



Certificate for Machinery Equipment

Valves

This is to certify that the undersigned Surveyor to LLOYD'S REGISTER did at the request of the below client, 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	124061
Manufacturer	Jotron Skipper AS
Intended for	Warehouse
Customer Work Order No	124061
Date of issue	19 October 2023
Quantity	1 out of 2 Batch

Particulars

Description	3 off Gate Valves SB-100-SA -LR with Bottom flange
Size	100 mm
Valve body material	Broze
Test pressure body	5 BAR
Test pressure seat	5 BAR
Design pressure	3 BAR
Set pressure if applicable	NA

Identification Marks On Product

I.D number	OSL2350159
Surveyors initials	NA
Date of inspection	NA

Remarks

No remarks raised

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



Page 2 of 2
Certificate No. OSL2350159/2
First Date of Inspection 18 October 2023
Final Date of Inspection 18 October 2023
Office Oslo

Description	Manufacturer Designation	Serial Number	IMO Number
Gate valves		23524, 23525, 23256	0

Packing list

Fakturanummer 1201



SKIPPER ELECTRONICS AS
Postboks 151 Manglerud
0612 OSLO

Kundenr. 16
Fakturadato 07.08.2023
Leveringsdato 07.08.2023
Deres referanse Tore Lundell Olsen
Vår referanse Kristian Langthon Jakobsen
Deres 106050
ordreferanse
Leveringsvilkår Ex Works
Forsinkelsesrente Ved betaling etter forfall beregnes rente etter
forsinkelsesrenteloven

Produktnr.	Beskrivelse	Antall	Enhet	Enhetspris	Sum
121	DB2051 Intermediate element DN100	50,00	stk		
<i>Intermediate element for xB-100-xB casted Leverandørens produkt navn: DB-2051 Intermed.</i>					
HWV					
09.08.2023					
1 Pallet					
80x120x90					
Net Weight 515 KG					
Gross Weight 565 KG					

Address
LANGTHON MARITIME AS
Stabburveien 24
1617 FREDRIKSTAD
Norway

Phone
+4795832432
Email/Website
kristian@langthon.com

Corporate identity no.
NO 920 323 812 MVA
Foretaksregisteret

Sertifika No / Number of Cert.: :2023/009

Tarih/Date

14.02.2023

Firma Adı / Customer Name : :LANGTHON AS/ SKIPPER - PO 452459

Malzeme Kalitesi / Material Standard : CF8M

Sıra Pos	Döküm No/Heat Number	Malzeme Adı / Material Name	Parça Adeti / Material Quantity	Kimyasal Kompozisyon / Chemical Composition							
				% C	% Si	% Mn	% P	% S	% Cr	%Mo	%Ni
				0.08 Max	1.5 Max.	1.5 Max.	0.040 Max	0.030 Max.	17.0-21.0	2.0-3.0	9.0-12.0
1	2211	DN100 INTERMEDIATE ELEMENT	50	0.055	0.684	0.890	0.023	0.026	17.4	2.15	9.11
2	2221	DN100 INTERMEDIATE ELEMENT	50	0.052	0.755	0.951	0.024	0.019	17.3	2.08	9.09
3	2231	DN100 INTERMEDIATE ELEMENT	50	0.051	0.975	0.856	0.026	0.017	17.5	2.09	9.19
4	2241	DN100 INTERMEDIATE ELEMENT	50	0.059	0.791	0.905	0.022	0.014	17.2	2.16	9.21
5	2251	DN100 INTERMEDIATE ELEMENT	50	0.056	0.866	0.910	0.023	0.016	17.5	2.13	9.12

Mekanik Özellikler / Mechanical Properties

Döküm No / Heat Number.	Akma Dayanımı N/mm ² Yield Strength	Çekme Dayanımı N/mm ² Tensile Strength	Uzama / Elongation %	Kesit Daralması / Reduction of Area %	Darbe Testi / Charpy Impact test 1/0°C	Sertlik / Hardness HB
	180 Min.	440	30 Min.	-	-	-
2211	294.3	522.4	46	-	-	-
2221	299.6	526.6	47	-	-	-
2231	293.2	506.2	44	-	-	-
2241	290.1	502.3	42	-	-	-
2251	296.4	515.7	46	-	-	-

