Promax RR 14 EVO

RAIL MOUNTED MOBILE ELEVATING WORK PLATFORM OPERATING & MAINTENANCE MANUAL

To be read in conjunction with:

- **Platform Basket Reference Use & Maintenance Manual, Logbook code: 4528570800a, Version 03/2017**
- **OLE Measuring Pantograph Operation & Maintenance Manual, Code: PAMP010PP, Version: 2/130916**

PAMP010RR

ISSUED FOR: PB _ _ _ _

Revision Eight 31st March 2017

RR 14 EVO

Revision	Date	Comments
1	21/09/2010	First Issue – reference RIS-1530-PLT Issue 1
2	28/10/2010	Second issue, addition of debris remover and minor text adjustments – reference RIS-1530-PLT Issue2
3	14/06/2013	Third issue, Text corrections, Layout & appearance improvements, Addition of anti-entrapment option
4	14/06/2013	Fourth issue, Addition of hydrostatic drive information – reference RIS-1530-PLT Issue4
5	16/12/2013	Fifth revision, change in document - text 'issue' replaced with 'revision' to avoid confusion, Addition of optional extras category and turret rotate friction plate test.
6	08/08/2014	Sixth revision, Addition of ALO working – reference RIS-1530-PLT Issue5, changed text – "Optional extras" renamed to "addendums"
7	16/03/2017	Seventh revision, Addition of 400KG capacity information – reference RIS-1530-PLT Issue5
7a	17/02/2015	Seventh revision with minor changes to maintain consistency throughout
8	31/03/2017	Eighth revision, Update to meet compliance of RIS1530 Issue 6

	Signed	Date
Author: M.Caves *Technical Director*	_____	**/ /**
Approved by: S.Day *Managing Director*	_____	**/ /**

Document Review

The maintenance plan shall be reviewed every 12 months by a competent engineer.

The plan shall include:

A process for it to be regularly reviewed for potential to improve its effectiveness.

A process for a record to be kept of decisions taken at each review.

A process for the maintenance instruction to also be reviewed in the light of the following:

i) In process reviews of maintenance activities

ii) Performance of the machines and components covered by the instruction, including relevant national incident reports

iii) Changes in the pattern of use and operating environment

iv) Manufacturer's advice

v) Network Rail directives

vi) As part of the seven-year review of the machine

vii) Fault logs and GE/RT8250 NIRs

A key element in the development of a successful maintenance instruction is a commitment to review regularly both the frequency and content of each job description. A nominated competent engineer identified by the owner should review the maintenance instruction, as a minimum, every 12 months, and the records retained for audit purposes.

Each component failure should be assessed to establish if there is a failure of maintenance that either caused or contributed to the failure. The maintenance instruction should then be amended to reflect the lessons learnt.

Regular reviews of the performance of the machine, reviews of maintenance activities, changes of use or frequency of use of the machine, and external information, could all lead to changes in the instruction.

Each change of the instruction should be authorised by a nominated competent engineer and, where reasonably practicable, the change should be agreed by the OEM. The amended instruction needs to be re-certificated. It is recommended that the instruction is kept as a live document, with each change authorised by the competent engineer, who should decide if the amendment is serious (and requires recertification immediately), or whether several changes can be bundled together and re-certificated at an annual review.

The users of the maintenance instruction should be encouraged to contribute to the review process.

Contents

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Section 1

Foreword

As specialist equipment suppliers, Promax Access Ltd actively promote safety in the operation and maintenance of its machines. We take great care to increase safety awareness and implement good working practice.
This manual has been written to provide the information necessary to keep the RR 14 EVO operating safely and efficiently throughout its service life, and should be read and used in conjunction with Platform-Basket "Reference use and maintenance manual", code 4528570800a, version 03/2017 and OLE Measuring Pantograph “Operation & Maintenance Manual”, code: PAMP010PP, version: 2/130916.
This manual is intended for both new and experienced personnel. It should remain with the machine at all times. All personnel should be aware of its location and contents.
It is important that all personnel are fully trained and familiar with the machine and that they have read and understood the information contained within this manual before operating within the site conditions for which the machine was designed and constructed.
This manual details practices and operations that Promax Access Ltd and IPAF (International Powered Access Federation) recommend.
DO NOT operate or use this machine for any purpose other than lifting persons or as detailed within the manual.
Prior to Commencing Maintenance Work You Must:
Read and fully understand the manufacturer's use and maintenance manual.
Ensure that any required safety precautions have been taken.
Adhere to safety notices contained within this manual and at the work site.
Fully understand the method statements and risk assessments and be competent to perform the work.
Use only genuine spare parts as replacement items.
Ensure that after maintenance work has been completed, and prior to machine being used, all safety checks and tests have been completed.
In accordance with their policy of continuous development Promax Access Ltd. reserve the right to amend the specifications of its machines without prior notice or consent.

Promax Access Ltd. does not accept liability for: -

1. Any machines, incidents or accidents arising from modifications, alterations or repairs carried out without written approval and consent from Promax Access Ltd, or the manufacture.
2. Machines not maintained in accordance with the conditions of operation and maintenance as specified within this manual
3. Breach of any relevant guidelines or regulations.
4. Damage or injury (whether direct or consequential) resulting from ignorance or failure to comply with any of the above items.

Please contact Promax Access Limited, Barnsley. S72 7BD. 01226 716657, sales@promaxaccess.com. if you have any queries regarding the operation and maintenance of the RR 14 EVO Mobile Elevation Work Platform (MEWP).

Staff Competency

In order to comply with the requirements of RIS-1530-PLT, the following minimum level of competence required is:

For all activities the person leading the task must be able to follow and carry out the instruction detailed in this document.

All safety critical work must be carried out by persons competent in accordance with:
ORR Railway Safety Publication 1 "Developing and Maintaining Staff Competence" March 2007.

All work relating to the maintenance and overhaul of axle bearings should be carried out by competent persons.

Staff undertaking this work must have been trained and hold the following certificates of competency:
SCWID (Safety Critical Work Identification).
Apprentice trained Craftsman/NVQ Level 3 in plant maintenance.
Certificate issued by a CITB/CTA approved body – operation for maintenance purposes only.
Re-assessment of competency in accordance with operator's maintenance policy.

Facilities

In order to comply with the requirements of RIS-1530-PLT, all work described in section nine shall be carried out using facilities (including those of sub contractors) which as a minimum have the following:
Clean, dry, covered accommodation for dealing with wheelsets, bearings, mechanical, hydraulic, electrical components and systems. Adequate illumination for inspection of components, rail axles and underframes. Cleaning facilities that will not cause damage to the components.
Handling facilities for removal and refitting of components such as rail axles and engines.
All weather of vulnerable areas of the vehicle and its components.
A suitable length of straight level rail track for carrying out brake tests.
These maintenance activities may be carried out at any location, where the work area is correctly protected, sufficient clearance is available around the machine and movements will not present risks to other staff and the machine is correctly secured against movement. Ensure all oil, grease and other fluid containers or contaminated materials are stored or disposed of as per the relevant procedures.
Any specific requirements over and above those listed will be identified in the applicable job descriptions or section nine.
Auditable records of maintenance to this manual shall be kept in accordance with RIS-1530-PLT Issue 6.

Definitions

Term	***Action required***
Adjust	Correct to defined limits
Change	Remove the original and fit a new or overhauled part or assembly in its place
Check	Determine a particular nominated condition before, during, or after repair, for example completeness, security, position
Clean	Remove all dirt and deposits
Defective	Any fault or faults in a component or assembly, for example structural fractures or weld fractures, which may prevent the component or assembly from fulfilling its designed purpose
Dismantle	Take to pieces
Examine	Determine general condition before repair, for example wear, cracks, splits, leaks, scoring, erosion, breaks, distortion, looseness
Gauge	Determine a nominated dimension by using suitable measuring equipment, for example ruler, micrometer, callipers, feeler gauges or Go / No-Go gauge
Inspect	Determine general condition after repair and attention, that is to say, conformity to required standards
Lubricate	Apply lubricant
Overhaul	Do what is necessary to make an assembly or sub-assembly reusable, that is to say, dismantle, strip, clean, examine, fit new parts, repair, reassemble, test and inspect, as required
Paint	To impart colour to a surface
Re-assemble	Put together
Record	Put down in writing a finding from examination, test, inspection or special checks
Rectify	To set right
Refit	Put back and reconnect
Remove	Disconnect and take off
Renew	Remove, scrap the original part and put a new part in its place
Repair	Restore an original part to the required condition by hand tooling, machining, build-up, welding, patching, bending, setting, heat-treating, re-securing etc
Strip	Remove covering, that is to say, paint, polish, fabric
Test	Prove correct operation by trial

Section 2

Introduction

The Promax RR 14 EVO is designed to operate in a railway or construction environment for to facilitate the lifting of persons and associated tools.
RR14 Evo - A maximum of two personnel plus tools and equipment (300kgs combined) may be carried in the platform on rail to maximum 200 mm cant and at maximum 1:25 gradient.
RR14 Evo2 - A maximum of two personnel plus tools and equipment (300kgs combined) may be carried in the platform on rail to maximum 200 mm cant and at maximum 1:16 gradient.
RR14 Evo2 400 - A maximum of three personnel plus tools and equipment (400kgs combined) may be carried in the platform on rail to maximum 200 mm cant and at maximum 1:16 gradient.
See page 25, sect 'C' Technical Specification of Platform-Basket "Reference use and maintenance manual", version 03/2017 for height and reach etc and/or working diagrams attached to machine.
The machine is designed and built to be able to on and off track at any designated RRAP.
With the Platform fully stowed (telescope fully retracted, main boom down and turret inline /in-gauge the RR 14 EVO will travel at maximum allowable rail speed for this class of RRV.
MEWPs are not intended for use as cranes and must not be used for lifting or suspending loads other than persons and small tools, wire pulling etc.

The RR 14 EVO is able to travel in working mode while elevated or slewed out of the stowed position (telescopic boom fully retracted) while maintaining floating / oscillating axle. – refer to Reference use and maintenance manual for indicator lights, good practice and limitations etc.

This RRV has electrical / electronic equipment sited at various locations around the vehicle including chassis and railgear. Electrical equipment such as sockets and modules cannot be totally sealed against against water ingress during immersion or high pressure washing.
Do Not operate the RRV with the wheels in water above the hub/axle level.
Do Not direct high pressure water onto switches, sensors, slip rings, plugs, sockets, panels or electronic modules.

Limitations as per engineering acceptance certificate.

This manual should be read in conjunction with the following documents:

Platform-Basket "Reference use and maintenance manual", code 4528570800a, version 03/2017.
OLE Measuring Pantograph “Operation & Maintenance Manual”, code: PAMP010PP, version: 2/130916.

BEFORE OPERATING, MAINTAINING or LOADING / UNLOADING ENSURE YOU ARE FULLY FAMILIAR WITH ITS CORRECT OPERATION AND FULLY UNDERSTOOD THE OPERATING MANUAL. FAILURE TO DO SO MAY RESULT IN DEATH OR SERIOUS INJURY.

Section 3

Specifications

Please refer to Section 'C' pages 25-33, Technical specification in the Platform-Basket "Reference use and maintenance manual", version 03/2017 for lengths, weights, reach etc

Section 4

Electrical Circuit and Hydraulic Diagrams, see owners information pack for full size drawings.

Drw Number	Title	Page	Revision
452.90.603.04	Functional Diagram	1	Rev '0'
452.90.603.04	Functional Diagram	2	Rev '0'
452.90.603.04	Functional Diagram	3	Rev '0'
452.90.603.04	Functional Diagram	4	Rev '0'
452.90.603.04	Functional Diagram	5	Rev '0'
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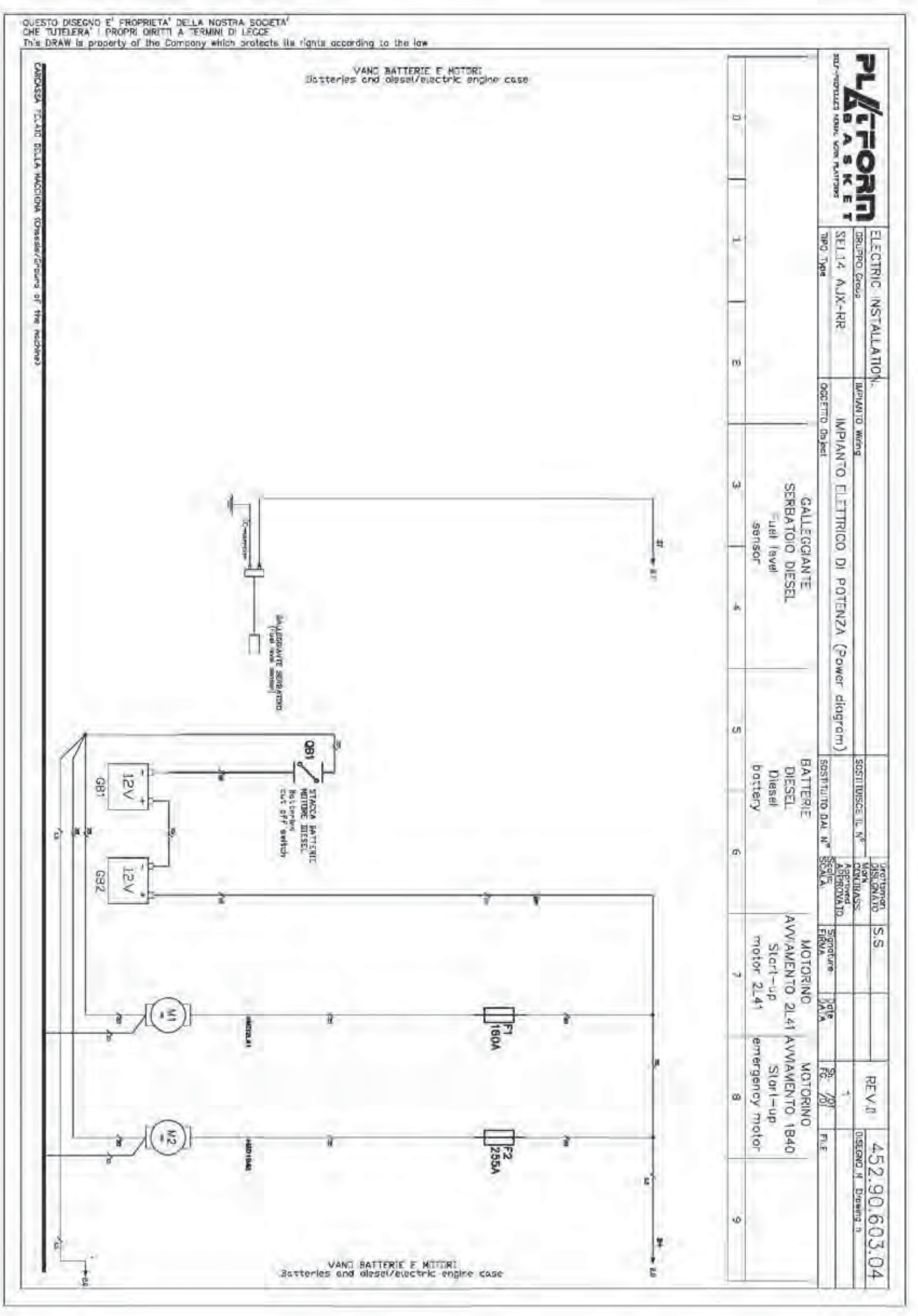
452.90.603.04	Functional Diagram	9	Rev '0'
452.90.603.04	Functional Diagram	10	Rev '0'
452.90.603.04	Functional Diagram	11	Rev '0'
452.90.603.04	Functional Diagram	12	Rev '0'
452.90.603.04	Functional Diagram	13	Rev '0'
452.90.603.04	Functional Diagram	14	Rev '0'
452.90.603.04	Functional Diagram	15	Rev '0'
452.90.603.04	Functional Diagram	16	Rev '0'
452.90.603.04	Functional Diagram	17	Rev '0'
452.90.603.04	Functional Diagram	18	Rev '0'
452.90.603.04	Functional Diagram	19	Rev '0'

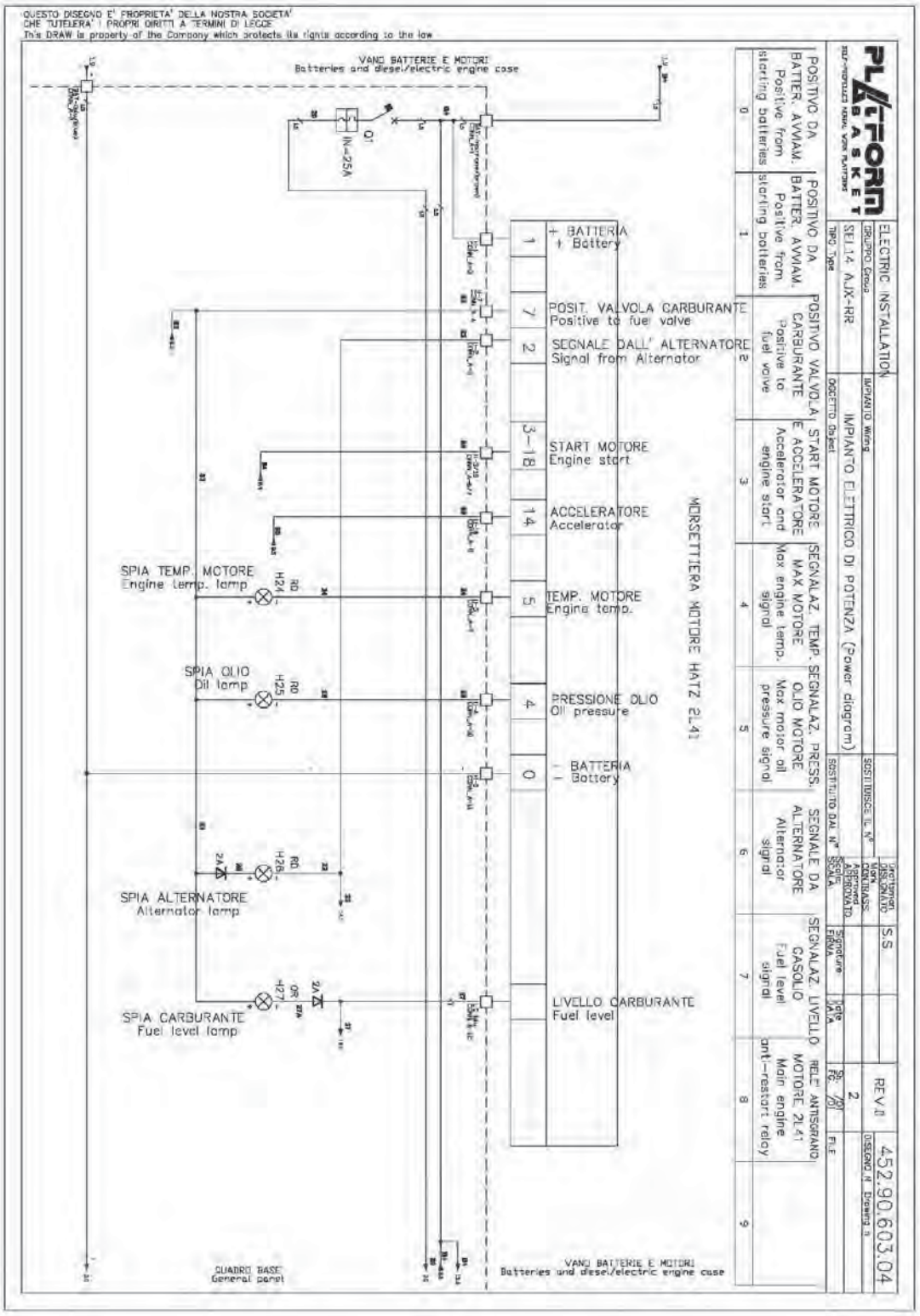
Fuses / electrical trips

See Reference Use and Maintenance Manual M.21 page 136

Electric Circuit Diagrams

RR 14 EVO


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA' CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
VANO BATTERIE E MOTORI
Batteries and diesel/electric engine case
ELECTRIC INSTALLATION
SEL14 AJX-RR
IMPIANTO ELETTRICO DI POTENZA (Power diagram)
S.S.
REV.0
452.90.603.04
GALLEGGIANTE SERBATOIO DIESEL
Fuel level sensor
BATTERIE DIESEL
Diesel battery
MOTORINO AVVIAMENTO 2L41
Start-up motor 2L41
MOTORINO AVVIAMENTO 1B40
Start-up emergency motor
QB1
STACCA BATTERIE MOTORE DIESEL
Batteries cut off switch
12V
GB1
GB2
M1
M2
F1
160A
F2
255A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CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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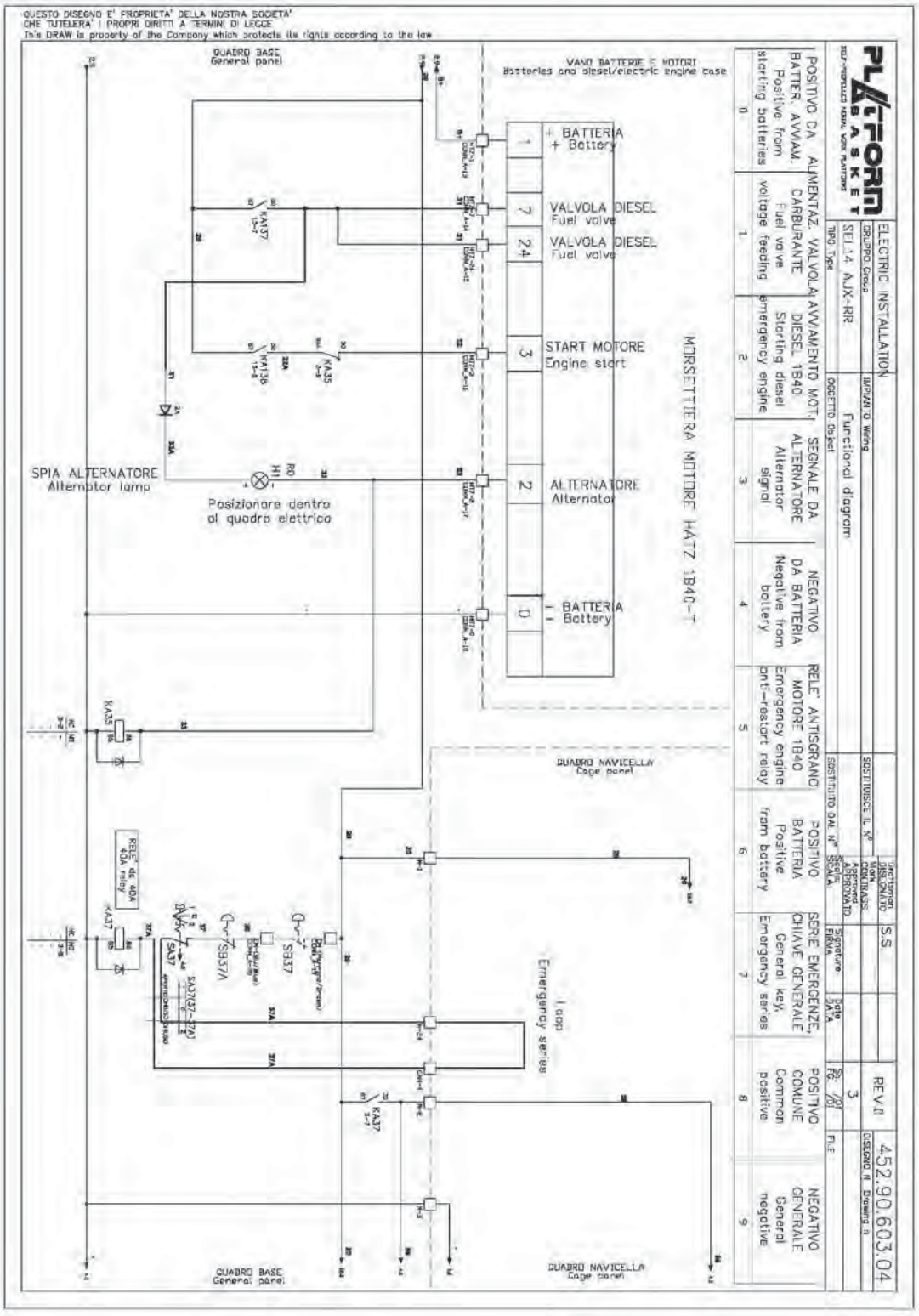
VANO BATTERIE E MOTORI
Batteries and diesel/electric engine case
Q1
IN=25A
+ BATTERIA
+ Battery
POSIT. VALVOLA CARBURANTE
Positive to fuel valve
SEGNALE DALL' ALTERNATORE
Signal from Alternator
START MOTORE
Engine start
ACCELERATORE
Accelerator
TEMP. MOTORE
Engine temp.
PRESSIONE OLIO
Oil pressure
- BATTERIA
- Battery
LIVELLO CARBURANTE
Fuel level
MORSETTIERA MOTORE HATZ 2L41
SPIA TEMP. MOTORE
Engine temp. lamp
SPIA OLIO
Oil lamp
SPIA ALTERNATORE
Alternator lamp
SPIA CARBURANTE
Fuel level lamp
QUADRO BASE
General panel
VANO BATTERIE E MOTORI
Batteries and diesel/electric engine case
POSITIVO DA BATTER. AVVIAM.
Positive from starting batteries
POSITIVO VALVOLA CARBURANTE
Positive to fuel valve
START MOTORE E ACCELERATORE
Accelerator and engine start
SEGNALAZ. TEMP. MAX MOTORE
Max engine temp. signal
SEGNALAZ. PRESS. OLIO MOTORE
Max motor oil pressure signal
SEGNALE DA ALTERNATORE
Alternator signal
SEGNALAZ. LIVELLO CASOLO
Fuel level signal
RELE' ANTIAVVIAMENTO MOTORE 2L41
Main engine anti-restart relay
ELECTRIC INSTALLATION
SEL.14 AJX-RR
IMPIANTO ELETTRICO DI POTENZA (Power diagram)
452.90.603.04
REV.8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CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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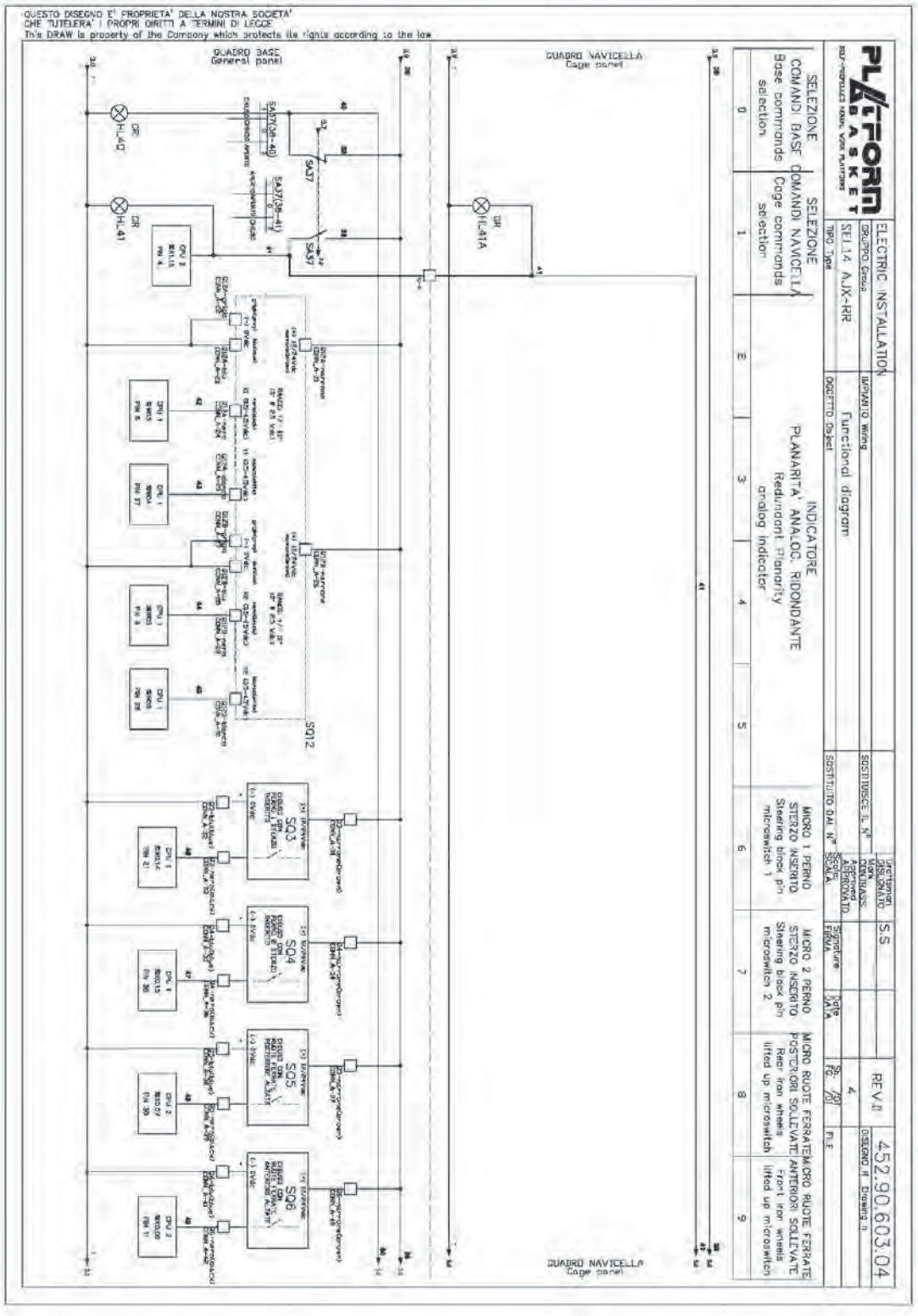
QUADRO BASE
General panel
VANO BATTERIE E MOTORI
Batteries and diesel/electric engine case
+ BATTERIA
+ Battery
VALVOLA DIESEL
Fuel valve
VALVOLA DIESEL
Fuel valve
START MOTORE
Engine start
ALTERNATORE
Alternator
- BATTERIA
- Battery
MOTORE MOTORE HATZ 1B40-T
SPIA ALTERNATORE
Alternator lamp
Posizionare dentro
al quadro elettrico
QUADRO NAVICELLA
Cage panel
Loop
Emergency series
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
POSITIVO DA ALIMENTAZ. VALVOLA CARBURANTE
Positive from voltage feeding Fuel valve
AVVIAMENTO MOT. DIESEL 1B40
Starting diesel emergency engine
SEGNALE DA ALTERNATORE
Alternator signal
NEGATIVO DA BATTERIA
Negative from battery
RELE' ANTISGRANC MOTORE 1B40
Emergency engine anti-restart relay
POSITIVO BATTERIA
Positive from battery
SERIE EMERGENZE, CHIAVE GENERALE
General key, Emergency series
POSITIVO COMUNE
Common positive
NEGATIVO GENERALE
General negative
ELECTRIC INSTALLATION
Functional diagram
SE1.14 AJX-RR
452.90.603.04
REV.8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CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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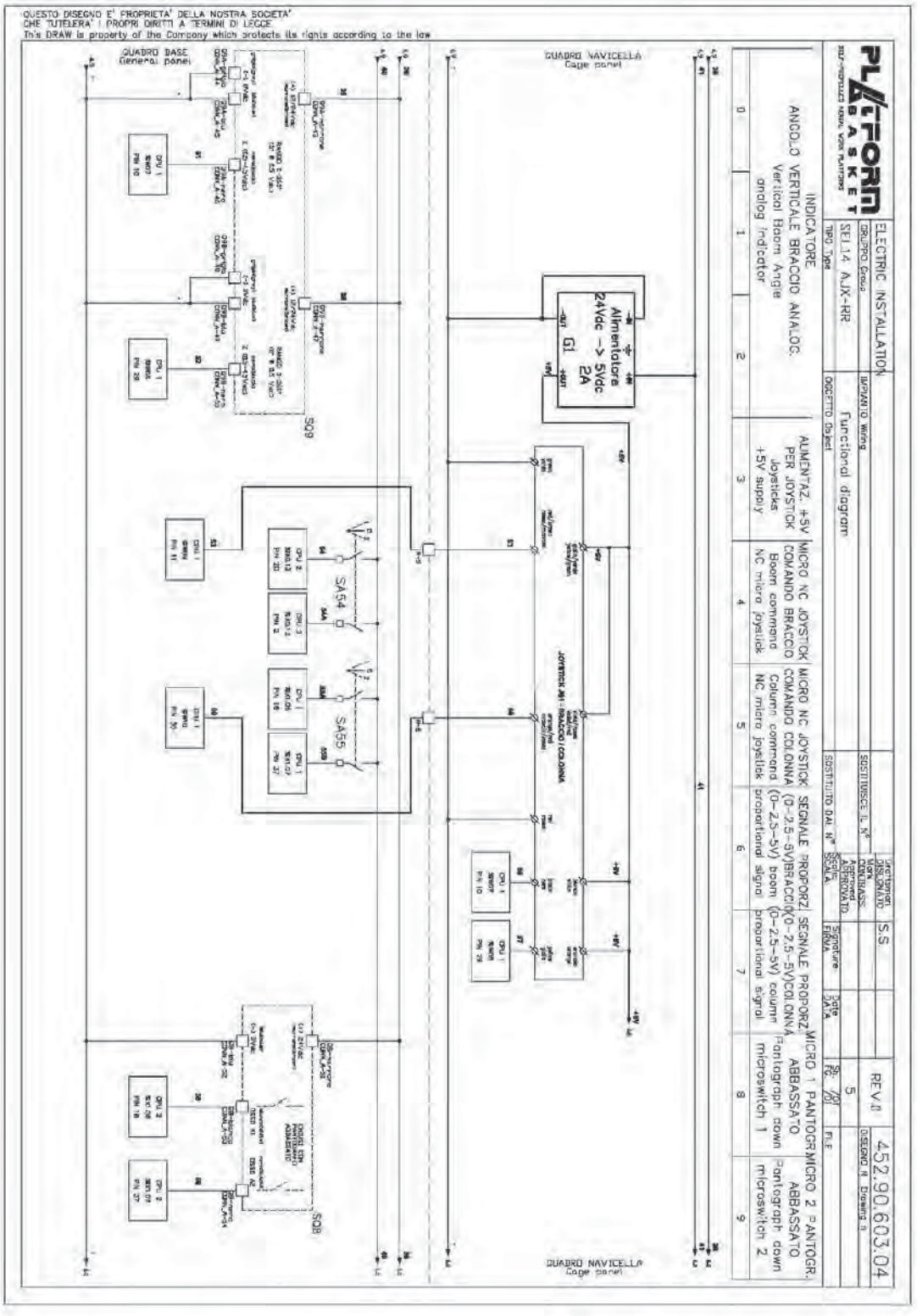
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
SELEZIONE COMANDI BASE
Base commands selection
SELEZIONE COMANDI NAVICELLA
Cage commands selection
INDICATORE PLANARITA' ANALOG. RIDONDANTE
Redundant Planarity analog indicator
MICRO 1 PERNO STERZO INSERITO
Steering block pin microswitch 1
MICRO 2 PERNO STERZO INSERITO
Steering block pin microswitch 2
MICRO RUOTE FERRATE POSTERIORI SOLLEVATE
Rear iron wheels lifted up microswitch
MICRO RUOTE FERRATE ANTERIORI SOLLEVATE
Front iron wheels lifted up microswitch
PLATFORM BASKET
ELECTRIC INSTALLATION
SE1.14 AJX-RR
Functional diagram
452.90.603.04
REV.8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CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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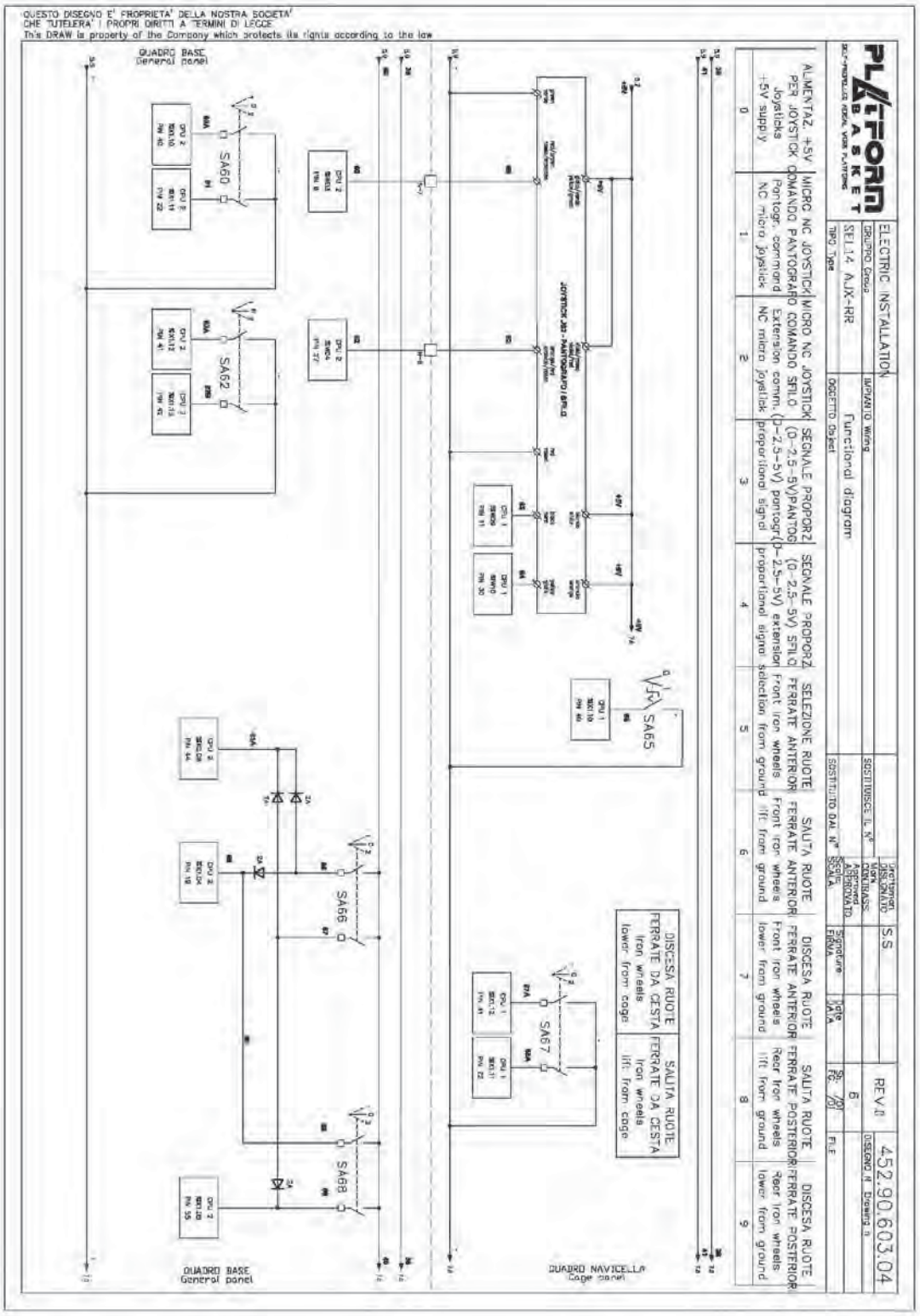
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
Alimentatore
24Vdc -> 5Vdc
2A
G1
SA54
SA55
S09
S08
ELECTRIC INSTALLATION
PLATFORM BASKET
SE1.14 AJX-RR2
INDICATORE ANGOLO VERTICALE BRACCIO ANALOG.
Vertical Boom Angle analog indicator
AUMENTAZ. +5V PER JOYSTICK
Joysticks +5V supply
MICRO NC JOYSTICK COMANDO BRACCIO
Boom command NC micro joystick
MICRO NC JOYSTICK COMANDO COLONNA
Column command NC micro joystick
SEGNALE PROPORZ. (0-2.5-5V) BRACCIO
boom proportional signal
SEGNALE PROPORZ. (0-2.5-5V) COLONNA
column proportional signal
MICRO 1 PANTOGR. ABBASSATO
Pantograph down microswitch 1
MICRO 2 PANTOGR. ABBASSATO
Pantograph down microswitch 2
452.90.603.04
REV.8
5
S.S.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CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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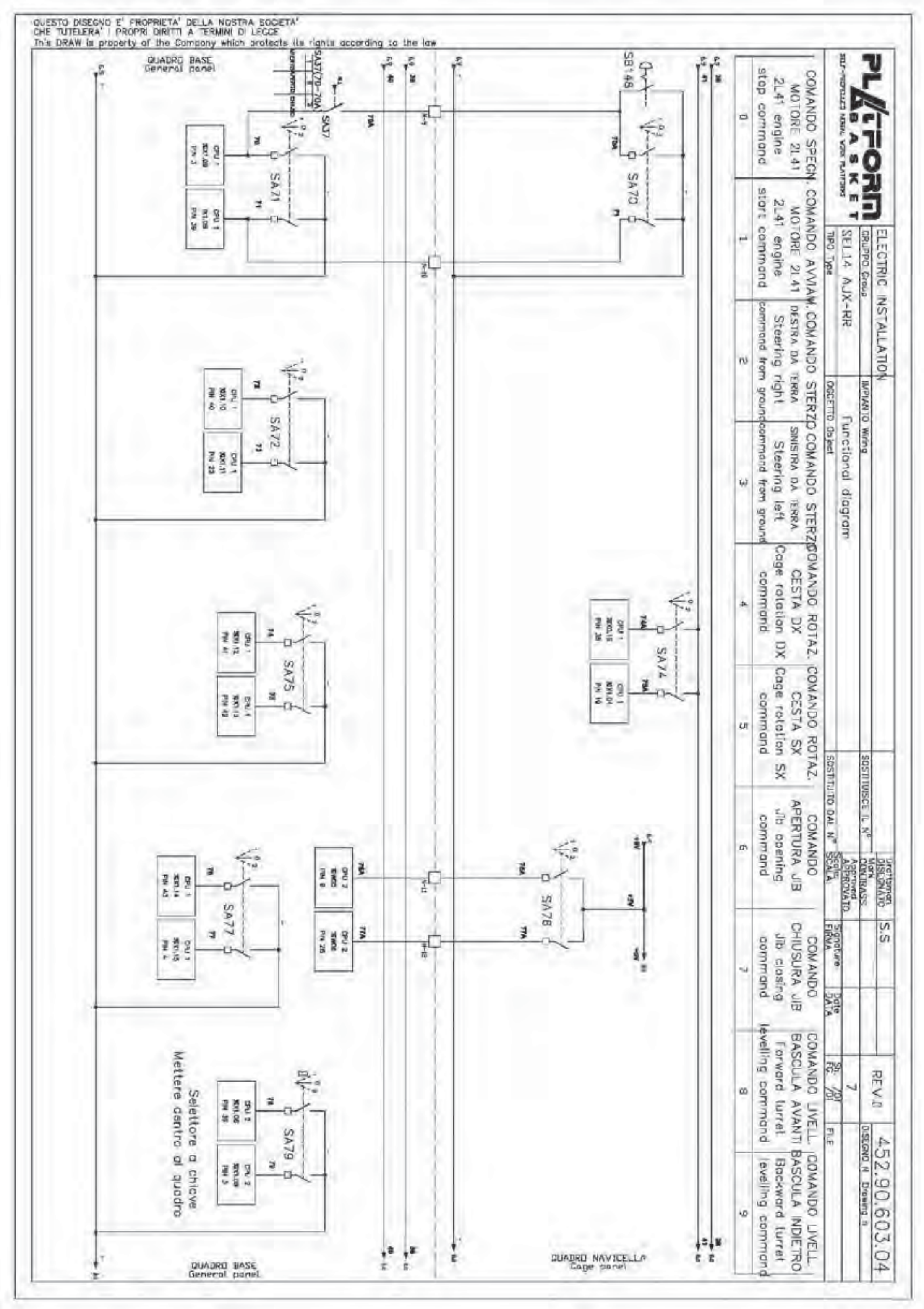
QUADRO BASE
General panel
SA60
SA62
SA65
SA66
SA67
SA68
QUADRO NAVICELLA
Cage panel
ELECTRIC INSTALLATION
SE1.14 AJX-RR
Functional diagram
452.90.603.04
REV.8

