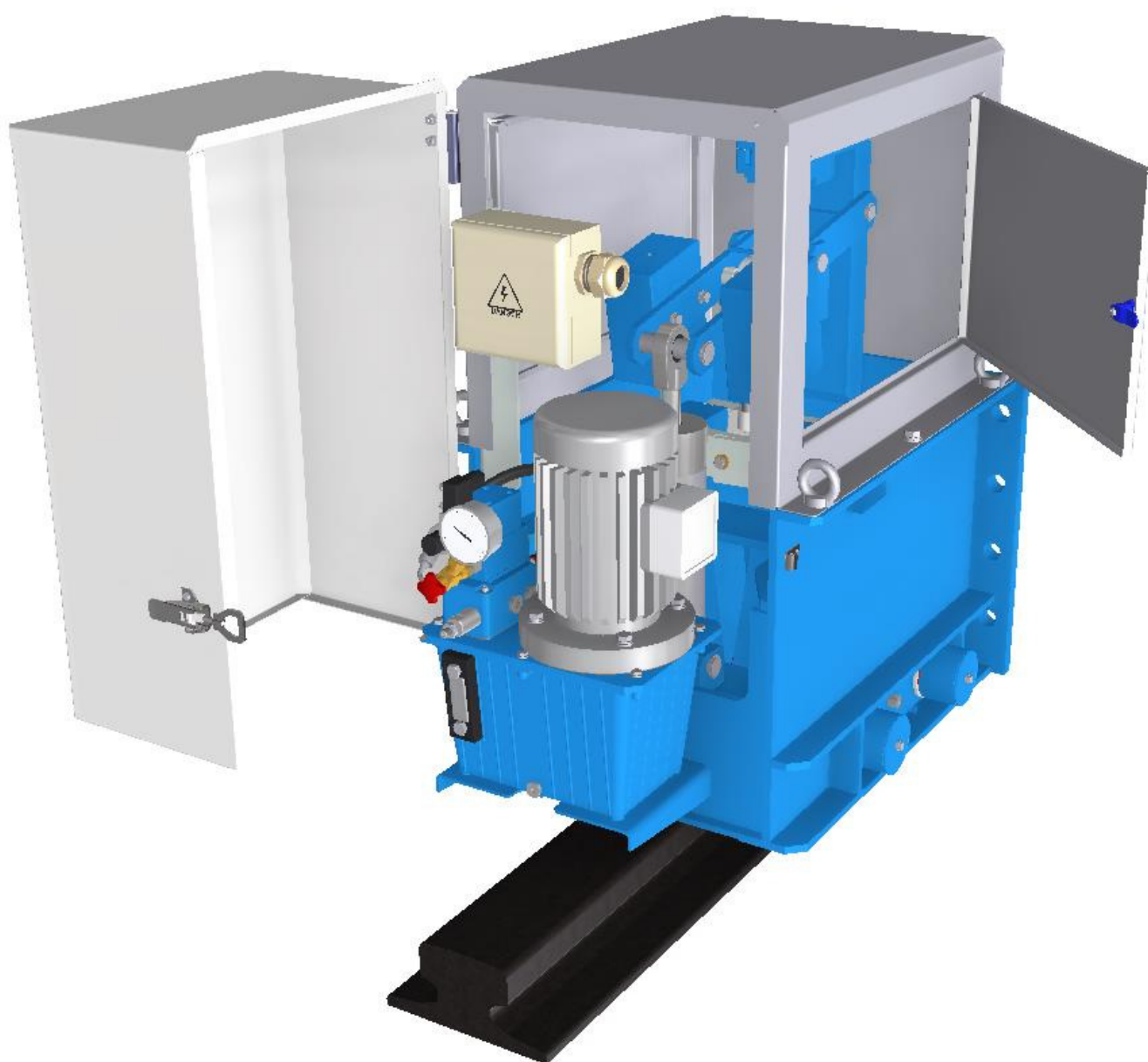


SELF BLOCKING RAIL CLAMPS

JUNE 2014

Certificato qualità
N° 50 100 10922CATALOGUE "TA"

Rima S.r.l.
Via Fermi 255 – 21042 Caronno Pertusella (Va) Italy
Phone: +39 02 9650694 – Fax +39 02 9657860
E-mail: rima@rimagroup.com

WWW.RIMAGROUP.COM

DESCRIPTION

These rail clamps are storm brakes suitable for high forces: from 250 to 1500 kN.

They are self-blocking type; in case a force acts on the crane and tends to put the same into motion, they press on the rail sideways. This pressing gets stronger as the crane moves. The rail clamps can withstand horizontal force only.

The value of forces indicated are calculated with friction coeff. of 0.25 (see after).

As the real coeff. in normal conditions is much higher (approx 0,59 - TUV German register certificated), the rail clamps can generate higher forces. Higher safety and braking shoes life are guaranteed

• *Advantages of self-blocking system*

Thanks to its working concept, the holding force given by the self-blocking rail clamp is a reaction to the force applied by the wind. The force given by the clamp is equal to the force of the wind deducted the force given by gantry brakes; this means that also the pressing force applied by the jaws to the rail side surface is, in all condition, the minimum needed to hold the crane in its position with proper safety factor.

The clamp start pushing on the rail sides only if the wind force overcomes the gantry brakes capacity.

All what above allows total intensity and working hours in a year to be almost negligible.

With regard to braking shoes, optimized design, careful choice of material, developed heat treatment cycles (combining correct surface hardness and necessary core ductility), guarantee both best performances and long life.

Above described features lead to following advantages:

1) Jaws duration is very long (our experience is that jaws life reaches also 10 years) minimising replacement needs.

2) All mechanical components are working quite seldom and most of times under low loads, minimizing maintenance needs.

3) Rails are preserved from wear and damages

• *Further advantages of self-blocking system*

- The holding capacity doesn't decrease significantly for reasons of wear of braking shoes.
- Holding capacity doesn't suffer variation of width of rail, being this clamp able to absorb differences of +/- 1,5 mm respect to the nominal width of the rail
- Vertical allowance of the position respect the rail of +/- 12 mm is big enough to permit a fixed installation also in the middle of the seal beam (no wheels are needed)

- Independence of the holding force from the fatigue deriving from heavy duty cycle (the absence of springs renders this device suitable to the continuous open/close applications)
- Fast opening with low power: opening is made just rising up the light weight of the calliper (not working against strong springs and wasting energy)
- Working at low pressure with life advantage for hydraulic components
- Particular suitability to high speed cranes thanks to the free movement:

Since while the crane is travelling, the braking calliper is lifted up over the rail level, we can adopt a very wide gap between guides and rails (10 mm or more), with the benefit of very seldom contacts.

This, together with accurate choice of guide materials and treatment allows a long duration of guides.

• *Friction coefficient (TUV certified)*

On new generation of self blocking rail clamps it has been applied a very innovative concept of "variable friction coefficient".

To maximize the safety, calculated average working friction coefficient is around 0,25, while the friction coefficient of our braking shoes it is much higher (0.59 also in the worst conditions, i.e. presence of grease on the rail, certified by German Register TUV). Real high values of working friction coeff. (always below guaranteed level) are needed only in extreme wind load conditions, therefore very seldom.

• *Advantages in comparison with spring types*

We would like to underline here the main disadvantages of spring rail clamps (and rail brakes) respect to self blocking type:

- The transversal (vertical) force applied by the jaws to the rail side (top) surface is always at maximum value, causing both wear of rails and wear of jaws (maintenance manual of spring clamps indicate a control of jaws wear and relevant periodical substitution)
- The holding force decreases with wear of jaws requesting than, to keep the needed safety of the crane, frequent interventions of substitution.
- The allowance regarding the width of rails is similar to brand new rail tolerances causing a weakening of the holding force in case of rails wear.
- To allow big vertical movements respect to the rail, requested in case of installation on the crane main frame, spring clamps are to be realised in the "on trolley" execution generating an increase of maintenance needs (wheels, pin, lubrication, etc.).
- In case of heavy duty application (several opening / closing cycles during the day) the springs loose force and come to collapse because of fatigue, than have to be replaced often



Rima S.r.l.

Via Fermi 255 – 21042 Caronno Pertusella (Va) Italy

Phone: +39 02 9650694 – Fax +39 02 9657860

E-mail: rima@rimagroup.com



WWW.RIMAGROUP.COM

- In case a fast opening is required, a big power hydraulic unit must be used with high cost and waste of energy since cylinders are working against the strong spring force.
- Rail brakes need to be installed only at centre of gantry equalizers.

System is operated at very low pressure level (abt 7,5 MPa) increasing largely the duration of hydraulic components, while on spring rail clamps pressure are quite high (more 15 Mpa). Higher values of pressure could be found only in case rail clamps have to be unlocked after high wind load application.

▪ *Technical features*

- Installation: side bolted;
- Vertical float = ± 12 mm ;
- Horizontal float = ± 40 mm ;
- Tolerance respect to nominal width of the rail = ± 1.5 mm (or more upon request);
- Opening time (signal for operation) = 4 s ;
- Closing time = adjustable from 8 to 16 s ;
- Duty = 24 hours full operation per day;
- Life: $\geq 2.000.000$ cycles

On request these values can be modified.

UTILIZATION / FUNCTIONING

This rail clamps are to be considered as parking devices (safety against the movement caused by wind) and they work pressing on rail sides.

