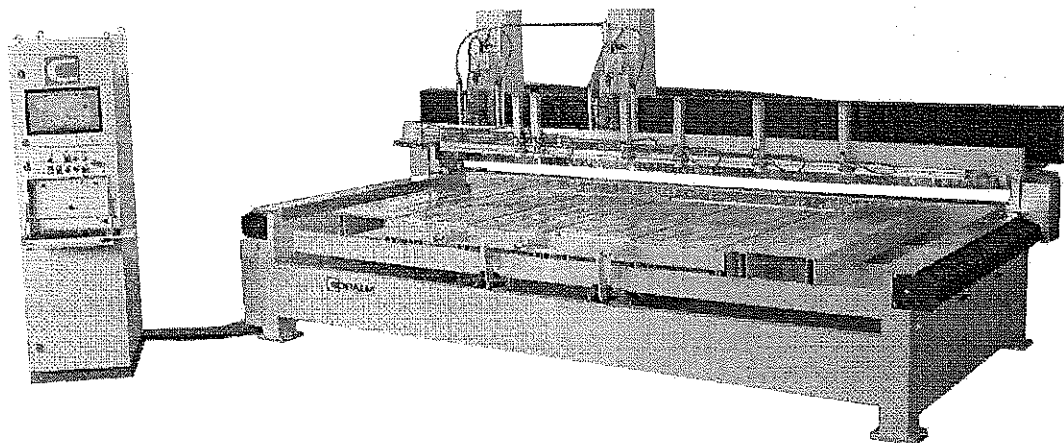




SPECIAL MACHINE  
FOR  
DRILLING WITH KEIL'S DOUBLE HEADS  
**PR99-20**

*USE AND MAINTENANCE*



TRANSLATION OF THE ORIGINAL INSTRUCTIONS

## DECLARATION OF COMPLIANCE

|                              |                                                               |
|------------------------------|---------------------------------------------------------------|
| Manufacturer:                | Co.b.a.l.m srl<br>Via Pomposa, 43E<br>47924 - Rimini - ITALIA |
| Responsible technical issue: | Nicoletti Alberto c/o Co.b.a.l.m srl                          |

It is declared that the following machine:

**"SPECIAL MACHINE FOR DRILLING WITH KEIL'S DOUBLE HEAD"**

Model "PR99-20"

Serial No. 55991101

Is compliant with the safety requirements of the following directives:

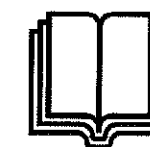
|             |                               |
|-------------|-------------------------------|
| 2006/42/CE  | Machines directive            |
| 2006/95/CE  | Low voltage                   |
| 2004/108/CE | Electromagnetic compatibility |

Savignano sul Rubicone, 21.02.2011

Manager

Nicoletti Alberto





## FOREWORD

This manual is a guide to proper maintenance and operation of the machine. Carefully follow the directions provided in the manual. This reduce the operating costs, improves efficiency and extends the service life of the machine. In addition, these instructions help prevent accidents that may occur during operation or when servicing the machine.

### IMPORTANT:

**Careful attention should be paid to the caution and warning statements that appear on the stickers attached to the machine. Read all the safety procedures prior to starting, operating or servicing the machine.**

Every machine is provided with a copy of use and maintenance manual and it's care of the final user the maintenance of the same.

In compliance with current regulations, this manual should accompany the machine at all times even when it is resold. In case of loss it is necessary to ask for the duplicate at Co.b.a.l.m. that will provide it charging the expense.

Co.b.a.l.m. has a company policy of continuous development therefore the descriptions, specifications as well as the machine parts and accessories illustrated in this manual are subject to change at any time without prior notice.

For further information, contact your nearest dealer or directly company CO.B.A.L.M.

Images only for illustrative use.



### IMPORTANT:

**Read the whole manual before using the machine and adequately instructing the employed personnel with the purpose to guarantee an appropriate use of it.**  
**Carefully read "SAFETY RULES", chapter "4". In order to ensure safe machine operation, it is essential that the operating personnel observes the safety procedures detailed herein.**

## INDEX

- 1 - GENERAL INFORMATION
    - 1.1 - MACHINE MANUFACTURER
    - 1.2 - WARRANTY
    - 1.3 - SIGNS FOR MANUAL READING
  - 2 - MACHINE IDENTIFICATION
    - 2.1 - DESCRIPTION OF THE MAIN MACHINE GROUPS
  - 3 - TECHNICAL CHARACTERISTICS
    - 3.1 - PLATE OF IDENTIFICATION
    - 3.2 - OVERALL DIMENSIONS
    - 3.3 - GENERAL CHARACTERISTICS
    - 3.4 - NOISE
  - 4 - SAFETY REGULATIONS
    - 4.1 - EXPECTED USE OF THE MACHINE
    - 4.2 - OPERATORS IDENTIFICATION
    - 4.3 - WORK AREA AND FORBIDDEN AREAS
    - 4.4 - DESCRIPTION OF THE PICTOGRAMS
    - 4.5 - SAFETY REGULATIONS FOR LOADING AND UNLOADING
    - 4.6 - SAFETY REGULATIONS DURING USE
    - 4.7 - EMERGENCY PROCEDURES
    - 4.8 - RESIDUAL RISKS
  - 5 - MACHINE INSTALLATION
    - 5.1 - INSTRUCTIONS FOR FITTING TOOLS
    - 5.2 - DISMANTLEMENT
  - 6 - BUTTON PANEL
  - 7 - OPERATION FUNCTIONS
    - 7.1 - PANEL CONTROL / ELECTRONIC DISPLAY
    - 7.2 - ZEROING OF AXES
    - 7.3 - MANUAL AXES MOVEMENT
    - 7.4 - AUTOMATIC AXIS CONTROL
    - 7.5 - ERROR CODES
    - 7.6 - UTILITY PROGRAMS
  - 9 - SERVICE AND MAINTENANCE
    - 9.1 - MAINTENANCE
    - 9.2 - TABLE OF OIL AND GREASE FOR LUBRIFICATION
    - 9.3 - COLOURS
    - 9.4 - CUSTOMER SERVICE
    - 9.5 - DIAGNOSTIC SEARCH BREAKDOWNS
- ANNEX 1: SERVICE FORM

## **1 - GENERAL INFORMATION**

READ THE INSTRUCTION GIVEN IN THIS MANUAL CAREFULLY. THEY PROVIDE IMPORTANT INFORMATION ABOUT SAFE INSTALLATION, USE AND MAINTENANCE.

THIS MACHINE MUST BE USED ONLY FOR THE PURPOSE FOR WHICH IT HAS BEEN SPECIFICALLY DESIGNED.

"SPECIAL MACHINE FOR DRILLING WITH KEIL'S DOUBLE HEAD".

THE MANUFACTURER CANNOT BE CONSIDERED RESPONSIBLE FOR ANY DAMAGE CAUSED BY IMPROPER OR UNREASONABLE USE. THE MANUFACTURER RESERVES THE RIGHT TO MAKE ANY CHANGES DEEMED NECESSARY FOR THE IMPROVEMENT OF THE MACHINE OR OF THIS MANUAL, WITHOUT GIVING PRIOR NOTICE.

THE PARTIAL REPRODUCTION OF THE MANUAL IS FORBIDDEN WITHOUT WRITTEN AUTHORIZATION OF CO.B.A.L.M. SRL.

### **1.1 - MACHINE MANUFACTURER**

CO.B.A.L.M. s.r.l.

Via I. Silone, 3

47039 SAVIGNANO SUL RUBICONE (FC)

ITALIA

Tel. +(39)-0541-942228

Fax. +(39)-0541-942238

Internet: [www.cobalm.com](http://www.cobalm.com)

### **1.2 - WARRANTY**

The warranty covers a period of 12 (twelve) months from the invoice date or 13 (thirteen) months from shipment date and anyway not over 2000 working hours and ends up when one of the three limits is reached.

The warranty refers to defects in materials or machining, excluding materials of normal wear and tear (i.e. tools, piece clamping suction cups, etc..).Cobalm undertakes the free replacement of defected parts, ex manufacturers factory. If it should be necessary a service by a Cobalm technician, the travel, board and lodging costs will be at purchasers charges. The replaced parts belong to Cobalm and they have to be returned within 10 days from new part receipt, otherwise the warranty won't be valid. The replacement of defected parts won't extend the warranty.

#### **1.2.1 - WARRANTY EXCLUSION**

The warranty won't be valid if:

- the machine hasn't been used in a correct way
- the machine hasn't been installed in a suitable place
- no usual maintenance has been done (programmed or extraordinary)

- defected parts owing to wrong supplies (for example contaminated compressed air or water, over voltages owing to weather)
- defected parts owing to change/tampering or repairing made without written leave from Cobalm.
- payments not observed.

### **1.3 - SIGNS FOR MANUAL READING**



The sign is used to mark parts of manual of particular interest.



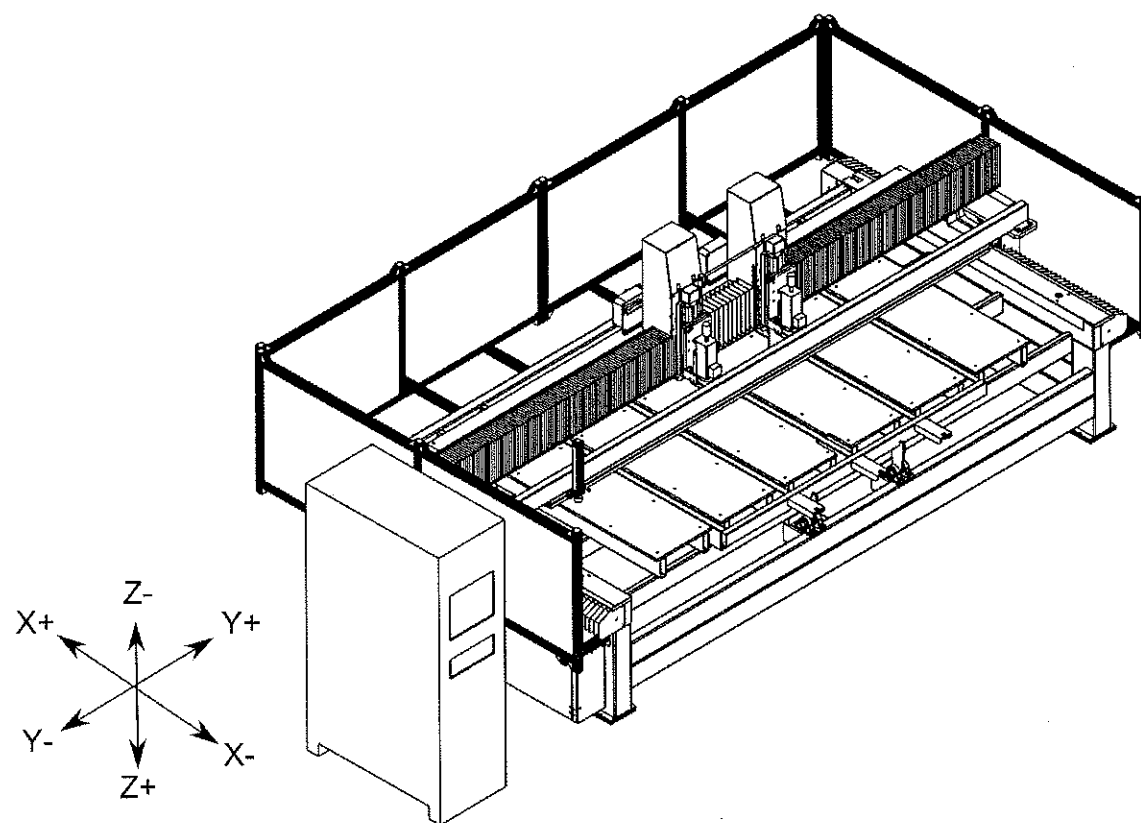
The sign is used to mark parts of manual with useful indications to prevent risks for people, animals or things.

## 2 - MACHINE IDENTIFICATION

This machine has been designed to render the drilling of slabs of marble, granite, glass more versatile, productive and precise. Great attention has been dedicated in its design to a significant reduction of noise and dust emissions with respect to conventional manual drilling methods. The machine is constructed in electric-welded steel treated with epoxy powder paints.

It is equipped with a numerical control system for control of movements on linear slides and screws with recirculating ball bearings, or linear guides and precision racks driven by brushless motors on all five movement axes (X Y Z K A).

### 2.1 - DESCRIPTION OF THE MAIN MACHINE GROUPS



- |                     |                    |
|---------------------|--------------------|
| 1 - Base            | 6 -                |
| 2 - Working plan    | 7 - Electric panel |
| 3 - Electro-spindle | 8 -                |
| 4 - Beam            |                    |
| 5 -                 |                    |

## 3 - TECHNICAL CHARACTERISTICS

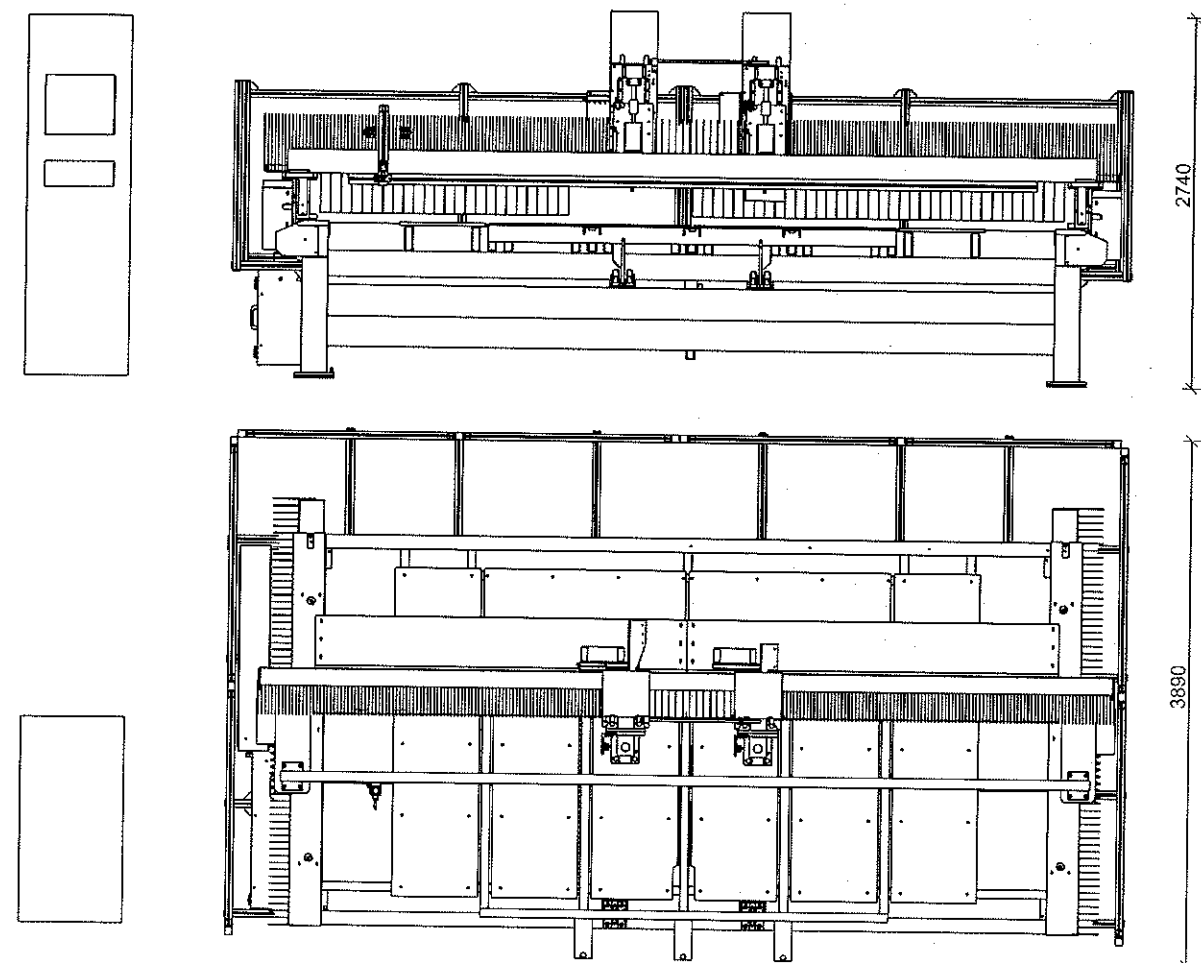
### 3.1 - PLATE OF IDENTIFICATION

The aluminium plate of machine identification is fixed on machine base next to electric panel.

|                                                   |  |                                                                                       |       |
|---------------------------------------------------|--|---------------------------------------------------------------------------------------|-------|
| <b>COBALM</b><br>MARBLE WORKING MACHINES<br>ITALY |  | Via I. Sione, 3 - 47039<br>SAVIGNANO S/R. (FO)<br>Tel. 0541/942228<br>Fax 0541/942238 |       |
| (A) Model                                         |  | (E)                                                                                   |       |
| (B) Serial No                                     |  | (F) kg                                                                                |       |
| (C) VAC                                           |  | (G) PH                                                                                |       |
| (D) Hz                                            |  | (H) kVA                                                                               |       |
|                                                   |  |                                                                                       | (H) A |

- A - Model
- B - Serial number
- C - Voltage
- D - Frequency
- E - Month and year of construction
- F - Weight
- G - Power installed
- H - Ampere consumption
- PH - Phases number of feeding.

### 3.2 - OVERALL DIMENSIONS



### 3.3 - GENERAL CHARACTERISTICS

N.B. For exact information on the machine purchased, read the machine plate.

|                                |       |                                  |
|--------------------------------|-------|----------------------------------|
| VOLTAGE                        |       | 400V three phase+neutral + earth |
| FREQUENCY                      |       | 50 Hz                            |
| POWER ABSORBED                 |       | 10 KVA                           |
| SPINDLE POWER                  |       | 0.57 KW                          |
| LENGTHWAYS TRAVEL (X)          | mm.   | 3400 (133,8 in.)                 |
| CROSS TRAVEL (Y)               | mm.   | 1900 (74,8 in.)                  |
| VERTICAL TRAVEL (Z)            | mm.   | 280 (11,0 in.)                   |
| FEED SPEED AXES X/Y            | mt/1' | 20                               |
| FEED SPEED AXIS Z              | mt/1' | 3.5                              |
| MAXIMUM THICKNESS MATERIAL     | mm.   | 200 (7,87 in.)                   |
| PRESSURE COMPRESSED AIR        | bar   | min. 6                           |
| AIR CONSUMPTION                | l/min | 300                              |
| PRESSURE LUBRICATION WATER     | bar   | min. 3                           |
| WATER CONSUMPTION INSIDE LUBR. | l/min | 5                                |
| TOTAL WEIGHT                   | Kg.   | 3200                             |
| TEMPERATURE ENVIRONMENT        | °C    | +10 ÷ +40                        |
| MAXIMUM TOOL HEIGHT            | mm.   | 5 (2,00 in.)                     |
| MAXIMUM TOOL DIAMETER          | mm.   | 7 (0,27 in.)                     |

### 3.4 - NOISE

This machine has been tested during working operations, and the results obtained are the following

SOUND PRESSURE IN THE WORK PLACE

Lpa 78,3 dB(A)



If the machine is placed in an environment that reverberates or in presence of other sources of noise, and if the level of the daily exposure of a person is more than 80 dB(A) there is a condition of risk of noise for the operator. In this case the employer, according to the rules in force, must take care to realize the necessary measures for the reduction of the noise (screens, soundproofing of the environment, supply of the devices of individual protection, so on.....)

## 4 - SAFETY REGULATIONS

### 4.1 - EXPECTED USE OF THE MACHINE

The machine PR99-20 has been planned exclusively for an industrial use . It's possible doing drillings on marble, granite and similar.

The working is through a software CAD/CAM and the using of diamond tools fitted inside the special electro-spindle of the machine. The other kind of material not specified are incompatible with the machine characteristics.

### 4.2 - OPERATORS IDENTIFICATION



#### Machine operator:

trained operator able to use the machine for the execution of normal anticipated jobs, included the phases of loading and unloading of the materials on the same machine. The use of the machine from the Operator foresees the use of all the systems of protection activated.



#### Handling operator:

trained operator able to use the machine for the lifting (ex. lifter to forklift or crane) necessary for the handling / installation of the machine.



#### Mechanical operator:

Qualified technician able to work on the mechanical organs to effect the regulations. Besides he's trained to the execution of services of maintenance and/or reparation necessary, as well as the mechanical installation of the machine itself.



#### Electric operator:

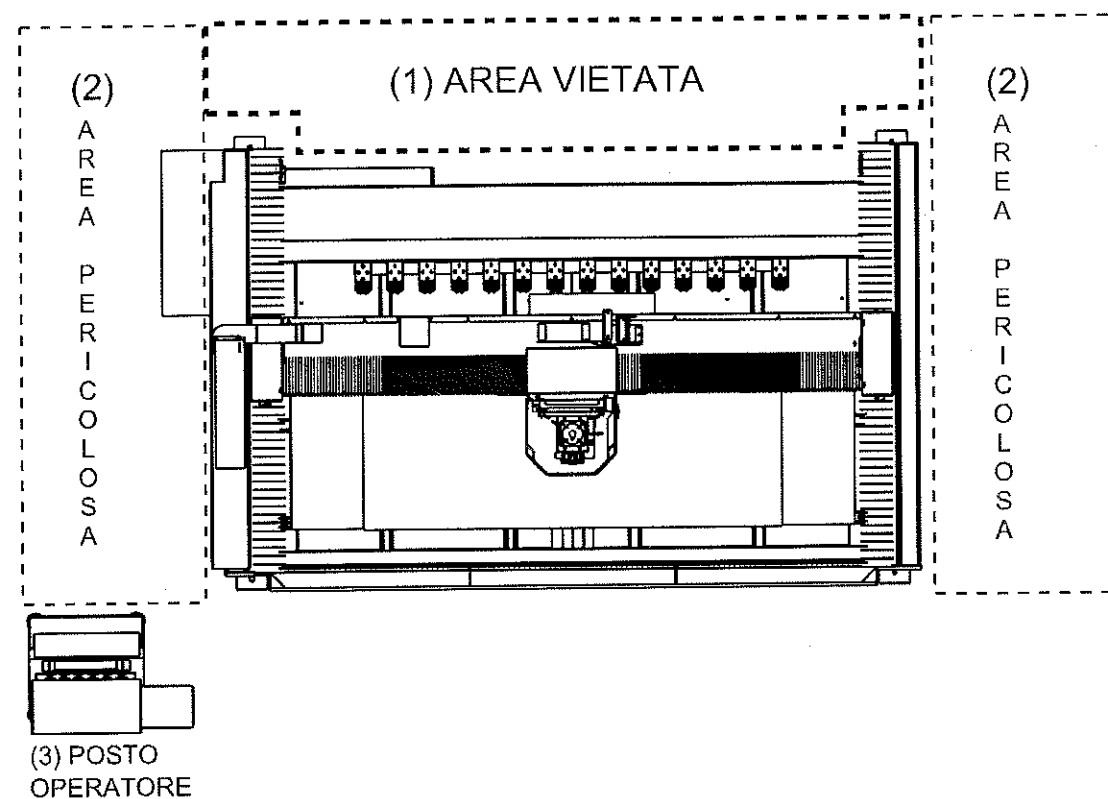
Qualified technician able to work on the electric / electronic apparatuses, to do regulations, maintenances, reparations. He's able to to operate in presence of voltage inside the electric board.



#### Technical of the builder:

Qualified technician able to use the machine under normal and particular conditions. He's able to do complex operations type mechanic, electric / electronic, software, and test according to the specifications of the builder.

#### 4.3 - WORK AREA AND FORBIDDEN AREAS



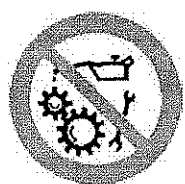
- 1 - Area vietata - Forbidden area - Zone interdite - verbietet Fläche  
 2 - Area pericolosa - Dangerous area - Zone dangereuse - gefährliche Fläche  
 3 - Posto operatore - Operator place - Je mets opérateur - Setzt Fachmann

#### 4.4 - DESCRIPTION OF THE PICTOGRAMS

It's important to pay attention to all the safety plates on the machinery. It's besides obligatory to replace the damaged plates.

##### Poster of prohibition

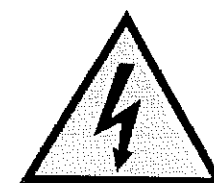
- Round shape, black pictogram on white fund, with edge and band of red color



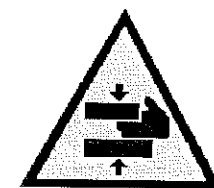
Prohibition to clean, to oil, to fatten up, to repair by hand organs in motion.

##### Poster of warning

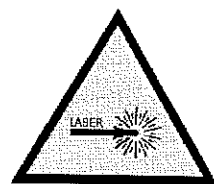
- Triangular shape, black pictogram on yellow fund, with black edge.



- High voltage.
- Danger of electrocution.



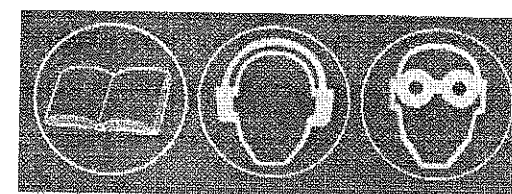
- Danger of crushing to the hands



- Don't directly look at the bright source of the laser

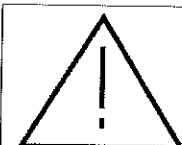
##### Poster of prescription

- Round shape (or rectangular), white pictogram on blue fund.

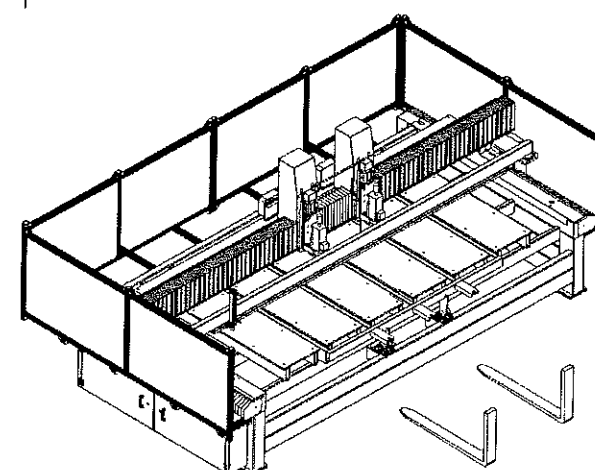


- Read the instructions manual before using
- Obligation to protect the hearing
- Obligation to protect the eyes

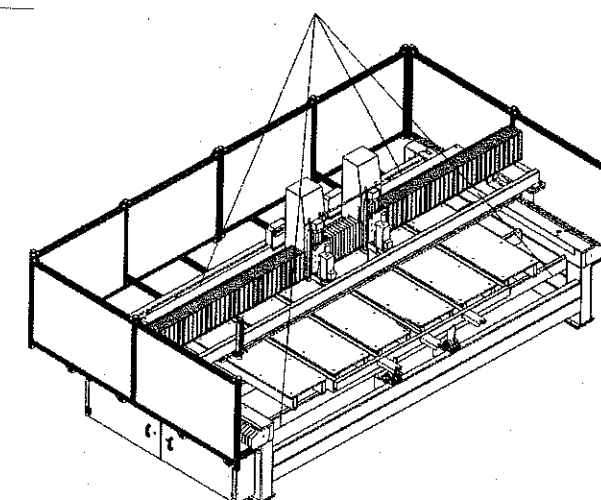
#### 4.5 - SAFETY REGULATIONS FOR LOADING AND UNLOADING



The following operations must be perform from personal adequately format and expert.



Lmin: 2,2 mt. / Kg. 3200



Lmin: 6 mt. / Kg. 3200

Movement of the machine is an operation that requires particular attention to avoid injury to persons and damage to things.

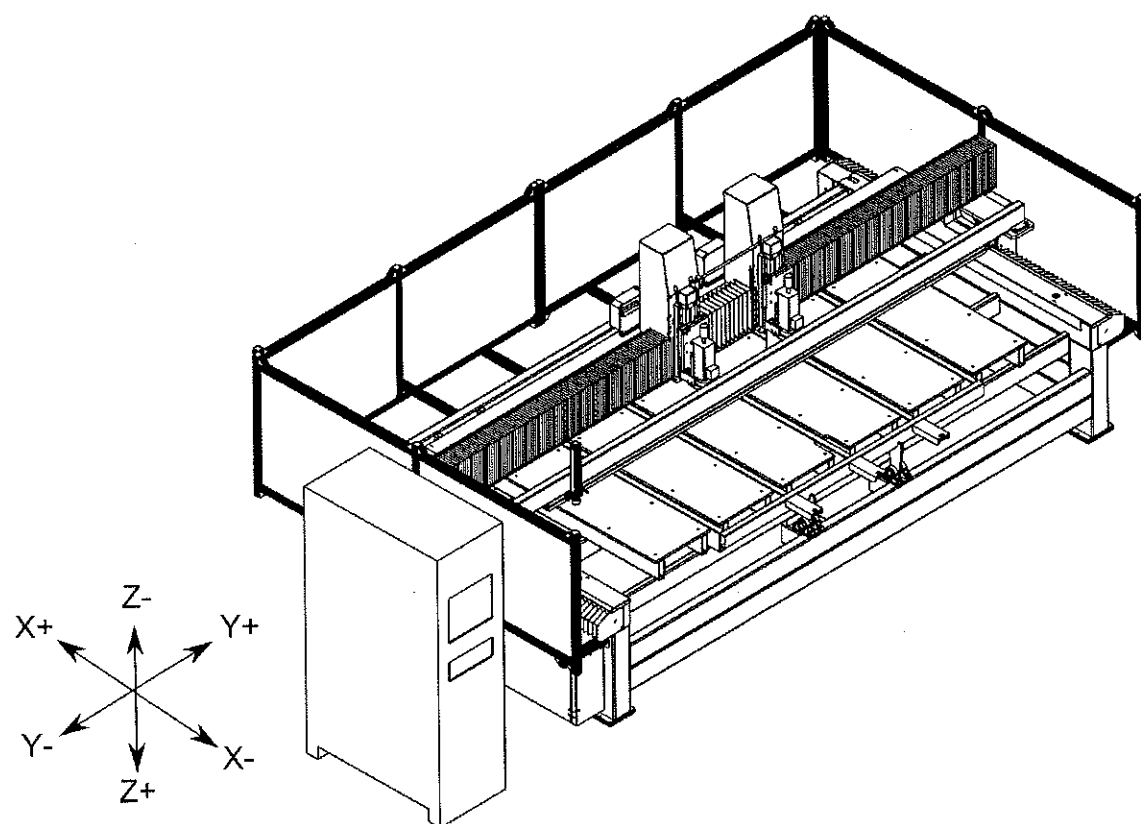
- Check attentively the absence of people in the ray of action of the system of lifting
- Verify with care the suitability of the systems of lifting used.

The machine is made in a single piece and can therefore be moved using a forklift truck. Insert the forks adjusted to maximum width beneath the base of the machine, taking care not to damage the vacuum pump and the water circulation pump placed on the back side of the machine.

When moving the machine pay particular attention to the possible unstable balance of the machine due in particular to the position of the electrical panel.

In alternative, the machine is equipped with 4 lifting brackets for hook and chains placed on machine's angles.

#### 4.6 - SAFETY REGULATIONS DURING USE



- It is prohibited for untrained persons to use the machine.
- It's allowed only the use of the machine to the people in good condition of health
- We recommend the use of devices of individual protection (D.P.I.).
- We recommend the use of clothes and/or fit personal objects with the purpose to avoid to catch with the parts of the machine.
- The job environment has to be adequately illuminated with the purpose to assure the perfect vision of the

operations to do to the operator.

- it is obligatory to verify the absence of people inside the machine, before the running it.
- it is obligatory to verify the operation of the devices of emergency to beginning of every working turn.
- Do not climb onto the bench of the machine when the machine is running (2).
- Never put your hands near the spindle while it is running. (3).
- it is prohibited to operate with hands or tools while the machine is in working.
- The access to the electric board is allowed exclusively to qualified technical personnel. The electric panel is furnished of a main switch to use during the services of maintenance.
- The keys of access to the panels and of deactivation of safety functions, have to be guarded in sure place. It's made explicit prohibition leave the keys unguarded or inserted in the padlocks or leave the padlocks opened.
- Any anomaly or malfunction of the machine, must quickly be signal to the person responsible of the turn.

#### 4.7 - EMERGENCY PROCEDURES

In case of an emergency, the machine can be turned off with the red button located both on the control panel (8) or with the red cable located behind the bridge. The activation of an emergency button, involves the uncontrolled immediate arrest of the machine. The activation of an emergency button has to be done in the following cases:

- imminent danger of people
- mechanical accident
- when machine doesn't work, to guarantee the maintenance under conditions of arrest

The systematic use of the emergency button, involves a precocious fatigue of the machine and its components.

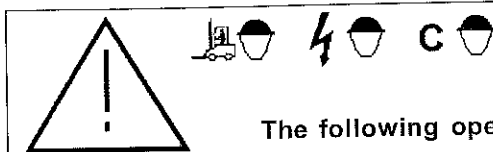
#### 4.8 - RESIDUAL RISKS

Despite the adopted precautions, the followings residual risks remain however



- 2 - Sliding: the plan of job, also because of the water that remains on the same plan, can be slippery. We recommend to clean the machine plan, before climbing us above.

## 5 - MACHINE INSTALLATION



The following operations have to be made by specialized technicians.

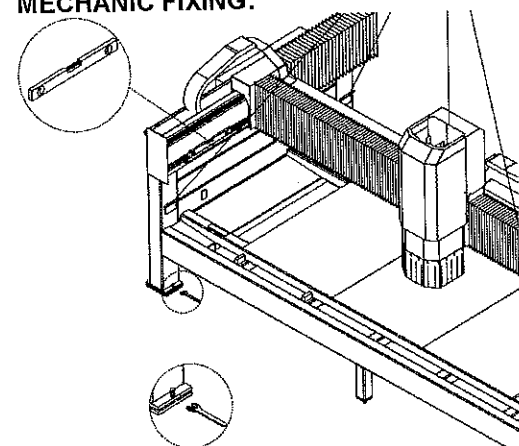
The machine must exclusively be installed in an environment type industrial, specifically a laboratory for marble worker or similar.

### STORAGE:

If it's necessary the storage or you don't use the machine for a long time (anyway no longer 12 months), you have to make the following operations:

- place the machine in a closed place
- apply a protective coat of rust preventer (especially on sliding guides)
- cover it with a plastic length of material to avoid the dust

### MECHANIC FIXING:



Before supporting the machine to the floor, it's necessary to position the 4 metal plates (furnished to outfit) in correspondence of the 4 machine feet. To this point it's necessary to act on the regulation screws in the lower angles of the base, verifying through centesimal level positioned on the rack of the Y axis, the correct level.

Fit the front ports and connect the safety sensors of the opening of the ports.

Connect the air intake of the machine to the workshop system (Min. 6 bar).

Connect the clean water plant (filtered at 50 micron) to the machine water intake (pipe of 20mm.).

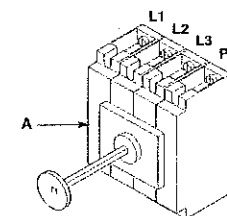
When installation has been completed, fill the water tank (optional).

### ELECTRICAL CONNECTIONS:



Electrical connections must be made by a specialized technician in compliance with local regulations.

- Before connecting the machine, check that the data given on the information plate correspond to the power supply characteristics.
- Turn the main switch (located on the side of the machine) to position O.



