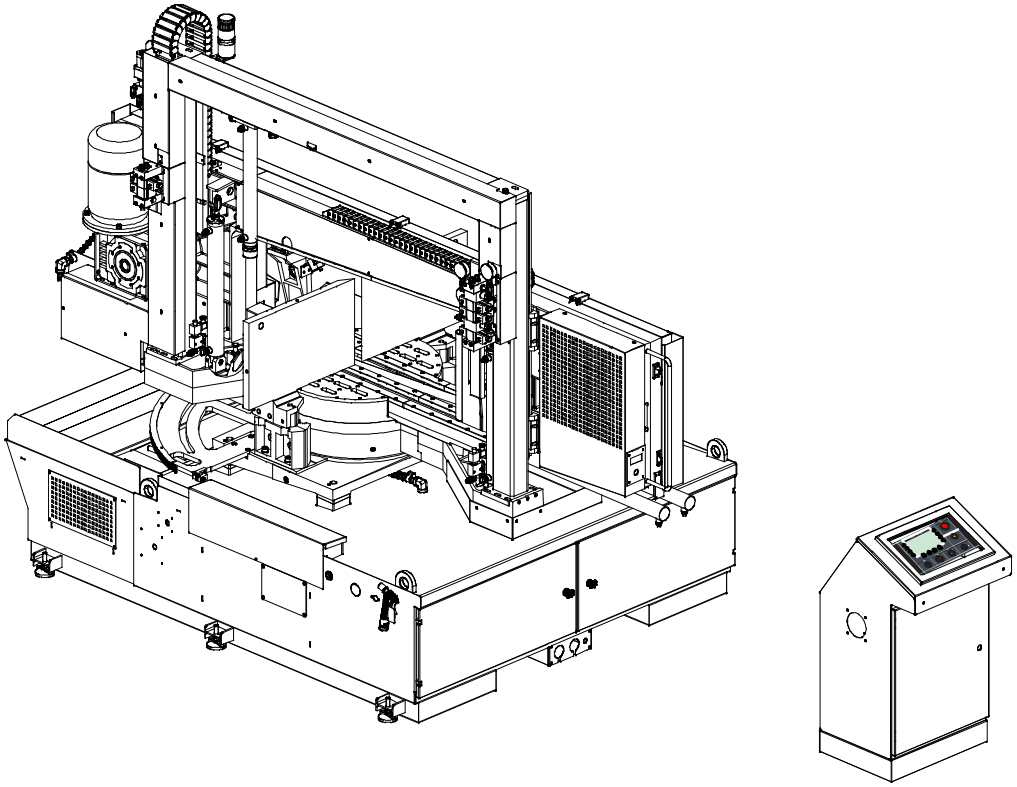


USE AND MAINTENANCE MANUAL

EN SHARK 652 SXI EVO H

YEAR OF MANUFACTURE: _____

EN

"CE" CONFORMITY DECLARATION
(according to EEC MACHINES DIRECTIVE 2006/42/CE annex II A)

The manufacturer:

MEP S.p.A.
Via Enzo Magnani, 1
61045 Pergola (PU) ITALIA
Tel. 072173721 - Fax 0721734533

Hereby declares that the bandsawing machine:

Machine Type:	**SAWING MACHI**
Machine model:	**SHARK 65 XI EVO**
Serial number:	
Year of manufacture:	

is in specification wi e following ives:

- **DIRECT E EEC MA DIRECTIV 2006/42/CE**
- **DIRE IVE 2006/ /CE VE**
- **DI CTIVE 4/10 E MC"**
- **Lgs. 17/2 0**

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FAC SIMILE

c/o MEP SPA
Via Enzo Magnani, 1
61045 - Pergola - PU - ITALY

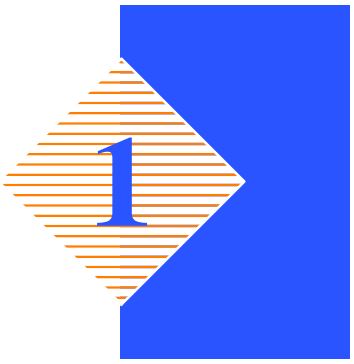
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Introduction and technical specifications



Foreword

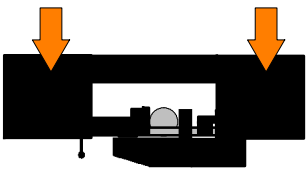
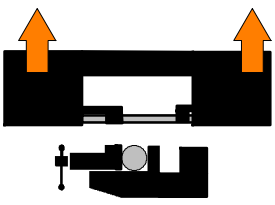
MEP S.p.A.,in response to modern production techniques, has developed the new **Shark 652 SXI- EVO**.
This work tool has been designed to satisfy the wide range of cutting needs of a modern workshop with simplicity and reliability, while at the same time complying with all EEC safety standards.
The **Shark 652 SXI- EVO** is structurally rigid, silent and safe: it produces a minimum of waste while its great versatility makes it suitable for cutting various materials such as stainless steel light alloys, aluminium, copper and bronze at high speed and with high precision.
Its high cutting capacity enables it to handle both single workpieces and bundles, which, combined with the possibility of making inclined cuts from 60° left to 45° right, make this machine the ideal solution for satisfying the wide range of cutting needs of machine shops, turneries, structural steel shops and engineering workshops.
Congratulations for having chosen this product which, by following the **instructions** contained in this user and maintenance handbook, will guarantee years of dependable service.

Warning This band saw has been exclusively designed to cut metals.

Machine presentation

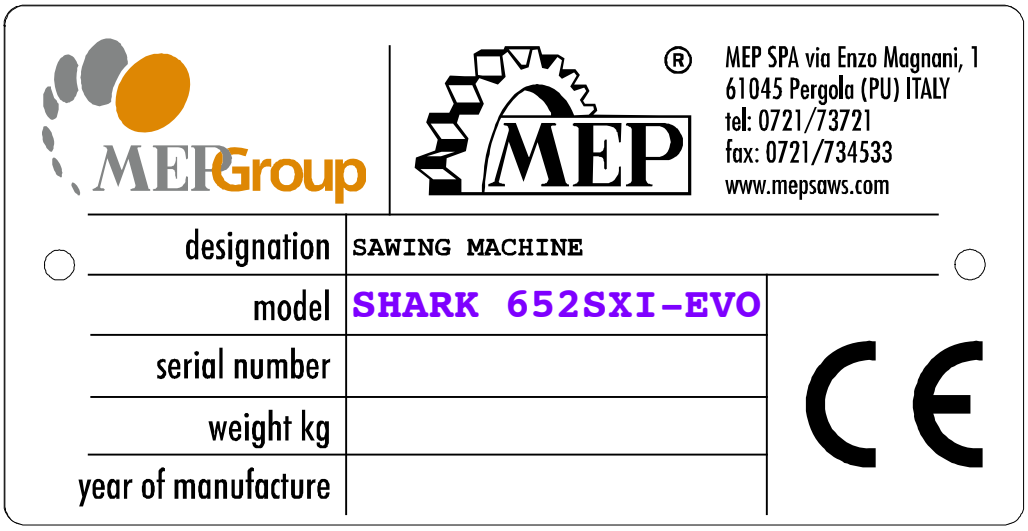
Machine operation is semi- automatic.

After having set the cutting stroke of the cutting head on the control panel and the head descent speed, position the vice at 2- 3 mm from the workpiece and then press the close vice button on the control panel. The vice closes, the cutting head moves down to the end of the cut and goes back to the starting position.

1. The cutting vices close	2. The head lowers until the cut is made (FCTA)	3. The head returns to start position (FCTI)	4. The cutting vices remain closed
			

Machine specification

The anodised aluminium name plate is riveted on the side of the machine; the same data are reproduced on the declaration of conformity included with this use and maintenance manual.



N.B. When communicating with the Technical Service department, the model, serial number and year of manufacture of the machine must be quoted.

General technical data table

CUTTING SPEEDS		
Speed	mt/min	15÷150

BAND SAW		
Rated size	mm	6700 x 41 x 1,3
Max/min blade length	mm	6720÷6680
Blade height	mm	41
Blade width	mm	1,3
Band saw tension	bar/Kg	3000

Attention

When choosing the cutting tool, if its dimensions do not correspond to those included in the ”Rated size” section, check that the dimensions at least fall within the admissible max/min specifications.