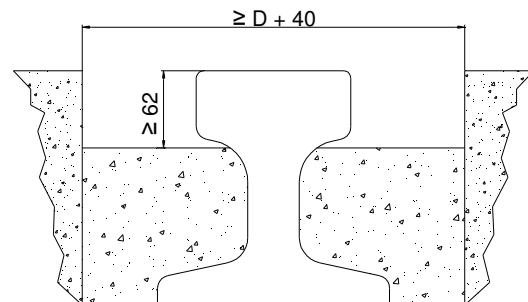
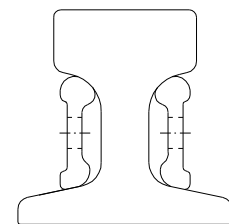
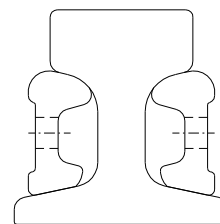
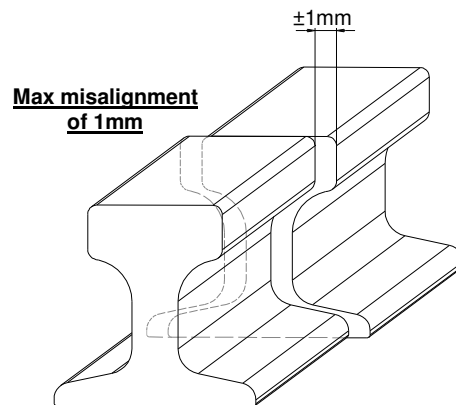
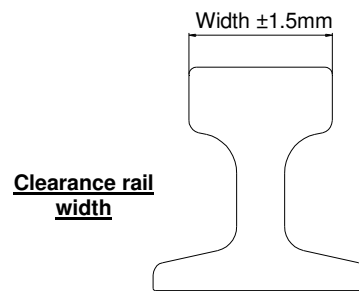
The jaws are connected to the frame by a swinging pendulum device. In "closed position" (ready to work) the jaws lean on the upper surface of rail but they don't apply any force to the side-surface of the rail. When the wind force is stronger than the blocking force given by the gantry drive brakes, and a small movement of the crane starts, the inclined planes of the blocks, moving with the crane frame, oblige the rollers to push the friction shoes against the sides of the rail.

(See scheme of working principle according to drawing at page 9/10/11).

RAIL

Braking shoes of our rail clamp have been designed to work on rails commonly on the market whose hardness is between 200 and 270 HB ($\sigma = 70$ to 90 daN/mm²). The certification of TUV are referred to above given values of rail hardness.

In case of different values we must be informed at order, Because this could affect the rail clamp functioning.



In the case what above shown cannot be respected, we have to be informed about effective conditions at offer stage.



Rima S.r.l.

Via Fermi 255 – 21042 Caronno Pertusella (Va) Italy

Phone: +39 02 9650694 – Fax +39 02 9657860

E-mail: rima@rimagroup.com



WWW.RIMAGROUP.COM

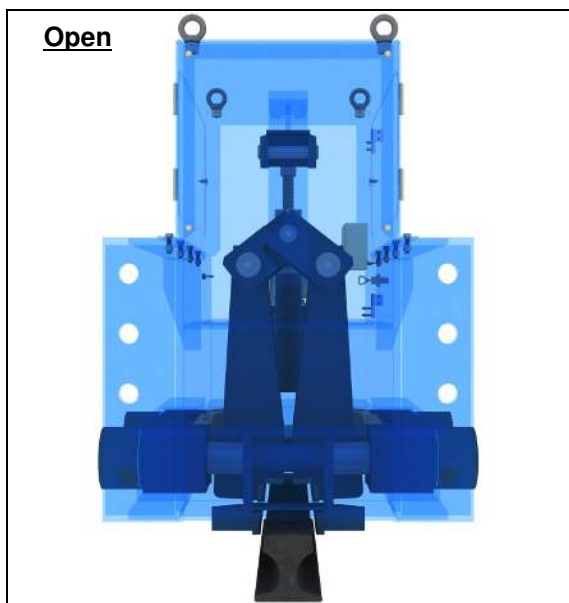
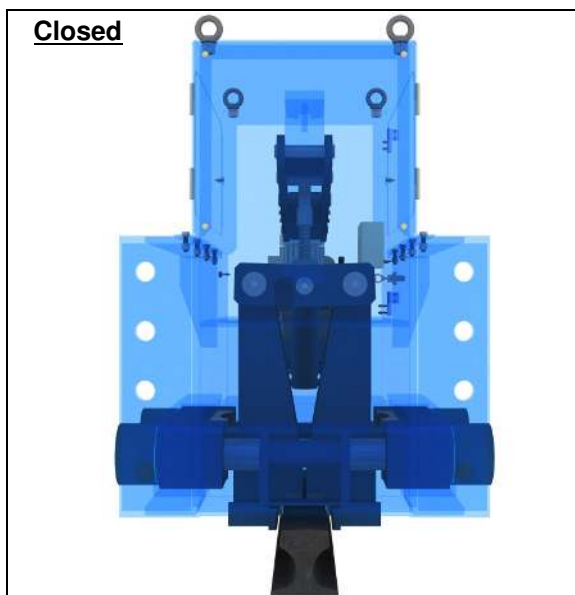
OPERATING

• *Opening of Rail Clamps*

A hydraulic cylinder in pressure opens the rail clamps, this is achieved by:

- a) starting the motor of the hydraulic unit by closing its remote control switch,
- b) energising the coil of the electric pilot check valve installed in the unit.

The power is sufficient to release the rail clamps without moving the crane.



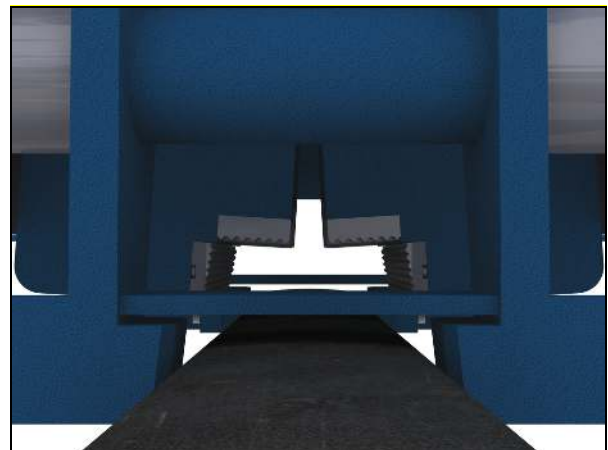
▪ *Closing of Rail Clamps*

Since clamp must close onto the rail only after crane stop, clamp closure is delayed through the use of a fixed flow regulator shop calibrated for a delay of 8 s. Different values can be given upon request at order; shorter values are not recommendable since dangerous.

In addition to this an adjustable flow regulator is provided to increase the delay up to further 8 s.

The fixed flow regulator solution has been adopted to minimize the variation of the delay upon temperature variation.

We suggest the client to inform us always about requested delay at order, to optimize the calibration.



ASSEMBLY DESCRIPTION

▪ *Rail Clamps*

Each rail clamp is composed by:

- Steel framework with lifting lugs and removable hinged inspection doors in stainless steel AISI 316;
- Steel levers and counterweight;
- Pins in stainless steel AISI 420;
- Heat treated steel rollers and sliding blocks;
- Guides with rail sweeping device;
- Steel jaws with braking shoes in 39NiCrMo3, knurled, quenched and tempered;
- Hydraulic cylinder for rail clamp opening with piston rod in NIKROM (carbon steel + Ni + Cr); The cylinder is easy replaceable in ca. 20 min;
- Stainless steel tie-rod for emergency manual release;
- Inductive limit switches for clamp release indication and restore hydraulic unit. Protection IP 65;
- Inductive limit switches for jaws position IP65;
- External grease lubrication fittings button head type;
- Bolts, if diameter is less than 12 mm in stainless steel, if over galvanized.



Rima S.r.l.

Via Fermi 255 – 21042 Caronno Pertusella (Va) Italy

Phone: +39 02 9650694 – Fax +39 02 9657860

E-mail: rima@rimagroup.com



- *Hydraulic Unit (acc. dwg page 7/8)*

It is suitable for sea-environment, completely assembled, wired, oil filled and flushed (acc. NAS 9). Cover in carbon steel with hinged door. All the electrical components are wired on option into electrical box (protection IP 55)

- *Emergency manual opening device*

For the emergency manual opening device we use a stainless steel tie rod assembled inside the rail clamp. To open the rail clamp is requested only the turning of a nut by a standard key tool.

The advantages of this system in comparison with the one with hand pump are the following:

- The opening is possible even in case of damage of the cylinder or of the flexible hose for the connection to the cylinder.
- The rail clamp remains open in the time with absolute security while in the hand pump execution eventual small leakages into the cylinder or into the cock valves may cause the undesired closing of the rail clamps.

- *Standard painting (only frame and external parts)*

Total thickness : 240 micron.

- Surfaces preparation: Sandblasting SA 2 ½.
- 1° Coat: Moist curing inorganic two-component zinc primer. Consists on complex ethyle silicate and zinc dust in high rate (>86% in dry film). Thickness = 80 micron
- 2° Coat: Two-component epoxy-polyamide primer and undercoat with zinc phosphate and micaceous iron oxide. Thickness = 90 micron
- 3° Coat: Two-component aliphatic acryl-urethane based paint no yellowing. Reacoatable for long time. Thickness = 70 micron

Final colour: Standard RIMA RAL 5019.

- *Fluids for normal temperatures*

- Hydraulic oil: ISO VG 15.
- Grease: SKF LGLT2.

ELECTRIC CONTROL PANEL

It is usually foreseen by the crane manufacturer by means of relays or PLC. On request, it can be supplied on plate or in a box (IP 55).

Here after is illustrated the sketch we suggest, which foresees the use of a suitable temporised relay (dwg. SCE-TA-01).

This relay is necessary to signal possible malfunctions in the hydraulic unit (for ex. oil deficiency or breakages of some hydraulic or electric components). Through this solution temperature and limit switcher are not needed.

The logic control of the rail clamps closing is established by the user. The rail clamps are usually closed at the end of the crane work, or on signal of a suitable anemometer which signals that the wind speed is higher than the max. allowed speed.

As the electro-valve has to be always excited, the magnet must be in direct current; if the customer wants to feed the coil valve with alternated current, a suitable rectifier is to be supplied.

WARRANTY

12/18 months

Warranty is subject to the following conditions:

- The electric diagram is made accordingly to the scheme we suggest (SCE-TA-01) or is made accordingly to a scheme designed by client but in any case approved by us.
- All maintenance procedures described in the manual provided with the supply are observed. In particular must be strictly observed the rules relevant to cleanliness and filters replacement.

In case one or more of above conditions should not be respected, the guarantee will be considered not valid.

TESTING

All the rail-clamps are tested on a test bench before delivery, at a nominal force power.



DOCUMENTATION

The documentation is worded according to EG (89/392/EWG) e Euro-EN 292-1/2; 1991 D rules.

- Use and Maintenance Manual
- Certificate of execution according to rules
- Over all dimension drawings;
- Hydraulic and electric diagrams;
- Suggested spare part list;
- Test Certificate;
- Material certificate (EN 10204-2.1) for all main parts;

Documentation is in Italian or English on cd-rom.



Rima S.r.l.

