



## TECHNICAL DATA REACH STACKER

### Lifting data

Lifting capacity at load centre L4, rated - at max lifting height	kg	45000 - 63000
Lifting capacity at load centre L5, rated-at max lifting height	kg	31000
Lifting speed, unloaded - at 80% of rated load	m/s	0,34 - 0,22
Lowering speed, unloaded - at rated load	m/s	0,36 - 0,36

### Driving data

Travelling speed forward, unloaded - at rated load	km/h	28 - 27
Travelling speed backward, unloaded - at rated load	km/h	18 - 17
Gradeability, at 2 km/h unloaded - at rated load	%	33 - 20
Max gradeability, unloaded - at rated load	%	42- 31
Max drawbar pull	kN	358
Stability according to EN 1459		

### Weight of truck

Service weight	kg	71000
Axle load front at load centre L4, unloaded - at rated load	kg	37200-102600
Axle load front at load centre L5, unloaded - at rated load	kg	41400-95000
Axle load front at driving position according to EN 1459 at rated load	kg	89400
Axle load rear at load centre L4, unloaded - at rated load	kg	33800-13400
Axle load rear at load centre L5, unloaded - at rated load	kg	29600-7000
Axle load rear at driving position according to EN 1459 at rated load	kg	26600

## RSV 4531

### Transmission

Manufacturer - type		Dana - TE 30
Clutch, type		torque converter
Gear box, type		power shift
N° of gears, forward - reverse		5 - 3
Driving axle, type		Kessler

### Wheels

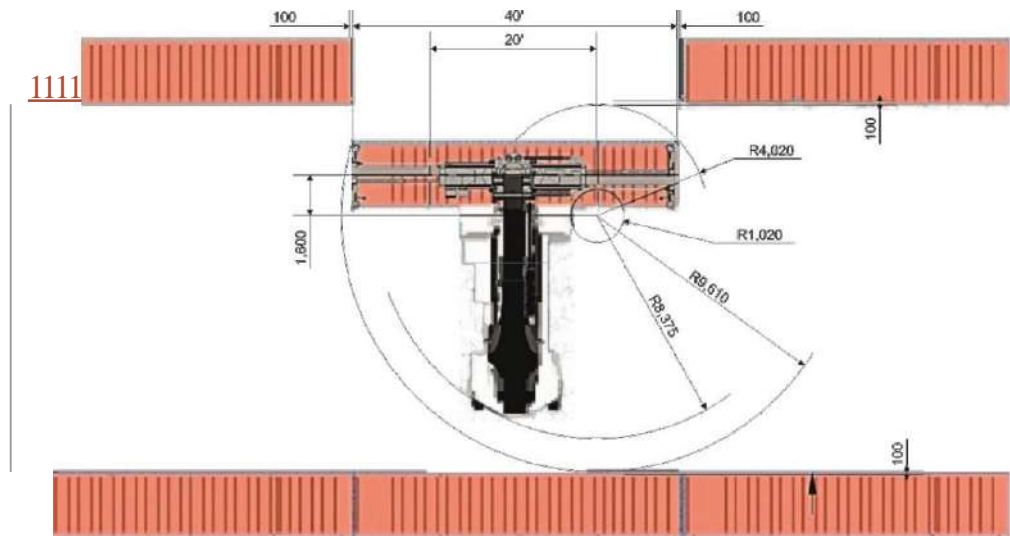
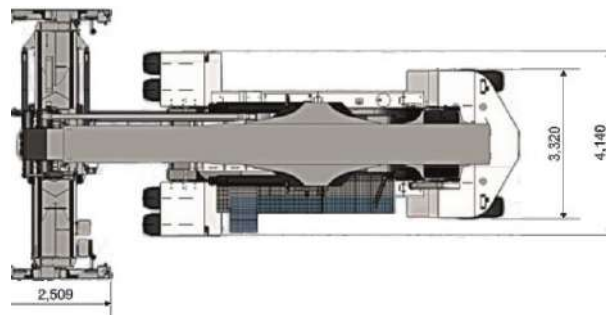
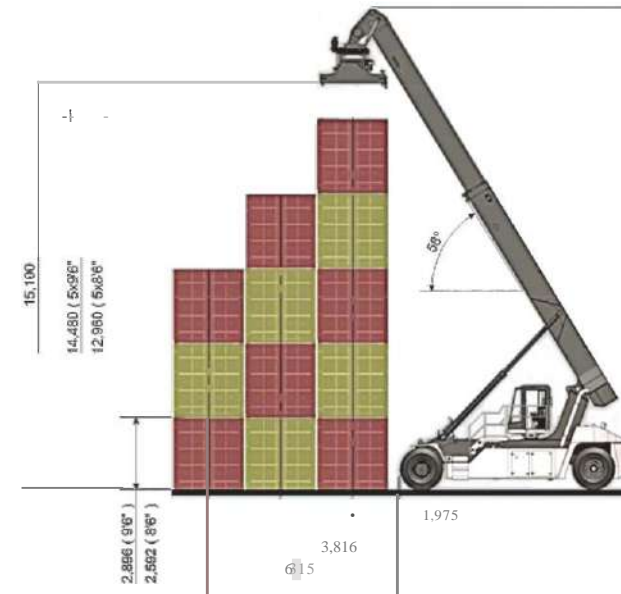
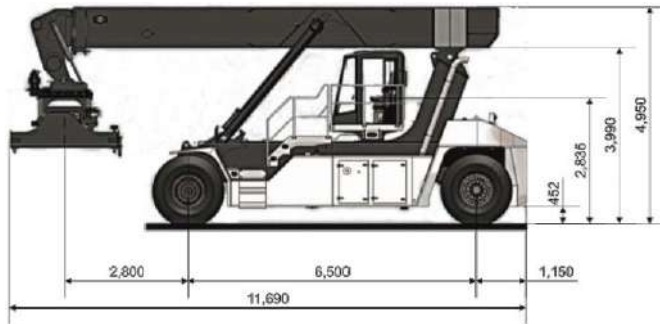
Type		pneumatic
Dimension		18.00-25 40 PR
N° of wheels, front - rear		4 - 2

### Miscellaneous

Steering system, type		servo assisted
Service brake, type		WDB - drive wheel
Parking brake, type		spring - drive wheel
Max hydraulic pressure	Mpa	32
Noise level according to DIN 45635, cabin	dbA	
Noise level according to 2000/14/EC, outside	dbA	
Fuel volume	L	600
Hydraulic oil volume	L	620
Overload protection		electronic

## ENGINE OPTIONS

Manufacturer- type	Fuel-type of engine	No of cylinders- displacement	Power according ISO3046 at rvs	Torque according ISO3046 at rvs	Alternator, type-A	Starting battery, V- Capacity
		L	kW/RPM	Nm/RPM	A	V-Ah
Volvo TAD1151VE, Stage IIIA/Tier 3	Diesel- 4 stroke	6-10,84	265/1450-2100	1785/1260	24V-110/150	2x12-140
CUMMINS X12 Stage IIIA/Tier 3	Diesel- 4 stroke	6-11,8	250/2100	1695/1400	24-110	2x15-140
CUMMINS X12 Stage V/Tier 4F	Diesel- 4 stroke	6-11,8	250/2100	1695/1400	24-110	2x15-140









Apart from having BoM on every assembly drawing, there is a Global BoM of the whole machine. It includes information for all parts and assemblies like:

- Description;
- Material;
- Quantity;
- Supplier;
- Weight;
- Commercial code and so on.

BILL OF MATERIALS - RSV4531													
Hierarchy	Part Number	Description	QTY.			Weight, Kg		Material	Assortment	Length of stock Дължина на заготовката, мм	Drawing, Y/N	Position in Assy	From Assembly
			Single	Total	Type	Single	Total						
2132	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15	7000017	Power Line Assembly	1	1	СБ	6897,78	6897,78			Y	2	7000016
2133	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.01	7400001	Transmission Support	2	2	СБ	7,54	15,28			Y	3	7000017
2134	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.01.01	8400001	Plate	1	2	Дер	4,34	8,68	S275J0	Лист	Y	1	7400001
2135	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.01.02	8400002	Plate	1	2	Дер	2,54	5,28	S275J0	Лист	Y	2	7400001
2136	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.01.03	8400003	Plate	1	2	Дер	0,39	0,78	S275J0	Лист	Y	3	7400001
2137	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.01.04	8400004	Plate	1	2	Дер	0,27	0,54	S275J0	Лист	Y	4	7400001
2138	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.02	7400002	Engine & Transmission Support	1	1	СБ	24,62	24,62			Y	4	7000017
2139	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.02.01	7400003	Support	1	1	СБ	8,99	8,99			Y	2	7400002
2140	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.02.01.01	8400005	Plate	1	1	Дер	1,41	1,41	S275J0	Лист	Y	1	7400003
2141	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.02.01.02	8400006	Plate	1	1	Дер	7,58	7,58	S275J0	Лист	Y	2	7400003
2142	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.02.02	7400004	Support	1	1	СБ	15,63	15,63			Y	1	7400002
2143	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.02.02.01	8400007	Bent Plate	1	1	Дер	10,65	10,65	S275J0	Лист	Y	1	7400004
2144	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.02.02.02	8400008	Plate	1	1	Дер	0,55	0,55	S275J0	Лист	Y	2	7400004
2145	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.02.02.03	8400009	Plate	1	1	Дер	3,80	3,80	S355J2G3	Лист	Y	3	7400004
2146	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.02.02.04	8400010	Plate	1	1	Дер	0,63	0,63	S275J0	Лист	Y	4	7400004
2147	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.02.03	1010004	DIN 931 - Bolt M14x110x34 - 8.8	4	4	Пок					N	5	7400002
2148	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.02.04	1140004	DIN 982 - Nut M14 - 8	4	4	Пок					N	4	7400002
2149	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.02.05	1200007	Washer DIN 125 - A 15 - St	8	8	Пок					N	3	7400002
2150	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.03	7400005	Engine & Transmission Support	1	1	СБ	24,62	24,62			Y	5	7000017
2151	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.03.01	7400006	Support	1	1	СБ	8,99	8,99			Y	2	7400005
2152	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.03.01.01	8400005	Plate	1	1	Дер	1,41	1,41	S275J0	Лист	Y	1	7400006
2153	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.03.01.02	8400006	Plate	1	1	Дер	7,58	7,58	S275J0	Лист	Y	2	7400006
2154	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.03.02	7400007	Support	1	1	СБ	15,63	15,63			Y	1	7400005
2155	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.03.02.01	8400011	Bent Plate	1	1	Дер	10,65	10,65	S275J0	Лист	Y	1	7400007
2156	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.03.02.02	8400008	Plate	1	1	Дер	0,55	0,55	S275J0	Лист	Y	2	7400007
2157	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.03.02.03	8400009	Plate	1	1	Дер	3,80	3,80	S355J2G3	Лист	Y	3	7400007
2158	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.03.02.04	8400010	Plate	1	1	Дер	0,63	0,63	S275J0	Лист	Y	4	7400007
2159	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.03.03	1010004	DIN 931 - Bolt M14x110x34 - 8.8	4	4	Пок					N	5	7400005
2160	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.03.04	1140004	DIN 982 - Nut M14 - 8	4	4	Пок					N	4	7400005
2161	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.03.05	1200007	Washer DIN 125 - A 15 - St	8	8	Пок					N	3	7400005
2162	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.04	5400002	silent-block (трампов за двигателя/трансмисия)	4	4	Пок					N	6	7000017
2163	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.05	8400012	Брекет	2	2	Пок	23,39	46,78	S355J2G3		Y	8	7000017
2164	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.06	8400013	Rim Support	2	2	Пок	50,44	100,88	S355J2G3		Y	9	7000017
2165	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.07	5400003	Engine Volvo TAD 1151 VE and Radiator Assembly	1	1	Пок	1400,00	1400,00			Catalogue	2	7000017
2166	1.11.09.04.15.02.11.20.13.18.08.07.13.29.12.15.07.01	5400017	Engine Volvo TAD 1151 VE	1	1	Пок					Catalogue	1	100-A-1

Powerline Coupling Calculations.  
Speeds and reduction ratios. Made by DANA according to Engine type and Drive axle reduction ratio.