Tahribatsız Testler / Non Destructive Tests

Döküm No / Heat Number.	Parça Adeti / Material Quantity	MT	PT	UT	RT	VT	Microstructure Ranges
2211	50	-	-	-	-	OK	-
2221	50	-	-	-	-	OK	-
2231	50	-	-	-	-	OK	-
2241	50	-	-	-	-	OK	-
2251	50	-	-	-	-	OK	-

Uygulanan Isıl İşlemler / Heat Treatment Applied

Döküm No / Heat Number.	Parça Adeti / Material Quantity	Normalizing °C	Annealing °C	Stress Relieving °C	Quenching °C	Tempering °C
2211	50	1100°C/ 2 Hours	-	-	-	-
2221	50	1100°C/ 2 Hours	-	-	-	-
2231	50	1100°C/ 2 Hours	-	-	-	-
2241	50	1100°C/ 2 Hours	-	-	-	-
2251	50	1100°C/ 2 Hours	-	-	-	-

We hereby certify that the material has been made by an approval process and satisfactorily tested in accordance with the rules of BV,LR and DNV-GL.

Surface quality is suitable with eye examination of MSS SP55 Standard.

KONTROL / CONTROLLED BY		ONAY / APPROVED BY		GÖZETİM / WITNESS BODY (if necessary)
Adı / Name	Tuncay SARAÇ	Adı / Name	Hakan ÇALIŞKAN	
Ünvanı / Title	Quality Control Engineer	Ünvanı / Title	Quality Manager	
İmza / Signature		İmza / Signature		
Tarih / Date	14.02.2023	Tarih / Date	14.02.2023	

CERTIFICATES:(Validities:DD/MM/..YY)

Naviga Certification ISO 9001:2015 Cert No:2140003(10.01.2023-06.01.2024)

DNV-GL : Certificate No:AMMM00002YE (05.04.2022-04.04.2025)

Bureau Veritas-Mode II Survey Scheme- Marine Division Cert No:SMS.W.II./57463/A.0 (09.11.2022-27.02.2026)

Lloyd's Register-Certificate No:LR2004266WA (03.07.2020-02.07.2023)



PICKING LIST



SKI-NO: PWO/124061



Printed: 16.10.2023 - 09:45

Operation number
100



Operation
Assembly

Manufacturing area
PRODUCTION

Remaining quantity
3 stk

Note

SB-100-SA-LR

Stockloc / Details	Assignment	Quantity	Product
For operation number 100			
1-PALL-01	SSA/127671-1	3 stk	ZCC-01011
1-PALL-01	14 stk		Main element DN100 PN16/3.1.B RG5/Bronze, Gate valve, Certificat 3.1.B / TDC
LAGER 20-L20-1-	2 stk		Picking blocked
1-PALL-01	SSA/129673-1	3 stk	DB-2051
1-PALL-01	4 stk		Intermediate element for xB-100-xB casted
1-PALL-03-B6	SSA/129704-1	6 stk	DB-2035
1-PALL-03-B6	11 stk		Gasket Ø47/32,5 X 20mm for XB-60/100/200-XX
1-PALL-06	SSA/130462-1	3 stk	SB-2019 <i>567560</i>
1-PALL-06	23 stk		Bottom flange for SB-100-xx
1-PALL-07	SSA/130093-1	3 stk	DB-2031
1-PALL-07	3 stk		Top Flange for XB-100/200-XX
1-S-74	SSA/128969-1	3 stk	DB-2040
1-S-74	121 stk		Washer Ø46x2,5 Ø32,5 for XB-60/100/200-XX
1-T-01	SSA/129158-1	24 stk	ZOA-01075
1-T-01	460 stk		Screw M16x55 mm DIN933 A4-80
1-T-01	SSA/129638-1	36 stk	ZOA-01036
1-T-01	160 stk		Nut M16 DIN934 A4
1-T-02	SSA/129136-1	36 stk	ZOA-01035
1-T-02	348 stk		Spring washer M16 DIN127B A4
1-T-02	SSA/129959-1	3 stk	DB-2036
1-T-02	5 stk		Nut M50 Brass for XB-60/100/200-XX
3-PRINT	SSA/126430-1	3 stk	ZZA-01127
3-PRINT	546.5 stk		Metallised polyester label on roll