Via Fermi 255 – 21042 Caronno Pertusella (Va) Italy
Phone: +39 02 9650694 – Fax +39 02 9657860
E-mail: rima@rimagroup.com



WWW.RIMAGROUP.COM

EXECUTIONS

- *Standard execution*

- Working temperature: -20°, +40°
- Environment: marine
- Installation with side flange
- Hydraulic unit integrated in the clamp, filled with oil and provided with terminal box
- Limit switch that signals clamp open
- Limit switch for maintain rail clamp open.

- *Special execution (on request, with extra price)*

- Working temperature different from standard
- Double side flanges or upper flange (with hydraulic unit supplied separately from rail clamps)
- Hydraulic unit suitable to operate with more than one rail clamps
- Electrical board (on plate or box IP55);
- Limit switch which signals "rail clamps closed"
- Horizontal and vertical clearance increased
- Security side stowage pins (to insert suitable holes on the quay)
- Manufacturing according Q.C.P. different from our standard (Nuclear plan or special application)
- Language of documentation different from standard
- Certificates of materials (EN 10204-2.2, EN 10204-3.1 o EN 10204-3.2) for all main components.

Without hydraulic unit



Without hydraulic unit, with hand pump



With parking pin



Rima S.r.l.

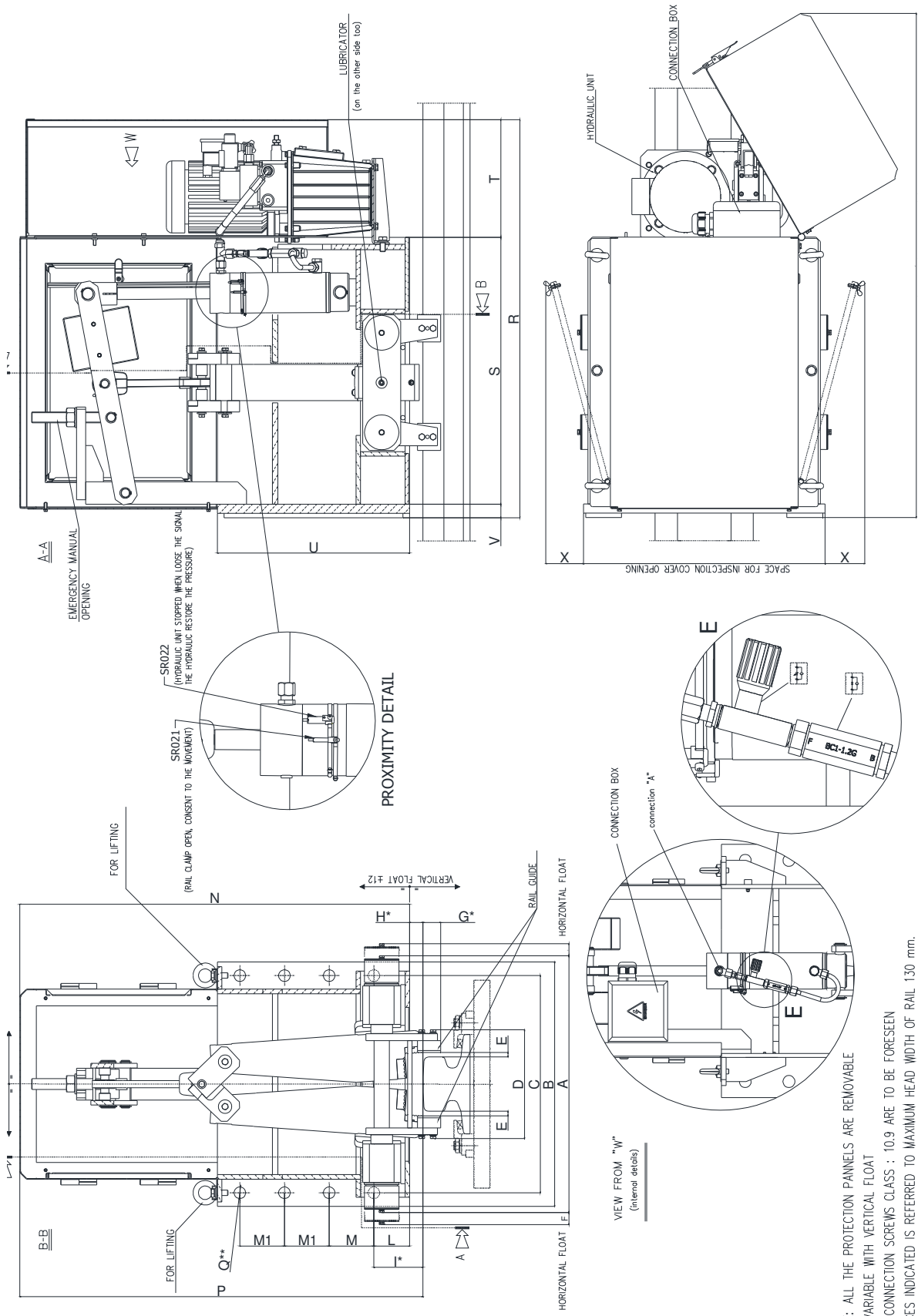
Via Fermi 255 – 21042 Caronno Pertusella (Va) Italy

Phone: +39 02 9650694 – Fax +39 02 9657860

E-mail: rima@rimagroup.com



WWW.RIMAGROUP.COM



SPACE FOR INSPECTION COVER OPENING

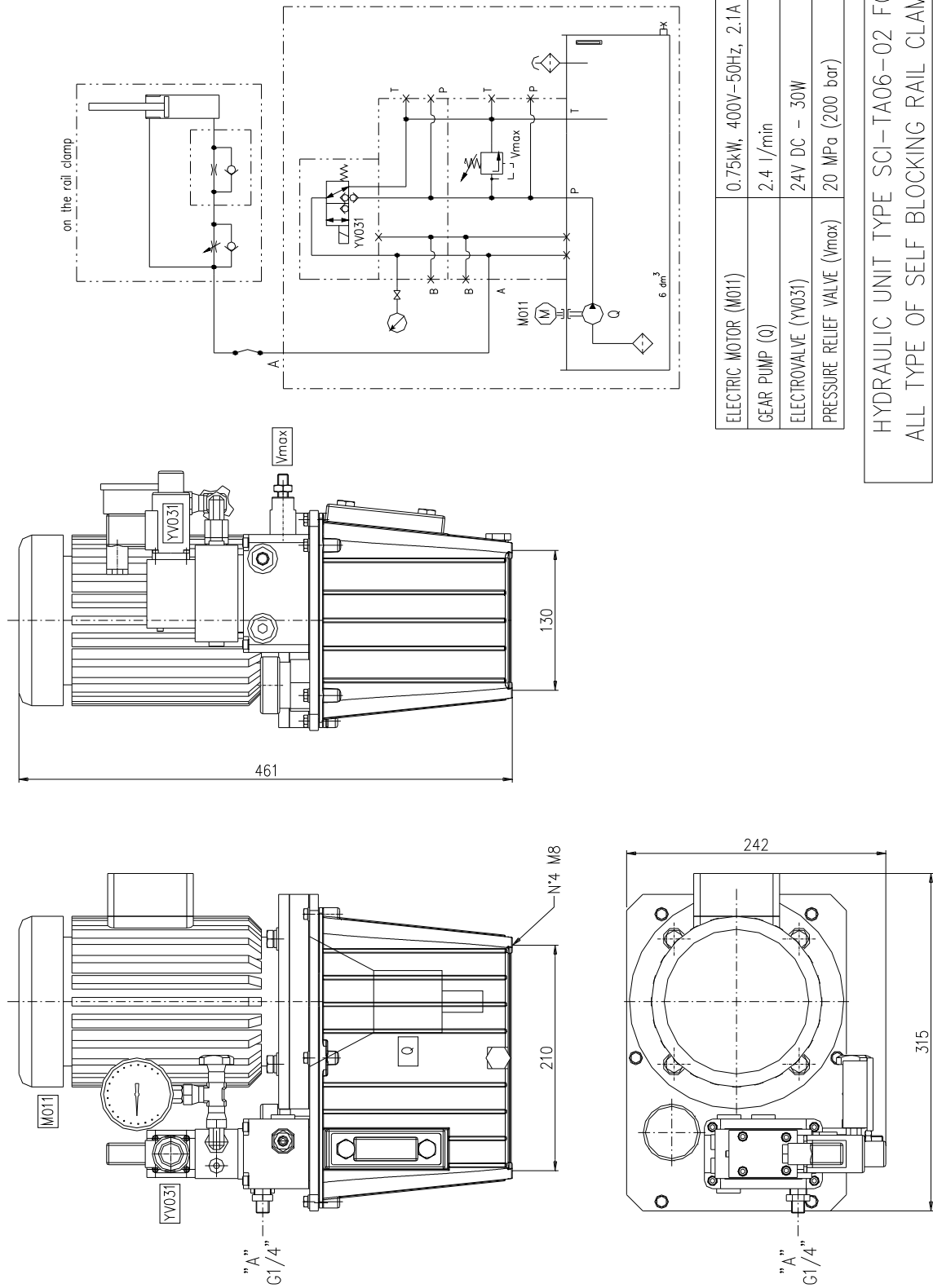
NOTE: ALL THE PROTECTION PANNELS ARE REMOVABLE
 (*) VARIABLE WITH VERTICAL FLOAT
 (**) CONNECTION SCREWS CLASS : 10.9 ARE TO BE FORESEEN
 FORCES INDICATED IS REFERRED TO MAXIMUM HEAD WIDTH OF RAIL 130 mm.
 FOR WIDER RAILS PLEASE CONTACT OUR TECHNICAL OFFICE.