Customer : CVS  
Application : RSV4531

Approval no. 06473811  
11 AUG 115 sheet 1 of 4

pump drive ratio : 0.958

105.00 l/min at 1000 RPM & 3.45 bar =	18.5 Nm lift
38.00 l/min at 1000 RPM & 4.00 bar =	7.2 Nm steer
75.00 l/min at 1000 RPM & 3.45 bar =	13.3 Nm lift
12.00 l/min at 2000 RPM & 6.90 bar =	1.5 Nm brake
28 GPM at 2000 RPM & 22.41 bar =	28.2 Nm charging pump
Total non-std accessories : = 68.7 Nm	

157LTB30510

VOLVO  
TAD1151VE  
converter  
stall at  
1134 Nm @ 1886

(full powershift)	
TR-PWD	TR-REV
4.78	4.78
2.50	2.50
1.64	1.09
1.09	
0.72	

### Engine Installation Approval

VOLVO PENTA

Company name AB Volvo Penta, Göteborg, Sweden Street Chrystian Högskule City Göteborg	Date of Agreement 06.12.2016	Page 1 (4) Agreement No. SL115-1
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PRODUCT APPLICATION AGREEMENT Controlled

TBD  
Marek Tunski  
Sara Rodelius

OEM Project manager  
VP Sales Manager  
VP Sales Engineering Manager

**CONTENTS**

General information	2
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Comment	3
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### Kessler Approval

KESLER

Date: 21.09.2016

Customer: Kessler + Co GmbH & Co. KG  
Address: Hülshagen Straße 19/20  
72433 Adzigenried  
Germany

Information furnished by J. Tiller, Fabrikka Praha  
Telephone: +39 023 202222  
E-Mail: j.tiller@kessler.com

Tel: +49 (0) 71 9691-0  
Fax: +49 (0) 71 9691-49  
info@kessler.com  
www.kessler.com

Model designation: RSV-531  
Application: Reach Stacker

Current Model:  New Model:

Painted Units per Year: 50  
Annual Vehicle Usage in Hours: 2500-4000  
Expected Years of Life (on Rebuilding): 10

1. Axle Arrangement	1 2 3 4	Axle
Steerability/Max. Lock Angle	3	25°
Drive Axle	X	
Drive Assembly Description		
Wheel/Bolt	1000	

2. Gross Weight	Fully Loaded	115.5	Empty	76.3	kg
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3. Axle Loads Fully Loaded at v=10 km/h	305.2	kg
Axle Loads Unloaded at v=10 km/h	27	kg
Axle Loads for Special Applications v<25 km/h	48.8	kg

4. Max. Static Axle Loads	184.2	kg
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5. Max. Static Wheel Loads	61	kg
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Soll 02/010 20.09.15 WAK001

KESLER

Max. Axle Load at v=25 km/h = 1.010.000 N  
 Max. Static Axle Load = 1.500.000 N  
 Max. Braking Torque per Hub End = 300.000 Nm  
 Operation: Max. Braking Torque = 7.200 Nm  
 Max. Torque = 13.000.000 Nm  
 Oil quantity: Drive Assembly = 1 Hub Assembly = 1

Scale: 1:10

Date: 02.08.2015

Design: L. F. 1718

Check: S. 1718

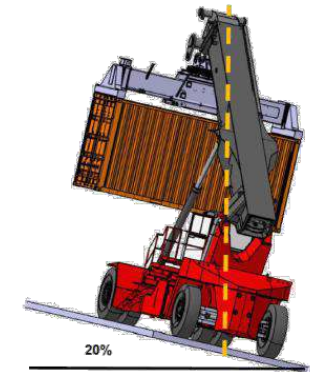
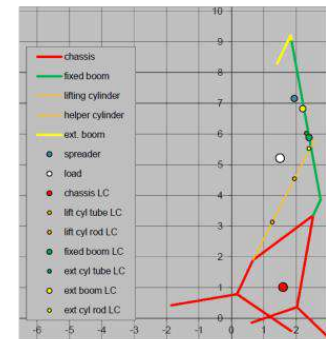
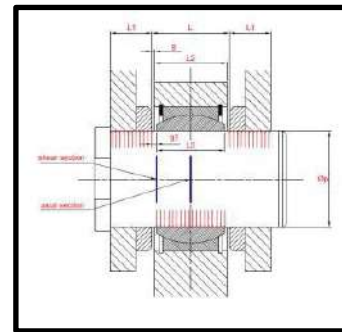
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101.2452.3

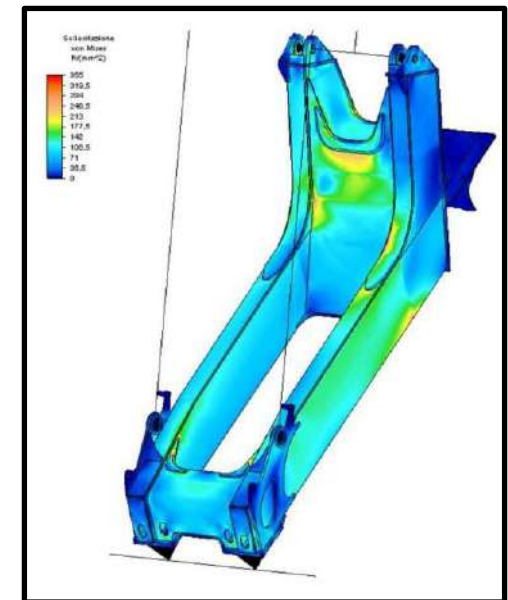
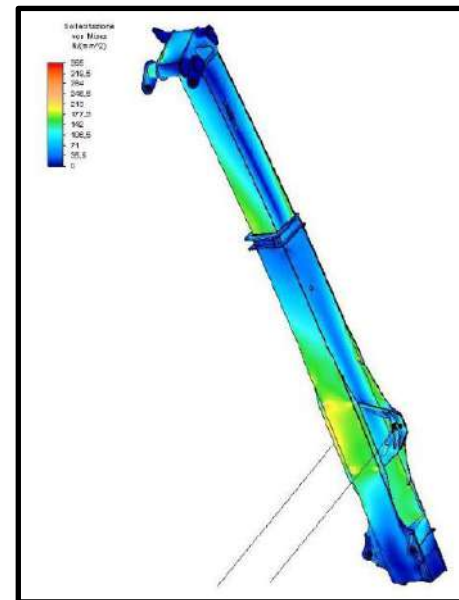
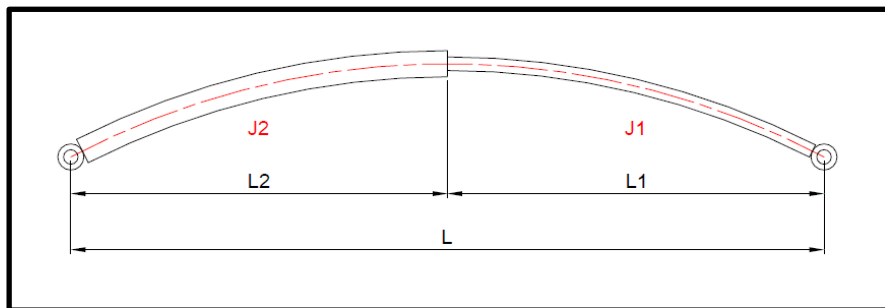


A Calculation report have been developed for the truck covering the following:

- Loads, load combinations, load cases, according to DIN 15018;
- Extension and fixed boom verification;
- Chassis verification;
- Lifting cylinders verification;
- Pin verification;
- Brake verification;
- General stability verification;
- FEA of boom and chassis.

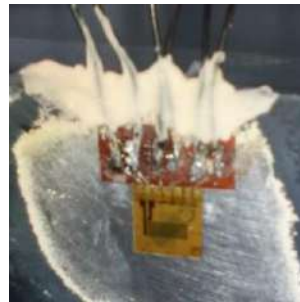


wind upsetting moment 11 kNm  
 weights moment 40 kNm  
 resulting moment 28 kNm

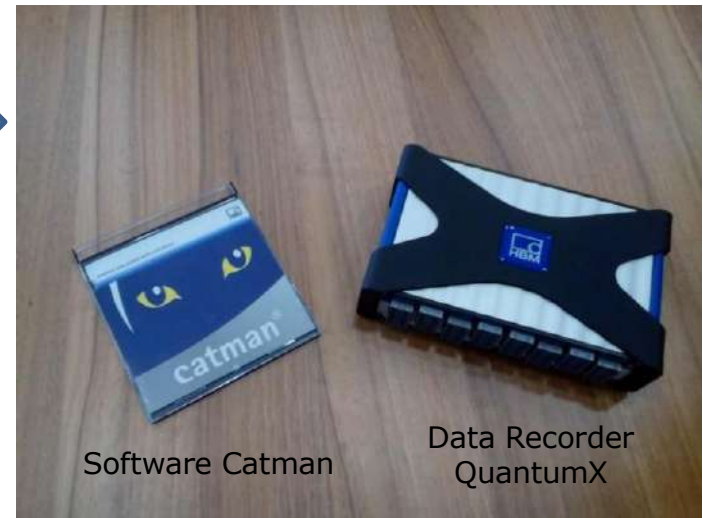
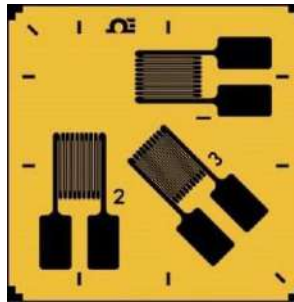




Set of tools and accessories



Strain gauge rosette



Software Catman

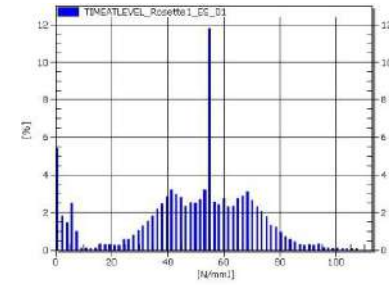
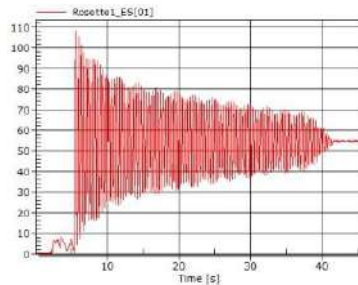
Data Recorder QuantumX



45t



[TensileStrengthProcedure](#)  
[StrainGaugeMeasurementReport](#)