- Open the door of the electrical panel and pass the power supply cable through the cable sheath.
- Connect the 400 V three-phase+neutral power line (or other supply as indicated) to terminals L1, L2, L3 and N, and the relative ground line to terminal PE/SC or to terminal marked with appropriate symbol on the main switch.
- Close the door of the electrical panel and turn the main switch to position 1.
- Check that all selectors located on the button panel are in the off position and release the EMERGENCY button.
- Press RESET button to feed the auxiliaries.
- Verify the sense of rotation of the vacuum pump. If the sense of rotation was that wrong, it's necessary to reverse the wiring of 2 phases of feeding of the machine.
- Now check all motor-driven movements

### 5.1 - INSTRUCTIONS FOR FITTING TOOLS



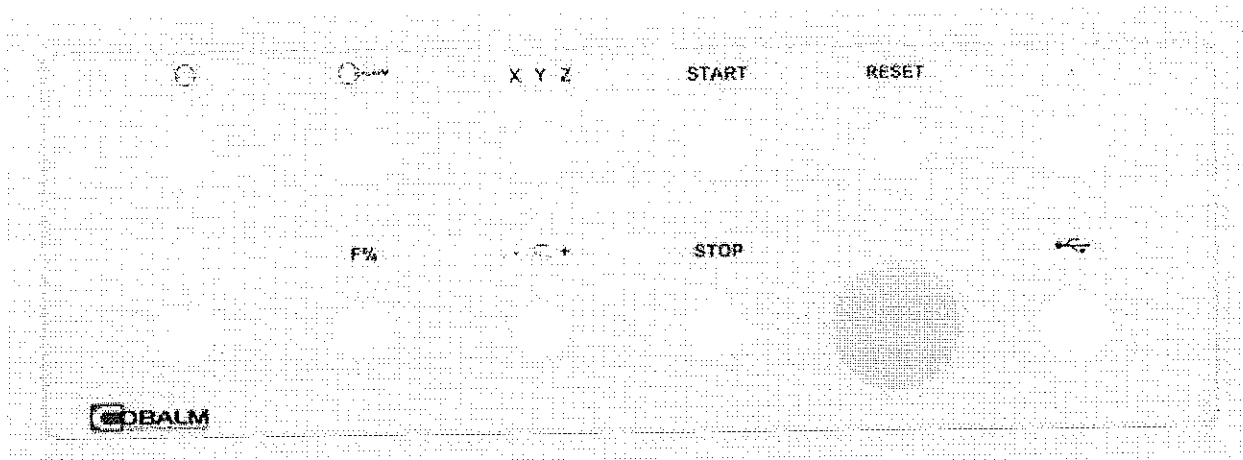
Follow the instructions supplied from the spindle manufacturer.

### 5.2 - DISMANTLEMENT



Adopt the opportune precautions during the dismantlement of the machine, and in particular way, handle the correct disposal of the single materials, according to the laws in force.

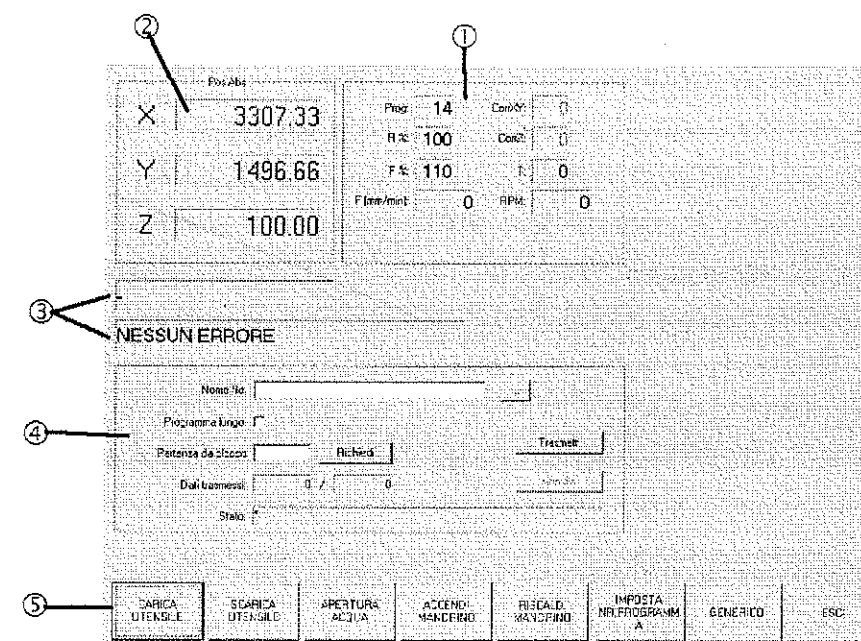
## 6 - BUTTON PANEL



- EMERGENCY** Red mushroom button to immediately halt all machine movements.
- RESET** Blue light-up button. Press to send power to the electrical panel.
- START** Green button that starts the automatic work cycle programmed on a personal computer.
- HOLD** Red light-up button. Allows work to be halted momentarily. To resume work, press the START button. When the HOLD button is pressed down for more than 2 seconds, the numerical control system enters emergency status.
- X Y Z1 Z2** Black selector with three stable positions. Allows the axis to be moved manually to be selected.
- +** Black selector with three unstable positions. When turned to left or right permits manual movement of the axis selected with XYZ.
-  Bright green/red button. It allows the start/stop of vacuum pump.
-  **ALARM** Orange warning-light. It ignites when the tank of vacuum pump is full and it needs to be emptied.
- F %** Double white/black button. Allows work speed to be varied by percentage while the machine is running.

## 7 - OPERATION FUNCTIONS

### 7.1 - PANEL CONTROL / ELECTRONIC DISPLAY



Panel 1: visualization of execution program number (Prog), rapid percentage speed (R%), percentage speed and working in mm/min (F%, F(mm/min), correction tool radius (CorrXY, CorrZ), tool number in the spindle (T:) and rpm spindle (RPM).

Panel 2: visualization of the current position of the spindle head in comparison to the mechanic zero (Pos Abs) or in comparison to the zero piece (Pos Rel). The values 'DAC' and 'Err Pos' are to exclusive diagnostic use.

Panel 3: visualization of code and description of current error.

Panel 4: visualization of advancement state of transmission data to CN.

Panel 5: softkey to speed up some common operations.

### 7.2 - ZEROING OF AXES

Select the programm 99 for execution and press START button. The machine starts the machine zero research procedure. Until this procedure has been terminated it is impossible to proceed with an automatic work cycle.

### 7.3 - MANUAL AXES MOVEMENT

Using selectors X-Y-Z1-Z2 and -/+, the electro-spindle head can be moved along all three movement axes.

## 7.4 - AUTOMATIC AXIS CONTROL

### Execution with one head and without sensor.

Set the tool zero position touching the material with the tool and execute the programm no.80. Besides uncheck the option 'Enable Sensor' and 'Enable head 2' in MARS CAD/CAM.

### Execution with one head with sensor.

Check the right position of the sensor on the head 1 with the programm no.90. Touch the material with the tool and execute the programm no.81. Besides check the option 'Enable sensor' and uncheck 'Enable head 2'.

### Execution with two head without sensor.

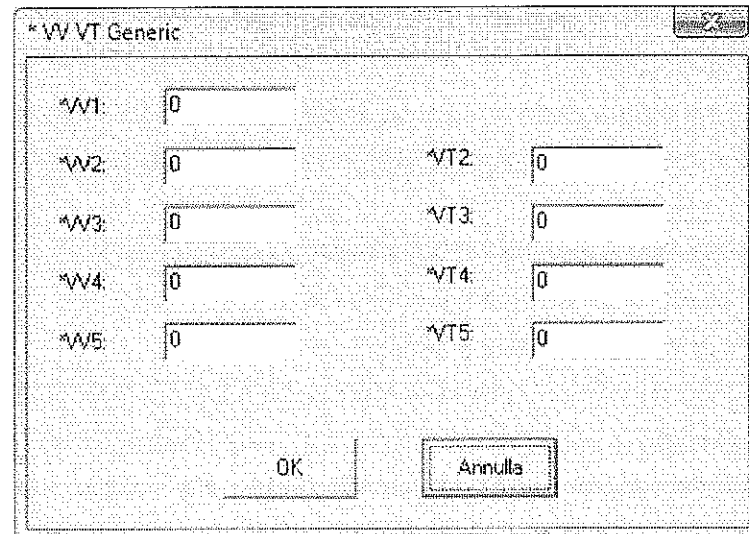
Set the tools zero position touching the material with both tools and execute the programm no.80. Besides uncheck the option 'Enable sensor' and check 'Enable head 2'.

### Execution with two heads with sensors.

Check the right position of the sensors with the programm no.90. Touch the material with the tool on the head one and execute the programm no.81. Touch the material with the tool on the head two and execute the programma no.81. Besides check the option 'Enable sensor' and 'Enable head 2'.

### CAD/CAM.

After preparing the program on a personal computer, send operating instructions to the machine. Check the position of the bit with respect to the slab to be worked and press the START button.



NB: all the parameters must be typed in integer numbers, without spaces or commas.

VT2 - Drilling depth (mm.)

VT3 - Drilling feed (mm./min)

VT4 - Undercut drilling time (msec.)

## 7.5 - ERROR CODES

|            |                            |                                                           |
|------------|----------------------------|-----------------------------------------------------------|
| 02.00.1000 | Air pressure failure       | Verify presence of compressed air.                        |
| 02.00.1001 | Water failure              | Verify feeding clean water.                               |
| 02.00.1003 | Drivers motors failure     | Call service                                              |
| 02.00.1005 | Axis X out of limits       | Verify drawing                                            |
| 02.00.1006 | Axis Y out of limits       | Verify drawing                                            |
| 02.00.1007 | Axis Z out of limits       | Verify drawing                                            |
| 02.00.1008 | Lubrication system failure | Restore grease level in the pump                          |
| 02.00.9003 | Rotating speed (RPM) wrong | insert a correct value                                    |
| 02.01.xxxx | Sensors time-out           | xxxx = 1500+nr. ingresso. see the electrical wire diagram |

For standard errors from numerical control (errors that don't start with 02.) see the 'Programming manual' of the numerical control.

## 7.6 - UTILITY PROGRAMS

To plan the nr. of the program to be performed, press button 'INVIO.' To this point it flashes the cursor on the nr. program. Insert the wished number and press INVIO. To insert the data, press the button WV and follow the indications.

NB: According to the machine configuration, some programs couldn't be there.

- 14 - Switch the electrospindle on (VV2 = RPM from 500 to maximum of electrospindle)
- 16 - Electrospindle warm-up (to run at the beginning of each work turn)
- 18 - Open/close water system (VV1=0 close, VV1=1 internal, VV1=2 external, VV1=3 both)
- 21 - Rapid X move (VV1 = absolute position in cmm.)
- 22 - Rapid Y move (VV1 = absolute position in cmm.)
- 23 - Rapid Z move (VV1 = absolute position in cmm.)
- 80 - Store the Z1/Z2 position as zero point
- 81 - Find the Z1 zero point with sensor
- 82 - Find the Z2 zero point with sensor
- 90 - Shift down the sensor's pistons.
- 99 - Zeroing of axes

## 9 - SERVICE AND MAINTENANCE



The execution of operations of cleaning and maintenance, imply the knowledge of the chapter '4 - safety rules.'

If the operations of cleaning and maintenance are not correctly performed, can determine precarious conditions of operation originating malfunctions to the machine and risks for the operator.

The entrusted operator to such operations, should make them observing the following conditions':

- the operations of cleaning and maintenance of the machine or parts of it, must have effected with the machine not working and with the devices of power supply and pneumatic sectioned.
- make sure to free the machine from possible tools and/or spare parts before the switching on again
- use exclusively original Cobalm spare parts

### 9.1 - MAINTENANCE

|                                                                                 |   |   |   |
|---------------------------------------------------------------------------------|---|---|---|
| Every morning                                                                   |   |   |   |
| Every 40 working hours or once a week                                           |   |   |   |
| Every 150 working hours or once a month                                         |   |   |   |
| verify emergency systems                                                        |   |   | X |
| Program execution of electro spindle heating (look at programs paragraph 9.1.1) |   |   | X |
| Check cleaning air compressed filter                                            |   | X |   |
| Cleaning of X-Y-Z guides                                                        | X |   |   |
| Cleaning and lubrication of X-Y racks and of Z re-circulating ball screw.       | X |   |   |



in case of heavy use of machine, you have to increase the maintenance.



- It's forbidden to wash the machine with throws of pressure water.
- In case of not use the machine for different days, we recommend to effect the monthly maintenance before the stop of the machine.

### 9.1.1 - MAINTENANCE ELECTRO-SPINDLE

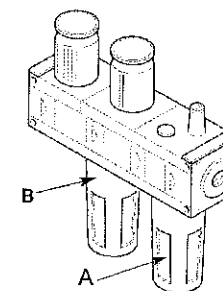
#### KEIL

##### Warm up

During the first daily starting it's necessary to make to develop to the electro-spindle a brief cycle of heating so that to allow the bearings to gradually reach and in way uniform the correct temperature . To perform this cycle already planned in the CN, see paragraph 7.6.

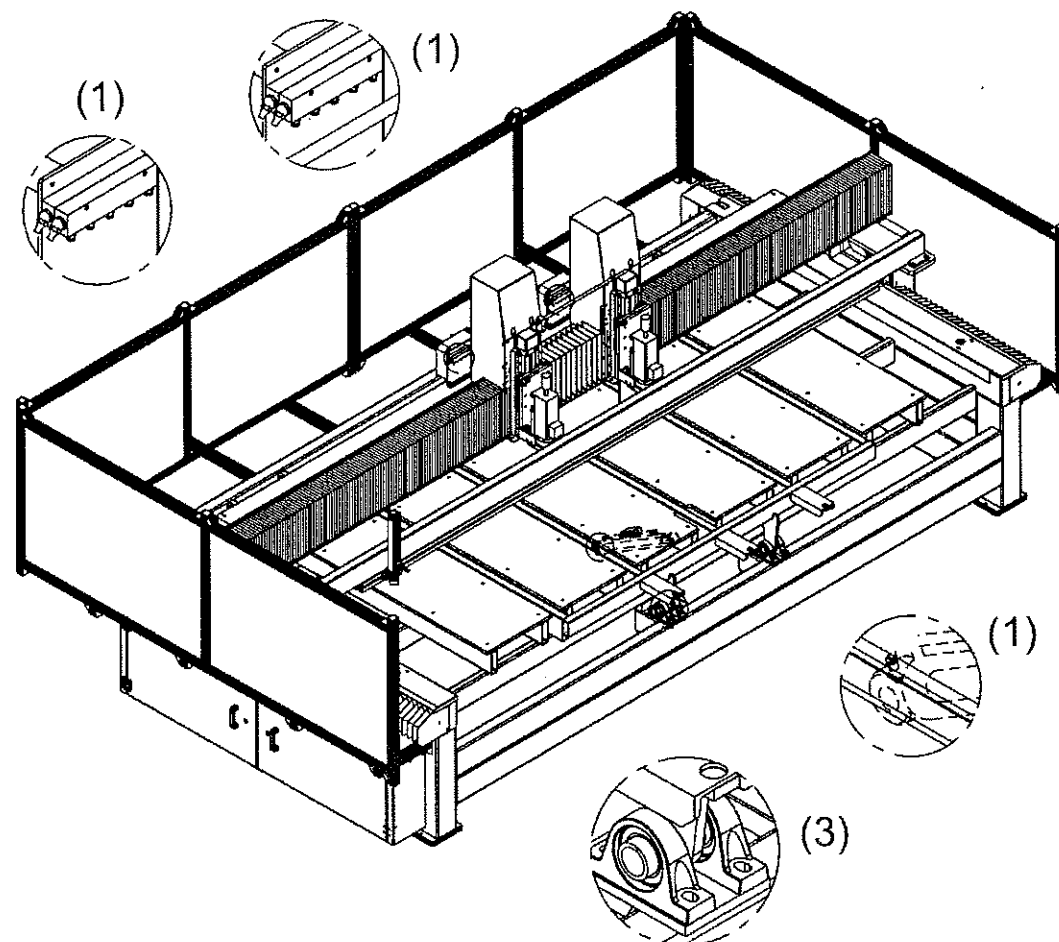
You can find further information on electro-spindle user manual.

### 9.1.2 - MAINTENANCE FILTER LUBRICATION COMPRESSED AIR



Empty the tank B from the possible presence of condensates.  
Fill the tank A with the oil, verifying the correct setting.

## 9.2 - TABLE OF OIL AND GREASE FOR LUBRICATION



Caution in using the lubricants, and in case of replacement arrange the waste disposal according to the current regulations.

|   |                                 | AGIP     | ESSO       | SHELL             |
|---|---------------------------------|----------|------------|-------------------|
| ① | Grease for guide lubrication    | GRMV EP0 | BEACON EP0 |                   |
| ③ | Grease for bearings lubrication | EP 220   | EP 220     | TIVELA A COMPOUND |
| ② | Oil for air plant               |          | FEBIS K32  | TONNA OIL T32     |
| ④ | Oil for vacuum pump             | OTE 68   | NUTO H68   | TELLUS 68         |

## 9.3 - COLOURS

|                |                |              |
|----------------|----------------|--------------|
| Green RAL 6019 | White RAL 7035 | Red RAL 3020 |
|----------------|----------------|--------------|

## 9.4 - CUSTOMER SERVICE

The telephone customer service is at your disposal from Monday to Friday from 08.00 a.m. to 12.00 a.m. and from 14.00 p.m. to 17.00 p.m. (time zone of Central Europe). Before using the customer service, we advise you to fill in the schedule of appendix A where there are useful information to solve quickly your problem.

Phone : +39 0541 942228  
Fax: +39 0541 942238  
Email: [service@cobalm.com](mailto:service@cobalm.com)

## 9.5 - DIAGNOSTIC SEARCH BREAKDOWNS

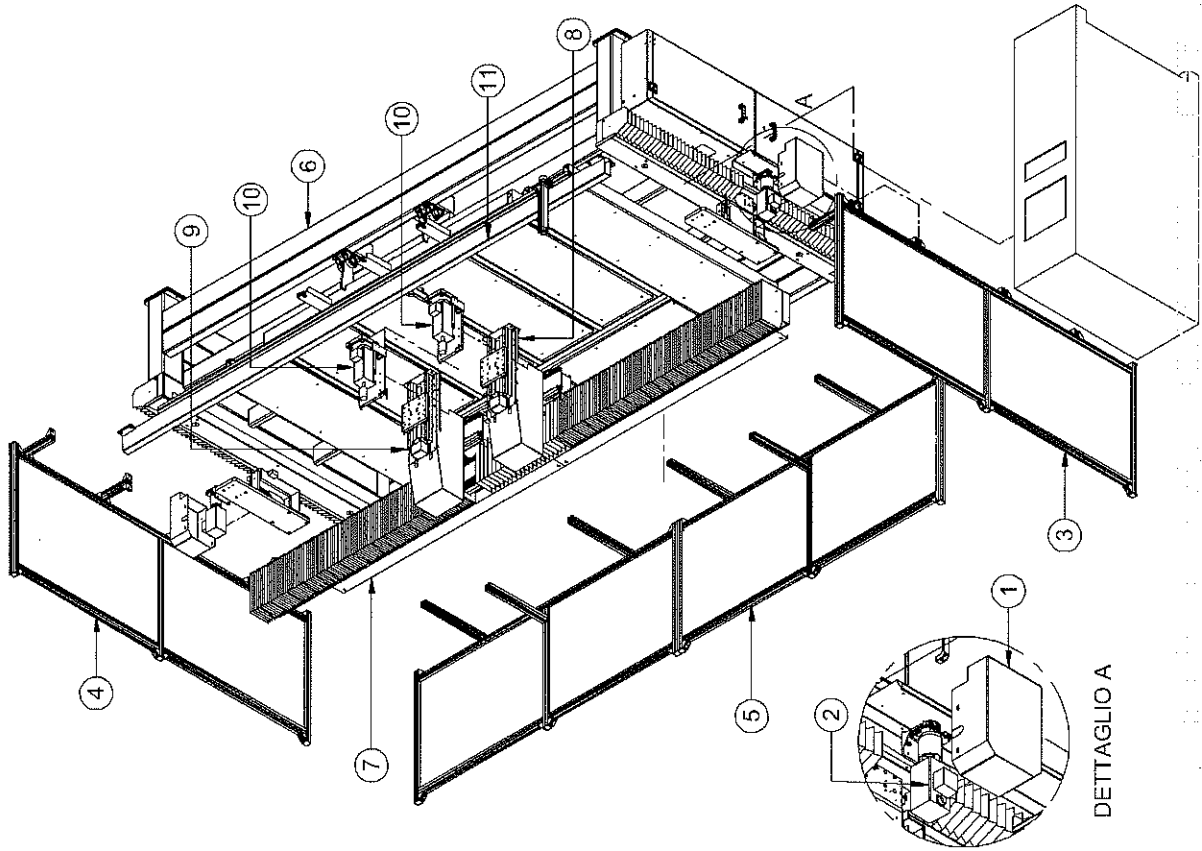


The following operations have to be made by specialized technicians.

|                                       |                                                                                                                                                                                                                                                                          |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The machine doesn't ignite            | verify the line of feeding                                                                                                                                                                                                                                               |
| The button RESET is not restored      | <ul style="list-style-type: none"> <li>- verify release of the buttons of emergency</li> <li>- verify the activation of all magnetothermics inside the electric panel</li> <li>- verify the activation of the relay KA201. If not active, contact the service</li> </ul> |
| The machine is not reseted            | <ul style="list-style-type: none"> <li>- verify with the manual commands the movement of an axis to the time to seek the axis with the anomaly. Contact the service to seek the breakdown.</li> </ul>                                                                    |
| It doesn't ignite the electro-spindle | <ul style="list-style-type: none"> <li>- verify the disconnecting of the option 'Simulation' in the software MARS</li> <li>- verify the lighting of the display of the inverter. In case of out display, contact the service.</li> </ul>                                 |
| Water is not closed                   | <ul style="list-style-type: none"> <li>- clean (eventually to replace) the electro valve of opening / closing water.</li> </ul>                                                                                                                                          |

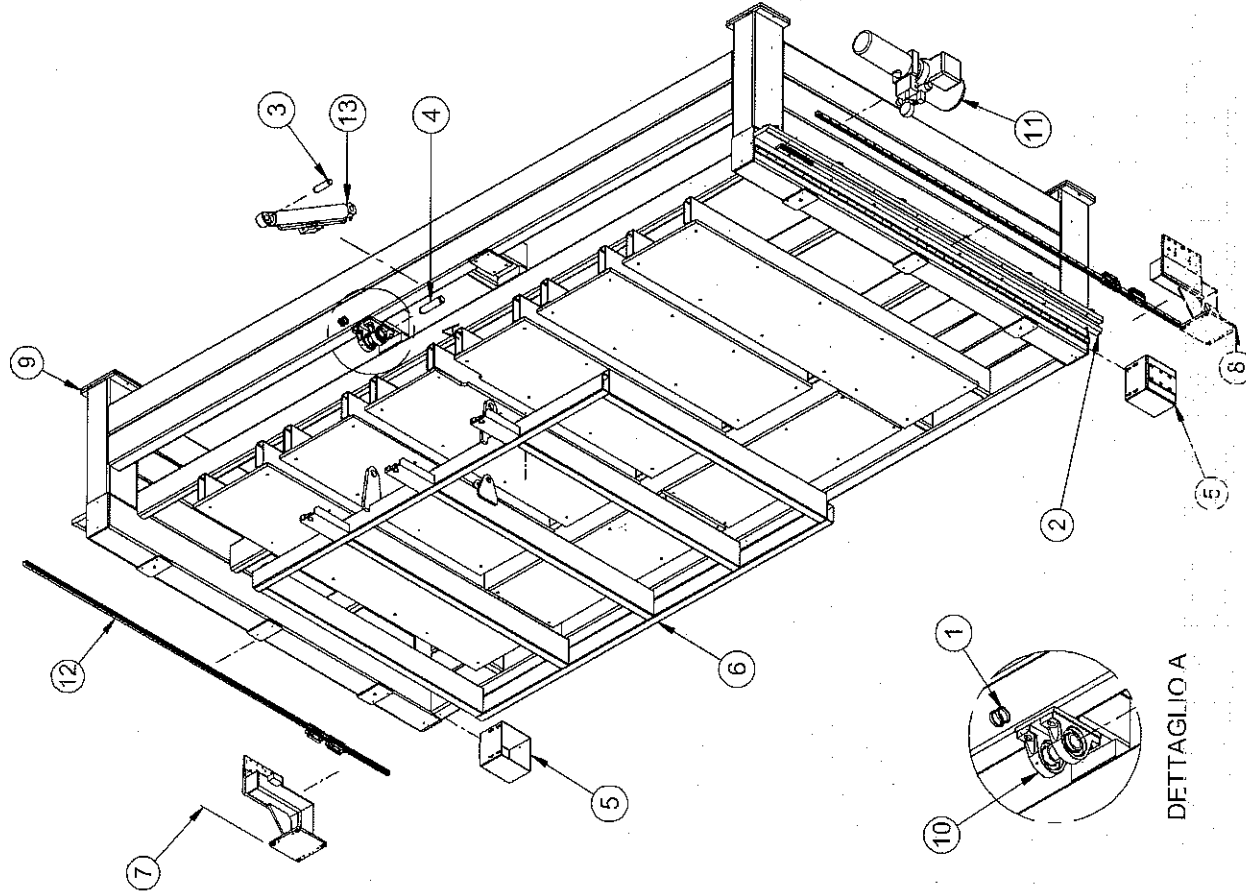


|                         |                            |          |                    |          |                             |          |            |          |            |          |            |          |            |          |
|-------------------------|----------------------------|----------|--------------------|----------|-----------------------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|
| ®<br><b>Co.b.a.l.m.</b> | DENOMINAZIONE<br>FORATRICE |          | FIRMA<br>GIORGETTI |          | CODICE DISEGNO<br>PR99-20-0 |          |            |          |            |          |            |          |            |          |
|                         |                            |          | DATA               |          | CONFIGURAZIONE              |          |            |          |            |          |            |          |            |          |
|                         | INDICE DI MODIFICA         | 1        | FIRMA DATA         | 2        | FIRMA DATA                  | 3        | FIRMA DATA | 4        | FIRMA DATA | 5        | FIRMA DATA | 6        | FIRMA DATA | 7        |
|                         |                            | BOLLA N° | BOLLA N°           | BOLLA N° | BOLLA N°                    | BOLLA N° | BOLLA N°   | BOLLA N° | BOLLA N°   | BOLLA N° | BOLLA N°   | BOLLA N° | BOLLA N°   | BOLLA N° |



Ci riserviamo a termini di Legge la proprietà di questo disegno con divieto di riprodurlo o di renderlo comunque noto a terzi senza la nostra approvazione

|                         |                                   |          |                    |          |                                |          |            |          |            |          |            |          |            |          |
|-------------------------|-----------------------------------|----------|--------------------|----------|--------------------------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|
| ®<br><b>Co.b.a.l.m.</b> | DENOMINAZIONE<br>GRUPPO BASAMENTO |          | FIRMA<br>GIORGETTI |          | CODICE DISEGNO<br>PR46992001/1 |          |            |          |            |          |            |          |            |          |
|                         |                                   |          | DATA               |          | CONFIGURAZIONE                 |          |            |          |            |          |            |          |            |          |
|                         | INDICE DI MODIFICA                | 1        | FIRMA DATA         | 2        | FIRMA DATA                     | 3        | FIRMA DATA | 4        | FIRMA DATA | 5        | FIRMA DATA | 6        | FIRMA DATA | 7        |
|                         |                                   | BOLLA N° | BOLLA N°           | BOLLA N° | BOLLA N°                       | BOLLA N° | BOLLA N°   | BOLLA N° | BOLLA N°   | BOLLA N° | BOLLA N°   | BOLLA N° | BOLLA N°   | BOLLA N° |



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|                         |                            |          |                    |          |                             |          |            |          |            |          |            |          |            |          |
|-------------------------|----------------------------|----------|--------------------|----------|-----------------------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|
| ®<br><b>Co.b.a.l.m.</b> | DENOMINAZIONE<br>FORATRICE |          | FIRMA<br>GIORGETTI |          | CODICE DISEGNO<br>PR99-20-0 |          |            |          |            |          |            |          |            |          |
|                         |                            |          | DATA               |          | CONFIGURAZIONE              |          |            |          |            |          |            |          |            |          |
|                         | INDICE DI MODIFICA         | 1        | FIRMA DATA         | 2        | FIRMA DATA                  | 3        | FIRMA DATA | 4        | FIRMA DATA | 5        | FIRMA DATA | 6        | FIRMA DATA | 7        |
|                         |                            | BOLLA N° | BOLLA N°           | BOLLA N° | BOLLA N°                    | BOLLA N° | BOLLA N°   | BOLLA N° | BOLLA N°   | BOLLA N° | BOLLA N°   | BOLLA N° | BOLLA N°   | BOLLA N° |

| POS. | CODICE     | Q.T.A' |
|------|------------|--------|
| 1    | 05A43234   | 2      |
| 2    | 46750023   | 2      |
| 3    | 46750025   | 1      |
| 4    | 46750026   | 1      |
| 5    | 46750027   | 1      |
| 6    | PR46992001 | 1      |
| 7    | PR46992002 | 1      |
| 8    | PR46992003 | 1      |
| 9    | PR46992004 | 1      |
| 10   | PR46992005 | 2      |
| 11   | PR46992006 | 1      |

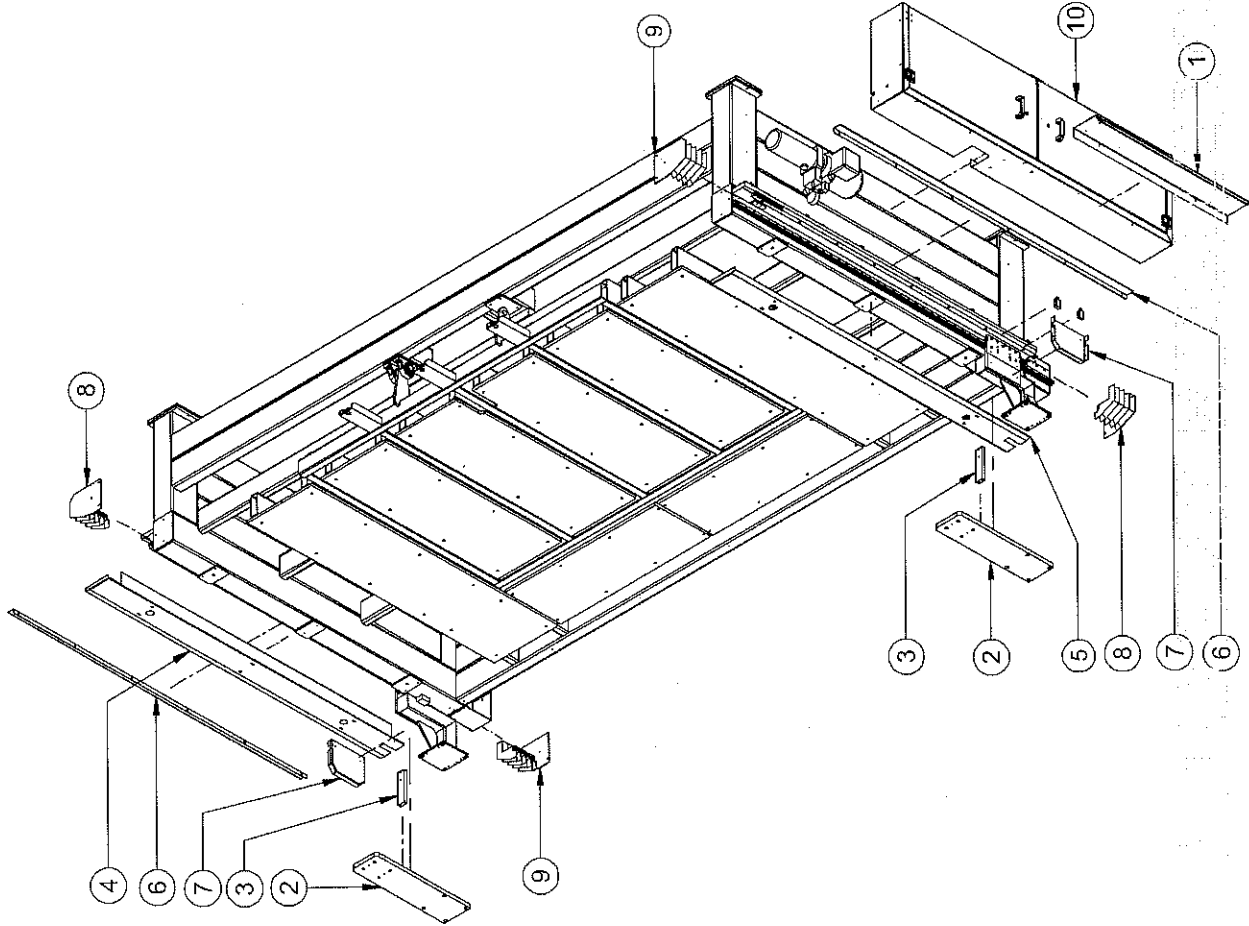
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|                         |                                   |          |                    |          |                                |          |            |          |            |          |            |          |            |          |
|-------------------------|-----------------------------------|----------|--------------------|----------|--------------------------------|----------|------------|----------|------------|----------|------------|----------|------------|----------|
| ®<br><b>Co.b.a.l.m.</b> | DENOMINAZIONE<br>GRUPPO BASAMENTO |          | FIRMA<br>GIORGETTI |          | CODICE DISEGNO<br>PR46992001/1 |          |            |          |            |          |            |          |            |          |
|                         |                                   |          | DATA               |          | CONFIGURAZIONE                 |          |            |          |            |          |            |          |            |          |
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|                         |                                   | BOLLA N° | BOLLA N°           | BOLLA N° | BOLLA N°                       | BOLLA N° | BOLLA N°   | BOLLA N° | BOLLA N°   | BOLLA N° | BOLLA N°   | BOLLA N° | BOLLA N°   | BOLLA N° |

| POS. | CODICE   | Q.T.A' |
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| 1    | 03A11241 | 4      |
| 2    | 03A16171 | 1      |
| 3    | 03A21064 | 2      |
| 4    | 03A21128 | 2      |
| 5    | 03A41505 | 2      |
| 6    | 05A34121 | 1      |
| 7    | 05A56055 | 1      |
| 8    | 05A56056 | 1      |
| 9    | 05A61147 | 1      |
| 10   | 19810003 | 4      |
| 11   | 46530017 | 1      |
| 12   | 46750018 | 2      |
| 13   | 99550002 | 1      |

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|                          |               |   |                  |   |         |   |           |   |                |   |         |   |         |   |
|--------------------------|---------------|---|------------------|---|---------|---|-----------|---|----------------|---|---------|---|---------|---|
| Co.b.a.l.m. <sup>®</sup> | DENOMINAZIONE |   | GRUPPO BASAMENTO |   | FIRMA   |   | GIORGETTI |   | CODICE DISEGNO |   |         |   |         |   |
|                          |               |   |                  |   | DATA    |   |           |   | PR46992001/2   |   |         |   |         |   |
|                          |               |   |                  |   |         |   |           |   | CONFIGURAZIONE |   |         |   |         |   |
| INDICE DI MODIFICA       |               | 1 | FIRMA            | 2 | FIRMA   | 3 | FIRMA     | 4 | FIRMA          | 5 | FIRMA   | 6 | FIRMA   | 7 |
|                          |               |   | DATA             |   | DATA    |   | DATA      |   | DATA           |   | DATA    |   | DATA    |   |
|                          |               |   | BOLLAN°          |   | BOLLAN° |   | BOLLAN°   |   | BOLLAN°        |   | BOLLAN° |   | BOLLAN° |   |