B / C Int.med

23524: 1N96 - 1N10 2219

23525: 1U73 / 1N10 2221

23526: 1U73 / 1N10 2221

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 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

SKIPPER sea valve Serial No.:	23525
Class certificate no.:	

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

Class: DNVGL ABS BV LR RINA

Sea valve Type:

		-SA	-SB	-LA	-LB	-F1	SLB	SJB
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 checked="" type="checkbox"/>	<input 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.:

	Heat no Body	Heat no Cap	Skipper Part No.
Valve Element:	1073	1N10	ZCC-01011
Intermediate Element:		2221	DB-2051
Bottom Flange:		567560	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: 17/10

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

SKIPPER sea valve Serial No.:	23524
Class certificate no.:	

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

Class: DNVGL ABS BV LR RINA

Sea valve Type:

		-SA	-SB	-LA	-LB	-F1	SLB	SJB
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 checked="" type="checkbox"/>	<input 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:	7N96	7N10	ZCC-01011
Intermediate Element:		2211	DB-2051
Bottom Flange:		567560	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: 17/10

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

SKIPPER sea valve Serial No.:	23526
Class certificate no.:	

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

Class: DNVGL ABS BV LR RINA

Sea valve Type:

		-SA	-SB	-LA	-LB	-F1	SLB	SJB
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 checked="" type="checkbox"/>	<input 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:	1073	1210	ZCC-01011
Intermediate Element:		2221	DB-2051
Bottom Flange:		567560	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: 17/10

Sign.: 



SAMSVARSERKLÆRING

Leverandør / produsent:

Strømmen Dreieverksted AS

Sendt dato:

26/07-2023

SKIPPER bestillings nr:

105494

SKIPPER varenummer:

SB-2019

Revisjon:

04

Antall levert:

30

Stål produsentens Heat / Charge nr:

1. 567560

2.

3.

4.

5.

Batch nr (år-uke-løpenummer):

Eks på batch nr: **13441**

3323

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

Strømmen Dreieverksted A/S

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

Stempel / Sign:

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	%	%
23551	Rp0.2	Rp1.0	Rm	A	2"
	241	328	529	48	48
	Red.of Area				
	%				
	Z				
	67				

Transversal, 90° from each other.

Location half radius

Lot	Yield strength		Tensile strength	Elongation	
	MPa	MPa	MPa	%	%
23551	Rp0.2	Rp1.0	Rm	A	2"
	222	326	534	51	51
	234	324	534	50	50
	Red.of Area				
	%				
	Z				
	69				
	70				

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

Location half radius

Lot	Min	Max
23551	145	145
Lot	Min	Max
Lot	HRB	HRB
23551	78	78

Grain size acc to ASTM E-112.

Location half radius

Lot		
23551	3.0	3.0

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

Location half radius

Lot	Single values			Avg.	Temperature
	Joule			Joule	°C
23551	148	148	140	145	20
	138	142	150	143	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 567560 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 <=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.

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



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Homepage: www.goepfert-ag.com

Göpfert AG • Industriestr. • D-25795 Weddingstedt

Skipper Electronics A/S
PO Box 151
Manglerud
0612 Oslo / NORWAY

Weddingstedt , 22.02.2023

Inspection certificate EN 10204 - 3.1

We herewith confirm that our delivery correspond to the requirements of the order and that it is asbestos-free

Order-No.:

delivery-note-No.:

106197

122204062

From: 20.12.2022

from: 17.02.2023

Your article: ZCC-01011

Our article: A350106

5 pcs body:
Gate valve DIN 3352 T2 PN16
with indicator DN 100
with full bore $\varnothing = 102$ mm
screws: stainless steel 1.4401
flanges PN16 dim. and drilled

Chemical Analysis	MATERIAL:	TEST-No.:	Mark.:
Casting Date 14.01.2021	CuSn5Zn5Pb5-C acc. to EN 1982	211U73	1U73
Cu % 83,10	Zn % 4,40	Fe % 0,05	P % 0,01
Sn % 5,22	Ni % 1,69	Al % < 0,01	Sb % 0,07
Pb % 5,38		S % 0,05	Si % 0,00