Formatting and analysis of the recorded data

## Electronic Control Systems IQAN System Products



IQAN-MD4



IQAN-XA2  
IQAN-XS2



IQAN software



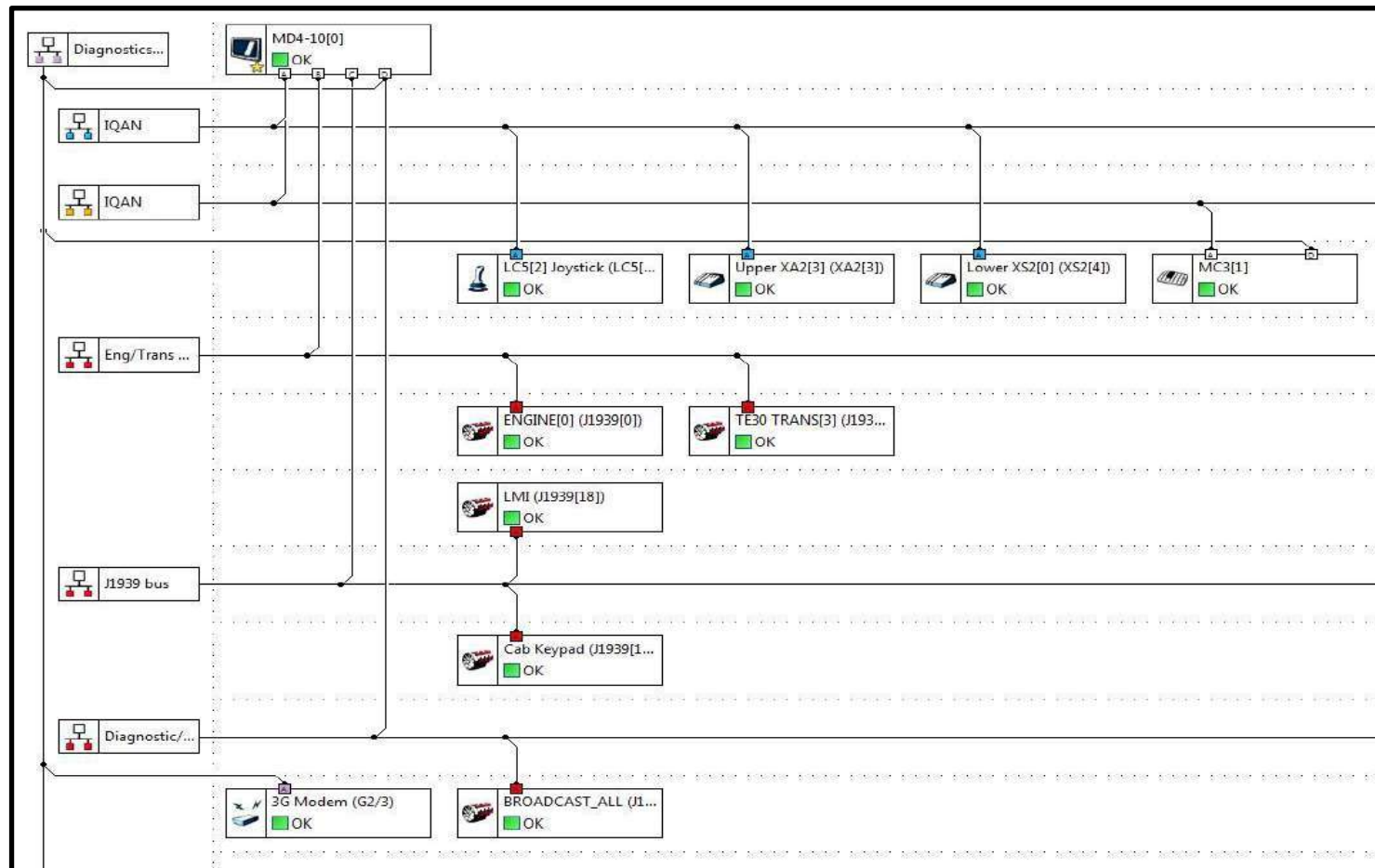
IQAN-MC3



IQAN-LC5-C01-MPB8W0T1

- The electronic control of the machine is being implemented through the collaboration of IQAN software, joystick, display and the controllers:
  - XA 2 – „Spreader“ control
  - XS 2 – Movement and hydraulic system
  - MC 3 – Safety

The display (MD4) is the master controller and makes all the calculations. It communicates with all main components in the machine via CAN wires from which it receives values.





IQAN Creative Studio is a user-programmable software. It includes tools for application development, simulation and initial setup.

- IQANdesign– for the design of the actual crane software
- IQANsimulate– used to simulate the program while in the development phase
- IQANrun– a diagnostic tool used to update and troubleshoot production machines

## PROEMION

Telematics Systems



Optional

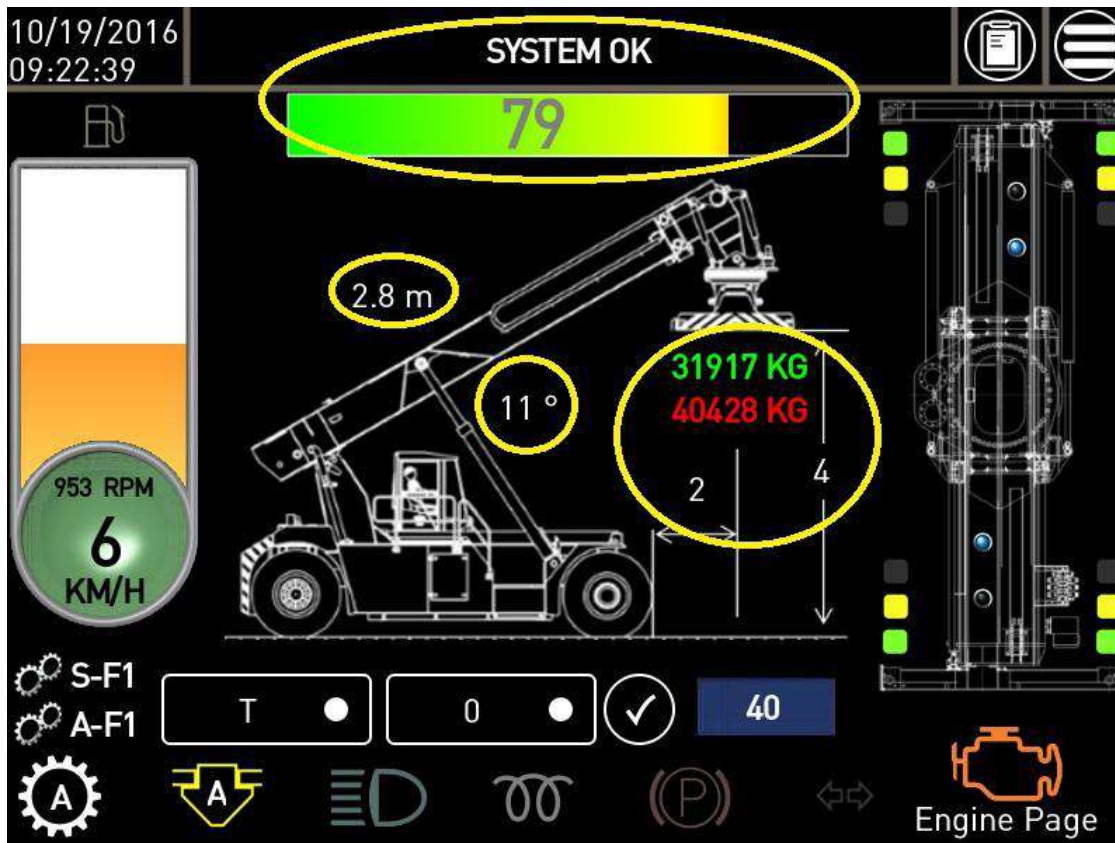
There are multiple ways to load the software onto the machine, the most common is via CANBUS using the following:

- NICAN USB/CAN Dongle NI USB-8473 from National Instruments.
- DB9 to DT3 conversion adapter
- NICAN1500 Driver software
- The “Proemion” modem allows remote control, diagnosis and adjustment of machine parameters in real time



**3B6**®

LOAD MOMENT INDICATOR (LMI)

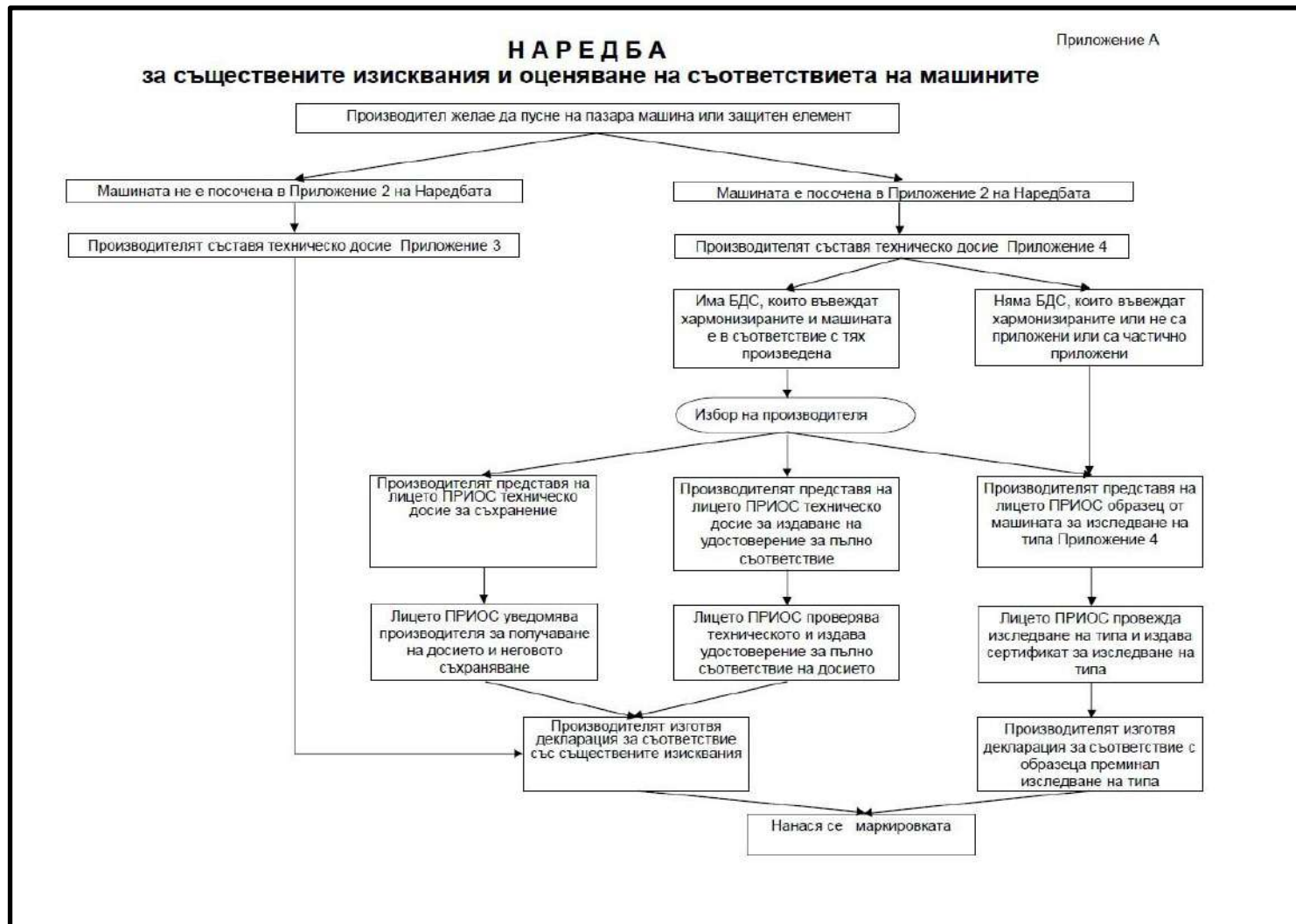


3B6 – COBO LMI safety system

monitors the following parameters:

- Weight of the load (W1)
- Permissible weight of the load, that can be lifted in the current position (W2)
- Angle of the boom
- Length of the boom
- Height from the ground to the top of the container
- Length from the machine to the center of the container
- Load bar  $\left( \frac{W1}{W2} \cdot 100, [\%] \right)$

## Regulation for the essential requirements and rating the correlation of machines





## List of documents

Documentation required	Необходими документи
The machinery for which the assessment has been made (e.g. specifications, limits, intended use)	Collect this info from the user's manual (Машини с, за които е направена оценката)
Any relevant assumptions that have been made (e.g. loads, strengths, safety factors)	Design data, applicable standards (Датуми данни, приложими стандарти)
The hazards and hazardous situations identified and the hazardous events considered in the assessment	Hazard identification sheet (Формуляр за опасности)
The information on which risk assessment was based	IQ database, tests, experience. Collect all available FMEA's (IQ база данни, тестове, опит. Съберете цялата налична FMEA.)
The data used and the sources (e.g. accident history, experience gained from machinery)	Column O of the Hazards identification sheet
The uncertainty associated with the data used and its impact on the risk assessment	Column M of the Hazards identification sheet
The risk reduction objectives to be achieved by protective measures, for the selection of which, the standards or other specifications used should be referred to	Column N of the Hazards identification sheet
The protective measures implemented to eliminate identified hazards or to reduce risk	Column O of the Hazards identification sheet
Residual risks associated with the machinery	Column L of the Hazards identification sheet
The result of the risk assessment	???
Any forms completed during the risk assessment	Keep everything in a folder (Поддържащи всички в един папка) - ДОСЬЕ

## FMEA Ratings

STILL FMEA RATINGS (LABEL FISH)			
DETECT	SEVERITY	OCURRENCE	RATING
Very small: (see above)	Very highly: (see above)	Very highly: (see above)	10
Small: (see above)	Highly: (see above)	Highly: (see above)	9
Medium: (see above)	Medium: (see above)	Medium: (see above)	8
Large: (see above)	Large: (see above)	Large: (see above)	7

