

October 21, 2016

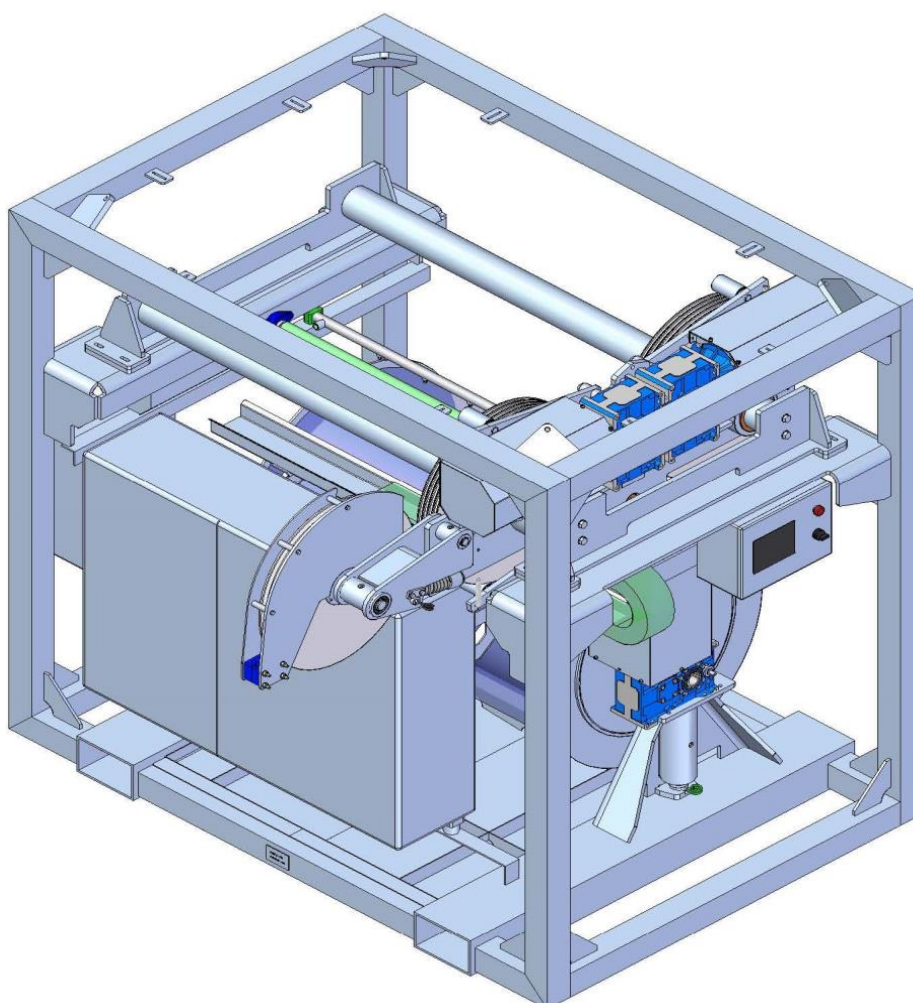
Manufacturing Record Book

Winch OE-2000-A3-4-7-2-FS-NZ-003
SHG-000973

MANUFACTURER: SH-GROUP
CUSTOMER: MODUS Seabed

SERIAL No: SHG-000973 - 1

NUMBER IN SERIES: 1#1



WinchOE-2000-A3-4-7-2-FS-NZ-003		1	MATERIAL CERTIFICATES
Serial No.: SHG-000973 - 1			
CUSTOMER: MODUS Seabed		2	PRODUCTION LOGS
Project ID SHG-000973			
MANUFACTURER: SH-GROUP		3	WELDING PROCEDURE SPECIFICATIONS (WPS)
NUMBER IN SERIES: 1#1			
REVISION: 0		4	CERTIFICATES FOR WELDERS
TOC - MRB			
		5	NDT REPORTS
		7	PRODUCT RELATED CERTIFICATES
		9	PAINT REPORT

10-21-2016

OE-2000-A3-4-7-2-FS-NZ-
003

Rev. 0

-

SHG-000973 - 1

Manufacturing Record Book (MRB)



10.21.2016

OE-2000-A3-4-
7-2-FS-NZ-003

Rev. 0

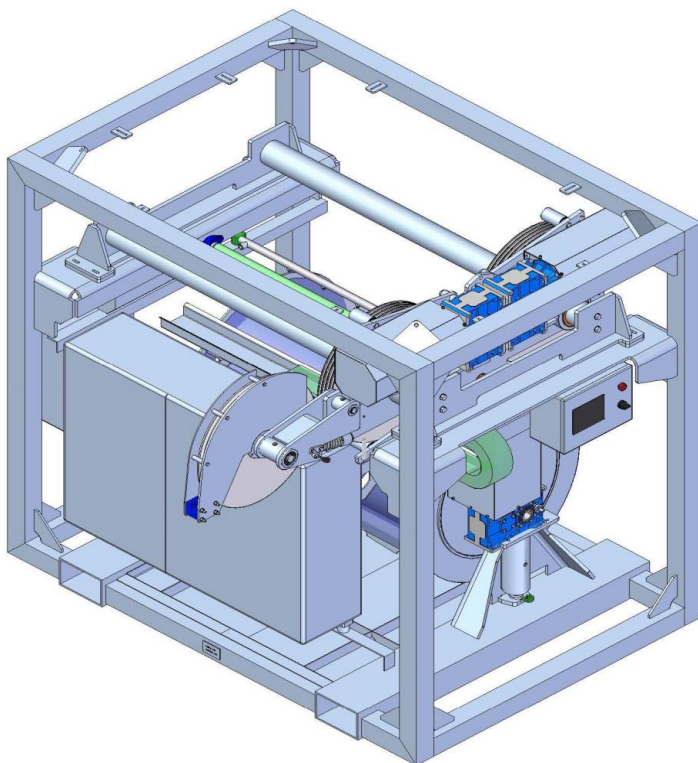
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SHG-000973 -

Manufacturing Record Book (MRB)



SHG-000973 - 1
MODUS Seabed
OE-2000-A3-4-7-2-FS-NZ-003



MATERIAL CERTIFICATES	1
PRODUCTION LOGS	2
WELDING PROCEDURE SPECIFICATIONS (WPS)	3
CERTIFICATES FOR WELDERS	4
NDT REPORTS	5
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Abnahmeprüfzeugnis 3.1		Nr./No. (A03)	1000512
Inspection certificate 3.1		Seite/Page	1/2
DIN EN 10204		Datum/Date	02.04.2011
(A02)			
✕			
Nr. (A07)	4500092263	13.01.2011	Nr. (A07)
Besteller	Lemvigh - Müller A/S		Empfänger
Purchaser	2730 HERLEV		Customer
(A06)	DÄNEMARK		(A06)
Erzeugnis	Warmbreitband		Werksauftrags-Nr.
Product	Hot rolled wide strip		Works order No.
(B01)			(A08)
Werkstoff und Lieferbedingung	S355MC		Lieferschein-Nr.
Steel grade and terms of delivery	DIN EN 10149/2 - 11/95		Dispatch note No.
(B02-B03)	DIN EN 10051 - 11/97		01.04.2011
	JPMD68		Abnahme
			Inspection
			(A05)


Materialdaten / Material data (B01-B99)

Pos. Item	Anzahl Quantity (B08)	Erzeugnis-Nr. Product No. (B07)	Schmelzen-Nr. Heat No. (B07)	Lieferzustand Cond. of delivery (B04)	Dicke x Breite Thickness x Width (B09-B11)	mm x mm
02	1	686067	14430	M	8,00 x 1500,0	
Σ	1	Gewicht Weight (B12)	27.720 kg kgs	M: thermomechanisch gewalzt / thermomechanically rolled		
Maßprüfung und Sichtkontrolle auf äußere Beschaffenheit: ohne Beanstandung Dimensional check and visual examination of the surface condition: without objection						


Schmelzenanalyse / Ladle analysis (C70-C99)

Schmelzen-Nr. Heat No. (B07)	C %	Si %	Mn %	P %	S %	N %	Al %	Nb %	Ti %	V %
14430	≤0,12	≤0,03	≤1,50	≤0,025	≤0,020		≥0,015	≤0,09	≤0,15	≤0,20
14430	0,07	0,02	0,74	0,013	0,002	0,003	0,036	0,03	0,002	0,003
Schmelzen-Nr. Heat No. (B07)	EV1 1) %									
14430	≤0,22									
14430	0,04									
1) EV1: V+Nb+Ti										
Stahlherstellung: Sauerstoffaufblasverfahren Steel making: Basic oxygen process (C70)										

Es wird bestätigt, daß die Lieferung den Anforderungen der Lieferbedingung entspricht.
We hereby certify that the delivered material complies with the terms of the order.
(Z01)

 Herstellerzeichen
Trademark
(A04)

Salzgitter Flachstahl GmbH
Eisenhüttenstr. 99
D-38239 Salzgitter
(A01)

 Abnahmestempel
Inspection Stamp
(Z03)

Abnahmebeauftragter
Inspection Representative
(Z02)

Diese durch ein geeignetes Datenverarbeitungssystem erstellte Bescheinigung ist gemäß EN 10 204, Abschnitt 5, ohne Unterschrift gültig.
This certificate was prepared by a suitable data processing system and is valid without signature according to EN 10 204, section 5.


Kratz

Abnahmeprüfzeugnis 3.1 Inspection certificate 3.1 DIN EN 10204 (A02)		Nr./No. (A03) 1000512 Seite/Page 2/2 Datum/Date 02.04.2011	
Nr. (A07) 4500092263 Besteller Lemvigh - Müller A/S Purchaser 2730 HERLEV (A06) DÄNEMARK	13.01.2011	Nr. (A07) Empfänger Lemvigh - Müller A/S Customer 2730 HERLEV (A06) DÄNEMARK	
Erzeugnis Warmbreitband Product Hot rolled wide strip (B01)		Werkstoff und Lieferbedingung S355MC Steel grade and terms of delivery DIN EN 10149/2 - 11/95 (B02-B03) DIN EN 10051 - 11/97 JPM68	Werkauftrags-Nr. 0001138512 Works order No. (A08) Lieferschein-Nr. 0083132268 Dispatch note No. 01.04.2011 Abnahme WS Inspection (A05)


Zugversuch / Tensile test (C10-C29)									
Proben-Nr. Specimen No. (C00)	Schmelzen-Nr. Heat No. (B07)	Ort Location (C01)	Richt. Direct. (C02)	Zustand Cond. (B05)	Form Type (C10)	Streckgrenze Yield point (C11) ReH MPa ≥ 355	Zugfestigkeit Tensile strength (C12) Rm MPa 430 - 550	Bruchdehnung Elongation (C13) A5 7) % ≥ 23	
686067	14430	E4G	L	M	P	413	489	33	
1) E: Ende / Tail end 2) 4: 1/4 Breite / 1/4 Width 3) G: Erzeugnisdicke / Thickness of product 4) L: längs / longitudinal 5) M: thermomechanisch gewalzt / thermomechanically rolled 6) P: prismatisch / prismatic 7) A5: Lo=5,65 √So									
Faltversuche ohne Beanstandung Bend tests without objection									

Kerbschlagbiegeversuch / Impact test (C40-C49)										
Proben-Nr. Specimen No. (C00)	Schmelzen-Nr. Heat No. (B07)	Ort Location (C01)	Richt. Direct. (C02)	Zustand Cond. (B05)	Probenform Type of specimen (C40-C41)	Temperatur Temperature (C03) °C	Schlagarbeit Impact energy (C42-C43) J ≥ 21			
686067	14430	E4O	L	M	KV750/7,5	-020	167	163	169	166
1) E: Ende / Tail end 2) 4: 1/4 Breite / 1/4 Width 3) O: oberflächennah / near surface 4) L: längs / longitudinal 5) M: thermomechanisch gewalzt / thermomechanically rolled 6) MW: Mittelwert / Average										

Es wird bestätigt, daß die Lieferung den Anforderungen der Lieferbedingung entspricht.
We hereby certify that the delivered material complies with the terms of the order.
(Z01)

 Herstellerzeichen
Trademark
(A04)

Salzgitter Flachstahl GmbH
Eisenhüttenstr. 99
D-38239 Salzgitter
(A01)

 Abnahmestempel
Inspection Stamp
(Z03)

Abnahmebeauftragter
Inspection Representative
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This certificate was prepared by a suitable data processing system and is valid without signature according to EN 10 204, section 5.

Kratz



A01

INSPECTION CERTIFICATE

EN10204 Type 3.1

A02

Date	20/04/16	Z02
Cert No.	120/1616/0777	A03
Del. Note	EWSR/0324	

CE
0038

Tata Steel Ref.No.	GXA 361487	Works	29 9316	A08
Sales				
Customer Order No.	P/O: 4500340224	OF 23/FEB/16		A07
Product Description	CELSIUS HOT FINISHED WELDED STEEL RECTANGULAR HOLLOW SECTIONS TO EN 10210 : 2006 GRADE S355NH AND DUAL CERTIFIED WITH S355J2H INCLUDING OPTIONS 1.2, 1.4 + 1.5. SILICON CONTENT 0.15-0.25%. CARBON EQUIVALENT 0.43 MAX. CORNER RADIUS 2T MAX. SURFACE CONDITION IN ACCORDANCE WITH EN10163-3 CLASS D SUB-CLASS 3. INTERNAL WELD BEAD TRIMMED.			B01-B04

NORMALISED ROLLED
MADE IN UK

C71-C99	Analysis %	C	Si	Mn	P	S	Cr	Mo	Ni	Al	B	Cu	N	Nb	Sn	Ti	V	CEV				
Cast No.																						
7T21821	LADLE	0.15	0.18	1.41	0.017	0.006	0.020	0.001	0.020	0.043	0.0002	0.009	0.01	0.034	0.001	0.001	0.004	0.39				

Z02
A05

Company Registration No. 02280000.

**This document has been prepared by a
computer system and is valid without signature.**



A04

Tata Steel UK Limited

20" H.F.I Mill

Brenda Road

Hartlepool Cleveland UK TS25 2EG

A01

Telephone: +44 (0) 1429 266611

Fax: +44 (0) 1429 527256

INSPECTION CERTIFICATE
EN10204 Type 3.1

A02

Date 03/05/16

Cert No. 280/1618/0094

Del. Note

Page No. 01 of 01

Customer

LEMVIGH-MULLER A/S

STATIONSALLEN 40
2730 HERLEV
DENMARK

A06



0038

Quality Management System
Approved to ISO 9001

Tata Steel Ref. No.

Sales GXA362142

Works 6904

Customer Order No.

P/O: 4500343393 OF 15/MAR/16

A08

A07

B01-B04

Product Description
CELSIUS HOT FINISHED WELDED STEEL RECTANGULAR HOLLOW SECTIONS TO EN 10210 : 2006 GRADE S355NH AND DUAL CERTIFIED WITH S355J2H INCLUDING OPTIONS 1.2, 1.4 + 1.5. SILICON CONTENT 0.15-0.25%. CARBON EQUIVALENT 0.43 MAX. CORNER RADIUS 2T MAX. SURFACE CONDITION IN ACCORDANCE WITH EN10163-3 CLASS C SUB-CLASS 3.

FPC CERTIFICATE NUMBER 0038/CPR/LRQ0840080/B

DURABILITY: NO PERFORMANCE DETERMINED - SUBJECT TO FINAL COATING

MADE IN UK

L=Longitudinal T=Transverse B=Body W=Weld KV=Charpy V-Notch HV=Hardness Vickers(10Kg Load) DT=Drop Weight Tear Test

Item No.	B08 Number of Pieces	Product Dimensions (mm)	B09-B12	B07 Cast/Heat No. Pipe No.	Tensile Test				Impact/Hardness Tests				Steel Making Process				C70																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
					C01 C02 C10	Yield Stress Re (N/mm2)	C11 Tensile Strength Rm (N/mm2)	C12 Elong A% A%	C13 Hydro Pressure (Bar)	D02	C01 C02	C30 Test Type	C40 Width (mm)	C41 Temp (C)	C42 C31 Values Ave	C43 C32 Ave		BASIC OXYGEN STEEL				C50-C69 D02-D99																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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C71-C99 Cast No.	Analysis %	C	SI	MN	P	S	CR	MO	NI	AL	B	CU	N	CA	NB	SN	TI	V	CEV		
7T22716	LADLE	.15	.1721	.41	.015	.006	.024	.001	.012	.038	.0003	.014	.0094	.000	.032	.005	.002	.002	.002	.39	
7T22716	CHECK	.14	.1671	.40	.013	.007	.028	.002	.013	.040	.0003	.015	.0090	.000	.031	.005	.002	.001	.001	.38	
7T22727	LADLE	.15	.1881	.36	.013	.009	.021	.001	.011	.043	.0002	.012	.0121	.000	.032	.005	.001	.001	.001	.38	
7T22727	CHECK	.14	.1791	.35	.012	.009	.024	.002	.012	.042	.0001	.012	.0118	.000	.032	.006	.001	.001	.001	.37	

Code Numbers in accordance with EN 10168 (see overleaf).
Alterations to this document or its use for other products shall be regarded as falsification of documents and be subject to criminal jurisdiction.

Compliance with European Directives - The CE mark shown in Hartlepool 20" mill inspection documents is in accordance with the Construction Products Regulation 305/2011/EU applicable to harmonized standards EN 10210 & EN 10219 only.
Hartlepool 20" mill Quality System complies with the Pressure Equipment Directive (PED) 97/23/EC Annex I Para. 4.3.
Note for end users - only tubes in accordance with EN 10217 have a presumption of conformity with the PED.

DAVID EVANS

Section Manager Technical

Z02

A05

This document has been prepared by a computer system and is valid without signature.

Z01 The products covered by this inspection document are certified by Tata Steel UK Limited and comply with the requirements of the Product Description.

Company Registration No. 02280000.

Duferco Danish Steel

Duferco GROUP

DK-3300 Frederiksværk - Telefon +45 47767600

LEMVIGH-MÜLLER A/S
Stationsalléen 40
DK-2730 - Herlev
DANMARK

Lieferbedingung / Specification:

EN 10025-2 **S355J2+AR**

BESCHEINIGUNG / CERTIFICATE

Stabstahl/Bars

Seite / Page: 1/1 Nr./No.: 72101

Type: EN 10204 / 3.1

Ihrer Auftrag/Your order 4500287147 ✓

Unser Auftrag/Our order 47514

Datum/Date: 18-02-2015

Lieferstelle/Delivery address:

LEMVIGH-MÜLLER A/S
Centrallager Randers
DK-8900 - Randers
DANMARK

Toleranz Tolerance: EN10060

Pos.	Product Type	Abmessungen/Dimensions										Stk/Pcs	Gewicht/Weight	Schmelze/Heat	Lieferzustand/Condition of delivery		
1	21 Round	6000									60.0	1	2074	37118	Walzzustand / As rolled		
2	22 Round	6000									70.0	1	2079	37121			
3															Kennzeichnung/Marking		
4															CE		
5															Sachverständigen/Quality inspector:		
6																	
7															Schmelznr/Heatno.		
8															10.000-29.000 Konverter-verfahren/Oxygen converter		
9															30.000-99.999 Elektro-Ofen/El-arc-furnace		
10															Im Pflanne raffiniert/Ladle refined		
Total weight:													4153				
	C	Mn	Si	P	S	Cr	Cu	Ni	Mo	Sn	Al	Nb	Ti	V	B	N	Ceq = Carbon-Equivalent (IIW - formula)
1	14	134	20	25	10	8	23	10	3		4	2	15	28		110	41
2	14	138	21	23	13	8	21	9	3		0	2	14	35		110	41
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
% x 100			% x 1000			% x 100				% x 1000				% x 10.000		% x 100	
Zugversuch/Tensile test			Kerbschlagbiegeversuch/Impact test/ISO - V							Hardness		DDS requires, that all billet suppliers make statement in writing to the effect, that the billets delivered have not been exposed to and / or contaminated with radiation. Bei Material mit einer Dicke unter 10 mm, werden die Kerbschlagproben zu einer Breite von entweder 7.5 mm oder 5.0 mm bearbeitet. For material with thickness less than 10 mm, the impact testpieces are machined to a width of either 7.5 mm or 5.0 mm.					
ReH		Rm	A5	1	2	3	Mittel/Average	Temp									
1	416	546	30	108	137	116	120	-20									
2	416	559	29	131	64	124	106	-20									
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
MPa		%	Joule				°C	HB									



06
0045 CPR-0620
EN 10025-1

See www.duferco.dk for Declaration Of Performance:

DDS 609

Wir bestätigen, dass die Lieferung den Forderungen der obengenannten Lieferbedingungen und des Auftrages entspricht.

We hereby certify, that the material has been produced and tested in compliance with the mentioned specification and with the requirement of the order.

Duferco Danish Steel A/S

Inge Beierholm
Inge Beierholm
Quality Department 18/2-15



DanSteel A/S

Havnevej 33
DK-3300 Frederiksværk

Inspection Certificate

(A02)

EN 10204:2004/3.2

Page 1 of 4
Date of creation: (Z02) 31.08.2015

Certificate No.: (A03)

036598/1

Our order No.: (A06) 5421551

Your order No.: (A07) 1PO-0001653-1

Order registration date: 13.07.2015

Date of dispatch: 31.08.2015 B

Material requirements and customer information

Product: (A03)

Plate

Steel standard and grade: (B02) NV/D36

Surface tolerance: EN 10163-2 B3

Delivery condition: (B04) Furnace normalized (N)

Length tolerance: EN 10029 Table 3

Customer name and address (A06)

Certificate address

Width tolerance: EN 10029 Table 2

9361

9261001

PBN Steel A/S

pernissen@pnsteel.dk

Denmark

Bjørnøvej 22

5700 Svendborg

DENMARK

Flatness tolerance: EN 10029 Table 4 Class N

pernissen@pnsteel.dk; m.helms@eu.nlmk.com

Supplementary information: (C04)

Fully Killed and Fine Grain

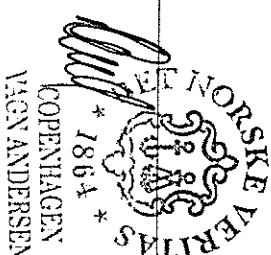
Plates <= 25mm are Normalised at 900°C for 3 minutes.

Plates > 25mm are Normalised at 900°C for 5 minutes.

Visual examination and dimensional checking: Satisfactory. The results of tests performed are in compliance with the requirements. (Z01)

Details of supplied materials dimensions, weights and pieces

Heat/Slab (B07)	Plate No. (B06)	Item	Thickness mm (B09)	Width mm (B10)	Length mm (B11)	Pieces (B08)	Gross kg (B12)	Hard stamp	Stamp location	Customer remark (B09)
48141J1	1534L	3	15.0	2500	6000	2	3 532	NV D36	Head	1PO-0001653-1
48240C4	1556L	3	15.0	2500	6000	2	3 532	NV D36	Head	1PO-0001653-1
47723C4	0353L	4	25.0	2500	6000	2	5 888	NV D36	Head	1PO-0001653-1
							6	12 952		



Third party inspection (Z03)

LR,DNV

Inspection representative NLMK DanSteel A/S (A05)

Zibrandt Greisen

Z. Greisen

(A04)



DanSteel A/S

Havnevej 33
DK-3300 Frederiksværk

Inspection Certificate

EN 10204:2004/3.2

Page

2 of 4

Date of creation: (Z02)

31.08.2015

Certificate No.: (A03)

036598/1

Our order No.: (A08) 5421551

Your order No.: (A07)

1PO-0001653-1

Order registration date: 13.07.2015

Date of dispatch: 31.08.2015

B

Chemical composition (heat analysis)

all results in %

Heat No. (B07)

	C	Mn	Si	P	S	Cr	Cu	Ni	Mo	Al	Nb	V	Ti	N
--	---	----	----	---	---	----	----	----	----	----	----	---	----	---

Set values:

min.

0.90

0.020 0.010

max.

0.18 1.60 0.50 0.035 0.035 0.200 0.350 0.400 0.080 0.100 0.054 0.100 0.050

0.0120

47723	0.15	1.45	0.33	0.016	0.004	0.022	0.018	0.011	0.001	0.038	0.046	0.005	0.004	0.0029
48141	0.15	1.45	0.39	0.016	0.009	0.023	0.022	0.013	0.001	0.044	0.036	0.002	0.002	0.0035
48240	0.17	1.48	0.32	0.015	0.006	0.025	0.037	0.018	0.001	0.046	0.031	0.005	0.002	0.0054

Heat No. (B07)

CEV

CA4

Remark (C70)

Set values:

min.

0.00

max.

0.43

0.124

47723	0.40	0.055	1 3 4 6
48141	0.40	0.040	1 3 4 6
48240	0.42	0.038	1 3 4 6

Supplementary information (C99)

CEV = C + Mn/6 + (Cr + Mo + V)/5 + (Ni + Cu)/15

CA4 = Nb+Ti+V

1 = Basic Oxygen Steel, 2 = Electric Arc Furnace, 3 = Ladle Refined, 4 = Calcium Treated, 5 = Vacuum Degassed, 6 = Continuous Cast, 7 = Ingot



Third party inspection (Z03)

LR,DNV

Inspection representative NLMK DanSteel A/S (A05)

Zibrandt Greisen

Z. Greisen



(A04)



DanSteel A/S

Inspection Certificate

(A02)

Page 3 of 4

Havevej 33

DK-3300 Frederiksværk

EN 10204:2004/3.2

Date of creation: (Z02)

31.08.2015

(A01)

Certificate No.: (A03)

036598/1

Our order No.: (A08) 5421551

Your order No.: (A07) 1PO-0001653-1

Order registration date: 13.07.2015

Date of dispatch: 31.08.2015 B

Tensile testing Tensile tests were performed in accordance with EN 10002/ISO 6892-1 with results as stated below:

Heat/slab	Plate ID	Thickness	Shape	Loc.	Dir.	Yield	Yield	UTS	Elong.	Elongation	Yield/UTS
(B07)	(B06)	mm	(C10)	(C01)	(C02)	MPa (C11)	type	MPa (C12)	type	%(C13)	
47723C4	0353L-1-1	25.0	R	H	T	367	REH	525	A200	31	0.70
47723C4	0353L-1-2	25.0	R	H	T	367	REH	525	A200	31	0.70
48141J1	1534L-2-1	15.0	R	H	T	384	REH	533	A200	24	0.72
48141J1	1534L-2-2	15.0	R	H	T	384	REH	533	A200	24	0.72
48240C4	1556L-2-1	15.0	R	H	T	396	REH	543	A200	26	0.73
48240C4	1556L-2-2	15.0	R	H	T	396	REH	543	A200	26	0.73

Supplementary Information (C99)

Loc.: (C01) H = head, T = tail

Dir.: (C02) T = transversal, L = longitudinal

Shape: (C10) Ø = round, R = rectangular

Original gauge length: 200 mm

Impact testing Impact tests were performed in accordance with EN 10045/ISO 148-1 with results as stated below:

Heat/slab	Plate ID	Position	Notch	Shape	Loc.	Dir.	Temp.	SV	SV	SV	AV
(B07)	(B06)	(C01)	(C40)	(C41)	(C01)	(C02)	°C (C03)	J (C42)	J (C42)	J (C42)	J (C43)
47723C4	0353L-1-1	1	CV	10x10	H	L	-20	187	226	233	215
47723C4	0353L-1-2	1	CV	10x10	H	L	-20	187	226	233	215
48141J1	1534L-2-1	1	CV	10x10	H	L	-20	167	199	188	185
48141J1	1534L-2-2	1	CV	10x10	H	L	-20	167	199	188	185
48240C4	1556L-2-1	1	CV	10x10	H	L	-20	182	171	223	192
48240C4	1556L-2-2	1	CV	10x10	H	L	-20	182	171	223	192

Supplementary Information (C99)

Position: (C01) 1 = surface, 2 = middle, 3 = 1/3 of thickness, 4 = 1/4 of thickness

Notch: (C40) CU = Charpy U-notch, CV = Charpy V-notch, CVA = Charpy V-notch (ASTM)

Loc.: (C01) H = head, T = tail

Dir.: (C02) T = transversal, L = longitudinal

NORSKE VERITAS
COPENHAGEN
VAGN ANDERSEN

1864

Third party inspection (Z03)

Inspection representative NLMK DanSteel A/S (A05)

LR,DNV

Zibrandt Greisen

Z. Greisen



(A04)



DanSteel A/S

Havevej 33
DK-3300 Frederiksværk

Inspection Certificate

EN 10204:2004/3.2

Page 4 of 4

Date of creation: (Z02) 31.08.2015

Certificate No.: (A03) 036598/1

Our order No.: (A08) 5421551 Your order No.: (A07) 1PO-0001653-1 Order registration date: 13.07.2015 Date of dispatch: 31.08.2015 B

Ship Steel or Steel for Ships, Boiler, Pressure Vessel and for welded Machinery Structures. We hereby certify that the Plates have been made by an approved process in accordance with, the rules of the stated Classification Society and the stated Steel Grade. Testing of the hereby certified materials has been carried out with satisfactory results in the presence of the Classification Society's Surveyor.



Third party inspection (Z03)




LR,DNV



Inspection representative NLMK DanSteel A/S (A05)

Zibrandt Greisen

Z. Greisen

(A04)

 <p>Correspondentieadres: Aperam Genk Swinnenwijerweg 5, Poort Genk 7523 3600 Genk, Belgium Tel. +32 (0)89 30 21 11</p>		MILL CERTIFICATE BS EN 10204/3.1 CERTIFICAT DE RECEPTION NF EN 10204/3.1 ABNAHMEPRUEFZEUGNIS DIN EN 10204/3.1										N-Nr-N 16K0021114-01 V01																											
		<p>Certified acc.PED 97/23/EC Annex I § 4.3 by Certification Body 0036 of TUV SUD Industrie Service GmbH with cert.No.:314/2007/MUC.Renounced of counter signature agreed by TÜV SÜD (9/5/2007).Approved acc.AD 2000-Merkblatt W0/TRD 100 by TÜV SÜD Industrie Service GmbH.Confirmation letter from TÜV SÜD Industrie Service GmbH of 07/05/2010 about the uniformity of coils acc.AD2000 W2 §4.1.1</p>																																					
<p>Tech.Req.:AD 2000 W2 -- AD 2000 W10 -- EN 13445-2</p>																																							
Manufacturer's works order number N° de la commande usine productrice Werksauftragsnummer 80307766/07-08256/211/07		Surveyor's mark Cachet de l'expert Stempel des Werkssachverständigen				Purchaser and/or consignee Client et/ou destinataire Besteller und/oder Empfänger Damstahl A/S DANMARKSVEJ 28 8660 SKANDERBORG DENMARK						Purchaser's order number N° de commande client Kundenbestellnummer 548929/BSO																											
Product - Produit - Erzeugnis SHEETS,HOT ROLLED,ANNEALED+PICKLED TOLES,LAMINEES A CHAUD,RECUTTS+DECAPES BLECHE,WARMGEWALZT,GEGLUEHT+GEBEIZT										Customer article number N.article client Artikelnummer des Kunden 5180																													
Steel designation Désignation de l'acier Stahlbezeichnung EN 10028-7-2008 1.4307 / 1.4301 EN 10088-2-2014 1.4307 / 1.4301 ASTM A 240-2015 TYPE 304L / 304 ASME SA 240-2015 TYPE 304L / 304 EN 10088-4-2009 1.4307 / 1.4301		Finish Présentation Ausfuehrung 1D 1D NO 1 NO 1 1D		Steelmaking process Mode d'élaboration de l'acier - Stahlherstellungverfahren Prod.proces: Electric arc furnace - VOD/AOD - Continuous casting Proc.fabric.: Four à arc - VOD/AOD - Coulée continue Fertigungsablauf: Elektro-Ofen - VOD/AOD - Stranggussanlage						Product delivery condition Etat de livraison du produit - Lieferzustand Solution treated: Hypertrempe: 1050 °C Loesungsgegl+abgeschreckt:																													
				Any supplementary requirements Prescriptions supplémentaires - Zusätzliche Anforderungen						Forced air-water/air forcé-eau Geblase Luft-Wasser																													
NACE MR 0175 / ISO 15156-1 / ISO 15156-3 -- NACE MR 0103																																							
Identification of the product - Identifizierung des Erzeugnisses MELTED IN BELGIUM, MADE IN BELGIUM																																							
Coil n. N.Bobine - Band Nr. 61351716		Heat n. N.Coulée - Schmelz Nr. 111430		Thickness Epaisseur - Staerke 10.00 mm		Width Largeur - Breite 1500.00 mm		Length Longueur - Laenge 3000.00 mm		Number of pieces Nb de pièces - Stueckzahl 21		Net weight Poids net - netto Gewicht 7370 KG																											
CHEMICAL ANALYSIS - ANALYSE CHIMIQUE - CHEMISCHE ZUSAMMENSETZUNG																																							
		C		Si		Mn		Ni		Cr		Mo		Ti		N		S		P																			
Required - Exigé %mini Anforderung. %maxi		0.030		0.75		2.00		8.00 10.50		17.50 19.50						0.100		0.015		0.045																			
Cast Analysis Analyse coulee Analyse Schmelze		0.021		0.40		1.39		8.00		18.01						0.073		0.002		0.030																			
		C71		C72		C73		C74		C75		C76		C77		C78		C79		C80		C81		C82		C83		C84		C85		C86							
Positive material identification carried out : OK Tests de vérification de la conformité de la nuance fournie : OK Verwechslungsprüfung wurde durchgeführt : OK																																							
Location (1)										MECHANICAL PROPERTIES - PROPRIETES MECANQUES - MECHANISCHE WERTE EN ISO 6892-1 B / A-SA 370																													
Room temperature - Température ambiante - Raumtemperatur										Test temperature (°C) :																													
Direction (2)		Yield or proof strength Limite d'élasticité Dehngrenze MPa		Tensile Strength Résistance à la traction Zugfestigkeit MPa		Elongation after fracture Allongement après rupt. Bruchdehnung %		Hardness Dureté Haerte		Yield or proof strength Limite d'élasticité Dehngrenze MPa		Tensile str. Résist. MPa Zugfestigkeit		Elongation % Allongement. Bruchdehnung																									
		Rp0.2%		Rp1%		Rm		A5		50mm		HRB		Rp0.2%		Rp1%		Rm		A5																			
		210		250		520 700		45		45		92																											
1 T		340		382		626		56		53		87																											
2												85																											
		C11		C14		C12		C13		C15		C31		C16		C17		C18		C19																			
Impact strength test Essai de résilience Kerbschlagzähigkeitstest				Corrosion test Test de corrosion Korrosionstest																																			
C40 (°C)				C44				EN ISO 3651/2 - A:OK				C50				C51				C52				C53				C54				C55				C05			
								D51				Internal cleanliness:				A:				B:				C:				D:				C57							
Location of the sample (1) Emplacement de l'échantillon Lage des Probenabschnittes 1. Front - Début - Anfang 2. Back - Fin - Ende 3. Middle - Milieu - Mitte				The delivery is in accordance with the order La fourniture est conforme aux exigences de la commande Die lieferung entspricht den Bestellbedingungen				Packing list Avis d'expédition Lieferscheinnummer 2016035632-8256				Organisation inspection Organisme et/ou service contrôle Ueberwachungsabteilung Quality Department 20/4/2016 The inspector Le responsable Der Werkssachverständige  D. Raemaekers																											
Direction of the test pieces (2) Orientation des éprouvettes Probenrichtung T. Transverse - Travers - Quer L. Longitudinal - Long - Laengs				Marking, inspection and measurement : without objection Contrôle de marquage, d'aspect et de dimensions : satisfaisants Prüfung der Stempelung, des Oberflaechenaspekts und der Abmessungen : ohne Beanstandung																																			

 <p>Correspondentieadres: Aperam Genk Swinnenwijerweg 5, Poort Genk 7523 3600 Genk, Belgium Tel. +32 (0)89 30 21 11</p>		MILL CERTIFICATE BS EN 10204/3.1 CERTIFICAT DE RECEPTION NF EN 10204/3.1 ABNAHMEPRUEFZEUGNIS DIN EN 10204/3.1										N-Nr-N 16K0021114-CE V01											
		Factory Production Control certified by TUV SUD Industrie Service GmbH with certificate nr 0036-CPD-43-2011. In compliance with the Construction Product Directive nr 89/106/EEC.																					
Manufacturer's works order number N° de la commande usine productrice Werksauftragsnummer 80307766/07-08256/211/07		Surveyor's mark Cachet de l'expert Stempel des Werkssachverstaendigen				Purchaser and/or consignee Client et/ou destinataire Besteller und/oder Empfaenger Damstahl A/S DANMARKSVEJ 28 8660 SKANDERBORG DENMARK						Purchaser's order number N° de commande client Kundenbestellnummer 548929/BSO											
Product - Produit - Erzeugnis SHEETS,HOT ROLLED,ANNEALED+PICKLED TOLES,LAMINEES A CHAUD,RECUTTS+DECAPES BLECHE,WARMGEWALZT,GEGLUEHT+GEBEIZT												Customer article number N.article client Artikelnummer des Kunden 5180											
Steel designation Désignation de l'acier Stahlbezeichnung EN 10088-4-2009 1.4307/1.4301		Finish Présentation Ausfuehrung 1D		Steelmaking process Mode d'élaboration de l'acier - Stahlherstellungverfahren Prod.proces: Electric arc furnace - VOD/AOD - Continuous casting Proc.fabric.: Four à arc - VOD/AOD - Coulée continue Fertigungsablauf: Elektro-Ofen - VOD/AOD - Stranggussanlage						Product delivery condition Etat de livraison du produit - Lieferzustand Solution treated: Hypertrempe: 1050 °C Loesungsgegl+abgeschreckt: Forced air-water/air forcé-eau Geblaease Luft-Wasser													
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Coil n. N.Bobine - Band Nr. 61351716		Heat n. N.Coulée - Schmelz Nr. 111430		Thickness Epaisseur - Staerke 10.00 mm		Width Largeur - Breite 1500.00 mm		Length Longueur - Laenge 3000.00 mm		Number of pieces Nb de pièces - Stueckzahl 21		Net weight Poids net - netto Gewicht 7370 KG											
CHEMICAL ANALYSIS - ANALYSE CHIMIQUE - CHEMISCHE ZUSAMMENSETZUNG																							
		C	Si	Mn	Ni	Cr	Mo	Ti	N	S	P												
Required -Exigé %mini Anforderung. %maxi		0.030	0.75	2.00	8.00 10.50	17.50 19.50			0.100	0.015	0.045												
Cast Analysis Analyse coulee Analyse Schmelze		0.021	0.40	1.39	8.00	18.01			0.073	0.002	0.030												
		C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85	C86						
Positive material identification carried out : OK Tests de vérification de la conformité de la nuance fournie : OK Verwechslungspruefung wurde durchgefuehrt : OK						D52																	
C04						C93																	
Location (1)		MECHANICAL PROPERTIES - PROPRIETES MECANQUES - MECHANISCHE WERTE EN ISO 6892-1 B / A-SA 370										C20											
		Room temperature - Température ambiante - Raumtemperatur										Test temperature (°C) :											
Direction (2)		Yield or proof strength Limite d'élasticité Dehngrenze MPa		Tensile Strength Résistance à la traction Zugfestigkeit MPa		Elongation after fracture Allongement après rupt. Bruchdehnung %		Hardness Dureté Haerte		Yield or proof strength Limite d'élasticité Dehngrenze MPa		Tensile str. Résist. MPa Zugfestigkeit		Elongation % Allongement. Bruchdehnung									
		Rp0.2%		Rp1%		Rm		A5		50mm		HRB		Rp0.2%		Rp1%		Rm		A5			
		210		250		520 700		45		45		92											
1 T		340		382		626		56		53		87											
2												85											
		C11		C14		C12		C13		C15		C31		C16		C17		C18		C19			
Impact strength test Essai de résilience Kerbschlagzaehigkeitstest				Corrosion test Test de corrosion Korrosionstest																			
C40 (°C)				C44				EN ISO 3651/2 - A:OK				C50		C51		C52		C53		C54		C55	
								D51				Internal cleanliness:		A:		B:		C:		D:			
Location of the sample (1) Emplacement de l'échantillon Lage des Probenabschnittes 1. Front - Début - Anfang 2. Back - Fin - Ende 3. Middle - Milieu - Mitte				The delivery is in accordance with the order La fourniture est conforme aux exigences de la commande Die lieferung entspricht den Bestellbedingungen				Packing list Avis d'expédition LieferscheinNummer 2016035632-8256				Organisation inspection Organisme et/ou service contrôle Ueberwachungsabteilung Quality Department 20/4/2016 The inspector Le responsable Der Werkssachverstaendige											
Direction of the test pieces (2) Orientation des éprouvettes Probenrichtung T. Transverse - Travers - Quer L. Longitudinal - Long - Laengs				Marking, inspection and measurement : without objection Contrôle de marquage, d'aspect et de dimensions : satisfaisants Pruefung der Stempelung, des Oberflaechenaspekts und der Abmessungen : ohne Beanstandung				D01				D02											



ПАО "ММК ИМ. ИЛЬИЧА"
PJSC "ILYICH IRON & STEEL WORKS OF MARIUPOL"

СЕРТИФИКАТ КАЧЕСТВА М
QUALITY CERTIFICATE No

20676

От
Date

25.10.2015

Лист
Sheet

1

Из
Of

022544

ISO 9001:2008 Система обеспечения качества подтверждена TÜV SÜD Industrie Service GmbH (Per.No0036) и соответствует Директиве 97/23/ЕС по оборудованию, работающему под давлением, и Памятке AD 2000 W0
DSTV ISO 9001:2009 The Quality Assurance System is certified by TÜV SÜD Industrie Service GmbH (No.0036) and in accordance with the Pressure Equipment Directive 97/23/EC and AD 2000-Merkblatt W0

Украина 87504, г. Мариуполь, ул. Левченко, 1.

Levchenko str. 1, Mariupol, 87504. Ukraine

Свидетельство о приемочных испытаниях			EN 10204:2004-3.1																		
Inspection certificate																					
Контракт N Contract No		12EXP/01-14	Заказ N Order No		LF4 -010139750327																
Барон N		62039060	Спецификация N Specification No		3975LF																
RW-Car No			Lot N		1																
Lot No			Lot No																		
Наименование товара Description of goods			Горячекатаный толстый лист Hot Rolled Plate																		
Марка стали Grade of steel		Стандарты Standards																			
S355J2+N		EN 10025-1,2:2004 EN 10029:2010 Class A, N EN 10163-1,2:2005 Class A, Subclass 3																			
Состояние поставки Delivery condition		Нормализующая прокатка Normalizing Rolling																			
Маркировка Marking		Trade mark, Made in Ukraine, Grade of steel, Cast No, Test No, Dimensions mm ,Sp.3975LF, Lot1, CE, EURO-STEEL.dk ONE Red STRIP																			
Клеймо Hard stamp		Trade mark, Grade of steel, Cast No																			
Позиция Item No	Плавка N Cast No	Партия N Test No	Размеры, Dimensions,			Кол-во, шт. Quantity, pcs															
			Толщина Thickness	Ширина Width	Длина Length																
6	155096-2	21992	20	2500	6000	12															
6	155096-2	21993	20	2500	6000	3															
6	155096-2	21994	20	2500	6000	3															
7	354970-1	21997	20	2500	8000	3															
10	354972-1	21930	25	2000	6000	6															
						27															
Выплавка Steelmaking proce		Конвертерный способ производства Made by the BOC Process																			
Химический состав, % Chemical composition, %																					
Плавка Cast No	C	Mn	Si	S	P	Cr	Ni	Cu	Ti	Al	As	N	Mo	V	Nb	Ca	B	Ceq	Pcm	I	
	x100			x1000			x100						x1000						x100		
155096-2	17	144	24	18	20	3	1	1	19	36	2	8	2	4	3				42		
354970-1	15	141	26	12	16	2	1	1	11	29	2	6	3	4	34				39		
354972-1	15	140	21	20	21	2	2	3	15	38	3	5	3	4	33				39		

Результаты испытаний															Test results									
Партия N Test No	Номер изделия Product No	Размеры обр Dimensions		Направление обр обр Direction	Темп. испыт. Test temperature	Предел текучести Yield stress	Предел прочности Tensile strength	Отн. удлинение Elongation	Отн. сужение Reduction of area	Тип надреза/образца Type of cut/specimen	Энергия удара KV/KU Impact energy KV/KU	Энергия удара KV/KU Impact energy KV/KU	Энергия удара KV/KU Impact energy KV/KU	Энергия удара KV/KU Impact energy KV/KU	Среднее значение KV/KU Average value	Изгиб Bend test	Кол-во вяз. сост. Shear area							
		Толщина/диаметр Thickness/diameter	Ширина Width															ReH	Rm	A5	Z Zavg	J	J	J
21992	2-1	20	25	t	20	361	519	28	-	-	-	-	-	-	-	-	-							
21992	2-1	10	10	1	-20	-	-	-	-	-	-	-	-	-	-	-	-							
21993	6-1	20	25	t	20	351	514	28,5	-	-	-	-	-	-	-	-	-							
21993	6-1	10	10	1	-20	-	-	-	-	-	-	-	-	-	-	-	-							
21994	11-1	20	25	t	20	353	516	27	-	-	-	-	-	-	-	-	-							
21994	11-1	10	10	1	-20	-	-	-	-	-	-	-	-	-	-	-	-							
21997	1-1	20	25	t	20	409	519	28	-	-	-	-	-	-	-	-	-							
21997	1-1	10	10	1	-20	-	-	-	-	-	-	-	-	-	-	-	-							
21930	17-1	25	25	t	20	372	507	27,5	-	-	-	-	-	-	-	-	-							
21930	17-1	10	10	1	-20	-	-	-	-	-	-	-	-	-	-	-	-							
S-начало полосы/strip start; E-конец полосы/strip end; L,l-продольное/Longitudinal; T,t-поперечное/Transverse; MC-мех. старение/strain aging d-диаметр/diameter; "Определение "Предел прочности" соответствует определениям "прочность на разрыв" и временное сопротивление разрыву" Definition "tensile strength" corresponds to definitions "ultimate strength" and "ultimate stress limit" УЗК/Ultrasonic examination																								
Примечание / Note																								
Поставка соответствует условиям заказа. Осмотр поверхности без замечаний. Размеры проката в пределах допусков. Delivery conforms to conditions of the order. Surface examination without remarks. Rolled product dimensions within the tolerance limit. It is hereby certified that products listed in this certificate tested and comply with contract's terms. Подтверждаем, что продукция, указанная в настоящем сертификате, испытана и соответствует условиям контракта.																								
0036 05 0036-CPR-M-56-2012										Подпись Ф.И.О., должность Signature Name Position Штамп эксперта Receiving agent's stamp КЛИШЕВИЧ Е. В.														



EURO-STEEL DANMARK A-S

Lungavej 31, DK-8722 Hedensted
Tlf. +45 75 89 01 66, Fax +45 75 89 07 34
euro-steel@gmail.dk
www.euro-steel.eu

ArcelorMittal Warszawa Sp. z o.o.
132 Kasprowicza Street
01-949 Warsaw Poland
fax: (022) 8354222 - 8340952
tlx: 82-53-51

ŚWIADECTWO ODBIORU
INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS
ACCORDING TO PN-EN 10204:2006
3.2.

Certificate No. Date
20216/2015(125) 2015-08-28
Confirmation No.
916157/2015 **3/*30
Department:
P20

Purchaser/Käufer
Order No/Bestell-Nr
B-S/O/6/15
dated/Datum
2015-06-08



1436-CPR-0006_06

Purchaser/Käufer (240397247)

Hereby we declare that the product is conforming
with the standards and other records contented in this document.
Wir bestaetigen hiermit, dass das Erzeugnis
mit den Normen und anderen im Text dieses Belegs erwaehtenen Unterlagen gerecht ist.

Article	Delivery conditions	Material destination
Gegenstand	(NPO)	(+N)
Hot Rolled Round Bars	Normalized	for mechanical working
Rundstange warmgewalzt	Normalisiert	zur mechanische Bearbeit.

Material	standard	Heat No
Werkstoff S355J2	normen EN 10025-2:2004	Schmelze-Nr 197749

Dimensions	Diameter	Exact length:
Abmessungen[mm]	Durchmes. 60 +1,0/-1,0	Feinlänge: 6,000 [m]
Length tolerance[+/-]:		Längstoleranz[+/-]: 200,0 [mm] 0,0 [mm]

Weight[kg]	Bundles	Standards
Gewicht[kg]	5.260 Bunde 3	Normen EN 10060:2003 EN 10025-1:2004

Ladle chemical analysis [%]

Schmelze chemische Zusammensetzung [%]

C	Mn	Si	P	S	Cr	Ni	Cu	Mo	Al	Sn
0,16	1,28	0,26	0,013	0,009	0,10	0,10	0,27	0,03	0,022	0,020
Ti	V	Nb	H	N	23	27	69	76		
0,0024	0,002	0,0020	0,00015	0,0090	0,022	0,42	0,13	0,504		

23=S+P; 27=Ce=C+Mn/6+ (Cr+Mo+V) /5+ (Ni+Cu) /15; 69=Cr+Mo; 76=Cr+Ni+Mo+Cu+V+Nb;

-Mechanical properties/Impact test	according to	Impact test temperature
-mechanische Eigenschaften/Kerbschlagzähigkeit	entsprechend EN 10002-1	/ EN 10045
Direction		Kerbschlagzähigkeitprüftemperatur
Richtung	Re [N/mm2] Rm [N/mm2] A5 [%] Z[%] ISO-V [J]	
L	361 529 30,0 69,0 163,0-151,0-161,0	-20,0°C
L	363 530 30,0 71,0 191,0-162,0-150,0	-20,0°C

-Impact test in temperature	according to
-Kerbschlagzähigkeit Prüftemperatur -50,0 °C	entsprechend EN 10045-1
Direction	
Richtung	
L ISO-V [J]	= 136,0 - 142,0 - 136,0
L ISO-V [J]	= 133,0 - 142,0 - 136,0

-Impact test in temperature	according to
-Kerbschlagzähigkeit Prüftemperatur -60,0 °C	entsprechend EN 10045-1
Direction	
Richtung	

Responsible: Quality Management Department
Verantwortlicher: Qualitätssicherungsabteilung

Manager M.Sc.Eng.
Leiter Dipl.Ing. B. Dorota Pietrzyk

ArcelorMittal Warszawa Sp. z o.o.
132 Kasprowicza Street
01-949 Warsaw Poland
fax: (022) 8354222 - 8340952
tlx: 82-53-51

ŚWIADECTWO ODBIORU
INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS
ACCORDING TO PN-EN 10204:2006
3.2.

Certificate No. Date
20216/2015(125) 2015-08-28
Confirmation No.
916157/2015 **3/*30
Department:
P20

L ISO-V [J] = 133,0 - 109,0 - 126,0
L ISO-V [J] = 93,0 - 91,0 - 127,0

-Hardness surface according to
-Härte Fläche entsprechend EN ISO 6506-1
HBW = 152,0 - 156,0

-Austenitic grain size according to
-Austenit Korngröße 7 - 7 entsprechend ISO 643

3.1. Department:

-Non-metallic inclusions K according to
-nichtmetallische Einschlüsse K -O- entsprechend DIN 50602
K4 = 0,0

N-880'C-air/Luft
NACE MR0175
KAT 1500788

Surface defect examination Oberflächenfehlerprüfung
Class A according to EN 10221 Klasse A entsprechend EN 10221
Förster 100% - OK Förster - Rißprüfung 100% - OK
Spectrotest 100% - OK 100% Verwechslungsgeprüft
VD - Vacuum Degassing
Electric steel from CC Elektrostahl aus Stranggussanlag
UD wg EN 10308 cl.3 -OK US test-EN10308 cl.3 -OK
Degree of rolling 9.06 Walzgrad 9.06

Responsible: Quality Management Department
Verantwortlicher: Qualitätssicherungsabteilung

Manager M.Sc.Eng.
Leiter Dipl.Ing. B. Dorota Pietrzyk

ArcelorMittal Warszawa Sp. z o.o.
INDEPENDENT QUALITY SUPERVISOR

Wiesław Orłowki





СЕРТИФИКАТ КАЧЕСТВА И КОЛИЧЕСТВА № 51451 30.09.2013
CERTIFICATE OF QUALITY AND QUANTITY

Система качества сертифицирована на соответствие требованиям МС ИСО 9001-2008
Quality system was certified for compliance with ISO 9001-2008

ОАО "СЕВЕРСТАЛЬ"
JSC "SEVERSTAL"

015223

Продавец/Производитель
Seller/Manufacturer

ОАО "СЕВЕРСТАЛЬ",
JSC "SEVERSTAL",

Грузополучатель, адрес

Consignee, Address

"СЕВЕРСТАЛЬ ЭКСПОРТ ГМБХ"
"SEVERSTAL EXPORT GMBH"

Inspection certificate EN10204/3.1

Заказ №

Order №

Контракт №

Contract №

Спецификация №

Specification №

Фондодержатель



Страна назначения 208 ДАНИЯ

Country of destination

DENMARK

Разрешение на вывоз № НЕ ЛИЦЕНЗИРУЕТСЯ

Export Licence № NO SUBJECT OF LICENCE

Машина N

Auto №

Лист №

Sheet 1

Листов №

Sheets 2

Наименование и код товара Description and Code of Goods	ОКПО	Стандарт Standard	Вид груз. мест Type of Packages	NN мест Package Nos
--	------	----------------------	------------------------------------	------------------------

Лист г/к
HR sheet

98100 EN 10025-2-04

EN 10025-2-04

BS EN 10029-10

ЛИСТЫ

PLATES

2

N п/п Tem No	Номера плавов Nos. of Heats	Номера партий Nos of Lot	№№ Листов Nos plates	Марка Grades	Состояние поставки Delivery condition	№ Пози ции № Poz order	Размеры, мм Dimensions, mm	Колич. товара Quan- tity	
1	235940	29720	48354	S355J2	+N	180	60.00x3000x8000	1	
2	235940	29721	48353	S355J2	+N	180	60.00x3000x8000	1	

Итого:

2

Группа поверхности В подкласс 3
Group of surface B subclass 3

Точность по толщине A
Thickness accuracy A

Плоскостность N
Flatness N

Кромка ОБРЕЗНАЯ
Edge SE

Состояние поставки : нормализующая прокатка +N
Supply condition : normalizing rolling +N

Тип стали : L
Type of Steel : L

Указанный в настоящем ДОКУМЕНТЕ товар соответствует по качеству действующим стандартам, техническим условиям и спецификации и может быть отгружен на экспорт. It is hereby certified that the quality of goods mentioned in this shipping DOCUMENT is in conformity with standards and specifications, and the goods may be exported

EURO-STEEL DANMARK A/S
IMPORT - EXPORT
Lundagårvej 31, DK 8722 Hedensted
Telefon 75 99 01 55, Telefax 75 99 07 34

Показатели качества товара

Quality Characteristics of Goods

Химический состав Chemical Composition																
№ п/п	№Плав-ки	C% *100	Si% *100	Mn% *100	P% *1000	S% *1000	Cr% *100	Ni% *100	Cu% *100	Al% *100	N% *1000	Ti% *1000	Mo% *1000	Nb% *1000	V% *1000	Сэкв %
1	235940	12	24	139	13	5	2	3	4	3	4	3	2	2	3	0,36

Результаты испытаний

Test Results

№ Контроль-ного листа №Control Plate	Партия Batch No	Предел прочности Tensile strength МПа / МПа	Предел текучести Yield point МПа / МПа	Относительное удлинение Дельта 5 tensile strain %	Работа удара KV -20°C Impact energe Дж J(L)
48354	29720	578	431	25	270-210-195
48353	29721	562	409	26	135-165-111

*Дополнительная Маркировка:
Extra Marking:

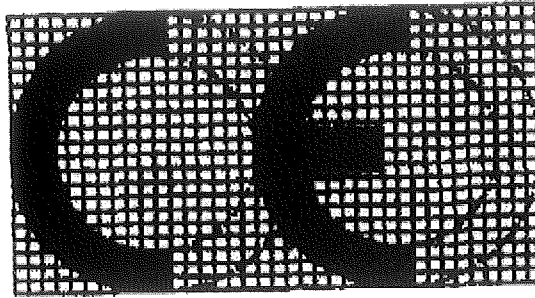
WX 1456B
WX 1456B

Отдел технического контроля: Смай Н.М.
Technical Control



Подписи:
Signature:

EURO-STEEL DANMARK A/S
IMPORT - EXPORT
Lundagårvej 11 DK 9722 Hedensted
Telefon 96 00 91 95, Telefax 96 00 92 01



0038

JSC "Severstal",

13

0038 / CPD / 20060016 / A

EN 10025 - 1:2004

Горячекатаный прокат из конструкционной стали

Hot rolled structural steel products

Назначение: Строительство зданий и гражданских сооружений

Intended uses: Building constructions or civil engineering

Допуски на размеры и форму

Tolerances on dimensions and shape:

Сталь горячекатаная согласно EN 10025-2-04 ЛИСТЫ BS EN 10029-10 Категория A

HR sheet (SE) according to EN 10025-2-04 Plates BS EN 10029-10 Category A

Удлинение Elongation	Сталь S355J2 - EN 10025-2-04 Grade S355J2 - EN 10025-2-04
Предел прочности на растяжение Tensile strength	
Предел текучести Yield strength	
Ударная вязкость Impact strength	
Свариваемость Weldability	
Долговечность Durability	Эксплуатационная характеристика не определена No performance determined
Опасные вещества Regulated substance	Эксплуатационная характеристика не определена No performance determined


HURD-STEEL JAMNARK A/S
 IMPORT - EXPORT
 Lundagårvej 31, DK 8722 Hedensted
 Telefon 75 69 01 46, Telefax 75 69 07 24

Euro Steel Danmark A/S
Sofus Larsen
Lundagervej 31, Postbox 83
DK-8722 Hedensted

Page 1 of 2
Enclosures -
Date 2014.09.08

TEST REPORT

DS/EN 10 204:2004 - 3.1

Specimen	60 mm platecut Approx. 150 x 150 mm	Project no.	1379259
Material	S355J2+N	Report no.	13694 REV1. Replaces report 13694 - date 2014.09.03
Specimen mark	Charge no.: 235940 48354 (KSM1)	Received	2014.09.01 and 2014.09.04
DTI mark	4 13522 (A) 4 13522 (A retest)	Tested	2014.09.03 and 2014.09.08
Test procedure	Impact testing acc. to DS/EN ISO 148-1	Tested by	Peter Barlach

Metal and Surface Technology



Peter Barlach
Consultant



Martin Amstrup
B.Sc. Mech.

IMPACT TEST

DS/EN ISO 148-1:2013

Nom. energy	300 J	Notch	ISO-V	Specimen size	55 x 10 x 10 mm	Temperature	-40 °C
DTI mark		Position	Test results			Average Joule	
			Joule				
			1	2	3		
4 13522 A		Parent metal	47	61	19	42	
4 13522 A1 Retest		Parent metal	105	118	111	111	
Average 77							

Impact strengths converted from kpm into Joule.
 Test specimen(s) are cut from position according to DS/EN ISO 377:1997.



36100 VICENZA (Italia) - Viale della scienza, 25 z.i.

Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

Cliente / Besteller/Purchaser/Client
VALBRUNA NORDIC AB

W:A KYRKOGATAN 1
65224-KARLSTAD - SWEDEN-SVE

Produttore: **ACCIAIERIE VALBRUNA S.P.A.**
Hersteller/Item/Usine produttrice

Avviso di Spedizione: D-VI05026059
Lieferanzeige/Packing list/B.L.

Ordine nr: R14319
Bestell/Your order/Commande

Certificato nr: MEST288063/2005/
Prüfung/Test/Essai

Conferma ordine nr: EI05006144
Werks/Our Order/Ref nr.

Marchio di Fabbrica:
Zeichen des Lieferwerkes
Trade mark
Sigle de l'usine produttrice



Oggetto Prove: Descaled Annealed Hotrolled
Prüfgegenstand/Item Inspected/Finissage

Tipo di Elaborazione: **E+AOD**
Erschmelzungsart/Melting process/Mode d'elaboration

Punzone del Collaudatore:
Stempel des Werksachverständigen
Inspector's stamp/Poinçon de l'essayeur

Specifiche:
Anforderungen / Requirements / Exigences

VAL STOCK 2004 1.4307/304L A
AMS 5639 H S30400 A
ASME (1) SA182 2001 S30403 A (1)
ASME (1) SA479 2001 S30400 A (4)
ASTM A182 2005A S30403 A (7)
ASTM A276 2005A S30400 A
ASTM A479 2005 S30400 A
EN 10088-3 95 1.4301 A
EN 10272 2000 1.4307 A
QQ-S-763 F 304 A

AISI 304
AMS 5647 H S30403 A
ASME (1) SA193 2001 B8 CLASS1 (2)
ASME (1) SA479 2001 S30403 A (5)
ASTM A193 2005 B8 CLASS1
ASTM A276 2005A S30403 A
ASTM A479 2005 S30403 A
EN 10088-3 95 1.4307 A
NACE MR0175 2003 S30400
QQ-S-763 F 304L A

AISI 304L
ASME (1) SA182 2001 S30400 A (0)
ASME (1) SA320 2001 B8 CLASS1 (3)
ASTM A182 2005A S30400 A (6)
ASTM A262 2002A PRACTICE E
ASTM A320 2005A B8 CLASS1
DIN 17440 96 1.4301 A
EN 10272 2000 1.4301 A
NACE MR0175 2003 S30403

(0) SEC.II PT.A 2001 EDITION ADD.2002
(1) SEC.II PT.A 2001 EDITION ADD.2002
(2) SEC.II PT.A 2001 EDITION ADD.2002
(4) SEC.II PT.A 2001 EDITION ADD.2002
(6) Chemical analysis only and mechanical properties.

(0) Chemical analysis only and mechanical properties.
(1) Chemical analysis only and mechanical properties.
(3) SEC.II PT.A 2001 EDITION ADD.2002
(5) SEC.II PT.A 2001 EDITION ADD.2002
(7) Chemical analysis only and mechanical properties

Qualità: 1.4307/304/304L
Werkstoff/Grade/Nuance

Marca: AISL
Markenbezeichnung/Brand/Nuance

Punzonatura: 1.4307/304/304L
Kennzeichnung/Marking/Marquage

Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Tolleranza Tolleranz. Allowance Tolerance	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0020	Flat	60,000 x 6,000	DIN1017	4800 / 5000	240922		655,0	516601710

Sono state soddisfatte tutte le condizioni richieste
Die gestellten Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le matériel à été trouvé conforme aux exigences

Controllo antimescolanza: OK
Verwechslungsprüfung: spectralanalytisch durchgeführt
Antimixing testing performed: OK
Contrôle antimelange fait: r.a.s.

Controllo visivo e dimensionale: soddisfa le esigenze:
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks:satisfactory
Contrôle visuel et dimensions: satisfaisant

TEST	Provetta/Probestab Specimen/Eprouvette Larg.diam.Speiss. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 % E 4d %	Strizione Einschnürung Reduction of area Striction Z % RA %	Resilienza Kerbschlagarbeit Impact Value Resilience -	Durezza Haerte Hardness Durete HB
	Valori richiesti 1 Anforderungen/Required values Valeurs demandées	min max		207	230	517 680	45 60	- 50	-	140 215
A	20X6	20	L	322	357	621	58 60	66 67		182

1)L=longitudinale/längs, Q=trasversale/quer, T=Tangenziale/tangential

Grain size for ASTM E112 : 5

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	min - max 0,030	- 1,000	- 2,00	18,00 19,50	- 1,00	- 1,00	8,00 10,00	- 0,040	- 0,030	- 0,100	- -	- -	- -	- -
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	P %	S %	N %				
240922	0,023	0,520	1,68	18,31	0,40	0,61	8,03	0,023	0,022	0,089				

Intergranular corrosion test per ASTM A262 pract. E: ok.

I.Korrosion nach EN ISO 3651-2A Sensibilisierung : T1 : OK

Corrosion test per EN ISO 3651-2A sensitized T1 : OK

Melted and manufactured in Italy No welding or weld repair Material free from Mercury or radio-activity contamination
The Quality Management System is Certified acc. Pressure Equipment Directive [97/23/EC] Annex 1,s.,4.3 by TUEV and LLOYD'S

Vicenza,01/12/05 Mod./VCQ008	Il collaudatore di stabilimento / der Werkssachverständige Works inspector / L'agent d'usine M. Rizzotto	Pagina - 1 di 1
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ПАО "ММК ИМ. ИЛЬИЧА"
PJSC "ILYICH IRON & STEEL WORKS OF MARIUPOL"

СЕРТИФИКАТ КАЧЕСТВА N
QUALITY CERTIFICATE No

20596

От
Date

24.10.2015

Лист
Sheet

1 Из
Of

022599

ISO 9001:2008 Система обеспечения качества подтверждена TÜV SÜD Industrie Service GmbH (Per.No0036) и соответствует Директиве 97/23/ЕС по оборудованию, работающему под давлением, и Памятке AD 2000 W0
DSTU ISO 9001:2009 The Quality Assurance System is certified by TÜV SÜD Industrie Service GmbH (No.0036) and in accordance with the Pressure Equipment Directive 97/23/EC and AD 2000-Merkblatt W0

Украина 87504, г. Мариуполь, ул. Левченко, 1. факс 38(0623)87-91-66, e-mail office@ilyichsteel.com

Levchenko str. 1, Mariupol, 87504. Ukraine факс 38(0623)87-91-66, e-mail office@ilyichsteel.com

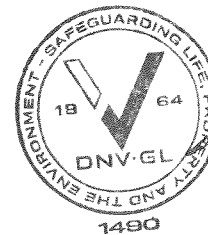
Свидетельство о приемочных испытаниях		EN 10204:2004-3.2																			
Inspection certificate																					
Контракт N 12EXP/01-14		Заказ N LF4 -010739750327																			
Contract No		Order No																			
Вагон N 59920785		Спецификация N 3975LF																			
RW-Car No		Lot N 5																			
Specification No		Lot No																			
Наименование товара Горячекатаный толстый лист																					
Description of goods Hot Rolled Plate																					
Марка стали		Стандарты																			
Grade of steel		Standards																			
NVE36		Правила DNV-2014 EN 10029:2010 Class B, N EN 10163-1,2:2005 Class B, Subclass 3																			
Состояние поставки		Термо-механическая прокатка																			
Delivery condition		Thermo-Mechanical rolling (TM)																			
Маркировка Trade mark, Made in Ukraine, Grade of steel, Cast No, Test No, Dimensions mm, Sp.3975LF, Lot5, EURO-STEEL.dk, ONE Yellow STRIP																					
Marking																					
Клеймо Trade Mark, Grade of steel, Cast No, NV Stamp																					
Hard stamp																					
Позиция	Плавка N	Партия N	Размеры,	Кол-во, шт.																	
Item No	Cast No	Test No	Dimensions,	Quantity,																	
			Толщина	pcs																	
			Thickness																		
			Ширина																		
			Width																		
			Длина																		
			Length																		
2	254919-2	3399	10 2500 8000	6																	
Выплавка		Конвертерный способ производства																			
Steelmaking proce		Made by the BOC Process																			
Химический состав, %																					
Chemical composition, %																					
Плавка	C	Mn	Si	S	P	Cr	Ni	Cu	Ti	Al	As	N	Mo	V	Nb	Ca	B	Ceq	Pcm	I	
Cast No	x100	x1000	x100																		
254919-2	11	118	23	10	16	2	1	1	15	37	2	6	2	4	26				31		



EURO-STEEL DANMARK A-S

Lundagervej 31, DK-8722 Hedensted
Tlf. +45 75 89 01 66, Fax +45 75 89 07 34
euro-steel@email.dk
www.euro-steel.eu

Результаты испытаний										Test results						
		Размеры обр Dimensions		Направление отб обр Direction	Темп. испит. Test temperature	Предел текучести Yield stress	Предел прочности Tensile strength	Отн. удлинение Elongation	Отн. сужение Reduction of area	Тип надреза/образца Type of cut/specimen	Энергия удара KV/KU Impact energy KV/KU	Энергия удара KV/KU Impact energy KV/KU	Энергия удара KV/KU Impact energy KV/KU	Среднее значение KV/KU Average value KV/KU	Изгиб Bend test	Кол-во вяз. сост. Shear area
		Толщина/диаметр Thickness/diameter	Ширина Width													
mm/d	mm	° C	Mpa	%	%	J	J	J	J	%						
1	10	25	T	20	492	523	24,5	-	-	-	-	-	-	-	-	
1	7,5	10	L	-40	-	-	-	-	-	KV	115	106	111	110,7	-	-
1	7,5	10	L	-40	-	-	-	-	-	KV	112	124	107	114,3	-	-
1	7,5	10	L	-40	-	-	-	-	-	KV	141	143	141	141,7	-	-
1	7,5	10	L	-40	-	-	-	-	-	KV	124	141	140	135	-	-



2015.11.09
M. SENYK
SURVEYOR TO DNV

Подпись Ф.И.О., должность
Signature Name Position
М.П. «Управление контролем качества»
Stamp Receiving agent's stamp
КОНТРОЛЕР



ПАО "ММК ИМ. ИЛЬИЧА"
PJSC "ILYICH IRON & STEEL WORKS OF MARIUPOL"

СЕРТИФИКАТ КАЧЕСТВА N
QUALITY CERTIFICATE No

20596

От
Date

24.10.2015

Лист
Sheet

2 Из
Of 4

ISO 9001:2008 Система обеспечения качества подтверждена TUV SUD Industrie Service GmbH (Per.No0036) и соответствует Директиве 97/23/EC по оборудованию, работающему под давлением, и Памятке AD 2000 WO
DSTV ISO 9001:2009 The Quality Assurance System is certified by TUV SUD Industrie Service GmbH (No.0036) and in accordance with the Pressure Equipment Directive 97/23/EC and AD 2000-Merkblatt WO

Украина 87504, г. Мариуполь, ул. Левченко, 1. факс 38(0623)87-91-66, e-mail office@ilyichsteel.com

Levchenko str. 1, Mariupol, 87504. Ukraine факс 38(0623)87-91-66, e-mail office@ilyichsteel.com

Свидетельство о приемочных испытаниях		EN 10204:2004-3.2																		
Inspection certificate																				
Контракт N Contract No	12EXP/01-14	Заказ N Order No	LF4 -010739750327																	
Варон N RW-Car No	59920785	Спецификация N Specification No	3975LF																	
Лот N Lot No	5	Лот N Lot No																		
Наименование товара Description of goods		Горячекатаный толстый лист Hot Rolled Plate																		
Марка стали Grade of steel	Стандарты Standards																			
NVE36	Правила DNV-2014 EN 10029:2010 Class B, N EN 10163-1,2:2005 Class B, Subclass 3																			
Состояние поставки Delivery condition	Термо-механическая прокатка Thermo-Mechanical rolling (TM)																			
Маркировка Marking	Trade mark, Made in Ukraine, Grade of steel, Cast No, Test No, Dimensions mm, Sp.3975LF, Lot5, EURO-STEEL.dk , ONE Yellow STRIP																			
Клеймо Hard stamp	Trade Mark, Grade of steel, Cast No, NV Stamp																			
Позиция Item No	Плавка N Cast No	Партия N Test No	Размеры, Dimensions, Толщина Thickness	Ширина Width	Длина Length	Кол-во, шт. Quantity, pcs														
1	254833-3	3275	8	2500	8000	1														
2	254919-2	3400	10	2500	8000	9														
2	254920-2	3398	10	2500	8000	3														
Выплавка Steelmaking proce		Конвертерный способ производства Made by the BOC Process																		
Химический состав, %		Chemical composition, %																		
Плавка Cast No	C	Mn	Si	S	P	Cr	Ni	Cu	Ti	Al	As	N	Mo	V	Nb	Ca	B	Ceq	Pcm	I
	x100			x1000			x100						x1000						x100	
254833-3	11	114	28	5	11	2	1	1	15	29	2	6	1	3	27			31		
254919-2	11	118	23	10	16	2	1	1	15	37	2	6	2	4	26			31		
254920-2	11	116	25	10	13	2	1	1	17	33	2	8	2	4	27			31		

Результаты испытаний		Test results															
Партия N Test No	Номер изделия Product No	Размеры обр Dimensions		Направление обр обр Direction	Темп. испыт. Test temperature	Предел текучести Yield stress	Предел прочности Tensile strength	Отн. удлинение Elongation	Отн. сужение Reduction of area	Тип надреза/образца Type of cut/specimen	Энергия удара KV/KU Impact energy KV/KU	Энергия удара KV/KU Impact energy KV/KU	Энергия удара KV/KU Impact energy KV/KU	Энергия удара KV/KU Impact energy KV/KU	Среднее значение KV/KU Average value KV/KU	Изгиб Bend test	Кол-во вяз. сост. Shear area
		Толщина/диаметр Thickness/diameter	Ширина Width														
		mm/d	mm		° C	ReH	Rm	A5	Z	Zavg	J	J	J	J	J		
3275	16-1	8	25	T	20	432	507	30			-	-	-	-	-	-	-
3275	16-1	7,5	10	L	-40	-	-	-		KV	163	181	169	171	-	-	-
3400	10-1	10	25	T	20	483	521	26,5			-	-	-	-	-	-	-
3400	10-1	7,5	10	L	-40	-	-	-		KV	163	106	133	134	-	-	-
3400	11-1	7,5	10	L	-40	-	-	-		KV	120	153	139	137,3	-	-	-
3400	12-1	7,5	10	L	-40	-	-	-		KV	131	109	136	125,3	-	-	-
3398	10-1	10	25	T	20	429	492	28			-	-	-	-	-	-	-
3398	10-1	7,5	10	L	-40	-	-	-		KV	124	121	136	127	-	-	-
3398	11-1	7,5	10	L	-40	-	-	-		KV	137	128	153	139,3	-	-	-
3398	13-1	7,5	10	L	-40	-	-	-		KV	132	119	124	125	-	-	-

EURO-STEEL DANMARK A-S

Lundagervej 31, DK-8722 Hedensted
Tlf. +45 75 89 01 66, Fax +45 75 89 07 34
euro-steel@gmail.dk
www.euro-steel.eu

2015.11.09
M. SENYK
SURVEYOR TO DNV

Подпись Ф.И.О., должность
Signature Name Position

Штамп эксперта
Receiving agent's stamp



ПАО "ММК ИМ. ИЛЬИЧА"
PJSC "ILYICH IRON & STEEL WORKS OF MARIUPOL"

СЕРТИФИКАТ КАЧЕСТВА N
QUALITY CERTIFICATE No

20596

От
Date

24.10.2015

Лист
Sheet

3

Из
Of

4

ISO 9001:2008 Система обеспечения качества подтверждена TUV SUD Industrie Service GmbH (Per.No0036) и соответствует Директиве 97/23/ЕС по оборудованию, работающему под давлением, и Памятке AD 2000 W0
DCTV ISO 9001:2009 The Quality Assurance System is certified by TUV SUD Industrie Service GmbH (No.0036) and in accordance with the Pressure Equipment Directive 97/23/EC and AD 2000-Merkblatt W0

Украина 87504, г. Мариуполь, ул. Левченко, 1. факс 38(0623)87-91-66, e-mail office@ilyichsteel.com