RR 14 EVO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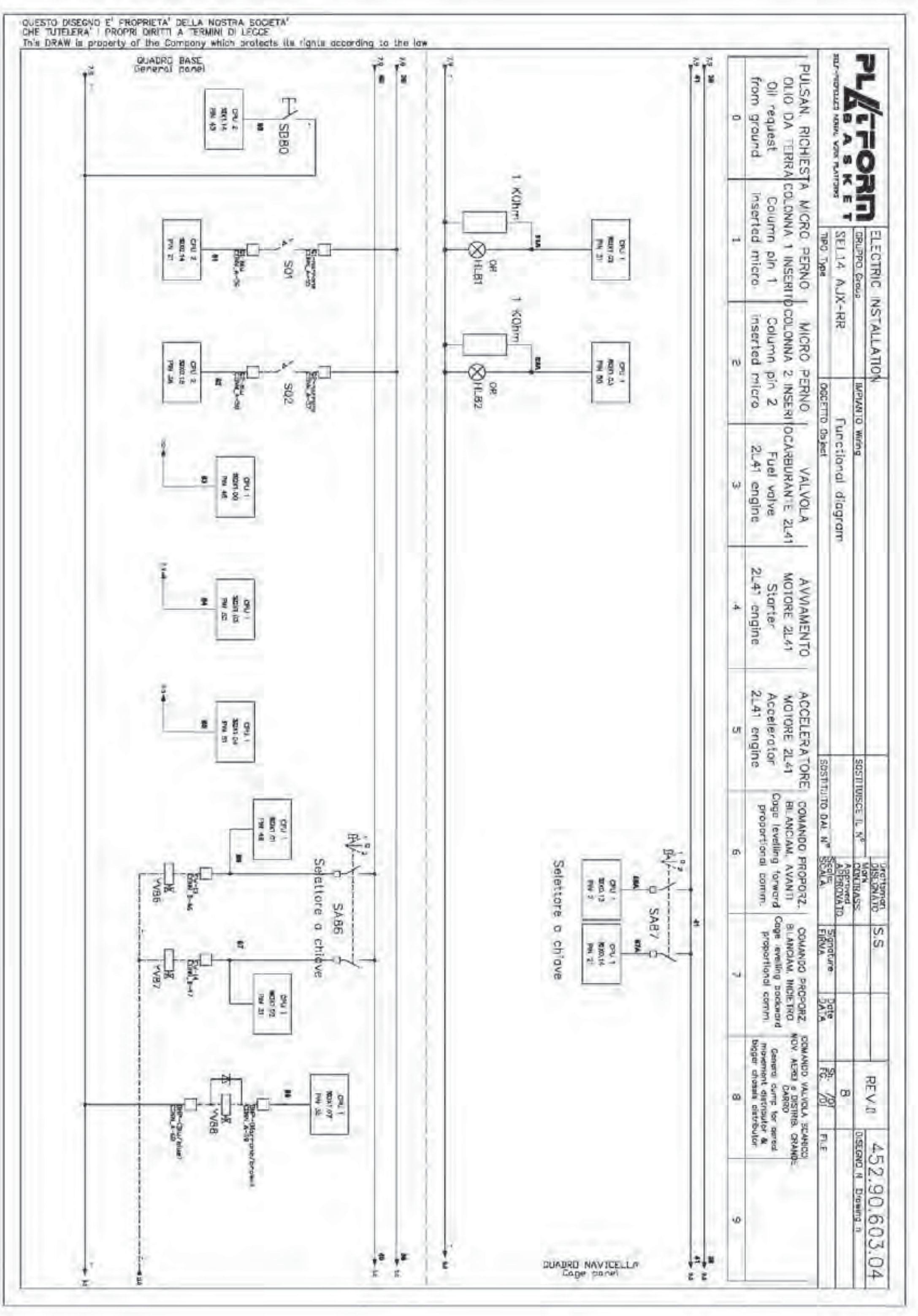
ELECTRIC INSTALLATION
SEL14 AJX-RR
Functional diagram
452.90.603.04
QUADRO BASE General panel
QUADRO NAVICELLA Cage panel
COMANDO SPEGN. MOTORE 2L41 2L41 engine stop command
COMANDO AVVIAM. MOTORE 2L41 2L41 engine start command
COMANDO STERZO DESTRA DA TERRA Steering right command from ground
COMANDO STERZO SINISTRA DA TERRA Steering left command from ground
COMANDO ROTAZ. CESTA DX Cage rotation DX command
COMANDO ROTAZ. CESTA SX Cage rotation SX command
COMANDO APERTURA JIB Jib opening command
COMANDO CHIUSURA JIB Jib closing command
COMANDO LIVELL. BASCULA AVANTI Forward turret levelling command
COMANDO LIVELL. BASCULA INDIETRO Backward turret levelling command
Selettore a chiave Mettere dentro al quadro

RR 14 EVO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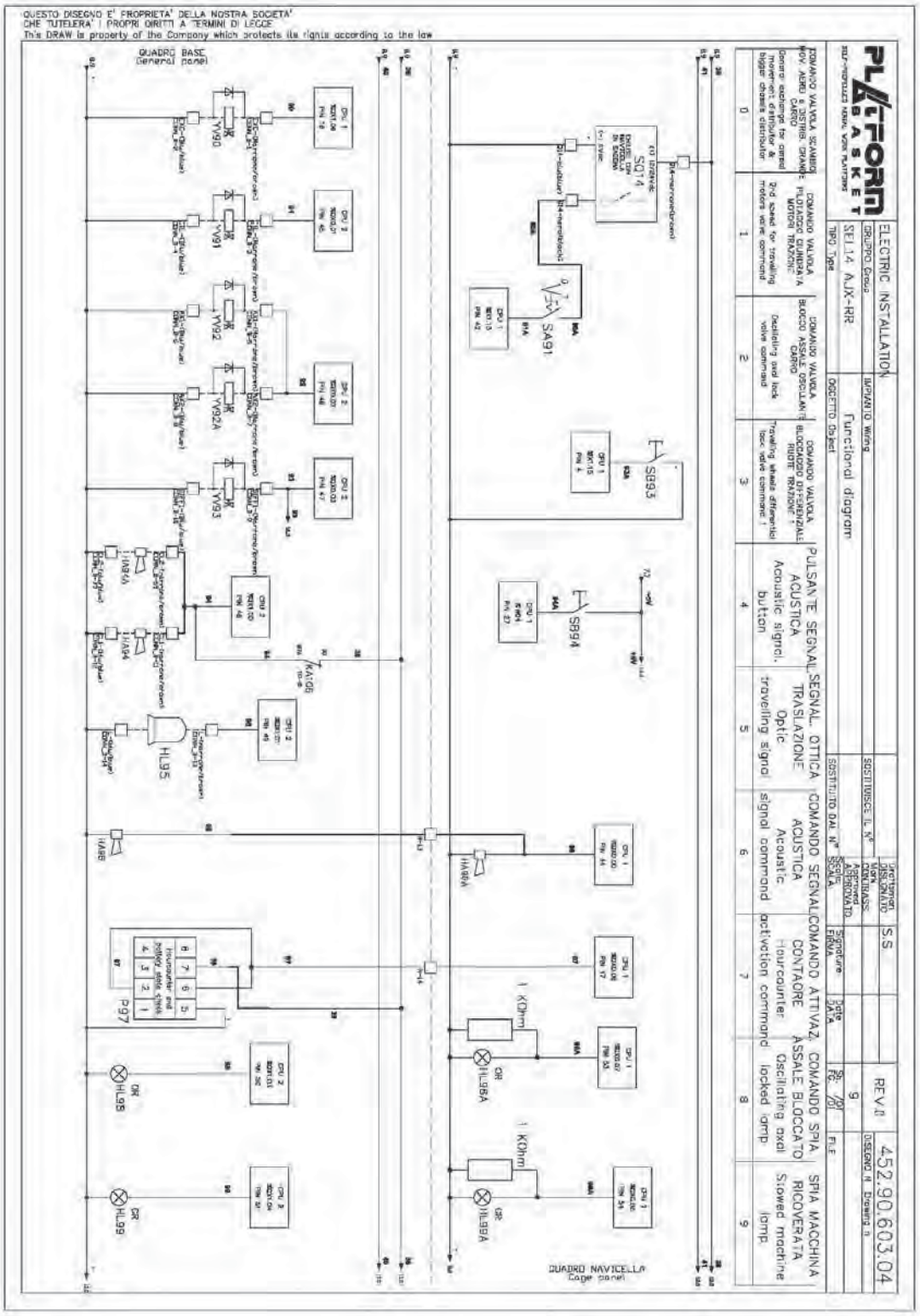
ELECTRIC INSTALLATION
Functional diagram
452.90.603.04
QUADRO BASE General panel
QUADRO NAVICELLA Cage panel
Selettore a chiave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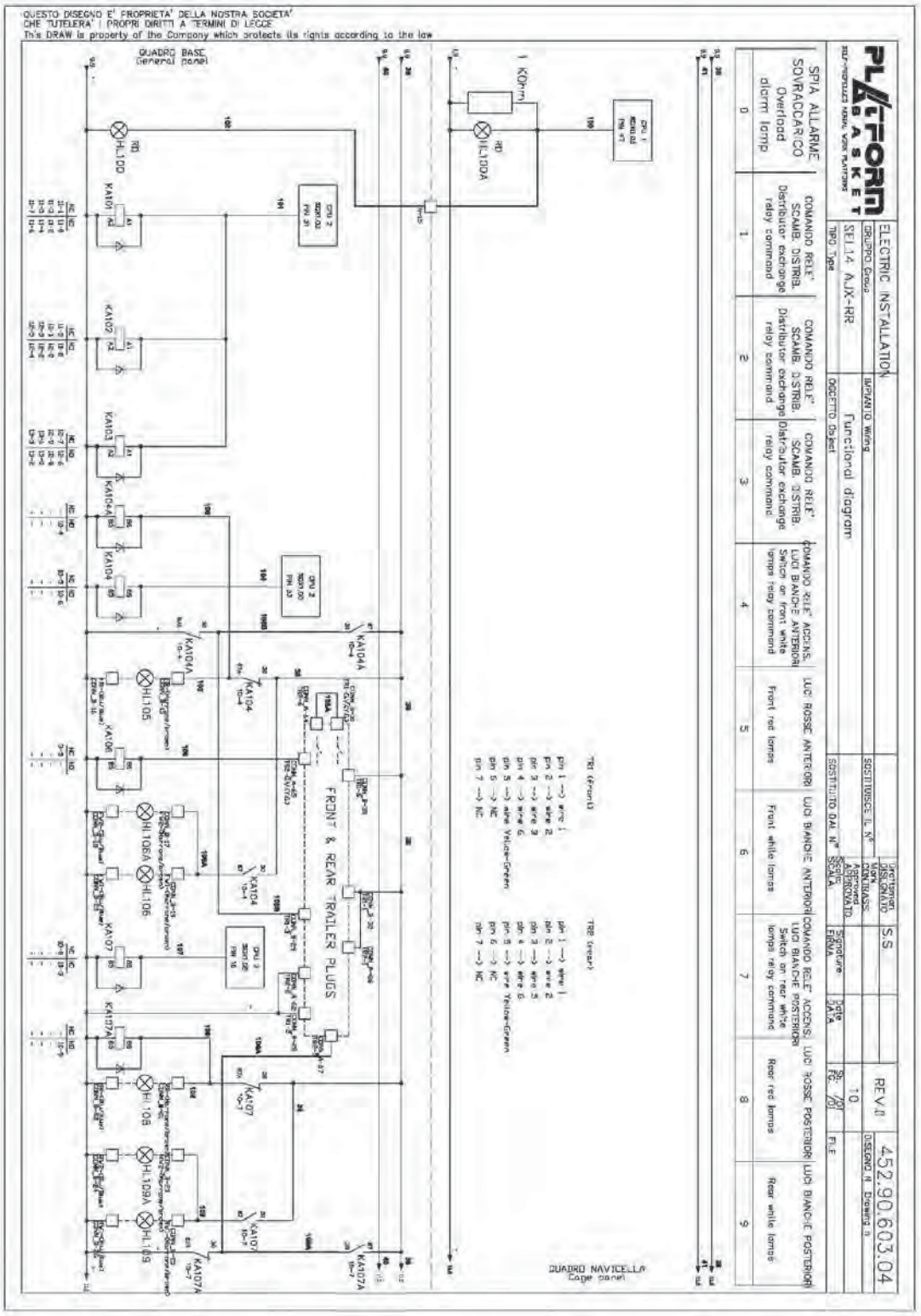
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
PLATFORM BASKET
ELECTRIC INSTALLATION
SE1.14 AJX-RR2
Functional diagram
452.90.603.04
REV.8
SQ14
SA91
S893
S894
HL95
HL98A
HL99A
HL98
HL99
P97
1 KOhm
PULSANTE SEGNAL. ACUSTICA
SEGNAL. OTTICA TRASLAZIONE
COMANDO SEGNAL. ACUSTICA
COMANDO ATTIVAZ. CONTAORE
COMANDO SPIA ASSALE BLOCCATO
SPIA MACCHINA RICOVERATA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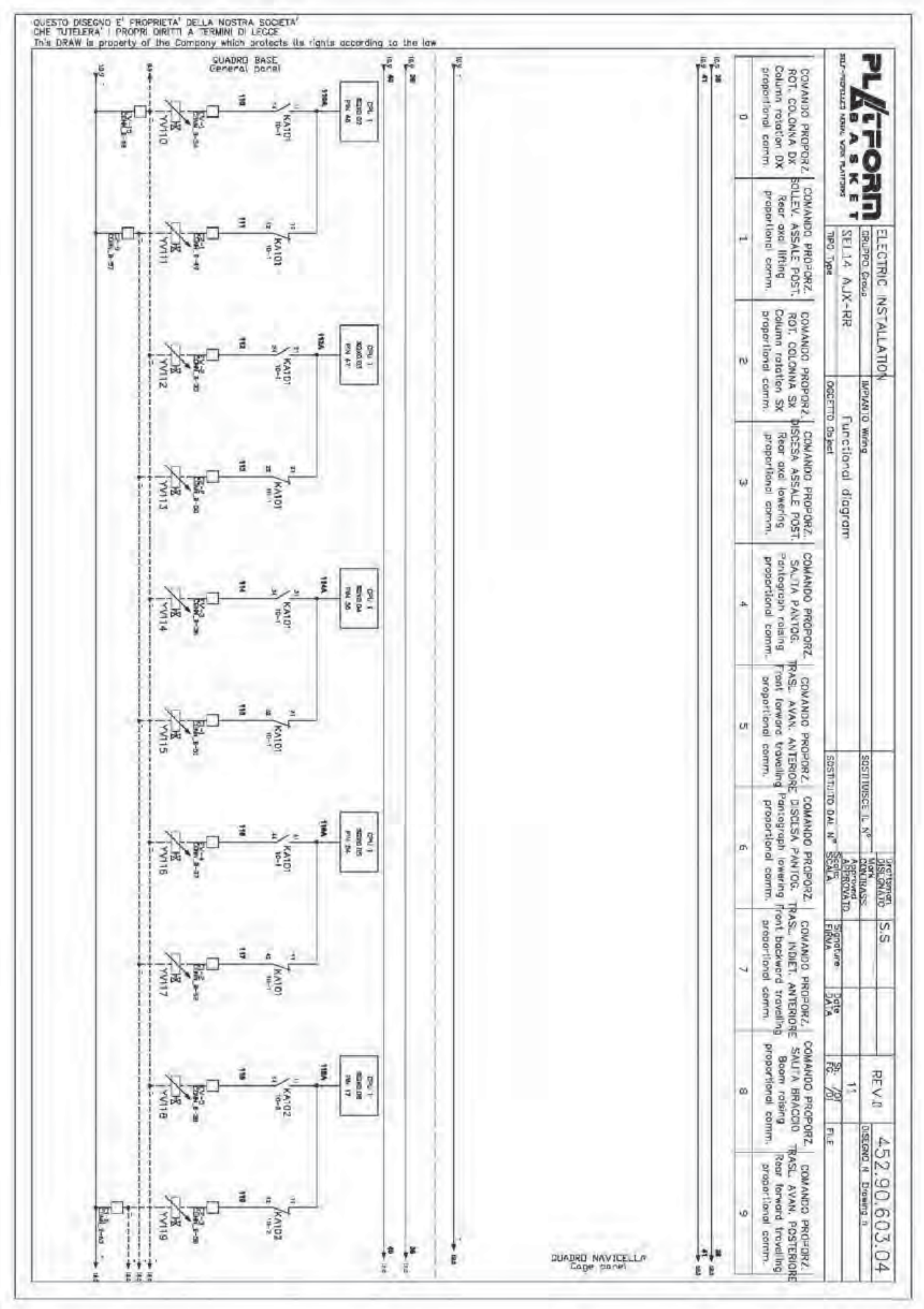
QUADRO BASE
General panel
FRONT & REAR TRAILER PLUGS
QUADRO NAVICELLA
Cage panel
ELECTRIC INSTALLATION
Functional diagram
SEI 14 AJX-RR
452.90.603.04
REV.8
SPIA ALLARME SOVRACCARICO
Overload alarm lamp
COMANDO RELE' SCAMB. DISTRIB.
Distributor exchange relay command
COMANDO RELE' LUCI BIANCHE ANTERIORI
Switch on front white lamps relay command
LUCI ROSSE ANTERIORI
Front red lamps
LUCI BIANCHE ANTERIORI
Front white lamps
COMANDO RELE' LUCI BIANCHE POSTERIORI
Switch on rear white lamps relay command
LUCI ROSSE POSTERIORI
Rear red lamps
LUCI BIANCHE POSTERIORI
Rear white lamps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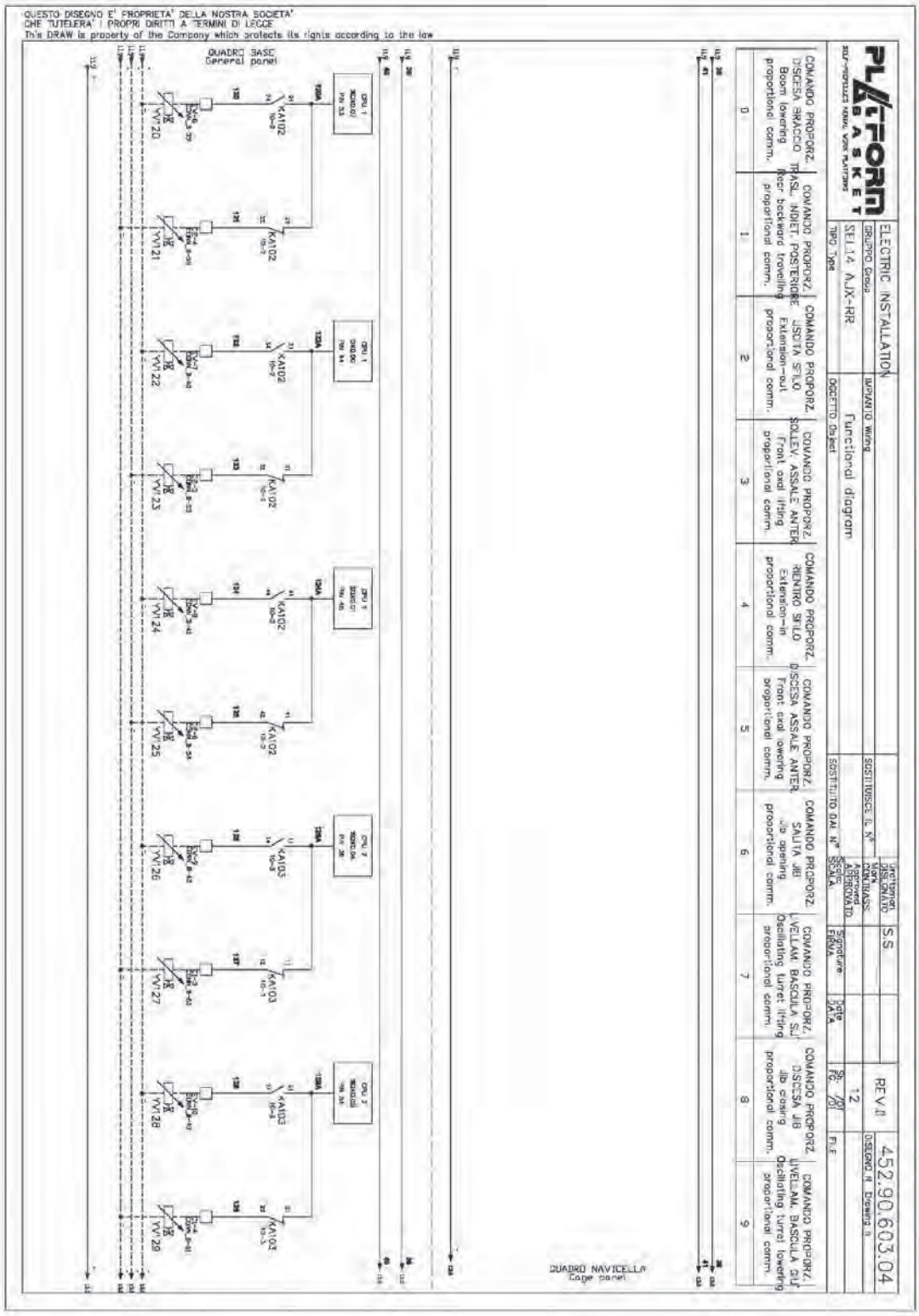
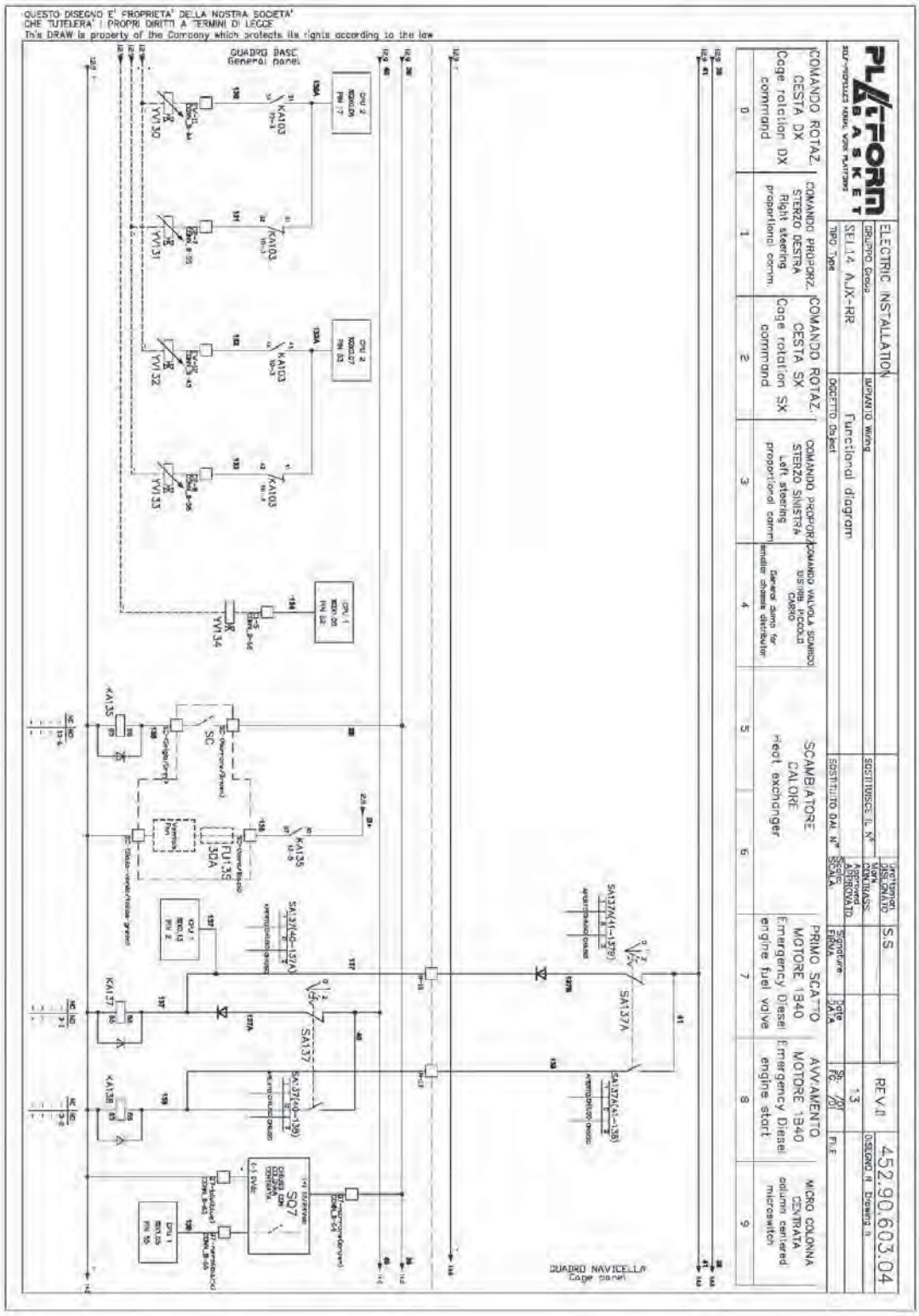
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
ELECTRIC INSTALLATION
SEL14 AJX-RR
Functional diagram
452.90.603.04
COMANDO PROPORZ. ROT. COLONNA DX
Column rotation DX proportional comm.
COMANDO PROPORZ. SOLLEV. ASSALE POST.
Rear axel lifting proportional comm.
COMANDO PROPORZ. ROT. COLONNA SX
Column rotation SX proportional comm.
COMANDO PROPORZ. DISCESA ASSALE POST.
Rear axel lowering proportional comm.
COMANDO PROPORZ. SALITA PANTOG.
Pantograph raising proportional comm.
COMANDO PROPORZ. TRASL. AVAN. ANTERIORE
Front forward travelling proportional comm.
COMANDO PROPORZ. DISCESA PANTOG.
Pantograph lowering proportional comm.
COMANDO PROPORZ. TRASL. INDIET. ANTERIORE
Front backward travelling proportional comm.
COMANDO PROPORZ. SALITA BRACCIO
Boom raising proportional comm.
COMANDO PROPORZ. TRASL. AVAN. POSTERIORE
Rear forward travelling proportional comm.
YV110
YV111
YV112
YV113
YV114
YV115
YV116
YV117
YV118
YV119


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA'
CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
ELECTRIC INSTALLATION
SE1.14 AJX-RR
Functional diagram
452.90.603.04
REV.8
COMANDO PROPORZ. DISCESA BRACCIO Boom lowering proportional comm.
COMANDO PROPORZ. TRASL. INDIET. POSTERIORE Rear backward travelling proportional comm.
COMANDO PROPORZ. USCITA STILO Extension-out proportional comm.
COMANDO PROPORZ. SOLLEV. ASSALE ANTER. Front axial lifting proportional comm.
COMANDO PROPORZ. RIENTRO STILO Extension-in proportional comm.
COMANDO PROPORZ. DISCESA ASSALE ANTER. Front axial lowering proportional comm.
COMANDO PROPORZ. SALITA JIB Jib opening proportional comm.
COMANDO PROPORZ. LIVELLAM. BASCULA SU Oscillating turret lifting proportional comm.
COMANDO PROPORZ. DISCESA JIB Jib closing proportional comm.
COMANDO PROPORZ. LIVELLAM. BASCULA GIU Oscillating turret lowering proportional comm.


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA'
CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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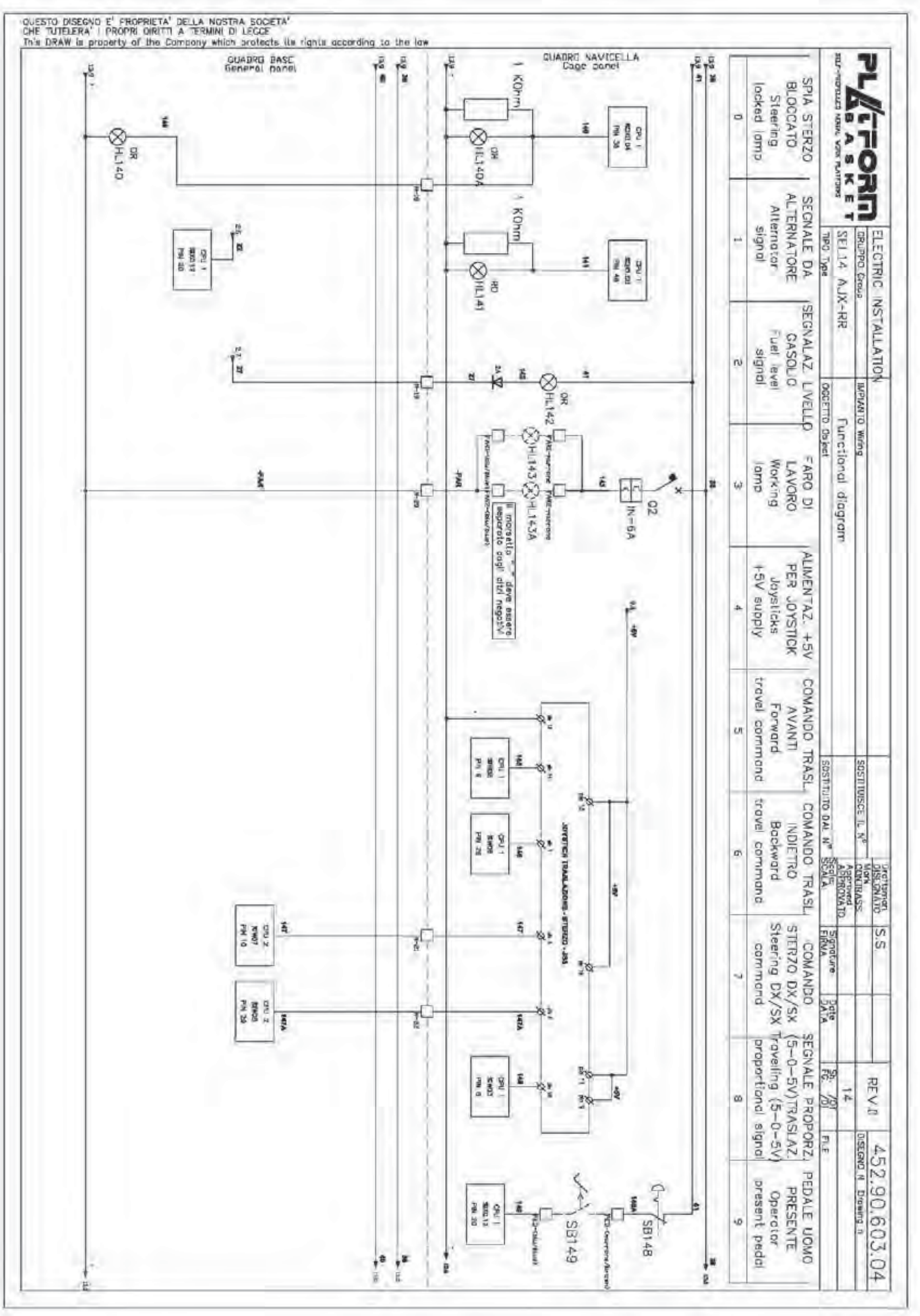
PLATFORM BASKET
ELECTRIC INSTALLATION
SE1.14 AJX-RR
Functional diagram
452.90.603.04
REV.8
GUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
COMANDO ROTAZ. CESTA DX
Cage rotation DX command
COMANDO PROPORZ. STERZO DESTRA
Right steering proportional comm.
COMANDO ROTAZ. CESTA SX
Cage rotation SX command
COMANDO PROPORZ. STERZO SINISTRA
Left steering proportional comm.
COMANDO VALVOLA SCAMBIO DISTRIB. PICCOLO CARRO
Service device for miniature chassis distributor
SCAMBIATORE CALORE
Heat exchanger
PRIMO SCATTO MOTORE 1340
Emergency Diesel engine fuel valve
AVVIAMENTO MOTORE 1340
Emergency Diesel engine start
MICRO COLONNA CENTRATA
column centered microswitch
KA103
KA135
KA137
KA138
SA137
SA137A
SA137M(41-137B)
SA137(40-136)
SA137A(41-136)
SA137M(40-137A)
SQ7
FU1.35
30A
YV130
YV131
YV132
YV133
YV134
SC

RR 14 EVO


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA' CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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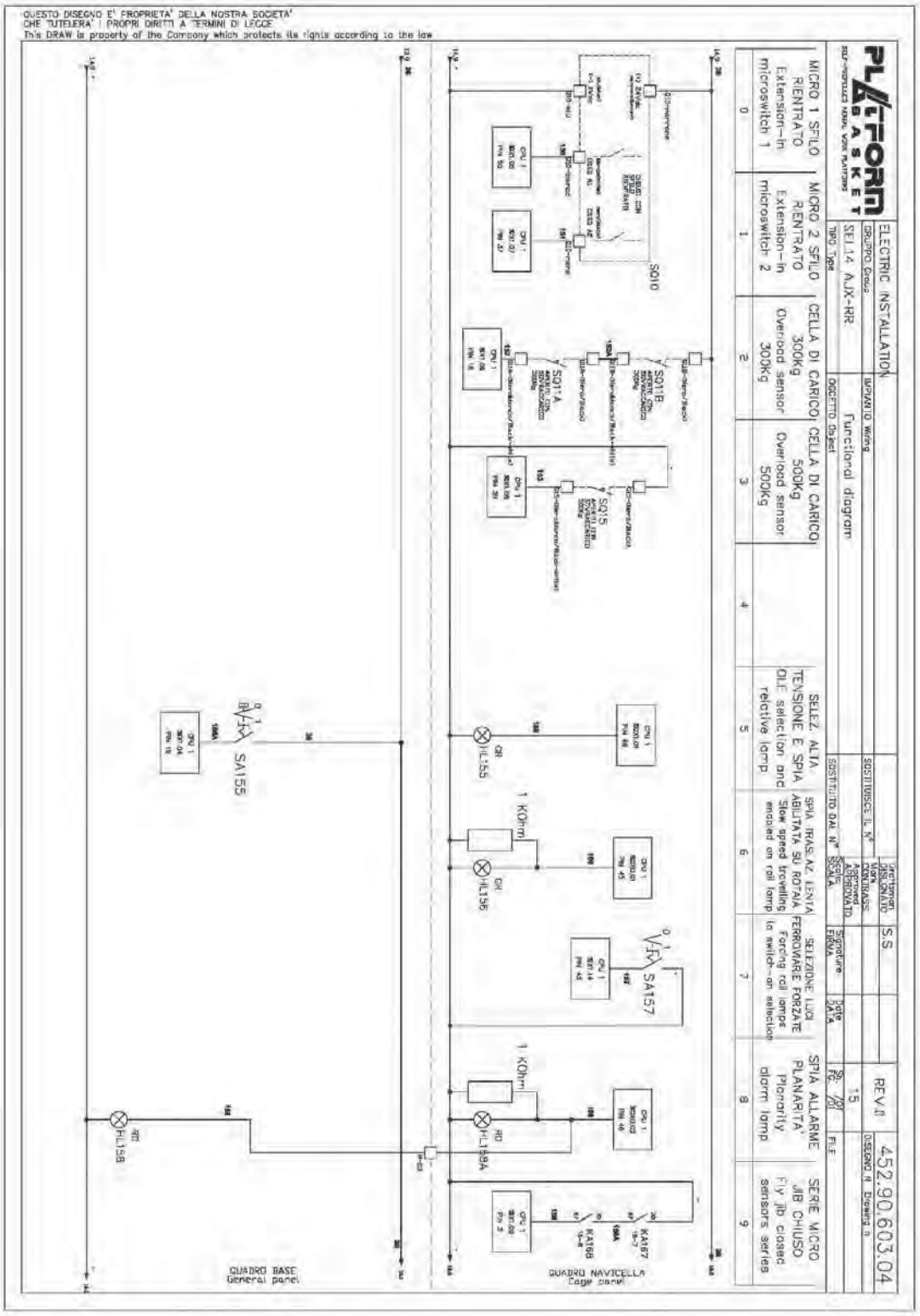
QUADRO BASE General panel
QUADRO NAVICELLA Cage panel
ELECTRIC INSTALLATION
Functional diagram
452.90.603.04
SPIA STERZO BLOCCATO Steering locked lamp
SEGNALE DA ALTERNATORE Alternator signal
SEGNALAZ. LIVELLO GASOLIO Fuel level signal
FARO DI LAVORO Working lamp
ALIMENTAZ. +5V PER JOYSTICK Joysticks +5V supply
COMANDO TRASL. AVANTI Forward travel command
COMANDO TRASL. INDIETRO Backward travel command
COMANDO STERZO DX/SX Steering DX/SX command
SEGNALE PROPORZ. (5-0-5V) TRASLAZ. Traveling (5-0-5V) proportional signal
PEDALE UOMO PRESENTE Operator present pedal
HL140
HL140A
HL141
HL142
HL143
HL143A
Q2
SB148
SB149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CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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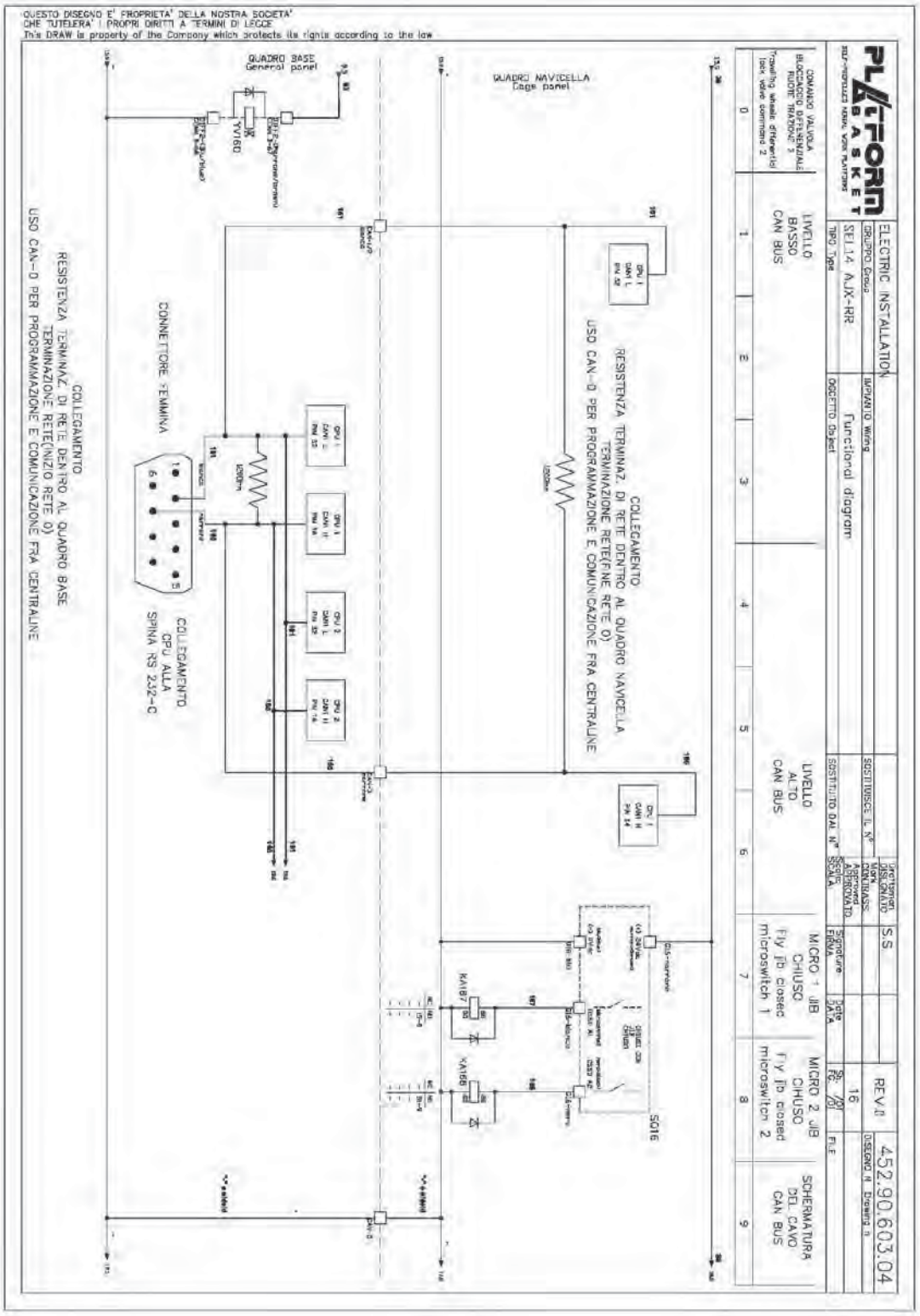
PLATFORM BASKET
ELECTRIC INSTALLATION
SE1.14 AJX-RR
Functional diagram
452.90.603.04
REV.8
MICRO 1 SFILO RIENTRATO Extension-in microswitch 1
MICRO 2 SFILO RIENTRATO Extension-in microswitch 2
CELLA DI CARICO 300Kg Overload sensor 300Kg
CELLA DI CARICO 500Kg Overload sensor 500Kg
SELEZ. ALTA TENSIONE E SPIA OLF selection and relative lamp
SPIA TRASLAZ. LENTA ABILITATA SU ROTAIA Slow speed travelling enabled on roll lamp
SELEZIONE LUCI FERROMARE FORZATE Forcing roll lamps in switch-on selection
SPIA ALLARME PLANARITA' Planarity alarm lamp
SERIE MICRO JIB CHIUSO Fly jib closed sensors series
S010
S011B
S011A
S015
SA155
SA157
HL155
HL156
HL158
HL159A
KA167
KA168
1 KOhm
QUADRO BASE General panel
QUADRO NAVICELLA Cage panel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CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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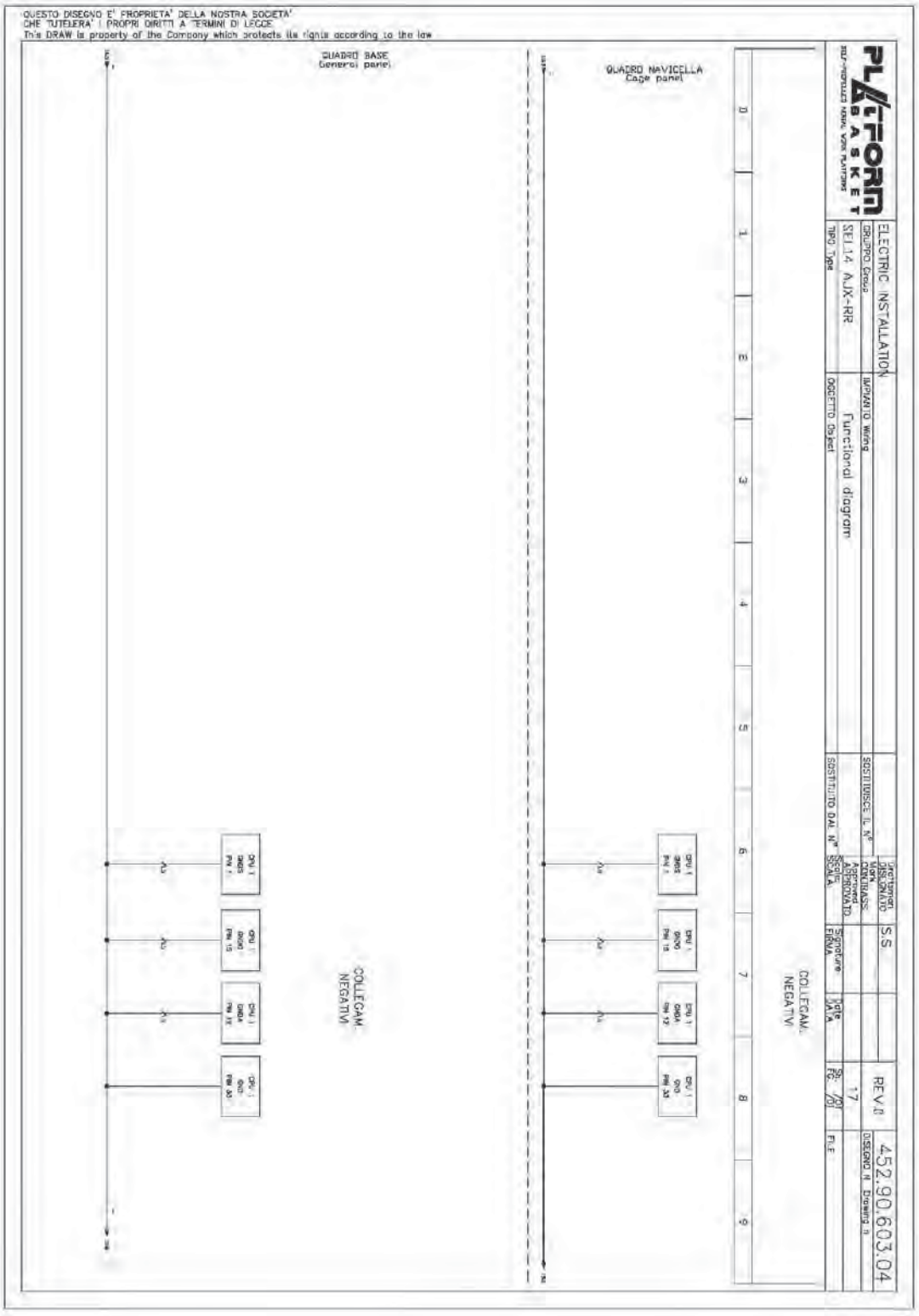
ELECTRIC INSTALLATION
PLATFORM BASKET
SE1.14 AJX-RR
Functional diagram
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
LIVELLO BASSO CAN BUS
LIVELLO ALTO CAN BUS
COLLEGAMENTO RESISTENZA TERMINAZ. DI RETE DENTRO AL QUADRO NAVICELLA TERMINAZIONE RETE(FINE RETE 0) USO CAN-0 PER PROGRAMMAZIONE E COMUNICAZIONE FRA CENTRALINE
CONNETTORE FEMMINA
COLLEGAMENTO CPU ALLA SPINA RS 232-C
MICRO 1 JIB CHIUSO fly jib closed microswitch 1
MICRO 2 JIB CHIUSO fly jib closed microswitch 2
SCHERMATURA DEL CAVO CAN BUS
452.90.603.04
REV.8
16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CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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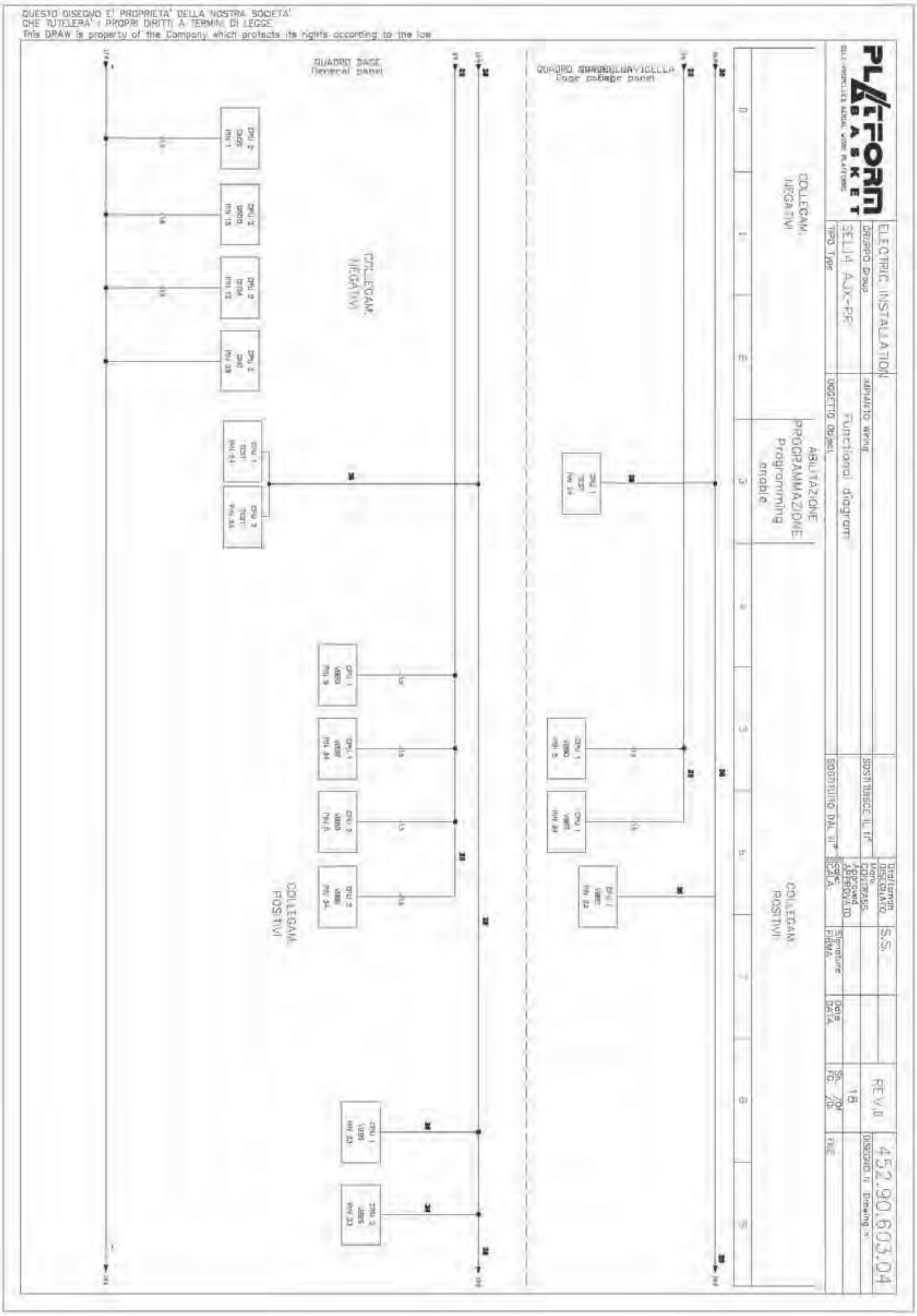
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
COLLEGAM. NEGATIVI
ELECTRIC INSTALLATION
SEI 14 AJX-RR2
Functional diagram
452.90.603.04
REV.0