## Ratings the level of risk

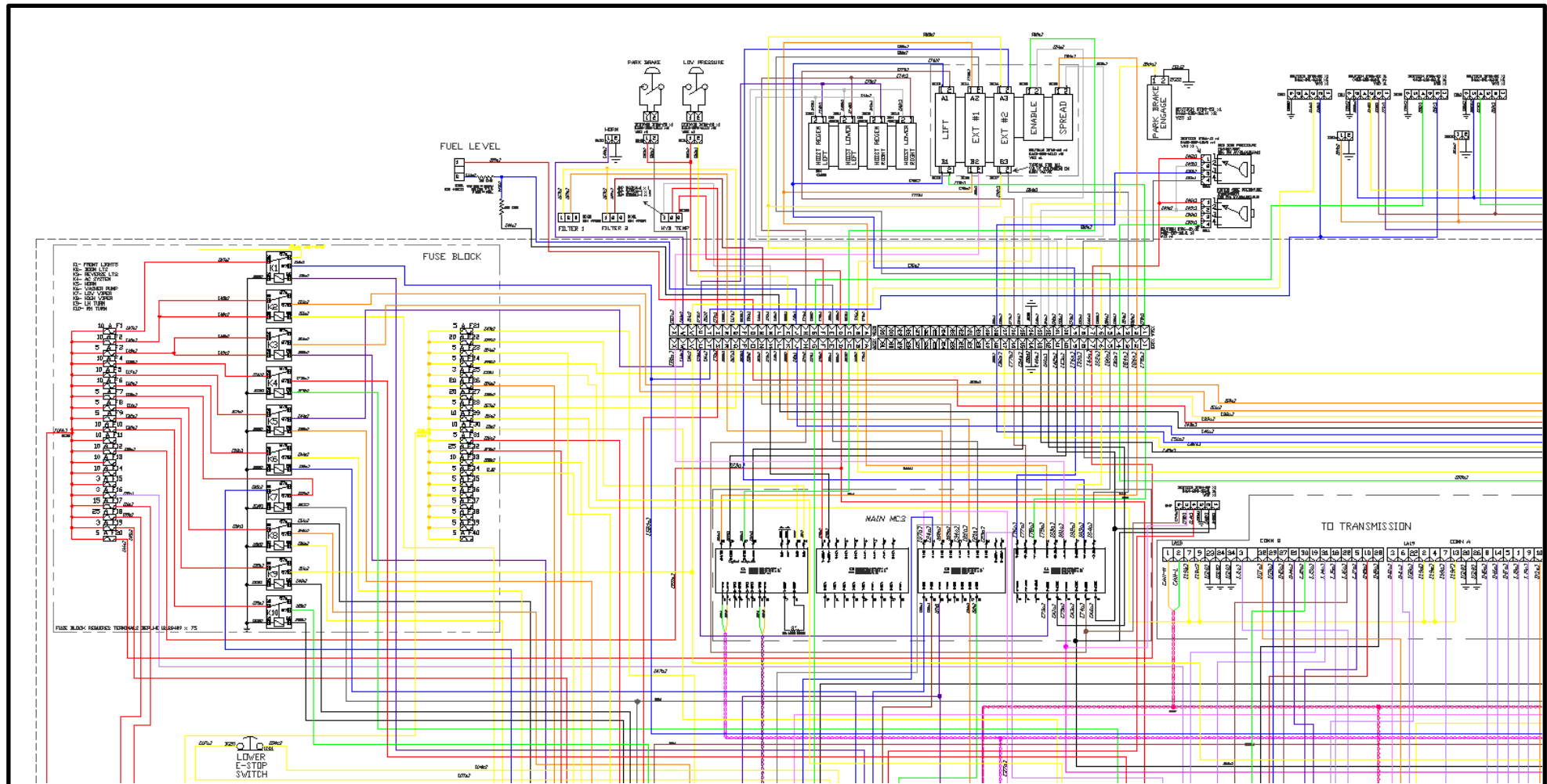
RATING	SEVERITY (Impact on the user)	OCURRENCE (Frequency of occurrence)	DETECTION (Ability to detect)
10	Death	Very High probability of occurrence 90%-100%	Undetectable
9	Major injury to user	High probability of occurrence 70%-90%	Probably detected by user
8	Permanent damage, loss of limbs, etc.	Medium probability of occurrence	Probably detected by user
7	Minor injury to user	Low probability of occurrence	Probably detected by user
6	Minor damage, loss of limbs, etc.	Low probability of occurrence	Probably detected by user
5	Minor damage, loss of limbs, etc.	Low probability of occurrence	Probably detected by user
4	Minor damage, loss of limbs, etc.	Low probability of occurrence	Probably detected by user
3	Minor damage, loss of limbs, etc.	Low probability of occurrence	Probably detected by user
2	Minor damage, loss of limbs, etc.	Low probability of occurrence	Probably detected by user
1	No damage, loss of limbs, etc.	Low probability of occurrence	Probably detected by user

## List of hazards in the machine

Item	Part	Failure mode	Failure cause	Failure effect	Failure consequence	Failure severity	Failure frequency	Failure detection	Failure prevention	Failure mitigation	Failure residual	Failure residual	Failure residual	Failure residual	Failure residual
Motor and transmission	Drive	Overheating	File, Power	Slip, Loss of power	High ambient conditions	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)
Motor and transmission	Drive	Overheating	File, Power	Slip, Loss of power	High ambient conditions	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)
Motor and transmission	Drive	Overheating	File, Power	Slip, Loss of power	High ambient conditions	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)
Motor and transmission	Drive	Overheating	File, Power	Slip, Loss of power	High ambient conditions	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)	Highly (see above)

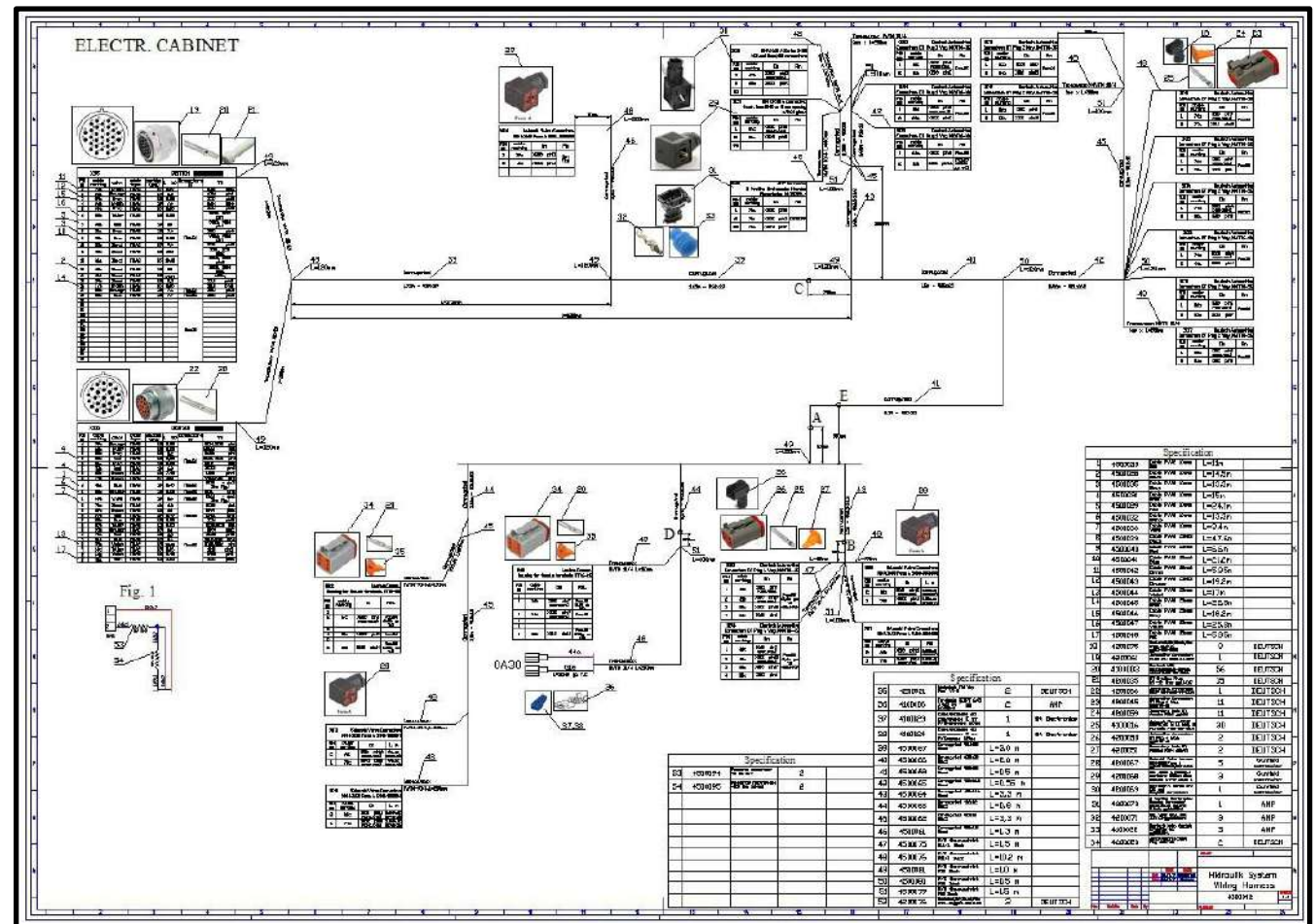
LIST OF STANDARDS	СПИСК НА ИЗПОЛЗВАНИТЕ (НЕОБХОДИМИ) СТАНДАРТИ
<b>Truck specific</b>	
EN 1459:1998 +A3:2012	Safety of industrial trucks: Self propelled variable reach trucks (Безопасност на промишлените кари: Самоходни кари с променлив обхват) 140 lv. Eng.
EN 1175-2:1998 +A1:2011	Safety of industrial trucks: Electrical requirements - General requirements for internal combustion engine powered trucks (Безопасност на промишлените кари. Електрически изисквания. Част-2 : Общи. Задвижвани с ДВГ.) x 31 lv. Eng.; BG

The Electrical System Schematic was developed in AutoCAD and displays all the electrical connections in the machine

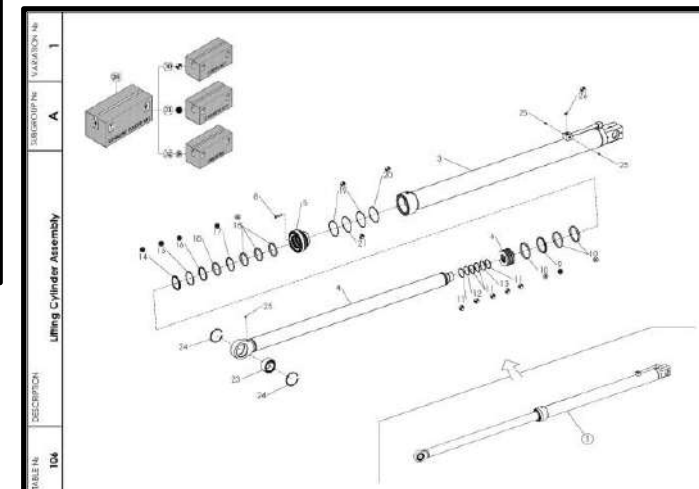
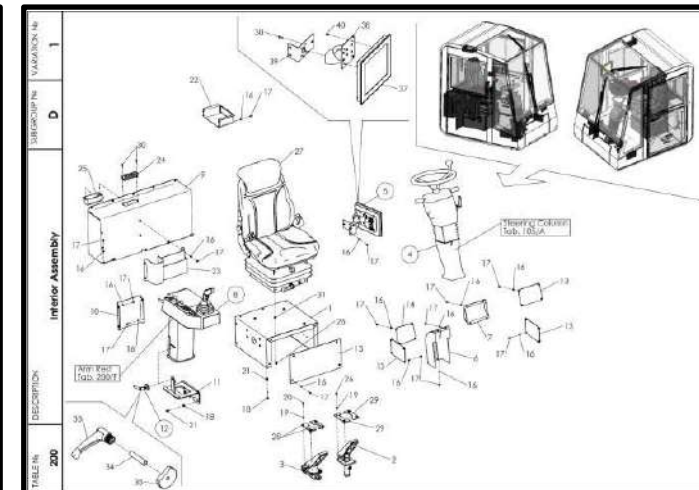
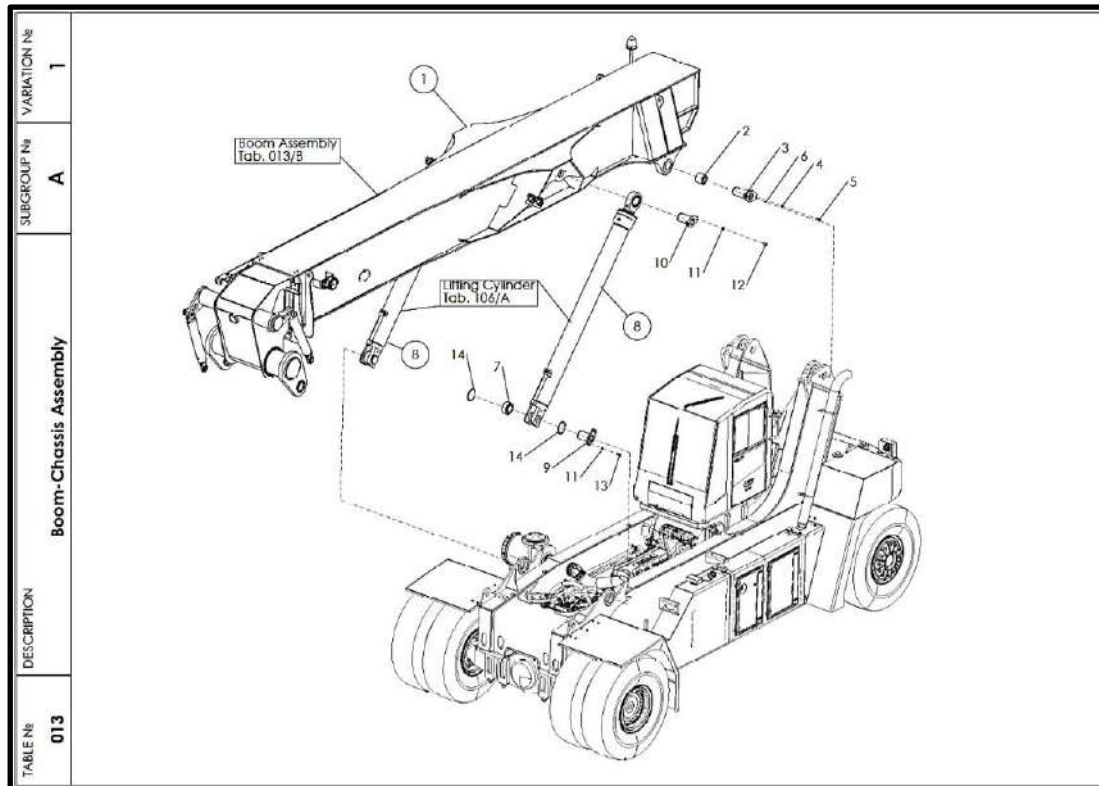