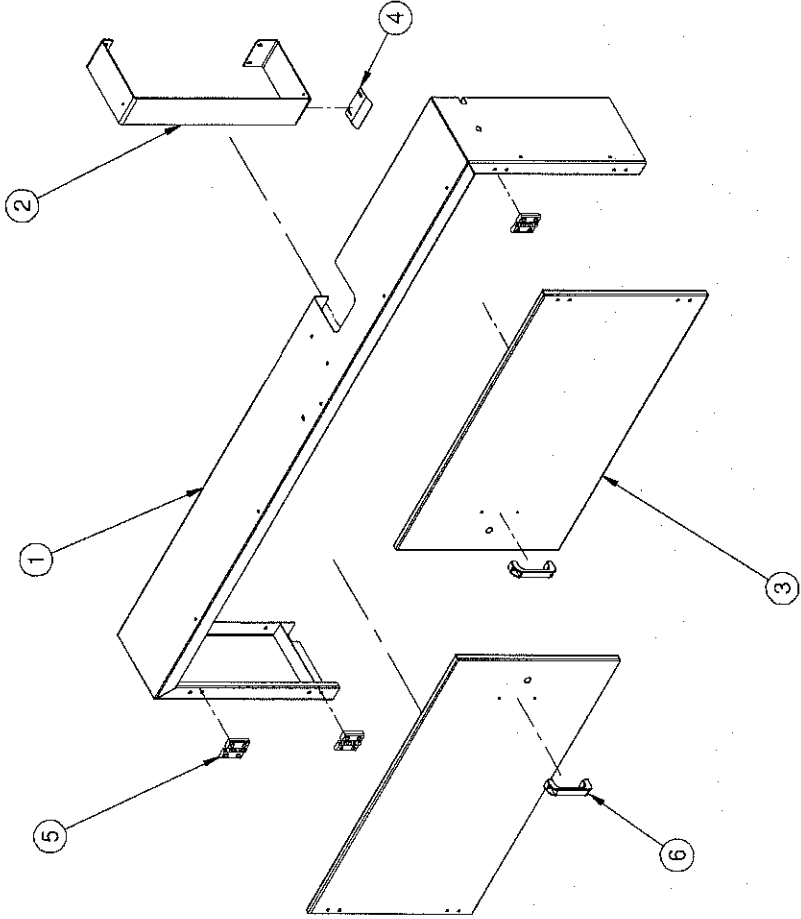
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|                          |               |   |                  |   |         |   |           |   |                |   |         |   |         |   |
|--------------------------|---------------|---|------------------|---|---------|---|-----------|---|----------------|---|---------|---|---------|---|
| Co.b.a.l.m. <sup>®</sup> | DENOMINAZIONE |   | GRUPPO BASAMENTO |   | FIRMA   |   | GIORGETTI |   | CODICE DISEGNO |   |         |   |         |   |
|                          |               |   |                  |   | DATA    |   |           |   | PR46992001/2   |   |         |   |         |   |
|                          |               |   |                  |   |         |   |           |   | CONFIGURAZIONE |   |         |   |         |   |
| INDICE DI MODIFICA       |               | 1 | FIRMA            | 2 | FIRMA   | 3 | FIRMA     | 4 | FIRMA          | 5 | FIRMA   | 6 | FIRMA   | 7 |
|                          |               |   | DATA             |   | DATA    |   | DATA      |   | DATA           |   | DATA    |   | DATA    |   |
|                          |               |   | BOLLAN°          |   | BOLLAN° |   | BOLLAN°   |   | BOLLAN°        |   | BOLLAN° |   | BOLLAN° |   |

|      |          |       |
|------|----------|-------|
| POS. | CODICE   | Q.TA' |
| 1    | 03604022 | 1     |
| 2    | 03A16358 | 2     |
| 3    | 03A31222 | 2     |
| 4    | 03A41503 | 1     |
| 5    | 03A41504 | 1     |
| 6    | 03A41506 | 2     |
| 7    | 03A43235 | 2     |
| 8    | 09A26148 | 2     |
| 9    | 09A26149 | 2     |
| 10   | 46680093 | 1     |

|                          |               |   |                       |   |         |   |           |   |                |   |         |   |         |   |
|--------------------------|---------------|---|-----------------------|---|---------|---|-----------|---|----------------|---|---------|---|---------|---|
| Co.b.a.l.m. <sup>®</sup> | DENOMINAZIONE |   | GR. CASSETTA LATERALE |   | FIRMA   |   | GIORGETTI |   | CODICE DISEGNO |   |         |   |         |   |
|                          |               |   |                       |   | DATA    |   |           |   | 46680093       |   |         |   |         |   |
|                          |               |   |                       |   |         |   |           |   | CONFIGURAZIONE |   |         |   |         |   |
| INDICE DI MODIFICA       |               | 1 | FIRMA                 | 2 | FIRMA   | 3 | FIRMA     | 4 | FIRMA          | 5 | FIRMA   | 6 | FIRMA   | 7 |
|                          |               |   | DATA                  |   | DATA    |   | DATA      |   | DATA           |   | DATA    |   | DATA    |   |
|                          |               |   | BOLLAN°               |   | BOLLAN° |   | BOLLAN°   |   | BOLLAN°        |   | BOLLAN° |   | BOLLAN° |   |



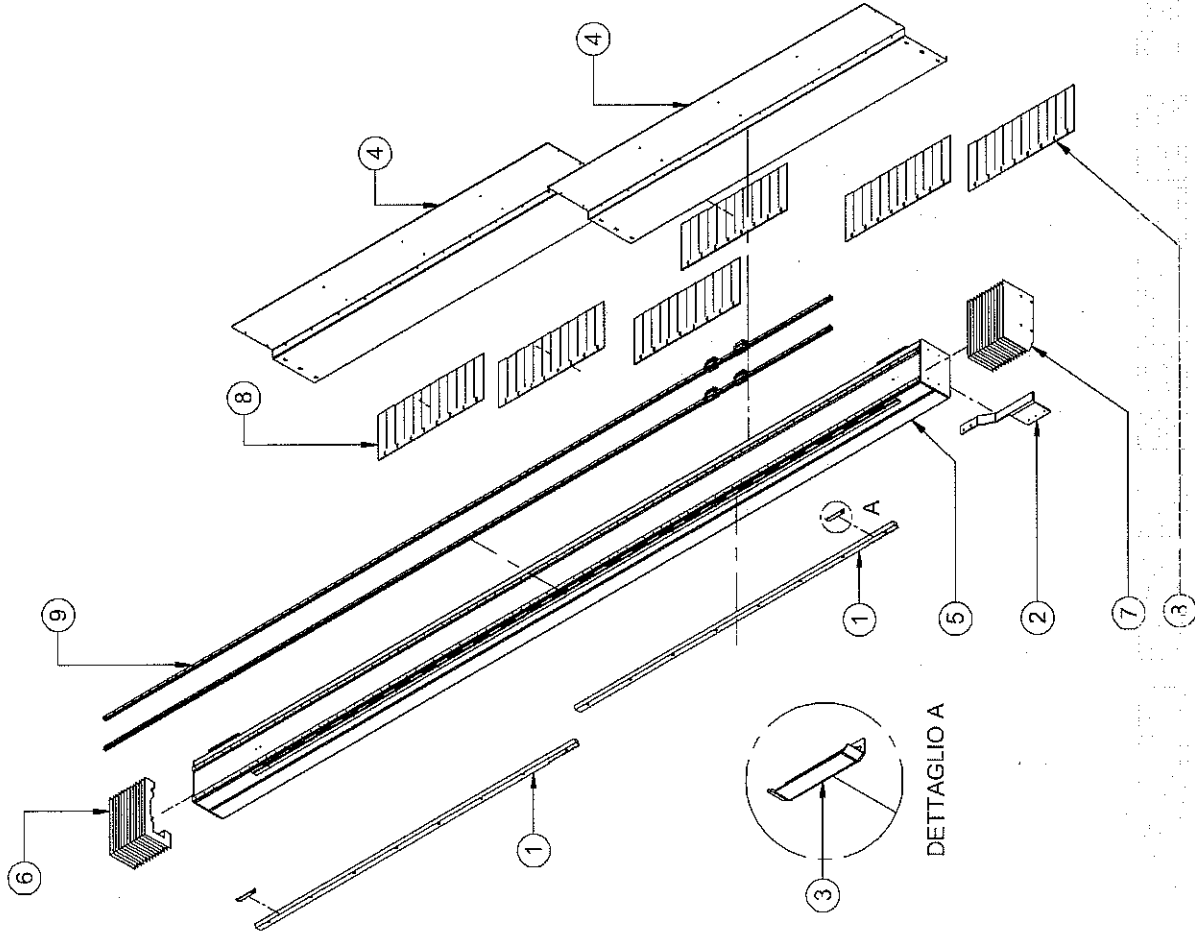
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|                          |               |   |                       |   |         |   |           |   |                |   |         |   |         |   |
|--------------------------|---------------|---|-----------------------|---|---------|---|-----------|---|----------------|---|---------|---|---------|---|
| Co.b.a.l.m. <sup>®</sup> | DENOMINAZIONE |   | GR. CASSETTA LATERALE |   | FIRMA   |   | GIORGETTI |   | CODICE DISEGNO |   |         |   |         |   |
|                          |               |   |                       |   | DATA    |   |           |   | 46680093       |   |         |   |         |   |
|                          |               |   |                       |   |         |   |           |   | CONFIGURAZIONE |   |         |   |         |   |
| INDICE DI MODIFICA       |               | 1 | FIRMA                 | 2 | FIRMA   | 3 | FIRMA     | 4 | FIRMA          | 5 | FIRMA   | 6 | FIRMA   | 7 |
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|                          |               |   | BOLLAN°               |   | BOLLAN° |   | BOLLAN°   |   | BOLLAN°        |   | BOLLAN° |   | BOLLAN° |   |

|      |          |       |
|------|----------|-------|
| POS. | CODICE   | Q.TA' |
| 1    | 03A41415 | 1     |
| 2    | 03A41416 | 1     |
| 3    | 03A41417 | 2     |
| 4    | 03A41459 | 1     |
| 5    | 11023001 | 3     |
| 6    | 11053139 | 2     |

|                         |                    |         |               |         |                    |         |                              |         |               |         |               |         |               |         |               |
|-------------------------|--------------------|---------|---------------|---------|--------------------|---------|------------------------------|---------|---------------|---------|---------------|---------|---------------|---------|---------------|
| ®<br><b>Co.b.a.l.m.</b> | DENOMINAZIONE      |         | GRUPPO TRAVE  |         | FIRMA<br>GIORGETTI |         | CODICE DISEGNO<br>PR46992002 |         |               |         |               |         |               |         |               |
|                         |                    |         |               |         | DATA               |         | CONFIGURAZIONE               |         |               |         |               |         |               |         |               |
|                         | INDICE DI MODIFICA | 1       | FIRMA<br>DATA | 2       | FIRMA<br>DATA      | 3       | FIRMA<br>DATA                | 4       | FIRMA<br>DATA | 5       | FIRMA<br>DATA | 6       | FIRMA<br>DATA | 7       | FIRMA<br>DATA |
|                         |                    | BOLLANT | BOLLANT       | BOLLANT | BOLLANT            | BOLLANT | BOLLANT                      | BOLLANT | BOLLANT       | BOLLANT | BOLLANT       | BOLLANT | BOLLANT       | BOLLANT | BOLLANT       |



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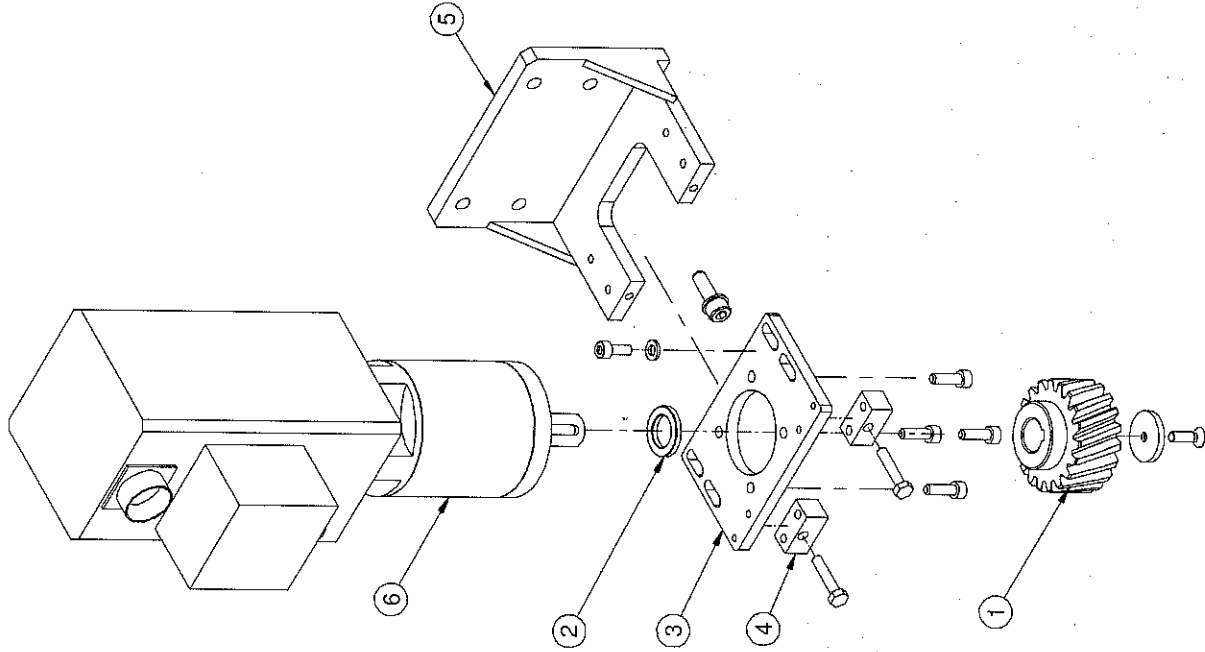
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|-------------------------|--------------------|---------|---------------|---------|--------------------|---------|------------------------------|---------|---------------|---------|---------------|---------|---------------|---------|---------------|
| ®<br><b>Co.b.a.l.m.</b> | DENOMINAZIONE      |         | GRUPPO TRAVE  |         | FIRMA<br>GIORGETTI |         | CODICE DISEGNO<br>PR46992002 |         |               |         |               |         |               |         |               |
|                         |                    |         |               |         | DATA               |         | CONFIGURAZIONE               |         |               |         |               |         |               |         |               |
|                         | INDICE DI MODIFICA | 1       | FIRMA<br>DATA | 2       | FIRMA<br>DATA      | 3       | FIRMA<br>DATA                | 4       | FIRMA<br>DATA | 5       | FIRMA<br>DATA | 6       | FIRMA<br>DATA | 7       | FIRMA<br>DATA |
|                         |                    | BOLLANT | BOLLANT       | BOLLANT | BOLLANT            | BOLLANT | BOLLANT                      | BOLLANT | BOLLANT       | BOLLANT | BOLLANT       | BOLLANT | BOLLANT       | BOLLANT | BOLLANT       |

| POS. | CODICE   | Q.TA' |
|------|----------|-------|
| 1    | 03A16171 | 2     |
| 2    | 03A41410 | 1     |
| 3    | 03A41412 | 2     |
| 4    | 03A41807 | 2     |
| 5    | 05A61098 | 1     |
| 6    | 09A26146 | 1     |
| 7    | 09A26147 | 1     |
| 8    | 10300705 | 6     |
| 9    | 46750019 | 2     |

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|                         |                    |         |                 |         |                    |         |                            |         |               |         |               |         |               |         |               |
|-------------------------|--------------------|---------|-----------------|---------|--------------------|---------|----------------------------|---------|---------------|---------|---------------|---------|---------------|---------|---------------|
| ®<br><b>Co.b.a.l.m.</b> | DENOMINAZIONE      |         | GRUPPO MOTORE Y |         | FIRMA<br>GIORGETTI |         | CODICE DISEGNO<br>46750023 |         |               |         |               |         |               |         |               |
|                         |                    |         |                 |         | DATA               |         | CONFIGURAZIONE             |         |               |         |               |         |               |         |               |
|                         | INDICE DI MODIFICA | 1       | FIRMA<br>DATA   | 2       | FIRMA<br>DATA      | 3       | FIRMA<br>DATA              | 4       | FIRMA<br>DATA | 5       | FIRMA<br>DATA | 6       | FIRMA<br>DATA | 7       | FIRMA<br>DATA |
|                         |                    | BOLLANT | BOLLANT         | BOLLANT | BOLLANT            | BOLLANT | BOLLANT                    | BOLLANT | BOLLANT       | BOLLANT | BOLLANT       | BOLLANT | BOLLANT       | BOLLANT | BOLLANT       |

| POS. | CODICE   | Q.TA' |
|------|----------|-------|
| 1    | 03A11116 | 1     |
| 2    | 03A11148 | 1     |
| 3    | 03A31112 | 1     |
| 4    | 03A31188 | 2     |
| 5    | 05A31179 | 1     |
| 6    | 31010003 | 1     |

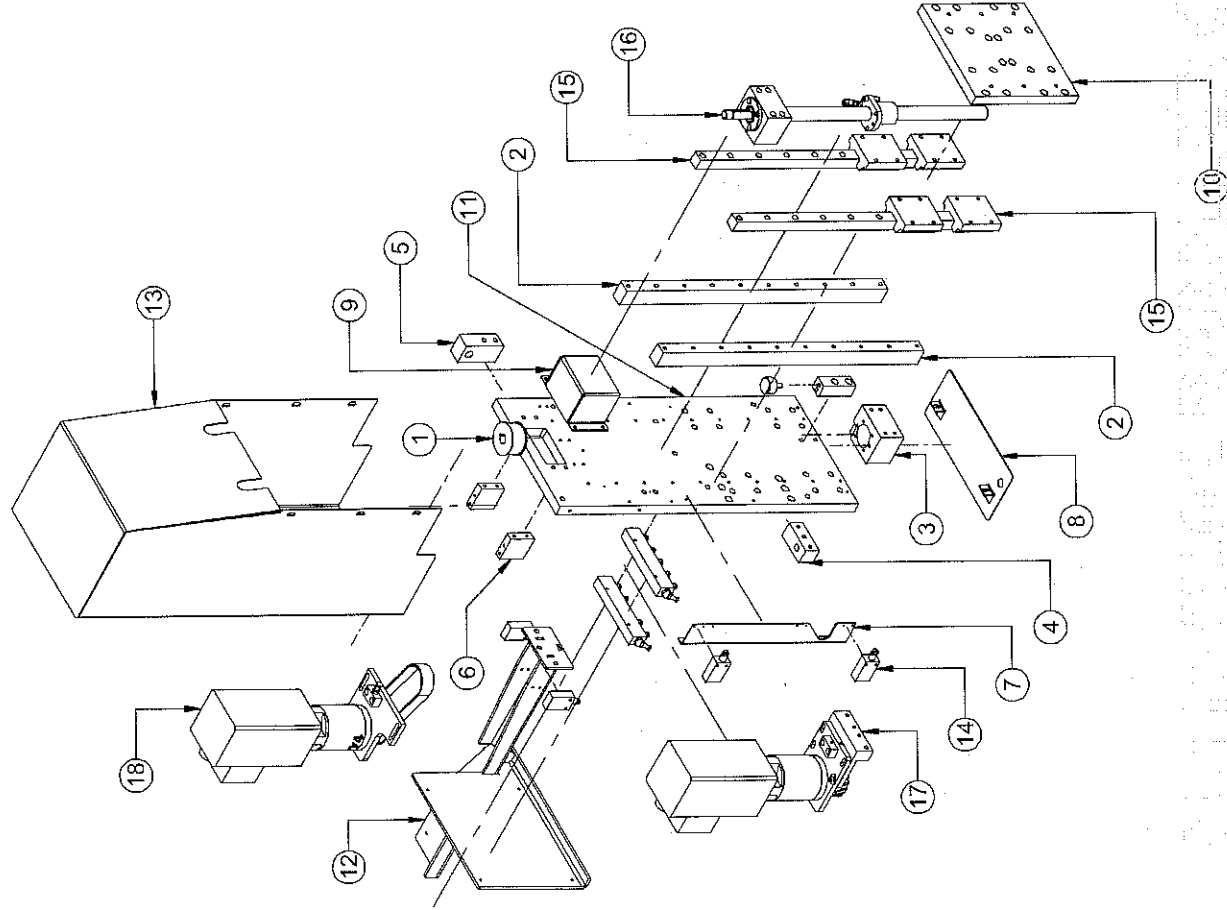


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|                         |                    |         |                 |         |                    |         |                            |         |               |         |               |         |               |         |               |
|-------------------------|--------------------|---------|-----------------|---------|--------------------|---------|----------------------------|---------|---------------|---------|---------------|---------|---------------|---------|---------------|
| ®<br><b>Co.b.a.l.m.</b> | DENOMINAZIONE      |         | GRUPPO MOTORE Y |         | FIRMA<br>GIORGETTI |         | CODICE DISEGNO<br>46750023 |         |               |         |               |         |               |         |               |
|                         |                    |         |                 |         | DATA               |         | CONFIGURAZIONE             |         |               |         |               |         |               |         |               |
|                         | INDICE DI MODIFICA | 1       | FIRMA<br>DATA   | 2       | FIRMA<br>DATA      | 3       | FIRMA<br>DATA              | 4       | FIRMA<br>DATA | 5       | FIRMA<br>DATA | 6       | FIRMA<br>DATA | 7       | FIRMA<br>DATA |
|                         |                    | BOLLANT | BOLLANT         | BOLLANT | BOLLANT            | BOLLANT | BOLLANT                    | BOLLANT | BOLLANT       | BOLLANT | BOLLANT       | BOLLANT | BOLLANT       | BOLLANT | BOLLANT       |

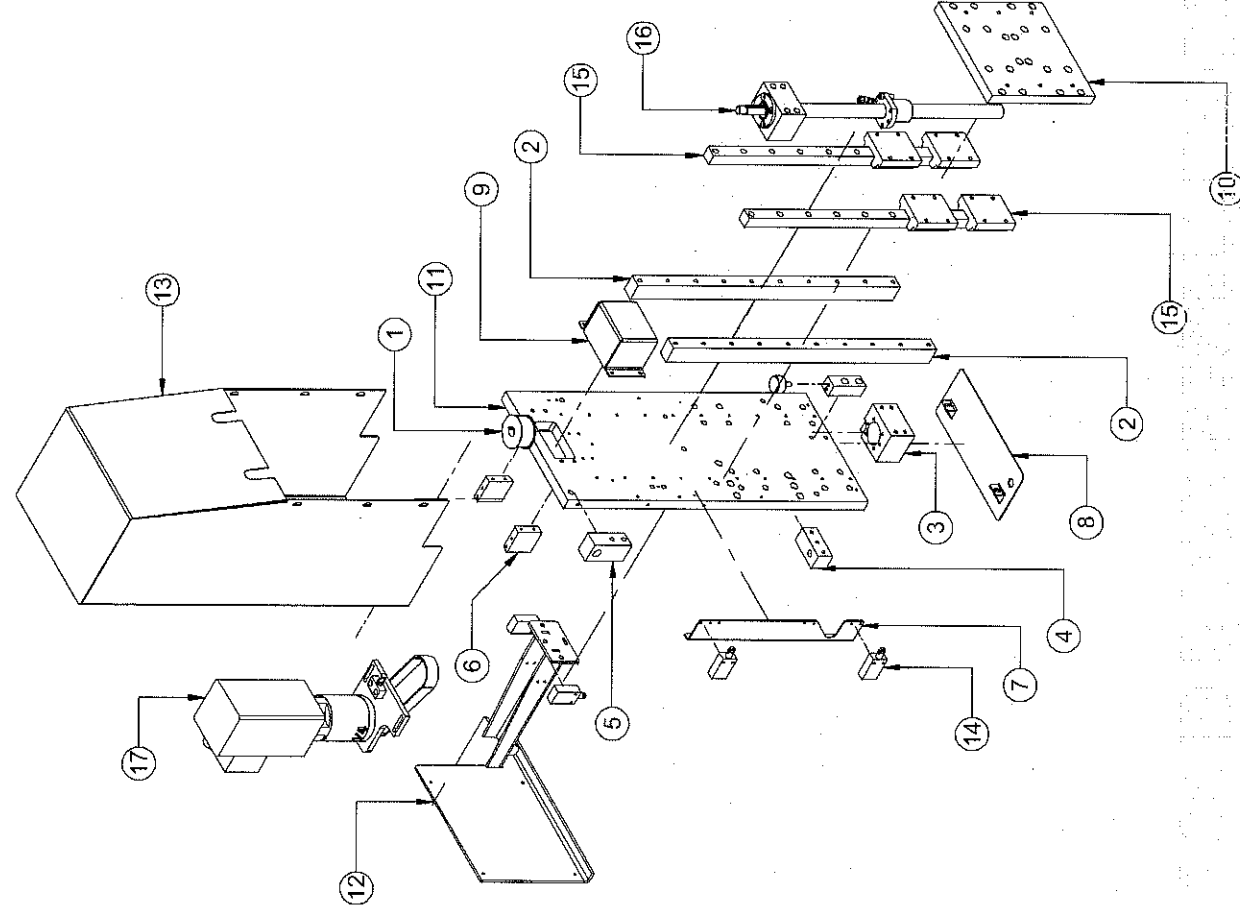
Ci riserviamo a termini di Legge la proprietà di questo disegno con divieto di riprodurlo o di renderlo comunque noto a terzi senza la nostra approvazione

| DENOMINAZIONE | GRUPPO TESTA       |   |   |   | FIRMA |   |   |   | CODICE DISEGNO |            |            |            |
|---------------|--------------------|---|---|---|-------|---|---|---|----------------|------------|------------|------------|
|               | INDICE DI MODIFICA | 1 | 2 | 3 | 4     | 5 | 6 | 7 | PR46992003     | PR46992003 | PR46992003 | PR46992003 |
| Co.b.a.l.m.   | FIRMA              | 1 | 2 | 3 | 4     | 5 | 6 | 7 | GIORGETTI      | GIORGETTI  | GIORGETTI  | GIORGETTI  |
|               | DATA               | 1 | 2 | 3 | 4     | 5 | 6 | 7 | DATA           | DATA       | DATA       | DATA       |
|               | BOLLAN°            | 1 | 2 | 3 | 4     | 5 | 6 | 7 | BOLLAN°        | BOLLAN°    | BOLLAN°    | BOLLAN°    |
|               | BOLLAN°            | 1 | 2 | 3 | 4     | 5 | 6 | 7 | BOLLAN°        | BOLLAN°    | BOLLAN°    | BOLLAN°    |



Ci riserviamo a termini di Legge la proprietà di questo disegno con divieto di riprodurlo o di renderlo comunque noto a terzi senza la nostra approvazione

| DENOMINAZIONE | GRUPPO TESTA       |   |   |   | FIRMA |   |   |   | CODICE DISEGNO |            |            |            |
|---------------|--------------------|---|---|---|-------|---|---|---|----------------|------------|------------|------------|
|               | INDICE DI MODIFICA | 1 | 2 | 3 | 4     | 5 | 6 | 7 | PR46992004     | PR46992004 | PR46992004 | PR46992004 |
| Co.b.a.l.m.   | FIRMA              | 1 | 2 | 3 | 4     | 5 | 6 | 7 | GIORGETTI      | GIORGETTI  | GIORGETTI  | GIORGETTI  |
|               | DATA               | 1 | 2 | 3 | 4     | 5 | 6 | 7 | DATA           | DATA       | DATA       | DATA       |
|               | BOLLAN°            | 1 | 2 | 3 | 4     | 5 | 6 | 7 | BOLLAN°        | BOLLAN°    | BOLLAN°    | BOLLAN°    |
|               | BOLLAN°            | 1 | 2 | 3 | 4     | 5 | 6 | 7 | BOLLAN°        | BOLLAN°    | BOLLAN°    | BOLLAN°    |



Ci riserviamo a termini di Legge la proprietà di questo disegno con divieto di riprodurlo o di renderlo comunque noto a terzi senza la nostra approvazione

| DENOMINAZIONE            | GRUPPO TESTA       |         |         |          | FIRMA      |         |          |         | CODICE DISEGNO |          |       |      |          |   |   |          |   |   |          |   |   |          |   |   |          |   |   |          |   |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |            |    |
|--------------------------|--------------------|---------|---------|----------|------------|---------|----------|---------|----------------|----------|-------|------|----------|---|---|----------|---|---|----------|---|---|----------|---|---|----------|---|---|----------|---|----|----------|----|----|----------|----|----|----------|----|----|----------|----|----|----------|----|----|----------|----|----|----------|----|----|----------|----|----|------------|----|
|                          | GIORGETTI          |         |         |          | PR46992003 |         |          |         |                |          |       |      |          |   |   |          |   |   |          |   |   |          |   |   |          |   |   |          |   |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |            |    |
| Co.b.a.l.m. <sup>®</sup> | INDICE DI MODIFICA | 1       | 2       | 3        | 4          | 5       | 6        | 7       | FIRMA          | DATA     | FIRMA | DATA |          |   |   |          |   |   |          |   |   |          |   |   |          |   |   |          |   |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |            |    |
|                          | MODIFICA           | BOLLAN° | BOLLAN° | BOLLAN°  | BOLLAN°    | BOLLAN° | BOLLAN°  | BOLLAN° | DATA           | DATA     | DATA  | DATA |          |   |   |          |   |   |          |   |   |          |   |   |          |   |   |          |   |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |          |    |    |            |    |
| POS.                     | CODICE             | Q.TA'   | 1       | 03A11153 | 1          | 2       | 03A16025 | 2       | 3              | 03A16093 | 3     | 4    | 03A16176 | 4 | 5 | 03A16359 | 5 | 6 | 03A31220 | 6 | 7 | 03A41024 | 7 | 8 | 03A41460 | 8 | 9 | 03A43352 | 9 | 10 | 03A51066 | 10 | 11 | 03A51095 | 11 | 12 | 05A41808 | 12 | 13 | 05A43351 | 13 | 14 | 33850103 | 14 | 15 | 46660016 | 15 | 16 | 46680055 | 16 | 17 | 46750022 | 17 | 18 | PR46992007 | 18 |

| POS. | CODICE     | Q.TA' |
|------|------------|-------|
| 1    | 03A11153   | 1     |
| 2    | 03A16025   | 2     |
| 3    | 03A16093   | 1     |
| 4    | 03A16176   | 1     |
| 5    | 03A16359   | 1     |
| 6    | 03A31220   | 2     |
| 7    | 03A41024   | 1     |
| 8    | 03A41460   | 1     |
| 9    | 03A43352   | 1     |
| 10   | 03A51066   | 1     |
| 11   | 03A51095   | 1     |
| 12   | 05A41808   | 1     |
| 13   | 05A43351   | 1     |
| 14   | 33850103   | 2     |
| 15   | 46660016   | 2     |
| 16   | 46680055   | 1     |
| 17   | 46750022   | 1     |
| 18   | PR46992007 | 1     |

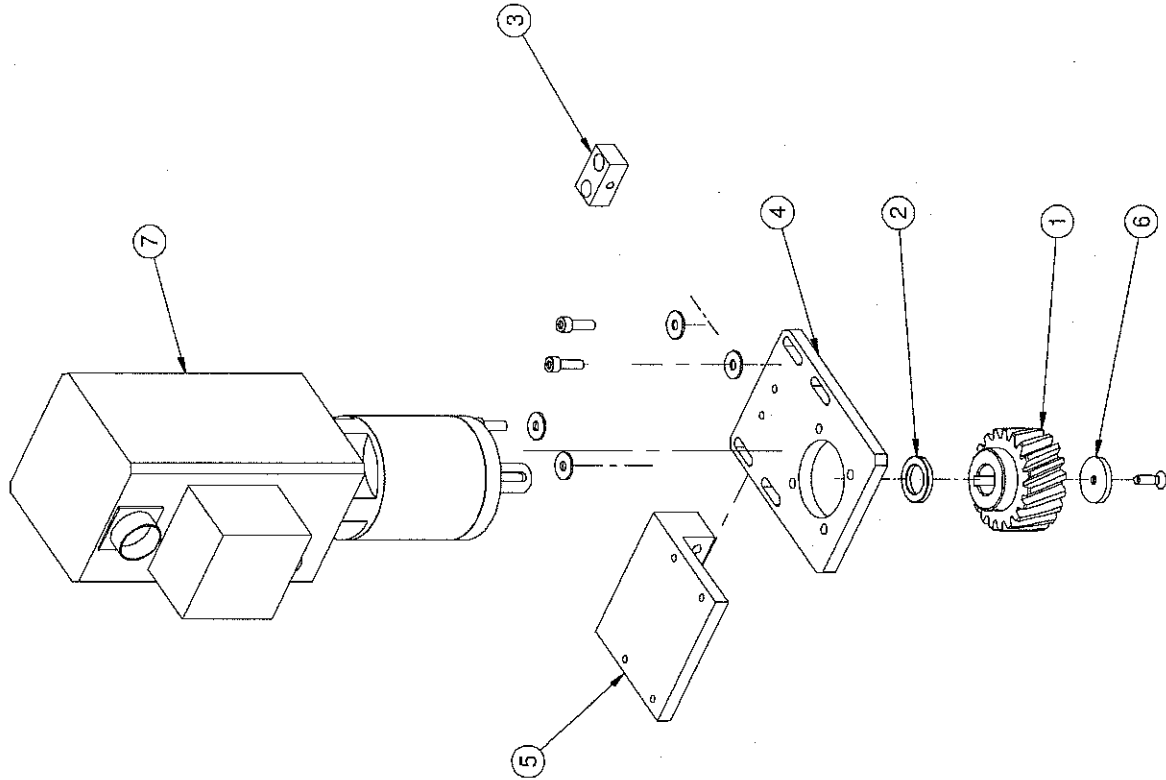
Ci riserviamo a termini di Legge la proprietà di questo disegno con divieto di riprodurlo o di renderlo comunque noto a terzi senza la nostra approvazione

|                                     |                    |  |  |  |           |  |         |  |                |  |         |  |         |  |         |  |         |  |
|-------------------------------------|--------------------|--|--|--|-----------|--|---------|--|----------------|--|---------|--|---------|--|---------|--|---------|--|
| <div>®</div> <div>Co.b.a.l.m.</div> | DENOMINAZIONE      |  |  |  | FIRMA     |  |         |  | CODICE DISEGNO |  |         |  |         |  |         |  |         |  |
|                                     | GRUPPO TESTA       |  |  |  | GIORGETTI |  |         |  | PR46992004     |  |         |  |         |  |         |  |         |  |
|                                     |                    |  |  |  | DATA      |  |         |  | CONFIGURAZIONE |  |         |  |         |  |         |  |         |  |
|                                     | INDICE DI MODIFICA |  |  |  | 1         |  | 2       |  | 3              |  | 4       |  | 5       |  | 6       |  | 7       |  |
|                                     |                    |  |  |  | FIRMA     |  | FIRMA   |  | FIRMA          |  | FIRMA   |  | FIRMA   |  | FIRMA   |  | FIRMA   |  |
|                                     |                    |  |  |  | DATA      |  | DATA    |  | DATA           |  | DATA    |  | DATA    |  | DATA    |  | DATA    |  |
|                                     | BOLLAN°            |  |  |  | BOLLAN°   |  | BOLLAN° |  | BOLLAN°        |  | BOLLAN° |  | BOLLAN° |  | BOLLAN° |  | BOLLAN° |  |
|                                     |                    |  |  |  | BOLLAN°   |  | BOLLAN° |  | BOLLAN°        |  | BOLLAN° |  | BOLLAN° |  | BOLLAN° |  | BOLLAN° |  |

| POS. | CODICE     | Q.TA' |
|------|------------|-------|
| 1    | 03A11153   | 1     |
| 2    | 03A16025   | 2     |
| 3    | 03A16093   | 1     |
| 4    | 03A16176   | 1     |
| 5    | 03A16359   | 1     |
| 6    | 03A31220   | 2     |
| 7    | 03A41024   | 1     |
| 8    | 03A41460   | 1     |
| 9*   | 03A43352   | 1     |
| 10   | 03A51066   | 1     |
| 11   | 03A51095   | 1     |
| 12   | 05A41509   | 1     |
| 13   | 05A43351   | 1     |
| 14   | 33850103   | 2     |
| 15   | 46660016   | 2     |
| 16   | 46680055   | 1     |
| 17   | PR46992007 | 1     |