RR 14 EVO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CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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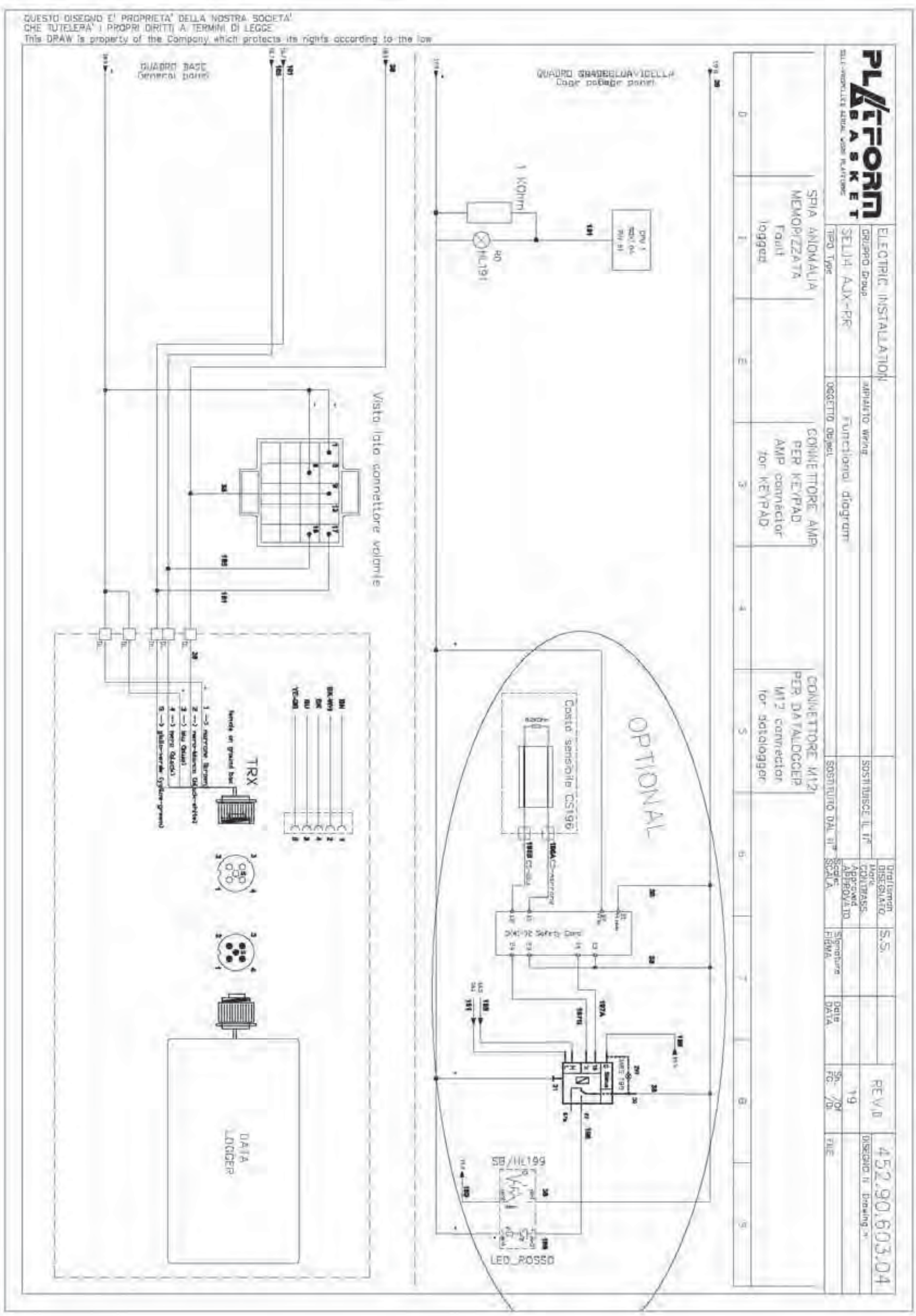
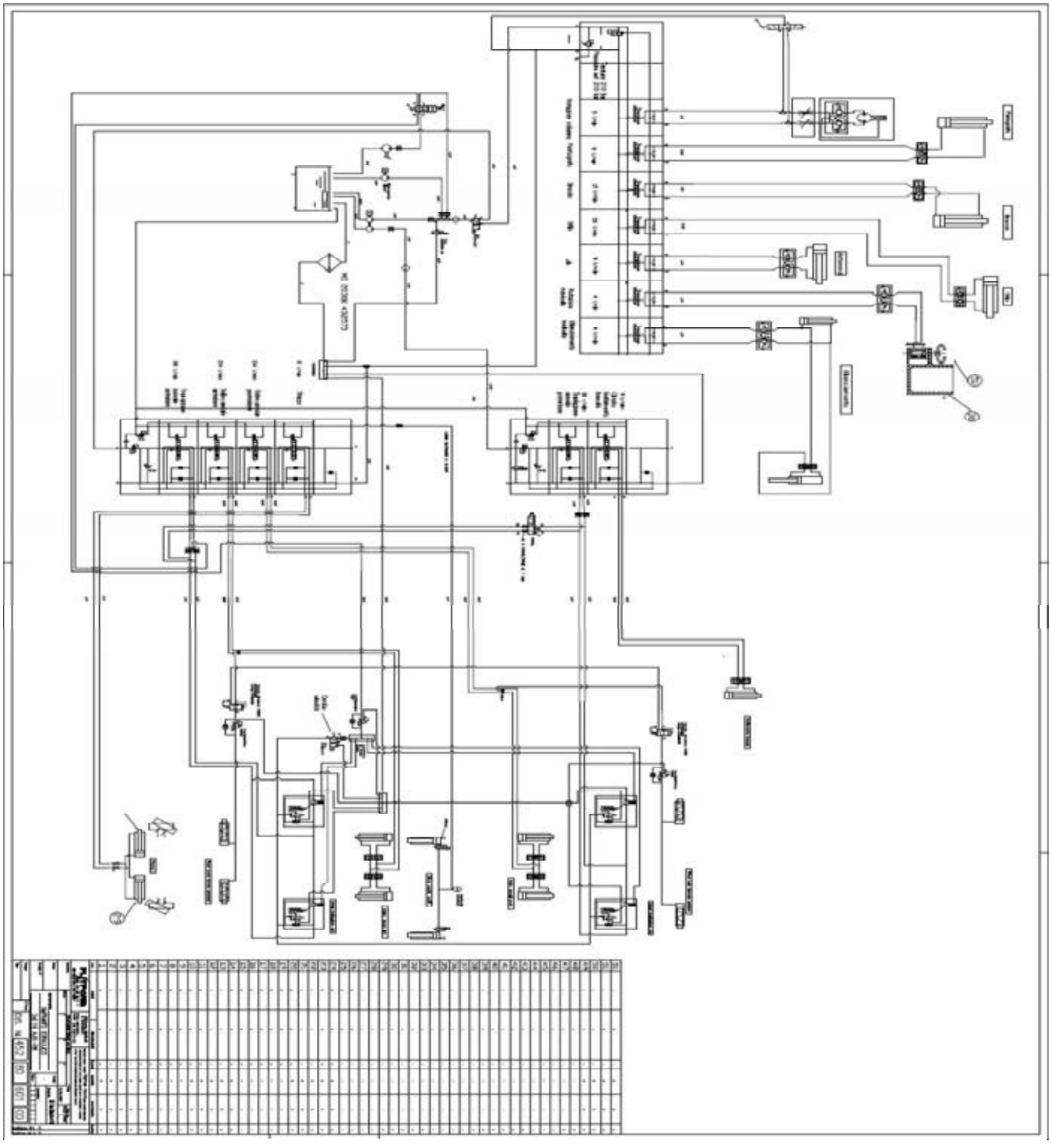
ELECTRIC INSTALLATION
Functional diagram
ABILITAZIONE PROGRAMMAZIONE
Programming enable
COLLEGAM. NEGATIVI
COLLEGAM. POSITIVI
452.90.603.04

RR 14 EVO


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA'
CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
QUADRO BASE
General panel
Vista lato connettore volante
TRX
DATA LOGGER
OPTIONAL
Costa sensibile CS196
LED_ROSSO
SB/HL199
1 KOhm
HL191
SPIA ANOMALIA MEMORIZZATA
Fault logged
CONNETTORE AMP PER KEYPAD
AMP connector for KEYPAD
CONNETTORE M12 PER DATALOGGER
M12 connector for datalogger
ELECTRIC INSTALLATION
Functional diagram
SELM AJX-RR
452.90.603.04

RR 14 EVO

Hydraulic Circuit Diagram



Section 5

General Safety and Operating Good practice

Refer to Platform-Basket "Reference use and maintenance manual", version 03/2017 section D1 "General Safety Rules" pages 34-35.

Section 6

Controls, layout and locations

Refer to section 'E', pages 53-62 of Platform-Basket "Reference use and maintenance manual", version 03/2017.

Section 7

Rail Axles Operation

The rail axles can be raised or lowered from cage or ground panel control stations.
The fixed axle end (opposite end to operator when in stowed position) must be fully deployed before lowering oscillating (nearest to operator) rail axle. Note oscillating axle will only deploy when the fixed end axle is fully down and steering pins have been inserted.
Note, Although 1 axle must be fully deployed before operating other end, ALL wheels are braked unless in movement – rail axle being deployed will have free brakes to prevent 'skidding' of rail wheels when contacting rail head.

Section 8

Rail Axle Brakes – *(Not applicable to machines fitted with hydrostatic drive axles)*

- ***The information contained in this document assumes the machine is as supplied and has not modified or adapted without the manufacturers written consent.***

All rail wheels have disc brakes with piston type spring applied brakes. The spring applies the braking force whenever hydraulic pressure is not present. The brakes are 'off' during the following operations:-

1. Travel, forward or reverse
2. Rail axle lifting or lowering (only the brakes on axle being moved are off).
3. Emergency operation utilizing hand-pump and spring return valve located under canopy adjacent to lower control panel. (See page 91, section 'I' of Platform-Basket "Reference use and maintenance manual", version 06/2013).

Section 9

-

On / Off Tracking – See section 1.4 in section 'I' of Platform-Basket "Reference use and maintenance manual", version 03/2017 and Page 36 of this document for dimensional sketch of required RRAP.

On Tracking
Attention
Before approaching any Railway line, you must first ensure all Authorities, Documentation, Isolations and Possessions etc. Have been received.
-On / Off tracking will only take place at a designated RRAP (Rail Access Point). Taking account of the relevant module of Network Rail infrastructure Plant Manual NR/PLANT/0200.
-Cant, Gradient, Gauge and track conditions must be within the specified machine tolerances.
-Manoeuvre the RR14 to align rail wheel flanges.
-Lower wheels starting with rail gear at opposite end to the cage to engage flanges with rail (drive / steer if necessary). Fully lower this axle. (Opposite end will not move until this is fully down.
-Centralise steering and insert locking pins.
-If necessary raise fly-jib to prevent cage contacting ground / rail.
Ensure both ends have fully engaged with the rubber tyres.
Test forward / reverse to ensure correct functioning of drive and rail direction lights.

Off tracking
-Park machine on RRAP.
Fully raise steering end rail axle, then raise fixed end rail axle – interlock prevent partial, sequential or simultaneous movements of rail axles.
Remove steering locking pins

Under Live OLE

Attention
On / Off Tracking under live OLE must be done in conjunction with the relevant authority and must be controlled and supervised by Machine Controller / Coss / PICOW / and in compliance with the specific method statement and risk assessment etc.

On Tracking Procedure (this is how to operate the machine only and all operations must be controlled and monitored by the person in charge).
Person controlling the works will open side panel, turn OLE key to 'Live' position and remove the key.
-Operator to test boom functions to ensure pantograph will not lift, main boom will only lift approx. 300mm and fly boom is restricted.
Drive onto the RRAP and align fixed end (opposite to operator) flanges.
Fully lower fixed end rail axle while monitoring cage proximity to rail head. If necessary main boom and fly-jib can be raised sufficiently to maintain a small gap between rail and cage. Note any attempt to move boom out of restricted area stops rail axle movement.
When fixed end is fully deployed, insert steering pins and fully lower steering end rail axle. – max cage height will be approx 1250-1300mm above rail head.
Insert slew locking pins and open OLE hydraulic lock valve. Fix with padlock. This prevents any further movements of boom.

Off Tracking

Attention

On / Off Tracking under live OLE must be done in conjunction with the relevant authority and must be controlled and supervised by Machine Controller / Coss / PICOW / and in compliance with the specific method statement and risk assessment etc.

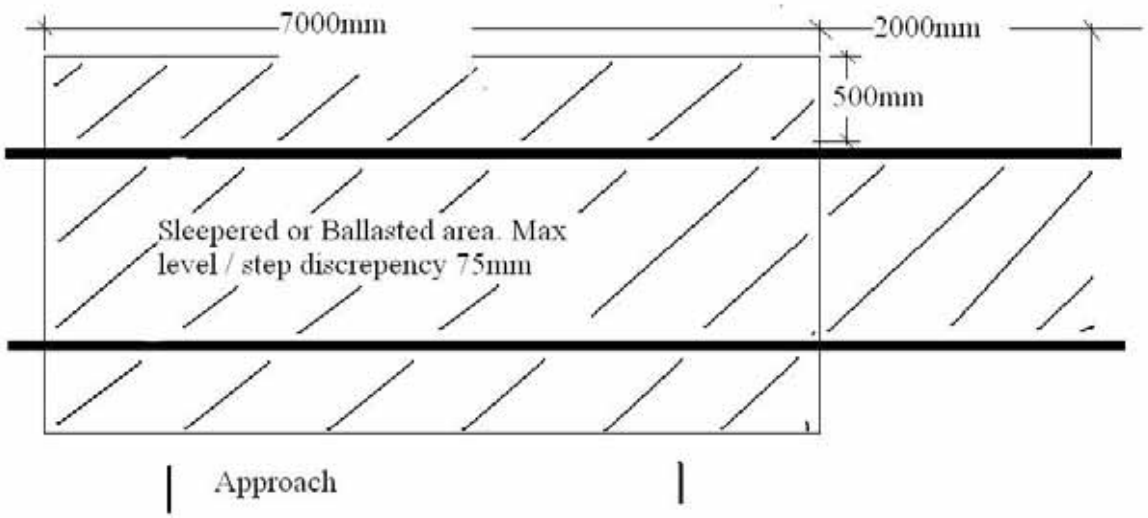
-Machine will have travelled to the RRAP with OLE Key in restricted position, booms fully down and fly boom within restricted area.

Raise main boom and fly boom to restriction (green light for travel and rail gear will extinguish, lower main boom and fly boom slightly to relight.

Raise steering (closest to cage) rail axle fully – If not raised fully fixed end will not move.

Fully raise fixed end and remove steering pins.

Now open the side panel and turn the OLE key back to "Normal".



The RR14EVO, having good terrain and manoeuvring capabilities, requires a level ballasted or sleepered area as above. The approach can be ramped, ballast or prepared ground – Ballast shoulder would be disturbed and should be avoided.

Section 10

Emergency recovery / operating – see section 1.6 in section 'I' Platform-Basket "Reference use and maintenance manual", version 03/2017.

Section 11

Devices, locations and descriptions

Section 'F' pages 63-78. Platform-Basket "Reference use and maintenance manual", version 03/2017 gives detailed description of limit switches, indicators, pins and indicators etc. their location, designation and use.

Section 12

Maintenance

Auditable records of maintenance to RRV's shall be kept in accordance with RIS-1530-PLT Issue 6.
It is also required to update the machine log book with a date, time and description of any maintenance carried out.
Any measurements taken or adjustments such as: brake tests, rail wheel checks, load limiters etc are also required to be recorded.

12.1
Safe Working Practice
Before lubrication and maintenance tasks:

Machine must be on firm level ground.
Stop engine and remove starter key.
Isolate the Battery.
Allow engine to cool.
Chock wheels.

12.2
Warning – Fluids

Handle fluids with care. Avoid skin contact with used oil. Protect hands with an effective barrier cream and/or gloves.
Fluids under pressure can escape from extremely small holes.
When checking for leaks use a piece of card, **NEVER** use your hand.
Always dispose of waste lubricants and filters in a responsible manner.

12.3
Warning-Hydraulic Connections
Ensure all hydraulic connections are tight. Relieve all pressure by moving the hydraulic control levers and allow the system to cool before disconnecting hoses or lines.

12.4
Hydraulic Hoses
Ensure any replacement hydraulic hoses are of an equivalent or superior rating to original fitments and correctly routed. Minimum hose specifications are shown below. Refer to hydraulic circuit diagrams for specific information regarding pressures in separate parts of the hydraulic system.

12.5
Warning - Batteries
Batteries shall be recharged in a well ventilated area free of flame, sparks or other hazards that may cause explosion. Highly explosive hydrogen gas is produced during the charging process.
When checking electrolyte levels great care should be taken to protect eyes, skin and clothing. Battery acid is highly corrosive and protective glasses and clothing is recommended.

12.6
Warning - Welding
Never use the RR 14 EVO as a welding ground Earth bonding is for personal protection only). Welding (repair or otherwise) will not be carried out on the RR 14 without prior written consent from the manufacturer or Promax Access Ltd, and under no circumstances will welding ever be permitted on Hydraulic (or other pressure) cylinders, valves or fittings etc.

12.7
Threaded Fasteners
Renewal Policy
All split cotter pins, star washers, locking tabs, spring washers and nyloc nuts removed during maintenance and repairs **MUST BE RENEWED**. All other fasteners removed during maintenance and repairs shall be renewed if any part of them is worn or distorted.

12.8
Tightening of Threaded Fasteners
For correct torque settings refer to Platform-Basket "Reference use and maintenance manual", version 03/2017, section M.18

12.9
Preparing For Maintenance
Before carrying out any maintenance, Read, Understand and follow the guidance in section M.6. Platform-Basket "Reference use and maintenance manual", version 03/2017.

12.10
Information and Reference on how to perform maintenance tasks
Section M of the Operation and Maintenance manual give guidance and specific instruction on how to perform the required maintenance. 'Man Sect' in last column of following schedule refers to Platform-Basket "Reference use and maintenance manual", version 03/2017 sections.

Section 13

Maintenance Schedules

The RR 14 EVO is to be examined at frequencies no greater than the limits set out below:

Type of Exam	Time
A	Daily or Pre-use
B	Pre-hire or Monthly
C	6 Monthly (or 250 hours) whichever comes first
D	12 Monthly (or 500 hours) whichever comes first

Code	Minimum level of Competency
O - Operator	IPAF & OTP trained / qualified
F - Fitter	Apprentice trained / competent person
S - Specialist	Engineer, suitably qualified with in depth knowledge

Summary of Job numbers, allocation and location and frequency.

The last Column gives location / reference for instruction how to complete the task; e.g OM.M.8 indicates Platform-Basket "Reference use and maintenance manual", version 03/2017, Maintenance section, Section 8 for further information. Jobs not covered by the Platform-Basket "Reference use and maintenance manual", version 03/2017 can be found at end of this section.

Job No.	Description / location	Intent	A	B	C	D	Additional Info.	Requires Record
LOLER	Statutory Loler Exam.	LOLER			S		Statutory 6 monthly inspection	Yes
General								
Gen.EVO	General Condition of RRV	Check	O	F	F	F	OM.D.2.6	
Cont.EVO	All controls for correct operation	Check	O	F	F	F	OM.E1, E2	
Emerg.Ops	Check Auxiliary Systems	Check	O	F	F	F	OM.I.6	
Gen.Fluids	Fluid Leaks	Check	O	F	F	F		
Grease	Fully Grease RRV	Lube		F	F	F	OM.M.8.1	
Docs.EVO	Documentation	Check	O	F	F	F		
Clean.EVO	Machine Cleaning	Clean	O	F	F	F	OM.M.7	
Decal.EVO	Decals	Check	O	F	F	F	OM.B.2.1	
Diesel Engine – Main Engine								
Gen.Fluids	Fluid Leaks	Check	O	F	F	F		
Eng.Oil.	Oil Level	Check	O	F	F	F	Manu. Man	
EngOil-Filt	Oil Filter	Change			F	F	Manu. Man	
Eng.Oil.Rep	Oil	Replace				F	Manu. Man	
Eng.Gen	Engine Generally	Check		F	F	F	Manu. Man	
Fuel-Filt	in-line Fuel Filter	Replace			F	F	Manu. Man	

Fuel-Filt	Main Fuel Filter	Replace			F	F	Manu. Man	
Air-Filt	Air Filter	Replace			F	F	Manu. Man	
Air-Filt	Filter Housing	Clean			F	F	Manu. Man	
Diesel Engine - Auxilliary								
GenFluids	Fluid Leaks	Check	O	F	F	F		
Eng.Oil.	Oil Level	Check	O	F	F	F	Manu. Man	
Eng.Oil.Rep	Oil	Replace				F	Manu. Man	
Eng.Gen	Engine Generally	Check		F	F	F	Manu. Man	
Fuel-Filt	Fuel Filter & Fuel	Replace			F	F	Manu. Man	
Hydraulics								
GenFluids	Fluid Leaks	Check	O	F	F	F		
Hyd.Oil	Hydraulic Oil Level	Check	O	F	F	F	OM.M.10	
Hyd.Oil.Rep	Hydraulic Oil	Replace				F	OM.M.10	
Hy.PFilt.Evo	Pressure Filters	Replace			F	F	OM.M.13	
Hy.RFilt.Evo	Return Filter	Replace			F	F	OM.M.14	
Hyd.Cyl.	Hydraulic Cylinders	Check		F	F	F	OM.D2.6	
Hyd.Cyl.E	Hyd. Cylinders and Hoses	Examine			F	F	OM.D2.6	
CageLev	Cage Levelling	Check	O	F	F	F	OM.E2	
CheckV	Check / Lock valves	Test			S	S		
Man-pump	Manual hand pump	Test		F	F	F	OM.E.4	
OLE.Val	Boom OLE Lock valve	Check	O	F	F	F		
Electrical								
Batts	Batteries	Check	O	F	F	F	OM.M.16	
R.Lights	Rail Lights	Check	O	F	F	F	OM.E.3	
EStops	Emergency Stop Buttons	Test	O	F	F	F	OM.M.20	
RHorn	Horn	Check	O	F	F	F		
RHorn-T	Horn	Test				S		Yes
Switches	All Switches and Controls	Check	O	F	F	F	OM.E.1,2	
Interlocks	All Interlocks	Check		F	F	F	OM.F	
OLESys	OLE Interlock System	Test		F	F	F	OM.E.1	
Earth	Earth Bond	Test				S		Yes
Chassis								
Gen.EVO	General Condition	Check	O	F	F	F	OM.M.17	
Wheel+Tyre	Road Wheels + Tyres	Check	O	F	F	F	OM.M.17	
Wheel+Tyre	Road Wheels + Tyres	Examine		F	F	F	OM.M.17	
Grease	Fully Grease	Lube		F	F	F	OM.M.8.1	
Steering	Steering	Check	O	F	F	F	OM.F.1.10	
Tow-Bar	Recovery Tow bar	Check	O	F	F	F		

Limits	Limit Switches	Check		F	F	F	OM.F.1.5 To F1.7	
TorqueHubs	Drive Hubs	Check		F	F	F	OM.D.2.3	
TorqueHubOil	Replace Oil	Renew				F		
Turret, Boom and Cage								
Gen.EVO	General Condition	Check	O	F	F	F	OM.D.2.6	
Struct	Structure	Examine		F	S	S	OM.D.2.3	
Pivots	Pins and Bushes	Check		F	S	S	OM.M.18	
Grease	Full Grease	Lube		F	F	F	OM.M.8.1	
Tur.Lev	Cant Level System	Check	O	F	F	F	OM.F.1.4	
180pins	Rotation stop pins	Check	O	F	F	F	OM.F.1.9	
Limits	Limit Switches	Check		F	F	F	OM.F.1.5 to F1.7	
Harnesspoint	Harness Attach Points	Examine			S	S		
Cageload	Cage Load Limiter	Test			S	S	OM.F.1.1	Yes

13.1

Job No.	**Description / location**	**Intent**	**A**	**B**	**C**	**D**	**Additional Info.**	
Rail System								
RSA.1	Axle Frames	Lube		F	F	F	OM.M.8.1	
RSA.2	Axles	Check		F	F	F		
RSA.3	Axles	Examine			S	S		
RSA.4	Oscillating Pivot / Cylinders	Check		F	F	F	OM.D2.6	
RSA.5	Oscillating Pivot / Cylinders	Examine			S	S	OM.D2.6	
RSA.6	Axle Frame Interlock	Test		F	F	F	OM. E, F,	
RSA.7	Drive Stubs	Check		F	F	F	OM.I.15	
RSA.8	Squash / Friction with Tyre	Adjust			F	F	OM.I.15 If necessary	
RSA.9	Debris remover / sweeper	Check		F	F	F		
RSA.10	Break-away horn (when towing trailer)	Check		F	F	F		
RSA.11	Rail axle interlock	Test		F	F	F		
Arising Work								

13.2

Job No.	Description / location	Intent	A	B	C	D	Additional Info.	
Rail Miscellaneous								
RS-EREC	Emergency Recovery Sys.	Test		F	F	F	OM.I.6	
RS-Decal	Rail Specific Decals	Check	O	F	F	F	OM.B	
Arising Work								

13.3

Job No.	Description / location	Intent	A	B	C	D	Additional Info.	
Rail Wheels								
RS.1	Back to Back	Check			F	F	RIS-1530	Yes
RS.2	Wheel Bearings	Lube		F	F	F	Manu.	
RS.3	Wheel Bearings	Check			F	F	SKF33215	
RS.4	Wheel Bearings	Examine				S	SKF33215	
RS.5	Rail Wheels	Check		F	S	S	RIS-1530	
RS.6	Rail Wheels	Examine				S	RIS-1530	
RS.7	Drive Stubs	Check		F	F	F		
RS.8	Flange Height	Check				S	RIS-1530	
Arising Work								
RS.15	Rail Wheel Re-profile	Profile					If necessary	

13.4

Job No.	Description / location	Intent	A	B	C	D	Additional Info.	
Rail Brakes								
RB.1	Brake	Check		F	F	F	Manu.	
RB.2	Service Brake	Test				F	Manu.	Yes
RB.3	Parking Brake	Test				F	Manu.	Yes
RB.4	Brake Pads (Rail Wheels)	Check		F	F	F	Manu.	
RB.5	Brake Pads (Rail Wheels	Replace				F	Manu. If necessary	
Arising Work								

Section 14

Rail Specific Maintenance Instructions

Scheduled Work is that mandatory work which should be undertaken at the prescribed examinations.

Arising Work is that work that is to be done to rectify the defects found in the course of carrying out **Scheduled Work.**

Refer to Platform-Basket "Reference use and maintenance manual", version 03/2017, for diagrams, locations and specifics.

The following pages have been compiled for Rail Specific tasks not covered in detail in the Platform-Basket "Reference use and maintenance manual", version 03/2017.

The Data Logger shall be interrogated and downloaded as detailed in the manufacturer's instruction manual and in accordance with the RRV operators maintenance policy.

Job RB.1 Brake – Check

Scheduled Work
1) Ideally with machine on an incline (max 1:25) the RR14 should remain stationary with fwd/rev joystick in neutral or engine off.

2) Run the RR14 (downhill if available) and release the joystick or remove foot from dead-man, - **Machine should come to a stop within 6.0 m.**

Arising Work

(1-2) If the RR14 fails the brake check, make sure the disc brakes are free and functioning and the brake pads are ok.
Re-test.

Check and adjust tyre 'Squash' -
Lower rail axle until drive stub touches the road tyre.
Take a measurement from the drive stub to road wheel steel rim (suggestion) or other suitable fixed point.
Fully deploy the axle and take same measurement – compare the two dimensions.
Difference should be 18-25mm.
If not, use the adjuster to bring 'squash' into this range.
Replace the adjuster locking bar.

Job RB.2 Service Brake – Test

Scheduled Work

TESTS TO BE CARRIED OUT ON CLEAN, DRY, LEVEL RAIL.

This test must be performed three times and the stopping distances recorded.
Test must be performed towing an un-braked load of 1200 kg.

1 Mark the rail position where the brakes are to be applied.
2 Start engine and allow 1 minute warm up.
3 Move machine to allow for room to get up to speed.
4 Accelerate up to full travel speed- approx. 8 km/h (5 mph).
5 When the braking point is reached release joystick.
6 Measure the distance taken to stop and record in accordance with RIS-1530-PLT Issue 6.

THE MAXIMUM STOPPING DISTANCE ON RAIL AT A SPEED OF 8 km/h is 6.0 m.

7 Compare results with previous.

Arising Work

6 If the Machine has failed the service brake test, Remove the RRV from service, Sign "MUST NOT BE USED" and consult manufacturer because all 8 brakes must have failed.

Job RB. 3 Parking Brake – Test

Warning
Before testing Parking Brake ensure the area is clear of people.
Scheduled Work

TEST TO BE CARRIED OUT ON CLEAN, DRY RAIL.
The following test is to be carried out on a 1:25 gradient with 1200 kg un-braked trailer. In the absence of a suitable inclined test line and trailer, a force of 1000 kg needs to be held as a drawbar pull. A suitable load cell and towing vehicle (or other means of applying the load) is of course needed in order to generate and measure the load.
1:25 Gradient

1 Stand machine and trailer on 1:25 gradient.
2 *The machine should not move.*
3 Record in accordance with RIS-1530-PLT Issue 6.

Drawbar Pull – *Level Surface*

Road mode
4a Connect the machine to a suitable load cell and towing vehicle.
5a Using the towing vehicle apply a load of 1000 kg to the machine. (Simulates 1:25 gradient plus 1200 kg un-braked trailer)
6a *The machine should not move.*
7a Record in accordance with RIS-1530-PLT Issue 6.

Rail mode
4b Disengage the drive stubs from rubber tyres.
5b Using the towing vehicle as in 4a, apply a load of 1000 kg to the machine. (Simulates 1:25 gradient plus 1200 kg un-braked trailer)
6b *The machine should not move.*
7b Record in accordance with RIS-1530-PLT Issue 6.

Warning
Do Not Operate a machine that has moved during the parking brake test.

Arising Work
2, 6a, 6b If the Machine has failed the parking brake test, check and adjust brakes. The RR 14 is braked using 8 brakes and can only move with oil pressure / flow to release.
2, 6a, 6b **REPEAT TEST** after repairs or adjustments have been made.

Job RB.4 Rail Wheel Brake Pad – Check

Warning
Brake Pads generate dust which if inhaled, may endanger health.
Clean hands thoroughly after work.

Scheduled Work
1 Check that pads on all rail wheels are present and undamaged.
2 Check wheel cannot be turned by hand when brake is on, but will rotate freely when 'hand-pumped' off.

Arising Work
1-2 Renew any pads that are damaged or worn.

Job RS.1 Rail Wheel Back to Back – Check

Scheduled Work
1 Check Wheel back-to back measurement is within tolerance of 1358mm – 1362mm using a wheel spacing gauge, Part No. 7540, at three locations around the wheels.

Arising Work
1.1 If out of tolerance at all three locations proceed as follows
Check the wheel bearings and wheel location for correct seating on bearing boss.
1.2 If out of tolerance at only one or two locations, and the wheel bearings are tightened correctly, then renew the axle.

Job RS.3 Rail Wheel Bearings – Check

Scheduled Work

1 Remove Drive stub and Bearing locking nut.
2 Support rail wheel with a strop around the tread and attach to suitable lifting gear (600KG min).
3 Remove the bearing nut and outer bearing.
4 Check bearings for corrosion, wear, fretting or axial movement.
5 Grease as necessary.
6 Refit Bearing parts and securing nut, tighten nut until load is just felt on the bearing while turning wheel assembly by hand. (upon reaching required torque the wheel should turn by hand with moderate force, not spin freely or bind).
7 Fit new locking nut.
8 Run machine and check for play / free rotation after approx 1 hour running time.

Arising Work

5 Rail Wheel Bearings – Examine Job RS.4

Job RS.4 Rail Wheel Bearings – Examine

Scheduled Work

1 Remove Drive Stub and Bearing locking nut.
2 Support rail wheel with a strop around the tread and attach to suitable lifting gear (600KG min).
3 Remove the bearing nut and outer bearing.
4 Check bearings for corrosion, wear, fretting or axial movement.
Remove Bearing shells, clean and gauge to manufacturers data sheet.
5 Inspect Bearing journal for wear, pick-up and scoring. If journal diameter is worn allowing 'spinning' of bearing the axle needs replacing.
6 Fit new or accepted used bearing.
7 Grease as necessary.
8 Refit Bearing parts and securing nut, tighten nut until load is just felt on the bearing while turning wheel assembly by hand. (upon reaching required torque the wheel should turn by hand with moderate force, not spin freely or bind).
9 Fit new locking nut.
10 Run machine and check for play / free rotation after approx 1 hour running time.

Arising Work

8 Renew bearings
9 Repair Journals, renew if repair is not viable.

Job RS.5 Rail Wheels – Check

Scheduled Work
1 Visually check the wheels for signs of pitting, scoring, flat spots or other damage.

Arising Work
1 Carry out Job No. RS.6 Rail wheels – Examine.

Job RS.6 page 1 Rail Wheels – Examine

Scheduled Work

1 Lift the rail wheels as far as possible.
2 Clean the entire wheel flange and tread, removing any grease, corrosion and debris.
3 Rotate the wheel and check that there is no sign of axial or radial play in the bearings, or noises or harshness. If float is detected, check that it does not exceed 0.05 mm.
4 Rotate the wheel slowly by hand, and examine all surfaces of the wheel, checking for cracks, cavities, metal migration and flats.
The limits for each will be found on Table 1. A description of the types of defects will be found in clauses A, B & C. Record findings on Table 1.
5. Use a P1 profile gauge and feeler gauges to check the following.
5.1 The hollow-wear on the tread is less than 1.5 mm.
5.2 Flange wear is less than 4 mm. See Clause 6 if doubt exists.
5.3 There are no steps in the flange profile greater than 1.5 mm.
5.4 The tread to the outside of the wheel is not more than 2 mm above the running tread surface (a false flange).

P1 Profile Gauge Limit for false flange

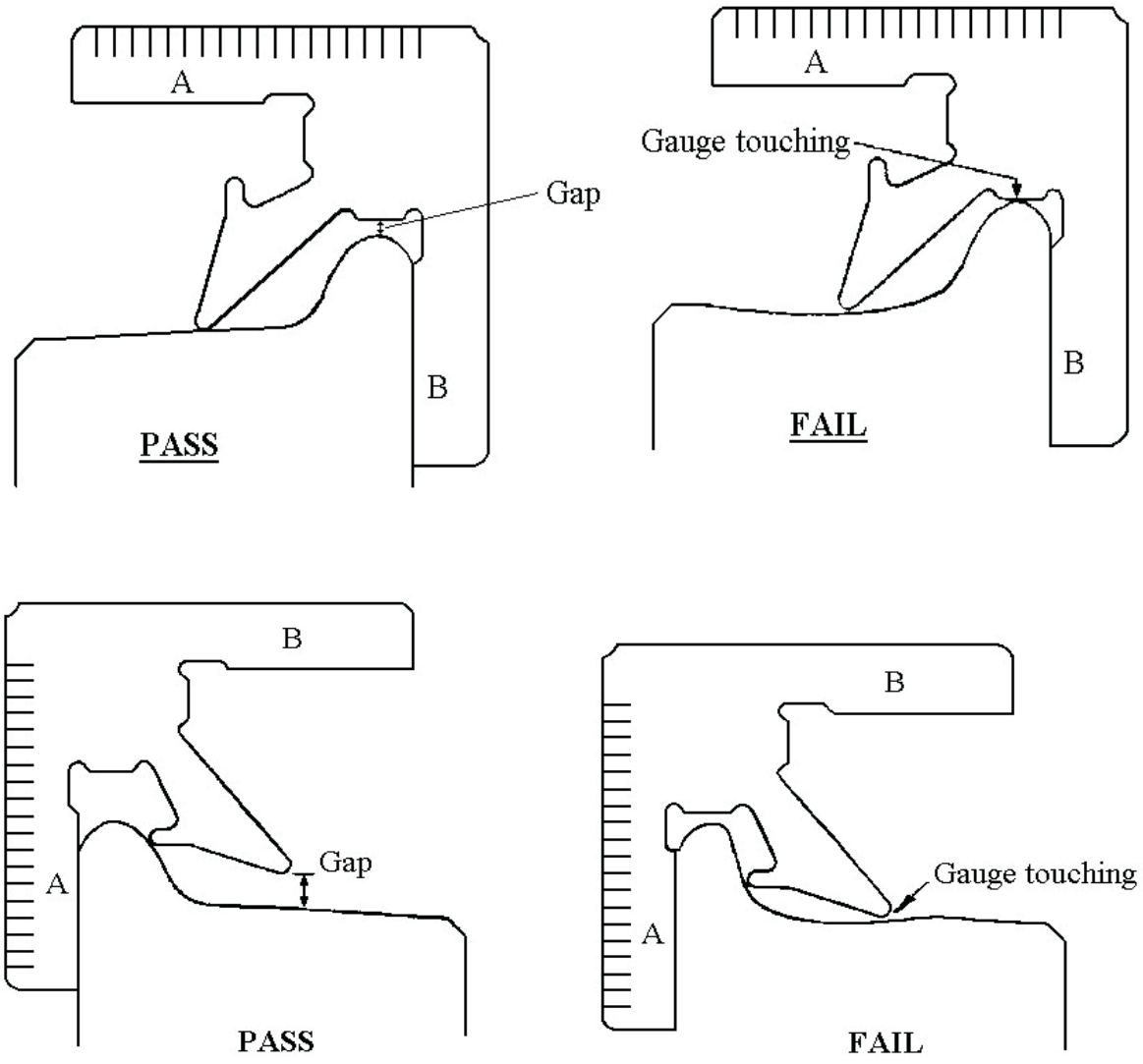
Job RS.6 page 2

6 If required, a more accurate method of gauging flange thickness is to use gauge to Drg. B-A2-1710 (BR Cat No 39/29839) as follows:

6.1 With face A squarely on the flange back, hold the gauge radially to the wheel and draw it into profile, see below.

6.2 Acceptable profiles are indicated by the gauge contacting the profile only at the flange.
See figure below Use of GO/NO GO flange thickness and height gauge to Drg. No B-A2-1710 to measure flange thickness

7 Check that the Ribbed Drive Stubs drums are securely mounted on the wheels.



RR 14 EVO

Job RS.6 page 3

Vehicle No:					
Location:			**Examiner:**		
Type of defect	**Allowable Limit**		**Record Findings Here**		
		Tick if none found		Record Details if found	
Cracks See section 3	None allowed				
Cavities See section 4	15 mm length				
Migration See section 5	5 mm tread roll over, otherwise no limit				
Flats	30 mm				

Tick if wear is less than limits, or record if amount is over limit					
Wear / Defect	**Limit (mm)**	**Front Axle**		**Rear Axle**	
		LEFT	RIGHT	LEFT	RIGHT
Tread Hollow					
Flange					
Steps					
False Flange					

Back to Back measurement (average in mm)	**Front axle**	**Rear axle**

* Left and Right is defined as standing with ones back to the vehicle in the normal direction of travel.

Arising Work

1 If axial or radial play in the bearing exceeds 0.05mm, or noise or harshness is detected, carry out Job No. RS.4 Rail wheel bearings – Examine.
Only persons assessed as competent shall carry out work relating to the maintenance and overhaul of rail bearings. This work must be carried out in a covered workshop.

2 Re-Profile Wheel in accordance with page 59.

3 Change the wheels in matched pairs if re-profiling is not possible, or if rail wheels diameter will be reduced below the following: 520 mm
Report findings to supervisor.

Job RS.6 page 4 DESCRIPTIVE CLAUSES

A Cracks

Cracks normally have a jagged saw tooth-type of surface profile with sharp edges. Cracks will normally form at the tread chamfer in an axial direction (across the thread) see Figure 100/1.

Figure 100/1 Wheel with crack

No cracks are permitted, but see clauses B and C overleaf. Renew wheels unless the cracks can be completely removed by re-profiling.

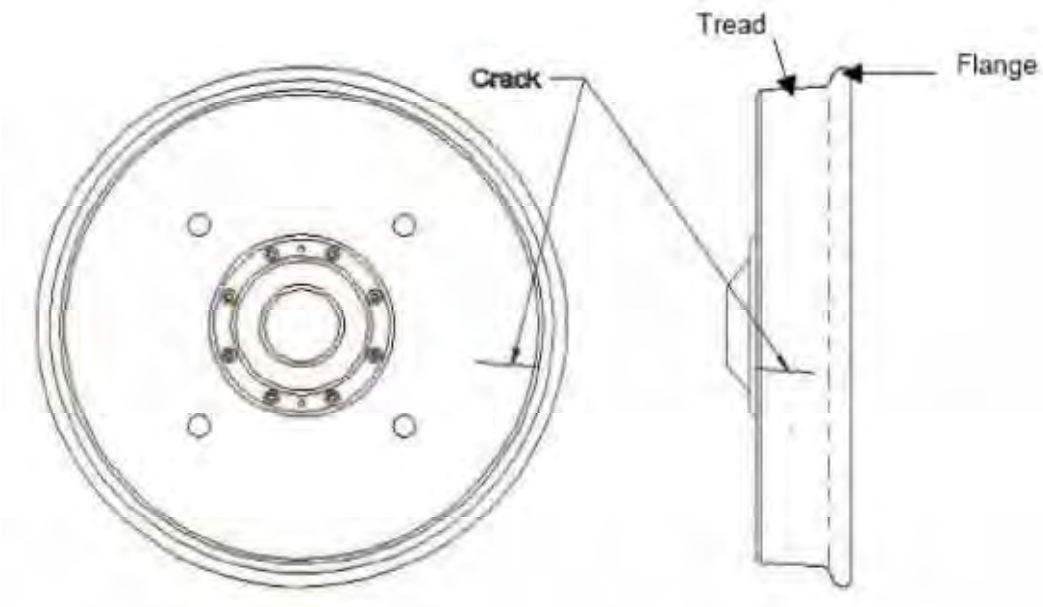


Figure: 100/1

RR 14 EVO

Job RS.6 page 5
B Cavities
Rolling contact fatigue causes microscopic subsurface cracks which develop into a localised network. (See fig 100/2 & 100/3 below.)
Figure 100/2 Microscopic cracks Figure 100/3 Cavities
Over a long period small sections or spalls break away leaving cavities (see Figure 9.4.3.8). Record the number and length of the cavities. Take action if the length of any cavity exceeds 15 mm, or if two cavities are within 50mm of each other and their combined length exceeds 15 mm. Re-profile wheels to remove cavities and cracks, otherwise renew the wheels.