All the wiring harnesses have a drawing developed according to the Electrical System Schematic. The drawings include all the components and parameters needed to produce the harness:

- Cables- length, color, section;
- Connectors type and number of pins;
- Insulations type and length and so on;



The Spare Parts Catalogue contains exploded view illustrations, part number of the parts, quantities and description of the part.



The User's Manual contains safety and maintenance instructions, vehicle controls, operation instructions and illustrations from the actual machine.

RST4531 series

### Chapter 5 – OPERATION

#### USE OF THE VEHICLE

**Moving off**

**⚠ CAUTION:**  
Before moving off, wait for the engine to reach its best operating thermic running, particularly at low temperatures, then slowly perform some operations such as boom lifting/lowering, extension and steering, in order to let the hydraulic fluid preheat.

**⚠ WARNING:**  
Before starting the vehicle, make sure that the alarm lighting area on the Display doesn't signal any failure (red lights switched on), such as the "Generator charger", "Low pressure engine oil", "High temperature of the engine water", signs error or malfunction, etc.  
Whenever any of the above should appear terms, this means that a fault in the vehicle, then please apply immediately to the CVS After-Sales Department, etc.  
Whenever one of the above mentioned conditions should occur, it means that there is a failure in the vehicle, in such a case please apply straight away to the CVS After-sales Department.

**NOTES:**

- In case it is necessary to move the vehicle, operate with extreme caution.


Start the vehicle as follows:

- Holding down the brake pedal (F), release the parking brake [in the keypad (P)], that is located on the front left controls panel.
- Select the desired gear (see section Gearbox selector lever), release the brake pedal (F) and gradually press the accelerator pedal (A).


**NOTE:**  
Soon after the moving off, test both service and parking brake; if one of them or both fail, contact immediately the Service Department of C.V.S. .

**⚠ CAUTION:**


- The reverse gear can be selected only with stationary vehicle and with the engine running at low rpm;
- Never move or drive on downhill slopes with the gearbox selector lever in neutral "N", this could seriously damage the transmission.



Display




Alarm illumination area (red)



F  
Brake pedal

A  
Accelerator pedal



Keypad

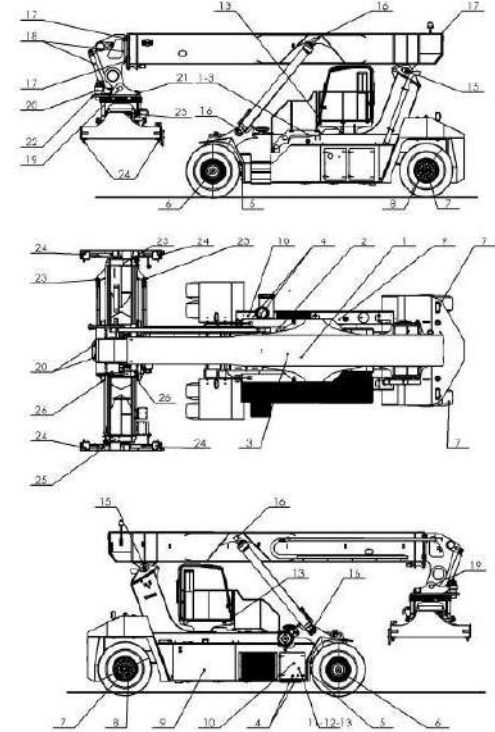
Parking Brake

Page 3.7

RST4531 Series

### Chapter 7 - LUBRICATION

#### LUBRICATION POINTS OF A REACH STACKER WITH ATTACHMENT



The Reach Stacker and the arrangement of the various components shown are referred to the "STANDARD" version; Different arrangements, than shown, are due to customized versions.

Page 7.16

## Raw Material Certificate

voestalpine Steel & Service Center GmbH

Seite: 1 / 4

Besteller: SL Industries Ltd. 71 Tuzhakan Str. BG-7003 Ruzica

Bestell-Nr.: 27825

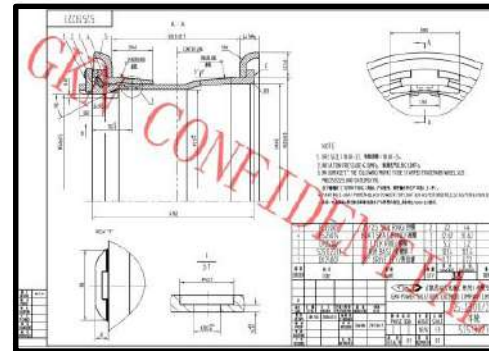
Bestell-Nr.: EN 10204 - 3.1

Bestell-Nr.: 410030720, 37, 2016

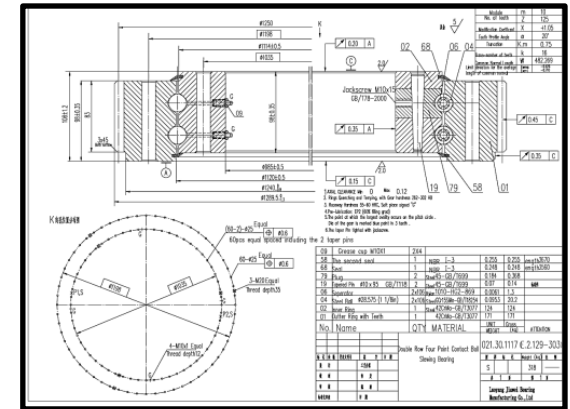
Werkstoff	Bestimmung	Abmessung	Stückzahl	Gewicht (Netto)
32Z12E	30	121401	1	2,02 kg
32Z12E	30	121401	1	1,94 kg
32Z12E	30	12748242	1	3,39 kg

voestalpine

## Techking Rims & Tires Performance Guarantee



## Bearing Manufacturer Certificate



## Hengli Cylinders Test Report

Test Report 油缸性能测试报告

客户名称: SL INDUSTRIES

油缸型号: LIFTING BOOM

油缸口径: 253mm

油缸行程: 11240mm

油缸工作压力: 35 MPa

测试项目	标准	结果	备注
气密性	符合	合格	
耐压性	符合	合格	
疲劳寿命	符合	合格	

江苏恒立液压股份有限公司

TECHKING TIRE SOLUTIONS

TECHKING TIRES LIMITED

Company Performance Guarantee Letter

For (18.00-25 40PR TKPORTH II)

Techking Tires Limited hereby guarantees that its (18.00-25 40PR TKPORTH II) can perform minimum 2000hours based on the following working conditions:

Requirements for load specification:	Front axle	Rear axle/steering wheels
0km/h	31500 kg	0km/h 25200 kg
8km/h	25400 kg	8km/h 20300 kg
20km/h	21900 kg	20km/h 17900 kg
25km/h	21500 kg	25km/h 17500 kg

Formula: (G-A)<sup>1.7</sup>FG

However, if the Underperformance is caused by the following reason(s), Techking is required to make no compensation to the Partner:

- Improper air pressure.
- Over load.
- Abnormal cut or puncture from sharp objects.
- Lack of maintenance.
- Lack of tracking records.
- Wrong application.

Payment terms for trial order: 30% paid by T/T, 40% paid after inspection on place (before shipment) and the rest 30% payment to be paid after the tire run 2000 hours without problems.

LYJW Luoyang Jiawei Bearing Manufacturing Co., Ltd

Luoyang Jiawei Bearing Manufacturing Co., Ltd

COMMERCIAL INVOICE

TO: SL INDUSTRIES EOOD

DATE: Sep. 22th, 2016

DESCRIPTION OF GOODS	QUANTITY	UNIT PRICE(USD) EXW	AMOUNT (USD)
Bearing E.2.129-303	1set	1362	1362
Bearing 32Z24U	4sets	60	240
Bearing 32Z30U	4sets	115	460

Authorized Signature



INDUSTRIAL LTD  
 17. REACH STACKER "RSV 4531" ЧАСТИЧНИ КРАЙЦИ НА ПРЕКЪСВАНЕ  
 1. УДЪБЯВАНИЯТА НА ЗАСТЪПИТЕ КРАЙЦИ ПРИ ПРЕКЪСВАНИЕ ИЛИ  
 ШИВА ДА СЕ ЗАЧИСТИ  
 2. РЪБОВЕТЕ ДА СЕ ОБВАРВАТ  
 3. ПОСАДОВАТАГОСТНОСТ ДА СЪГЛАДНОМЕРИТА  
 4. ДА СЕ ЗАВАРЯВА В ПОЗИЦИЯ РВ

DETAIL A  
 SCALE 1 : 20

№: WTS	КАЛИБЪР	ДЪЛЖИНА	МАТЕРИАЛ
1.2	zIS	817	18

SL Industries LTD  
 Rousse, Bulgaria

INDUSTRIAL LTD  
 17. REACH STACKER "RSV 4531" ЧАСТИЧНИ КРАЙЦИ НА ПРЕКЪСВАНИЕ  
 1. УДЪБЯВАНИЯТА НА ЗАСТЪПИТЕ КРАЙЦИ ПРИ ПРЕКЪСВАНИЕ ИЛИ  
 ШИВА ДА СЕ ЗАЧИСТИ  
 2. РЪБОВЕТЕ ДА СЕ ОБВАРВАТ  
 3. ПОСАДОВАТАГОСТНОСТ ДА СЪГЛАДНОМЕРИТА  
 4. ДА СЕ ЗАВАРЯВА В ПОЗИЦИЯ РВ

№: WTS	КАЛИБЪР	ДЪЛЖИНА	МАТЕРИАЛ
1.2	zIS	817	18

SL Industries LTD  
 Rousse, Bulgaria

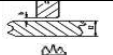

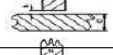







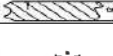



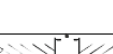





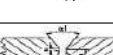





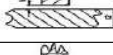

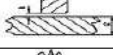




1. УДЪБЯВАНИЯТА НА ЗАСТЪПИТЕ КРАЙЦИ ПРИ ПРЕКЪСВАНИЕ ИЛИ ШИВА ДА СЕ ЗАЧИСТИ  
 2. РЪБОВЕТЕ ДА СЕ ОБВАРВАТ  
 3. ПОСАДОВАТАГОСТНОСТ ДА СЪГЛАДНОМЕРИТА  
 4. ДА СЕ ЗАВАРЯВА В ПОЗИЦИЯ РВ