Levchenko str. 1, Mariupol, 87504. Ukraine факс 38(0623)87-91-66, e-mail office@ilyichsteel.com

Свидетельство о приемочных испытаниях		EN 10204:2004-3.2	
Inspection certificate			
Контракт N 12EXP/01-14		Заказ N LF4 -010739750327	
Contract No		Order No	
Барон N 59920785		Спецификация N 3975LF	
RW-Car No		Lot N 5	
Наименование товара		Горячекатаный толстый лист	
Description of goods		Hot Rolled Plate	
Марка стали		Стандарты	
Grade of steel		EN 10029:2010 Class B, N	
NVE36		EN 10163-1,2:2005 Class B, Subclass 3	
Состояние поставки		Термо-механическая прокатка	
Delivery condition		Thermo-Mechanical rolling (TM)	
Маркировка		Trade mark, Made in Ukraine, Grade of steel, Cast No, Test No, Dimensions mm, Sp.3975LF, Lot5, EURO-STEEL.dk, ONE Yellow STRIP	
Marking			
Клеймо		Trade Mark, Grade of steel, Cast No, NV Stamp	
Hard stamp			

Позиция Item No	Плавка N Cast No	Партия N Test No	Размеры, Dimensions,			Кол-во, шт. Quantity, pcs
			Толщина Thickness	Ширина Width	Длина Length	
3	254834-3	3443	12	2500	8000	13

Выплавка Steelmaking proce		Конвертерный способ производства Made by the BOC Process																		
Химический состав, %																				
Плавка Cast No	C	Mn	Si	S	P	Cr	Ni	Cu	Ti	Al	As	N	Mo	V	Nb	Ca	B	Ceq	Pcm	I
	x100			x1000		x100							x1000						x100	
254834-3	11	111	26	4	11	2	1	1	16	45	2	7	1	3	27			30		



EURO-STEEL DANMARK A-S

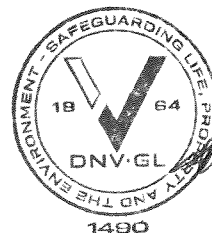
Lundagervej 31, DK-8722 Hedensted
Tlf. +45 75 89 01 66, Fax +45 75 89 07 34

euro-steel@email.dk
www.euro-steel.eu

Результаты испытаний

Test results

Партия N Test No	Номер изделия Product No	Размеры обр Dimensions		Направление отб обр Direction	Темп. испыт. Test temperature	Предел текучести Yield stress	Предел прочности Tensile strength	Отн. удлинение Elongation	Отн. сужение Reduction of area	Тип надреза/образца Type of cut/specimen	Энергия удара KV/KU Impact energy KV/KU	Энергия удара KV/KU Impact energy KV/KU	Энергия удара KV/KU Impact energy KV/KU	Среднее значение KV/KU Average value KV/KU	Изгиб Bend test	Кол-во вяз. сост. Shear area
		Толщина/диаметр Thickness/diameter	Ширина Width													
		mm/d	mm													
		° C	МПа													
3443	2-1	12	25	T	20	472	534	23,5	-	KV	151	157	234	180,7	-	-
3443	2-1	10	10	L	-40	-	-	-	-	KV	234	170	245	216,3	-	-
3443	3-1	10	10	L	-40	-	-	-	-	KV	196	236	163	198,3	-	-
3443	4-1	10	10	L	-40	-	-	-	-	KV	251	232	164	215,7	-	-
3443	5-1	10	10	L	-40	-	-	-	-	KV	242	206	180	209,3	-	-



2015.11.09

M. SENYK

SURVEYOR TO DNV

Подпись Ф.И.О., должность
Signature Name Position

Штамп эксперта
Receiving agent's stamp

Людмила Л.С.
КОНТРОЛЕР

Контроль качества
Quality control department №3



ПАО "ММК ИМ. ИЛЬИЧА"
PJSC "ILYICH IRON & STEEL WORKS OF MARIUPOL"

СЕРТИФИКАТ КАЧЕСТВА N
QUALITY CERTIFICATE No

20310

От
Date

20.10.2015

Лист
Sheet

1

Из
of

2 022598

ISO 9001:2008 Система обеспечения качества подтверждена TÜV SÜD Industrie Service GmbH (Per.No0036) и соответствует Директиве 97/23/ЕС по оборудованию, работающему под давлением, и Памятке AD 2000 W0
ДСТУ ISO 9001:2009 The Quality Assurance System is certified by TÜV SÜD Industrie Service GmbH (No.0036) and in accordance with the Pressure Equipment Directive 97/23/EC and AD 2000-Merkblatt W0

Украина 87504, г. Мариуполь, ул. Левченко, 1. факс 38(0623)87-91-66, e-mail office@ilyichsteel.com

Levchenko str. 1, Mariupol, 87504, Ukraine факс 38(0623)87-91-66, e-mail office@ilyichsteel.com

Свидетельство о приемочных испытаниях		EN 10204:2004-3.2	
Inspection certificate			
Контракт N	12EXP/01-14	Заказ N	LF4 -010739750327
Contract No		Order No	
Вагон N	56212723	Спецификация N	3975LF
RW-Car No		Specification No	Lot N 5
Наименование товара		Горячекатаный толстый лист	
Description of goods		Hot Rolled Plate	
Марка стали	Стандарты	Правила DNV-2014	
Grade of steel	Standards	EN 10029:2010 Class B, N	
NVE36		EN 10163-1,2:2005 Class B, Subclass 3	
Состояние поставки	Термо-механическая прокатка		
Delivery condition	Thermo-Mechanical rolling (TM)		
Маркировка	Trade mark, Made in Ukraine, Grade of steel, Cast No, Test No, Dimensions mm, Sp.3975LF, LOT 5, EURO-STEEL .dk ,ONE Yellow STRIP		
Marking			
Клеймо	Trade Mark, Grade of steel, Cast No, NV Stamp		
Hard stamp			
Позиция	Плавка N	Партия N	Размеры,
Item No	Cast No	Test No	Dimensions,
			Толщина
			Width
			Длина
			Length
4	254920-2	3292	15 2500 8000
			15
Выплавка	Конвертерный способ производства		
Steelmaking proce	Made by the BOC Process		
Химический состав, %			
Chemical composition, %			
Плавка	C	Mn	Si
Cast No	x100	x1000	x100
254920-2	11	116	25
	10	13	2
	1	1	1
	17	33	2
	8	2	4
	27		
	31		
EURO-STEEL DANMARK A-S			
Lur: Cagervej 31, DK-8722 Hedensted			
Tlf: +45 75 89 01 66, Fax +45 75 89 07 34			
euro-steel@mail.dk			
www.euro-steel.eu			



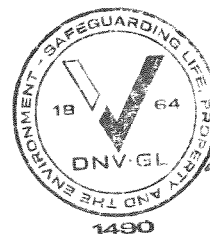
EURO-STEEL DANMARK A-S

Lur: Cagervej 31, DK-8722 Hedensted
Tlf: +45 75 89 01 66, Fax +45 75 89 07 34
euro-steel@mail.dk
www.euro-steel.eu

Результаты испытаний

Test results

Партия N Test No	Номер изделия Product No	Размеры обр Dimensions		Направление отб обр Direction	Темп. испт. Test temperature	Предел текучести Yield stress		Предел прочности Tensile strength	Отн. удлинение Elongation	Отн. сужение Reduction of area	Тип надреза/образца Type of cut/specimen	Энергия удара KV/KU Impact energy KV/KU	Энергия удара KV/KU Impact energy KV/KU	Энергия удара KV/KU Impact energy KV/KU	Среднее значение KV/KU Average value KV/KU	Изгиб Bend test	Кол-во вяз. сост. Shear area		
		Толщина/диаметр Thickness/diameter	Ширина Width			ReH	Rm											A5	Zavg
mm/d	mm	° C	Mpa	%	%	J	J	J	J										
3292	1-1	15	25	T	20	444	508	30	-	-	KV	205	188	193	195,3	-	-		
3292	1-1	10	10	L	-40	-	-	-	-	-	KV	149	136	129	138	-	-		
3292	2-1	10	10	L	-40	-	-	-	-	-	KV	123	125	123	123,7	-	-		
3292	3-1	10	10	L	-40	-	-	-	-	-	KV	121	115	122	119,3	-	-		
3292	4-1	10	10	L	-40	-	-	-	-	-	KV	131	133	127	130,3	-	-		
3292	5-1	10	10	L	-40	-	-	-	-	-	KV	110	129	133	124	-	-		



2015.11.09

M. SENYK

SURVEYOR TO DNV

Подпись Ф.И.О., должность
Signature Name Position
БОТНАРЬ З В
КОНТРОЛЕР
Штамп Эксперта
Receiving agent's stamp
2015.11.09



ПАО "ИМК ИМ. ИЛЬИЧА"
PJSC "ILYICH IRON & STEEL WORKS OF MARIUPOL"

СЕРТИФИКАТ КАЧЕСТВА N
QUALITY CERTIFICATE No

20310

От
Date

20.10.2015

Лист
Sheet

2

Из

2

Of

ISO 9001:2008 Система обеспечения качества подтверждена TUV SUD Industrie Service GmbH (Per.No0036) и соответствует Директиве 97/23/ЕС по оборудованию, работающему под давлением, и Памятке AD 2000 W0
DSTU ISO 9001:2009 The Quality Assurance System is certified by TUV SUD Industrie Service GmbH (No.0036) and in accordance with the Pressure Equipment Directive 97/23/EC and AD 2000-Merkblatt W0

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Levchenko str. 1, Mariupol, 87504. Ukraine факс 38(0623)87-91-66, e-mail office@ilyichsteel.com

Свидетельство о приемочных испытаниях		EN 10204:2004-3.2	
Inspection certificate			
Контракт N 12EXP/01-14		Заказ N LF4 -010739750327	
Contract No		Order No	
Вагон N	56212723	Спецификация N	3975LF
RW-Car No		Specification No	Lot N 5
Наименование товара		Горячекатаный толстый лист	
Description of goods		Hot Rolled Plate	
Марка стали		Стандарты	
Grade of steel		Standards	
NVE36		Правила DNV-2014 EN 10029:2010 Class B, N EN 10163-1,2:2005 Class B, Subclass 3	
Состояние поставки		Термо-механическая прокатка	
Delivery condition		Thermo-Mechanical rolling (TM)	
Маркировка Trade mark, Made in Ukraine, Grade of steel, Cast No, Test No, Dimensions mm, Sp.3975LF, LOT 5, EURO-STEEL .dk , ONE Yellow STRIP			
Marking			
Клеймо Trade Mark, Grade of steel, Cast No, NV Stamp			
Hard stamp			
Позиция	Плавка N	Партия N	Размеры,
Item No	Cast No	Test No	Dimensions,
			Толщина
			Width
			Длина
			Length
			Кол-во, шт.
			Quantity,
			pcs
1	254833-3	3276	8 2500 8000 23 38

Выплавка		Конвертерный способ производства	
Steelmaking proce		Made by the BOC Process	
Химический состав, %		Chemical composition, %	
Плавка	C Mn Si S P Cr Ni Cu Ti Al As N Mo V Nb Ca B Ceq Pcm I		
Cast No	x100 x1000 x100 x1000 x1000 x1000 x1000 x1000 x1000 x1000 x1000 x1000 x1000 x1000 x1000 x1000 x1000		
254833-3	11 114 28 5 11 2 1 1 15 29 2 6 1 3 27 31		



EURO-STEEL DANMARK A-S

Lundagervej 31, DK-8722 Hedensted
Tlf. +45 75 89 01 66, Fax +45 75 89 07 34

euro-steel@email.dk
www.euro-steel.eu

Результаты испытаний		Test results														
Партия N Test No	Номер изделия Product No	Размеры обр Dimensions		Направление отб обр Direction	Темп. испт. Test temperature	Предел текучести Yield stress	Предел прочности Tensile strength	Отн. удлинение Elongation	Отн. сужение Reduction of area	Тип надреза/образца Type of cut/specimen	Энергия удара KV/KU Impact energy KV/KU	Энергия удара KV/KU Impact energy KV/KU	Энергия удара KV/KU Impact energy KV/KU	Среднее значение KV/KU Average value KV/KU	Изгиб Bend test	Кол-во вяз. сост. Shear area
		Толщина/диаметр Thickness/diameter	Ширина Width													
3276	18-1	8	25	T	20	398	490	34	-	-	-	-	-	-	-	-
3276	18-1	7,5	10	L	-40	-	-	-	-	KV	171	164	190	175	-	-
3276	19-1	7,5	10	L	-40	-	-	-	-	KV	204	179	168	183,7	-	-
3276	20-1	7,5	10	L	-40	-	-	-	-	KV	190	214	197	200,3	-	-
3276	21-1	7,5	10	L	-40	-	-	-	-	KV	202	198	189	196,3	-	-
3276	22-1	7,5	10	L	-40	-	-	-	-	KV	190	173	148	170,3	-	-
3276	23-1	7,5	10	L	-40	-	-	-	-	KV	141	179	175	165	-	-
S-начало полосы/strip start; E-конец полосы/strip end; L,l-продольное/Longitudinal; T,q-поперечное/Transverse; MC-мех.старение/strain aging d-диаметр/diameter; "Определение "Предел прочности" соответствует определениям "прочность на разрыв" и временное сопротивление разрыву" Defintion "tensile strength" corresponds to defintions "ultimate strength" and "ultimate stress limit"																
УЗК/Ultrasonic examination																
Примечание / Note																
Поставка соответствует условиям заказа. Осмотр поверхности без замечаний. Размеры проката в пределах допусков. Delivery conforms to conditions of the order. Surface examination without remarks. Rolled product dimensions within the tolerance limit.																
Данный сертификат подтверждает, что материал, указанный выше, был изготовлен в соответствии с утвержденным процессом и успешно прошел испытания в соответствии с Правилами DNV по классификации. Данный сертификат выдлен в соответствии с соглашением о порядке проведения приемок MSA R-1877, которое подвергается регулярным аудиторским проверкам. This is to certify that the material described above has been made by an approved process and has been satisfactorily tested in accordance with DNV Rules for Classification. This certificate is issued in accordance with the survey arrangement authorised by DNV in MSA No.R-1877, which is controlled by regular auditing.																

2015.11.09 M. SENYK SURVEYOR TO DNV	
Подпись Ф.И.О., должность Штамп эксперта Signature Name Position Receiving agent's stamp	
507873 3 В КОНТРАКТЕР	
1490	



36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4
Telephon number : 0039 (0) 444968211

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER

Cliente / Besteller/Purchaser/Client
VALBRUNA NORDIC AB
LOVARTSGATAN 7
65221-KARLSTAD - SWEDEN-SE

Avviso di Spedizione: D-VI15002196
Lieferanzeige/Packing list/B.L.

Certificato nr: MEST631821/2015/
Prüfung/Test/Essai

Produttore: **ACCIAIERIE VALBRUNA S.P.A.**
Hersteller/Item/Usine produttrice

Ordine nr: R31640 R31640
Bestell/Your order/Commande

Conferma ordine nr: EI15000376
Werks/Our Order/Ref nr.

Marchio di Fabbrica:
Zeichen des Lieferwerkes
Trade mark
Sigle de l'usine produttrice



Stato di fornitura: Hot rolled - Annealed Peeled
Lieferzustand/Delivery state/Etat de livraison

Tipo di Elaborazione: E+AOD
Erschmelzungsart/Melting process/Mode d'elaboration

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'essayeur

Specifiche:
Anforderungen / Requirements / Exigences

VAL STOCK 2010 1.4307/304L A
ASME SA182 2013 S30400 A (0)
ASME SA276 2013 S30400 A (3)
ASME SA479 2013 S30400 A (6)
ASTM A182 2014A S30403 A (9)
ASTM A276 2013A S30400 A
ASTM A479 2014 S30400 A
EN 10088-3 2005 1.4301 A
EN 10272 2007 1.4307 A
NACE MR0175 2009 S30400 A (A)

AISI 304
ASME SA182 2013 S30403 A (1)
ASME SA276 2013 S30403 A (4)
ASME SA479 2013 S30403 A (7)
ASTM A193 2011A B8 CLASS1
ASTM A276 2013A S30403 A
ASTM A479 2014 S30403 A
EN 10088-3 2005 1.4307 A
NACE MR0103 2010 S30400 A
NACE MR0175 2009 S30403 A (B)

AISI 304L
ASME SA193 2013 B8 CLASS1 (2)
ASME SA320 2013 B8 CLASS1 (5)
ASTM A182 2014A S30400 A (8)
ASTM A262 2013 PRACTICE E
ASTM A320 2011A B8 CLASS1
DIN 17440 96 1.4301 A
EN 10272 2007 1.4301 A
NACE MR0103 2010 S30403 A

(0) SECTION II PT.A 2013 EDITION
(1) SECTION II PT.A 2013 EDITION
(2) SECTION II PT.A 2013 EDITION
(4) SECTION II PT.A 2013 EDITION
(6) SECTION II PT.A 2013 EDITION
(8) For products machined directly from bar refer also
(9) For products machined directly from bar refer also
(A) ANSI/NACE MR0175/ISO 15156-3, second edition 2009-10-15
(B) ANSI/NACE MR0175/ISO 15156-3, second edition 2009-10-15

(0) For products machined directly from bar refer to ASME SA479.
(1) For products machined directly from bar refer to ASME SA479.
(3) SECTION II PT.A 2013 EDITION
(5) SECTION II PT.A 2013 EDITION
(7) SECTION II PT.A 2013 EDITION
(8) to ASTM A479.
(9) to ASTM A479.
(A) Technical circular 1:2011 Published 2011-06-14
(B) Technical circular 1:2011 Published 2011-06-14

Qualità: 1.4301/1.4307/304/304L
Werkstoff/Grade/Nuance

Marca: MVAISL
Markenbezeichnung
Brand/Nuance MAXIVAL

Tolleranza: k12
Tolleranz./Allowance/Tolerance

Punzonatura: 1.4301/7/304/L
Kennzeichnung/Marking/Marquage

Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0020	Round	70,000	5255 / 5555	265342		2694,0	419506110

TEST ALLO STATO DI FORNITURA

Test on delivery condition Prüfung auf lieferbarem produkt test a l'etat de fourniture Prueba sobre el material así como entregado

TEST	Provetta/Probtestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probenlage Location Emplacement 1)	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Allungamento Bruchdehnung Elongation Allongement A5 % E 4d %		Strizione Einschnürung Reduction of area Striction Z % RA %		Resilienza Kerbschlagarbeit Impact Value Resilience KV J			Durezza Haerte Hardness Durete HB		
	Valori richiesti 1 Anforderungen/Required values Valeurs demandées	min max		205	230	515 680	45	40	-	50	100			-		
A	10	20	L	302	341	602	50	54	68	68	249	252	251	180		
B	10	20	L	294	337	591	52	55	69	69	241	244	246	179		

TEST		min	max	
A	Grain size for ASTM E112			6

1)L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	min - max 0,030	- 1,00	- 2,00	18,00 19,50	8,00 10,00	- 0,045	- 0,030	- 0,100	- -	- -	- -	- -	- -	- -	- -
	C %	Si %	Mn %	Cr %	Ni %	P %	S %	N %							
265342	0,016	0,64	1,85	18,17	8,10	0,033	0,022	0,086							

Intergranular corrosion test per ASTM A262 pract. E: ok.
Absence of cracks at 20 x magnification after bend test.

Vicenza, 26/01/15 VCQ008 (Mod. MCE2)	Il collaudatore di stabilimento / der Werkssachverständige Works inspector / L'agent d'usine M. Rizzotto	Pagina - 1 di 2
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36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4
Telephon number : 0039 (0) 444968211

Cliente / Besteller/Purchaser/Client
VALBRUNA NORDIC AB
LOVARTSGATAN 7
65221-KARLSTAD - SWEDEN-SE

Produttore: **ACCIAIERIE VALBRUNA S.P.A.**
Hersteller/Item/Usine produtrice

Stato di fornitura: Hot rolled - Annealed Peeled
Lieferzustand/Delivery state/Etat de livraison

I.Korrosion nach EN ISO 3651-2A Sensibilisierung : T1 : OK
Corrosion test per EN ISO 3651-2A sensitized T1 : OK
Reduction ratio = 7,7 : 1

Sono state soddisfatte tutte le condizioni richieste
Die gestellten Anforderungen sind it. Anlage erfüllt
The material has been furnished in accordance with the requirements
Le materiel à été trouvé conforme aux exigences

Controllo antimescolanza: OK
Verwechslungsprüfung: spectralanalytisch durchgeführt
Antimixing testing performed: OK
Contrôle antimelange fait: r.a.s.

Controllo visivo e dimensionale: soddisfa le esigenze
Besichtigung und Ausmessung: ohne Beanstandung
Visual inspection and dimensional checks: satisfactory
Contrôle visuel et dimensions: satisfaisant

Melted and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination through Portal System when it leaves the production plant.

The Quality Management System is Certified acc. Pressure Equipment Directive [97/23/EC] Annex 1, s., 4.3 by TUEV and LLOYD' S

Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.

Maximal and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.

The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER

Avviso di Spedizione: D-VI15002196
Lieferanzeige/Packing list/B.L.

Ordine nr: R31640 R31640
Bestell/Your order/Commande

Tipo di Elaborazione: E+AOD
Erschmelzungsart/Melting process/Mode d' elaboration

Certificato nr: MEST631821/2015/
Prüfung/Test/Essai

Conferma ordine nr: EI15000376
Werks/Our Order/Ref nr.

Marchio di Fabbrica:
Zeichen des Lieferwerkes
Trade mark
Sigle de l' usine produtrice

Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector' s stamp/Poinçon de l' assesseur



Vicenza, 26/01/15

VCQ008

(Mod. MCE2)

Il collaudatore di stabilimento / der Werkssachverständige / Works inspector / L' agent d' usine

M. Rizzotto

Pagina - 2 di 2

0434683

A04

**HUTA BANKOWA**Spółka z o.o.
ul. Sobieskiego 24
41-300 Dąbrowa Górnicza

A02

Świadectwo odbioru 3.1 Nr 04583/14Inspection certificate 3.1
Abnahmeprüfzeugnis 3.1
Certificat de réception 3.1

PN-EN 10204

A06

Zamawiający

ODS B.V.

Ordered by - Besteller

ul. Donk 6, Postbus 69 , 2990 AB Barendrecht

Netherlands

VAT reg.nr NL 801137391B01

A06

Adres wysyłkowy

ODS B.V.

Address - Versandadresse ul. Donk 6, Postbus 69 , 2990 AB Barendrecht

A07

Nr i data zamówienia klientaOrder No and date
Nr und Datum der Bestellung

BARENDRECHT 4500524296 z

dnia 14/02/26

LOT:

10

ZlecenieManuf. Order No
Auftrag NrHb/6205457/02/14
PL/273155484/2014/B0441

order:

Number of dispatch:

Wykonano wg normProduced according to
Herstellt gemäß NormEN 10025-2,
EN 10025-1:2004
EN 10060:2003
EN 10221:1995 Kl.B; AD2000 - W13, TRD100.**Wagon**Car No
Wagen NrDZLFW86 /
DZLES93

B01

Przedmiot i wykonanieItem and specification (Heat and
mechanical treatment etc.)Gegenstand und Ausführung (therm
und mechan. Bearbeitung usw.)

Round bars normalised.

B09

Wymiar lub rysunekDimension or drawing
Abmessung oder Zeichnung

90 mm

dł. 5000+6200 mm

B02

GatunekSteel grade
Güte

S355J2+N

B07

WytopHeat
Schmelze

333289

B08

SztukPieces
Stück

31

B14

WiązkiBundles
Bünde

4

B12

kg

9350

B06

B15 Reduction ratio 6,6 x.

C71

1. SKŁAD CHEMICZNY - CHEMICAL COMPOSITION - CHEMISCHE ZUSAMMENSETZUNG %

B02 Wytop Heat Schmelze	C	Mn	Si	P	S	Cu	Cr	Ni	Mo	V	Sn	As	Ti
	0,17	1,48	0,189	0,010	0,012	0,03	0,02	0,05	0,014	0,005	0,003	0,003	0,001
333289	Al	Al met	Nb	N	H ₂	O ₂	—	—	—	—	CEV[%]	Ceq[%]	X [%]
	0,037	0,033	0,001	0,0061	1,5ppm	—	—	—	—	—	0,4298	—	—
Analiza kontrolna Control analysis Verwechslungsprüfung													
	C	Mn	Si	P	S	Cu	Cr	Ni	Mo	V	Sn	As	Ti
	—	—	—	—	—	—	—	—	—	—	—	—	—
	Al	Al met	Nb	N	H ₂	O ₂	—	—	—	—	CEV[%]	Ceq[%]	X [%]
	—	—	—	—	—	—	—	—	—	—	—	—	—

D51

2. BADANIA MECHANICZNE - MECHANICAL TEST - MECHANISCHE UNTERSUCHUNGEN

C01 Próba Nr Tests No Probe Nr	B05 Rodzaj obróbki termicznej prób Heat treatment of the sample. Metallurgischer Zustand der Probe.	C11 Re	C12 Rm	C13 A ₅	C14 Z	Udarność temp°C Impact test probe Middle value, Mittelwert			C31 Twardość Hardness Harte [HB]
		[MPa]	[MPa]	[%]	[%]	C40 KV [J]	C40 KCU2 [J/cm ²]	C40 KCU5 [J/cm ²]	
1333	Sample in the delivery condition	352	542	31,6	67,5	186,191,181/-20C	-	-	-
1333/A	Sample in the delivery condition	-	-	-	-	155,152,142/-40C	-	-	-
1333/B	Sample in the delivery condition	-	-	-	-	95,90,100/-50C	-	-	-

D52

3. BADANIA TECHNOLOGICZNE - TECHNOLOGICAL TESTS - TECHNOLOGISCHE UNTERSUCHUNGEN

Ultrasonic testing SEP 1920-1 kl. B gr. 2.

D53

4. BADANIA METALOGRAFICZNE - METALLOGRAPHIC TESTS - METALLOGRAPHISCHE UNTERSUCHUNGEN

B02 Wytop Nr Heat No Schmelze	D54 Zanieczyszczenia niemetaliczne Nonmetallic impurities Nichtmetallische Verunreinigungen	D55 Struktura Structure Struktur
333289		

Powierzchnię i wymiary zbadano przez wydz.prod. w 100% -Surface and dimension tested by Dept.at 100%-Oberfläche und Abmessungen geprüft von Prod.Abt. zu 100%

Z01

Deklarujemy, że wykonany wyrób jest zgodny z warunkami potwierdzenia zamówienia.

We declare that the final product comply with the order confirmation. Wir deklarieren, dass die herstellung gemäß auftragsbetätigungsbedingungen ist gemacht

D01

Materiał oznaczono -Material marked -Das Material wurde bezeichnet**Materiał nie jest radioaktywny**One strip red, white.
Steel grade, Nr heat, "Hb" mark, Testes no, "ZR" mark.

Material weist keine radiation auf The material has not displayed any radiation

B15

Deklaration of performance - 009/CPR/2013 (www.hutabankowa.pl)

Z04

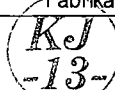


1436

06

1436-CPD-0009
1436-CPD-0025/A
EN 10025-1:2004

Z02

Kontrola jakościControl of Manufacture
Fabrikationskontrolle

Data: 2014-05-20

Z05

Dyrekcja HutyMill's Management
Hütten - DirektionKierownik zespołu technicznego
ds. Odbioru Wytobów
Z-ca Kierownika JBK

Z03


OdbiorcaInspector
Abnehmer

ZR-6

HUTA BANKOWA Sp. z o.o.
RZECZOZNAWCA ZAKŁADOWY


Gerard Kulej

Gerard Kulej


Vallourec Deutschland GmbH Werk Mülheim Rohrkontistraße Schützenstrasse 124 45476 Mülheim an der Ruhr	(A01)		INSPECTION CERTIFICATE ABNAHMEPRUEFZEUGNIS 3.1 EN 10204:2004	(A02)
			No. / Nr. : 67953Mu16 Page/Seite: 1 / 4 Date/Datum: 15.03.2016	(A03)

Certificate n° 67953Mu16 , 10.02.2016 is replaced by this updated version n° 67953Mu16
Zeugnis Nr. 67953Mu16 , 10.02.2016 wird ersetzt durch diese neue Ausgabe Nr. 67953Mu16

(A01) Vallourec Deutschland GmbH	(A08.1) Vallourec-Order-No. / Vallourec-Auftrags-Nr./ 84260908 (A08.2) Suborder / Unterauftrag
(A06.1) Customer / Kunde	
(A06.2) Orderer / Besteller	(A07.2) Orderer Order-No. / Besteller Bestell-Nr. 27482 Date / Datum 25.11.2015

(B01, B02, B04) Description of the product Erzeugnisbeschreibung	HOT FINISHED SEAMLESS STEEL TUBES ENDS PLAIN, SQUARE CUT, DEBURRED INSIDE AND OUTSIDE WITHOUT RUST PROTECTION IN BUNDLES OF MAX. 2,5 T REPORT ELEMENTS: CR, CU, MO, NI, NB, TI, V, AL, N NAHTLOSE STAHLROHRE, WARMGEFERTIGT ENDEN GLATT, SENKRECHT ZUR ROHRACHSE ABGESCHNITTEN, GRATFREI INNEN UND AUSSEN OHNE ROSTSCHUTZ IN BUNDEN VON MAX. 2,5 T MIT ANGABE DER ELEMENTE: CR, CU, MO, NI, NB, TI, V, AL, N EN 10216-3:2013, EN 10210-1:2006, EN 10297-1:2003, DIN 1629:10.84 AD 2000-DATA SHEET W 4, EDITION FEBRUARY 2013 / IN CONNECTION WITH VDTUEV MATERIAL DATA SHEET 354/2 EDITION 02.2013 P355N-TC1/S355J2H/E355+N/ST 52.0
(A14)  16 0769-CPR-VAS-00483-1	

(A13) Vallourec Item Position	(A09) Cust. Item Position	(B14) Item text Positionstext	(B09) Dimensions Abmessung	(B10) Single length Einzellänge
20			O.D. 127 MM X WTH. 14,2 MM A.D. 127 MM X WD. 14,2 MM	IN RANDOM MILL LENGTH 12000 - 13800 MM HL 12000 - 13800 MM

Vallourec Deutschland GmbH (A01) Werk Mülheim Rohrkontstraße Schützenstrasse 124 45476 Mülheim an der Ruhr		INSPECTION CERTIFICATE (A02) ABNAHMEPRUEFZEUGNIS 3.1 EN 10204:2004 No. / Nr. : 67953Mu16 (A03) Page/Seite: 2 / 4 Date/Datum: 15.03.2016
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(A13) Vallourec Item Position	(A09) Cust. Item Position	(B08) Quantity Stück	(B11) Total length Gesamtlänge m	(B13) Weight Gewicht kg
20		11	146,25	5.775

Vallourec Item Position	Delivery Note-No Lieferschein-Nr.	Packing list-No Packlisten-Nr.
20	90510	

(C71)

HEAT CHEMICAL ANALYSIS / SCHMELZANALYSE

(B07.1) Heat Schmelze	(B15) Process Erschmelz.	C %	Si %	Mn %	P %	S %	Al %	Cu %	Cr %	Ni %	Mo %
min	-	-	-	0.90	-	-	0.020	-	-	-	-
max	-	0.200	0.500	1.60	0.025	0.0200	-	0.300	0.300	0.500	0.080
352458	Oxygen (BOF)	0.120	0.190	1.44	0.014	0.0017	0.032	0.020	0.060	0.030	0.010

(B07.1) Heat Schmelze	V %	Ti %	Nb(Cb) %	N %	CQ 03 %	EF 02 %	EF 28 %					
min	-	-	-	-	-	-	-					
max	0.100	0.040	0.050	0.0120	.45	0.12	0.45					
352458	0.070	0.004	0.018	0.0114	.39	0.09	0.09					

CQ 03	$CEV/CE = C + MN/6 + (CR+MO+V)/5 + (NI+CU)/15$
EF 02	$EF = V + TI + NB$
EF 28	$EF = CR + MO + CU$

Heats fully killed Beruhigter Stahl
--

AL >= 2 X N

TENSILE TEST RESULTS / ERGEBNISSE DES ZUGVERSUCHS

Type / Form (C10.1)	TUBE STRIP TEST SPECIMEN / ROHRSTREIFENPROBE
Test temperature / Prüftemperatur (C03)	ROOM TEMPERATURE / RAUMTEMPERATUR
Direction / Richtung (C02)	longitudinal / längs

0000338-00039/00023

Vallourec Deutschland GmbH (A01) Werk Mülheim Rohrkontistaße Schützenstrasse 124 45476 Mülheim an der Ruhr		INSPECTION CERTIFICATE (A02) ABNAHMEPRUEFZEUGNIS 3.1 EN 10204:2004 No. / Nr. : 67953Mu16 (A03) Page/Seite: 3 / 4 Date/Datum: 15.03.2016
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TENSILE TEST RESULTS / ERGEBNISSE DES ZUGVERSUCHS

(B07.1) Heat Schmelze	(C00.1) Test Piece Prüfstück	(C10) Dimension Abmessung	(C11) YS Streckgr.	(C12) TS Zugfest.	(C13) Elong. Dehnung	(C14.1) Ratio Verhältn.					
		mm	ReH MPa	R _m MPa	5,65√S ₀ %	R/R _m -					
min		-	355	500	22.0	-					
max		-	-	630	-	-					
352458	M573	25.10X14.87	387	527	30.0	0.73					

IMPACT TEST RESULTS / ERGEBNISSE DES KERBSCHLAGBIEGEVERSUCHS

Type / Form (C40)	CHARPY-V 3/4 / CHARPY-V 3/4
Test temperature / Prüftemperatur (C03)	- 20 DEGREES C
Direction / Richtung (C02)	transverse / quer


(B07.1) Heat Schmelze	(C00.1) Test Piece Prüfstück	(C41) qcm	(C42.1) Impact1 Arbeit1	(C42.1) Impact2 Arbeit2	(C42.1) Impact3 Arbeit3	(C43.3) Mean Mittelw.					
		qcm	J	J	J	J					
min		-	16.0	16.0	16.0	21.0					
max		-	-	-	-	-					
352458	M573	0.600	106	119	112	112					

(D55)

OTHER TESTS ON PIPE / SONSTIGE PRUEFUNGEN

Test Prüfung	Conditions Prüfbedingungen	Test rate Prüfumfang	Result Ergebnis
HEAT TREATMENT WAERMEBEHANDLUNG	NORMALISED CONDITION IN NORMALISIERTEM ZUSTAND	>920 DEGREES C/ COOLING AIR >920 GRAD C/LUFT	
FLATTENING TEST RINGFALTVERSUCH			SATISFACTORY BESTANDEN
RING EXPANDING TEST RINGAUFDORNVERSUCH			SATISFACTORY BESTANDEN
APPEARANCE AND DIMENSIONS (D01) OBERFLAECHEBESCHAFFEN- HEIT UND MASSE (D01)		EACH PIPE/ TUBE JE ROHR	SATISFACTORY BESTANDEN
PIPE PRODUCTION METHOD ROHRHERSTELLVERFAHREN	SEAMLESS, HOT-ROLLED NAHTLOS, WARMGEWALZT		

ELECTROMAGNETIC TESTING FOR THE VERIFICATION OF HYDRAULIC
LEAKTIGHTNESS ACC. TO EN 10893-1 : SATISFACTORY
ELEKTROMAGNETISCHE PRUEFUNG ZUM NACHWEIS DER DICHTHEIT GEM.

Vallourec Deutschland GmbH (A01) Werk Mülheim Rohrkontistraße Schützenstrasse 124 45476 Mülheim an der Ruhr		INSPECTION CERTIFICATE (A02) ABNAHMEPRUEFZEUGNIS 3.1 EN 10204:2004 No. / Nr. : 67953Mu16 (A03) Page/Seite: 4 / 4 Date/Datum: 15.03.2016
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(D55)

OTHER TESTS ON PIPE / SONSTIGE PRUEFUNGEN

EN 10893-1 : BESTANDEN

(A04, B05)

MARKING, IDENTIFICATION / KENNZEICHNUNG, IDENTIFIKATION

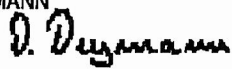


20		VALLOUREC	DIE STAMPED BOTH SIDES VALLOUREC LOGO MANUFACTURER'S NAME MANUFACTURER'S MARK TERMS OF DELIVERY EN10216/10210/10297/DIN1629 P355N-TC1/S355J2H/E355+N/ST 52.0 127 X 14,2 HEAT-NO. WA 84260908 VLR ITEM-NO 20
20		VALLOUREC	BEIDSEITIG STAHLGESTEMPELT VALLOUREC LOGO HERSTELLERNAME HERSTELLERZEICHEN LIEFERBED./SPEZIFIKATION: EN10216/10210/10297/DIN1629 P355N-TC1/S355J2H/E355+N/ST 52.0 127 X 14,2 SCHMELZEN-NR. WA 84260908 POSITIONS-NR. 20

(Z01)

The supplied products are in compliance with the requirements of the order

Die gelieferten Erzeugnisse stimmen mit den Anforderungen des Auftrages überein

(A05, Z02, Z03)

Date / Datum	15.03.2016
Validated by Bestätigt durch	Inspection Representative Abnahmebeauftragter
	DEYMANN 
	(0208) 810-4650
	(0208) 810-5629
@	DIETER.DEYMANN@VALLOUREC. COM
Stamp / Stempel	

Indication in parentheses correspond to attributes according to EN 10168

Die Bezeichnungen in Klammern entsprechen den Kennnummern gemäss EN 10168

This testimonial and certification respectively may neither be modified nor used for other products. Offences are regarded as falsification of documents and will be subject to criminal prosecution.

Dieses Zeugnis bzw. diese Bescheinigung darf weder verändert noch für andere Erzeugnisse verwendet werden. Zuwiderhandlungen werden als Urkundenfälschung und Betrug strafrechtlich verfolgt.



Trade Mark - Zeichen des Lieferwerkes
Anagrama del suministrador






Works Inspector Stamp - Werkssachverständiger
Sello del Inspector



Certificate type - APZ Nach Certificado tipo				EN 10204/3.1				Certificate n° - Prüf-Nr Certificado n°				207489				Date - Datum - Fecha 09 - 10 - 2014																			
Our order N° Werks - Nr N° de Referencia				555065				Heat Schmelze Colada				379867				Your order N° Bestell - Nr Pedido N°				IN13505-1															
Steel Grade Werkstoff Calidad								X-2-CRNIMO-17-12-2 / 1.4404 MECAMAX								According to Entsprechend Corresponde								EN 10.272-2007.											
Shape and Size - Gegenstad Perfil y dimensión ROUND 70 mm								Tolerance - Toleranz Tolerancia h 9 /DIN 671 /EN 10278								Bundles Bunde Bultos				1				Bars Stäbe Barras				Weight Gewicht Peso				379 Kg			
Requirements - Anforderungen - Exigencias																																			
EN 10.088-3.2005. ASTM A 479 / A 479M-14. AD-2000-W2/W10. Type 316-Type 316L. Conformity letter/Zustimmungsschreiben TUV BADEN 28.01.1969 Waiving of Countersing/Gegenzeichnungserzicht:01.03.1977 PED 97/23/EC, Annex I, Parag.4.3/DGR 97/23/EG Anhang I Absatz 4.3 Certificate/Zertifikat Nr. 348/2008/MUC																																			
Melting process / Erschmelzungsart / Proceso de Fusión E.A.F. / A.O.D.								Heat treatment / Wärmebehandlung / Tratamiento térmico 1060C 4H/Std WATER/WASSER/AGUA																											
Solution annealed/Abgeschreckt/Hipertemple-Centerless ground/Geschliffen/Rectificado-																																			
Test results - Ergebnis der Prüfungen - Resultados de los ensayos																																			
Dimension of Specimen Abmessungen des Probestabes Medida de las probetas				Rp0,2% N/mm2 MPA		Rp 1% N/mm2 MPA		Rm N/mm2 MPA		A %L 5D		A %L 4D		Z %		Hardness Härte HBw		Impact test / Kersbschlag / Resiliencia ISO V Jules																	
RD. 10,00 mm.				Min.		200		235		500		40						100																	
				Max.						700						215																			
Temperature °C 20		Spec. N°. Probe Nr. Pro N°.		1		275		318		577		52				73		156		232/236/232															
C		Si		Mn		P		S		Cr		Mo		Ni		N		Co																	
Min.										16,50		2,00		10,00																					
Max		0,030		1,00		2,00		0,045		0,030		18,50		2,50		13,00		0,1000																	
		0,022		0,38		1,62		0,033		0,026		16,60		2,00		10,00		0,0325		0,13															
Visual and dimensional inspection Besichtigung und Ausmessung Control visual y dimensional				O.K.				Radioactivity inspection Radioaktivitätskontrolle Control de Radioactividad				O.K.				Antimixing test Spektroskop Verwechslungspr Antimezcla				O.K.				Grain Size Korngrösse Tamaño de grano											
Remarks - Bemerkungen - Observaciones																																			
IC test acc./IK prüfung nach EN ISO 3651-2/98 Met.A. OK																																			
																EDV / EDP Acc. EN 10.204 Alfredo Molina Certification Mng. Works Inspector Der Werksachverständige Inspector de fábrica																			

COLUMBUS STAINLESS (Pty) Ltd Subsidiary of ACERINOX, S.A. SWB: +27 13 247 9111 FAX: +27 13 246 3681 http://www.columbus.co.za PO BOX 133 MIDDELBURG 1050 MIDDELBURG SOUTH AFRICA	 by Accredited Body	<h1 style="margin:0;">INSPECTION CERTIFICATE</h1> <h2 style="margin:0;">ABNAHMEPRÜFZEUGNIS</h2>	3.1
CUSTOMER CLIENTE INOX STAL HANDELSSELKAB A/S BOELETVEJ 7-9 DK - 8680 RY DANMARK		OUR ORDER N° N/ PEDIDO FW 1012	YOUR ORDER N° S/ PEDIDO IN14661-1
		TRADE MARK SELLO DEL FABRICANTE	INSPECTOR'S STAMP SELLO DEL INSPECTOR
		STEELMAKING PROCESS PROCESO DE ACERIA A.O.D.	
REQUIREMENTS NORMAS APLICABLES EN 10028-7 2007 COLD ROLLED COIL & SHEET EN 10088-2 2005 COLD ROLLED COIL & SHEET EN 10028-7 2007 COLD ROLLED COIL & SHEET ASTM A240 / A240M -13C/ASME SECT.IIA, ED. 07 SA240 EN 10088-2 2005 COLD ROLLED COIL & SHEET ASTM A240 / A240M -13C/ASME SECT.IIA, ED. 07 SA240		INTERGRANULAR CORROSION CORROSION INTERGRANULAR EN ISO 3651-2 EN ISO 3651-2 EN ISO 3651-2 ASTM A262-02A:E EN ISO 3651-2 ASTM A262-02A:E	GRADE MATERIAL Acx 240 1.4404 Acx 240 1.4401 Acx 240 1.4401 Acx 240 316 Acx 240 1.4404 Acx 240 316L
		FINISH ACABADO 2B 2B 2B 2B 2B 2B	
COIL / BOX BOBINA/CAJA	CONTENT CONTENIDO	THICKNESS ESPESOR	WIDTH ANCHO
X01Q9J A07 X01Q9J A08 X01Q9J A09 X01Q9J A10	3958945 /0 3958945 /0 3958945 /0 3958945 /0	3,000 3,000 3,000 3,000	1250,00 1250,00 1250,00 1250,00
		LENGTH LARGO	2500,00 2500,00 2500,00 2500,00
		MARKS MARCA	7 8 9 10
		QUANTITY CANTIDAD	15 15 15 12
		TEST N° PROBETA	3958945 /0 3958945 /0 3958945 /0 3958945 /0
		C / F C / F C / F C / F	C / F C / F C / F C / F
CHEMICAL ANALYSIS / COMPOSITION CHIMIQUE (%)			
HEAT N° SCHWELZE Nr	C	CR	MN
395894	0,025	16,600	1,280
		MO	N
		2,020	0,050
		NI	P
		10,000	0,025
		S	SI
		0,002	0,430
MECHANICAL PROPERTIES / CARACTERISTIQUES MECANIKES			
TEST N° BEWERTUNG	PROBE ST. TYPE	Rm. N/mm2	Rp 0.2 N/mm2
3958945 /0 3958945 /0	C T F T	630,00 633,00	309,00 322,00
		Rp 1.0 N/mm2	A50 %
		348,00 362,00	51,00 51,00
		A5 %	HRB
		55,00 55,00	83,00 84,00
REMARKS / OBSERVACIONES			
Material meets the Hardness requirements of Nace MR-0175/03 Permeability 1.1 Max Columbus Stainless (Pty) Ltd. certifies that the analysis and material on this certification is correct and meets the specification as stated.			
SURFACE AND DIMENSIONAL CONTROL INSPECTION DIMENSIONNELLE ET VISUELLE Satisfactory Ohne Beanstandung			
WORK INSPECTOR WERKSACHVERSTÄNDIGER			
			
Middellburg, 24 SEPTIEMBRE 2014			

COLUMBUS STAINLESS (Pty) Ltd Subsidiary of ACERINOX, S.A. SWB: +27 13 247 9111 FAX: +27 13 246 1681 http://www.columbus.co.za PO BOX 133 MIDDELBURG 1050 MIDDELBURG SOUTH AFRICA	 by Accredited Body	<h1 style="margin:0;">INSPECTION CERTIFICATE</h1> <h2 style="margin:0;">ABNAHMEPRÜFZEUGNIS</h2> 3.1																																				
CUSTOMER CLIENTE INOX STAL HANDELSSELKAB A/S BOELETVEJ 7-9 DK - 8680 RY DANMARK		OUR ORDER N° N/PEDIDO FW 1012		YOUR ORDER N° S/PEDIDO IN14661-1		TRADE MARK SELLO DEL FABRICANTE 		INSPECTOR'S STAMP SELLO DEL INSPECTOR		STEELMAKING PROCESS PROCESO DE ACERIA A.O.D.																												
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COIL / BOX BOBINA/CAJA X01Q9J A01 X01Q9J A02 X01Q9J A03 X01Q9J A04 X01Q9J A05 X01Q9J A06		CONTENT CONTENIDO 3958945 /0 3958945 /0 3958945 /0 3958945 /0 3958945 /0 3958945 /0		DIMENSIONS DIMENSIONES <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>THICKNESS</th> <th>WIDTH</th> <th>LENGTH</th> </tr> <tr> <td>ESPESOR</td> <td>ANCHO</td> <td>LARGO</td> </tr> <tr> <td>3,000</td> <td>1250,00</td> <td>2500,00</td> </tr> <tr> <td>3,000</td> <td>1250,00</td> <td>2500,00</td> </tr> <tr> <td>3,000</td> <td>1250,00</td> <td>2500,00</td> </tr> <tr> <td>3,000</td> <td>1250,00</td> <td>2500,00</td> </tr> <tr> <td>3,000</td> <td>1250,00</td> <td>2500,00</td> </tr> <tr> <td>3,000</td> <td>1250,00</td> <td>2500,00</td> </tr> </table>			THICKNESS	WIDTH	LENGTH	ESPESOR	ANCHO	LARGO	3,000	1250,00	2500,00	3,000	1250,00	2500,00	3,000	1250,00	2500,00	3,000	1250,00	2500,00	3,000	1250,00	2500,00	3,000	1250,00	2500,00	MARKS MARCA 1 2 3 4 5 6		QUANTITY CANTIDAD 15 15 15 15 15 15		TEST N° PROBETA 3958945 /0 3958945 /0 3958945 /0 3958945 /0 3958945 /0 3958945 /0		C / F C / F C / F C / F C / F C / F	
THICKNESS	WIDTH	LENGTH																																				
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395894		0,025	16,600	1,280	2,020	0,050	10,000	0,025	0,002	0,430																												
MECHANICAL PROPERTIES / CARACTERISTIQUES MECANQUES																																						
TEST N° ECHANTILLON		PROBE SET TYPE	Rm. N/mm2	Rp 0.2 N/mm2	Rp 1.0 N/mm2	A50 %	A5 %	HRB																														
3958945 /0		C T	630,00	309,00	348,00	51,00	55,00	83,00																														
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									WORK INSPECTOR WERKSACHVERSTÄNDIGER 																													
									Middelburg, 24 SEPTIEMBRE 2014																													

COLUMBUS STAINLESS (Pty) Ltd Subsidiary of ACERINOX, S.A. <small>SWB: +27 13 247 9111 FAX: +27 13 246 1691 http://www.columbus.co.za PO BOX 133 MIDDELBURG 1050 MPUMALANGA SOUTH AFRICA</small>	<h1 style="margin:0;">Abnahmeprüfzeugnis</h1> <h2 style="margin:0;">INSPECTION CERTIFICATE</h2>	Prüf - Nr. 73 2014 91106 10001 5 Inspection No.											
ACCORDING TO EN 10204 NACH													
Besteller - Customer INOX STAL HANDELSSELKAB A/S		Auftrags Nr - Our order n° FW 1012											
		Bestellung Nr - Your order n° IN14661-1											
Prüfgegenstand - Article BLECH AUS BAND (SHEET)		Werkstoff Nr und Lieferzustand - Material n° and Condition of Delivery 1.4404/1.4401 2B											
Werkstoff - Normbez Standard - Grade of Material X2CRNIMO 17-12-2/X5CRNIMO 17-12-2		Werksbez - Works Grade Acx - 240											
		Erschmelzungsart- Steelmaking Process A=AOD Verfahren - AOD Process A											
Anforderungen - Technical requirements EN 10088-2 2005 COLD ROLLED COIL & SHEET/AD WO/TRB 100/AD-2000-MERKBLATT W2/W10/DGRL 97/23/EC(PED)		Kennzeichnung - Marking Schmelzennummer - N° of coil											
Zeichen des Lieferwerks - Brand of the manufacturer		Stempel des Sachverständigen - Inspector's stamp											
Pos Nr. Item N°	Stückzahl Quantity	Abmessung - Dimensions mm	Schmelze Nr Heat N°	Probe Nr Test N°									
1	15	3,000 x 1.250,00 x 2.500,00	395894	3958945 /0 C / F									
2	15	3,000 x 1.250,00 x 2.500,00	395894	3958945 /0 C / F									
3	15	3,000 x 1.250,00 x 2.500,00	395894	3958945 /0 C / F									
4	15	3,000 x 1.250,00 x 2.500,00	395894	3958945 /0 C / F									
5	15	3,000 x 1.250,00 x 2.500,00	395894	3958945 /0 C / F									
6	15	3,000 x 1.250,00 x 2.500,00	395894	3958945 /0 C / F									
Chemische Analyse - Chemical Composition (%)													
Schmelze Nr Heat N°	C	CR	MN	MO	N	NI	P	S	SI				
Anforderungen		16,500		2,000		10,000							
Requirements	0,030	18,500	2,000	2,500	0,110	13,000	0,045	0,015	1,000				
395894	0,025	16,600	1,280	2,020	0,050	10,000	0,025	0,002	0,430				
Mechanische Eigenschaften - Mechanical Properties Pr. Temp/T. Temp. 20° C													
Probe Nr Test N°	Prob.-Lage Pos of Test	Abmessungen des Probestabs Dim. of specimen	Rm. N/mm2	Rp 0.2 N/mm2	Rp 1.0 N/mm2	A50 %	A5 %	HRB					
Anforderungen		Breite x Dicke Width x Thickness mm	530,00	240,00	270,00		92,00						
Requirements			680,00										
3958945 /0	C T	12,490 3,02	630,00	309,00	348,00	51,00	55,00	83,00					
3958945 /0	F T	12,490 3,02	633,00	322,00	362,00	51,00	55,00	84,00					
Besichtigung und Masskontrolle wurden durchgeführt: O.B. Surface and dimensions controlled: O.K. Der Werkstoff ist beständig gegen interkristalline Korrosion gemäss EN ISO 3651-2 The material is resistant to intergranular corrosion test according to EN ISO 3651-2 Spektroskopische Identitätsprüfung: O.B. Spectrometrical identity test: O.K. Wärmebehandlung: Glühen bei 1050 - 1100 °C Heat treatment: Und Abschrecken mit Luft cooling with air. Die Lieferung entspricht der Bestellung The delivery is in accordance with the order Issued In agreement with TÜV SÜD Industrie Service GmbH (02/1983)													
WERKSACHVERSTÄNDIGER WORK INSPECTOR													
										Middelburg, 24 SEPTIEMBRE 2014			

COLUMBUS STAINLESS (Pty) Ltd Subsidiary of ACERINOX, S.A. <small>SWB: +27 13 247 9111 FAX: +27 13 246 1681 http://www.columbus.co.za PO BOX 133 MIDDELBURG 1050 MPUMALANGA SOUTH AFRICA</small>	<h1 style="margin: 0;">Abnahmeprüfzeugnis</h1> <h2 style="margin: 0;">INSPECTION CERTIFICATE</h2> <p style="margin-top: 20px;">ACCORDING TO EN 10204 NACH</p>	Prüf - Nr. 73 2014 91106 10001 5 Inspection No.											
Besteller - Customer INOX STAL HANDELSSELKAB A/S		Auftrags Nr - Our order n° FW 1012											
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Zeichen des Lieferwerks - Brand of the manufacturer		Stempel des Sachverständigen - Inspector's stamp											
Pos Nr. Item N°	Stückzahl Quantity	Abmessung - Dimensions mm	Schmelze Nr Heat N°	Probe Nr Test N°									
7	15	3,000 x 1.250,00 x 2.500,00	395894	3958945 /0 C / F									
8	15	3,000 x 1.250,00 x 2.500,00	395894	3958945 /0 C / F									
9	15	3,000 x 1.250,00 x 2.500,00	395894	3958945 /0 C / F									
10	12	3,000 x 1.250,00 x 2.500,00	395894	3958945 /0 C / F									
Chemische Analyse - Chemical Composition (%)													
Schmelze Nr Heat N°	C	CR	MN	MO	N	NI	P	S	SI				
Anforderungen		16,500		2,000		10,000							
Requirements	0,030	18,500	2,000	2,500	0,110	13,000	0,045	0,015	1,000				
395894	0,025	16,600	1,280	2,020	0,050	10,000	0,025	0,002	0,430				
Mechanische Eigenschaften - Mechanical Properties Pr. Temp/T. Temp. 20° C													
Probe Nr Test N°	Prob.-Lage Pos of Test	Abmessungen des Probestabs Dim. of specimen	Rm. N/mm2	Rp 0.2 N/mm2	Rp 1.0 N/mm2	A50 %	A5 %	HRB					
Anforderungen		Breite x Dicke Width x Thickness mm	530,00	240,00	270,00								
Requirements			680,00				92,00						
3958945 /0	C T	12,490 3,02	630,00	309,00	348,00	51,00	55,00	83,00					
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WERKSACHVERSTÄNDIGER WORK INSPECTOR										Middelburg, 24 SEPTIEMBRE 2014			

(A01) **Salzgitter Mannesmann Stainless Tubes France SAS**

(A05) B.P.10 - F 21501 Montbard Cedex - FRANCE

www.smst-tubes.com

INSPECTION CERTIFICATE

**Abnahmeprüfzeugnis
Certificat de Réception**

(A02)

EN 10204: 2004 TYPE 3.1



(A03) No. / Nr. / N°

3-15-40390-rev.01

(A06) **Purchaser / Besteller / Acheteur**

INOX STAL A/S

Boeletvej

8680 RY

Danemark

(A07) **Customer Order No / Kundenauftragsnr. / N° Commande Client**

IN17353-1

(A08) **SMST-Tubes Order No / Auftragsnr. / N° Commande SMST**

0000261706

SMST-Item

(A09) **Part No / Teilenummer / Part number**

0000261706-000003

(B01)(B02)(B04) **Product Description / Produkt Beschreibung / Description du Produit**

Seamless Stainless Steel Hot Finished Tubes Annealed Free From Scale Plain Ends Square Cut Deburred

Rohre warmgefertigt nahtlos rostfreier Stahl gegläht zunderfrei glatte Enden rechteckig gesägt entgratet

Tubes sans soudure Acier Inoxydable Fini à chaud Traité Exempt de calamine Extrémité lisse coupée d equerre

Specifications / Spezifikationen / Spécifications

A312M CHEM MECH TEST ONLY 14 b;ASTM A 511M 15;CTS 96010 HB MC;EN 10088-1
2006;EN 10216-5 CHEM MECH TEST ONLY 12.2013 TC1;EN 10294-2 08.2012;EN
10297-2 2006;HYDRO 70 BARS GUARANTEE;NACE MR0103 2012;NACE MR0175/ISO
15156-3 2009

Grade / Werkstoff / Nuance

1.4301 VALIMA;1.4306 VALIMA;MT 304 VALIMA;MT 304L VALIMA;TP 304 VALIMA;TP
304L VALIMA

Tolerances / Toleranzen / Tolérances

STD OD+0+2%_ID+0-2%_MIN 1MM

(B03) **Supplementary Requirements / Zusatzanforderungen / Exigences Supplémentaires**

None / Keine / Aucune

(B06)(D01) **Marking of the Product / Kennzeichnung des Produkts / Marquage du Produit**

Technical marking

\$WO_NUMBER\$ DMV-F - TP 304L / TP 304 / MT 304L / MT 304 / 1.4306 / 1.4301 - VALIMA
- 160,00 X 90,00 - HEAT : \$HEAT_NBR\$ - \$INDIV_LENGTH_MM\$ MM -
\$QUAL_LOT_NBR\$ - FRANCE -

Country of Origin of the tubes / Herstellungsland der Rohre / Pays d'origin des tubes

France / Frankreich / France

		Quantity / Menge / Quantité			Dimensions / Abmessung / Dimensions				
(B07) Heat Schmelze Coulée	Quality Lot Qualitätslos Lot Qualité	SMST-Item	(B08) Pieces Stück Pièces	(B13) Weight Gewicht Poids	(B16) Length Länge Longueur	(B09) OD	(B14) ID	(B11) Ordered Length Auftragslänge Longueur commandée	
								min	max
547050	QL30088873	000003	2	946.00 kg 2085.57 lbs	8.430 m 27.66 ft	160.00 mm 6.299 "	90.00 mm 3.543 "	3000 mm 9.84 ft	6400 mm 21.00 ft
Heat	QLotID	Father QL	pcs	Weight kg	Length m	Father PHU		PHU	
547050	QL30088873	QL30084030	2	946.00 kg	8.430 m	30118140000		30125155000	

Heat Analysis / Schmelzanalyse / Analyse de Coulée

		Request	C	Si	Mn	P	S	Cr	Ni	N	Co
		Min	0.00	0.00	0.00	0.00	0.0150	18.0	10.0	0.00	0.00
		Max	0.030	1.0	2.0	0.040	0.0300	19.0	10.5	0.10	99.00
(B07) Heat Schmelze Coulée	Heat Origin Ursprung der Schmelze Origine de la Coulée	(C70) Melting Process Erschmelzungsart Procédé d'élaboration	%	%	%	%	%	%	%	%	%
547050	Germany	EAF + VOD	0.015	0.42	1.42	0.029	0.024	18.56	10.18	0.071	0.11

(A01) **Salzgitter Mannesmann Stainless Tubes France SAS**

(A05) B.P.10 - F 21501 Montbard Cedex - FRANCE

www.smst-tubes.com

INSPECTION CERTIFICATE

Abnahmeprüfzeugnis

Certificat de Réception

(A02)

EN 10204: 2004 TYPE 3.1



(A03) No. / Nr. / N°

3-15-40390-rev.01

Product Analysis / Produktanalyse / Analyse sur Produit

EN 10297-2 // EN 10294-2 // EN 10216-5 // EN 10088-1 // ASTM A 511M // A312M CHEMISTRY MECH TEST

	Request	C	Si	Mn	P	S	Cr	Ni	N
	Min	0.00	0.00	0.00	0.00	0.0150	18.0	9.9	0.00
	Max	0.035	1.0	2.0	0.040	0.0300	19.2	10.65	0.11
Quality Lot Qualitätslos Lot Qualité	(C00) Sample	%	%	%	%	%	%	%	%
QL30088873	30272707	0.015	0.41	1.41	0.029	0.0263	18.5	10.18	0.07
	30272708	0.021	0.42	1.40	0.026	0.0248	18.5	10.15	0.07

Sampling done on tubes in manufacturing length / Beprobung erfolgte an Rohren in Herstelllänge / Echantillonnage réalisé par longueur de fabrication

Tensile Test at Room Temperature / Zugversuch bei Raumtemperatur / Essai de traction à température ambiante

EN 10002-1 // EN ISO 6892-1 // ASTM A 370

(C02) Direction : LONGITUDINAL

		(C11) YS 0.2%	(C11) YS 1%	(C12) U.T.S.	(C13) EL	(C13) EL
	Request	Rp 0.2%	Rp 1%	Rm	50mm	5,65VSo
	Min	205	230	515	35	40
	Max			680		
Quality Lot Qualitätslos Lot Qualité	(C00) Sample	MPa	MPa	MPa	%	%
QL30088873	30272708	276	323	597	49	49

Sampling done on tubes in manufacturing length / Beprobung erfolgte an Rohren in Herstelllänge / Echantillonnage réalisé par longueur de fabrication

(C30) Hardness Test / Härteprüfung / Essai de dureté

NACE MR0103 // NACE MR0175/ISO 15156-3 // ASTM A 370

			(C30) HB		(C30) HRC	
	Request		192.0 max		22.0 max	
Quality Lot Qualitätslos Lot Qualité	(C00) Sample	Result Ergebnis Resultat	(C31) Min	(C31) Max	(C32) Avg	(C31) Min
						(C31) Max
						(C32) Avg
QL30088873	30272708		134	136	135.0	< 18
						< 18
						< 18.00

Sampling done on tubes in manufacturing length / Beprobung erfolgte an Rohren in Herstelllänge / Echantillonnage réalisé par longueur de fabrication

Intergranular Corrosion Test / Prüfung der interkristallinen Korrosion / Essai de corrosion intergranulaire

EN ISO 3651-2 METHOD A // ASTM A 262 PRACTICE E

(A01) **Salzgitter Mannesmann Stainless Tubes France SAS**

(A05) B.P.10 - F 21501 Montbard Cedex - FRANCE

www.smst-tubes.com

INSPECTION CERTIFICATE

Abnahmeprüfzeugnis

Certificat de Réception

(A02)

EN 10204: 2004 TYPE 3.1



(A03) No. / Nr. / N°

3-15-40390-rev.01

EN ISO 3651-2 METHOD A // ASTM A 262 PRACTICE E

	Request Max	
	Unit	
Quality Lot	(C00)	Result
Qualitätslos	Sample	Ergebnis
Lot Qualité		Resultat
QL30088873	30272708	Satisfactory

Sampling done on tubes in manufacturing length / Beprobung erfolgte an Rohren in Herstelllänge / Echantillonnage réalisé par longueur de fabrication

(A01) **Salzgitter Mannesmann Stainless Tubes France SAS**

(A05) B.P.10 - F 21501 Montbard Cedex - FRANCE

www.smst-tubes.com

INSPECTION CERTIFICATE

Abnahmeprüfzeugnis

Certificat de Réception

(A02)

EN 10204: 2004 TYPE 3.1



(A03) No. / Nr. / N° **3-15-40390-rev.01**

Other Tests and Declarations / Andere Prüfungen und Prüffeststellungen / Autres Tests et Déclarations

QL30088873

Heat Treatment / Wärmbehandlung / Traitement Thermique / Annealed : 1040/1100 °C 1904/2012 °F Water Quenching

(D01) Visual and dimensional inspection (VT) on 100% of tubes according to the order
Besichtigung und Maßkontrolle von 100% der Rohre gemäß Auftrag
Examen visuel et dimensionnel sur 100% des tubes selon la commande

Satisfactory
Bestanden
Satisfaisant

(D51) Antimixing Check (PMI) on 100% of tubes
Verwechselungsprüfung an allen Rohren mittels Spektralprüfung von 100% der Rohre
Contrôle anti-mélange par PMI sur 100% des tubes

Satisfactory
Bestanden
Satisfaisant

(D52) Hydrostatic Test / Wasserinnendruckversuch / Essai Hydraulique : 7,00 Mpa / 5 sec EN 10216-5 : test garanti/guaranteee
test/ prüfung gewährleistet

The material is conforming to directive 2000/53/EC and 2011/65/EU
Das Material entspricht den Anforderungen der Richtlinien 2000/53/EC und 2011/65/EU
Le matériau est conforme aux directives 2000/53/EC et 2011/65/EU

No Weld Repair
Keine Reparaturschweißung
Aucune réparation par soudure

(Z01) SMST declares that the product is in compliance with the order.
Die Erzeugnisse wurden bestellungsgemäß geprüft und für in Ordnung befunden
SMST atteste que les produits livrés sont conformes aux stipulations de la commande

Tubes are free from mercury contamination and from radioactiv contamination
Die Rohre sind frei von Quecksilberverunreinigungen und frei von radioaktiver Verunreinigung
Les tubes sont exempts de contamination par le mercure et de contamination radioactive

Confirmation with reference to Pressure Equipment Directive 97/23/EC:
The works operates a quality management system that has undergone a specific assessment for materials for pressure equipment and is certified by a competent body (TÜV-SÜD-Cert.No: 05/2014/MAN)
Bestätigung in Bezug auf Druckgeräterichtlinie 97/23/EC:
Das Werk wendet ein Qualitätsmanagementsystem an, das in Bezug auf Werkstoffe für Druckgeräte einer spezifischen Bewertung unterzogen wurde und von einer zuständigen Stelle (TÜV-SÜD-Cert.No: 05/2014/MAN) zertifiziert ist.
Confirmation concernant la Directive Equipements sous Pression 97/23/EC:
L'usine applique un système de management de la qualité qui a fait l'objet d'une évaluation spécifique pour les matériaux pour équipements sous pression et qui est certifié par un organisme compétent (TÜV-SÜD-Cert.No: 05/2014/MAN)

(Z02) Mill's Inspector
Werkssachverständiger
Le Contrôleur usine

Pommery Thierry (IU)

Date of Edition
Ausgabedatum
Date d'Édition

29/06/2015

This certificate is issued by SALZGITTER MANNESMANN STAINLESS TUBES via a computerized system bearing a traceable unique number. It is valid without signature. An intermediary may only pass on the original certificate without any alterations. Providing a copy of the original is only permitted subject to strict compliance with the prerequisites set out in § 6 of EN 10204:2004 i.e. traceability and availability of the original upon request. Any modification or alteration of the certificate or any copies are strictly prohibited. Any contravention of this notice or § 6 of EN 10204:2004 is illegal and will be prosecuted. Any falsification of a certificate e.g. by introducing false or fraudulent data for the purpose of promoting the sales of goods is a criminal offence under German law (and many other jurisdictions) punishable with fines and imprisonment. If an authentication is needed, please contact dmv@smst-tubes.com.

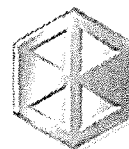
Customer

HELENS RØR A/S-DK

Date 17/03/2016

UGITECH

Providing special steel solutions



CERTIFICATE OF CONFORMITY

EN 10204 / 3.1

LOT No. 573165

View cast No on the next page

Diameter 50.000

Steel Grade 1.4460

Delivered quantity 102.53 ML

Our order N° C21512008

Packing List B21603063

Your order N° 4501562706

Ref Nomen. douanes 72222

Tolerance	Chrom thickness >=	RA <=	RZ <=
30-50f7	20	0.2	3

Chrome hardness 900 à 1100 Hv

Corrosion test : 500 hours ISO9227 AASS

Evaluation : ISO10289 rating 10

Charpy test KCV mini 27 J by - 20°C



Spett. Ditta

UGITECH SA Establishment of
Saint-Etienne
5, Rue Jules Ferry
42100 SITE SAINT ETIENNE

Document de contrôle

EN10204:2004/3.1

CERTIFICAT	Nr. 112341 del 05/02/2016	DOC REF.	DDE 316/2016	COMMANDE	21509042						
NUANCE	1.4460	COULEE	573165	QUANTITE (KG)	10.153						
TRAIT THERM.		DIAMETRE	50,00 -75/-100 my	ETAT DE LIVRAISON	Rond certifié						
MARQUAGE											
ANALYSE DE COULEE											
C %	Mn %	Si %	P %	S %	Cr %	Ni %	Mo %	V %	Al %		
0,024	1,330	0,470	0,026	0,027	25,770	4,960	1,350	0,000	0,000		
Cu %	Pb %	Ti %	Co %	B %	N %	W %	Nb %	Cr+Mo+Ni %	C eq %		
0,250	0,000	0,000	0,000	0,000	0,110	0,000	0,000	0,000			
CARACTERISTIQUES MECANQUES											
Etat de livraison											
T (°C) Normalisation		0,00		T (°C) trempé		0,00		T (°C) Revenu		0,00	
Rm (N/mm2)				Rp 0,2% (N/mm2)				A5%		Z %	
667,0		0,0		434,0		0,0		31,2		70,8	
KVJ		KVJ		KVJ		T(°C) épreuve		Dureté		HB	
86		70		70		-20,00 Long.		216,00			
ANALYSES METALLOGRAPHIQUES											
DIMENSION DU GRAIN			INCLUSIONS								
Grain austénitique			Grain (Etat de livraison)			Micropropreté			Inclusions non métal.		
0,00			0,00								
CARACTERISTIQUES GEOMETRIQUES											
RUGOSITE				RECTITUDE				CIRCULARITE			
Ra Ri Rz Rq											
NOTE											
EN 10088-3											
EN 10277-1: +SH class 3 - - SL class 4											
EN 10278											

Si attesta che il materiale della presente fornitura è conforme alla prescrizione d'ordine e ad ogni altra specifica concordata contrattualmente con il cliente.

We declare that the mentioned product is in compliance with the requirements of the contract and the specified requirements

Certificat imprimé par gabrieletorno (Certificatore) Certificat électronique



Aperam Stainless Services & Solutions Luxembourg S.A.

Avenue de l'Europe Site du PED - BP 55
L-4801 RODANGE

Tel: +352 50 54 81 1
Fax: +352 50 54 81 64

TEST REPORT RELEVÉ DE CONTRÔLE WERKSZEUGNIS

According to / Selon / Nachdem
EN 10204

BL: 0057451 - 7

Date: 22/06/2016

Manufact. / Product. / Herstell.