Fig. 100/2

Fig. 100/3

C Migration
Material migration results from a rolling action that forces the surface material sideways. This can occur in two places:

Job RS.6 page 6
C1. Tread Rollover:
This forms on the tread chamfer see fig. 100/5. The maximum allowable is 5 mm. Associated with this are circumferential cracks (see Figure 100/4) which do not affect the integrity of the wheel.

Fig. 100/4

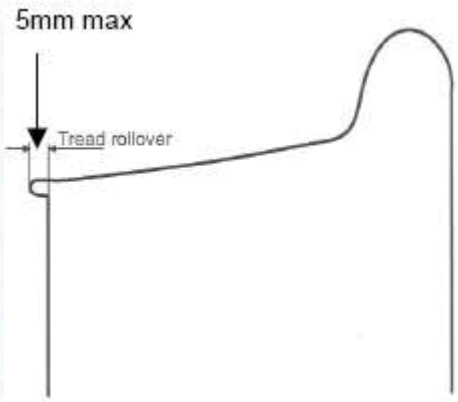


Fig. 100/5

C2. Migration down the flange,
is shown in Figure 100/6 where the extreme edges have flaked off.

Figure 100/6 Migration down the flange

This does not affect the integrity of the wheel. These defects are removed when Re-profiling becomes necessary to restore the wheel profile.

Job RS.7 Drive stubs – Check

Scheduled Work
1 Check for loose or missing bolts.
2 Check for damaged or missing traction bars that engage with rubber tyres.

Arising Work
1.1 Tighten or replace fixings
2.1 Repair or replace traction bar.

Job RS.8 Flange height – Check

Scheduled Work

1 Refer to Section RS.6 page 2. (Use of Go/No Go Gauge)

Job RS.15 Rail Wheels – Re-Profile

Scheduled Work

1 Re-Profile Wheel to Drawing RT-C3-2400401 (Network Rail) or BR Drw. S8-C2-8006234. Rail wheels on the same axle must have a wheel diameter of within 2 mm of each other.

2 Check for significant compression between rail and road wheels by means of a visual check and adjust as using the turn buckle.
Visual check to see that the rail wheel hub is adequately compressing the road wheel tyre (typically 18 – 25 mm – Foam Filled Tyres).
Brake test Carry out a service brake test. Section Job RB.2 .

Arising Work

2 Adjust if the brake test is failed or the road wheels are spinning against the rail wheels or the rail wheel / tyre compression is less than 18 mm.

Job RSA.2 Rail Axles – Check

Scheduled Work
1 Visually check the Axles for signs of deformation, cracks or damage.

Arising Work
1 Carry out Job No RSA.3 Rail Axles – Examine

Job RSA.3 Rail Axles – Examine

Scheduled Work

1 Examine axle structure and all welded joints for signs of stress or cracks.
2 Ensure axle securing bolts are tight. Check for any signs of movement between bolted faces.
3 Check there is evidence of surplus grease escaping from all lubricated pins and bushes.

Arising Work

1 Renew defective components or repair in-accordance with good workshop practice.
2 If any nut/bolt moves more than half a turn renew them all. Examine threads in tapped holes for damage.

Job RSA.9 Debris Remover - Check

Scheduled Work

1 The debris remover or rail sweeper is fitted all machines with the exception of Issue 1 machines (without Data Loggers).
2 With the machine on rail, check the debris removers for signs of damage, loose fixings or missing / worn brushes.
3 The brushes fitted to the ends of the arms should be no greater than 30mm from the rail head.
4 The brushes can be replaced or adjusted using the slotted holes.

Arising Work

3.1 Adjust sweeper brushes to be a maximum of 30 mm from rail head.
3.2 Replace any worn or damaged brushes and adjust to maximum 30mm from rail head.
4 Repair or replace any bent or damaged debris remover arms.

Job RSA.10 (break-away Horn) Check

1 The main horn will sound if the trailer loop-back circuit is broken. If either or both of the trailer dummy plugs or a trailer plug/cable is removed then the horn should sound continuously until both plugs and inserted correctly..

Arising Work

1 Fault find and rectify if horn does not sound.

Job RSA.11 Rail Axle Interlock - Test

Scheduled Work

1 With boom in stowed 'travel' position (green light illuminated), and steering lock pins inserted - attempt to lower steering end rail axle – this should not move.

2 With both rail axles raised, lower fixed end rail axle till almost touching rubber tyres. Try to lower steering end rail axle – this should not move.

3 Fully lower fixed axle, you will see indicator lights in the limit switch illuminated – steering end rail axle will then lower.

4 With steering axle partly and fully deployed, try to raise fixed end axle – this should not move.

Arising Work

1 The magnetic limit switches are double switching (hence 2 indicator lights) and fail to safe. If a fault occurs steering axle will not deploy. Change damaged limit switch or cable.

RR 14 EVO

Job No. Emergency Recovery System – Test

Warning
Before maintenance on braking system ensure the
machine is on firm level ground, wheels chocked securely.

Scheduled Work
1 Follow the procedure in the Platform-Basket "Reference use and maintenance manual", version 03/2017 section ‘I’ USE sections 1.6-1.6.2, emergency recovery system, ensuring the system works.

Arising Work
1 Repair/renew faulty components.

Job No. Safety Labels – Check

Scheduled Work
1 Check labels are in place and are legible the Platform-Basket "Reference use and maintenance manual", version 03/2017 section ‘B’ sections B.2.1.

Arising Work
1 Renew labels.

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Job No. Tow-Bar

Tow Bar Security – Check

Scheduled Work

1 Check the tow bar is present and secure.
2 Check adapter (for eye or pin connections) is present and secured

Arising Work

1 Fasten securely.
1 Renew tow bar, pins or adapter.

RR 14 EVO

Job No. EARTH

Earth Resistance – Test

Scheduled Work

1 Check that the earth bonds between the cage, boom sections and chassis are intact and connected.

1 If OLE measuring pantograph is fitted, check connection at head and base

2 Using a suitable meter, measure the resistance as follows, on completion of any repair: Between platform and rail head with a maximum resistance 0.15 Ω.

3 Records results in relevant table

Arising Work

1 Connect earth bond if disconnected.

1 Renew earth bond if damaged.

2 If resistance is greater than stated, use the meter to isolate the area of high resistance, then examine all connections between those points, mechanical and electrical, clean contact surfaces and/or re-terminate defective and or disturbed connections, renew if necessary.

2 Repeat test.

RR 14 EVO

Job No. OLE Interlock – Check

Scheduled Work

1 Check OLE Interlock Key is present and switch / lock functions freely..

2 Put OLE Interlock in the 'Normal' position – all boom functions should work correctly.

3 Turn key to OLE position – The following conditions should be observed :-

1. Main boom will 'try' to lower but cannot be raised.
2. Telescopic boom will 'try' to retract but will not extend.
3. Rotate will be OK, as normal
4. Fly boom will lower and will only raise to locked position.
5. After attempting to raise all boom sections, measure distance from cage floor to rail head – this should not exceed 1300mm

4 Return OLE interlock key to normal position, turn OLE hydraulic interlock valve to locked position – all boom functions should be disabled.

As per the Platform-Basket "Reference use and maintenance manual", version 03/2017 manual section ‘E’ CONTROLS sections E.1

Arising Work

1 Renew defective items.

3 & 4 Investigate fault. Repair / renew faulty items and retest.

RR 14 EVO

Job No. OLE.Val

Scheduled Work

1 Turn OLE Valve (Located at R/H side of Ground Control Panel) to OLE Position – Handle pointing vertical up to lockable position.

2 Operate boom functions from ground or cage control station, boom does not function, drive and steer remain enabled.

Arising Work

1-1 Repair or renew seized or sticking valve.

1-2 Replace padlock if missing or damaged

2 Investigate fault. Repair / renew faulty items and retest.

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Job No. GenFluids

Scheduled Work

1 Visually inspect around the RRV for signs of leaks. Hydraulic Oil could be leaking from pipes or valve blocks and 'pool' in the chassis.
Engine oil would be seen around the auxiliary engine but would collect in the casing of main engine.
Look around engines for Oil or Fuel leaks.

Warning, Fuel, Hydraulic and engine oils are COSHH controlled chemicals and precautions should be taken to prevent contact with skin. Suitable PPE should be used at all times.

Arising Work

1-1 Trace any leak to source and repair or replace faulty pipes, filler caps, fittings or hoses.
Test run / operate to ensure leak has been fixed.
Use spill kits or other methods to completely recover lost fluids.

RR 14 EVO

Job No. AuxSys.Evo

Scheduled Work

1 Following the procedures shown in Emergency Recovery

Arising Work

1-1 Trace any leak to source and repair or replace faulty pipes, filler caps, fittings or hoses.
Test run / operate to ensure leak has been fixed.
Use spill kits or other methods to completely recover lost fluids.

March 2017

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Job No. R.Horn Test

Scheduled Work

1 With main engine running at full RPM, activate horn and measure sound level at quadrants around the machine. Record values with the horn sounding and without. Difference must be at least 10db.

2 Record results in relevant table

Arising Work

1 Replace or repair defective horns if sound level too low.

LOLER Examinations

Statutory Examinations (LOLER) –
Lifting Accessories & Safety Devices – Check
Scheduled Work
Check machine has taken the statutory LOLER examinations.
Do not use machine until it has passed the LOLER examination and a report is available.

Job No. TorqueHubOil - Renew

Scheduled work

Drain torque hub oil and re-fill to half way.

RR 14 EVO

Job No. Secondary control guarding – *for machines fitted with this device*

Scheduled work - Test

With machine turned on, apply a load of approximately 10kg to simulate a person being trapped or crushed against the cage controls.

The system should trip and inhibit all functions from the cage and should activate an audio/visual warning device.

Arising work

Repair and log any deviation from correct operation.

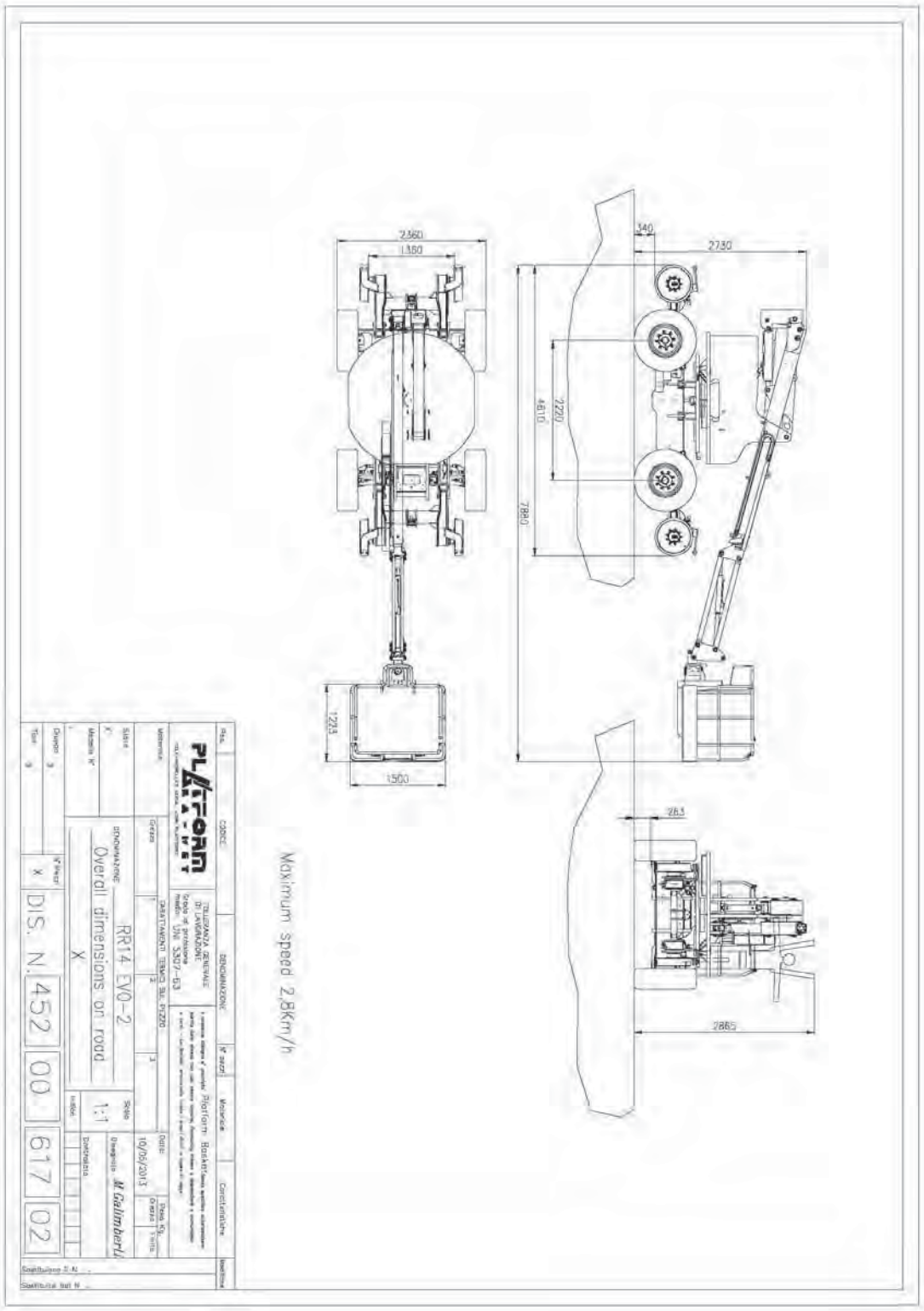
Section 15

Machines fitted with hydrostatic drive and braking axles

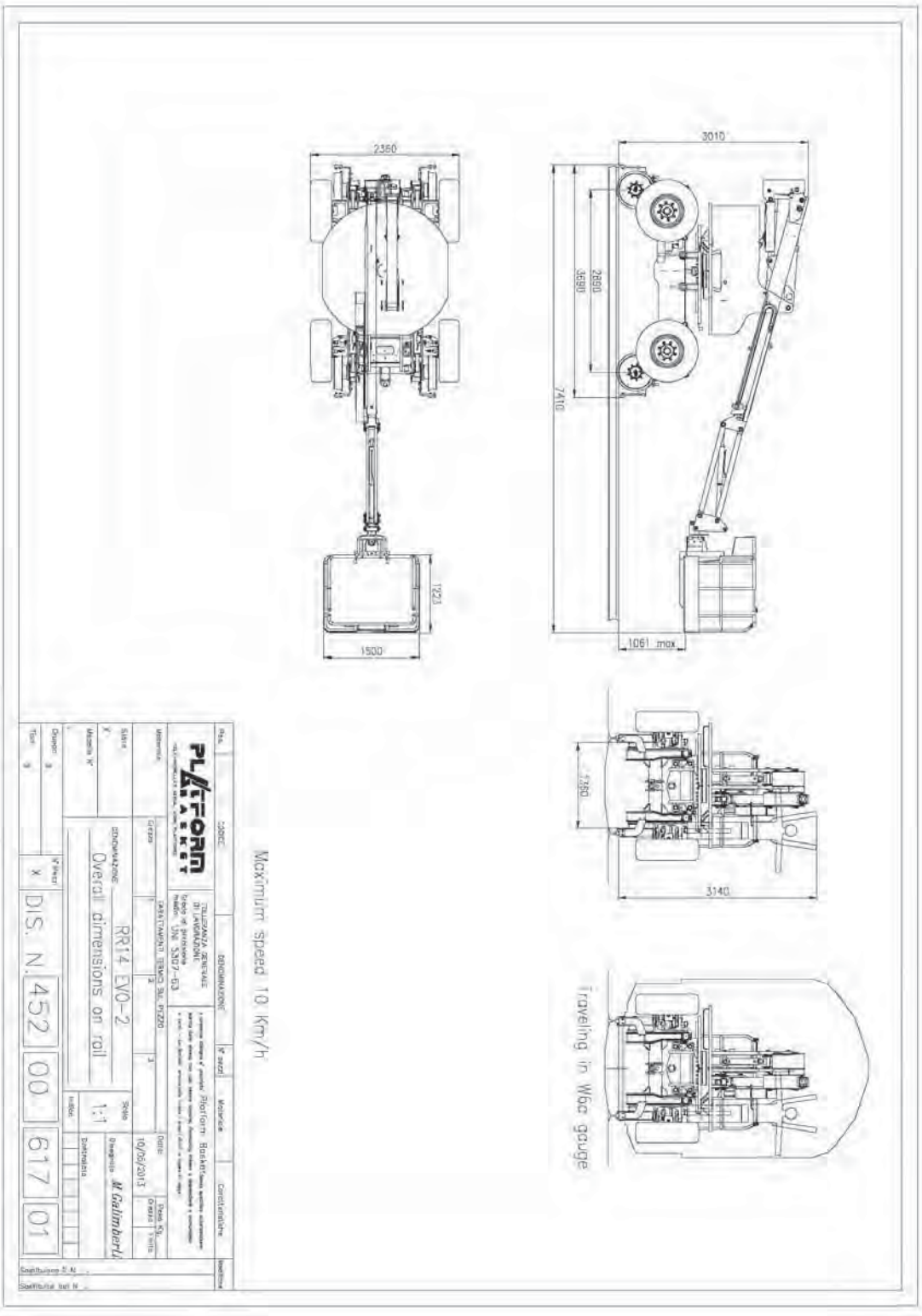
Hydrostatic drive is an option on the standard RR 14 Evo RRV, the operation and maintenance is the same except for the following information contained in Section 16 page 81 onwards.

RR 14 EVO

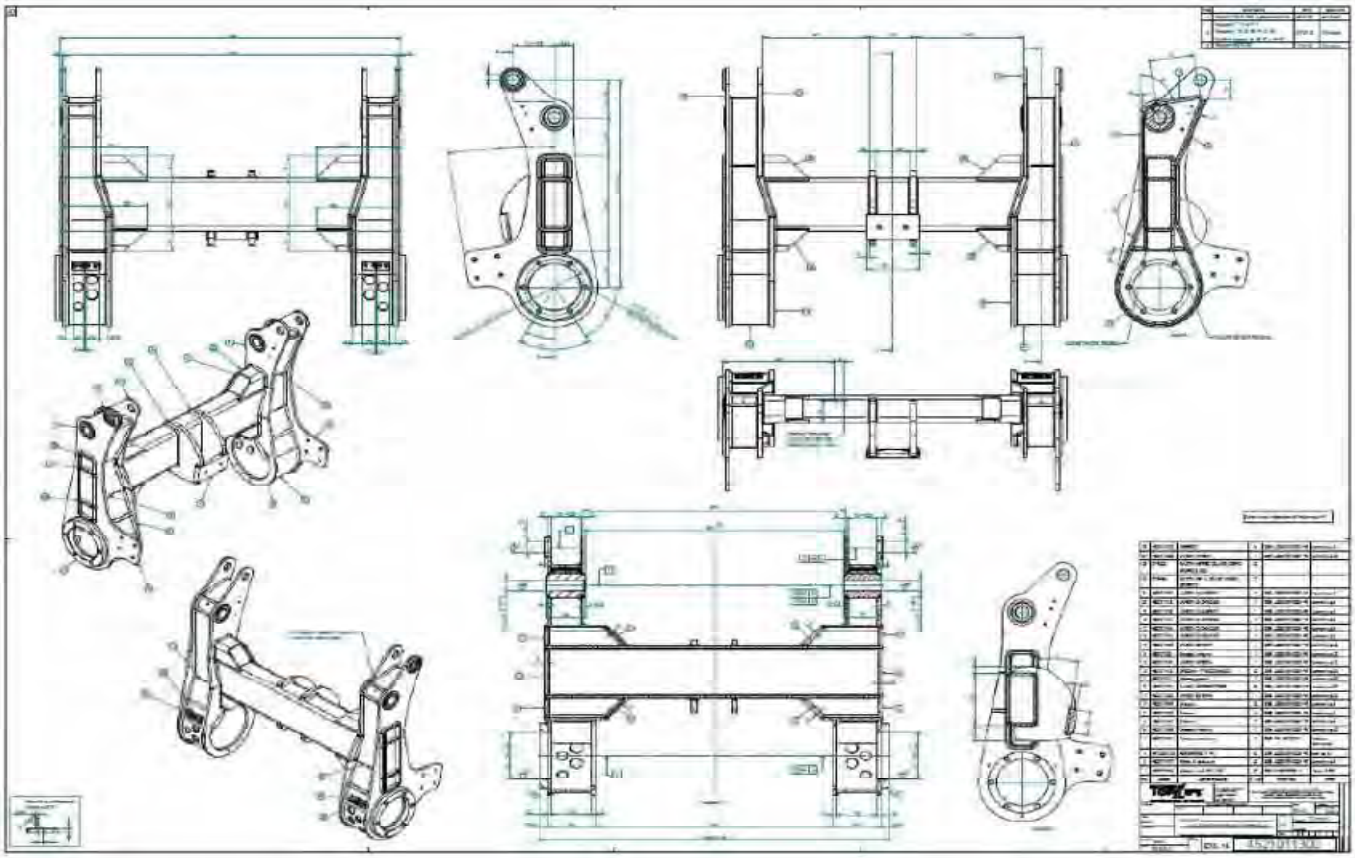
Dimensions (on road)



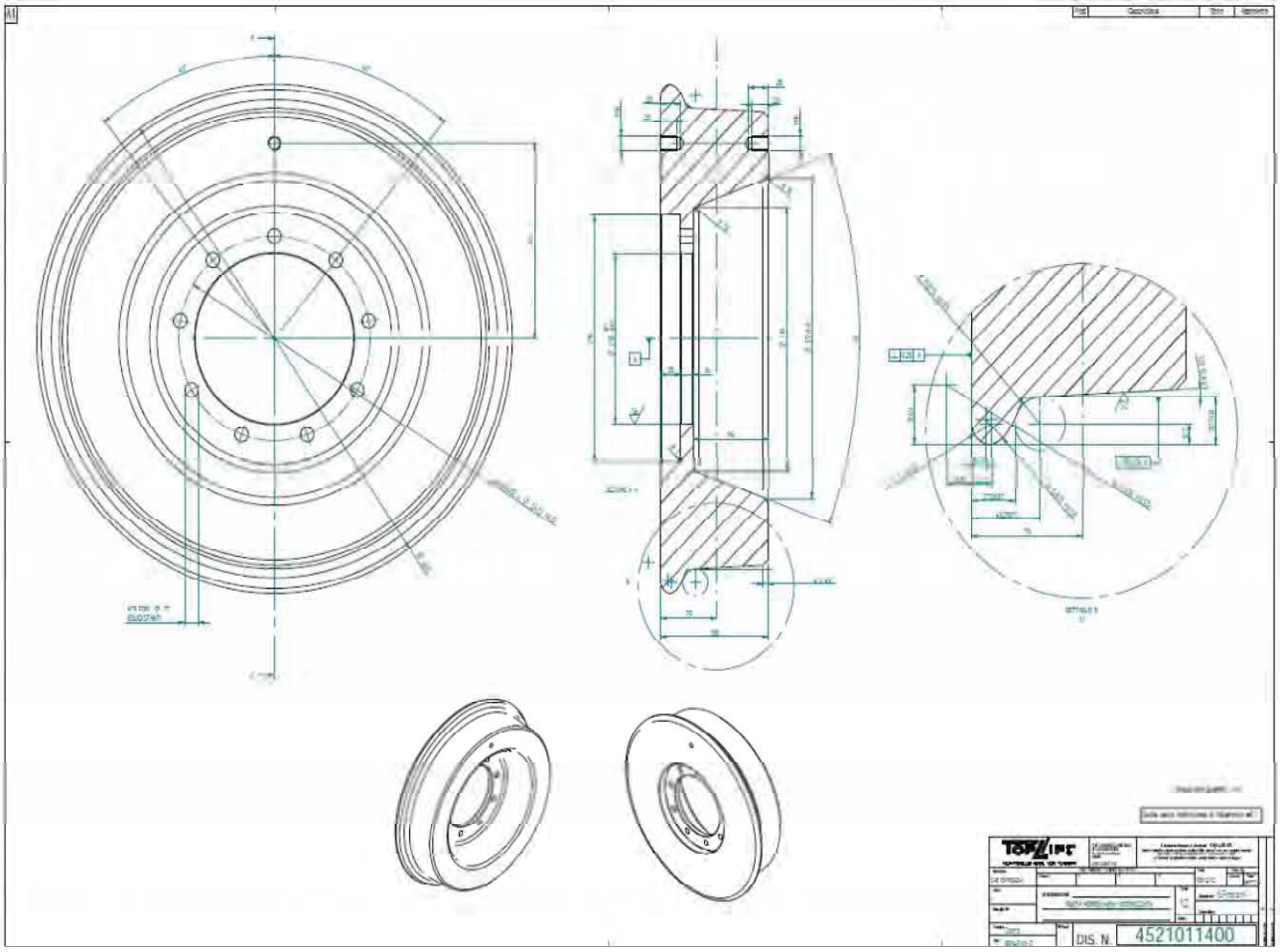
Dimensions (on rail)



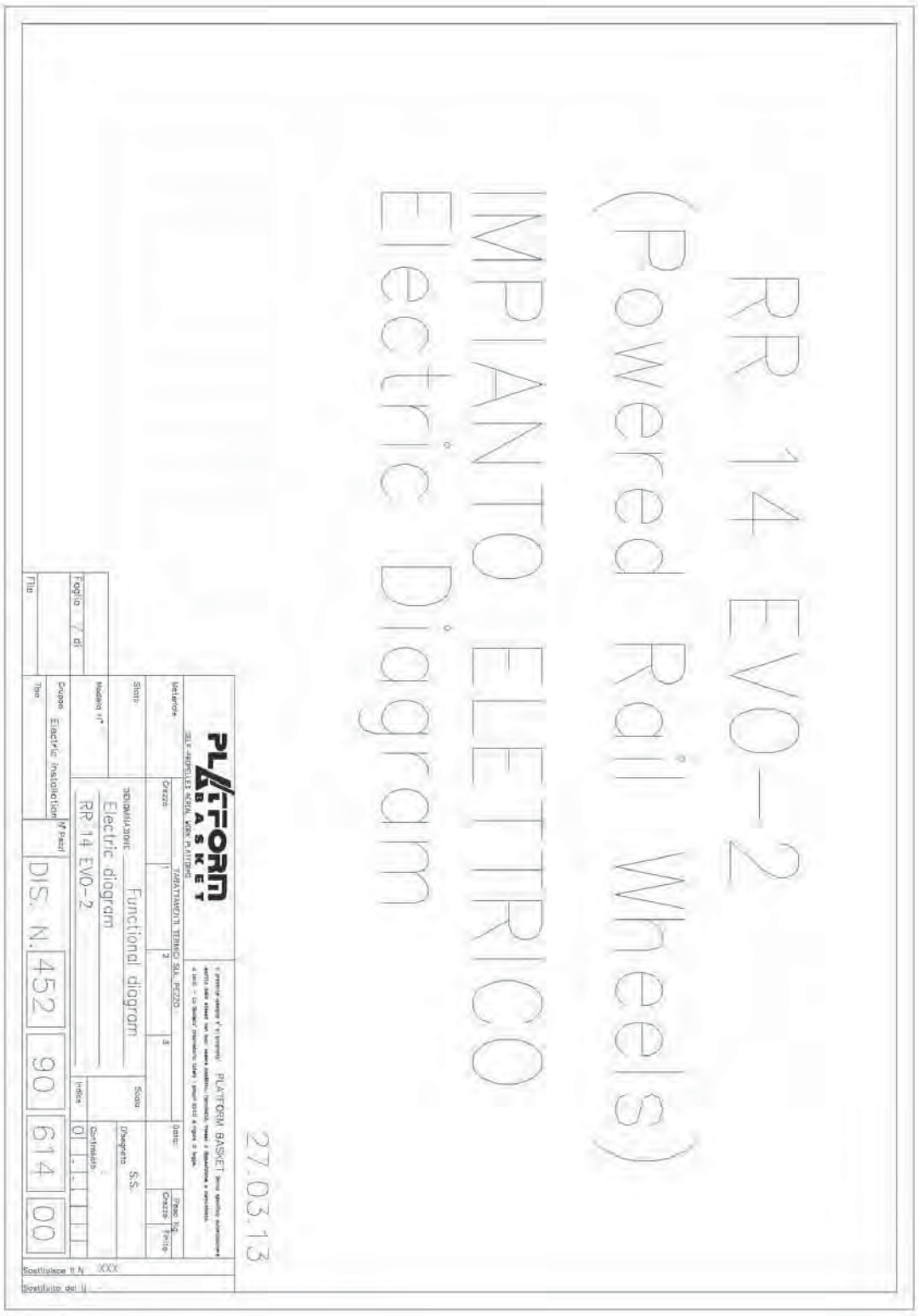
Hydrostatic Axle



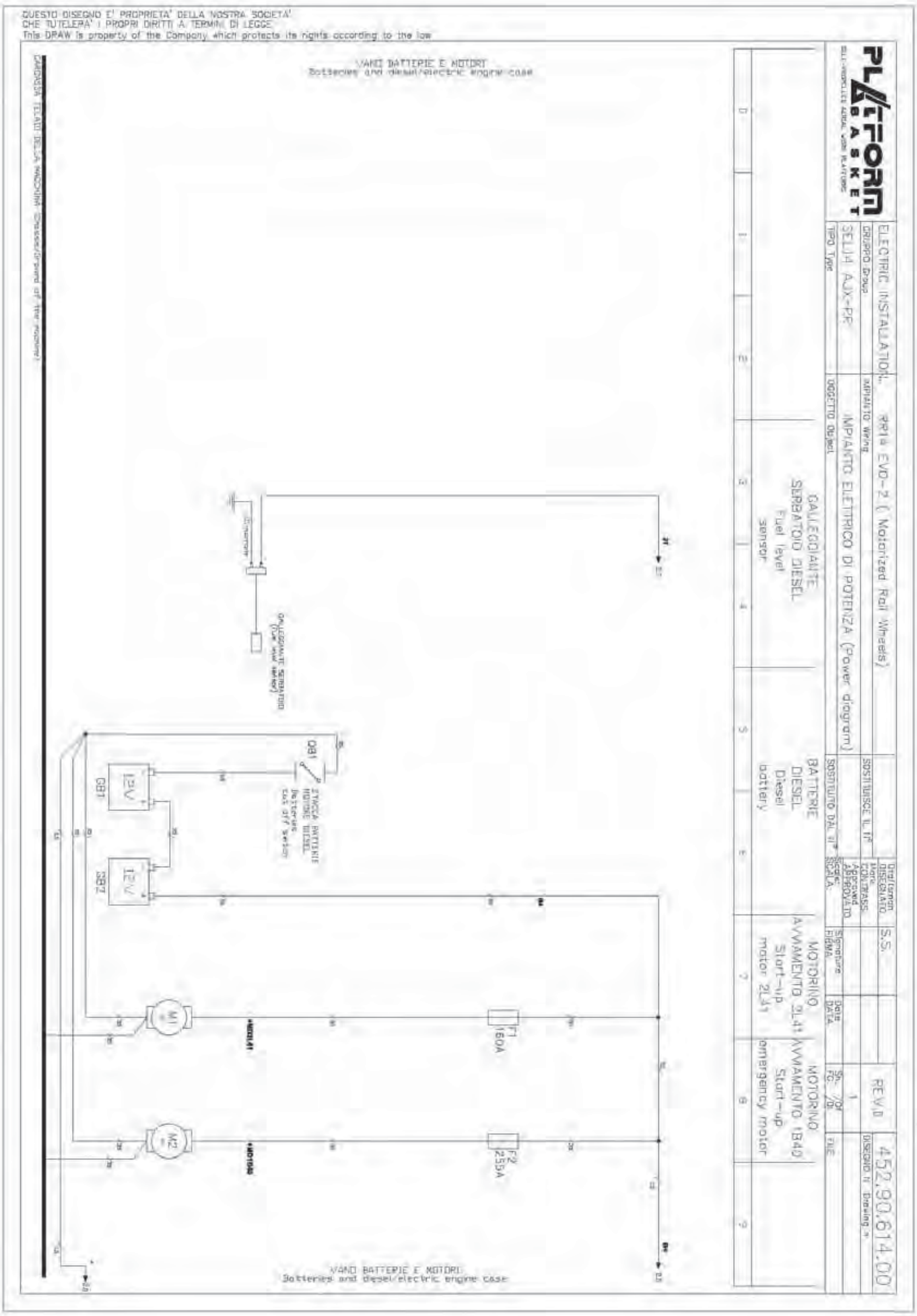
Hydrostatic Rail Wheel

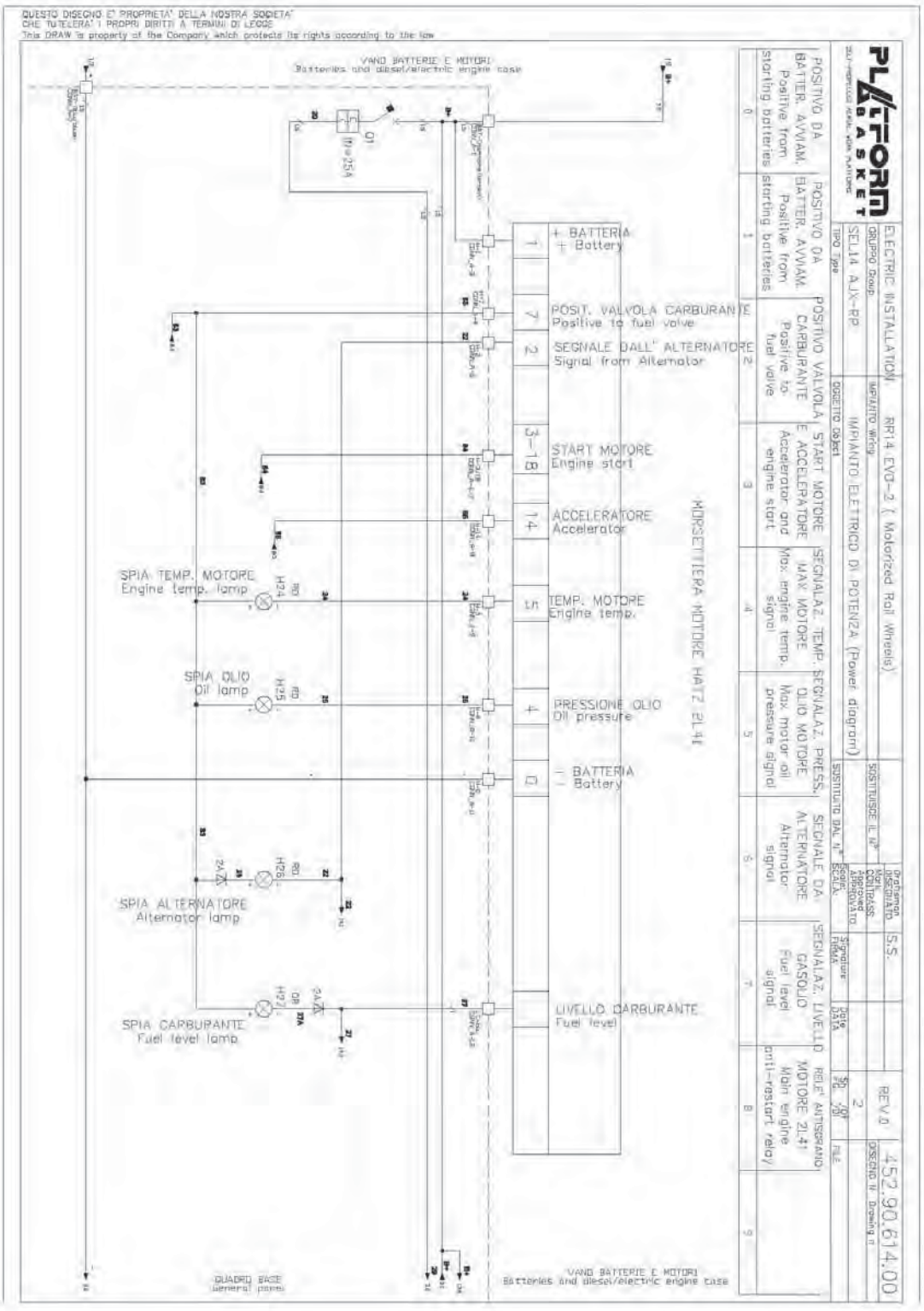


Electrical Diagrams



RR 14 EVO


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA' CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
ELECTRIC INSTALLATION
452.90.614.00
BATTERIE DIESEL
Diesel battery
12V
GB1
GB2
F1 160A
F2 250A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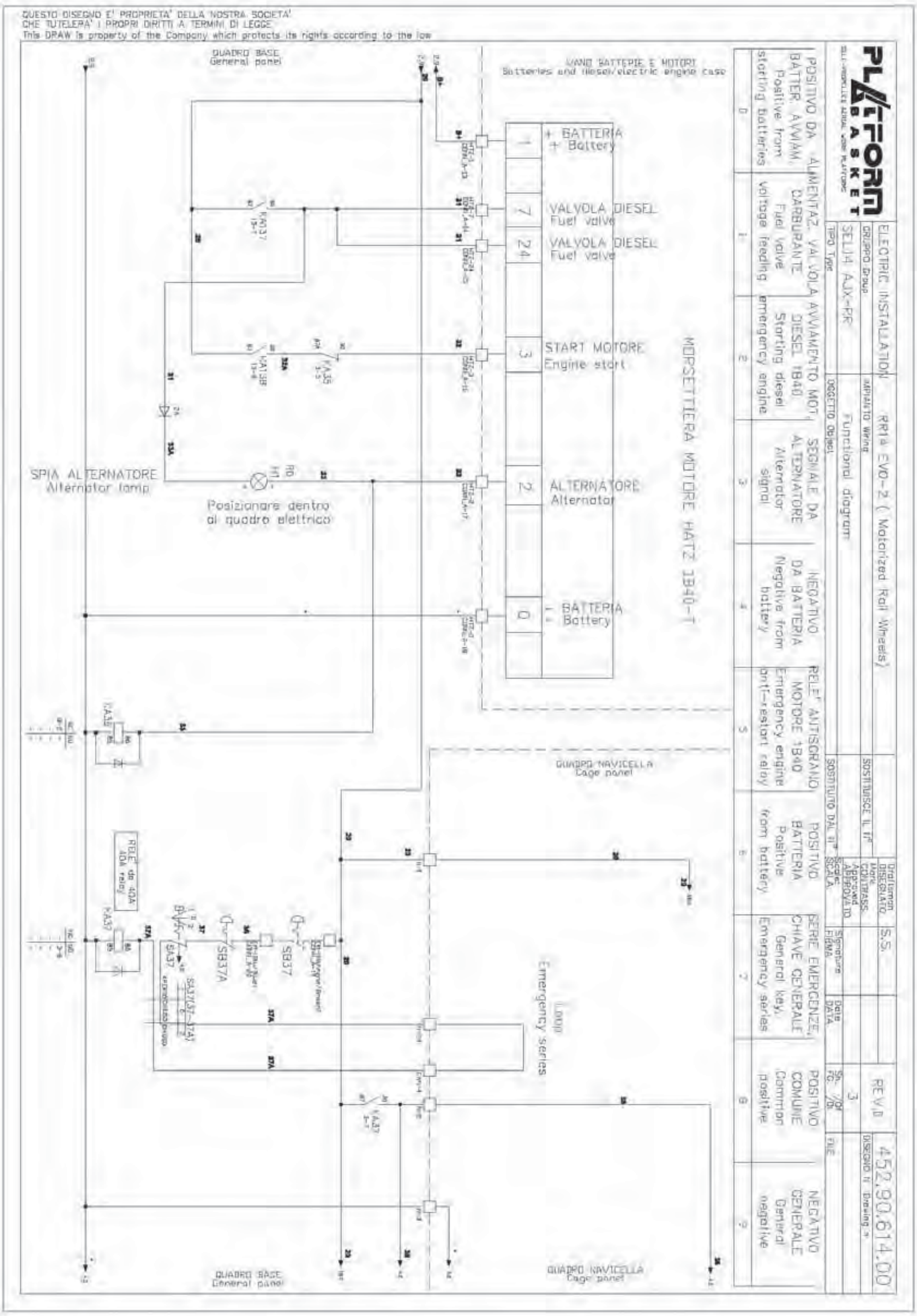
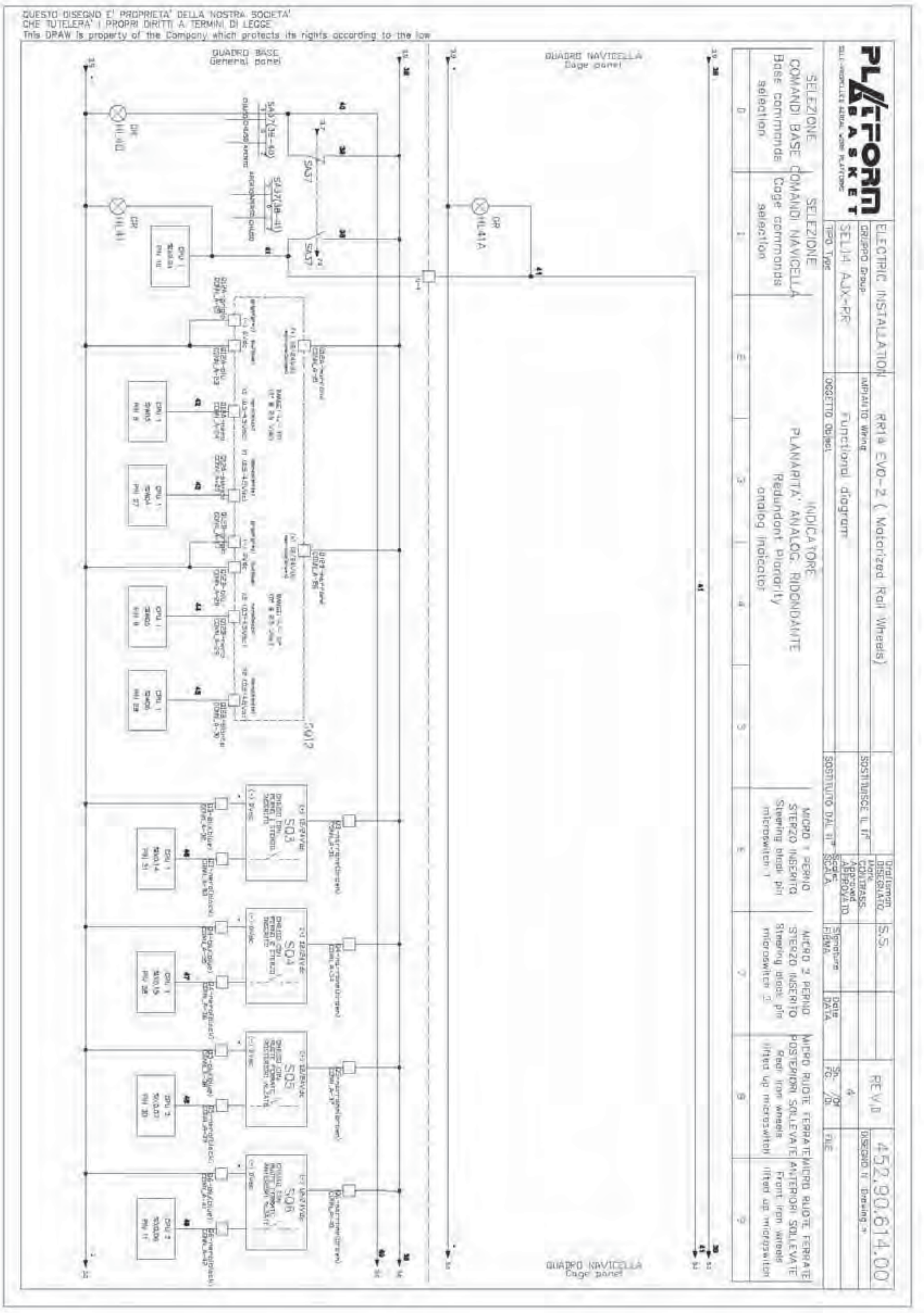
CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
VANO BATTERIE E MOTORI
Batteries and diesel/electric engine case
MORSETTIERA MOTORE HATZ 2L41
+ BATTERIA
+ Battery
POSIT. VALVOLA CARBURANTE
Positive to fuel valve
SEGNALE DALL' ALTERNATORE
Signal from Alternator
START MOTORE
Engine start
ACCELERATORE
Accelerator
TEMP. MOTORE
Engine temp.
PRESSIONE OLIO
Oil pressure
- BATTERIA
- Battery
LIVELLO CARBURANTE
Fuel level
SPIA TEMP. MOTORE
Engine temp. lamp
SPIA OLIO
Oil lamp
SPIA ALTERNATORE
Alternator lamp
SPIA CARBURANTE
Fuel level lamp
POSITIVO DA BATTER. AVVIAM.
Positive from starting batteries
POSITIVO VALVOLA CARBURANTE
Positive to fuel valve
START MOTORE E ACCELERATORE
Accelerator and engine start
SEGNALAZ. TEMP. MAX MOTORE
Max. engine temp. signal
SEGNALAZ. PRESS. OLIO MOTORE
Max. motor oil pressure signal
SEGNALAZ. ALTERNATORE
Alternator signal
SEGNALAZ. LIVELLO GASOLIO
Fuel level signal
RELE' ANTIRIAVV. MOTORE 2L41
Main engine anti-restart relay
PLATFORM BASKET
ELECTRIC INSTALLATION
RR14 EVO-2 (Motorized Rail Wheels)
SELLA AJX-RP
IMPIANTO ELETTRICO DI POTENZA (Power diagram)
REV.0
452.90.614.00
S.S.
QUADRO BASE
General panel
VANO BATTERIE E MOTORI
Batteries and diesel/electric engine case