№	WTS	КАЛИБЪР	ДЪЛЖИНА	МАТЕРИАЛ	WTS №	ЗИМБЪЛКА
1	1.2	zJO	1842	18		
2	3-7 - 18	z25	25370	17		
3	/	/	1600	13		

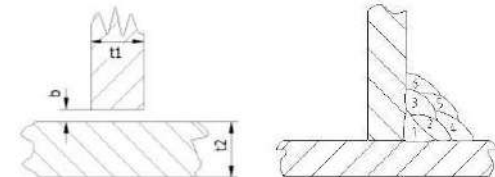
SL Industries LTD Rousse, Bulgaria	Материал	Описание на материала	Вид на материала	111
WTS	zIS	Welded Assy		

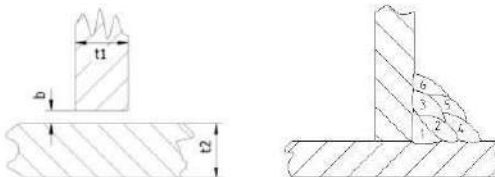


# 18.LIST OF APPROVED WELDING PROCEDURE SPECIFICATION(WPS)

ИНС РУКЦ ИИ ЗА ЗАВАРЯВ АНЕ (WPS)														
№	ЗАВ. ПРОЦЕ С	ЗАВ. СХЕМА	КАЛИБЪР мм	ОМ	ДЕБЕЛИНА мм	ДМ/Ø мм	ГАЗ/ФЛЮС ДЕБИТ L/min	T <sub>0</sub> /C°	СЛОЕВЕ	ПАРАМЕТРИ				ПОСЛЕДОВАТЕЛНОСТ НА ЗАВАРЯВАНЕ
										СЛОЙ	U /V	I /A	V <sub>з</sub> cm/min	
1	135-FW		t1=t2=4 mm b=0±1,5	a2	EN 10025-2(1,2) S355J2 EN 10025-2(1,2) S355J2	3±5	EN 14341 G3Si1;Ш,0	EN 439 M21 - 12L	-	1	1	18±21	180±200	
2	135-FW		t1=t2=4 mm b=0±1,5	a3	EN 10025-2(1,2) S355J2 EN 10025-2(1,2) S355J2	4±6	EN 14341 G3Si1;Ш,2	EN 439 M21 - 15L	-	1	1	22±25	220±240	
3	135-FW		t1=t2=8 mm b=0±1,5	a4	EN 10025-2(1,2) S355J2 EN 10025-2(1,2) S355J2	6±10	EN 14341 G3Si1;Ш,2	EN 439 M21 - 15L	-	1	1	24±26	240±260	
4	135-FW		t1=t2=10 mm b=0±1,5	a5	EN 10025-2(1,2) S355J2 EN 10025-2(1,2) S355J2	8±15	EN 14341 G3Si1;Ш,2	EN 439 M21 - 18L	-	1	1	26±27,5	265±280	
5	135-FW		t1=t2=10 mm b=0±1,5	a6	EN 10025-2(1,2) S355J2 EN 10025-2(1,2) S355J2	8±20	EN 14341 G3Si1;Ш,2	EN 439 M21 - 18L	-	1	1	28,5±31	290±300	
6	135-FW		t1=t2=10 mm b=0±1,5	a7	EN 10025-2(1,2) S355J2 EN 10025-2(1,2) S355J2	10±22	EN 14341 G3Si1;Ш,2	EN 439 M21 - 18L	-	2	1	25±27	180±200	
7	135-FW		t1=t2=15 mm b=0±1,5	a8	EN 10025-2(1,2) S355J2 EN 10025-2(1,2) S355J2	14±30	EN 14341 G3Si1;Ø1,2	EN 439 M21 - 18L	-	3	1	26±27	260±270	
8	135-BW		t1=t2=3 mm b=1±1,5	s3	EN 10025-2(1,2) S355J2 EN 10025-2(1,2) S355J2	3	EN 14341 G3Si1;Ш,0	EN 439 M21 - 13L	-	1	1	18±21	180±200	
9	135-BW		t1=t2= 4 mm b=1,5±2	s4-5	EN 10025-2(1,2) S355J2 EN 10025-2(1,2) S355J2	4±5	EN 14341 G3Si1;Ø1,2	EN 439 M21 - 15L	-	2	1	18±21	180±200	
10	135-BW		t1=t2= 6 mm b=2±2,5	s6	EN 10025-2(1,2) S355J2 EN 10025-2(1,2) S355J2	6	EN 14341 G3Si1;Ø1,2	EN 439 M21 - 15L	-	2	1	22±23,5	210±220	
11	135-BW		b = 1,5±2 t1=t2=8±10 u = 1,5±2 α = 60°	s8-10	EN 10025-2(1,2) S355J2 EN 10025-2(1,2) S355J2	8±10	EN 14341 G3Si1;Ø1,2	EN 439 M21 - 18L	-	2	1	22±23,5	210±220	
12	135-BW		b = 1,5±2 t1=t2=12 u = 1,5±2 α = 60°	s12	EN 10025-2(1,2) S355J2 EN 10025-2(1,2) S355J2	12	EN 14341 G3Si1;Ø1,2	EN 439 M21 - 18L	-	3	1	22±23,5	210±220	
13	135-BW		b = 1,5±2 t1=t2=16 u = 1,5±2 α1=α2 = 60°	s14-16	EN 10025-2(1,2) S355J2 EN 10025-2(1,2) S355J2	14±16	EN 14341 G3Si1;Ø1,2	EN 439 M21 - 18L	-	4	1.2	22±23,5	210±220	
15	135-FW		t1=t2=15 mm b=0±1,5	a10	EN 10025-2(1,2) S355J2 EN 10025-2(1,2) S355J2	15±30	EN 14341 G3Si1;Ø1,2	EN 439 M21 - 18L	-	4	1	25±27	265±270	
16	135-FW		t1=t2=15 mm b=0±1,5	a12	EN 10025-2(1,2) S355J2 EN 10025-2(1,2) S355J2	18±50	EN 14341 G3Si1;Ø1,2	EN 439 M21 - 18L	20°C	6	1	25±27	265±270	
17	135-FW		t1=t2=20 mm b=0±1,5	a15	EN 10025-2(1,2) S355J2 EN 10025-2(1,2) S355J2	22±200	EN 14341 G3Si1;Ø1,2	EN 439 M21 - 18L	20°C	n	1	25±27	265±270	
18	135-FW		t1=t2=20 mm b=0±1,5	a18	EN 10025-2(1,2) S355J2 EN 10025-2(1,2) S355J2	30±300	EN 14341 G3Si1;Ø1,2	EN 439 M21 - 18L	20°C	n	1	25±27	265±270	

Steel S235-S355

SL Industries Ltd		Welding procedure specification				WPS №15				
Методи на заваряване	Данни за основния метал					Време за заваряване				
	Детайл №	Стандарт	Дебелина			to, min/m	tcp, min			
135	1. група 1*	БДС EN 10025-2	18-50 mm			35	12			
	2. група 1*	БДС EN 10025-2	18-50mm							
Данни за термичната обработка										
Предварително подгряване	Междуслойна температура		Отгряване	T <sub>1-3</sub>	Начин на контрол на температурата					
T° C	не	T° C	не	T° C	термометър					
Разкрой на материалa		Подготовка на ръбовете		Зона на почистване						
Термичен механичен		не		виз. скицата						
Данни за последваща обработка на шва										
Почистване		Обработка на корена			Обработка на короната					
нормално		не			не					
Данни за контрол на шва				Квалификация на заварчика						
Метод на контрол		%		EN 287-1 135 PFW 1.1 St 3-5 PB ml						
Визуален		100								
*Съгласно EN ISO 15608.										
**Измерването на дебелината на шва а се прави с шаблон или универсален катетомер.										
<b>a = 12mm (z = 17mm)</b>										
 <p>t<sub>1</sub> = t<sub>2</sub> = 18±50 mm; b = 0±0.5 mm</p>										
Зоната на заваряване да бъде почиствана!										
Данни и допълнителни материализ режимa										
Електрод/тел		Защитен газ			Флюс					
№	Стандарт	Означение	Стандарт	Означение	Стандарт	Означение				
1	EN 14341	G2 Si1	EN 439	M21						
2										
Преход	Метод	Позиция	Електрод/тел		Защитен газ	AC/DC	I/A	U/V	Ve	Vz
			№	Ø,mm	I/min				m/min	cm/min
1	135	PB	1	1,2	12	DC+	270	27		
2-3-4-5-6	135	PB	1	1,2	18	DC+	280	27,5		
7-п	135	PB	1	1,2	18	DC+	300	31		
Съставил	Ивк. К. Къччева		НИЗ	Доп.д-р.Ивк. Николов		Взложител		ЛИСТ		
Подпис			Подпис			Подпис				
Дата			Дата			Дата				
								1/1		

SL Industries Ltd		Welding procedure specification				WPS №16				
Методи на заваряване	Данни за основния метал					Време за заваряване				
	Детайл №	Стандарт	Дебелина			to, min/m	tcp, min			
135	1. група 1*	БДС EN 10025-2	22-200 mm			30	18			
	2. група 1*	БДС EN 10025-2	22-200mm							
Данни за термичната обработка										
Предварително подгряване	Междуслойна температура		Отгряване	T <sub>1-3</sub>	Начин на контрол на температурата					
T <sub>0</sub> ° C	20° C	T° C	200° C	T° C	термометър					
Разкрой на материалa		Подготовка на ръбовете		Зона на почистване						
Термичен механичен		не		виз. скицата						
Данни за последваща обработка на шва										
Почистване		Обработка на корена			Обработка на короната					
нормално		не			не					
Данни за контрол на шва				Квалификация на заварчика						
Метод на контрол		%		EN 287-1 135 PFW 1.1 St 3-5 PB ml						
Визуален		100								
*Съгласно EN ISO 15608.										
**Измерването на дебелината на шва а се прави с шаблон или универсален катетомер.										
<b>a = 15mm (z = 21mm)</b>										
 <p>t<sub>1</sub> = t<sub>2</sub> = 22±200 mm; b = 0±0.5 mm;</p>										
Зоната на заваряване да бъде почиствана!										
Данни и допълнителни материализ режимa										
Електрод/тел		Защитен газ			Флюс					
№	Стандарт	Означение	Стандарт	Означение	Стандарт	Означение				
1	EN 14341	G3 Si1	EN 439	M21						
2										
Преход	Метод	Позиция	Електрод/тел		Защитен газ	AC/DC	I/A	U/V	Ve	Vz
			№	Ø,mm	I/min				m/min	cm/min
1	135	PB	1	1,2	15	DC-	270	27		
2 + 12	135	PB	1	1,2	15	DC-	280	27,5		
п	135	PB	1	1,2	15	DC-	300	31		
Съставил	Ивк.Евк. Къччева		НИЗ	Доп.д-р.Ивк. Николов		Взложител		ЛИСТ		
Подпис			Подпис			Подпис				
Дата			Дата			Дата				
								1/1		