INSTALLED ELECTRICAL POWER		
Spindle motor	KW	9,2
Monobloc hydraulic power pack motor	KW	2,2
Lubricant/coolant fluid electric pump motor	KW	2 x 0,18
Blade tensioning motor	KW	0,25
Chip ejector motor	KW	0,37
Transformers	KW	0,9
Max. installed electrical power	KW	13,28

WORKING PRESSURE		
Vice working pressure during opening/closure phase	Bar	25/40
Head working pressure up/down	Bar	10/40

LUBRICANT/COOLANT FLUID AND OIL		
Oil for monobloc hydraulic power pack	capacità Lt	25
Lubricant/coolant fluid (oil concentration 5- 6%)	capacità Lt	95

VICE		
Vice max. opening	mm	660

SPINDLE MOTOR 4- pole, three- phase, asynchronous; frequency 50 Hz.					
No.of poles	**Current (Volts)**	**Absorption (Amps)**	**Power (Kw)**	**rpm**	**Band saw speed**
4	400	15	9,2	1450	15/150 m/min
Stator wound with enamelled copper wire, class H 200° C.					
Class F insulation (limit temperature TL 155° C).					
IP 55 protection rating (total against contact with live parts, water sprayed from all directions, with shaft oil seal).					
Conforming to CEI norms, publication: IEC 34 of 01/07/1985.					

N.B. Example of class F insulation: in air- cooled machines at an ambient temperature of 40° C (according to CEI 2- 3 and IEC 85), the allowable overtemperature is 100° C (where 100 C represents the allowable DT).

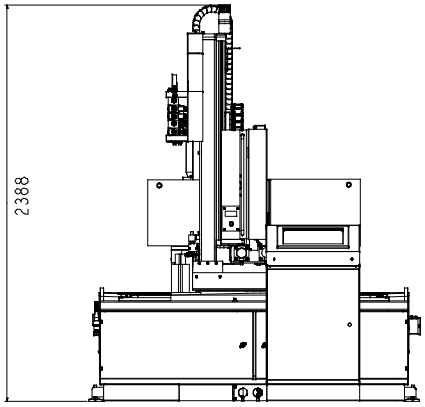
ELECTROPUMP MOTOR **Single phase; Frequency 50 Hz.**					
Voltage (Volts)	**Absorption (Amps)**	**Power (Kw)**	**rpm**	**Delivery rate lt/min**	**Head (mt.)**
230	1	0,18	2800	85/3	0/6
400	0,85	0,18	2800	85/3	0/6

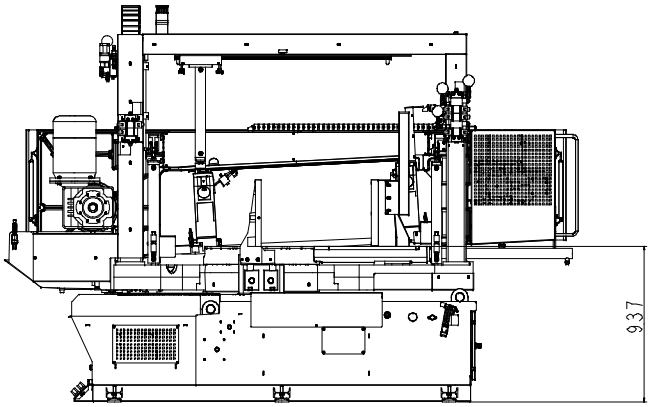
HYDRAULIC POWER PACK MOTOR SPECIFICATIONS 4- pole, three- phase, asynchronous; frequency 50 Hz.				
Nr. of poles	**Voltage (Volts)**	**Absorption (Amps.)**	**Power (Kw)**	**RPM**
4	400	4	2,2	1390
Protection rating IP 54.				
Conforming to CEI norms, publication: IEC 34 of 01/07/1985.				

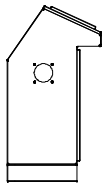
CUTTING CAPACITY			
Section			
0°	450	450	650 x 450
45° ◖	400	400	400 x 450
60° ◖	250	250	250 x 450
45° ◗	400	400	400 x 450
60° ◗	250	250	250 x 450

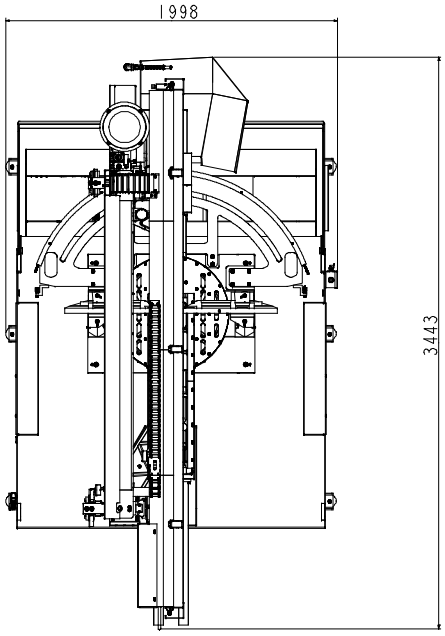
Dimensions

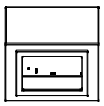
MACHINE INSTALLED		
Work table height	mm	938
Weight	Kg	2800