RR 14 EVO


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA' CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
QUADRO BASE
General panel
VANO BATTERIE E MOTORI
Batteries and diesel/electric engine case
+ BATTERIA
+ Battery
VALVOLA DIESEL
Fuel valve
START MOTORE
Engine start
ALTERNATORE
Alternator
- BATTERIA
- Battery
MORSETTIERA MOTORE HATZ 1B40-T
SPIA ALTERNATORE
Alternator lamp
Posizionare dentro al quadro elettrico
RELE' da 40A
40A relay
QUADRO NAVICELLA
Cage panel
Loop
Emergency series
ELECTRIC INSTALLATION
RR14 EVO-2 (Motorized Rail Wheels)
Functional diagram
452.90.614.00

RR 14 EVO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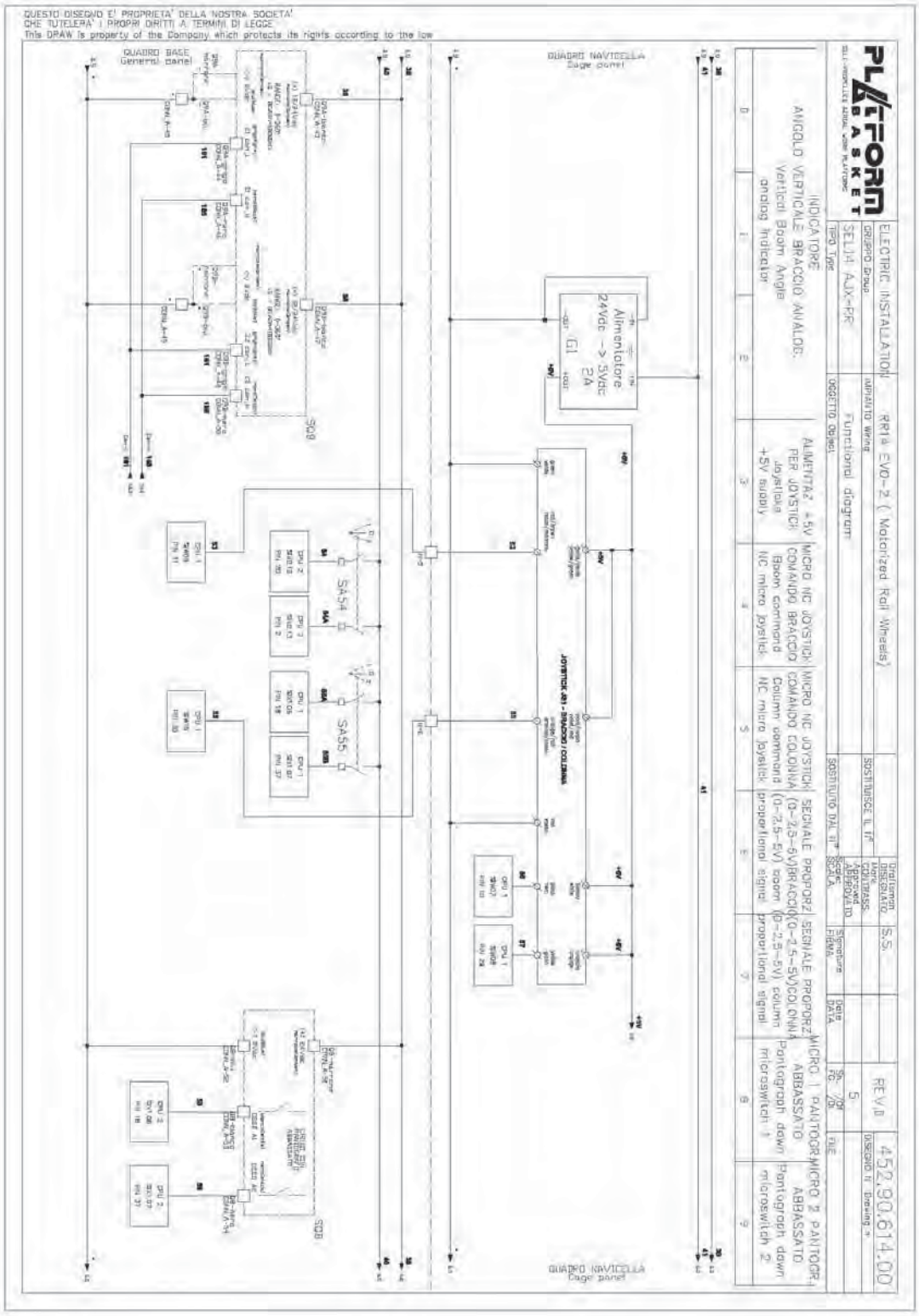
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
ELECTRIC INSTALLATION
RR14 EVO-2 (Motorized Rail Wheels)
Functional diagram
452.90.614.00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CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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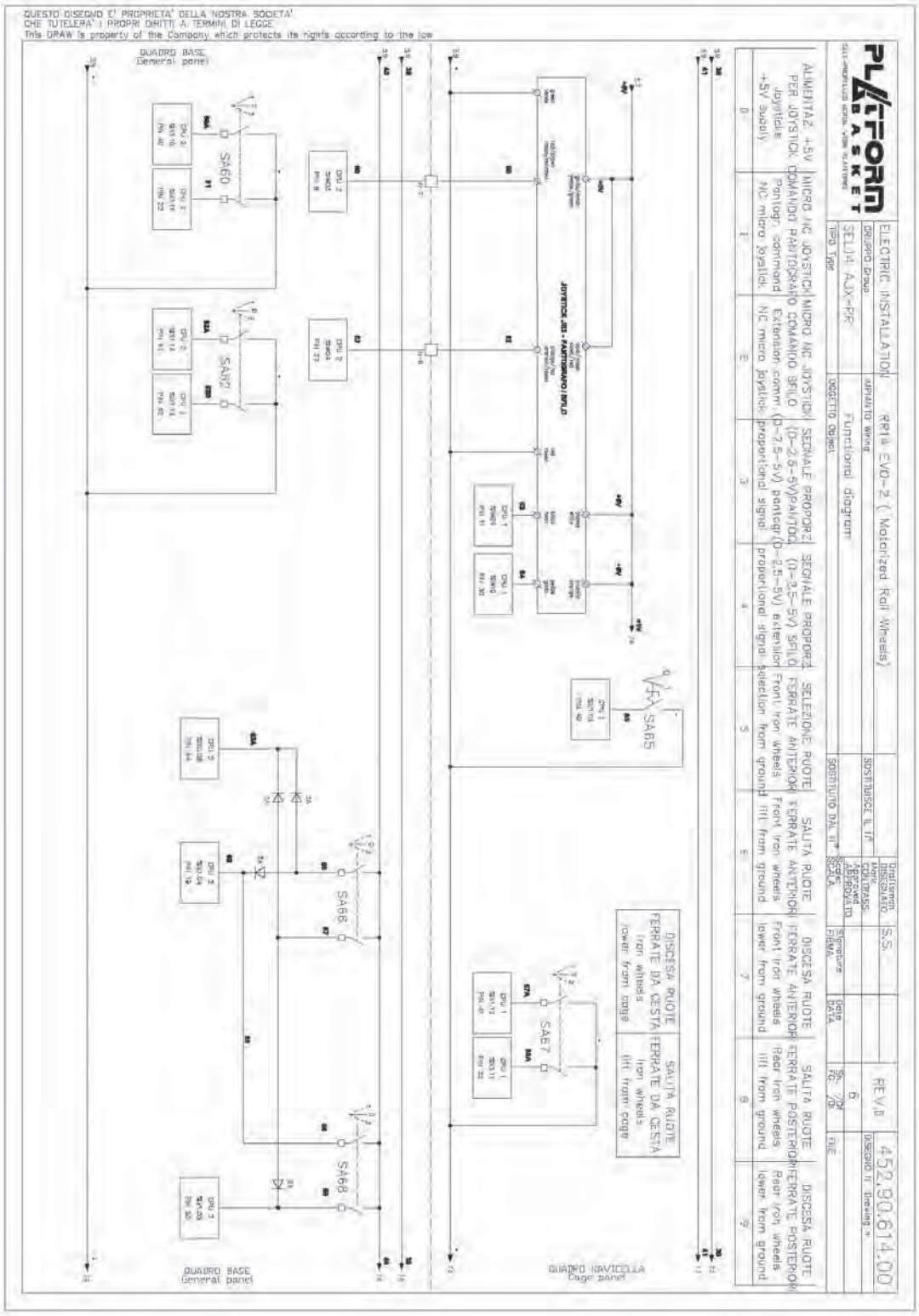
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
Alimentatore
24Vdc -> 5Vdc
2A
G1
SA54
SA55
ELECTRIC INSTALLATION
RR14 EVO-2 (Motorized Rail Wheels)
452.90.614.00
REV.8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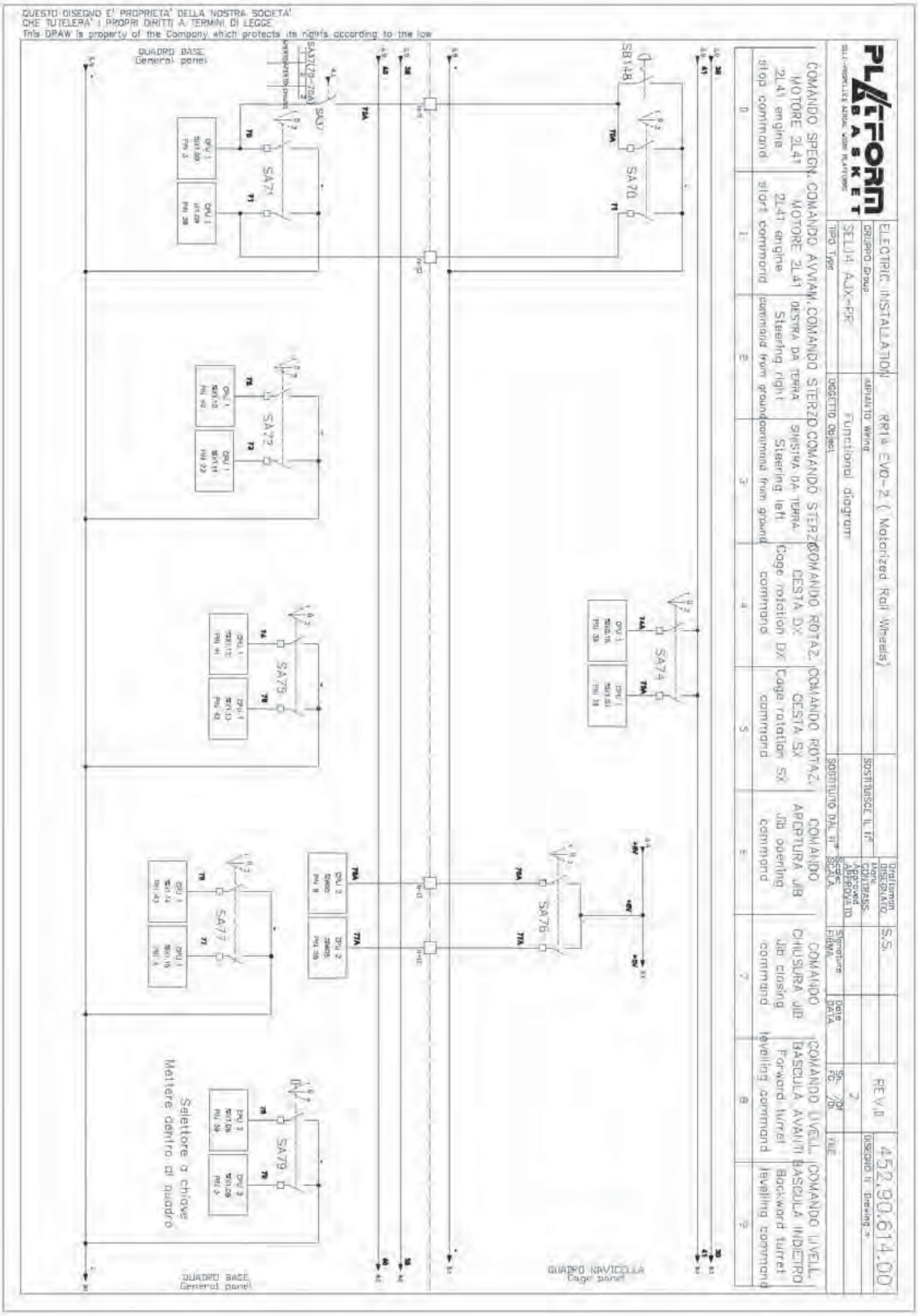
QUADRO BASE
General panel
SA60
SA67
SA68
QUADRO NAVICELLA
Cage panel
PLATFORM BASKET
ELECTRIC INSTALLATION
RR14 EVO-2 (Motorized Rail Wheels)
Functional diagram
452.90.614.00
REV.8

RR 14 EVO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CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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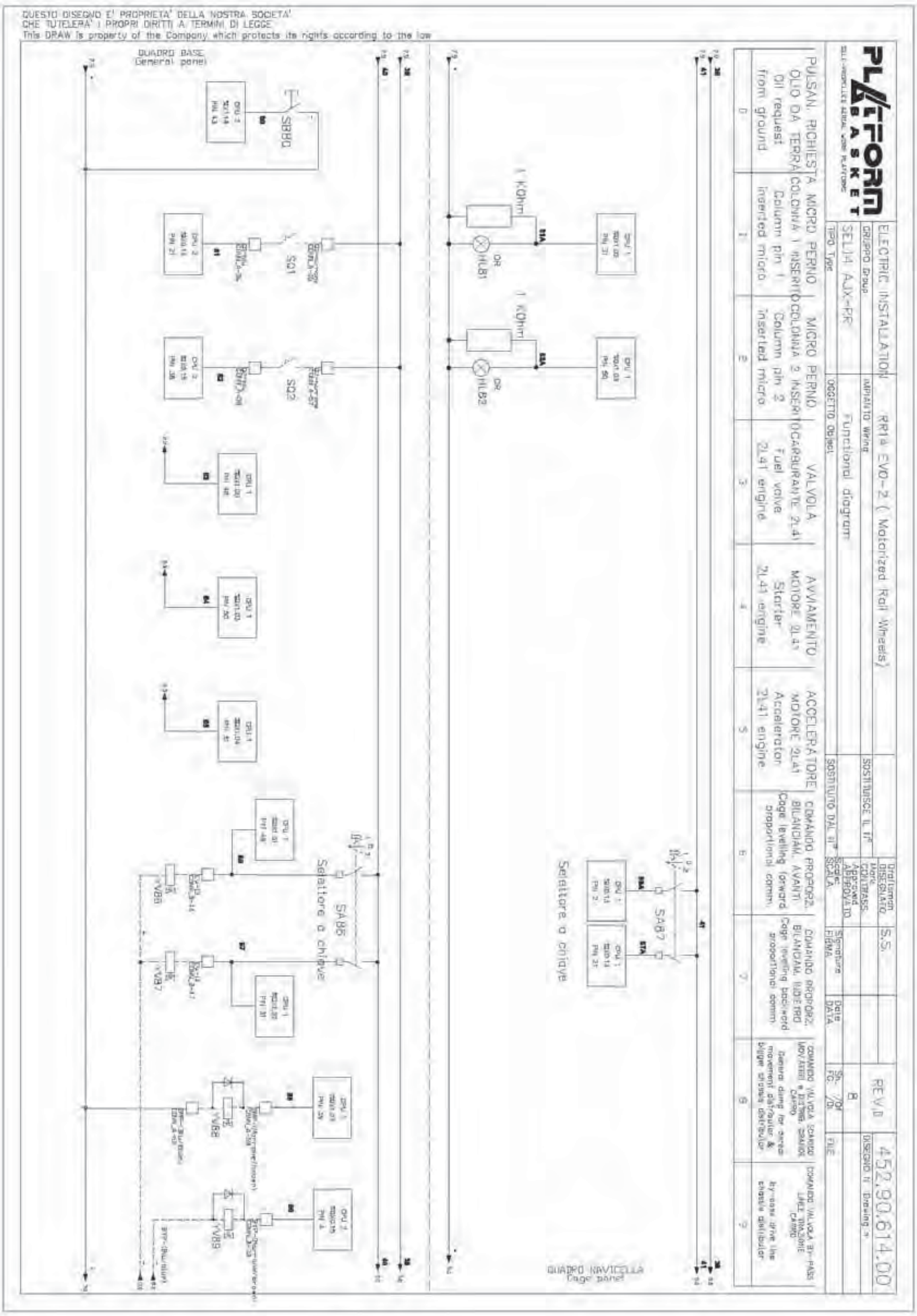
RR 14 EVO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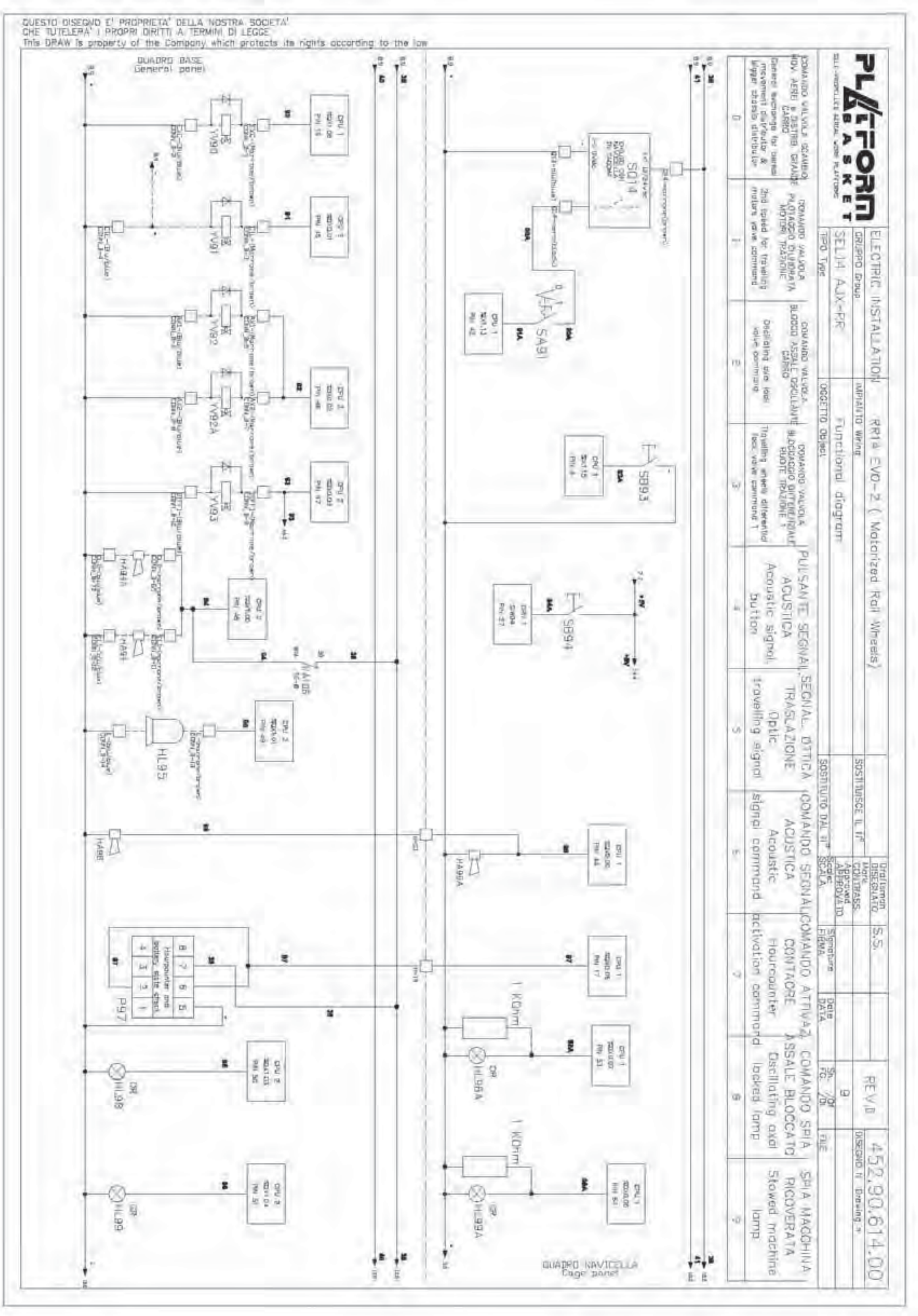
This DRAW is property of the Company which protects its rights according to the law
QUADRO BASE General panel
QUADRO NAVICELLA Cage panel
ELECTRIC INSTALLATION
RR14 EVO-2 (Motorized Rail Wheels)
Functional diagram
452.90.614.00
Selettore a chiave
1 KOhm

RR 14 EVO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CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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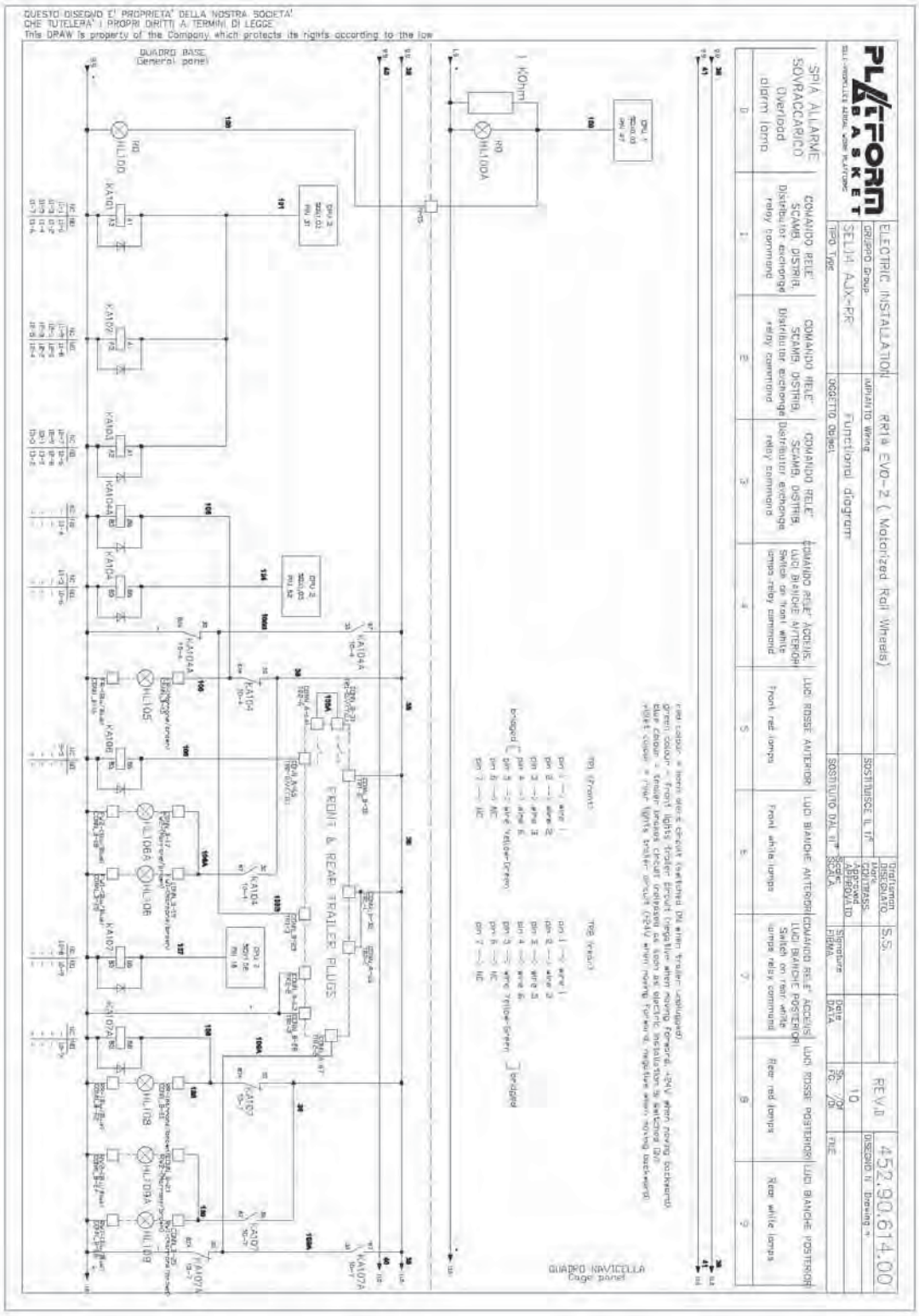
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
ELECTRIC INSTALLATION
RR14 EVO-2 (Motorized Rail Wheels)
Functional diagram
452.90.614.00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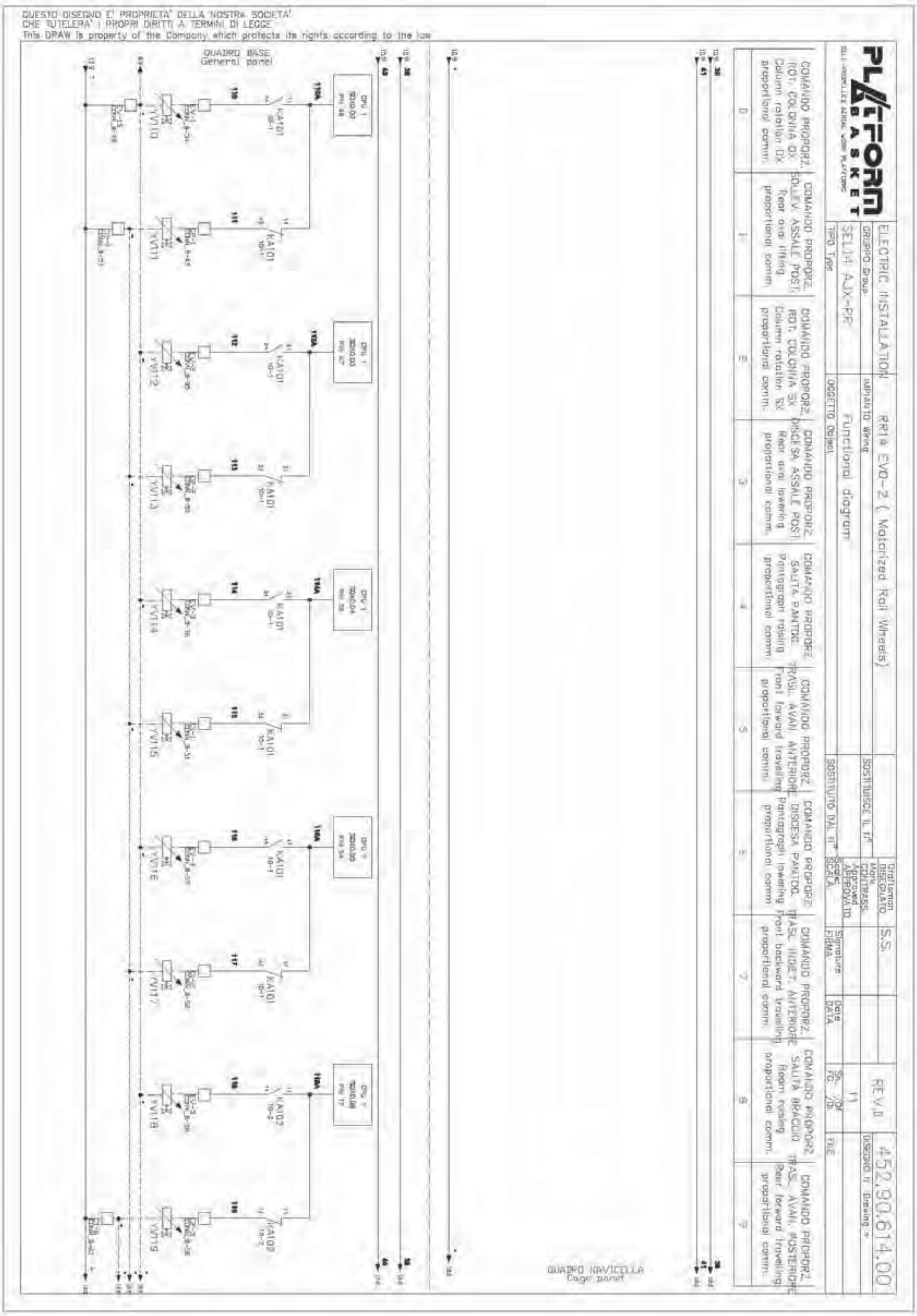
This DRAW is property of the Company which protects its rights according to the law
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
FRONT & REAR TRAILER PLUGS
ELECTRIC INSTALLATION
RR14 EVO-2 (Motorized Rail Wheels)
Functional diagram
452.90.614.00
REV.0

RR 14 EVO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CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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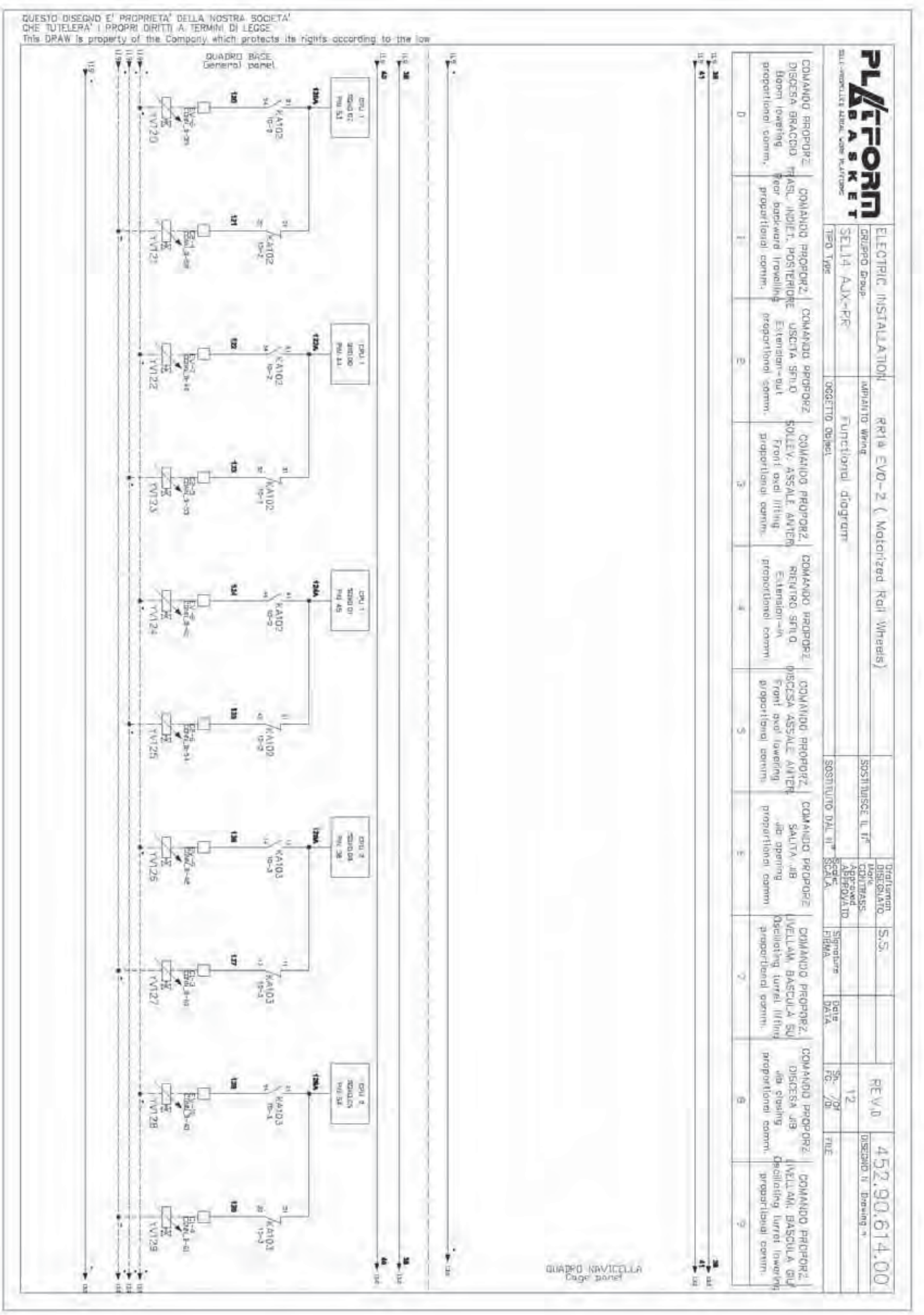
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
ELECTRIC INSTALLATION
RR14 EVO-2 (Motorized Rail Wheels)
Functional diagram
452.90.614.00