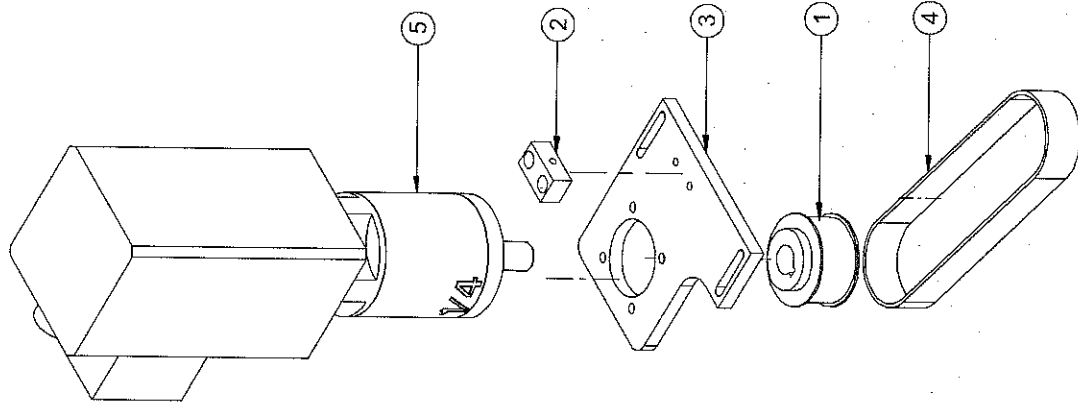
Ci riserviamo a termini di Legge la proprietà di questo disegno con divieto di riprodurlo o di renderlo comunque noto a terzi senza la nostra approvazione

|                                     |                           |                           |                           |                           |                            |                           |                           |  |
|-------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------------|---------------------------|---------------------------|--|
| DENOMINAZIONE<br><b>Co.b.a.l.m.</b> | FIRMA<br>GIORGETTI        |                           |                           |                           | CODICE DISEGNO<br>46750022 |                           |                           |  |
|                                     | DATA<br>26/03/2007        |                           |                           |                           | CONFIGURAZIONE             |                           |                           |  |
| INDICE DI MODIFICA                  | 1                         | 2                         | 3                         | 4                         | 5                          | 6                         | 7                         |  |
|                                     | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N°  | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N° |  |



Ci riserviamo a termini di Legge la proprietà di questo disegno con divieto di riprodurlo o di renderlo comunque noto a terzi senza la nostra approvazione

|                                     |                           |                           |                           |                           |                              |                           |                           |  |
|-------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|------------------------------|---------------------------|---------------------------|--|
| DENOMINAZIONE<br><b>Co.b.a.l.m.</b> | FIRMA<br>GIORGETTI        |                           |                           |                           | CODICE DISEGNO<br>PR46992007 |                           |                           |  |
|                                     | DATA<br>26/03/2007        |                           |                           |                           | CONFIGURAZIONE               |                           |                           |  |
| INDICE DI MODIFICA                  | 1                         | 2                         | 3                         | 4                         | 5                            | 6                         | 7                         |  |
|                                     | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N°    | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N° |  |



Ci riserviamo a termini di Legge la proprietà di questo disegno con divieto di riprodurlo o di renderlo comunque noto a terzi senza la nostra approvazione

|                                     |                           |                           |                           |                           |                            |                           |                           |  |
|-------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------------|---------------------------|---------------------------|--|
| DENOMINAZIONE<br><b>Co.b.a.l.m.</b> | FIRMA<br>GIORGETTI        |                           |                           |                           | CODICE DISEGNO<br>46750022 |                           |                           |  |
|                                     | DATA<br>26/03/2007        |                           |                           |                           | CONFIGURAZIONE             |                           |                           |  |
| INDICE DI MODIFICA                  | 1                         | 2                         | 3                         | 4                         | 5                          | 6                         | 7                         |  |
|                                     | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N°  | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N° |  |

|      |          |       |
|------|----------|-------|
| POS. | CODICE   | Q.TA' |
| 1    | 03A11116 | 1     |
| 2    | 03A11148 | 1     |
| 3    | 03A31006 | 1     |
| 4    | 03A31100 | 1     |
| 5    | 05A31101 | 1     |
| 6    | 10680501 | 1     |
| 7    | 31010003 | 1     |

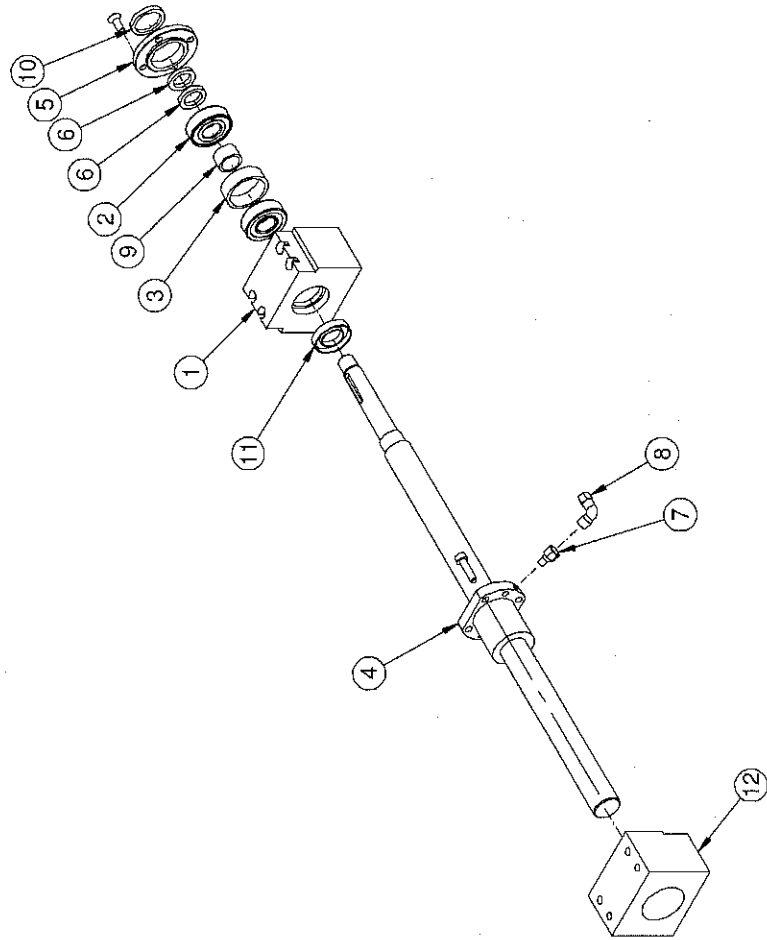
Ci riserviamo a termini di Legge la proprietà di questo disegno con divieto di riprodurlo o di renderlo comunque noto a terzi senza la nostra approvazione

|                                     |                           |                           |                           |                           |                              |                           |                           |  |
|-------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|------------------------------|---------------------------|---------------------------|--|
| DENOMINAZIONE<br><b>Co.b.a.l.m.</b> | FIRMA<br>GIORGETTI        |                           |                           |                           | CODICE DISEGNO<br>PR46992007 |                           |                           |  |
|                                     | DATA<br>26/03/2007        |                           |                           |                           | CONFIGURAZIONE               |                           |                           |  |
| INDICE DI MODIFICA                  | 1                         | 2                         | 3                         | 4                         | 5                            | 6                         | 7                         |  |
|                                     | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N°    | FIRMA<br>DATA<br>BOLL. N° | FIRMA<br>DATA<br>BOLL. N° |  |

|      |          |       |
|------|----------|-------|
| POS. | CODICE   | Q.TA' |
| 1    | 03A11152 | 1     |
| 2    | 03A31006 | 1     |
| 3    | 03A31219 | 1     |
| 4    | 11275003 | 1     |
| 5    | 31010002 | 1     |

Ci riserviamo a termini di Legge la proprietà di questo disegno con divieto di riprodurlo o di renderlo comunque noto a terzi senza la nostra approvazione

|                          |                                  |   |                    |   |                            |   |               |   |               |   |               |   |               |   |
|--------------------------|----------------------------------|---|--------------------|---|----------------------------|---|---------------|---|---------------|---|---------------|---|---------------|---|
| Co.b.a.l.m. <sup>®</sup> | DENOMINAZIONE<br>GR. VITE ASSE Z |   | FIRMA<br>GIORGETTI |   | CODICE DISEGNO<br>46680055 |   |               |   |               |   |               |   |               |   |
|                          | DATA<br>08/07/2004               |   | DATA<br>08/07/2004 |   | CONFIGURAZIONE             |   |               |   |               |   |               |   |               |   |
|                          | INDICE DI MODIFICA               | 1 | FIRMA<br>DATA      | 2 | FIRMA<br>DATA              | 3 | FIRMA<br>DATA | 4 | FIRMA<br>DATA | 5 | FIRMA<br>DATA | 6 | FIRMA<br>DATA | 7 |



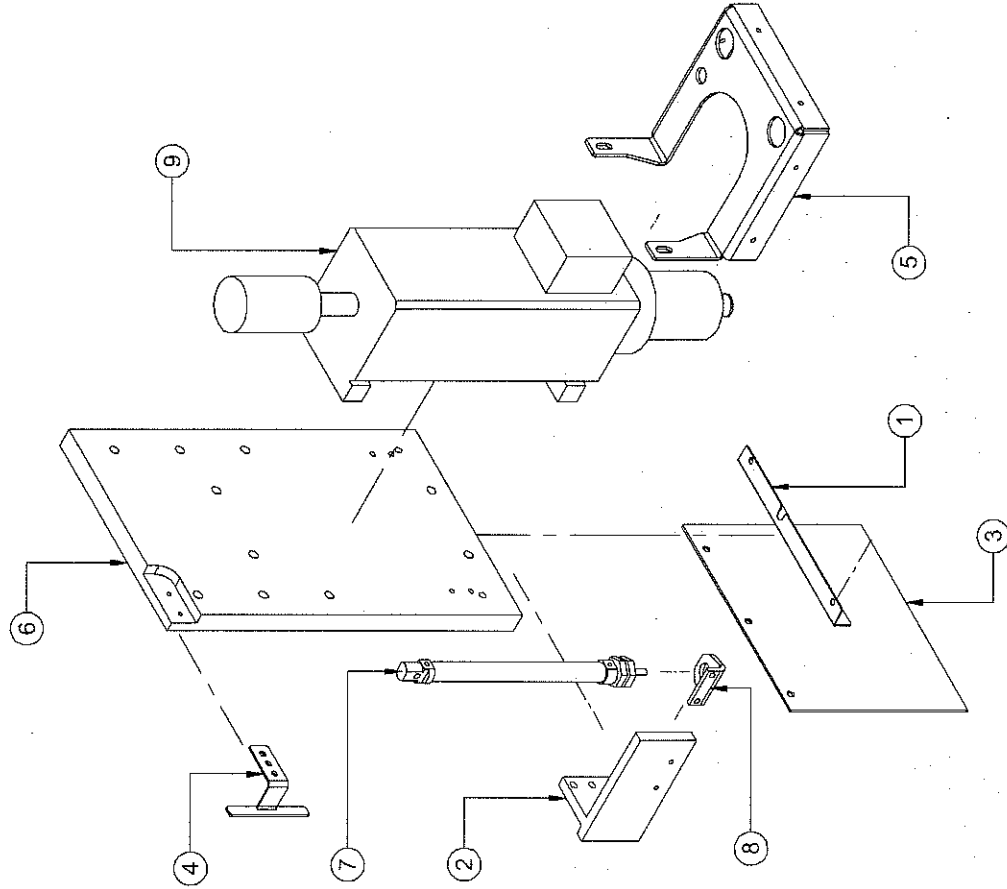
Ci riserviamo a termini di Legge la proprietà di questo disegno con divieto di riprodurlo o di renderlo comunque noto a terzi senza la nostra approvazione

|                          |                                  |   |                    |   |                            |   |               |   |               |   |               |   |               |   |
|--------------------------|----------------------------------|---|--------------------|---|----------------------------|---|---------------|---|---------------|---|---------------|---|---------------|---|
| Co.b.a.l.m. <sup>®</sup> | DENOMINAZIONE<br>GR. VITE ASSE Z |   | FIRMA<br>GIORGETTI |   | CODICE DISEGNO<br>46680055 |   |               |   |               |   |               |   |               |   |
|                          | DATA<br>08/07/2004               |   | DATA<br>08/07/2004 |   | CONFIGURAZIONE             |   |               |   |               |   |               |   |               |   |
|                          | INDICE DI MODIFICA               | 1 | FIRMA<br>DATA      | 2 | FIRMA<br>DATA              | 3 | FIRMA<br>DATA | 4 | FIRMA<br>DATA | 5 | FIRMA<br>DATA | 6 | FIRMA<br>DATA | 7 |

| POS. | CODICE   | Q.TA' |
|------|----------|-------|
| 1    | 03661572 | 1     |
| 2    | 19111701 | 2     |
| 3    | 03A11106 | 1     |
| 4    | 03A21053 | 1     |
| 5    | 03651039 | 1     |
| 6    | 03651047 | 2     |
| 7    | 20031701 | 1     |
| 8    | 20071201 | 1     |
| 9    | 03A11107 | 1     |
| 10   | 10310003 | 1     |
| 11   | 10342002 | 1     |
| 12   | 03A16093 | 1     |

Ci riserviamo a termini di Legge la proprietà di questo disegno con divieto di riprodurlo o di renderlo comunque noto a terzi senza la nostra approvazione

|                          |                                     |   |                    |   |                              |   |               |   |               |   |               |   |               |   |
|--------------------------|-------------------------------------|---|--------------------|---|------------------------------|---|---------------|---|---------------|---|---------------|---|---------------|---|
| Co.b.a.l.m. <sup>®</sup> | DENOMINAZIONE<br>GR ELETTROMANDRINO |   | FIRMA<br>GIORGETTI |   | CODICE DISEGNO<br>PR46992005 |   |               |   |               |   |               |   |               |   |
|                          | DATA                                |   | DATA               |   | CONFIGURAZIONE               |   |               |   |               |   |               |   |               |   |
|                          | INDICE DI MODIFICA                  | 1 | FIRMA<br>DATA      | 2 | FIRMA<br>DATA                | 3 | FIRMA<br>DATA | 4 | FIRMA<br>DATA | 5 | FIRMA<br>DATA | 6 | FIRMA<br>DATA | 7 |



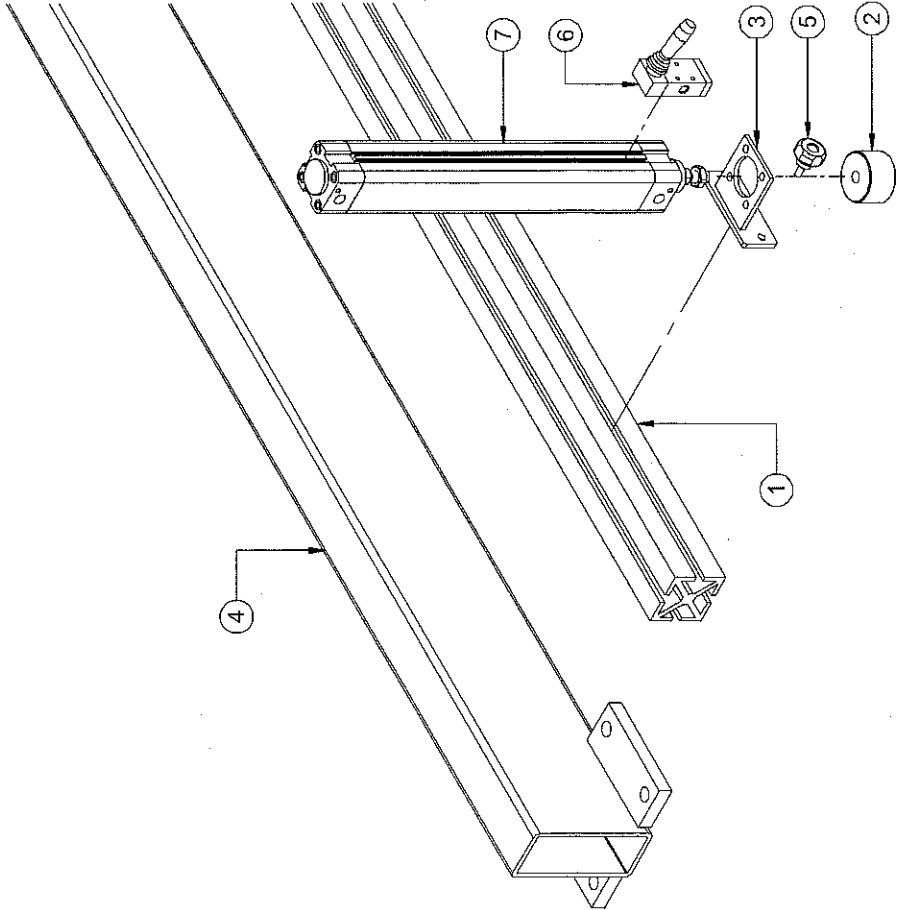
Ci riserviamo a termini di Legge la proprietà di questo disegno con divieto di riprodurlo o di renderlo comunque noto a terzi senza la nostra approvazione

|                          |                                     |   |                    |   |                              |   |               |   |               |   |               |   |               |   |
|--------------------------|-------------------------------------|---|--------------------|---|------------------------------|---|---------------|---|---------------|---|---------------|---|---------------|---|
| Co.b.a.l.m. <sup>®</sup> | DENOMINAZIONE<br>GR ELETTROMANDRINO |   | FIRMA<br>GIORGETTI |   | CODICE DISEGNO<br>PR46992005 |   |               |   |               |   |               |   |               |   |
|                          | DATA                                |   | DATA               |   | CONFIGURAZIONE               |   |               |   |               |   |               |   |               |   |
|                          | INDICE DI MODIFICA                  | 1 | FIRMA<br>DATA      | 2 | FIRMA<br>DATA                | 3 | FIRMA<br>DATA | 4 | FIRMA<br>DATA | 5 | FIRMA<br>DATA | 6 | FIRMA<br>DATA | 7 |

| POS. | CODICE   | Q.TA' |
|------|----------|-------|
| 1    | 03664072 | 1     |
| 2    | 03A16362 | 1     |
| 3    | 03A26220 | 1     |
| 4    | 03A41033 | 1     |
| 5    | 03A43353 | 1     |
| 6    | 03A51096 | 1     |
| 7    | 20311605 | 1     |
| 8    | 20391601 | 1     |
| 9    | 30405002 | 1     |

Ci riserviamo a termini di Legge la proprietà di questo disegno con divieto di riprodurlo o di renderlo comunque noto a terzi senza la nostra approvazione

|                          |                 |           |  |           |           |           |  |           |                |           |  |           |  |           |  |
|--------------------------|-----------------|-----------|--|-----------|-----------|-----------|--|-----------|----------------|-----------|--|-----------|--|-----------|--|
| Co.b.a.l.m. <sup>®</sup> | DENOMINAZIONE   |           |  |           | FIRMA     |           |  |           | CODICE DISEGNO |           |  |           |  |           |  |
|                          | GRUPPO PRESSORI |           |  |           | GIORGETTI |           |  |           | PR46992006     |           |  |           |  |           |  |
|                          | DATA            |           |  |           | DATA      |           |  |           | CONFIGURAZIONE |           |  |           |  |           |  |
| INDICE DI MODIFICA       |                 | 1         |  | 2         |           | 3         |  | 4         |                | 5         |  | 6         |  | 7         |  |
| BOLLIA N°                |                 | BOLLIA N° |  | BOLLIA N° |           | BOLLIA N° |  | BOLLIA N° |                | BOLLIA N° |  | BOLLIA N° |  | BOLLIA N° |  |

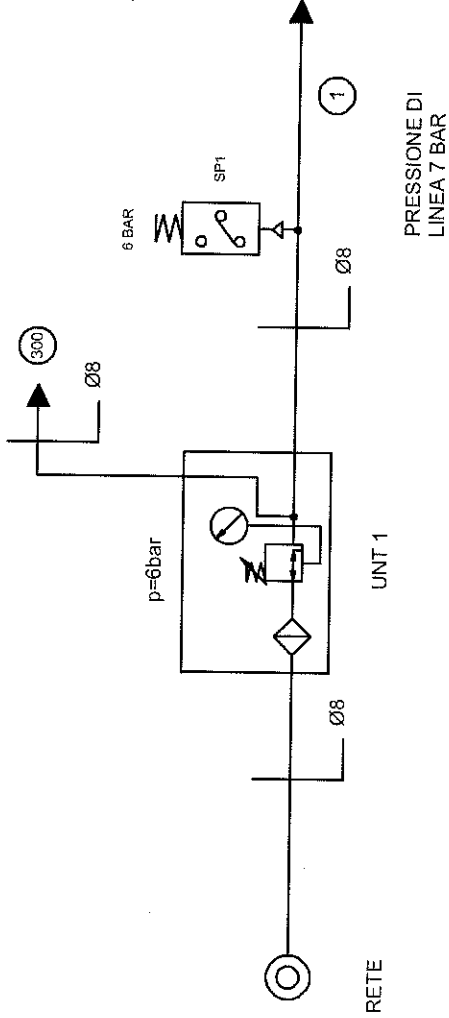


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|                          |                 |           |  |           |           |           |  |           |                |           |  |           |  |           |  |
|--------------------------|-----------------|-----------|--|-----------|-----------|-----------|--|-----------|----------------|-----------|--|-----------|--|-----------|--|
| Co.b.a.l.m. <sup>®</sup> | DENOMINAZIONE   |           |  |           | FIRMA     |           |  |           | CODICE DISEGNO |           |  |           |  |           |  |
|                          | GRUPPO PRESSORI |           |  |           | GIORGETTI |           |  |           | PR46992006     |           |  |           |  |           |  |
|                          | DATA            |           |  |           | DATA      |           |  |           | CONFIGURAZIONE |           |  |           |  |           |  |
| INDICE DI MODIFICA       |                 | 1         |  | 2         |           | 3         |  | 4         |                | 5         |  | 6         |  | 7         |  |
| BOLLIA N°                |                 | BOLLIA N° |  | BOLLIA N° |           | BOLLIA N° |  | BOLLIA N° |                | BOLLIA N° |  | BOLLIA N° |  | BOLLIA N° |  |

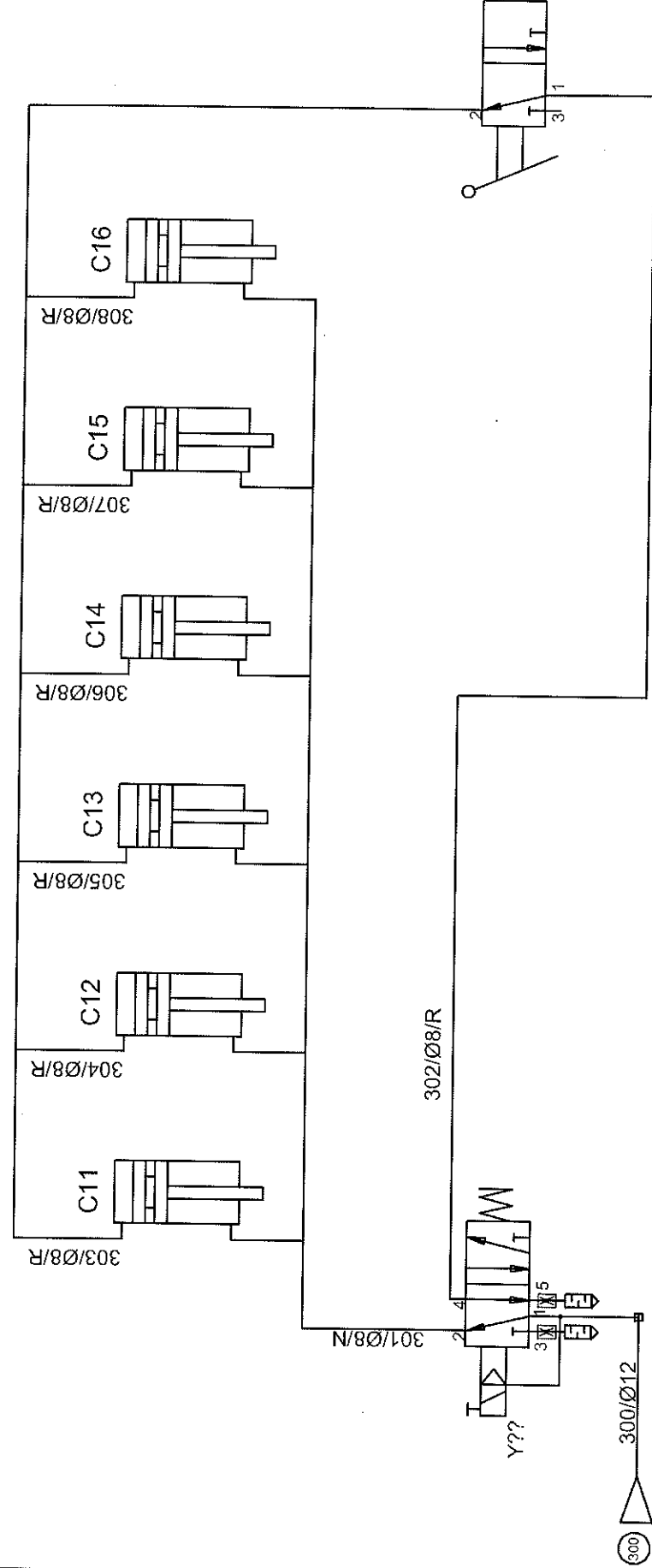
| POS. | CODICE   | Q.TA' |
|------|----------|-------|
| 1    | 03A11226 | 1     |
| 2    | 03A26245 | 6     |
| 3    | 03A31221 | 6     |
| 4    | 05A34122 | 1     |
| 5    | 11033015 | 1     |
| 6    | 20210203 | 1     |
| 7    | 20314005 | 6     |

Ci riserviamo a termini di Legge la proprietà di questo disegno con divieto di riprodurlo o di renderlo comunque noto a terzi senza la nostra approvazione



|                          |               |                                |                     |              |          |         |  |
|--------------------------|---------------|--------------------------------|---------------------|--------------|----------|---------|--|
| Co.b.a.l.m. <sup>®</sup> | SCHEMA        |                                | ALIMENTAZIONE       |              | DATA     |         |  |
|                          | TIPO MACCHINA |                                | FORATRICE PR99-20-0 |              | 18-02-11 |         |  |
|                          | DESCRIZIONE   |                                | ASSIEME             |              | FILE     |         |  |
| RIFERIMENTO              |               | UNIT 1                         |                     | PN-PR99-20-0 |          | ASSIEME |  |
| SP1                      |               | GRUPPO FILTRO REG. PRESSOSTATO |                     |              |          |         |  |
| Mod.                     |               | 1                              |                     | 2            |          | 3       |  |
| Data                     |               | *                              |                     | *            |          | *       |  |
| Descr.                   |               | *                              |                     | *            |          | *       |  |
| Firma                    |               | *                              |                     | *            |          | *       |  |

CENTRATURA  
CONO



|                                                                                                                                                                                                                                                                                             |  |                            |  |              |             |   |               |   |          |      |  |  |   |   |        |  |  |   |   |       |   |   |   |   |   |  |        |                 |      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------|--|--------------|-------------|---|---------------|---|----------|------|--|--|---|---|--------|--|--|---|---|-------|---|---|---|---|---|--|--------|-----------------|------|
| <div>Modifiche</div> <table><tr><td>Mod.</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>Data</td><td></td><td></td><td>*</td><td>*</td></tr><tr><td>Descr.</td><td></td><td></td><td>*</td><td>*</td></tr><tr><td>Firma</td><td>*</td><td>*</td><td>*</td><td>*</td></tr></table> |  |                            |  |              | Mod.        | 1 | 2             | 3 | 4        | Data |  |  | * | * | Descr. |  |  | * | * | Firma | * | * | * | * | ® |  | SCHEMA | CAMBIO UTENSILE | DATA |
|                                                                                                                                                                                                                                                                                             |  |                            |  |              | Mod.        | 1 | 2             | 3 | 4        |      |  |  |   |   |        |  |  |   |   |       |   |   |   |   |   |  |        |                 |      |
|                                                                                                                                                                                                                                                                                             |  |                            |  |              | Data        |   |               | * | *        |      |  |  |   |   |        |  |  |   |   |       |   |   |   |   |   |  |        |                 |      |
|                                                                                                                                                                                                                                                                                             |  |                            |  |              | Descr.      |   |               | * | *        |      |  |  |   |   |        |  |  |   |   |       |   |   |   |   |   |  |        |                 |      |
|                                                                                                                                                                                                                                                                                             |  |                            |  |              | Firma       | * | *             | * | *        |      |  |  |   |   |        |  |  |   |   |       |   |   |   |   |   |  |        |                 |      |
|                                                                                                                                                                                                                                                                                             |  |                            |  |              | Co.b.a.l.m. |   | TIPO MACCHINA |   | 18-02-11 |      |  |  |   |   |        |  |  |   |   |       |   |   |   |   |   |  |        |                 |      |
| RIFERIMENTO                                                                                                                                                                                                                                                                                 |  | DESCRIZIONE                |  | FILE         |             |   |               |   |          |      |  |  |   |   |        |  |  |   |   |       |   |   |   |   |   |  |        |                 |      |
|                                                                                                                                                                                                                                                                                             |  |                            |  | PN-PR99-20-0 |             |   |               |   |          |      |  |  |   |   |        |  |  |   |   |       |   |   |   |   |   |  |        |                 |      |
| Y..                                                                                                                                                                                                                                                                                         |  | EV. 5/2                    |  | ASSIEME      |             |   |               |   |          |      |  |  |   |   |        |  |  |   |   |       |   |   |   |   |   |  |        |                 |      |
| C11-C16                                                                                                                                                                                                                                                                                     |  | CILINDRI 40/300 (20314005) |  |              |             |   |               |   |          |      |  |  |   |   |        |  |  |   |   |       |   |   |   |   |   |  |        |                 |      |
| Y..                                                                                                                                                                                                                                                                                         |  | VALV. 3/2 (20210203)       |  |              |             |   |               |   |          |      |  |  |   |   |        |  |  |   |   |       |   |   |   |   |   |  |        |                 |      |
|                                                                                                                                                                                                                                                                                             |  |                            |  |              |             |   |               |   |          |      |  |  |   |   |        |  |  |   |   |       |   |   |   |   |   |  |        |                 |      |

CILINDRI BLOCCO PEZZO  
SU TESTA

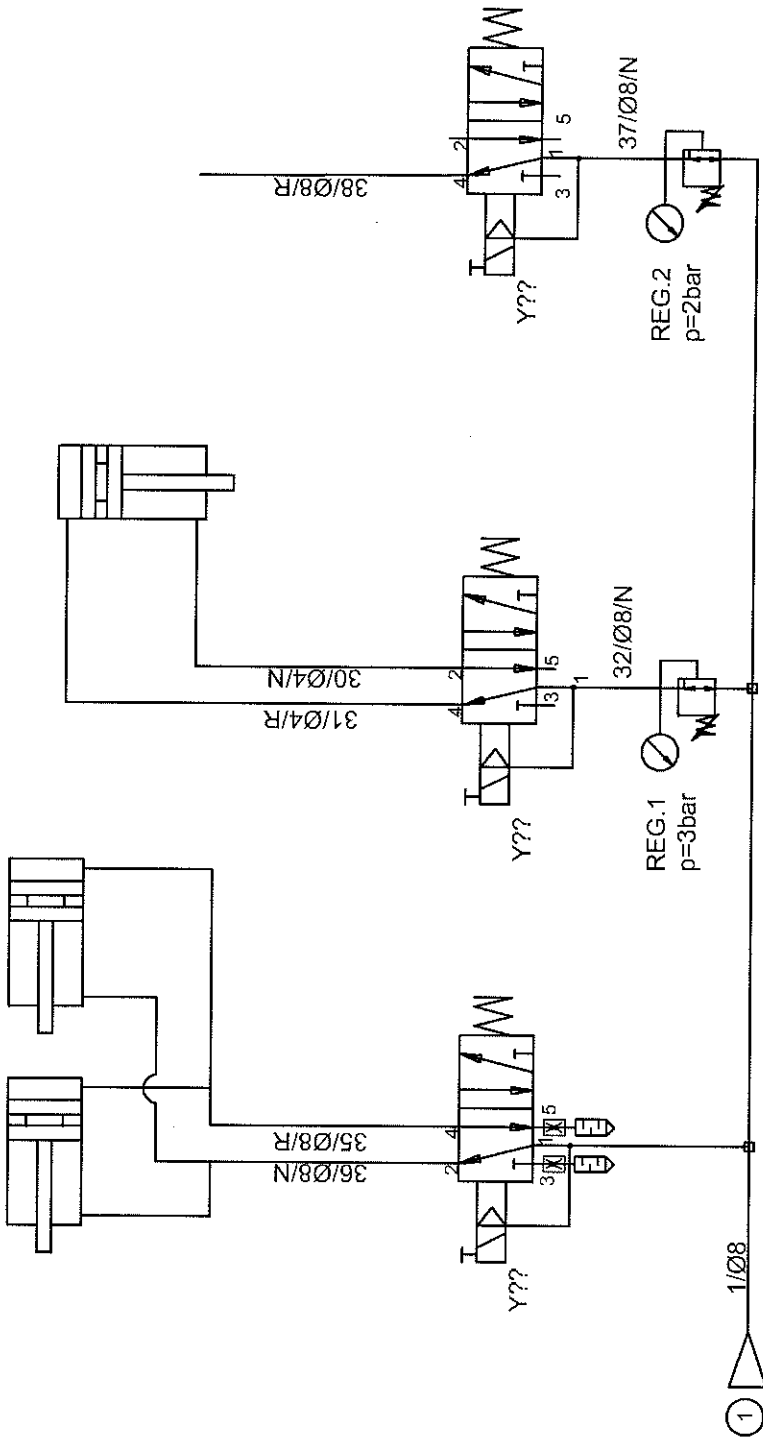
TASTATORE

UTENSILE  
MANDRINO

C20

C21

C3



| Modifiche |   |   |   | SCHEMA |               | DATA                         |              |
|-----------|---|---|---|--------|---------------|------------------------------|--------------|
| Mod.      | 1 | 2 | 3 | 4      | TESTA N°1     | 18-02-11                     |              |
| Data      | . | . | . | .      | TIPO MACCHINA | FILE                         | PN-PR99-20-0 |
| Descr.    | . | . | . | .      | DESCRIZIONE   | FORATRICE PR99-20-0          | ASSIEME      |
| Firma     | . | . | . | .      |               | EV. 5/2 (20210106)           |              |
|           |   |   |   |        |               | CILINDRI 32/350              |              |
|           |   |   |   |        |               | CILINDRI 16/150 (20311605)   |              |
|           |   |   |   |        |               | REG. DI PRESSIONE (20801003) |              |



27/10/09

## PARAMETRI PER INVERTER DELTA VFD-S 230V Mono-1.1KW

(Applicazione elettromandrino)

(U2 - U3)

|      |            |                                                                 |
|------|------------|-----------------------------------------------------------------|
| 0-02 | 9          | Ripristina i parametri di fabbrica                              |
| 1-00 | <u>150</u> | (166) Frequenza massima (RPM 10000)                             |
| 1-01 | <u>50</u>  | (200) Frequenza di base del motore                              |
| 1-02 | <u>220</u> | (220) Tensione base motore                                      |
| 1-03 | <u>1.0</u> | (def) Frequenza intermedia                                      |
| 1-04 | <u>1.2</u> | (def) Tensione intermedia                                       |
| 1-05 | <u>1.0</u> | (def) Frequenza minima                                          |
| 1-06 | <u>1.2</u> | (def) Tensione minima                                           |
| 1-09 | <u>5</u>   | (5) Tempo di accelerazione in secondi                           |
| 1-10 | <u>5</u>   | (5) Tempo di decelerazione in secondi                           |
| 1-15 |            | (0) Acc. / Dec. lineare                                         |
| 2-00 | 1          | Riferimento 0/10V                                               |
| 2-01 | 2          | Comandi da morsettiera                                          |
| 2-03 | 10         | Frequenza di modulazione in KHz                                 |
| 2-04 | 1          | Disabilita inversione mandrino                                  |
| 3-06 | 2          | Programmazione uscita RELE (Attiva=vel. raggiunta)              |
| 4-00 | <u>0.7</u> | 0.7 Offset su riferimento (% di 1-00)(deve essere > di 1-05)    |
| 4-04 | 2          | Comandi a 2 fili (RUN e FWD/REV)                                |
| 4-09 | 1          | Sicurezza START in accensione                                   |
| 7-00 | <u>30</u>  | (60) Corrente nominale del motore in % della taglia (100%=7.5A) |
| 7-01 | <u>20</u>  | (50) Corrente del motore senza carico in % (100%=7.5A)          |