| TYPE | FORCE (kN) | A | B | C | D | E | F | G | H | I | L | M | M1 | N | P | Q ** | R | S | T | U | V | X | Y | WEIGHT(kg) |
|--------------|------------|------|-----|-----|-----|----|----|----|----|-----|-----|-----|-----|------|------|---------------|------|------|-----|-----|----|-----|------|------------|
| TA20-0250-03 | 250 | 567 | 540 | 480 | 241 | 10 | 40 | 35 | 30 | 110 | 80 | 100 | 100 | 873 | 903 | N°8 Ø26 (M24) | 880 | 620 | 260 | 430 | 30 | 480 | 1120 | 350 |
| TA30-0400-03 | 400 | 640 | 630 | 550 | 251 | 10 | 40 | 40 | 30 | 110 | 80 | 110 | 110 | 960 | 990 | N°8 Ø30 (M27) | 955 | 695 | 260 | 470 | 30 | 560 | 1200 | 450 |
| TA40-0700-03 | 700 | 700 | 700 | 605 | 273 | 10 | 40 | 40 | 30 | 120 | 90 | 120 | 120 | 1062 | 1092 | N°8 Ø36 (M33) | 1025 | 765 | 260 | 510 | 35 | 630 | 1330 | 660 |
| TA50-1000-03 | 1000 | 858 | 770 | 655 | 293 | 10 | 40 | 40 | 30 | 120 | 90 | 130 | 130 | 1062 | 1092 | N°8 Ø42 (M39) | 1135 | 875 | 260 | 550 | 45 | 720 | 1500 | 890 |
| TA60-1500-03 | 1500 | 1038 | 930 | 800 | 416 | 10 | 40 | 45 | 30 | 145 | 115 | 205 | 150 | 1213 | 1243 | N°8 Ø52 (M48) | 1300 | 1065 | 235 | 710 | 45 | 750 | 1740 | 1550 |



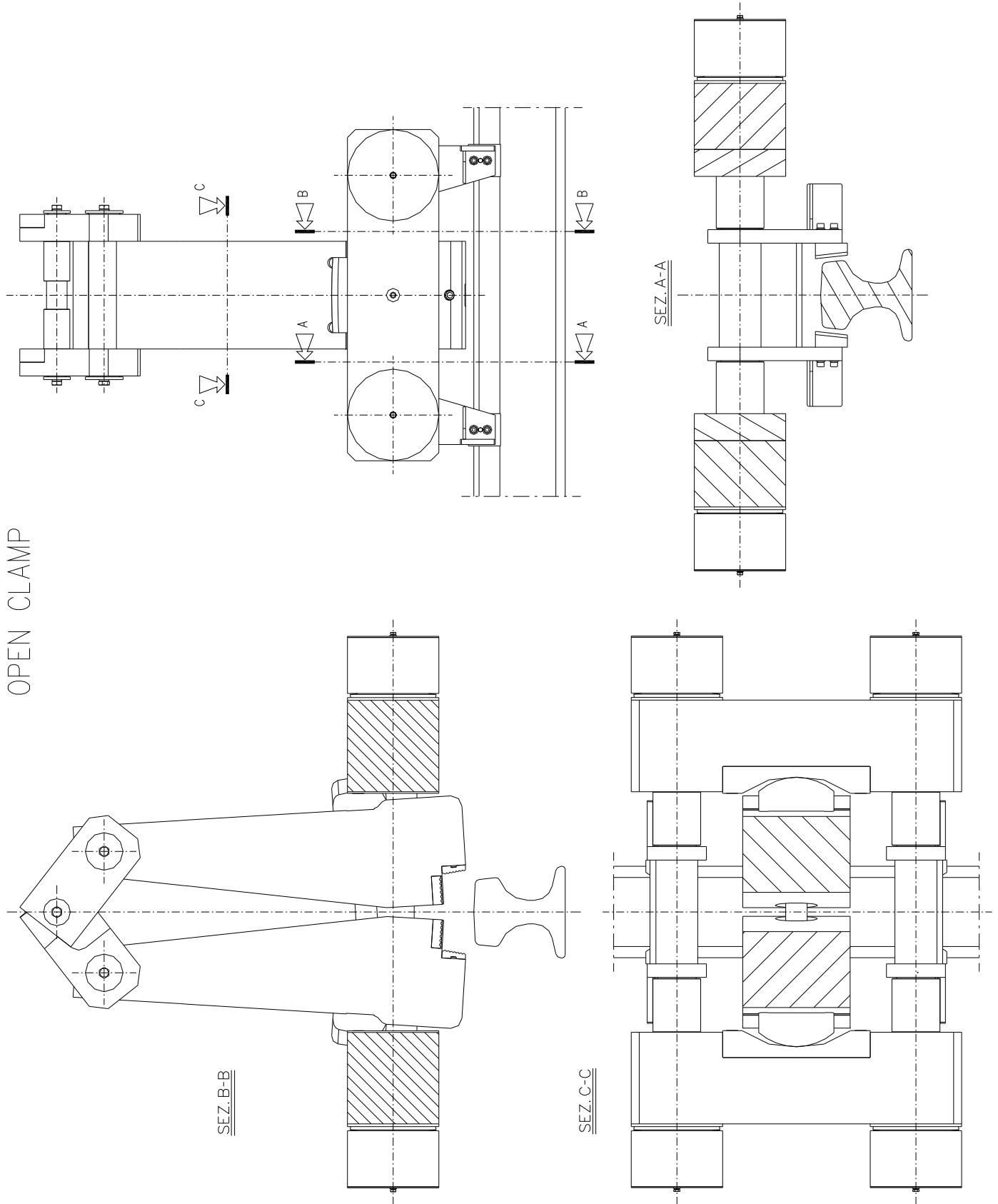
Rima S.r.l.
 Via Fermi 255 – 21042 Caronno Pertusella (Va) Italy
 Phone: +39 02 9650694 – Fax +39 02 9657860
 E-mail: rima@rimagroup.com

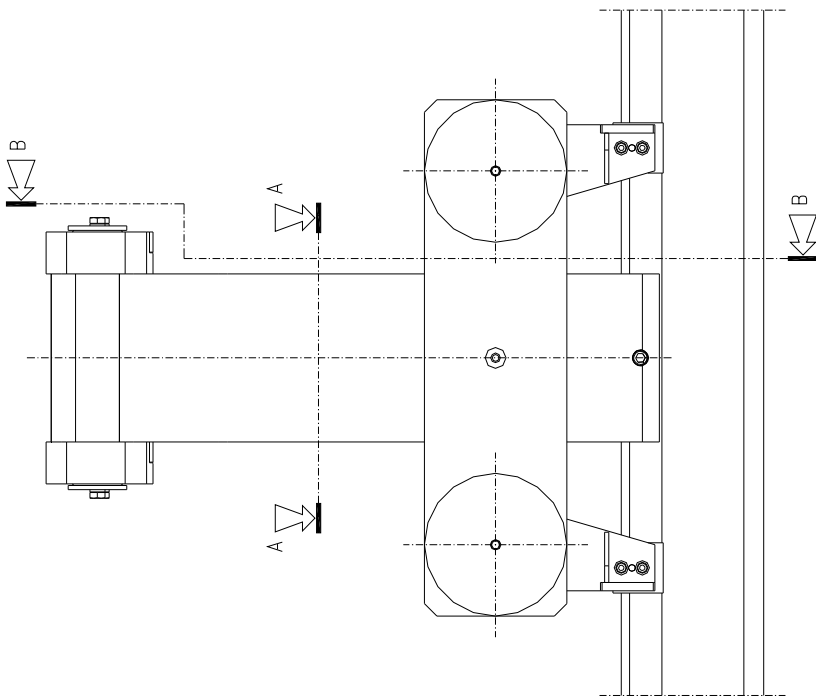




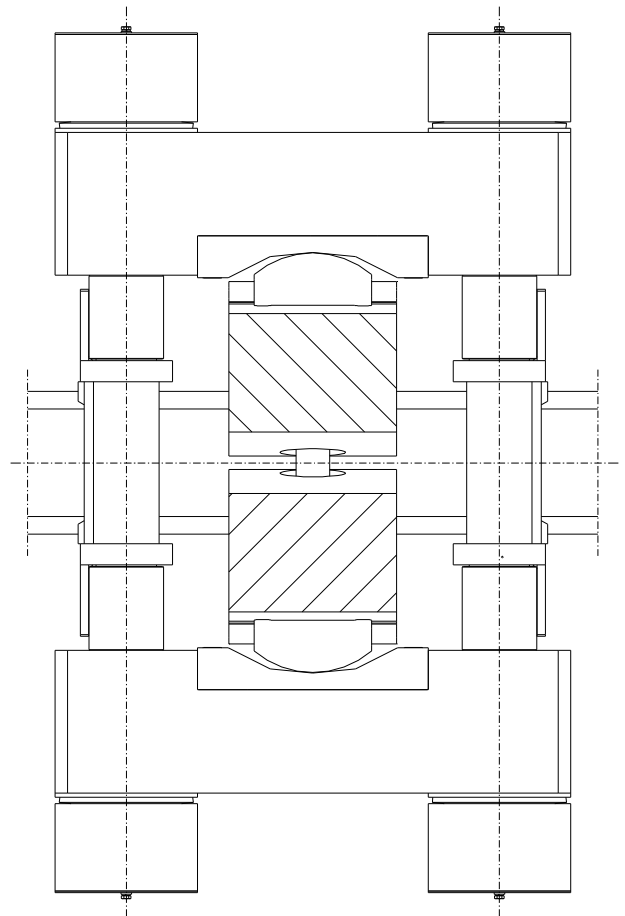
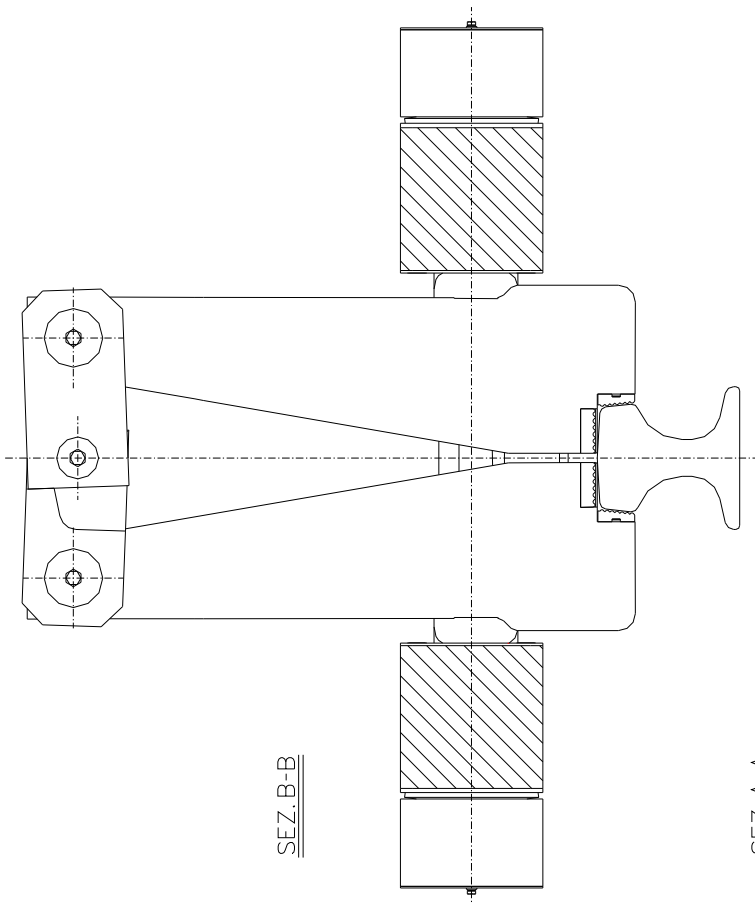
Rima S.r.l.
 Via Fermi 255 - 21042 Caronno Pertusella (Va) Italy
 Phone: +39 02 9650694 - Fax +39 02 9657860
 E-mail: rima@rimagroup.com

