



Certificate for Machinery Equipment

Valves

This is to certify that the undersigned Surveyor to LLOYD'S REGISTER did at the request of the below customer, attend the testing and examination of the product(s) described below in accordance with the relevant Rules and Regulations for the Classification of Ships and found it/them satisfactory.

General information

Customer	Jotron Skipper AS
Purchase Order No	PWO-127128
Manufacturer	Jotron Skipper AS
Intended for	Warehouse
Customer Work Order No	PWO-132428, 131341, 127128
Date of issue	30 April 2024
Quantity	5 pcs

Particulars

Description	3 off SB100SB 1 off DB-100-SB and 1 off DB60SA (all with bottom flanges)
Size	4 off 100mm and 1 off 60mm
Valve body material	Stainless steel
Test pressure body	5 Bar
Test pressure seat	5 Bar
Design pressure	-
Set pressure if applicable	-
Quantity	5 serial number 24264, 24265, 24266, 24268, 24269

Identification Marks On Product

I.D number	OSL2400356
Surveyors initials	-
Date of inspection	-

Remarks

No remarks raised

Stein Vangen
Lloyd's Register EMEA
A subsidiary of Lloyd's Register Group Limited



Page 2 of 2
Certificate No. OSL2400356
First Date of Inspection 30 April 2024
Final Date of Inspection 30 April 2024
Office Oslo

Description	Manufacturer Designation	Serial Number	IMO Number
SB-100-SB-LR		24264	0
SB-100-SB-LR		24265	0
SB-100-SB-LR		24266	0
DB-100-SB-LR		24268	0
DB-60-SA-LR		24269	0

A02/Z03
 INSPECTION CERTIFICATE acc to
 EN 10204 3.1

 A06
 SVERDRUP STEEL AS
 STRANDSVINGEN 2
 4032 STAVANGER
 NORWAY

 INSPECTION STAMP
 SVQ

Customer References A07 PO-03705 125-06911 SVERDRUP S	Alleima References A08 <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Order No.</td> <td style="width: 33%;">Subs No.</td> <td style="width: 33%;">Dispatch note</td> </tr> <tr> <td>590387</td> <td>714251</td> <td>37697/53</td> </tr> <tr> <td>Suppl. No</td> <td>C.Code</td> <td></td> </tr> <tr> <td>284-64142</td> <td>87</td> <td></td> </tr> </table>	Order No.	Subs No.	Dispatch note	590387	714251	37697/53	Suppl. No	C.Code		284-64142	87	
Order No.	Subs No.	Dispatch note											
590387	714251	37697/53											
Suppl. No	C.Code												
284-64142	87												

Material description B01/B04 HOT WORKED BAR STEEL ROLLED ANNEALED & STRAIGHTENED PEEL TURNED AND POLISHED <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Metallurgical process</td> <td style="width: 20%;">Origin</td> <td style="width: 30%; text-align: right;">c70</td> </tr> <tr> <td>E+AOD+LRF</td> <td>Sweden</td> <td></td> </tr> </table>	Metallurgical process	Origin	c70	E+AOD+LRF	Sweden		Steel/material Designations B02 Alleima SANMAC 316/SANMAC 316L <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">AISI</td> <td style="width: 50%;">UNS</td> </tr> <tr> <td>316/316L</td> <td>S31600/S31603</td> </tr> <tr> <td>W.nr</td> <td>EN no</td> </tr> <tr> <td>1.4401/1.4404</td> <td>1.4401/1.4404</td> </tr> </table>	AISI	UNS	316/316L	S31600/S31603	W.nr	EN no	1.4401/1.4404	1.4401/1.4404
Metallurgical process	Origin	c70													
E+AOD+LRF	Sweden														
AISI	UNS														
316/316L	S31600/S31603														
W.nr	EN no														
1.4401/1.4404	1.4401/1.4404														

Technical requirements B03 EN 10088-3:-2014, EN10272:-2016*, EN10060:2003, EN 10221:1996 EN10222-5:-2017*, PED 2014/68/EU, QQ-S-763 F, NACE MR0175/ISO 15156-3:-2015, NACE MR0103/ISO 17945-1:-2015, ASTM A-276-17, ASME SA-276-ED-21 SECT II PART A, ASTM A-479-21, ASME SA-479-ED-21 SECT II PART A, ASTM A-484-22, ASTM A-182-22*, ASTM A-965-21A*, ASTM A-314-19*, NORSOK M-630:2020, NORSOK MDS S17 REV. 1 *For detailed information, please see the appendix
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EXTENT OF DELIVERY B07-B13								
It	Product designation	Heat	Lot	Pieces	Kg			
06	MBR-SANMAC316L-140	566504	78963	1	737.0			
			Total	1	737.0			
Heat		Recycled material(%)						
566504	Continuous casting	95.3						
TEST RESULTS								
Reduction ratio (times)								
Lot								
78963	5.7							
Chemical composition (weight%) acc. to ASTM A-751								
Heat	C	Si	Mn	P	S	Cr	Ni	Mo
566504	0.012	0.28	1.71	0.031	0.027	16.91	10.19	2.04
	N							
566504	0.044							

Quality assurance - Erik Jansson/QA-manager Primary Products A05/Z02 MTC Service / Certificates
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Tensile test at room temperature acc. to ASTM A370/ISO 6892-1

Longitudinal

Location half radius

Lot	Yield strength		Tensile strength	Elongation	
	Mpa	MPa	Mpa	%	%
78963	Rp0.2	Rp1.0	Rm	A	2"
	218	253	544	62	62
	Red.of Area				
	%				
	Z				
	79				

Transversal, 90° from each other.