RR 14 EVO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CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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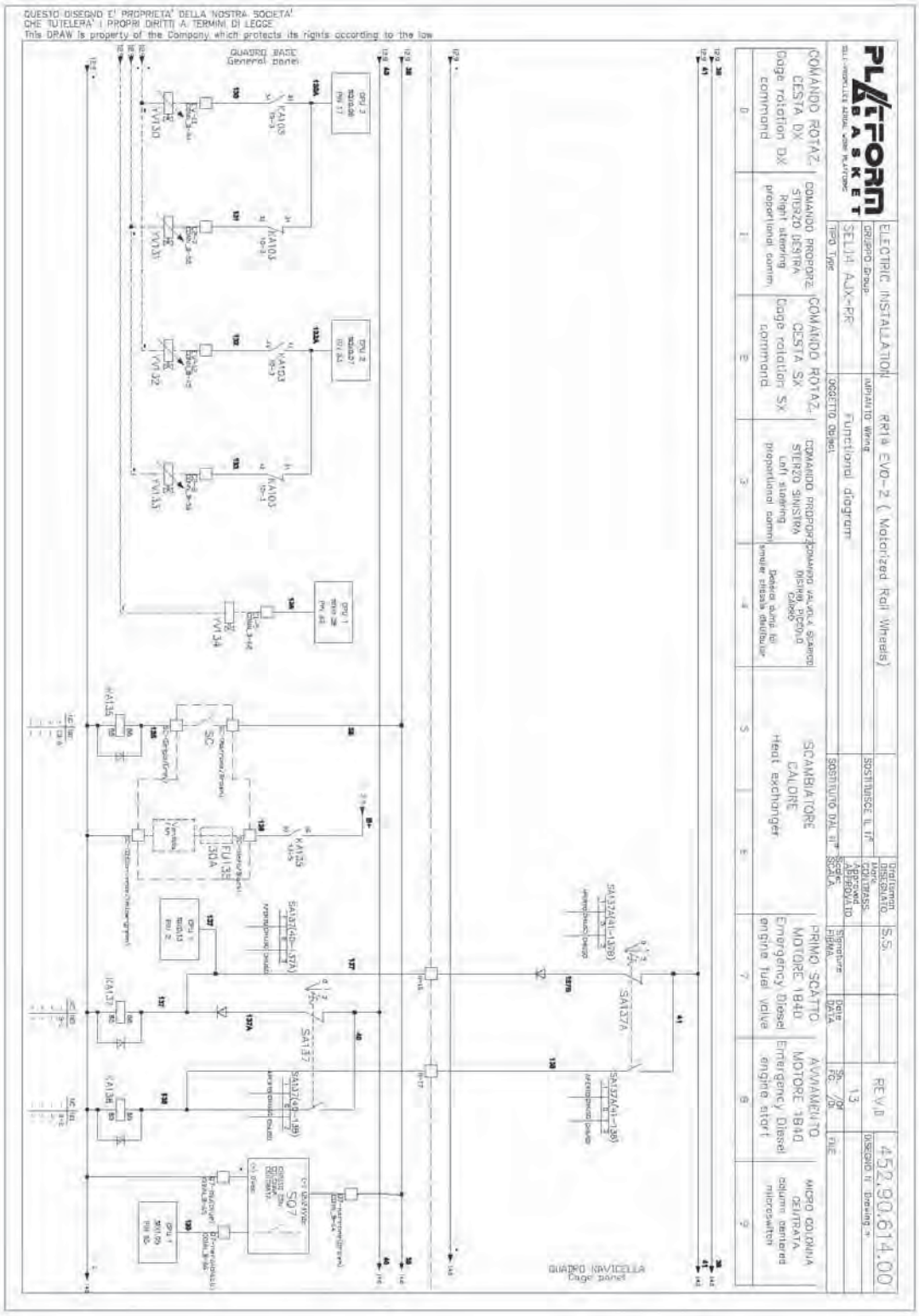
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
ELECTRIC INSTALLATION
RR14 EVO-2 (Motorized Rail Wheels)
Functional diagram
452.90.614.00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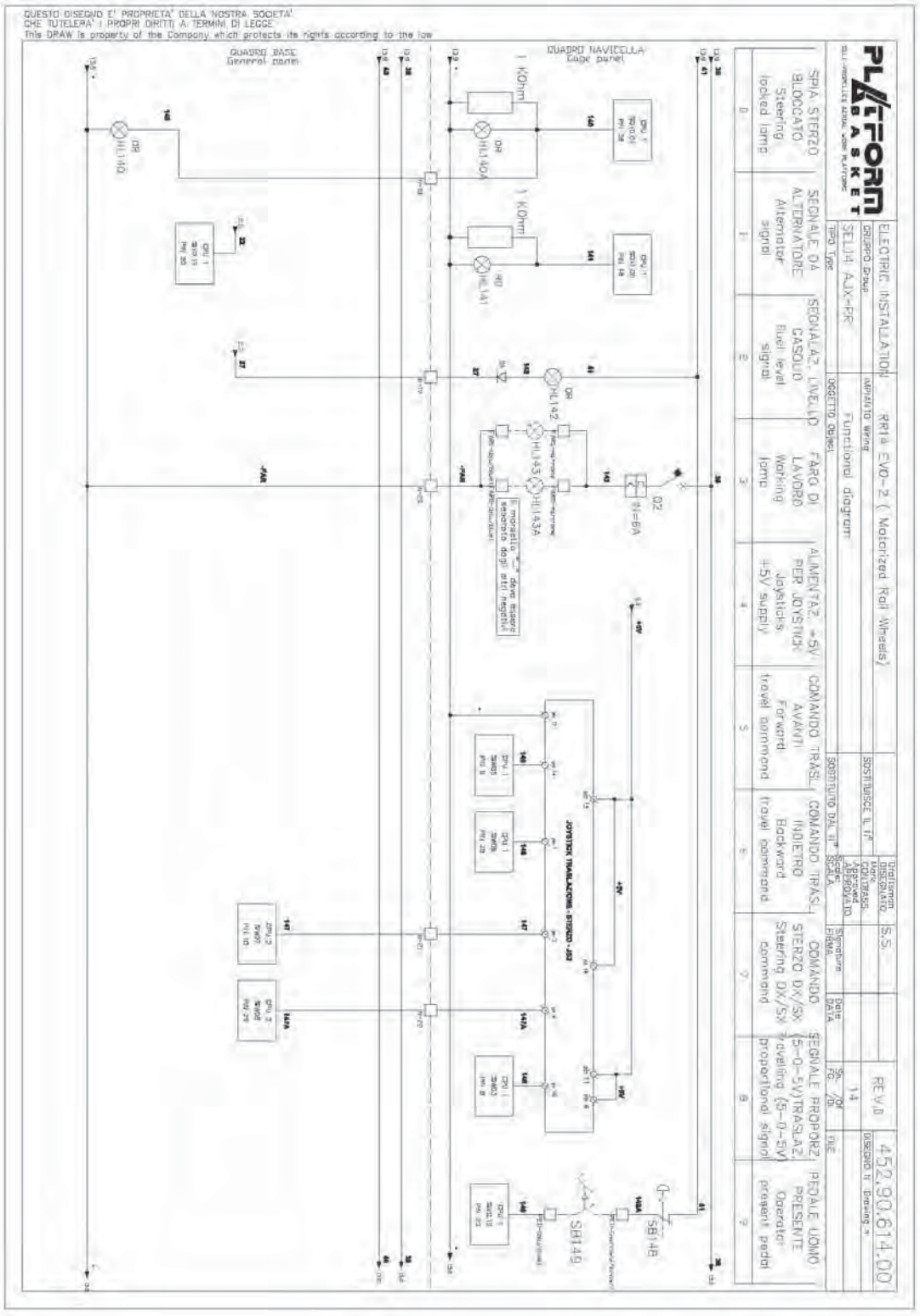
PLATFORM BASKET
ELECTRIC INSTALLATION
RR14 EVO-2 (Motorized Rail Wheels)
Functional diagram
452.90.614.00
REV.8
QUADRO BASE
General panel
QUADRO RAVICELLA
Cage panel
COMANDO ROTAZ. CESTA DX
Cage rotation DX command
COMANDO PROPORZ. STERZO DESTRA
Right steering proportional comm.
COMANDO ROTAZ. CESTA SX
Cage rotation SX command
COMANDO PROPORZ. STERZO SINISTRA
Left steering proportional comm.
SCAMBIATORE CALORE
Heat exchanger
PRIMO SCATTO MOTORE 1840
Emergency Diesel engine fuel valve
AVVIAMENTO MOTORE 1840
Emergency Diesel engine start
MICRO COLONNA DELTRATA
colonna centrale microswitch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CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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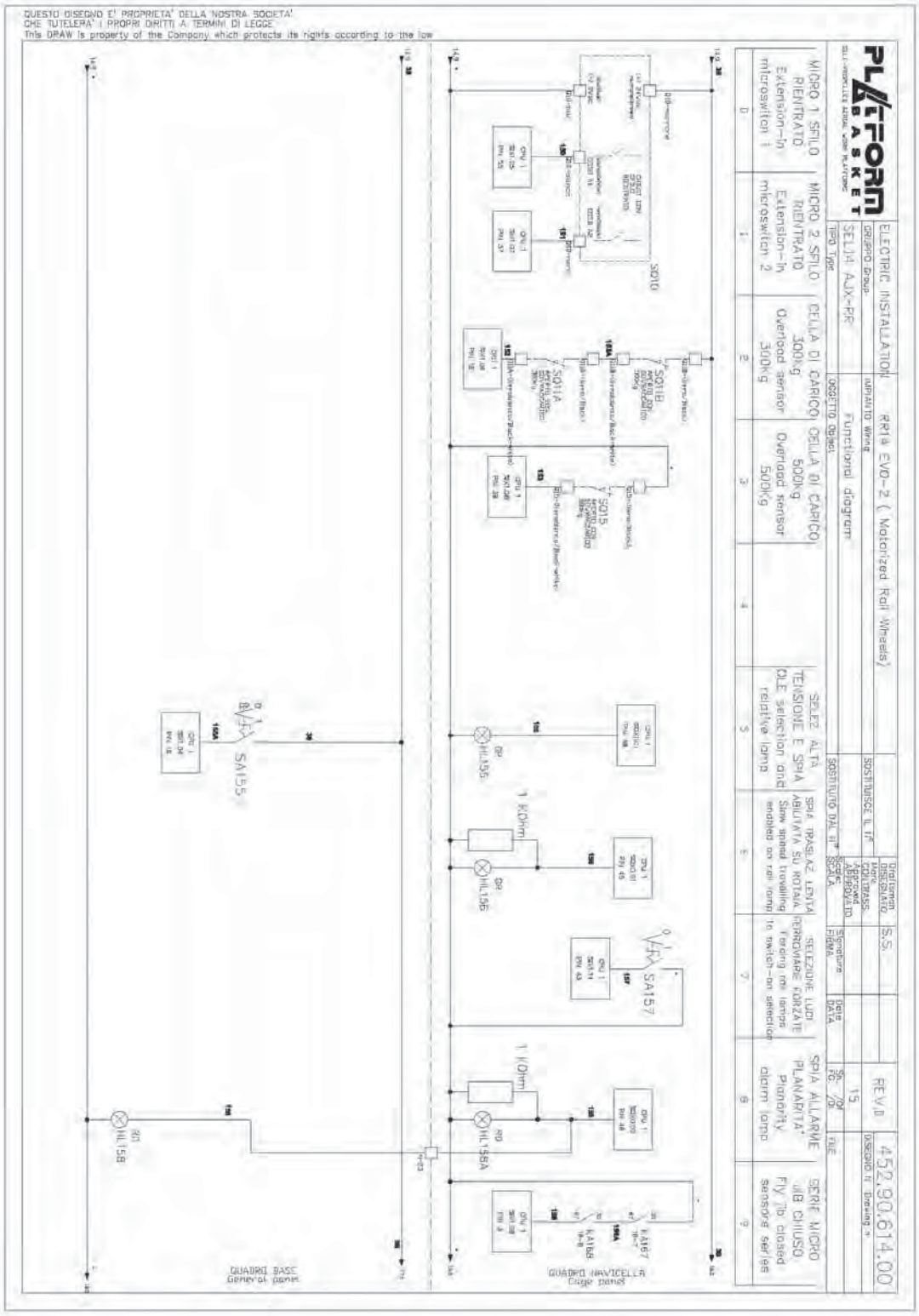
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
1 KOhm
1 KOhm
HL140
HL140A
HL141
HL142
HL143
HL143A
B1=6A
02
SB148
SB149
PLATFORM BASKET
ELECTRIC INSTALLATION
RR14 EVO-2 (Motorized Rail Wheels)
SPIA STERZO BLOCCATO Steering locked lamp
SEGNALE DA ALTERNATORE Alternator signal
SEGNALAZ. LIVELLO CASOLO Fuel level signal
FARO DI LAVORO Working lamp
ALIMENTAZ. +5V PER JOYSTICK Joystick +5V supply
COMANDO TRASL. AVANTI Forward travel command
COMANDO TRASL. INDIETRO Backward travel command
COMANDO STERZO DX/SX Steering DX/SX command
SEGNALE PROPORZ. PEDALE UOMO PRESENTE (5-0-5V)TRASLAZ. (5-0-5V) Operator present pedal proportional signal
REV.8
452.90.614.00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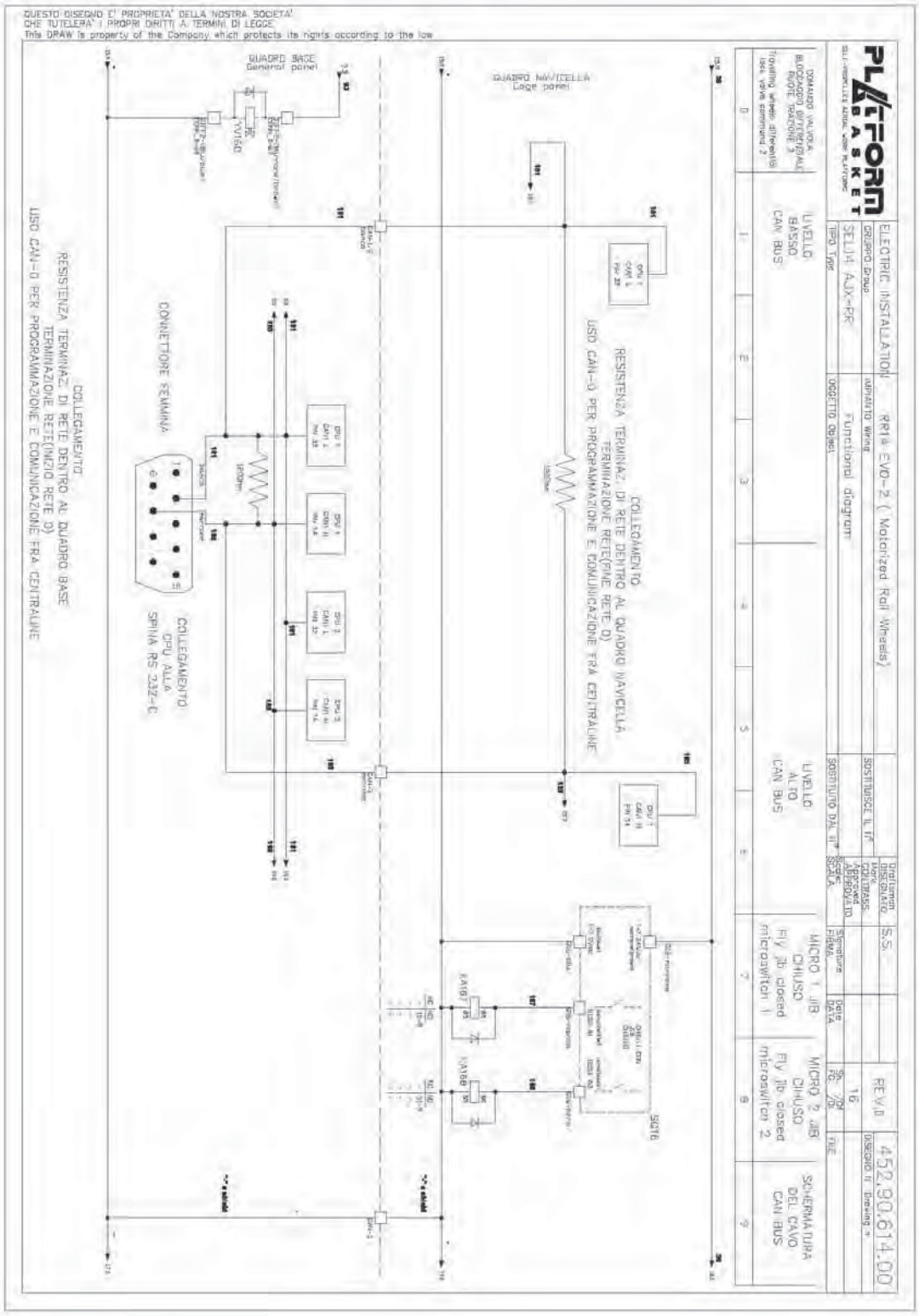
PLATFORM BASKET
ELECTRIC INSTALLATION
RR14 EVO-2 (Motorized Roll Wheels)
Functional diagram
452.90.614.00
REV.0
MICRO 1 SFILO RIENTRATO
Extension-in microswitch 1
MICRO 2 SFILO RIENTRATO
Extension-in microswitch 2
CELLA DI CARICO 300Kg
Overload sensor 300Kg
CELLA DI CARICO 500Kg
Overload sensor 500Kg
SELEZ ALTA TENSIONE E SPIA OLE selection and relative lamp
SPIA TRASLAZ LENTA ABILITATA SU ROTAIA
Slow speed travelling enabled on rail ramp
SELEZIONE LUCI LAMPEGGIANTI
Flashing ran lamps selection
SPIA ALLARME PLANARITA'
Planarity alarm lamp
SERIE MICRO JIB CHIUSO
Fly jib closed sensors series
SA155
SA157
SA167
SA168
HL155
HL156
HL158
HL158A
1 KOhm
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel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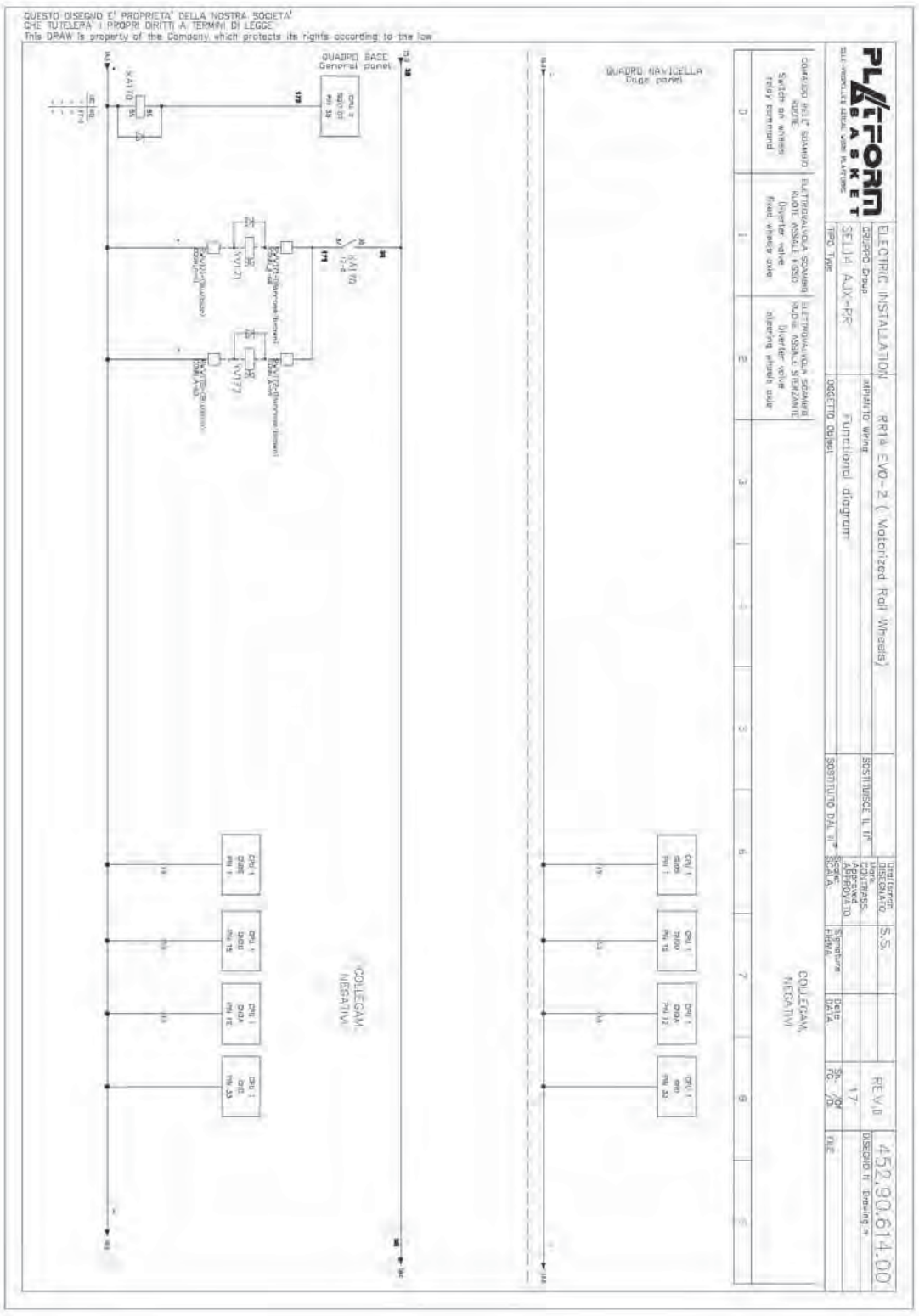
PLATFORM BASKET
ELECTRIC INSTALLATION
RR14 EVO-2 (Motorized Rail Wheels)
SELLA AUX-FR
Functional diagram
452.90.614.00
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
LIVELLO BASSO CAN BUS
LIVELLO ALTO CAN BUS
COLLEGAMENTO RESISTENZA TERMINAZ. DI RETE DENTRO AL QUADRO NAVICELLA
USO CAN-0 PER PROGRAMMAZIONE E COMUNICAZIONE FRA CENTRALINE
RESISTENZA TERMINAZ. DI RETE DENTRO AL QUADRO BASE
TERMINAZIONE RETE(INIZIO RETE 0)
USO CAN-0 PER PROGRAMMAZIONE E COMUNICAZIONE FRA CENTRALINE
CONNETTORE FEMMINA
COLLEGAMENTO CPU ALLA SPINA RS 232-C
MICRO 1 JIB CHIUSO
Fly jib closed microswitch 1
MICRO 2 JIB CHIUSO
Fly jib closed microswitch 2
SCHERMATURA DEL CAVO CAN BUS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CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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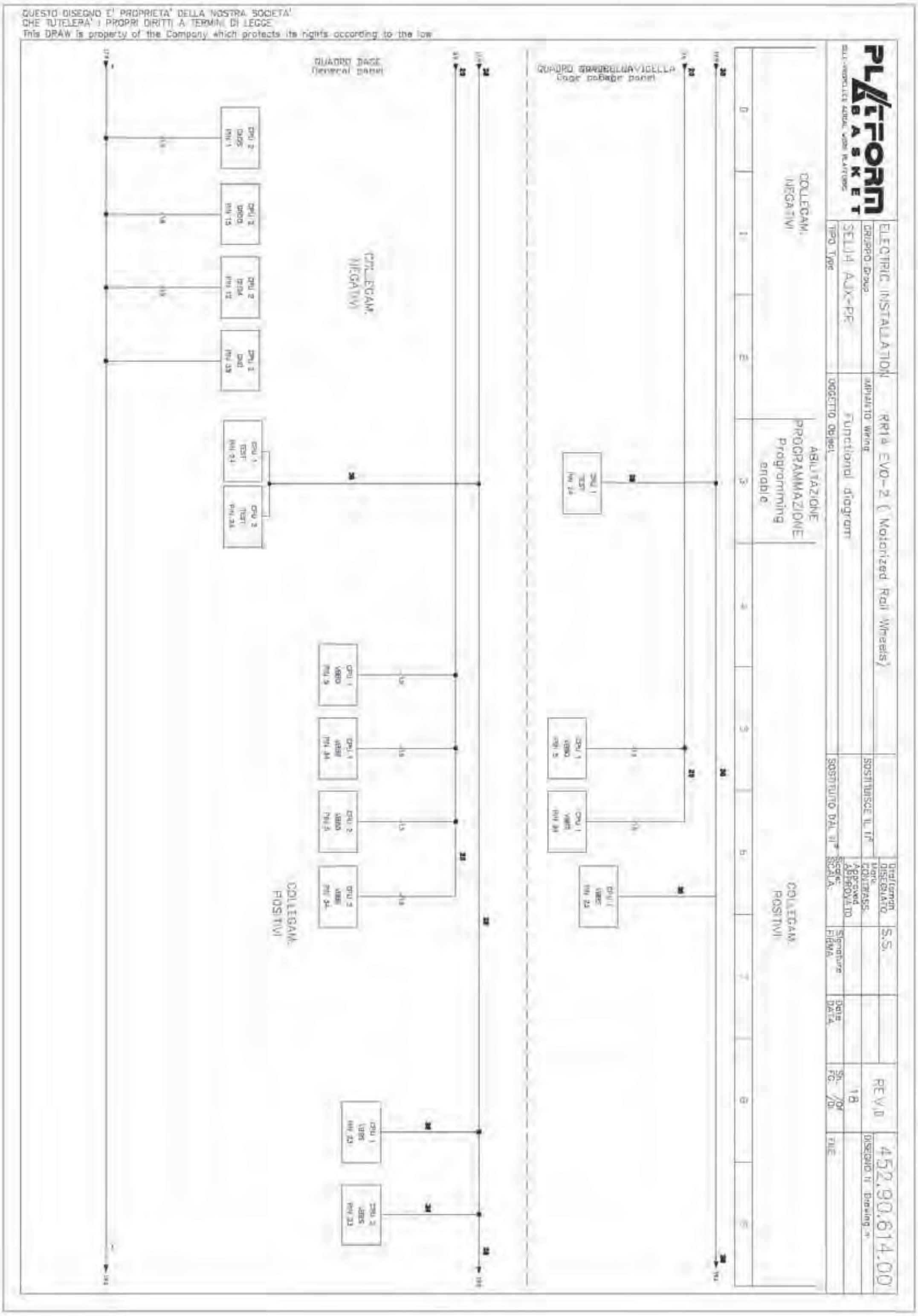
QUADRO BASE
General panel
QUADRO NAVICELLA
Dage panel
COLLEGAM. NEGATIVI
ELECTRIC INSTALLATION
RR14 EVO-2 (Motorized Rail Wheels)
SELI4 AUX-FIF
Functional diagram
452.90.614.00
REV.0

RR 14 EVO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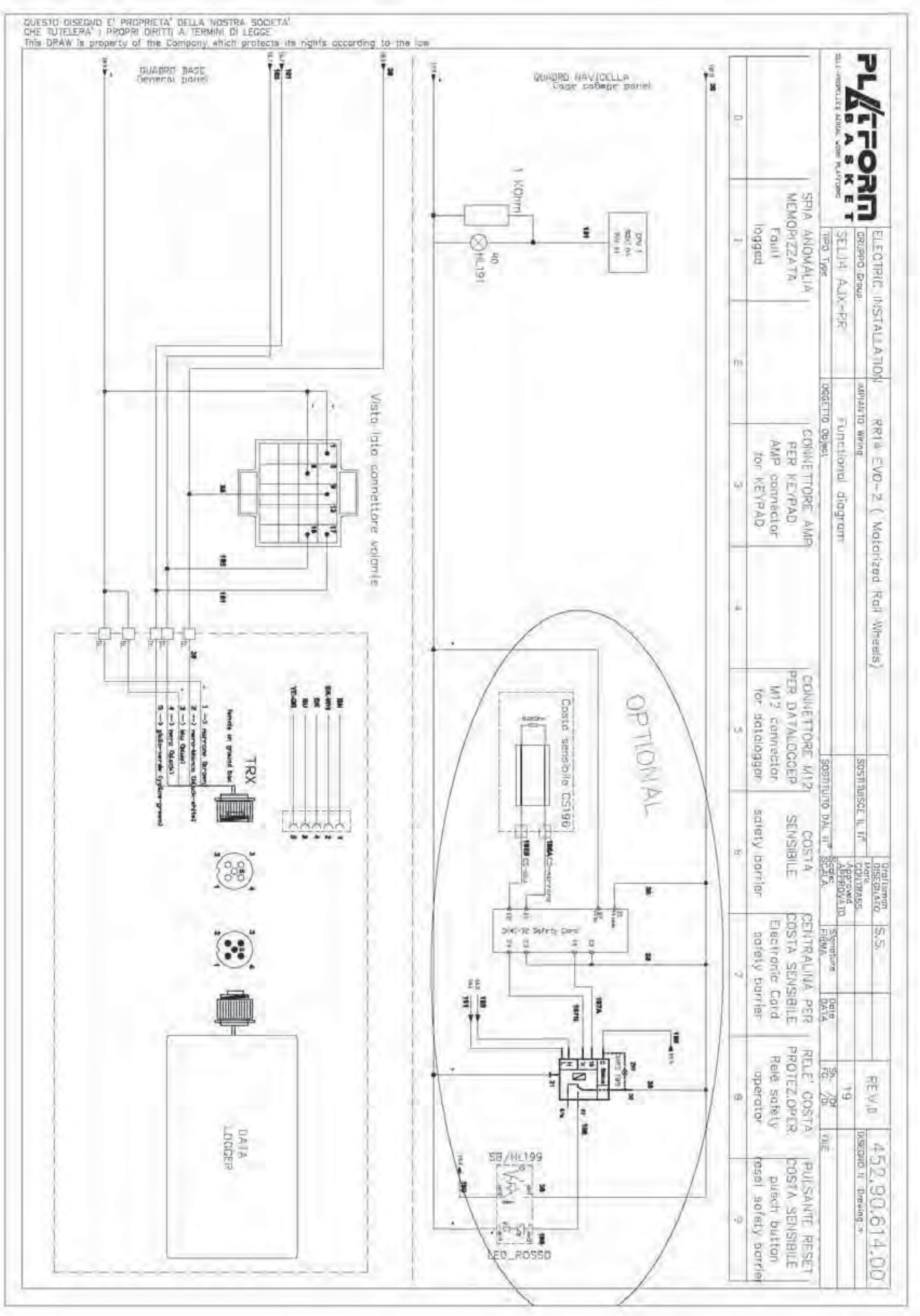
CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
QUADRO BASE
General panel
COLLEGAM. NEGATIVI
COLLEGAM. POSITIVI
ABILITAZIONE PROGRAMMAZIONE
Programming enable
ELECTRIC INSTALLATION
RR14 EVO-2 (Motorized Rail Wheels)
Functional diagram
SELJ4 AJX-PF
S.S.
452.90.614.00

RR 14 EVO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CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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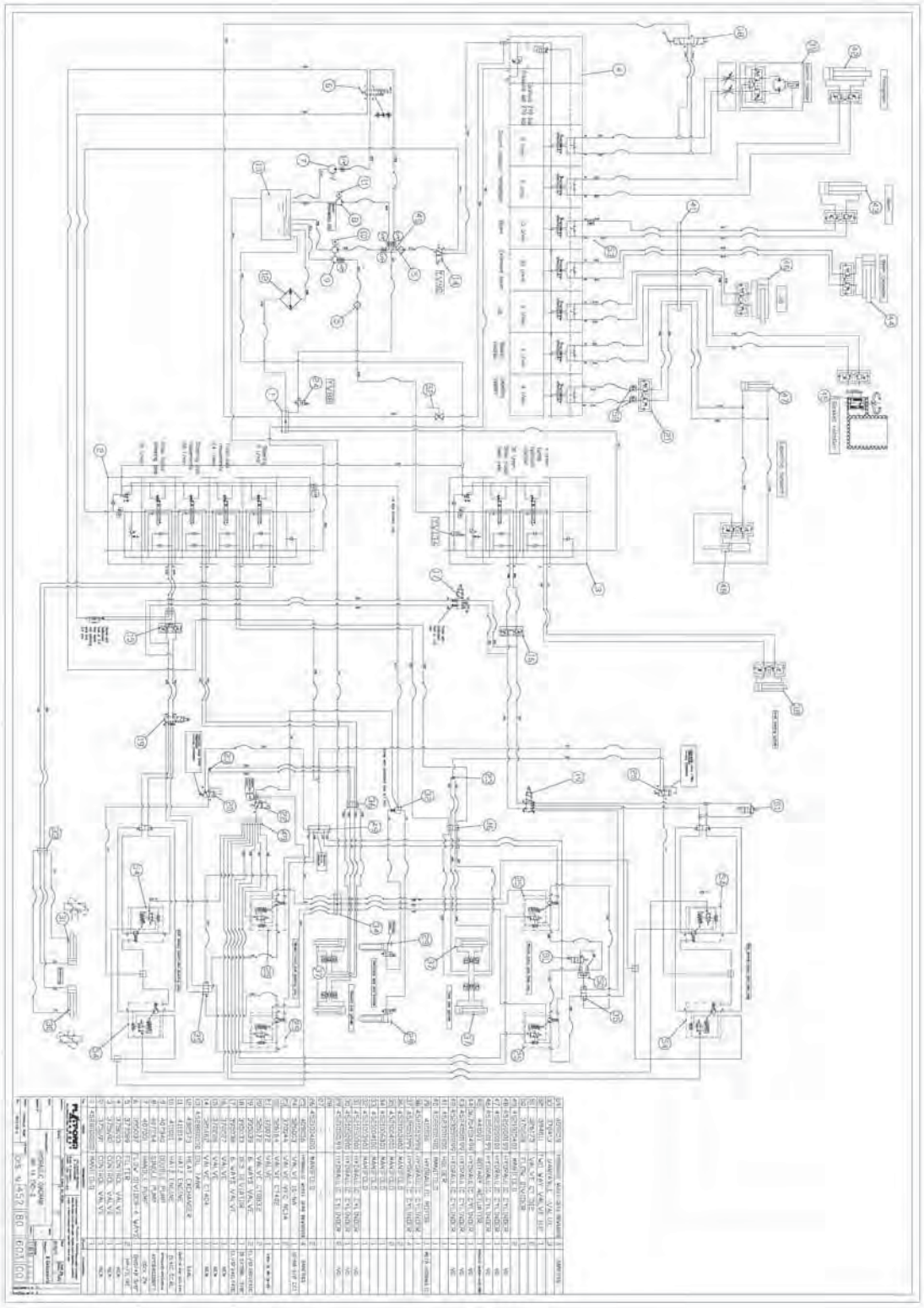
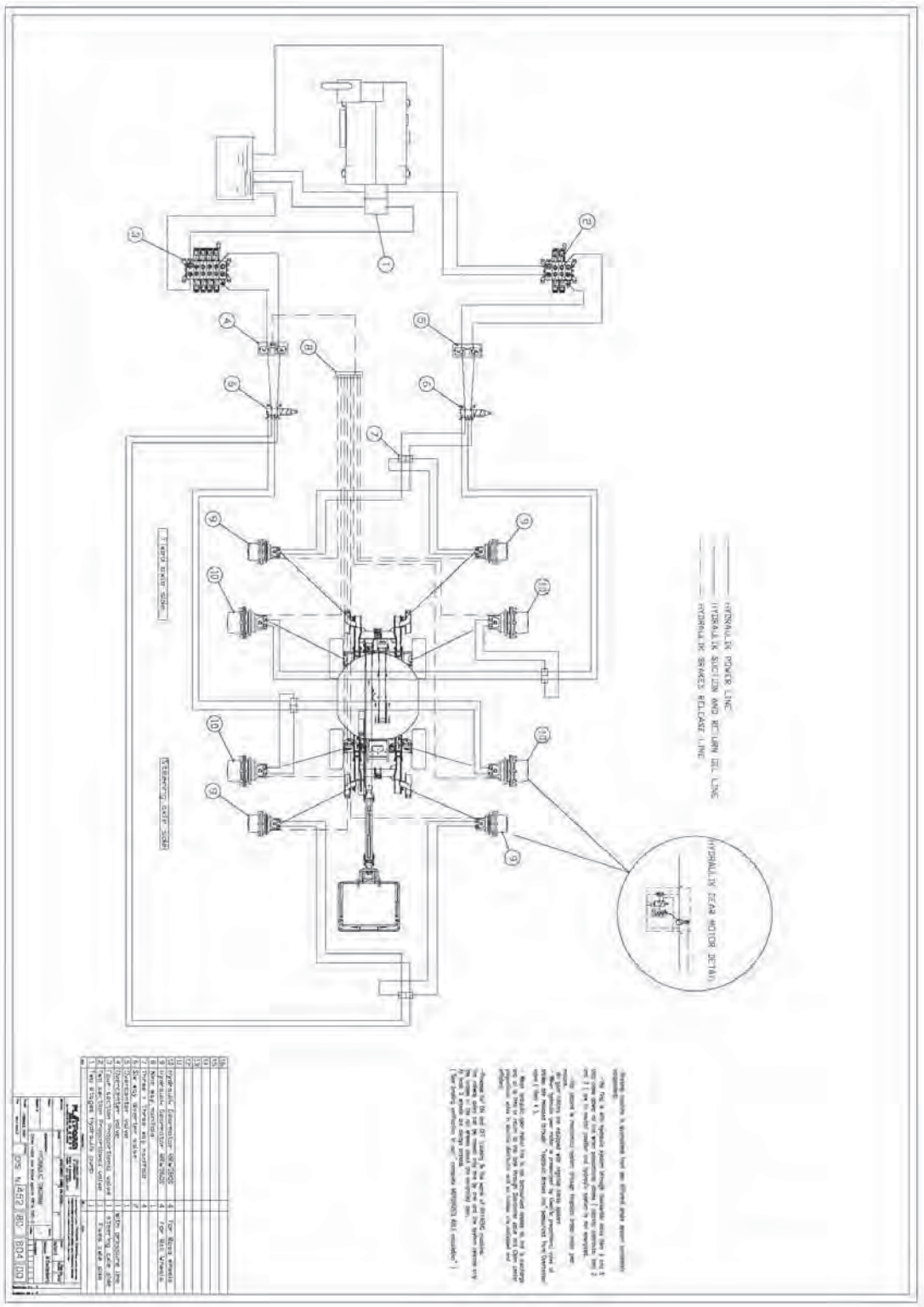
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
Vista lato connettore volante
1 KOhm
HL191
OPTIONAL
Costa sensibile CS196
TRX
DATA LOGGER
SB/HL199
LED_ROSSO
ELECTRIC INSTALLATION
RR14 EVO-2 (Motorized Rail Wheels)
Functional diagram
SEL14 AJX-PR
SPIA ANOMALIA MEMORIZZATA
Fault logged
CONNETTORE AMP PER KEYPAD
AMP connector for KEYPAD
CONNETTORE M12 PER DATALOGGER
M12 connector for datalogger
COSTA SENSIBILE
safety barrier
CENTRALINA PER COSTA SENSIBILE
Electronic Card safety barrier
RELE' COSTA PROTEZ.OPER.
Relè safety operator
PULSANTE RESET COSTA SENSIBILE
push button reset safety barrier
452.90.614.00

Hydraulic Diagrams





Section 16

Hydrostatic Specific Maintenance Instructions

Scheduled Work is that mandatory work which should be undertaken at the prescribed examinations.

Arising Work is that work that is to be done to rectify the defects found in the course of carrying out **Scheduled Work.**

Refer to the Platform-Basket "Reference use and maintenance manual", version 03/2017, for diagrams, locations and specifics.

The following pages have been compiled for rail specific tasks that relate to the hydrostatic variant that is not covered in detail in the Platform-Basket "Reference use and maintenance manual", version 03/2017.

Job No.	Description / location	Intent	A	B	C	D	Additional Info.	Require Record
HRA.1	Hydrostatic Axle	Check		F	S	S		
HRD.1	Hydrostatic Drive	Check		F	S	S		
CLL.1	Cage Load Limiter	Test			S	S		

Note: *Job No. CLL.1 is specifically for machines fitted with a load cell type cage load limiter*

RR 14 EVO

Job No. HRA.1

Hydrostatic Axle Check

Scheduled Work

1 Check axle frame for damage, cracks, distortion and structural integrity.
2 Check pipe work for damage, leaks and security.

Arising Work

1 Repair or replace as necessary.
2 Repair or replace as necessary.

RR 14 EVO

Job No. HRD.1

Hydrostatic Drive Check

Scheduled Work

1 Check for mounting and security
2 Check wheel mounting flange and studs for tightness
3 Check hub fluid levels.
4 Check for leaks.

Arising Work

1 Tighten or replace fixings as required.
2 Replace and torque to correct value as necessary.
3 Change or top up fluids.
4 Repair or replace if leaking.

March 2017

RR 14 EVO

Job No. CLL.1

Cage Load Limiter Test

Scheduled Work

1. Check for mounting and security
2. With ≤ 300KG weight in cage, check all boom functions are OK
3. With > 300KG and ≤ 400KG weight in cage, ensure all boom functions except telescope out function correctly
4. With > 400KG weight in cage, ensure boom functions are not possible
5. Record if a reset or calibration has been performed

Arising Work

1.1 Tighten or replace fixings as required.
2.1 Consult Promax Access Ltd on further advice
3.1 If telescope out function is available, remove from service and consult Promax Access Ltd on further advice
3.2 Check telescope in limit switch for correct functionality
4.1 Remove machine from service and consult Promax Access Ltd on further advice

Section 17

Addendums

Scheduled Work is that mandatory work which should be undertaken at the prescribed examinations.

Arising Work is that work that is to be done to rectify the defects found in the course of carrying out **Scheduled Work.**

Refer to the Platform-Basket "Reference use and maintenance manual", version 03/2017, for diagrams, locations and specifics.

The following pages have been compiled for addendums that relate to the Platform Basket RR14 Evo that is not covered in detail in the Platform-Basket "Reference use and maintenance manual", version 03/2017.

Job No.	Description / location	Intent	A	B	C	D	Additional Info.	Require Record
ATRP.1	Turret rotate friction plate	Test				F		
AALO.1	ALO Working procedure	Test		F	F	F		
AED.1	Electronic devices	Check		F	F	F		

RR 14 EVO

Job No. ATRP.1

Turret rotate friction plate test

Scheduled Work

1 Check for mounting and security

2 With boom fully stowed, apply a lateral pull at the cage of 40kg (40daN) for > 5 seconds in both directions and record positive movement.

Arising Work

1.1 Tighten or replace fixings as required.

2.1 Replace worn out friction plate and re-test.

AALO.1

ALO Working procedure

1. Identify open line

2. Approach RRAP ensuring machine is oriented correctly

3. Slew turret to safe side

4. Inspect pin for damage etc, replace if damaged or bent (machine is equipped with 2 pins in case of loss or damage)

5. Insert pin in correct hole – Note: with turret slewed to safe side, pin will not fully engage in wrong hole

6. Check illumination of correct ALO indicator lamp present on cage control panel

7. Slew against ALO slew lock pin to ensure correct insertion

8. Close canopy

9. Lock canopy with padlock to avoid tampering

RR 14 EVO

AERP.1

Emergency Recovery Procedure (400KG machine specific) – Towing on rail.

Due to latest requirements of EN280:2013, oscillating axle on RR14 Evo2 – 400 defaults to locked.

If towing on rail by another vehicle is necessary;

1. Ensure machine fully stowed and within W6a/Plant gauge.

2. Attached towing vehicle and ensure machine will not run away when brakes are disengaged

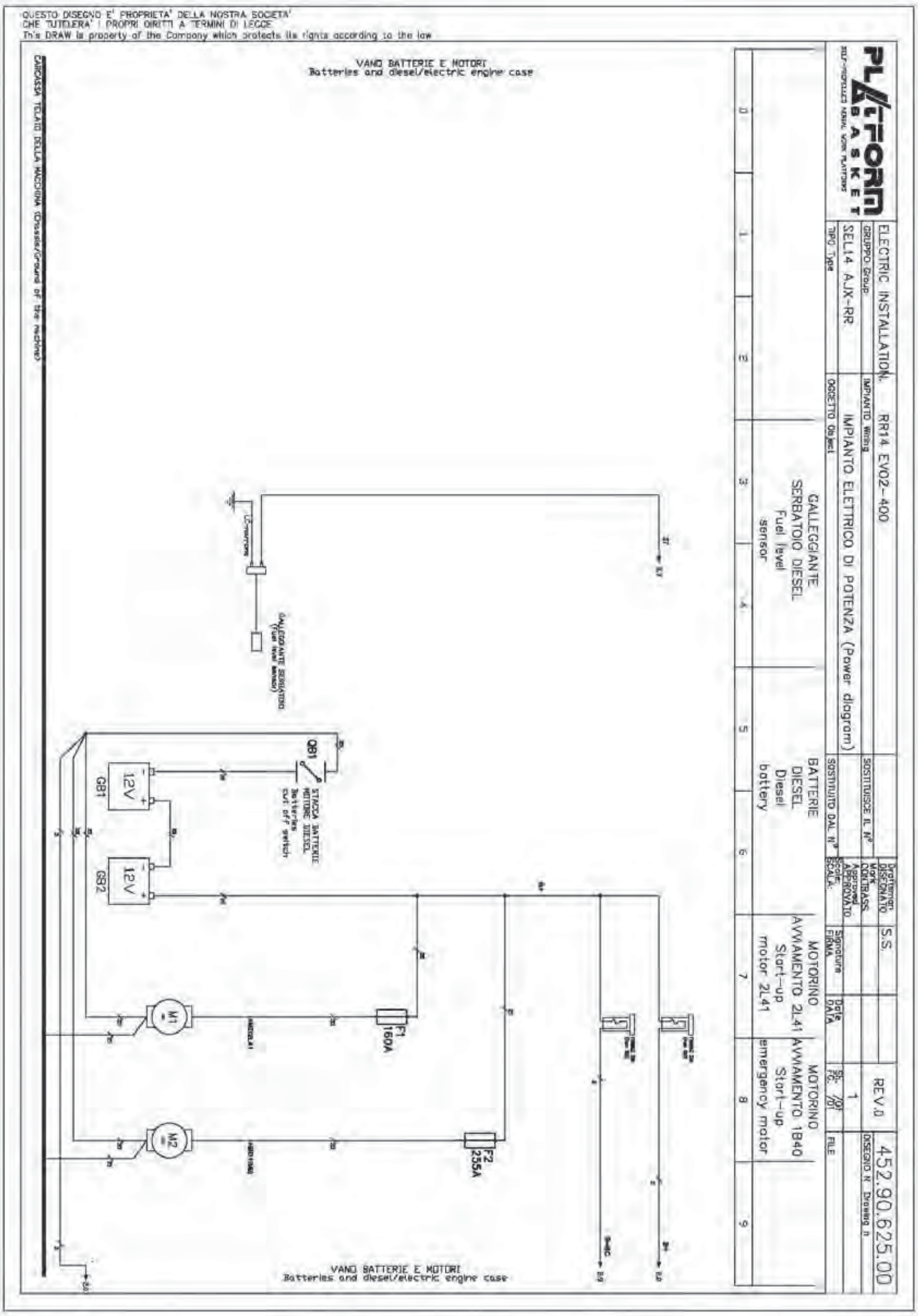
3. Locate the push and twist valves that are located on top of the oscillating axle cylinders. Remove seal and push and twist cap to free the axle.

4. Follow the procedure in the Platform-Basket "Reference use and maintenance manual", version 03/2017 section ‘I’ USE sections 1.6-1.6.2, emergency recovery system to disengage hydrostatic rail hub brakes