LIST WELDING PROCEDURE (WPQR)										
№	WPQR №	WELDING UNIT	MATERIAL ISO 15608	RANGE OF APPROVAL ОБХВАТ НА ОДОБРЕНИЕ			WELD TYPE mm	WELDING PROCESS ISO 4063 ЗАВАРЪЧЕН ПРОЦЕС	FILER METAL ДОБАВЪЧЕН МАТЕРИАЛ	GAS/FLUX ГАЗ/ФЛЮС
				BASE MATERIAL	WALL THICKNESS /mm	PIPE OUTER DIAMETER/				
1	0200/04.03.2014	SEMI'MECHANICAL	EN ISO 10025-6 - S960QL(1,8933) ISO 15608:3.2	3°-3;1-1;2-1;2-2;3°-1;3°-2	≥ 5	≥500(≥150-PA,PC)	FW	135	EN ISO 16834A G89 5 M Mn4Ni2CrMo AWS/A5.28-79 ER120 S-G	EN ISO 14175- M21
2	0201/04.03.2014	SEMI'MECHANICAL	EN ISO 10025-6 - S960QL(1,8933) ISO 15608:3.2	3°-3;1-1;2-1;2-2;3°-1;3°-2	4,0÷16,0	≥500(≥150-PA,PC)	FW	135	EN ISO 16834A G89 5 M Mn4Ni2CrMo AWS/A5.28-79 ER120 S-G	EN ISO 14175- M21
3	0202/04.03.2014	SEMI'MECHANICAL	EN ISO 10025-6 - S960QL(1,8933) ISO 15608:3.2	3°-3;1-1;2-1;2-2;3°-1;3°-2	3,0÷16,0	≥500(≥150-PA,PC)	BW	135	EN ISO 16834A G89 5 M Mn4Ni2CrMo AWS/A5.28-79 ER120 S-G	EN ISO 14175- M21
4	0203/17.03.2014	SEMI'MECHANICAL	EN ISO 10025-6 - S960QL(1,8933) ISO 15608:3.2	3°-3;1-1;2-1;2-2;3°-1;3°-2	12,5÷50,0	≥500(≥150-PA,PC)	BW	135	EN ISO 16834A G89 5 M Mn4Ni2CrMo AWS/A5.28-79 ER120 S-G	EN ISO 14175- M21
5	0154/21.06.2013	AUTOMAT	EN ISO 10025-6 - S700MC(1,8974) ISO 15608:2.2	2°-2;1-1;2°-1	3,0÷16,0	≥500(≥150-PA,PC)	BW	121	EN 14171 S2 AWS/A5.28-69 ER100 S-G	EN 14174 - S A AF2 64 DC H5 2-20
6	0206/30.04.2014	SEMI'MECHANICAL	EN ISO 10025-2 - S355J2 ISO 15608:1.2 STUD MATERIAL:St373K ISO 15608: 1.1	1.1,1.2	≥4 STUD DIAMETAR: M16	-	-	783	-	-
7	0155/21.06.2013	ROBOTIC	EN ISO 10025-2 - S355J2+N ISO 15608:1.2	1°-1	20,0÷80,0	≥500(≥150-PA,PC)	FW	135	EN ISO 14341 G3Si1 AWS/A5.18-ER70 S-6	EN ISO 14175- M21
8	0262/27.03.2015	ROBOTIC	EN ISO 10025-6 - S960QL(1,8933) ISO 15608:3.2	3°-3;1-1;2-1;2-2;3°-1;3°-2	3,0÷24,0	≥500(≥150-PA,PC)	BW	135	EN ISO 16834A G89 5 M Mn4Ni2CrMo AWS/A5.28-79 ER120 S-G	EN ISO 14175- M21
9	0263/27.03.2015	ROBOTIC	EN ISO 10025-6 - S960QL(1,8933) ISO 15608:3.2	3°-3;1-1;2-1;2-2;3°-1;3°-2	6,0÷24,0	≥500(≥150-PA,PC)	FW	135	EN ISO 16834A G89 5 M Mn4Ni2CrMo AWS/A5.28-79 ER120 S-G	EN ISO 14175- M21
									IWE/EWE :	K.Kancheva

# 21. PROTECTED PROCEDURES FOR WELDING AND THERMAL CUTTING OF STEEL (WPQR)

НО 2162 при „ВЕРИФИКАЦИЯ БЪЛГАРИЯ“ ООД /  
Notified body 2162 for Pressure Equipment/ VERIFICATION BULGARIA OOD

inspection "usability" verification

**ОДОБРЕНИЕ НА ПРОЦЕДУРА ПО ЗАВАРЯВАНЕ – МЕТАЛИ**  
**WELDING PROCEDURE QUALIFICATION METAL (WPQR)**  
WPQR No – 0263 / 27.03.2015

Производител: Manufacturer:	„СЛ Индъстрис“ ЕООД, Русе SL INDUSTRIES Ltd, RUSE	Заваръчна процедура на производител: Manufacturers Welding Procedure:	pWPS-No: 38
Дата на заваряване: Date of Welding:	21.03.2015	Пробен образец №: 38 Specimen No:	
<b>ИЗИСКВАНИЯ СЪГЛАСНО / SPECIFICATIONS:</b>		<b>БДС EN ISO 15614-1 + PED 97/23/EC</b>	
<b>ОБЕКТ НА ИЗПИТВАНЕ / TEST PIECE:</b>			
Материал-Означение (Група съгл. ISO/CR15608)/ Material-Designation (Subgroup acc. ISO/CR 15608)	EN 10025-6 - S960QL (1.8933); CR ISO 15608: 3.2		
Външен диаметър на тръбата, Дебелина Pipe Outer Diameter, Thickness (mm)	12,0 mm		
<b>ОБХВАТ НА ОДОБРЕНИЕ / RANGE OF APPROVAL</b>			
Основен материал / спецификация: Base Material Specification/Subgroup:	3 <sup>a</sup> – 3; 1 – 1; 2 – 1; 2 – 2; 3 <sup>a</sup> – 1; 3 <sup>a</sup> – 2		
Дебелина/ Wall Thickness (mm):	6,0 + 24,0		
Външен диаметър на тръбата/ Pipe Outer Diameter (mm):	≥ 500 (≥ 150 - PA, PC) <sup>b)</sup>		
Тип, Вид съединение / Weld Type, Joint Type:	FW		
Заваръчен процес (ISO 4063) / Welding Process (ISO 4063):	135		
Добавъчен материал, спецификация / Означение: Filler metal, Specification / Designation:	БДС EN ISO 12534 - G 89 5 M Mn4Ni2,5CrMo AWS/A5.28-79 ER120 S-G		
Дебелина на шва/ Deposited weld metal thickness (mm):	--		
Еднослойно (sf), многослойно (ml)/single layer (sf), multi layer (ml)	ml		
Флюс/Фъз: Защитен газ/Gas:	Спецификация -Означение / Specification -Designation:	БДС EN ISO 14175 - M21	
<b>Вид и полярност на заваръчния ток:</b> Type of Welding Current:			
DC+			
Линейна енергия (min-max)/Heat input (min-max) [kJ/mm]			
0,73 + 1,21			
Мин. Температура на подгряване / Min Preheat Temperature [°C]:			
≥ 120			
Макс. междуслонна температура/ Max. Interpass Temperature [°C]:			
200			
Оттравяне/ Soaking			
--			
Термообработка след заваряване/ Post Weld Heat Treatment:			
--			
Пространствено положение съгл. ISO 6947/ Welding Position acc. ISO 6947:			
All except PG, J-L045			
<b>ЗАБЕЛЕЖКИ / REMARKS:</b>			
a) Обхваща стомани от същата група с равна или по-ниска граница на провлчане от определената /Covers the equal or lower specified yield strength steel of the same group/			
b) За тръбни разклонения D е диаметра на разклонението и се заварява с ъгъл ≥60° /For branch connection D is the diameter of the branch and welds with an angle ≥60°.			
<b>РЕЗУЛТАТИ / RESULT:</b>			
С това се удостоверява, че изпитните заварени съединения са направени, изпитани и са дали удовлетворителен резултат в съответствие с по-горе посочените спецификации. This is to certify that test welds were prepared, welded and tested satisfactory in accordance with the specifications indicated above.			
Място: Location:	Sofia	инж. А. Гъцева Ръководител на НО Head of Notified Body for Pressure Equipment	
Приложения: Attachments:	1. Протокол от изпита по заваряване / Report of Weld Test 2. Резултати от изпитването / Test Results 3. Металографски изпитвания/ Assessment of structure		

Верификация България ООД, 1000 София, ул. Сердика № 13, ет.2  
Verification Bulgaria OOD, 1000 Sofia, 13.fl.2 Serdika Str.

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НО 2162 при „ВЕРИФИКАЦИЯ БЪЛГАРИЯ“ ООД /  
Notified body 2162 for Pressure Equipment/ VERIFICATION BULGARIA OOD

inspection "usability" verification

**Протокол от изпит на заваряване – Report of Weld Test**

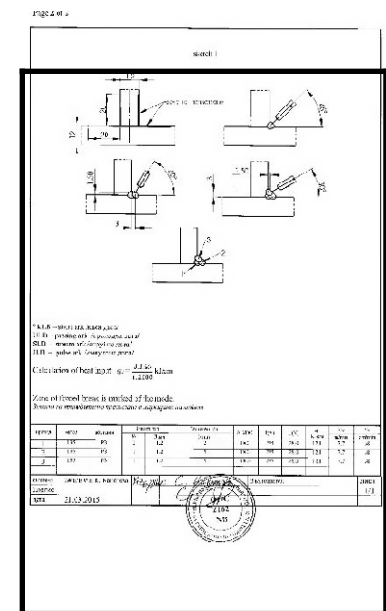
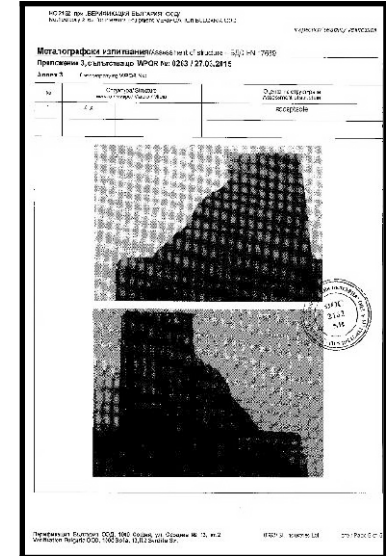
Приложение 1, съпътстващо WPQR №: WPQR No – 0263 / 27.03.2015

Апхек 1      accompanying WPQR No.:

Производител: Manufacturing Plant:	„СЛ Индъстрис“ ЕООД, Русе SL INDUSTRIES Ltd, RUSE	Име на заварчика: Name of Welder:	Марин Атанасов Димитров Marin Atanasov Dimitrov						
Зав. протокол №: Welding Record No	15251-2/21.03.2015	Екзаминатор/ Examiner:	Nikolov						
МЕТОД Method	135	Материал Material	EN 10025-6 - S960QL - 12,0 mm						
		Добавъчен материал: Filler material:	EN ISO 12534 – G 89 5 M Mn4Ni2,5CrMo AWS/A5.28-79 ER120 S-G						
<b>ПОДГОТОВКА НА ЗАВАРНОТО СЪЕДИНЕНИЕ (СКИЦА) / Weld Preparation Details (Sketch)</b>									
Подготовка на краищата Joint Design		Последователност на заваряване Welding Sequence							
Вид на съединението/ Welding Joint: FW		Позиция на заваряване / Position of welding: PB							
<b>ПАРАМЕТРИ НА ЗАВАРЪЧНИЯ ПРОЦЕС / WELDING DETAILS</b>									
Зав. слой/ Bead	Процес Process	Размер на доб.м-л/ Size of Filler Metal (mm)	Сила на тока Current [A]	Напрежени е Voltage [V]	Вид на тока/ полярност Type Current / Polarity	Линейна енергия/ Heat Input* [kJ/mm]	Скорост на теплоподаване/ Wire Feed [mm/min]	Скорост на заваряване / Wire Feed / [mm/min]	
1	135	1,2	275,0	28,0	DC+	0,97	7,7	380	
2	135	1,2	275,0	28,0	DC+	0,97	7,7	380	
3	135	1,2	275,0	28,0	DC+	0,97	7,7	380	
Разход на защитен газ [l/min]: Gas Flow Rate - Shield [l/min]:			12±15		Разход на защитен газ - корен [l/min]: Gas Flow Rate - Backing [l/min]:			--	
Волфрамов електрод, вид / диаметър: Tungsten Electrode Type / Size:			--					Детайли по обработка на корена/ Осигуряване на корена: Details of Back Gouging / Backing:	nb
<b>ПРЕДВАРИТЕЛНО НАГРЯВАНЕ/ PREHEATING [°C]:</b>				--					
<b>МЕЖДУСЛ. ТЕМП. / INTERPASS TEMPERATURE [°C]:</b>				200					
<b>ТЕРМООБРАБОТКА / POST WELD HEAT TREATMENT</b>				--					
Температура на нагряване/ Temperature of heating				--					
Скорост на нагряване/ Speed of heating				--					
Време на задържане/ Holding time				--					
Скорост на охлаждане/ Speed of cooling:				--					
<b>Допълнителна информация, напр. специални изисквания за сушене:</b> Other Information, i.e. special Baking or Drying specs:				--					
* ако се изисква/ if required				--					