27/10/09

## PARAMETRI PER INVERTER DELTA VFD-S 400V Trif-2.2KW

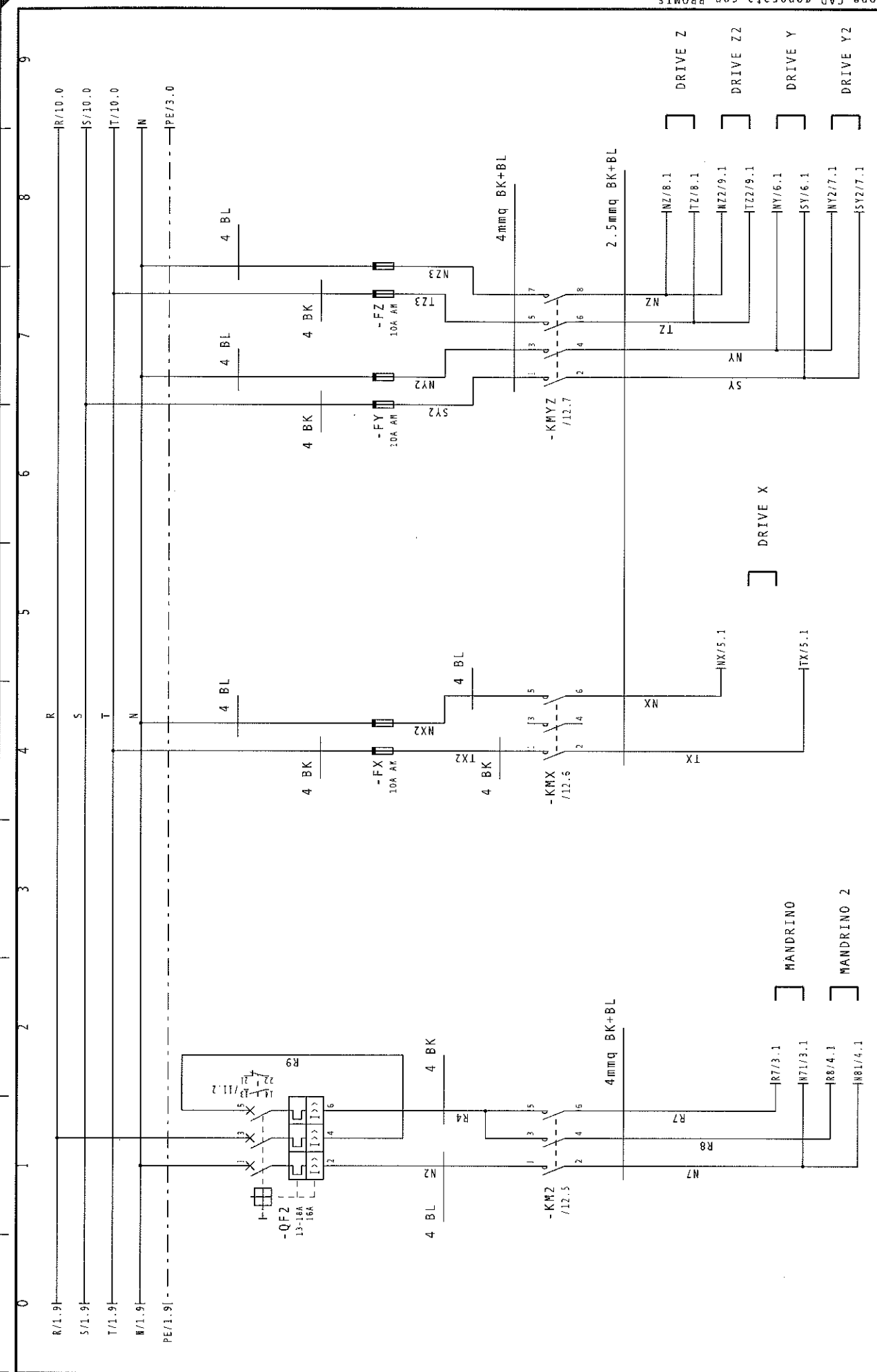
(Applicazione elettromandrino)

|      |     |                                                                 |
|------|-----|-----------------------------------------------------------------|
| 0-02 | 9   | Ripristina i parametri di fabbrica                              |
| 1-00 |     | (180) Frequenza massima (RPM 10000)                             |
| 1-01 |     | (50) Frequenza di base del motore                               |
| 1-02 |     | (400) Tensione base motore                                      |
| 1-03 |     | (def) Frequenza intermedia                                      |
| 1-04 |     | (def) Tensione intermedia                                       |
| 1-05 |     | (def) Frequenza minima                                          |
| 1-06 |     | (def) Tensione minima                                           |
| 1-09 |     | (5) Tempo di accelerazione in secondi                           |
| 1-10 |     | (7) Tempo di decelerazione in secondi                           |
| 1-15 |     | (0) Acc. / Dec. lineare                                         |
| 2-00 | 1   | Riferimento 0/10V                                               |
| 2-01 | 2   | Comandi da morsettiera                                          |
| 2-03 | 10  | Frequenza di modulazione in KHz                                 |
| 2-04 | 1   | Disabilita inversione mandrino                                  |
| 3-06 | 2   | Programmazione uscita RELE (Attiva=vel. raggiunta)              |
| 4-00 | 0.7 | 0.7 Offset su riferimento (% di 1-00)(deve essere > di 1-05)    |
| 4-04 | 2   | Comandi a 2 fili (RUN e FWD/REV)                                |
| 4-09 | 1   | Sicurezza START in accensione                                   |
| 7-00 |     | (95) Corrente nominale del motore in % della taglia (100%=5.5A) |
| 7-01 |     | (50) Corrente del motore senza carico in % (100%=5.5A)          |





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| Modifiche<br>Modifications | Data<br>Date | Nome<br>Name |
|----------------------------|--------------|--------------|
| B                          |              |              |
| D                          |              |              |
| C                          |              |              |
| G                          |              |              |

| Data<br>Date  | Nome<br>Name |
|---------------|--------------|
| Dis. 19.01.11 | Z.C.         |
| Ver.          |              |

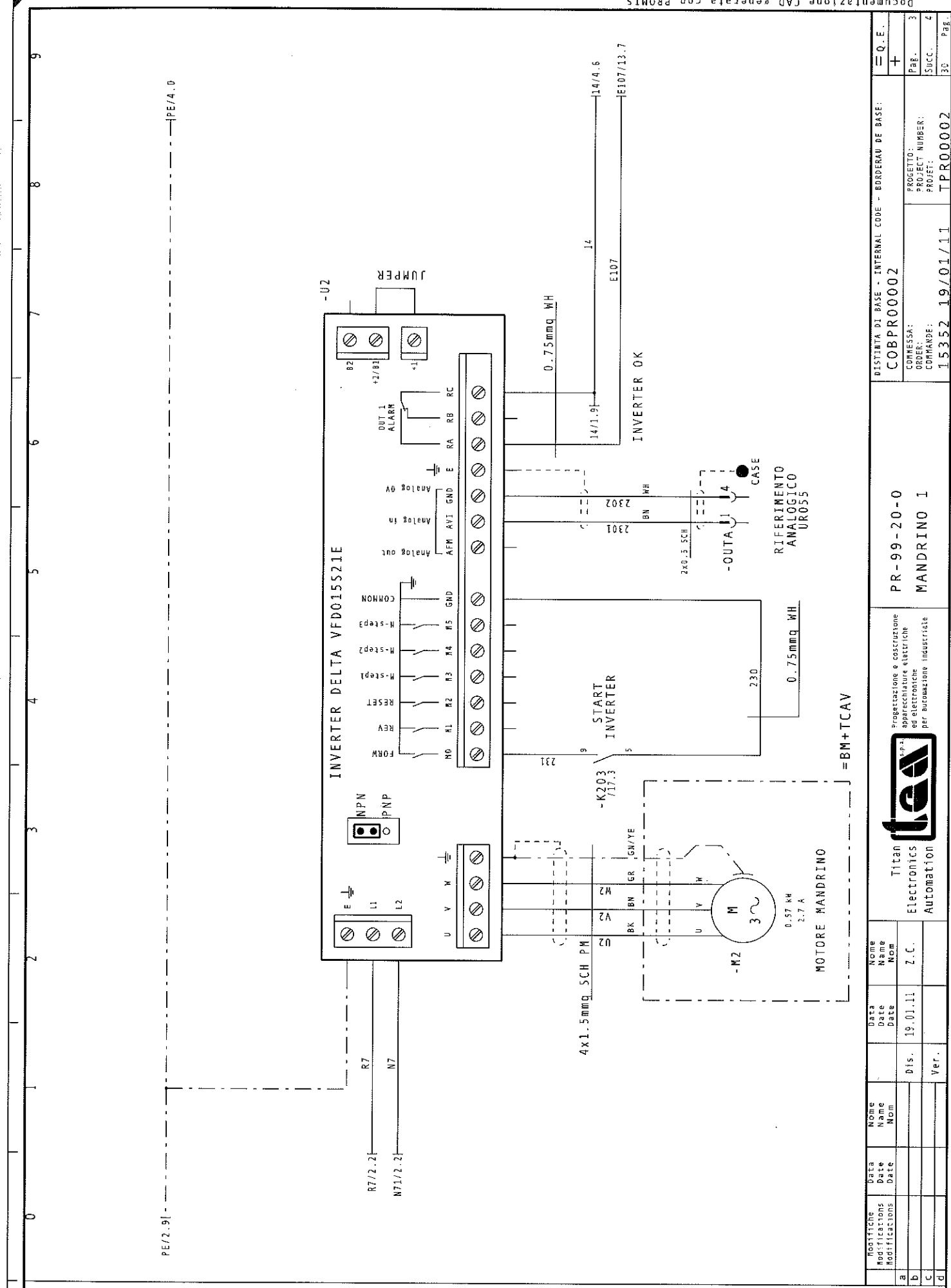
Titan  
Electronics  
Automation

Progettazione e costruzione  
apparecchiature elettriche  
per automazione industriale

PR-99-20-0  
ALIMENTAZIONE ASSI

|                                                                    |                              |          |         |  |
|--------------------------------------------------------------------|------------------------------|----------|---------|--|
| DISTINTA DI BASE - INTERNAL CODE - BORDERAU DE BASE:<br>COBPR00002 |                              |          | = Q. E. |  |
| COMMESSA:<br>ORDER:                                                | PROGETTO:<br>PROJECT NUMBER: | Pag. 2   |         |  |
| COMANDO:<br>PROJECT:                                               | 15352 19/01/11               | TPR00002 |         |  |
|                                                                    |                              | 30       | Pag.    |  |

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| PRODOTTORE    | DATA          | NOME          | DATA          | NOME          | DATA          | NOME          |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Modificazioni | Modificazioni | Modificazioni | Modificazioni | Modificazioni | Modificazioni | Modificazioni |
| a             |               |               |               |               |               |               |
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| d             |               |               |               |               |               |               |

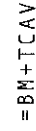
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| Dis. | 19.01.11 | Z.C. |
| Ver. |          |      |

|            |            |
|------------|------------|
| PR-99-20-0 | PR-99-20-0 |
| MANDRINO 1 | MANDRINO 1 |

|                |                |
|----------------|----------------|
| COBPR00002     | COBPR00002     |
| ORDINE:        | ORDINE:        |
| COMANDA:       | COMANDA:       |
| 15352 19/01/11 | 15352 19/01/11 |
| TPR00002       | TPR00002       |

|                |                |
|----------------|----------------|
| PROGETTO:      | PROGETTO:      |
| PROJET NUMBER: | PROJET NUMBER: |
| PROJET:        | PROJET:        |
| 3              | 3              |
| PAB.           | PAB.           |
| 4              | 4              |
| SUCC.          | SUCC.          |
| 30             | 30             |
| Pag.           | Pag.           |

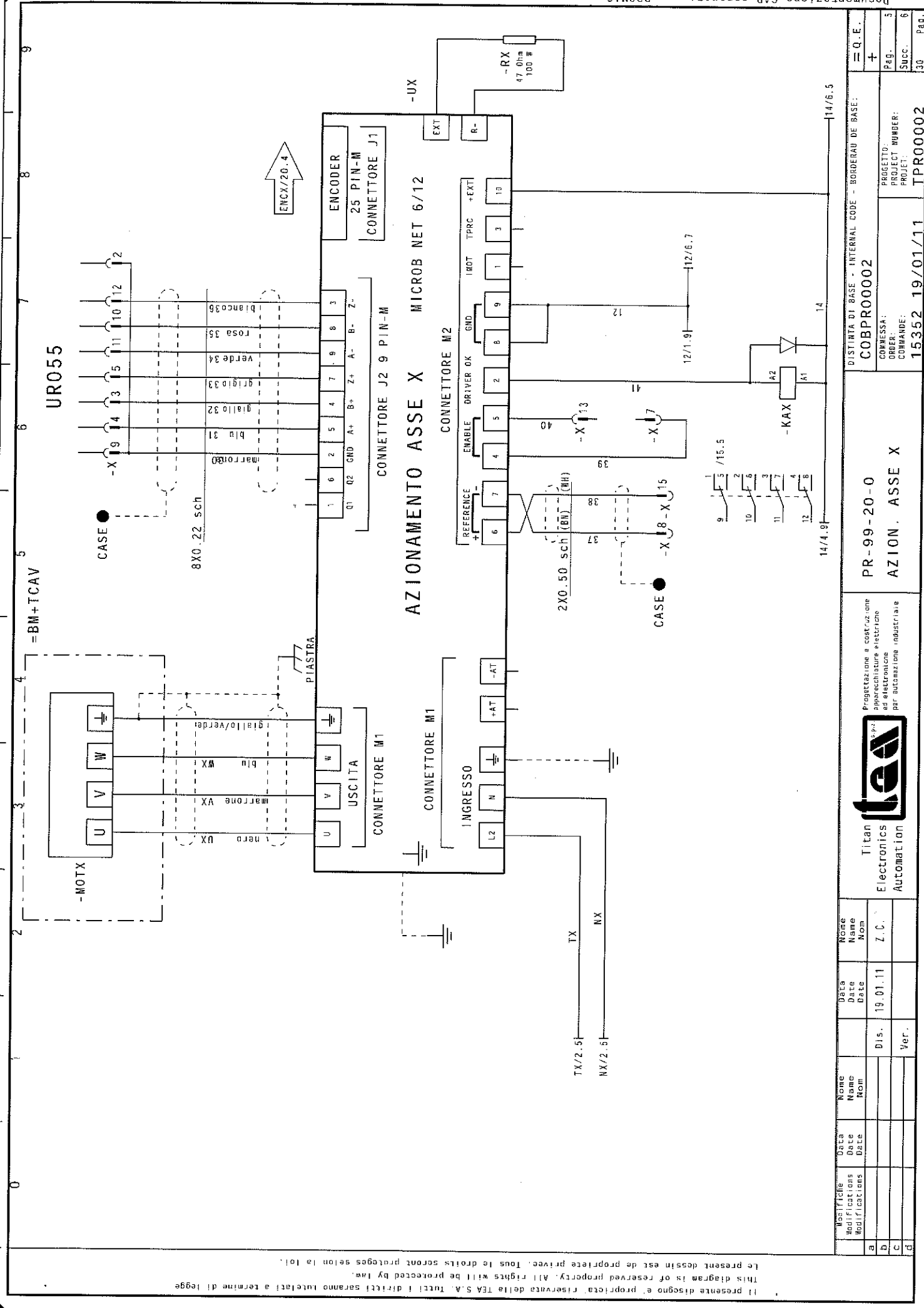
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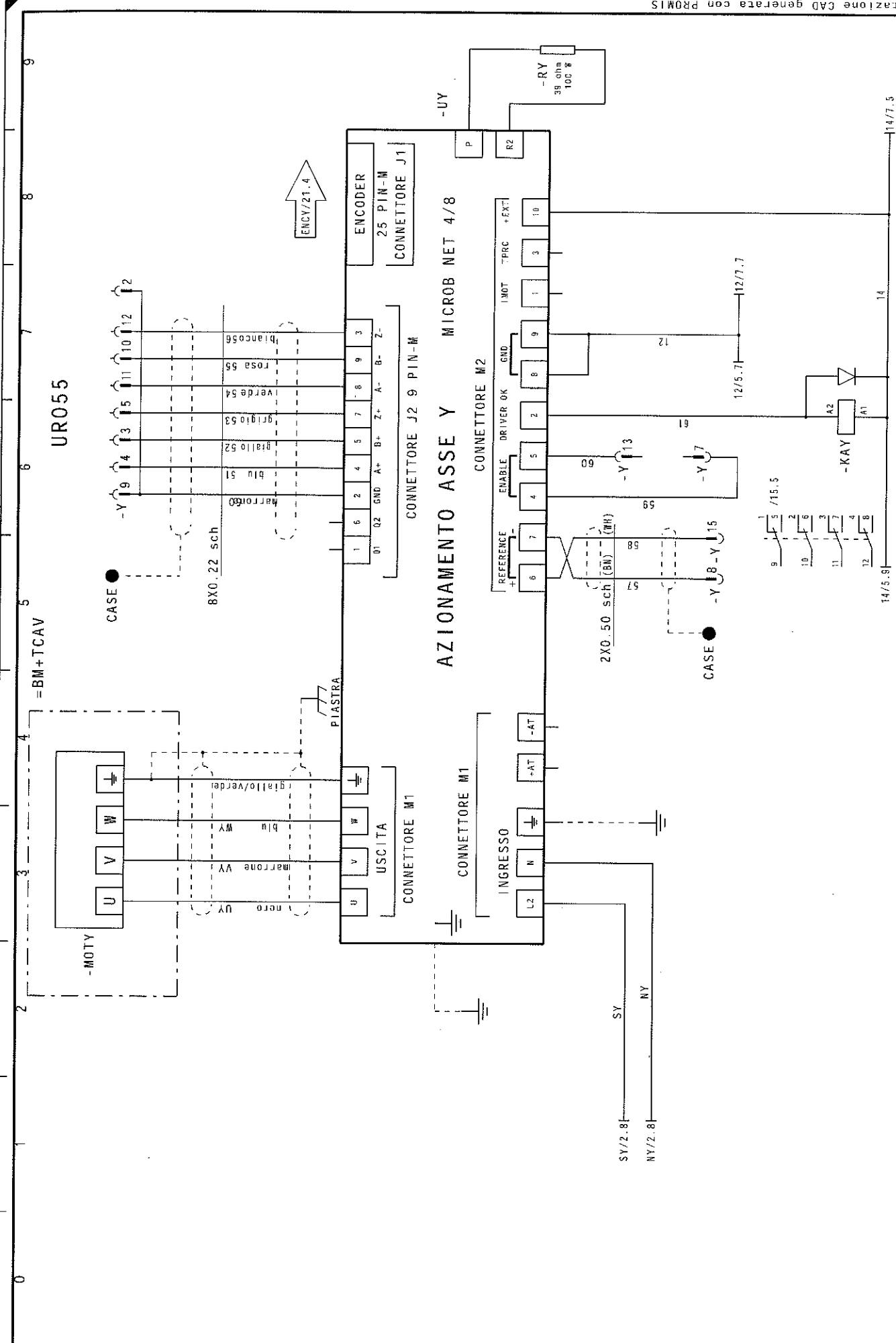
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Automation**

PR-99-20-0  
MANDRINO 2

|                                                                    |                                                                        |
|--------------------------------------------------------------------|------------------------------------------------------------------------|
| DISTINTA DI BASE - INTERNAL CODE - BORDERAU DE BASE:<br>COBPR00002 |                                                                        |
| CONTESSA:<br>VIGOR:<br>COMARDE:                                    | PROGETTO:<br>PROJECT NUMBER:<br>PROJECT:<br>15352 19/01/11<br>TPR00002 |



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| Modifiche | Data | Nome | Data | Nome | Nome |
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| a)        |      |      |      |      |      |
| b)        |      |      |      |      |      |
| c)        |      |      |      |      |      |
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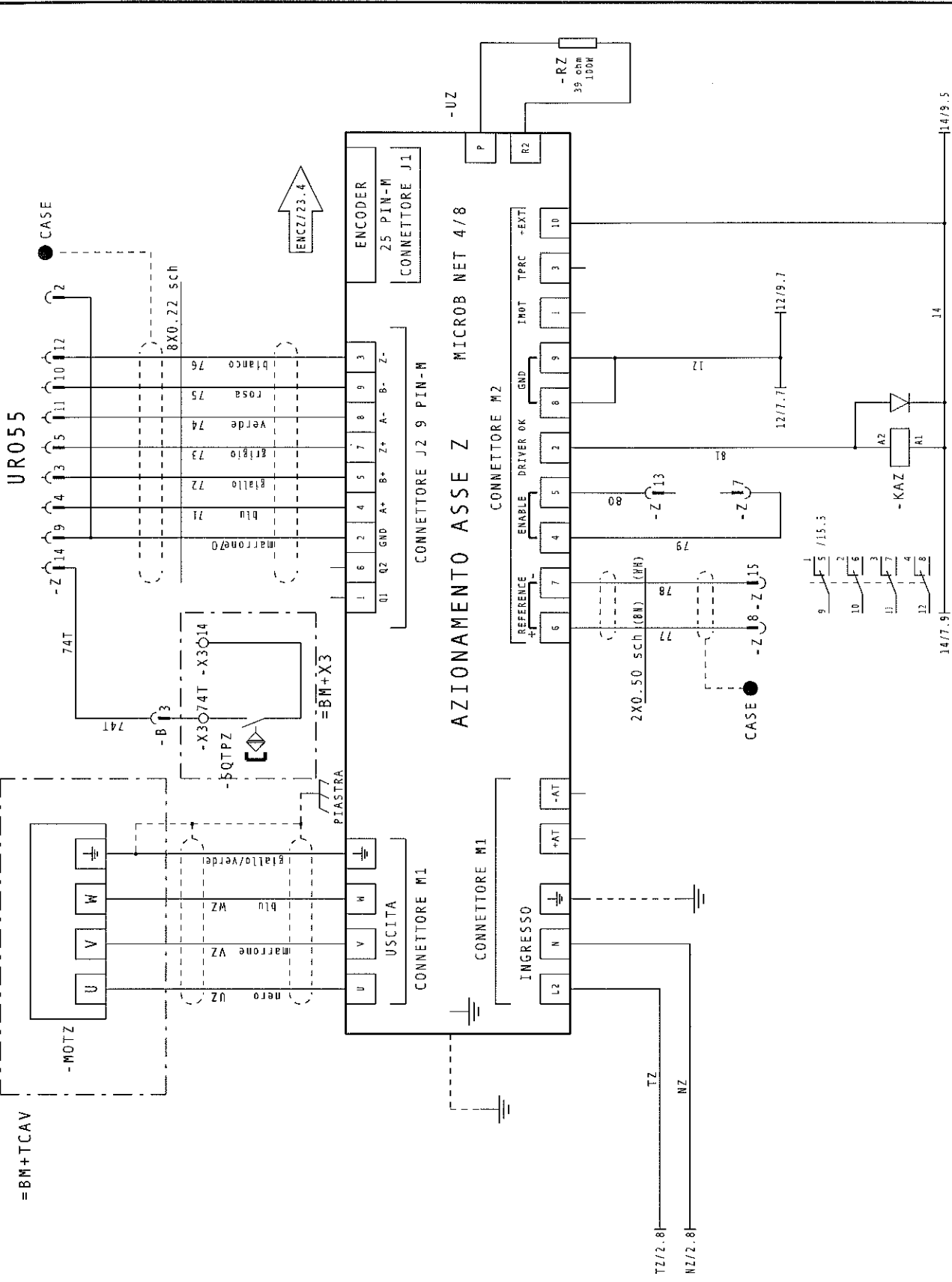
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| Dis. | 19.01.11 | Z. C. |  |
| Ver. |          |       |  |

|                                                                                   |  |            |  |                                                      |  |
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| Titan Electronics Automation                                                      |  | PR-99-20-0 |  | AZION. ASSE Y                                        |  |
| Progettazione e costruzione<br>disegno elettronico<br>per automazione industriale |  | COBPR00002 |  | DISTINTA DI BASE - INTERNAL CODE - BORDERAU DE BASE: |  |
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|                                                                                   |  |            |  | Pag. 6                                               |  |
|                                                                                   |  |            |  | Succ. 7                                              |  |
|                                                                                   |  |            |  | Pag. 30                                              |  |
|                                                                                   |  |            |  | TPR00002                                             |  |

Documentazione CAD generata con PROMIS





|   | Modifications | Data Date | Name | Data Date | Name |
|---|---------------|-----------|------|-----------|------|
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| b |               |           |      |           |      |
| c |               |           |      | Ver.      |      |
| d |               |           |      |           |      |

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Automation**

Progettazione e costruzione  
apparecchiature elettriche  
ed elettroniche  
per automazione industriale

PR-99-20-0  
AZION. ASS

DISTINTA DI BASE - IN  
COBPR00002

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ORDER:  
COMMANDE:

PROGETTO:  
PROJECT NUMBER:  
PROJET:  
TPR00002

303

+

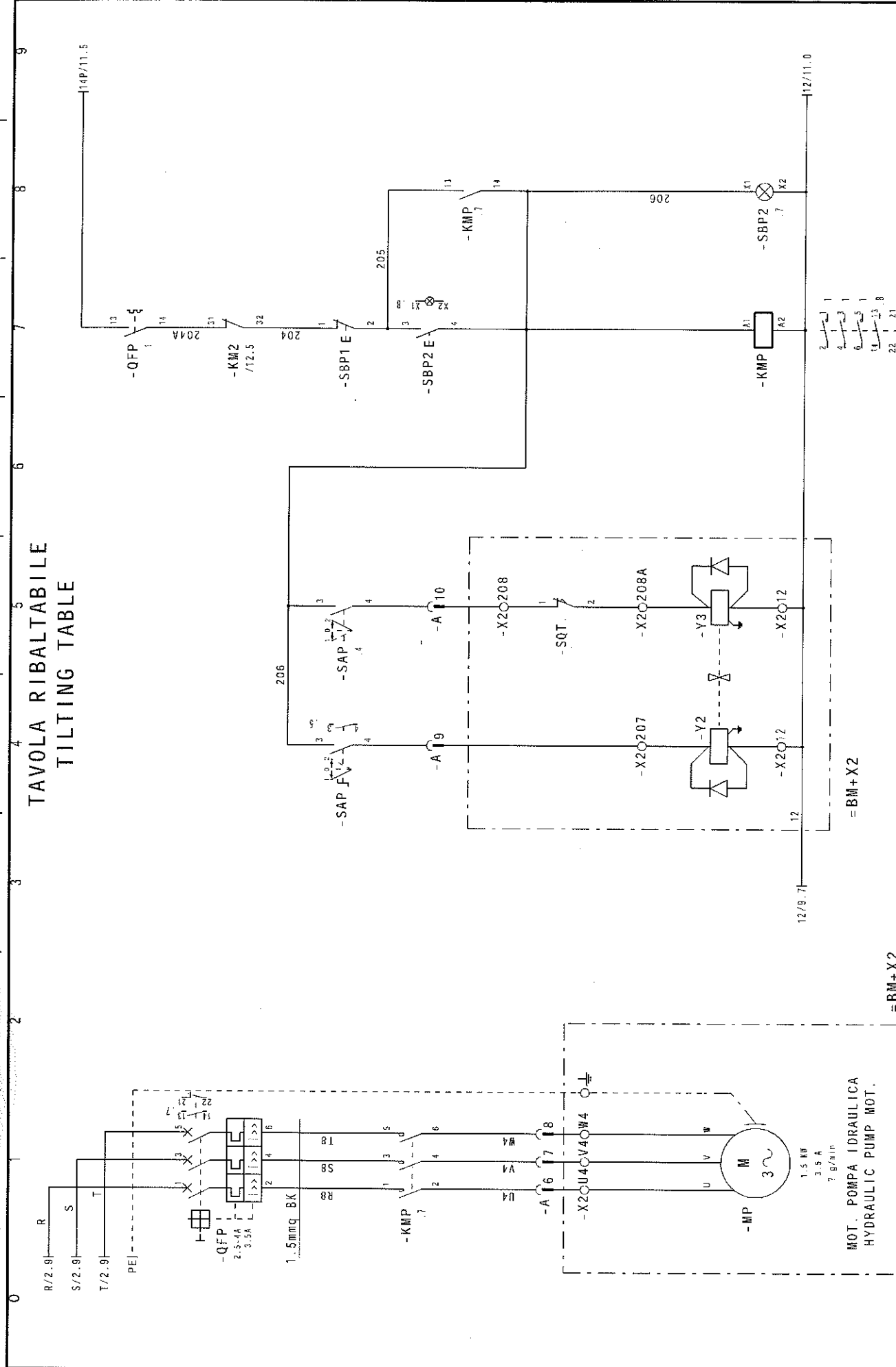
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| Lab.     | 8 |
| Success. | 9 |

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| 30 | 20 |
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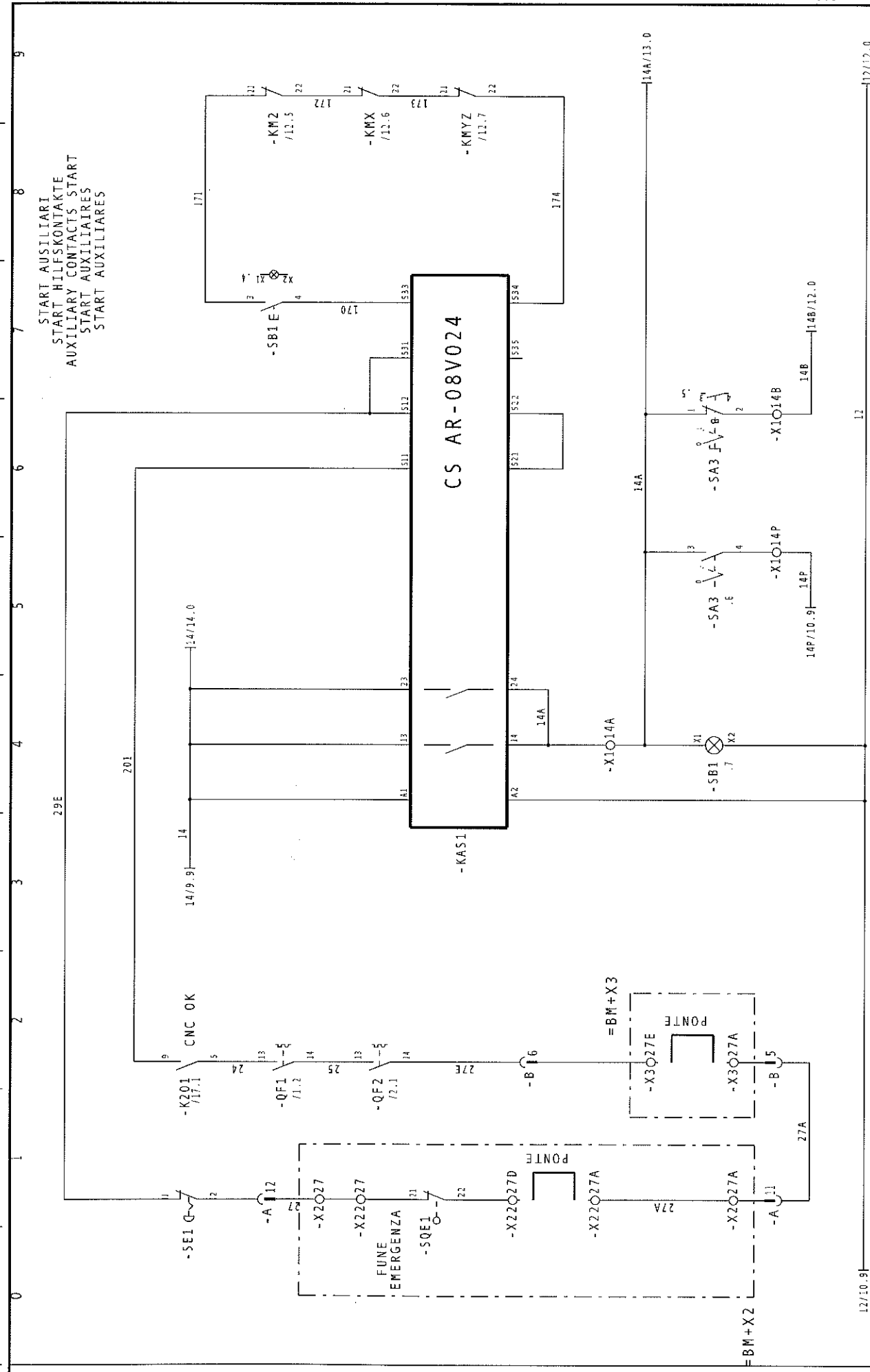
TAVOLA RIBALTABILE  
TILTING TABLE



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| 2             | IN. XWP/KUD |      | Dis.     |      |
| 3             |             |      | Ver.     |      |
| 4             |             |      |          |      |

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| COMMESSA:                                          |  | ORDER:          |  | 15352 19/01/11 |  | TPR00002        |  |
| PROGETTO:                                          |  | PROJECT NUMBER: |  | 11             |  | 11              |  |
| PROJET:                                            |  | PROJECT:        |  | 11             |  | 11              |  |
| Pag. 10                                            |  | Pag. 10         |  | Pag. 10        |  | Pag. 10         |  |
| Succ. 11                                           |  | Succ. 11        |  | Succ. 11       |  | Succ. 11        |  |
| 30                                                 |  | 30              |  | 30             |  | 30              |  |

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| Modifiche     | Data | Nome | Data | Nome |
|---------------|------|------|------|------|
| Modifications | Date | Name | Date | Name |
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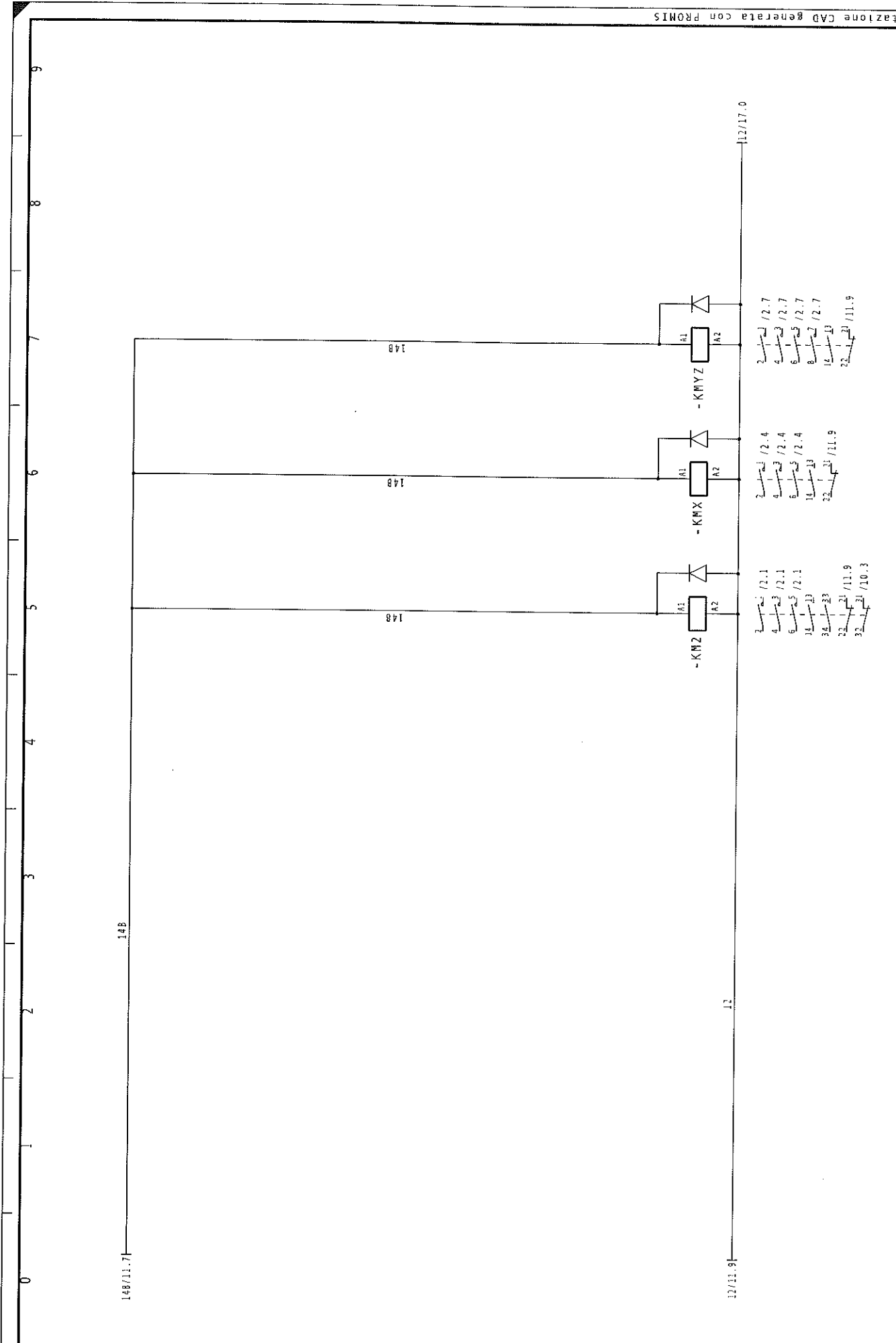
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ed elettroniche  
per automazione industriale

PR-99-20-0  
DISP. SICUREZZA

|                                                     |                |
|-----------------------------------------------------|----------------|
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| COMMESSA:                                           |                |
| ORDER:                                              |                |
| PROJECT NUMBER:                                     | 15352 19/01/11 |
| PROJECT:                                            | TPR00002       |
| SUCC.                                               | 30             |
| Pag.                                                | 11             |
| Q.E.                                                | +              |

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| Modifiche | Data | Nome | Data | Nome | Modifiche | Data | Nome |
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| 8         |      |      |      |      | 8         |      |      |
| 9         |      |      |      |      | 9         |      |      |
| 10        |      |      |      |      | 10        |      |      |

PR-99-20-0  
CIRCUITO AUX

Documentazione CAD Generata con PROMIS

PROGETTO:  
PROJECT NUMBER:  
PROJET:  
TPR00002

COMMESSA:  
ORDER:  
COMMANDE:  
15352 19/01/11

DISTINTA DI BASE - INTERNAL CODE - BORNERA DE BASE:  
COBPR00002

Q.E.  
+

Pag. 13  
Succ. 13  
30. Pag.