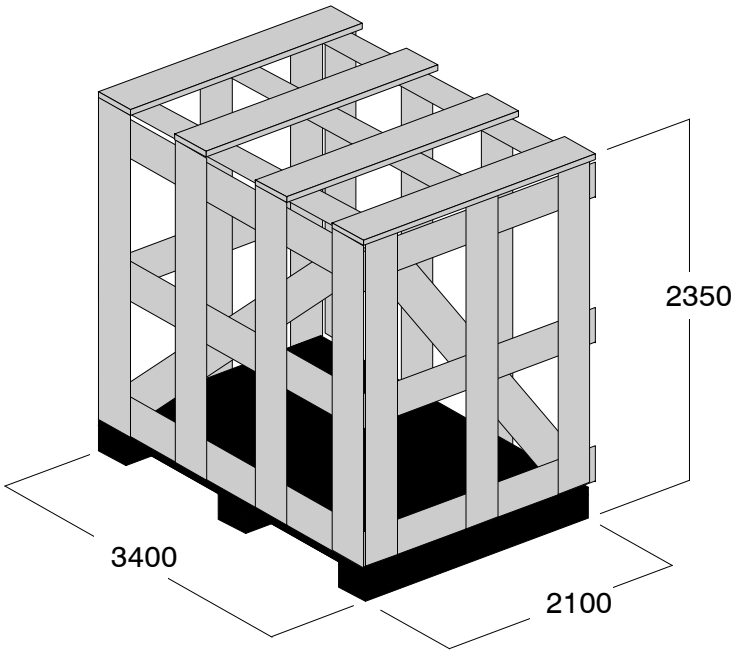








PACKED WEIGHT		
Wooden cage and pallet	Kg	600
Wooden pallet	Kg	180

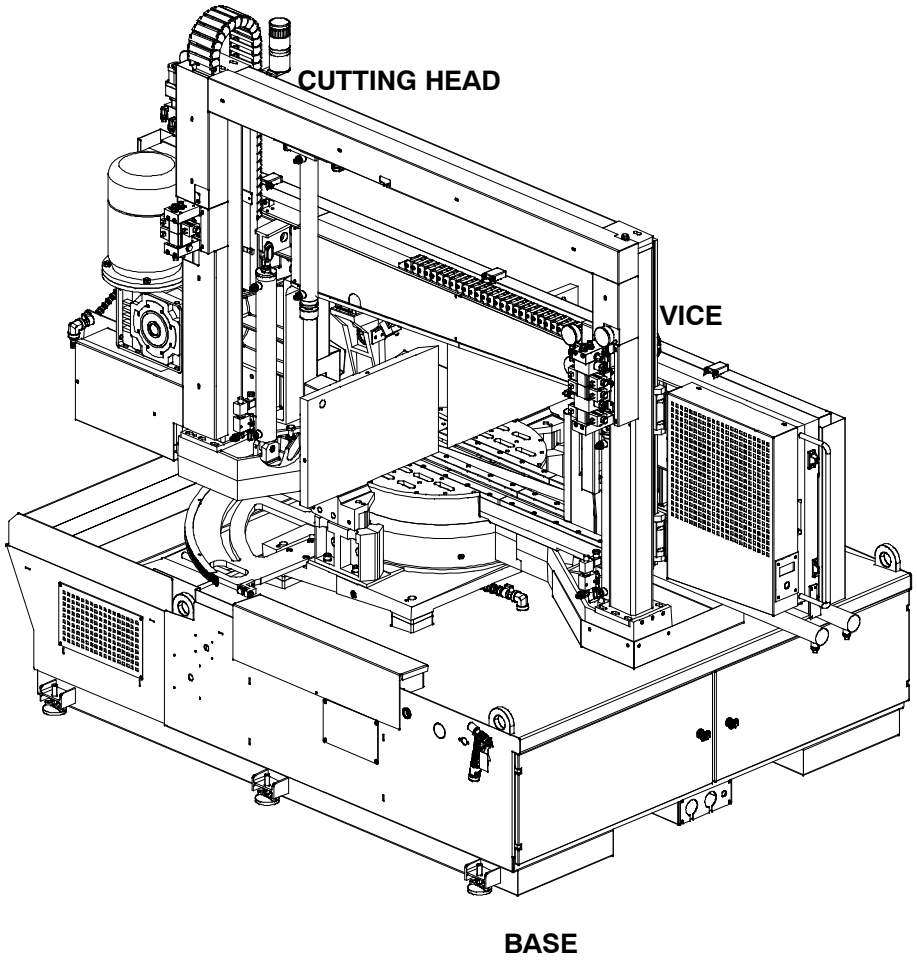


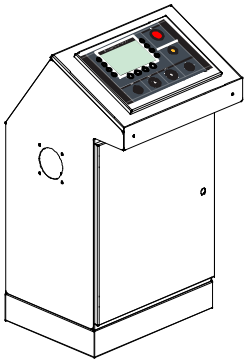
Functional parts

2

Shark 652 SXI- EVO model

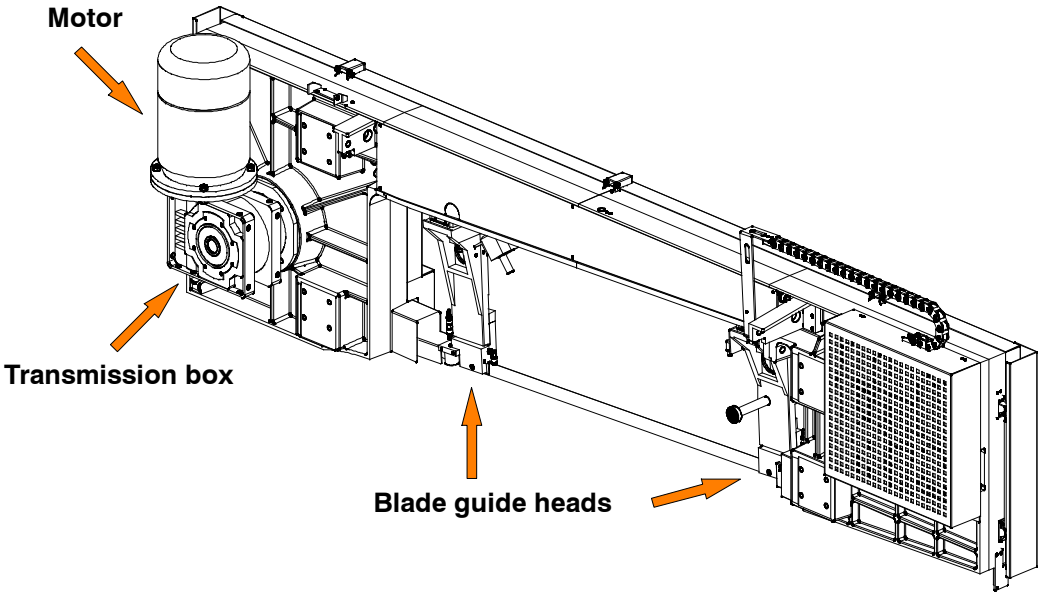
In order for the user to move towards a full understanding of how the machine works, which is described in detail in the chapter 5, this chapter deals with the main units and their locations.





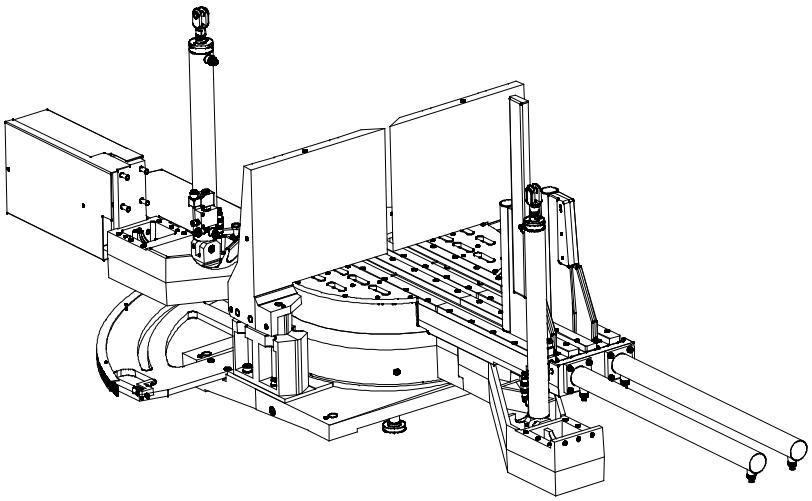
Cutting head

The operating head is the cutting component and is made up of a bow from cast iron on which the following elements are installed: band, band guide components, band tensioning unit, worm screw reducer and spindle motor.
The cutting bow slides on linear guides, with ball- recirculation slides, installed on columns for getting a better cutting stability and longer blade life. Feeding is by a hydraulic cylinder on linear guides with ball- recirculating slides.
The machine is equipped with a laser system to position the bar accurately to carry out non- standard or facing cuts.



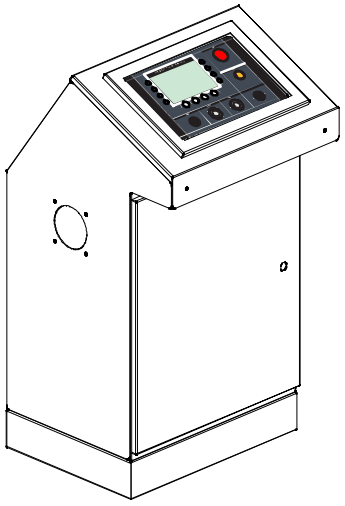
Cutting vices and vertical vice

Shearing vices are independent and lock the material; they are composed of a vice support, usually called lead nut, fastened on the fixed platform on which the movable jaws are installed. The opening or closing movement is carried out through the relevant buttons on the console.
The vertical vice locks the material on the cutting plane and can be positioned along the guide in the column post.



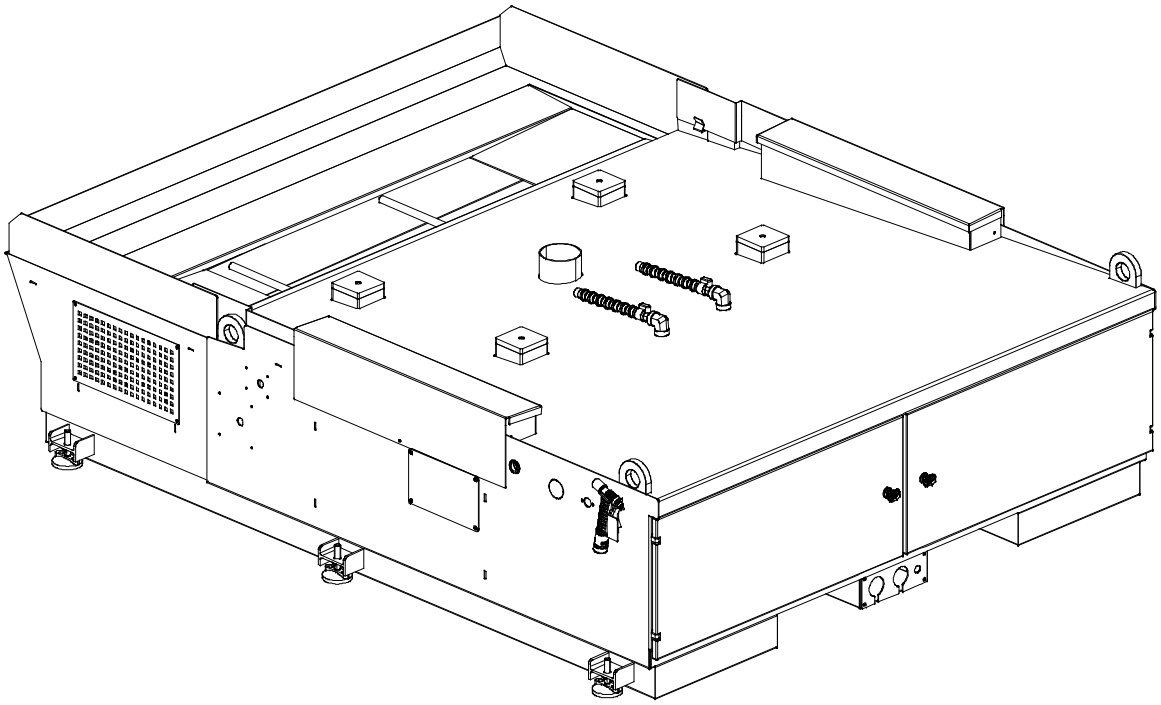
Control Panel

The control panel features an IP 54 protection and houses the electronic equipment. Its access is limited by a door installed on pintles and fastened by screws, to prevent every intentional tampering.
The control panel is installed on a structural console that can be positioned as wished and enables the operator to steadily monitor the cutting area in total safety.