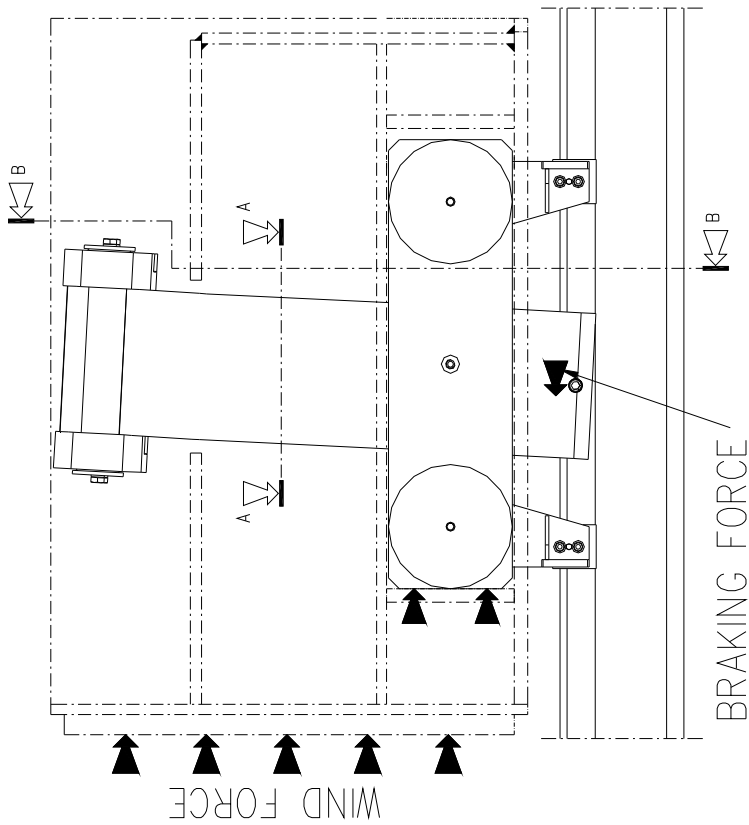




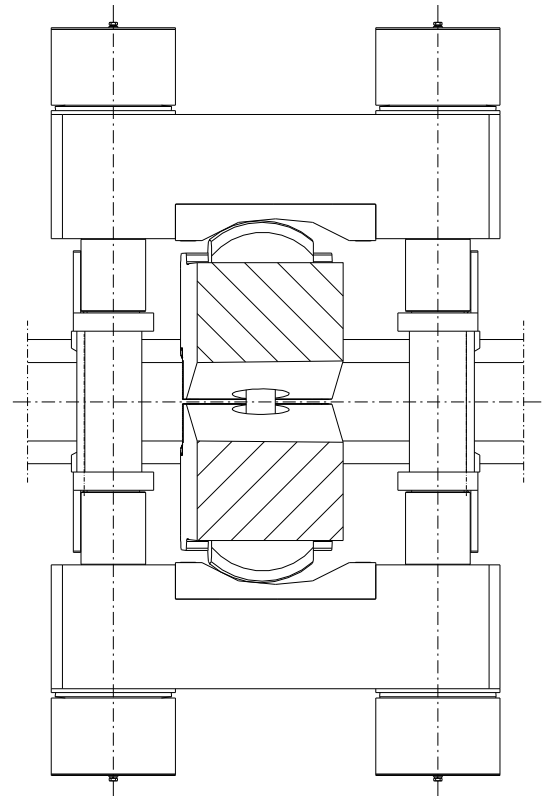
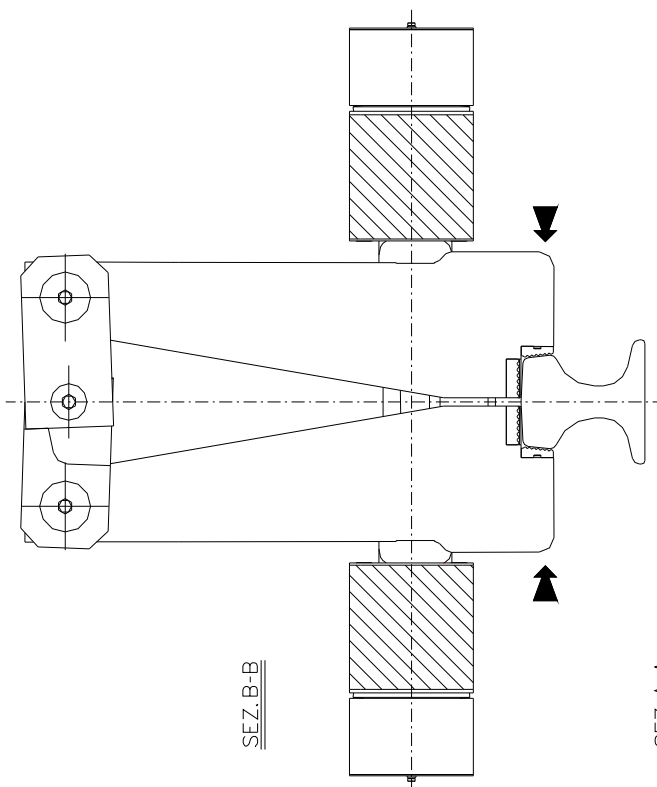


CLOSED CLAMP WITHOUT LOAD





CLOSED CLAMP WITH LOAD





via Bettola 32
I-20092 Cinisello Balsamo (MI)
Tel.: 02-66 05 3.1
Fax: 02-66 01 28 02

/MG File: Rima-02

Cinisello, 02/05/98

TEST REPORT

Customer: RIMA S.r.l.
STEMMAN-TECHNIK GmbH

Object: Brakes Type R2291 and R2271

N° of order: 100987 (TÜV Italy)

Technical files: See Annex

Site of testing activity: Caronno Pertusella (Varese, Italy)

Date of test: 2/5/1998

Test description: The test was carried out with knurled sliding for brakes type R 2271, in order to have the same specific pressure of the sliding type R2291.
The minimum friction coefficient was recorded for each condition of rail's surface state.
Values are shown in the schedule.
See annex for more informations.
In addition the rail clamp was pushed as far as the rail clamp started to slip (only by greasy rail).

| Type of knurled sliding (R2271) | State of side surface of rail | Radial force F_1 [kN] | Axial force F_2 [kN] | Friction coefficient $\mu = F_2 / 2 * F_1$ | Slipping force F_2 [kN] |
|---------------------------------------|-------------------------------|-------------------------------|------------------------------|---|---------------------------------|
| <input type="checkbox"/> 2 x 2 mm | dry | 99.6 | 100 | > 0.5 | // |
| <input type="checkbox"/> 2 x 2 mm | wet | 99.6 | 100 | > 0.5 | // |
| <input type="checkbox"/> 2 x 2 mm | greasy | 99.6 | 100 | > 0.5 | 119 ($\mu \approx 0.59$) |
| <input type="checkbox"/> 2,3 x 2,3 mm | dry | 95.2 | 103 | > 0.5 | // |
| <input type="checkbox"/> 2,3 x 2,3 mm | wet | 95.2 | 103 | > 0.5 | // |
| <input type="checkbox"/> 2,3 x 2,3 mm | greasy | 95.2 | 103 | > 0.5 | 113 ($\mu \approx 0.54$) |


Ing. Giorgio Mazzoni

TÜV ITALIA S.R.L.
Società del Gruppo TÜV SÜDDEUTSCHLAND
Amministratore Delegato: Roberto Majocchi - Sede legale: Via Bettola 32 - 20092 Cinisello Balsamo (MI)
Capitale sociale Lit. 850.000.000 interamente versato - Cod. Fisc. 08922920155 - P. IVA 02055510966 - Registro delle imprese di Milano (Trib. Monza) No. 273786 - R.E.A. 1255140

Rima S.r.l.
Via Fermi 255 - 21042 Caronno Pertusella (Va) Italy
Phone: +39 02 9650694 - Fax +39 02 9657860
E-mail: rima@rimagroup.com