5. Return hydrostatic hubs to braked condition prior to disengaging towing vehicle.

6. Return oscillating axle valves to normal operation prior to operating boom.

RR 14 EVO


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA' CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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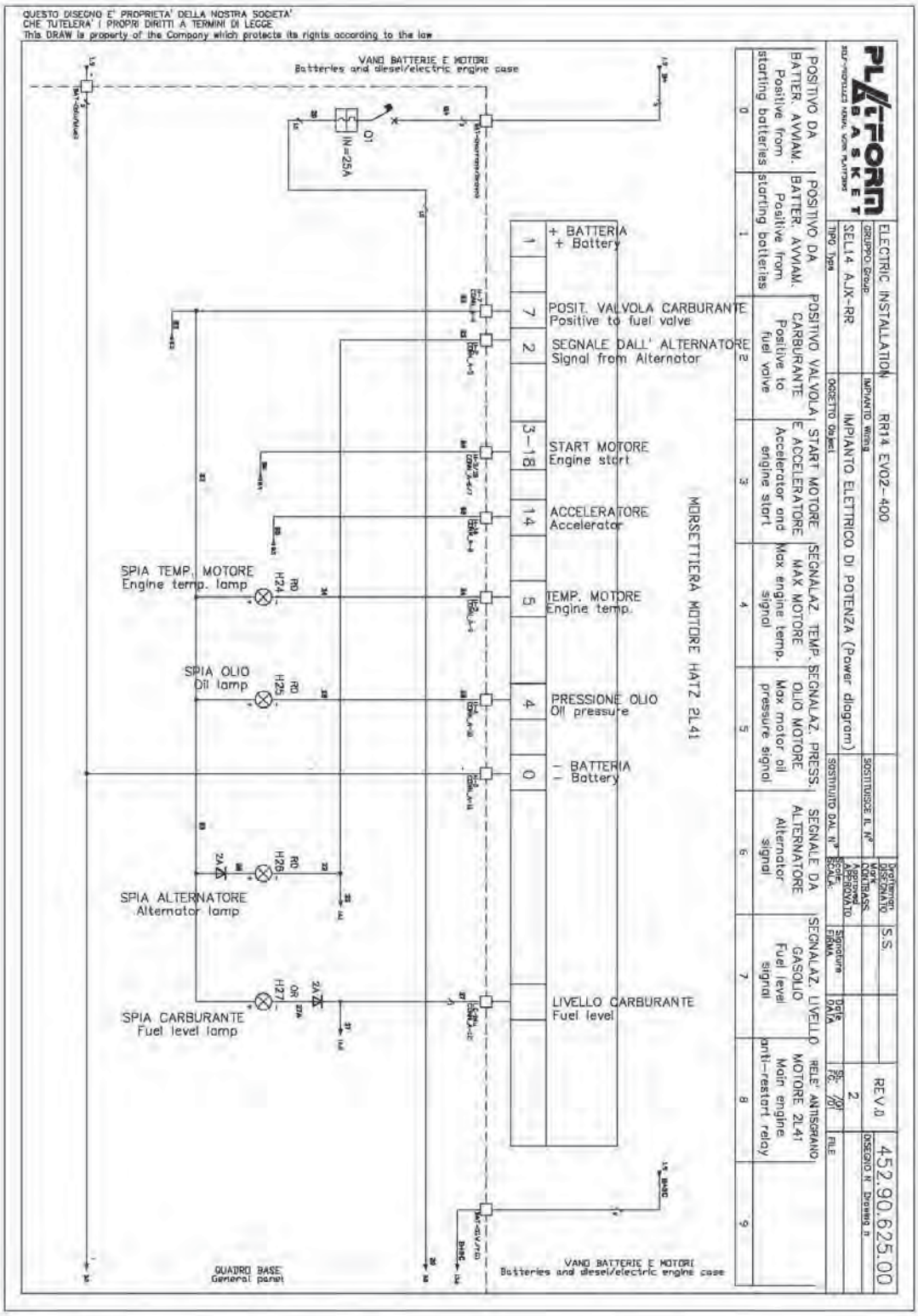
VANO BATTERIE E MOTORI
Batteries and diesel/electric engine case
ELECTRIC INSTALLATION
RR14 EVO2-400
SEL14 AJX-RR
IMPIANTO ELETTRICO DI POTENZA (Power diagram)
GALLEGGIANTE SERBATOIO DIESEL
Fuel level sensor
BATTERIE DIESEL
Diesel battery
MOTORINO AVVIAMENTO 2L41
Start-up motor 2L41
MOTORINO AVVIAMENTO 1B40
Start-up emergency motor
S.S.
REV.0
452.90.625.00
QB1
12V
GB1
GB2
M1
M2
F1 160A
F2 255A
VANO BATTERIE E MOTORI
Batteries and diesel/electric engine case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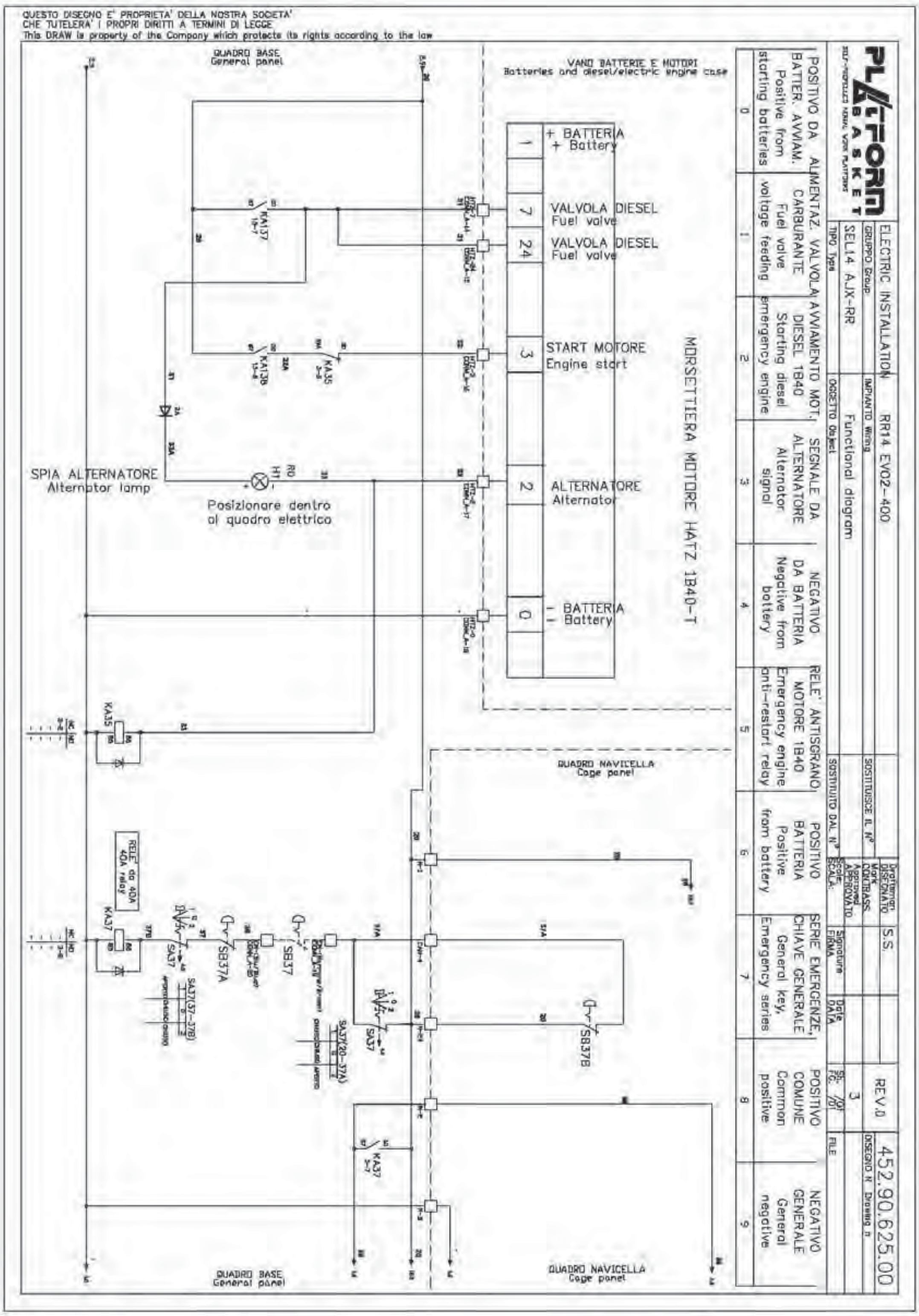
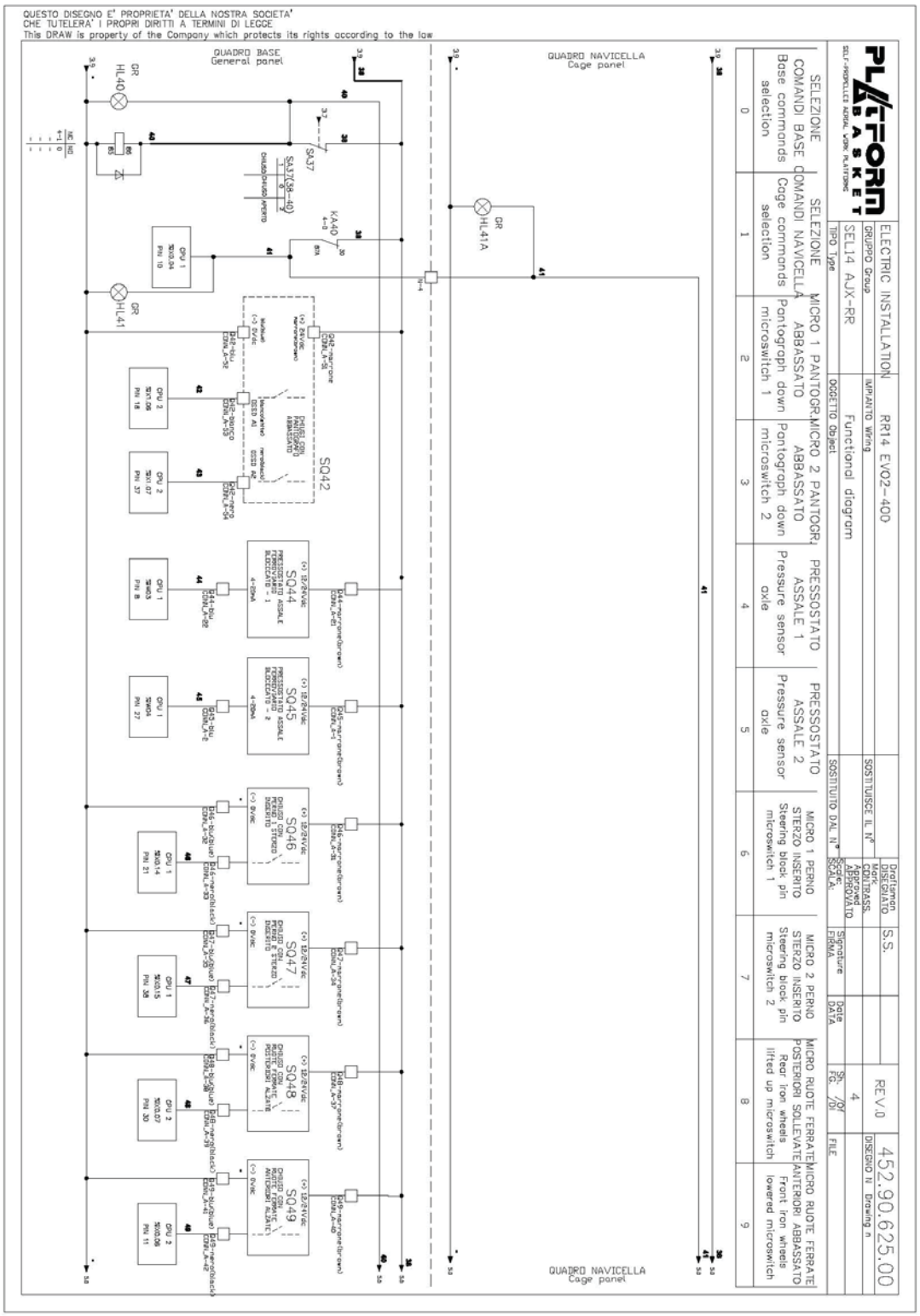
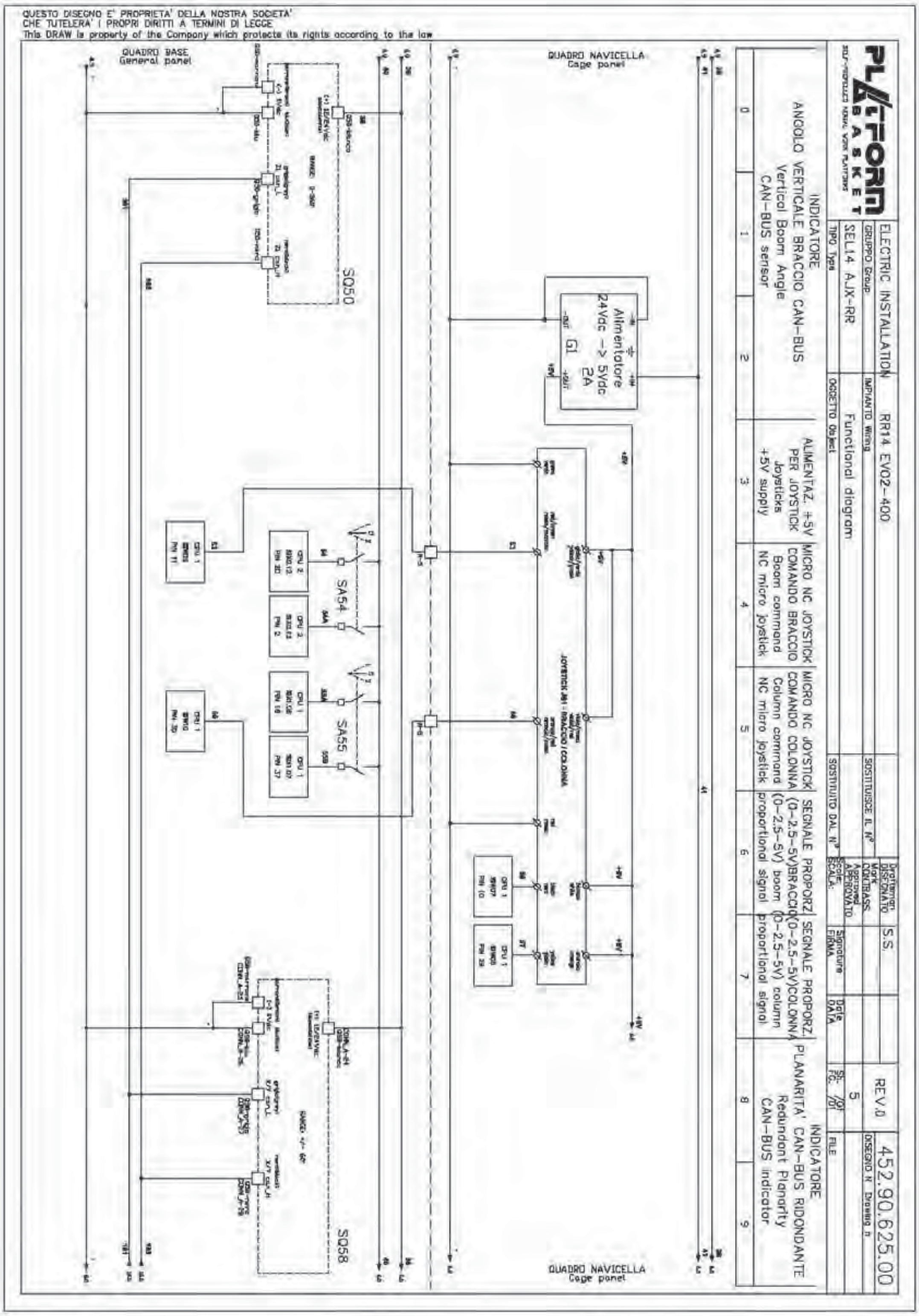
CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
VANO BATTERIE E MOTORI
Batteries and diesel/electric engine case
F1 IN=25A
+ BATTERIA
+ Battery
POSIT. VALVOLA CARBURANTE
Positive to fuel valve
SEGNALE DALL' ALTERNATORE
Signal from Alternator
START MOTORE
Engine start
ACCELERATORE
Accelerator
TEMP. MOTORE
Engine temp.
PRESSIONE OLIO
Oil pressure
- BATTERIA
- Battery
LIVELLO CARBURANTE
Fuel level
MORSETTIERA MOTORE HATZ 2L41
SPIA TEMP. MOTORE
Engine temp. lamp
SPIA OLIO
Oil lamp
SPIA ALTERNATORE
Alternator lamp
SPIA CARBURANTE
Fuel level lamp
QUADRO BASE
General panel
VANO BATTERIE E MOTORI
Batteries and diesel/electric engine case
POSITIVO DA BATTER. AVVIAM.
Positive from starting batteries
POSITIVO VALVOLA CARBURANTE
Positive to fuel valve
START MOTORE E ACCELERATORE
Accelerator and engine start
SEGNALAZ. TEMP. MAX MOTORE
Max engine temp. signal
SEGNALAZ. PRESS. OLIO MOTORE
Max motor oil pressure signal
SEGNALE DA ALTERNATORE
Alternator signal
SEGNALAZ. LIVELLO GASOLIO
Fuel level signal
RELE' ANTISGRANO MOTORE 2L41
Main engine anti-restart relay
ELECTRIC INSTALLATION RR14 EVO2-400
IMPIANTO ELETTRICO DI POTENZA (Power diagram)
SEL14 AJX-RR
452.90.625.00
REV.0

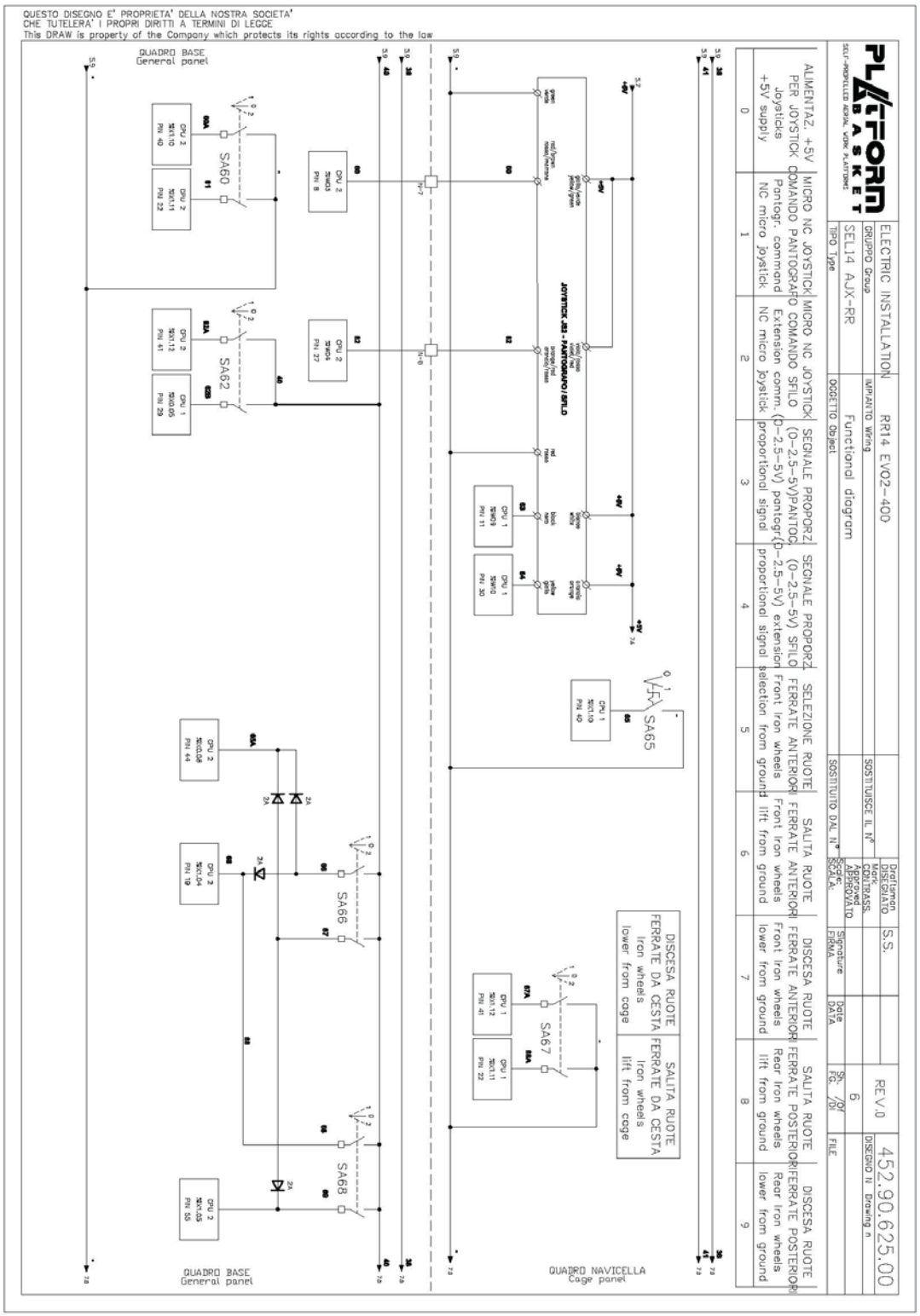
RR 14 EVO


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA' CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
QUADRO BASE
General panel
VANO BATTERIE E MOTORI
Batteries and diesel/electric engine case
+ BATTERIA
+ Battery
VALVOLA DIESEL
Fuel valve
VALVOLA DIESEL
Fuel valve
START MOTORE
Engine start
ALTERNATORE
Alternator
- BATTERIA
- Battery
MORSETTIERA MOTORE HATZ 1B40-T
SPIA ALTERNATORE
Alternator lamp
Posizionare dentro al quadro elettrico
QUADRO NAVICELLA
Cage panel
RELE' da 40A
40A relay
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
ELECTRIC INSTALLATION
RR14 EVO2-400
SEL14 AJX-RR
Functional diagram
POSITIVO DA BATTER. AVVIAM.
Positive from starting batteries
ALIMENTAZ. VALVOLA CARBURANTE
Fuel valve voltage feeding
AVVIAMENTO MOT. DIESEL 1B40
Starting diesel emergency engine
SEGNALE DA ALTERNATORE
Alternator signal
NEGATIVO DA BATTERIA
Negative from battery
RELE' ANTISGRANO MOTORE 1B40
Emergency engine anti-restart relay
POSITIVO BATTERIA
Positive from battery
SERIE EMERGENZE, CHIAVE GENERALE
General key, Emergency series
POSITIVO COMUNE
Common positive
NEGATIVO GENERALE
General negative
S.S.
REV.0
452.90.625.00

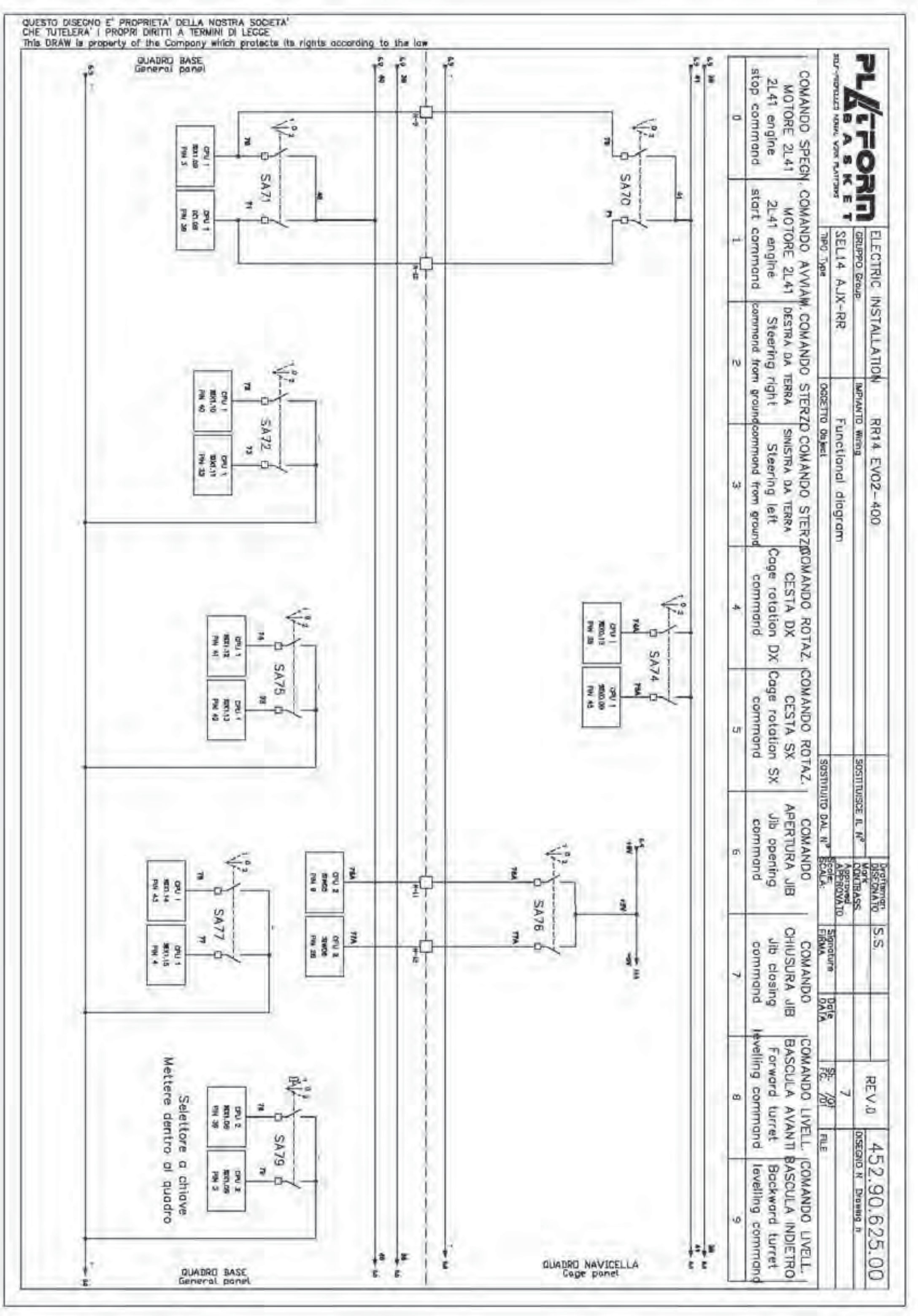

QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA'
CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
QUADRO NAVICELLA
Cage panel
PLATFORM BASKET
ELECTRIC INSTALLATION
RR14 EVO2-400
GRUPPO Group
IMPIANTO Wiring
SEL14 AUX-RR
Functional diagram
OGGETTO Object
SOSTITUISCE IL N°
SOSTITUITO DAL N°
Disegnato DISEGNATO
Mark. CONTRASS.
Approvato APPROVATO
Scala: SCALA:
Signature FIRMA
Date DATA
S.S.
REV.0
452.90.625.00
DISEGNO N° Drawing n
FILE
SELEZIONE COMANDI BASE Base commands selection
SELEZIONE COMANDI NAVICELLA Cage commands selection
MICRO 1 PANTOGR. ABBASSATO Pantograph down microswitch 1
MICRO 2 PANTOGR. ABBASSATO Pantograph down microswitch 2
PRESSOSTATO ASSALE 1 Pressure sensor axle
PRESSOSTATO ASSALE 2 Pressure sensor axle
MICRO 1 PERNO STERZO INSERITO Steering block pin microswitch 1
MICRO 2 PERNO STERZO INSERITO Steering block pin microswitch 2
MICRO RUOTE FERRATE POSTERIORI SOLLEVATE Rear iron wheels lifted up microswitch
MICRO RUOTE FERRATE ANTERIORI ABBASSATO Front iron wheels lowered microswitch
0
1
2
3
4
5
6
7
8
9
SQ42
SQ44
SQ45
SQ46
SQ47
SQ48
SQ49

RR 14 EVO

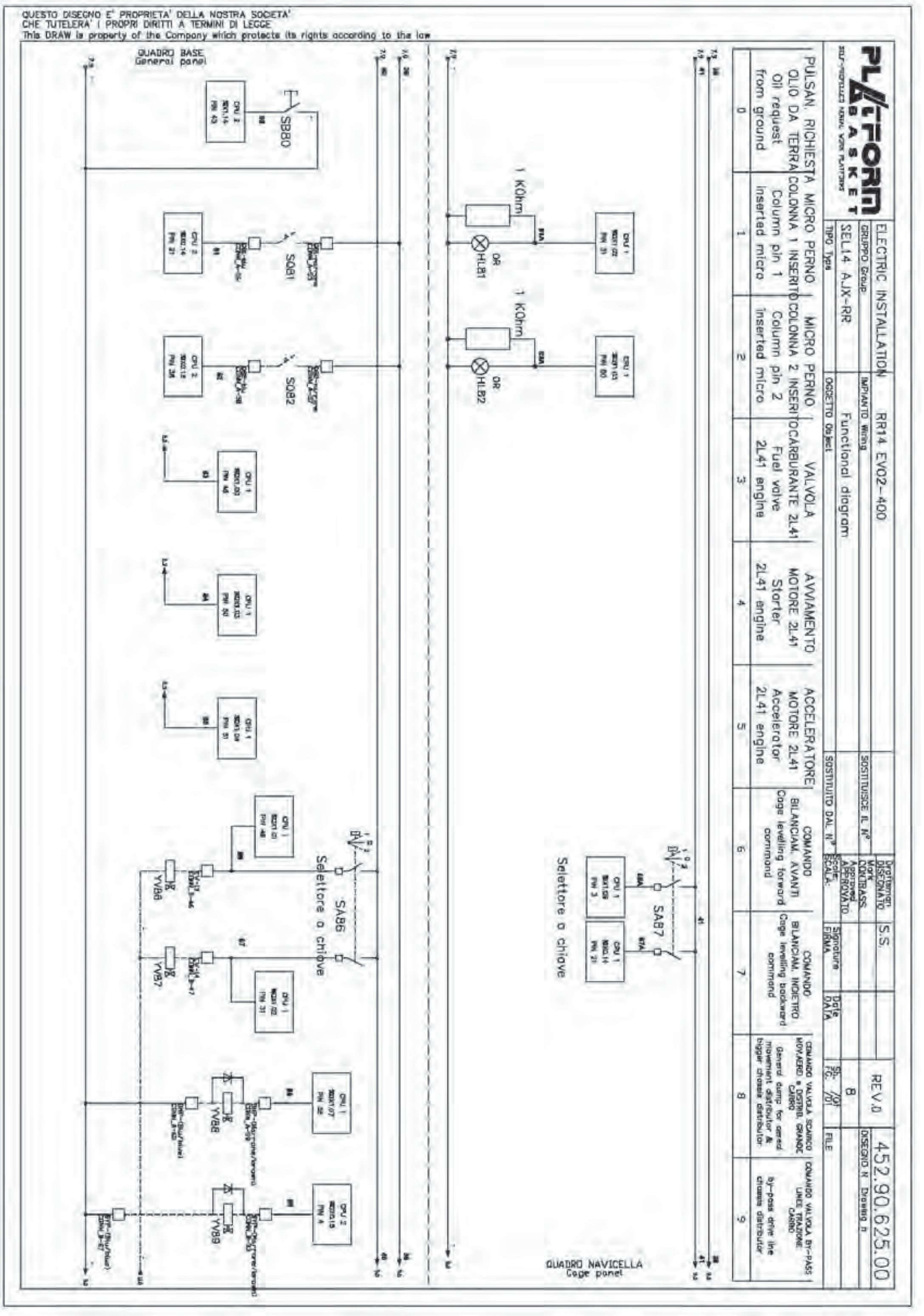

QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA' CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
QUADRO BASE General panel
QUADRO NAVICELLA Cage panel
SQ50
SQ58
SA54
SA55
Alimentatore 24Vdc -> 5Vdc 2A
G1
ELECTRIC INSTALLATION
RR14 EVO2-400
Functional diagram
SEL14 AJX-RR
REV.0
452.90.625.00
INDICATORE ANGOLO VERTICALE BRACCIO CAN-BUS Vertical Boom Angle CAN-BUS sensor
ALIMENTAZ. +5V PER JOYSTICK Joysticks +5V supply
MICRO NC JOYSTICK COMANDO BRACCIO Boom command NC micro joystick
MICRO NC JOYSTICK COMANDO COLONNA Column command NC micro joystick
SEGNALE PROPORZ. (0-2.5-5V)BRACCIO (0-2.5-5V) boom proportional signal
SEGNALE PROPORZ. (0-2.5-5V)COLONNA (0-2.5-5V) column proportional signal
INDICATORE PLANARITA' CAN-BUS RIDONDANTE Redundant Planarity CAN-BUS indicator


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA'
CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
SA60
SA62
SA65
SA66
SA67
SA68
ELECTRIC INSTALLATION
RR14 EVO2-400
Functional diagram
SEL14 AJX-RR
452.90.625.00
REV.0
0 MICRO NC JOYSTICK ALIMENTAZ. +5V PER JOYSTICK Joysticks +5V supply
1 MICRO NC JOYSTICK COMANDO PANTOGRAFO Pantogr. command NC micro joystick
2 MICRO NC JOYSTICK COMANDO SFILO Extension comm. NC micro joystick
3 SEGNALE PROPORZ. (0-2,5-5V)PANTOG (0-2,5-5V) pantogr proportional signal
4 SEGNALE PROPORZ. (0-2,5-5V) SFILO (0-2,5-5V) extension proportional signal
5 SELEZIONE RUOTE FERRATE ANTERIORI Front iron wheels selection from ground
6 SALITA RUOTE FERRATE ANTERIORI Front iron wheels lift from ground
7 DISCESA RUOTE FERRATE ANTERIORI Front iron wheels lower from ground
8 SALITA RUOTE FERRATE POSTERIORI Rear iron wheels lift from ground
9 DISCESA RUOTE FERRATE POSTERIORI Rear iron wheels lower from ground
DISCESA RUOTE FERRATE DA CESTA Iron wheels lower from cage
SALITA RUOTE FERRATE DA CESTA Iron wheels lift from cage

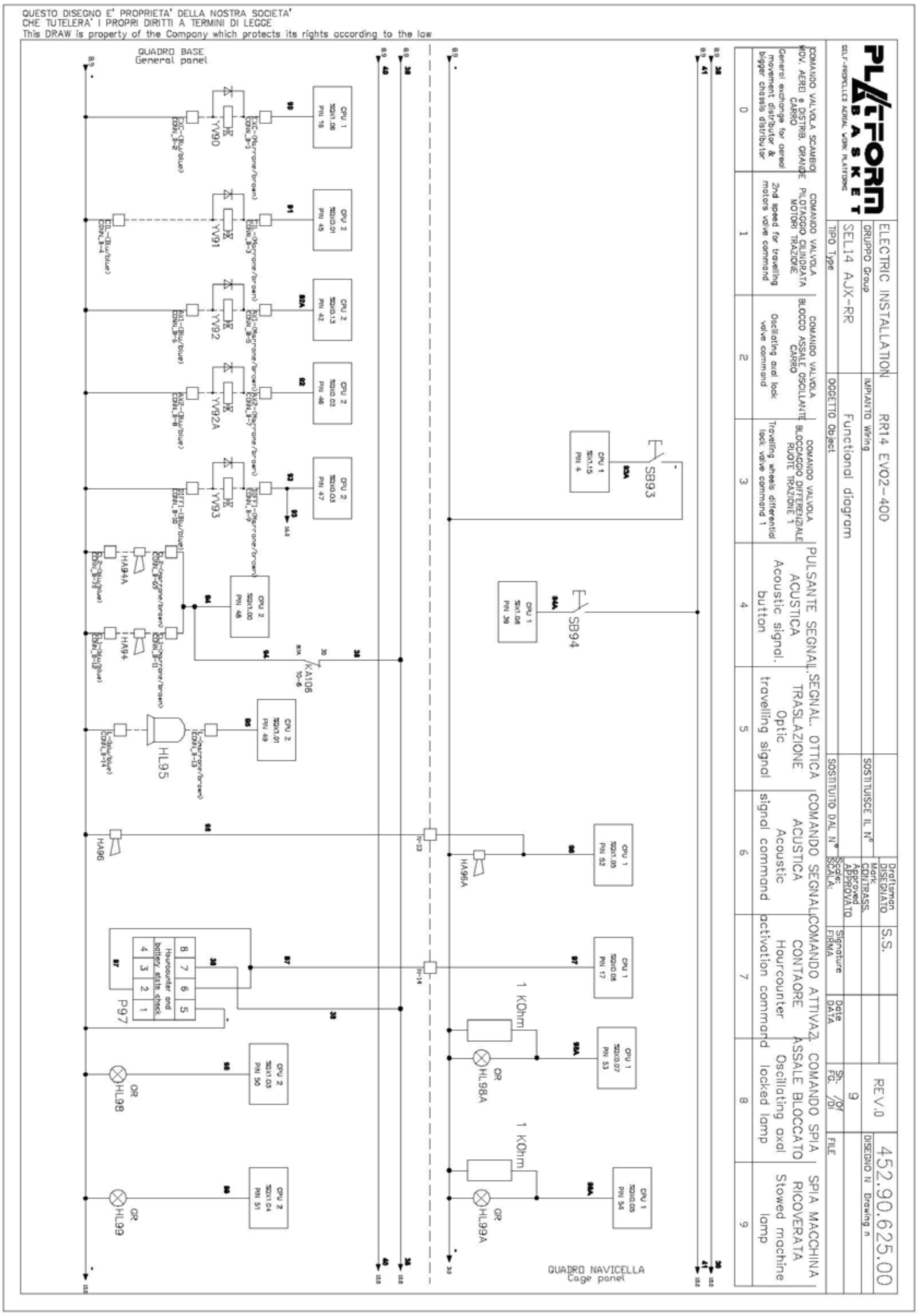
RR 14 EVO

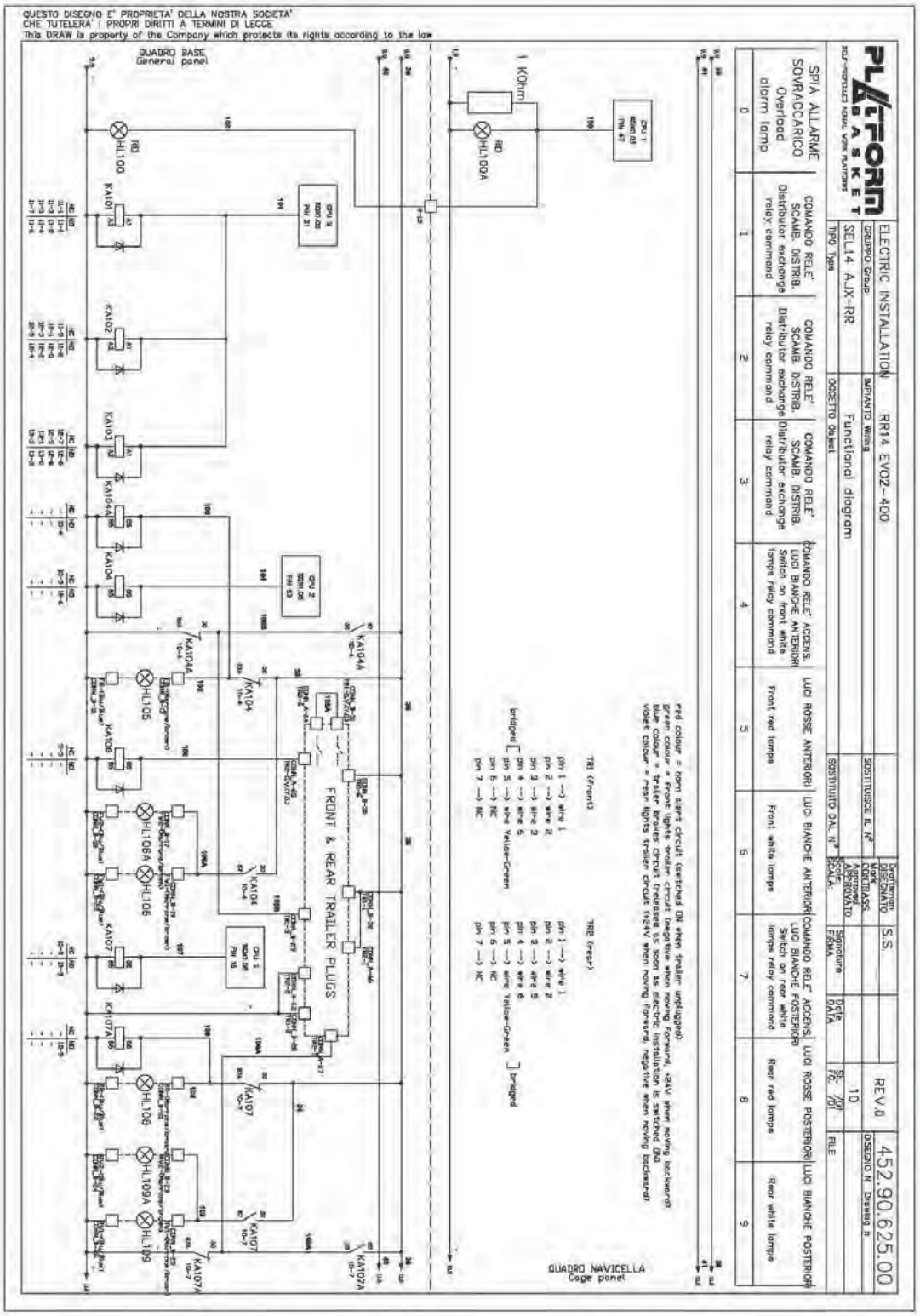

QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA' CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
ELECTRIC INSTALLATION
RR14 EVO2-400
SEL14 AJX-RR
Functional diagram
452.90.625.00
REV.0
S.S.
COMANDO SPEGN. MOTORE 2L41
2L41 engine stop command
COMANDO AVVIAM. MOTORE 2L41
2L41 engine start command
COMANDO STERZO DESTRA DA TERRA
Steering right command from ground
COMANDO STERZO SINISTRA DA TERRA
Steering left command from ground
COMANDO ROTAZ. CESTA DX
Cage rotation DX command
COMANDO ROTAZ. CESTA SX
Cage rotation SX command
COMANDO APERTURA JIB
Jib opening command
COMANDO CHIUSURA JIB
Jib closing command
COMANDO LIVELL. BASCULA AVANTI
Forward turret levelling command
COMANDO LIVELL. BASCULA INDIETRO
Backward turret levelling command
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
SA70
SA71
SA72
SA74
SA75
SA76
SA77
SA79
Selettore a chiave
Mettere dentro al quadro

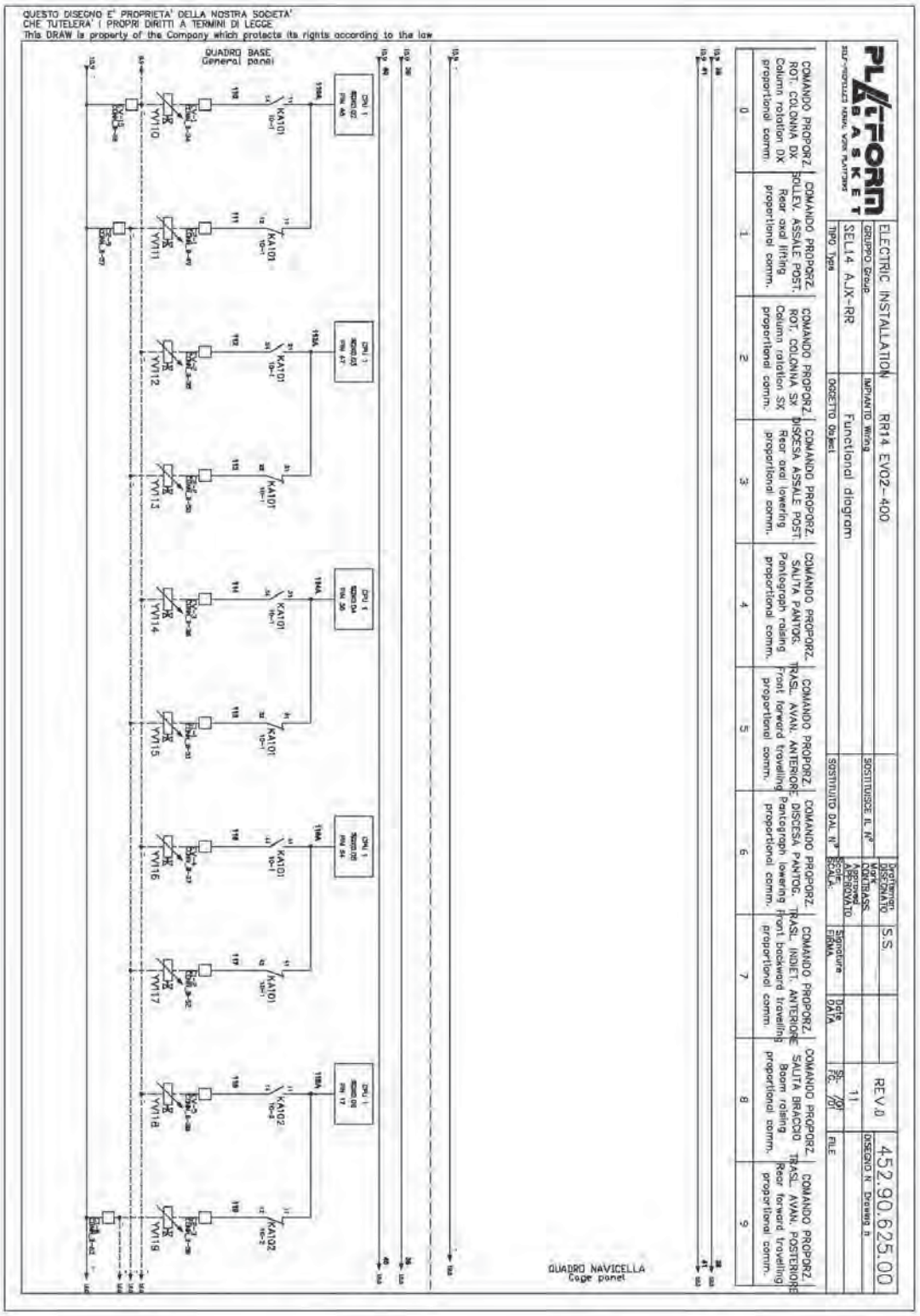
RR 14 EVO

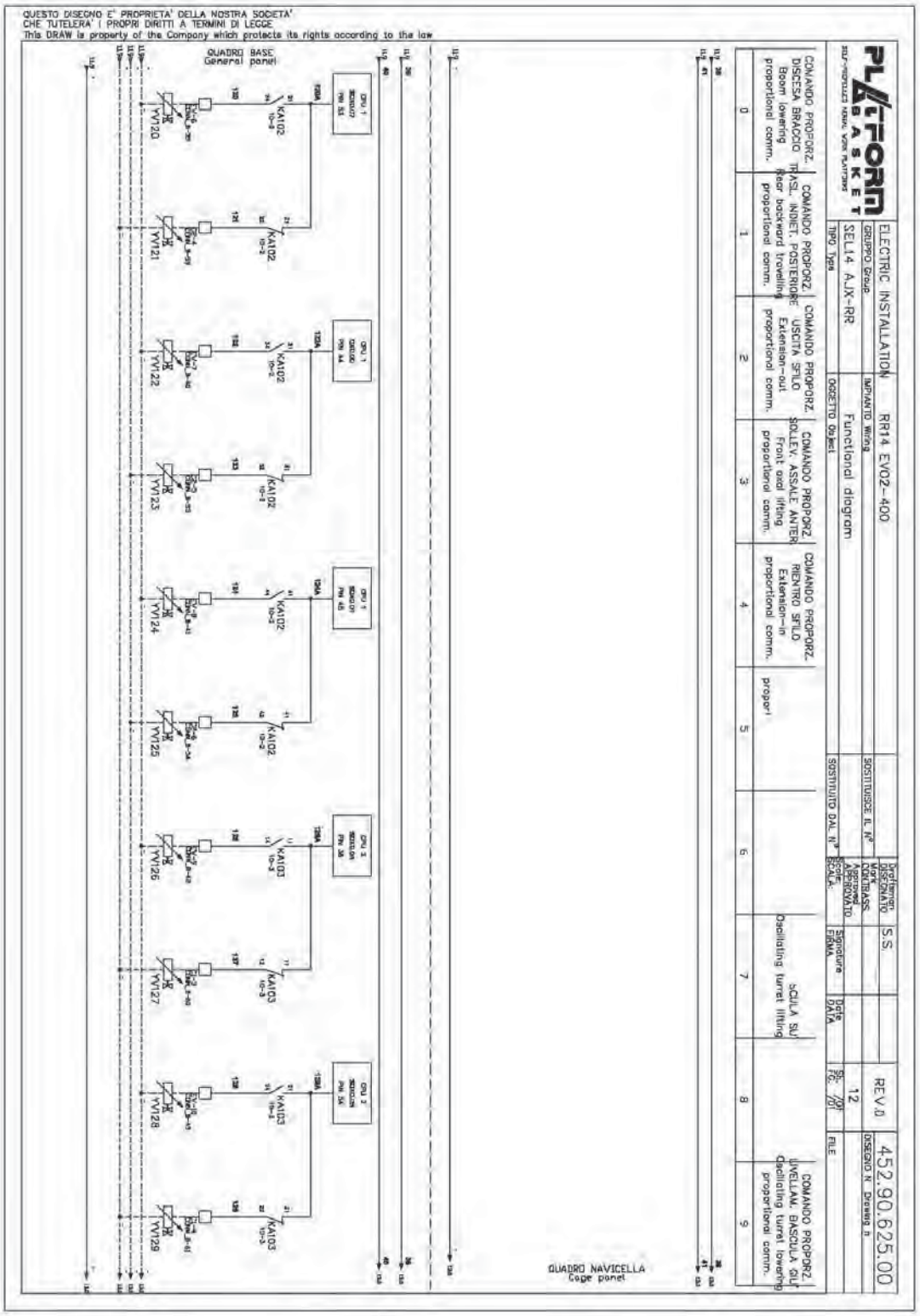

ELECTRIC INSTALLATION
RR14 EVO2-400
Functional diagram
452.90.625.00
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel

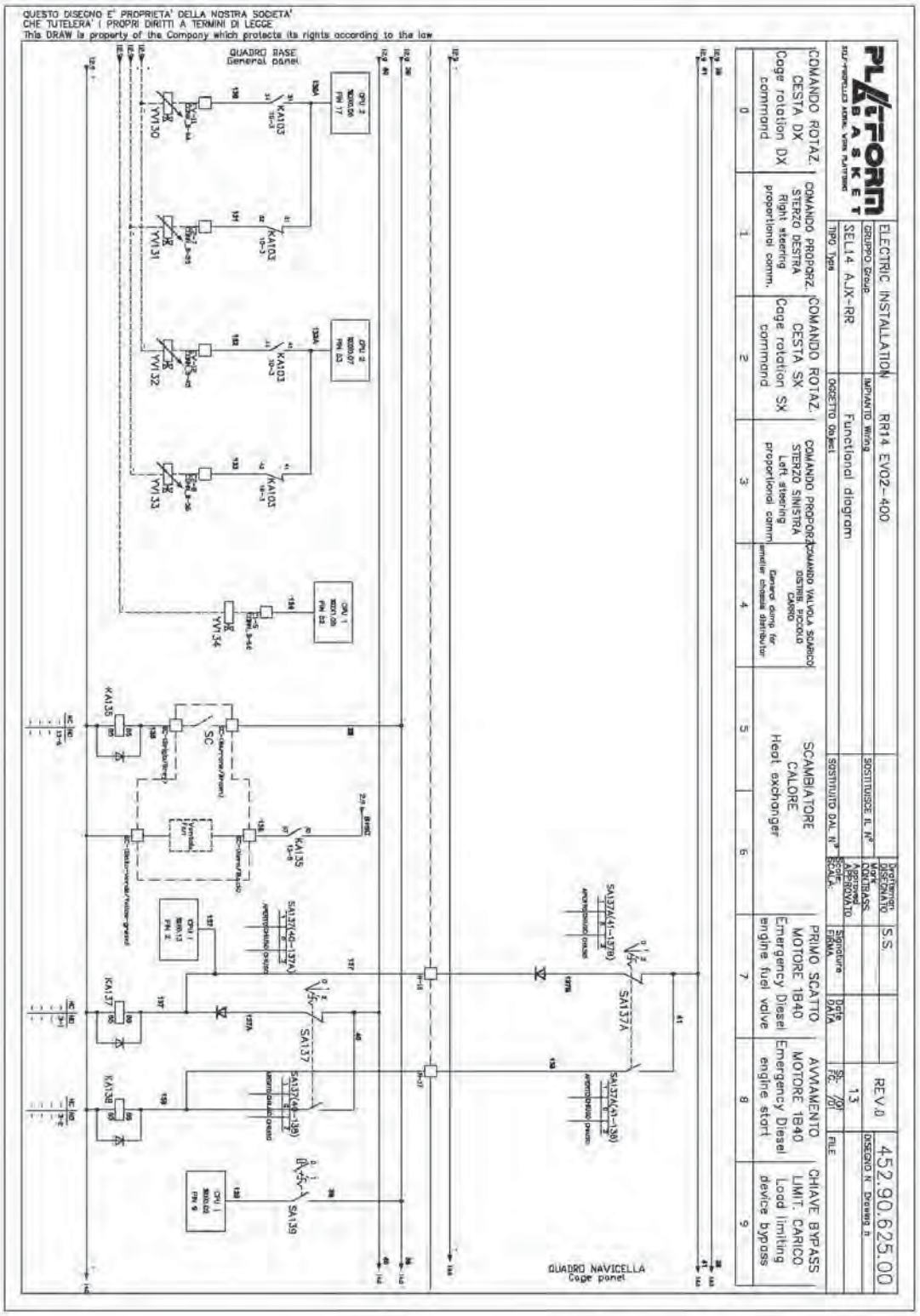
RR 14 EVO


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA'
CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the low
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
ELECTRIC INSTALLATION
SEL14 AJX-RR
RR14 EVO2-400
Functional diagram
452.90.625.00
REV.0
S.S.
SB93
SB94
KA106
HL95
HA96
HA96A
P97
HL98
HL98A
HL99
HL99A
YV90
YV91
YV92
YV92A
YV93
1 KOhm
PULSANTE SEGNAL. ACUSTICA
Acoustic signal. button
SEGNAL. OTTICA TRASLAZIONE
Optic travelling signal
COMANDO SEGNAL. ACUSTICA
Acoustic signal command
COMANDO ATTIVAZ. CONTATORE
Hourcounter activation command
COMANDO SPIA ASSALE BLOCCATO
Oscillating axel locked lamp
SPIA MACCHINA RICOVERATA
Stowed machine lamp