Base

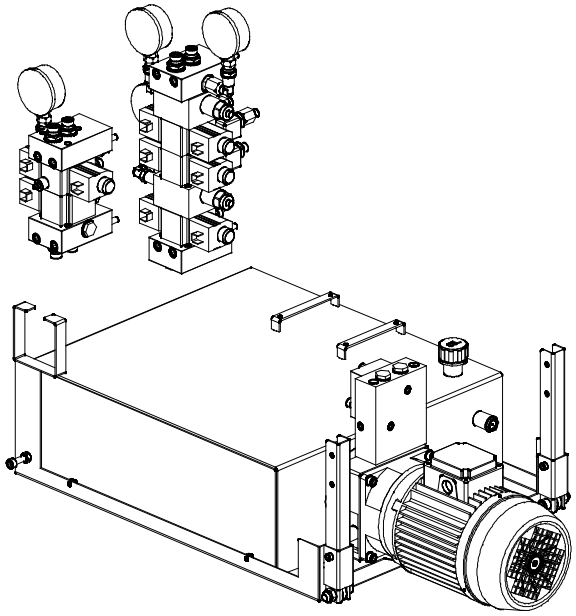
This unit features a large coolant collection surface which conveys the coolant to a rear tank via the tank cover, and a swarf collection drawer.
The electric pumps seated inside the tray suck the clean liquid from the progressive filter system.



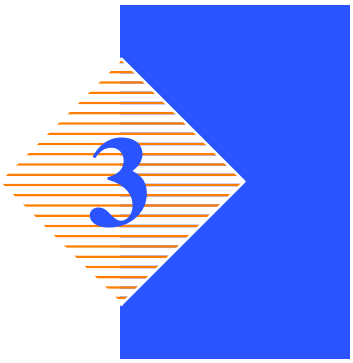
In the left side there is the coolant gun and the vice pressure adjuster.

Hydraulic power pack

The hydraulic power pack operates the cutting head and the shearing vices. It can be removed from the base front compartment and is equipped with telescopic legs.
The oil exchange in the circuits is operated by solenoid valves driven by the machine controller.



Safety and accident prevention



The **Shark 652 SXI- EVO** has been designed and produced in accordance with European standards. For the correct use of the machine we recommend that the instructions contained in this chapter are carefully followed.

Use of the machine

The **Shark 652 SXI- EVO** band saw cutting machine is intended exclusively for cutting metallic materials, ferrous or non- ferrous, in section or solid.
Other types of material and machining are not compatible with the specific characteristics of the saw.
The employer is responsible for instructing the personnel who, in turn, are obliged to inform the operator of any accident risks, safety devices, noise emission and accident prevention regulations provided for by international standards and national laws regarding the use of the machine. The operator must be perfectly aware of the position and function of all the machine's controls.The instructions, warnings and accident prevention standards in this manual must be respected without question by all those concerned.The following definitions are those provided for by **EEC MACHINES DIRECTIVE 2006/42/CE** :

- "Danger zone": any zone in and/or around a machine in which the presence of a person constitutes a risk for the safety and health of that person.
- "Person exposed": any person finding himself either completely or partly in a danger zone.
- "Operator": the person or persons given the responsibility of installing, operating, adjusting, maintaining, cleaning, repairing or transporting the machine.

Attention

The manufacturer declines any responsibility whatsoever, either civil or criminal, should there be unauthorised interference or replacement of one or more parts or assemblies on the machine, or if accessories, tools and consumable materials are used that are different from those recommended by the manufacturer itself or if the machine is employed in a plant system and its proper function is thereby altered.

General recommendations

LIGHTING

Insufficient lighting for the types of operation envisaged could constitute a safety hazard for the persons concerned. For this reason, the machine user must provide lighting in the working area sufficient to eliminate all shadowy areas while also avoiding any blinding light concentrations. (Reference standard ISO 8995- 89 “Lighting in work environments”).

CONNECTIONS

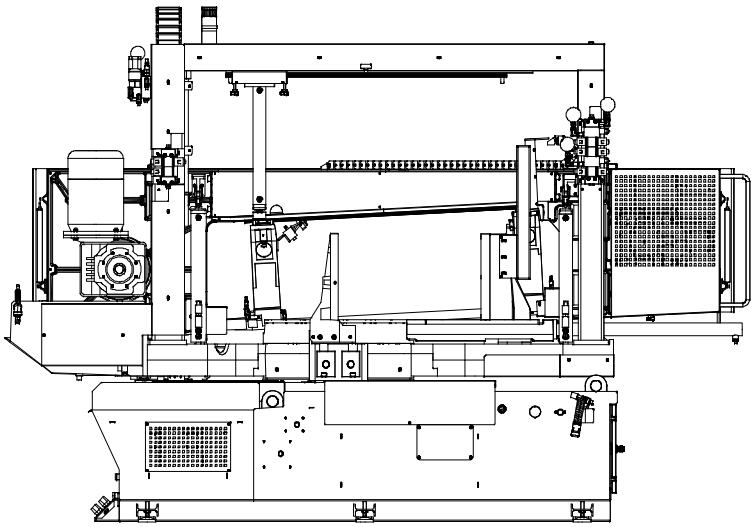
Check that the power supply cables and pneumatic feed systems comply with the maximum machine absorption values listed in the ”Machine Specification” tables; replace if necessary.

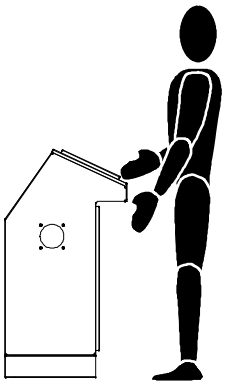
EARTHING

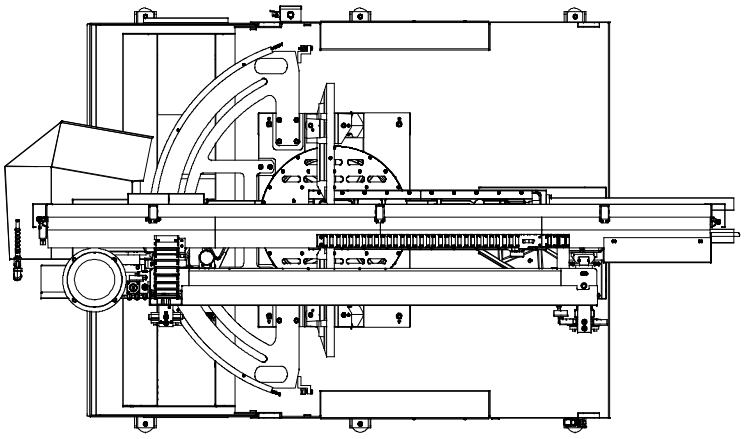
The installation of the earthing system must comply with the requirements set out in IEC STANDARD 204.

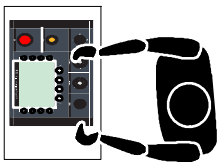
OPERATOR POSITION

The position of the operator controlling machine operations must be as shown in the diagram below.

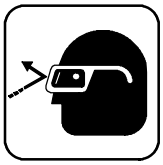








Recommendations to the operator



Always wear proper goggles or protective glasses.



Do not use the machine without the guards in position. Replace the polycarbonate windows , if subject to corrosion.



Do not allow hands or arms to encroach on the cutting zone while the machine is in operation.



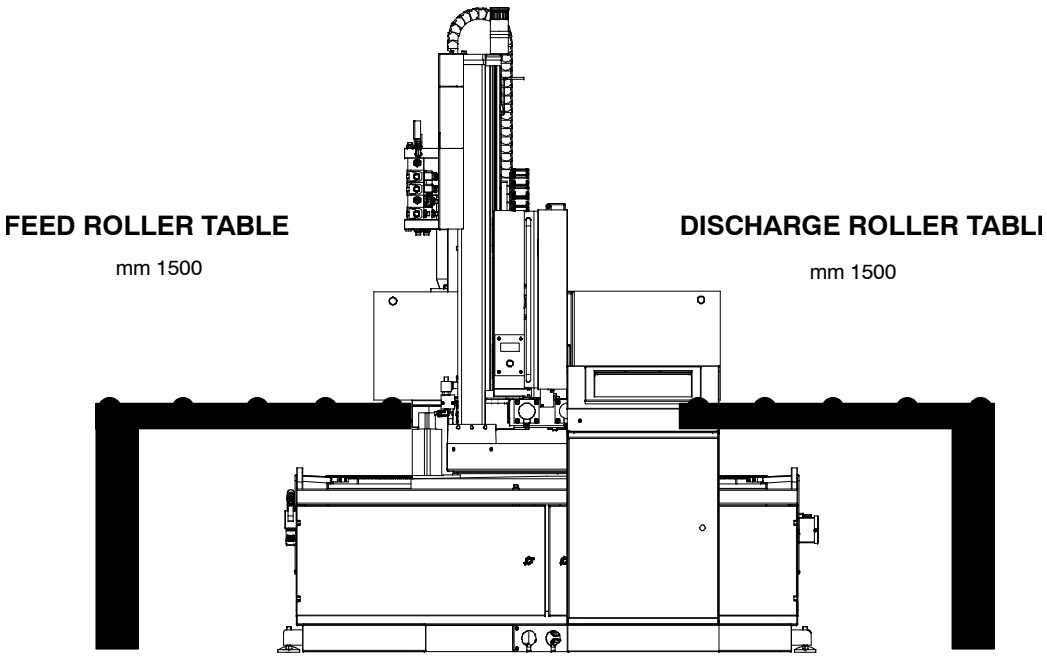
Do not wear oversize clothing with long sleeves, oversize gloves, bracelets, necklaces or any other object that may become entangled in the machine during working; long hair must be tied back and bunched.