WWW.RIMAGROUP.COM

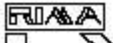
SCHEMA ELETTRICO PER 2 CENTRALINE E 2 TENAGLIE AUTOBLOCCANTI

ELECTRICAL DIAGRAM FOR 2 HYDRAULIC UNITS AND 2 AUTOMATIC RAIL CLAMPS

SCHÉMA ÉLECTRIQUE POUR 2 CENTRALES HYDRAULIQUES ET 2 PINCES D'ANCRAGES AUTOMATIQUES

ELEKTRISCHE SCHALTPLAN FÜR 2 HYDRAULIK AGGREGATE UND 2 SELBSTSCHLIESSENDE SCHIENENZANGEN

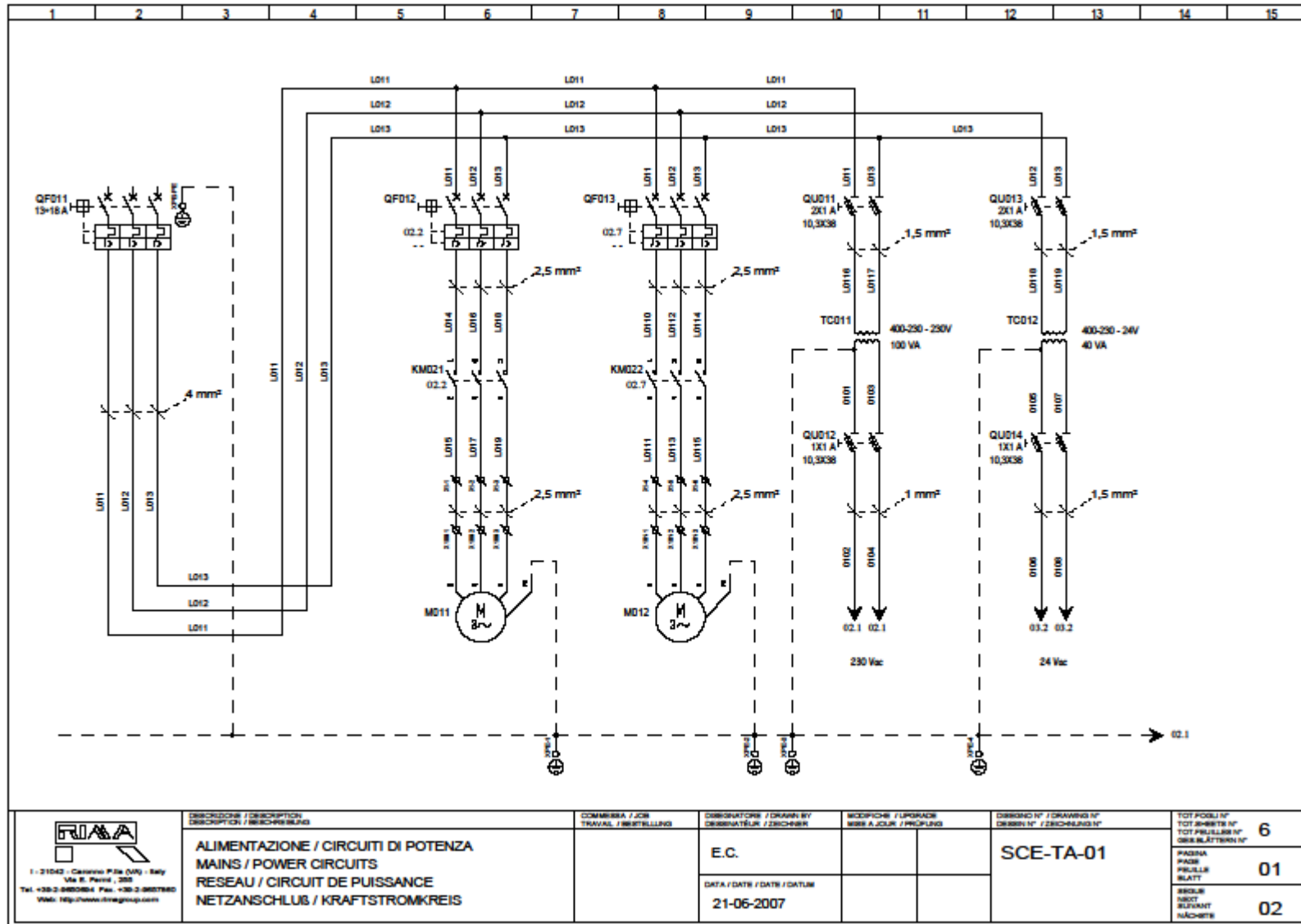
| | | | |
|--|---|--|--|
| DATA COMMISSION DELIVERY DATE DATE DE COMMISSION LIEFERDATUM | TENSIONE DI RISERVOZZO / RATING VOLTAGE TENSION DE MARCHÉ / NUTZSPANNUNG | GRADO PROTEZIONE / PROTECT DEGREE DEGREE DE PROTECTION / SCHUTZSTADIUM | NORMA CEI-EN / CEI-EN STANDARD NORMA CEI-EN / CEI-EN STANDARD |
| POTENZA MASSA ASSORBITA MAX POWER POISSANCE PUISSANCE MAXI MAX STROMVERBRAUCH | 3 kW | 400 Vac | In base al DPR 30789, Diga 02864, Diga 044, Norma CEI EN 50110-1, Norma CEI EN 50117-1 base sulla direttiva dell'apparecchiatura di comando per macchine elettriche (PEE) e la PEE con relativi decreti (PEE - per essere esente, PEV - per essere esente). This device is in accordance with project of base 04855. In base al DPR 30789, Diga 02864, Diga 044, Norma CEI EN 50110-1, CEI 11-27 specificazioni, standard unico sulla certificazione, validi per l'installazione di PEV in CEI 11-27 specificazioni, standard unico (AP - per essere esente). This device will be installed by an electrical installation qualified staff. Conformément à DPR 30789, Diga 02864, Diga 044, Règle CEI EN50110-1 - CEI 11-27 les normes techniques à l'origine de l'appareillage de commande doivent être certifiées conformes à PEV ou PEV (l'absence de projet, PEV - per essere esente, PEV - per essere esente). Das Produkt ist gemäß der EN 50110-1 und EN 50117-1 in CEI 11-27 mit einem Mindestanforderungsniveau für die Zertifizierung von PEV in CEI 11-27 spezifischen Standard (AP - per essere esente) konform. Dieses Produkt wird durch ein qualifiziertes Personal (Ausgangs) installiert. Diese Spezifikation wird durch die Herstellerdaten erfüllt. Das PEV erfüllt |
| CORRENTE MASSA ASSORBITA MAX PEAK CURRENT COURANT DE CRÊTE MAXI MAX SPITZSTROM | 20 A | TENSIONE COMANDA / CONTROL CIRCUIT VOLTAGE TENSION ALIMENTAZIONE / STEUERSPANNUNG | |
| TENSIONE MASSA AMMESSA MAX ADMITTED VOLTAGE (DIP IN) TENSIONE MASSA AMMESSA IN MASS MAX ZULASSUNGSSPANNUNG (DIP IN) | 5 | 24 Vac | |
| SEZIONE RACCOMANDATA RECOMMENDED CROSS SECTION SECTION RECOMMANDÉE EMPFOHLENE ABMESSUNG | 2,5 mm ² | TENSIONE SEGNALE / SIGNAL VOLTAGE TENSION SIGNAUX / SIGNALSPANNUNG | |
| CORRENTE DI CORTO CIRCUITO MAX SHORT CIRCUIT CURRENT MAX KURZSCHLUSSSTROM | 17 kA | 24 Vac | |

| | | | | | | |
|--|---|---|---|--|--|---|
|  <p>I - 21042 Caronno P.le Ody - Italy Via E. Mattei, 203 Tel. +39 02 9650694 Fax. +39 02 9657860 Web: http://www.rimagroup.com</p> | DESCRIZIONE / DESCRIPTION DESCRIPTION / BESCHREIBUNG | COMMISSIONA / JOB TRAVAIL / BESTELLUNG | DISSEGNAZIONE / DRAWN BY DÉSINATEUR / ZEICHNER | MODIFICHE / UPDATES MODIF. A JOUR / PROLONG | DISEGNO N° / DRAWING N° DÉSIN N° / ZEICHNUNG N° | TOT FOGLI N° TOT SHEETS N° DES BLATTEN N° |
| | COPERTINA FRONT PAGE PAGE DE GARDE VORDERSEITE | E.C. | SCE-TA-01 | 6 | | |
| | DATA / DATE / DATE / DATUM | 21-06-2007 | 00 01 | | | |



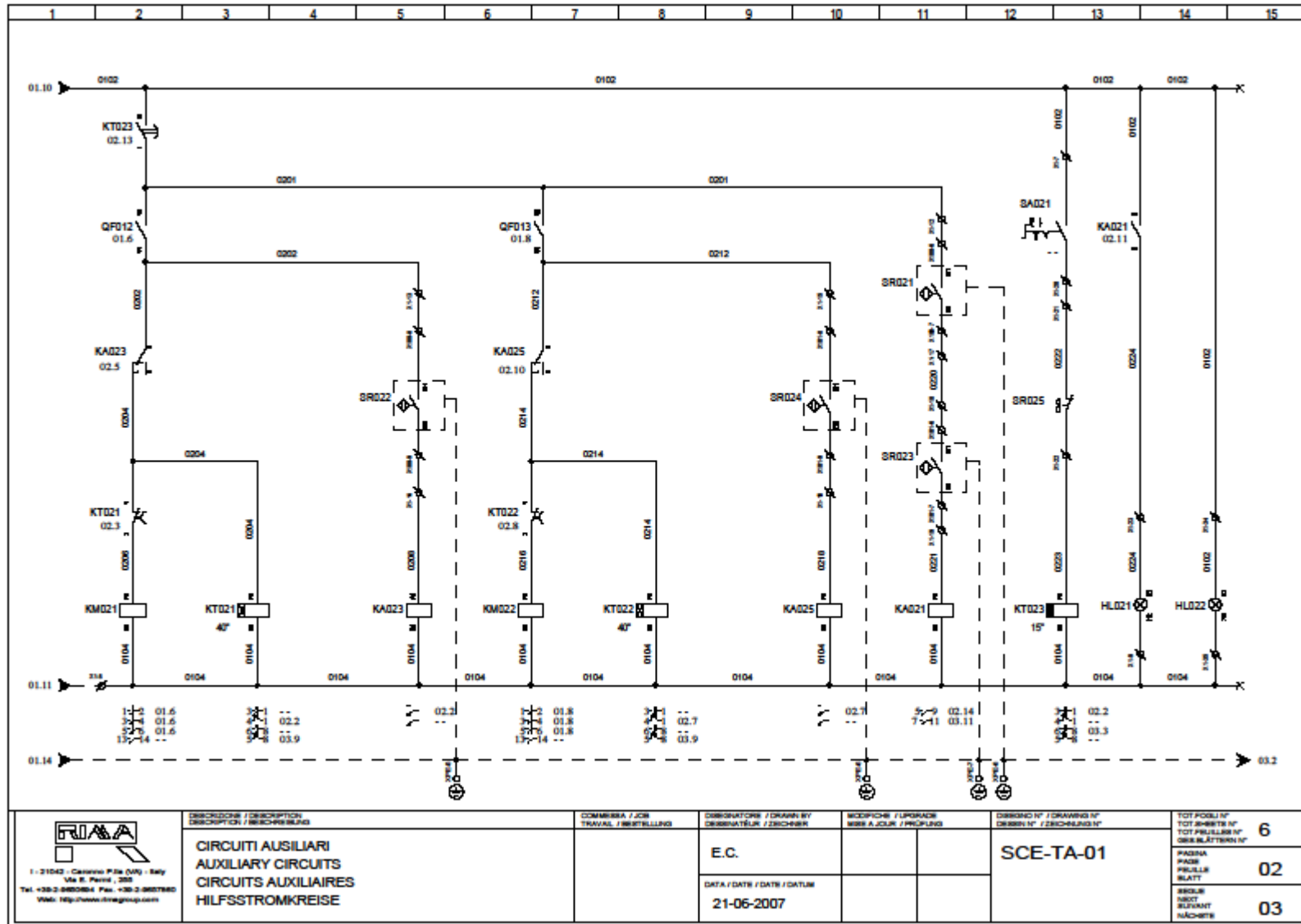
Rima S.r.l.
 Via Fermi 255 – 21042 Caronno Pertusella (Va) Italy
 Phone: +39 02 9650694 – Fax +39 02 9657860
 E-mail: rima@rimagroup.com