14A/11.9

14A/19.0

=BM+X3

-X3Ø14

-SQX-

-X3ØE101

=BM+X2

-X2Ø14

-SQY-

-X2ØE103

=BM+X3

-X3Ø14

-SQZ-

-X3ØE105

=BM+X3

-X3Ø14

-SQZ+

-X3ØE106

EXTRACORSA ASSE X+  
LIMIT SWITCH X+  
GRENZSCHALTER X+  
INTERUPTEUR DE LIMITES X+

EXTRACORSA ASSE X+  
LIMIT SWITCH X+  
GRENZSCHALTER X+  
INTERUPTEUR DE LIMITES X+

EXTRACORSA ASSE Y+  
LIMIT SWITCH Y+  
GRENZSCHALTER Y+  
INTERUPTEUR DE LIMITES Y+

EXTRACORSA ASSE Y+  
LIMIT SWITCH Y+  
GRENZSCHALTER Y+  
INTERUPTEUR DE LIMITES Y+

EXTRACORSA ASSE Z+  
LIMIT SWITCH Z+  
GRENZSCHALTER Z+  
INTERUPTEUR DE LIMITES Z+

EXTRACORSA ASSE Z+  
LIMIT SWITCH Z+  
GRENZSCHALTER Z+  
INTERUPTEUR DE LIMITES Z+

EXTRACORSA ASSE Z+  
LIMIT SWITCH Z+  
GRENZSCHALTER Z+  
INTERUPTEUR DE LIMITES Z+

EXTRACORSA ASSE Z+  
LIMIT SWITCH Z+  
GRENZSCHALTER Z+  
INTERUPTEUR DE LIMITES Z+

EXTRACORSA ASSE Z+  
LIMIT SWITCH Z+  
GRENZSCHALTER Z+  
INTERUPTEUR DE LIMITES Z+

| Modifiche | Data | Nome | Data | Nome |
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| c         |      |      |      |      |
| d         |      |      |      |      |

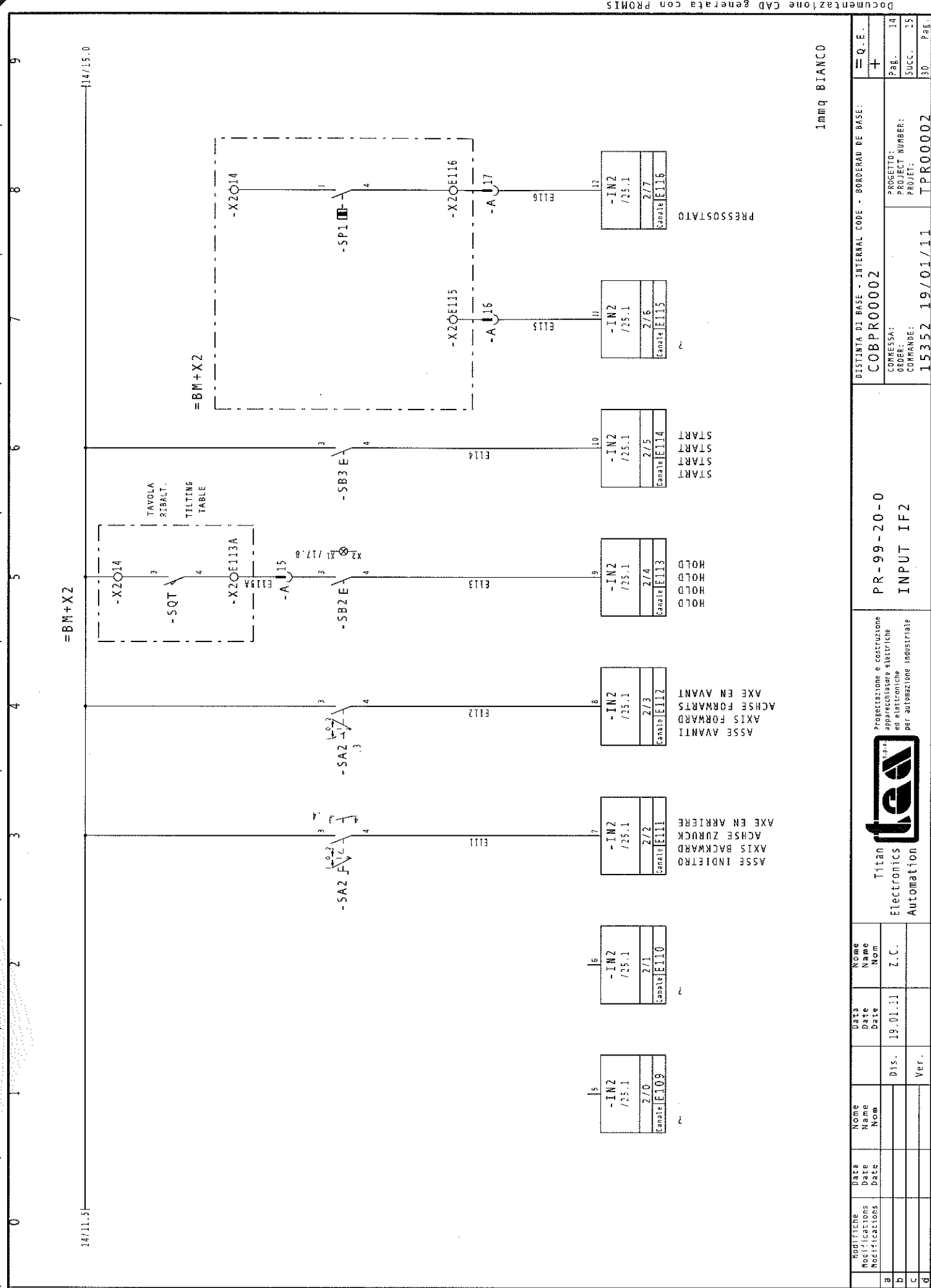
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Automation

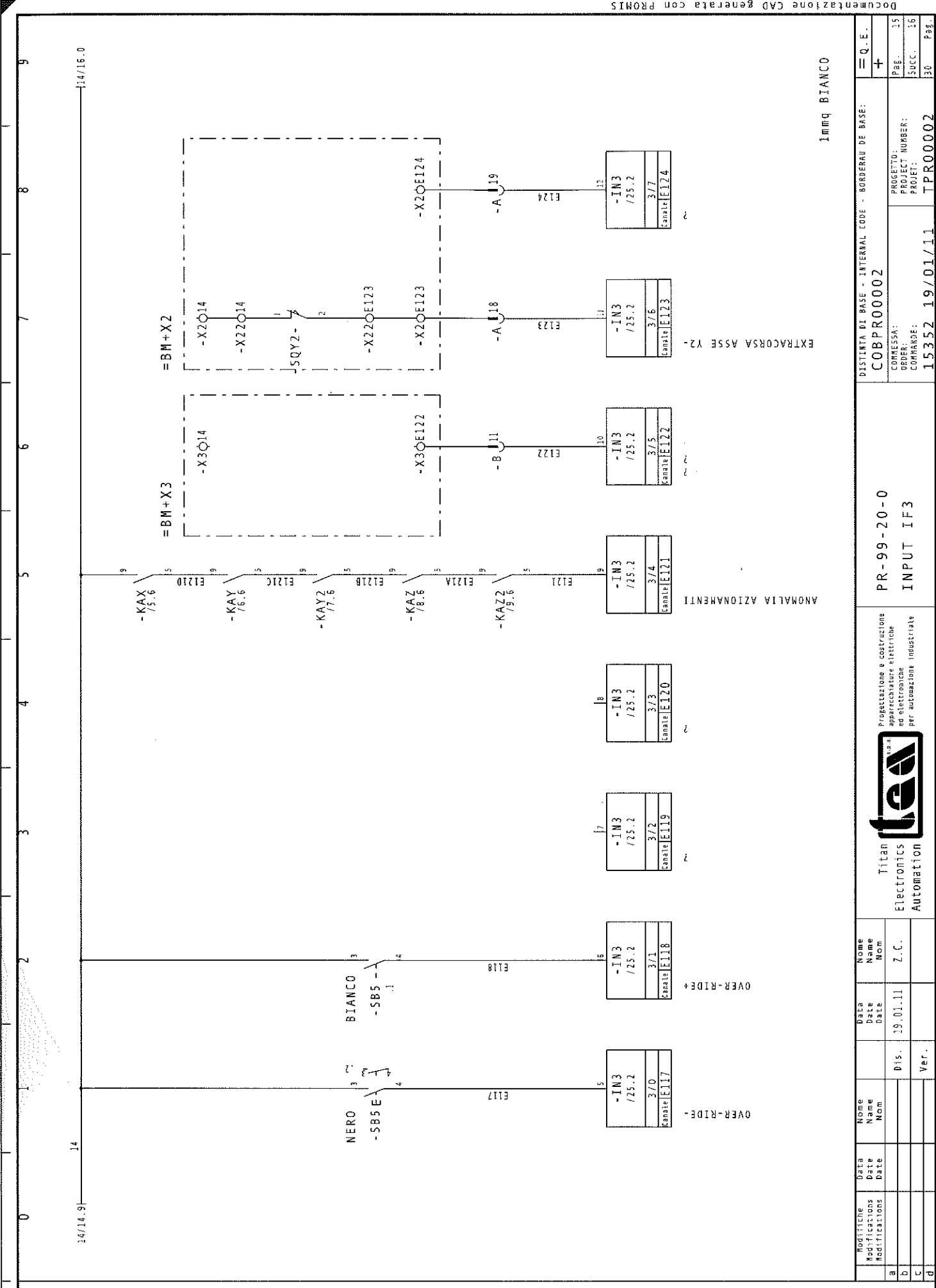
PR-99-20-0  
INPUT IF1

DISTINTA DI BASE - INTERNAL CODE - BORDEAU DE BASE:  
COBPR00002  
COMMESSA:  
ORDER:  
15352 19/01/11  
TPR00002

ImmQ BIANCO  
= Q.E.  
+  
Pag. 13  
Succ. 14  
30 Pag.



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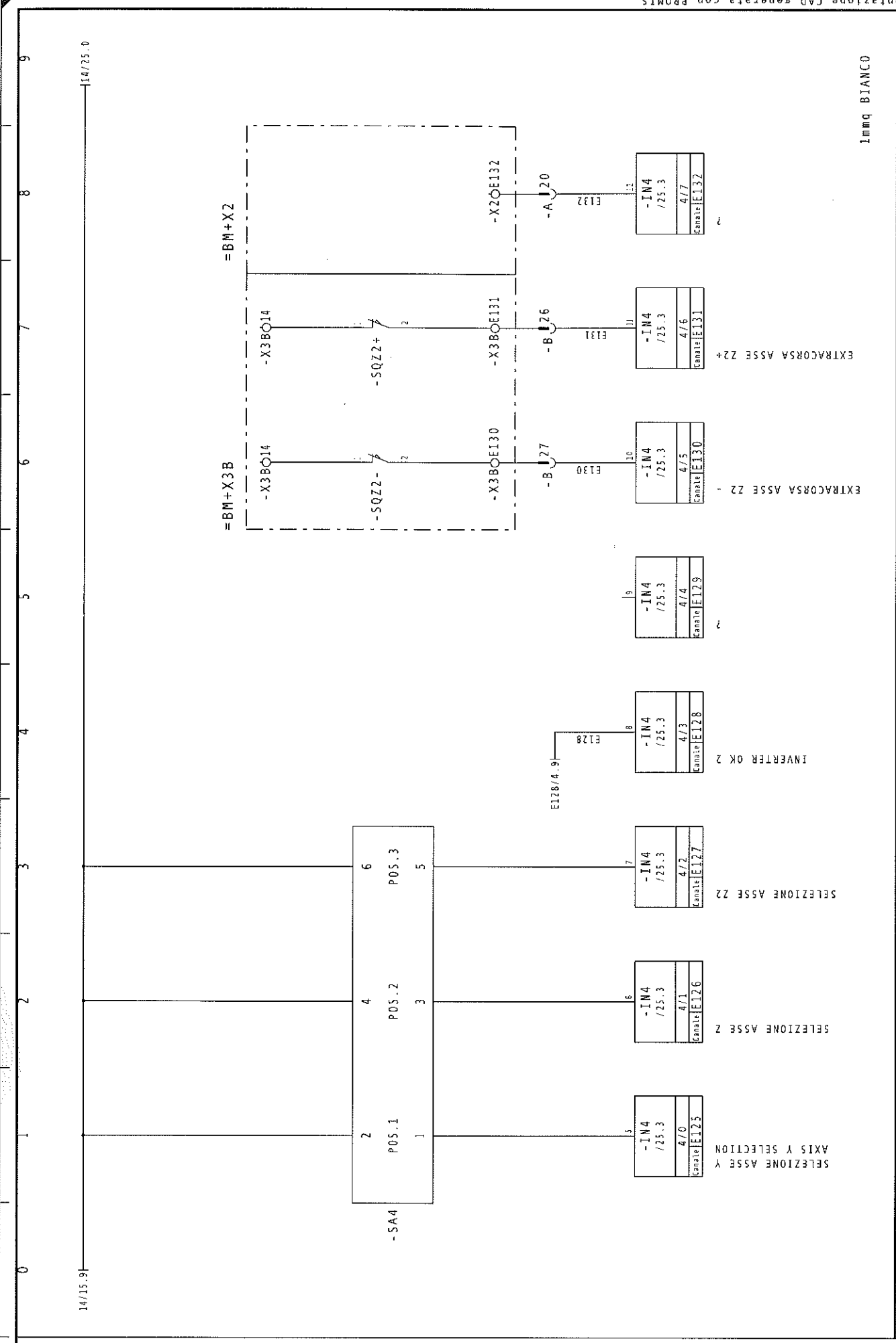


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| a         |      |      |      |      |
| b         |      |      |      |      |
| c         |      |      |      |      |
| d         |      |      |      |      |

|                              |  |                                                      |  |           |  |
|------------------------------|--|------------------------------------------------------|--|-----------|--|
| PR-99-20-0                   |  | DISTIRTA DI BASE - INTERNAL CODE - BORDERAU DE BASE: |  | = Q.E.    |  |
| INPUT IF3                    |  | COBPR00002                                           |  | +         |  |
| Titan Electronics Automation |  | COMMESSA:                                            |  | PROGETTO: |  |
| Dis.                         |  | 19.01.11                                             |  | Z.C.      |  |
| Ver.                         |  | 15352                                                |  | 19/01/11  |  |
|                              |  | COMANDO:                                             |  | TPR00002  |  |
|                              |  | ORDER:                                               |  | Pag.      |  |
|                              |  | 15352                                                |  | 15        |  |
|                              |  |                                                      |  | Succ.     |  |
|                              |  |                                                      |  | 30        |  |
|                              |  |                                                      |  | Pag.      |  |
|                              |  |                                                      |  | 16        |  |



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| Modifiche     | Data | Nome | Data | Nome |
|---------------|------|------|------|------|
| Modifications | Date | Name | Date | Name |
| a             |      |      |      |      |
| b             |      |      |      |      |
| c             |      |      |      |      |
| d             |      |      |      |      |

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|------|----------|------|--|
| Dis. | 19.01.11 | Z.C. |  |
| Ver. |          |      |  |

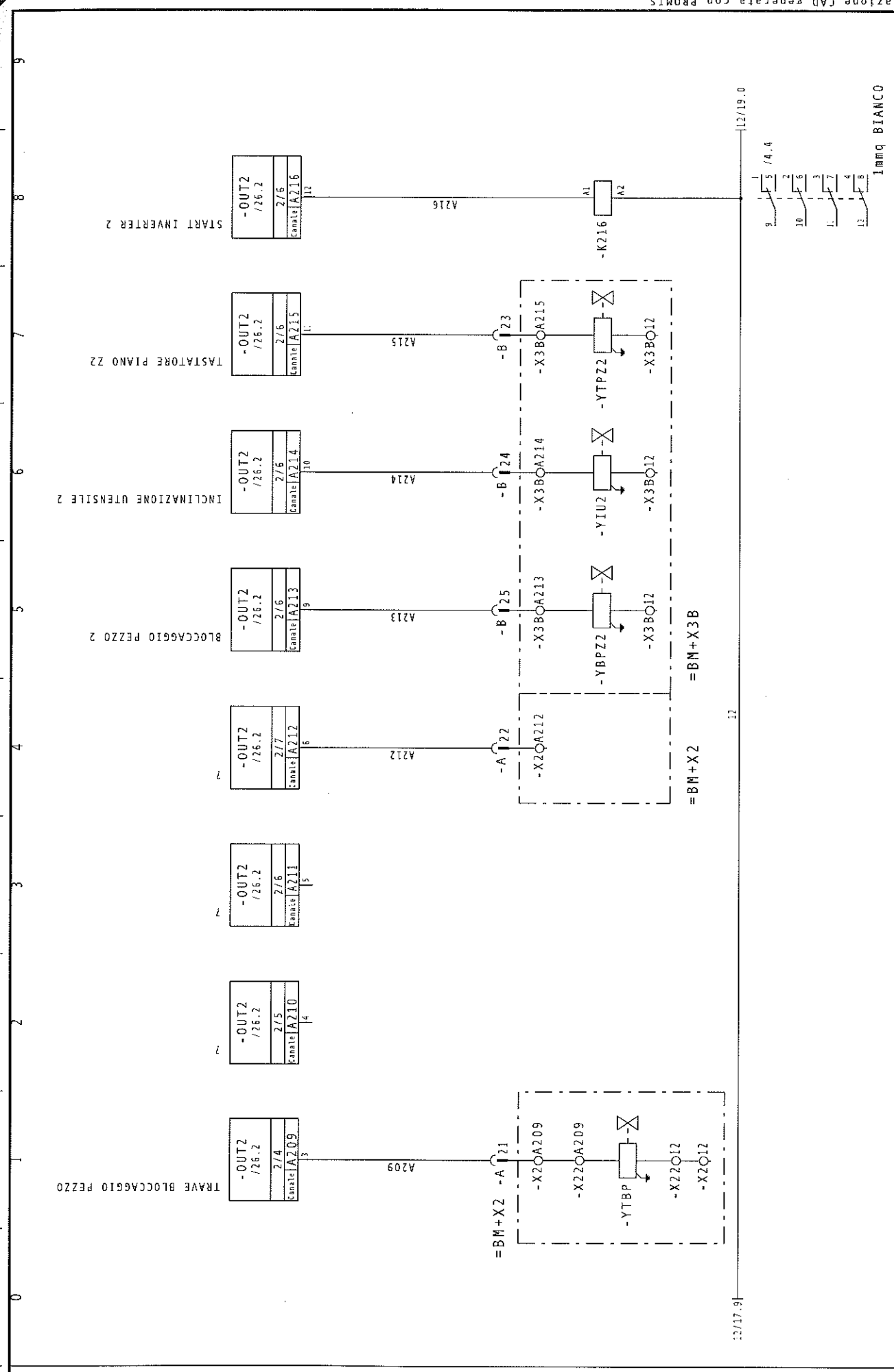
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| DISTINTA DI BASE - INTERNAL CODE - BORDERAU DE BASE: |  | COMMESSA:       |  |
| PR-99-20-0                                           |  | ORDER:          |  |
| INPUT IF4                                            |  | PROJECT NUMBER: |  |
|                                                      |  | PROJECT:        |  |
|                                                      |  | 15352 19/01/11  |  |
|                                                      |  | TPR00002        |  |

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| = R.E. |    |
| +      |    |
| Pag.   | 15 |
| Succ.  | 17 |
| Pag.   | 30 |
| Succ.  | 30 |

Imm. BIANCO



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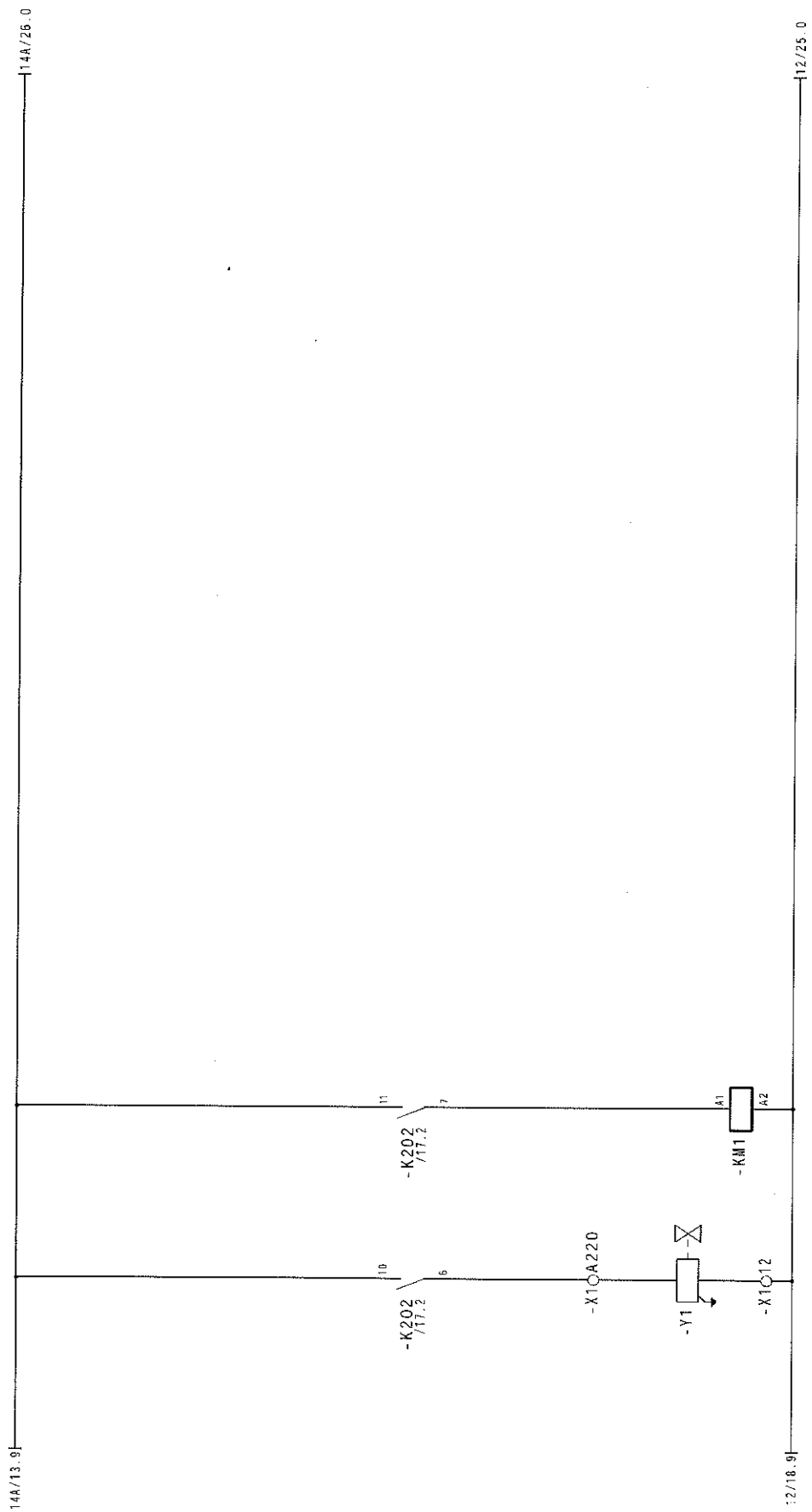


| Modifiche     | Data | Nome     | Data | Nome | Proiezione e costruzione    | DISTINTA DI BASE - INTERNAL CODE - BORDENAU DE BASE: | Q.E. |
|---------------|------|----------|------|------|-----------------------------|------------------------------------------------------|------|
| Modifications | Date | Name     | Date | Name | appareillages électriques   | COBPR00002                                           | +    |
| a             |      |          |      |      | ed électroniques            |                                                      |      |
| b             | Dis. | 19.01.11 | Z.C. |      | per automazione industriale |                                                      |      |
| c             | Ver. |          |      |      |                             |                                                      |      |
| d             |      |          |      |      |                             |                                                      |      |

|                |                |      |
|----------------|----------------|------|
| PROGETTO:      | Pag.           | 18   |
| PROJET NUMBER: | Succ.          | 19   |
| PROJET:        | TPR00002       | 30   |
| COMMANDE:      | 15352 19/01/11 | Pag. |

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EV ACQUA MOTORE POMPA ACQUA

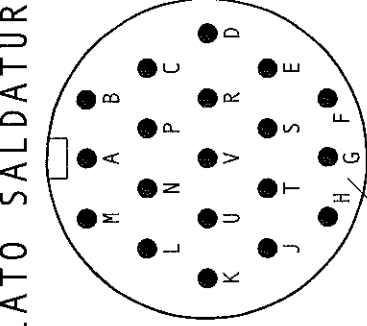


| Modifiche | Data | Nome | Data | Nome | Modifiche | Data | Nome | Data | Nome |
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| B         |      |      |      |      |           |      |      |      |      |
| C         |      |      |      |      |           |      |      |      |      |
| D         |      |      |      |      |           |      |      |      |      |

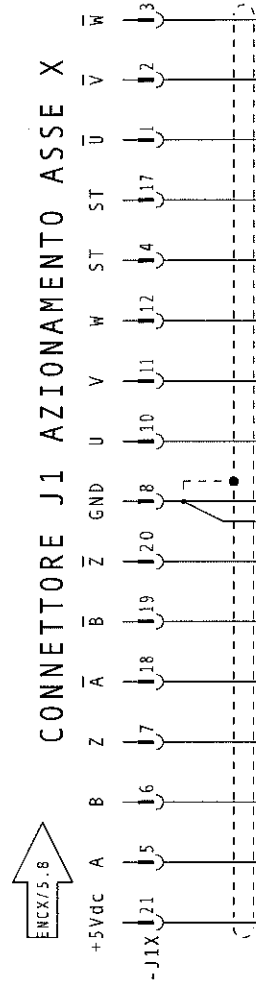
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|------|----------|-------|--|
| Dis. | 19.01.11 | Z. C. |  |
| Ver. |          |       |  |

|                                                                                                             |  |            |  |                                                                  |  |              |  |
|-------------------------------------------------------------------------------------------------------------|--|------------|--|------------------------------------------------------------------|--|--------------|--|
| Titel<br>Electronics<br>Automation                                                                          |  | PR-99-20-0 |  | DISTINTA DI BASE - INTERNAL CODE - BUREAU DE BASE:<br>COBPR00002 |  | = 0. E.      |  |
| Progettazione e costruzione<br>apparecchiature elettriche<br>ed elettroniche<br>per automazione industriale |  |            |  | COMMESSA:<br>ORD.:                                               |  | +<br>Pag. 19 |  |
|                                                                                                             |  |            |  | PROGETTO:<br>PROJECT NUMBER:                                     |  | Succ. 20     |  |
|                                                                                                             |  |            |  | COMMANDE:<br>15352 19/01/11                                      |  | Pag. 30      |  |
|                                                                                                             |  |            |  | TPR00002                                                         |  |              |  |

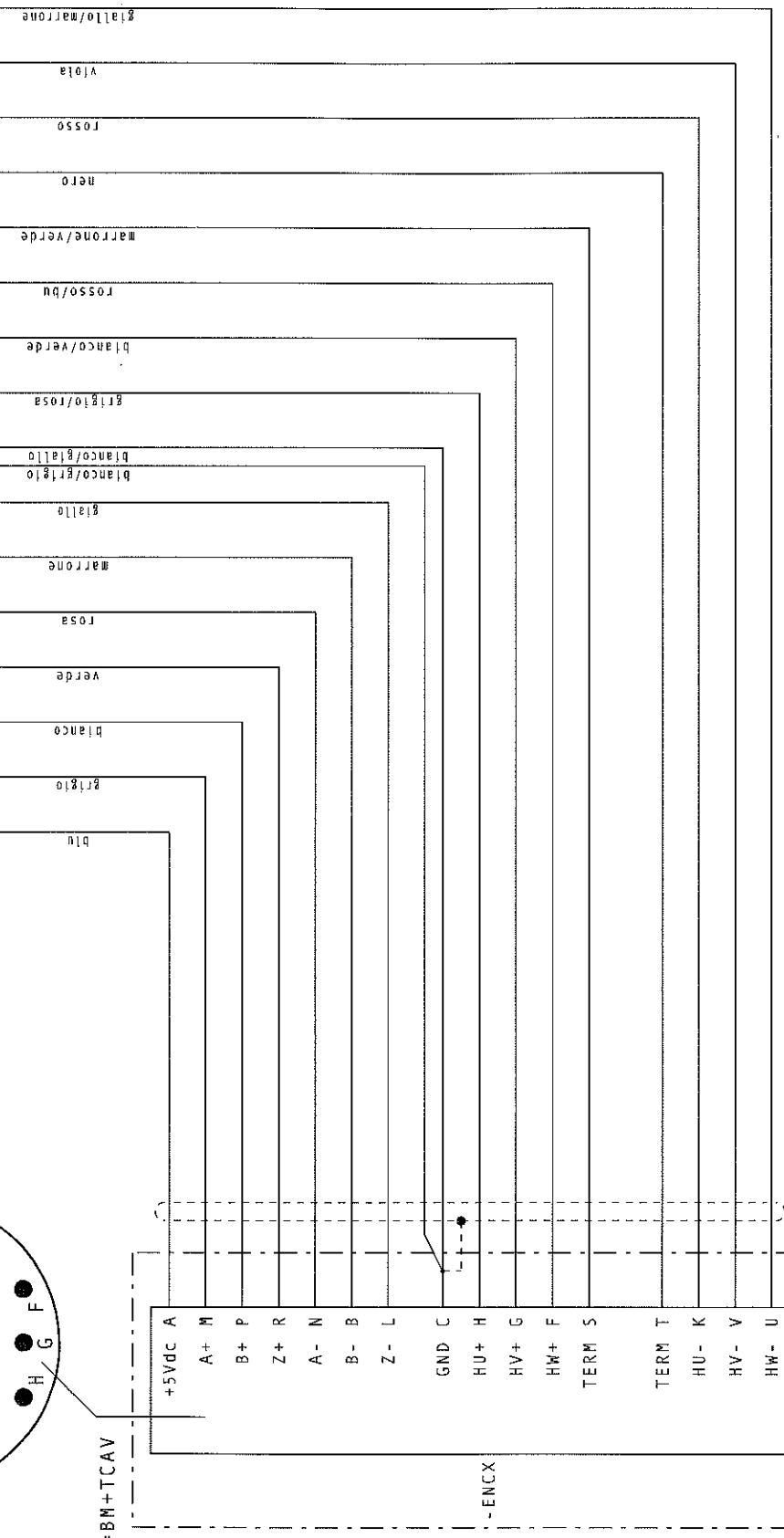
LATO SALDATURE



CONNETTORE J1 AZIONAMENTO ASSE X



| Modifiche     | Data | Nome | Data | Nome |
|---------------|------|------|------|------|
| Modifications | DATE | NAME | DATE | NAME |
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| b             |      |      |      |      |
| c             |      |      |      |      |
| d             |      |      |      |      |



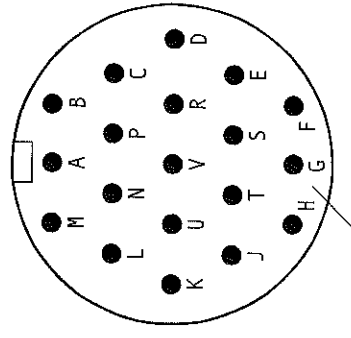
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| Modifiche     | Data | Nome | Data | Nome | Progettazione e costruzione | PR-99-20-0     | DISTINTA DI BASE - INTERNAL CODE - BORDERAU DE BASE: | Q.E. |
|---------------|------|------|------|------|-----------------------------|----------------|------------------------------------------------------|------|
| Modifications | DATE | NAME | DATE | NAME | apparecchiature elettriche  | ENCODER ASSE X | COBPR00002                                           | +    |
| a             |      |      |      |      | ed elettroniche             |                |                                                      |      |
| b             |      |      |      |      | per automazione industriale |                |                                                      |      |
| c             |      |      |      |      |                             |                |                                                      |      |
| d             |      |      |      |      |                             |                |                                                      |      |

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|------|----------|------|-----------------|----------|
| Dis. | 19.01.11 | Z.C. | PROGETTO:       | Pag. 20  |
| Ver. |          |      | PROJECT NUMBER: | Succ. 21 |
|      |          |      | PROJET:         | Pag. 30  |
|      |          |      | COMMANDE:       |          |
|      |          |      | 15352 19/01/11  | TPR00002 |