Location half radius

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
78963	Rp0.2	Rp1.0	Rm	A	2"
	222	271	546	58	49
	Red.of Area				
	%				
	Z				
	72				

Hardness test acc.to ASTM A-370/ISO 6506-1

Location half radius

Lot	Min	Max
	78963	HB
	139	140
	Min	Max
78963	HRB	HRB
	75	76

Grain size acc to ASTM E-112.

Location half radius

Lot		
78963	7.0	7.0

Impact test, J, Longitudinal acc. to ASTM A-370/ISO 148-1

Location half radius

Lot	Single values			Avg.	Temperature
	Joule			Joule	°C
78963	261	257	226	248	20
	266	276	269	270	20

Following controls/tests have been satisfactorily performed:

- Intergranular corrosion test acc to ASTM A-262 PR.E and EN ISO 3651-2A
- Positive Material Identification (PMI)
- Ultrasonic testing (*)
- Visual inspection and dimensional control.

Heat Treatment:

Solution annealed and quenched.



HEAT TREATMENT:

Up to 35mm: Material soaking 1050°C, min. 20 minutes. Quenched in water. Water temp pre-quench max 38°C, after quench max 49°C.

>35-150mm: In process annealed according to ASTM A484 above the minimum hot rolling temperature of 1010°C and cooled in air.

>150-350mm: Material soaking 1065°C, min. 30 minutes. Quenched in water. Water temp pre-quench max 38°C, after quench max 49°C.

>350-375mm: Material soaking 1050°C, min. 60 minutes. Quenched in water. Water temp pre-quench max 38°C, after quench max 49°C.

>375mm: Material soaking 1050°C, min. 120 minutes. Quenched in water. Water temp pre-quench max 38°C, after quench max 49°C.

The raw material is free from radioactive contamination.

Material free from mercury contamination.

No welding or weld repair.

This is to certify that the contents of this certified material test report are correct and accurate and that all test results and operations are in compliance with the material specification.

Approved acc. AD 2000-Merkblatt W0 and certified acc. to Pressure Equipment Directive (2014/68/EU) by TÜV NORD; notified body, reg.no. 0045.

The material is manufactured according to a Quality system, approved and registered to ISO 9001:2015.

No unauthorized alterations. The contents of this Inspection Certificate may not be modified or revised in any way without the prior written approval of Alleima.

Unauthorized alterations to the Inspection Certificate, including introduction of false, fictitious or fraudulent statements or entries, may be punishable by fines, imprisonment, or both. This Inspection Certificate may be copied only in the manner and for the purposes specified in Section 6 of EN 10204:2004. Contravention of this notice will be prosecuted to the fullest extent of applicable law.

The certificate is produced with EDP and valid without signature.



APPENDIX

Lab accreditation

Our lab is accredited under SWEDAC Accreditation number 1636 for testing as per ISO/IEC 17025

Applicable only to specific dimensions

20mm - 250mm: EN 10088-5 EN (Only valid for CE marked products together with Alleima Declaration of Performance certificate).

20mm - 400mm: PED 2014/68/EU EN 10272 (Stainless steel bars for pressure purposes)

20mm - 375mm: AD-2000-W2/W10

20mm - 450mm: NORSOK M-630 - NORSOK MDS S11

180mm- 450mm: PED 2014/68/EU EN 10222-5 (Chemical composition only)

70mm - 450mm: AMS 5648 Rev. L, AMS 5653 Rev. H

Suitable for manufacturing of components in acc. with *ASTM A-182, (F316/F316L), ASTM A-965, ASTM A-314.

Test location

Mechanical, ferrite, corrosion testing:

Bar dim <=50mm - Longitudinal test pieces in center of the bar.

Bar dim > 50mm - 160 mm - Longitudinal test pieces, 1/4 T and minimum 100 mm from any second surface.

Bar dim > 160mm- 450 mm - Transversal test pieces, 1/4 T and minimum 100 mm from any second surface.

One set of test samples per heat treatment lot.

Maximum lot size 15 ton.

Furnace calibration every third month according to API 6A

Thermocouples of S-type (+/- 5°C tolerance) are used to monitor the furnace temperature.

Ultrasonic test

Dim 29 - 74 mm: EN 10308 quality class 3

Dim 75 mm - : EN 10228-4, Tab 3 Scan coverage 1a 100%, Tab 5
Quality Class 3, ASTM A-388, API 6A PSL3/3G.

Alleima, formerly Sandvik Materials Technology. During a brand transition period, both Sandvik and Alleima marking on products may exist.