PHYSICAL CHARACTERISTIC

Tensile strenght Rm N/mm ²	Proof stress Rp 0,2 N/mm ²	Elongation A 5%
220	130	14

Expert of Work
QS-23
Uwe Stübe

Vorstand:
Jörg Barnwatter

Aufsichtsrat:
Jens Barnwatter
Manfred Breuell
Andreas Sattler

Handelsregister:
HRB Nr. PI 1729

Bankverbindungen:
Volksbank Dithm., Heide (BLZ 218 900 22) Kto.Nr. 1 114 190
IBAN DE54 2189 0022 0001 1141 90 • Swift: GENODEF1DVR
Commerzbank AG (BLZ 218 400 78) Kto.Nr. 43 999 86
IBAN DE75 2184 0078 0439 9986 00 • Swift: COBADEFF218

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Göpfert AG
ARMATURENFABRIK
UND METALLGIESSEREI

Göpfert AG • Industriestr. • D-25795 Weddingstedt

Skipper Electronics A/S

PO Box 151

Manglerud

0612 Oslo / NORWAY

Weddingstedt , 22.02.2023

Inspection certificate EN 10204 - 3.1

We herewith confirm that our delivery correspond to the requirements of the order and that it is asbestos-free

Order-No.:

delivery-note-No.:

106197

122204062

From: 20.12.2022

from: 17.02.2023

Your article: ZCC-01011

Our article: A350106

4 pcs body:
Gate valve DIN 3352 T2 PN16
with indicator DN 100
with full bore Ø = 102 mm
screws: stainless steel 1.4401
flanges PN16 dim. and drilled

Chemical Analysis	MATERIAL:	TEST-No.:	Mark.:
Casting Date 14.01.2021	CuSn5Zn5Pb5-C acc. to EN 1982	211U74	1U74
Cu % 84,60	Zn % 4,32	Fe % 0,06	P % 0,01
Sn % 4,74	Ni % 1,65	Al % < 0,01	Sb % 0,06
Pb % 4,42		S % 0,04	Si % 0,00

PHYSICAL CHARACTERISTIC

Tensile strenght Rm N/mm ²	Proof stress ₂ Rp 0,2 N/mm ²	Elongation A 5%
220	130	14

Expert of Work

QS-23

Uwe Stübe

Vorstand:
Jörg Bamwater

Aufsichtsrat:
Jens Bamwater
Manfred Breuell
Andreas Sattler

Handelsregister:
HRB Nr. PI 1729

Bankverbindungen:
Volksbank Dithm., Heide (BLZ 218 900 22) Kto.Nr. 1 114 190
IBAN DE54 2189 0022 0001 1141 90 • Swift: GENODEF1DVR
Commerzbank AG (BLZ 218 400 78) Kto.Nr. 43 999 86
IBAN DE75 2184 0078 0439 9986 00 • Swift: COBADEFF218

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Homepage: www.goepfert-ag.com

Göpfert AG
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PO Box 151

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0612 Oslo / NORWAY

Weddingstedt , 22.02.2023

Inspection certificate EN 10204 - 3.1

We herewith confirm that our delivery correspond to the requirements of the order and that it is asbestos-free

Order-No.:

delivery-note-No.:

106197

122204062

From: 20.12.2022

from: 17.02.2023

Your article: ZCC-01011

Our article: A350106

11 pcs body:
Gate valve DIN 3352 T2 PN16
with indicator DN 100
with full bore Ø = 102 mm
screws: stainless steel 1.4401
flanges PN16 dim. and drilled

Chemical Analysis	MATERIAL:	TEST-No.:	Mark.:
Casting Date 30.01.2023	CuSn5Zn5Pb5-C acc. to EN 1982	231N96	1N96
Cu % 82,40	Zn % 5,25	Fe % 0,07	P % 0,01
Sn % 4,74	Ni % 1,83	Al % < 0,01	Sb % 0,06
Pb % 5,50		S % 0,04	Si % 0,01

PHYSICAL CHARACTERISTIC

Tensile strenght Rm N/mm ²	Proof stress ₂ Rp 0,2 N/mm ²	Elongation A 5%
240	130	17