Always disconnect the power supply to the machine before carrying out any maintenance work whatsoever, including in the case of abnormal operation of the machine.

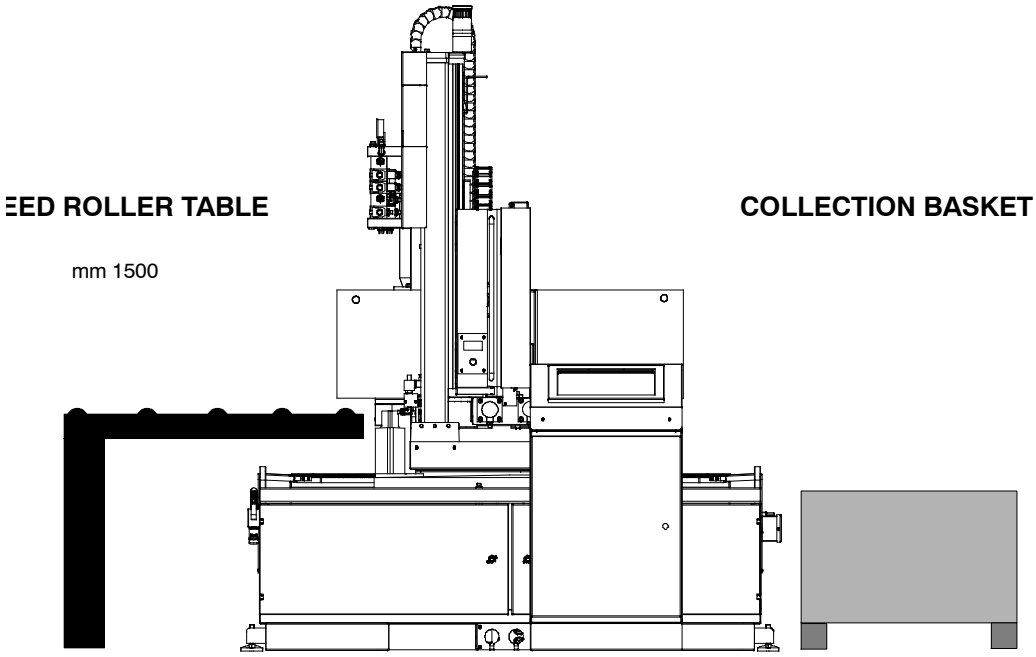


Before starting cutting operations, support the material at both ends of the machine using the support arm - standard, or OPTIONAL accessories such as the feed and discharge roller tables shown in the diagram below. Before removing the devices supporting and moving the material, fasten the latter in place using the machine's clamping devices or other suitable equipment.





Arrange recovery/collection systems for the cut pieces, such as metal baskets, for example.





Any maintenance work on the hydraulic or pneumatic systems must be carried out only after the pressure in the system has been released.



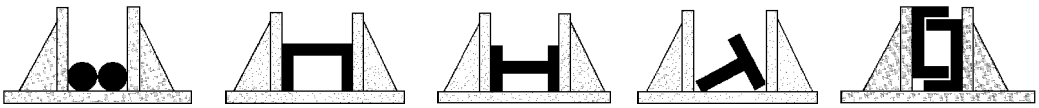
The operator must not perform any risky operations or operations not required for the machining operation under way (e.g. remove swarf or metal shavings from the machine while cutting).



Remove equipment, tools or any other objects from the cutting zone; always keep the working area as clean as possible.



Before starting any cutting operations, ensure that the workpiece is securely held in the vice and the machine has been set correctly. A number of examples of how to clamp different profiles correctly in our machines are shown below.





Do not use the machine to cut pieces that exceed the capacity of the machine as listed in the machine specifications.



Never move the machine while it is cutting.



Do not use blades of different sizes to those recommended in the machine specifications.



When cutting very short pieces, make sure that they are not dragged behind the support shoulder, where they could jam in the blade.





When working on the band saw, wear gloves only when handling materials and for tool changing or adjustment operations. Only perform one operation at a time and do not hold more than one item or operate more than one device simultaneously. Keep hands as clean as possible.



Warning: if the blade jams in the cut, press the emergency stop push- button immediately. If this does not free the blade, slowly loosen the vice, remove the piece and check the blade or blade teeth for breakage. Replace the blade if necessary.



Before carrying out any repair work on the machine, consult the MEP Technical Assistance Service: this can be done through a representative in the country of use of the machine.



Adjustment of the blade- guide head must only be carried out with the machine at a standstill.

Machine safety devices

This use and maintenance manual is not intended as purely a guide for the use of the machine in a strictly productive environment, it is instead an instrument providing information on how to use the machine correctly and safely. The following standards are those specified by the EEC Committee in the directives regarding safety of machinery, health and safety at work, personal protection and safeguarding of the environment. These standards have been applied to the **Shark 652 SXI- EVO** band saw.

Reference standards

MACHINE SAFETY

- EEC MACHINES DIRECTIVE 2006/42/CE ;
- EEC directive no. 2004/108/CE “EMC - Electromagnetic Compatibility”;

- EEC Directive No. 2006/95/CE known as “Low voltage directive”.

HEALTH AND SAFETY AT WORK

- EEC Directive No. 80/1107; 83/477;86/188;88/188; 88/642 for the protection of workers against risks caused by exposure to physical, chemical and biological agents during working;
- EEC Directive No. 89/391 and Special EEC Directives No. 89/654 and No. 89/655 for improvements in health and safety at work;
- EEC Directive No. 90/394 for the protection of workers against risks deriving from exposure at work to carcinogenic substances;
- EEC Directive No. 77/576 and No. 79/640 on safety signs at work.

PERSONAL PROTECTION

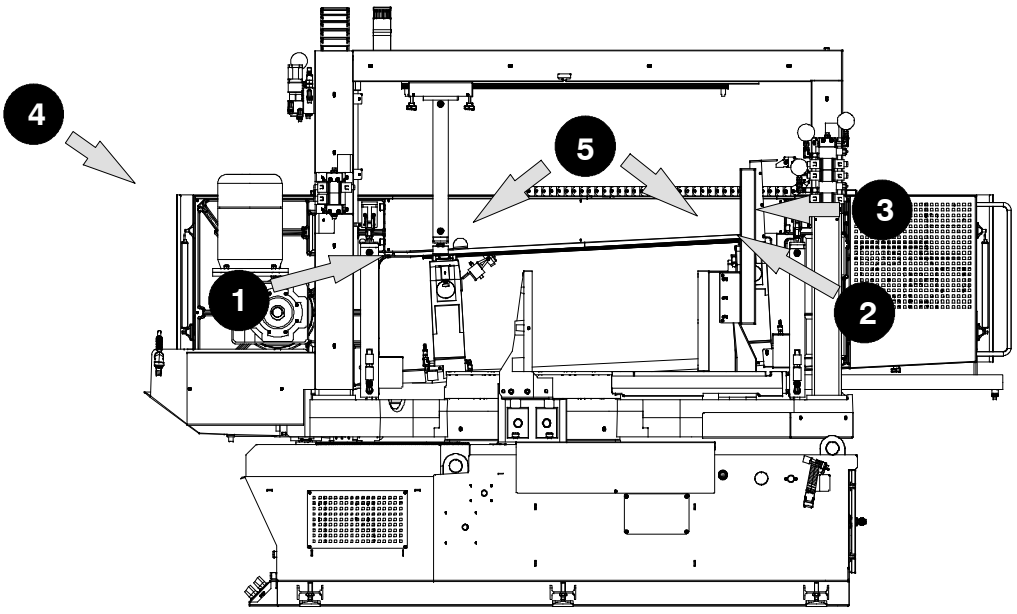
- EEC Directive No. 89/656 and No. 89/686 on the use of personal protection devices.