APERAM STAINLESS EUROPE

Supplier Lot / Lot Fourn. / Band Nr

61512235

Item / Article / Produkt (EN 10058)

61001603

FLAT BAR 4404 1D 10,0 X 100,0 X 6000,0

Heat N° / N° de coulée / Schmelz Nr

615122

Customer / Client / Kunde

VALBRUNA NORDIC AB

Steel Designation / Désignation Acier / Stahlbezeichnung

EN 10028-7 WNR 1.4404/1.4401
EN 10088-2 WNR 1.4404/1.4401
ASTM A 240(M) TYPE 316L/316
ASME SA 240 TYPE 316L/316

Order / Commande / Order

605036398 - 07

Reference / Référence / Referenz

R32943

AD 2000 W2 -- AD 2000 W10 -- PED 97/23/EC

Mill Certificate / N° de Certificats / Prüfzeugnis Nr

16K0027329 16K0027329-CE

Chemical Analysis / Analyse Chimique / Chemische Zusammensetzung

	C	Si	Mn	Ni	Cr	Mo	Ti	N	S	P	Cu	Al				
Cast Analysis Analyse Coulée Analyse	0,023	0,4	1,27	10,02	17,04	2,02		0,04	0,003	0,029						

Mechanical Properties / Propriétés Mécaniques / Mechanische Werte EN 10002-1

	Yield strength Limite D'élasticité Dehngrenze MPa		Tensile strength Résistance à la traction Zugfestigkeit MPa	Elongation after fracture (A) Allongement après rupture Bruchdehnung %		Hardness Dureté Haerte		
	Rp 0.2 %	Rp 1%	Rm	A5	50 mm	HRB	DDQ	
	325	354	578		57	83,7	56	

Material identification / Identification Matière / Identifizierung Sachgebiet

Lot Nr N° Lot Los Nr	Weight Poids Gewicht	Lot Nr N° Lot Los Nr	Weight Poids Gewicht	Lot Nr N° Lot Los Nr	Weight Poids Gewicht	Lot Nr N° Lot Los Nr	Weight Poids Gewicht
	Kg		Kg		Kg		Kg
0948820	508						
0948822	509						
0948823	511						
0948829	512						
0948831	509						
0948832	512						
0948840	510						
0948841	649						

Number of lots / Nombre de lots / Bunde Anzahl : 8

Total weight / Poids Total / Gesamt Gewicht [Kg] : 4220

The Inspector
Le Responsable
Der Werksachverstaendige

A. Wiblet



Nordic AB Supplier Certificate -





119 055 000 832

 Correspondentieadres: Aperam Genk Swinnenvijerweg 5, Poort Genk 7523 3600 Genk, Belgium Tel. +32 (0)89 30 21 11		MILL CERTIFICATE BS EN 10204/3.1 CERTIFICAT DE RECEPTION NF EN 10204/3.1 ABNAHMEPRUEFZEUGNIS DIN EN 10204/3.1										N-Nr-N 16K0027329-01 V01						
		Certified acc. PED 97/23/EC Annex I § 4.3 by Certification Body 0036 of TÜV SÜD Industrie Service GmbH with cert. No.: 314/2007/MUC. Renounced of counter signature agreed by TÜV SÜD (9/5/2007). Approved acc. AD 2000-Merkblatt W0/TRD 100 by TÜV SÜD Industrie Service GmbH. Confirmation letter from TÜV SÜD Industrie Service GmbH of 07/05/2010 about the uniformity of coils acc. AD 2000 W2 § 4.1.1																
Manufacturer's works order number N° de la commande usine productrice Werksauftragsnummer 80320023/01-20699/596/01		Surveyor's mark Cachet de l'expert Stempel des Werkssachverständigen				Purchaser and/or consignee Client et/ou destinataire Besteller und/oder Empfänger APERAM SS&S LUXEMBOURG 15 AVENUE DE L'EUROPE 4801 RODANGE LUXEMBOURG				Purchaser's order number N° de commande client Kundenbestellnummer 604009548								
Product - Produit - Erzeugnis COIL, HOT ROLLED, ANNEALED AND PICKLED, UNTRIMMED COIL, LAMINE A CHAUD, RECUIT+DECAPE, BORDS NON REFENDUS COIL, WARMGEWALZT, GEGLUEHT UND GEBEIZT, UNBESAEUMT		Steel designation Désignation de l'acier Stahlbezeichnung EN 10028-7-2008 1.4404 / 1.4401 EN 10088-2-2014 1.4404 / 1.4401 ASTM A 240-2015 TYPE 316L / 316 ASME SA 240-2015 TYPE 316L / 316 EN 10088-4-2009 1.4404 / 1.4401		Finish Présentation Ausführung ID ID NO 1 NO 1 ID		Steelmaking process Mode d'élaboration de l'acier - Stahlherstellungverfahren Prod. proces: Electric arc furnace - VOD/AOD - Continuous casting Proc. fabric.: Four à arc - VOD/AOD - Coulée continue Fertigungsablauf: Elektro-Ofen - VOD/AOD - Stranggussanlage Any supplementary requirements Prescriptions supplémentaires - Zusätzliche Anforderungen				Product delivery condition Etat de livraison du produit - Lieferzustand Solution treated: Hypertrempe: 1050 °C Loesungsgeglüht-abgeschreckt: Forced air-water/air forcé-eau Gebläse Luft-Wasser								
NACE MR 0175 / ISO 15156-1 / ISO 15156-3 -- NACE MR 0103 // DIMENSION AND SHAPE TOLERANCES ACC. TO EN ISO 9444-2 // FREE OF RADIOACTIVE CONTAMINATION // CORROSION TEST: ASTM A262-E -OK																		
Identification of the product Identification du produit - Identifizierung des Erzeugnisses MELTED IN BELGIUM, MADE IN BELGIUM		Dimensions Dimensions - Abmessungen <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Thickness Epaisseur - Staerke 10.00 mm</td> <td style="width: 33%;">Width Largeur - Breite 1250.00 mm</td> <td style="width: 33%;">Length Longueur - Laenge</td> </tr> </table>						Thickness Epaisseur - Staerke 10.00 mm	Width Largeur - Breite 1250.00 mm	Length Longueur - Laenge	Number of pieces Nb de pièces - Stueckzahl 1							
Thickness Epaisseur - Staerke 10.00 mm	Width Largeur - Breite 1250.00 mm	Length Longueur - Laenge																
Coil n. N. Bobine - Band Nr. 61512235		Heat n. N. Coulée - Schmelz Nr. 615122		Net weight Poids net - netto Gewicht 23980 KG														
CHEMICAL ANALYSIS - ANALYSE CHIMIQUE - CHEMISCHE ZUSAMMENSETZUNG																		
		C	Si	Mn	Ni	Cr	Mo	Ti	N	S	P	Co						
Required - Exigé %mini Anforderung, %maxi		0.030	0.75	2.00	10.00 13.00	16.50 18.00	2.00 2.50		0.100	0.015	0.045							
Cast Analysis Analyse coulée Analyse Schmelze		0.023	0.40	1.27	10.02	17.04	2.02		0.040	0.003	0.029	0.241						
		C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85	C86	
Positive material identification carried out : OK Tests de vérification de la conformité de la nuance fournie : OK Verwechslungsprüfung wurde durchgeführt : OK																		
Location (1)														MECHANICAL PROPERTIES - PROPRIETES MECANQUES - MECHANISCHE WERTE EN ISO 6892-1 B / A-SA 370				
Room temperature - Température ambiante - Raumtemperatur														Test temperature (°C) :				
Direction (2) <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Required Exigé Anforderung</td> <td style="width: 33%;">Obtained Obtenu Ergebnisse</td> </tr> </table>		Required Exigé Anforderung	Obtained Obtenu Ergebnisse	Yield or proof strength Limite d'élasticité Dehngrenze MPa		Tensile Strength Résistance à la traction Zugfestigkeit MPa		Elongation after fracture Allongement après rupt. Bruchdehnung %		Hardness Dureté Haerte		Yield or proof strength Limite d'élasticité Dehngrenze MPa		Tensile str. Résist. MPa Zugfestigkeit		Elongation % Allongement Bruchdehnung		
Required Exigé Anforderung	Obtained Obtenu Ergebnisse																	
		Rp0.2%	Rp1%	Rm		A5	50mm	HRB	Rp0.2%	Rp1%	Rm	A5						
1 T		220	260	530 680		40	40	95										
2 T		325	354	578		54	57	84 81										
		C11	C14	C12		C13	C15	C31	C16	C17	C18	C19						
Impact strength test Essai de résilience Kerbschlagzähigkeitstest				Corrosion test Test de corrosion Korrosionstest				E0.2(T)/R(T) %										
C40 J(°C)				C42				56 C50		C51	C52	C53	C54	C55	C05			
EN ISO 3651/2 - A:OK														Internal cleanliness: A: B: C: D:				
Location of the sample (1) Emplacement de l'échantillon Lage des Probenabchnittes 1. Front - Début - Anfang 2. Back - Fin - Ende 3. Middle - Milieu - Mitte				The delivery is in accordance with the order La fourniture est conforme aux exigences de la commande Die Lieferung entspricht den Bestellbedingungen				Organisation inspection Organisme et/ou service contrôle Überwachungsabteilung										
C01				Z01				A05										
Direction of the test pieces (2) Orientation des éprouvettes Probenrichtung T. Transverse - Travers - Quer L. Longitudinal - Long - Laengs				Packing list Avis d'expédition 2016038806-20699 Lieferscheinnummer				Quality Department 24/5/2016 The inspector Le responsable Der Werkssachverständige										
C02				A10				Z02										

 Correspondentieadres: Aperam Genk Swinnenwijerweg 5, Poort Genk 7523 3600 Genk, Belgium Tel. +32 (0)89 30 21 11		MILL CERTIFICATE BS EN 10204/3.1 CERTIFICAT DE RECEPTION NF EN 10204/3.1 ABNAHMEPRUEFZEUGNIS DIN EN 10204/3.1										N-Nr-N 16K0027329-CE V01				
		Factory Production Control certified by TUV SUD Industrie Service GmbH with certificate nr 0036-CPD-43-2011. In compliance with the Construction Product Directive nr 89/106/EEC.														
Manufacturer's works order number N° de la commande usine productrice Werksauftragsnummer 80320023/01-20699/596/01		Surveyor's mark Cachet de l'expert Stempel des Werkssachverständigen				Purchaser and/or consignee Client et/ou destinataire Besteller und/oder Empfänger APERAM SS&S LUXEMBOURG 15 AVENUE DE L'EUROPE 4801 RODANGE LUXEMBOURG				Purchaser's order number N° de commande client Kundenbestellnummer 604009548						
Product - Produit - Erzeugnis COIL, HOT ROLLED, ANNEALED AND PICKLED, UNTRIMMED COIL, LAMINE A CHAUD, RECUIT+DECAPE,BORDS NON REFENDUS COIL, WARMGEWALZT, GEGLUEHT UND GEBEIZT, UNBESAEUMT		Finish Présentation Ausführung ID		Steelmaking process Mode d'élaboration de l'acier - Stahlherstellungsverfahren Prod.proces: Electric arc furnace - VOD/AOD - Continuous casting Proc.fabric.: Four à arc - VOD/AOD - Coulée continue Fertigungsablauf: Elektro-Ofen - VOD/AOD - Stranggussanlage Any supplementary requirements Prescriptions supplémentaires - Zusätzliche Anforderungen				Customer article number N° article client Artikelnummer des Kunden ART015016								
Steel designation Désignation de l'acier Stahlbezeichnung EN 10088-4-2009 1.4404/L.4401		Product delivery condition Etat de livraison du produit - Lieferzustand Solution treated: Hypertrempe: 1050 °C Loesungsgegl+abgeschreckt: Forced air-water/air forcé-eau Gebläse Luft-Wasser														
Identification of the product Identification du produit - Identifizierung des Erzeugnisses MELTED IN BELGIUM, MADE IN BELGIUM		Dimensions Dimensions - Abmessungen Thickness B09 Epaisseur - Staerke 10,00 mm				Width B10 Largeur - Breite 1250,00 mm		Length B11 Longueur - Laenge		Number of pieces B08 Nb de pièces - Stueckzahl 1		Net weight B13 Poids net - netto Gewicht 23980 KG				
Coil n. N.Bobine - Band Nr. 61512235		Heat n. N.Coulée - Schmelz Nr. 615122														
CHEMICAL ANALYSIS - ANALYSE CHIMIQUE - CHEMISCHE ZUSAMMENSETZUNG																
		C	Si	Mn	Ni	Cr	Mo	Ti	N	S	P	Co				
Required -Exigé %mini Anforderung %maxi		0.030	0.75	2.00	10.00 13.00	16.50 18.00	2.00 2.50		0.100	0.015	0.045					
Cast Analysis Analyse coulée Analyse Schmelze		0.023	0.40	1.27	10.02	17.04	2.02		0.040	0.003	0.029	0.241				
		C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85
Positive material identification carried out : OK Tests de vérification de la conformité de la nuance fournie : OK Verwechslungsprüfung wurde durchgeführt : OK																
		MECHANICAL PROPERTIES - PROPRIETES MECANQUES - MECHANISCHE WERTE EN ISO 6892-1 B / A-SA 370														
Location (1)		Room temperature - Température ambiante - Raumtemperatur										Test temperature (°C) :				
Direction (2)		Yield or proof strength Limite d'élasticité Dehngrenze MPa		Tensile Strength Résistance à la traction Zugfestigkeit MPa		Elongation after fracture Allongement après rupt. Bruchdehnung %		Hardness Dureté Haerte		Yield or proof strength Limite d'élasticité Dehngrenze MPa		Tensile str. Résist. MPa Zugfestigkeit		Elongation % Allongement Bruchdehnung		
Required Exigé Anforderung		Rp0.2% Rp1%		Rm		A5 50mm		HRB		Rp0.2% Rp1%		Rm		A5		
mini maxi		220 260		530 680		40 40		95								
Obtained Obtenu Ergebnisse		325 354		578		54 57		84 81								
		C11	C14	C12	C13	C15	C31	C16	C17	C18	C19					
Impact strength test Essai de résilience Kerbschlagzähigkeitstest		Corrosion test Test de corrosion Korrosionstest		E0.2(T)/R(T) %												
C40 t(°c)		C44		56 C50		C51		C52		C53		C54		C55		
		EN ISO 3651/2 - A:OK		D51		Internal cleanliness:		A:		B:		C:		D:		
Location of the sample (1) Emplacement de l'échantillon Lage des Probenabschnittes 1. Front - Début - Anfang 2. Back - Fin - Ende 3. Middle - Milieu - Mitte		The delivery is in accordance with the order La fourniture est conforme aux exigences de la commande Die Lieferung entspricht den Bestellbedingungen				Packing list Avis d'expédition Lieferscheinnummer 2016038806-20699		Organisation inspection Organisme et/ou service contrôle Überwachungsabteilung Quality Department 24/5/2016 The inspector Le responsable Der Werkssachverständige D. Raemaekers								
Direction of the test pieces (2) Orientation des éprouvettes Probenrichtung T. Transverse - Travers - Quer L. Longitudinal - Long - Laengs		Marking, inspection and measurement : without objection Contrôle de marquage, d'aspect et de dimensions : satisfaisants Prüfung der Stempelung, des Oberflächenaspekts und der Abmessungen : ohne Beanstandung				D01		Z02								

 Correspondance address Adresse de correspondance - Adresse für briefwechsel Swinnenwijerweg 5, Poort Genk 7523 3600 Genk, Belgium	Annex to certificate 16K0027329-01 V01 Annexe du CCPU Anlage Zum Zeugnis		Certificate CCPU - Zeugnis 16K0027329-CE V01
	Certificate of Production Control Number Numéro du certificat de contrôle de la production Zeugnisnummer von Produktionskontrolle 0036-CPD-43-2011		
	Year 11 Année Jahr		
Manufacturer's works order number N° de la commande usine productrice Werksauftragsnummer 80320023/01-20699/596/01	Purchaser and/or consignee Client et/ou destinataire Besteller und/oder Empfänger APERAM SS&S LUXEMBOURG 15 AVENUE DE L'EUROPE 4801 RODANGE LUXEMBOURG		Purchaser's order number N° de commande client Kundenbestellnummer 604009548
			Customer article number N° d'article client Artikelnummer des Kunden ART015016
Identification of the product Identifictaion du produit - Identifizierung des Erzeugnisses	Dimensions Dimensions - Abmessungen		
Coil n° N° de bobine - Band Nr 61512235	Thickness Epaisseur - Dicke 10.00 mm	Width Largeur - Breite 1250.00 mm	Length Longueur - Laenge
Stainless steel / Acier inoxydable / Rostfreier Stahl EN10088-4			
Intended uses : building constructions or civil engineering Usages prévus : construction immobilière ou génie civil Vorgesehene Verwendungen : Hochbauten und Ingenieurbauwerke			
Declaration of performance : Déclaration des performances : Leistungserklärung : DoP available on website Aperam : www.aperam.com/europe/news-publications/documentation/certifications/approvals			
Steel Acier Werkstoff	1.4404/1.4401		
Hot rolled Laminées à chaud Warmgewalzt			
Coil / bobine / Band			
Elongation / Allongement / Bruchdehnung Tensile strength / Résistance à la traction / Zugfestigkeit Yield strength / Limite d'élasticité / Dehngrenze Impact strength / Résistance au choc / Kerbschlagzähigkeit Weldability / Aptitude au soudage / Schweisseignung Durability / Durabilité / Dauerhaftigkeit Characteristics expressed as indicated in the above mentioned DOP Tolerances on dimension and shape / Tolérances sur les dimensions et sur forme / Grenzabmasse und Formtoleranzen : EN ISO 9444-2			
Regulated substance : no performance determined Substance réglementée : aucune performance déterminée Regulierter Stoff: keine Leistung festgestellt			

Продавец (Экспортер) Seller (Exporter)	Сделано в России / Made in Russia ЗАО "ВМК "Красный Октябрь" JSC "VMKKO"		СЕРТИФИКАТ КАЧЕСТВА 3.1 № QUALITY CERTIFICATE 3.1 No.	8652-14
Изготовитель Manufacture	400007 Россия, Волгоград, пр. Ленина, 110 Russia Volgograd, Lenina avenue, 110		согласно EN10204:2005 according to EN10204:2005	

 0036	JSC "VMKKO" Lenin, Av, 110, Volgograd, 400007, Russia Federation 13	EN 10025-2:2004 S355J2 (1.0577) Dangerous substance: No performance determined
	0036-CPR-M-60-2014	

Грузополучатель, адрес, страна Consignee, address, country GERMANY.	Заказ № Order No.	L3168
	Контракт № Contract No.	CH 756-50508689/110-13
	Вагон № Freight car No.	A209CH161/CA282761.
	Стандарт Standard	EN 10025, AD2000-W13, EN 10060
Количество мест: Number of packages:	4	Масса нетто, т (Mass net, t): 20,330 Масса брутто, т (Mass gross, t): 20,398
Наименование товара Description of goods	HOT ROLLED ROUND BARS PEELED Melting in electric arc furnace. Vacuum degassed. 1. NORMALIZED	

№№ п/п Item No.	Номера плавков Melt No.	Марки Steel grade	№ спец. Spec	Размеры (мм) / Dimensions (mm)			связки/пачки bundles/packets	Масса нетто (т) / Mass net (t)		
				толщ./диам. thickness, diameter	ширина/ внутр. диам. width, inner diameter	длина length		pieces in bundles		bundles
								Кол-во Quantity	Вес связки t	
1.	1467741	S355J2+N	121-109	Ф270		5 500 - 5 700	4	2 2 2 2	4,970 4,940 5,220 5,200	20,330
Итого : Масса брутто, т (Mass gross, t): 20,398							4	8		20,330

Массовая доля элементов (%) (по ковшевой пробе) (%) (according to ladle sample)													
C	Mn	Si	P	S	Cr	Ni	Cu	Mo	Al	N	H	Свк	
0.17	1.23	0.25	0.011	0.027	0.08	0.24	0.18	0.040	0.027	0.010	1,1 ppm	0.43	

№ п/п Item No.	Механические свойства (на образцах) Mechanical characteristics (on sample)						Твердость на образцах Hardness in samples	Термообработка образцов Heat treatment of samples	Места замеров Test location	Твердость в сост. поставки. Hardness in delivery condition	Зерно Grain	Горячее крупен. Hot insining
	временное сопротив-е ultimate strength	предел текуч. yield point	относит. удл. не раскалыва elongation	относит. сужение reduction in area	ударная вязкость impact	работа удара impact						
	N / mm ²	N / mm ²	%	%	дж(Д)/см ²	дж(Д)						
1						ISO-V-20°C						
	548	374	19	61		100-103-97				163-163	8	
	537	364	20	62		avg 100						
						ISO-V-50°C						
						68-65-69						
						avg 67						

№ в п Item No.	Неметаллические включения (баллы) Non-metallic inclusions (points) DIN50602								Макроструктура Macrostructure
	A		B		C		D		
	thin	thick	thin	thick	thin	thick	thin	thick	
1									GOOD

№№ пп Item No.	Неметаллические включения Non-metallic inclusions DIN50602
1	K4 = 16 (S:11; O:5)

№№ пп Item No.	Коэффициент затяжки Reduction ratio	Микроструктура Microstructure	Степень полосчатости Banding degree (grade)	Карбид сетка Carbide network	Обезугле- живание Decarburization	Идеальн. диаметр Ideal Diameter	Контроль не- антисмешивание Anti-mixture control
1	6.13						

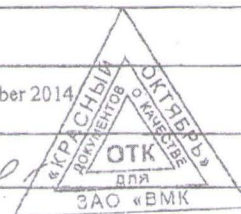
УЗК Ultrasonic test
1 - EN 10308 class 3

Экологический контроль: свободно от ртути. Проверено на отсутствие радиоактивности.
Ecological control: mercury free. Goods are non-radioactive.

Маркировка Marking	1 Grey 355N.
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Примечание Note	Сталь не является мартенситно стареющей. Steel is not martensite killed
	Материал поставлен в соответствии с требованиями по качеству продукции, согласно указанному номеру контракта и спецификациям. The materials supplied are in compliance with the quality requirements of the contract number and specifications noted.
	При переписке по вопросу качества ссылаться на № сертификата. While corresponding concerning the quality, refer to No. certificate.

Certificate group JSC "VMKKO"		Дата Date	06 October 2014
Inspector -	Vasichkina	(Подпись) (Signature)	<i>Vase</i>



4193,7x40

4193,7x40



HUBEI XINYEGANG STEEL CO., LTD.
NO. 316 HUANGSHI AVENUE, HUANGSHI, HUBEI, CHINA, P.C.435000
QUALITY CERTIFICATE
ACC TO EN10204 3.1



DESCRIPTION OF GOODS: PRIME NEW SEAMLESS STEEL TUBE
S355L2H as per EN10210-1/E355 as per EN10297-1/ST52.0 as per DIN1629 in connection with AD2000W4, P355N as per EN 10216-3 in connection with PED97/23/EG

Batch No.	Grade	Heat No.	Size (mm)	Pieces	Bundles	Weight (MT)	Total Length (M)	Delivery Condition	Manufacture Process
T215022520	P355N/S355L2H/E355/ST52.0	50809950	193.7x40	5	3	5.598	36.5	normalized	EMF+LP+RH/VP+CC

I. Chemical Composition (%):													
Element	%	C	Si	Mn	P	S	Cr	Ni	Mo	Cu	Al	V	Nb
Lead	1	0.16	0.4	1.43	0.009	0.006	0.07	0.04	0.01	0.05	0.029	0.06	0.0022
II. Mechanical Properties Examination:													
Product	2												

1. tensile test						2. impact tests:			
temperature (°C)	direction	lim (Mpa)	Rp0.2 (Mpa)	A (%)	Z (%)	temperature (°C)	dimension (mm)	Impact N-Torch Depth	direction
R. M temp	Longitudinal	559	564	377	373	-40	10x10x55	2mm	Transverse
						-20	10x10x35	2mm	Transverse
						-50	10x10x55	2mm	Transverse

3. ringlike tensile test : good

III. NDT:							
result:	good	Ultrasonic Test	result:	good	Eddy Current Test	result:	good
standard:	EN10246-7		standard:	EN10246-1		standard:	EN10246-1
test level:	U2-C		test level:	12.5%		test level:	12.5%
direction:	longitudinal		direction:	transverse+longitudinal		direction:	transverse+longitudinal
sampling location:	full length		sampling location:	full length		sampling location:	full length

IV. Heat Treatment: 1. normalizing temperature (°C): 920-940 2. normalizing soaking time (min): 98 3. normalizing cooling method : air cooling

V. Dimensions, Appearance and Surface Quality:

1. dimensions, appearance and surface quality : good

Note: (1) We hereby certify that the material herein described has been manufactured, sampled, tested and inspected in accordance with the requirements of specifications and purchase order, and meet the requirements (2) When there is any complaint, you are kindly requested to mark the Steel Grade, Heat No., Size, Delivery Date, Causes and reserve the material in the condition of delivery (3) Our company's quality management system has been certified by TÜV SÜD for fulfilling all requirements of ISO9001:2008, ISO/TS 16949.

#By CE, AD2000W4, PED97/23 EG certification, Rust protection complies with the regulations of the EU and is not harmful to the environment and to health. The tubes are free from any harmful radioactive contamination

Date: 2015-04-10
Inspector: Wang Yuan
Manager of Inspection: Liu Guanghui
Signature: 王元



HUBEI XINYEANG STEEL CO., LTD.
NO. 316 HUANGSHI AVENUE, HUANGSHI, HUBEI, CHINA P.C.435000
QUALITY CERTIFICATE
ACC TO EN10204 3.1



DESCRIPTION OF GOODS: PRIME NEW SEAMLESS STEEL TUBE

S355J2H as per EN10210-1/E355 as per EN10297-1/ST52.0 as per DIN1629 in connection with AD2000W4, P355N as per EN 10216-3 in connection with PED97/23/EC

Batch No.	7115009460	Grade	-1035N/S355J2H/E355/ST52.0	Heat No.	50107510	Size (mm)	95x25	Pieces	21	Weight (kg)	4.89	Total Length (m)	113.9	Delivery Condition	normalized	Manufacture Process	Hot-rolled
-----------	------------	-------	----------------------------	----------	----------	-----------	-------	--------	----	-------------	------	------------------	-------	--------------------	------------	---------------------	------------

I. Chemical Composition (%):																	
Element	%	C	Si	Mn	P	S	Cr	Ni	Mo	Cu	Al	V	Ti	N			
Ladle	1	0.17	0.32	1.10	0.016	0.007	0.13	0.01	0.01	0.04	0.027	0.06	0.003	0.0028	0.0067	0.43	0.18
Product	2																0.0658

II. Mechanical Properties Examination									
1. tensile test									
temperature (°C)	direction	Re (MPa)	Rp0.2 (MPa)	A (%)	Z (%)				
K.M temp	Longitudinal	562	558	389	375	30.5	31.0		
2. Impact tests:									
temperature (°C)	dimension (mm)	Impact N-torch Apin	direction	absorbed energy KV2 (J)					
-40	10×10×55	2mm	Transverse	128	153	120			
-20	10×10×55	2mm	Transverse	137	168	140			
-50	10×10×55	2mm	Transverse	111	139	97			

III. NDT:																	
Ultrasonic Test									Eddy Current Test								
result:	good								result:	Good							
standard:	EN10246-7								standard:	EN10246-1							
test level:	12-1								test level:	12 SKS							
direction:	longitudinal								direction:	transverse/longitudinal							
sampling location:	full length								sampling location:	full length							

IV. Heat Treatment:																	
1. normalizing temperature (°C): 920-940																	
2. normalizing soaking time (min): 55																	
3. normalizing cooling method: air cooling																	

V. Dimensions, Appearance and Surface Quality:																	
1. dimensions, appearance and surface quality: good																	

Note:																	
(1) We hereby certify that the material herein described has been manufactured, sampled, tested and inspected in accordance with the requirements of specifications and purchase order, and meet the requirements.										Date: 2015-04-20							
(2) When there is any complaint, you are kindly requested to mark the Steel Grade, Heat No., Size, Delivery Date, Cause and reserve the material in the condition of delivery.										Inspector: Ming Chao							
(3) Our company's quality management system has been certified by TUV SUD for fulfilling all requirements of ISO9001:2008, ISO/TS 16949.										Manager of Inspection: Liu Guanghui							
#By CE, AD2000W4, PED97/23/EG certification, full protection complies with the regulations of the EU and is not harmful to the environment and to health. The tubes are free from any harmful radioactive contamination.										石梅华							

Steel from electric arc furnace

INSPECTION DOCUMENT N.: 828033

OFFICIAL REGULATION: EN 10025-2

INSPECTION CERTIFICATE 3.1 - EN10204

ENCLOSE CERTIFICATION **CE**

AGENT ORDER N. 210/1088418

CUSTOMER CODE 950

CUSTOMER ORDER N. 110432-8159

CONSIGNEE

VON ASCHENBACH & VOSS

GRADE S355J2+AR

24314501

LOADING NUMBER: 308964

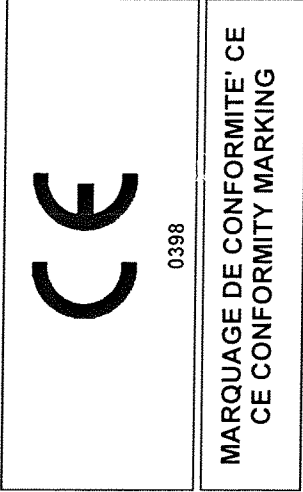
LOADING DATE: 09/06/2015

INTERNAL ORDER: E 806333


IT.	CAST	SECTION	DIMENSIONS mm	CE	LENGTH mt	C	Si	Mn	P	S	Cu	Cr	Ni	V	Mo	Ti	Nb	N	Ceq	Al
1	LM 97182	ANGLE	60X60X6	0398	12,00	0,12	0,19	1,09	0,019	0,025	0,30	0,20	0,15	0,064	0,02	0,0015	0,002	0,0049	0,38	0,0012

IT.	CAST	ORIGIN	PRODUCT REGULATION	TEST NUM	Bd/s n.	WEIGHT Kg	TENSILE TEST ReH/MPa Rm/MPa A5%	2%	IMPACT TEST Kv/Kcu 300/10 J	°C	RATIO REDUC.	BEND <	TEST D	GRAIN	HARDNESS	INSPECTION ANTI SUP. INSIDE MIX.
1	LM 97182	TRITH	EN 10056-2	6004687	2	9.710	424 574 27,7		68 70 70	-20						

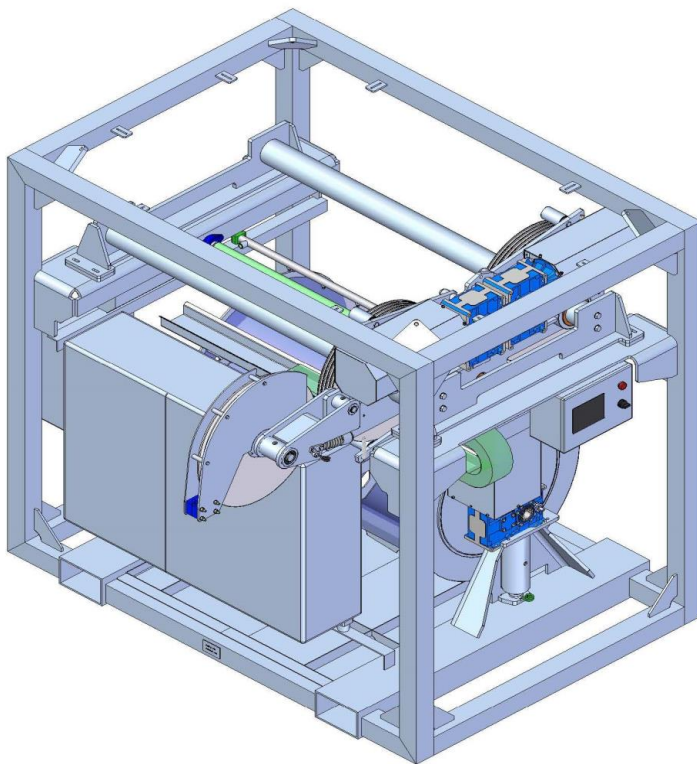
INSPECTOR				FACTORY		DATE		QUALITY CONTROL DEPT		QUALITY ASSURANCE DEPT	
				TRITH ST LEGER		09/06/15		Julien Hermand		Sebastien Crom	



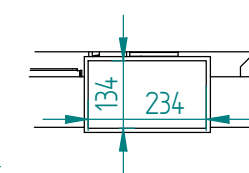
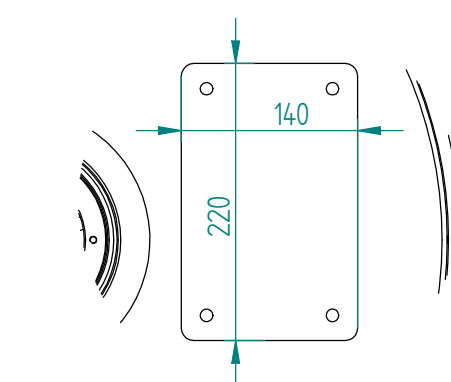
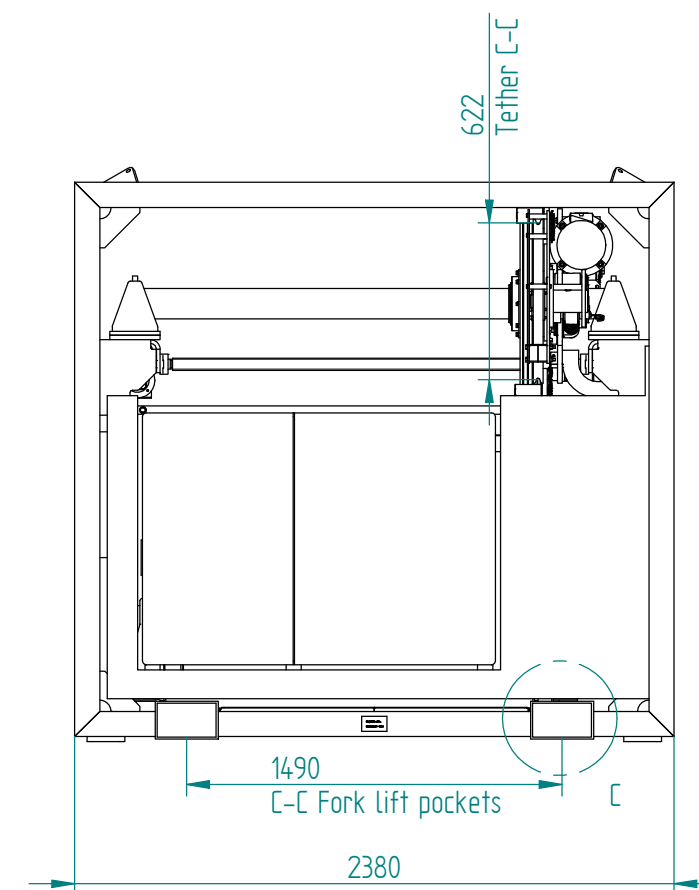
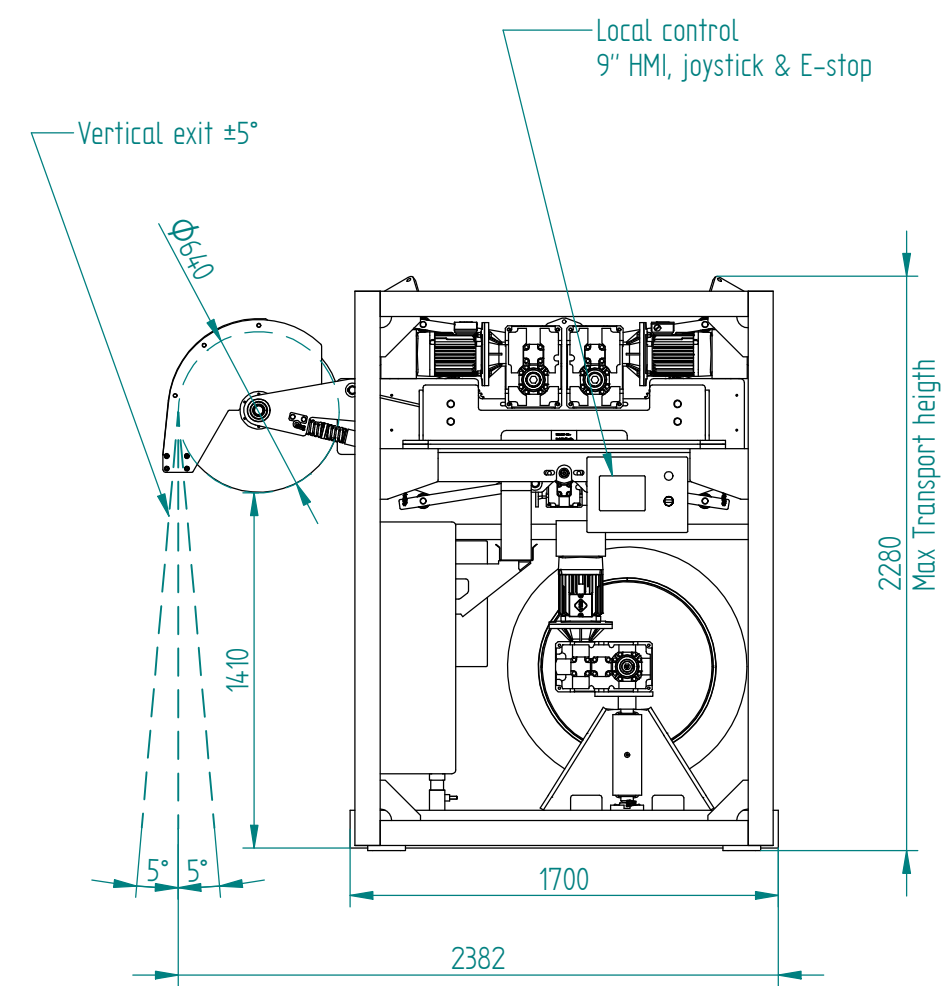
INSPECTION DOCUMENT N.: 828033/
S355J2+AR - EN 10025-2

LME DECLARE QUE LES PRODUITS INDIQUE SONT CONFORMES AUX EXIGENCES PREVUES PAR LA LEGISLATION LME DECLARES THAT THE SUITABLE PRODUCTS ARE CONFORMING TO THE REQUISITE FORESEEN BY THE LEGISLATION				
EN 10025-1 PRODUITS EN ACIER LAMINES A CHAUD HOT ROLLED STRUCTURAL STEEL PRODUCTS USAGE: STRUCTURES METALLIQUES STRUCTURES MIXTES ACIER BETON USE: METALLIC STRUCTURES MIXED STEEL-CONCRETE STRUCTURE		Elongation - Elongation Résistance à la traction - Tensile Strength Limite d'élasticité - Yield Strength Résistance aux chocs - Impact Strength Soudabilité - Weldability Durabilité - Durability: Composition chimique - Chemical composition		Comme indiqué sur DOP As indicated in the DOP
Usine Factory	Adresse Address		Année Year	Certificat de contrôle de la production Production Control Certificate
TRITH ST LEGER	Rue Emile Zola		15	 0398 / CPD / MP / 06.002 / 02

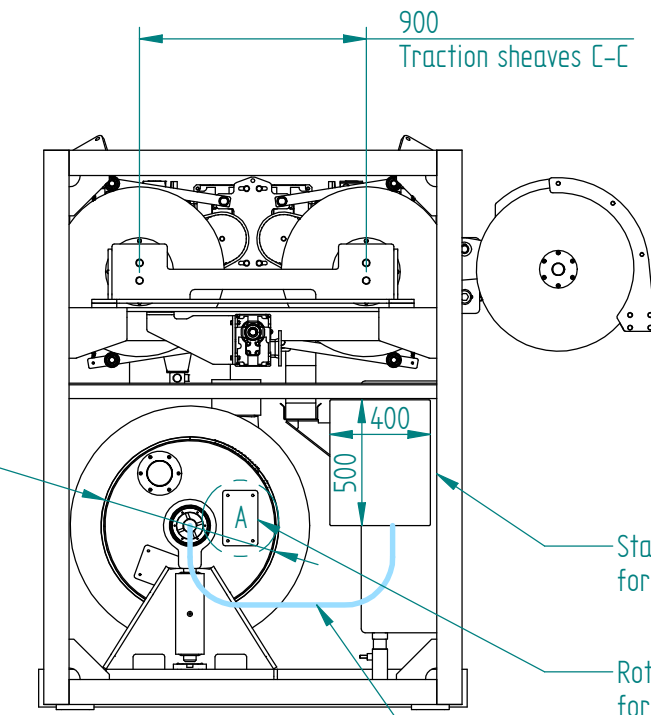
SHG-000973 - 1
MODUS Seabed
OE-2000-A3-4-7-2-FS-NZ-003



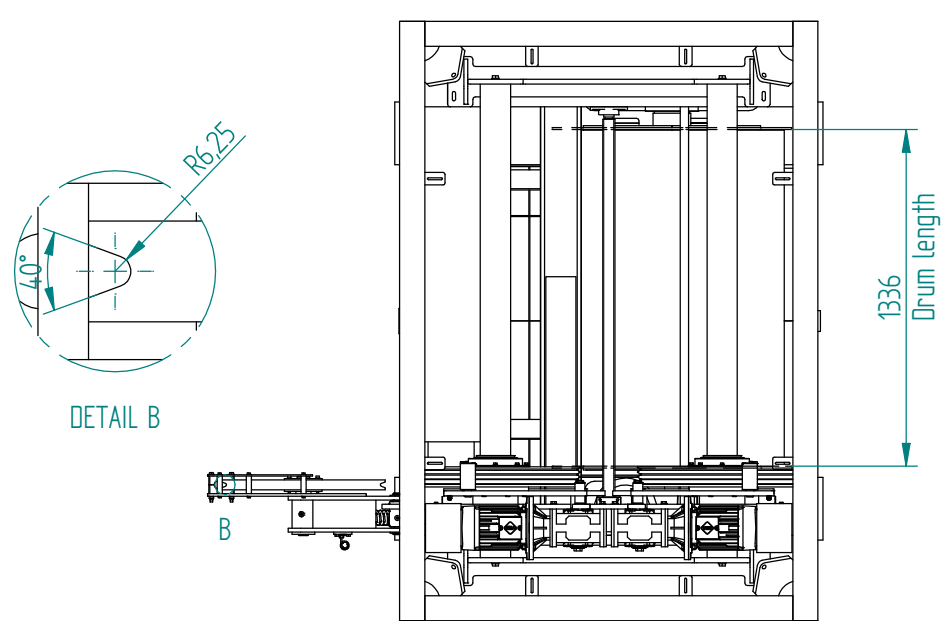
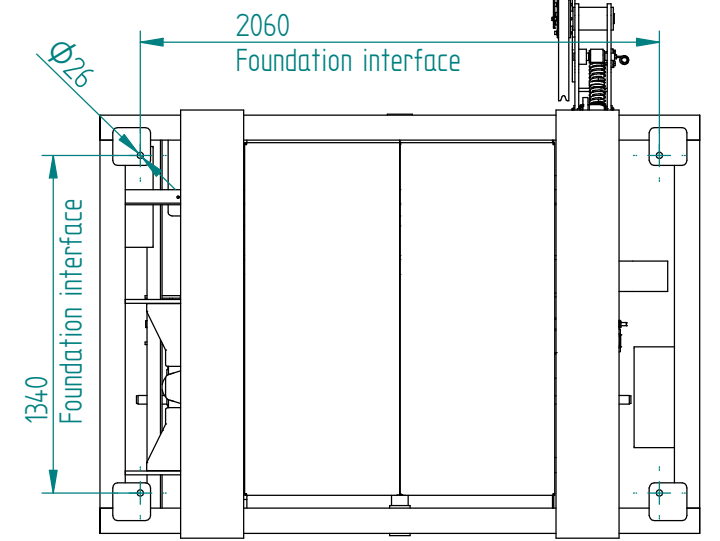
MATERIAL CERTIFICATES	1
PRODUCTION LOGS	2
WELDING PROCEDURE SPECIFICATION S (WPS)	3
CERTIFICATES FOR WELDERS	4
NDT REPORTS	5
CERTIFICATES FOR NDT INSPECTORS	6
PRODUCT RELATED CERTIFICATES	7
TEST REPORTS	8
PAINT REPORT	9
FACTORY ACCEPTANCE TEST (FAT)	10



DETAIL C



Bolt on foundation
1 pcs M24 bolt in each corner



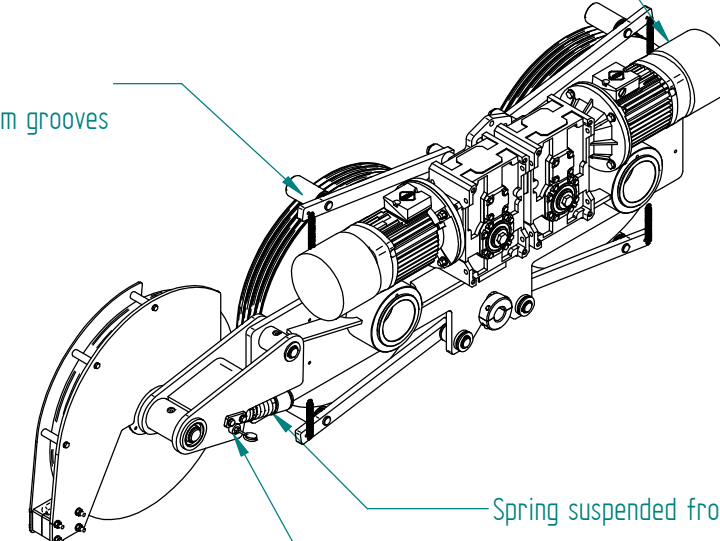
ILO 1.5.2 Lifting frame
With dedicated lifting sling

Electric motors for storage system
2.2kW 4-pole motor with fail safe electrical brakes
and forced cooling

Electrical interface
Supply: 380V @ 50 Hz, 440V @ 60Hz
Power consumption: approx 7 kW

Electric motors for storage system
2.2kW 4-pole motor with fail safe electrical brakes
and forced cooling

Sheave material : PAG6
Traction sheaves fitted with rubber inserts in bottom grooves
for higher friction



Main electrical cabinet

Drum cooling
7 Water spray jets evenly distributed

Protective fiber gratings on all accesible sides

Drip tray outlet 1,5" Female BSP

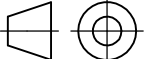

Drum fitted with Lebus shells for Ø12mm Tether

Drum cooling interface
Sea water supply,
connection 1" Hose fitting

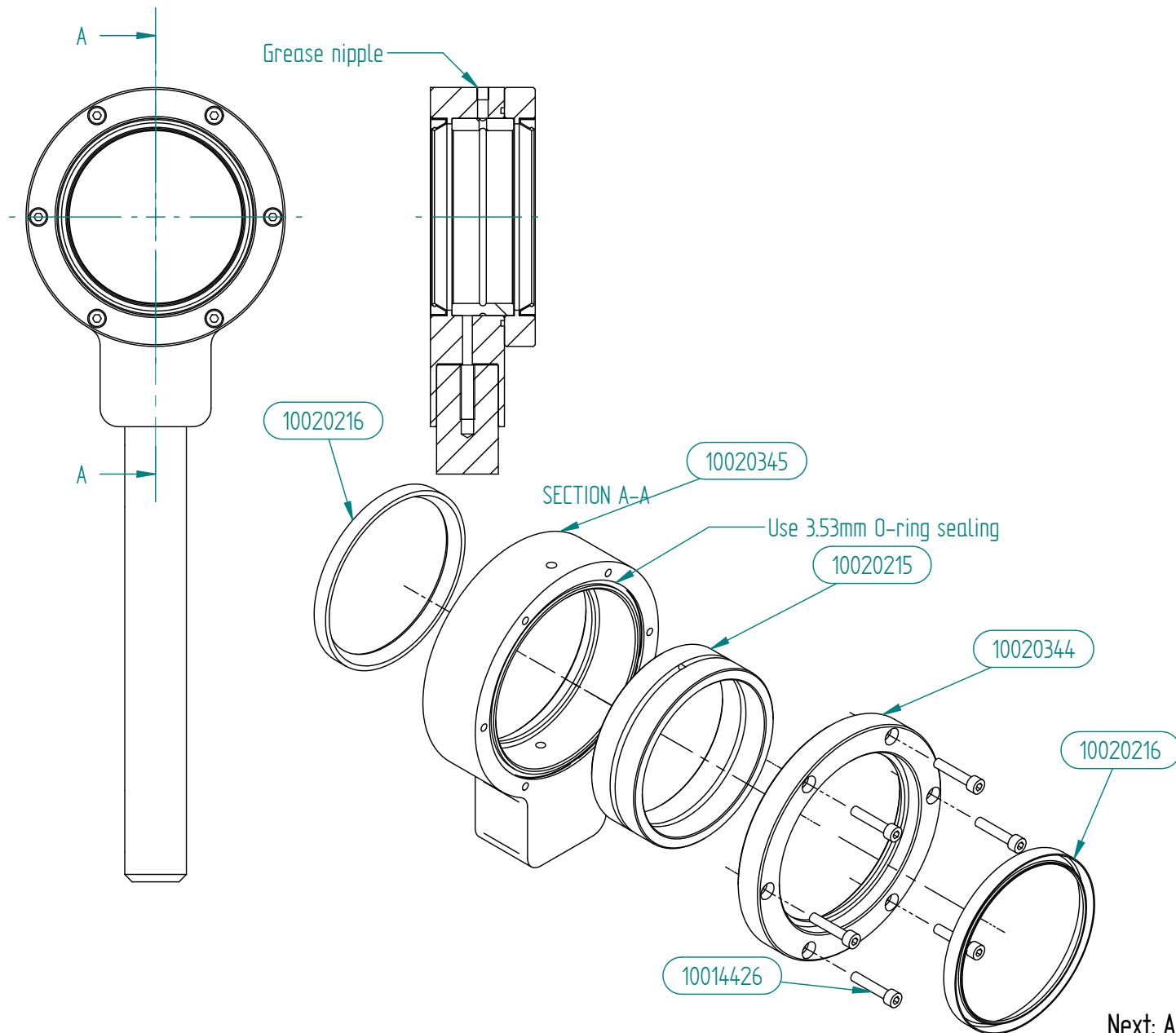
Winch - Specification

Design factor (psi) : 2
Design temperature : -20 to +45deg C
SWL : 2 kN
Line speed : 0 - 90 m/min
Suitable for Ø11,3mm & Ø12,0mm Tether

Sheet 1 of 2: General Arrangement
Sheet 2 of 2: Lifting set

Customer Name/ Customer Drawing/ Class:												
Mat: -					Weight: 3051 kg		<div>Projection:</div> <div></div>		Approved	28-06-2016	PF	
0-3				19-09-2016	MKJ	General Tolerances:			Checked	27-06-2016	CS	
Revision	Change			Date	Name	Tolerances: ISO 2768-1 m				<div></div>		
						Tolerances: EN ISO 13920-BF						
Subject:												
OE-2000-A3-4-7-2-FS-NZ-003												
<div></div>						SH Group as Kuopiovej 20 DK-5700 Svendborg + 45 62 21 78 10 www.shgroup.dk			Drawn by:		Format:	Date:
						MKG		A2	06-06-2016			
						Drawing no:				Sheet:		
						10020171				1 OF 2		
						Project ID:			Production ID:			
Unauthorized use of this drawing, which may not be copied, is subjected to prosecution according to the law of illoyal competition												

Unauthorized use of this drawing, which may not be copied, is subjected to prosecution according to the law of illoyal competition



Object ID	QTY	Subject	Mass	Raw material	POS
10014426	6	Bolt-M8-40-ISO 4762-None-A4-70-	0 kg		1
10020215	1	Sliding Bearing-140-160-50-	2 kg	10020103 Sliding Bearing-140-160-90--CuSn7ZnPb (JM1)	2
10020216	2	Simmering-CBRFF 140X160X13-NBR-70	0 kg		3
10020344	1	Bearing House-Cap for Bearing housing	3 kg	10010222 Plate-NV D36-25---3.1-Raw	4
10020345	1	Bearing House-For axle mount $\phi 160$	9 kg	10013536 Plate-NV E36-60,0--3.1-Raw	5
10020513	1	Drum support rod	6 kg	10011597 Piston rod Bar-50--AISI 329-_-_-_-	6*

Customer Name/ Customer Drawing/ Class:

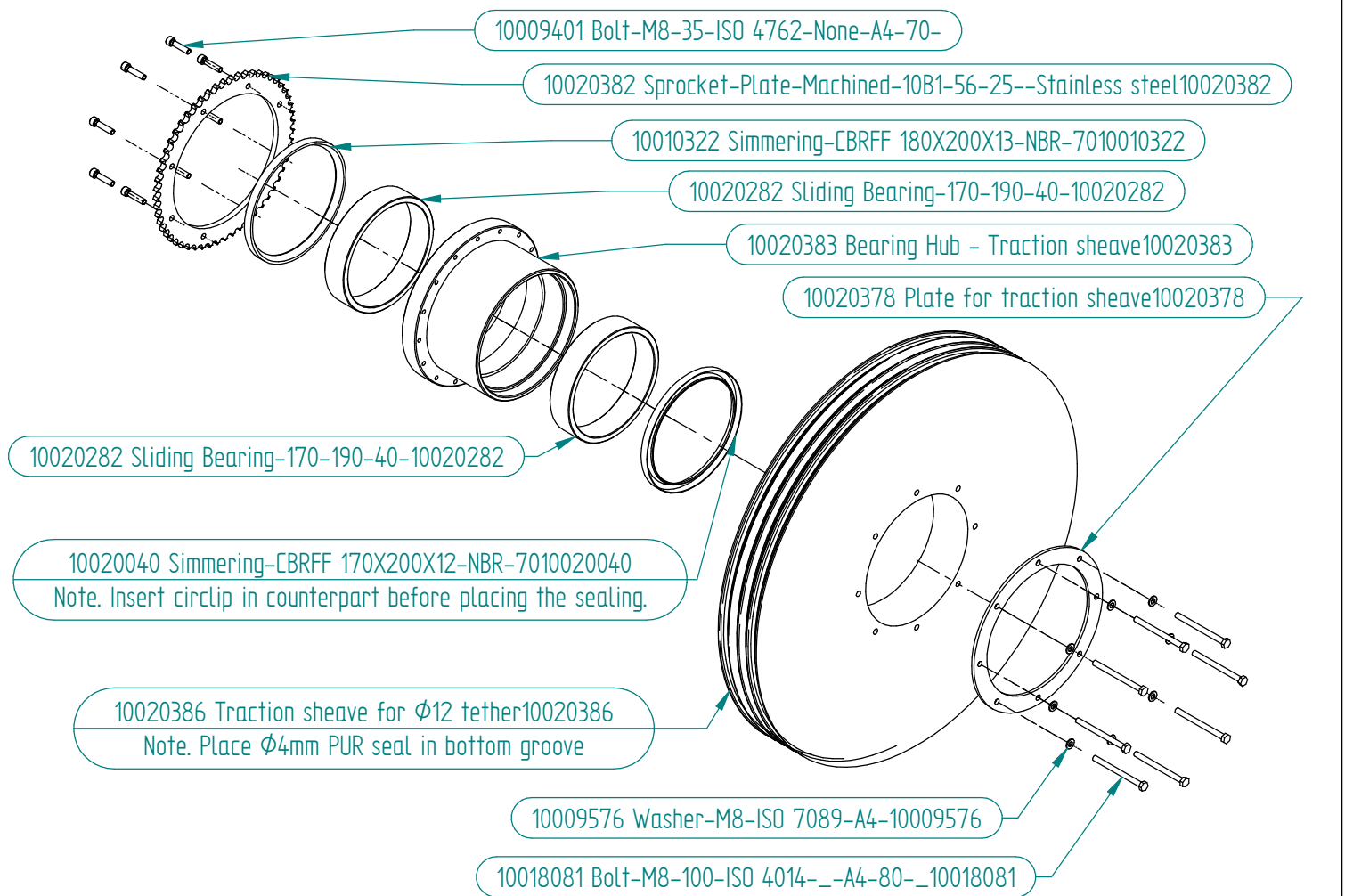
Mat: -				Weight: 20 kg	Projection:	Approved		
				General Tolerances:		Checked		
Revision	Change	Date	Name	Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF			Date	Name

Subject:

Bearing House-With bronze bearing $\phi 140$


	SH Group as Kuopiovej 20 DK-5700 Svendborg + 45 62 21 78 10 www.shgroup.dk		Drawn by: MKJ	Format: A4	Date: 14-06-2016
			Drawing no: 10020346	Sheet: 1 OF 1	
			Project ID:	Production ID:	

Unauthorized use of this drawing, which may not be copied, is subjected to prosecution according to the law of illoyal competition



Object ID	QTY	Subject	Mass	Raw material	POS
10009401	8	Bolt-M8-35-ISO 4762-None-A4-70-	0 kg		1
10009576	8	Washer-M8-ISO 7089-A4-	0 kg		2
10010322	1	Simmering-CBRFF 180X200X13-NBR-70	0 kg		3
10018081	8	Bolt-M8-100-ISO 4014--A4-80--	0 kg		4
10020040	1	Simmering-CBRFF 170X200X12-NBR-70	0 kg		5
10020282	2	Sliding Bearing-170-190-40-	4 kg	10020039 Sliding Bearing-170-190-100--CuSn7ZnPb (JM1)	6
10020378	1	Plate for traction sheave	1 kg	10011414 Plate-AISI 304-5,0-1250x2500--2B	7
10020382	1	Sprocket-Plate-Machined-10B1-56-25--Stainless	2 kg	10020379 Sprocket-Plate-10B1-56-25--Stainless steel	8
10020383	1	Bearing Hub - Traction sheave	13 kg	10020384 Pipe-Seamless-267--50-NV D36-3.1-HOT	9
10020386	1	Traction sheave for $\phi 12$ tether	29 kg	10016869 PA6G - Black--	10

Customer Name/ Customer Drawing/ Class:

Mat: -				Weight: 71 kg	<div>Projection:</div> <div></div>	Approved	28-06-2016	PF
0-1	Attributes updated	08-07-2016	MKJ	General Tolerances:		Checked	27-06-2016	CS
Revision	Change	Date	Name	Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF			Date	Name

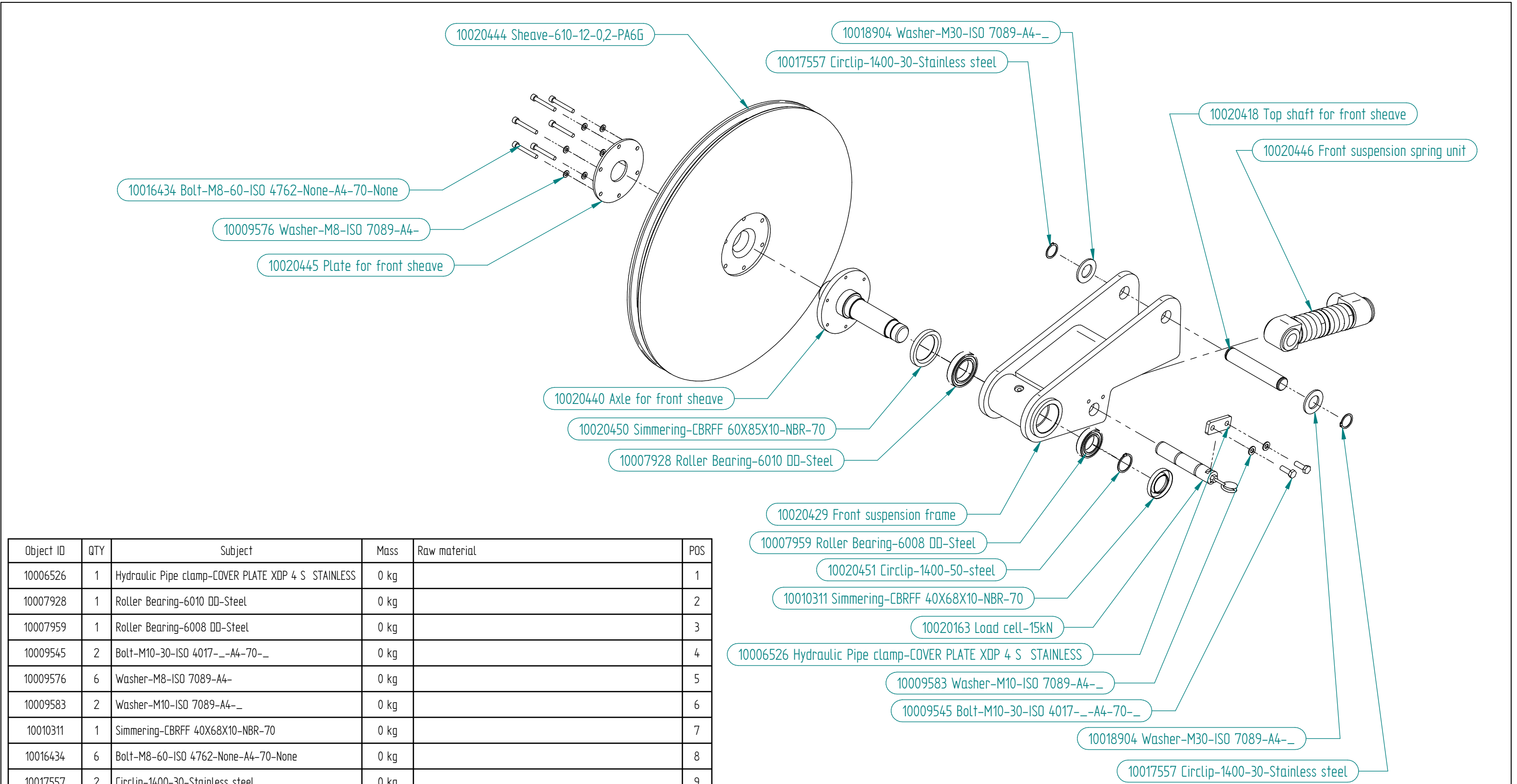
Subject:

Traction sheave assembly




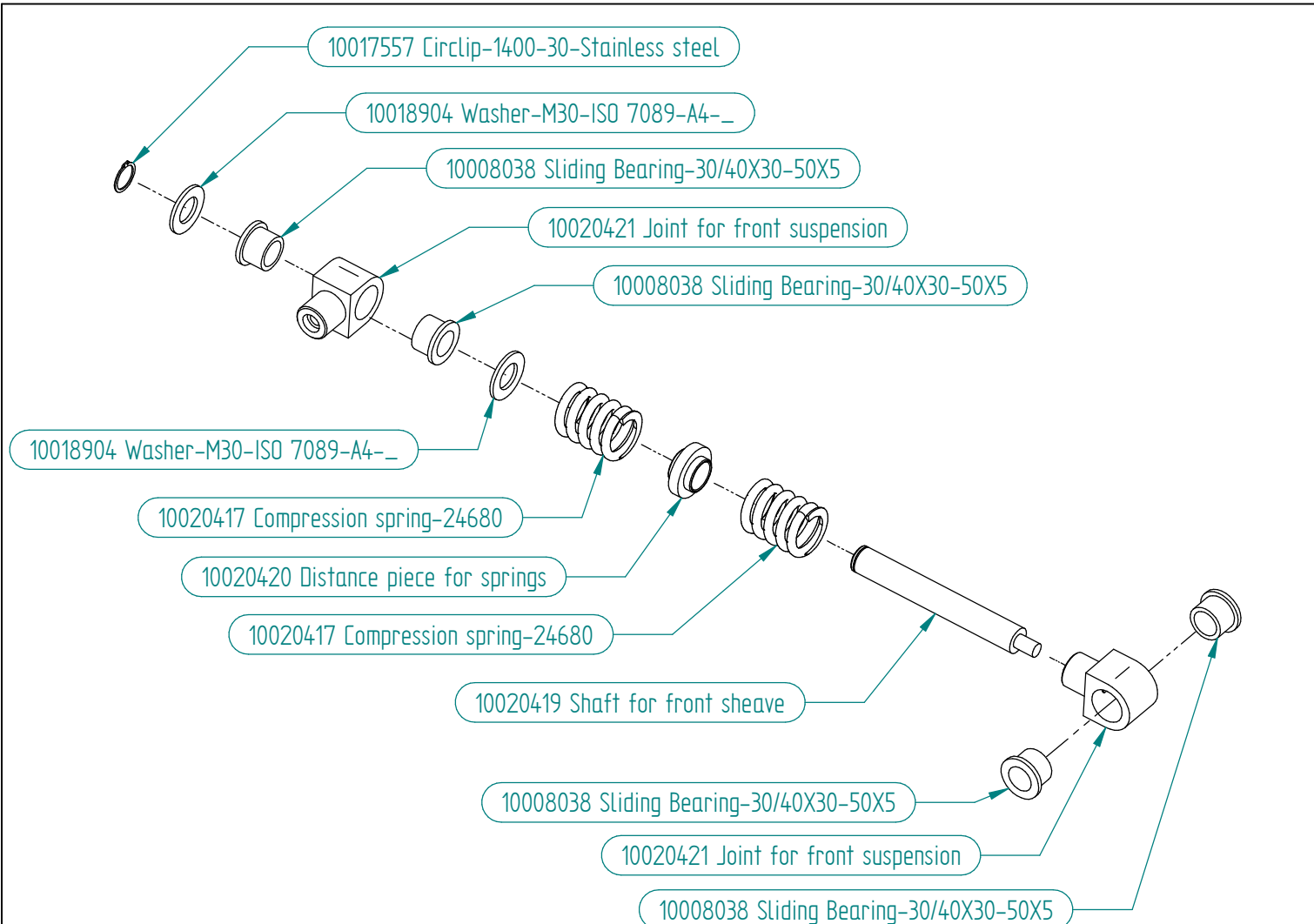
SH Group as
Kuopiovej 20
DK-5700 Svendborg
+ 45 62 21 78 10
www.shgroup.dk

Drawn by: MKJ	Format: A4	Date: 15-06-2016
Drawing no: 10020388		Sheet: 1 OF 1
Project ID:		Production ID:



Object ID	QTY	Subject	Mass	Raw material	POS
10006526	1	Hydraulic Pipe clamp-COVER PLATE XDP 4 S STAINLESS	0 kg		1
10007928	1	Roller Bearing-6010 DD-Steel	0 kg		2
10007959	1	Roller Bearing-6008 DD-Steel	0 kg		3
10009545	2	Bolt-M10-30-ISO 4017-_-A4-70-_-	0 kg		4
10009576	6	Washer-M8-ISO 7089-A4-_-	0 kg		5
10009583	2	Washer-M10-ISO 7089-A4-_-	0 kg		6
10010311	1	Simmering-CBRFF 40X68X10-NBR-70	0 kg		7
10016434	6	Bolt-M8-60-ISO 4762-None-A4-70-None	0 kg		8
10017557	2	Circlip-1400-30-Stainless steel	0 kg		9
10018904	2	Washer-M30-ISO 7089-A4-_-	0 kg		10
10020163	1	Load cell-15kN	1 kg		11
10020418	1	Top shaft for front sheave	1 kg	10011596 Piston rod Bar-30-_-AISI 329-_-_-_-_-	12
10020429	1	Front suspension frame	23 kg		13
10020440	1	Axle for front sheave	5 kg		14
10020444	1	Sheave-610-12-0,2-PA6G	15 kg	10016869 PA6G - Black-_-	15
10020445	1	Plate for front sheave	1 kg	10011414 Plate-AISI 304-5,0-1250x2500-_-2B	16
10020446	1	Front suspension spring unit	5 kg		17
10020450	1	Simmering-CBRFF 60X85X10-NBR-70	0 kg		18
10020451	1	Circlip-1400-50-steel	0 kg		19


Customer Name/ Customer Drawing/ Class:									
Mat: -				Weight: 51 kg		Projection:		Approved 28-06-2016 PF	
0-1		Object 10020450 Updated		12-08-2016 MKJ		General Tolerances:		Checked 20-06-2016 CS	
Revision		Change		Date		Name		Date Name	
Subject:									
Front sheave unit									
						Drawn by:		Format:	
						MKJ		A3	
						Drawing no:		Date:	
						10020443		16-06-2016	
						Project ID:		Sheet:	
								1 OF 1	
						Production ID:			
Unauthorized use of this drawing, which may not be copied, is subjected to prosecution according to the law of illoyal competition									



Object ID	QTY	Subject	Mass	Raw material	POS
10008038	4	Sliding Bearing-30/40X30-50X5	1 kg		1
10017557	1	Circlip-1400-30-Stainless steel	0 kg		2
10018904	2	Washer-M30-ISO 7089-A4-_-	0 kg		3
10020417	2	Compression spring-24680	1 kg		4
10020419	1	Shaft for front sheave	1 kg	10011596 Piston rod Bar-30-_-AISI 329-_-_-_-	5
10020420	1	Distance piece for springs	0 kg	10015038 Round Bar-60-_-AISI 316-_-_-_-Raw	6
10020421	2	Joint for front suspension	2 kg	10014093 Plate-NV D36-50-_-3.1-Raw	7

Next: A

Customer Name/ Customer Drawing/ Class:

Mat: -				Weight: 5 kg	<div>Projection:</div> <div></div>	Approved	28-06-2016	PF
0-0		16-06-2016	MKJ	General Tolerances:		Checked	20-06-2016	CS
Revision	Change	Date	Name	Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF			Date	Name

Subject:

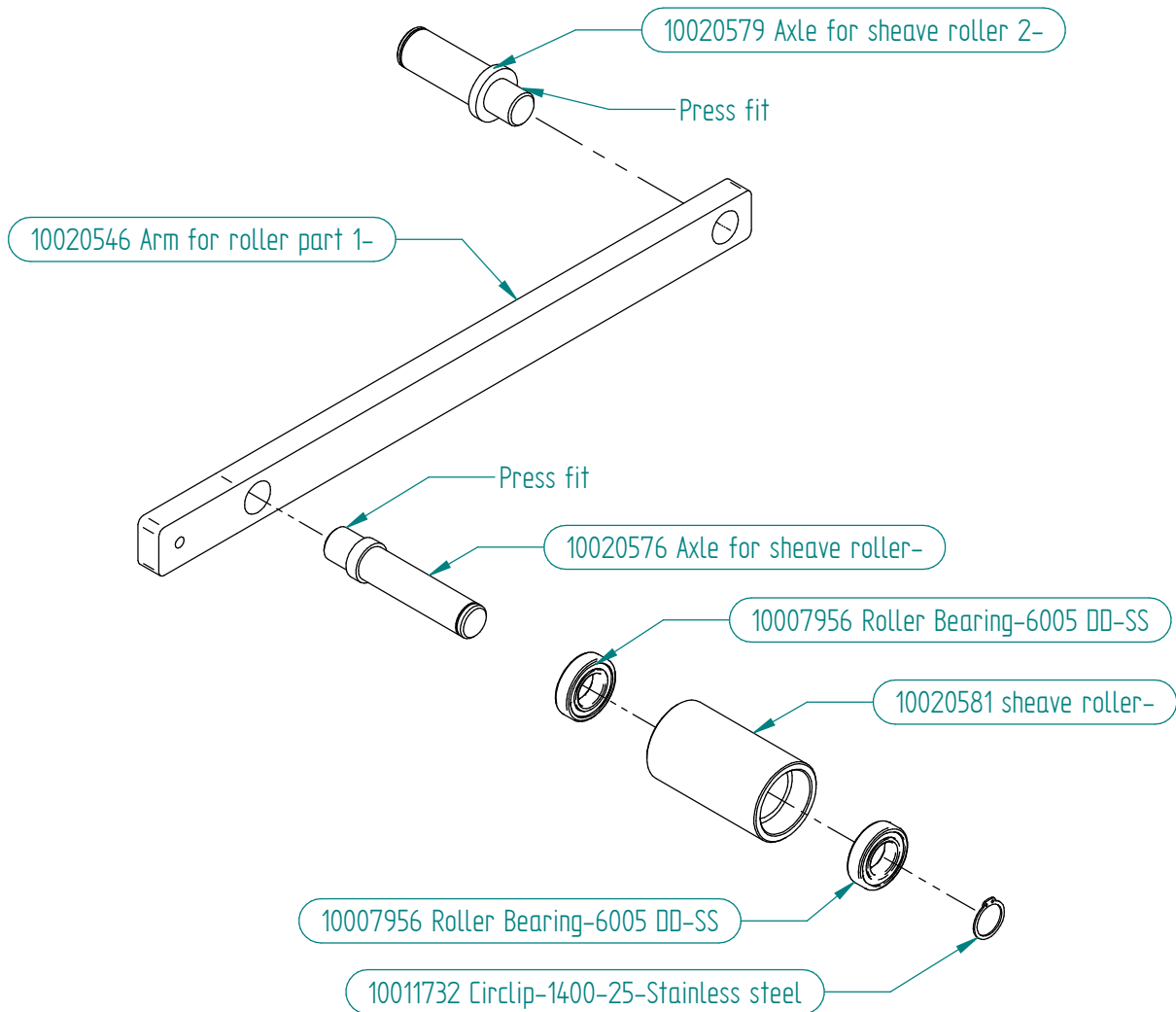
Front suspension spring unit



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Drawn by: MKJ	Format: A4	Date: 16-06-2016
Drawing no: 10020446		Sheet: 1 OF 1
Project ID:		Production ID:


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Object ID	QTY	Subject	Mass	Raw material	POS
10007956	2	Roller Bearing-6005 DD-SS	0 kg		1
10011732	1	Circlip-1400-25-Stainless steel	0 kg		2
10020546	1	Arm for roller part 1-	3 kg	10011422 Flat Bar-40-20-AISI 304---	3
10020576	1	Axle for sheave roller-	1 kg	10011527 Round Bar-30--AISI 316----Raw	4
10020579	1	Axle for sheave roller 2-	1 kg	10013511 Round Bar-40--AISI 304----Raw	5
10020581	1	sheave roller-	1 kg	10018384 Pipe-Hollow bar-Ø063-Ø040--AISI 316-----	6

Next: A

Customer Name/ Customer Drawing/ Class:

Mat: -				Weight: 6 kg	<div>Projection:</div> <div></div>	Approved	28-06-2016	PF
0-0		23-06-2016	MKJ	General Tolerances:		Checked	23-06-2016	CT
Revision	Change	Date	Name	Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF			Date	Name

Subject:

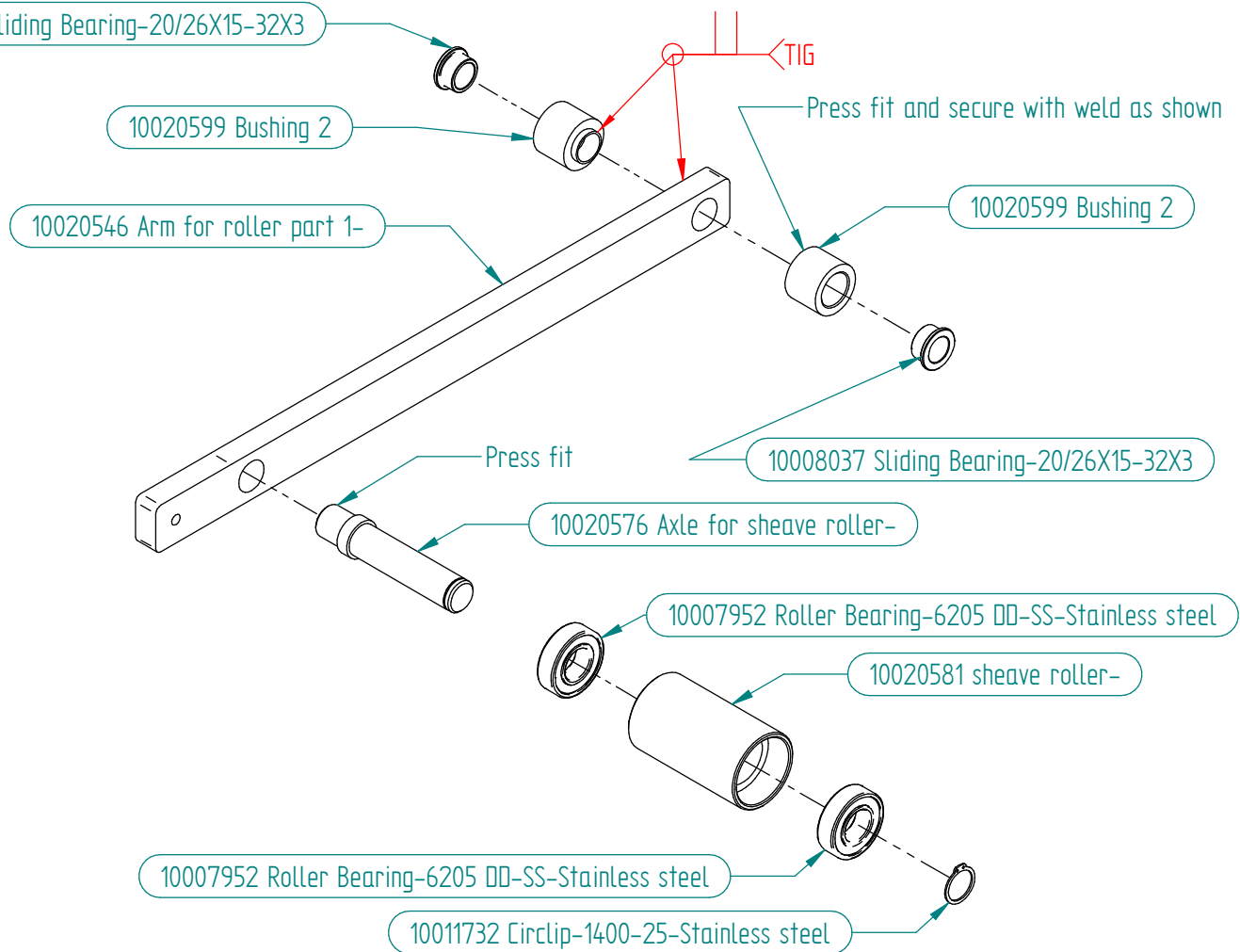
Sheave roller assembly-



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+ 45 62 21 78 10
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Drawn by: MKJ	Format: A4	Date: 23-06-2016
Drawing no: 10020595		Sheet: 1 OF 1
Project ID:		Production ID:

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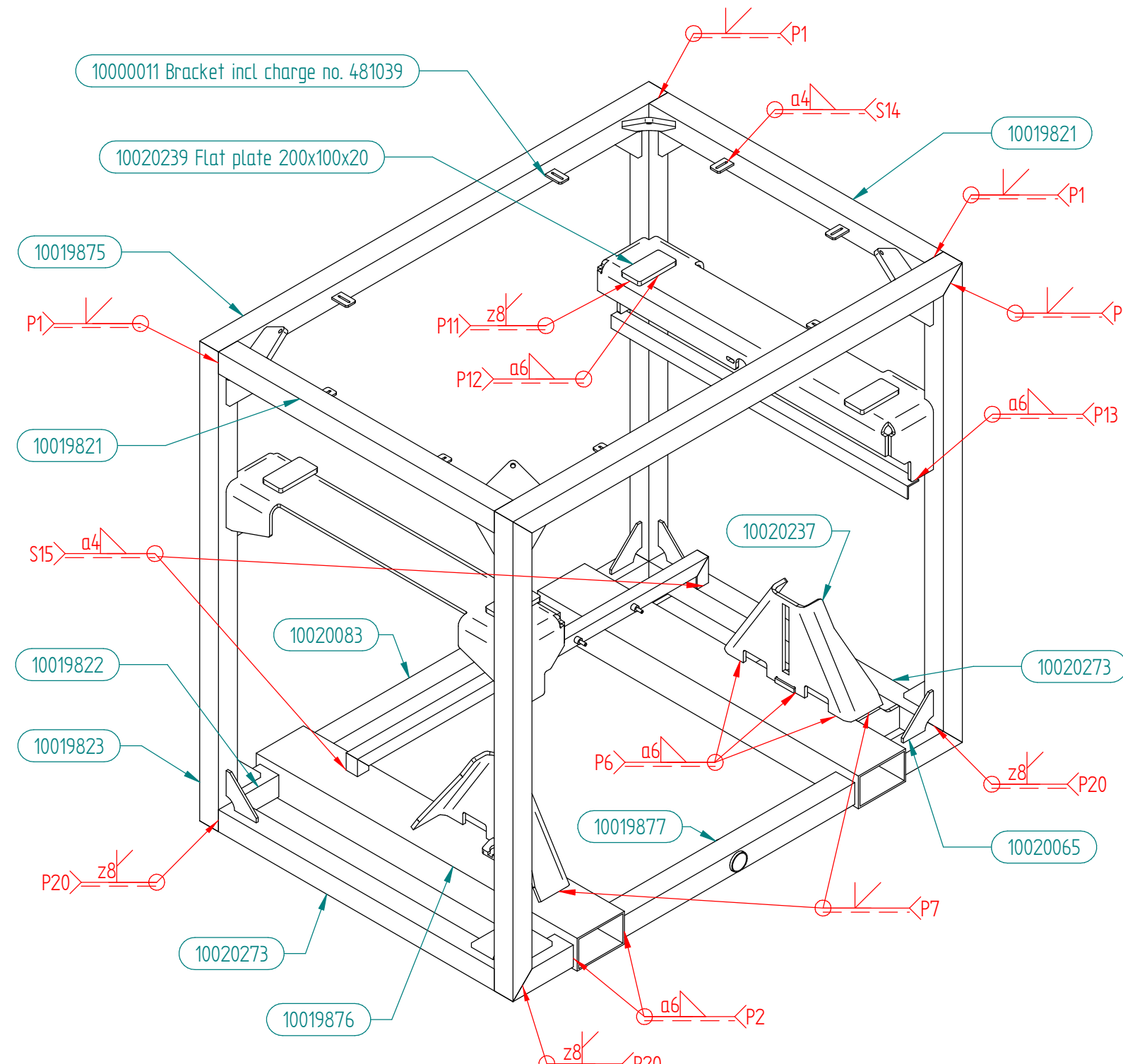
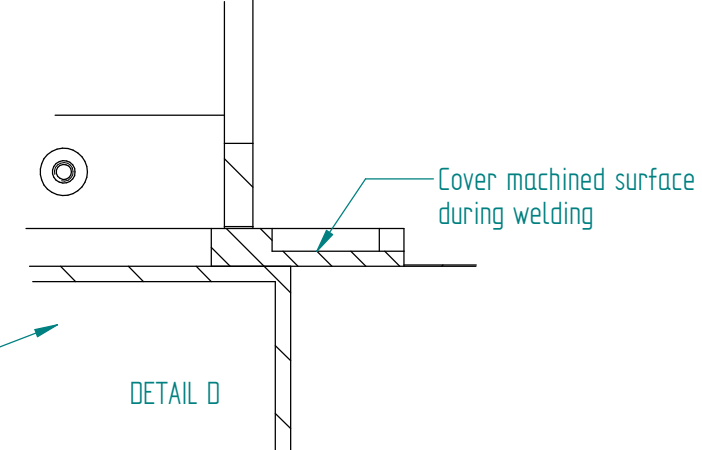
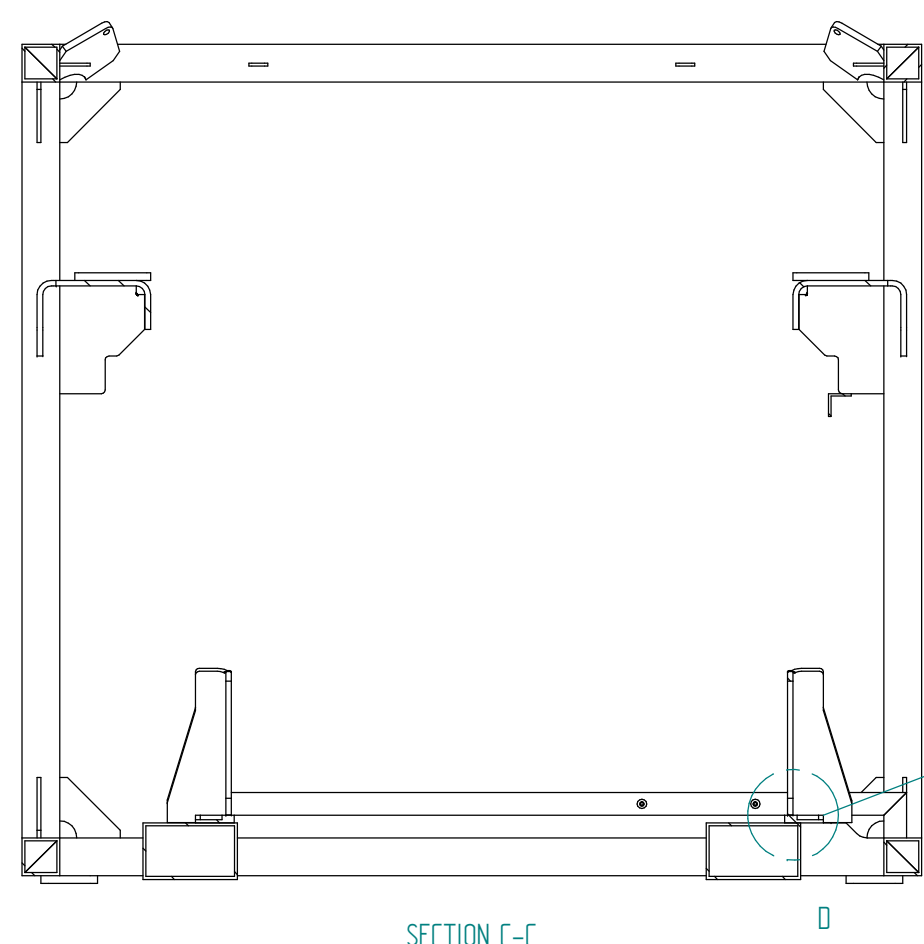
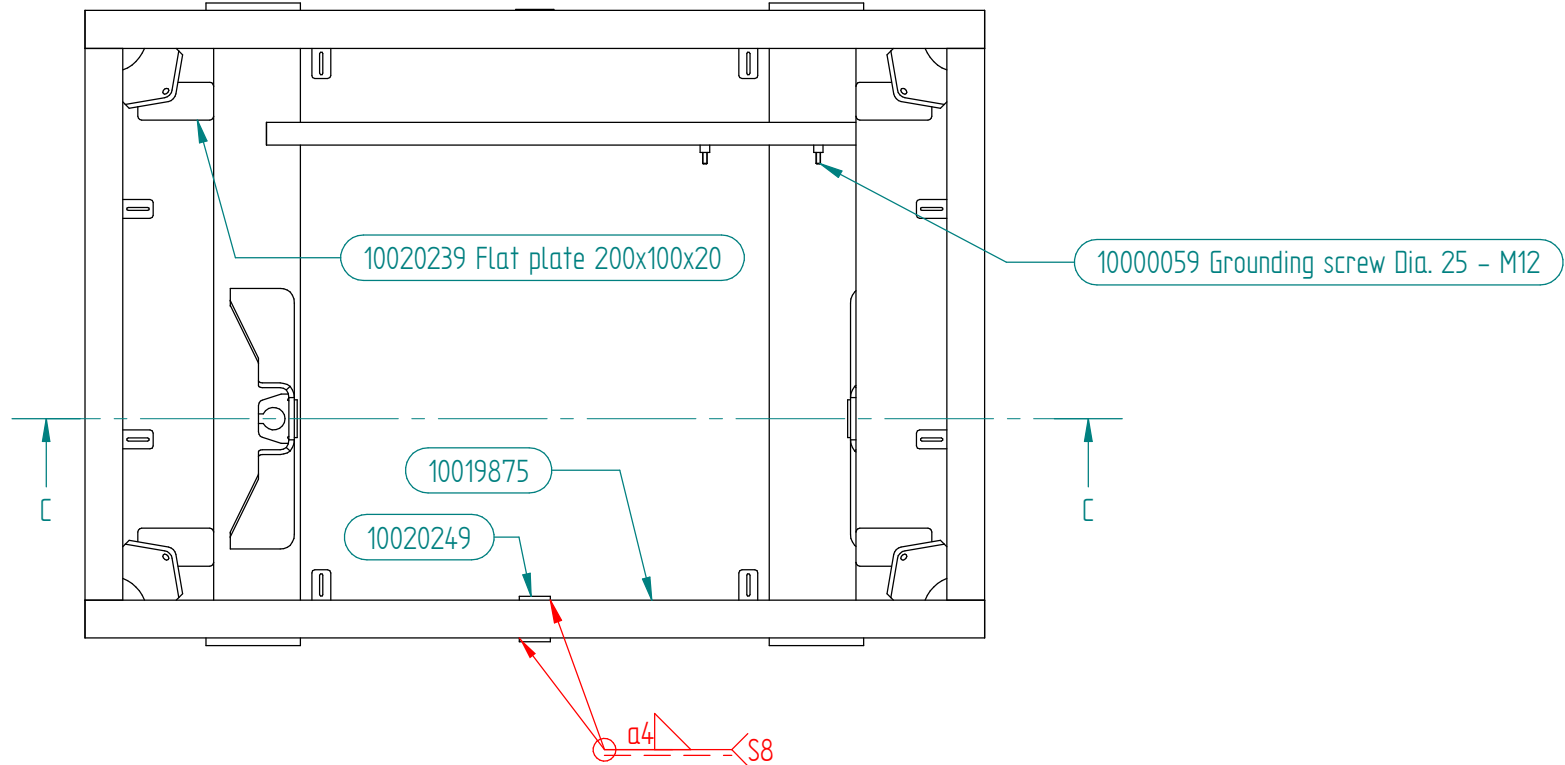
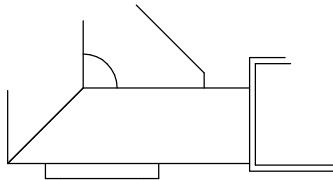
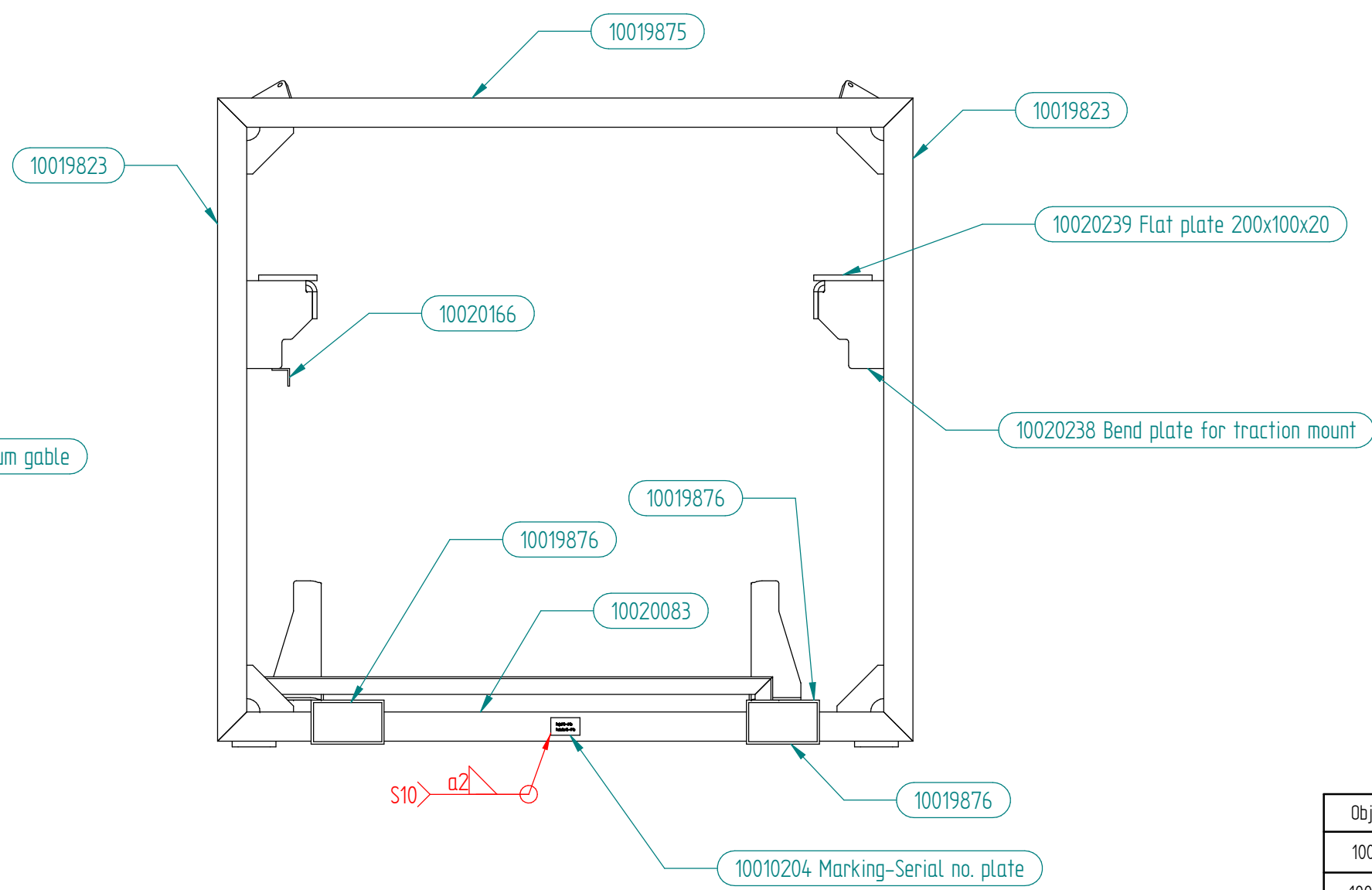
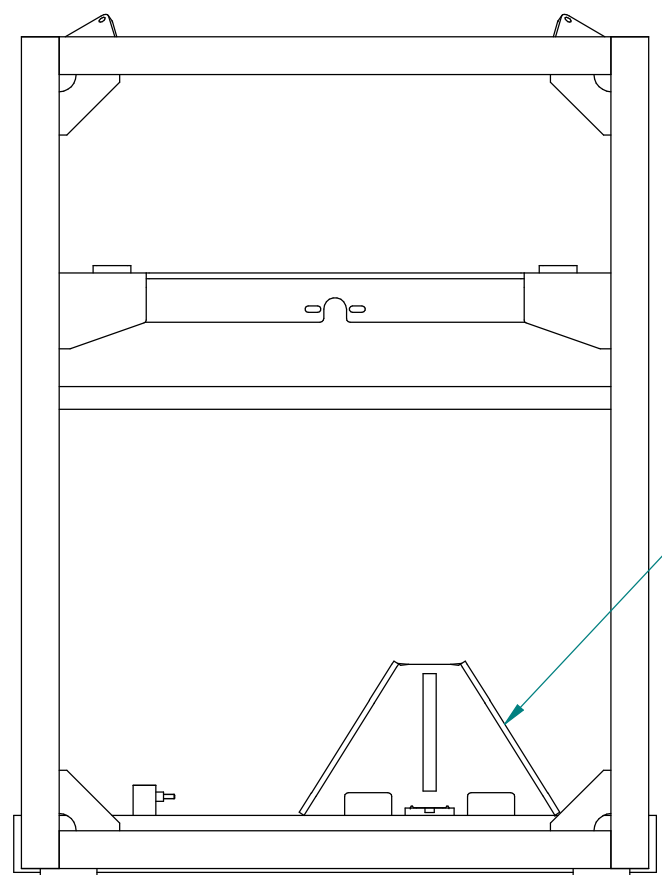
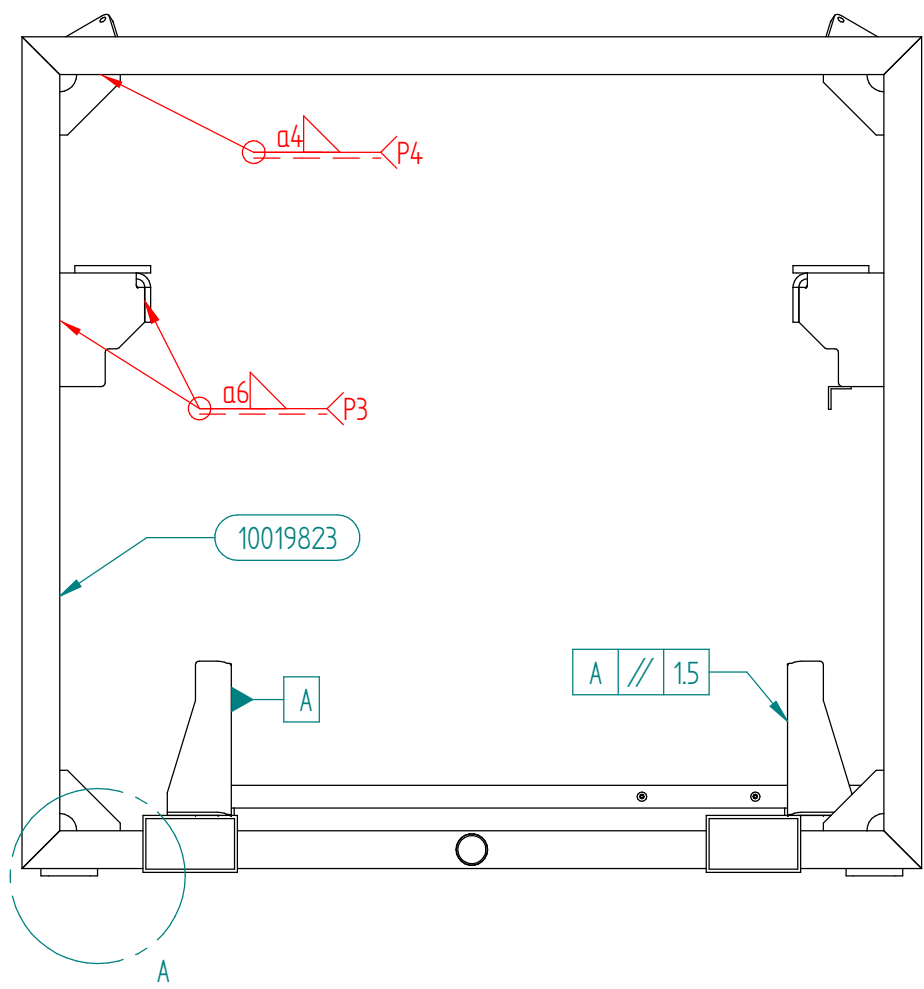
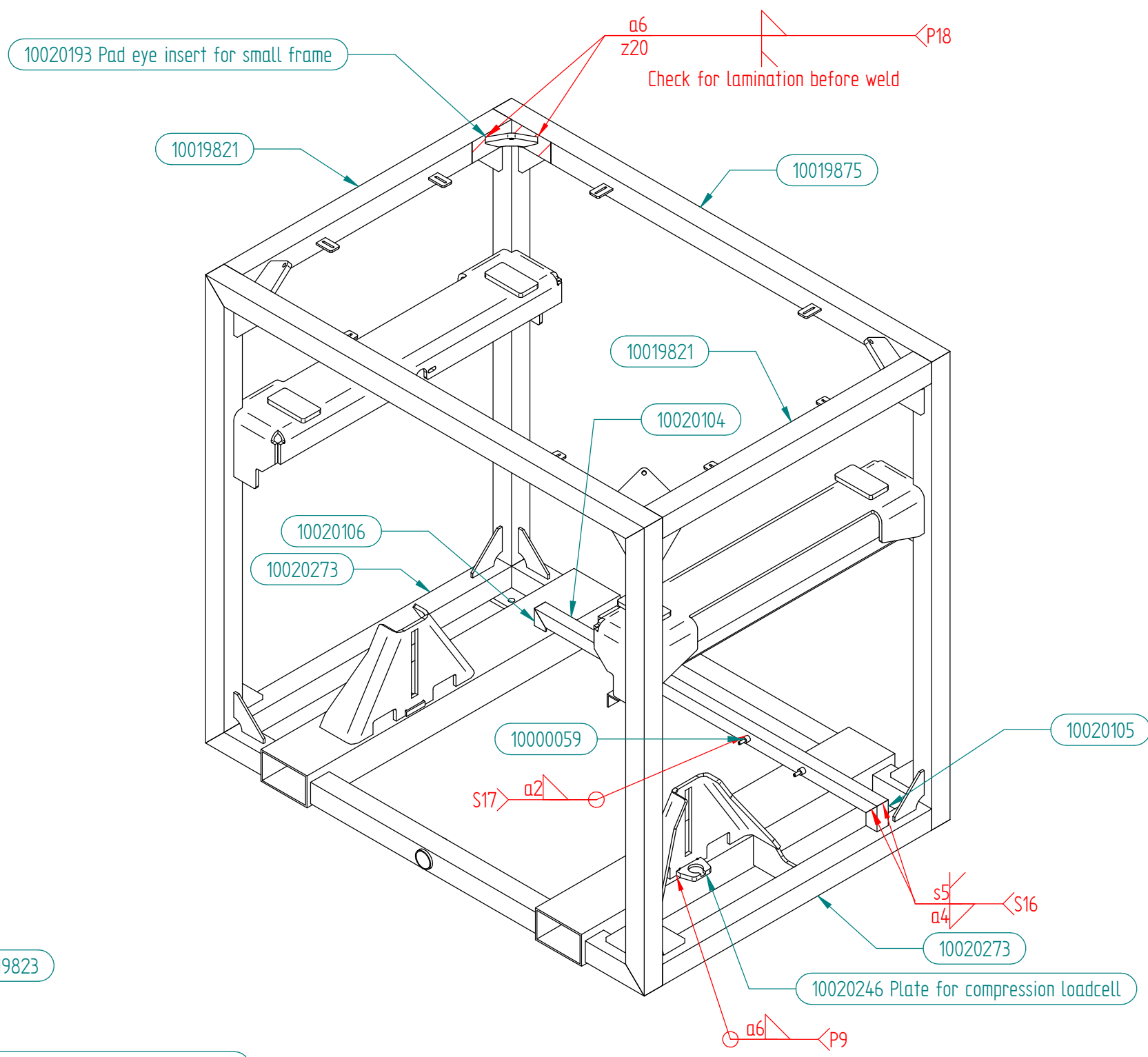
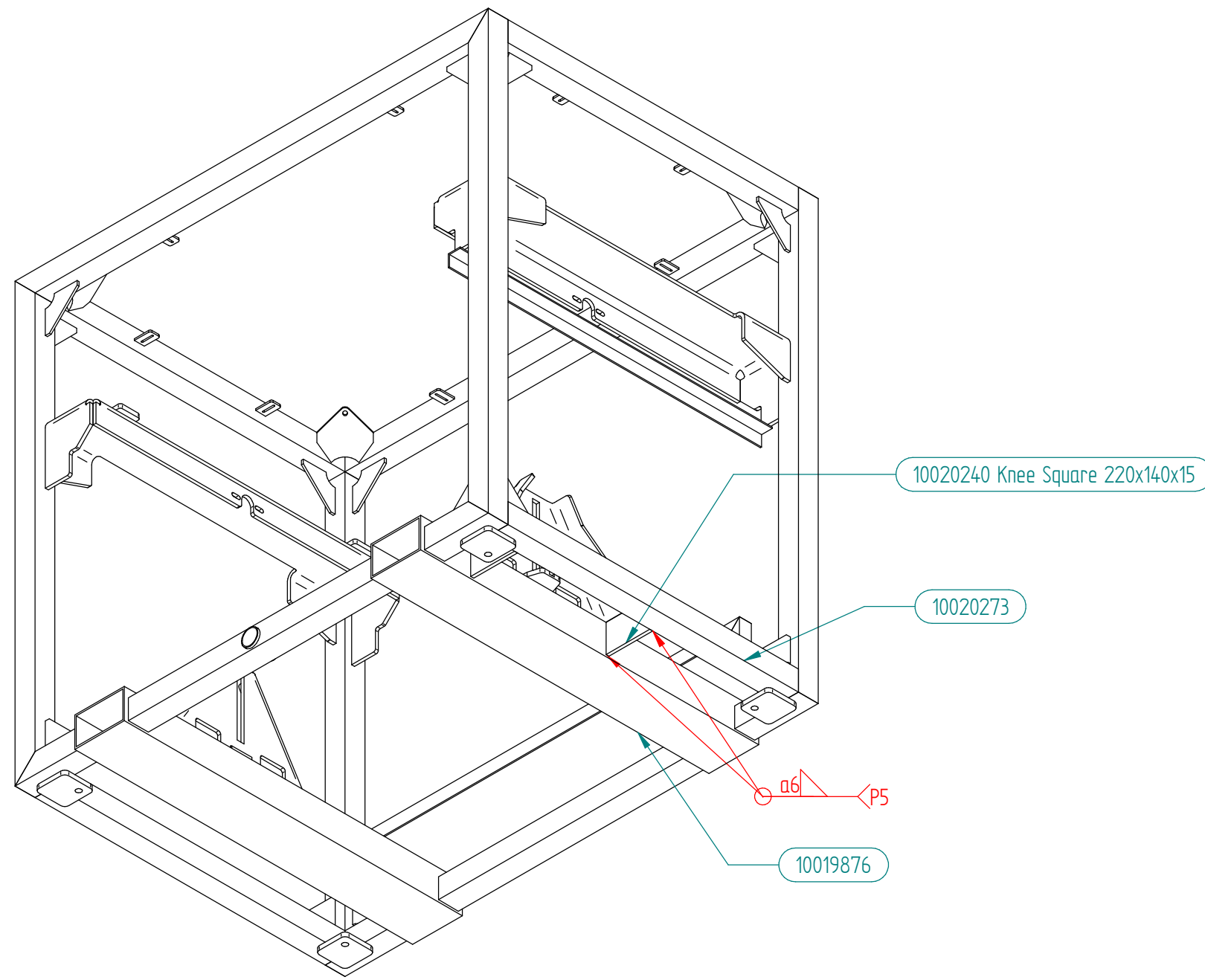
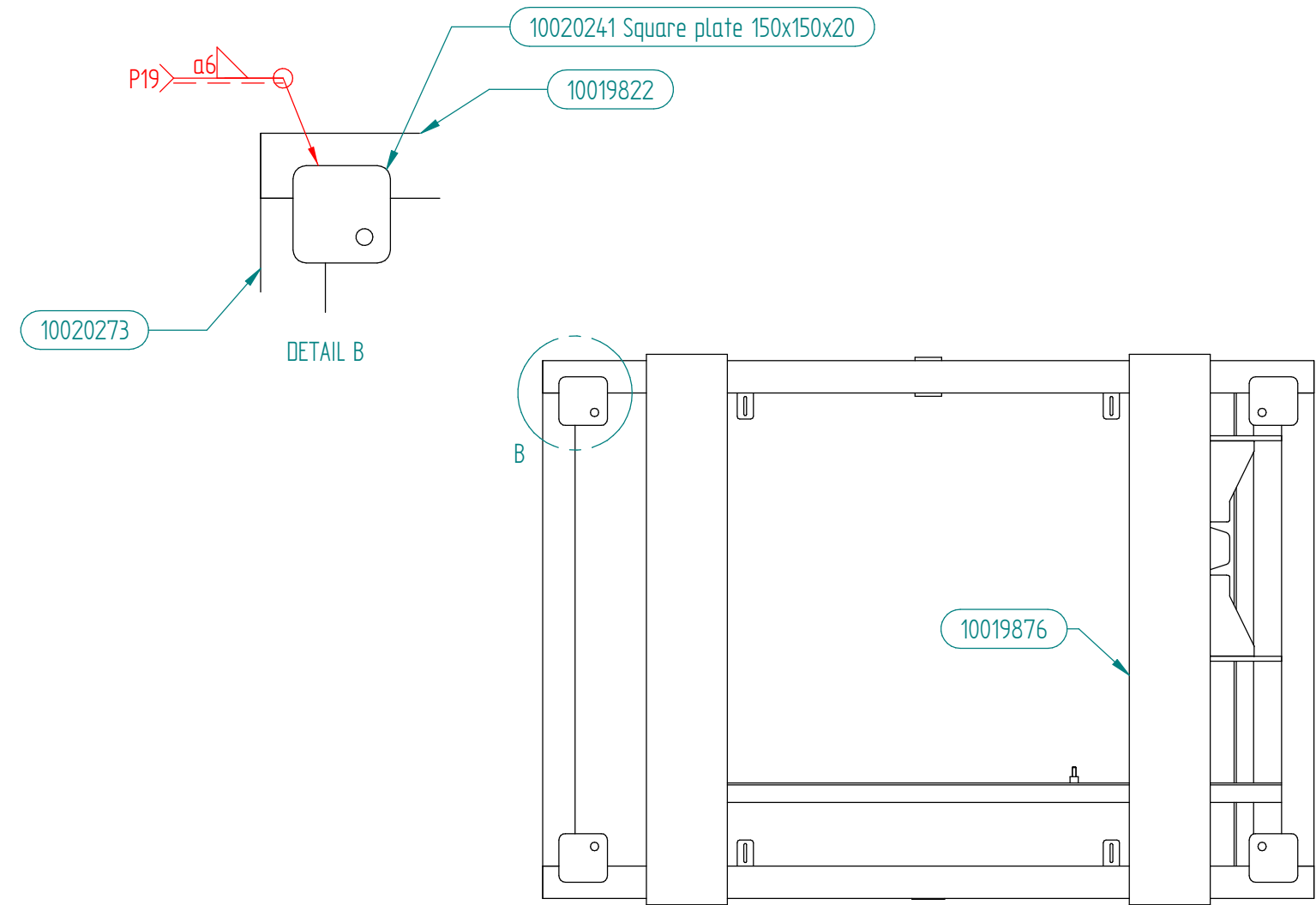
Object ID	QTY	Subject	Mass	Raw material	POS
10007952	2	Roller Bearing-6205 DD-SS-Stainless steel	0 kg		1
10008037	2	Sliding Bearing-20/26X15-32X3	0 kg		2
10011732	1	Circlip-1400-25-Stainless steel	0 kg		3
10020546	1	Arm for roller part 1-	3 kg	10011422 Flat Bar-40-20-AISI 304---	4
10020576	1	Axle for sheave roller-	1 kg	10020654 Round Bar-30--AISI 304-_-_-_-	5
10020581	1	sheave roller-	1 kg	10020655 Pipe-Hollow bar-φ063-φ040-_-AISI	6
10020599	2	Bushing 2	0 kg	10013511 Round Bar-40-_-AISI 304-_-_-Raw	7

Next: A

Customer Name/ Customer Drawing/ Class:										
Mat: -				Weight: 6 kg		Projection:		Approved	28-06-2016	PF
0-1	Bearing type changed		08-08-2016	MKJ	General Tolerances:			Checked	23-06-2016	CT
Revision	Change	Date	Name	Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF		Date		Name		
Subject: Sheave roller assembly-										
						Drawn by:		Format:	Date:	
						MKJ		A4	23-06-2016	
						Drawing no:		Sheet:		
						10020598		1 OF 1		
						Project ID:		Production ID:		
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[illegible]



Object ID	QTY	Subject	Mass	Raw material	PDS
10000011	8	Bracket incl charge no. 481039	2 kg		1
10000059	2	Grounding screw Dia. 25 - M12	0 kg	10000289 Round Bar-25--AISI 316-31--	2
10010204	1	Marking-Serial no. plate	0 kg	10000178 Plate-AISI 316-30-1250x2500-31-28	3
10019821	2	Profile 1	67 kg	10000122 Profile by DIM-RHS-100-100-8--NV	4
10019822	4	Profile 2	25 kg	10000122 Profile by DIM-RHS-100-100-8--NV	5
10019823	4	Profile 3	194 kg	10000122 Profile by DIM-RHS-100-100-8--NV	6
10019875	2	Profile 4	105 kg	10000122 Profile by DIM-RHS-100-100-8--NV	7
10019876	2	Profile 5	164 kg	10020236 Profile by DIM-RHS-250-150-8--NV	8
10019877	1	Profile 6	28 kg	10020083 Profile-Profile	9
10020065	16	Knee Triangle 160x160x10mm	18 kg	10010223 Plate-NV D36-10-...-31-Row	10
10020083	1	Profile 7	29 kg	10000122 Profile by DIM-RHS-100-100-8--NV	11
10020104	1	Profile 8	10 kg	10000204 Profile by DIM-L-60-60-6--NV D36-31-...	12
10020105	1	Profile 9	1 kg	10000204 Profile by DIM-L-60-60-6--NV D36-31-...	13
10020106	1	Profile 10	0 kg	10000204 Profile by DIM-L-60-60-6--NV D36-31-...	14
10020166	1	Profile 11	8 kg	10000204 Profile by DIM-L-60-60-6--NV D36-31-...	15
10020193	4	Pad eye insert for small frame	16 kg	10010221 Plate-NV D36-20-...-31-Row	16
10020237	2	Folded Drum gable	58 kg	10010217 Plate-NV D36-15-...-31-Row	17
10020238	2	Bend plate for traction mount	169 kg	10010217 Plate-NV D36-15-...-31-Row	18
10020239	4	Flat plate 200x100x20	13 kg	10010221 Plate-NV D36-20-...-31-Row	19
10020240	2	Knee Square 220x140x15	7 kg	10010217 Plate-NV D36-15-...-31-Row	20
10020241	4	Square plate 150x150x20	14 kg	10010221 Plate-NV D36-20-...-31-Row	21
10020246	1	Plate for compression loadcell	3 kg	10010221 Plate-NV D36-20-...-31-Row	22
10020249	1	Pipe Ø62.5 x 4 L=120	1 kg	10020248 Pipe-Seamless-62.5-74.5-4-NV D36-31-HOT	23
10020273	2	Profile 1	67 kg	10000122 Profile by DIM-RHS-100-100-8--NV	24

Sheet 1 of 3: Welded
Sheet 2 of 3: Machined
Sheet 3 of 3: Weld Log

Next: M

Customer Name/ Customer Drawing/ Class:

Mat: -	Weight: 996 kg	Projection:	Approved		
	General Tolerances:		Checked		
Revision Change	Date	Name	Tolerances: ISO 2768-1 m	Date	Name
			Tolerances: EN ISO 13920-BF		
Subject:					
Winch frame-OW-3000-ILO 152					
		Drawn by:	Format:	Date:	
		MKJ	A1	17-05-2016	
		Drawing no:	10019820	Sheet:	1 OF 3
		Project ID:		Production ID:	
Unauthorized use of this drawing, which may not be copied, is subjected to prosecution according to the law of Royal competition					

Weld no.	Object ID.	Charge no.	Dim.	WPS no.	Welders id.	Filler mat. batch no.	Welding end date/time	MT	UT	VT	Lamination (UT)
1	10019875	7T21821	100x100x8	SH 39 - 01	6046 605	NB6122 NB6421	12/7-16 09 ⁰⁰				
	10019821	7T21821	100x100x8								
	10019823	7T21821	100x100x8								
			100x100x8								
2	10019877	7T21821	100x100x8	SH 39 - 02	605 6046	NB6421	12/7-16 14 ³⁰				
	10020083	7T21821	100x100x8								
	10019876	7T222716	150x250x8								
	10019822	7T21821	100x100x8								
3	10020238	254920-2	PI 15	SH 16 - 02	605 6046	NB6421	12/7-16 13 ⁰⁰				
	10019823	7T21821	100x100x8								
4	10020065	254919-2	PI 10	SH 23	6046	NB6421	12/7-16 08 ³⁰				
	10019875	7T21821	100x100x8								
	10019822	7T21821	100x100x8								
	10019823 / 10019821	7T21821 - 7T21821	100x100x8								
5	10020240	254920-2	PI 15	SH 16 - 02	605	NB6421	12/7-16 07 ⁰⁰				
	10019876	7T222716	150x250x8								
	10020273	7T21821	100x100x8								
6	10020237	254920-2	PI 15	SH 16 - 02	605	NB6421	12/7-16 10 ⁰⁰				
	10019876	7T222716	150x250x8								
7	10020237	254920-2	PI 15	SH 39 - 01	605	NB6122 NB6421	12/7-16 10 ³⁰				
	10019876	7T222716	150x250x8								
	10020240	254920-2	PI 15								
8	10020249		Ø82,5x4	SH 23	605	NB6421	13/7-16 08 ⁰⁰				
	10019875	7T21821	100x100x8								
9	10020246	155096-2	PI 20	SH 16 - 02	605	NB6421	13/7-16 9 ³⁰				
	10019876	7T222716	150x250x8								
	10020240	254920-2	PI 15								
10	10010204	395894	PI 2	SH 36 - 02	605	211782	13/7-16 07 ⁰⁰				
	10020083	7T21821	100x100x8								
11	10020239	155096-2	PI 20	SH 39 - 01	605 6046	NB6122 NB6421	12/7-16 16 ³⁰				
	10020238	254920-2	PI 15								
12	10020239	155096-2	PI 20	SH 16 - 02	605 6046	NB6421	12/7-16 11 ³⁰				
	10020238	254920-2	PI 15								
13	10020166	97182	60x60x6	SH 16 - 02	6046	NB6421	11/7-16 17 ¹⁵				
	10020238	254920-2	PI 15								
14	10019875	7T21821	100x100x8	SH 23	605	NB6421	12/7-16				
	10019821	7T21821	100x100x8								
	10000011	85879051	PI 8								
15	10020106	97182	60x60x6	SH 23	6046	NB6421	11/7-16 17 ⁰⁰				
	10020105	97182	60x60x6								
	10019876	7T222716	150x250x8								
16	10020106	97182	60x60x6	SH 39 - 01 SH 23	6046	NB6122 NB6421	11/7-16 16 ⁴⁵				
	10020105	97182	60x60x6								
	10020104	97182	60x60x6								
17	10000059	GND - Ø25 m 12	Ø20	SH 35-02	605	211782	13/7-16 10 ⁰⁰				
	10020104	97182	60x60x6								
18	10020193	155096-2	PI 20	SH 16 - 02 SH 39 - 01	605	NB6122 NB6421	12/7-16 14 ³⁰				
	10019821	7T21821	100x100x8								
	10019875	7T21821	100x100x8								
19	10020241	155096-2	10020241	SH 16 - 02	605	NB6421	12/7-16 14 ⁰⁰				
	10019821	7T21821	100x100x8								
	10019822	7T21821	100x100x8								
20	10019821	7T21821	100x100x8	SH 39 - 01	6046 605	NB6122 NB6421	12/7-16 15 ⁰⁰				
	10019823	7T21821	100x100x8								
	10019822	7T21821	100x100x8								

Sheet 1 of 3: Welded
Sheet 2 of 3: Machined
Sheet 3 of 3: Weld Log

NDT to be performed according to:
DNV STANDARD FOR CERTIFICATION No. 2.22
LIFTING APPLIANCE JUNE 2013

Comments:



13/7-16

NDT performed by:

Item #: 1

Customer Name/ Customer Drawing/ Class:

Modus - Winch frame-OW-3000-ILO 152

Qty: 1

Mat: -

0-2 Weld procedure changed 27-06-2016 MKJ

Weight: 996 kg

General Tolerances:

Tolerances: ISO 2768-1 m
Tolerances: EN ISO 13920-BF

Projection:

Approved

09-06-2016 PF

Checked

09-06-2016 CS

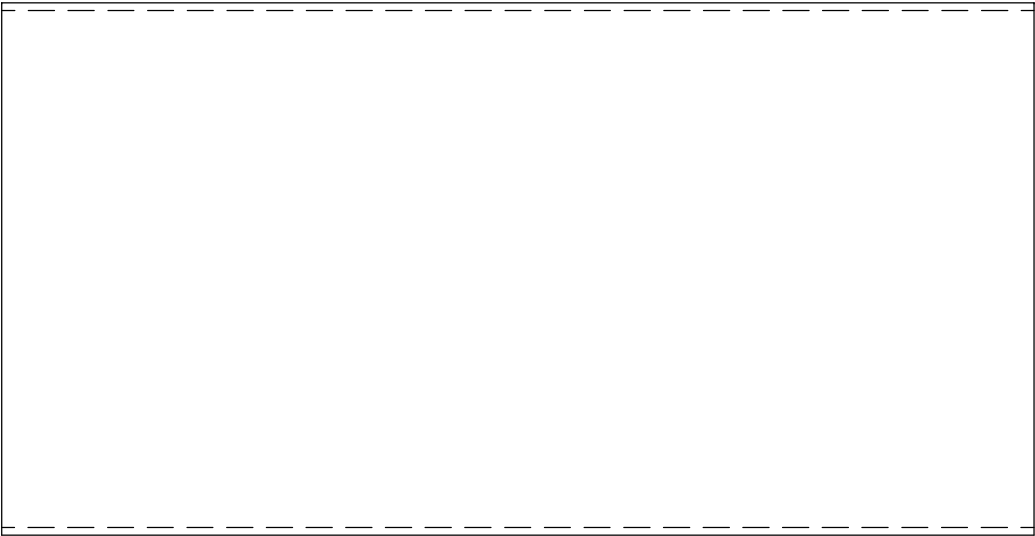
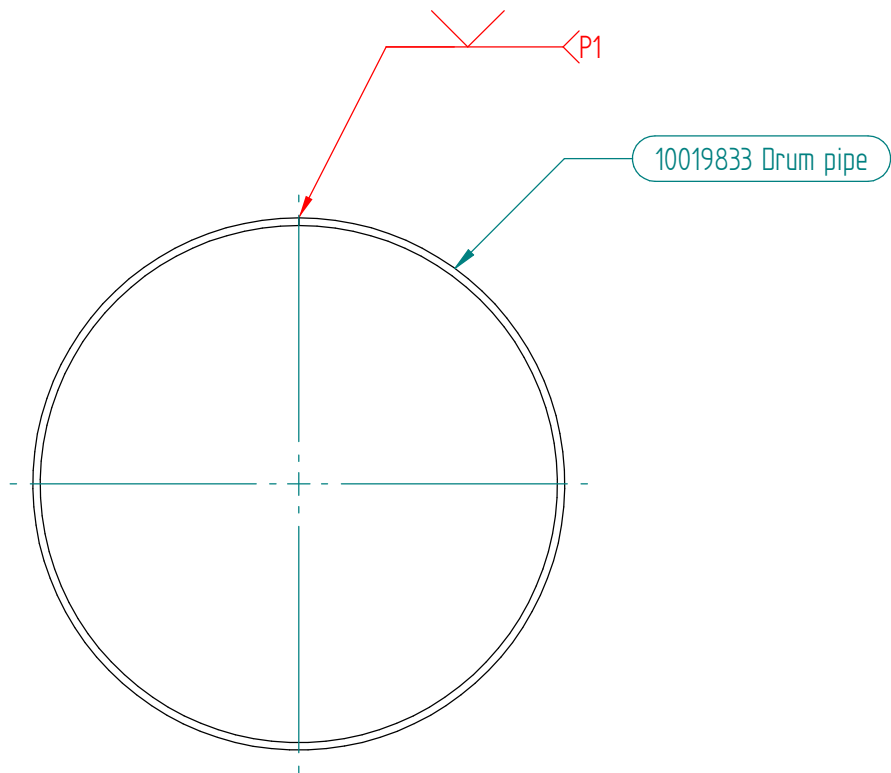
Subject:

Winch frame-OW-3000-ILO 152

01 JULI 2016




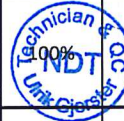
Note:
All corners R0,4–R0,8 – All edges 0–0,2 – No Burrs.
Surface Roughness 6,3 unless otherwise specified.
Shown Chamfer 1x45 deg. unless otherwise specified.



Sheet 1 of 4: Machining
Sheet 2 of 4: Cutting
Sheet 3 of 4: Weld Log
Sheet 4 of 4: Cutting 1:1 Clean

Next: W

Customer Name/ Customer Drawing/ Class:											
Mat: Plate-AISI 304-10-1250x2500-3.1-2B - 10011001				Weight: 233,8 kg		Projection:		Approved			
				General Tolerances:				Checked			
Revision		Change		Date		Name		Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF			
Subject: Drum pipe											
						Drawn by:		Format:		Date:	
						MKJ		A3		17-05-2016	
						Drawing no: 10019833				Sheet: 1 OF 4	
						Project ID:		Production ID:			
Unauthorized use of this drawing, which may not be copied, is subjected to prosecution according to the law of illoyal competition											

Weld no.	Object ID.	Charge no.	Dim.	WPS no.	Welders id.	Filler mat. batch no.	Welding end date/time	MT		VT	Lamination (UT)
1	10019833	111390	PI 10	SH 24	313	H.NO 416104 EIGA chroma WIG.	11/7-16 15:00				
2											
3											
4											
5											
6											
7											

Sheet 1 of 4: Machining
Sheet 2 of 4: Cutting
Sheet 3 of 4: Weld Log
Sheet 4 of 4: Cutting 1:1 Clean

NDT to be performed according to:
DNV STANDARD FOR CERTIFICATION No. 222
LIFTING APPLIANCE JUNE 2013

Comments:

NDT performed by:



13/7-16

Item #: 1

Customer Name/ Customer Drawing/ Class:

Modus - Drum-OW-2000

Qty: 1

Mat: Plate-AISI 304-10-1250x2500-3.1-2B - 10011001

Weight: 233,8 kg

Projection:

Approved

28-06-2016

PF

0-0

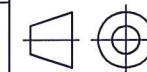
17-05-2016

MKJ

General Tolerances:

Tolerances: ISO 2768-1 m

Tolerances: EN ISO 13920-BF



Checked

27-06-2016

CS

Date

Name

Subject:

Drum pipe

30 JUNI 2016



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Drawn by:

MKJ

Format:

A4

Date:

17-05-2016

Drawing no:

10019833

Sheet:

3 OF 4

Project ID:

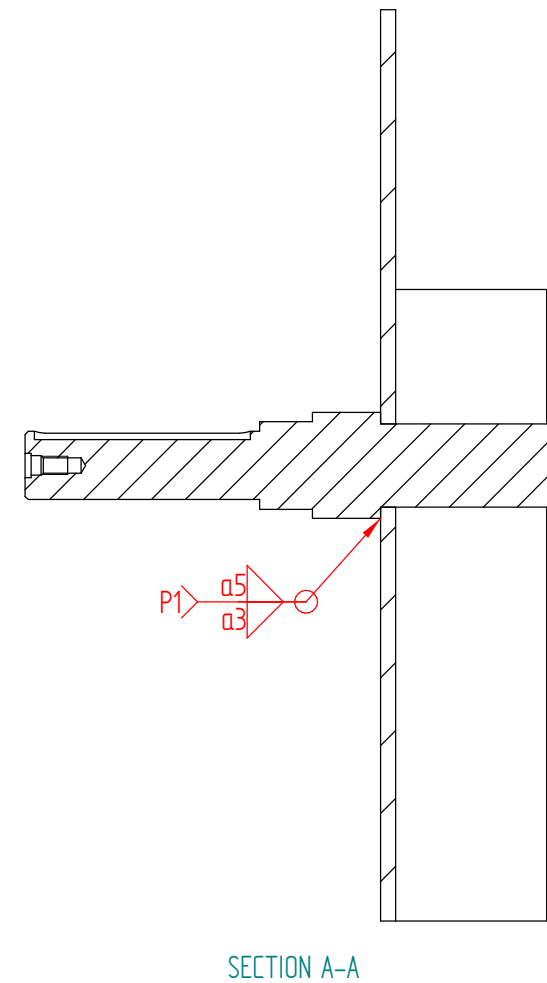
SHG-000973_01

Production ID:

1P-000000260

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All corners R0,4-R0,8 – All edges 0-0,2 – No Burrs.
Surface Roughness 6,3 unless otherwise specified.
Shown Chamfer 1x45 deg. unless otherwise specified.



It is very important that the main shaft is 100% perpendicular on the wall, if not it has to be straighten up.





Customer Name/ Customer Drawing/ Class:

Object ID	QTY	Subject	Mass	Raw material	POS
10019838	1	End plate -2, Drum	28 kg	10011001 Plate-AISI 304-10-1250x2500-3.1-2B	1
10020046	1	Main Shaft f. Drum	6 kg	10013515 Round Bar-70--AISI 316-3.1--	2
10020499	4	Knee	10 kg	10000489 Flat Bar-100-10-AISI 316-3.1---_	3



Drawn by: MKJ	Format: A3	Date: 17-05-2016
Drawing no: 10019834		Sheet: 1 OF 2
Project ID:		Production ID:

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Weld no.	Object ID.	Charge no.	Dim.	WPS no.	Welders id.	Filler mat. batch no.	Welding end date/time	ET	UT	VT	Lamination (UT)
1	10020499		Ø70	SH 26 SH 24	313	416104 Crown mix SLAP	11/7-16 11/20		0%		
	10019838	111590	PI 10								
	10020046	379867	PI 10								
2	10020499	615122	Ø70	SH 24	313	-11-	11/7-16 11/20		0%		
	10019838	111390	PI 10								
	10020046	379867	PI 10								
3											
4											
5											
6											
7											

Sheet 1 of 2: Welded
Sheet 2 of 2: Weld Log

NDT to be performed according to:
DNV STANDARD FOR CERTIFICATION No. 2.22
LIFTING APPLIANCE JUNE 2013

Comments:

NDT performed by:




13/7-16

Item # :

Customer Name/ Customer Drawing/ Class:

Modus - Drum-OW-2000

Qty: 1

Mat: -				Weight: 45 kg	<div>Projection:</div> <div></div>	Approved	28-06-2016	PF
0-0		17-05-2016	MKJ	General Tolerances:		Checked	24-06-2016	PK
Revision	Change	Date	Name	Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF			Date	Name

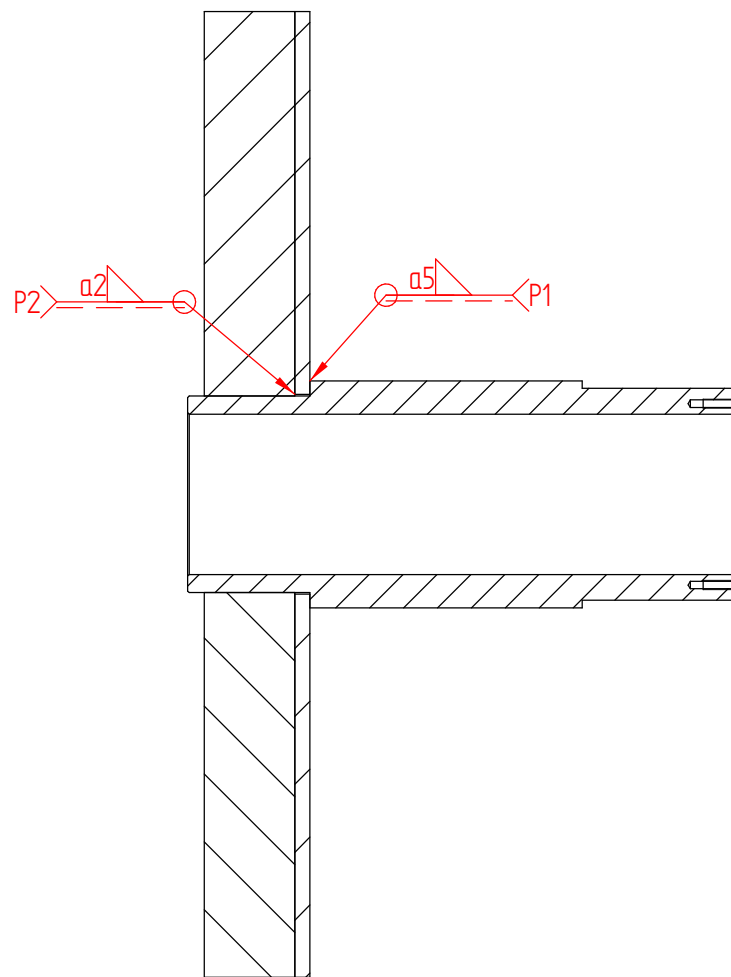
Subject:

Drum End -2

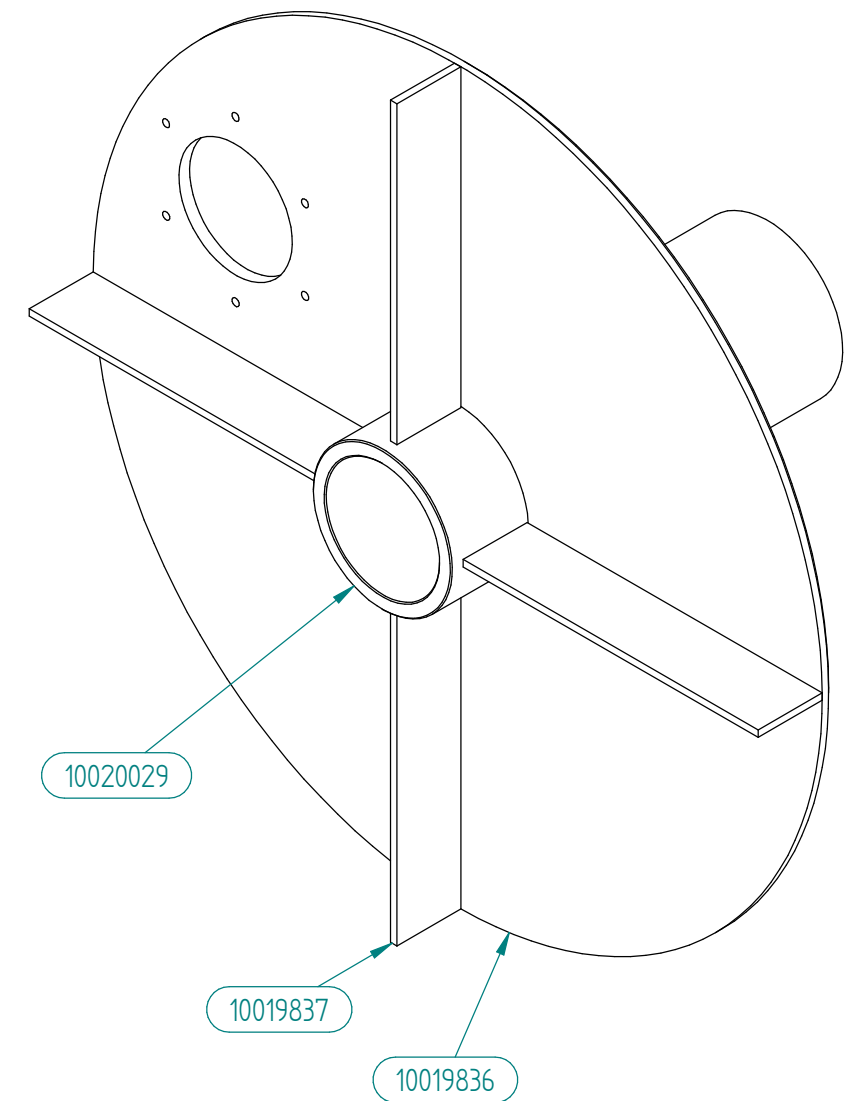
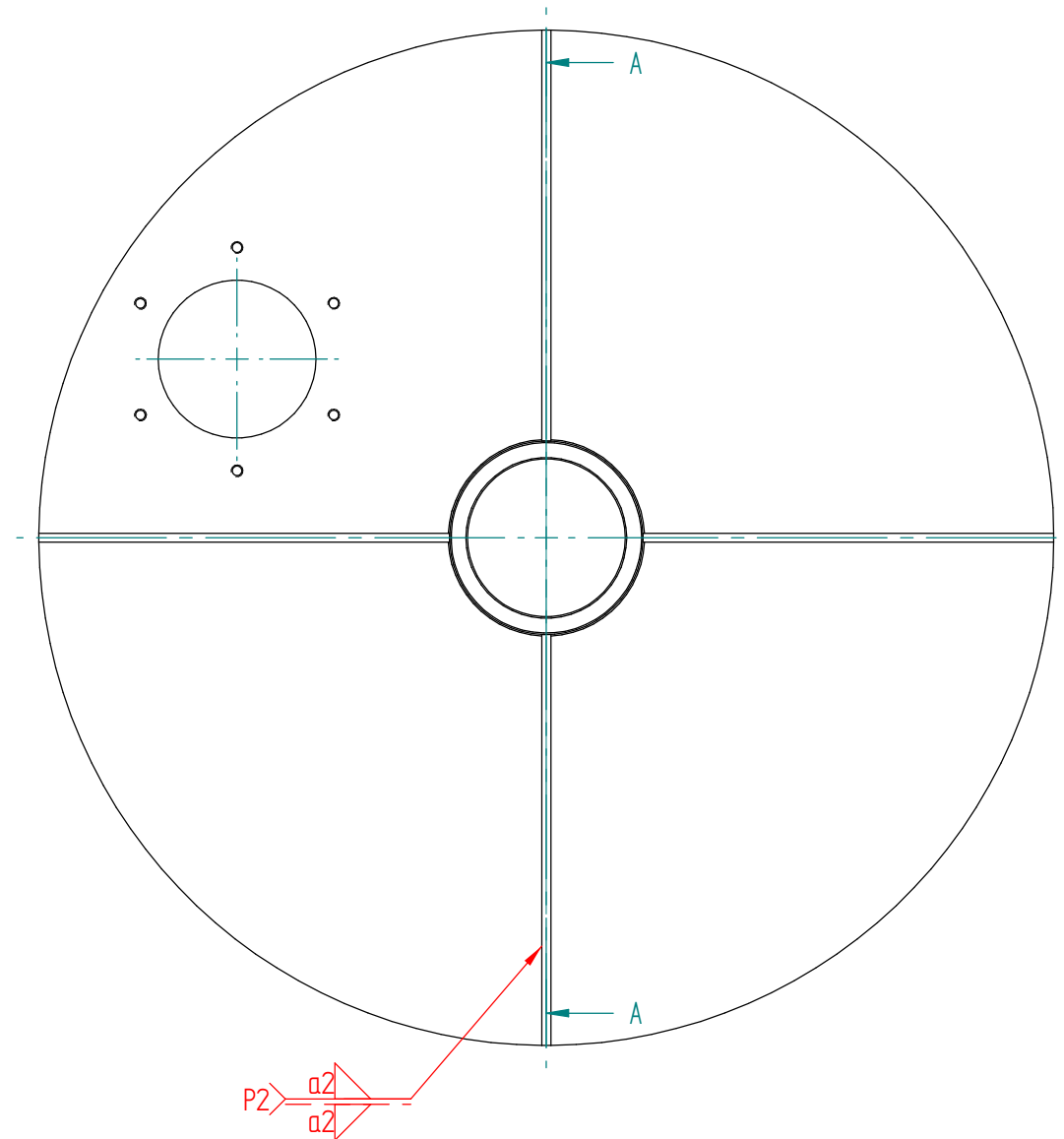
30 JUNI 2016

				SH Group as Kuopiovej 20 DK-5700 Svendborg + 45 62 21 78 10 www.shgroup.dk		Drawn by:	Format:	Date:
						MKJ	A4	17-05-2016
						Drawing no:	Sheet:	
						10019834	2 OF 2	
						Project ID:	Production ID:	
						SHG-000973_01	1P-000000260	

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SECTION A-A



Sheet 1 of 2: Welded
Sheet 2 of 2: Weld Log

Next: W

Object ID	QTY	Subject	Mass	Raw material	POS
10019836	1	End plate -1, Drum	26,8 kg	10011001 Plate-AISI 304-10-1250x2500-3.1-2B	1
10019837	4	Knee	3,1 kg	10000486 Flat Bar-60-6-AISI 304-3.1-_-_-	2
10020029	1	Inner Bearing housing	20,5 kg	10020337 Pipe-Hollow bar- ϕ 150- ϕ 106-_-_-AISl	3

Customer Name/ Customer Drawing/ Class:

Mat: -	Weight: 50,3 kg	Projection:	Approved		
	General Tolerances:		Checked		
Revision	Change			Date	Name

Subject:





Drum end -1



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Kuopiovej 20
DK-5700 Svendborg
+ 45 62 21 78 10
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Drawn by: MKJ	Format: A3	Date: 17-05-2016
Drawing no: 10019835	Sheet: 1 OF 2	
Project ID:	Production ID:	

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Weld no.	Object ID.	Charge no.	Dim.	WPS no.	Welders id.	Filler mat. batch no.	Welding end date/time	PT	UT	VT	Lamination (UT)
1	10020029	547050	Ø150 x 22	SH 26	313	416104 Crown welding 5265	11/7-16 10 ⁰⁰		0%		
	10019836	111390	PI 10								
2	10019837	290922	PI 10	SH 24	313	-11-	11/7-16 10 ⁰⁰		0%		
	10019839	111390	PI 10								
	10020029	547050	Ø150 x 12								
3											
4											
5											
6											
7											

Sheet 1 of 2: Welded
Sheet 2 of 2: Weld Log

NDT to be performed according to:
DNV STANDART FOR CERTIFICATION No. 2.22
LIFTING APPLIANCE JUNE 2013

Comments:

NDT performed by:




18/7-16 Item #: 1

Customer Name/ Customer Drawing/ Class:

Modus - Drum-OW-2000

Qty: 1

30 JUNI 2016

Mat: -				Weight: 50,3 kg		<div>Projection:</div> <div></div>	Approved	28-06-2016	PF
0-0		17-05-2016	MKJ	General Tolerances:			Checked	24-06-2016	PK
Revision	Change	Date	Name	Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF				Date	Name

Subject:

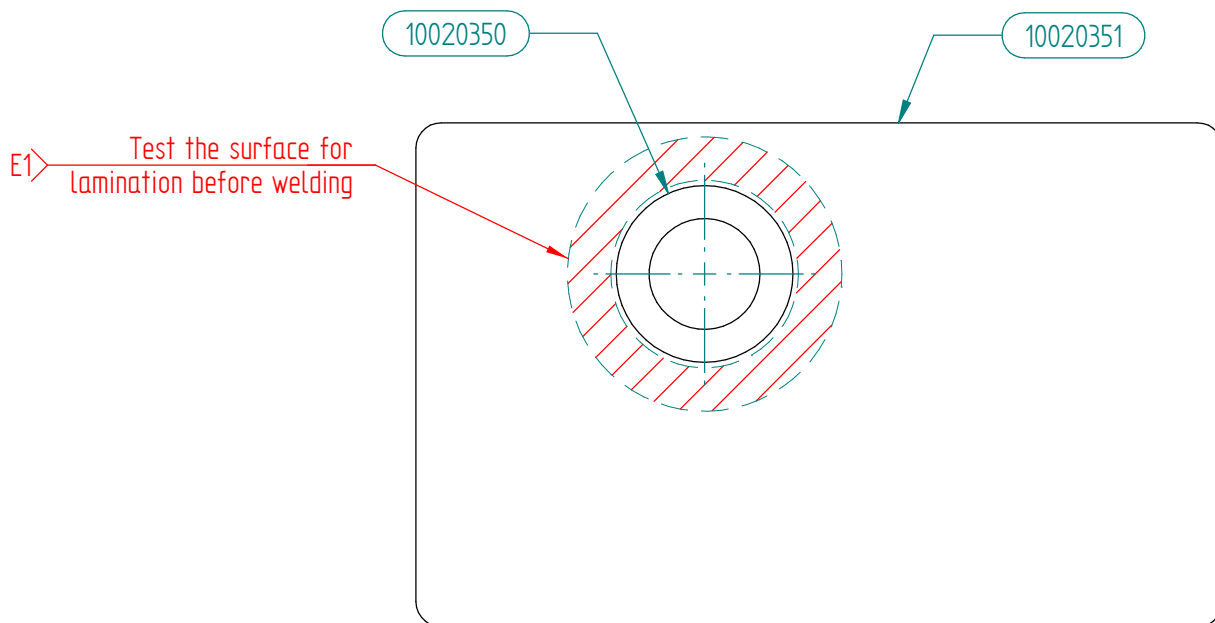
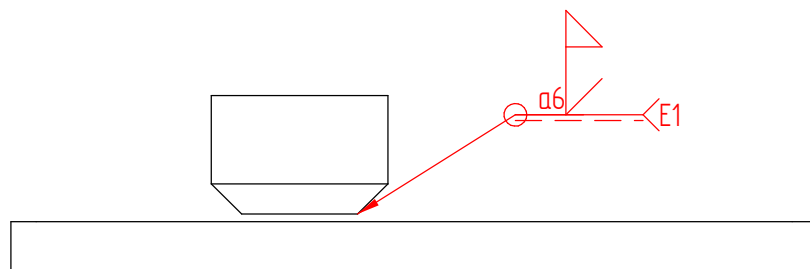
Drum end -1



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Drawn by:	Format:	Date:
MKJ	A4	17-05-2016
Drawing no:	Sheet:	
10019835	2 OF 2	
Project ID:	Production ID:	
SHG-000973_01	1P-000000260	

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Object ID	QTY	Subject	Mass	Raw material	POS
10020350	1	Bush for axle	1 kg	10013952 Round Bar-70--NV D36-3.1---Raw	1
10020351	1	Mount plate for gear	9 kg	10010221 Plate-NV D36-20---3.1-Raw	2

Sheet 1 of 3: Welded
Sheet 2 of 3: Machined
Sheet 3 of 3: Weld Log

Next: A

Customer Name/ Customer Drawing/ Class:

Mat: -				Weight: 10 kg	<div>Projection:</div> <div></div>	Approved		
				General Tolerances:		Checked		
Revision	Change	Date	Name	Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF			Date	Name

Subject:

Bracket for gearbox



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Drawn by: MKJ	Format: A4	Date: 14-06-2016
Drawing no: 10020353		Sheet: 1 OF 3
Project ID:		Production ID:

Weld no.	Object ID.	Charge no.	Dim.	WPS no.	Welders id.	Filler mat. batch no.	Welding end date/time	MT	UT	VT	Lamination (UT)
1	10020350	191512	Ø70 x 13	SH 39 - 01 SH 39 - 02	605	NB6122 NB6421	10/3-16 14-00				
	10020351	155096-28	PI 20								
2											
3											
4											
5											
6											
7											

Sheet 1 of 3: Welded
Sheet 2 of 3: Machined
Sheet 3 of 3: Weld Log

NDT to be performed according to:
DNV STANDARD FOR CERTIFICATION No. 2.22
LIFTING APPLIANCE JUNE 2013

Comments:

NDT performed by:



Item #: 1

11/8-16

Customer Name/ Customer Drawing/ Class:

Bracket for Gear motor

Qty 1

Mat: -

1-0 dim changed

09-08-2016 MKJ

Revision Change

Date

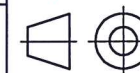
Name

Weight: 7 kg

General Tolerances:

Tolerances: ISO 2768-1 m
Tolerances: EN ISO 13920-BF

Projection:



Approved

09-08-2016

kvj

Checked

09-08-2016

CS

Date

Name

Subject:

Bracket for gearbox



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Drawn by:

MKJ

Format:

A4

Date:

14-06-2016

Drawing no:

10020353

Sheet:

3 OF 3

Project ID:

SHG-000973_01

Production ID:

1P-000000258

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Weld no.	Object ID.	Charge no.	Dim.	WPS no.	Welders id.	Filler mat. batch no.	Welding end date/time	MT	UT	VT	Lamination (UT)
1	10020350	3712	Ø70 x 13	SH 39 - 01 SH 39 - 02	535	ND 5844 MCL6231	14/7-16 12°	Technician & NDT 100% Ulrik Gjerstad	Technician & NDT 100% Ulrik Gjerstad	Technician & NDT 100% Ulrik Gjerstad	Technician & NDT 100% Ulrik Gjerstad
	10020351	15 50 96 - 28	PI 20								
2											
3											
4											
5											
6											
7											

Sheet 1 of 3: Welded
Sheet 2 of 3: Machined
Sheet 3 of 3: Weld Log

NDT to be performed according to:
DNV STANDARD FOR CERTIFICATION No. 2.22
LIFTING APPLIANCE JUNE 2013

Comments:

NDT performed by:



15/7-16 Item #: 1

Customer Name/ Customer Drawing/ Class:

Modus - Winch OE-2000-A3-4-7-2-FS-NZ-003

Qty: 1

Mat: -				Weight: 7 kg		<div>Projection:</div> <div></div>	Approved	28-06-2016	PF
0-0		14-06-2016	MKJ	General Tolerances:			Checked	21-06-2016	CS
Revision	Change	Date	Name	Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF				Date	Name

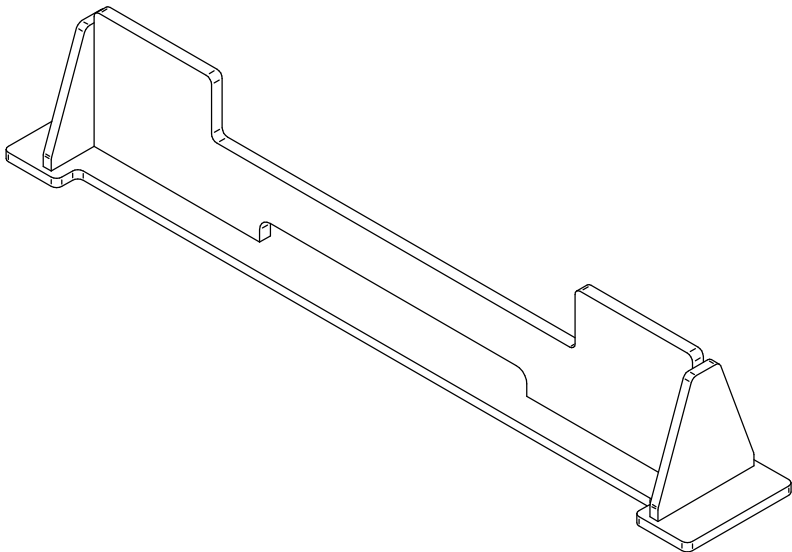
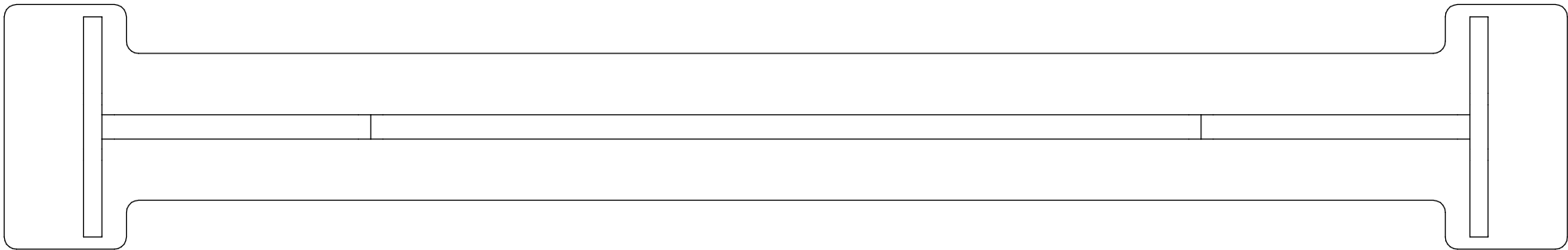
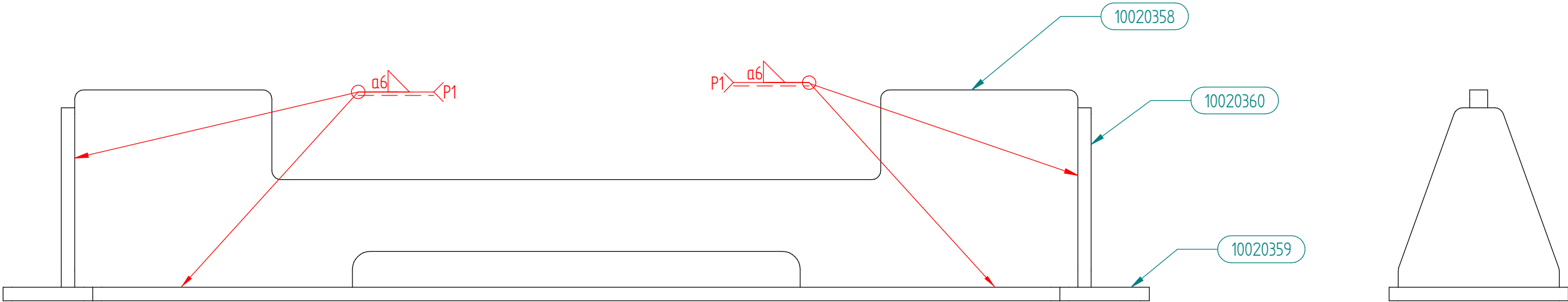
Subject:

Bracket for gearbox

04 JULI 2016

	SH Group as Kuopiovej 20 DK-5700 Svendborg + 45 62 21 78 10 www.shgroup.dk		Drawn by: MKJ	Format: A4	Date: 14-06-2016
			Drawing no: 10020353	Sheet: 3 OF 3	
			Project ID: SHG-000973_01	Production ID: 1P-000000258	

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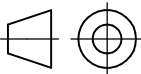



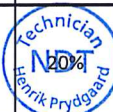
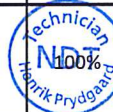
1:10

Object ID	QTY	Subject	Mass	Raw material	POS
10020358	1	Base plate for LW console	23 kg	10010221 Plate-NV D36-20---3.1-Raw	1
10020359	1	Bottom plate for LW console	20 kg	10010217 Plate-NV D36-15-_-3.1-Raw	2
10020360	2	Side plate for LW console	6 kg	10010217 Plate-NV D36-15-_-3.1-Raw	3

Sheet 1 of 3: Welded
Sheet 2 of 3: Machined
Sheet 3 of 3: Weld Log

Next: M

Customer Name/ Customer Drawing/ Class:										
Mat: -				Weight: 49 kg		Projection: 	Approved			
				General Tolerances:			Checked			
Revision	Change	Date	Name	Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF				Date	Name	
Subject: LW console										
				SH Group as Kuopiovej 20 DK-5700 Svendborg + 45 62 21 78 10 www.shgroup.dk		Drawn by:		Format:	Date:	
						MKJ		A3	14-06-2016	
						Drawing no: 10020357			Sheet: 1 OF 3	
						Production ID:		Production ID:		
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Weld no.	Object ID.	Charge no.	Dim.	WPS no.	Welders id.	Filler mat. batch no.	Welding end date/time	MT	UT	VT	Lamination (UT)
1	10020358	155096-2	PI 20	SH 16 - 02	NB6421 503	NB6421	9/7-16				
	10020359	254920-2	PI 15								
	10020360	254920-2	PI 15								
2											
3											
4											
5											
6											
7											

Sheet 1 of 3: Welded
Sheet 2 of 3: Machined
Sheet 3 of 3: Weld Log

NDT to be performed according to:
DNV STANDARD FOR CERTIFICATION No. 2.22
LIFTING APPLIANCE JUNE 2013

Comments:

NDT performed by:




13/7-16

Item #: 1

Customer Name/ Customer Drawing/ Class:

Modus - Cable engine Sub Assembly-LW traction system 2kN Qty: 10/2

Mat: -		Weight: 49 kg		Projection:	Approved	28-06-2016	PF
0-0		14-06-2016	MKJ		Checked	27-06-2016	CS
Revision	Change	Date	Name			Date	Name


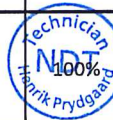
Subject:

LW console

30 JUNI 2016

		SH Group as Kuopiovej 20 DK-5700 Svendborg + 45 62 21 78 10 www.shgroup.dk		Drawn by:	Format:	Date:
				MKJ	A4	14-06-2016
				Drawing no:	Sheet:	
				10020357	3 OF 3	
				Project ID:	Production ID:	
				SHG-000973_01	1P-000000261	

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Weld no.	Object ID.	Charge no.	Dim.	WPS no.	Welders id.	Filler mat. batch no.	Welding end date/time	MT	UT	VT	Lamination (UT)
1	10020358	155090-2	PI 20	SH 16 - 02	503	NB6421	9/7-16				
	10020359	254920-2	PI 15								
	10020360	254920-2	PI 15								
2											
3											
4											
5											
6											
7											

Sheet 1 of 3: Welded
Sheet 2 of 3: Machined
Sheet 3 of 3: Weld Log

NDT to be performed according to:
DNV STANDARD FOR CERTIFICATION No. 2.22
LIFTING APPLIANCE JUNE 2013

Comments:

NDT performed by:



Item #: 2

13/7.16.