PICKING LIST

SKIPPER

SKI-NO: PWO/127128

CASE. 127123

Printed: 24.04.2024 - 11:15

Operation number Operation Manufacturing area Remaining quantity
PRODUCTION **3 stk**

Note
SB-100-SB-LR

Stockloc / Details	Assignment	Quantity	Product
For operation number 100			
1-PALL-00	SSA/133188-1	3 stk	ZCC-01015
1-PALL-00	9 stk		Main element, Ball Valve DN100 PN16/3.1.B
For operation number 200			
1-PALL-01	SSA/133235-1	✓ 3 stk	DB-2051 <i>2304 + 2 / 2301 x 1</i>
1-PALL-01	4 stk		Intermediate element for xB-100-xB casted
1-PALL-03	SSA/132281-1	24 stk	ZOA-01075
1-PALL-03	420 stk		Screw M16x55 mm DIN933 A4-80
1-PALL-06	SSA/133370-1	3 stk	DB-2031
1-PALL-06	8 stk		Top Flange for XB-100/200-XX
1-PALL-06	SSA/133446-1	✓ 3 stk	SB-2019 <i>569485</i> <i>2411</i>
1-PALL-06	12 stk		Bottom flange for SB-100-xx
1-S-74	SSA/132430-1	3 stk	DB-2040
1-S-74	192 stk		Washer Ø46x2,5 Ø32,5 for XB-60/100/200-XX
1-T-01	SSA/133056-1	36 stk	ZOA-01036
1-T-01	1445 stk		Nut M16 DIN934 A4
1-T-01	SSA/133510-1	6 stk	DB-2035
1-T-01	427 stk		Gasket Ø47/32,5 X 20mm for XB-60/100/200-XX
1-T-02	SSA/131169-1	36 stk	ZOA-01035
1-T-02	80 stk		Spring washer M16 DIN127B A4
1-T-02	SSA/133656-1	3 stk	DB-2036
1-T-02	47 stk		Nut M50 Brass for XB-60/100/200-XX
3-A-04	SSA/131679-1	6 stk	ZZA-01127
3-A-04	3235.5 stk		Metallized, silver polyester label, on roll

Additional parts

Product	Stockloc	Quantity
GVA-LR Sea Valve approval from Lloyds Register		3 stk

B / C

S.no. 24264 = TE9A / TC9A Int. med 2304

24265 = TE9A / TE9A 2304

24266 = TC9A / TE9A 2301

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 Web page: www.skipper.no

SKIPPER
 C.O. reg no: NO-965378847-MVA

INSPECTION & TEST PROTOCOL FOR SEA VALVE

Document No: Q12-TI-0108-02 2023

SKIPPER sea valve Serial No.:	24264
Class certificate no.:	

Class stamp and certificate no. shall be stamped on main element and bottom flange (welding part)

Class: DNV ABS BV LR RINA NK

Sea valve Type:

		<u>-SA</u>	<u>-SB</u>	<u>-LA</u>	<u>-LB</u>	<u>-F1</u>	<u>SLB</u>	<u>SJB</u>
SB-60		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		
DB-60		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		
SB-100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
DB-100		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
ETN- 100mm							<input type="checkbox"/>	<input type="checkbox"/>
SB-200-Echo	<input type="checkbox"/>							

Assembly, Items Serial No. / Batch No. / Charge No.:

	<u>Heat no</u> <u>Body</u>	<u>Heat no</u> <u>Cap</u>	<u>Skipper Part</u> <u>No.</u>
Valve Element:	TE9A	TC9A	ZCC-01015
Intermediate Element:		2304	DB-2051
Bottom Flange:		569485	SB-2019
Intermediate flange (for DB valves)			

Visual Inspection:

Performed without remarks:

Pressure Test:

Working pressure 2 bar
 Tested for 5 minutes with 5 bar pressure,
 According to procedure no. 02-Q12_Pressure testing Gate_ball Valve

Performed without remarks:

Date: 25/4-24

Sign.: 

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SKIPPER
 C.O. reg no: NO-965378847-MVA

INSPECTION & TEST PROTOCOL FOR SEA VALVE

Document No: Q12-TI-0108-02 2023

SKIPPER sea valve Serial No.:	24265
Class certificate no.:	

Class stamp and certificate no. shall be stamped on main element and bottom flange (welding part)

Class: DNV ABS BV LR RINA NK

Sea valve Type:

		<u>-SA</u>	<u>-SB</u>	<u>-LA</u>	<u>-LB</u>	<u>-F1</u>	<u>SLB</u>	<u>SJB</u>
<u>SB-60</u>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		
<u>DB-60</u>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		
<u>SB-100</u>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<u>DB-100</u>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<u>ETN- 100mm</u>							<input type="checkbox"/>	<input type="checkbox"/>
<u>SB-200-Echo</u>	<input type="checkbox"/>							

Assembly, Items Serial No. / Batch No. / Charge No.:

	<u>Heat no</u> <u>Body</u>	<u>Heat no</u> <u>Cap</u>	<u>Skipper Part</u> <u>No.</u>
Valve Element:	TE9A	TE9A	ZCC-01015
Intermediate Element:		2304	DB-2051
Bottom Flange:		569485	SB-2019
Intermediate flange (for DB valves)			

Visual Inspection:


Performed without remarks:

Pressure Test:

Working pressure 2 bar
 Tested for 5 minutes with 5 bar pressure,
 According to procedure no. 02-Q12_Pressure testing Gate_ball Valve