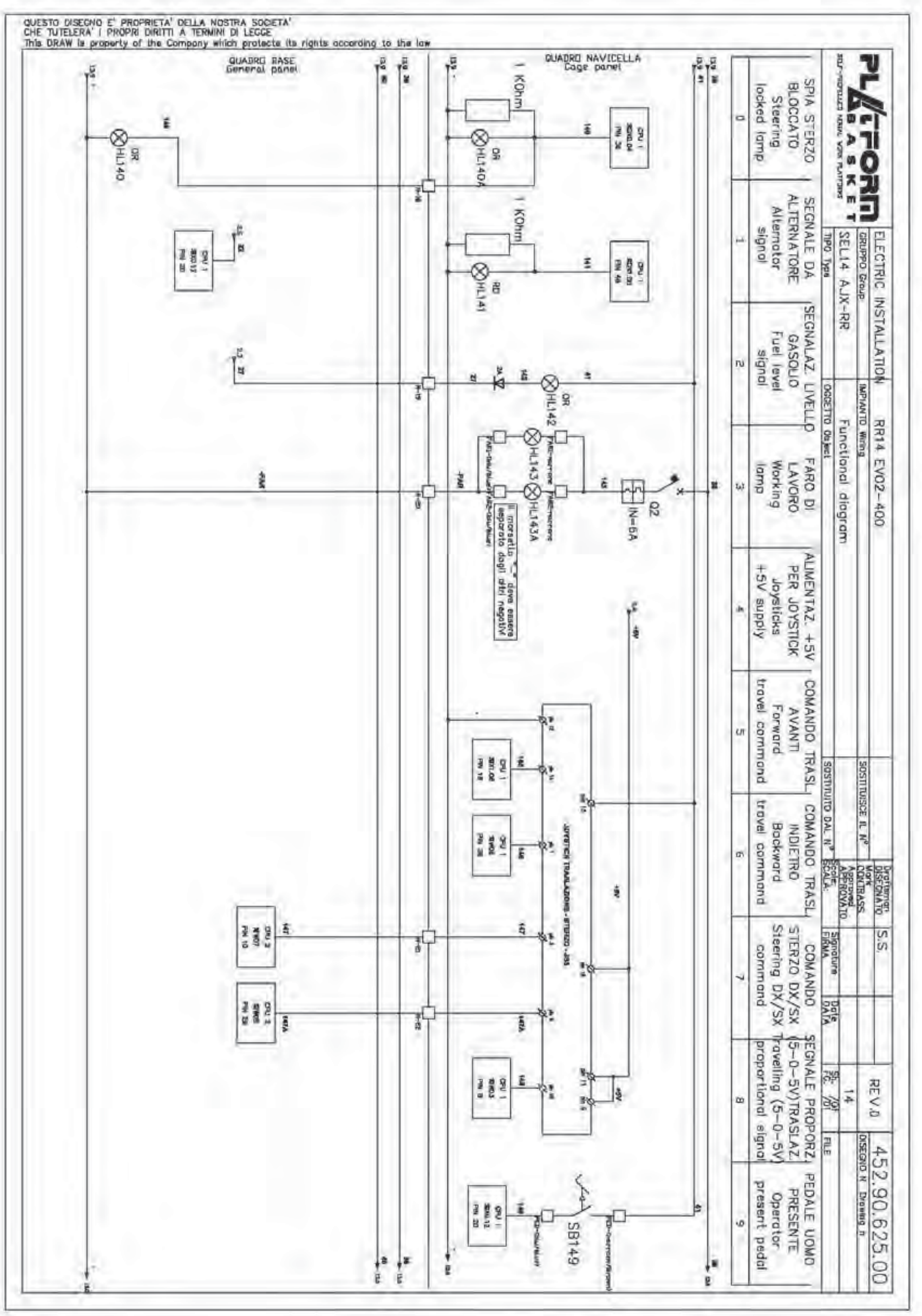

QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA'
CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE.
This DRAW is property of the Company which protects its rights according to the law
PLATFORM BASKET
ELECTRIC INSTALLATION
RR14 EVO2-400
Functional diagram
SEL14 AJX-RR2
REV.0
452.90.625.00
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
FRONT & REAR TRAILER PLUGS
1 KOhm
SPIA ALLARME SOVRACCARICO
Overload alarm lamp
COMANDO RELE' SCAMB. DISTRIB.
Distributor exchange relay command
COMANDO RELE' ACCESS. LUCI BIANCHE ANTERIORI
Switch on front white lamps relay command
LUCI ROSSE ANTERIORI
Front red lamps
LUCI BIANCHE ANTERIORI
Front white lamps
COMANDO RELE' ACCESS. LUCI BIANCHE POSTERIORI
Switch on rear white lamps relay command
LUCI ROSSE POSTERIORI
Rear red lamps
LUCI BIANCHE POSTERIORI
Rear white lamps
red colour = horn alert circuit (switched ON when trailer unplugged)
green colour = front lights trailer circuit (negative when moving forward, +24V when moving backward)
blue colour = trailer brakes circuit (negative as soon as electric installation is switched ON)
violet colour = rear lights trailer circuit (+24V when moving forward, negative when moving backward)
TR1 (front)
TR2 (rear)
pin 1 --> wire 1
pin 2 --> wire 2
pin 3 --> wire 3
pin 4 --> wire 6
pin 5 --> wire Yellow-Green
pin 6 --> NC
pin 7 --> NC
bridged


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA'
CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE.
This DRAW is property of the Company which protects its rights according to the law
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
ELECTRIC INSTALLATION
RR14 EVO2-400
GRUPPO Group
SEL14 AJX-RR
TIPO Type
IMPIANTO Wiring
Functional diagram
OGGETTO Object
SOSTITUISCE IL N°
SOSTITUITO DAL N°
REV.0
452.90.625.00
DISEGNO N° Drawing n°
COMANDO PROPORZ. ROT. COLONNA DX. Column rotation DX proportional comm.
COMANDO PROPORZ. SOLLEV. ASSALE POST. Rear axil lifting proportional comm.
COMANDO PROPORZ. ROT. COLONNA SX Column rotation SX proportional comm.
COMANDO PROPORZ. DISCESA ASSALE POST. Rear axil lowering proportional comm.
COMANDO PROPORZ. SALITA PANTOG. Pantograph raising proportional comm.
COMANDO PROPORZ. TRASL. AVAN. ANTERIORE Front forward travelling proportional comm.
COMANDO PROPORZ. DISCESA PANTOG. Pantograph lowering proportional comm.
COMANDO PROPORZ. TRASL. INDIET. ANTERIORE Front backward travelling proportional comm.
COMANDO PROPORZ. SALITA BRACCIO Boom raising proportional comm.
COMANDO PROPORZ. TRASL. AVAN. POSTERIORE Rear forward travelling proportional comm.
0
1
2
3
4
5
6
7
8
9

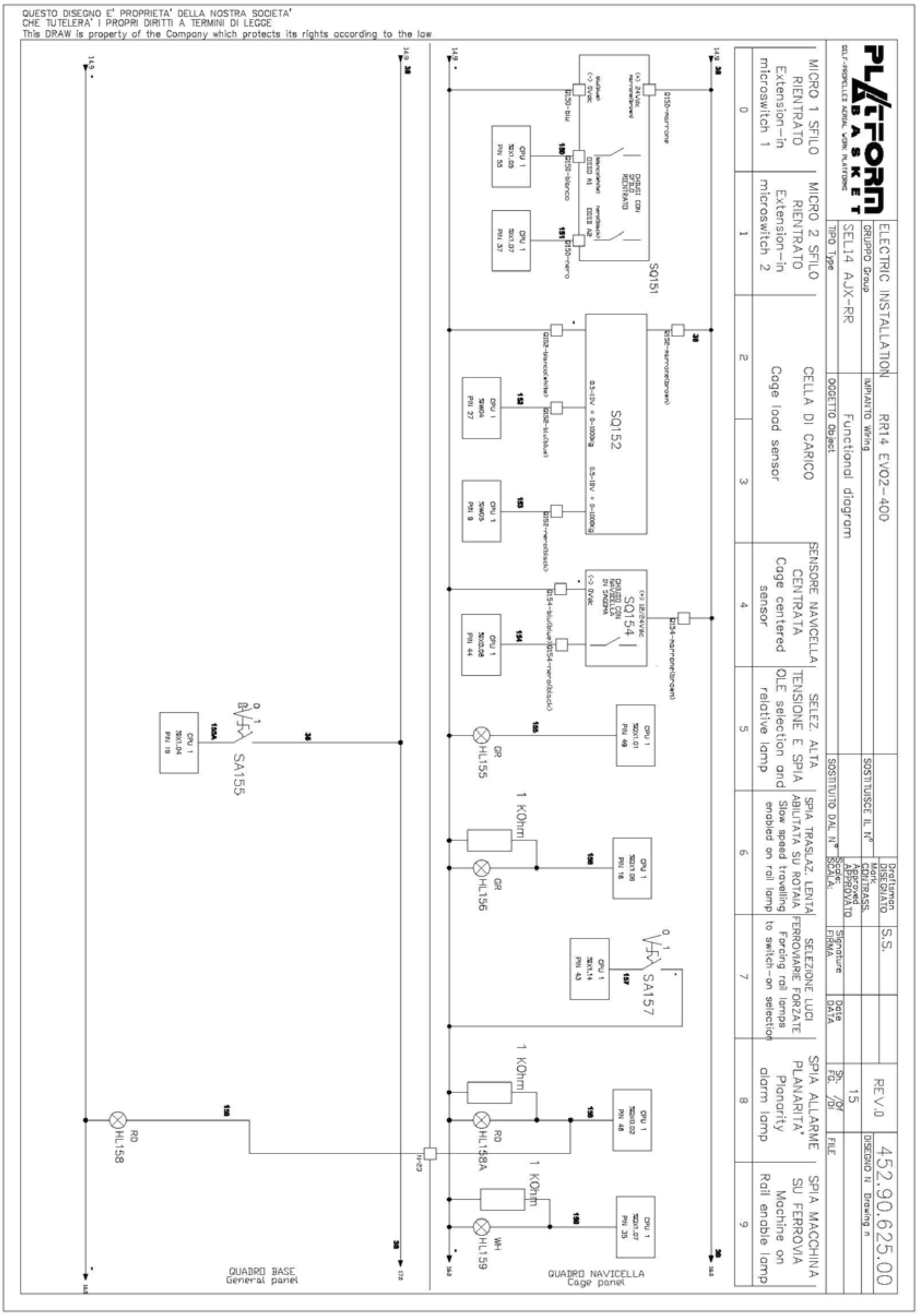

QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA'
CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
PLATFORM BASKET
ELECTRIC INSTALLATION
RR14 EVO2-400
GRUPPO Group
SEL14 AJX-RR
TIPO Type
IMPIANTO Wiring
Functional diagram
OGGETTO Object
SOSTITUISCE IL N°
SOSTITUITO DAL N°
REV.0
452.90.625.00
COMANDO PROPORZ. DISCESA BRACCIO Boom lowering proportional comm.
COMANDO PROPORZ. TRASL. INDIET. POSTERIORE Rear backward travelling proportional comm.
COMANDO PROPORZ. USCITA SFILO Extension-out proportional comm.
COMANDO PROPORZ. SOLLEV. ASSALE ANTER. Front axel lifting proportional comm.
COMANDO PROPORZ. RIENTRO SFILO Extension-in proportional comm.
COMANDO PROPORZ. SCULA SU Oscillating turret lifting
COMANDO PROPORZ. LIVELLAM. BASCULA GIU' Oscillating turret lowering proportional comm.
FILE


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA'
CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE.
This DRAW is property of the Company which protects its rights according to the law
PLATFORM BASKET
ELECTRIC INSTALLATION
RR14 EVO2-400
Functional diagram
SEL14 AJX-RR
452.90.625.00
REV.0
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
COMANDO ROTAZ. CESTA DX
Cage rotation DX command
COMANDO PROPORZ. STERZO DESTRA
Right steering proportional comm.
COMANDO ROTAZ. CESTA SX
Cage rotation SX command
COMANDO PROPORZ. STERZO SINISTRA
Left steering proportional comm.
COMANDO VALVOLA SCARICO DISTRIB. PICCOLO CARRO
Emergency dump for primaries chassis distributor
SCAMBIATORE CALORE
Heat exchanger
PRIMO SCATTO MOTORE 1840
Emergency Diesel engine fuel valve
AVVIAMENTO MOTORE 1840
Emergency Diesel engine start
CHIAVE BYPASS LIMIT. CARICO
Load limiting device bypass
YV130
YV131
YV132
YV133
YV134
KA103
KA135
KA137
KA138
SA137
SA137A
SA139
SC

RR 14 EVO


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA' CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
QUADRO BASE General panel
QUADRO NAVICELLA Cage panel
ELECTRIC INSTALLATION
RR14 EVO2-400
SEL14 AJX-RR
Functional diagram
452.90.625.00
SPIA STERZO BLOCCATO Steering locked lamp
SEGNALE DA ALTERNATORE Alternator signal
SEGNALAZ. LIVELLO GASOLIO Fuel level signal
FARO DI LAVORO Working lamp
ALIMENTAZ. +5V PER JOYSTICK Joysticks +5V supply
COMANDO TRASL. AVANTI Forward travel command
COMANDO TRASL. INDIETRO Backward travel command
COMANDO STERZO DX/SX Steering DX/SX command
SEGNALE PROPORZ. (5-0-5V)TRASLAZ. Travelling (5-0-5V) proportional signal
PEDALE UOMO PRESENTE Operator present pedal
HL140
HL140A
HL141
HL142
HL143
HL143A
Q2
IN=6A
SB149
1 KOhm

RR 14 EVO


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA'
CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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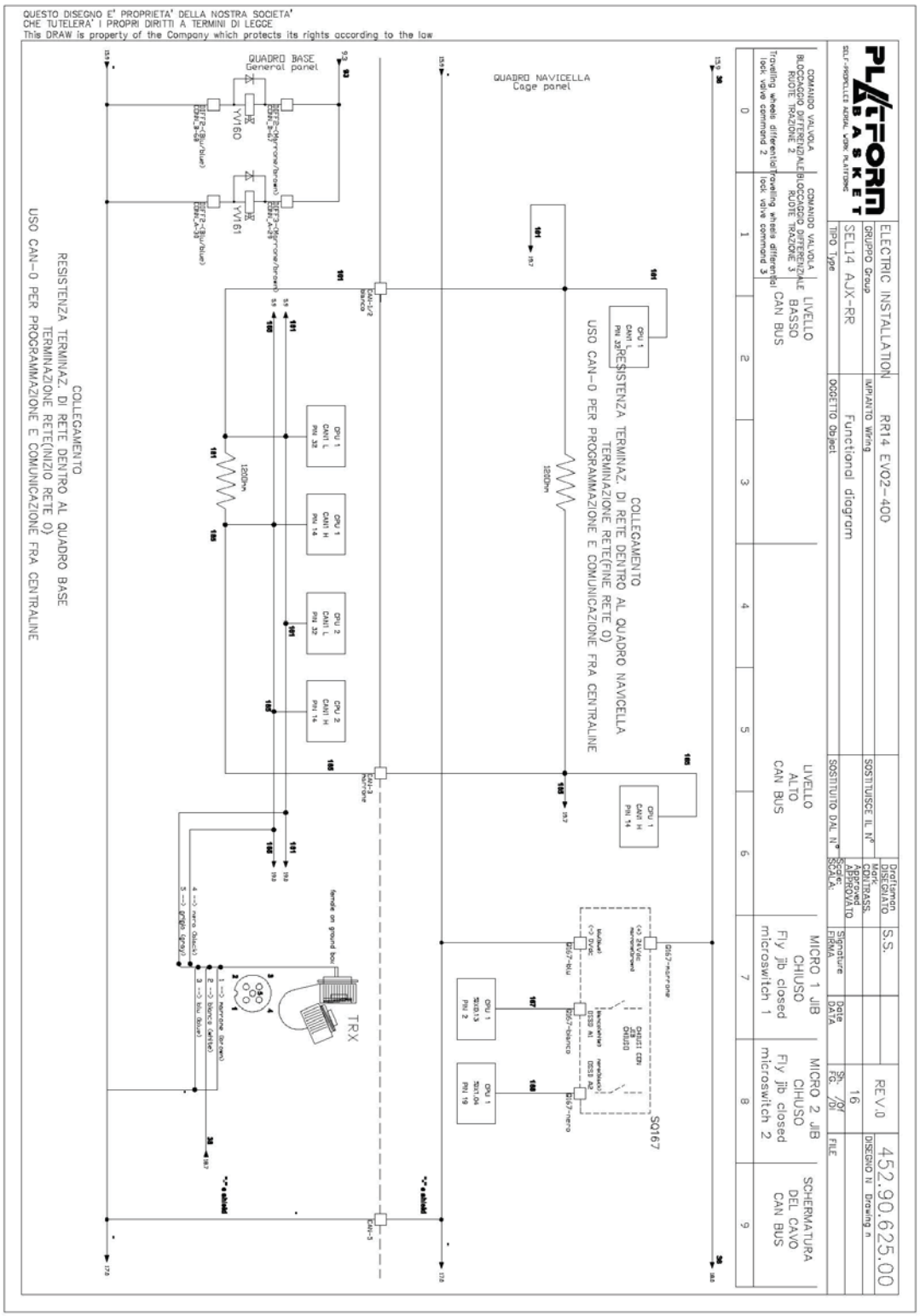
ELECTRIC INSTALLATION
RR14 EVO2-400
SEL14 AJX-RR
Functional diagram
452.90.625.00
REV.0
S.S.
MICRO 1 SFILO RIENTRATO
Extension-in microswitch 1
MICRO 2 SFILO RIENTRATO
Extension-in microswitch 2
CELLA DI CARICO
Cage load sensor
SENSORE NAVICELLA CENTRATA
Cage centered sensor
SELEZ. ALTA TENSIONE E SPIA OLE
selection and relative lamp
SPIA TRASLAZ. LENTA ABILITATA SU ROTAIA
Slow speed travelling enabled on rail lamp
SELEZIONE LUCI FERROVIARIE FORZATE
Forcing rail lamps to switch-on selection
SPIA ALLARME PLANARITA'
Planarity alarm lamp
SPIA MACCHINA SU FERROVIA
Machine on Rail enable lamp
SQ151
SQ152
SQ154
SA155
SA157
HL155
HL156
HL158
HL158A
HL159
1 KOhm
QUADRO NAVICELLA
Cage panel
QUADRO BASE
General panel


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA'
CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
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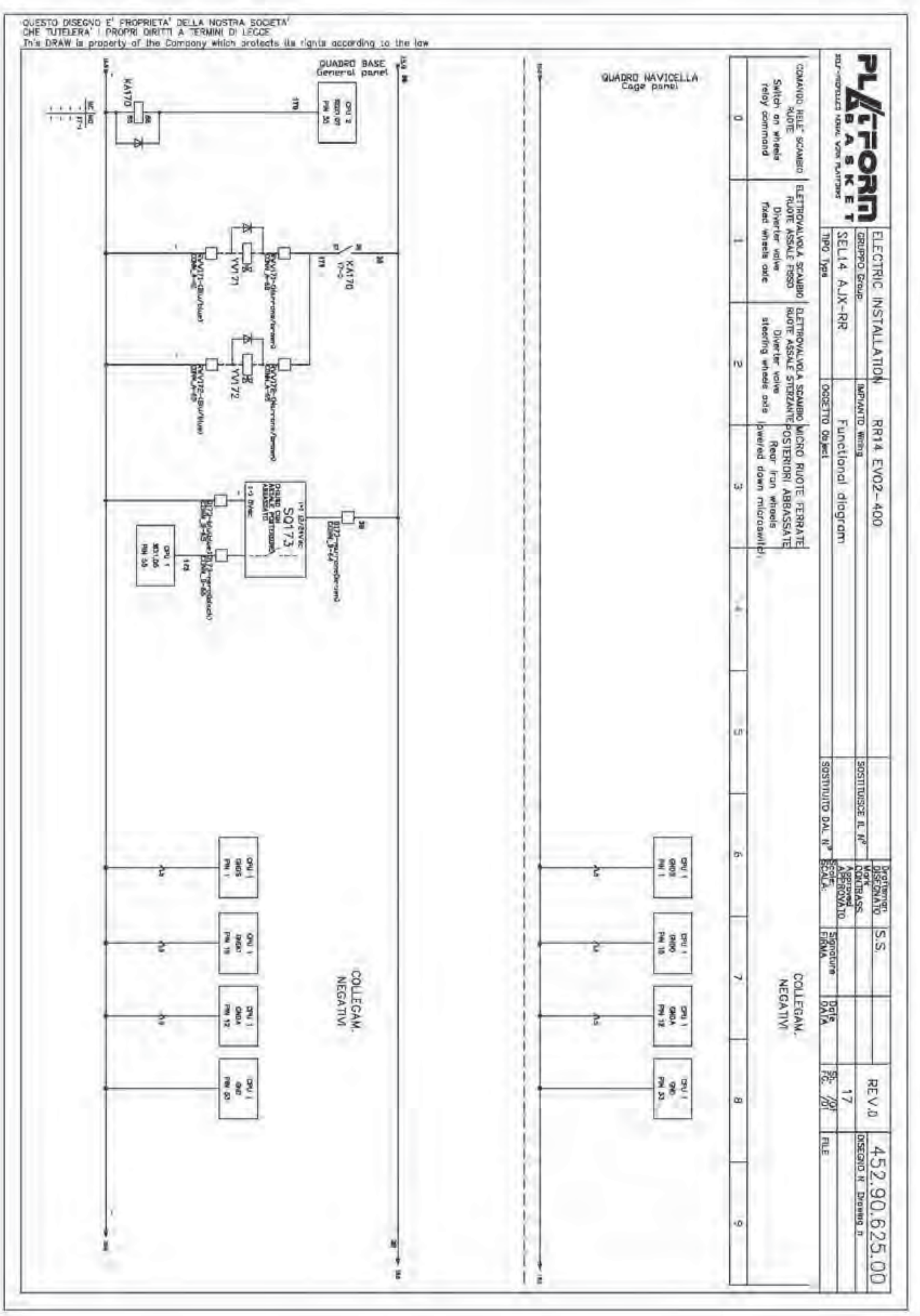
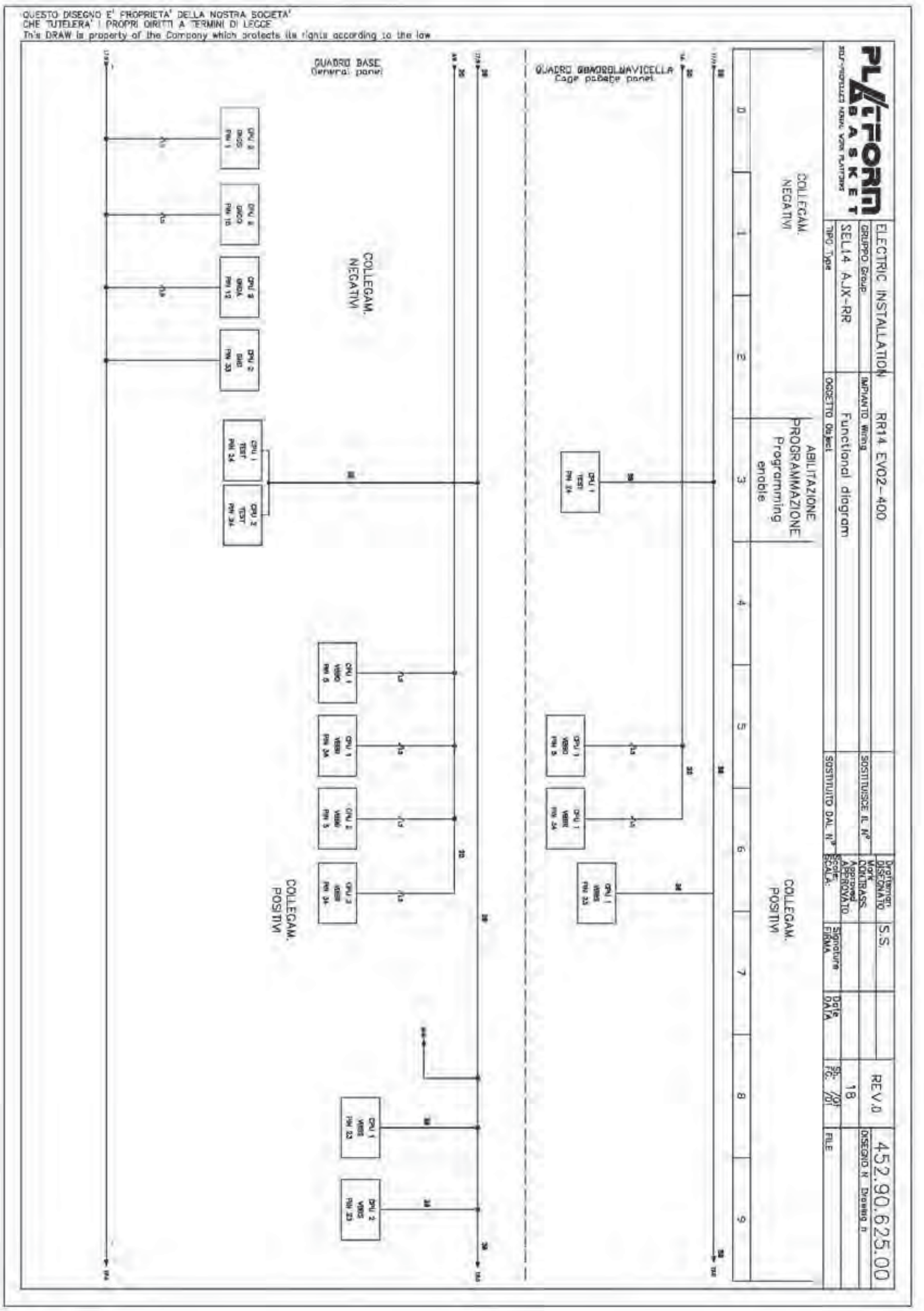
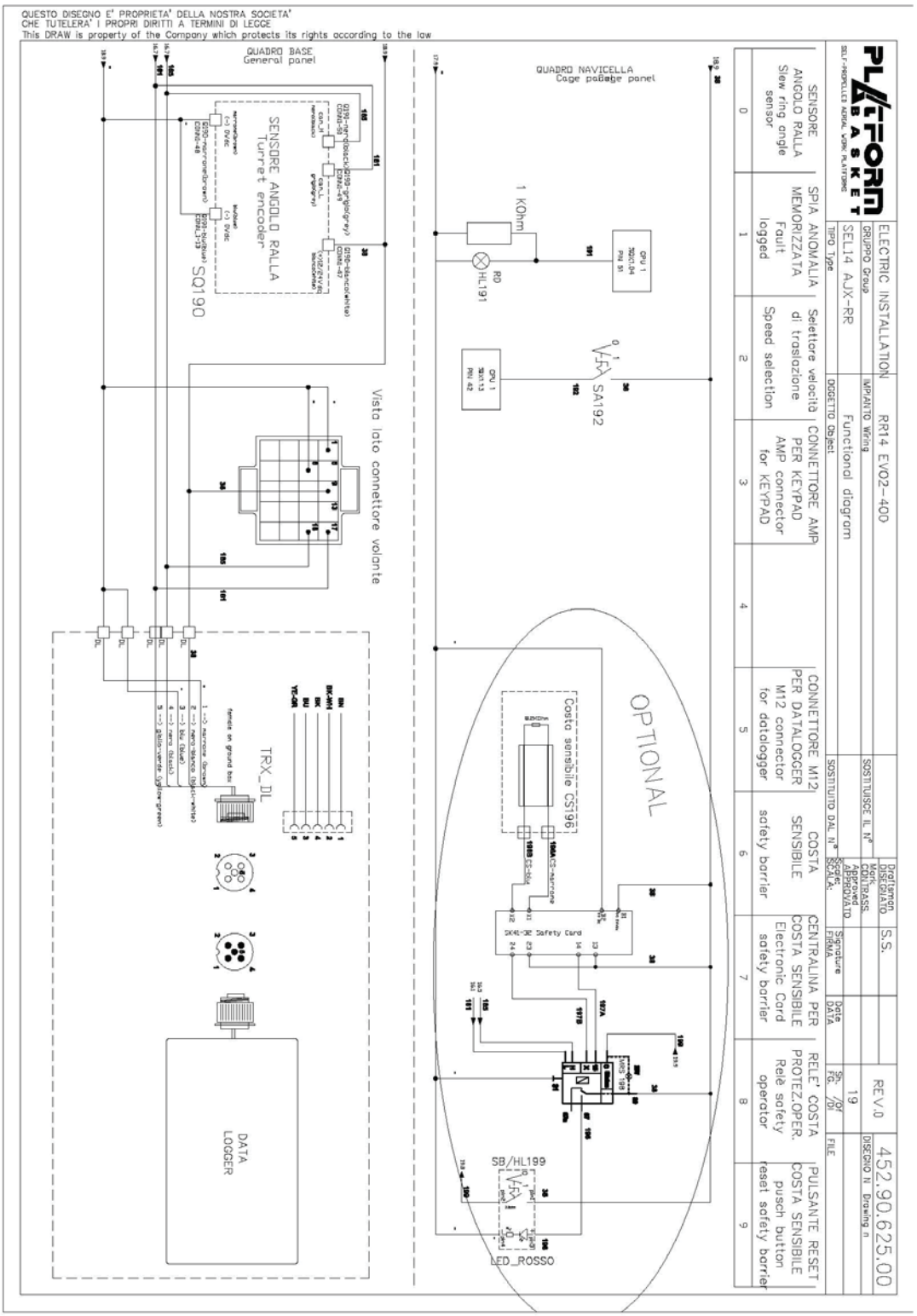
PLATFORM BASKET
ELECTRIC INSTALLATION
RR14 EVO2-400
IMPIANTO Wiring
Functional diagram
SEL14 AJX-RR
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
COLLEGAMENTO
RESISTENZA TERMINAZ. DI RETE DENTRO AL QUADRO BASE
TERMINAZIONE RETE(INIZIO RETE 0)
USO CAN-0 PER PROGRAMMAZIONE E COMUNICAZIONE FRA CENTRALINE
LIVELLO BASSO CAN BUS
LIVELLO ALTO CAN BUS
MICRO 1 JIB CHIUSO Fly jib closed microswitch 1
MICRO 2 JIB CHIUSO Fly jib closed microswitch 2
SCHERMATURA DEL CAVO CAN BUS
SQ167
TRX
REV.0
452.90.625.00

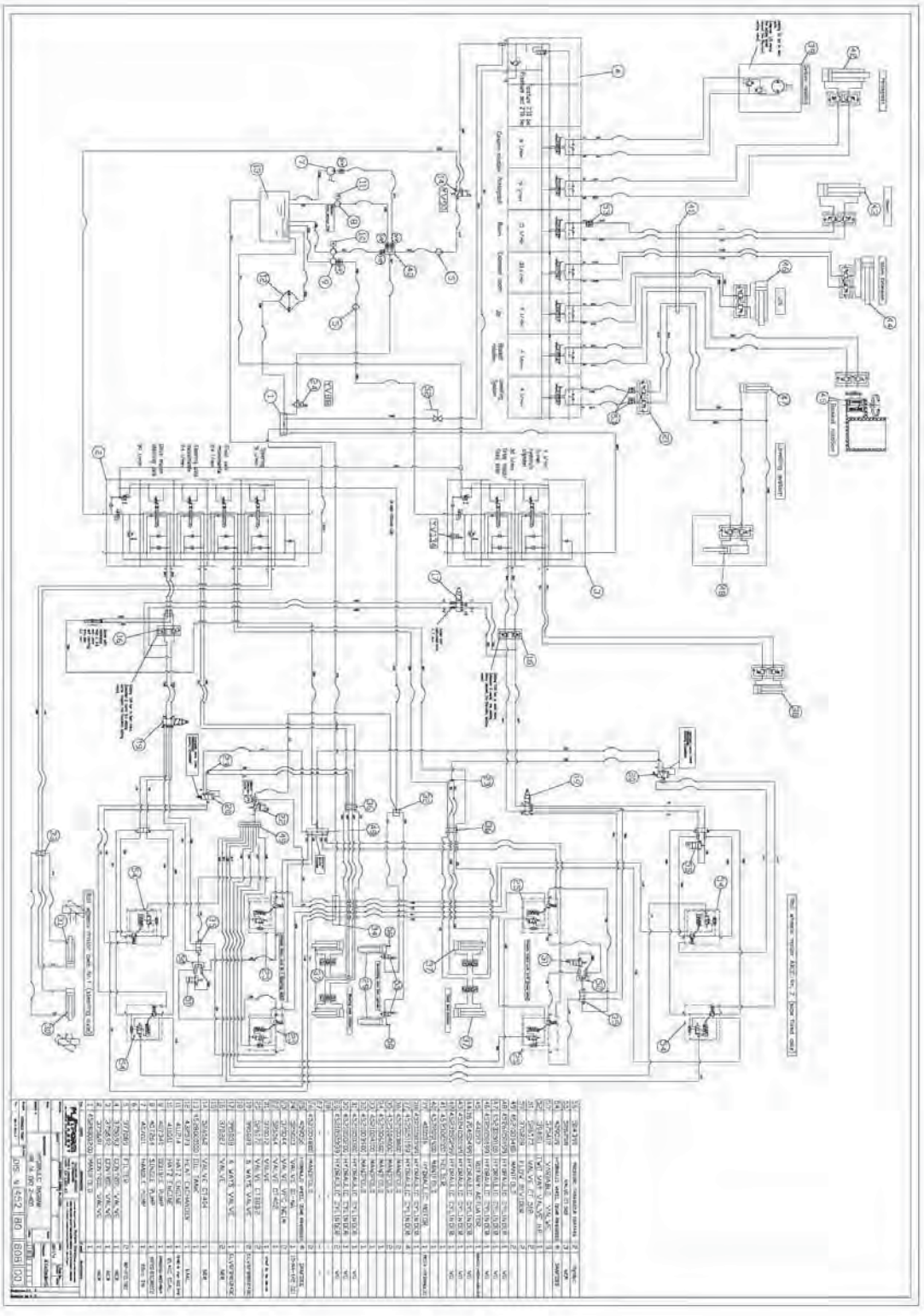
RR 14 EVO


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA' CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
QUADRO BASE
General panel
QUADRO NAVICELLA
Cage panel
COLLEGAM.
NEGATIVI
ELECTRIC INSTALLATION
RR14 EVO2-400
SEL14 AJX-RR
Functional diagram
452.90.625.00
REV.0
S.S.
COMANDO RELE' SCAMBIO RUOTE
Switch on wheels relay command
ELETTROVALVOLA SCAMBIO RUOTE ASSALE FISSO
Diverter valve fixed wheels axle
ELETTROVALVOLA SCAMBIO RUOTE ASSALE STERZANTE
Diverter valve steering wheels axle
MICRO RUOTE FERRATE POSTERIORI ABBASSATE
Rear iron wheels lowered down microswitch
KA170
YV171
YV172
SQ173

RR 14 EVO


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA'
CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
QUADRO BASE
General panel
COLLEGAM.
NEGATIVI
COLLEGAM.
POSITIVI
ABILITAZIONE
PROGRAMMAZIONE
Programming
enable
ELECTRIC INSTALLATION
RR14 EVO2-400
SEL14 AJX-RR
Functional diagram
REV.0
452.90.625.00


QUESTO DISEGNO E' PROPRIETA' DELLA NOSTRA SOCIETA'
CHE TUTELERA' I PROPRI DIRITTI A TERMINI DI LEGGE
This DRAW is property of the Company which protects its rights according to the law
QUADRO BASE
General panel
SENSORE ANGOLO RALLA
Turret encoder
SQ190
Vista lato connettore volante
TRX_DL
DATA LOGGER
QUADRO NAVICELLA
Cage panel
1 KOhm
HL191
SA192
OPTIONAL
Costa sensibile CS196
SK41-3E Safety Card
SB/HL199
LED_ROSSO
PLATFORM BASKET
ELECTRIC INSTALLATION
RR14 EVO2-400
SEL14 AJX-RR
Functional diagram
SENSORE ANGOLO RALLA Slew ring angle sensor
SPIA ANOMALIA MEMORIZZATA Fault logged
Selettore velocità di traslazione Speed selection
CONNETTORE AMP PER KEYPAD AMP connector for KEYPAD
CONNETTORE M12 PER DATALOGGER M12 connector for datalogger
COSTA SENSIBILE safety barrier
CENTRALINA PER COSTA SENSIBILE Electronic Card safety barrier
RELE' COSTA PROTEZ.OPER. Relè safety operator
PULSANTE RESET COSTA SENSIBILE push button reset safety barrier
452.90.625.00
REV.0



RR 14 EVO

Job No. AED.1
Electronic devices check

Encoder *(400KG capacity machine)*

Scheduled Work

1 Check for mounting and security
2 With boom fully stowed, ensure that turret is inline. (ALO lock pin can be used to assist)
3 Green "OK" light should be lit.
4 Rotate turret both ways and ensure green "OK" light is only illuminated when inline. (There is a small tolerance approx. 1º)
5 Rotate 180º and repeat steps 2- 5

Arising Work

1.1 Tighten or replace fixings as required.
3.1 If light is not lit, contact Promax Access Ltd for reset procedure.

Turret inclinometer

Scheduled Work

1 Check for mounting and security
2 Drive machine and ensure that auto turret levelling system is active and functioning correctly

Arising Work

1.1 Tighten or replace fixings as required.
2.1 If system functions incorrectly, contact Promax Access Ltd for reset procedure.

Boom angle sensor

Scheduled Work

1 Check for mounting and security
2 With turret centred, telescope fully in and both booms fully down, ensure green "OK" light is lit.
3 Elevate telescope boom approx 5º, green "OK" light should go out.

Arising Work

1.1 Tighten or replace fixings as required.
2.1 If light is not lit, contact Promax Access Ltd for reset procedure.

Oscillating axle pressure transducers (400KG capacity machine)

Scheduled Work

1 Check for mounting and security
2 With boom fully stowed, ensure that drive function is available and oscillating axle locked light goes out.

Arising Work

1.1 Tighten or replace fixings as required.
3.1 If drive is not possible or light stays lit, contact Promax Access Ltd for technical assistance.

Emergency recovery procedure(s) and times

Refer to Platform-Basket "Reference use and maintenance manual", version 03/2017 section 'I' sections I.1.6 for valve location and procedure

Recovering aerial parts into gauge (travelling mode)

1. Loss of main engine – using auxiliary engine
   - Start auxiliary engine
   - Operate controls to bring aerial parts into gauge.

   Time to perform: 3 minutes (worst case)
   Persons required: 1

2. Loss of auxiliary engine – using hand pump (total electrical failure)
   - Press and hold override valve (YV88)
   - Operate hand pump
   - Use levers on valves to bring aerial parts into gauge.

   Time to perform: 30 minutes (worst case)
   Persons required: 2

Off tracking machine from rail using RRAP
(assumes machine has been recovered to RRAP by towing or auxiliary engine)

1. Loss of main engine – using auxiliary engine
   - Start auxiliary engine
   - Operate controls to de-mount machine from rail and manoeuvre off RRAP.

   Time to perform: 5 minutes
   Persons required: 1

2. Loss of auxiliary engine – using hand pump (total electrical failure)
   - Push and twist to lock override valve (YV90)
   - Press and hold override valve (YV88)
   - Operate hand pump
   - Use levers on valves to de-mount machine from rail
   - Screw in tops of rail/road change-over valves mounted on L/H side of chassis
   - Use levers to manoeuvre the machine

   Time to perform: 45 minutes (3m clear of line)
   Persons required: 2

Recovering OLE measuring pantograph

1. Loss of main engine – using auxiliary engine
   - Start auxiliary engine
   - Switch to ground controls
   - Press and hold down button until mast is fully retracted.

   Time to perform: 1 minute
   Persons required: 1

2. Loss of auxiliary engine – using hand pump (total electrical failure)
   - Push and twist to lock override valve (YV90)
   - Press and hold override valve (YV88)
   - Mount and screw in override cap to changeover valve mounted on R/H side of pant bracket
   - Operate hand pump
   - Use steering function lever on chassis valve bank until mast is fully retracted.

   -Remove override cap after recover to re-enable steering

   Time to perform: 5 minutes
   Persons required: 2

Dataloggers

The data stored on the datalogger's SD card should be downloaded at intervals no greater than 3 months.

The accuracy of the dataloggers should be checked at the 3 month download intervals.

Records

This sections contains areas for relevant data to be recorded and kept as part of the seven-year life cycle of the machine.

Brake test:

Forward	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Reverse	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Date of test:		

Forward	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Reverse	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Date of test:		

Forward	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Reverse	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Date of test:		

RR 14 EVO

Forward	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Reverse	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Date of test:		

Forward	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Reverse	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Date of test:		

Forward	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Reverse	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Date of test:		

Forward	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Reverse	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Date of test:		

RR 14 EVO

	High Speed	Low Speed
Forward	mm	mm
	mm	mm
	mm	mm
Reverse	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Date of test:		

	High Speed	Low Speed
Forward	mm	mm
	mm	mm
	mm	mm
Reverse	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Date of test:		

	High Speed	Low Speed
Forward	mm	mm
	mm	mm
	mm	mm
Reverse	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Date of test:		

	High Speed	Low Speed
Forward	mm	mm
	mm	mm
	mm	mm
Reverse	High Speed	Low Speed
	mm	mm
	mm	mm
	mm	mm
Date of test:		

RR 14 EVO

Horn Test:

		Low revs	High revs
Left	Ambient		
	With horn		
Right	Ambient		
	With horn		
Front	Ambient		
	With horn		
Back	Ambient		
	With horn		
Date of test:			

		Low revs	High revs
Left	Ambient		
	With horn		
Right	Ambient		
	With horn		
Front	Ambient		
	With horn		
Back	Ambient		
	With horn		
Date of test:			

		Low revs	High revs
Left	Ambient		
	With horn		
Right	Ambient		
	With horn		
Front	Ambient		
	With horn		
Back	Ambient		
	With horn		
Date of test:			

RR 14 EVO

		Low revs	High revs
Left	Ambient		
	With horn		
Right	Ambient		
	With horn		
Front	Ambient		
	With horn		
Back	Ambient		
	With horn		
Date of test:			

		Low revs	High revs
Left	Ambient		
	With horn		
Right	Ambient		
	With horn		
Front	Ambient		
	With horn		
Back	Ambient		
	With horn		
Date of test:			

		Low revs	High revs
Left	Ambient		
	With horn		
Right	Ambient		
	With horn		
Front	Ambient		
	With horn		
Back	Ambient		
	With horn		
Date of test:			

RR 14 EVO

		Low revs	High revs
Left	Ambient		
	With horn		
Right	Ambient		
	With horn		
Front	Ambient		
	With horn		
Back	Ambient		
	With horn		
Date of test:			

		Low revs	High revs
Left	Ambient		
	With horn		
Right	Ambient		
	With horn		
Front	Ambient		
	With horn		
Back	Ambient		
	With horn		
Date of test:			

		Low revs	High revs
Left	Ambient		
	With horn		
Right	Ambient		
	With horn		
Front	Ambient		
	With horn		
Back	Ambient		
	With horn		
Date of test:			

		Low revs	High revs
Left	Ambient		
	With horn		
Right	Ambient		
	With horn		
Front	Ambient		
	With horn		
Back	Ambient		
	With horn		
Date of test:			

Earth bond test:

Cage to rail wheel impedance	
Pant head to rail wheel impedance	
Date of test:	

Cage to rail wheel impedance	
Pant head to rail wheel impedance	
Date of test:	

Cage to rail wheel impedance	
Pant head to rail wheel impedance	
Date of test:	

Cage to rail wheel impedance	
Pant head to rail wheel impedance	
Date of test:	

Cage to rail wheel impedance	
Pant head to rail wheel impedance	
Date of test:	

Cage to rail wheel impedance	
Pant head to rail wheel impedance	
Date of test:	

Cage to rail wheel impedance	
Pant head to rail wheel impedance	

Date of test:

Cage to rail wheel impedance	
Pant head to rail wheel impedance	
Date of test:	

Cage to rail wheel impedance	
Pant head to rail wheel impedance	
Date of test:	

Cage to rail wheel impedance	
Pant head to rail wheel impedance	
Date of test:	