Customer Name/ Customer Drawing/ Class:

Modus - Cable engine Sub Assembly-LW traction system 2kN Qty: 20/2

Mat: -			Weight: 49 kg			Approved	28-06-2016	PF
0-0		14-06-2016	MKJ	General Tolerances:		Checked	27-06-2016	CS
Revision	Change	Date	Name	Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF			Date	Name

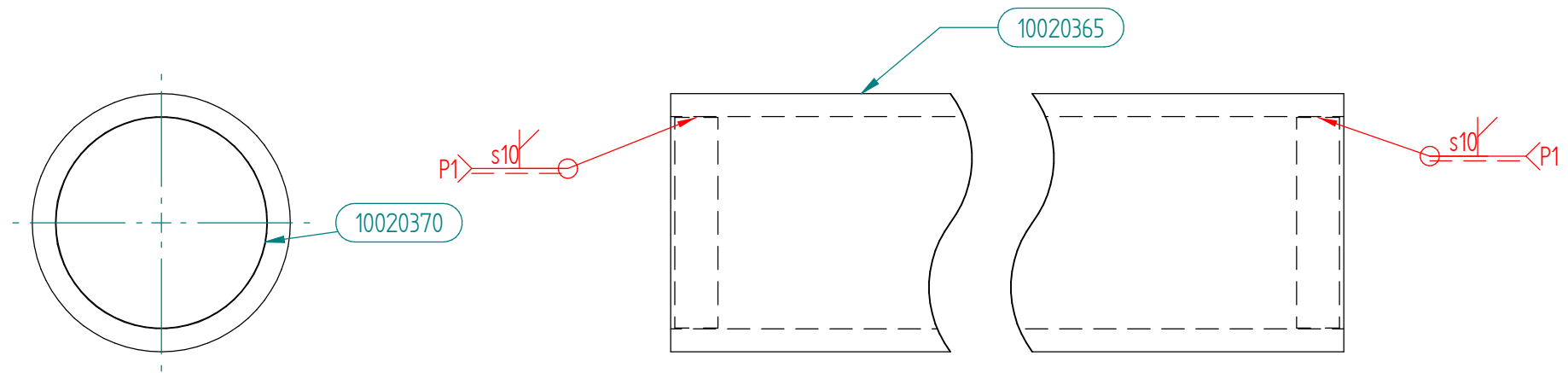
Subject:

LW console

30 JUNI 2016

 <small>Unauthorized use of this drawing, which may not be copied, is subjected to prosecution according to the law of illoyal competition</small>	SH Group as Kuopiovej 20 DK-5700 Svendborg + 45 62 21 78 10 www.shgroup.dk	Drawn by:	Format:	Date:
		MKJ	A4	14-06-2016
		Drawing no:		Sheet:
		10020357		3 OF 3
		Project ID:		Production ID:
SHG-000973_01		1P-000000261		

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Object ID	QTY	Subject	Mass	Raw material	POS
10020365	1	Guidance tube $\phi 120$ L1900	55 kg	10020369 Pipe-Seamless-127--14-NV D36-3,1-HOT	1
10020370	2	Cap for guidance axle	2 kg	10010221 Plate-NV D36-20---3.1-Raw	2


Sheet 1 of 3: Welded

Sheet 2 of 3: Machined

Sheet 3 of 3: Weld Log

Next: M

Customer Name/ Customer Drawing/ Class:

Mat: -				Weight: 57 kg		<div>Projection:</div> <div></div>	Approved		
				General Tolerances:			Checked		
Revision	Change	Date	Name	Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF				Date	Name

Subject:

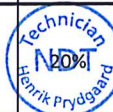

Guidance tube $\phi 120$ L1900



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Drawn by: MKJ	Format: A4	Date: 15-06-2016
Drawing no: 10020372		Sheet: 1 OF 3
Project ID:		Production ID:

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Weld no.	Object ID.	Charge no.	Dim.	WPS no.	Welders id.	Filler mat. batch no.	Welding end date/time	MT	UT	VT	Lamination (UT)
1	10020365	352458	Ø127 x 14	SH 39 - 01	625	NF5561 NB6421	4-8-16 1315		0%		
	10020370	155096-28	Ø98 x 22								
2											
3											
4											
5											
6											
7											

Sheet 1 of 3: Welded
Sheet 2 of 3: Machined
Sheet 3 of 3: Weld Log

NDT to be performed according to:
DNV STANDARD FOR CERTIFICATION No. 2.22
LIFTING APPLIANCE JUNE 2013

Comments:

NDT performed by:




Item # : 1

8/8-16.

Customer Name/ Customer Drawing/ Class:

Modus - Cable engine Sub Assembly-LW traction system 2kN Qty: 1 of 2

Mat: -		Weight: 57 kg		Projection:	Approved	28-06-2016	PF
0-0		15-06-2016	MKJ		Checked	21-06-2016	CS
Revision	Change	Date	Name			Date	Name

General Tolerances:

Tolerances: ISO 2768-1 m
Tolerances: EN ISO 13920-BF

Subject:

Guidance tube Ø120 L1900

30 JUNI 2016

		SH Group as Kuopiovej 20 DK-5700 Svendborg + 45 62 21 78 10 www.shgroup.dk		Drawn by:	Format:	Date:
				MKJ	A4	15-06-2016
				Drawing no:	Sheet:	
				10020372	3 OF 3	
				Project ID:	Production ID:	
				SHG-000973_01	1P-000000261	

Unauthorized use of this drawing, which may not be copied, is subjected to prosecution according to the law of illoyal competition

Weld no.	Object ID.	Charge no.	Dim.	WPS no.	Welders id.	Filler mat. batch no.	Welding end date/time	MT	UT	VT	Lamination (UT)
1	10020365	352458	Ø127 x 14	SH 39 - 01	625	NF5561 NB6421	4-8-16 1315		0%		
	10020370	155096-28	Ø98 x 22								
2											
3											
4											
5											
6											
7											

Sheet 1 of 3: Welded
Sheet 2 of 3: Machined
Sheet 3 of 3: Weld Log

NDT to be performed according to:
DNV STANDARD FOR CERTIFICATION No. 2.22
LIFTING APPLIANCE JUNE 2013

Comments:

NDT performed by:



8/8-16

Item #: 2

Customer Name/ Customer Drawing/ Class:

Modus - Cable engine Sub Assembly-LW traction system 2kN Qty: 20/2

Mat: -			Weight: 57 kg		Projection:	Approved	28-06-2016	PF
0-0		15-06-2016	MKJ	General Tolerances:		Checked	21-06-2016	CS
Revision	Change	Date	Name	Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF			Date	Name

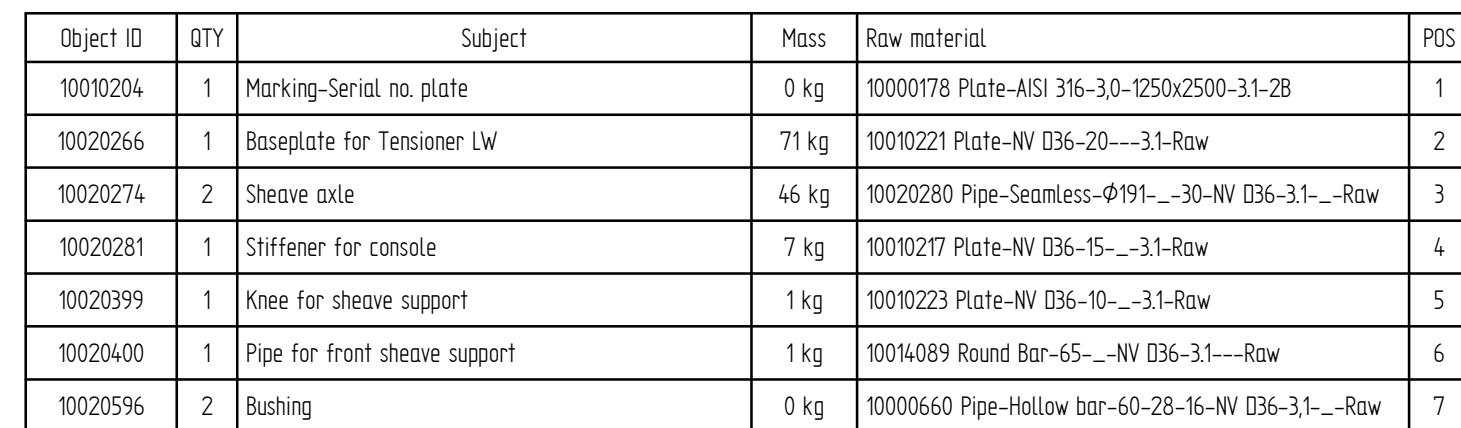
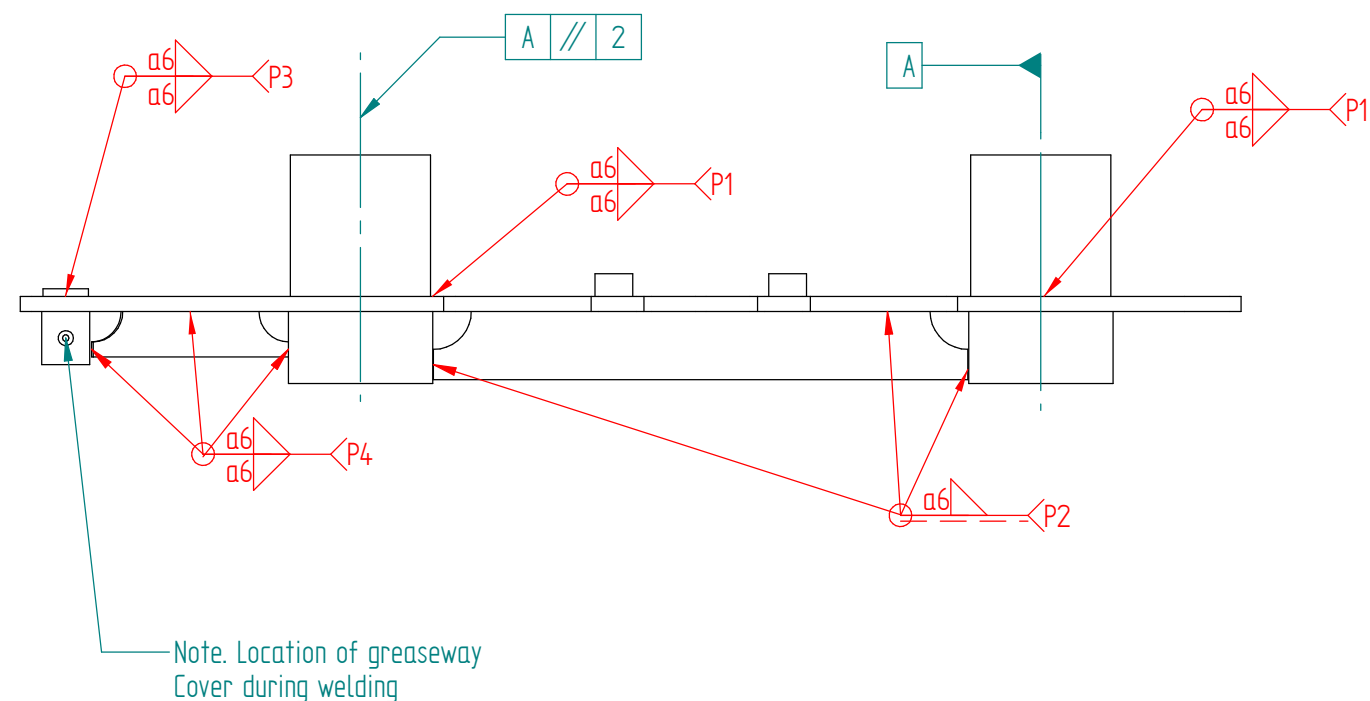
Subject:

Guidance tube Ø120 L1900

30 JUNI 2016

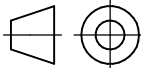

			SH Group as Kuopiovej 20 DK-5700 Svendborg + 45 62 21 78 10 www.shgroup.dk		Drawn by:	Format:	Date:
					MKJ	A4	15-06-2016
					Drawing no: 10020372	Sheet: 3 OF 3	
					Project ID: SHG-000973_01	Production ID: 1P-000000261	

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Sheet 1 of 3: Welded
Sheet 2 of 3: Machined
Sheet 3 of 3: Weld Log

Next: M

Customer Name/ Customer Drawing/ Class:											
Mat: -				Weight: 127 kg		<div>Projection:</div> <div></div>		Approved			
				General Tolerances:				Checked			
Revision	Change	Date	Name	Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF						Date	Name
Subject:											
Frame for LW traction system											
<div></div> <div>SH Group as Kuopiovej 20 DK-5700 Svendborg + 45 62 21 78 10 www.shgroup.dk</div>						Drawn by:		Format:		Date:	
						MKJ		A3		15-06-2016	
						Drawing no:				Sheet:	
						10020416				1 OF 3	
						Project ID:		Production ID:			
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Weld no.	Object ID.	Charge no.	Dim.	WPS no.	Welders id.	Filler mat. batch no.	Welding end date/time	MT	UT	VT	Lamination (UT)
1	10020274	50809950	Ø191 x 30	SH 16 - 02	6002	NB6421	14/7-2016 kl 1230		0%		
	10020266	155096-2	PI 20								
2	10020274	50809950	Ø191 x 30	SH 16 - 02	6002	NB6421	14/7 2016 kl 1230		0%		
	10020266	155096-2	PI 20								
	10020281	254920-2	PI 15								
3	10020400	37121	Ø60 x 15	SH 39 - 02	6002	NB.6421	14/7 2016 kl 1300		0%		
	10020266	155096-2	PI 20								
4	10020400	37121	Ø60 x 15	SH 16 - 02	6002	NB6421	14/7 2016 kl 1300		0%		
	10020399	254919-2	PI 10								
	10020266	155096-2	PI 20								
	10020274		Ø191 x 30								
5	10020266	155096-2	PI 20	SH 36 - 02	503ME	213257FP	14/7 - 16 15-00		0%		
	10010204	395894	PI 3								
6	10020596	197749	Ø50	SH 39 - 02	6002	NB6421	14/7 2016 kl 14		0%		
	10020266	155096-2	PI 20								
7											

Sheet 1 of 3: Welded
Sheet 2 of 3: Machined
Sheet 3 of 3: Weld Log

NDT to be performed according to:
DNV STANDARD FOR CERTIFICATION No. 2.22
LIFTING APPLIANCE JUNE 2013

Comments:

NDT performed by:



14/7-16

Item #: 1

Customer Name/ Customer Drawing/ Class:

Modus - Cable engine Sub Assembly-LW traction system 2kN Qty: 1

Mat: -

Weight: 127 kg

Projection:

Approved

28-06-2016

PF

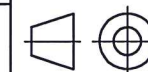
0-0

15-06-2016

MKJ

General Tolerances:

Tolerances: ISO 2768-1 m
Tolerances: EN ISO 13920-BF



Checked

27-06-2016

CS

Revision Change

Date

Name

Date

Name

Subject:

Frame for LW traction system

30 JUNI 2016



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Drawn by:

MKJ

Format:

A4

Date:

15-06-2016

Drawing no:

10020416

Sheet:

3 OF 3

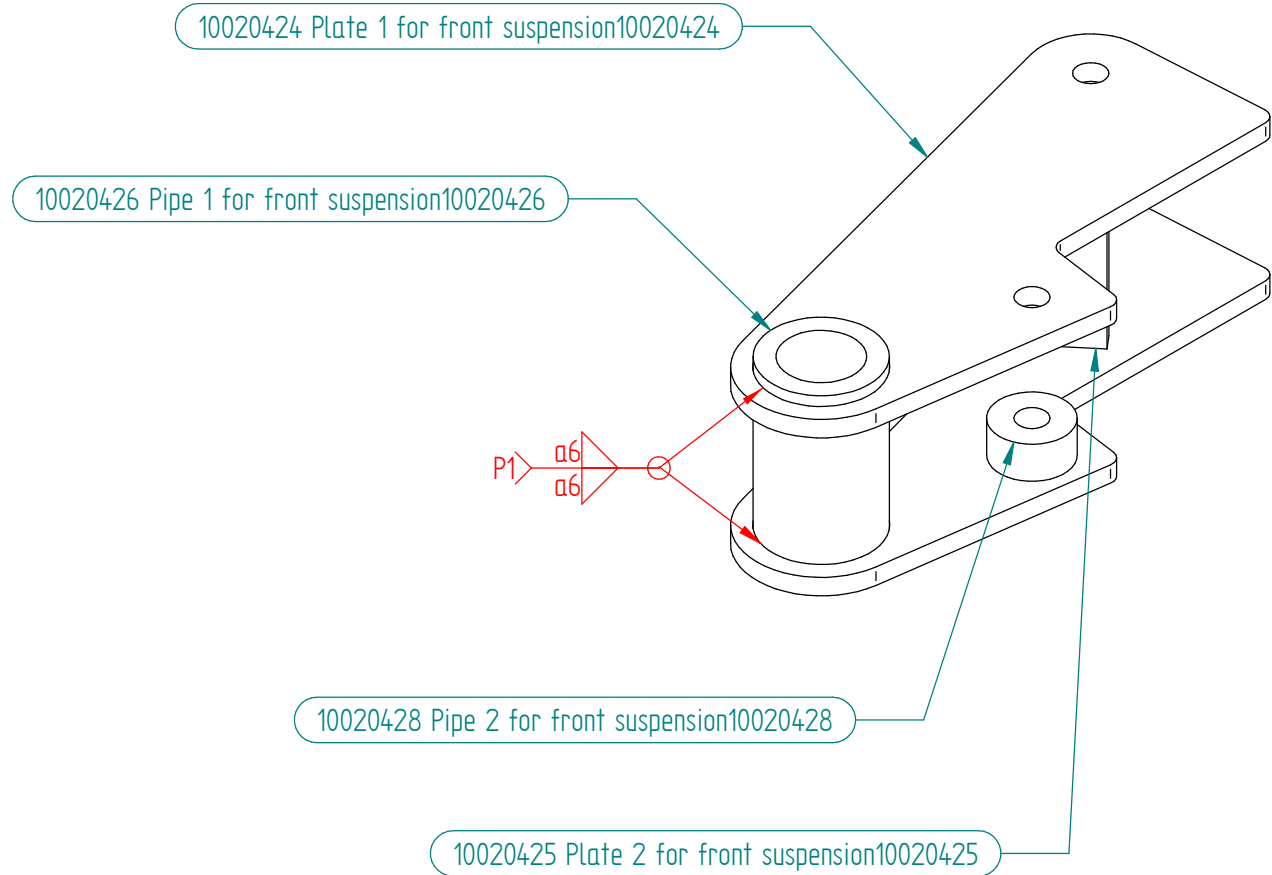
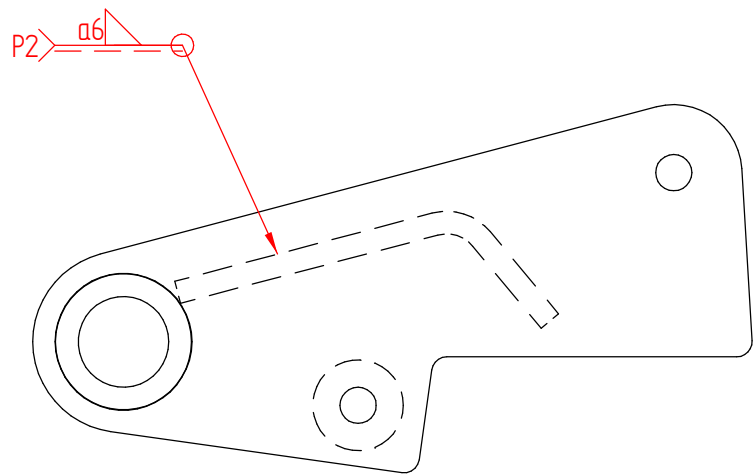
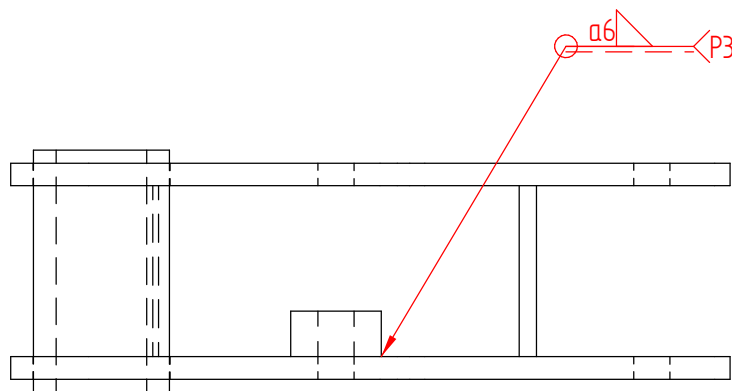
Project ID:

SHG-000973_01

Production ID:

1P-000000261

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Object ID	QTY	Subject	Mass	Raw material	POS
10020424	2	Plate 1 for front suspension	15 kg	10010217 Plate-NV D36-15-_-3.1-Raw	1
10020425	1	Plate 2 for front suspension	4 kg	10010217 Plate-NV D36-15-_-3.1-Raw	2
10020426	1	Pipe 1 for front suspension	4 kg	10000579 Round Bar-90-_-NV E36-3.1---Raw	3
10020428	1	Pipe 2 for front suspension	0 kg	10000545 Round Bar-60-_-NV E36-3.1---_	4

Sheet 1 of 3: Welded

Sheet 2 of 3: Machined

Sheet 3 of 3: Weld Log

Next: M

Customer Name/ Customer Drawing/ Class:									
Mat: -				Weight: 23 kg		Projection:		Approved	
				General Tolerances:				Checked	
Revision		Change		Date		Name		Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF	
Subject:									
Front suspension frame									
						Drawn by:		Format:	
						MKJ		A3	
						Date:		15-06-2016	
						Drawing no:		Sheet:	
						10020429		1 OF 3	
						Project ID:		Production ID:	
Unauthorized use of this drawing, which may not be copied, is subjected to prosecution according to the law of illoyal competition									

Weld no.	Object ID.	Charge no.	Dim.	WPS no.	Welders id.	Filler mat. batch no.	Welding end date/time	MT	UT	VT	Lamination (UT)
1	10020426	333289	Ø90	SH 39 - 02	605	NB 6421	14/7-16 13 ³⁰		0%		
	10020424	254920-2	PI 15								
2	10020425	254920-2	PI 15	SH 39 - 02	605	NB 6421	14/7-16 13 ³⁰		0%		
	10020424	254920-2	PI 15								
3	10020428	197249	Ø60	SH 39 - 02	605	NB 6421	14/7-16 13 ³⁰		0%		
	10020424	254920-2	PI 15								
4											
5											
6											
7											

Sheet 1 of 3: Welded
Sheet 2 of 3: Machined
Sheet 3 of 3: Weld Log

NDT to be performed according to:
DNV STANDARD FOR CERTIFICATION No. 222
LIFTING APPLIANCE JUNE 2013

Comments:

NDT performed by:



19/7-16

Item #: 1

Customer Name/ Customer Drawing/ Class:

Modus - Cable engine Sub Assembly-LW traction system 2kN Qty: 1

Mat: -			Weight: 23 kg		Projection:	Approved	28-06-2016	PF
0-0		15-06-2016	MKJ	General Tolerances:		Checked	27-06-2016	CS
Revision	Change	Date	Name	Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF			Date	Name

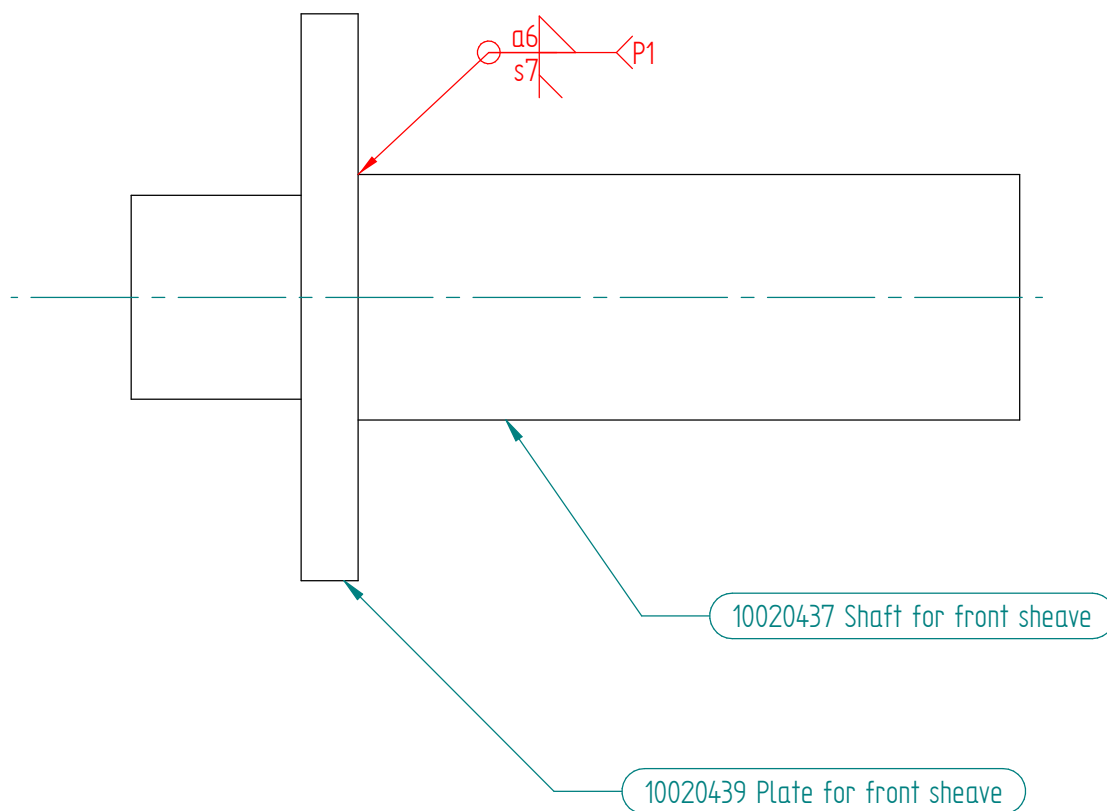
Subject:

Front suspension frame

30 JUNI 2016

			SH Group as Kuopiovej 20 DK-5700 Svendborg + 45 62 21 78 10 www.shgroup.dk		Drawn by:	Format:	Date:
					MKJ	A4	15-06-2016
					Drawing no:	Sheet:	
					10020429	3 OF 3	
					Project ID:	Production ID:	
					SHG-000973_01	1P-000000261	

Unauthorized use of this drawing, which may not be copied, is subjected to prosecution according to the law of illoyal competition





Object ID	QTY	Subject	Mass	Raw material	POS
10020437	1	Shaft for front sheave	3 kg	10014089 Round Bar-65-_-NV D36-3.1---Raw	1
10020439	1	Plate for front sheave	2 kg	10010217 Plate-NV D36-15-_-3.1-Raw	2

Sheet 1 of 3: Welded
Sheet 2 of 3: Machined
Sheet 3 of 3: Weld Log

Next: M

Customer Name/ Customer Drawing/ Class:											
Mat: -				Weight: 5 kg		Projection:		Approved			
				General Tolerances:				Checked			
Revision		Change		Date				Name		Date	
Subject: Axle for front sheave											
SH Group as Kuopiovej 20 DK-5700 Svendborg + 45 62 21 78 10 www.shgroup.dk						Drawn by:		Format:		Date:	
						MKJ		A4		16-06-2016	
						Drawing no:				Sheet:	
						10020440		1 OF 3			
						Project ID:		Production ID:			
Unauthorized use of this drawing, which may not be copied, is subjected to prosecution according to the law of illoyal competition											

Weld no.	Object ID.	Charge no.	Dim.	WPS no.	Welders id.	Filler mat. batch no.	Welding end date/time	MT	UT	VT	Lamination (UT)
1	10020437	3712	Ø65	SH 40 - 01 SH 40 - 02	535	NE 5852	14/7-16 1032		0%		
	10020439	254920-2	PI 15								
2											
3											
4											
5											
6											
7											

Sheet 1 of 3: Welded
Sheet 2 of 3: Machined
Sheet 3 of 3: Weld Log

NDT to be performed according to:
DNV STANDARD FOR CERTIFICATION No. 2.22
LIFTING APPLIANCE JUNE 2013

Comments:

NDT performed by:




19/7-16

Item #: 1

Customer Name/ Customer Drawing/ Class:

Modus - Cable engine Sub Assembly-LW traction system 2kN Qty: 1

Mat: -				Weight: 5 kg	<div>Projection:</div> <div></div>	Approved	28-06-2016	PF
0-0		16-06-2016	MKJ	General Tolerances:		Checked	27-06-2016	CS
Revision	Change	Date	Name	Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF			Date	Name

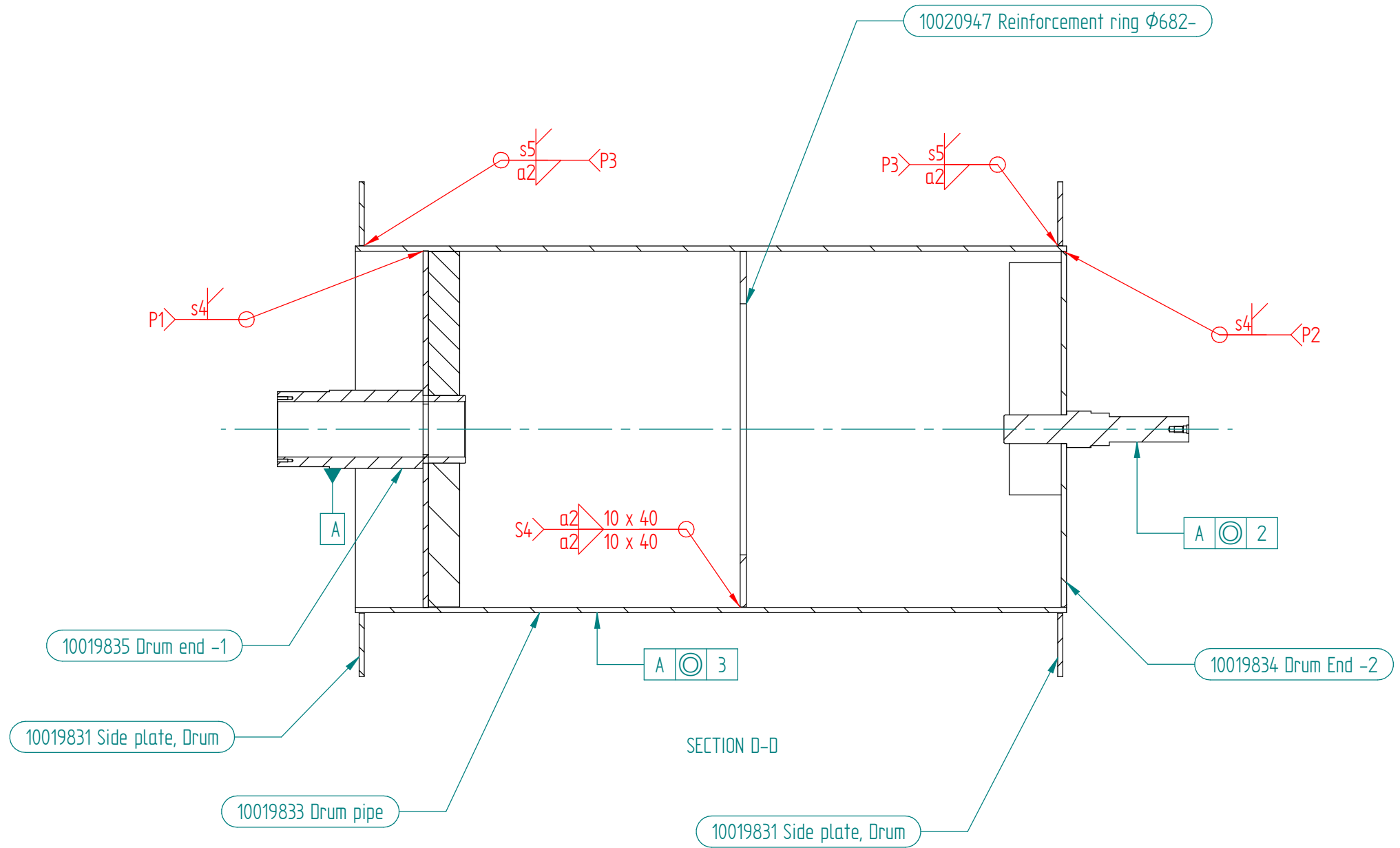
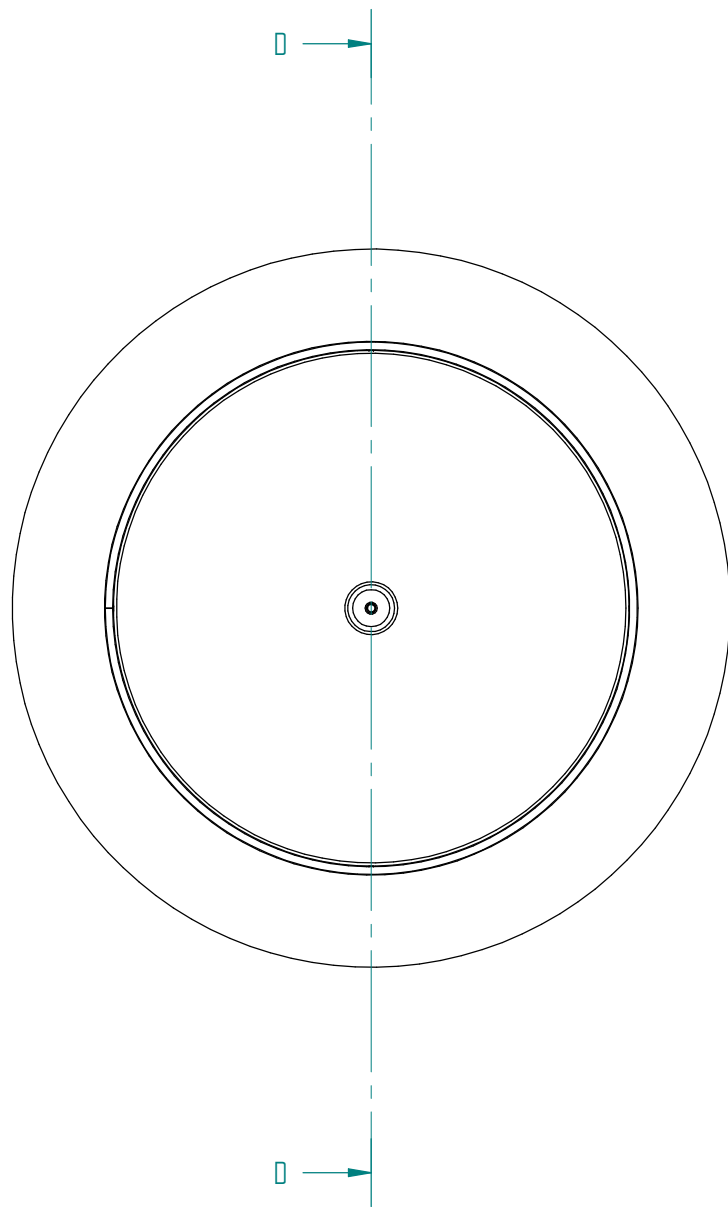
Subject:

Axle for front sheave

30 JUNI 2016

				SH Group as Kuopiovej 20 DK-5700 Svendborg + 45 62 21 78 10 www.shgroup.dk		Drawn by:	Format:	Date:
						MKJ	A4	16-06-2016
						Drawing no:	Sheet:	
						10020440	3 OF 3	
						Project ID:	Production ID:	
						SHG-000973_01	1P-000000261	

Unauthorized use of this drawing, which may not be copied, is subjected to prosecution according to the law of illoyal competition





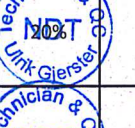
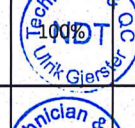
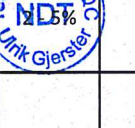
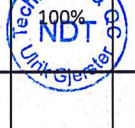


Sheet 1 of 3: Welded
Sheet 2 of 3: Machined
Sheet 3 of 3: Weld Log

Next: M

Object ID	QTY	Subject	Mass	Raw material	POS
10019831	2	Side plate, Drum	50 kg	10011001 Plate-AISI 304-10-1250x2500-3.1-2B	1
10019833	1	Drum pipe	234 kg	10011001 Plate-AISI 304-10-1250x2500-3.1-2B	2
10019834	1	Drum End -2	44 kg		3
10019835	1	Drum end -1	50 kg		4
10020947	1	Reinforcement ring Ø682-	17 kg	10020949 Plate-AISI 304-12-1250x2500---2B	5

Customer Name/ Customer Drawing/ Class:					
Mat: -		Weight: 339 kg		Projection:	
		General Tolerances:		Approved	
Revision		Change		Checked	
Date		Name		Date	
Subject:					
Drum weld					
SH GROUP		SH Group as Kuopiovej 20 DK-5700 Svendborg + 45 62 21 78 10 www.shgroup.dk		Drawn by: MKJ	
				Format: A3	
				Date: 23-06-2016	
				Sheet: 1 OF 3	
				Production ID:	
Unauthorized use of this drawing, which may not be copied, is subjected to prosecution according to the law of illoyal competition					

Weld no.	Object ID.	Charge no.	Dim.	WPS no.	Welders id.	Filler mat. batch no.	Welding end date/time	P.T	UT	VT	Lamination (UT)
1	10019835	111390	PI 10	SH 24'	313	416104 CRUNA WIK EGA	12/7-16 14 ³⁰		0%		
	10019833	111390	PI 10								
2	10019834	111390	PI 10	SH 24'	313	-1-	12/7-16 16 ⁼		0%		
	10019833	111390	PI 10								
3	10019831	111390	PI 10	SH 24'	313	-1-	12/7-6 17 ³⁰		0%		
	10019833	111390	PI 10								
4	10020947	÷ CH. NR. 111390 i vake på klovret. MKJ.	PI 12	SH 24'	313	-1-	8/716 14 ³⁰		0%		
	10019833	111390	PI 10								
5											
6											
7											

Sheet 1 of 3: Welded
Sheet 2 of 3: Machined
Sheet 3 of 3: Weld Log

NDT to be performed according to:
DNV STANDARD FOR CERTIFICATION No. 2.22
LIFTING APPLIANCE JUNE 2013

Comments:

NDT performed by:



12/7-16 Item #: 1

Customer Name/ Customer Drawing/ Class:

Modus - Drum-OW-2000

Qty: 1

Mat: -				Weight: 339 kg		Approved	28-06-2016	PF
0-1	Reinforcement ring added	06-07-2016	MKJ	General Tolerances:		Checked	27-06-2016	CS
Revision	Change	Date	Name	Tolerances: ISO 2768-1 m Tolerances: EN ISO 13920-BF			Date	Name

Subject:

Drum weld

06 JULI 2016



SH Group as
Kuopiovej 20
DK-5700 Svendborg
+ 45 62 21 78 10
www.shgroup.dk

Drawn by: MKJ	Format: A4	Date: 23-06-2016
Drawing no: 10020603		Sheet: 3 OF 3
Project ID: SHG-000973_01		Production ID: 1P-000000260

Unauthorized use of this drawing, which may not be copied, is subjected to prosecution according to the law of illoyal competition

Revision nr.: 0

Redigeret af: LER

Godkendt af: UN

Godkendelsesdato: 01-10-2014

MONTAGE LOG - WINCH

Formular nr.: p3.3 – f6



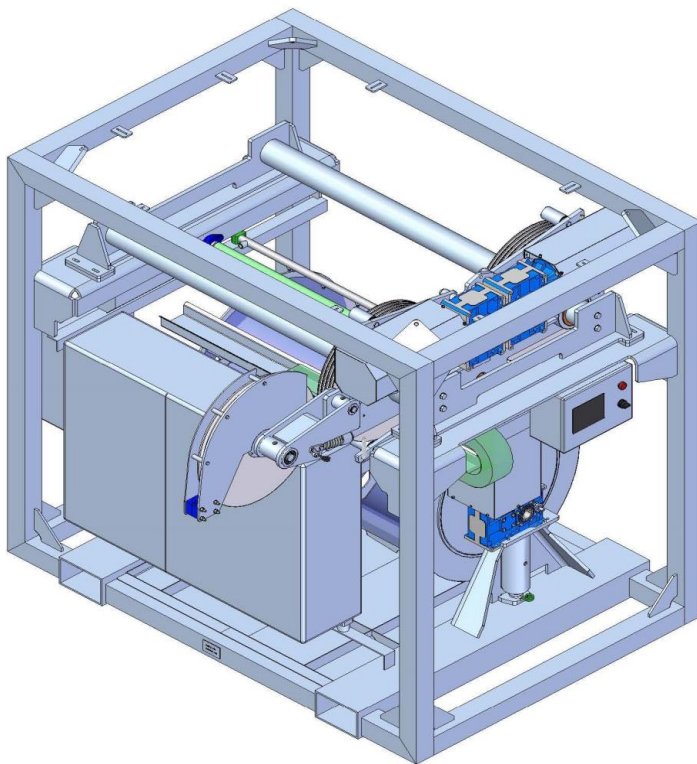
H-no.:		V- no.:		Date:	
Drawing of drive end (see next page)					
Drive:	Motor serial number:	Gear serial number:		Tandhjul heat number:	
1	0407163	2			
1.1	0407162	2			
2	0407161	2013663001			
2.1					
3	137288800 41605	2			
3.1					

Levelwind	
Motor serial number:	Gear serial number:
HPU Motor	
Motor serial number:	


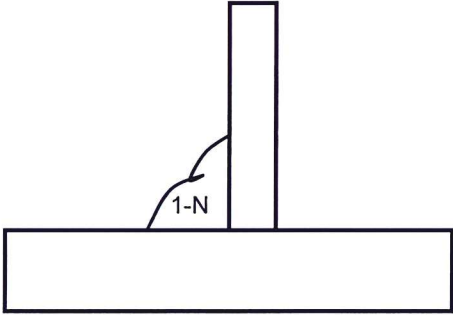
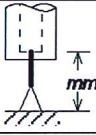

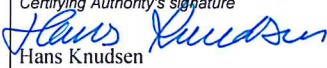
Diverse components		
Components:	Heat / serie no.:	
Toothed rim		
Smooth shaft - upper		
Smooth shaft - lower		
Trapeze spindle		
Load Pin	V87859 (Blockhjul)	
Wire Sling		
Wire Sling		
Break cylinder	H no.:	V no.:
Slip ring		

Kontrolleret af: _____

SHG-000973 - 1
MODUS Seabed
OE-2000-A3-4-7-2-FS-NZ-003



MATERIAL CERTIFICATES	1
PRODUCTION LOGS	2
WELDING PROCEDURE SPECIFICATIONS (WPS)	3
CERTIFICATES FOR WELDERS	4
NDT REPORTS	5
CERTIFICATES FOR NDT INSPECTORS	6
PRODUCT RELATED CERTIFICATES	7
TEST REPORTS	8
PAINT REPORT	9
FACTORY ACCEPTANCE TEST (FAT)	10

		SVEJSEPROCEDURE-SPECIFIKATION WELDING PROCEDURE SPECIFICATION				WPS No. SH 16-02				
		Godkendelse i henhold til: Approval according to: DS/EN ISO 15614-1				Rev. No. 5		Blad/Sheet 1 / 1		
		DS/EN ISO 15609-1				Dato/Date 30.04.2013				
		Kundens specifikation: Client's specification: DNV Rules for certification of Lifting Appliances				Dækket af WPQR nr./Supported by WPQR No. SH 16				
Kunde/Client					Projekt/Project					
GRUNDMATERIALER/BASE MATERIALS Standard Betegnelse/Code Designation-grade ISO 15608 Gruppe/Group * Ceqv. max. Carbon Steel 1.1, 1.2, 1.4 - til/to Carbon Steel 1.1, 1.2, 1.3, 1.4 - Plade-rør/Plate-pipe Tykkelsesområde mm/Thickn. range mm Plade-rør/Plate-pipe Tykkelsesområde mm/Thickn. range mm Stumpsøm/Butt weld - til/to Stumpsøm/Butt weld - Kantsøm/Fillet weld 8,0 - 32,0 til/to Kantsøm/Fillet weld 10,0 - 40,0 *) Max. flydespænding/Max. yield strength Rørdiameterområde/Pipe diameter range mm a-mål mm/Throat thickness mm Rørdiameterområde/Pipe diameter range mm 355 N/mm ² ≥ 80 Alle/all Plade/plate										
Fugedetaljer og sømopbygning (skitse) / Joint details and welding sequence (sketch) <div style="display: flex; align-items: center;">  <div style="margin-left: 10px;"> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> </div> </div>					Hæftning/Tacking Som 1. streng / as run no. 1 Min. forvarmetemp./Min. preheat temp. 20 °C Længde/Length 10 mm Antal strenger/No of runs 1 Stillings/Position Alle/all Andre data/Other data - 2. side Fugning/Gouging <input type="checkbox"/> Ja/Yes <input checked="" type="checkbox"/> Nej/No Forvarmetemp./Preheat temp. °C Elektrode dia./Electrode dia. mm Lufttryk/Air pressure bar 2. side Slibning/Grinding <input type="checkbox"/> Ja/Yes <input checked="" type="checkbox"/> Nej/No					
Svejsestilling/Welding position Alle undtaget PG, J-L045/ all except PG and J-L045										
Streng nr. Run No.	Svejses-proces Welding process	G: Gas T: Tråd/Wire P: Pulver/Flux E: Electrode ▽ Fabrikat og betegnelse/ Manufacture and trade mark	W: Wolfram/tungsten	Dimension Diameter -Længde Diameter -Length mm	Standard	Klassifikation/Classification G: ISO 14175 T: EN 758 P: E:	H ₂ Skala Scale	Gas Dyse Nozzle l/min mm ²	Baggas Back shielding gas Type l/min No.	Bem. Note No.
1-N	136	T	Elgacore DWA 55E	1,2		T 46 4 P M 1 H5	D	-	-	-
		G	Argon 82% / CO ₂ 18%			M21	-	18-22	18	-
<input checked="" type="checkbox"/> Manuelt/Manual <input type="checkbox"/> Mekaniseret/Mechanized <input type="checkbox"/> Automatisk/Automatic <input type="checkbox"/> Puls/Pulsed										
Streng nr. Run No.	Program nr. Programme No.	Strøm/Current AC DC Pol. Område/Range Amp.		Tråd-hastighed/ Wire speed Omr./Range m/min		Svejseshast. mm/min. Travel speed mm/min. or torch tip speed mm/min	S: u. pendl./Stringer XX: pendl., strengbredde max./ Weaving, run width max.	Andre data/ Other data	Bem. Note No.	
1-N	-	DC+	189-231	-	18-25	23,8-26,3	146-178	10-14	1,2-2,0	-
Specielle krav/Special requirements Forvarmning/Preheat 20 °C Temp. mellem strenger/Interpass temp. max. 162 °C Efterf. varmebehandling/PWHT: <input checked="" type="checkbox"/> Nej/No <input type="checkbox"/> Ja, se bilag nr./Yes, see enclosure No.:										
Bemærkninger - andre oplysninger / Notes - other informations No. 1: Tykkelsesområde for kantsømme revideret den 23.08.2012 iflg. DS/EN ISO 15614-1/A2 / Thickness range for fillet weld revised 23.08.2012 according to DS/EN ISO 15614-1/A2. No. 2: Tykkelsesområde rettet fra 24 til 32 mm iflg. WPQR SH 16 tykkelse = 16 mm/Thickness range corrected from 24 to 32 mm according to WPQR SH 16 thickness = 16 mm.										
Dato/Date 12/7-13					Dato/Date			Dato/Date 30.04.2013		
Producentens underskrift/ Contractor's signature 					Underskrift af kunde-kunderepræsentant/ Client's or representative's signature			Underskrift af godkendende myndighed/ Certifying Authority's signature  Hans Knudsen		

370-4-1-da-en (EN-formular) FORCE Technology

Svejseprocedure specifikation

Welding Procedure Specification

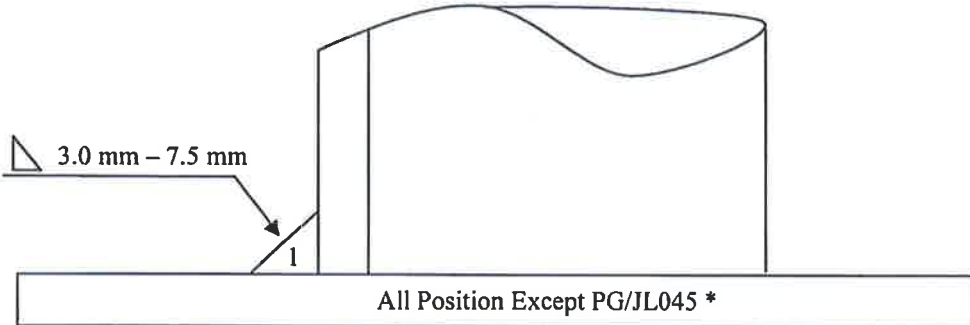


Godkendt i h. t. / Qualific. acc. to: DS/EN ISO 15614-1, DS/EN ISO 15609-1	WPQR nr. / WPQR No.: SH 13 & SH 23	Rev.: 0 Rev. date:	WPS No.: SH 23-01
--	--	-----------------------	------------------------------

Kunde: Client	Projekt: Project
-------------------------	----------------------------

Fremstiller: Manufacturer	SH Group A/S
-------------------------------------	---------------------

Grundmaterialer / Base Materials:								
Betegnelse / Designation	Standard / Code	Group No. (EN 15608)	Ceqv. Max.		Betegnelse / Designation	Standard / Code	Group No. (EN 15608)	Ceqv. Max.
S 355	EN 10225	1.1,1.2,1.4		to	S 355	EN 10225	1.1,1.2,1.3, 1.4	
Plade eller rør / Plate or Pipe		Tykk. omr. / Thickn. range			Plade eller rør / Plate or Pipe		Tykk. omr. / Thickn. range	
Rør/Pipe		3.0 – 20 mm		to	Plade/Plate		3.0-20 mm	
Rørdiameter område / Pipe diameter range					Øvrigt / Other			
Udvendig diameter / Outside diameter > 50 mm								


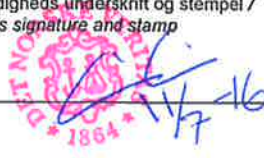
Fugeforberedelse og Svejserækkefølge / Joint Preparation and Welding Sequence	
	Hæftning / Tacking: As run no 1
	Forvarmetemp./Preheat temp.: 20° c.
	Længde / Length (mm): 4 x t. (max 50 mm)
	Antal strenge / No. of runs: 1
	Stillings / Position: All
	Kulfugning / Arc air gouging: -
	Bagsskinne / Backing: -
	Slibning / Grinding: -
	Andre data / Other data: -
	-

Svejetilsatsmaterialer / Welding consumables:											
Streng/ Run No.	Svejses- proces Welding Process (ISO 4063)	G: Gas / Gas W: Tråd / Wire F: Pulver / Flux E: Elektrode / Electrode	Diam. [mm]	Klassificering Classification		Beskyttelses gas Shielding gas			Baggas Back shielding gas		Bem. Rem. No.
		Manufacture and trade name		Norm / Code	Betegnelse / Designation	Type	l / min	Dyse Nozzle Ø mm	Type	L / min	
1	136	W	Elgacore DWA 55 E	1.2	EN 758	T 46 4 PM 1 H5					
1	-	G	82% Argon+18% Co2	-	EN 14175	M21	-	18-24	18-22	-	-


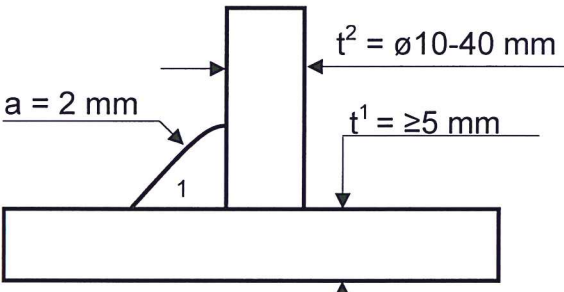
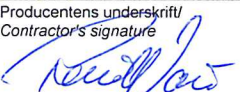


Svejsedetaljer / Welding details:													
Streng nr.	Svejses-process	Svejses stilling	Strøm Current	Type	Spænding	Tråd udstik Elektrisk stick-out mm	Svejseshastighed	Streng el. sidebev. String or weave S or W	Streng bredde Run width Max mm	Varme tilførsel Heat input KJ/mm	Andre data Other data	Bem.	
Run No.	Weld proces	Weld Pos.	Område / range AMP	Type	Område /range Volt / voltage		Travel speed mm / min						
1	136	All*	190 - 220	DC+	22 - 25	-	230 - 175	-	-	0.84 - 1.60	-	*	

Ekstra tilsatsmaterialer Supplemental filler materials	Ingen / None	Pistolhældning i svejseretningen / Torch angle in welding direction	0° – 15°
Forvarmetemperatur / Preheat temperature (Min.)	20 °C	Pistolhældning i sideretningen / Torch angle in side direction	0° – 45°
Mellemstrengs temperatur (Min/Max) / Interpass temperature (Min/Max.)	° / °C	Opfugning på rodsiden / Back gouging	Ja / Yes
Varmebehandling efter svejsning / Post-weld heat treatment	X Nej / No	Fugemetode / Gouging method	Ikke aktuelt Not applicable
Sidebevægelse Weaving	Ja / Yes	Rengøring efter fugning / Cleaning after gouging	Ikke aktuelt Not applicable


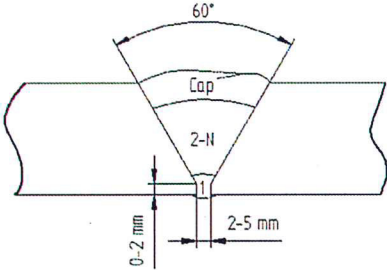


Bemærkninger / Remarks: * According to ISO/EN 15614-1 table 1 pkt f.

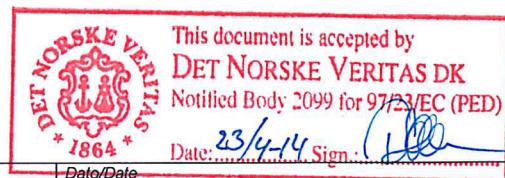
Dato / Date 11.07.2016	Dato / Date	Dato / Date
Fabrikantens underskrift og stempel / Manufactures signature and stamp 	Kundens underskrift og stempel / Client's signature and stamp	Certificerende myndigheds underskrift og stempel / Certifying authority's signature and stamp 

SH GROUP AS Hydraulic · Steel · Engineering		SVEJSEPROCEDURE-SPECIFIKATION WELDING PROCEDURE SPECIFICATION				WPS No. SH 26				
Godkendelse i henhold til: Approval according to:		DS/EN ISO 15613				Rev. No. 2	Blad/Sheet 1 / 1			
DS/EN ISO 15609-1						Dato/Date 13.06.2013				
Kundens specifikation: Client's specification:		DNV Lifting Appliances				Dækket af WPQR nr./Supported by WPQR No. SH 26				
Kunde/Client				Projekt/Project						
GRUNDMATERIALER/BASE MATERIALS Standard Betegnelse/Code Designation-grade ISO 15608 Gruppe/Group * Ceqv. max.										
Rustfri stålør / Stainless steel pipe		8.1		--		Standard Betegnelse/Code Designation-grade ISO 15608 Gruppe/Group Ceqv. max.				
Plade-rør/Plate-pipe		Tykkelsesområde mm/Thickn.range mm		til/to		Rustfri plade / Stainless steel plate 8.1, 8.2, 8.3 --				
Stumpsøm/Butt weld		-		til/to		Plade-rør/Plate-pipe Tykkelsesområde mm/Thickn.range mm				
Kantsøm/Fillet weld		10,0 – 40,0		til/to		Stumpsøm/Butt weld 10,0 – 40,0				
*) Max. flydespænding/Max. yield strength - N/mm ²		Rørdiameterområde/Pipe diameter range mm		til/to		Kantsøm/Fillet weld a-mål mm/Throat thickness mm Rørdiameter/Pipe diameter range mm				
		≥ 51				Alle / All (Multirun) > 500				
Fugedetaljer og sømopbygning (skitse) / Joint details and welding sequence (sketch)						Hæftning/Tacking Som streng 1 / As run no. 1 Min. forvarmetemp. Min. preheat temp. 20 °C Længde/Length 10 mm Antal strenge/No of runs 1 Stillings/Position All Andre data/Other data - 2. side Fugning/Gouging <input type="checkbox"/> Ja/Yes <input checked="" type="checkbox"/> Nej/No Forvarmetemp./Preheat temp. °C Elektrode dia./Electrode dia. mm Lufttryk/Air pressure bar 2. side Slibning/Grinding <input type="checkbox"/> Ja/Yes <input checked="" type="checkbox"/> Nej/No				
Svejestilling/Welding position PB										
Streng nr. / Run No.	Sveje-proces / Welding process	G: Tråd/Wire T: Pulver/Flux P: Elektrode E: Fabrikat og betegnelse/Manufacture and trade mark	W: Wolfram/tungsten	Dimension Diameter -Længde Diameter -Length mm	Klassifikation/Classification G: EN ISO 14175 T: EN ISO 14343 E:	H ₂ Skala Scale	Gas Dyse Nozzle l/min mm ^w	Baggas Back shielding gas Type l/min	Bem. Note No.	
1 - N	135	T	Elga Cromamig 316LSi	1,0	G 19 12 3 LSi	-	-	-	- / -	-
		G	98 % Argon + 2 % CO ₂		M12		18-20		/	
									/	
									/	
									/	
									/	
<input checked="" type="checkbox"/> Manuelt/Manual <input type="checkbox"/> Mekaniseret/Mechanized <input type="checkbox"/> Automatisk/Automatic <input type="checkbox"/> Puls/Pulsed										
Streng nr. / Run No.	Program nr. / Programme No.	Strøm/Current AC DC Pol. Område/Range Amp.		Tråd-hastighed/Wire speed Omr./Range m/min	Svejsehast. mm/min. eller strækkelængde mm/Travel speed mm/min. or run-out-length-mm Omr./Range Volt	S: u. pendl./Stringer XX: pendl., strengbredde max./Weaving, run width max. mm	Heat input KJ/mm (EN 1011)	Andre data/Other data	Bem. Note No.	
1	-	+DC	180 - 220	-	24 - 26	260 - 300	-	0,7 - 1,1	-	
2 - N	-	+DC	180 - 220	-	24 - 26	330 - 400	-	0,5 - 0,9	-	
Specielle krav/Special requirements Forvarmning/Preheat 15 °C Temp. mellem strenge/Interpass temp. max. 65 °C Efterf. varmebehandling/PWHT: <input checked="" type="checkbox"/> Nej/No <input type="checkbox"/> Ja, se bilag nr./Yes, see enclosure No.: Bemærkninger - andre oplysninger / Notes - other informations No. 1: Tykkelsesområde for kantsømme revideret den 23.08.2012 iflg. DS/EN ISO 15614-1/A2 / Thickness range for fillet weld revised 23.08.2012 according to DS/EN ISO 15614-1/A2. No. 2: Tykkelsesområde i skitse revideret den 13.06.2012 / Thickness range in sketch revised 13.06.2013.										
Dato/Date 12/7-2013		Dato/Date				Dato/Date 13.06.2013				
Producentens underskrift/Contractor's signature		Underskrift af kunde-kunderepræsentant/Client's or representative's signature				Underskrift af godkendende myndighed/Certifying Authority's signature				

 SH GROUP AS Hydraulic • Steel • Engineering	SVEJSEPROCEDURE-SPECIFIKATION WELDING PROCEDURE SPECIFICATION				WPS No. SH 35-02				
	Godkendelse i henhold til: DS/EN ISO 15613 Approval according to:				Revision No. 1 [note 4]				
	DS/EN ISO 15609-1				Dato/Date 28.03.2014				
	Kundens specifikation: DNV Lifting Appliances 2.22 - June 2013 Client's specification:				Dækket af WPQR nr./ Supported by WPQR No. SH 35				
Kunde/Client					Projekt/Project				
GRUNDMATERIALER/BASE MATERIALS Standard Betegnelse/Code Designation-grade ISO 15608 Gruppe/Group * Ceqv. max.									
Kulstof stål / Carbon steel 1.2 0.43			Rustfrit stål / stainless steel 8.1 -						
Plade-rør/Plate-pipe Tykkelsesområde mm/Thickn. range mm			Plade-rør/Plate-pipe Tykkelsesområde mm/Thickn. range mm						
Stumpsøm/Butt weld -			Stumpsøm/Butt weld -						
Kantsøm/Fillet weld ≥5,0			Kantsøm/Fillet weld			Rund stål/Round bar: 10 - 40			
*) Max. flydespænding/Max. yield strength 355 N/mm ²			Rørdiameterområde/Pipe diameter range mm >500			Rørdiameter/Pipe diameter range mm 2 (enkeltstrengs / Single run)			
Rund stål/Round bar: 10 - 40									
Fugedetaljer og sømopbygning (skitse) / Joint details and welding sequence (sketch)									
									
Hæftning/Tacking Som streng 1 / As run no. 1 [Note 1]									
Min. forvarmetemp./Min. preheat temp. 150 [note 2] °C									
Længde/Length Min 10 mm									
Antal streng/No of runs 1									
Stilling/Position All except downhill									
Andre data/Other data -									
2. side Fugning/Gouging <input type="checkbox"/> Ja/Yes <input checked="" type="checkbox"/> Nej/No									
Forvarmetemp./Preheat temp. °C									
Elektrode dia./Electrode dia. mm									
Lufttryk/Air pressure bar									
2. side Slibning/Grinding <input type="checkbox"/> Ja/Yes <input checked="" type="checkbox"/> Nej/No									
Svejestilling/Welding position Alle undtagen faldende / All except downhill									
Streng nr.	Svejse-proces	G: Gas	W: Wolffram/tungsten	Dimension Diameter	Klassifikation/Classification	H ₂	Gas	Baggas Back	Bem. Note
Run No.	Welding process	T: Tråd/Wire		-Længde Diameter	G: ISO 14175	Skala Scale	Dyse Nozzle	shielding gas	
		P: Pulver/Flux		-Length mm	T: ISO 14343-A		l/min	Type	No.
		E: Electrode			P:		mm ²	l/min	
		Fabrikat og betegnelse/Manufacture and trade mark			E:				
1	141	T	ESAB OK Tigrod 310	2,0	W 25 20	-	-	-	- / -
		G	99,99% Argon	-	11	-	10-14	-	- / -
		W	Blå / Blue	2,4	WL 20	-	-	-	- / -
									/
									/
									/
<input checked="" type="checkbox"/> Manuelt/Manual <input type="checkbox"/> Mekaniseret/Mechanized <input type="checkbox"/> Automatisk/Automatic <input type="checkbox"/> Puls/Pulsed									
Streng nr.	Program nr.	Strøm/Current		Tråd-hastighed/Wire speed	Svejsehast. mm/min. eller strækkelængde mm/Travel speed mm/min. or run-out length mm	S: u. pendl./Stringer XX: pendl., strengbredde max./Weaving, run width max.		Andre data/Other data	Bem. Note
Run No.	Programme No.	AC DC Pol.	Område/Range Amp.	Omr./Range m/min	Omr./Range Volt	mm	Heat input KJ/mm (EN 1011)		No.
1	-	DC-	135-165	-	13-15	42-99	S	0,9-1,5	3
Specielle krav/Special requirements Forvarmning/Preheat 150 [note 2] °C Temp. mellem streng/Interpass temp. max. - °C									
Efterf. varmebehandling/PWHT: <input checked="" type="checkbox"/> Nej/No <input type="checkbox"/> Ja, se bilag nr./Yes, see enclosure No.:									
Bemærkninger - andre oplysninger / Notes - other informations									
Note 1: Ophæftning forestages efterforvarme af kulstof stål / Tacking to be performed after preheat of Carbon steel									
Note 2: Forvarme er kun gældende for kulstof stål / Preheat is only applicable for carbon steel material.									
Note 3: Når højeste svejsestrøm anvendes, så skal der svejdes med højeste svejsehastighed og omvendt When highest welding current is in use, then use highest welding speed and vice versa.									
Note 4: Reference til Norsok M-101 fjernet / Reference to Norsok M-101 deleted.									
Dato/Date 4/4-2014					Dato/Date 28.03.2014			Dato/Date 28.03.2014	
Producentens underskrift/Contractor's signature					Underskrift af kunde-kunderepræsentant/Client's or representative's signature			Underskrift af godkendende myndighed/Certifying Authority's signature	
									

370-5-1-da-en (EN-formular) FORCE Technology

		SVEJSEPROCEDURE-SPEKIFIKATION WELDING PROCEDURE SPECIFICATION				WPS No. SH 39-01			
		Godkendelse i henhold til: DS/EN ISO 15614-1 Approval according to:				Revision No. 00			
		DS/EN ISO 15609-1 DNV Rules for Classification of Ships - January 2014				Dato/ Date 25.03.2014			
		Kundens specifikation: Client's specification: NORSOK M-101 Edition 5, Oct. 2011				Dækket af WPQR nr./ Supported by WPQR No. SH 39			
Kunde/Client SH Group AS				Projekt/Project					
GRUNDMATERIALER/BASE MATERIALS Standard Betegnelse/Code Designation-grade ISO 15608 Gruppe/Group * Ceqv. max. Kulstof stål / Carbon Steel 1.1, 1.2, 1.4 0,43 til/to Kulstof stål / Carbon steel 1.1, 1.2, 1.3, 1.4 0,43 Plade-rør/Plate-pipe Tykkelsesområde mm/Thickn.range mm til/to Plade-rør/Plate-pipe Tykkelsesområde mm/Thickn.range mm Stumpsøm/Butt weld 3 - 24 til/to Stumpsøm/Butt weld 3 - 24 Kantsøm/Fillet weld til/to Kantsøm/Fillet weld *) Max. flydespænding/Max. yield strength Rørdiameterområde/Pipe diameter range mm a-mål mm/Throat thickness mm Rørdiameter/Pipe diameter range mm N/mm ² ≥ 50 mm ≥ 50 mm									
Fugedetaljer og sømopbygning (skitse) / Joint details and welding sequence (sketch) 				Hæftning/Tacking Som 1. streng / As run no. 1 Min. forvarmetemp. Min. preheat temp. 18 °C Længde/ Length Min. 4 x WT mm Antal strenge/ No of runs 1 Stillings/ Position All except PG and J-L045 Andre data/ Other data 2. side Fugning/Gouging <input type="checkbox"/> Ja/Yes <input checked="" type="checkbox"/> Nej/No Forvarmetemp./ Preheat temp. °C Elektrode dia./ Electrode dia. mm Lufttryk/ Air pressure bar 2. side Slibning/Grinding <input type="checkbox"/> Ja/Yes <input type="checkbox"/> Nej/No					
Svejestilling/Welding position Alle undtaget PG og J-L045 / All except PG and J-L045									
Streng nr.	Svejses- proces	G: Gas T: Tråd/Wire P: Pulver/Flux E: Electrode	W: Wolfram/tungsten	Dimension Diameter -Længde Diameter -Length mm	Klasifikation/Classification G: EN ISO 14175 T: EN ISO 17632-A P: E:	H ₂	Gas	Baggas Back shielding gas Type l/min	Bem. Note
Run No.	Welding process	Fabrikat og betegnelse/ Manufacture and trade mark		Standard	Scale	Skala Scale	Dyse Nozzle		No.
1	138	T	Elgacore MXA 100XP	1,2	T 46 4 M M 1 H5	D		/	
		G	82% Argon + 18% CO ₂		M21	20-25		/	
2-Cap	136	T	Elgacore DWA 55E	1,2	T 42 4 P M 1 H5	D		/	
		G	82% Argon + 18% CO ₂		M21	20-25		/	
								/	
								/	
<input checked="" type="checkbox"/> Manuel/Manual <input type="checkbox"/> Mekaniseret/Mechanized <input type="checkbox"/> Automatisk/Automatic <input type="checkbox"/> Puls/Pulsed									
Streng nr.	Program nr.	Strøm/Current		Tråd- hastighed/ Wire speed	Svejseshast. mm/min. eller strækkelængde mm/ Travel speed mm/min. or run-out length mm	S: u. pendl./Stringer XX: pendl., strengbredde max./ Weaving, run width max.	Andre data/ Other data		Bem. Note
Run No.	Programme No.	AC DC Pol.	Område/Range Amp.	Omr./Range m/min	Omr./Range Volt	mm	Heat input KJ/mm (EN 1011)		No.
1	138	DC+	117-143	15 - 25	14,6 - 16,2	85 - 103	6 - 9	0,8 - 1,3	1, D
2-N	136	DC+	184-224	15 - 25	21,6 - 23,9	183 - 238	9 - 11	0,8 - 1,4	1
Cap	136	DC+	180-220	15 - 25	21,4 - 23,6	207 - 264	11 - 15	0,7 - 1,2	1
Specielle krav/Special requirements Forvarming/Preheat 18 °C Temp. mellem strenge/Interpass temp. max. 207 °C Efterf. varmebehandling/PWHT: <input checked="" type="checkbox"/> Nej/No <input type="checkbox"/> Ja, se bilag nr./Yes, see enclosure No.:									
Bemærkninger - andre oplysninger / Notes - other informations 1: Når højeste svejsestrøm anvendes, skal der svejses med højeste svejseshastighed og omvendt/ When highest welding current is in use, then use highest welding speed and vice versa 2: Design temperatur ≥ -20°C / Design temperature ≥ -20°C D: Kort bue / Short Circuit transfer									
Dato/Date 23/4-2014					Dato/Date				
Producentens underskrift/ Contractor's signature  					Underskrift af kunde-kunderepræsentant/ Client's or representative's signature				
					Underskrift af godkendende myndighed/ Certifying Authority's signature				





SVEJSEPROCEDURE-SPECIFIKATION WELDING PROCEDURE SPECIFICATION

WPS No. SH 39-02

Godkendelse i henhold til:
Approval according to: DS/EN ISO 15609-1

Revision No. 00

DS/EN ISO 15609-1
DNV Rules for Classification of Ships
- January 2014Dato/
Date 25.03.2014Kundens specifikation:
Client's specification: NORSOK M-101 Edition 5, Oct. 2011Dækket af WPQR nr./
Supported by WPQR No. SH 39Kunde/Client
SH Group AS

Projekt/Project

GRUNDMATERIALER/BASE MATERIALS

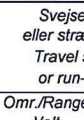
Standard Betegnelse/Code Designation-grade	ISO 15608 Gruppe/Group *	Ceqv. max.		Standard Betegnelse/Code Designation-grade	ISO 15608 Gruppe/Group	Ceqv. max.
Kulstof stål / Carbon Steel	1.1, 1.2, 1.4	0,43	til/to	Kulstof stål / Carbon steel	1.1, 1.2, 1.3, 1.4	0,43
Plade-rør/Plate-pipe	Tykkelsesområde mm/Thickn.range mm			Plade-rør/Plate-pipe	Tykkelsesområde mm/Thickn.range mm	
Stumpsøm/Butt weld			til/to	Stumpsøm/Butt weld		
Kantsøm/Fillet weld	6 - 24		til/to	Kantsøm/Fillet weld	6 - 24	
*) Max. flydespænding/Max. yield strength	Rørdiameterområde/Pipe diameter range mm			a-mål mm/Throat thickness mm	Rørdiameter/Pipe diameter range mm	
N/mm ²	≥ 50 mm			Alle / all	≥ 50 mm	

Fugdetaljer og sømopbygning (skitse) /
Joint details and welding sequence (sketch)Hæftning/Tacking
Som 1. streng / as run no. 1Min. forvarmetemp.
Min. preheat temp. 18 °CLængde/
Length Min. 4 x WT mmAntal strenger/
No of runs 1Stillings/
Position All except PG and J-L045Andre data/
Other data2. side Fugning/Gouging
☐ Ja/Yes ☒ Nej/NoForvarmetemp./
Preheat temp. °CElektrode dia./
Electrode dia. mmLuftryk/
Air pressure bar2. side Slibning/Grinding
☐ Ja/Yes ☐ Nej/No

Svejestilling/Welding position Alle undtaget PG og J-L045 / All except PG and J-L045

Streng nr.	Svejs- proces	G: T: P: E:	W: Wolfram/tungsten	Dimension Diameter -Længde Diameter -Length mm	Klasifikation/Classification G: EN ISO 14175 T: EN ISO 17632-A P: E:	H ₂	Gas	Baggas Back shielding gas Type l/min	Bem. Note
Run No.	Welding process	Fabrikat og betegnelse/ Manufacture and trade mark				Skala Scale	Dyse Nozzle		
1 - N	136	T	Elgacore DWA 55E	1,2	T 42 4 P M 1 H5	D		/	
		G	82% Argon + 18% CO ₂		M21		20-25	/	
								/	
								/	
								/	
								/	
								/	

☒ Manuel/Manual ☐ Mekaniseret/Mechanized ☐ Automatisk/Automatic ☐ Puls/Pulsed

Streng nr.	Program nr.	Strøm/Current		Tråd- hastighed/ Wire speed		Svejseshast. mm/min. eller strækkelængde mm/ Travel speed mm/min. or run-out length mm		S: u. pendl./Stringer XX: pendl., strengbredde max./ Weaving, run width max.		Andre data/ Other data	Bem. Note
		AC DC Pol.	Område/Range Amp.			Omr./Range m/min	Omr./Range Volt	mm	Heat input KJ/mm (EN 1011)		
Run No.	Programme No.										No.
1 - N	136	DC+	182-222		15 – 25	21,5-23,7	194 - 235	9 - 15	0,8-1,3		1

Specielle krav/Special requirements
Forvarmning/Preheat 18 °C

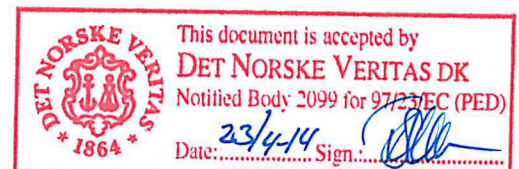
Temp. mellem strenger/Interpass temp. max. 207 °C

Efterf. varmebehandling/PWHT: ☒ Nej/No ☐ Ja, se bilag nr./Yes, see enclosure No.:

Bemærkninger - andre oplysninger / Notes - other informations

1: Når højeste svejsestrøm anvendes, skal der svejses med højeste svejseshastighed og omvendt/
When highest welding current is in use, then use highest welding speed and vice versa