Performed without remarks:

Date: 25/4-24

Sign.: 

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SKIPPER
 C.O. reg no: NO-965378847-MVA

INSPECTION & TEST PROTOCOL FOR SEA VALVE

Document No: Q12-TI-0108-02 2023

SKIPPER sea valve Serial No.:	24266
Class certificate no.:	

Class stamp and certificate no. shall be stamped on main element and bottom flange (welding part)

Class: DNV ABS BV LR RINA NK

Sea valve Type:

		<u>-SA</u>	<u>-SB</u>	<u>-LA</u>	<u>-LB</u>	<u>-F1</u>	<u>SLB</u>	<u>SJB</u>
SB-60		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		
DB-60		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		
SB-100		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
DB-100		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
ETN- 100mm							<input type="checkbox"/>	<input type="checkbox"/>
SB-200-Echo	<input type="checkbox"/>							

Assembly, Items Serial No. / Batch No. / Charge No.:

	<u>Heat no</u> <u>Body</u>	<u>Heat no</u> <u>Cap</u>	<u>Skipper Part</u> <u>No.</u>
Valve Element:	TC9A	TE9A	ZCC-01015
Intermediate Element:		2301	DB-2051
Bottom Flange:		569485	SB-2019
Intermediate flange (for DB valves)			

Visual Inspection:

Performed without remarks:

Pressure Test:

Working pressure 2 bar

Tested for 5 minutes with 5 bar pressure,

According to procedure no. 02-Q12_Pressure testing Gate_ball Valve

Performed without remarks:

Date: 25/4-24

Sign.: 

PICKING LIST

SKIPPER

SKI-NO: PWO/131341



Printed: 24.04.2024 - 11:16

Operation number Operation Manufacturing area Remaining quantity
PRODUCTION **1 stk**

Note

DB-60-SA-LR

Stockloc / Details	Assignment	Quantity	Product
For operation number 200			
1-L-05-01	SSA/132787-1	✓ 1 stk	DB-1030 <i>569363 0624</i> Sea Valve 60 mm, Intermediate Flange, for DB-60-XA
1-L-05-01	13 stk		
For operation number 100			
1-PALL-00	SSA/132781-1	✓ 1 stk	ZCC-02001 <i>CP3K9</i> Main element DN65 for XB-60-XA
1-PALL-00	20 stk		
For operation number 200			
1-PALL-03-B6	SSA/131822-1	✓ 1 stk	DB-1022 <i>566504 5023</i> Bottom Flange for DB-60-XA
1-PALL-03-B6	3 stk		
1-PALL-06	SSA/133315-1	✓ 1 stk	DB-1021 <i>6228</i> Intermediate Element 60 mm
1-PALL-06	15 stk		
1-PALL-07	SSA/133483-1	1 stk	DB-1031 Top Flange for XB-60-XA
1-PALL-07	25 stk		
1-S-24	SSA/131168-1	4 stk	ZOA-01023 Nut M12 DIN934 A4
1-S-24	127 stk		
1-S-74	SSA/129962-1	1 stk	DB-2040 Washer Ø46x2,5 Ø32,5 for XB-60/100/200-XX
1-S-74	13 stk		
1-T-01	SSA/133510-1	2 stk	DB-2035 Gasket Ø47/32,5 X 20mm for XB-60/100/200-XX
1-T-01	427 stk		
1-T-01	SSA/133655-1	1 stk	DB-2036 Nut M50 Brass for XB-60/100/200-XX
1-T-01	36 stk		
1-T-02	SSA/131169-1	4 stk	ZOA-01035 Spring washer M16 DIN127B A4
1-T-02	80 stk		
1-T-02	SSA/132139-1	4 stk	ZOA-01048 Washer M12 DIN125 A4
1-T-02	296 stk		
1-T-02	SSA/132838-1	2 stk	ZOA-01065 Screw M12x40 mm DIN933 A4-80
1-T-02	180 stk		
1-T-02	SSA/132836-1	4 stk	ZOA-01034 Screw M16x40 DIN933 A4-80
1-T-02	140 stk		
1-T-02	SSA/133576-1	6 stk	ZOA-01066 Spring Washer M12,2 DIN 127B A4
1-T-02	866 stk		
3-A-04	SSA/131679-1	2 stk	ZZA-01127 Metallized, silver polyester label, on roll
3-A-04	3235.5 stk		

Additional parts

Product	Stockloc	Quantity
GVA-LR Sea Valve approval from Lloyds Register		1 stk

S.no. 24269

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SKIPPER

C.O. reg no: NO-965378847-MVA

INSPECTION & TEST PROTOCOL FOR SEA VALVE

Document No: Q12-TI-0108-02 2023

SKIPPER sea valve Serial No.:	24269
Class certificate no.:	

Class stamp and certificate no. shall be stamped on main element and bottom flange (welding part)

Class: DNV ABS BV LR RINA NK

Sea valve Type:

		<u>-SA</u>	<u>-SB</u>	<u>-LA</u>	<u>-LB</u>	<u>-F1</u>	<u>SLB</u>	<u>SJB</u>
<u>SB-60</u>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		
<u>DB-60</u>		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		
<u>SB-100</u>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<u>DB-100</u>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<u>ETN- 100mm</u>							<input type="checkbox"/>	<input type="checkbox"/>
<u>SB-200-Echo</u>	<input type="checkbox"/>							