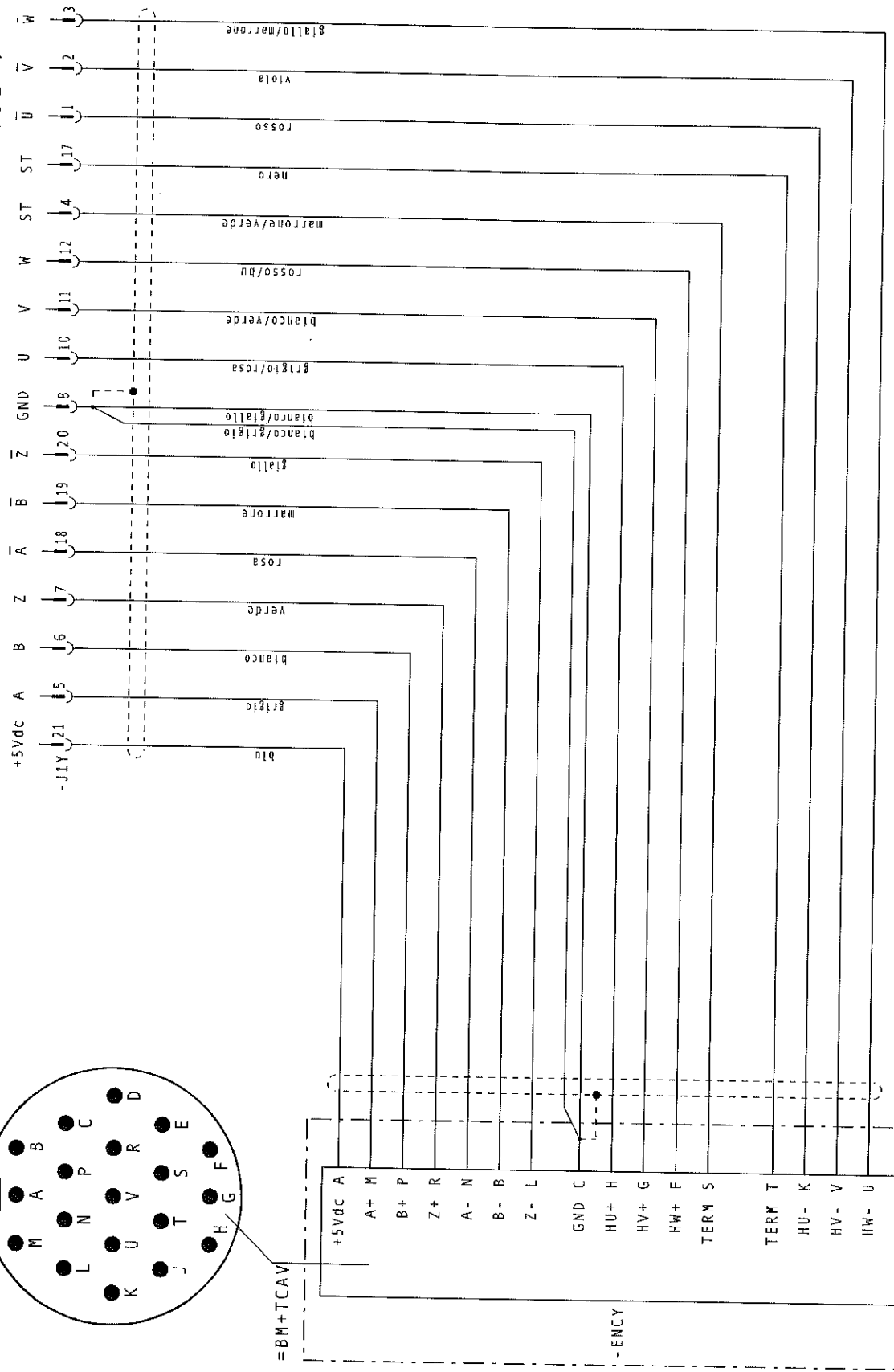
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LATO SALDATURE



ENCY/6.8

CONNETTORE J1 AZIONAMENTO ASSE Y

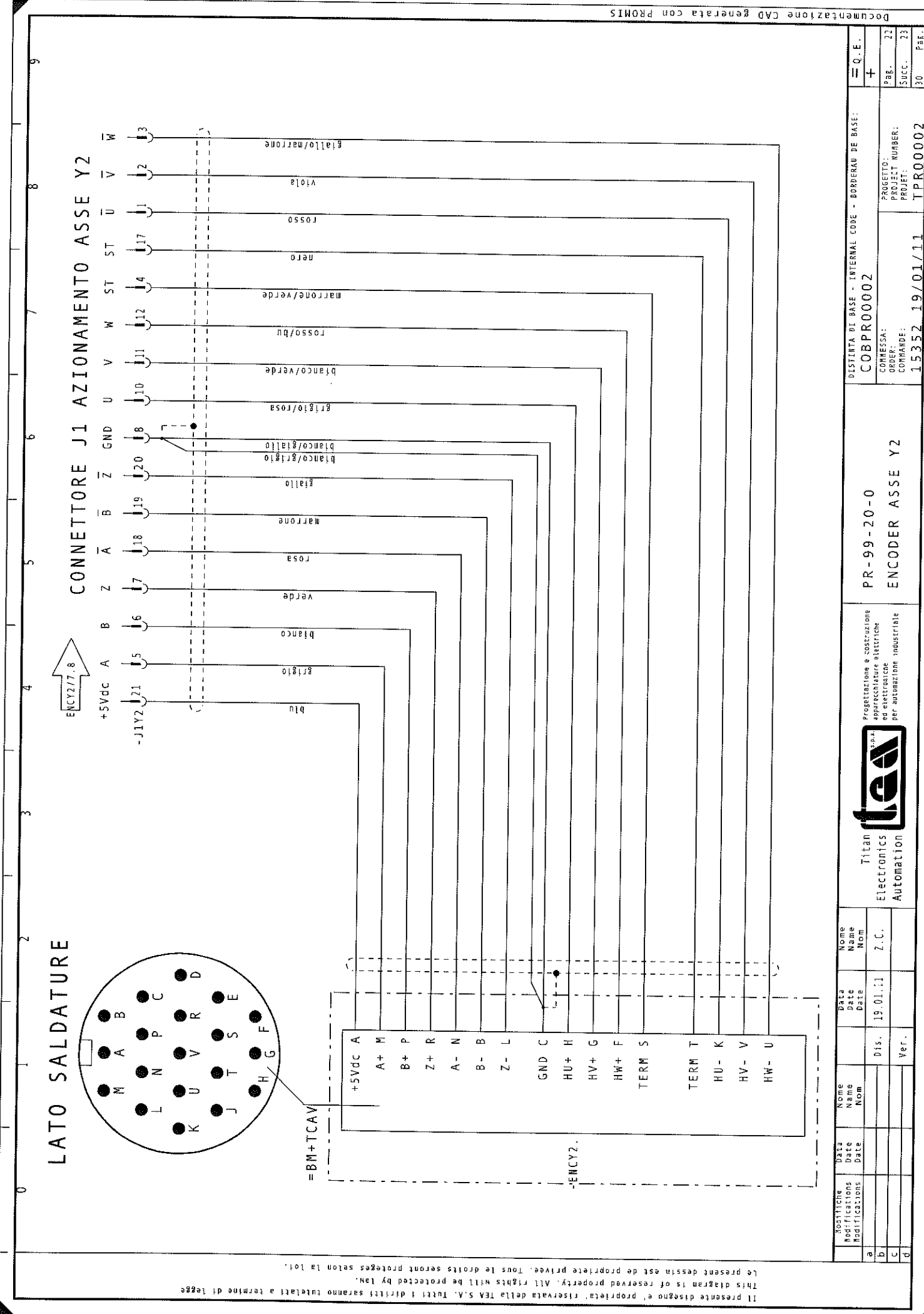


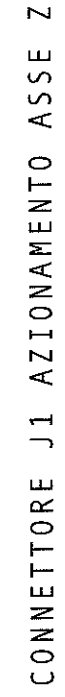
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| c        |               |      |               |      |               |
| d        |               |      |               |      |               |

|                |                                           |                |          |
|----------------|-------------------------------------------|----------------|----------|
| PR-99-20-0     | PROGETTO:<br>CODICE PROGETTO:<br>COMANDA: | 15352 19/01/11 | TPR00002 |
| ENCODER ASSE Y | PROGETTO:<br>CODICE PROGETTO:<br>COMANDA: | 15352 19/01/11 | TPR00002 |

|                                                                                                             |            |                |            |                                                      |      |
|-------------------------------------------------------------------------------------------------------------|------------|----------------|------------|------------------------------------------------------|------|
| PROGETTAZIONE E COSTRUZIONE<br>APPARECCHIATURE ELETTRICHE<br>ED ELETTRONICHE<br>PER AUTOMAZIONE INDUSTRIALE | PR-99-20-0 | ENCODER ASSE Y | COBPR00002 | DISTINTO DI BASE - INTERNAL CODE - BORDENAU DE BASE: | Q.E. |
| Titan<br>Electronics<br>Automation                                                                          |            |                |            |                                                      | +    |

|    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  |
| a  | b  | c  | d  | e  | f  | g  | h  | i  |
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 |

[illegible]



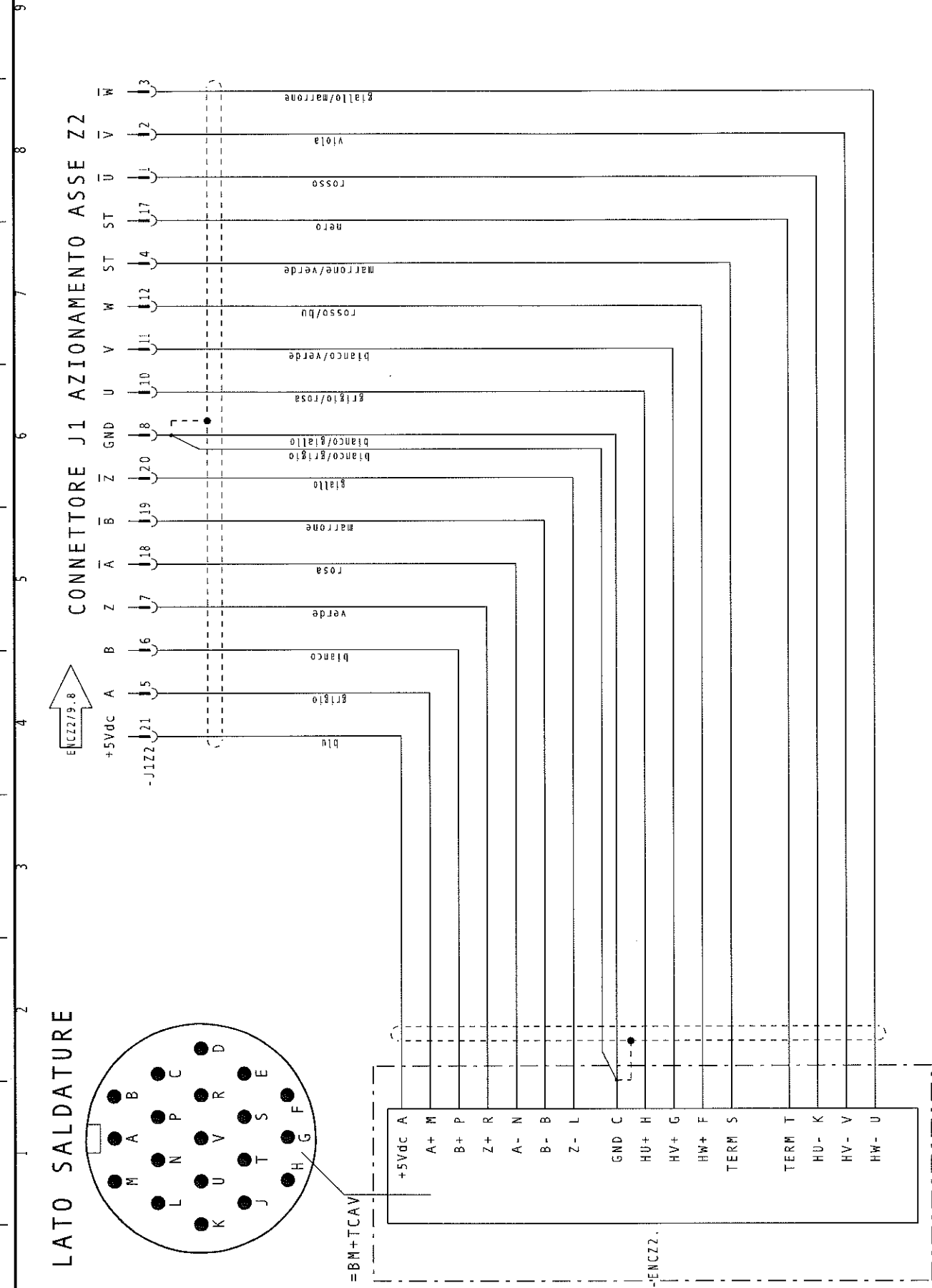
**Titan**  
**Electronics**  
**Automation**



Progettazione e costruzione  
apparecchiature elettroniche  
ed elettroniche  
per automazione industriale

|                                                      |                 |
|------------------------------------------------------|-----------------|
| DISTINTA DI BASE - INTERNAL CODE - BORDERAU DE BASE: |                 |
| COBPR00002                                           |                 |
| COMPRESSA:                                           | PROGETTO:       |
| PROPER:                                              | PROJECT NUMBER: |
| COMMANDE:                                            | PROJET:         |
| 15352 19/01/11                                       | TPR000002       |

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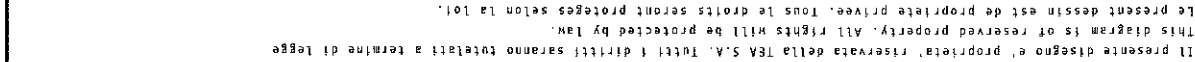
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|-----------|------|------|----------|------|
| a         |      |      | 19.01.11 | Z.C. |
| b         |      |      |          |      |
| c         |      |      |          |      |
| d         |      |      |          |      |

Progettazione e costruzione  
apparecchiature elettriche  
per automazione industriale

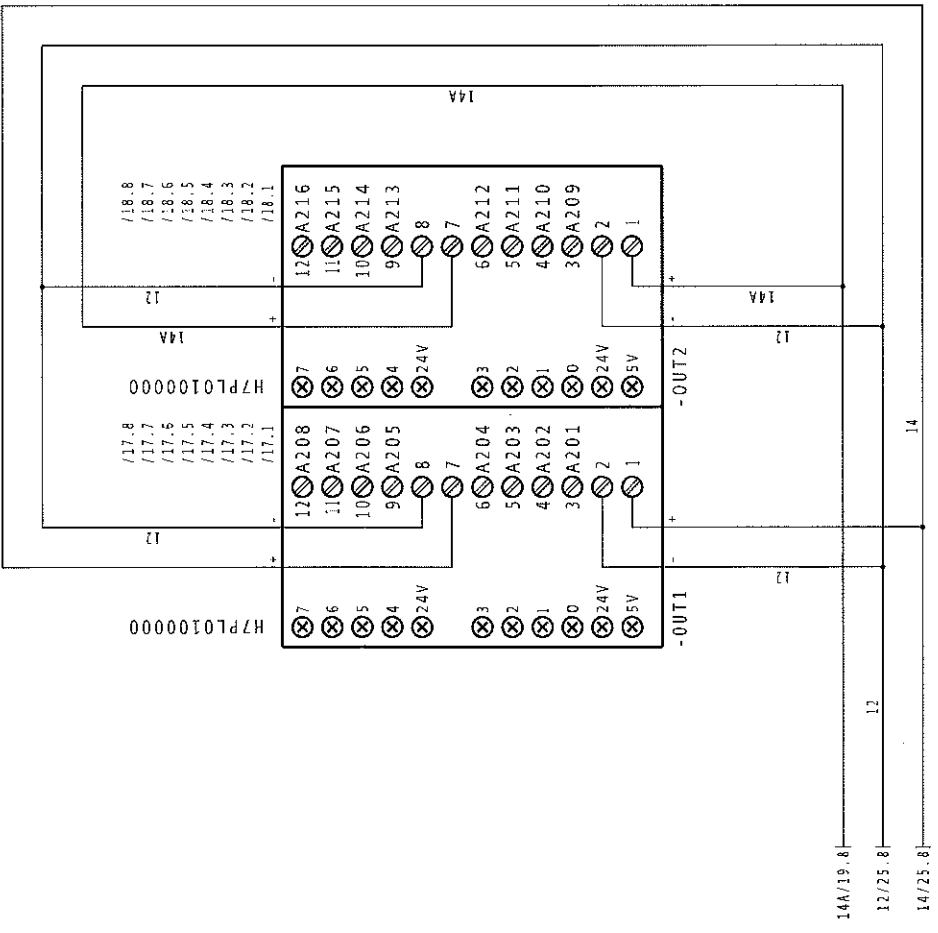
**TEA**  
Titan  
Electronics  
Automation

PR-99-20-0  
ENCODER ASSE Z1

|                                                      |                |                 |    |
|------------------------------------------------------|----------------|-----------------|----|
| DISTINTA DI BASE - INTERNAL CODE - BORDERAU DE BASE: | COBPR00002     | PROGETTO:       | 24 |
| CONMESSA:                                            |                | PROJECT NUMBER: |    |
| ORDER:                                               |                | PROJET:         | 25 |
| CONTINDE:                                            | 15352 19/01/11 | TPR00002        |    |



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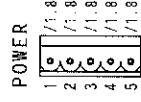
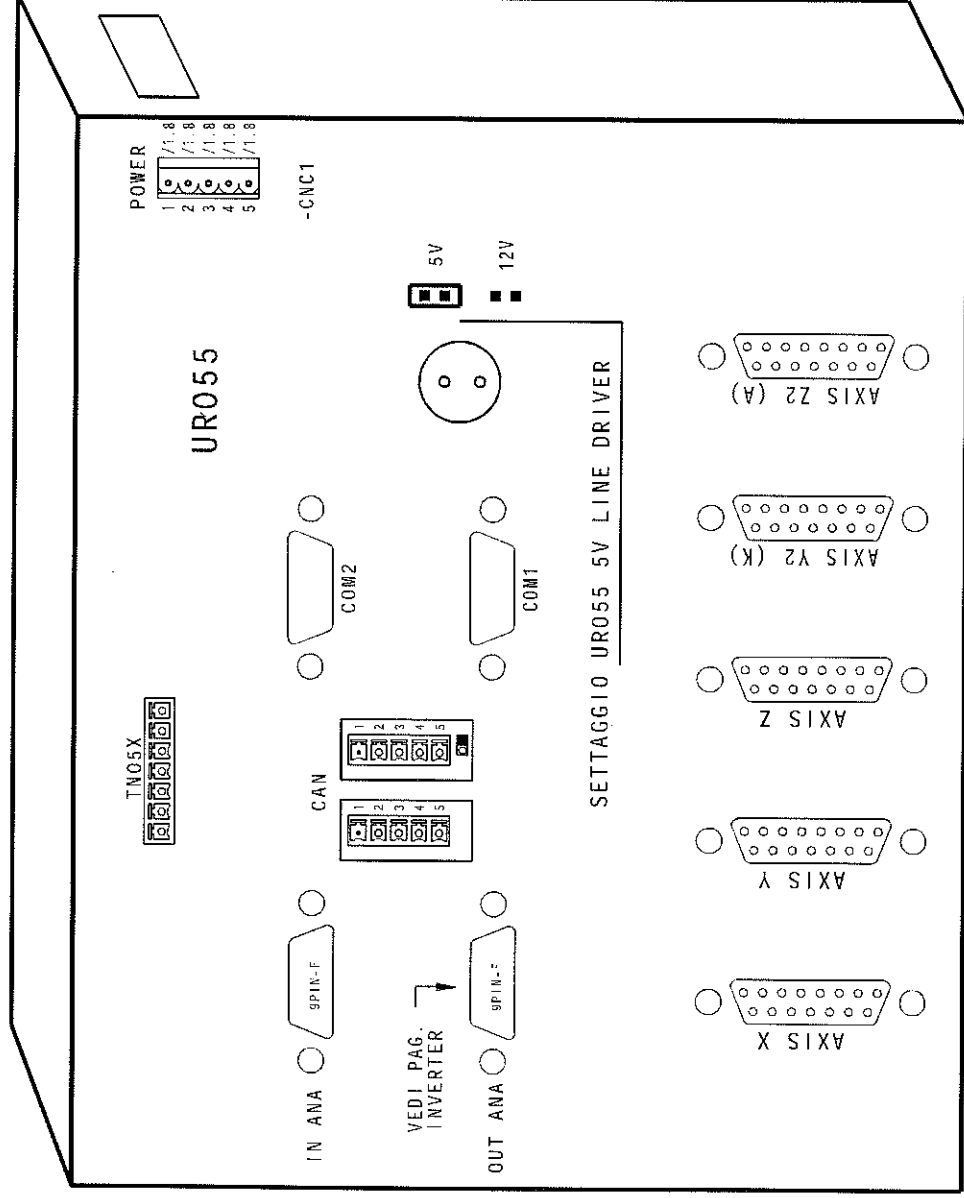
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| a         |      |      | Dis. | 19.01.11 |
| b         |      |      |      |          |
| c         |      |      |      |          |
| d         |      |      |      |          |



Progettazione e costruzione  
apparecchiature elettriche  
ed elettroniche  
per automazione industriale

PR-99-20-0  
SCHEDE OUTPUT

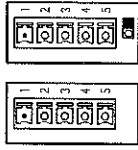
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| COBPR00002                                           |                 | +         |      |
| COMMESSA:                                            | PROGETTO:       | PAG.      | 26   |
| ORDER:                                               | PROJECT NUMBER: | SUCC.     | 27   |
| 15352                                                | 19/01/11        | TPR00002  | 30   |
|                                                      |                 | COMMANDE: | PAG. |



-CNC1

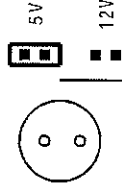


CAN



COM2

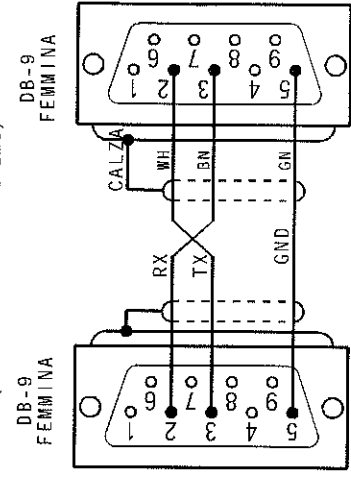
COM1



SETTAGGIO UR055 5V LINE DRIVER

CAVO SERIALE PC-CN

(CAVO 4x0.5 SCH L=2mt)



S1 COLLEGARE COM2 CN  
S2 COLLEGARE COM1 PC

| Modifiche | Data | Nome | Data | Nome |
|-----------|------|------|------|------|
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| b         |      |      |      |      |
| c         |      |      |      |      |
| d         |      |      |      |      |

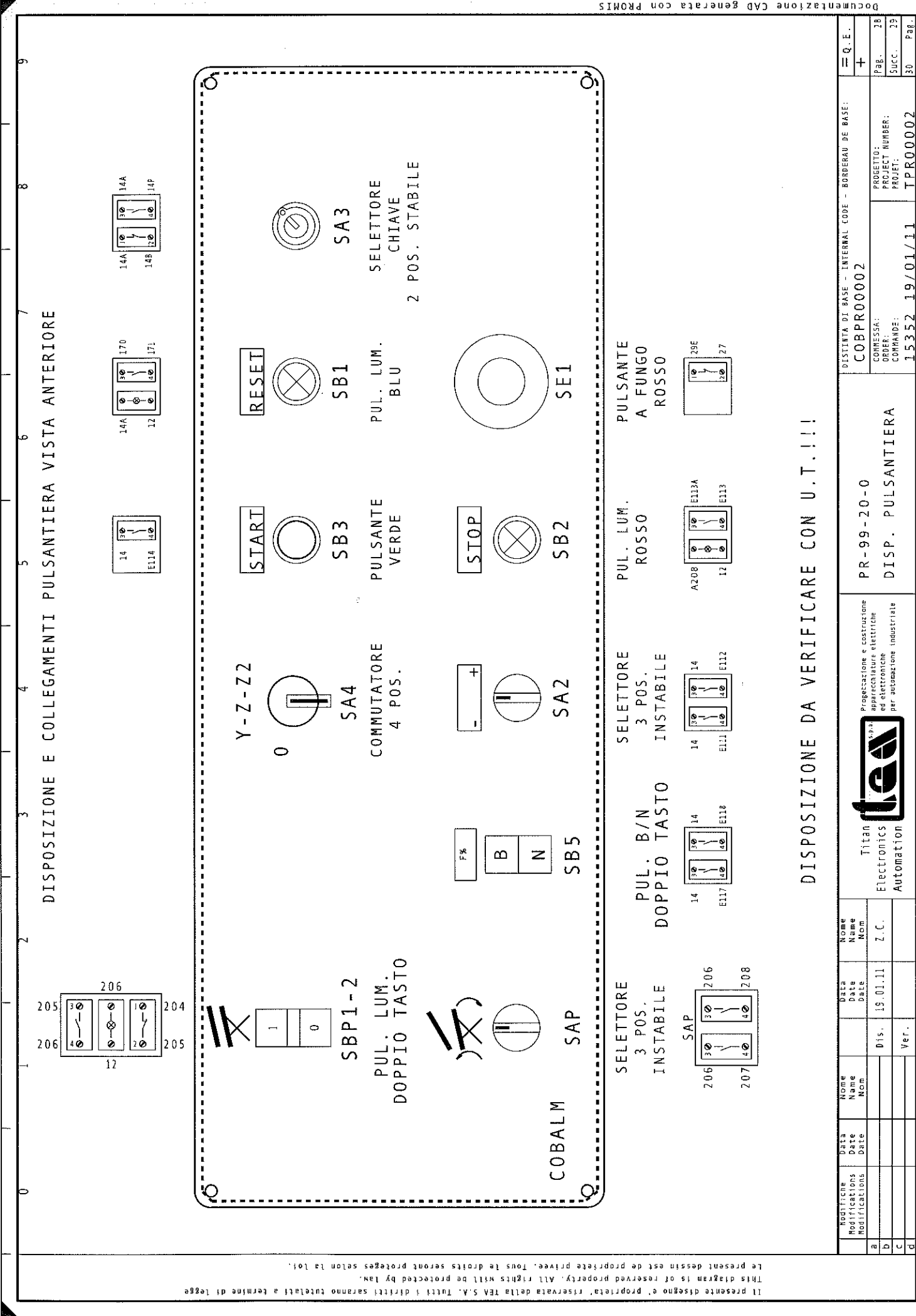
Titan  
Electronics  
Automation

Progettazione e costruzione  
di sistemi elettronici  
per automazione industriale e

PR-99-20-0  
UR055

DISTINTA DI BASE - INTERNAL CODE - CODICE DE BASE:  
COBPR00002  
COMMESSA:  
ORDER:  
PROJECT NUMBER:  
PROJECT  
15352 19/01/11 IPR00002

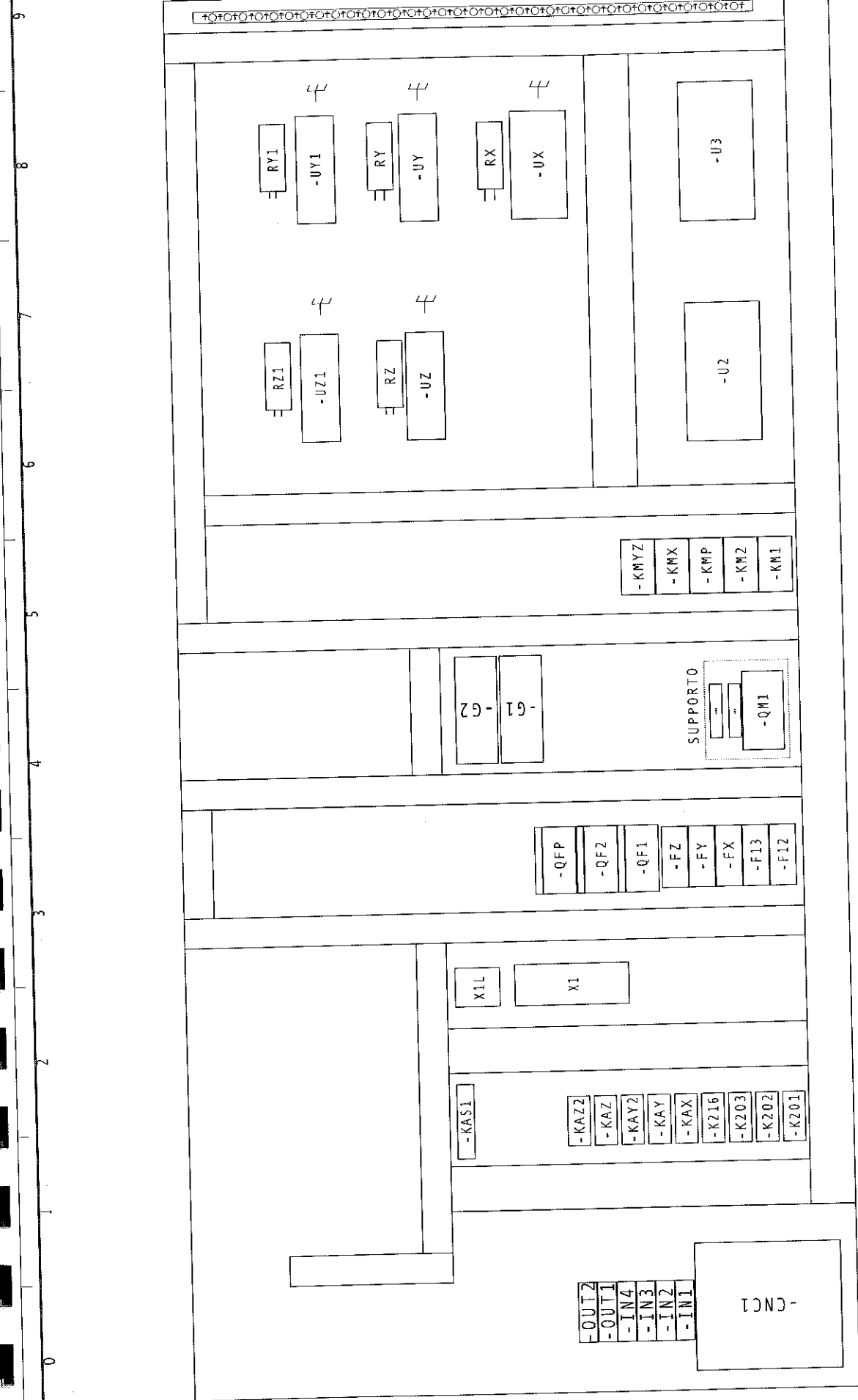
= Q.E.  
+  
Pag. 27  
Succ. 28  
30 Pag.



DISPOSIZIONE DA VERIFICARE CON U.T.!!!

| Modifiche                                                                                          | Data | Nome | Data | Nome | Distinta di Base - Internal Code - Bordereau de Base: | = Q. E. =          |
|----------------------------------------------------------------------------------------------------|------|------|------|------|-------------------------------------------------------|--------------------|
| Modifications                                                                                      | Date | Nom  | Date | Nom  | COBPR00002                                            | +                  |
| A                                                                                                  |      |      |      |      | PR-99-20-0                                            |                    |
| B                                                                                                  |      |      |      |      | DISP. PULSANTIERA                                     |                    |
| C                                                                                                  |      |      |      |      |                                                       |                    |
| D                                                                                                  |      |      |      |      |                                                       |                    |
| Progettazione e costruzione apparecchiature elettriche ed elettroniche per automazione industriale |      |      |      |      |                                                       | PROGETTO: 28       |
| Titan Electronics Automation                                                                       |      |      |      |      |                                                       | PROJECT NUMBER: 29 |
| Dis. 19.01.11 Z.C.                                                                                 |      |      |      |      |                                                       | Succ. 30           |
| Ver.                                                                                               |      |      |      |      |                                                       | TPR00002           |
| 15352 19/01/11                                                                                     |      |      |      |      |                                                       | 30                 |
|                                                                                                    |      |      |      |      |                                                       | Page               |

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| Modificazioni | Data | Nome | Data | Nome     |
|---------------|------|------|------|----------|
| Modifications | Date | Name | Date | Name     |
| a             |      |      | Dis. | 19.01.11 |
| b             |      |      |      | Z.C.     |
| c             |      |      | Ver. |          |
| d             |      |      |      |          |



Progettazione e costruzione  
apparecchiature elettriche  
ed elettroniche  
per automazione industriale

PR-99-20-0  
LAY-OUT Q.E.

| DISTINTA DI BASE - INTERNAL CODE - BORDO DI BASE: |                 | Q.E.     |    |
|---------------------------------------------------|-----------------|----------|----|
| COBPR00002                                        |                 | +        |    |
| COMMESSA:                                         | PROGETTO:       | Pag.     | 25 |
| ORDER:                                            | PROJECT NUMBER: | SUCC.    | 30 |
| COMMANDE:                                         | PROJECT:        |          |    |
| 15352                                             | 19/01/11        | TPR00002 |    |

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| Modifiche<br>Modifications | Data<br>Date | Nome<br>Name | Data<br>Date | Nome<br>Name |
|----------------------------|--------------|--------------|--------------|--------------|
| a                          |              |              | Dis.         | 19.01.11     |
| b                          |              |              |              |              |
| c                          |              |              | Ver.         |              |
| d                          |              |              |              |              |

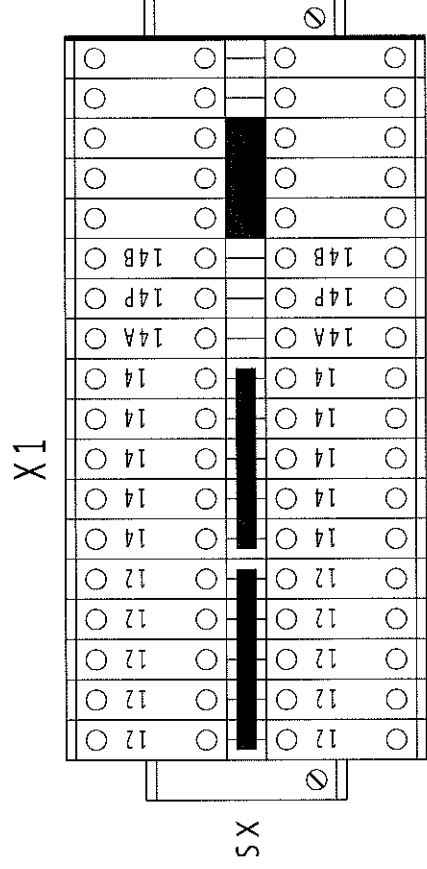
Titan  
Electronics  
Automation



Progettazione e costruzione  
di apparecchiature elettroniche  
per automazione industriale

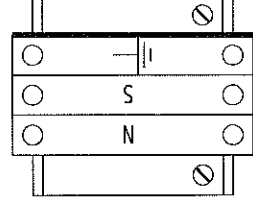
PR-99-20-0  
MM

|                                                                    |  |                                         |          |
|--------------------------------------------------------------------|--|-----------------------------------------|----------|
| DISTINTA DI BASE - INTERNAL CODE - BORDERAU DE BASE:<br>COBPR00002 |  | PROGETTO:<br>PROJECT NUMBER:<br>PROJET: | 30       |
| COMMESSA:<br>COMMANDE:                                             |  | 15352 19/01/11                          | TPR00002 |
| = Q.E. +                                                           |  | Pağ.                                    | 30       |
|                                                                    |  | Succ.                                   | 30       |

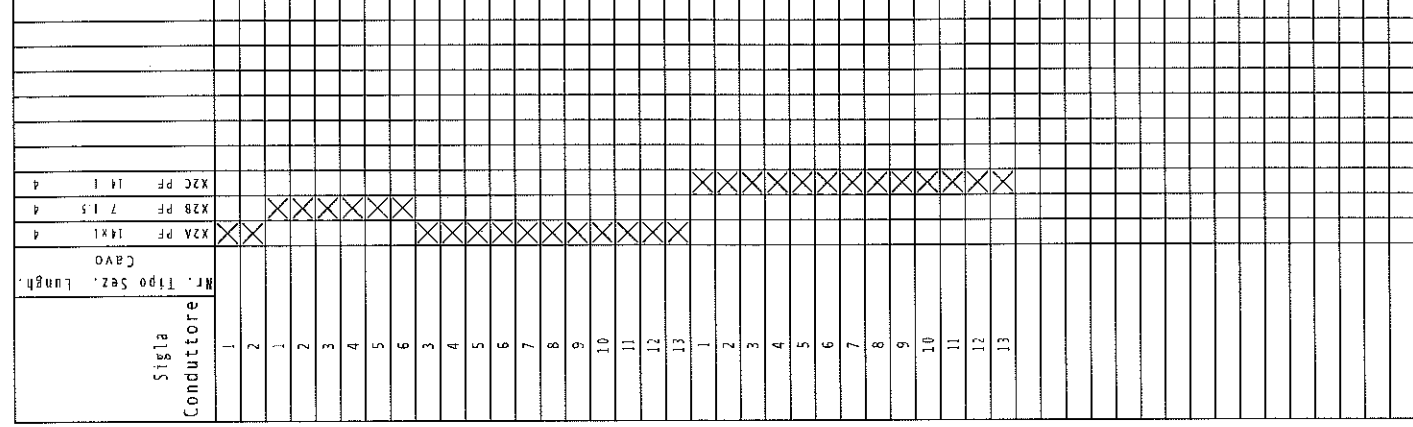


X1L

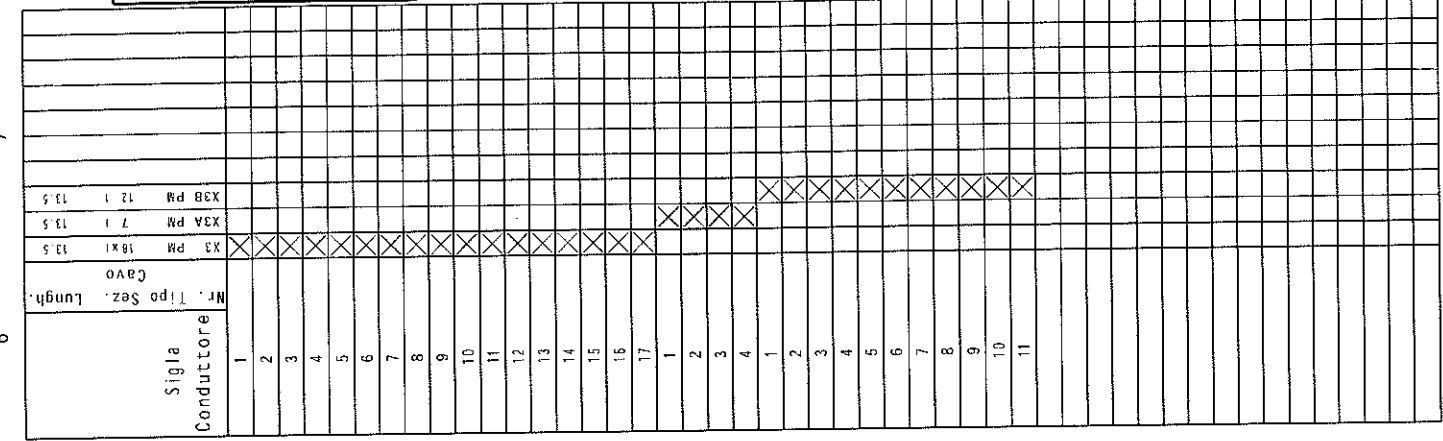
ZDU 2.5  
ZDU 2.5  
ZDU 2.5



220V

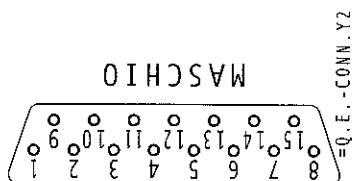
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|-----------|-----------------------------|------------------------------|--------|---|----------------|----------|--------|
| COBR00002 | COMMESSA - ORDER - COMMAND: | PROGETTO - PROJECT - PROJET: | Paq. 2 | 8 | 15352 19/01/11 | TPR00002 | Paq. 2 |
| +         |                             |                              |        |   |                |          |        |

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[illegible]

[illegible][illegible][illegible]

[illegible]



MASCCHIO

5 4 3 2 1

9 8 7 6

=O.E.-OUTA.