2: Design temperatur ≥ -20°C / Design temperature ≥ -20°C


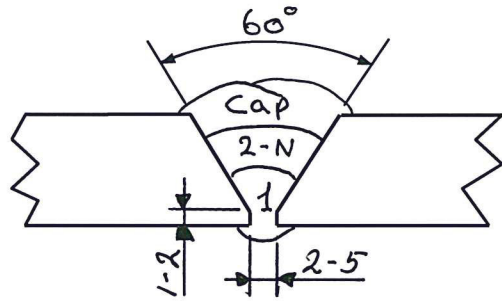
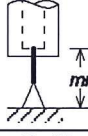



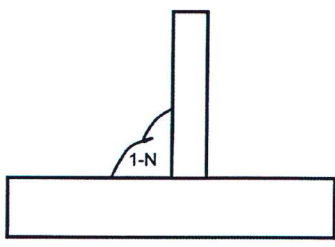
Dato/Date 23/4-2014

Dato/Date

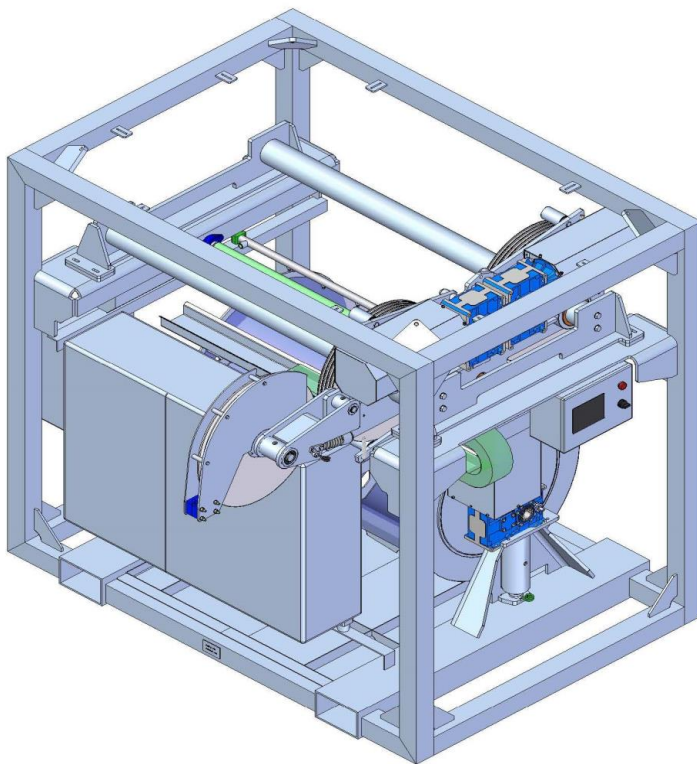
Dato/Date

Producentens underskrift/
Contractor's signatureUnderskrift af kunde-kunderepræsentant/
Client's or representative's signatureUnderskrift af godkendende myndighed/
Certifying Authority's signature

		SVEJSEPROCEDURE-SPECIFIKATION WELDING PROCEDURE SPECIFICATION				WPS No.: SH 40-01				
		Godkendelse i henhold til: EN ISO 15614-1 Approval according to:				Revision: 0				
Revision nr.: 0		Godkendt af: RN		EN ISO 15609-1 DNV Rules for Classification of Ships – January 2014				Dato / Date : 21.07.2014		
Godkendelsesdato: 03-06-2014		Bilag: P3.2 - f5		SH Group's specification: NORSOK M-101 Edition 5, Oct. 2011 SH Group's specification:				Dækket af WPQR nr.: SH 40 Supported by WPQR No.:		
Kunde/Client: SH Group AS						Projekt/Project:				
GRUNDMATERIALER/BASE MATERIALS										
Standard Betegnelse/Code Designation-grade		ISO 15608 Gruppe/Group		Ceqv. max.		Standard Betegnelse/Code Designation-grade		ISO 15608 Gruppe/Group		
Kulstof stål /Carbon steel		1.1, 1.2, 1.4		0,43		Kulstof stål /Carbon steel		1.1, 1.2, 1.4		
Plade-rør/Plate-pipe		Tykkelsesområde mm/Thickn.range mm		til/to		Plade-rør/Plate-pipe		Tykkelsesområde mm/Thickn.range mm		
Stumpsøm/Butt weld		15 – 60		*		Stumpsøm/Butt weld		15 – 60		
Kantsøm/Fillet weld		til/to		Kantsøm/Fillet weld		til/to		Kantsøm/Fillet weld		
Max. flydespænding/Max. yield strength N/mm ²		Rørdiameterområde/Pipe diameter range mm		a-mål mm/Throat thickness mm		Rørdiameter/Pipe diameter range mm		≥ 60 mm		
Fugedetaljer og sømopbygning (skitse) / Joint details and welding sequence (sketch)		<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		Hæftning/Tacking:		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Sidste streng skal placeres som en afspændingsstreng. Last string shall be placed as tempering weld bead.				Min. forvarmetemp. Min. preheat temp.		100 °C		Længde/ Length		
				4 x WT mm		Antal strenger/ No of runs		1		
				Stillings/ Position		All except PG and J-L045		Andre data/ Other data		
				2. side		Fugning/Gouging		<input type="checkbox"/> Ja/Yes <input checked="" type="checkbox"/> Nej/No		
				Forvarmetemp./ Preheat temp.		°C		Elektrode dia./ Electrode dia.		
				mm		Lufttryk/ Air pressure		bar		
				2. side		Slibning/Grinding		<input type="checkbox"/> Ja/Yes <input type="checkbox"/> Nej/No		
Streng nr.	Svejses-proces	G:	Gas	W: Wolfram/tungsten	Dimension Diameter	Klassifikation/Classification	H ₂	Gas	Baggas Back	Bem. Note
Run No.	Welding process	T:	Tråd/Wire		-Længde Diameter	G EN ISO 14175	Skala Scale	Dyse Nozzle	shielding gas Type	No.
		E:	Pulver/Flux		-Length mm	T: EN ISO 17632-A		l/min	l/min	
			Fabrikat og betegnelse/ Manufacture and trade mark			E:		mm ³		
1	138	T	Elgacore MXA 100XP		1.2	T 46 4 M 1 H5	D		/	
		G	82% Argon + 18% CO ₂			M21		20-25	/	
1	136	T	Elgacore DWA 55L		1.2	T 46 6 1,5 Ni P M 1 H5	D		/	
		G	82% Argon + 18% CO ₂			M21		20-25	/	
									/	
									/	
									/	
<input checked="" type="checkbox"/> Manuel/Manual <input type="checkbox"/> Mekaniseret/Mechanized <input type="checkbox"/> Automatisk/Automatic <input type="checkbox"/> Puls/Pulsed										
Streng nr.	Program nr.	Strøm/Current		Tråd-hastighed/ Wire speed		Svejseshast. mm/min. eller stræklængde mm/ Travel speed mm/min. or run-out length mm	S-u-pendl./Stringer XX: pendl., strengbredde max./ Weaving, run width max.		Andre data/ Other data	Bem. Note
Run No.	Programme No.	AC DC Pol.	Område/Range Amp.	Omr./Range m/min		Omr./Range Volt	mm	Heat input KJ/mm (EN 1011)		No.
1	138	DC+	109 – 133	-	15 – 25	15,2 – 16,8	38 – 89	9	1,2 – 2,1	1, D
2 - N	136	DC+	180 – 220	-	15 – 25	22,4 – 24,7	138 – 290	16	0,9 – 1,4	1
Cap	136	DC+	180 – 220	-	15 – 25	22,2 – 24,6	137 – 325	19	0,8 – 1,4	1
Specielle krav/Special requirements Forvarmning/Preheat 100 °C Temp. mellem strenger/Interpass temp. max. 208 °C										
Efterf. varmebehandling/PWHT: <input checked="" type="checkbox"/> Nej/No <input type="checkbox"/> Ja, se bilag nr./Yes, see enclosure No.:										
Bemærkninger - andre oplysninger / Notes - other informations										
1: Når højeste svejsestrøm anvendes, skal der svejdes med højeste svejseshastighed og omvendt/ When highest welding current is in use, then use highest welding speed and vice versa										
2: Tykkelsesområde 15 – 50 mm iht. NORSOK M-101 / Thickness range according to NORSOK M-101 15 – 50 mm										
D: Short Circuit transfer										
* CTOD testing have not been performed.										
Dato/Date 22.07.2014			Dato/Date				Dato/Date 4/9-2014			
Producentens underskrift/ Contractor's signature René Nau			Underskrift af kunde-kunderepræsentant/ Client's or representative's signature				Underskrift af godkendende myndighed/ Certifying Authority's signature			

		SVEJSEPROCEDURE-SPECIFIKATION WELDING PROCEDURE SPECIFICATION				WPS No.: SH 40-02				
		Godkendelse i henhold til: EN ISO 15614-1 Approval according to:				Revision: 0				
Revision nr.: 0		Godkendt af: RN		EN ISO 15609-1 DNV Rules for Classification of Ships – January 2014				Dato / Date : 21.07.2014		
Godkendelsesdato: 03-06-2014		Bilag: P3.2 - f5		SH Group's specification: NORSOK M-101 Edition 5, Oct. 2011 SH Group's specification:				Dækket af WPQR nr.: SH 40 Supported by WPQR No.:		
Kunde/Client: SH Group AS						Projekt/Project:				
GRUNDMATERIALER/BASE MATERIALS										
Standard Betegnelse/Code Designation-grade		ISO 15608 Gruppe/Group		Ceqv. max.		Standard Betegnelse/Code Designation-grade		ISO 15608 Gruppe/Group		
Kulstof stål /Carbon steel		1.1, 1.2, 1.4		0,43		Kulstof stål /Carbon steel		1.1, 1.2, 1.4		
Plade-rør/Plate-pipe		Tykkelsesområde mm/Thickn.range mm		til/to		Plade-rør/Plate-pipe		Tykkelsesområde mm/Thickn.range mm		
Stumpsøm/Butt weld				til/to		Stumpsøm/Butt weld				
Kantsøm/Fillet weld		≥ 5		til/to		Kantsøm/Fillet weld		≥ 5		
Max. flydespænding/Max. yield strength N/mm ²		Rørdiameterområde/Pipe diameter range mm		a-mål mm/Throat thickness mm		Rørdiameter/Pipe diameter range mm		≥ 60 mm		
		≥ 60 mm		Alle / all				≥ 60 mm		
Fugedetaljer og sømopbygning (skitse) / Joint details and welding sequence (sketch)										
						Hæftning/Tacking:				
						Min. forvarmetemp. 100 °C Min. preheat temp.				
						Længde/Length 4 x WT mm				
						Antal strenge/No of runs 1				
						Stillings/Position All except PG and J-L045				
						Andre data/Other data				
						2. side Fugning/Gouging <input type="checkbox"/> Ja/Yes <input checked="" type="checkbox"/> Nej/No				
						Forvarmetemp./Preheat temp. °C				
						Elektrode dia./Electrode dia. mm				
						Lufttryk/Air pressure bar				
						2. side Slibning/Grinding <input type="checkbox"/> Ja/Yes <input type="checkbox"/> Nej/No				
Svejestilling/Welding position All except PG and J-L045										
Streng nr.	Sveje-proces	G:	Gas	W: Wolfram/tungsten	Dimension Diameter	Klassekifikation/Classification	H ₂	Gas	Baggas Back	Bem. Note
Run No.	Welding process	T:	Tråd/Wire		-Længde Diameter	G EN ISO 14175	Skala Scale	Dyse Nozzle	shielding gas	
		E:	Pulver/Flux		-Length mm	T: EN ISO 17632-A		l/min	Type	No.
			Fabrikat og betegnelse/Manufacture and trade mark			E:				
1	136	T	Elgacore DWA 55L		1.2	T 46 6 1,5 Ni P M 1 H5	D		/	
		G	82% Argon + 18% CO ₂			M21		20-25	/	
									/	
									/	
									/	
									/	
									/	
<input checked="" type="checkbox"/> Manuel/Manual <input type="checkbox"/> Mekaniseret/Mechanized <input type="checkbox"/> Automatisk/Automatic <input type="checkbox"/> Puls/Pulsed										
Streng nr.	Program nr.	Strøm/Current		Tråd-hastighed/Wire speed	Svejsehast. mm/min. eller strækkelængde mm/Travel speed mm/min. or run-out length mm	S-u-pendl./Stringer XX: pendl., strengbredde max./Weaving, run width max.	Andre data/Other data		Bem. Note	
Run No.	Programme No.	AC DC Pol.	Område/Range Amp.	Omr./Range m/min	Omr./Range Volt	mm	Heat input KJ/mm (EN 1011)		No.	
1 - N	136	DC+	180 – 220	-	22,3 – 24,7	138 - 290	19	0,9 – 1,4	1	
									1	
									1	
Specielle krav/Special requirements Forvarmning/Preheat 100 °C Temp. mellem strenge/Interpass temp. max. 208 °C										
Efterf. varmebehandling/PWHT: <input checked="" type="checkbox"/> Nej/No <input type="checkbox"/> Ja, se bilag nr./Yes, see enclosure No.:										
Bemærkninger - andre oplysninger / Notes - other informations 1: Når højeste svejsestrøm anvendes, skal der svejdes med højeste svejsehastighed og omvendt/ When highest welding current is in use, then use highest welding speed and vice versa										
Dato/Date 22.07.2014			Dato/Date			Dato/Date 4/9-2014				
Producentens underskrift/ Contractor's signature René Nau			Underskrift af kunde-kunderepræsentant/ Client's or representative's signature			Underskrift af godkendende myndighed/ Certifying Authority's signature				

SHG-000973 - 1
MODUS Seabed
OE-2000-A3-4-7-2-FS-NZ-003



MATERIAL CERTIFICATES	1
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Betegnelse **EN ISO 9606-2 131 P FW 22 S t8,0 PB ml**
Designation
Firma **SH Group A/S**
Manufacturer
Svejsernavn **Jacob Lindhardtzen**
Welder's name
Fødselsdato **1976-01-29**
Date of birth
Svejseserid. **313**
Welder Ident
Dato for svejsning **2015-09-03**
Date of welding
Eksaminator **Lars Jensen**
Examiner

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of approval</i>	Certifikatnr. <i>Certificate no.</i>	ESB125855	
Svejsemetode <i>Welding process</i>	131	131	Force sag id. <i>Order no.</i>	115-30196	
Plade eller rør <i>Plate or pipe</i>	P	T, P	Identifikation <i>Identification of test piece</i>	3G	
Sømttype <i>Joint type</i>	FW	FW	Foto (hvis ønsket) <i>Photo (if required)</i>		
Grundmateriale <i>Parent material</i>	22	21, 22			
Tilsatsmateriale <i>Filler metal type</i>	S	S			
Godstykkelse (mm) <i>Thickness of test piece (mm)</i>	8,0	≥ 3,0			
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>		≥ 150			
Svejsstilling <i>Welding position</i>	PB	PA, PB			
Svejsedetaljer <i>Welding details</i>	ml	sl, ml	WPS <i>WPS</i>	SH 202	
Bemærkninger <i>Aux.</i>	ISO 14175:I1				
Yderligere information fremgår af det medfølgende bilag <i>Additional information available on enclosures</i>			Nej	Jobkendskab <i>Job knowledge</i>	Ikke prøvet/Not Tested

Gyldig til (dato)
Validity of approval until (date)
2017-09-03

Certifikatet er kun gyldigt, når det er underskrevet iflg. EN ISO 9606-2 afsnit 9.2

Certificate is only valid, if signed acc. to EN ISO 9606-2 subsection 9.2

Prøvningsmetode <i>Type of test</i>	Rapport <i>Report</i> Bestået/ikke prøvet <i>Acceptable/Not performed</i>	Acceptstandard <i>Acc. standard</i>	Acceptkrit. <i>Accept crit.</i>
Visuel kontrol <i>Visual examination</i>	Bestået/Accepted	Forlængelse hver 6. måned efter afsluttet prøvning iflg. 9.2 <i>Prolongation every 6 month after date of completed test acc. to subsection 9.2</i>	
Radiografering <i>Radiographic test</i>	Ikke prøvet/Not Tested	Dato <i>Date</i>	Stilling eller titel <i>Position or title</i>
Ultralud <i>Ultrasonic test</i>	Ikke prøvet/Not Tested	4-2016	Bent O. Hansen IWS DK 00357 SH Group A/S
Magnetpulver <i>Magnetic test</i>	Ikke prøvet/Not Tested	4/9-2016	Bent O. Hansen IWS DK 00357 SH Group A/S
Penetrant <i>Dye penetrant test</i>	Ikke prøvet/Not Tested		
Macroscopi <i>Macro examination</i>	Ikke prøvet/Not Tested		
Brudprøver <i>Fracture test</i>	Bestået/Accepted	Certifikat udstedt i.h.t 9.3, forlængelse for yderligere 2 år <i>Certificate issued acc to subsection 9.3, prolongation for the following 2 years</i>	
Bøjepøver <i>Bend test</i>	Ikke prøvet/Not Tested	Oprindeligt cert. nr. From cert. No.	Cert. Organ Certification body
Andre prøver* <i>Add. tests</i>		Certificeringsansvarlig <i>Certification manager</i>	
Markrapport nr <i>Field report no.</i>		Underskriftsdato <i>Date of issue</i>	
Se evt. bilag for supplerende oplysninger <i>See separate sheet, if required.</i>		Jesper Christiansen	
		2015-11-25	

FORCE Certification

Notified body 0200

Svejsers/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer direktiv 97/23/EF (PED) henholdsvis 1999/36/EF (TPED)

Welder/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 1999/36/EC.

Jesper Christiansen 2015-11-25

Betegnelse **EN ISO 9606-2 131 T/P FW 22 S t10,0/15,0 D50 PB ml**
 Designation

Firma **SH Group A/S**
 Manufacturer

Svejsernavn **Jakob Lindhardsen**
 Welder's name

Fødselsdato **1976-01-29**
 Date of birth

Svejserid. **313**
 Welder Ident

Dato for svejsning **2015-09-30**
 Date of welding

Eksaminator **John Grønning**
 Examiner

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of approval</i>	Certifikatnr. <i>Certificate no.</i>	ESB125654	
Svejsemetode <i>Welding process</i>	131	131	Force sag id. <i>Order no.</i>	115-31370	
Plade eller rør <i>Plate or pipe</i>	T/P	T, P	Identifikation <i>Identification of test piece</i>	1A	
Sømttype <i>Joint type</i>	FW	FW	Foto (hvis ønsket) <i>Photo (if required)</i>		
Grundmateriale <i>Parent material</i>	22	21, 22			
Tilsatmateriale <i>Filler metal type</i>	S	S			
Godstykkelse (mm) <i>Thickness of test piece (mm)</i>	10,0 15,0	≥ 3,0 ≥ 3,0			
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>	50	≥ 25			
Svejestilling <i>Welding position</i>	PB	PA, PB			
Svejsedetaljer <i>Welding details</i>	ml	sl, ml	WPS <i>WPS</i>	SH 203	
Bemærkninger <i>Aux.</i>	ISO 14175:F2				
Yderligere information fremgår af det medfølgende bilag <i>Additional information available on enclosures</i>			Nej	Jobkendskab <i>Job knowledge</i>	Ikke prøvet/Not Tested

Gyldig til (dato) **2017-09-30** Certifikatet er kun gyldigt, når det er underskrevet iflg. EN ISO 9606-2 afsnit 9.2
 Validity of approval until (date) Certificate is only valid, if signed acc. to EN ISO 9606-2 subsection 9.2

Prøvningsmetode Type of test	Rapport Report Bestået/ikke prøvet Acceptable/Not performed	Acceptstandard Acc. standard	Acceptkrit. Accept crit.
Visuel kontrol Visual examination	Bestået/Accepted	ISO 10042	EN ISO 9606-2 afsnit 7
Radiografering Radiographic test	Ikke prøvet/Not Tested	Dato Date	Forlængelse hver 6. måned efter afsluttet prøvning iflg. 9.2 Prolongation every 6 month after date of completed test acc. to subsection 9.2
Ultralyd Ultrasonic test	Ikke prøvet/Not Tested	30/5-2016	Stilling eller titel Position or title
Magnetpulver Magnetic test	Ikke prøvet/Not Tested	Bent O. Hansen IWS EN 9606-2 SH Group A/S	
Penetrant Dye penetrant test	Ikke prøvet/Not Tested	Underskrift Signature	
Macroscopi Macro examination	Bestået/Accepted		
Brudprøver Fracture test	Ikke prøvet/Not Tested	Certifikat udstedt i.h.t 9.3, forlængelse for yderligere 2 år Certificate issued acc to subsection 9.3, prolongation for the following 2 years	
Bøjepøver Bend test	Ikke prøvet/Not Tested	Oprindeligt cert. nr. From cert. No.	Cert. Organ Certification body
Andre prøver* Add. tests		Certificeringsansvarlig Certification manager	
Markrapport nr Field report no.		Underskriftsdato Date of issue	
Se evt. bilag for supplerende oplysninger See separate sheet, if required.		Jesper Christiansen	

FORCE Certification
 Notified body 0200

Svejser/operator er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer direktiv 97/23/EF (PED) henholdsvis 1999/36/EF (TPED)

Welder/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 1999/36/EC

Jesper Christiansen 2015-11-16.

Svejser/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som
implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 135 T/P FW FM5 S t5/10 D73 PB ml
Designation

Firma SH Group A/S
Manufacturer

Svejsers navn Jacob Lindhardtson
Welders name

Fødested
Place of birth

Eksaminator Lars Jensen
Examiner

Svejsersid 313
Welders ID

Fødselsdato 1976-01-29
Date of birth

Supplerende kantsømprøve/Supplementary fillet weld ☐

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of qualification</i>	Certifikatnr. <i>Certificate no.</i>
Svejsemetode <i>Welding process</i>	135 (D)	135 (D, G, S), 138 (D, G, S)	Identifikation <i>Identification of test piece</i>
Plade eller rør <i>Plate or pipe</i>	T/P	T, P	Force sag id. <i>Order no.</i>
Svejsesømtype <i>Type of weld</i>	FW	FW	114-29962
Grundmateriale <i>Parent material</i>	8.1	1 - 11	Foto (hvis ønsket) <i>Photo (if required)</i>
Tilsatsmaterialegruppe <i>Filler material group</i>	FM5	FM5	
Tilsatsmaterialetype <i>Filler metal type</i>	S	S, M	
Godstykkelser (mm) <i>Material thickness (mm)</i>	5 10	≥3	
Svejst godstykkelser (mm) <i>Deposited thickness (mm)</i>			
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>	73	≥36,5	WPS SH26
Svejestilling <i>Welding position</i>	PB	Oven-ned, stående kantsøm <i>Flat, horizontal vertical</i>	WPS
Svejsedetaljer <i>Welding details</i>	ml	sl, ml	Jobkundskab <i>Job knowledge</i>
			Nej/No

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer

S: Spraybue/Spray Transfer

Prøvningsmetode <i>Type of test</i>	Oplysninger <i>Information</i>
Visuel kontrol <i>Visual testing</i>	Bestået/Acceptable
Radiografering <i>Radiographic testing</i>	Ikke prøvet/Not tested
Ultralyd <i>Ultrasonic testing</i>	Ikke prøvet/Not tested
Magnetpulver <i>Magnetic particle testing</i>	Ikke prøvet/Not tested
Penetrant <i>Dye penetrant testing</i>	Ikke prøvet/Not tested
Makroudersøg. <i>Macro examination</i>	Bestået/Acceptable
Brudprøver <i>Fracture testing</i>	Ikke prøvet/Not tested
Bøjeprøver <i>Bend test</i>	Ikke prøvet/Not tested
Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år <i>Method of revalidation according to section 9.3: a Recertification every three years</i>	
Gyldigt fra (dato) <i>Validity of approval from (date)</i>	2014-09-12
Underskriftsdato <i>Date of issue</i>	2014-09-19
Gyldig til (dato) <i>Valid to (date)</i>	2017-09-12
Certificeringsansvarlig <i>Certification Manager</i>	Jesper Christensen

Navn/ Name

Jacob Lindhardtzen

Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2

Confirmation every six months according to ISO 9606-1 section 9.2

Dato/ Date

Underskrift/ Signature

Stilling eller titel/ Position or title

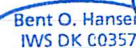
6/3-15



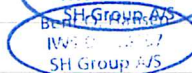
7/9-2015



8/3-2016



8/9-2016



Betegnelse **EN ISO 9606-2 141 P BW 22 S t8,0 PA bs**

Designation

Firma SH Group A/S

Manufacturer

Svejsernavn **Jakob Lindhardsen**

Welder's name

Fødselsdato 1976-01-29

Date of birth

Svejsersid. 313

Welder Ident

Dato for svejsning 2015-11-16

Date of welding

Eksaminator Lars Jensen

Examiner

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of approval</i>	Certifikatnr. <i>Certificate no.</i>	ESB126328	
Svejsemetode <i>Welding process</i>	141	141	Force sag id. <i>Order no</i>	115-32888	
Plade eller rør <i>Plate or pipe</i>	P	T, P	Identifikation <i>Identification of test piece</i>	3AO	
Sømtype <i>Joint type</i>	BW	BW, FW	Foto (hvis ønsket) <i>Photo (if required)</i>		
Grundmateriale <i>Parent material</i>	22	21, 22			
Tilsatsmateriale <i>Filler metal type</i>	S	S, nm			
Godstykkelse (mm) <i>Thickness of test piece (mm)</i>	8,0	≥ 6,0			
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>		≥ 150			
Svejestilling <i>Welding position</i>	PA	PA, PB			
Svejsedetaljer <i>Welding details</i>	bs	ss mb, bs, sl, ml	WPS <i>WPS</i>	SH 204	
Bemærkninger <i>Aux.</i>	ISO 14175:11 Godkendt for AC / Qualified for AC				
Yderligere information fremgår af det medfølgende bilag <i>Additional information available on enclosures</i>			Nej	Jobkendskab <i>Job knowledge</i>	Ikke prøvet/Not Tested

Gyldig til (dato)

Validity of approval until (date)

2017-11-16

Certifikatet er kun gyldigt, når det er underskrevet iflg. EN ISO 9606-2 afsnit 9.2

Certificate is only valid, if signed acc. to EN ISO 9606-2 subsection 9.2

Prøvningsmetode Type of test	Rapport Report Bestået/ikke prøvet Acceptable/Not performed	Acceptstandard Acc. standard	Acceptkriter. Accept crit.
Visuel kontrol Visual examination	Bestået/Accepted	ISO 10042 EN ISO 9606-2 afsnit 7	
Radiografering Radiographic test	Bestået/Accepted	Forlængelse hver 6. måned efter afsluttet prøvning iflg. 9.2 Prolongation every 6 month after date of completed test acc. to subsection 9.2	
Ultralyd Ultrasonic test	Ikke prøvet/Not Tested	Dato Date	Stilling eller titel Position or title
Magnetpulver Magnetic test	Ikke prøvet/Not Tested	13/5-2016	Bent O. Hansen IM'S DK 00357 SH Group A/S
Penetrant Dye penetrant test	Ikke prøvet/Not Tested		Underskrift Signature Bent O. Hansen
Macroscopi Macro examination	Ikke prøvet/Not Tested		
Brudprøver Fracture test	Ikke prøvet/Not Tested	Certifikat udstedt i.h.t 9.3, forlængelse for yderligere 2 år Certificate issued acc to subsection 9.3, prolongation for the following 2 years	
Bøjepøver Bend test	Ikke prøvet/Not Tested	Oprindeligt cert. nr. From cert. No.	Cert. Organ Certification body
Andre prøver* Add. tests		Certificeringsansvarlig Certification manager	
Markrapport nr Field report no.		Underskriftsdato Date of issue	
Se evt. bilag for supplerende oplysninger See separate sheet, if required.		Stig Andersen 2015-12-21	

FORCE Certification

Notified body 0200

Svejsers/operator er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer direktiv 97/23/EF (PED) henholdsvis 1999/36/EF (TPED)

Welder/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 1999/36/EC.


Stig Andersen

Betegnelse **EN ISO 9606-2 141 T/P FW 22 S t10,0/8,0 D100 PF sl**
Designation

Firma SH Group A/S
Manufacturer

Svejsernavn **Jakob Lindhardsen**
Welder's name

Fødselsdato 1976-01-29
Date of birth

Svejserid. 313
Welder Ident

Dato for svejsning 2015-11-12
Date of welding

Eksaminator Lars Jensen
Examiner

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of approval</i>	Certifikatnr. <i>Certificate no.</i>	ESB126331
Svejsemetode <i>Welding process</i>	141	141	Force sag id. <i>Order no.</i>	115-32888
Plade eller rør <i>Plate or pipe</i>	T/P	T, P	Identifikation <i>Identification of test piece</i>	3B
Sømttype <i>Joint type</i>	FW	FW	Foto (hvis ønsket) <i>Photo (if required)</i>	
Grundmateriale <i>Parent material</i>	22	21, 22		
Tilsatmateriale <i>Filler metal type</i>	S	S, nm		
Godstykkelse (mm) <i>Thickness of test piece (mm)</i>	10,0 8,0	≥ 3,0 ≥ 3,0		
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>	100	≥ 50		
Svejsstilling <i>Welding position</i>	PF	PA, PB, PD, PF		
Svejsedetaljer <i>Welding details</i>	sl	sl	WPS <i>WPS</i>	SH 205
Bemærkninger <i>Aux.</i>	ISO 14175:11 Godkendt for AC / Qualified for AC			
Yderligere information fremgår af det medfølgende bilag <i>Additional information available on enclosures</i>			Nej	
			Jobkendskab <i>Job knowledge</i>	Ikke prøvet/Not Tested

Gyldig til (dato) **2017-11-12** **Certifikatet er kun gyldigt, når det er underskrevet iflg. EN ISO 9606-2 afsnit 9.2**
Validity of approval until (date) *Certificate is only valid, if signed acc. to EN ISO 9606-2 subsection 9.2*

Prøvningsmetode <i>Type of test</i>	Rapport <i>Report</i>	Acceptstandard <i>Acc. standard</i>	Acceptkriter. <i>Accept crit.</i>
Bestået/ikke prøvet <i>Acceptable/Not performed</i>	Bestået/Accepted	ISO 10042	EN ISO 9606-2 afsnit 7
Visuel kontrol <i>Visual examination</i>	Bestået/Accepted	Forlængelse hver 6. måned efter afsluttet prøvning iflg. 9.2 <i>Prolongation every 6 month after date of completed test acc. to subsection 9.2</i>	
Radiografering <i>Radiographic test</i>	Ikke prøvet/Not Tested	Dato <i>Date</i>	Underskrift <i>Signature</i>
Ultralyd <i>Ultrasonic test</i>	Ikke prøvet/Not Tested	13/5-2016	Stilling eller titel <i>Position or title</i>
Magnetpulver <i>Magnetic test</i>	Ikke prøvet/Not Tested	Stig Andersen SH Group A/S	
Penetrant <i>Dye penetrant test</i>	Ikke prøvet/Not Tested		
Macroscopi <i>Macro examination</i>	Bestået/Accepted		
Brudprøver <i>Fracture test</i>	Ikke prøvet/Not Tested	Certifikat udstedt i.h.t 9.3, forlængelse for yderligere 2 år <i>Certificate issued acc to subsection 9.3, prolongation for the following 2 years</i>	
Bøjep prøver <i>Bend test</i>	Ikke prøvet/Not Tested	Oprindeligt cert. nr. From cert. No.	Cert. Organ Certification body
Andre prøver* <i>Add. tests</i>		Certificeringsansvarlig <i>Certification manager</i>	
Markrapport nr <i>Field report no.</i>		Underskriftsdato <i>Date of issue</i>	
Se evt. bilag for supplerende oplysninger <i>See separate sheet, if required.</i>		Stig Andersen 2015-12-21	

FORCE Certification
 Notified body 0200

Svejser/operator er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer direktiv 97/23/EF (PED) henholdsvis 1999/36/EF (TPED)

Welder/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 1999/36/EC.

Stig Andersen

Svejsers/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 138/136 T BW FM1 M/P s13(3/10) D100 H-L045 ss nb

Designation

Firma SH Group A/S

Manufacturer

Svejsers navn Morten Eriksen

Welders name

Fødested

Place of birth

Eksaminator Lars Jensen

Examiner

Svejsersid 503

Welders ID

Fødselsdato 1979-10-29

Date of birth

Supplerende kantsømprøve/Supplementary fillet weld ☒

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of qualification</i>	Certifikatnr. <i>Certificate no.</i>
Svejsemetode <i>Welding process</i>	138 (D, G) / 136	135 (D, G, S), 138 (D, G, S), 136	4723333
Plade eller rør <i>Plate or pipe</i>	T	P, T	Identifikation <i>Identification of test piece</i>
Svejsesømttype <i>Type of weld</i>	BW, FW	BW, FW *	4A
Grundmateriale <i>Parent material</i>	1.2	1 - 11	Force sag id. <i>Order no.</i>
Tilsatsmaterialegruppe <i>Filler material group</i>	FM1	FM1, FM2	
Tilsatsmaterialetype <i>Filler metal type</i>	M / P	M, S, R, P, V, W, Y, Z	
Godstykkelser (mm) <i>Material thickness (mm)</i>	13 (10 FW)	(≥3 FW)	
Svejst godstykkelser (mm) <i>Deposited thickness (mm)</i>	138/136 : 13 138 : 3 136 : 10	135/136, 138/136 : ≥3 135, 138 : 3 - 6 136 : 3 - 20	
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>	100	≥50	Foto (hvis ønsket) <i>Photo (if required)</i>
Svejestilling <i>Welding position</i>	H-L045	Oven-ned, side-ind, under-op, lodret stigende, stående kantsøm <i>Flat, horizontal, overhead, vertical up, horizontal vertical</i>	
Svejsedetaljer <i>Welding details</i>	ss nb	S, M: ss nb, ss mb, bs, ss gb, ss fb, sl, ml S, M, R, P, V, W, Y, Z: ss mb, bs, sl, ml	WPS 100XP/55E, t40, PF WPS
			Jobkundskab <i>Job knowledge</i>

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer

S: Spraybue/Spray Transfer

* FW: Oven-ned, stående kantsøm / Flat, horizontal

Prøvningsmetode <i>Type of test</i>	Oplysninger <i>Information</i>
Visuel kontrol <i>Visual testing</i>	Bestået/Acceptable
Radiografering <i>Radiographic testing</i>	Ikke prøvet/Not tested
Ultralyd <i>Ultrasonic testing</i>	Bestået/Acceptable
Magnetpulver <i>Magnetic particle testing</i>	Ikke prøvet/Not tested
Penetrant <i>Dye penetrant testing</i>	Ikke prøvet/Not tested
Makroundersøg. <i>Macro examination</i>	Ikke prøvet/Not tested
Brudprøver <i>Fracture testing</i>	Bestået/Acceptable
Bøjep prøver <i>Bend test</i>	Ikke prøvet/Not tested

Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år

Method of revalidation according to section 9.3: a Recertification every three years

Gyldigt fra (dato) 2014-04-09

Validity of approval from (date)

Underskriftsdato

Date of issue

2014-08-20



Gyldig til (dato)

Valid to (date)

2017-04-09

Certificeringsansvarlig

Certification Manager

Hans Knudsen

Navn/ Name

Morten Eriksen

Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2

Confirmation every six months according to ISO 9606-1 section 9.2

Dato/ Date

Underskrift/ Signature

Stilling eller titel/ Position or title

9-10-2014



14-8-2015



12/10-2015

Bent O. Hansen



8/1-2014

Bent O. Hansen



Svejsers/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 136 T/P FW FM5 P t5/5 D50 PB sl

Designation

Firma SH Group A/S

Manufacturer

Svejsers navn

Welders name

Morten Eriksen

Fødested

Place of birth

Eksaminator Lars Jensen

Examiner

Svejsersid

Welders ID

503

Fødselsdato

Date of birth

1979-10-29

Supplerende kantsømprøve/Supplementary fillet weld

☐

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of qualification</i>	Certifikatnr. <i>Certificate no.</i>
Svejsemetode <i>Welding process</i>	136	136	Identifikation <i>Identification of test piece</i> 2A
Plade eller rør <i>Plate or pipe</i>	T/P	T, P	Force sag id. <i>Order no.</i> 115-27378
Svejsesømtype <i>Type of weld</i>	FW	FW	
Grundmateriale <i>Parent material</i>	8.1 / 1.2	1 - 11	
Tilsatsmaterialegruppe <i>Filler material group</i>	FM5	FM5	
Tilsatsmaterialestype <i>Filler metal type</i>	P	R, P, V, W, Y, Z	
Godstykkelse (mm) <i>Material thickness (mm)</i>	5	≥3	Foto (hvis ønsket) <i>Photo (if required)</i>
Svejst godstykkelse (mm) <i>Deposited thickness (mm)</i>			
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>	50	≥25	WPS SH 59
Svejsstilling <i>Welding position</i>	PB	Oven-ned, stående kantsøm <i>Flat, horizontal vertical</i>	WPS
Svejsedetaljer <i>Welding details</i>	sl	sl	Jobkendskab <i>Job knowledge</i> Nej/No

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer

S: Spraybue/Spray Transfer

P: Pulsbue/Pulsed transfer

Prøvningsmetode <i>Type of test</i>	Oplysninger <i>Information</i>
Visuel kontrol <i>Visual testing</i>	Gas EN ISO 14175 M21
Radiografering <i>Radiographic testing</i>	Hjælpeudstyr <i>Auxiliaries</i>
Ultralyd <i>Ultrasonic testing</i>	Strømtype og polaritet <i>Current and polarity</i> DC+
Magnetpulver <i>Magnetic particle testing</i>	Andet <i>Others</i>
Penetrant <i>Dye penetrant testing</i>	
Makroundersøg. <i>Macro examination</i>	
Brudprøver <i>Fracture testing</i>	
Bøjeprøver <i>Bend test</i>	

Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år

Method of revalidation according to section 9.3: a Recertification every three years

Gyldigt fra (dato)
Validity of approval from (date)

2015-06-09

Underskriftsdato
Date of issue

2015-07-08

Gyldig til (dato)
Valid to (date)

2018-06-09

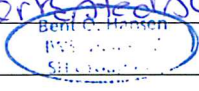
Certificeringsansvarlig
Certification Manager

Christian Lund Svendsen

Navn/ Name	Morten Eriksen
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Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2

Confirmation every six months according to ISO 9606-1 section 9.2

Dato/ Date	Underskrift/ Signature	Stilling eller titel/ Position or title
17/12 2015	Peter Jensen	Vorkæstelsleder
17/6 - 2016	Bent O. Hansen	

Svejsere/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 138 P BW FM1 M s15 PC ss nb

Designation

Firma SH Group A/S

Manufacturer

Svejsers navn Morten Eriksen

Welders name

Fødested

Place of birth

Eksaminator John Grønning

Examiner

Svejsersid 503

Welders ID

Fødselsdato 1979-10-29

Date of birth

Supplerende kantsømprøve/Supplementary fillet weld ☒

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of qualification</i>	Certifikatnr. <i>Certificate no.</i>
Svejsemetode <i>Welding process</i>	138 (D, G)	135 (D, G, S), 138 (D, G, S)	Identifikation <i>Identification of test piece</i>
Plade eller rør <i>Plate or pipe</i>	P	P, T	Force sag id. <i>Order no.</i>
Svejsesømtype <i>Type of weld</i>	BW, FW	BW, FW	114-30369
Grundmateriale <i>Parent material</i>	1.2	1 - 11	Foto (hvis ønsket) <i>Photo (if required)</i>
Tilsatsmaterialegruppe <i>Filler material group</i>	FM1	FM1, FM2	
Tilsatsmaterialetype <i>Filler metal type</i>	M	M, S	
Godstykkelser (mm) <i>Material thickness (mm)</i>	15 (10 FW)	(≥3 FW)	
Svejst godstykkelser (mm) <i>Deposited thickness (mm)</i>	15	≥3	
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>		≥75 (Roterende/rotating), ≥500 (fast/fixed)	WPS <i>WPS</i>
Svejsstilling <i>Welding position</i>	PC	Oven-ned, side-ind, stående kantsøm <i>Flat, horizontal, horizontal vertical</i>	SH 38-01
Svejsedetaljer <i>Welding details</i>	ss nb	ss nb, ss mb, bs, ss gb, ss fb, sl, ml	Jobkundskab <i>Job knowledge</i>

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer

S: Spraybue/Spray Transfer

Prøvningsmetode <i>Type of test</i>	Oplysninger <i>Information</i>
Visuel kontrol <i>Visual testing</i>	Bestået/Acceptable
Radiografering <i>Radiographic testing</i>	Ikke prøvet/Not tested
Ultralyd <i>Ultrasonic testing</i>	Bestået/Acceptable
Magnetpulver <i>Magnetic particle testing</i>	Ikke prøvet/Not tested
Penetrant <i>Dye penetrant testing</i>	Ikke prøvet/Not tested
Makroundersøg. <i>Macro examination</i>	Ikke prøvet/Not tested
Brudprøver <i>Fracture testing</i>	Bestået/Acceptable
Bøjep prøver <i>Bend test</i>	Ikke prøvet/Not tested

Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år

Method of revalidation according to section 9.3: a Recertification every three years

Gyldigt fra (dato) 2014-09-24 Underskriftsdato 2014-10-08

Validity of approval from (date)

Date of issue

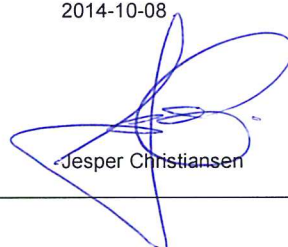
Gyldig til (dato) 2017-09-24

Valid to (date)

Certificeringsansvarlig

Certification Manager



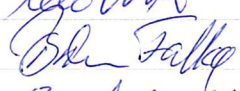

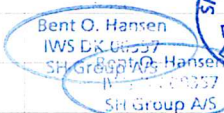
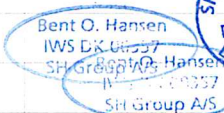
Jesper Christiansen



Navn/ Name	Morten Eriksen
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Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2

Confirmation every six months according to ISO 9606-1 section 9.2

Dato/ Date	Underskrift/ Signature	Stilling eller titel/ Position or title
25/3-15		
25/4-15		
23/9-2016	Bent O. Hansen	
23/9-2016	Bent O. Hansen	

Svejser/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som
implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 138/136 T BW FM1 M/P s16(4/12) D89 H-L045 ss nb
Designation

Firma <i>Manufacturer</i>	SH Group A/S	Svejsers navn <i>Welders name</i>	Morten Eriksen	Fødested <i>Place of birth</i>	
Eksaminator <i>Examiner</i>	John Grønning	Svejsers ID <i>Welders ID</i>	503	Fødselsdato <i>Date of birth</i>	1979-10-29
Supplerende kantsømprøve/Supplementary fillet weld <input checked="" type="checkbox"/>					

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of qualification</i>	Certifikatnr. <i>Certificate no.</i>
Svejsemetode <i>Welding process</i>	138 (D) / 136	135 (D, G, S), 138 (D, G, S), 136	Identifikation <i>Identification of test piece</i> 1A
Plade eller rør <i>Plate or pipe</i>	T	P, T	Force sag id. <i>Order no.</i>
Svejsesømttype <i>Type of weld</i>	BW, FW	BW, FW	114-30369
Grundmateriale <i>Parent material</i>	1.2	1 - 11	Foto (hvis ønsket) <i>Photo (if required)</i>
Tilsatsmaterialegruppe <i>Filler material group</i>	FM1	FM1, FM2	
Tilsatsmaterialetype <i>Filler metal type</i>	M / P	M, S, R, P, V, W, Y, Z	
Godstykkelser (mm) <i>Material thickness (mm)</i>	16 (10 FW)	(≥3 FW)	
Svejst godstykkelser (mm) <i>Deposited thickness (mm)</i>	138/136 : 16 138 : 4 136 : 12	135/136, 138/136 : ≥3 135, 138 : 3 - 8 136 : ≥3	
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>	89	≥44,5	WPS SH 39-01
Svejestilling <i>Welding position</i>	H-L045	Oven-ned, side-ind, under-op, lodret stigende, stående kantsøm <i>Flat, horizontal, overhead, vertical up, horizontal vertical</i>	WPS
Svejsedetaljer <i>Welding details</i>	ss nb	S, M : ss nb, ss mb, bs, ss gb, ss fb, sl, ml S, M, R, P, V, W, Y, Z : ss mb, bs, sl, ml	Jobkundskab <i>Job knowledge</i> Nej/No

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer

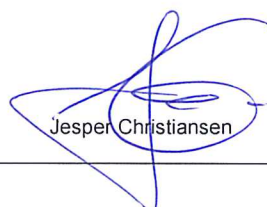
S: Spraybue/Spray Transfer

Prøvningsmetode <i>Type of test</i>	Oplysninger <i>Information</i>
Visuel kontrol <i>Visual testing</i>	Bestået/Acceptable Gas EN ISO 14175 M21 Gas EN ISO 14175
Radiografering <i>Radiographic testing</i>	Ikke prøvet/Not tested Hjælpeudstyr <i>Auxiliaries</i>
Ultralyd <i>Ultrasonic testing</i>	Bestået/Acceptable Strømtype og polaritet <i>Current and polarity</i> DC+
Magnetpulver <i>Magnetic particle testing</i>	Ikke prøvet/Not tested Andet <i>Others</i>
Penetrant <i>Dye penetrant testing</i>	Ikke prøvet/Not tested
Makroundersøg. <i>Macro examination</i>	Ikke prøvet/Not tested
Brudprøver <i>Fracture testing</i>	Bestået/Acceptable
Bøjepøver <i>Bend test</i>	Ikke prøvet/Not tested

Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år
Method of revalidation according to section 9.3: a Recertification every three years

Gyldigt fra (dato) <i>Validity of approval from (date)</i>	2014-09-24	Underskriftsdato <i>Date of issue</i>	2014-10-09
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Gyldig til (dato) <i>Valid to (date)</i>	2017-09-24	Certificeringsansvarlig <i>Certification Manager</i>
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Jesper Christiansen

Navn/ Name	Morten Eriksen
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Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2

Confirmation every six months according to ISO 9606-1 section 9.2

Dato/ Date	Underskrift/ Signature	Stilling eller titel/ Position or title
25/3 - 15		
25/4 - 15		
23/3 - 2016	Bent O. Hansen	Bent O. Hansen IWS DK 00057 SH Group A/S
23/4 - 2016	Bent O. Hansen	Bent O. Hansen IWS DK 00057 SH Group A/S

Svejser/operator er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som
implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 141/136 T BW FM1 S/P s14,2(4/10,2) D100 H-L045 ss nb

Designation

Firma SH Group A/S

Manufacturer

Svejsers navn Morten Eriksen

Welders name

Fødested

Place of birth

Eksaminator Lars Jensen

Examiner

Svejsersid 503

Welders ID

Fødselsdato 1979-10-29

Date of birth

Supplerende kantsømprøve/Supplementary fillet weld

☒

Væsentlige data Essential variables	Aktuelle data Actual data	Godkendelsesområde Range of qualification	Certifikatnr. Certificate no.
Svejsemetode Welding process	141 / 136	141, 142, 143, 145, 136	Identifikation Identification of test piece
Plade eller rør Plate or pipe	T	P, T	Force sag id. Order no.
Svejsesømtype Type of weld	BW, FW	BW, FW	115-23376
Grundmateriale Parent material	1.2	1 - 11	Foto (hvis ønsket) Photo (if required)
Tilsatsmaterialegruppe Filler material group	FM1	FM1, FM2	
Tilsatsmaterialetype Filler metal type	S / P	S, M, R, P, V, W, Y, Z, nm	
Godstykkelse (mm) Material thickness (mm)	14,2 (10 FW)	(≥3 FW)	
Svejst godstykkelse (mm) Deposited thickness (mm)	141/136 : 14,2 141 : 4 136 : 10,2	141/136, 142/136, 143/136, 145/136 : ≥3 141, 142, 143, 145 : 3 - 8 136 : 3 - 20.4	
Udv. rørdiameter (mm) Outside pipe diameter (mm)	100	≥50	WPS SH 141-136-01-cert.
Svejestilling Welding position	H-L045	Oven-ned, side-ind, under-op, lodret stigende, stående kantsøm, under-op/side-ind Flat, horizontal, overhead, vertical up, horizontal vertical, horizontal overhead	WPS
Svejsedetaljer Welding details	ss nb	S, M, nm : ss nb, ss mb, bs, ss gb, ss fb, sl, ml S, M, nm, R, P, V, W, Y, Z : ss mb, bs, sl, ml	Jobkundskab Job knowledge
			Nej/No

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer

S: Spraybue/Spray Transfer

Prøvningsmetode Type of test	Oplysninger Information
Visuel kontrol Visual testing	Bestået/Acceptable Gas EN ISO 14175 Gas EN ISO 14175
Radiografering Radiographic testing	Ikke prøvet/Not tested Hjælpeudstyr Auxiliaries
Ultralyd Ultrasonic testing	Bestået/Acceptable Strømtype og polaritet Current and polarity
Magnetpulver Magnetic particle testing	Ikke prøvet/Not tested Andet Others
Penetrant Dye penetrant testing	Ikke prøvet/Not tested
Makroundersøg. Macro examination	Ikke prøvet/Not tested
Brudprøver Fracture testing	Bestået/Acceptable
Bøjepøver Bend test	Ikke prøvet/Not tested

Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år
Method of revalidation according to section 9.3: a Recertification every three years

Gyldigt fra (dato) Validity of approval from (date)	2015-02-27	Underskriftsdato Date of issue	2015-03-09
Gyldig til (dato) Valid to (date)	2018-02-27	Certificeringsansvarlig Certification Manager	Jesper Christiansen

Navn/ Name

Morten Eriksen

Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2

Confirmation every six months according to ISO 9606-1 section 9.2

Dato/ Date

Underskrift/ Signature

Stilling eller titel/ Position or title

27/8-2015



29/2-2016

Bert O. Hansen

29/8-2016

Bert O. Hansen

Svejser/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som
implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 141 T/P FW FM5 S t20/6 D20 PH sl

Designation

Firma SH Group A/S

Manufacturer

Svejsernavn

Welders name

Morten Eriksen

Fødested

Place of birth

Eksaminator Lars Jensen

Examiner

Svejserid

Welders ID

503

Fødselsdato

Date of birth

1979-10-29

Supplerende kantsømprøve/supplementary fillet weld

☐

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of qualification</i>	Certifikatnr. <i>Certificate no.</i>
Svejsemetode <i>Welding process</i>	141	141, 142, 143, 145	4722656
Plade eller rør <i>Plate or pipe</i>	T/P	T, P	Identifikation <i>Identification of test piece</i>
Svejsesømtype <i>Type of weld</i>	FW	FW	1C
Grundmateriale <i>Parent material</i>	8.1 / 1.2	1 - 11	Force sag id. <i>Order no.</i> 114-25640
Tilsatsmaterialegruppe <i>Filler material group</i>	FM5	FM5	
Tilsatsmaterialestype <i>Filler metal type</i>	S	S, M, nm	
Godstykkelse (mm) <i>Material thickness (mm)</i>	20 6	≥3	
Svejst godstykkelse (mm) <i>Deposited thickness (mm)</i>			
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>	20	20 - 40	Foto (hvis ønsket) <i>Photo (if required)</i>
Svejestilling <i>Welding position</i>	PH	Oven-ned, stående kantsøm, side-ind, under-op/side-ind, under-op, lodret stigende <i>Fiat, horizontal vertical, horizontal, horizontal overhead, overhead, vertical up</i>	
Svejsedetaljer <i>Welding details</i>	sl	sl	WPS SH 35-02 <i>WPS</i>
			Jobkundskab <i>Job knowledge</i> Nej/No

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer

S: Spraybue/Spray Transfer

Prøvningsmetode <i>Type of test</i>	Oplysninger <i>Information</i>
Visuel kontrol <i>Visual testing</i>	Bestået/Acceptable Gas EN ISO 14175 Gas EN ISO 14175
Radiografering <i>Radiographic testing</i>	Ikke prøvet/Not tested Hjælpeudstyr <i>Auxiliaries</i>
Ultralyd <i>Ultrasonic testing</i>	Ikke prøvet/Not tested Strømtype og polaritet <i>Current and polarity</i>
Magnetpulver <i>Magnetic particle testing</i>	Ikke prøvet/Not tested Andet <i>Others</i>
Penetrant <i>Dye penetrant testing</i>	Ikke prøvet/Not tested
Makroudersøg. <i>Macro examination</i>	Bestået/Acceptable
Brudprøver <i>Fracture testing</i>	Ikke prøvet/Not tested
Bøjep prøver <i>Bend test</i>	Ikke prøvet/Not tested

Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år
Method of revalidation according to section 9.3: a Recertification every three years

Gyldigt fra (dato)
Validity of approval from (date)

2014-05-07

Certificeringsansvarlig
Certification Manager

FORCE Certification

19 MAJ 2014

Gyldig til (dato)
Valid to (date)

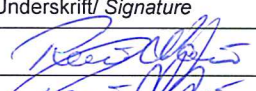

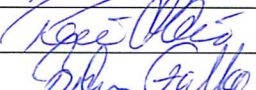

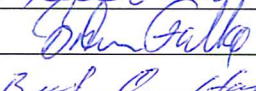

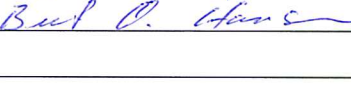
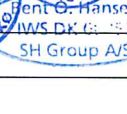
2017-05-07

Stig Andersen

Navn/ Name	Morten Eriksen
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Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2

Confirmation every six months according to ISO 9606-1 section 9.2

Dato/ Date	Underskrift/ Signature	Stilling eller Titel/ Position or title
12-11-14		
14/5-15		
19/11-2015		
9/5-2016		

Svejser/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 141 T BW FM1 S s7,1 D48,3 H-L045 ss nb
Designation

Firma SH Group A/S
Manufacturer

Svejsers navn Morten Eriksen
Welders name

Fødested
Place of birth

Eksaminator Lars Jensen
Examiner

Svejserid 503
Welders ID

Fødselsdato 1979-10-29
Date of birth

Supplerende kantsømprøve/Supplementary fillet weld ☒


Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of qualification</i>	Certifikatnr. <i>Certificate no.</i>
Svejsemetode <i>Welding process</i>	141	141, 142, 143, 145	Identifikation <i>Identification of test piece</i>
Plade eller rør <i>Plate or pipe</i>	T	T, P	Force sag id. <i>Order no.</i>
Svejsesømtype <i>Type of weld</i>	BW, FW	BW, FW *	114-25640
Grundmateriale <i>Parent material</i>	1.2	1 - 11	Foto (hvis ønsket) <i>Photo (if required)</i>
Tilsatsmaterialegruppe <i>Filler material group</i>	FM1	FM1, FM2	
Tilsatsmaterialetype <i>Filler metal type</i>	S	S, M, nm	
Godstykkelser (mm) <i>Material thickness (mm)</i>	7,1 (10 FW)	(≥3 FW)	
Svejst godstykkelser (mm) <i>Deposited thickness (mm)</i>	7,1	3 - 14,2	
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>	48,3	≥25	WPS SH 29
Svejestilling <i>Welding position</i>	H-L045	Oven-ned, side-ind, under-op, lodret stigende <i>Flat, horizontal, overhead, vertical up</i>	WPS
Svejsedetaljer <i>Welding details</i>	ss nb	ss nb, ss mb, bs, ss gb, ss fb, sl, ml	Jobkundskab <i>Job knowledge</i>
			Nej/No

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer

S: Spraybue/Spray Transfer









* FW: Oven-ned, stående kantsøm / Flat, horizontal

Prøvningsmetode <i>Type of test</i>	Oplysninger <i>Information</i>
Visuel kontrol <i>Visual testing</i>	Bestået/Acceptable Gas EN ISO 14175 <i>Gas EN ISO 14175</i>
Radiografering <i>Radiographic testing</i>	Bestået/Acceptable Hjælpeudstyr <i>Auxiliaries</i>
Ultralyd <i>Ultrasonic testing</i>	Ikke prøvet/Not tested Strømtype og polaritet <i>Current and polarity</i>
Magnetpulver <i>Magnetic particle testing</i>	Ikke prøvet/Not tested Andet <i>Others</i>
Penetrant <i>Dye penetrant testing</i>	Ikke prøvet/Not tested
Makroundersøg. <i>Macro examination</i>	Ikke prøvet/Not tested
Brudprøver <i>Fracture testing</i>	Bestået/Acceptable
Bøjepøver <i>Bend test</i>	Ikke prøvet/Not tested
Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år <i>Method of revalidation according to section 9.3: a Recertification every three years</i>	
Gyldigt fra (dato) <i>Validity of approval from (date)</i>	2014-05-07
Underskriftsdato <i>Date of issue</i>	2014-08-19
	
Gyldig til (dato) <i>Valid to (date)</i>	2017-05-07
Certificeringsansvarlig <i>Certification Manager</i>	Hans Knudsen

Navn/ Name	Morten Eriksen
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Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2

Confirmation every six months according to ISO 9606-1 section 9.2

Dato/ Date	Underskrift/ Signature	Stilling eller titel/ Position or title
12-11-14		
19/5-15		
19/11-2015		
9/5-2016		

Svejsers/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som
implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 141 T/P FW FM1 S t7, 1/10 D48,3 PH ml
Designation

Firma SH Group A/S
Manufacturer

Svejsernavn Morten Eriksen
Welders name

Fødested
Place of birth

Eksaminator Lars Jensen
Examiner

Svejserid 503
Welders ID

Fødselsdato 1979-10-29
Date of birth

Supplementary fillet weld/Supplementary fillet weld ☐

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of qualification</i>	Certifikatnr. <i>Certificate no.</i>
Welding process <i>Welding process</i>	141	141, 142, 143, 145	Identifikation <i>Identification of test piece</i>
Plate or pipe <i>Plate or pipe</i>	T/P	T, P	Force sag id. <i>Order no.</i>
Type of weld <i>Type of weld</i>	FW	FW	114-25171
Parent material <i>Parent material</i>	1.2	1 - 11	Foto (hvis ønsket) <i>Photo (if required)</i>
Filler material group <i>Filler material group</i>	FM1	FM1, FM2	
Filler metal type <i>Filler metal type</i>	S	S, M, nm	
Material thickness (mm) <i>Material thickness (mm)</i>	7,1 10	≥3	
Deposited thickness (mm) <i>Deposited thickness (mm)</i>			
Outside pipe diameter (mm) <i>Outside pipe diameter (mm)</i>	48,3	≥25	
Welding position <i>Welding position</i>	PH	Oven-ned, stående kantsøm, side-ind, under-op/side-ind, under-op, lodret stigende <i>Flat, horizontal vertical, horizontal overhead, overhead, vertical up</i>	WPS SH 29 <i>WPS</i>
Welding details <i>Welding details</i>	ml	sl, ml	Jobkundskab <i>Job knowledge</i>

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer

S: Spraybue/Spray Transfer

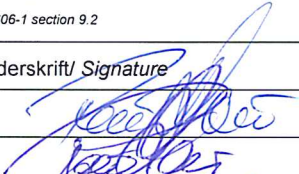

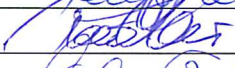

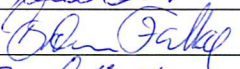

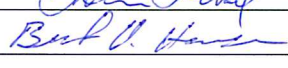
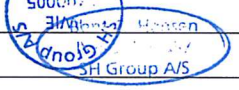
Prøvningsmetode <i>Type of test</i>	Oplysninger <i>Information</i>
Visual testing <i>Visual testing</i>	Bestået/Acceptable Gas EN ISO 14175 <i>Gas EN ISO 14175</i>
Radiographic testing <i>Radiographic testing</i>	Ikke prøvet/Not tested Auxiliaries <i>Auxiliaries</i>
Ultrasonic testing <i>Ultrasonic testing</i>	Ikke prøvet/Not tested Current and polarity <i>Current and polarity</i>
Magnetic particle test <i>Magnetic particle testing</i>	Ikke prøvet/Not tested Others <i>Others</i>
Dye penetrant testing <i>Dye penetrant testing</i>	Ikke prøvet/Not tested
Macro examination <i>Macro examination</i>	Bestået/Acceptable
Fracture testing <i>Fracture testing</i>	Ikke prøvet/Not tested
Bend test <i>Bend test</i>	Ikke prøvet/Not tested
Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år <i>Method of revalidation according to section 9.3: a Recertification every three years</i>	
Gyldigt fra (dato) <i>Validity of approval from (date)</i>	2014-04-15 Certificeringsansvarlig <i>Certification Manager</i>
Gyldig til (dato) <i>Valid to (date)</i>	2017-04-15 Stig Andersen

FORCE Certification

12 MAJ 2014

Stig Andersen

Navn/ Name	Morten Eriksen
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Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2 Confirmation every six months according to ISO 9606-1 section 9.2		
Dato/ Date	Underskrift/ Signature	Stilling eller titel/ Position or title
14/10-14		
14/10-15		
14/10-2015		
15/1-2016		



Nordisk Svejse Kontrol a/s



Svejsecertifikat - EN ISO 9606-1

Welding Qualification Test Certificate - EN ISO 9606-1

Designation
Betegnelse

EN ISO 9606-1 141 T FW FM5 S t6 D20 PH sl

Manufacturer name and address
Firma navn og adresse

SH Group A/S Kuopiovej 20 5700 Svendborg DK

Date of completed test
Prøvning afsluttet den

04-02-2016

Welder's name
Svejsere's navn

Morten Eriksen

Examinator
Eksaminator


René Nau

Date of birth
Fødselsdato

29-10-1979



Welder's ident
Svejsersid

503

	Actual data Aktuelle data	Range of approval Godkendelsesområdet	Certificate no Certifikat nr.
Welding process Svejsemetode	141	141, 142, 143, 145	68676-04C
Transfer mode Dråbeovergang	-	-	Identification of test piece Identifikation af emne
Product type (plate or pipe) Produkttype (plade eller rør)	T	T, P	68676-04C
Type of weld Svejsetype	FW	FW	
Parent material group(s)/subgroups Grundmaterialegruppe(r)/undergrupper	8.1	1-11	
Filler material group(s)/subgroups Tilsmatsmaterialegruppe(r)	FM5	FM5	
Filler material (Designation) Tilsmatsmateriale (betegnelse)	S, EN ISO 14343-A: W 19 9 LSi	S, nm	
Shielding gas Beskyttelsesgas	ISO 14175: I1	-	
Auxiliaries Hjælpeudstyr	-	-	
Type of current and polarity Strømtype og polaritet	DC-	-	
Material thickness (mm) Materialetykkelse (mm)	6,0	>= 3,0	
Deposited thickness (mm) Nedsmeltet tykkelse (mm)	-	-	
Outside pipe diameter (mm) Udv. rørdiameter (mm)	20,0	20,0 - 40,0	
Welding position Svejsesposition	PH	All, except vertical down / Alle, undtagen lodret faldende	Welding Procedure Specification Svejsespecifikationsangivelse
Welding details Svejsedetaljer	sl	sl	SH 35-02
Supplementary fillet weld test Supplerende kantsømsprøve	-	-	Job Knowledge Not tested / Ikke prøvet

Validity of qualification until (date)
Gyldig til (dato)

04-02-2019

This certificate is issued according to Dette certifikat er udstedt i henhold til		9.3(a) 3 year/år	Confirmation of the validity for the following 6 month acc. to 9.2 Bekræftelse af gyldighed for yderlige 6 måneder iht. 9.2		
			Date Dato	Signature Underskrift	Position or title Stilling eller titel
			04-02-2016	Bent O. Hansen	SH Group A/S
	Testing standard Prøvningsstandard	DS/EN ISO 9606-1			
Type of qualification tests Prøvningsmetode	Accept criteria Accept kriterier	EN ISO 9606-1 part/afsnit 7			
Visual testing Visual kontrol	Accepted / Bestået				
Macroscopic examination Makroskopisk prøvning	Accepted / Bestået				
			Remarks / Bemærkninger		
			15-02-2016 Niels-Jørgen Christiansen		
Field report no. Markrapport nr.	68676 VT 01, MA 01		  Nordisk Svejse Kontrol A/S Søvejlandsgade 4 • DK-6670 Silkeborg		



Certification Manager (date of issue)
Certificeringsansvarlig (udstedelsesdato)

Svejsere/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Firma <i>Manufacturer</i>	SH Group A/S	Svejsers navn <i>Welders name</i>	Jimmi Pedersen	Fødested <i>Place of birth</i>	
Eksaminator <i>Examiner</i>	Lars Jensen	Svejsers ID <i>Welders ID</i>	535	Fødselsdato <i>Date of birth</i>	1981-11-12

Godkendelsesmetode ☐ 4.1.a Svejseprocedure ☐ 4.1.b Præproduktion ☒ 4.1.c ISO 9606-x ☐ 4.1.d Produktionsprøve

Method of approval *Welding Proc.* *Preproduction* *ISO 9606-x* *Production test*

Mekaniseret svejsning / Mechanized welding

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of qualification</i>	Certifikatnr. <i>Certificate no.</i>
Svejsemetode <i>Welding process</i>	121	121	Identifikation <i>Identification of test piece</i>
Svejsedstyr <i>Welding equipment</i>	A2 Svejsetraktor <i>A2 Welding tractor</i>	A2 Svejsetraktor <i>A2 Welding tractor</i>	Force sag id. <i>Order no.</i>
Svejseenhed <i>Welding unit</i>	ESAB LAF 1001 <i>ESAB LAF 1001</i>	ESAB LAF 1001 <i>ESAB LAF 1001</i>	115-23376
Visuel styring <i>Direct/remote Visual control</i>	Visuel styring på afstand <i>Remote visual control</i>	Visuel styring på afstand <i>Remote visual control</i>	Foto (hvis ønsket) <i>Photo (if required)</i>
Automatisk styring af lysbuelængde <i>Automatic arc length control</i>	Uden automatisk styring af lysbuelængde <i>Without automatic arc length control</i>	Med og uden automatisk styring af lysbuelængde <i>With and without automatic arc length control</i>	
Automatisk fugefølgesystem <i>Automatic joint tracking</i>	Uden automatisk fugefølgesystem <i>Without automatic joint tracking</i>	Med og uden automatisk fugefølgesystem <i>With and without automatic joint tracking</i>	
Svejestilling <i>Welding position</i>	PA PA	Oven-ned Flat	
Enkeltstreng/flerstreng <i>Single run / multi run technique</i>	Flerstreng <i>Multi run technique</i>	Enkeltstreng/flerstreng <i>Single run/Multi run - technique</i>	WPS <i>WPS</i>
Backing <i>Backing</i>	Med backing <i>With backing</i>	Med backing <i>With backing</i>	SH 30
Indsat tilsatsmateriale <i>Consumable insert</i>	Uden indsat tilsatsmateriale <i>Without consumable insert</i>	Med og uden indsat tilsatsmateriale <i>With and without consumable insert</i>	

Funktionel kundskab til svejseenheden iflg. Anneks A <i>Functional knowledge appropriate to the welding unit acc. to Annex A</i>	<input checked="" type="checkbox"/> Bestået / Acceptable	Godkendelseskriterie / Criteria for approval ISO 9606-1 VT og RT
Kundskaber i svejseteknologi iflg. anneks B <i>Knowledge of welding technology acc. to Annex B</i>	<input type="checkbox"/> Bestået / Acceptable <input checked="" type="checkbox"/> Ikke prøvet / Not tested	Rapport nr. / Report no
		Bemærkninger / Remarks

Certifikatet er kun gyldigt, når det er bekræftet iflg. ISO 14732 afsnit 5.2 iflg. side 2
Certificate is only valid, if confirmed acc. to ISO 14732 section 5.2 page 2

Metode for fornyet validering iflg. afsnit 5.3: a Recertificering hvert sjette år
Method of revalidation according to section 5.3: a Recertification every six years

Gyldigt fra (dato) <i>Validity of approval from (date)</i>	2015-02-27	Underskriftsdato <i>Date of issue</i>	2015-03-06
Gyldig til (dato) <i>Valid to (date)</i>	2021-02-27	Certificeringsansvarlig <i>Certification Manager</i>	Jesper Christiansen

[illegible]

Svejsere/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Firma Manufacturer	SH Group A/S	Svejsers navn Welders name	Jimmi Pedersen	Fødested Place of birth	
Eksaminator Examiner	John Grønning	Svejsereg Welders ID	535	Fødselsdato Date of birth	1981-11-12

Godkendelsesmetode
Method of approval

<input type="checkbox"/> 4.1.a Svejsprocedure Welding Proc.	<input type="checkbox"/> 4.1.b Præproduktion Preproduction	<input checked="" type="checkbox"/> 4.1.c ISO 9606-x ISO 9606-x	<input type="checkbox"/> 4.1.d Produktionsprøve Production test
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Mekaniseret svejsning / Mechanized welding

Væsentlige data Essential variables	Aktuelle data Actual data	Godkendelsesområde Range of qualification	Certifikatnr. Certificate no.
Svejsemetode Welding process	121	121	Identifikation Identification of test piece
Svejsedstyr Welding equipment	ESAB LAF 1251 ESAB LAF 1251	ESAB LAF 1251 ESAB LAF 1251	Force sag id. Order no.
Svejsseenhed Welding unit	ESAB Pulvertårn CAB 460 M4x4 Mir. ESAB Column and boom station CAB 460 M4x4 Mir.	ESAB Pulvertårn CAB 460 M4x4 Mir. ESAB Column and boom station CAB 460 M4x4 Mir.	
Visuel styring Direct/remote Visual control	Direkte visuel styring Direct visual control	Direkte visuel styring Direct visual control	Foto (hvis ønsket) Photo (if required)
Automatisk styring af lysbuelængde Automatic arc length control	Uden automatisk styring af lysbuelængde Without automatic arc length control	Med og uden automatisk styring af lysbuelængde With and without automatic arc length control	
Automatisk fugefølgesystem Automatic joint tracking	Uden automatisk fugefølgesystem Without automatic joint tracking	Med og uden automatisk fugefølgesystem With and without automatic joint tracking	
Svejsstilling Welding position	PA PA	Oven-ned Flat	
Enkeltstreng/flerstreng Single run / multi run technique	Flerstreng Multi run technique	Enkeltstreng/flerstreng Single run/Multi run - technique	WPS WPS
Backing Backing	Uden backing Without backing	Med og uden backing With and without backing	
Indsat tilsatsmateriale Consumable insert	Uden indsat tilsatsmateriale Without consumable insert	Med og uden indsat tilsatsmateriale With and without consumable insert	





Funktionel kundskab til svejsseenheden iflg. Anneks A Functional knowledge appropriate to the welding unit acc. to Annex A	<input checked="" type="checkbox"/> Bestået / Acceptable	Godkendelseskriterie /Criteria for approval ISO 9606-1, VT og RT
Kundskaber i svejseteknologi iflg. anneks B Knowledge of welding technology acc. to Annex B	<input type="checkbox"/> Bestået / Acceptable <input type="checkbox"/> Ikke prøvet / Not tested	Rapport nr. /Report no
Certifikatet er kun gyldigt, når det er bekræftet iflg. ISO 14732 afsnit 5.2 iflg. side 2 Certificate is only valid, if confirmed acc. to ISO 14732 section 5.2 page 2		
Metode for fornyet validering iflg. afsnit 5.3: a Recertificering hvert sjette år Method of revalidation according to section 5.3: a Recertification every six years		

Gyldigt fra (dato) Validity of approval from (date)	2015-02-06	Underskriftsdato Date of issue	2015-02-17
Gyldig til (dato) Valid to (date)	2021-02-06	Certificeringsansvarlig Certification Manager	Jesper Christiansen

Navn/ <i>Name</i>	Jimmi Pedersen
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Bekræftelse hver sjette måned iflg. ISO 14732 afsnit 5.2

Confirmation every six months according to ISO 14732 section 5.2

Dato/ Date	Underskrift/ Signature	Stilling eller titel/ Position
3/8-15		
3/2 - 2016	Bent O. Hansen	
5/8 - 2016	Bent O. Hansen	

Svejser/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 138 P BW FM1 M s15 PC ss nb
Designation

Firma SH Group A/S
Manufacturer

Svejsers navn Jimmi Pedersen
Welders name

Fødested
Place of birth

Eksaminator Lars Jensen
Examiner

Svejserid 535
Welders ID

Fødselsdato 1981-11-12
Date of birth

Supplerende kantsømprøve/Supplementary fillet weld ☒

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of qualification</i>	Certifikatnr. <i>Certificate no.</i>
Svejsemetode <i>Welding process</i>	138 (D, G)	135 (D, G, S), 138 (D, G, S)	Identifikation <i>Identification of test piece</i>
Plade eller rør <i>Plate or pipe</i>	P	P, T	Force sag id. <i>Order no.</i>
Svejsesømtype <i>Type of weld</i>	BW, FW	BW, FW	114-29866
Grundmateriale <i>Parent material</i>	1.2	1 - 11	Foto (hvis ønsket) <i>Photo (if required)</i>
Tilsatsmaterialegruppe <i>Filler material group</i>	FM1	FM1, FM2	
Tilsatsmaterialetype <i>Filler metal type</i>	M	M, S	
Godstykkelse (mm) <i>Material thickness (mm)</i>	15 (10 FW)	(≥3 FW)	
Svejst godstykkelse (mm) <i>Deposited thickness (mm)</i>	15	≥3	
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>		≥75 (Roterende/rotating), ≥500 (fast/fixed)	WPS SH 38-01
Svejestilling <i>Welding position</i>	PC	Oven-ned, side-ind, stående kantsøm <i>Flat, horizontal, horizontal vertical</i>	WPS
Svejsedetaljer <i>Welding details</i>	ss nb	ss nb, ss mb, bs, ss gb, ss fb, sl, ml	Jobkundskab <i>Job knowledge</i>

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer

S: Spraybue/Spray Transfer

Prøvningsmetode <i>Type of test</i>	Oplysninger <i>Information</i>
Visuel kontrol <i>Visual testing</i>	Bestået/Acceptable
Radiografering <i>Radiographic testing</i>	Ikke prøvet/Not tested
Ultralyd <i>Ultrasonic testing</i>	Bestået/Acceptable
Magnetpulver <i>Magnetic particle testing</i>	Ikke prøvet/Not tested
Penetrant <i>Dye penetrant testing</i>	Ikke prøvet/Not tested
Makroudersøg. <i>Macro examination</i>	Ikke prøvet/Not tested
Brudprøver <i>Fracture testing</i>	Bestået/Acceptable
Bøjep prøver <i>Bend test</i>	Ikke prøvet/Not tested
Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år <i>Method of revalidation according to section 9.3: a Recertification every three years</i>	
Gyldigt fra (dato) <i>Validity of approval from (date)</i>	2014-09-12
Underskriftsdato <i>Date of issue</i>	2014-09-19
Gyldig til (dato) <i>Valid to (date)</i>	2017-09-12
Certificeringsansvarlig <i>Certification Manager</i>	Jesper Christiansen

Navn/ Name

Jimmi Pedersen

Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2

Confirmation every six months according to ISO 9606-1 section 9.2

Dato/ Date

Underskrift/ Signature

Stilling eller titel/ Position or title

6/3-15



7/9-2015

Bent O. Hansen
IWS DK 00357
SH Group A/S

8/3-2016

Bent O. Hansen
IWS DK 00357
SH Group A/S

8/9-2016



Svejser/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 138/136 T BW FM1 M/P s16(4/12) D89 H-L045 ss nb
Designation