Assembly, Items Serial No. / Batch No. / Charge No.:

	<u>Heat no</u> <u>Body</u>	<u>Heat no</u> <u>Cap</u>	<u>Skipper Part</u> <u>No.</u>
Valve Element:	CP3K9		ZCC-02001
Intermediate Element:		6228	DB-1021
Bottom Flange:		566504	DB-1022
Intermediate flange (for DB valves)		569363	DB-1030

Visual Inspection:

Performed without remarks:

Pressure Test:


Working pressure 2 bar

Tested for 5 minutes with 5 bar pressure,

According to procedure no. 02-Q12_Pressure testing Gate_ball Valve

Performed without remarks:

Date: 25/4-24

Sign.: 

PICKING LIST

SKIPPER

SKI-NO: PWO/132428

CASE. 130831

Printed: 25.04.2024 - 10:12

Operation number Operation Manufacturing area Remaining quantity
PRODUCTION **1 stk**

Note

DB-100-SB-LR

Stockloc / Details	Assignment	Quantity	Product
For operation number 200			
1-L-03-01	SSA/133306-1	✓ 1 stk	DB-2021 <i>568914</i> <i>1024</i> Bottom Flange for DB-100-SX
1-L-03-01		13 stk	
1-L-05-01	SSA/130923-1	✓ 1 stk	DB-2030 <i>566109</i> <i>4223</i> Intermediate Flange for DB-100-XX
1-L-05-01		3 stk	
For operation number 100			
1-PALL-00	SSA/133188-1	✓ 1 stk	ZCC-01015 Main element, Ball Valve DN100 PN16/3.1.B
1-PALL-00		9 stk	
For operation number 200			
1-PALL-01	SSA/133235-1	✓ 1 stk	DB-2051 <i>2301</i> Intermediate element for xB-100-xB casted
1-PALL-01		4 stk	
1-PALL-03	SSA/132281-1	8 stk	ZOA-01075 Screw M16x55 mm DIN933 A4-80
1-PALL-03		360 stk	
1-PALL-06	SSA/133547-1	1 stk	DB-2031 Top Flange for XB-100/200-XX
1-PALL-06		12 stk	
1-S-74	SSA/132430-1	1 stk	DB-2040 Washer Ø46x2,5 Ø32,5 for XB-60/100/200-XX
1-S-74		192 stk	
1-T-01	SSA/133056-1	12 stk	ZOA-01036 Nut M16 DIN934 A4
1-T-01		1265 stk	
1-T-01	SSA/133510-1	2 stk	DB-2035 Gasket Ø47/32,5 X 20mm for XB-60/100/200-XX
1-T-01		423 stk	
1-T-01	SSA/133655-1	1 stk	DB-2036 Nut M50 Brass for XB-60/100/200-XX
1-T-01		36 stk	
1-T-02	SSA/132835-1	12 stk	ZOA-01035 Spring washer M16 DIN127B A4
1-T-02		338 stk	
3-A-04	SSA/126680-1	2 stk	ZZA-01127 Metallized, silver polyester label, on roll
3-A-04		85 stk	

Additional parts

Product	Stockloc	Quantity
GVA-LR Sea Valve approval from Lloyds Register		1 stk

B / C
Sn. 24268: TE9A / TD9A

SKIPPER Electronics A/S
 Enebakkveien 150
 P.O.Box 151 Manglerud
 N-0612 OSLO

Telephone: +47 23 30 22 70
 Telefax: +47 23 30 22 71
 E-mail: support@skipper.no
 Web page: www.skipper.no

SKIPPER
 C.O. reg no: NO-965378847-MVA

INSPECTION & TEST PROTOCOL FOR SEA VALVE

Document No: Q12-TI-0108-02 2023

SKIPPER sea valve Serial No.:	24268
Class certificate no.:	

Class stamp and certificate no. shall be stamped on main element and bottom flange (welding part)

Class: DNV ABS BV LR RINA NK

Sea valve Type:

		<u>-SA</u>	<u>-SB</u>	<u>-LA</u>	<u>-LB</u>	<u>-F1</u>	<u>SLB</u>	<u>SJB</u>
<u>SB-60</u>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		
<u>DB-60</u>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		
<u>SB-100</u>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<u>DB-100</u>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<u>ETN- 100mm</u>							<input type="checkbox"/>	<input type="checkbox"/>
<u>SB-200-Echo</u>	<input type="checkbox"/>							

Assembly, Items Serial No. / Batch No. / Charge No.:

	<u>Heat no</u> <u>Body</u>	<u>Heat no</u> <u>Cap</u>	<u>Skipper Part</u> <u>No.</u>
Valve Element:	TE9A	TD9A	ZCC-01015
Intermediate Element:		2301	DB-2051
Bottom Flange:		568941	DB-2021
Intermediate flange (for DB valves)		566109	DB-2030

Visual Inspection:

Performed without remarks:

Pressure Test:

Working pressure 2 bar
 Tested for 5 minutes with 5 bar pressure,
 According to procedure no. 02-Q12_Pressure testing Gate_ball Valve

Performed without remarks:

Date: 25/4-24

Sign.: _____



SAMSVARSERKLÆRING

Leverandør / produsent:

Strømmen Dreieverksted AS

Sendt dato:

21-3-2024

SKIPPER bestillings nr:

107177

SKIPPER varenummer:

S13-2019

Revisjon:

04

Antall levert:

30

Stål produsentens Heat / Charge nr:

1. 560485

2.