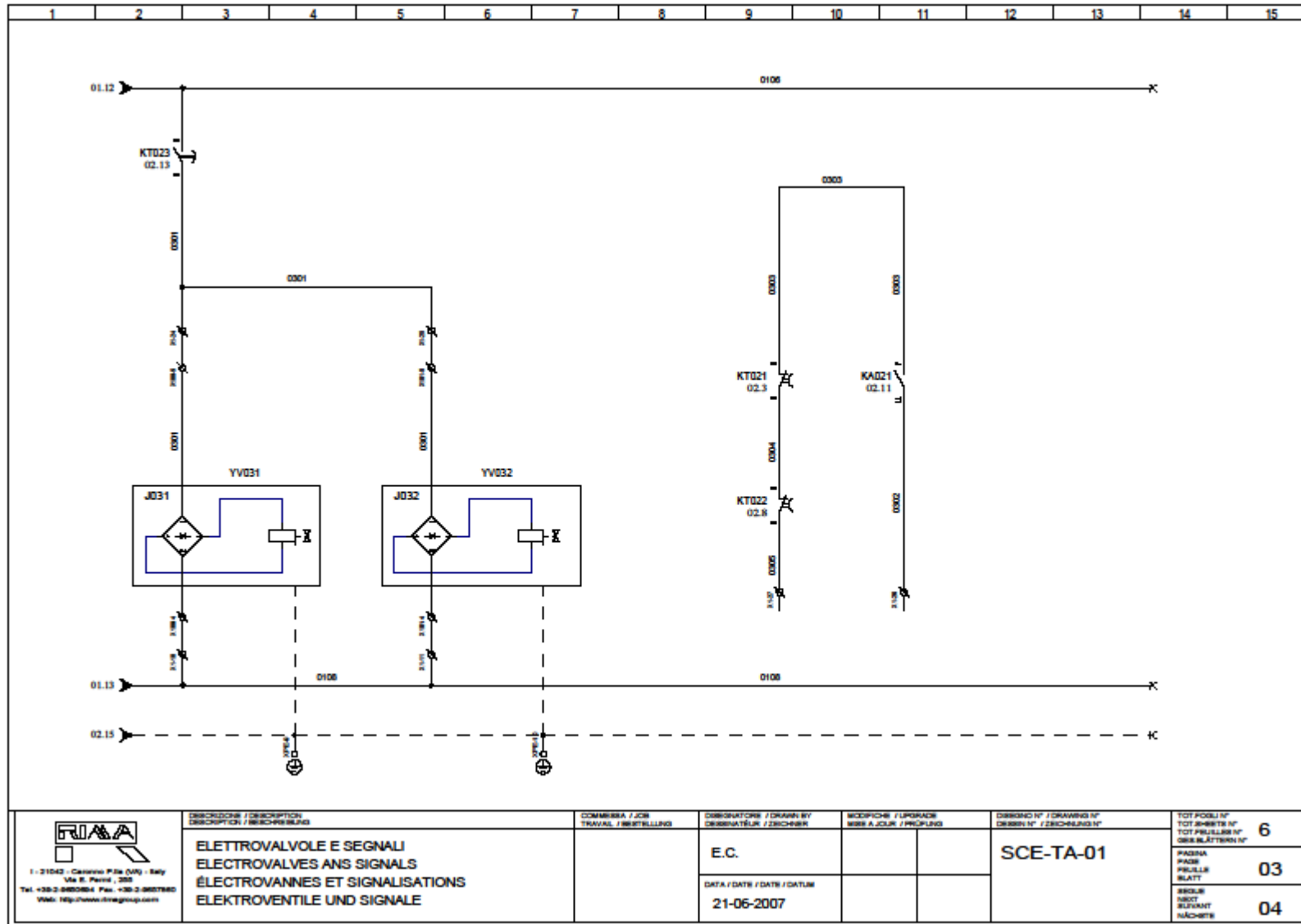
Rima S.r.l.
 Via Fermi 255 - 21042 Caronno Pertusella (Va) Italy
 Phone: +39 02 9650694 - Fax +39 02 9657860
 E-mail: rima@rimagroup.com





Rima S.r.l.
Via Fermi 255 – 21042 Caronno Pertusella (Va) Italy
Phone: +39 02 9650694 – Fax +39 02 9657860
E-mail: rima@rimagroup.com

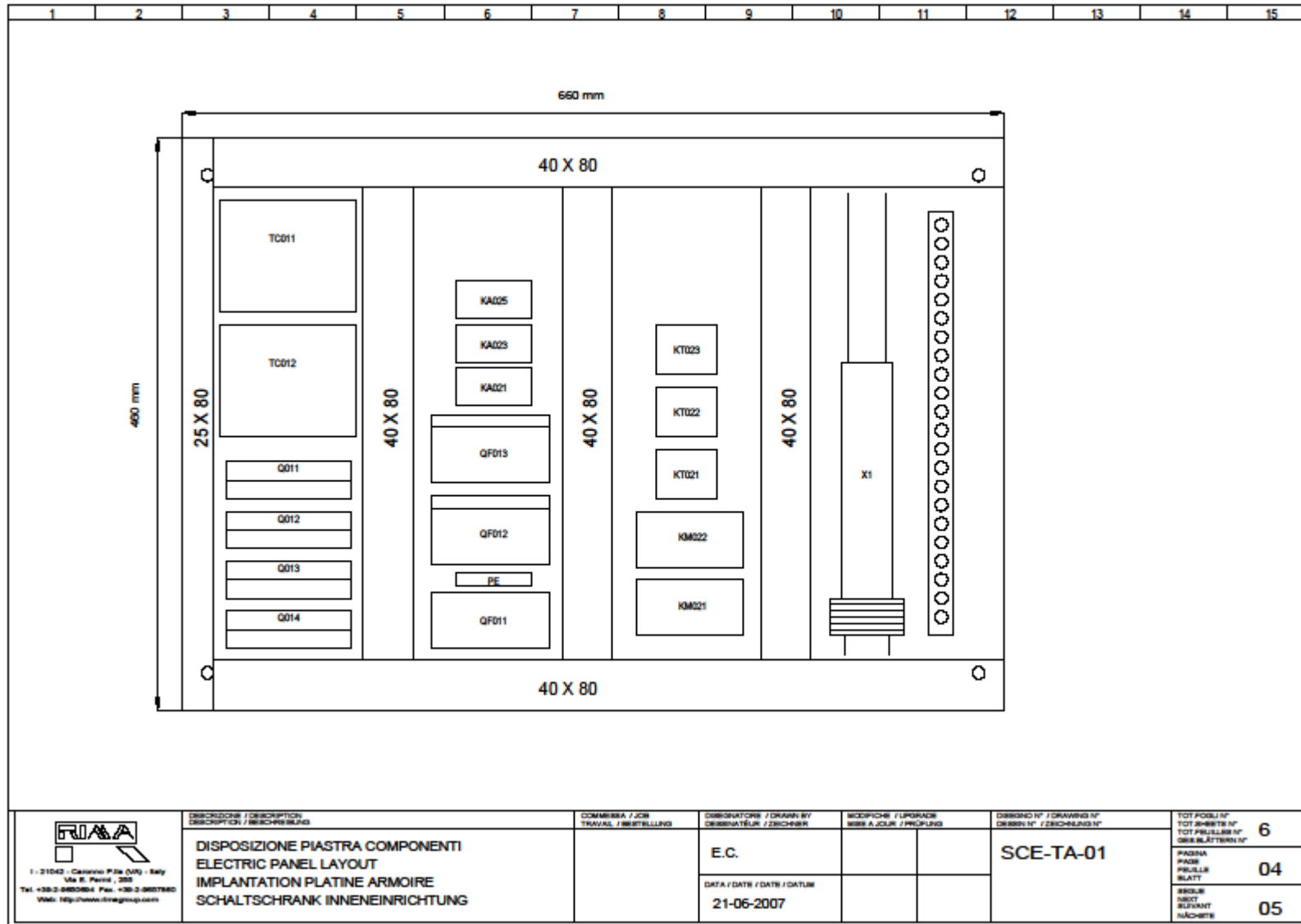




Rima S.r.l.
 Via Fermi 255 - 21042 Caronno Pertusella (Va) Italy
 Phone: +39 02 9650694 - Fax +39 02 9657860
 E-mail: rima@rimagroup.com



WWW.RIMAGROUP.COM




Rima S.r.l.
Via Fermi 255 – 21042 Caronno Pertusella (Va) Italy
Phone: +39 02 9650694 – Fax +39 02 9657860
E-mail: rima@rimagroup.com