Firma SH Group A/S
Manufacturer

Svejsers navn Jimmi Pedersen
Welders name

Fødested
Place of birth

Eksaminator Lars Jensen
Examiner

Svejserid 535
Welders ID

Fødselsdato 1981-11-12
Date of birth

Supplerende kantsømprøve/Supplementary fillet weld ☒

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of qualification</i>	Certifikatnr. <i>Certificate no.</i>
Svejsemetode <i>Welding process</i>	138 (D, G) / 136	135 (D, G, S), 138 (D, G, S), 136	4723636
Plade eller rør <i>Plate or pipe</i>	T	P, T	Identifikation <i>Identification of test piece</i>
Svejsesømtype <i>Type of weld</i>	BW, FW	BW, FW	1A
Grundmateriale <i>Parent material</i>	1.2	1 - 11	Force sag id. <i>Order no.</i>
Tilsatsmaterialegruppe <i>Filler material group</i>	FM1	FM1, FM2	114-29866
Tilsatsmaterialestype <i>Filler metal type</i>	M / P	M, S, R, P, V, W, Y, Z	Foto (hvis ønsket) <i>Photo (if required)</i>
Godstykkelser (mm) <i>Material thickness (mm)</i>	16 (10 FW)	(≥3 FW)	
Svejst godstykkelser (mm) <i>Deposited thickness (mm)</i>	138/136 : 16 138 : 4 136 : 12	135/136, 138/136 : ≥3 135, 138 : 3 - 8 136 : ≥3	
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>	89	≥44,5	WPS SH 39-01
Svejestilling <i>Welding position</i>	H-L045	Oven-ned, side-ind, under-op, lodret stigende, stående kantsøm, stående kantsøm <i>Flat, horizontal, overhead, vertical up, horizontal vertical, horizontal vertical</i>	WPS
Svejsedetaljer <i>Welding details</i>	ss nb	S, M: ss nb, ss mb, bs, ss gb, ss fb, sl, ml S, M, R, P, V, W, Y, Z: ss mb, bs, sl, ml	Jobkundskab <i>Job knowledge</i>

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer






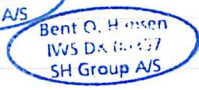
S: Spraybue/Spray Transfer

Prøvningsmetode <i>Type of test</i>	Oplysninger <i>Information</i>
Visuel kontrol <i>Visual testing</i>	Bestået/Acceptable
Radiografering <i>Radiographic testing</i>	Ikke prøvet/Not tested
Ultralyd <i>Ultrasonic testing</i>	Bestået/Acceptable
Magnetpulver <i>Magnetic particle testing</i>	Ikke prøvet/Not tested
Penetrant <i>Dye penetrant testing</i>	Ikke prøvet/Not tested
Makroundersøg. <i>Macro examination</i>	Ikke prøvet/Not tested
Brudprøver <i>Fracture testing</i>	Bestået/Acceptable
Bøjep prøver <i>Bend test</i>	Ikke prøvet/Not tested
Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år <i>Method of revalidation according to section 9.3: a Recertification every three years</i>	
Gyldigt fra (dato) <i>Validity of approval from (date)</i>	2014-09-12
Underskriftsdato <i>Date of issue</i>	2014-09-19
Gyldig til (dato) <i>Valid to (date)</i>	2017-09-12
Certificeringsansvarlig <i>Certification Manager</i>	Jesper Christiansen

Navn/ Name	Jimmi Pedersen
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Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2

Confirmation every six months according to ISO 9606-1 section 9.2

Dato/ Date	Underskrift/ Signature	Stilling eller titel/ Position or title
6/3-15		
7/9-2015		
8/3-2016	Bent O. Hansen	
8/9-2016	Bent O. Hansen	



Nordisk Svejse Kontrol a/s



Svejsecertifikat - EN ISO 9606-1

Welding Qualification Test Certificate - EN ISO 9606-1

Designation
Betegnelse

EN ISO 9606-1 111/136 T BW FM1 B/P s12(6/6) D100 PH ss nb

Manufacturer name and address
Firma navn og adresse

SH Group A/S Kuopiovej 20 5700 Svendborg DK

Date of completed test
Prøvning afsluttet den

27-01-2016

Welder's name
Svejsere's navn

Claus Herum Jensen

Examinator
Eksaminator


René Nau

Date of birth
Fødselsdato

13-04-1971

Welder's ident
Svejsed

605

	Actual data Aktuelle data	Range of approval Godkendelsesområde	Certificate no Certifikat nr.
			68587-02B
Welding process Svejsemetode	111 136	111 136	Identification of test piece Identifikation af emne
Transfer mode Dråbeovergang	Spray arc/Spraybue	Globular/Blandbue, Spray arc/Spraybue	68587-02B
Product type (plate or pipe) Produkttype (plade eller rør)	T	T, P	
Type of weld Svejsetype	BW	BW	
Parent material group(s)/subgroups Grundmaterialegruppe(r)/undergrupper	1.2	1-11	
Filler material group(s)/subgroups Tilsmatsmaterialegruppe(r)	FM1	FM1, FM2	
Filler material (Designation) Tilsmatsmateriale (betegnelse)	B, EN ISO 2560-A: E46 6Mn1Ni B 32H5 P, ISO 17632-A: T 42 2 P M 1 H5	A, RA, RB, RC, RR, R, B R, P, V, W, Y, Z	
Shielding gas Beskyttelsesgas	ISO 14175: M21	-	
Auxiliaries Hjælpeudstyr	-	-	
Type of current and polarity Strømtype og polaritet	DC-, DC+ DC+	-	
Material thickness (mm) Materialetykkelse (mm)	12,0	-	
Deposited thickness (mm) Nedsmedt tykkelse (mm)	111: 6,0 136: 6,0	111: 3,0 - 12,0 136: 3,0 - 12,0	
Outside pipe diameter (mm) Udv. rørdiameter (mm)	100,0	>= 50,0	
Welding position Svejsesposition	PH	Flat, Overhead, Vertical up / Oven-ned, Under-op, Lodret stigende	Welding Procedure Specification Svejsespecifikationspecifikation
Welding details Svejsedetaljer	ss nb, ml ss mb, ml	111: ss nb, ss mb, bs, ss gb, ss fb 136: ss mb, bs	SH 32
Supplementary fillet weld test Supplerende kantsømsprøve	No/Nej		Job Knowledge Not tested / Ikke prøvet

Validity of qualification until (date)
Gyldig til (dato)

27-01-2019

This certificate is issued according to Dette certifikat er udstedt i henhold til		9.3(a) 3 year/år		Confirmation of the validity for the following 6 month acc. to 9.2 Bekræftelse af gyldighed for yderligere 6 måneder iht. 9.2	
				Date Dato	Signature Underskrift
				27/1-2016	Bent O. Hansen
				Position or title Stilling eller titel	
				Bent O. Hansen IWS DK GROUP SH Group A/S	
Testing standard Prøvningsstandard		DS/EN ISO 9606-1			
Type of qualification tests Prøvningsmetode		Accept criteria Accept kriterier		EN ISO 9606-1 part/afsnit 7	
Visual testing Visual kontrol		Accepted / Bestået			
Macroscopic examination Makroskopisk prøvning		Accepted / Bestået			
				Remarks / Bemærkninger	
				Branch angle/grenrør: 30 degrees/grader. Range of approval/gyldighedsområde: 30 - 90 degrees/grader.	
				08-02-2016 Niels-Jørgen Christiansen	
Field report no. Markrapport nr.		68587 VT 01, MA 02		PED - APPROVED NSK 3. PART NSK Nordisk Svejse Kontrol A/S Støjundveget 4 • DK - 4870 Bjerg Tlf: +45 7324 6905 • Fax: +45 7324 8908	

Certification Manager (date of issue)
Certificeringsansvarlig (udstedelsesdato)



Nordisk Svejse Kontrol a/s



Svejseoperatørcertifikat - EN ISO 14732

Welding Operator Approval Test Certificate - EN ISO 14732

Manufacturer name and address
Firma navn og adresse

SH Group A/S Kuopiovej 20 5700 Svendborg DK

Date of completed test
Prøvning afsluttet den

03-05-2016

Welder's name
Svejsers navn

Claus Herum Jensen

Examinator
Eksaminator


René Nau

Date of birth
Fødselsdato

13-04-1971

Welder's ident
Svejsed


605

	Test piece Proveene	Range of qualification Kvalificeringsområde	Certificate no Certifikat nr.
			70693-01A
Welding process Svejsemetode	121	121	Identification of test piece Identifikation af emne
Welding equipment Svejsedstyr	ESAB Tractor A2/ESAB LAF 1001 Unit	ESAB Tractor/ESAB LAF 1001 Unit	70693-01A
Welding unit Svejsenhed	ESAB LAF 1001	ESAB LAF 1001	
Details for mechanized welding Detaljer for mekaniseret svejsning			
Visual control/visual remote control Visuel styring/visuel styring på afstand	Visual control/Visuel styring	Visual control/Visuel styring	
Automatic arc length control Automatisk styring af lysbuelængde	Without/Uden	With and without/Med og uden	
Automatic joint tracking Automatiseret fugefølgesystem	Without/Uden	With and without/Med og uden	
Welding position Svejsesposition	PA	Flat/Oven-ned	
Single run / multi run Enkeltstring / flerstreng	Multi run/Flerstreng	Single run, multi run/Enkeltstreng, flerstreng	
Material backing Bagskinne	Without/Uden	Without/Uden	
Consumable insert Tilsmatsmaterialer	Without/Uden	Without/Uden	Job knowledge acc. Annex B Jobkendskab iht. Annex B
			Acceptable / Acceptabel

Additional information is available on attached sheet and/or welding procedure specification No: SH 30
Yderligere oplysninger forefindes på vedlagte bilag og/eller svejsespecifikationsnr.:

Valid until
Gyldig indtil

03-05-2022

The approval is based on welding procedure test in accordance with Godkendelsen er baseret på Svejsespecifikationsprøvning i henhold til	4.1c	 04-05-2016 Keld Dupont Name, date and signature of examining body Navn, dato, underskrift eller eksaminerende instans Location Sted
Result of the approval test see document no: (welding procedure approval records or other documents of testing) Resultaterne af godkendelsesprøvning se dokumentnr.: (Rapport over svejsespecifikationsgodkendelse eller andre prøvningsdokumenter)	70693 VT 01 70693 UT 01	
This certificate is issued according to Dette certifikat er udsedt i henhold til	5.3(a) 6 year/år	

Re-validation for qualification by employee/welding coordination for the following 6 months (see clause 5)
Fornyelse validering til kvalificering af arbejdsgiver/svejsespecifikationskoordinator for efterfølgende 6 måneder (se punkt 5)

Date Dato	Signature Underskrift	Position or title Stilling eller titel	Date Dato	Signature Underskrift	Position or title Stilling eller titel

Svejseoperatørcertifikat - EN ISO 14732

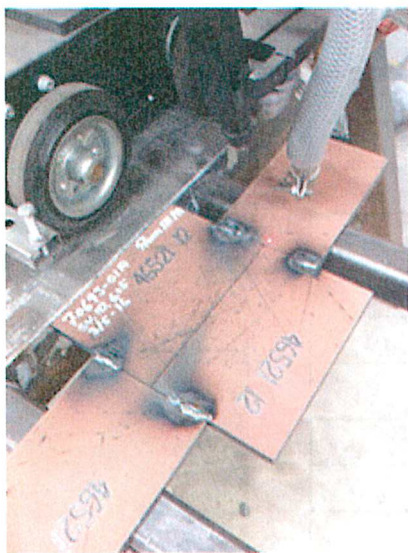
Welding Operator Approval Test Certificate - EN ISO 14732

Certificate no
Certifikat nr.

70693-01A

Page
Side

2



Welding unit / Svejseenhed



Adjustment unit / Justeringsenhed

Svejser/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 136 T BW FM1 B/P s16(4/12) D89 H-L045 ss nb

Designation

Firma SH Group A/S

Manufacturer

Svejsers navn Claus Jensen

Welders name

Fødested

Place of birth

Eksaminator Lars Jensen

Examiner

Svejsersid 605

Welders ID

Fødselsdato 1971-04-13

Date of birth

Supplerende kantsømprøve/Supplementary fillet weld



Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of qualification</i>	Certifikatnr. <i>Certificate no.</i>
Svejsemetode <i>Welding process</i>	136	136	Identifikation <i>Identification of test piece</i> 1A
Plade eller rør <i>Plate or pipe</i>	T	P, T	Force sag id. <i>Order no.</i>
Svejsesømttype <i>Type of weld</i>	BW, FW	BW, FW	115-24175
Grundmateriale <i>Parent material</i>	1.2	1 - 11	Foto (hvis ønsket) <i>Photo (if required)</i>
Tilsatsmaterialegruppe <i>Filler material group</i>	FM1	FM1, FM2	
Tilsatsmaterialetype <i>Filler metal type</i>	B / P	B, R, P, V, W, Y, Z	
Godstykkelser (mm) <i>Material thickness (mm)</i>	16 (10 FW)	(≥3 FW)	
Svejst godstykkelser (mm) <i>Deposited thickness (mm)</i>	136 : 16 136 : 4 12	≥3 136 : 3 - 8 ≥3	
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>	89	≥44,5	WPS 10-01
Svejsestilling <i>Welding position</i>	H-L045	Oven-ned, side-ind, under-op, lodret stigende, stående kantsøm, under-op/side-ind <i>Flat, horizontal, overhead, vertical up, horizontal vertical, horizontal overhead</i>	WPS
Svejsedetaljer <i>Welding details</i>	ss nb	ss nb, ss mb, bs, ss gb, ss fb, sl, ml	Jobkundskab <i>Job knowledge</i> Nej/No

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer

S: Spraybue/Spray Transfer

Prøvningsmetode <i>Type of test</i>	Oplysninger <i>Information</i>
Visuel kontrol <i>Visual testing</i>	Bestået/Acceptable
Radiografering <i>Radiographic testing</i>	Ikke prøvet/Not tested
Ultralyd <i>Ultrasonic testing</i>	Bestået/Acceptable
Magnetpulver <i>Magnetic particle testing</i>	Ikke prøvet/Not tested
Penetrant <i>Dye penetrant testing</i>	Ikke prøvet/Not tested
Makroundersøg. <i>Macro examination</i>	Ikke prøvet/Not tested
Brudprøver <i>Fracture testing</i>	Bestået/Acceptable
Bøjep prøver <i>Bend test</i>	Ikke prøvet/Not tested

Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år

Method of revalidation according to section 9.3: a Recertification every three years

Gyldigt fra (dato) 2015-03-18 Underskriftsdato 2015-03-20
Validity of approval from (date) Date of issue

Gyldig til (dato) 2018-03-18 Certificeringsansvarlig
Valid to (date) Certification Manager



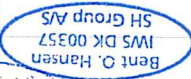

Jesper Christiansen

Navn/ Name

Claus Jensen

Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2

Confirmation every six months according to ISO 9606-1 section 9.2

Dato/ Date	Underskrift/ Signature	Stilling eller titel/ Position or title
18/9-2015		
17/3-2016	Bent O. Hansen	
16/9-2016	Bent O. Hansen	

Svejsers/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 138/136 T BW FM1 M/P s16(4/12) D89 H-L045 ss nb

Designation

Firma SH Group A/S
Manufacturer

Svejsers navn Claus Jensen
Welders name

Fødested
Place of birth

Eksaminator John Grønning
Examiner

Svejsersid 605
Welders ID

Fødselsdato 1971-04-13
Date of birth

Supplerende kantsømprøve/Supplementary fillet weld ☒

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of qualification</i>	Certifikatnr. <i>Certificate no.</i>
Svejsemetode <i>Welding process</i>	138 (D) / 136	135 (D, G, S), 138 (D, G, S), 136	Identifikation <i>Identification of test piece</i> 6A
Plade eller rør <i>Plate or pipe</i>	T	P, T	Force sag id. <i>Order no.</i>
Svejsesørmtype <i>Type of weld</i>	BW, FW	BW, FW	114-30369
Grundmateriale <i>Parent material</i>	1.2	1 - 11	Foto (hvis ønsket) <i>Photo (if required)</i>
Tilsatsmaterialegruppe <i>Filler material group</i>	FM1	FM1, FM2	
Tilsatsmaterialetype <i>Filler metal type</i>	M / P	M, S, R, P, V, W, Y, Z	
Godstykkelser (mm) <i>Material thickness (mm)</i>	16 (10 FW)	(≥3 FW)	
Svejst godstykkelser (mm) <i>Deposited thickness (mm)</i>	138/136 : 16 138 : 4 136 : 12	135/136, 138/136 : ≥3 135, 138 : 3 - 8 136 : ≥3	
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>	89	≥44,5	WPS SH 39-01 <i>WPS</i>
Svejsstilling <i>Welding position</i>	H-L045	Oven-ned, side-ind, under-op, lodret stigende, stående kantsøm <i>Flat, horizontal, overhead, vertical up, horizontal vertical</i>	
Svejsedetaljer <i>Welding details</i>	ss nb	S, M : ss nb, ss mb, bs, ss gb, ss fb, sl, ml S, M, R, P, V, W, Y, Z : ss mb, bs, sl, ml	Jobkundskab <i>Job knowledge</i> Nej/No

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer

S: Spraybue/Spray Transfer

Prøvningsmetode <i>Type of test</i>	Oplysninger <i>Information</i>
Visuel kontrol <i>Visual testing</i>	Bestået/Acceptable Gas EN ISO 14175 Gas EN ISO 14175 M21
Radiografering <i>Radiographic testing</i>	Ikke prøvet/Not tested Hjælpeudstyr <i>Auxiliaries</i>
Ultralyd <i>Ultrasonic testing</i>	Bestået/Acceptable Strømtype og polaritet <i>Current and polarity</i> DC+
Magnetpulver <i>Magnetic particle testing</i>	Ikke prøvet/Not tested Andet <i>Others</i>
Penetrant <i>Dye penetrant testing</i>	Ikke prøvet/Not tested
Makroundersøg. <i>Macro examination</i>	Ikke prøvet/Not tested
Brudprøver <i>Fracture testing</i>	Bestået/Acceptable
Bøjep prøver <i>Bend test</i>	Ikke prøvet/Not tested




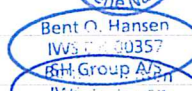

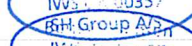



Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år
Method of revalidation according to section 9.3: a Recertification every three years

Gyldigt fra (dato) <i>Validity of approval from (date)</i>	2014-09-24	Underskriftsdato <i>Date of issue</i>	2014-10-09
Gyldig til (dato) <i>Valid to (date)</i>	2017-09-24	Certificeringsansvarlig <i>Certification Manager</i>	Jesper Christensen

Navn/ Name	Claus Jensen
------------	--------------

Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2

Confirmation every six months according to ISO 9606-1 section 9.2

Dato/ Date	Underskrift/ Signature	Stilling eller titel/ Position or title
25/3-15		
25/9-2015		
23/3-2016		
23/9-2016		
		

Svejsers/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 138 P BW FM1 M s15 PC ss nb

Designation

Firma SH Group A/S

Manufacturer

Svejsers navn Claus Jensen

Welders name

Fødested

Place of birth

Eksaminator Lars Jensen

Examiner

Svejsersid 605

Welders ID

Fødselsdato 1971-04-13

Date of birth

Supplerende kantsømprøve/Supplementary fillet weld ☒

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of qualification</i>	Certifikatnr. <i>Certificate no.</i>
Svejsemetode <i>Welding process</i>	138 (D, G)	135 (D, G, S), 138 (D, G, S)	4723644
Plade eller rør <i>Plate or pipe</i>	P	P, T	Identifikation <i>Identification of test piece</i>
Svejsesømtype <i>Type of weld</i>	BW, FW	BW, FW	6B
Grundmateriale <i>Parent material</i>	1.2	1 - 11	Force sag id. <i>Order no.</i>
Tilsatsmaterialegruppe <i>Filler material group</i>	FM1	FM1, FM2	114-29866
Tilsatsmaterialetype <i>Filler metal type</i>	M	M, S	Foto (hvis ønsket) <i>Photo (if required)</i>
Godstykkelser (mm) <i>Material thickness (mm)</i>	15 (10 FW)	(≥3 FW)	
Svejst godstykkelser (mm) <i>Deposited thickness (mm)</i>	15	≥3	
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>		≥75 (Roterende/rotating), ≥500 (fast/fixed)	WPS SH 38-01
Svejsstilling <i>Welding position</i>	PC	Oven-ned, side-ind, stående kantsøm <i>Flat, horizontal, horizontal vertical</i>	WPS
Svejsedetaljer <i>Welding details</i>	ss nb	ss nb, ss mb, bs, ss gb, ss fb, sl, ml	Jobkundskab <i>Job knowledge</i>
			Nej/No

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer

S: Spraybue/Spray Transfer

Prøvningsmetode <i>Type of test</i>	Oplysninger <i>Information</i>
Visuel kontrol <i>Visual testing</i>	Bestået/Acceptable
Radiografering <i>Radiographic testing</i>	Ikke prøvet/Not tested
Ultralyd <i>Ultrasonic testing</i>	Bestået/Acceptable
Magnetpulver <i>Magnetic particle testing</i>	Ikke prøvet/Not tested
Penetrant <i>Dye penetrant testing</i>	Ikke prøvet/Not tested
Makroudersøg. <i>Macro examination</i>	Ikke prøvet/Not tested
Brudprøver <i>Fracture testing</i>	Bestået/Acceptable
Bøjep prøver <i>Bend test</i>	Ikke prøvet/Not tested

Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år

Method of revalidation according to section 9.3: a Recertification every three years



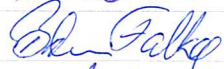

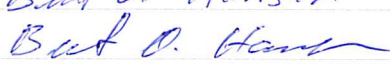
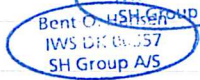
Gyldigt fra (dato) 2014-09-12 Underskriftsdato 2014-09-19
Validity of approval from (date) *Date of issue*

Gyldig til (dato) 2017-09-12 Certificeringsansvarlig Jesper Christiansen
Valid to (date) *Certification Manager*

Navn/ Name	Claus Jensen
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Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2

Confirmation every six months according to ISO 9606-1 section 9.2

Dato/ Date	Underskrift/ Signature	Stilling eller titel/ Position or title
6/3-15		
7/9-2015		
8/3-2016	Bent O. Hansen	Bent O. Hansen IWS DK 00357 SH Group A/S
8/9-2016		

Svejsers/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 136 T/P FW FM5 P t5/5 D50 PB sl

Designation

Firma SH Group A/S

Manufacturer

Svejsers navn Claus Jensen

Welders name

Fødested

Place of birth

Eksaminator Lars Jensen

Examiner

Svejsersid 605

Welders ID

Fødselsdato 1971-04-13

Date of birth

Supplerende kantsømprøve/Supplementary fillet weld ☐

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of qualification</i>	Certifikatnr. <i>Certificate no.</i>
Svejsemetode <i>Welding process</i>	136	136	Identifikation <i>Identification of test piece</i> 1A
Plade eller rør <i>Plate or pipe</i>	T/P	T, P	Force sag id. <i>Order no.</i>
Svejsesømtype <i>Type of weld</i>	FW	FW	115-27378
Grundmateriale <i>Parent material</i>	8.1 / 1.2	1 - 11	Foto (hvis ønsket) <i>Photo (if required)</i>
Tilsatsmaterialegruppe <i>Filler material group</i>	FM5	FM5	
Tilsatsmaterialestype <i>Filler metal type</i>	P	R, P, V, W, Y, Z	
Godstykkelser (mm) <i>Material thickness (mm)</i>	5	≥3	
Svejst godstykkelser (mm) <i>Deposited thickness (mm)</i>			
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>	50	≥25	WPS SH 59
Svejsstilling <i>Welding position</i>	PB	Oven-ned, stående kantsøm <i>Flat, horizontal vertical</i>	WPS
Svejsedetaljer <i>Welding details</i>	sl	sl	Jobkendskab <i>Job knowledge</i> Nej/No

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer

S: Spraybue/Spray Transfer

P: Pulsbue/Pulsed transfer

Prøvningsmetode <i>Type of test</i>	Oplysninger <i>Information</i>
Visuel kontrol <i>Visual testing</i>	Bestået/Acceptable Gas EN ISO 14175 M21
Radiografering <i>Radiographic testing</i>	Ikke prøvet/Not tested Hjælpeudstyr <i>Auxiliaries</i>
Ultralyd <i>Ultrasonic testing</i>	Ikke prøvet/Not tested Strømtype og polaritet <i>Current and polarity</i> DC+
Magnetpulver <i>Magnetic particle testing</i>	Ikke prøvet/Not tested Andet <i>Others</i>
Penetrant <i>Dye penetrant testing</i>	Ikke prøvet/Not tested
Makroudersøg. <i>Macro examination</i>	Bestået/Acceptable
Brudprøver <i>Fracture testing</i>	Ikke prøvet/Not tested
Bøjep prøver <i>Bend test</i>	Ikke prøvet/Not tested

Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år
Method of revalidation according to section 9.3: a Recertification every three years

Gyldigt fra (dato) <i>Validity of approval from (date)</i>	2015-06-09	Underskriftsdato <i>Date of issue</i>	2015-07-08
Gyldig til (dato) <i>Valid to (date)</i>	2018-06-09	Certificeringsansvarlig <i>Certification Manager</i>	Christian Lund Svendsen

Navn/ Name	Claus Jensen
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Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2

Confirmation every six months according to ISO 9606-1 section 9.2

Dato/ Date	Underskrift/ Signature	Stilling eller titel/ Position or title
17/12-15	Peter Jensen	Jesper Hansen
17/6-2016	Bent O. Hansen	17/6-2016 SH Group A/S

Certifikat for svejsere i henhold til DS/EN ISO 9606-1:2013

Welders Certificate in accordance with DS/EN ISO 9606-1:2013



Betegnelse i henhold til DS/EN ISO 9606-1:

Designation in accordance with DS/EN ISO 9606-1: 111 P/T FW 1.1 FM1 B t10 D159 PH ml

Udført på DS 322-certificeret
svejseskole. Navn og adresse:
Performed at DS 322 certified welding
school. Name and address:

Svendborg Erhvervsskole

Porthusvej 71

5700 Svendborg

DS-licens-nr.:

DS license No.: 526

Svejsepas-nr.:

Welding passport No.: 32804

Svejsersens navn:

Welder's name: Norbert Rudolf Georg Hönke

Fødselsdato:

Birth date: 161256

Adresse:

Address: Estersvej 34,1
5700 Svendborg

Prøvningsinstans:

Examining body: Force Technology
Alsvej 6, 5500 Middelfart

Reference-nr./Reference No. 276

Fornyelse/Revalidation ☐

Variable Variables	Anvendte data Actual data used	Gyldighedsområde Range of approval
Svejsemetode(r)/Dråbeovergang Welding process(es)/Transfer mode	111	ISO 4063 - 111
Plade eller rør Plate or pipe	P/T	P:Plade T:Rør
Sømtype Type of joint	FW	FW:Kantsøm
Materialegruppe(r) Material group(s)	1.1	All materials acc. EN ISO 15608, Table 1
Tilsatsmateriale Welding consumables	FM1	FM1, FM2
Type og betegnelse Type and designation	Tabel/table 4 Tabel/table 5	B ESAB 53.05 B, A, RA, RB, RC, RR, R
Beskyttelsesgas Shielding gas		
Tilbehør (fx baggas) Auxiliaries (e.g. backing gas)		
Strømtype og polaritet Type of current and polarity	DC-/DC+	
Nedsmeltet tykkelse i mm for BW Deposit thickness in mm for BW		
Materialetykkelse i mm for FW Material thickness in mm for FW	10	≥3
Rørdiameter i mm Pipe diameter in mm	159	≥79.5
Svejseposition Welding position	BW tabel/table 9 FW tabel/table 10	all FW positions, except vertical down
Svejsetekniske detaljer og lag Weld details and layer	ml	(sl,ml)

Svejsespecifikations-nr.:

Welding procedure specification No.: SP111-018

Mærkning af prøveemne:

Identification of test piece: SE tfst 111 276 P/T PH

Jobkundskab/Job knowledge:

Bestået/Accepted ☒

Omprøve/Retest ☐

Svejsning af prøveemne udført/Welding of test piece terminated: 2016-03-08

Den praktiske prøve er gennemført tilfredsstillende og er indstillet til prøvning.

Svejseskolens svejsekoordinator (dato/navn/underskrift):

The welder's approval test is accepted and released for testing.

Welding coordinator of the welding school (date/name/signature):

8/3-16 [Signature]

Bedømmelse af svejsesømme/Evaluation of welds



Prøvningsinstans: FORCE Technology, Alsvej 6, 5500 Middelfart
Examining body:

Sags-nr.: 116-20181
Job No.:

Identifikation af prøveemne: 276
Identification of test piece:

Prøveemne undersøgt (dato): 10. marts 2016
Test piece examined (date):

med de anførte metoder i henhold til anførte standarder og acceptkriterier med nedenstående resultater:
with the referred method in accordance to the referred standards and accept criteria with the following results:

Bemærkninger Remarks				
Prøvningsmetode Type of test	Prøvningsstandard Testing standard	Acceptkriterier Acceptance requirements	Modsvarende acceptkriterier Corresponding acceptance criteria	Godkendt/ikke udført Acceptable/not performed
Visuel Visual	EN ISO 17637	EN ISO 5817 B (C)	-	Godkendt
Radiografi Radiography				Ikke udført
Ultralyd Ultrasonic				Ikke udført
Magnetpulver Magnetic particles				Ikke udført
Penetrant Dye penetrant				Ikke udført
Makro Macro	EN ISO 17639	EN ISO 5817 B		Godkendt
Brudprøve Fracture				Ikke udført
Bøjeprobe Bend				Ikke udført
Kærvtrækprøvning Notch tensile test				Ikke udført

Prøvningsinstans (dato/underskrift): 10. marts 2016
Examining body (date/signature):



Kvalifikation gyldig fra (dato): 2016-03-08
Qualification valid from (date):

Fornyelsesmetode EN ISO 9606-1, 9.3 a ☒
Revalidation method

Kvalifikation gyldig til (dato): 2019-03-08
Qualification valid until (date):

Svejsskolens svejsekoordinator (dato/underskrift): 17/3-16
Welding coordinator of the welding school (date/signature):

[Handwritten signature: Mogens Jørgensen]

Forlængelse/Prolongation

Bekræftelse af gyldigheden ved arbejdsgiver eller virksomhedens svejseansvarlig for de følgende 6 måneder Confirmation of the validity by employer/welding coordinator for the following 6 months		
Dato/Date	Stilling eller titel/Position or title	Underskrift/Signature
<u>09 - 2016</u>	<u>IWS DK B-17 SH Group A5</u>	<u>Bent O. Hansen</u>

Svejsers/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som
implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 138/136 T BW FM1 M/P s16(4/12) D89 H-L045 ss nb

Designation

Firma SH Group A/S

Manufacturer

Svejsers navn Norbert Hönke

Welders name

Fødested

Place of birth

Eksaminator Lars Jensen

Examiner

Svejsersid 625

Welders ID

Fødselsdato 1956-12-16

Date of birth

Supplerende kantsømprøve/Supplementary fillet weld ☒

Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of qualification</i>	Certifikatnr. <i>Certificate no.</i>
Svejsemetode <i>Welding process</i>	138 (D, G) / 136	135 (D, G, S), 138 (D, G, S), 136	Identifikation <i>Identification of test piece</i>
Plade eller rør <i>Plate or pipe</i>	T	P, T	Force sag id. <i>Order no.</i>
Svejsesømtype <i>Type of weld</i>	BW, FW	BW, FW *	114-26796
Grundmateriale <i>Parent material</i>	1.2	1 - 11	Foto (hvis ønsket) <i>Photo (if required)</i>
Tilsatsmaterialegruppe <i>Filler material group</i>	FM1	FM1, FM2	
Tilsatsmaterialetype <i>Filler metal type</i>	M / P	M, S, R, P, V, W, Y, Z	
Godstykkelser (mm) <i>Material thickness (mm)</i>	16 (10 FW)	(≥3 FW)	
Svejst godstykkelser (mm) <i>Deposited thickness (mm)</i>	138/136 : 16 138 : 4 136 : 12	135/136, 138/136 : ≥3 135, 138 : 3 - 8 136 : ≥3	
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>	89	≥44,5	WPS SH 39-01
Svejestilling <i>Welding position</i>	H-L045	Oven-ned, side-ind, under-op, lodret stigende, stående kantsøm <i>Flat, horizontal, overhead, vertical up, horizontal vertical</i>	WPS
Svejsedetaljer <i>Welding details</i>	ss nb	S, M: ss nb, ss mb, bs, ss gb, ss fb, sl, ml S, M, R, P, V, W, Y, Z: ss mb, bs, sl, ml	Jobkundskab <i>Job knowledge</i>

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer

S: Spraybue/Spray Transfer

* FW: Oven-ned, stående kantsøm / Flat, horizontal

Prøvningsmetode <i>Type of test</i>	Oplysninger <i>Information</i>
Visuel kontrol <i>Visual testing</i>	Bestået/Acceptable
Radiografering <i>Radiographic testing</i>	Ikke prøvet/Not tested
Ultralyd <i>Ultrasonic testing</i>	Bestået/Acceptable
Magnetpulver <i>Magnetic particle testing</i>	Ikke prøvet/Not tested
Penetrant <i>Dye penetrant testing</i>	Ikke prøvet/Not tested
Makroundersøg. <i>Macro examination</i>	Ikke prøvet/Not tested
Brudprøver <i>Fracture testing</i>	Bestået/Acceptable
Bøjep prøver <i>Bend test</i>	Ikke prøvet/Not tested

Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år

Method of revalidation according to section 9.3: a Recertification every three years

Gyldigt fra (dato) 2014-06-17 Underskriftsdato 2014-08-19
Validity of approval from (date) Date of issue

Hans Knudsen

Gyldig til (dato) 2017-06-17 Certificeringsansvarlig Hans Knudsen
Valid to (date) Certification Manager

Navn/ Name

Norbert Hönke

Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2

Confirmation every six months according to ISO 9606-1 section 9.2

Dato/ Date

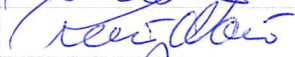
Underskrift/ Signature

Stilling eller titel/ Position or title

15-12-2014



17/6-2015



17/12-2015



17/6-2016




Svejser/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 138 P BW FM1 M s15 PC ss nb

Designation

Firma SH Group A/S

Manufacturer

Svejsers navn Norbert Hönke

Welders name

Fødested

Place of birth

Eksaminator Lars Jensen

Examiner

Svejsersid 625

Welders ID

Fødselsdato 1956-12-16

Date of birth

Supplerende kantsømprøve/Supplementary fillet weld



Væsentlige data <i>Essential variables</i>	Aktuelle data <i>Actual data</i>	Godkendelsesområde <i>Range of qualification</i>	Certifikatnr. <i>Certificate no.</i>
Svejsemetode <i>Welding process</i>	138 (D, G)	135 (D, G, S), 138 (D, G, S)	4723643
Plade eller rør <i>Plate or pipe</i>	P	P, T	Identifikation <i>Identification of test piece</i>
Svejsesømtype <i>Type of weld</i>	BW, FW	BW, FW	5B
Grundmateriale <i>Parent material</i>	1.2	1 - 11	Force sag id. <i>Order no.</i>
Tilsatsmaterialegruppe <i>Filler material group</i>	FM1	FM1, FM2	
Tilsatsmaterialetype <i>Filler metal type</i>	M	M, S	
Godstykkelse (mm) <i>Material thickness (mm)</i>	15 (10 FW)	(≥3 FW)	
Svejst godstykkelse (mm) <i>Deposited thickness (mm)</i>	15	≥3	
Udv. rørdiameter (mm) <i>Outside pipe diameter (mm)</i>		≥75 (Roterende/rotating), ≥500 (fast/fixed)	Foto (hvis ønsket) <i>Photo (if required)</i>
Svejestilling <i>Welding position</i>	PC	Oven-ned, side-ind, stående kantsøm <i>Flat, horizontal, horizontal vertical</i>	
Svejsedetaljer <i>Welding details</i>	ss nb	ss nb, ss mb, bs, ss gb, ss fb, sl, ml	WPS SH 38-01
			WPS
			Jobkundskab <i>Job knowledge</i>
			Nej/No

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer

S: Spraybue/Spray Transfer

Prøvningsmetode <i>Type of test</i>	Oplysninger <i>Information</i>
Visuel kontrol <i>Visual testing</i>	Bestået/Acceptable
Radiografering <i>Radiographic testing</i>	Ikke prøvet/Not tested
Ultralyd <i>Ultrasonic testing</i>	Bestået/Acceptable
Magnetpulver <i>Magnetic particle testing</i>	Ikke prøvet/Not tested
Penetrant <i>Dye penetrant testing</i>	Ikke prøvet/Not tested
Makroudersøg. <i>Macro examination</i>	Ikke prøvet/Not tested
Brudprøver <i>Fracture testing</i>	Bestået/Acceptable
Bøjep prøver <i>Bend test</i>	Ikke prøvet/Not tested

Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år

Method of revalidation according to section 9.3: a Recertification every three years

Gyldigt fra (dato) <i>Validity of approval from (date)</i>	2014-09-12	Underskriftsdato <i>Date of issue</i>	2014-09-19
Gyldig til (dato) <i>Valid to (date)</i>	2017-09-12	Certificeringsansvarlig <i>Certification Manager</i>	Jesper Christiansen

Navn/ Name

Norbert Hönke

Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2

Confirmation every six months according to ISO 9606-1 section 9.2

Dato/ Date

Underskrift/ Signature

Stilling eller titel/ Position or title

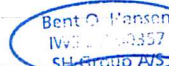
6/3-15



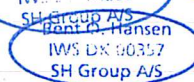
7/9-2015



8/3-2016



8/9-2016



Svejser/operatør er godkendt efter Arbejdstilsynets bekendtg. 694 og 685, som implementerer Rådets Direktiv 97/23/EF PED henholdsvis 2010/35/EU – TPED om trykbærende udstyr
Welding/operator is approved according to ACT 694 and 685, which implements the directives 97/23/EC respectively 2010/35/EU regarding pressure equipment

Betegnelse ISO 9606-1 138/136 T BW FM1 M/P s16(4/12) D89 H-L045 ss nb

Designation

Firma SH Group A/S

Manufacturer

Svejsers navn

Welders name

Jacob Nørgaard

Fødested

Place of birth

Eksaminator Lars Jensen

Examiner

Svejsersid

Welders ID

6046

Fødselsdato

Date of birth

1991-09-10

Supplerende kantsømprøve/Supplementary fillet weld



Væsentlige data Essential variables	Aktuelle data Actual data	Godkendelsesområde Range of qualification	Certifikatnr. Certificate no.
Svejsemetode Welding process	138 (D) / 136	135 (D, G, S, P), 138 (D, G, S, P), 136	Identifikation Identification of test piece 7FO
Plade eller rør Plate or pipe	T	P, T	Force sag id. Order no. 115-30196
Svejsesømtype Type of weld	BW, FW	BW, FW	
Grundmateriale Parent material	1.2	1 - 11	Foto (hvis ønsket) Photo (if required)
Tilsatsmaterialegruppe Filler material group	FM1	FM1, FM2	
Tilsatsmaterialetype Filler metal type	M / P	M, S, R, P, V, W, Y, Z	
Godstykkelser (mm) Material thickness (mm)	16 (10 FW)	(≥3 FW)	
Svejst godstykkelser (mm) Deposited thickness (mm)	138/136 : 16 138 : 4 136 : 12	135/136, 138/136 : ≥3 135, 138 : 3 - 8 136 : ≥3	
Udv. rørdiameter (mm) Outside pipe diameter (mm)	89	≥44,5	WPS SH 39-01
Svejsestilling Welding position	H-L045	Oven-ned, Side-ind, Under-op, Lodret stigende, stående kantsøm, under-op/side-ind Flat, horizontal, overhead, vertical up, horizontal vertical, horizontal overhead	WPS
Svejsedetaljer Welding details	ss nb	S, M : ss nb, ss mb, bs, ss gb, ss fb, sl, ml S, M, R, P, V, W, Y, Z : ss mb, bs, sl, ml	Jobkendskab Job knowledge Nej/No

D: Kortbue/Short Circuit Transfer

G: Blandbue/Globular Transfer

S: Spraybue/Spray Transfer

P: Pulsbue/Pulsed transfer

Prøvningsmetode Type of test	Oplysninger Information
Visuel kontrol Visual testing	Bestået/Acceptable Gas EN ISO 14175 Gas EN ISO 14175 M21
Radiografering Radiographic testing	Ikke prøvet/Not tested Hjælpeudstyr Auxiliaries
Ultralyd Ultrasonic testing	Bestået/Acceptable Strømtype og polaritet Current and polarity DC+
Magnetpulver Magnetic particle testing	Ikke prøvet/Not tested Andet Others
Penetrant Dye penetrant testing	Ikke prøvet/Not tested
Makroundersøg. Macro examination	Ikke prøvet/Not tested
Brudprøver Fracture testing	Bestået/Acceptable
Bøjepøver Bend test	Ikke prøvet/Not tested

Metode for fornyet validering iflg. afsnit 9.3: a Recertificering hvert tredje år

Method of revalidation according to section 9.3: a Recertification every three years

Gyldigt fra (dato)

2015-09-25

Underskriftsdato

2015-11-25

Validity of approval from (date)

Date of issue

Gyldig til (dato)

2018-09-25

Certificeringsansvarlig

Jesper Christiansen

Valid to (date)

Certification Manager

Navn/ Name	Jacob Nørgaard
------------	----------------

Bekræftelse hver sjette måned iflg. ISO 9606-1 afsnit 9.2

Confirmation every six months according to ISO 9606-1 section 9.2

Dato/ Date	Underskrift/ Signature	Stilling eller titel/ Position or title
23/3 - 2016	Bent O. Hansen	IWS 1001357 SH Group A/S
22/9 - 2016	Bent O. Hansen	Bent O. Hansen IWS 1001357 SH Group A/S

Bilag 1: Certifikat for svejsere i henhold til DS/EN ISO 9606-1:2013

Udført på svejseskole med certificeringslicens i henhold til DS 322:2014

Performed at welding school with license of certification in accordance with DS 322:2014

Betegnelse i henhold til DS/EN ISO 9606-1:

Designation in accordance with DS/EN ISO 9606-1: 138/136 D/S T BW 1.1 FM1 M/P s16(3.5/12.5) D168 H-L045 ss nb/ss mb

Svejseskolens navn og adresse:

Name and address of the welding school: Svendborg Erhvervsskole

Porthusvej 71

5700 Svendborg

DS-licens-nr.:

DS license No.: 526

Svejsepas-nr.:

Welding passport No.: 25344

Svejserens navn:

Welder's name: Liem Duy Nguyen

CPR-nr.:

CPR No.: 180565-3163

Adresse:

Address: Troldekovvej 2

Prøvningsinstans:

Examining body: Force Technology

5700 Svendborg

Alsvej 6, 5500 Middelfart

Reference-nr./Reference No. 082

Fornyelse/Revalidation ☐

Variable Variables	Anvendte data Actual data used		Gyldighedsområde Range of approval	
Svejsemetode(r)/Dråbeovergang Welding process(es)/Transfer mode	138/136	D/S	ISO 4063 – 135, 138/136(not root)	All modes
Plade eller rør Plate or pipe	T		P:Plade + T:Rør	
Sømtype Type of joint	BW		BW:Stumpsøm	
Materialegruppe(r) Material group(s)	1.1		All materials acc. EN ISO 15608, Table 1	
Tilsatsmateriale Welding consumables	FM1		FM1, FM2	
Type og betegnelse Type and designation	Tabel/table 4 Tabel/table 5	Filarc 6102 Filarc 6113	S, M / R, P, V, W, Y, Z	
Beskyttelsesgas Shielding gas	M21	DS/EN ISO 14175	Samme eller tilsvarende beskyttelsesgas	
Tilbehør (fx baggas) Auxiliaries (e.g. backing gas)				
Strømtype og polaritet Type of current and polarity	DC+			
Nedsmeltet tykkelse i mm for BW Deposit thickness in mm for BW	16	3.5 12.5	≥3	s1: 3-7 s2: ≥3
Materialetykkelse i mm for FW Material thickness in mm for FW				
Rørdiameter i mm Pipe diameter in mm	168		≥84	
Svejsesposition Welding position	BW tabel/table 9 FW tabel/table 10	H-L045	all BW positions, except vertical down	
Svejsetekniske detaljer og lag Weld details and layer	ss nb/ss mb		(ss,bs) (mb,nb) / (ss,bs,mb)	

Svejsespecifikations-nr.:

Welding procedure specification No.: SP136-026

Mærkning af prøveemne:

Identification of test piece: SE kla 138/136 082 H-Lo45

Jobkundskab/Job knowledge:

Bestået/Accepted ☒Omprøve/Retest ☐

Svejsning af prøveemne udført/Welding of test piece terminated: 2014-12-10

Den praktiske prøve er gennemført tilfredsstillende og er indstillet til prøvning.

Svejseskolens svejsekoordinator (dato/navn/underskrift):

The welder's approval test is accepted and released for testing.

Welding coordinator of the welding school (date/name/signature):

10/12-14

Bilag 1: – Bedømmelse af svejsesømme/Evaluation of welds



Prøvningsinstans:

Examining body: FORCE Technology, Alsvej 6, 5500 Middelfart

Sags-nr.:

Job No.: 114-20529

Identifikation af prøveemne:

Identification of test piece: 082

Prøveemne undersøgt (dato):

Test piece examined (date): 11. december 2014

med de anførte metoder i henhold til anførte standarder og acceptkriterier med nedenstående resultater:
with the referred method in accordance to the referred standards and accept criteria with the following results:

Bemærkninger				
Remarks				
Prøvningsmetode Type of test	Prøvningsstandard Testing standard	Acceptkriterier Acceptance requirements	Modsvarende acceptkriterier Corresponding acceptance criteria	Godkendt/ikke udført Acceptable/not performed
Visuel Visual	EN ISO 17637	EN ISO 5817 B (C)	-	Godkendt
Radiografi Radiography				Ikke udført
Ultralyd Ultrasonic	EN ISO 17640	EN ISO 5817 B	EN ISO 11666 niv. 2	Godkendt
Magnetpulver Magnetic particles				Ikke udført
Penetrant Dye penetrant				Ikke udført
Makro Macro				Ikke udført
Brudprøve Fracture				Ikke udført
Bøjeprobe Bend				Ikke udført
Kærvtrækprøvning Notch tensile test				Ikke udført

Prøvningsinstans (dato/underskrift):

11. december 2014

Examining body (date/signature):

F 401
Thomas Melchior Nürnberg

Kvalifikation gyldig fra (dato):

Qualification valid from (date): 2014-12-10

Fornyelsesmetode

Revalidation method

EN ISO 9606-1, 9.3 a) ☒

Kvalifikation gyldig til (dato):

Qualification valid until (date): 2017-12-10

Svejseskolens svejsekoordinator (dato/underskrift):

Welding coordinator of the welding school (date/signature):

15/12-14

Forlængelse/Prolongation

Bekræftelse af gyldigheden ved arbejdsgiver eller virksomhedens svejseansvarlig for de følgende 6 måneder

Confirmation of the validity by employer/welding coordinator for the following 6 months

Dato/Date	Stilling eller titel/Position or title	Underskrift/Signature
8-6-2015	For mand	
9-12-2015	— " —	
9-6-2016	— " —	

Bilag 1: Certifikat for svejsere i henhold til DS/EN ISO 9606-1:2013

Udført på svejseskole med certificeringslicens i henhold til DS 322:2014

Performed at welding school with license of certification in accordance with DS 322:2014

Betegnelse i henhold til DS/EN ISO 9606-1:

Designation in accordance with DS/EN ISO 9606-1: 136 S T/P FW 1.1 FM1 P t10 D159 PH ml

Svejseskolens navn og adresse:

Name and address of the welding school: Svendborg Erhvervsskole

Porthusvej 71

5700 Svendborg

DS-licens-nr.:

DS license No.: 526

Svejsepas-nr.:

Welding passport No.: 23344

Svejserens navn:

Welder's name: Liem Duy Nguyen

CPR-nr.:

CPR No.: 180565-3163

Adresse:

Address: Troldekovvej 2

Prøvningsinstans:

Examining body: Force Technology

5700 Svendborg

Alsvej 6, 5500 Middelfart

Reference-nr./Reference No. 083

Fornyelse/Revalidation ☐

Variabler Variables		Anvendte data Actual data used		Gyldighedsområde Range of approval	
Svejsemetode(r)/Dråbeovergang Welding process(es)/Transfer mode		136	S	ISO 4063 - 136	All modes except D
Plade eller rør Plate or pipe		T/P		P:Plade + T:Rør	
Sømtype Type of joint		FW		FW:Kantsøm	
Materialegruppe(r) Material group(s)		1.1		All materials acc. EN ISO 15608, Table 1	
Tilsatsmateriale Welding consumables		FM1		FM1, FM2	
Type og betegnelse Type and designation	Tabel/table 4		Filarc PZ6113	R, P, V, W, Y, Z	
	Tabel/table 5	P			
Beskyttelsesgas Shielding gas	M21		DS/EN ISO 14175	Samme eller tilsvarende beskyttelsesgas	
Tilbehør (fx baggas) Auxiliaries (e.g. backing gas)					
Strømtype og polaritet Type of current and polarity		DC+			
Nedsmeltet tykkelse i mm for BW Deposit thickness in mm for BW					
Materialetykkelse i mm for FW Material thickness in mm for FW		10		≥3	
Rørdiameter i mm Pipe diameter in mm		159		≥79.5	
Svejsesposition Welding position	BW tabel/table 9			all FW positions, except vertical down	
	FW tabel/table 10	PH			
Svejsetekniske detaljer og lag Weld details and layer		ml		(sl,ml)	

Svejsespecifikations-nr.:

Welding procedure specification No.: SP136-047

Mærkning af prøveemne:

Identification of test piece: SE kla 136.083 T/P PH

Jobkundskab/Job knowledge:

Bestået/Accepted ☒Omprøve/Retest ☐

Svejsning af prøveemne udført/Welding of test piece terminated: 2014-12-12

Den praktiske prøve er gennemført tilfredsstillende og er indstillet til prøvning.

Svejseskolens svejsekoordinator (dato/navn/underskrift):

The welder's approval test is accepted and released for testing.

Welding coordinator of the welding school (date/name/signature):

12/12-14

Bilag 1: – Bedømmelse af svejsesømme/Evaluation of welds



Prøvningsinstans:

Examining body: FORCE Technology, Alsvej 6, 5500 Middelfart

Sags-nr.:

Job No.: 114-20529

Identifikation af prøveemne:

Identification of test piece: 083

Prøveemne undersøgt (dato):

Test piece examined (date):

16. december 2014

med de anførte metoder i henhold til anførte standarder og acceptkriterier med nedenstående resultater:
with the referred method in accordance to the referred standards and accept criteria with the following results:

Bemærkninger				
Remarks				
Prøvningsmetode Type of test	Prøvningsstandard Testing standard	Acceptkriterier Acceptance requirements	Modsvarende acceptkriterier Corresponding acceptance criteria	Godkendt/ikke udført Acceptable/not performed
Visuel Visual				
Radiografi Radiography	EN ISO 17637	EN ISO 5817 B (C)	-	Godkendt
Ultralyd Ultrasonic				Ikke udført
Magnetpulver Magnetic particles				Ikke udført
Penetrant Dye penetrant				Ikke udført
Makro Macro				Ikke udført
Brudprøve Fracture	EN ISO 17639	EN ISO 5817 B	-	Godkendt
Bøjeprøve Bend				Ikke udført
Kærvtrækprøvning Notch tensile test				Ikke udført

Prøvningsinstans (dato/underskrift):

Examining body (date/signature):

16. december 2014

FORCE
TECHNOLOGY
Thomas Melchior Nurnberg

Kvalifikation gyldig fra (dato):

Qualification valid from (date):

2014-12-12

Fornyelsesmetode

Revalidation method

EN ISO 9606-1, 9.3 a) ☒

Kvalifikation gyldig til (dato):

Qualification valid until (date):

2017-12-12

Svejseskolens svejsekoordinator (dato/underskrift):

Welding coordinator of the welding school (date/signature):

18/12 14

[Signature]

Forlængelse/Prolongation

Bekræftelse af gyldigheden ved arbejdsgiver eller virksomhedens svejseansvarlig for de følgende 6 måneder

Confirmation of the validity by employer/welding coordinator for the following 6 months

Dato/Date	Stilling eller titel/Position or title	Underskrift/Signature
<u>8-6-2015</u>	<u>Forward</u>	<u>[Signature]</u>
<u>9-12-2015</u>	<u>Forward</u>	<u>[Signature]</u>
<u>9-6-2016</u>	<u>- u -</u>	<u>[Signature]</u>

Bilag 1: Certifikat for svejsere i henhold til DS/EN ISO 9606-1:2013

Udført på svejseskole med certificeringslicens i henhold til DS 322:2014

Performed at welding school with license of certification in accordance with DS 322:2014

Betegnelse i henhold til DS/EN ISO 9606-1:

Designation in accordance with DS/EN ISO 9606-1: 135 D T/P FW 1.1 FM1 S t10 D159 PH ml

Svejseskolens navn og adresse:

Name and address of the welding school: Svendborg Erhvervsskole

Porthusvej 71

5700 Svendborg

DS-licens-nr.:

DS license No.: 526

Svejsepas-nr.:

Welding passport No.: 25344

Svejserens navn:

Welder's name: Liem Duy Nguyen

CPR-nr.:

CPR No.: 180565-3163

Adresse:

Address: Troldekovvej 2

Prøvningsinstans:

Examining body: Force Technology

5700 Svendborg

Alsvej 6, 5500 Middelfart

Reference-nr./Reference No. 137

Fornyelse/Revalidation ☐

Variable Variables	Anvendte data Actual data used		Gyldighedsområde Range of approval	
Svejsemetode(r)/Dråbeovergang Welding process(es)/Transfer mode	135	D	ISO 4063 - 135,138	All modes
Plade eller rør Plate or pipe	T/P		P:Plade + T:Rør	
Sømtype Type of joint	FW		FW:Kantsøm	
Materialegruppe(r) Material group(s)	1.1		All materials acc. EN ISO 15608, Table 1	
Tilsatsmateriale Welding consumables	FM1		FM1, FM2	
Type og betegnelse Type and designation	Tabel/table 4 S	Autorod 12.51	S, M	
Beskyttelsesgas Shielding gas	M21	DS/EN ISO 14175	Samme eller tilsvarende beskyttelsesgas	
Tilbehør (fx baggas) Auxiliaries (e.g. backing gas)				
Strømtype og polaritet Type of current and polarity	DC+			
Nedsmeltet tykkelse i mm for BW Deposit thickness in mm for BW				
Materialetykkelse i mm for FW Material thickness in mm for FW	10		≥3	
Rørdiameter i mm Pipe diameter in mm	159		≥79.5	
Svejseposition Welding position	BW tabel/table 9 FW tabel/table 10 PH		all FW positions, except vertical down	
Svejsetekniske detaljer og lag Weld details and layer	ml		(sl,ml)	

Svejsespecifikations-nr.:

Welding procedure specification No.: SP135-020

Mærkning af prøveemne:

Identification of test piece: SE kla 135 137 T/P PH

Jobkundskab/Job knowledge:

Bestået/Accepted ☒Omprøve/Retest ☐

Svejsning af prøveemne udført/Welding of test piece terminated: 2015-03-03

Den praktiske prøve er gennemført tilfredsstillende og er indstillet til prøvning.

Svejseskolens svejsekoordinator (dato/navn/underskrift):

The welder's approval test is accepted and released for testing.

Welding coordinator of the welding school (date/name/signature):

3/3-15

Bilag 1: – Bedømmelse af svejsesømme/Evaluation of welds



Prøvningsinstans: FORCE Technology, Alsvej 6, 5500 Middelfart
Examining body:

Sags-nr.: 115-20309

Job No.:

Identifikation af prøveemne: 137
Identification of test piece:

Prøveemne undersøgt (dato): 9. marts 2015
Test piece examined (date):

med de anførte metoder i henhold til anførte standarder og acceptkriterier med nedenstående resultater:
with the referred method in accordance to the referred standards and accept criteria with the following results:

Bemærkninger Remarks				
Prøvningsmetode Type of test	Prøvningsstandard Testing standard	Acceptkriterier Acceptance requirements	Modsvarende acceptkriterier Corresponding acceptance criteria	Godkendt/ikke udført Acceptable/not performed
Visuel Visual	EN ISO 17637	EN ISO 5817 B (C)	-	Godkendt
Radiografi Radiography				Ikke udført
Ultralyd Ultrasonic				Ikke udført
Magnetpulver Magnetic particles				Ikke udført
Penetrant Dye penetrant				Ikke udført
Makro Macro	EN ISO 17639	EN ISO 5817 B	-	Godkendt
Brudprøve Fracture				Ikke udført
Bøjeprobe Bend				Ikke udført
Kærvtrækprøvning Notch tensile test				Ikke udført

9. marts 2015

Prøvningsinstans (dato/underskrift):
Examining body (date/signature):

Thomas Melchior Nurnberg

Kvalifikation gyldig fra (dato): 2015-03-03
Qualification valid from (date):

Fornyelsesmetode EN ISO 9606-1, 9.3 a) ☒
Revalidation method

Kvalifikation gyldig til (dato): 2018-03-03
Qualification valid until (date):

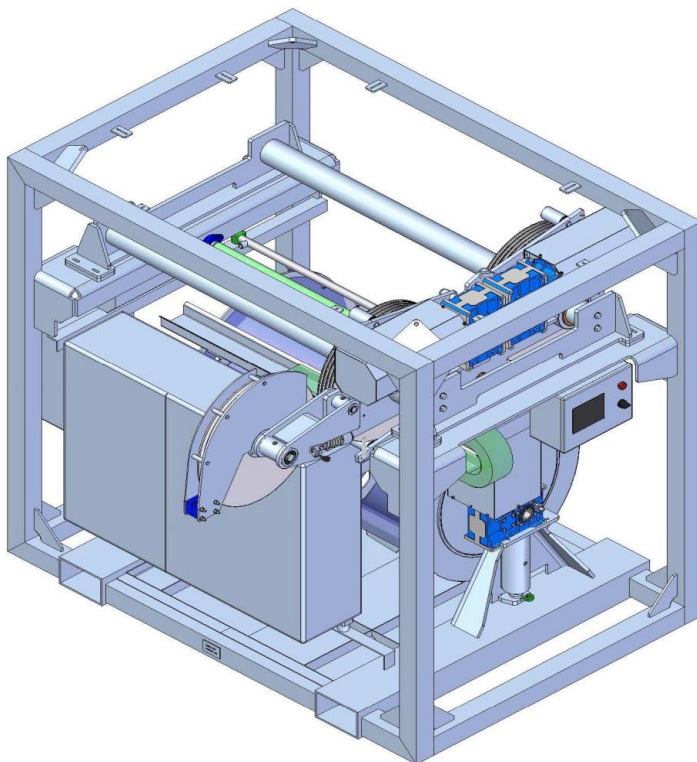
Svejseskolens svejsekoordinator (dato/underskrift):
Welding coordinator of the welding school (date/signature):

11/3-15 Kim D. Larsen

Forlængelse/Prolongation

Bekræftelse af gyldigheden ved arbejdsgiver eller virksomhedens svejseansvarlig for de følgende 6 måneder Confirmation of the validity by employer/welding coordinator for the following 6 months		
Dato/Date	Stilling eller titel/Position or title	Underskrift/Signature
01-09-2015	Formand	Bent O. Hansen
01-03-2016	Formand	Bent O. Hansen

SHG-000973 - 1
MODUS Seabed
OE-2000-A3-4-7-2-FS-NZ-003



MATERIAL CERTIFICATES	1
PRODUCTION LOGS	2
WELDING PROCEDURE SPECIFICATION S (WPS)	3
CERTIFICATES FOR WELDERS	4
NDT REPORTS	5
CERTIFICATES FOR NDT INSPECTORS	6
PRODUCT RELATED CERTIFICATES	7
TEST REPORTS	8
PAINT REPORT	9
FACTORY ACCEPTANCE TEST (FAT)	10

[illegible]

Revision nr.: 2
 Redigeret af: CBR
 Godkendt af: UN
 Godkendelsesdato: 18-09-2015

TEST REPORT - MAGNETIC TESTING

NDT

Bilag nr.: P5.1 - f2

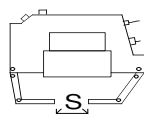


Date for report: 19-07-2016	NDT Inspector: Technician - UGJ	Certificate No.: 0767-N2-MT	Examination organization / Inspection authority: SH Group NDT Technician / QC
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg
Description in text: Axle for front sheave			ID. / PO SHG-000973_01
			Drawing No. / Rev. No.: 10020440 Rev. 0-0
Examination procedure: EN / ISO 17638 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 23278-2X / DNV 2.22 Lift App 2013
Customer examination procedure:			Customer acceptance criteria:

Surface Condition

☐ Ground ☒ Smooth ☐ Coarse

☒ AC Yoke



Type **MR 9291 Handyoke**
 Smax.= **150 mm**

Reinforcement

☒ As welded ☐ Ground

Reg.No. **MR 9291**

☒ Water/black ☐ Kerosine/black

☐ Water/fluorecent ☐ Kerosine/fluorecent

Background

☒ White ☐ Non-treated

Field strength 2-6 kA/m

Other

Oerstedm. Value Oe

☒ Castrol strip

Lighting

☒ White ☐ UV-Lamp

Magnetized for

☒ Indications in any direction

Extent of examination

20 %

Results of examination:

Weld No.:	Extent:	Accepted/Rejected	Date:	Sign.:
P, 1	20%	MT acceptable	19-07-2016	Sign: UGJ-N2-MT
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				

Accepted in accordance to specification

☒ MT acceptable
☐ MT not acceptable

Page:

2

of

2

NDT Technician signature:

SH Group as
 NDT Technician & QC
 Ulrik Gjerster

Ulrik Gjerster

Revision nr.: 2
 Redigeret af: CBR
 Godkendt af: UN
 Godkendelsesdato: 18-09-2015

TEST REPORT - MAGNETIC TESTING

NDT

Bilag nr.: P5.1 - f2

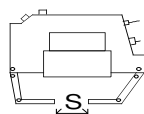


Date for report: 11-08-2016	NDT Inspector: Technician - HBP	Certificate No.: 1099-N2-MT	Examination organization / Inspection authority: SH Group NDT Technician / QC
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg
Description in text: Bracket for gearbox #1			ID. / PO SHG-000973_01
			Drawing No. / Rev. No.: 10020353 R.1-0
Examination procedure: EN / ISO 17638 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 23278-2X / DNV 2.22 Lift App 2013
Customer examination procedure:			Customer acceptance criteria:

Surface Condition

☐ Ground ☒ Smooth ☐ Coarse

☒ AC Yoke



Type **MR 9346 Handyoke**
 Smax.= **150 mm**

Reinforcement

☒ As welded ☐ Ground

Reg.No. **MR 9346**

☒ Water/black ☐ Kerosine/black
☐ Water/fluorecent ☐ Kerosine/fluorecent

Background
☒ White ☐ Non-treated

Field strength 2-6 kA/m **Other**
 Oerstedm. Value Oe ☒ Castrol strip

Lighting
☒ White ☐ UV-Lamp

Magnetized for

☒ Indications in any direction

Extent of examination 100 %

Results of examination:	Extent:	Accepted/Rejected	Date:	Sign.:
Weld No.: E,1	100%	MT acceptable	11-08-2016	Sign: HBP-N2-MT
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				

Accepted in accordance to specification

<input checked="" type="checkbox"/> MT acceptable	Page:			NDT Technician signature:
<input type="checkbox"/> MT not acceptable	2	of	4	

Henrik Prydgard.

Revision nr.: 2
 Redigeret af: CBR
 Godkendt af: UN
 Godkendelsesdato: 18-09-2015

TEST REPORT - ULTRASONIC TESTING


NDT

Bilag nr.: P5.1 - f3



Date for report: 11-08-2016		NDT Inspector: Technician - HBP		Certificate No.: 1099-N2-UT		Examination organization / Inspection authority: SH Group NDT Technician / QC											
Contrator: SH Group						Test location: Grønnemosevej 34, 5700 Svendborg											
Description in text: Bracket for gearbox #1						ID. / PO SHG-000973_01			Drawing No. / Rev. No.: 10020353 R.1-0								
Examination procedure: EN / ISO 17640-B / DNV 2.22 Lift App 2013						Acceptance criteria: EN / ISO 11666-2 / DNV 2.22 Lift App 2013											
Customer examination procedure:						Customer acceptance criteria:											
						Equipment / reg. No.: USM 25 S Lemo 40.17.13											
Compression probes:						Angel probes:											
Probe type		A: MSEB4-E		B: K 4-G		C: MWB45/4		D: SWB60/2		E: MWB70/4		F: MWB60/4					
Reg. No True angle		40.17.21 - 0°		40.17.23 - 0°		40.17.28 - 46°		40.17.30 - 61°		40.17.27 - 69,4°		40.17.25 - 60°					
Sensetivity setting (dB):																	
Basic sett. -ref. curve		41° dB		40,5°		44,5 dB		39,5 dB		40 dB		37 dB					
Transfer Coorection		2 dB		2 dB		2 dB		2 dB		2 dB		2 dB					
Extra when scanning		10 dB		10 dB		10 dB		10 dB		10 dB		10 dB					
Total		53 dB		52,5 dB		56,5 dB		51,5 dB		52 dB		49 dB					
Sensitivity: Diam.= Ø3 mm				Range = 150 mm				DGS (AVG): Disc diam. = mm				Range = mm					
<input checked="" type="checkbox"/> V1 block No. 40.17.38				<input checked="" type="checkbox"/> V2 block No. 40.17.39				<input checked="" type="checkbox"/> Tif-block No. 40.17.40									
<input checked="" type="checkbox"/> Probe check		Operator check of ultrasonic probes carried out				<input checked="" type="checkbox"/> Parent metal		Scanning area tested for lamination				<input checked="" type="checkbox"/> Couplant - Gel					
Scanning position for defects:																	
Scanning for longitudinal defects and lamination						Scanning for transverse defect											
 t1 = t2 =						 t3 = 10 mm t4 = 20 mm											
Position 1 2 3 4 5 6 Probe						Position 7 8 9 10 Probe c,e,f a a						Position 11 12 13 14 15 16 Probe					
Results of examination:						Extent:		Accepted/Rejected		Date:		Sign.:					
Weld No.: E,1 see remarks.						100%		UT acceptable		11-08-2016		Sign: HBP-N2-UT					
Weld No.:																	
Weld No.:																	
Weld No.:																	
Weld No.:																	
Weld No.:																	
Weld No.:																	
Accepted in accordance to specification																	
Remarks: pos.7 full skip not possible due to design.																	
<input checked="" type="checkbox"/> UT acceptable <input type="checkbox"/> UT not acceptable						Page: 3 of 4		NDT Technician signature: 									

Revision nr.: 2	TEST REPORT - ULTRASONIC LAMINATION NDT	
Redigeret af: CBR		
Godkendt af: UN		
Godkendelsesdato: 18-09-2015		
Bilag nr.: P5.1 - f6		

Date for report: 11-08-2016		NDT Inspector: Technician - HBP		Certificate No.: 1099-N2-UT		Examination organization / Inspection authority: SH Group NDT Technician / QC	
Contrator: SH Group				Test location: Grønnemosevej 34, 5700 Svendborg			
Description in text: Bracket for gearbox #1				ID. / PO SHG-000973_01		Drawing No. / Rev. No.: 10020353 R.1-0	
Examination procedure: EN 10160				Acceptance criteria: EN 10160 S2/E3			
Customer examination procedure:				Customer acceptance criteria:			
				Surface condition: Coarse			
Technical information regarding the test:							
Equipment type / Reg. No.: USM GO+ 40.17.15				Couplant: Water:			
Probe description:	1 type: MSEB4	Reg. No.: 40.17.21	Basic setting: 41	Extra when scanning: 12	Total 53 dB		
	2. type K4-G	Reg. No.: 40.17.23	Basic setting: 40,5	Extra when scanning: 12	Total 52,5 dB		
DGS (AVG):KSR diameter= 5 mm				Range= 100 mm			
Test type:	Class		Scanning pattern:				
Combined scan:	S2/E3		Sinus formed lines: Line distance / Width mm				
Specifiec information:							
UT lamination testing on hatched areas: E,1 Preformed date: 10-08-2016 HBP.							
Test result: Unless otherwise stated, the test is preformed from one side only. Accepted in accordance to specifikation.							
<input checked="" type="checkbox"/> Lam test acceptable <input type="checkbox"/> Lam test not acceptable			Page: <div>4 of 4</div>		NDT Technician signature: 		

Revision nr.: 2	TEST REPORT - VISUAL TESTING	
Redigeret af: CBR	NDT	
Godkendt af: UN	Bilag nr.: P5.1 - f1	
Godkendelsesdato: 18-09-2015		

Date for report: 15-07-2016	NDT Inspector: Technician - UGJ	Certificate No.: 0767-N2-VT	Examination organization / Inspection authority: SH Group NDT Technician / QC
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg
Description in text: Bracket for gearbox			ID. / PO SHG-000973_01 Drawing No. / Rev. No.: 10020353 R. 0-0
Examination procedure: EN / ISO 17637 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 5817-B / DNV 2.22 Lift App 2013
Customer examination procedure:			Customer acceptance criteria:

Aids			
<input checked="" type="checkbox"/> Ruler	<input type="checkbox"/> Caliper gauge	<input type="checkbox"/> Feeler gauge	<input checked="" type="checkbox"/> Weld gauge <input type="checkbox"/> Contour gauge
Time of examination			
<input checked="" type="checkbox"/> After welding		<input type="checkbox"/> Repair	
Extent of examination	Surface condition		
<input checked="" type="checkbox"/> 100%	<input type="checkbox"/> Ground <input checked="" type="checkbox"/> Smooth <input type="checkbox"/> Coarse <input type="checkbox"/> Primer		

Results of examination:	Accepted/Rejected	Date:	Sign.:
Weld No.: E, 1	Accepted welds	15-07-2016	Sign: UGJ-N2-VT
Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			

Accepted in accordance to specification			

<input checked="" type="checkbox"/> VT acceptable <input type="checkbox"/> VT not acceptable	Page: <div style="display: flex; justify-content: space-around;"> 1 of 4 </div>	NDT Technician signature: <div style="float: right; text-align: center;"> <div style="border: 1px solid black; padding: 2px; font-size: 0.8em;"> SH Group as NDT Technician & QC Ulrik Gjerster </div> </div>
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Revision nr.: 2
 Redigeret af: CBR
 Godkendt af: UN
 Godkendelsesdato: 18-09-2015

TEST REPORT - MAGNETIC TESTING

NDT

Bilag nr.: P5.1 - f2

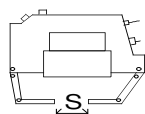


Date for report: 15-07-2016	NDT Inspector: Technician - UGJ	Certificate No.: 0767-N2-MT	Examination organization / Inspection authority: SH Group NDT Technician / QC
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg
Description in text: Bracket for gearbox			ID. / PO SHG-000973_01
			Drawing No. / Rev. No.: 10020353 R. 0-0
Examination procedure: EN / ISO 17638 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 23278-2X / DNV 2.22 Lift App 2013
Customer examination procedure:			Customer acceptance criteria:

Surface Condition

☐ Ground ☒ Smooth ☐ Coarse

☒ AC Yoke



Type **MR 9291 Handyoke**
 Smax.= **150 mm**

Reinforcement

☒ As welded ☐ Ground

Reg.No. **MR 9291**

☒ Water/black ☐ Kerosine/black

☐ Water/fluorecent ☐ Kerosine/fluorecent

Background

☒ White ☐ Non-treated

Field strength 2-6 kA/m

Other

Oerstedm. Value Oe

☒ Castrol strip

Lighting

☒ White ☐ UV-Lamp

Magnetized for

☒ Indications in any direction

Extent of examination

100 %

Results of examination:

Weld No.:	Extent:	Accepted/Rejected	Date:	Sign.:
E, 1	100%	MT acceptable	15-07-2016	Sign: UGJ-N2-MT
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
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Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				

Accepted in accordance to specification

☒ MT acceptable

☐ MT not acceptable

Page:

2

of

4

NDT Technician signature:

SH Group as
 NDT Technician & QC
 Ulrik Gjerster

Ulrik Gjerster

Revision nr.: 2
 Redigeret af: CBR
 Godkendt af: UN
 Godkendelsesdato: 18-09-2015

TEST REPORT - ULTRASONIC TESTING


NDT

Bilag nr.: P5.1 - f3



Date for report: 15-07-2016		NDT Inspector: Technician - UGJ		Certificate No.: 0767-N2-UT		Examination organization / Inspection authority: SH Group NDT Technician / QC											
Contrator: SH Group						Test location: Grønnemosevej 34, 5700 Svendborg											
Description in text: Bracket for gearbox						ID. / PO SHG-000973_01			Drawing No. / Rev. No.: 10020353 R. 0-0								
Examination procedure: EN / ISO 17640-B / DNV 2.22 Lift App 2013						Acceptance criteria: EN / ISO 11666-2 / DNV 2.22 Lift App 2013											
Customer examination procedure:						Customer acceptance criteria:											
						Equipment / reg. No.: USM GO+ 40.17.15											
Compression probes:						Angel probes:											
Probe type		A: MSEB4-E		B: K 4-G		C: SWB70/2		D: SWB60/2		E: MWB70/4		F: MWB60/4					
Reg. No True angle		40.17.20 - 0°		40.17.22 - 0°		40.17.32 - 68,9°		40.17.29 - 59,8°		40.17.26 - 68,6°		40.17.24 - 59,7°					
Sensetivity setting (dB):																	
Basic sett. -ref.curve		45,6 dB		34,4 dB		37,4 dB		35,2 dB		27,2 dB		23,6 dB					
Transfer Coorection		2 dB		2 dB		2 dB		2 dB		2 dB		2 dB					
Extra when scanning		10 dB		10 dB		10 dB		10 dB		10 dB		10 dB					
Total		57,6 dB		46,4 dB		49,4 dB		47,2 dB		39,2 dB		35,6 dB					
Sensitivity: Diam.= Ø3 mm				Range = 150 mm				DGS (AVG): Disc diam. = mm				Range = mm					
<input checked="" type="checkbox"/> V1 block No. 40.17.01				<input checked="" type="checkbox"/> V2 block No. 40.17.02				<input checked="" type="checkbox"/> Tif-block No. 40.17.04									
<input checked="" type="checkbox"/> Probe check		Operator check of ultrasonic probes carried out				<input checked="" type="checkbox"/> Parent metal		Scanning area tested for lamination				<input checked="" type="checkbox"/> Couplant - Gel					
Scanning position for defects:																	
Scanning for longitudinal defects and lamination						Scanning for transverse defect											
 t1 = t2 =						 t3 = 15 mm t4 = 20 mm											
Position 1 2 3 4 5 6 Probe						Position 7 8 9 10 Probe E A A						Position 11 12 13 14 15 16 Probe					
Results of examination:						Extent:		Accepted/Rejected		Date:		Sign.:					
Weld No.: E, 1						100%		UT acceptable		15-07-2016		Sign: UGJ-N2-UT					
Weld No.:																	
Weld No.:																	
Weld No.:																	
Weld No.:																	
Weld No.:																	
Weld No.:																	
Accepted in accordance to specification																	
<input checked="" type="checkbox"/> UT acceptable		Page:		NDT Technician signature:													
		3 of 4		 SH Group as NDT Technician & QC Ulrik Gjerster													
<input type="checkbox"/> UT not acceptable																	