3.

4.

5.

Batch nr (år-uke-løpenummer):

Eks på batch nr: 13441

24 11

Hvis samme varenummer blir levert mer enn en gang i løpet av uken, skal løpenummer endres fra 1 til 2 o.s.v.

Produsenten/leverandøren erklærer herved at produktet er laget i henhold til SKIPPERs seneste godkjente tegning, og i samsvar med SKIPPERs bestilling.
(Batch nummer skal stemples i materialet)

Dette skjemaet skal følge med varene som blir levert til SKIPPER, og evt. skannes og sendes til SKIPPER sammen med materialsertifikat.

Produktet er målt, kontrollert og godkjent av:

Stempel / Sign:

Strømmen Dreieverksted AS

E-post: firmapost@dreie.no
www.dreie.no

A02/Z03

 INSPECTION CERTIFICATE acc to
 EN 10204 3.1

A06

 SVERDRUP STEEL AS
 STRANDSVINGEN 2
 4032 STAVANGER
 NORWAY

SVQ

Customer References A07 PO-NO02358 125-06911 SVERDRUP S		Alleima References A08 <table border="1"> <thead> <tr> <th>Order No.</th> <th>Subs No.</th> <th>Dispatch note</th> </tr> </thead> <tbody> <tr> <td>605467</td> <td>724624</td> <td>49476/53</td> </tr> <tr> <th>Suppl. No</th> <th>C.Code</th> <td></td> </tr> <tr> <td>284-83616</td> <td>87</td> <td></td> </tr> </tbody> </table>		Order No.	Subs No.	Dispatch note	605467	724624	49476/53	Suppl. No	C.Code		284-83616	87																												
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Material description B01/B04 HOT WORKED BAR STEEL FORGED ANNEALED & STRAIGHTENED PEEL TURNED AND POLISHED Melt Source *) Metallurgical process Origin c70 EAF+AOD+LRF Sweden		Steel/material Designations B02 Alleima SANMAC 316/SANMAC 316L AISI UNS 316/316L S31600/S31603 W.nr EN no 1.4401/1.4404 1.4401/1.4404																																								
Technical requirements B03 EN 10088-3:-2014, EN10272:-2016*, EN10060:2003, EN 10221:1996 EN10222-5:-2017*, PED 2014/68/EU, QQ-S-763 F, NACE MR0175/ISO 15156-3:-2020, NACE MR0103/ISO 17945-1:-2015, ASTM A-276-23, ASME SA-276-ED-23 SECT II PART A, ASTM A-479-23A, ASME SA-479-ED-23 SECT II PART A, ASTM A-484-23A, ASTM A-182-23*, ASTM A-965-23*, ASTM A-314-19*, NORSOK M-630:2020, NORSOK MDS S17 REV. 1 *For detailed information, please see the appendix																																										
EXTENT OF DELIVERY B07-B13 <table border="1"> <thead> <tr> <th>It</th> <th>Product designation</th> <th>Heat</th> <th>Lot</th> <th>Pieces</th> <th>Kg</th> </tr> </thead> <tbody> <tr> <td>01</td> <td>MBR-SANMAC316L-225</td> <td>568409</td> <td>53122</td> <td>1</td> <td>965.0</td> </tr> <tr> <td></td> <td></td> <td>569485</td> <td>89643</td> <td>1</td> <td>1579.0</td> </tr> <tr> <td colspan="4" style="text-align: right;">Total</td> <td>2</td> <td>2544.0</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Heat</th> <th></th> <th>Recycled material(%)</th> </tr> </thead> <tbody> <tr> <td>568409</td> <td>Continuous casting</td> <td>95.1</td> </tr> <tr> <td>569485</td> <td>Continuous casting</td> <td>95.3</td> </tr> </tbody> </table> TEST RESULTS Reduction ratio (times) <table border="1"> <thead> <tr> <th>Lot</th> <th></th> </tr> </thead> <tbody> <tr> <td>53122</td> <td>2.2</td> </tr> <tr> <td>89643</td> <td>2.3</td> </tr> </tbody> </table>				It	Product designation	Heat	Lot	Pieces	Kg	01	MBR-SANMAC316L-225	568409	53122	1	965.0			569485	89643	1	1579.0	Total				2	2544.0	Heat		Recycled material(%)	568409	Continuous casting	95.1	569485	Continuous casting	95.3	Lot		53122	2.2	89643	2.3
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89643	2.3																																									
Quality assurance - Erik Jansson/QA-manager Primary Products A05/Z02 MTC Service / Certificates																																										



Chemical composition (weight%) acc. to ASTM A-751

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
568409	0.010	0.26	1.74	0.030	0.025	16.82	10.12	2.01
569485	0.011	0.27	1.70	0.029	0.023	16.90	10.10	2.01
	N							
568409	0.049							
569485	0.049							

Tensile test at room temperature acc. to ASTM A370/ISO 6892-1

Longitudinal

Location half radius

Lot	Yield strength		Tensile strength	Elongation	
	Mpa	MPa	Mpa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
53122	250	283	524	62	62
89643	248	285	529	63	63

Red.of Area

%

Z

75

74

Transversal, 90° from each other.