WWW.RIMAGROUP.COM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---------|---|--|--|--|---|---|---|---|----|----|----|----|----|----|
| QF011 | INTERRUTTORE GENERALE | MAIN SWITCH | DISJONCTEUR PRINCIPAL | HAUPTSCHALTER | | | | | | | | | | |
| QF012 | PROTEZIONE MOTORE POMPA CENTRALINA 1 | HYDRAULIC UNIT 1 MOTOR PROTECTIVE SWITCH | DISJONCTEUR MOTEUR EQUIPEMENT HYDRAULIQUE 1 | HYDRAULISCHE GERÄT 1 MOTORSCHUTZSCHALTER | | | | | | | | | | |
| QF013 | PROTEZIONE MOTORE POMPA CENTRALINA 2 | HYDRAULIC UNIT 2 MOTOR PROTECTIVE SWITCH | DISJONCTEUR MOTEUR EQUIPEMENT HYDRAULIQUE 2 | HYDRAULISCHE GERÄT 2 MOTORSCHUTZSCHALTER | | | | | | | | | | |
| QU011 | FUSIBILE PROTEZIONE TRASFORMATORE CIRCUITI AUSILIARI | AUXILIARY CIRCUITS TRANSFORMER PROTECTION FUSE | COUPE-CIRCUIT PROTECTION TRANSFO CIRCUITS AUXILIAIRES | HILFSSTROMKREISERTRAFU SCHUTZ SICHERUNGSLASTRENNER | | | | | | | | | | |
| QU013 | FUSIBILE PROTEZIONE TRASFORMATORE ELETTROVALVOLE | ELECTROVALVES TRANSFORMER PROTECTION FUSE | COUPE-CIRCUIT PROTECTION DU TRANSFO ELECTROVANNES | ELEKTROVENT. STROMKREISERTRAFU SCHUTZ SICHERUNGSLASTSTR. | | | | | | | | | | |
| TC011 | TRASFORM. ALIMENTAZIONE CIRCUITI AUSILIARI | AUXILIARY CIRCUITS SUPPLY TRANSFORMER | TRANSFORMATEUR ALIMENTATION CIRCUITS AUXILIAIRES | HILFSKREISE STROMVERSORGUNG TRAFU | | | | | | | | | | |
| TC012 | TRASFORM. ALIMENTAZIONE ELETTROVALVOLE | ELECTROVALVES SUPPLY TRANSFORMER | TRANSFORMATEUR ALIMENTATION ELECTROVANNES | ELEKTROVENTILE STROMVERSORGUNG TRAFU | | | | | | | | | | |
| QU012 | FUSIBILE PROTEZIONE LINEA AUSILIARI | AUXILIARY CIRCUITS LINE PROTECTION FUSE | COUPE-CIRCUIT PROTECTION LIGNE AUXILIAIRES | HILFSKREISELEITUNG SCHUTZ SICHERUNGSLASTRENNER | | | | | | | | | | |
| QU014 | FUSIBILE PROTEZIONE LINEA ELETTROVALVOLE | ELECTROVALVES LINE PROTECTION FUSE | COUPE-CIRCUIT PROTECTION LIGNE ELECTROVANNES | ELEKTROVENTILE LEITUNG SCHUTZ SICHERUNGSLASTRENNER | | | | | | | | | | |
| MD11 | MOTORE POMPA CENTRALINA 1 | HYDRAULIC UNIT 1 PUMP MOTOR | MOTEUR POMPE EQUIPEMENT HYDRAULIQUE 1 | HYDRAULISCHE GERÄT 1 PUMPE MOTOR | | | | | | | | | | |
| MD12 | MOTORE POMPA CENTRALINA 2 | HYDRAULIC UNIT 2 PUMP MOTOR | MOTEUR POMPE EQUIPEMENT HYDRAULIQUE 2 | HYDRAULISCHE GERÄT 2 PUMPE MOTOR | | | | | | | | | | |
| KMD21 | CONTATTORE MOTORE POMPA CENTRALINA 1 | HYDRAULIC UNIT 1 PUMP MOTOR CONTACTOR | CONTACTEUR MOTEUR POMPE EQUIPEMENT HYDRAULIQUE 1 | HYDRAULISCHE GERÄT 1 PUMPE MOTOR SCHUTZ | | | | | | | | | | |
| KMD22 | CONTATTORE MOTORE POMPA CENTRALINA 2 | HYDRAULIC UNIT 2 PUMP MOTOR CONTACTOR | CONTACTEUR MOTEUR POMPE EQUIPEMENT HYDRAULIQUE 2 | HYDRAULISCHE GERÄT 2 PUMPE MOTOR SCHUTZ | | | | | | | | | | |
| KTD21 | TEMPORIZZ. SICUREZZA DISINERZIONE MOTORE CENTRALINA 1 | HYDRAULIC UNIT 1 PUMP MOTOR DISABLING SAFETY TIMER | TEMPORISATEUR SECURITE ARRÊT EQUIPEMENT HYDRAULIQUE 1 | HYDRAULISCHE GERÄT 1 ANSCHLAG SCHUTZZEITRELAIS | | | | | | | | | | |
| KTD22 | TEMPORIZZ. SICUREZZA DISINERZIONE MOTORE CENTRALINA 2 | HYDRAULIC UNIT 2 PUMP MOTOR DISABLING SAFETY TIMER | TEMPORISATEUR SECURITE ARRÊT EQUIPEMENT HYDRAULIQUE 2 | HYDRAULISCHE GERÄT 2 ANSCHLAG SCHUTZZEITRELAIS | | | | | | | | | | |
| KAD21 | RELÉ ESERCIZIO TRASLAZIONE PER TENAGLIE APERTE | OPEN CLAMPS TRANSLATION ENABLING RELAY | RELAIS CONSENTEMENT TRANSLATION AVEC PINCES OUVERTES | RELAIS ÜBERTRAGUNG ERMÖGLICHKEIT MIT ÖFFNEN ZANGEN | | | | | | | | | | |
| KAD23 | RELÉ ESERCIZIO FINE CORSA SR022 | SR022 LIMIT SWITCH CYCLE RELAY | RELAIS CYCLE DE FIN DE COURSE SR022 | SR022 ENDSCHALTER KREISLAUFRELAIS | | | | | | | | | | |
| KAD25 | RELÉ ESERCIZIO FINE CORSA SR024 | SR024 LIMIT SWITCH CYCLE RELAY | RELAIS CYCLE DE FIN DE COURSE SR024 | SR024 ENDSCHALTER KREISLAUFRELAIS | | | | | | | | | | |
| KTD23 | TEMPORIZZATORE SICUREZZA CICLO | CYCLE SAFETY TIMER | TEMPORISATEUR POUR SECURITE CYCLE | KREISLAUF SCHUTZ ZEITRELAIS | | | | | | | | | | |
| SR021 | FC INDUTTIVO TENAGLIE APERTE CONSENSO TRASLAZIONE 1 | TRANSLATION 1 ENABLING OPEN CLAMPS INDUCTIVE LIMIT SW. | FDC INDUCTIF PINCES OUVERTES ET CONSENT. TRANSLATION 1 | ÜBERTRAG. ERMÖGLICH.-ÖFFNEN ZANGEN 1 NÄHERUNGSSINITIATOR | | | | | | | | | | |
| SR022 | FC INDUTTIVO MANTENIMENTO TENAGLIE APERTE 1 | OPEN CLAMPS 1 HOLDING INDUCTIVE LIMIT SWITCH | FDC INDUCTIF DE MAINTIEN PINCES OUVERTES 1 | ZANGENÖFFNUNGSDAUER 1 NÄHERUNGSSINITIATOR | | | | | | | | | | |
| SR023 | FC INDUTTIVO TENAGLIE APERTE CONSENSO TRASLAZIONE 2 | TRANSLATION 2 ENABLING OPEN CLAMPS INDUCTIVE LIMIT SW. | FDC INDUCTIF PINCES OUVERTES ET CONSENT. TRANSLATION 2 | ÜBERTRAG. ERMÖGLICH.-ÖFFNEN ZANGEN 2 NÄHERUNGSSINITIATOR | | | | | | | | | | |
| SR024 | FC INDUTTIVO MANTENIMENTO TENAGLIE APERTE 2 | OPEN CLAMPS 2 HOLDING INDUCTIVE LIMIT SWITCH | FDC INDUCTIF DE MAINTIEN PINCES OUVERTES 2 | ZANGENÖFFNUNGSDAUER 2 NÄHERUNGSSINITIATOR | | | | | | | | | | |
| SA021 * | COMANDO INIZIO CICLO | START CYCLE CONTROL | CONTROLE MARCHE DU CYCLE | KREISLAUF ANFANG | | | | | | | | | | |
| SR025 * | ANEMOMETRO | AIR-SPEED METER | ANÉMOMÈTRE | LUFTGESCHWINDIGKEITMESSER | | | | | | | | | | |
| HL021 * | SEGNALAZIONE CONSENSO TRASLAZIONE | TRANSLATION ENABLING SIGNAL | SIGNALISATION CONSENTEMENT TRANSLATION | ÜBERTRAGUNG ERMÖGLICHKEIT SIGNALISIERUNG | | | | | | | | | | |
| HL022 * | SEGNALAZIONE PRESENZA TENSIONE | POWER ON SIGNAL | SIGNALISATION DE TENSION EN LIGNE | SPANNUNG EIN SIGNALISIERUNG | | | | | | | | | | |
| YV031 | ELETTROVALVOLA CENTRALINA 1 | HYDRAULIC UNIT 1 ELECTROVALVE | ELECTROVANNE EQUIPEMENT HYDRAULIQUE 1 | HYDRAULISCHE GERÄT 1 ELEKTROVENTIL | | | | | | | | | | |
| YV032 | ELETTROVALVOLA CENTRALINA 2 | HYDRAULIC UNIT 2 ELECTROVALVE | ELECTROVANNE EQUIPEMENT HYDRAULIQUE 2 | HYDRAULISCHE GERÄT 2 ELEKTROVENTIL | | | | | | | | | | |
| * | ESCLUSO DALLA FORNITURA DEL QUADRO DI COMANDO | NOT SUPPLIED WITH THE CONTROL EQUIPMENT | PAS EN LA FOURNITURE DU EQUIPEMENT DE CONTROLE | NICHT DELIEFERT MIT DAS SCHALTGERÄT | | | | | | | | | | |

| | | | | | | |
|---|---|--|--|---|--|---|
|  <p>1 - 21042 - Caronno P.le Orio - Italy Via E. Fermi, 255 Tel. +39 02 9650694 Fax. +39 02 9657860 Web: http://www.rimagroup.com</p> | DESCRIZIONE / DESCRIPTION DESCRIPTION / BESCHREIBUNG | COMMITTEE / COM TRAVAIL / BEFESTIGUNG | DIMENSIONI / DRAWING BY DIMENSIONS / ZEICHNER | MODIFICHE / UPDATES MODIF. A.JOUR / PROFILES | DISEGNO N° / DRAWING N° DIMENSIONI N° / ZEICHENBLATT N° | TOT. PAGINE N° TOT. SHEETS N° DIM. BLATTEN N° |
| | COMPONENTI E LORO FUNZIONI COMPONENTS AND FUNCTIONS COMPOSANTS ET FONCTIONS BAUELEMENTE UND BETRIEBSFUNKTION | E.C. | DATA / DATE / DATE / DATUM 21-06-2007 | SCE-TA-01 | 6 05 | |



Rima S.r.l.
 Via Fermi 255 – 21042 Caronno Pertusella (Va) Italy
 Phone: +39 02 9650694 – Fax +39 02 9657860
 E-mail: rima@rimagroup.com