Revision nr.: 2	TEST REPORT - ULTRASONIC LAMINATION NDT	
Redigeret af: CBR		
Godkendt af: UN		
Godkendelsesdato: 18-09-2015		
Bilag nr.: P5.1 - f6		

Date for report: 15-07-2016		NDT Inspector: Technician - UGJ		Certificate No.: 0767-N2-UT		Examination organization / Inspection authority: SH Group NDT Technician / QC	
Contrator: SH Group				Test location: Grønnemosevej 34, 5700 Svendborg			
Description in text: Bracket for gearbox				ID. / PO SHG-000973_01		Drawing No. / Rev. No.: 10020353 R. 0-0	
Examination procedure: EN 10160				Acceptance criteria: EN 10160 S2/E3			
Customer examination procedure:				Customer acceptance criteria:			
				Surface condition: Coarse			
Technical information regarding the test:							
Equipment type / Reg. No.: USM GO+ 40.17.15				Couplant: Water:			
Probe description:	1 type: MSEB4	Reg. No.: 40.17.20	Basic setting: 45,6	Extra when scanning: 12	Total 57,6 dB		
	2. type	Reg. No.:	Basic setting:	Extra when scanning:	dB		
DGS (AVG):KSR diameter= 8 mm				Range= 100 mm			
Test type:	Class		Scanning pattern:				
Combined scan:	S2/E3		Sinus formed lines: Line distance / Width mm				
Specifiec information:							
UT lamination testing on hatched areas: Preformed date: 07-07-2016							
Test result: Unless otherwise stated, the test is preformed from one side only. <p style="text-align: center;">Accepted in accordance to specifikation.</p>							
<input checked="" type="checkbox"/> Lam test acceptable <input type="checkbox"/> Lam test not acceptable			Page: 4 of 4		NDT Technician signature: <div style="text-align: right;">  </div>		

Revision nr.: 2
Redigeret af: CBR
Godkendt af: UN
Godkendelsesdato: 18-09-2015

TEST REPORT - VISUAL TESTING

NDT

Bilag nr.: P5.1 - f1



Date for report: 18-07-2016	NDT Inspector: Technician - UGJ	Certificate No.: 0767-N2-VT	Examination organization / Inspection authority: SH Group NDT Technician / QC	
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg	
Description in text: Drum end - 1			ID. / PO SHG-000973_01	Drawing No. / Rev. No.: 10019835 Rev. 0-0
Examination procedure: EN / ISO 17637 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 5817-C / DNV 2.22 Lift App 2013	
Customer examination procedure:			Customer acceptance criteria:	

Aids

☒ Ruler ☐ Caliper gauge ☐ Feeler gauge ☒ Weld gauge ☐ Contour gauge

Time of examination

☒ After welding

☐ Repair

Extent of examination

☒ 100%

Surface condition

☐ Ground

☒ Smooth

☐ Coarse

☐ Primer

Results of examination:

Accepted/Rejected

Date:

Sign.:

Weld No.:	P, 1	Accepted welds	18-07-2016	Sign: UGJ-N2-VT
Weld No.:	P, 2	Accepted welds	11-07-2016	Sign: UGJ-N2-VT
Weld No.:				
Weld No.:				
Weld No.:				
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Weld No.:				
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Weld No.:				
Weld No.:				

Accepted in accordance to specification

☒ VT acceptable

☐ VT not acceptable

Page:

1

of


2

NDT Technician signature:

SH Group as
NDT Technician & QC
Ulrik Gjerster

Ulrik Gjerster

[illegible]

Revision nr.: 2	TEST REPORT - VISUAL TESTING	
Redigeret af: CBR	NDT	
Godkendt af: UN	Bilag nr.: P5.1 - f1	
Godkendelsesdato: 18-09-2015		

Date for report: 18-07-2016	NDT Inspector: Technician - UGJ	Certificate No.: 0767-N2-VT	Examination organization / Inspection authority: SH Group NDT Technician / QC
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg
Description in text: Drum end - 2			ID. / PO SHG-000973_01 Drawing No. / Rev. No.: 10019834 Rev. 0-0
Examination procedure: EN / ISO 17637 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 5817-C / DNV 2.22 Lift App 2013
Customer examination procedure:			Customer acceptance criteria:

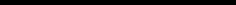
Aids			
<input checked="" type="checkbox"/> Ruler	<input type="checkbox"/> Caliper gauge	<input type="checkbox"/> Feeler gauge	<input checked="" type="checkbox"/> Weld gauge <input type="checkbox"/> Contour gauge
Time of examination			
<input checked="" type="checkbox"/> After welding		<input type="checkbox"/> Repair	
Extent of examination		Surface condition	
<input checked="" type="checkbox"/> 100%		<input type="checkbox"/> Ground <input checked="" type="checkbox"/> Smooth <input type="checkbox"/> Coarse <input type="checkbox"/> Primer	

Results of examination:	Accepted/Rejected	Date:	Sign.:
Weld No.: P, 1	Accepted welds	18-07-2016	Sign: UGJ-N2-VT
Weld No.: P, 2	Accepted welds	11-07-2016	Sign: UGJ-N2-VT
Weld No.:			
Weld No.:			
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Weld No.:			
Weld No.:			

Accepted in accordance to specification			

<input checked="" type="checkbox"/> VT acceptable <input type="checkbox"/> VT not acceptable	Page: <div style="display: flex; justify-content: space-around;"> 1 of 2 </div>	NDT Technician signature: <div style="float: right; text-align: center;"> <div style="border: 1px solid black; padding: 2px; font-size: 0.8em;"> SH Group as NDT Technician & QC Ulrik Gjerster </div>  </div>
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[illegible]

<input checked="" type="checkbox"/> VT acceptable <input type="checkbox"/> VT not acceptable	Page:			NDT Technician signature: <div style="border: 1px solid black; padding: 5px; display: inline-block; text-align: center;"> SH Group as NDT Technician & QC Ulrik Gjerster </div> 
	1	of	2	

[illegible]

Revision nr.: 2
Redigeret af: CBR
Godkendt af: UN
Godkendelsesdato: 18-09-2015

TEST REPORT - VISUAL TESTING

NDT

Bilag nr.: P5.1 - f1



Date for report: 18-07-2016	NDT Inspector: Technician - UGJ	Certificate No.: 0767-N2-VT	Examination organization / Inspection authority: SH Group NDT Technician / QC	
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg	
Description in text: Drum weld			ID. / PO SHG-000973_01	Drawing No. / Rev. No.: 10020603 Rev. 0-1
Examination procedure: EN / ISO 17637 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 5817-C / DNV 2.22 Lift App 2013	
Customer examination procedure:			Customer acceptance criteria:	

Aids

☒ Ruler ☐ Caliper gauge ☐ Feeler gauge ☒ Weld gauge ☐ Contour gauge

Time of examination

☒ After welding

☐ Repair

Extent of examination

☒ 100%

Surface condition

☐ Ground

☒ Smooth

☐ Coarse

☐ Primer

Results of examination:

Accepted/Rejected

Date:

Sign.:

Weld No.:	P, 1,2,3	Accepted welds	18-07-2016	Sign: UGJ-N2-VT
Weld No.:	S, 4	Accepted welds	14-07-2016	Sign: UGJ-N2-VT
Weld No.:				
Weld No.:				
Weld No.:				
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Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				

Accepted in accordance to specification

☒ VT acceptable

☐ VT not acceptable

Page:

1

of


2

NDT Technician signature:

SH Group as
NDT Technician & QC
Ulrik Gjerster

Ulrik Gjerster

[illegible]

Revision nr.: 2	TEST REPORT - VISUAL TESTING	
Redigeret af: CBR	NDT	
Godkendt af: UN	Bilag nr.: P5.1 - f1	
Godkendelsesdato: 18-09-2015		

Date for report: 19-07-2016	NDT Inspector: Technician - UGJ	Certificate No.: 0767-N2-VT	Examination organization / Inspection authority: SH Group NDT Technician / QC
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg
Description in text: Frame for LW traction system			ID. / PO SHG-000973_01 Drawing No. / Rev. No.: 10020416 Rev. 0-0
Examination procedure: EN / ISO 17637 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 5817-C / DNV 2.22 Lift App 2013
Customer examination procedure:			Customer acceptance criteria:

Aids			
<input checked="" type="checkbox"/> Ruler	<input type="checkbox"/> Caliper gauge	<input type="checkbox"/> Feeler gauge	<input checked="" type="checkbox"/> Weld gauge <input type="checkbox"/> Contour gauge
Time of examination			
<input checked="" type="checkbox"/> After welding		<input type="checkbox"/> Repair	
Extent of examination	Surface condition		
<input checked="" type="checkbox"/> 100%	<input type="checkbox"/> Ground <input checked="" type="checkbox"/> Smooth <input type="checkbox"/> Coarse <input type="checkbox"/> Primer		

Results of examination:	Accepted/Rejected	Date:	Sign.:
Weld No.: P, 1,2,3,4,6	Accepted welds	19-07-2016	Sign: UGJ-N2-VT
Weld No.: S, 5	Accepted welds	19-07-2016	Sign: UGJ-N2-VT
Weld No.:			
Weld No.:			
Weld No.:			
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Weld No.:			
Weld No.:			

Accepted in accordance to specification			

<input checked="" type="checkbox"/> VT acceptable <input type="checkbox"/> VT not acceptable	Page: <div style="display: flex; justify-content: space-around;"> 1 of 3 </div>	NDT Technician signature: <div style="float: right; text-align: center;"> <div style="border: 1px solid black; padding: 2px; font-size: 0.8em;"> SH Group as NDT Technician & QC Ulrik Gjerster </div>  </div>
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Revision nr.: 2
 Redigeret af: CBR
 Godkendt af: UN
 Godkendelsesdato: 18-09-2015

TEST REPORT - MAGNETIC TESTING

NDT

Bilag nr.: P5.1 - f2

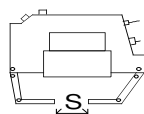


Date for report: 19-07-2016	NDT Inspector: Technician - UGJ	Certificate No.: 0767-N2-MT	Examination organization / Inspection authority: SH Group NDT Technician / QC
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg
Description in text: Frame for LW traction system			ID. / PO SHG-000973_01
			Drawing No. / Rev. No.: 10020416 Rev. 0-0
Examination procedure: EN / ISO 17638 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 23278-2X / DNV 2.22 Lift App 2013
Customer examination procedure:			Customer acceptance criteria:

Surface Condition

☐ Ground ☒ Smooth ☐ Coarse

☒ AC Yoke



Type **MR 9291 Handyoke**
 Smax.= **150 mm**

Reinforcement

☒ As welded ☐ Ground

Reg.No. **MR 9291**

☒ Water/black ☐ Kerosine/black

☐ Water/fluorecent ☐ Kerosine/fluorecent

Background

☒ White ☐ Non-treated

Field strength 2-6 kA/m

Other

Oerstedm. Value Oe

☒ Castrol strip

Lighting

☒ White ☐ UV-Lamp

Magnetized for

☒ Indications in any direction

Extent of examination

20 %

Results of examination:	Extent:	Accepted/Rejected	Date:	Sign.:
Weld No.: P, 1,2,3,4,6	20%	MT acceptable	19-07-2016	Sign: UGJ-N2-MT
Weld No.:				
Weld No.:				
Weld No.:				
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Weld No.:				
Weld No.:				
Weld No.:				

Accepted in accordance to specification

☒ MT acceptable
☐ MT not acceptable

Page:

2

of

3

NDT Technician signature:

SH Group as
 NDT Technician & QC
 Ulrik Gjerster

Ulrik Gjerster

Revision nr.:	2
Redigeret af:	CBR
Godkendt af:	UN
Godkendelsesdato:	18-09-2015

TEST REPORT - PENETRANT TESTING

NDT



Bilag nr.: P5.1 - f5

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Revision nr.: 2	TEST REPORT - VISUAL TESTING	
Redigeret af: CBR	NDT	
Godkendt af: UN	Bilag nr.: P5.1 - f1	
Godkendelsesdato: 18-09-2015		

Date for report: 19-07-2016	NDT Inspector: Technician - UGJ	Certificate No.: 0767-N2-VT	Examination organization / Inspection authority: SH Group NDT Technician / QC
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg
Description in text: Front suspension frame			ID. / PO SHG-000973_01 Drawing No. / Rev. No.: 10020429 Rev. 0-0
Examination procedure: EN / ISO 17637 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 5817-C / DNV 2.22 Lift App 2013
Customer examination procedure:			Customer acceptance criteria:

Aids			
<input checked="" type="checkbox"/> Ruler	<input type="checkbox"/> Caliper gauge	<input type="checkbox"/> Feeler gauge	<input checked="" type="checkbox"/> Weld gauge <input type="checkbox"/> Contour gauge
Time of examination			
<input checked="" type="checkbox"/> After welding		<input type="checkbox"/> Repair	
Extent of examination	Surface condition		
<input checked="" type="checkbox"/> 100%	<input type="checkbox"/> Ground <input checked="" type="checkbox"/> Smooth <input type="checkbox"/> Coarse <input type="checkbox"/> Primer		

Results of examination:	Accepted/Rejected	Date:	Sign.:
Weld No.: P, 1,2,3,	Accepted welds	19-07-2016	Sign: UGJ-N2-VT
Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			
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Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			

Accepted in accordance to specification			

<input checked="" type="checkbox"/> VT acceptable <input type="checkbox"/> VT not acceptable	Page: <table style="margin: auto;"> <tr> <td style="border: 1px solid black; padding: 2px;">1</td> <td style="border: 1px solid black; padding: 2px;">of</td> <td style="border: 1px solid black; padding: 2px;">2</td> </tr> </table>	1	of	2	NDT Technician signature: <div style="float: right; text-align: center;"> <div style="border: 1px solid black; padding: 2px; font-size: 0.8em;"> SH Group as NDT Technician & QC Ulrik Gjerster </div> </div>
1	of	2			

Revision nr.: 2
 Redigeret af: CBR
 Godkendt af: UN
 Godkendelsesdato: 18-09-2015

TEST REPORT - MAGNETIC TESTING

NDT

Bilag nr.: P5.1 - f2

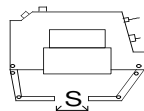


Date for report: 19-07-2016	NDT Inspector: Technician - UGJ	Certificate No.: 0767-N2-MT	Examination organization / Inspection authority: SH Group NDT Technician / QC
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg
Description in text: Front suspension frame			ID. / PO SHG-000973_01
			Drawing No. / Rev. No.: 10020429 Rev. 0-0
Examination procedure: EN / ISO 17638 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 23278-2X / DNV 2.22 Lift App 2013
Customer examination procedure:			Customer acceptance criteria:

Surface Condition

☐ Ground ☒ Smooth ☐ Coarse

☒ AC Yoke



Type **MR 9291 Handyoke**
 Smax.= **150 mm**

Reinforcement

☒ As welded ☐ Ground

Reg.No. **MR 9291**

☒ Water/black ☐ Kerosine/black

☐ Water/fluorecent ☐ Kerosine/fluorecent

Background

☒ White ☐ Non-treated

Field strength 2-6 kA/m

Other

Oerstedm. Value Oe

☒ Castrol strip

Lighting

☒ White ☐ UV-Lamp

Magnetized for

☒ Indications in any direction


Extent of examination

20 %

Results of examination:	Extent:	Accepted/Rejected	Date:	Sign.:
Weld No.: P, 1,2,3	20%	MT acceptable	19-07-2016	Sign: UGJ-N2-MT
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
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Weld No.:				
Weld No.:				
Weld No.:				

Accepted in accordance to specification

<input checked="" type="checkbox"/> MT acceptable	Page:			NDT Technician signature:	<div>SH Group as NDT Technician & QC Ulrik Gjerster</div>
<input type="checkbox"/> MT not acceptable	2	of	2		

<input checked="" type="checkbox"/> VT acceptable <input type="checkbox"/> VT not acceptable	Page:			NDT Technician signature: 
	1	of	2	

Revision nr.: 2
Redigeret af: CBR
Godkendt af: UN
Godkendelsesdato: 18-09-2015

TEST REPORT - MAGNETIC TESTING

NDT

Bilag nr.: P5.1 - f2

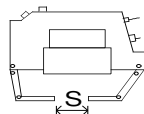


Date for report: 08-08-2016	NDT Inspector: Technician - HBP	Certificate No.: 1099-N2-MT	Examination organization / Inspection authority: SH Group NDT Technician / QC	
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg	
Description in text: Guidance tube Ø 120 L 1900 #1_#2			ID. / PO SHG-000973_01	Drawing No. / Rev. No.: 10020372 R.0-0
Examination procedure: EN / ISO 17638 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 23278-2X / DNV 2.22 Lift App 2013	
Customer examination procedure:			Customer acceptance criteria:	

Surface Condition

☐ Ground ☒ Smooth ☐ Coarse

☒ AC Yoke



Type **MR 9346 Handyoke**
Smax.= **150 mm**

Reinforcement

☒ As welded ☐ Ground

Reg.No. **MR 9346**

☒ Water/black ☐ Kerosine/black
☐ Water/fluorecent ☐ Kerosine/fluorecent

Background
☒ White ☐ Non-treated

Field strength 2-6 kA/m **Other**
Oerstedm. Value Oe ☒ Castrol strip

Lighting
☒ White ☐ UV-Lamp


Magnetized for

☒ Indications in any direction

Extent of examination 20 %

Results of examination:	Extent:	Accepted/Rejected	Date:	Sign.:
Weld No.: P,1	20%	MT acceptable	08-08-2016	Sign: HBP-N2-MT
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
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Weld No.:				
Weld No.:				

Accepted in accordance to specification

<input checked="" type="checkbox"/> MT acceptable	Page:			NDT Technician signature: 
<input type="checkbox"/> MT not acceptable	2	of	2	

Revision nr.: 2
Redigeret af: CBR
Godkendt af: UN
Godkendelsesdato: 18-09-2015

TEST REPORT - VISUAL TESTING

NDT

Bilag nr.: P5.1 - f1



Date for report: 08-08-2016	NDT Inspector: Technician - HBP	Certificate No.: 1099-N2-VT	Examination organization / Inspection authority: SH Group NDT Technician / QC	
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg	
Description in text: Guidance tube Ø 120 L 1900 #2_#2			ID. / PO SHG-000973_01	Drawing No. / Rev. No.: 10020372 R.0-0
Examination procedure: EN / ISO 17637 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 5817-C / DNV 2.22 Lift App 2013	
Customer examination procedure:			Customer acceptance criteria:	

Aids

☒ Ruler ☐ Caliper gauge ☐ Feeler gauge ☒ Weld gauge ☐ Contour gauge

Time of examination

☒ After welding

☐ Repair

Extent of examination

☒ 100%

Surface condition

☐ Ground

☒ Smooth

☐ Coarse

☐ Primer

Results of examination:

Weld No.:	Accepted/Rejected	Date:	Sign.:
P,1	Accepted welds	08-08-2016	Sign: HBP-N2-VT
Weld No.:			
Weld No.:			
Weld No.:			
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Weld No.:			
Weld No.:			
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Weld No.:			
Weld No.:			
Weld No.:			

Accepted in accordance to specification

☒ VT acceptable

☐ VT not acceptable

Page:

1

of

2

NDT Technician signature:

Henrik Prydgaaard.

Revision nr.: 2
 Redigeret af: CBR
 Godkendt af: UN
 Godkendelsesdato: 18-09-2015

TEST REPORT - MAGNETIC TESTING

NDT

Bilag nr.: P5.1 - f2

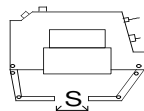


Date for report: 08-08-2016	NDT Inspector: Technician - HBP	Certificate No.: 1099-N2-MT	Examination organization / Inspection authority: SH Group NDT Technician / QC
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg
Description in text: Guidance tube Ø 120 L 1900 #2_#2			ID. / PO SHG-000973_01
Examination procedure: EN / ISO 17638 / DNV 2.22 Lift App 2013			Drawing No. / Rev. No.: 10020372 R.0-0
Customer examination procedure:			Acceptance criteria: EN / ISO 23278-2X / DNV 2.22 Lift App 2013
Customer acceptance criteria:			

Surface Condition

☐ Ground ☒ Smooth ☐ Coarse

☒ AC Yoke



Type **MR 9346 Handyoke**
 Smax.= **150 mm**

Reinforcement

☒ As welded ☐ Ground

Reg.No. **MR 9346**

☒ Water/black ☐ Kerosine/black
☐ Water/fluorecent ☐ Kerosine/fluorecent

Background

☒ White ☐ Non-treated

Field strength 2-6 kA/m Other
 Oerstedm. Value Oe ☒ Castrol strip

Lighting

☒ White ☐ UV-Lamp

Magnetized for

☒ Indications in any direction

Extent of examination


20 %

Results of examination:	Extent:	Accepted/Rejected	Date:	Sign.:
Weld No.: P,1	20%	MT acceptable	08-08-2016	Sign: HBP-N2-MT
Weld No.:				
Weld No.:				
Weld No.:				
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Weld No.:				

Accepted in accordance to specification

<input checked="" type="checkbox"/> MT acceptable	Page:			NDT Technician signature:
<input type="checkbox"/> MT not acceptable	2	of	2	

Henrik Prydggaard.


Revision nr.: 2	TEST REPORT - VISUAL TESTING	
Redigeret af: CBR	NDT	
Godkendt af: UN	Bilag nr.: P5.1 - f1	
Godkendelsesdato: 18-09-2015		

Date for report: 13-07-2016	NDT Inspector: Technician - HBP	Certificate No.: 1099-N2-VT	Examination organization / Inspection authority: SH Group NDT Technician / QC		
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg		
Description in text: Lw console #1_#2			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">ID. / PO SHG-000973_01</td> <td style="width: 50%;">Drawing No. / Rev. No.: 10020357 R.0-0</td> </tr> </table>	ID. / PO SHG-000973_01	Drawing No. / Rev. No.: 10020357 R.0-0
ID. / PO SHG-000973_01	Drawing No. / Rev. No.: 10020357 R.0-0				
Examination procedure: EN / ISO 17637 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 5817-C / DNV 2.22 Lift App 2013		
Customer examination procedure:			Customer acceptance criteria:		

Aids			
<input checked="" type="checkbox"/> Ruler	<input type="checkbox"/> Caliper gauge	<input type="checkbox"/> Feeler gauge	<input checked="" type="checkbox"/> Weld gauge <input type="checkbox"/> Contour gauge
Time of examination			
<input checked="" type="checkbox"/> After welding		<input type="checkbox"/> Repair	
Extent of examination	Surface condition		
<input checked="" type="checkbox"/> 100%	<input type="checkbox"/> Ground <input checked="" type="checkbox"/> Smooth <input type="checkbox"/> Coarse <input type="checkbox"/> Primer		

Results of examination:	Accepted/Rejected	Date:	Sign.:
Weld No.: P,1	Accepted welds	13-07-2016	Sign: HBP-N2-VT
Weld No.:			
Weld No.:			
Weld No.:			
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Weld No.:			

Accepted in accordance to specification			

<input checked="" type="checkbox"/> VT acceptable <input type="checkbox"/> VT not acceptable	Page: <table border="1" style="margin: auto;"> <tr> <td style="width: 30px; text-align: center;">1</td> <td style="width: 30px; text-align: center;">of</td> <td style="width: 30px; text-align: center;">2</td> </tr> </table>	1	of	2	NDT Technician signature: <i>Henrik Prydgaaard</i> 
1	of	2			

Revision nr.: 2
Redigeret af: CBR
Godkendt af: UN
Godkendelsesdato: 18-09-2015

TEST REPORT - MAGNETIC TESTING

NDT

Bilag nr.: P5.1 - f2

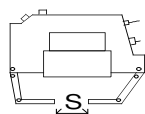


Date for report: 13-07-2016	NDT Inspector: Technician - HBP	Certificate No.: 1099-N2-MT	Examination organization / Inspection authority: SH Group NDT Technician / QC	
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg	
Description in text: Lw console #1_#2			ID. / PO SHG-000973_01	Drawing No. / Rev. No.: 10020357 R.0-0
Examination procedure: EN / ISO 17638 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 23278-2X / DNV 2.22 Lift App 2013	
Customer examination procedure:			Customer acceptance criteria:	

Surface Condition

☐ Ground ☒ Smooth ☐ Coarse

☒ AC Yoke



Type **MR 9346 Handyoke**
Smax.= **150 mm**

Reinforcement

☒ As welded ☐ Ground

Reg.No. **MR 9346**

☒ Water/black ☐ Kerosine/black
☐ Water/fluorecent ☐ Kerosine/fluorecent

Background

☒ White ☐ Non-treated

Field strength 2-6 kA/m Other
Oerstedm. Value Oe ☒ Castrol strip

Lighting

☒ White ☐ UV-Lamp

Magnetized for


☒ Indications in any direction

Extent of examination

20 %

Results of examination:		Extent:	Accepted/Rejected	Date:	Sign.:
Weld No.:	P,1	20%	MT acceptable	13-07-2016	Sign: HBP-N2-MT
Weld No.:					
Weld No.:					
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Weld No.:					

Accepted in accordance to specification

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Revision nr.: 2
Redigeret af: CBR
Godkendt af: UN
Godkendelsesdato: 18-09-2015

TEST REPORT - VISUAL TESTING

NDT

Bilag nr.: P5.1 - f1



Date for report: 13-07-2016	NDT Inspector: Technician - HBP	Certificate No.: 1099-N2-VT	Examination organization / Inspection authority: SH Group NDT Technician / QC	
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg	
Description in text: Lw console #2_#2			ID. / PO SHG-000973_01	Drawing No. / Rev. No.: 10020357 R.0-0
Examination procedure: EN / ISO 17637 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 5817-C / DNV 2.22 Lift App 2013	
Customer examination procedure:			Customer acceptance criteria:	

Aids

☒ Ruler ☐ Caliper gauge ☐ Feeler gauge ☒ Weld gauge ☐ Contour gauge

Time of examination

☒ After welding

☐ Repair

Extent of examination

☒ 100%

Surface condition

☐ Ground

☒ Smooth

☐ Coarse

☐ Primer

Results of examination:

Weld No.:	Accepted/Rejected	Date:	Sign.:
P,1	Accepted welds	13-07-2016	Sign: HBP-N2-VT
Weld No.:			
Weld No.:			
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Weld No.:			

Accepted in accordance to specification

☒ VT acceptable

☐ VT not acceptable

Page:

1

of

2

NDT Technician signature:

Henrik Prydgaaard.

Revision nr.: 2
Redigeret af: CBR
Godkendt af: UN
Godkendelsesdato: 18-09-2015

TEST REPORT - MAGNETIC TESTING

NDT

Bilag nr.: P5.1 - f2

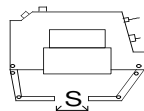


Date for report: 13-07-2016	NDT Inspector: Technician - HBP	Certificate No.: 1099-N2-MT	Examination organization / Inspection authority: SH Group NDT Technician / QC	
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg	
Description in text: Lw console #2_#2			ID. / PO SHG-000973_01	Drawing No. / Rev. No.: 10020357 R.0-0
Examination procedure: EN / ISO 17638 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 23278-2X / DNV 2.22 Lift App 2013	
Customer examination procedure:			Customer acceptance criteria:	

Surface Condition

☐ Ground ☒ Smooth ☐ Coarse

☒ AC Yoke



Type **MR 9346 Handyoke**
Smax.= **150 mm**

Reinforcement

☒ As welded ☐ Ground

Reg.No. **MR 9346**

☒ Water/black ☐ Kerosine/black
☐ Water/fluorecent ☐ Kerosine/fluorecent

Background
☒ White ☐ Non-treated

Field strength 2-6 kA/m **Other**
Oerstedm. Value Oe ☒ Castrol strip

Lighting
☒ White ☐ UV-Lamp


Magnetized for


☒ Indications in any direction

Extent of examination 20 %

Results of examination:	Extent:	Accepted/Rejected	Date:	Sign.:
Weld No.: P,1	20%	MT acceptable	13-07-2016	Sign: HBP-N2-MT
Weld No.:				
Weld No.:				
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Weld No.:				

Accepted in accordance to specification

<input checked="" type="checkbox"/> MT acceptable	Page:			NDT Technician signature: 
<input type="checkbox"/> MT not acceptable	2	of	2	

Revision nr.: 2	TEST REPORT - VISUAL TESTING	
Redigeret af: CBR	NDT	
Godkendt af: UN	Bilag nr.: P5.1 - f1	
Godkendelsesdato: 18-09-2015		

Date for report: 13-07-2016	NDT Inspector: Technician - UGJ	Certificate No.: 0767-N2-VT	Examination organization / Inspection authority: SH Group NDT Technician / QC
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg
Description in text: Winch frame-OW-3000-ILO 152_#1			ID. / PO SHG-000973_01 Drawing No. / Rev. No.: 10019820 R. 0-2
Examination procedure: EN / ISO 17637 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 5817-C / DNV 2.22 Lift App 2013
Customer examination procedure:			Customer acceptance criteria:

Aids

☒ Ruler
 ☐ Caliper gauge
 ☐ Feeler gauge
 ☒ Weld gauge
 ☐ Contour gauge

Time of examination


☒ After welding
 ☐ Repair

Extent of examination ☒ 100%

Surface condition ☐ Ground ☒ Smooth ☐ Coarse ☐ Primer

Results of examination:	Accepted/Rejected	Date:	Sign.:
Weld No.: P. 1,2,3,4,5,6,7,9,11,12,13,18,19,20	Accepted welds	13-07-2016	Sign: UGJ-N2-VT
Weld No.: S. 8,10,14,15,16,17	Accepted welds	13-07-2016	Sign: UGJ-N2-VT
Weld No.:			
Weld No.:			
Weld No.:			
Weld No.:			
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Weld No.:			
Weld No.:			

Accepted in accordance to specification

<input checked="" type="checkbox"/> VT acceptable <input type="checkbox"/> VT not acceptable	Page: <div style="display: flex; justify-content: space-around;"> 1 of 4 </div>	NDT Technician signature: <div style="float: right; text-align: center;"> <div style="border: 1px solid black; padding: 2px; font-size: small;">SH Group as NDT Technician & QC Ulrik Gjerster</div>  </div>
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Revision nr.: 2
 Redigeret af: CBR
 Godkendt af: UN
 Godkendelsesdato: 18-09-2015

TEST REPORT - MAGNETIC TESTING

NDT

Bilag nr.: P5.1 - f2

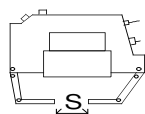


Date for report: 13-07-2016	NDT Inspector: Technician - UGJ	Certificate No.: 0767-N2-MT	Examination organization / Inspection authority: SH Group NDT Technician / QC
Contrator: SH Group			Test location: Grønnemosevej 34, 5700 Svendborg
Description in text: Winch frame-OW-3000-ILO 152_#1			ID. / PO SHG-000973_01
			Drawing No. / Rev. No.: 10019820 R. 0-2
Examination procedure: EN / ISO 17638 / DNV 2.22 Lift App 2013			Acceptance criteria: EN / ISO 23278-2X / DNV 2.22 Lift App 2013
Customer examination procedure:			Customer acceptance criteria:

Surface Condition

☐ Ground ☒ Smooth ☐ Coarse

☒ AC Yoke



Type **MR 9291 Handyoke**
 Smax.= **150 mm**

Reinforcement

☒ As welded ☐ Ground

Reg.No. **MR 9291**

☒ Water/black ☐ Kerosine/black

☐ Water/fluorecent ☐ Kerosine/fluorecent

Background

☒ White ☐ Non-treated

Field strength 2-6 kA/m

Other

Oerstedm. Value Oe

☒ Castrol strip

Lighting

☒ White ☐ UV-Lamp

Magnetized for

☒ Indications in any direction

Extent of examination

2-5-20 %


Results of examination:	Extent:	Accepted/Rejected	Date:	Sign.:
Weld No.: P, 1,2,3,4,5,6,7,9,11,12,13,18,19,20	20%	MT acceptable	13-07-2016	Sign: UGJ-N2-MT
Weld No.: S, 8,14,15,16,	2-5%	MT acceptable	13-07-2016	Sign: UGJ-N2-MT
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
Weld No.:				
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Weld No.:				
Weld No.:				

Accepted in accordance to specification

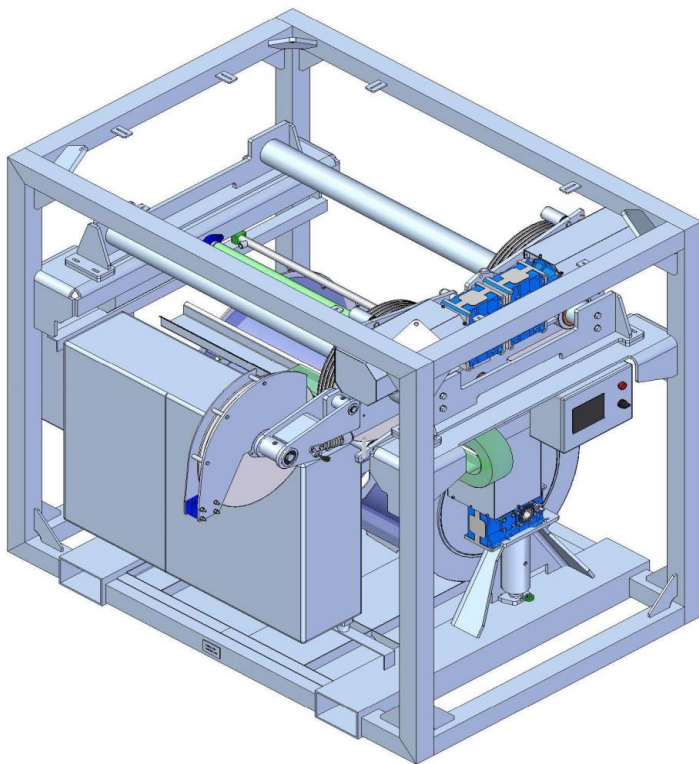
<input checked="" type="checkbox"/> MT acceptable	Page:			NDT Technician signature:	<div>SH Group as NDT Technician & QC Ulrik Gjerster</div>
<input type="checkbox"/> MT not acceptable	2	of	4		

[illegible]

Revision nr.: 2	TEST REPORT - ULTRASONIC LAMINATION NDT	
Redigeret af: CBR		
Godkendt af: UN		
Godkendelsesdato: 18-09-2015		
Bilag nr.: P5.1 - f6		

Date for report: 13-07-2016		NDT Inspector: Technician - UGJ		Certificate No.: 0767-N2-UT		Examination organization / Inspection authority: SH Group NDT Technician / QC	
Contrator: SH Group				Test location: Grønnemosevej 34, 5700 Svendborg			
Description in text: Winch frame-OW-3000-ILO 152_#1				ID. / PO SHG-000973_01		Drawing No. / Rev. No.: 10019820 R. 0-2	
Examination procedure: EN 10160				Acceptance criteria: EN 10160 S2/E3			
Customer examination procedure:				Customer acceptance criteria:			
				Surface condition: Coarse			
Technical information regarding the test:							
Equipment type / Reg. No.: USM GO+ 40.17.15				Couplant: Water:			
Probe description:	1 type: MSEB4	Reg. No.: 40.17.20	Basic setting: 45,6	Extra when scanning: 12	Total 57,6 dB		
	2. type	Reg. No.:	Basic setting:	Extra when scanning:	dB		
DGS (AVG):KSR diameter= 8 mm				Range= 100 mm			
Test type:	Class		Scanning pattern:				
Combined scan:	S2/E3		Sinus formed lines: Line distance / Width mm				
Specifiec information:							
UT lamination testing on hatched areas: Preformed date: 08-07-2016							
Test result: Unless otherwise stated, the test is preformed from one side only. <p style="text-align: center;">Accepted in accordance to specifikation.</p>							
<input checked="" type="checkbox"/> Lam test acceptable <input type="checkbox"/> Lam test not acceptable			Page: 4 of 4		NDT Technician signature: <div style="text-align: right;">  </div>		

SHG-000973 - 1
MODUS Seabed
OE-2000-A3-4-7-2-FS-NZ-003



MATERIAL CERTIFICATES	1
PRODUCTION LOGS	2
WELDING PROCEDURE SPECIFICATION S (WPS)	3
CERTIFICATES FOR WELDERS	4
NDT REPORTS	5
CERTIFICATES FOR NDT INSPECTORS	6
PRODUCT RELATED CERTIFICATES	7
TEST REPORTS	8
PAINT REPORT	9
FACTORY ACCEPTANCE TEST (FAT)	10

EN ISO 9712

NDT LEVEL 2 CERTIFICATE

Test method: Magnetic Particle Testing

Henrik Bøye Prydgaard

Halvmånen 7, 5900 Rudkøbing, Denmark

Date of birth:
1975-04-14

Number: 1099-N2-M

Date of first issue: 2013-04-19

Date of renewal:

Date of expiry: 2018-04-19

Fulfills the requirements according to ACT743 and 289, which implements the directives 97/23/EC respectively 1999/36/EC PED/TPED
Notified body 0200

Henrik Prydgaard
Signature holder of certificate

The certificate holder fulfills all requirements of EN ISO 9712 and NORDTEST DOC GEN 010, edition 6.

Sector: IMU Multisector (All industrial sectors)

Supplemental sector: Non

Sector limitation: No limitations

Initial certification body:
FORCE Certification



FORCE Certification

22 APR 2015
Helle H. Rasmussen



FORCE Certification

The certificate is valid only with the operating authorization which is based on visual acuity and proof of satisfactory work with the actual NDT method, without interruptions totally not more than 1 year, for the whole validity period. The documentation file of the certificate holder shall also include complaints within the scope of the certification competence. The operating authorization shall be renewed annually.

Operating authorization by employer:

SH Group as

Kuopiovej 20, 5700 Svendborg, Denmark

2013.04.19

FORCE Certification
Helle H. Rasmussen

Authorized signature/Employer, first time issue

2014.04.19

FORCE Certification
Helle H. Rasmussen

Authorized signature/Employer, renewed 1st year

2015.04.19

NSK L.M.O.
Nordisk Svejse Kontrol AS
Lars Holm

Authorized signature/Employer, renewed 2nd year

2016.04.19

NSK L.M.O.
Nordisk Svejse Kontrol AS
Lars Holm

Authorized signature/Employer, renewed 3rd year

2017.04.19

Authorized signature/Employer, renewed 4th year

2018.04.19

Authorized signature/Employer, renewed 5th year

EN ISO 9712

NDT LEVEL 2 CERTIFICATE

Test method: Penetrant Testing

Henrik Bøye Prydgaard

Halvmånen 7, 5900 Rudkøbing, Denmark

Date of birth:

1975-04-14

Number: 1099-N2-P

Date of first issue: 2016-01-14

Date of renewal:

Date of expiry: 2021-01-14

Fulfills the requirements according
to ACT743 and 289, which
implements the directives
97/23/EC respectively 1999/36/EC
PED/TPED
Notified body 0200

Henrik Prydgaard.
Signature holder of certificate

The certificate holder fulfills all requirements of EN ISO 9712 and NORDTEST DOC GEN 010, edition 6.

Sector: IMU Multisector (All industrial sectors)

Supplemental sector: Non

Sector limitation: No limitations

Initial certification body:
FORCE Certification



FORCE Certification

16 FEB 2016

Helle H. Rasmussen

FORCE Certification



The certificate is valid only with the operating authorization which is based on visual acuity and proof of satisfactory work with the actual NDT method, without interruptions totally not more than 1 year, for the whole validity period. The documentation file of the certificate holder shall also include complaints within the scope of the certification competence. The operating authorization shall be renewed annually.

Operating authorization by employer:

SH Group as

Kuopiovej 20, 5700 Svendborg, Denmark

2016.01.14

2017.01.14

2018.01.14

N.S.K. L.M.O.
Nordisk Svejse Kontrol A/S

Authorized signature/Employer, first time issue

Authorized signature/Employer, renewed 1st year

Authorized signature/Employer, renewed 2nd year

2019.01.14

2020.01.14

2021.01.14

Authorized signature/Employer, renewed 3rd year

Authorized signature/Employer, renewed 4th year

Authorized signature/Employer, renewed 5th year

EN ISO 9712

NDT LEVEL 2 CERTIFICATE

Test method: Ultrasonic Testing

Henrik Bøye Prydgaard

Halvmånen 7, 5900 Rudkøbing, Denmark

Date of birth:
1975-04-14

Number: 1099-N2-U

Date of first issue: 2013-04-19

Date of renewal:

Date of expiry: 2018-04-19

Fulfills the requirements according
to ACT743 and 289, which
implements the directives
97/23/EC respectively 1999/36/EC
PED/TPED
Notified body 0200

Henrik Prydgaard

Signature holder of certificate

The certificate holder fulfills all requirements of EN ISO 9712 and NORDTEST DOC GEN 010, edition 6.

Sector: w Welds + wp Wrought products

Supplemental sector: tp Tubes and Pipes

Sector limitation: No limitations

Initial certification body:
FORCE Certification



FORCE Certification

22 APR. 2015

Helle H. Rasmussen

FORCE Certification



The certificate is valid only with the operating authorization which is based on visual acuity and proof of satisfactory work with the actual NDT method, without interruptions totally not more than 1 year, for the whole validity period. The documentation file of the certificate holder shall also include complaints within the scope of the certification competence. The operating authorization shall be renewed annually.

Operating authorization by employer:

SH Group as

Kuopiovej 20, 5700 Svendborg, Denmark

2013.04.19

FORCE
Certification
Helle H. Rasmussen

Authorized signature/Employer, first time issue

2014.04.19

FORCE
Certification
Helle H. Rasmussen

Authorized signature/Employer, renewed 1st year

2015.04.19

NSK L.M.O.
Nordisk Svøjte Kontrol A/S
Hans Holm

Authorized signature/Employer, renewed 2nd year

2016.04.19

NSK L.M.O.
Nordisk Svøjte Kontrol A/S

Authorized signature/Employer, renewed 3rd year

2017.04.19

Authorized signature/Employer, renewed 4th year

2018.04.19

Authorized signature/Employer, renewed 5th year

EN ISO 9712

NDT LEVEL 2 CERTIFICATE

Test method: Visual Testing

Henrik Bøye Prydgaard

Halvmånen 7, 5900 Rudkøbing, Denmark

Date of birth:
1975-04-14

Number: 1099-N2-V

Date of first issue: 2013-07-03

Date of renewal:

Date of expiry: 2018-07-03

Henrik Prydgaard
Signature holder of certificate

The certificate holder fulfills all requirements of EN ISO 9712 and NORDTEST DOC GEN 010, edition 6.

Sector: IMU Multisector (All industrial sectors)

Supplemental sector: Non

Sector limitation: No limitations

Initial certification body:
FORCE DantestCERT



FORCE Certification

22 APR 2015

Helle H. Rasmussen

FORCE Certification



PERSON Reg. No. 3001

The certificate is valid only with the operating authorization which is based on visual acuity and proof of satisfactory work with the actual NDT method, without interruptions totally not more than 1 year, for the whole validity period. The documentation file of the certificate holder shall also include complaints within the scope of the certification competence. The operating authorization shall be renewed annually.

Operating authorization by employer:

SH Group as

Kuopiovej 20, 5700 Svendborg, Denmark

2013.07.03



Authorized signature/Employer, first time issue

2014.07.03



Authorized signature/Employer, renewed 1st year

2015.07.03



Authorized signature/Employer, renewed 2nd year

2016.07.03



Authorized signature/Employer, renewed 3rd year

2017.07.03

Authorized signature/Employer, renewed 4th year

2018.07.03

Authorized signature/Employer, renewed 5th year

EN ISO 9712

NDT LEVEL 2 CERTIFICATE

Test method: Penetrant Testing

Ulrik Gjerster

Ringvejen 6, 5900 Rudkøbing, Danmark

Date of birth:
1963-10-05

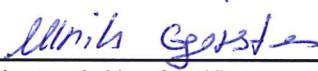
Number: 0767-N2-P

Date of first issue: 2010-09-30

Date of renewal: 2015-09-30

Date of expiry: 2020-09-30

Fulfills the requirements according
to ACT743 and 289, which
implements the directives
97/23/EC respectively 1999/36/EC
PED/TPED
Notified body 0200


Signature holder of certificate

The certificate holder fulfills all requirements of EN ISO 9712 and NORDTEST DOC GEN 010, edition 6.

Sector: IMU Multisector (All industrial sectors)

Supplemental sector: Non

Sector limitation: No limitations

Initial certification body:
FORCE Certification



FORCE Certification
09.08.2015

Helle H. Rasmussen

FORCE Certification



The certificate is valid only with the operating authorization which is based on visual acuity and proof of satisfactory work with the actual NDT method, without interruptions totally not more than 1 year, for the whole validity period. The documentation file of the certificate holder shall also include complaints within the scope of the certification competence. The operating authorization shall be renewed annually.

Operating authorization by employer:


SH Group as

Kuopiovej 20, 5700 Svendborg, Denmark

2015.09.30

2016.09.30

2017.09.30


Authorized signature/Employer, first time issue

Authorized signature/Employer, renewed 1st year

Authorized signature/Employer, renewed 2nd year

2018.09.30

2019.09.30

2020.09.30

Authorized signature/Employer, renewed 3rd year

Authorized signature/Employer, renewed 4th year

Authorized signature/Employer, renewed 5th year

EN ISO 9712

NDT LEVEL 2 CERTIFICATE

Test method: Magnetic Particle Testing

Ulrik Gjerster

Ringvejen 6, 5900 Rudkøbing, Danmark

Date of birth:
1963-10-05

Number: 0767-N2-M

Date of first issue: 2011-12-20

Date of renewal:

Date of expiry: 2016-12-20

Fulfills the requirements according
to ACT743 and 289, which
implements the directives
97/23/EC respectively 1999/36/EC
PED/TPED
Notified body 0200


Signature holder of certificate

The certificate holder fulfills all requirements of EN ISO 9712 and NORDTEST DOC GEN 010, edition 6.

Sector: IMU Multisector (All industrial sectors)

Supplemental sector: Non

Sector limitation: No limitations

Initial certification body:
FORCE DantestCERT

FORCE
Certification 

FORCE Certification
09 SEP. 2013

Helle H. Rasmussen

 **DANAK**
PERSON Reg. No. 3001

FORCE Certification

The certificate is valid only with the operating authorization which is based on visual acuity and proof of satisfactory work with the actual NDT method, without interruptions totally not more than 1 year, for the whole validity period. The documentation file of the certificate holder shall also include complaints within the scope of the certification competence. The operating authorization shall be renewed annually.

Operating authorization by employer:

SH Group as

Kuopiovej 20, 5700 Svendborg, Denmark

2011.12.20

FORCE
Certification 

Helle H. Rasmussen

Authorized signature/Employer, first time issue

2012.12.20

FORCE
Certification 

Helle H. Rasmussen

Authorized signature/Employer, renewed 1st year

2013.12.20

NSK **L.M.O.**

Nordisk Svejls Kontrol A/S

Authorized signature/Employer, renewed 2nd year

2014.12.20

NSK **L.M.O.**

Nordisk Svejls Kontrol A/S

Authorized signature/Employer, renewed 3rd year

2015.12.20

NSK **L.M.O.**

Nordisk Svejls Kontrol A/S

Authorized signature/Employer, renewed 4th year

2016.12.20

Authorized signature/Employer, renewed 5th year

EN ISO 9712

NDT LEVEL 2 CERTIFICATE

Test method: Ultrasonic Testing

Ulrik Gjerster

Ringvejen 6, 5900 Rudkøbing, Danmark

Date of birth:
1963-10-05

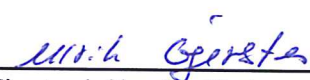
Number: 0767-N2-U

Date of first issue: 2013-05-01

Date of renewal:

Date of expiry: 2018-05-01

Fulfills the requirements according
to ACT743 and 289, which
implements the directives
97/23/EC respectively 1999/36/EC
PED/TPED
Notified body 0200


Signature holder of certificate

The certificate holder fulfills all requirements of EN ISO 9712 and NORDTEST DOC GEN 010, edition 6.

Sector: w Welds + wp Wrought products

Supplemental sector: tp Tubes and Pipes

Sector limitation: No limitations

Initial certification body:
FORCE DantestCERT



FORCE Certification

09 SEP. 2013

Helle H. Rasmussen

FORCE Certification



The certificate is valid only with the operating authorization which is based on visual acuity and proof of satisfactory work with the actual NDT method, without interruptions totally not more than 1 year, for the whole validity period. The documentation file of the certificate holder shall also include complaints within the scope of the certification competence. The operating authorization shall be renewed annually.

Operating authorization by employer:

SH Group as

Kuopiovej 20, 5700 Svendborg, Denmark

2013.05.01


Helle H. Rasmussen

Authorized signature/Employer, first time issue

2014.05.01


Lars Mohr

Authorized signature/Employer, renewed 1st year

2015.05.01


Lars Mohr

Authorized signature/Employer, renewed 2nd year

2016.05.01


Lars Mohr

Authorized signature/Employer, renewed 3rd year

2017.05.01

Authorized signature/Employer, renewed 4th year

2018.05.01

Authorized signature/Employer, renewed 5th year

EN ISO 9712

NDT LEVEL 2 CERTIFICATE

Test method: Visual Testing

Ulrik Gjerster

Ringvejen 6, 5900 Rudkøbing, Danmark

Date of birth:
1963-10-05

Number: 0767-N2-V

Date of first issue: 2012-07-01

Date of renewal:

Date of expiry: 2017-07-01


Signature holder of certificate

The certificate holder fulfills all requirements of EN ISO 9712 and NORDTEST DOC GEN 010, edition 6.

Sector: IMU Multisector (All industrial sectors)

Supplemental sector: Non

Sector limitation: No limitations

Initial certification body:
FORCE DantestCERT



FORCE Certification
09 SEP. 2013

Helle H. Rasmussen

FORCE Certification



The certificate is valid only with the operating authorization which is based on visual acuity and proof of satisfactory work with the actual NDT method, without interruptions totally not more than 1 year, for the whole validity period. The documentation file of the certificate holder shall also include complaints within the scope of the certification competence. The operating authorization shall be renewed annually.

Operating authorization by employer:

SH Group as

Kuopiovej 20, 5700 Svendborg, Denmark

2012.07.01


Helle H. Rasmussen

Authorized signature/Employer, first time issue

2013.07.01


Helle H. Rasmussen

Authorized signature/Employer, renewed 1st year

2014.07.01


Helle H. Rasmussen

Authorized signature/Employer, renewed 2nd year

2015.07.01


Helle H. Rasmussen

Authorized signature/Employer, renewed 3rd year

2016.07.01

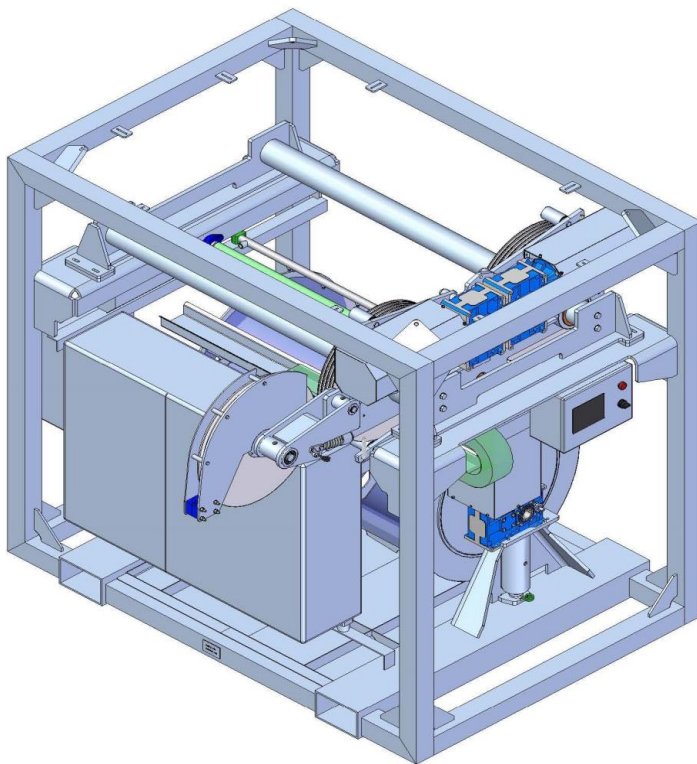

Helle H. Rasmussen

Authorized signature/Employer, renewed 4th year

2017.07.01

Authorized signature/Employer, renewed 5th year

SHG-000973 - 1
MODUS Seabed
OE-2000-A3-4-7-2-FS-NZ-003



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SH Group A/S
Kuopiovej 20
5700 Svendborg

Certifikat / Certificate
FORM 3

Certificate of Test and Thorough Examination of Loose Gear

CERTIFICATE No.: H25966

Date : 12-07-2016

Customer No.: 62217810

- Alle nævnte værdier er i overensstemmelse med oplysningerne fra vor leverandør.
- All values correspond to information from our supplier.

Order no.:
708354

Production no.:
506977

Salesperson:
TEN

Reference to standard:

Customer order no.:
1po-0014419

Customer attention:
TORBEN LINNEBJERG

Customer location:

External Doc. no.:

Indholdet i dette certifikat er i overensstemmelse med bestemmelserne i direktivet 2006/42/EF, bilag II A
Ved levering af maskiner jvf. direktivet 2006/42/EF, gælder dette certifikat som overensstemmelseserklæring.
All contents of this Certificate correspond to the contents of the Directive 2006/42/EC, add. II A
By deliveries of machines in the sence of the Directives 2006/42/EC, this certification is considered as conformaty explanation.

Til de leverede produkter dokumenterer vi følgende detaljer:
We certify the following details for the supplied articles:

Mærkning / Marking	Beskrivelse / Description	Antal / Quantity	Dato / Date	Testload factor	OSWL kg	WLL kg	MBL kg
H25966	4-GR. WIRESLING. ACC TO DRAW. 10020171.. ILO 152 WIRE 6X36+IWRC. Ø18MM MONT I TOP MED MASTER LINK. TAN3/418. OG GPS13SP GREEN PIN SJÆKLER I BUND. TOTAL BEN LGD. 1,73M VINKEL 48°. SF 6:1. WLL 3500KG.	1	12-07- 16			3500	

CERTEX A/S

Quality
department:

Th Løvgren
Thomas Løvgren

Dette Certifikat er fremstillet maskinelt i overensstemmelse med EN 10204 (afsnit 5).
This Certificate was provided by machine and is in accordance with EN 10204 (exp. 5)
This Certificate covers the standard international form as recommended by the International Labour Office in accordance with
ILO Convention No. 152.

Certified according to
DS/EN ISO 9001
DS/EN ISO 14001
DS/OHSAS 18001

Certificate of Compliance

SH Group A/S

(Manufacturer's name)

Kuopiovej 20, DK-5700 Svendborg, Denmark

(Address)

MODUS Seabed Intervention Limited

(Client name)

Beaumont House, Beaumont Street, Darlington, DL1 5RW, England

(Address)

SHG-O-174

(Contract No.)

Manufacturer declare that

MODUS Seabed Intervention Limited Purchase number	Description	Serial number	Sepro part no. and serial no.
1070 - PO-11108	2kN OE Tether Winch	01	SHG-000973-01

Product type no.: 2kN OE Tether Winch

Design Specification: 000174

Doc Rev: 7

and

MODUS Seabed Intervention Limited Order no. SHG-O-174

(Client Specification and rev. no.)

Accepted deviations (NCR):

NA

(Quality Notification number)

Svendborg 14-09-2016

(Place and date of issue)

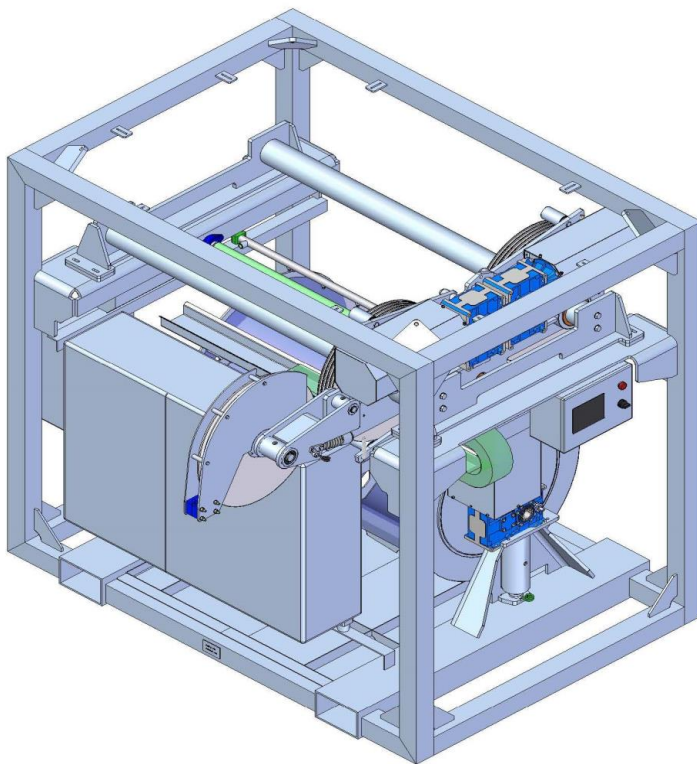
Kaare Vang Jensen, Operations Director

(Name and title of authorized person)



(Handwritten signature)

SHG-000973 - 1
MODUS Seabed
OE-2000-A3-4-7-2-FS-NZ-003



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Lifting test – ILO 152

(All point lifting)

Project no. : SHG-000973

Drawing no. : 10020171

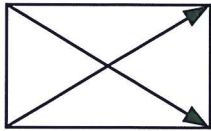
Type : Umbilical Winch

Dynamometer id. no. : Dynafor 5T, 0717/021W, cert. 0717/38E

Total Gross Mass : 3.500 kg

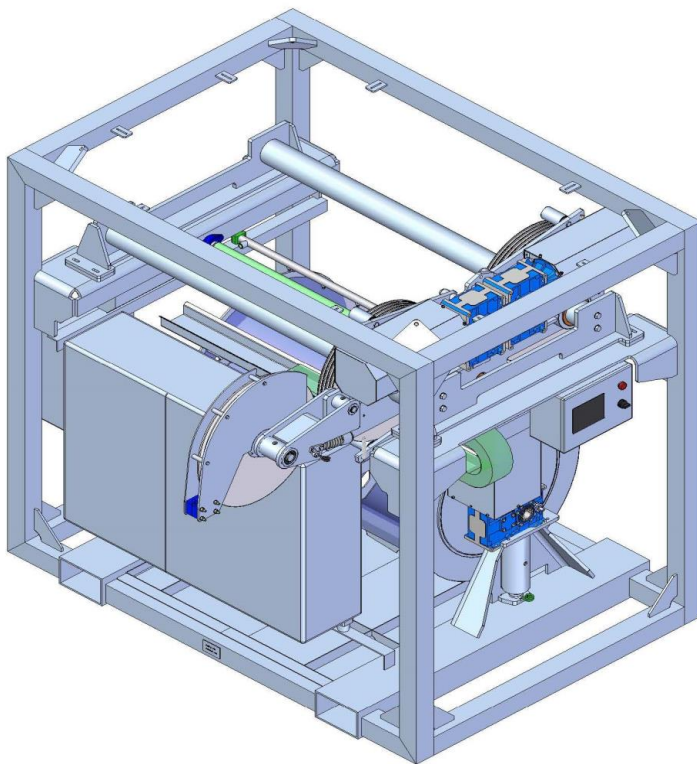
Test load : 3.500 kg + 25% = 4.375 kg

Test time/actual load : 5 minutes / 4.550 kg

Bottom plan	Dimension			
		Pre load test	Post load test	Difference
	1.	2556 mm	2555 mm	1 mm
	2.	2553 mm	2553 mm	0 mm

Customer (if participate)	SH Group
Signature: _____	Signature: 
Place: _____	Place: 
Date: _____	Date: 

SHG-000973 - 1
MODUS Seabed
OE-2000-A3-4-7-2-FS-NZ-003



MATERIAL CERTIFICATES	1
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FACTORY ACCEPTANCE TEST (FAT)	10

MALERAPPORT / PAINTING REPORT



Gemalvej 15 · Kirkeby · DK-5771 Stenstrup
Tlf. 65 36 26 26 · Fax 65 36 26 36
E-mail: fyns-coating@fyns-coating.dk
www.fyns-coating.dk

Kunde / Customer:		Emne / Object:		Kundens ref. nr. / Customer's ref. No.:	
SH Group A/S		1 stk. Modus Spil 1PO-0014635-2 SHG-000973_01			MBE
Dato / Date:	Kl./ Time:	Malerapport nr. / Painting report No.:		Tegningsnr. / Drawing No.:	
18.07.16		1516058			

Kontrol af overflade før forbehandling / Control of surface before pretreatment.		JA / YES	NEJ / NO	Bemærkninger / Remarks	
Fedt & olie / Oil & grease		X		Control OK	
Runding af kanter / Grinding		X			
Svejseperler / welding pearls		X			
Fejl i svejsninger / Defects in welding		X			
Forbehandling / Pretreatment:		SA 2½		Forbehandling godkendt / Pretreatment approved: YES	
Malespec. / paintingspec.:		Sigma Zinc 68 SP		70 µm	
		Sigma Fast 278		130 µm	
		Sigmadur 550 H Ral 9010		80 µm	
				µm	
				µm	
Tørfilm lagtykkelse / Dry film thickness				280 µm	
1. lag type / 1. coat type:		Batch No.		Komp A	Komp B
2. lag type / 2. coat type:		Batch No.			
3. lag type / 3. coat type:		Batch No.			
4. lag type / 4. coat type:		Batch No.			
5. lag type / 5. coat type:		Batch No.			
Klima målinger / Climatic measurements:					
Luftens temperatur / Air temperature:		26	27	27	
Stål temperatur / Steel Temperature:		22	23	23	
Luftens fugtighed RH % / Air humidity:		51	51	50	
Dugpunkt / Dew point:		13	14	15	
Overfladetemperaturen skal være mindst 3 grader C over dugpunktet. Der må ikke males ved relativ luftfugtighed over 80%. Surface temperature must be at least 3 C over the dew point. Paint must not be applied with a relative humidity over 80%.					
Målinger / Measurements:		1. coat	2. coat	3. coat	4. coat
Antal målinger / No. of measurements:		250	250	350	
Laveste måling / Lowest measurements:		65	198	267	
Højeste måling / Highest measurements:		98	341	493	
Gennemsnits måling / Average measurements:		86,97	231,06	336,25	
Bemærkninger til slutkontrol / Remarks to final control:					
Lakleverandør / Paint supplier:		PPG Protective&Marine Coatings			
Porretest / Holiday detection:					
Vedhæftning / Adhesion test:					

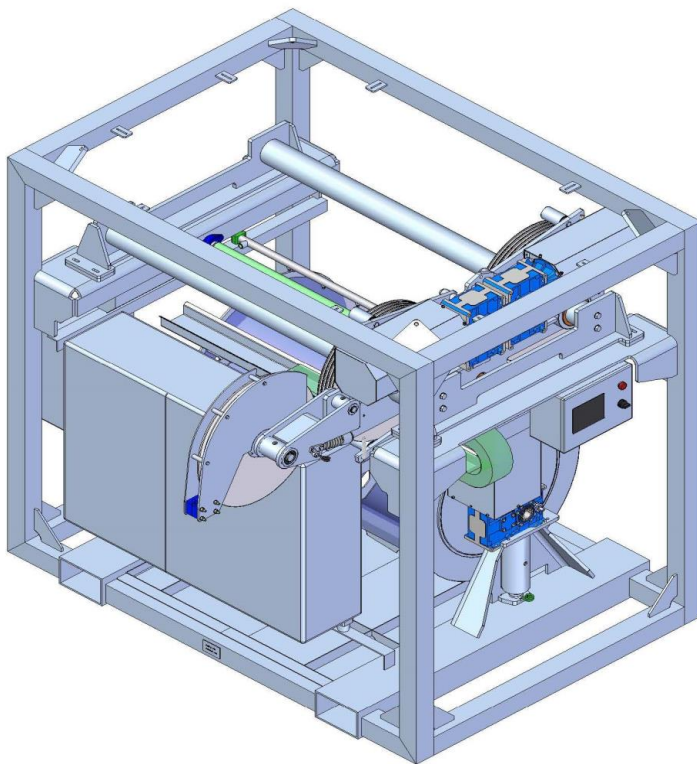
21.07.16
Dato / date

Flemming Pilegaard
Kvalitets kontrol ansvarlig / Quality Control responsible

KP1108-rev.0

Tænk ikke overfladisk - når det gælder overfladebehandling!

SHG-000973 - 1
MODUS Seabed
OE-2000-A3-4-7-2-FS-NZ-003



MATERIAL CERTIFICATES	1
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FACTORY ACCEPTANCE TEST

Customer:
Modus Seabed Intervention

Type:
2kN OE Tether Winch

Serial No.:
SHG-000973

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1 Introduction

The purpose of the Factory Acceptance Test (FAT) is to verify the winch meets the performance requirements specified in the contract, to verify a limited set of control / software functions and to verify the integrity of the electrical installation.

Winch performance is defined in this FAT by the following criteria;

- the load it can handle at the bottom layer of wire
- the operating speed with a specified load condition
- the load the brake system can safely hold
- the load the motors can safely hold

Load values are in kg.

The set of control / software functions that are tested are concerned primarily with;

- Verifying control locations
- Operator Login
- Emergency Steering
- Alarms

The FAT is performed with the winch installed in the test area, and the test loads are suspended to an overhead crane.

Safety instructions for guests at SH Group is adopted for the test procedures. The safety folder is available in the reception.

In addition to the individual test results which are found in each test section, section 8 provides for written remarks relevant to the test procedure.

1.1 Calibrated instruments

The instruments listed below, have been calibrated by an independent party and have been issued a certificate validating authenticity.

Id.	Winch test	Test equipment	Serial no.	Certificate available
1	Check of overall dimensions	Measuring tape	N/A	N/A
2	Pull test Brake test Load test	Load Cell Max 2% deviation, Check certificate	10020210	yes.

1.2 Software version

The test was performed with this software version.

Item	Software Version
PLC	1.0.22
VSD 1	07.51
VSD 2	07.51
VSD 3	07.51
VSD 4	

2 Performance and design values:

Max pull 2 kN	200 kg
SWL 2,0 kN	200 kg
Design factor Ψ	1,25
Lift test above SWL x 1,25	250 kg
Dynamic speed test shall be performed with	200 kg
Dynamic brake test is to be performed with	200 kg

3 Test of control and login

3.1 Verify that all login profiles are active

Id.	Type	Accept criteria	Local control	Rack control
1	Level1-daily	Enter user and password	✓	
2	Level2-captain	Enter user and password	✓	
3	Level3-Sepso	Enter user and password	✓	

4 Mechanical and function test

4.1 Static test of winch

The winch is mounted on the foundation. A test cable is spooled onto the winch drum and secured. The test cable is connected to a load point with minimum 750 kg load.

Id.	Description	Acceptance criteria	Acceptance criteria value	Test result
1	Load test All Brakes	SWL X 1,25	5 min 250 kg	0,25 ✓ Ton
2*	Lift test	>SWL	> 220 kg	0,25 ✓ Ton
3**	Lift test limitation	<SWL X1,25	< 250 kg	0,200 ✓ Ton
4	Overload protection	When overloaded, the winch will start to pay out the umbilical. The winch cannot be operated again by the joystick before confirmation of overload protection		Ton

* The torque setting is increased manually to achieve the minimum value of 1,1 x SWL for the test.

** The torque setting is decreased manually to the standard configuration maximum value of 1,1 x SWL

4.2 Static test of load pin

This test verify the accuracy of the load pin.

Static pull in a load cell, will confirm the accuracy of the load pin in the sheave.

Make 5 random tests.

Id.	Test load cell	Winch Load pin
1	65	55
2	106	93
3	157	175
4	197	240
5	225	255

4.3 Dynamic test of brakes and emergency stop

The test load has to be equal to, and not less than SWL.

The weight of the test load is verified with a calibrated load cell.

Weight of test load: 220 kg

Id.	Description	Note	Check alarm	Test result
1	Three successful emergency stops. (full pay out)	Test 1 Remote CS stop Test 2 Control Panel Test 3 Jo Box	✓ ✓ ✓	OK OK OK
2	Dead ship		NA	OK
3	Function test of all emergency stops	Emg. stop. Local control Emg. stop. Remote	✓ ✓	OK OK
4	Protection against full unwinding	The winch will stop with min. 3 turns left on drum. To be controlled at spooling.		

to be carried out when spooling Tether on drum

4.4 Speed test

The test shall reveal that the system is able to pull the advised load at the advised speed.

Id.	Description	Acceptance criteria value	Test result (value)
1	Power supply voltage	440V	447 V
2	Power supply frequency	50Hz	50 Hz

Speed test on bottom layer:

Id.	Description	Acceptance criteria value	Test result (value)
1	Test load	200 kg	220 kg T
2	Speed	90 m/min	103 @ 100 kg m/min
3	VSD 1 pay in		3.7 A 24 Hz 0.220 T
4	VSD 2 pay in		11 A 45 Hz T
5	VSD 3 pay in		0 A 0 Hz T
6	VSD 1 pay out		2.9 A 39 Hz 0.2 T
7	VSD 2 pay out		5.5 A 52 Hz T
8	VSD 3 pay out		0 A 0 Hz T

VSD 3 (4) NO READINGS DUE TO MANUAL OVERRIDE TO KEEP FLEETING POSITION WHILE TESTING

5 Software and function test

5.1 Software and functional test of Local Control

Id.	Description	Note	Test result
1	Check direction of traction in auto		OK
2	Check correct function of limit switches in auto		OK

5.2 Software and functional test of Remote

Id.	Description	Note	Test result
1	Check direction of drum with remote		OK
2	Check correct function of limit switches in auto		OK
3	Control all functions on Remote, one by one according to Remote spec.		OK

5.3 Test of emergency steering

Switch on emergency steering
Test with SWL

Id.	Description	Note	Test result
1	Test emergency stop		OK
2	Test pay in		OK
3	Test pay out		OK
4	Test traction in		OK
5	Test traction out		OK
6	Test correct function of limit switches on traction		OK

5.4 Constant Tension test

To control the operation of constant tension.

Procedure

Start the winch. Change mode to constant tension. Note the torque.
Hold joystick in pay in position until load is moving up. Note the torque.
Hold joystick in pay out position until load is moving down. Note the torque.
Repeat the test for all operating stations but only note values for local control.

Id.	Description	Note	Inits	Remark
1	holding load 25 kg			
2	pay in limit	Load ____ kg		
3	pay out limit	Load ____ kg		
4	holding load 100 kg			
5	pay in limit	Load ____ kg		
6	pay out limit	Load ____ kg		
7	holding load 200 kg			
8	pay in limit	Load ____ kg		
9	pay out limit	Load ____ kg		

Expected result

The pay in torque limit should be a few percent higher and the pay out limit should be lower than the initial torque limit value.

5.4.1 Constant Tension variation test

To control the operation of constant tension.

Procedure

Start the winch. Change mode to constant tension.
Note the torque level chosen on the screen.
Run load up and down with external crane.
Control tension level follows the movement of the external load cell.

Id.	Description	Note	Inits	Remark
1	holding load 200 kg	Max torque ____ %		
2	Constant Tension level chosen	CT ____ kN		
3	Run external crane op and down. Control tension level follows the chosen level on the screen			

Expected result

The chosen tension level on the screen must follow the load level on the external load cell.

5.5 Alarms

All tests can be done from, Main Control or Remote Control unit. During the test, check the alarm list on the locked control unit(s).
Alarms will stop the winch

Id.	Description	Note	Test result Local	Test result Rack
1	Test brake resistor hot. Verify that winch can pay out	Winch started	OK	NA
2	Test brake resistor too hot. Verify that winch is unable to pay out	Winch started Hot – no pay out	OK	NA
3	Cooling water low pressure		NA	NA
4	High temp motor 1 Fan must start		OK.	NA
5	High temp motor 2 Fan must start		OK	NA
6	High temp motor 3 Fan must start		OK.	NA
7	High temp electrical cabinet Above 55 degrees C		OK	NA

5.6 Warnings

Warnings will not stop the winch.

Id.	Description	Note	Test result Local	Test result Rack
1	Thermistor, motor 1		OK	
2	Thermistor, motor 2		OK	
3	Thermistor, motor 3 2-1		OK	
4	Thermistor, traction spindle motor		OK	
5	Brake not open motor 1		OK	
6	Brake not open motor 2		OK	
7	Brake not open motor 3		OK	
8	All brakes not closed		OK	

All these stopped the winch

5.7 Tests that causes no alarm or warning

Id.	Description	Note	Test result
1	Reset of Emergency stop impossible when: Brake motor 1 manually released Brake motor 2 manually released		OK
2	Reset of emergency stop impossible when emergency stop is active		OK
3	Remove communication from PLC		OK
4	Remove communication from VSD		OK.
5	Analogue indication of motor temperature		OK.

6 Winch review

Verify that the electrical installation designed to function in a maritime environment, and according to documentation.

Id.	Description	Remarks
1	Made in accordance with drawing from SH Automation	OK
2	Visual inspection of electrical wiring and main SWB	OK
3	Terminal box	OK
4	Fixing of cables and correct glands	OK
5	Air draft stopper mounted in SWB (VSD PART)	OK
6	Visual inspection of brake resistor	OK

Note 1: Verify that the equipment is assembled in a way, which meet the requirements to ingress protection in IEC 529 (14.2.6), in accordance with IP56.

7 Check of overall dimensions on winch

Id.	Overall dimensions on winch
A	Frame dimensions
B	Drum dimensions
C	Check of winch foundation, placement of welding knees
D	Welding joint on slip ring pigtail tube
E	Size of Slip Ring pigtail tube
F	Painting

Id.	Acceptance criteria	Acceptance criteria value	Test result
A	Frame length:	2380 mm	2380 mm
	Frame width:	1700 mm	1700 mm
	Frame height (transport) without welding knees:	2280 mm	2200 or 2280 mm
	Ref. DWG:	10020171	
B	Drum length, between flanges: Ref. DWG:	1336 mm 10020171	1336 mm
C	Check of foundation placement Ref. DWG:	10020171	NOT SPECIFIED ON DRAWING
D	Check welding joints in Slip Ring tube:	No sharp edges	OK
E	Check Slip Ring pigtail tube:	According to focal dimension	NA
F	Check painting according to paint specification and documented with coating report:	Paint report (See FRB)	

8 Remarks and acceptance of FAT

* DECK Emergency control Box So now in JIB controlling Reelby
MAIN JIB could be an issue off shore (on Front Face)
Constant tension Not fully working
Protection Against Roll unwinding ^{test} to be done when Tether is Spooled
No readings on VSD 4 Due to Reeling being Locked off for TSSing
PAINT TO BE TOUCHED UP
GIVENS for motors Not fitted

14/9/2016



Date

Signature

Customer

14/9-2016



Date

Signature

SH Group