Location half radius

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
	Rp0.2	Rp1.0	Rm	A	2"
53122	236	271	523	63	63
	236	271	526	61	61
89643	236	271	531	62	62
	241	280	534	62	62

Red.of Area

%

Z

69

69

69

66

Hardness test acc.to ASTM A-370/ISO 6506-1

Location half radius

Lot	Min	Max
	HB	HB
53122	148	150
89643	132	139
	Min	Max
	HRB	HRB
53122	74	76
89643	74	74

Grain size acc to ASTM E-112.

Location half radius

Lot		
53122	4.0	4.0
89643	4.5	4.5



Impact test, J, Transversal acc. to ASTM A-370

Location half radius

Lot	Single values			Avg.	Temperature
	Joule			Joule	°C
53122	180	146	181	169	20
	159	182	172	171	20
89643	177	170	183	177	20

Following controls/tests have been satisfactorily performed:

- Intergranular corrosion test acc to ASTM A-262 PR.E and EN ISO 3651-2A
- Positive Material Identification (PMI)
- Ultrasonic testing (*)
- Visual inspection and dimensional control.

Heat Treatment:

Solution annealed and quenched.

*) Melt Source

Heat 569485 ALLEIMA AB SWEDEN

Heat 568409 ALLEIMA AB SWEDEN

HEAT TREATMENT:

Up to 35mm: Material soaking 1050°C, min. 20 minutes. Quenched in water. Water temp pre-quench max 38°C, after quench max 49°C.

>35-150mm: In process annealed according to ASTM A484 above the minimum hot rolling temperature of 1010°C and cooled in air.

>150-350mm: Material soaking 1065°C, min. 30 minutes. Quenched in water. Water temp pre-quench max 38°C, after quench max 49°C.

>350-375mm: Material soaking 1050°C, min. 60 minutes. Quenched in water. Water temp pre-quench max 38°C, after quench max 49°C.

>375mm: Material soaking 1050°C, min. 120 minutes. Quenched in water. Water temp pre-quench max 38°C, after quench max 49°C.

The raw material is free from radioactive contamination.

Material free from mercury contamination.

No welding or weld repair.

This is to certify that the contents of this certified material test report are correct and accurate and that all test results and operations are in compliance with the material specification.

Approved acc. AD 2000-Merkblatt W0 and certified acc. to Pressure Equipment Directive (2014/68/EU) by TÜV NORD; notified body, reg.no. 0045.

The material is manufactured according to a Quality system, approved and registered to ISO 9001:2015.



No unauthorized alterations. The contents of this Inspection Certificate may not be modified or revised in any way without the prior written approval of Alleima.

Unauthorized alterations to the Inspection Certificate, including introduction of false, fictitious or fraudulent statements or entries, may be punishable by fines, imprisonment, or both. This Inspection Certificate may be copied only in the manner and for the purposes specified in Section 6 of EN 10204:2004. Contravention of this notice will be prosecuted to the fullest extent of applicable law.

The certificate is produced with EDP and valid without signature.

APPENDIX

Lab accreditation

Our lab is accredited under SWEDAC Accreditation number 1636 for testing as per ISO/IEC 17025

Applicable only to specific dimensions

20mm - 250mm: EN 10088-5 EN (Only valid for CE marked products together with Alleima Declaration of Performance certificate).

20mm - 400mm: PED 2014/68/EU EN 10272 (Stainless steel bars for pressure purposes)

20mm - 375mm: AD-2000-W2/W10

20mm - 450mm: NORSOK M-630 - NORSOK MDS S17

180mm- 450mm: PED 2014/68/EU EN 10222-5 (Chemical composition only)

70mm - 450mm: AMS 5648 Rev. L, AMS 5653 Rev. H

Suitable for manufacturing of components in acc. with *ASTM A-182, (F316/F316L), ASTM A-965, ASTM A-314.

Test location

Mechanical, ferrite, corrosion testing:

Bar dim \leq 50mm - Longitudinal test pieces in center of the bar.

Bar dim > 50mm - 160 mm - Longitudinal test pieces, 1/4 T and minimum 100 mm from any second surface.

Bar dim > 160mm- 450 mm - Transversal test pieces, 1/4 T and minimum 100 mm from any second surface.

One set of test samples per heat treatment lot.

Maximum lot size 15 ton.

Furnace calibration every third month according to API 6A 21th Edition Annex M, Thermocouples of S-type (+/- 5°C tolerance) are used to monitor the Furnace temperature.


Ultrasonic test

Dim 29 - 74 mm: EN 10308 quality class 3

Dim 75 mm - : EN 10228-4, Tab 3 Scan coverage 1a 100%, Tab 5 Quality Class 3, ASTM A-388, API 6A PSL3/3G.