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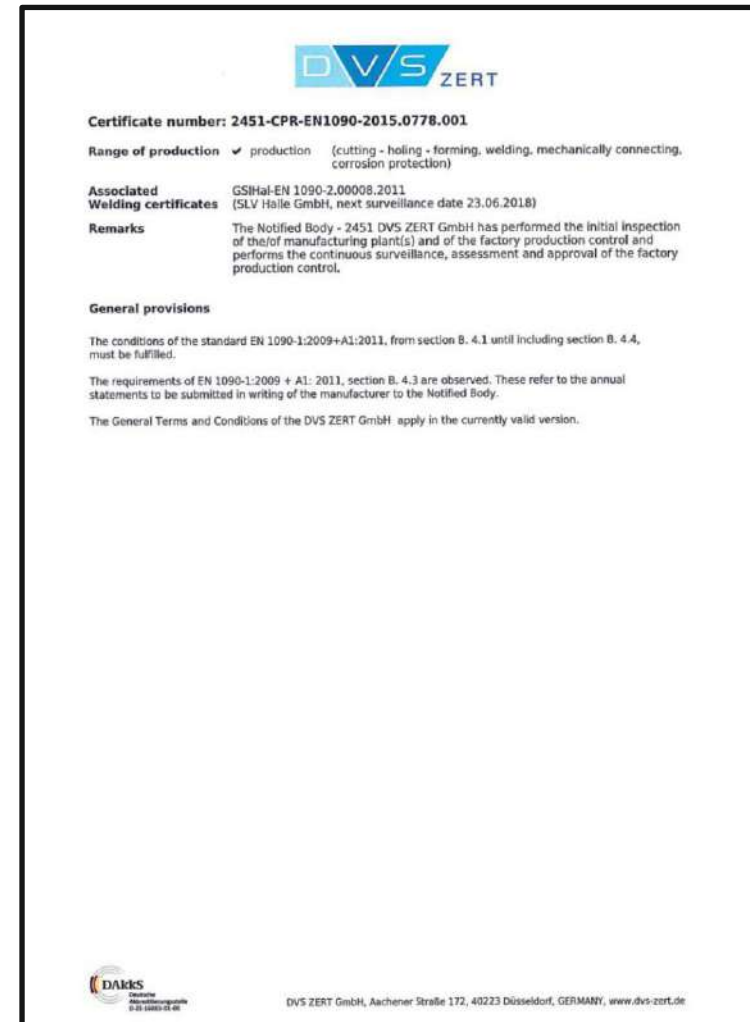
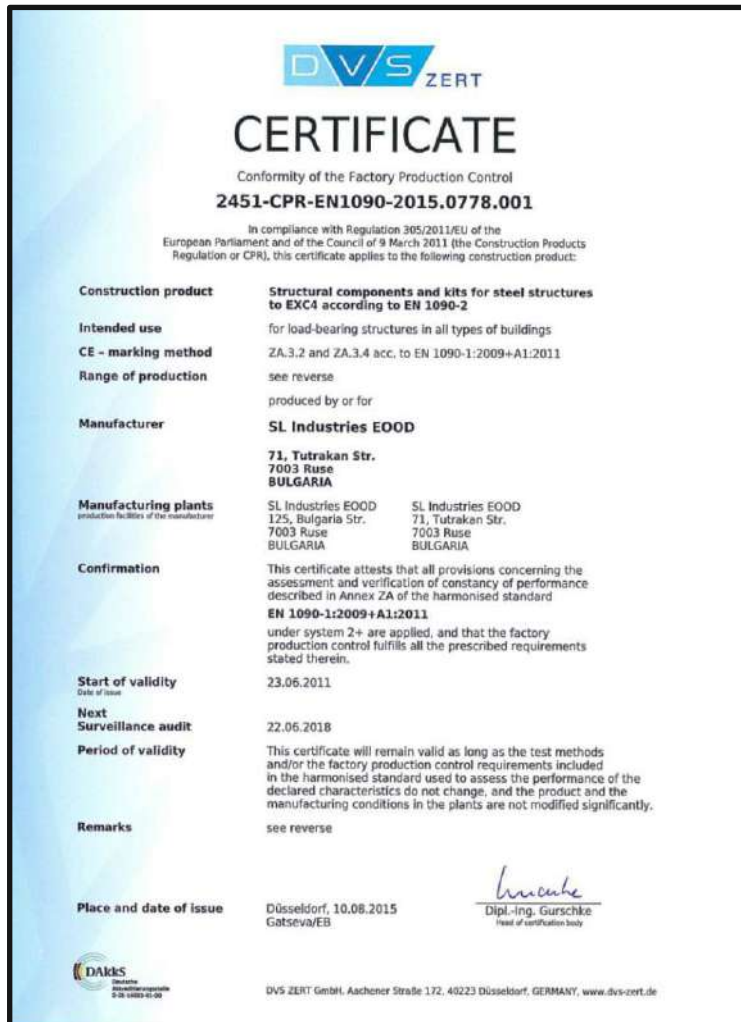
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Certificate regulating the activity of the company

In 2010 SL INDUSTRIES was certified according standard **EN ISO 9001** which declares that in the company is established a functioning quality system according to International and European norms.

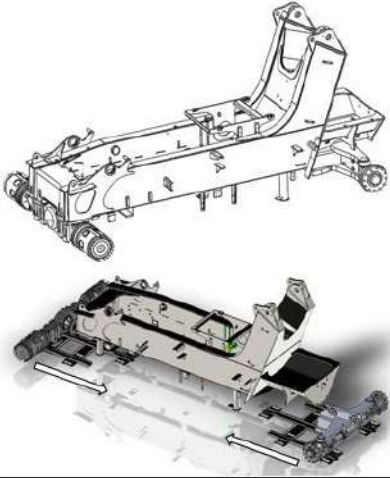

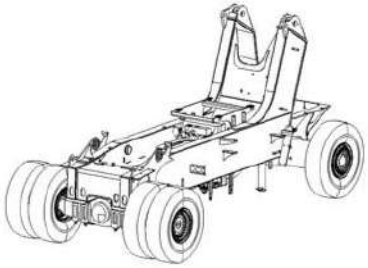



Certificate that provides accessibility to producing crane equipment

Schweißtechnische Lehr- und Versuchsanstalt Halle GmbH			
<h2>Welding Certificate</h2>			
<b>GSIHal-EN1090-2.00008.2011.003</b>			
<p>in accordance with EN 1090-1, table B.1, its hereby declared: The manufacturer has produced evidence that he fulfills the requirements of the European standard EN 1090-2 for execution of structural steel components</p>			
<b>Manufacturer</b>	<b>SL Industries EOOD</b> 71, Tutrakan str. BG 7003 Ruse		
<b>Technical specification</b>	EN 1090-2:2008+A1:2011		
<b>Execution class(es)</b>	EXC4 according to EN 1090-2		
<b>Welding Process(es)</b> <small>(reference no. acc. to DIN EN ISO 6945)</small>	121, 135, 783		
<b>Material Group</b>	1.1, 1.2, 3.1, 3.2 according to CEN ISO/TR 15608 and EN 1090-2, table 2 and 3		
<b>Responsible Welding Coordinator</b> <small>(Title, Surname, Name, Qualification, Date of birth)</small>	Kamella Atanasova Kancheva, IWE	born on: 19.08.1956	
<b>Substitute</b> <small>(Title, Surname, Name, Qualification, Date of birth)</small>	Svetlin Milnov Dimitrov, SFI	born on: 11.01.1963	
<b>Confirmation</b>	All provisions concerning welding as described in the above mentioned technical specification(s) were applied.		
<b>Validity start</b>	24.06.2015		
<b>Period of validity</b>	23.06.2018		
<b>Remarks</b>	see reverse		
			
<b>Place and date of issue</b>	Halle (Saale), 11.08.2015	 Grunewald <small>Deputy head of certification body</small>	
<small>Schweißtechnische Lehr- und Versuchsanstalt Halle GmbH            Köthener Straße 214, 06110 Halle (Saale), Abteilung für Qualitätssicherung            Tel.: +49 349 5248-170 Fax: +49 349 5248-172 Internet: www.slv-halle.de</small>		 <small>Seit dem 1. April 2011 ist die GSI SLV Halle als            DVS-zertifizierte Stelle für die Durchführung von            Schweißarbeiten in der EN 1090-2 anerkannt.</small>	

Certificate regulating the methods and materials used for welding

Assembly instructions are developed for every step of the assembly process. They include Bill of Materials of the components needed on the current workplace, instructions with illustrations and pictures of the special tools and equipment, if needed.

Assembly Instructions for installing Drive and Steering Axles							
Position	Part №	Rev.	Description	Qty.	Instructions	Illustration	Special Tools and Equipment
1	-	-	Chassis/Axles Assembly	1	Make assembly according to drawings 7000017 and 7000016 or drawings 001-B-1 and 001-A-1 (SPM);		
1.01	7200001	-	Chassis	1	Place 3 jacks (3) on the roller sliders 2;		
1.02	5400006	-	Front Drive Axle - Kessler LF_101_1345_3c	1	Place the roller sliders in the rails of the equipment 1;		
1.03	7000018	-	Steering Axle	1	Connect the hydraulic jacks on 2 circuits so that a minimum rotation of the axle can be allowed;		
1.04	5400005	-	Propeller Shaft DANA Series 2045	1	At this state place the axle (front or rear) on the jacks using the short lifting beam 4;		
1.05	1010024	-	DIN 933 - Bolt M14x40 - 10.9	4	Slide the axle under the chassis and upraise using the jacks;		
1.06	1010025	-	DIN 933 - Bolt M14x50 - 10.9	4	Align mounting surfaces of the chassis and axle using the jacks, connected in 2 circuits;		
1.07	1140010	-	DIN 982 - Nut M14 - 10	4	For front axle cut the heads of 4 bolts 1010005, according to the corresponding drawing, then install all fasteners according to drawing 7000016;		
1.08	8300006	-	Pin	2	For rear axle install the pins and fasteners according to drawing 7000016;		
1.09	8300004	-	Spacer	2	Front axle bolts 1010005 (1.16) and nuts 1100008 (1.14) to be tightened with a standard tightening torque of 2900Nm. Use torque wrench (5) and reducer (6);		
1.10	8300008	-	Washer 105x58x9	2			
1.11	1100010	-	DIN 934 - Nut M56x4 - 8	2			
1.12	1100003	-	DIN 935 - Nut M56x4 - 17H	2			
1.13	3300054	-	Plug M27x2	2			
1.14	1100008	-	DIN 934 - Nut M39 - 10	8			
1.15	1110002	-	DIN 936 - Nut M39 - 22H	8			
1.16	1010005	-	DIN 931 - Bolt M39x560x100 - 10.9	8			
Assembly Instructions for mounting front and rear rims and tyres							
Position	Part №	Rev.	Description	Qty.	Instructions	Illustration	Special Tools and Equipment
2	-	-	Rims and Tyres Mounting	1	Place wheel on the equipment 1;		
2.01	-	-	Chassis/Axles Assembly	1	Note: Rim and Tyre are being delivered assembled;		
2.02	5400007	-	Front & Rear Tyre - TECHKING 18.00R25.1	6	Slide the wheel in the hub;		
2.03	5400008	-	Rim - TECHKING 1300-25.1.1	6	For rear axle install the wheel flange 8300007 (2.08) and tighten the nuts 1120001 (2.09) with a standard tightening torque of 650Nm. Use torque wrench (2);		
2.04	8400012	-	Spacer	2	For front axle install the spacer 8400012 (2.04) between both couples of wheels, then install the rim support 8400013 (2.05) and secure using Kessler clamp 5400010 (2.06) and nut 5400009 (2.07);		
2.05	8400013	-	Rim Support	2	Tighten the nuts 5400009 (2.07) with a standard tightening torque of 270Nm. Use torque wrench (2).		
2.06	5400010	-	Clamp for Wheel - Kessler 101.102.4	48			
2.07	5400009	-	Wheel Nut M18 - Kessler 101.570.4	48			
2.08	8300007	-	Wheel Flange	2			
2.09	1120001	-	DIN 6331 - Nut M24 - 10	24			