Expert of Work

QS-23

Uwe Stübe

Vorstand:
Jörg Bamwater

Aufsichtsrat:
Jens Bamwater
Manfred Breuell
Andreas Sattler

Handelsregister:
HRB Nr. PI 1729

Bankverbindungen:
Volksbank Dithm., Heide (BLZ 218 900 22) Kto.Nr. 1 114 190
IBAN DE54 2189 0022 0001 1141 90 • Swift: GENODEF1DVR
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Göpfert AG
ARMATURENFABRIK
UND METALLGIESSEREI

Göpfert AG • Industriestr. • D-25795 Weddingstedt

Skipper Electronics A/S

PO Box 151

Manglerud

0612 Oslo / NORWAY

Weddingstedt , 22.02.2023

Inspection certificate EN 10204 - 3.1

We herewith confirm that our delivery correspond to the requirements of the order and that it is asbestos-free

Order-No.:

delivery-note-No.:

106197

122204062

From: 20.12.2022

from: 17.02.2023

Your article: ZCC-01011

Our article: A350106

10 pcs body:
Gate valve DIN 3352 T2 PN16
with indicator DN 100
with full bore $\varnothing = 102$ mm
screws: stainless steel 1.4401
flanges PN16 dim. and drilled

Chemical Analysis	MATERIAL:	TEST-No.:	Mark.:
Casting Date 30.01.2023	CuSn5Zn5Pb5-C acc. to EN 1982	231N97	1N97
Cu % 83,10	Zn % 4,70	Fe % 0,05	P % 0,01
Sn % 4,73	Ni % 1,83	Al % < 0,01	Sb % 0,06
Pb % 5,43		S % 0,03	Si % 0,00

PHYSICAL CHARACTERISTIC

Tensile strenght Rm N/mm ²	Proof stress ₂ Rp 0,2 N/mm ²	Elongation A 5%
240	130	17

Expert of Work

QS-23

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Order-No.:

delivery-note-No.:

106197

122204062

From: 20.12.2022

from: 17.02.2023

Your article: ZCC-01011

Our article: A350106

29 pcs bonnet:
Gate valve DIN 3352 T2 PN16
with indicator DN 100
with full bore $\varnothing = 102$ mm
screws: stainless steel 1.4401
flanges PN16 dim. and drilled

Chemical Analysis	MATERIAL:	TEST-No.:	Mark.:
Casting Date 30.11.2022	CuSn5Zn5Pb5-C acc. to EN 1982	221N10	1N10
Cu % 83,40	Zn % 5,20	Fe % 0,06	P % 0,02
Sn % 4,53	Ni % 1,87	Al % < 0,01	Sb % 0,05
Pb % 4,79		S % 0,04	Si % 0,00

PHYSICAL CHARACTERISTIC

Tensile strenght Rm N/mm ²	Proof stress ₂ Rp 0,2 N/mm ²	Elongation A 5%
250	120	25

Expert of Work
QS-23
Uwe Stübe

Vorstand:
Jörg Bamwater

Aufsichtsrat:
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Manfred Breuell
Andreas Sattler

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0612 Oslo / NORWAY

Weddingstedt , 22.02.2023

Inspection certificate EN 10204 - 3.1

We herewith confirm that our delivery correspond to the requirements of the order and that it is asbestos-free

Order-No.:

delivery-note-No.:

106197

122204062

From: 20.12.2022

from: 17.02.2023

Your article: ZCC-01011

Our article: A350106

1 pcs bonnet:
Gate valve DIN 3352 T2 PN16
with indicator DN 100
with full bore $\varnothing = 102$ mm
screws: stainless steel 1.4401
flanges PN16 dim. and drilled

Chemical Analysis	MATERIAL:	TEST-No.:	Mark.:
Casting Date 19.07.2021	CuSn5Zn5Pb5-C acc. to EN 1982	211Z85	1Z85
Cu % 82,90	Zn % 5,79	Fe % 0,06	P % 0,01
Sn % 4,68	Ni % 1,85	Al % < 0,01	Sb % 0,05
Pb % 4,48		S % 0,04	Si % 0,00

PHYSICAL CHARACTERISTIC

Tensile strenght Rm N/mm ²	Proof stress Rp 0,2 N/mm ²	Elongation A 5%
210	110	16

Expert of Work

QS-23

Uwe Stübe

Vorstand:
Jörg Barmwater

Aufsichtsrat:
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Manfred Breuell
Andreas Sattler

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