Certificate EN 10204-3.1

Klant/customer:		Certificaat number/certificat number:VT-230517001									
MESON AB											
ORDER NO: IK20439			INVOICE NO: IK20439			DATE: 2023-05-17					
Item	Q'ty	Description	Dn	Rating	Conn.			Material body&cap			
1	300	V2F-BODY	100	PN16	FLANGED NED			EN10213/1.4408			
1	300	V2F-CAP	100	PN16	FLANGED NED			EN10213/1.4408			
Item	Part	Charge Nr.	Q'ty	Pressure Test /Media water	Mechanische eigenschappen /mechanical properties			Kerbschlagarbeit ISO V Probe			
					Tensile strength (N/mm2)	Yieldpoint (N/mm2)	Elongation (%)	Energy Charpy Impact (J)			
					RM	Rp 1.0	A	1	2	3	Σ/3
					PSI	440-640	≥210	≥30%			
1	V2F-BODY	TD9A	102	348	569	256	42,6	162	165	174	167,0
1	V2F-BODY	TC9A	100	348	558	262	41,5	165	169	177	170,3
1	V2F-BODY	TE9A	98	348	562	265	41,8	170	172	175	172,3
1	V2F-CAP	TD9A	101	348	569	256	42,6	162	165	174	167,0
1	V2F-CAP	TC9A	102	348	558	262	41,5	165	169	177	170,3
1	V2F-CAP	TE9A	97	348	562	265	41,8	170	172	175	172,3
CHEMISCHE SAMENSTELLING/CHEMICAL COMPOSITION											
Charge Nr.	C %	Si %	S %	P %	Mn%	Ni %	Cr %	Mo %	Cu %		
	≤0.07	≤1.50	≤0.030	≤0.040	≤1.50	9.0-12.0	18.0-20.0	2.0-2.5	≤0.50		
TD9A	0,041	0,925	0,003	0,025	0,963	9,216	18,244	2,216	0,214		
TC9A	0,052	0,936	0,005	0,028	0,954	9,302	18,412	2,163	0,185		
TE9A	0,048	0,633	0,006	0,024	0,947	9,325	18,336	2,108	0,168		
We hereby certify that material described above has been successfully tested and complies with the terms of the order.						VALVE-TEK CO., LTD.					
						LEE/SALES					

HAITIMA CORPORATION

MATERIAL TEST CERTIFICATE

8F, No. 201, Tiding Blvd. Sec. 2,

Neihu Area Taipei 114 Taiwan

Page: 3

Date: Jun. 19, 2023

Messrs. MESON AB

Contract No.		P.O. IK20378								Invoice No.		HIV063023					
Description		VALVES & FITTINGS								Specification		ACC. TO EN 10204 3.1		Type		EN 1.4408	
Item No.	Size	Quantity	Heat No.		Pressure Test		Finish										
					Shell	Seat											
11	#2052A	40 PC	NBA2		60 BAR	7 BAR	GOOD										
12			N944		60 BAR	7 BAR	GOOD										
13	DN65	140 PC	CP2F2		24 BAR	7 BAR	GOOD										
14			CNCN4		24 BAR	7 BAR	GOOD										
15			CP16M		24 BAR	7 BAR	GOOD										
16			CP3PF		24 BAR	7 BAR	GOOD										
17			CP3K9		24 BAR	7 BAR	GOOD										
18			CP2C1		24 BAR	7 BAR	GOOD										
19			CP3PC		24 BAR	7 BAR	GOOD										
20			CNC SB		24 BAR	7 BAR	GOOD										
Item No.	Spec.	Chemical Composition (%)								Mechanical Properties				Solution Heat Treatment			
		C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Y.S. Mpa	T.S. Mpa	Elongation %		Impact Test		
		Max.	0.070	1.500	1.500	0.040	0.030	20.00	2.50	12.00	0.50	-	640		-	-	1150 C
Min.	-	-	-	-	-	18.00	2.00	9.00	-	210	440	L: 30	60 J	1080 C			
11		0.047	1.082	0.979	0.030	0.005	18.192	2.123	9.190	0.223	299	526	53	194	1080		
12		0.055	1.088	1.064	0.023	0.008	18.077	2.133	9.231	0.210	297	582	53	199	1080		
13		0.049	1.079	0.994	0.031	0.004	18.414	2.251	9.213	0.217	328	567	51	195	1080		
14		0.047	0.934	0.977	0.029	0.006	18.106	2.258	9.054	0.228	306	524	53	195	1080		
15		0.050	0.842	0.949	0.024	0.006	18.184	2.226	9.167	0.220	315	558	47	195	1080		
16		0.060	0.969	0.838	0.031	0.009	18.474	2.043	9.265	0.198	294	513	58	195	1080		
17		0.056	1.035	0.893	0.025	0.005	18.183	2.127	9.094	0.240	297	560	51	204	1080		
18		0.061	0.957	1.054	0.031	0.007	18.084	2.202	9.098	0.219	321	595	52	204	1080		
19		0.055	0.854	0.986	0.022	0.006	18.182	2.225	9.095	0.187	317	562	48	200	1080		
20		0.059	0.891	0.877	0.025	0.005	18.140	2.244	9.198	0.237	326	568	47	196	1080		
Remarks: WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS.											Inspector			Q C Manager			
											<i>Louis Liu</i>			<i>Hanson Chen</i>			