LISTA DISPOSITIVI  
Data: 31.01.11  
Pag.: 1  
Progetto : TPR00002  
Denominaz. : COBPR00002  
Nr. disegno : TPR00002  
Via F. Montebello, 14  
Gualdicciolo RSM

BdI , Nr. artic. , Denominazione  
Locaz. , Pag./mont. , Descrizione tecnica  
Install. ,

| Modifiche | Data | Nome | Data | Nome | Dis. | Z.C. |
|-----------|------|------|------|------|------|------|
|           |      |      |      |      |      |      |
| A         |      |      |      |      |      |      |
| B         |      |      |      |      |      |      |
| C         |      |      |      |      |      |      |
| D         |      |      |      |      |      |      |

|         |            |                              |              |
|---------|------------|------------------------------|--------------|
| -CONN.A | 085WES0020 | CUST. VOLANTE 32 POLI WESTEC | 7032.6526.5  |
| +X2     | 1.8        |                              |              |
| =BM     |            |                              |              |
| -SQT    | 095HUM0004 | PRESSACAYO PG13.5 HUMMEL     |              |
| +X2     | 14.5       |                              |              |
| =BM     |            |                              |              |
| -Y2     | 120PNE0011 | CONN. ELETTROVALVOLA PNEUMAX | MPM180 N/LED |
| +X2     | 10.5       |                              |              |
| =BM     |            |                              |              |
| -Y2     | 025ZANO017 | DIODO                        | 1802267      |
| +X2     | 10.5       |                              |              |
| =BM     |            |                              |              |
| -Y3     | 120PNE0011 | CONN. ELETTROVALVOLA PNEUMAX | MPM180 N/LED |
| +X2     | 10.6       |                              |              |
| =BM     |            |                              |              |
| -Y3     | 025ZANO017 | DIODO                        | 1802267      |
| +X2     | 10.6       |                              |              |
| =BM     |            |                              |              |
| -CONN.B | 085WES0025 | FRUTTO MASCHIO 1-16 WESTEC   | 7316.5953.0  |
| +X3     | 2.8        |                              |              |
| =BM     |            |                              |              |
| -CONN.B | 085WES0026 | FRUTTO MASCHIO 17-32 WESTEC  | 7316.5954.0  |
| +X3     | 2.8        |                              |              |
| =BM     |            |                              |              |
| -CONN.B | 085WES0111 | VITE DI BLOCCO WESTEC        |              |
| +X3     | 2.8        |                              |              |
| =BM     |            |                              |              |
| -CONN.B | 085WES0111 | VITE DI BLOCCO WESTEC        |              |
| +X3     | 2.8        |                              |              |
| =BM     |            |                              |              |
| -CONN.B | 085WES0020 | CUST. VOLANTE 32 POLI WESTEC | 7032.6526.5  |
| +X3     | 2.8        |                              |              |
| =BM     |            |                              |              |
| -CONN.B | 095FLA0027 | RACCORDO PVC35 FLARMA        |              |
| +X3     | 2.8        |                              |              |
| =BM     |            |                              |              |

LISTA DISPOSITIVI

PROGETTO: COBPR00002

COMMESSA: 15352 19/d17BR00002

| Modifiche | Data | Nome | Data | Nome | Dis. | Z.C. |
|-----------|------|------|------|------|------|------|
| A         |      |      |      |      |      |      |
| B         |      |      |      |      |      |      |
| C         |      |      |      |      |      |      |
| D         |      |      |      |      |      |      |

PROGETTO: COBPR00002

COMMESSA: 15352 19/d17BR00002

LISTA DISPOSITIVI

| Modifiche | Data | Nome | Data | Nome | Dis. | Z.C. |
|-----------|------|------|------|------|------|------|
| A         |      |      |      |      |      |      |
| B         |      |      |      |      |      |      |
| C         |      |      |      |      |      |      |
| D         |      |      |      |      |      |      |

PROGETTO: COBPR00002

COMMESSA: 15352 19/d17BR00002

| Modifiche | Data | Nome | Data | Nome | Dis. | Z.C. |
|-----------|------|------|------|------|------|------|
| A         |      |      |      |      |      |      |
| B         |      |      |      |      |      |      |
| C         |      |      |      |      |      |      |
| D         |      |      |      |      |      |      |

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|--------|------------|----------------------|----------|------------|--------|------------|-----------------------------|------------|------------|
| -SQX+  | 075PIZ0018 | FINECORS             | PIZZATO  | FA 4615-2  | +X22   | 11.1       | FD 678                      |            |            |
| +X3    | 13.2       | FA 4615-2            | CAVO 2mt |            | =BN    |            |                             |            |            |
| -SQX-  | 075PIZ0018 | FINECORS             | PIZZATO  | FA 4615-2  | -SQE1  | 095HUM0004 | PRESSACAVO PG13.5           | HUMMEL     |            |
| +X3    | 13.1       | FA 4615-2            | CAVO 2mt |            | +X22   | 11.1       | PG13.5                      |            |            |
| =BN    |            |                      |          |            | =BN    |            |                             |            |            |
| -SQZ-  | 075PIZ0018 | FINECORS             | PIZZATO  | FA 4615-4  | -SQY2- | 075PIZ0013 | FINECORS                    | PIZZATO    | FA 4615-4  |
| +X3    | 13.1       | FA 4615-2            | CAVO 2mt |            | +X22   | 15.7       | FA 4615-4                   | CAVO 4mt   |            |
| =BN    |            |                      |          |            | =BN    |            |                             |            |            |
| -SQY+  | 075PIZ0018 | FINECORS             | PIZZATO  | FA 4615-2  | -SQY+  | 075PIZ0018 | FINECORS                    | PIZZATO    | FA 4615-2  |
| +X3    | 13.5       | FA 4615-2            | CAVO 2mt |            | +X22   | 13.4       | FA 4615-2                   | CAVO 2mt   |            |
| =BN    |            |                      |          |            | =BN    |            |                             |            |            |
| -YBPZ  | 120PNE0003 | CONN. ELETTROVALVOLA | PNEUMAX  | MPC012209N | -YTBP  | 120PNE0003 | CONN. ELETTROVALVOLA        | PNEUMAX    | MPC012209N |
| +X3    | 17.4       | MPM120               |          |            | +X22   | 18.1       | MPM120                      |            |            |
| =BN    |            |                      |          |            | =BN    |            |                             |            |            |
| -YIU   | 120PNE0003 | CONN. ELETTROVALVOLA | PNEUMAX  | MPC012209N | -CARP  | 000AB80116 | KIT MSW1000-FIANCO          | ABB        |            |
| +X3    | 17.5       | MPM120               |          |            | +Q.E.  | 29.0       | KIT SPECIALE 2000x1000x600  |            |            |
| =BN    |            |                      |          |            | =Q.E.  |            |                             |            |            |
| -YTPZ  | 120PNE0003 | CONN. ELETTROVALVOLA | PNEUMAX  | MPC012209N | -CARP  | 000NHG0001 | TASCA PORTASCHIMA           | 06617      |            |
| +X3    | 17.7       | MPM120               |          |            | +Q.E.  | 29.0       |                             |            |            |
| =BN    |            |                      |          |            | =Q.E.  |            |                             |            |            |
| -SQZ2+ | 075PIZ0018 | FINECORS             | PIZZATO  | FA 4615-2  | -CARP  | 005TEA0006 | CARPENTERIA                 | VARI       |            |
| +X3B   | 15.7       | FA 4615-2            | CAVO 2mt |            | +Q.E.  | 29.0       | CHIUSURA SCASSO VENTILATORE |            |            |
| =BN    |            |                      |          |            | =Q.E.  |            |                             |            |            |
| -SQZ2- | 075PIZ0018 | FINECORS             | PIZZATO  | FA 4615-2  | -CARP  | 010ALF9001 | GRUPPO FILTRO 250X250 ALFA  | ALFA20008P |            |
| +X3B   | 15.6       | FA 4615-2            | CAVO 2mt |            | +Q.E.  | 29.0       | IP54 RAL7035                |            |            |
| =BN    |            |                      |          |            | =Q.E.  |            |                             |            |            |
| -YBPZ2 | 120PNE0003 | CONN. ELETTROVALVOLA | PNEUMAX  | MPC012209N | -CARP  | 010ALF9001 | GRUPPO FILTRO 250X250 ALFA  | ALFA20008P |            |
| +X3B   | 18.5       | MPM120               |          |            | +Q.E.  | 29.0       | IP54 RAL7035                |            |            |
| =BN    |            |                      |          |            | =Q.E.  |            |                             |            |            |
| -YIU2  | 120PNE0003 | CONN. ELETTROVALVOLA | PNEUMAX  | MPC012209N | -CARP  | 005TEA0017 | CARPENTERIA                 | VARI       |            |
| +X3B   | 18.6       | MPM120               |          |            | +Q.E.  | 29.0       | CHIUSURA CONNETTORE 32 PIN  |            |            |
| =BN    |            |                      |          |            | =Q.E.  |            |                             |            |            |
| -YTPZ2 | 120PNE0003 | CONN. ELETTROVALVOLA | PNEUMAX  | MPC012209N | -CARP  | 005TEA0017 | CARPENTERIA                 | VARI       |            |
| +X3B   | 18.7       | MPM120               |          |            | +Q.E.  | 29.0       | CHIUSURA CONNETTORE 32 PIN  |            |            |
| =BN    |            |                      |          |            | =Q.E.  |            |                             |            |            |
| -SQE1  | 075PIZ0003 | FINECORS             | FUNE     | FD678      |        |            |                             |            |            |

PROGETTO: COBPRO00002

CONMESSA: 15352 19/01/78

NR. DISEGNO: 19/01/78

LISTA DISPOSITIVI

PROGETTO: COBPRO00002

CONMESSA: 15352 19/01/78

NR. DISEGNO: 19/01/78

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| Modificata | Data | Nome | Data | Nome | Dis.     | Ver. | Nome | Disegno | Ver. | Disegno | Ver. |
|------------|------|------|------|------|----------|------|------|---------|------|---------|------|
| a          |      |      |      |      |          |      |      |         |      |         |      |
| b          |      |      |      |      | 31.01.11 |      |      |         |      |         |      |
| c          |      |      |      |      |          |      |      |         |      |         |      |
| d          |      |      |      |      |          |      |      |         |      |         |      |

| Progetto  | Comprova   | Commissa | Ver.  | Disegno   | Ver. | Disegno | Ver. |
|-----------|------------|----------|-------|-----------|------|---------|------|
| PROGETTO: | COBPR00002 | 15352    | 19/01 | 17ER00002 |      |         |      |
|           |            |          |       |           |      |         |      |

| Modificata | Data | Nome | Data | Nome | Dis.     | Ver. | Nome | Disegno | Ver. | Disegno | Ver. |
|------------|------|------|------|------|----------|------|------|---------|------|---------|------|
| a          |      |      |      |      |          |      |      |         |      |         |      |
| b          |      |      |      |      | 31.01.11 |      |      |         |      |         |      |
| c          |      |      |      |      |          |      |      |         |      |         |      |
| d          |      |      |      |      |          |      |      |         |      |         |      |

| Modificata | Data | Nome | Data | Nome | Dis.     | Ver. | Nome | Disegno | Ver. | Disegno | Ver. |
|------------|------|------|------|------|----------|------|------|---------|------|---------|------|
| a          |      |      |      |      |          |      |      |         |      |         |      |
| b          |      |      |      |      | 31.01.11 |      |      |         |      |         |      |
| c          |      |      |      |      |          |      |      |         |      |         |      |
| d          |      |      |      |      |          |      |      |         |      |         |      |

| Modificata | Data | Nome | Data | Nome | Dis.     | Ver. | Nome | Disegno | Ver. | Disegno | Ver. |
|------------|------|------|------|------|----------|------|------|---------|------|---------|------|
| a          |      |      |      |      |          |      |      |         |      |         |      |
| b          |      |      |      |      | 31.01.11 |      |      |         |      |         |      |
| c          |      |      |      |      |          |      |      |         |      |         |      |
| d          |      |      |      |      |          |      |      |         |      |         |      |

| Modificata | Data | Nome | Data | Nome | Dis.     | Ver. | Nome | Disegno | Ver. | Disegno | Ver. |
|------------|------|------|------|------|----------|------|------|---------|------|---------|------|
| a          |      |      |      |      |          |      |      |         |      |         |      |
| b          |      |      |      |      | 31.01.11 |      |      |         |      |         |      |
| c          |      |      |      |      |          |      |      |         |      |         |      |
| d          |      |      |      |      |          |      |      |         |      |         |      |

| Modificata | Data | Nome | Data | Nome | Dis.     | Ver. | Nome | Disegno | Ver. | Disegno | Ver. |
|------------|------|------|------|------|----------|------|------|---------|------|---------|------|
| a          |      |      |      |      |          |      |      |         |      |         |      |
| b          |      |      |      |      | 31.01.11 |      |      |         |      |         |      |
| c          |      |      |      |      |          |      |      |         |      |         |      |
| d          |      |      |      |      |          |      |      |         |      |         |      |

| Modificata | Data | Nome | Data | Nome | Dis.     | Ver. | Nome | Disegno | Ver. | Disegno | Ver. |
|------------|------|------|------|------|----------|------|------|---------|------|---------|------|
| a          |      |      |      |      |          |      |      |         |      |         |      |
| b          |      |      |      |      | 31.01.11 |      |      |         |      |         |      |
| c          |      |      |      |      |          |      |      |         |      |         |      |
| d          |      |      |      |      |          |      |      |         |      |         |      |

| Modificata | Data | Nome | Data | Nome | Dis.     | Ver. | Nome | Disegno | Ver. | Disegno | Ver. |
|------------|------|------|------|------|----------|------|------|---------|------|---------|------|
| a          |      |      |      |      |          |      |      |         |      |         |      |
| b          |      |      |      |      | 31.01.11 |      |      |         |      |         |      |
| c          |      |      |      |      |          |      |      |         |      |         |      |
| d          |      |      |      |      |          |      |      |         |      |         |      |

| Modificata | Data | Nome | Data | Nome | Dis.     | Ver. | Nome | Disegno | Ver. | Disegno | Ver. |
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| a          |      |      |      |      |          |      |      |         |      |         |      |
| b          |      |      |      |      | 31.01.11 |      |      |         |      |         |      |
| c          |      |      |      |      |          |      |      |         |      |         |      |
| d          |      |      |      |      |          |      |      |         |      |         |      |

| Modificata | Data | Nome | Data | Nome | Dis.     | Ver. | Nome | Disegno | Ver. | Disegno | Ver. |
|------------|------|------|------|------|----------|------|------|---------|------|---------|------|
| a          |      |      |      |      |          |      |      |         |      |         |      |
| b          |      |      |      |      | 31.01.11 |      |      |         |      |         |      |
| c          |      |      |      |      |          |      |      |         |      |         |      |
| d          |      |      |      |      |          |      |      |         |      |         |      |

| Modificata | Data | Nome | Data | Nome | Dis.     | Ver. | Nome | Disegno | Ver. | Disegno | Ver. |
|------------|------|------|------|------|----------|------|------|---------|------|---------|------|
| a          |      |      |      |      |          |      |      |         |      |         |      |
| b          |      |      |      |      | 31.01.11 |      |      |         |      |         |      |
| c          |      |      |      |      |          |      |      |         |      |         |      |
| d          |      |      |      |      |          |      |      |         |      |         |      |

| Modificata | Data | Nome | Data | Nome | Dis. | Ver. | Nome | Disegno | Ver. | Disegno | Ver. |
|------------|------|------|------|------|------|------|------|---------|------|---------|------|
|------------|------|------|------|------|------|------|------|---------|------|---------|------|



| Modifiche | Data       | Nome                 | Data    | Nome        | Progetto:   | Disegnato:       | Verificato: | Per: | Rev. | Page |
|-----------|------------|----------------------|---------|-------------|-------------|------------------|-------------|------|------|------|
| -IN2      | 0800ME0006 | CONN. 12P PASSO 5.08 | OMEGA   | MC85812     | PROGETTO:   | DISIGNO:         | VER.        | PER. | REV. | 5    |
| +         | 25.1       |                      |         |             | COMPRO00002 | 15352 19/01/1980 |             |      |      | 6    |
| =Q.E.     |            |                      |         |             |             |                  |             |      |      | 7    |
| -IN3      | 025TEC0060 | MODULO INPUT CNC     | TECNOS  | H7PLO000000 |             |                  |             |      |      | 8    |
| +         | 25.2       |                      |         |             |             |                  |             |      |      | 9    |
| =Q.E.     |            |                      |         |             |             |                  |             |      |      | 10   |
| -IN3      | 0800ME0006 | CONN. 12P PASSO 5.08 | OMEGA   | MC85812     |             |                  |             |      |      | 11   |
| +         | 25.2       |                      |         |             |             |                  |             |      |      | 12   |
| =Q.E.     |            |                      |         |             |             |                  |             |      |      | 13   |
| -IN4      | 025TEC0060 | MODULO INPUT CNC     | TECNOS  | H7PLO000000 |             |                  |             |      |      | 14   |
| +         | 25.3       |                      |         |             |             |                  |             |      |      | 15   |
| =Q.E.     |            |                      |         |             |             |                  |             |      |      | 16   |
| -IN4      | 0800ME0006 | CONN. 12P PASSO 5.08 | OMEGA   | MC85812     |             |                  |             |      |      | 17   |
| +         | 25.3       |                      |         |             |             |                  |             |      |      | 18   |
| =Q.E.     |            |                      |         |             |             |                  |             |      |      | 19   |
| -K201     | 055OMR0001 | RELE'                | OMRON   | MY4         |             |                  |             |      |      | 20   |
| +         | 17.1       |                      |         |             |             |                  |             |      |      | 21   |
| =Q.E.     |            |                      |         |             |             |                  |             |      |      | 22   |
| -K201     | 055SCK0004 | DIODD                | SCHRACK | TYPE 2      |             |                  |             |      |      | 23   |
| +         | 17.1       |                      |         |             |             |                  |             |      |      | 24   |
| =Q.E.     |            |                      |         |             |             |                  |             |      |      | 25   |
| -K201     | 055GAV9001 | ZOCOCO PER RELE'     | GAVAZZI | ES15/4N     |             |                  |             |      |      | 26   |
| +         | 17.1       |                      |         |             |             |                  |             |      |      | 27   |
| =Q.E.     |            |                      |         |             |             |                  |             |      |      | 28   |
| -K202     | 055OMR0001 | RELE'                | OMRON   | MY4         |             |                  |             |      |      | 29   |
| +         | 17.2       |                      |         |             |             |                  |             |      |      | 30   |
| =Q.E.     |            |                      |         |             |             |                  |             |      |      | 31   |
| -K202     | 055SCK0004 | DIODD                | SCHRACK | TYPE 2      |             |                  |             |      |      | 32   |
| +         | 17.2       |                      |         |             |             |                  |             |      |      | 33   |
| =Q.E.     |            |                      |         |             |             |                  |             |      |      | 34   |
| -K202     | 055GAV9001 | ZOCOCO PER RELE'     | GAVAZZI | ES15/4N     |             |                  |             |      |      | 35   |
| +         | 17.2       |                      |         |             |             |                  |             |      |      | 36   |
| =Q.E.     |            |                      |         |             |             |                  |             |      |      | 37   |
| -K203     | 055OMR0001 | RELE'                | OMRON   | MY4         |             |                  |             |      |      | 38   |
| +         | 17.3       |                      |         |             |             |                  |             |      |      | 39   |
| =Q.E.     |            |                      |         |             |             |                  |             |      |      | 40   |
| -K203     | 055SCK0004 | DIODD                | SCHRACK | TYPE 2      |             |                  |             |      |      | 41   |

|       | 0           | 1                       | 2             | 3         | 4 | 5     | 6          | 7                                | 8             | 9          |
|-------|-------------|-------------------------|---------------|-----------|---|-------|------------|----------------------------------|---------------|------------|
| -KAY2 | 0555CK0004  | D10D0                   | SCHRACK       | TYPE 2    |   | -KMYZ | 050TELO290 | TELERUTTORE                      | TELEMECANIQUE | LC1-DT25BD |
| +     | 7.6         | D10D0 X ZOCCOLO ZG4     |               |           |   | +     | 12.7       | LC1-DT25BD, 5.5KW, 24Vcc, 4 POLI |               |            |
| =Q.E. |             |                         |               |           |   | =Q.E. |            | INO+1NC                          |               |            |
| -KAV2 | 0555GAV9001 | ZOCCOLO PER RELE'       | GAVAZZI       | ES15/4N   |   | ===== |            |                                  |               |            |
| +     | 7.6         | ES15/4N                 |               |           |   | -OUT1 | 025TEC0061 | MODULO OUTPUT CNC                | TECNOS        | SRB-800    |
| =Q.E. |             |                         |               |           |   | +     | 26.1       | SRB-800                          |               |            |
| -KAZ  | 0550MR0001  | RELE'                   | OMRON         | MY4       |   | =Q.E. |            | PNP                              |               |            |
| +     | 8.6         | MY4, 24Vdc              |               |           |   | -OUT1 | 0800ME0006 | CONN. 12P PASSO 5.08 OMEGA       | MC85812       |            |
| =Q.E. |             |                         |               |           |   | +     | 26.1       | MC85812                          |               |            |
| -KAZ  | 0555CK0004  | D10D0                   | SCHRACK       | TYPE 2    |   | =Q.E. |            |                                  |               |            |
| +     | 8.6         | D10D0 X ZOCCOLO ZG4     |               |           |   | -OUT2 | 025TEC0061 | MODULO OUTPUT CNC                | TECNOS        | SRB-800    |
| =Q.E. |             |                         |               |           |   | +     | 26.2       | SRB-800                          |               |            |
| -KAZ  | 0555GAV9001 | ZOCCOLO PER RELE'       | GAVAZZI       | ES15/4N   |   | =Q.E. |            | PNP                              |               |            |
| +     | 8.6         | ES15/4N                 |               |           |   | -OUT2 | 0800ME0006 | CONN. 12P PASSO 5.08 OMEGA       | MC85812       |            |
| =Q.E. |             |                         |               |           |   | +     | 26.2       | MC85812                          |               |            |
| -KAZ2 | 0550MR0001  | RELE'                   | OMRON         | MY4       |   | =Q.E. |            |                                  |               |            |
| +     | 9.6         | MY4, 24Vdc              |               |           |   | -OUTA | 025ZAN0022 | CONNETTORE VASCHETTA ZANIBONI    | 1402043       |            |
| =Q.E. |             |                         |               |           |   | +     | 9.8        | 9PIN, MASCHIO                    |               |            |
| -KAZ2 | 0555CK0004  | D10D0                   | SCHRACK       | TYPE 2    |   | =Q.E. |            |                                  |               |            |
| +     | 9.6         | D10D0 X ZOCCOLO ZG4     |               |           |   | -OUTA | 025ZAN0027 | COVER X 9PIN                     | ZANIBONI      | 1413013    |
| =Q.E. |             |                         |               |           |   | +     | 9.8        | PLAST. COND.                     |               |            |
| -KAZ2 | 0555GAV9001 | ZOCCOLO PER RELE'       | GAVAZZI       | ES15/4N   |   | =Q.E. |            |                                  |               |            |
| +     | 9.6         | ES15/4N                 |               |           |   | -QF1  | 040TEL9001 | CONTATTO AUX                     | TELEMECANIQUE | GV-AM11    |
| =Q.E. |             |                         |               |           |   | +     | 1.2        | INO+1NC                          |               |            |
| -KM1  | 050TELO251  | TELERUTTORE             | TELEMECANIQUE | LC1-D09BL |   | =Q.E. |            | EQUIVAL. GV2-AM11                |               |            |
| +     | 19.2        | LC1-D09BL, 4KW, 24Vcc   |               |           |   | -QF1  | 040TEL0006 | MAGNETO-TERMICO                  | TELEMECANIQUE | GV2-ME06   |
| =Q.E. |             | BASSO ASSORB.           |               |           |   | +     | 1.2        | GV2-ME06, 1-1.6A                 |               |            |
| -KM2  | 050TELO221  | TELERUTTORE             | TELEMECANIQUE | LC1-D18BD |   | =Q.E. |            | EX GV2-M06                       |               |            |
| +     | 12.5        | LC1-D18BD, 7.5KW, 24Vcc |               |           |   | -QF2  | 040TEL9001 | CONTATTO AUX                     | TELEMECANIQUE | GV-AM11    |
| =Q.E. |             | INO+1NC                 |               |           |   | +     | 2.1        | INO+1NC                          |               |            |
| -KN2  | 050TELO257  | CONTATTO AUX            | TELEMECANIQUE | LAD-N11   |   | =Q.E. |            | EQUIVAL. GV2-AM11                |               |            |
| +     | 12.5        | INO+1NC                 |               |           |   | -QF2  | 040TELO012 | MAGNETO-TERMICO                  | TELEMECANIQUE | GV2-ME20   |
| =Q.E. |             | FRONTALE                |               |           |   | +     | 2.1        | GV2-ME20, 13-18A                 |               |            |
| -KNP  | 050TELO251  | TELERUTTORE             | TELEMECANIQUE | LC1-D09BL |   | =Q.E. |            | EX GV2-M20                       |               |            |
| +     | 10.7        | LC1-D09BL, 4KW, 24Vcc   |               |           |   | -QFP  | 040TEL9001 | CONTATTO AUX                     | TELEMECANIQUE | GV-AM11    |
| =Q.E. |             | BASSO ASSORB.           |               |           |   | +     | 10.1       | INO+1NC                          |               |            |
| -KNX  | 050TELO220  | TELERUTTORE             | TELEMECANIQUE | LC1-D12BD |   | =Q.E. |            | EQUIVAL. GV2-AM11                |               |            |
| +     | 12.6        | LC1-D12BD, 5.5KW, 24Vcc |               |           |   | -QFP  | 040TELO008 | MAGNETO-TERMICO                  | TELEMECANIQUE | GV2-ME08   |
| =Q.E. |             | INO+1NC                 |               |           |   | +     | 10.1       | GV2-ME08, 2.5-4A                 |               |            |
|       |             |                         |               |           |   | =Q.E. |            | EX GV2-M08                       |               |            |

PROGETTO: COBPRO0002

COMMESSA: 15352 19/017HR00002

LISTA DISPOSITIVI

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| 0       | 1          | 2                               | 3    | 4 | 5 | 6 | 7 | 8 | 9 |
|---------|------------|---------------------------------|------|---|---|---|---|---|---|
| -QM1    | 020ABB9008 | CALOTTA PROT. TRIP. ABB         |      |   |   |   |   |   |   |
| + =Q.E. | 1.0        | 63-80A                          |      |   |   |   |   |   |   |
| -QM1    | 020ABB0102 | SEZIONATORE                     | ABB  |   |   |   |   |   |   |
| + =Q.E. | 1.0        | BL. BASE 63A                    |      |   |   |   |   |   |   |
| =====   |            |                                 |      |   |   |   |   |   |   |
| -QM1    | 020ABB1009 | POLO AGGIUNTIVO                 | ABB  |   |   |   |   |   |   |
| + =Q.E. | 1.0        | 63-80A                          |      |   |   |   |   |   |   |
| =====   |            |                                 |      |   |   |   |   |   |   |
| -QM1    | 020ABB1010 | BARRA DI TERRA                  | ABB  |   |   |   |   |   |   |
| + =Q.E. | 1.0        | 63-80A                          |      |   |   |   |   |   |   |
| -QM1    | 020ABB9018 | MANOVRA NERA                    | ABB  |   |   |   |   |   |   |
| + =Q.E. | 1.0        | 125A                            |      |   |   |   |   |   |   |
| -QM1    | 020ABB9026 | ALBERO PROLUNGA                 | ABB  |   |   |   |   |   |   |
| + =Q.E. | 1.0        | ALBERO PROLUNGA 290mm           |      |   |   |   |   |   |   |
| -QM1    | 005TEA0001 | CARPENTERIA                     | VARI |   |   |   |   |   |   |
| + =Q.E. | 1.0        | SUPPORTO INT. GENERALE          |      |   |   |   |   |   |   |
| -S1/S2  | COBSER0001 | CAVO SERIALE CN-SCE             |      |   |   |   |   |   |   |
| + =Q.E. | 27.7       | 3x0.25 SCH 51/S2                |      |   |   |   |   |   |   |
| -SA2    | 065TELO139 | SELETTORE 3 POS.                |      |   |   |   |   |   |   |
| + =Q.E. | 14.3       | ZB4-BD5, INSTAB.                |      |   |   |   |   |   |   |
| -SA2    | 065TELO175 | CONTATTO                        |      |   |   |   |   |   |   |
| + =Q.E. | 14.3       | ZB4-BZ101, NO+FLANGIA           |      |   |   |   |   |   |   |
| -SA2    | 065TELO199 | CONTATTO                        |      |   |   |   |   |   |   |
| + =Q.E. | 14.3       | ZBE-101, NO                     |      |   |   |   |   |   |   |
| -SA3    | 065TELO144 | SELET. CHIAVE 2POS.             |      |   |   |   |   |   |   |
| + =Q.E. | 11.6       | ZB4-BG4, STAB., ESTR. CR. SX DX |      |   |   |   |   |   |   |
| -SA3    | 065TELO176 | CONTATTO                        |      |   |   |   |   |   |   |
| =====   |            |                                 |      |   |   |   |   |   |   |
| + =Q.E. | 11.6       | ZB4-BZ102, NC+FLANGIA           |      |   |   |   |   |   |   |
| -SA4    | 065TELO102 | COMUTATORE 4 POS.               |      |   |   |   |   |   |   |
| + =Q.E. | 16.1       | KIC003Q                         |      |   |   |   |   |   |   |
| -SA4    | 065TELO103 | TESTA COMUTATORE                |      |   |   |   |   |   |   |
| + =Q.E. | 16.1       | KBC1B                           |      |   |   |   |   |   |   |
| -SAP    | 065TELO139 | SELETTORE 3 POS.                |      |   |   |   |   |   |   |
| + =Q.E. | 10.5       | ZB4-BD5, INSTAB.                |      |   |   |   |   |   |   |
| =====   |            |                                 |      |   |   |   |   |   |   |
| -SAP    | 065TELO175 | CONTATTO                        |      |   |   |   |   |   |   |
| + =Q.E. | 10.5       | ZB4-BZ101, NO+FLANGIA           |      |   |   |   |   |   |   |
| -SAP    | 065TELO199 | CONTATTO                        |      |   |   |   |   |   |   |
| + =Q.E. | 10.5       | ZBE-101, NO                     |      |   |   |   |   |   |   |
| -SB1    | 065TELO172 | PULSANTE LUM. BLU               |      |   |   |   |   |   |   |
| + =Q.E. | 11.7       | ZB4-BW36                        |      |   |   |   |   |   |   |
| -SB1    | 065TELO199 | CONTATTO                        |      |   |   |   |   |   |   |
| + =Q.E. | 11.7       | ZBE-101, NO                     |      |   |   |   |   |   |   |
| -SB1    | 065TELO217 | PORTALAMP. LED BIANCO           |      |   |   |   |   |   |   |
| + =Q.E. | 11.7       | ZB4-BVB1 24V                    |      |   |   |   |   |   |   |
| -SB2    | 065TELO170 | PULSANTE LUM. ROSSO             |      |   |   |   |   |   |   |
| + =Q.E. | 14.5       | ZB4-BW34                        |      |   |   |   |   |   |   |
| -SB2    | 065TELO217 | PORTALAMP. LED BIANCO           |      |   |   |   |   |   |   |
| + =Q.E. | 14.5       | ZB4-BVB1 24V                    |      |   |   |   |   |   |   |
| -SB2    | 065TELO199 | CONTATTO                        |      |   |   |   |   |   |   |
| + =Q.E. | 14.5       | ZBE-101, NO                     |      |   |   |   |   |   |   |
| -SB3    | 065TELO131 | PULSANTE VERDE                  |      |   |   |   |   |   |   |
| + =Q.E. | 14.6       | ZB4-BA3                         |      |   |   |   |   |   |   |

PROGETTO: COBPR00002

COMMESSA: 15352 19/0178R00002

NR. DISEGNO: 15352 19/0178R00002

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