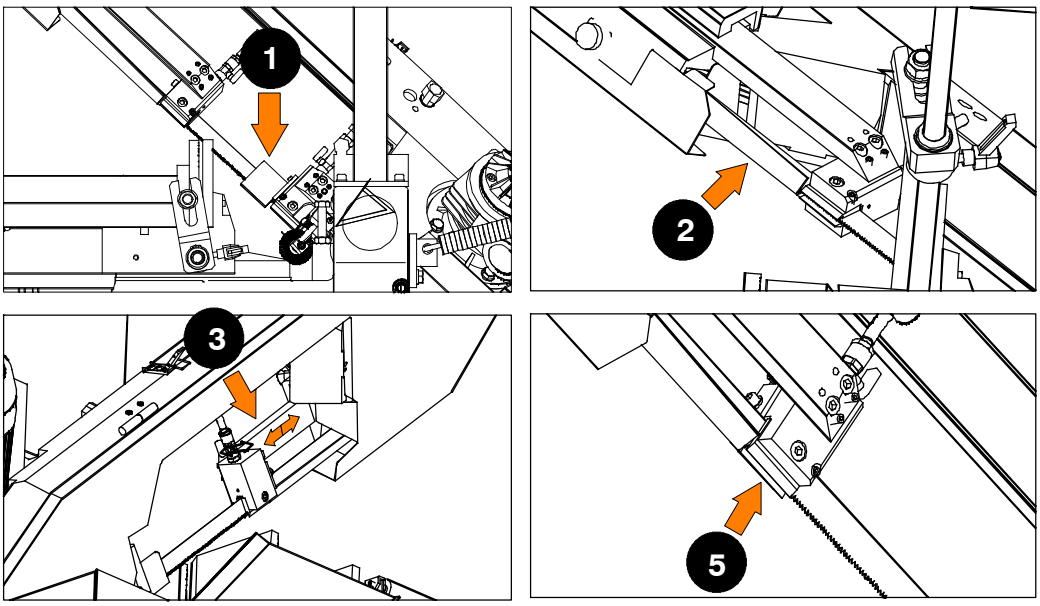
ENVIRONMENTAL PROTECTION

- EEC Directive No. 75/442 on waste disposal;
- EEC Directive No. 75/439 on the disposal of used oil.
- Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).

Protection against accidental contact with the blade

1. Metal guard screwed to the rear blade guide head (machine side);
2. metal guard screwed to the front blade guide head (operator side);
3. front head sliding support: when the head is at maximum aperture, the support ensures that the blade is covered, leaving free only the part of the blade engaged in the actual cutting, in accordance with Presidential Decree no. 547/55, art. 108;
4. hinged protective cover over blade, fitted with “removable” closing devices;
5. Blade guide plates which completely cover the blade teeth in the zone under the blade guide heads.





Electrical equipment

In accordance with Italian standard CEI 60204- 1, April 1998, derived from European Standard EN 60204- 1 publication IEC 204- 1, 1997:

- Access to electrical control panel limited by screws and panel- lock device, allowing panel to be opened only after the electricity supply has been turned off;

- 24 Vac Control voltage for actuators, in accordance with chapter 6 or European Standard ”Control and indication circuits”, paragraph 2 ”Control Circuits” sub- section 1 ”Preferential voltage values for control circuits”;
- plant short- circuit protection by means of rapid fuses, earthing of all plant parts connected with work as well as all foreseeable accidental contact; a thermal- magnetic overload cutout switch shuts down the motor;
- protection from accidental start- up by a minimum voltage relay in case of power failure.

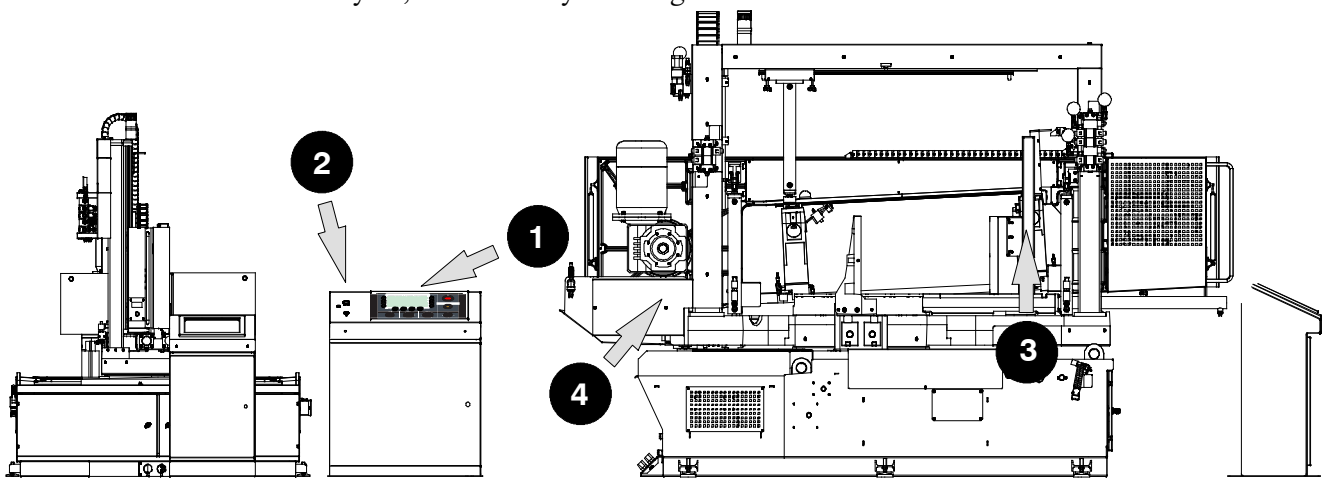
Emergency devices

In accordance with Standard CEI 204- 1:

- **Chapter 5 Section 6 Sub- section 1 ”Emergency stop device”**: «the emergency stop device immediately stops all the dangerous and other functions of the machine»;
- **chapter 6 Section 2 Sub- section 4 Point 7 ”Protective guards”:** «the removal of protective guards designed to prevent access to dangerous parts or zones causes the machine to stop immediately; replacing the guards does not restart the functions, which must be reset».

...Emergency devices applicable to the Shark 652 SXI- EVO:

1. **Emergency stop**: a non- return mushroom- head pushbutton, colour red on yellow background, is located on the control panel of the machine. To release the pushbutton, the actuator must be rotated 45°. After the emergency situation has been resolved, the machine must be reset.
2. **Strain gauge to meter the belt tension:** if the blade breaks or runs off its pulley the machine is immediately stopped.
3. **Automatic thermal- magnetic cutout switch with thermal- magnetic relay:** the machine auto switch, located on the control panel, has two protection systems against voltage drops. In the case of a voltage drop, all electrical components are disengaged, the machine stops immediately, and automatic restart when the power supply returns is inhibited. Another function is that of resetting the thermal relay provided to protect against overcurrents.
4. **Protective guard for blade:** a coded key microswitch is operated if the blade cover is accidentally or intentionally opened during the machine operating cycle, immediately shutting down all functions.



Noise level of the machine

Noise can cause hearing damage and represents one the problems faced by many countries who adopt their own standards. In accordance with the **EEC MACHINES DIRECTIVE 2006/42/CE** , we are listing the standards that specify noise levels for machine tools.
The following paragraph explains the modes and the detected sound power and pressure values released by the sawing machine.
These values comply with norm EN 13898:2003 + A1:2009, EN ISO 12001:2010 and EN ISO 4871:2009,concerning the rules for drawing and presenting a procedure for noise tests and the declaration and check of sound emission values by machines and equipment.

Noise level measurement

Noise levels are measured using an instrument known as an Integrator noise- meter which registers the equivalent continuous acoustic pressure level at the work station.The damage caused by noise depends on three parameters: level, frequency and duration. The equivalent level concept Leq combines the three parameters and supplies just one indication. The Leq is based on the principle of equal energy, and represents the continuous stationary level containing the same amount of energy, expressed in dBA, as that actually fluctuating over the same period of time.This calculation is made automatically by the integrator noise- meter. The measurements are taken every 60 seconds, in order to obtain a stabilised value. The reading stays on the display for a sufficient time to enable a reading to be taken by the operator.Measurements are taken by holding the instrument at approximately 1 metre from the machine at a height of 1.60 metres above the platform at the operator's work station.
Two measurements are taken: the first while the machine operates without cutting anything, the second while cutting in manual mode.

Noise level values

Identification		
Machine type		Band saw for metal applications
Model		**Shark 652 SXI- EVO**
Reference standard		ISO 3746
Results		
Test 1st	**Description**	C 40 steel cut - pipe 350 mm Bimetal band 6700x41x1,3 S.GLB Z 5/7
	Results	**Mean sound level (Leq) 72,45 dB (A)** Environmental correction (K) 3,84 dB(A) Peak sound power (Lw) 83,60 dB(A)
Test 2nd	**Descriprion**	C 40 steel cut - beam H 400 mm Bimetal band 6700x41x1,3 M42 Z 3/4
	Results	**Mean sound level (Leq) 70,33 dB(A)** Environmental correction (K) 3,84 dB(A) Peak sound power (Lw) 81,48 dB(A)
Test 3rd	**Description**	U- beam 300x100 mm. mm diameter solid tube in chromed stainless steel Bimetal band 6700x41x1,3 S.GLB Z 10/14
	Results	**Mean sound level (Leq) 71,95 dB(A)** Environmental correction (K) 3,84 dB(A) Peak sound power (Lw) 83,11 dB(A)

Vibration emission

This sawing machine complies with the norms EN1299 and EN1033, as the machine vibration emission on the devices controlled by the operator does not exceed the threshold of 2.5 m/s^2

Electromagnetic compatibility

As from 1 January 1996 all electrical and electronic appliances bearing the CE marking that are sold on the European market must conform to Directive 2004/108/CE and 2006/95/CE and **EEC MACHINES DIRECTIVE 2006/42/CE** . The prescriptions regard two specific aspects in particular:

1. "EMISSIONS: during its operation, the appliance or system must not emit spurious electromagnetic signals of such magnitude as to contaminate the surrounding electromagnetic environment beyond clearly prescribed limits";
2. "IMMUNITY: the appliance or system must be able to operate correctly even when it is placed in an electromagnetic environment that is contaminated by disturbances of defined magnitude".

The following text contains a list of the applied standards and the results of the electromagnetic compatibility testing of machine model **Shark 652 SXI- EVO**; Test report no. 011200.

Emissions

- EN 61000-6-4 (2002) Electromagnetic Compatibility (EMC) - Generic standard regarding emissions. Part 6-4: Industrial Environment.
- EN 55011 (1999) Industrial, scientific, and medical radio frequency appliances (ISM). Characteristics of radio frequency disturbance - Limits and methods of measurement.
- EN 55014-1 (2002) Electromagnetic Compatibility - Prescriptions for domestic appliances, electric power tools, and similar equipment. Part 1: Standard Emission in relation to product family.

CONDUCTED EMISSIONS				
Gate A	**Freq. (MHz)**	**Q- peak limit (dBuV)**	**Mean value limit (dBuV)**	**Result**
A.C. power supply input	0.15 - 0.5 0.5 - 5 5 - 30	79 - 73 (linear reduction with log of frequency) 73 73	66 - 60 (linear reduction with log of frequency) 60 60	Complies

CONDUCTED EMISSIONS - ANALYSIS OF INTERMITTENT DISTURBANCES	
Gate	**Result**
A.C. power supply input	Not applicable

IRRADIATED EMISSIONS			
Gate	**Freq. (MHz)**	**Q- peak limit (10 m) (dBuV/m)**	**Result**
Enclosure	30 - 230 230 - 1000	40 47	Complies

Immunity

- CEI EN 61000-6-2 (2000) Electromagnetic Compatibility (EMC) - Generic standard on immunity. Part 6-2: Industrial Environment.
- EN 61000-4-2 + A1 (1996-1999) Electromagnetic Compatibility (EMC) - Part 4: Test and measurement techniques - Section 2: Electrostatic discharge immunity tests - Basic publication.
- EN 61000-4-3 Electromagnetic Compatibility (EMC) - Part 4: Test and measurement techniques - Section 3: Radiated, radio- frequency, electromagnetic field immunity test.
- EN 61000-4-4 (1996) Electromagnetic Compatibility (EMC) - Part 4: Test and measurement techniques - Section 4: Fast transients/bursts immunity tests - Basic publication.
- EN 61000-4-5 (1997) Electromagnetic Compatibility (EMC) - Part 4: Test and measurement techniques - Section 5: Surge immunity test.
- EN 61000-4-6 (1995) Electromagnetic Compatibility (EMC) - Part 4: Test and measurement techniques - Section 6: Immunity to conducted interference, induced by radio frequency fields.
- EN 61000-4-11 (1977) Electromagnetic Compatibility (EMC) - Part 4: Test and measurement techniques - Section 11: Voltage dips, short interruptions and voltage variations immunity tests.

IMMUNITY TO ELECTROSTATIC DISCHARGES			
Gate	**Test levels**	**Evaluation criterion**	**Result**
Enclosure	contact 4 kV steel plate 4 kV in air 8 kV	B	Complies

IMMUNITY TO VOLTAGE (BURSTS)			
Gate	**Test levels**	**Evaluation criterion**	**Result**
A.C. power supply input	2 kV	B	Complies

IMMUNITY TO CONDUCTED ELECTROMAGNETIC FIELDS			
Gate	**Test levels**	**Evaluation criterion**	**Result**
A.C. power supply input	10V	A	Complies

IMMUNITY TO IRRADIATED ELECTROMAGNETIC FIELDS			
Gate	**Test levels**	**Evaluation criterion**	**Result**
Enclosure	10 V/m	A	Complies

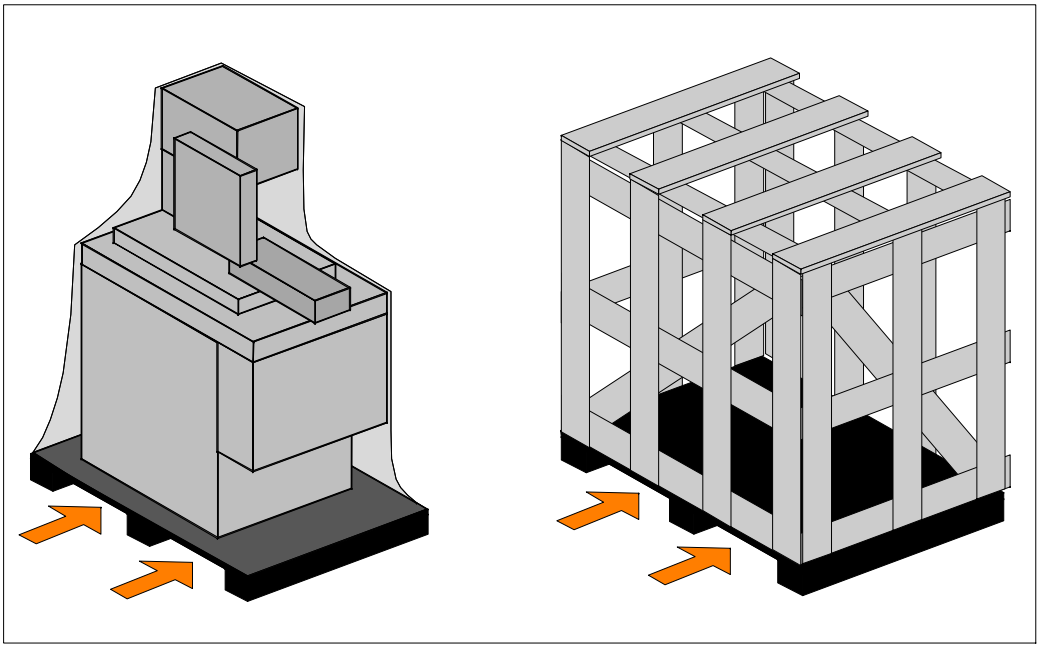
Machine installation

4

Packaging and storage

MEP S.p.A. use packing materials that guarantee the integrity and protection of the machine during its transport to the customer.

The type of packing differs according to the size, weight and destination. Therefore the customer will receive the machine in one of two following ways:



1. on a pallet with straps and heat- shrink plastic;
2. on a pallet with straps, heat- shrink plastic and a wooden crate.

Warning

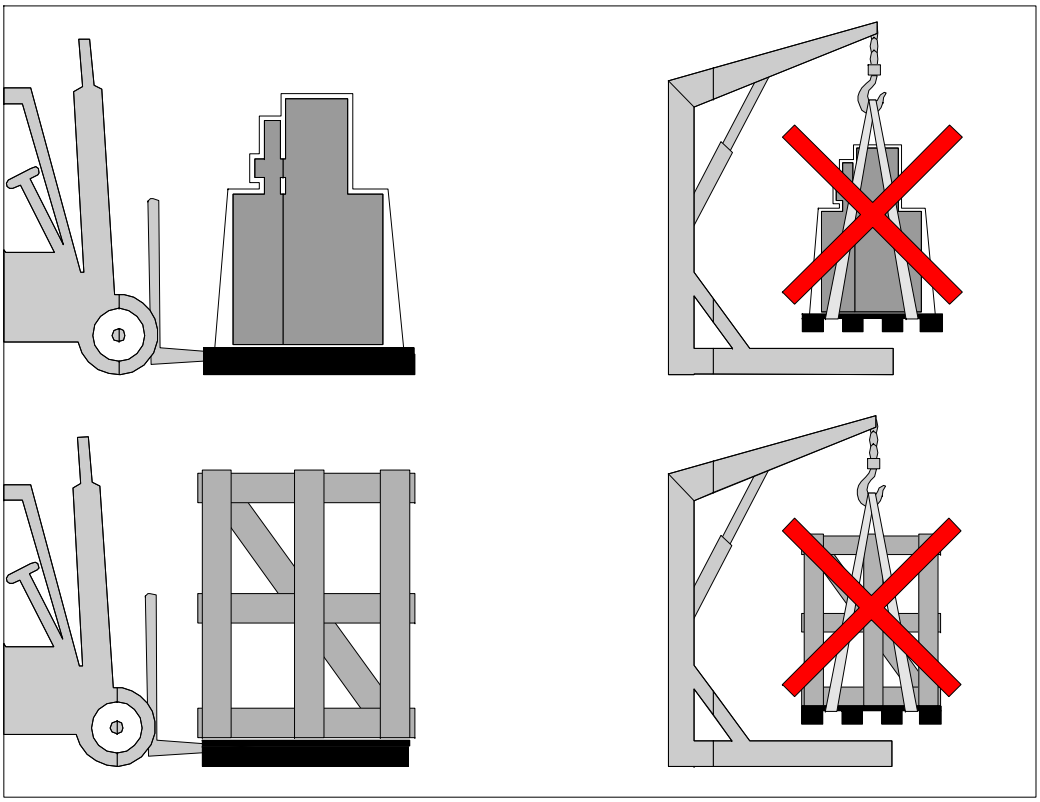
In both cases, for correct balancing the machine must be handled using a fork- lift truck, inserting the tines at the points indicated by the arrows, using the reference marks on the crate itself.

Attention

Before carrying out lifting operations, make sure that the weight of the machine, as indicated on the crating or other packaging, is within the forklift truck load limit.

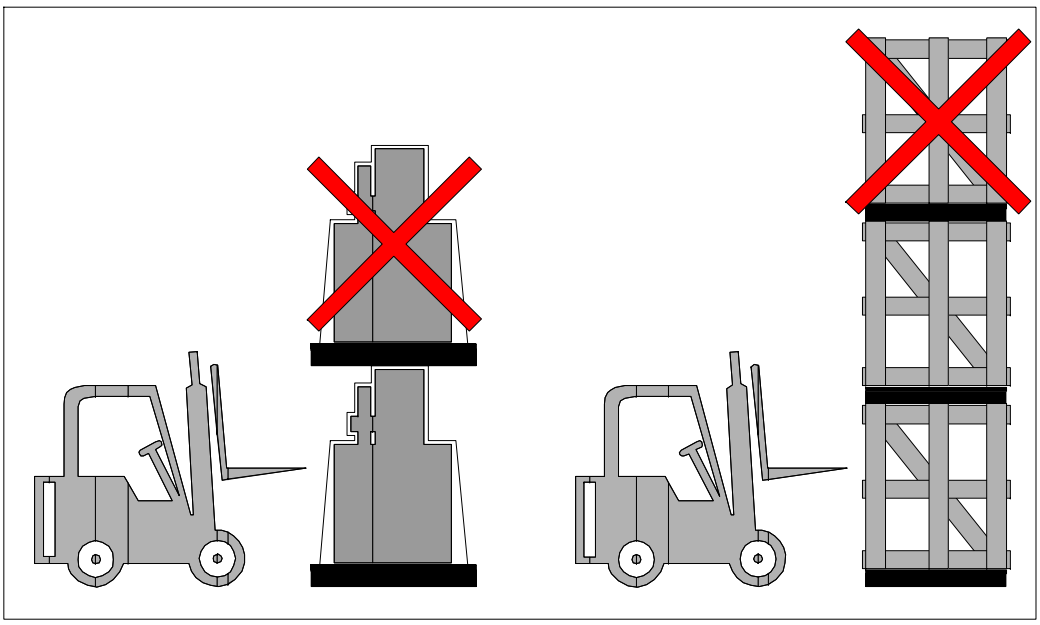
Attention

Do not handle the packed machine using slings.



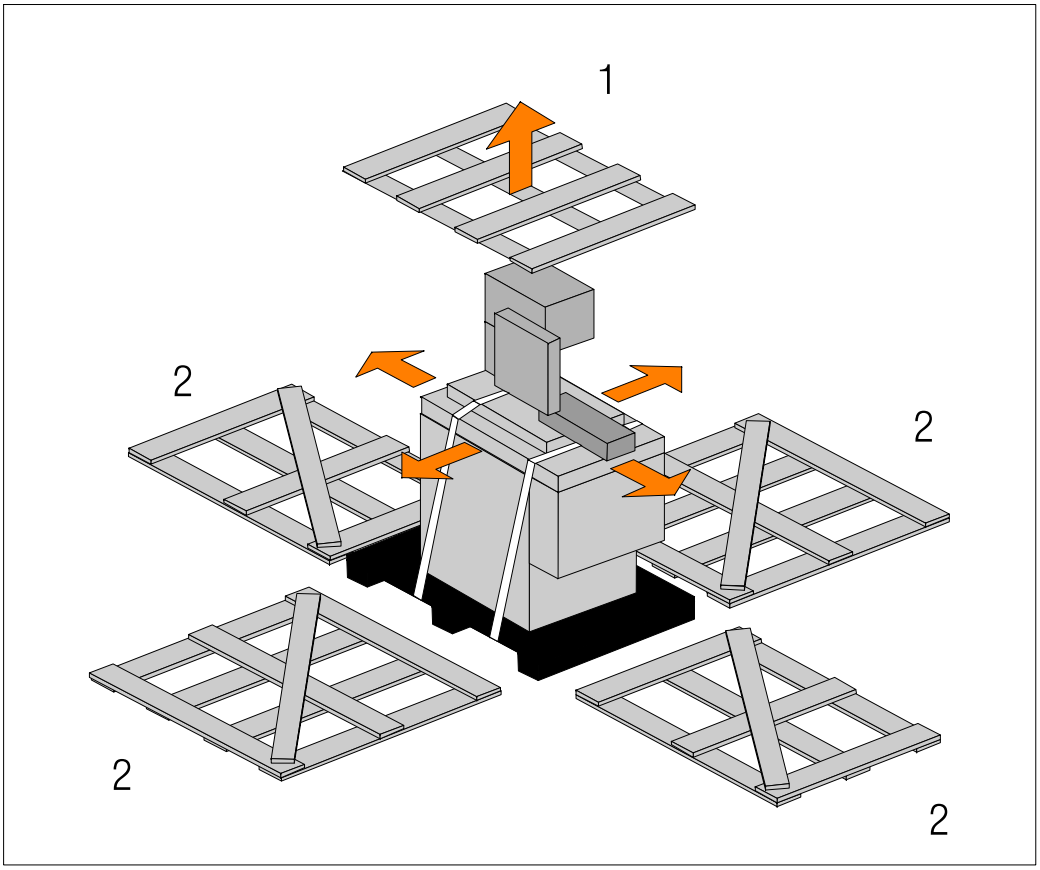
Attention

When storing, machines palletized and shrink- wrapped must not be stacked two high, and machines pallettized and crated must not be stacked three high.

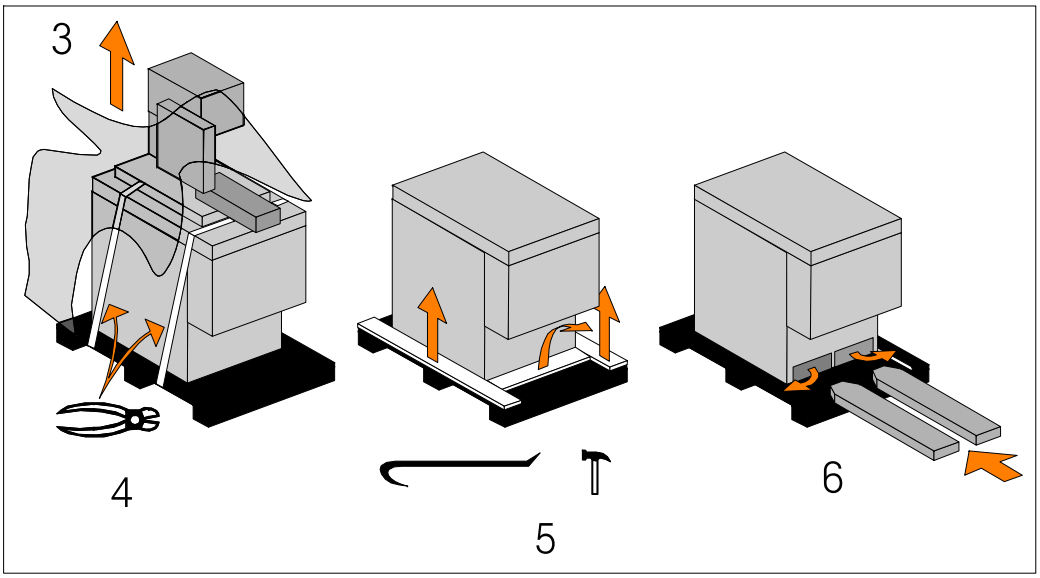


To install the machine, first remove the packing, paying particular attention not to cut any electric wires or hydraulic hoses; if necessary use pliers, a hammer and a cutter.
Open crate in the illustrated order:

1. remove nails and lift the top of the cage;
2. remove nails and lower walls;



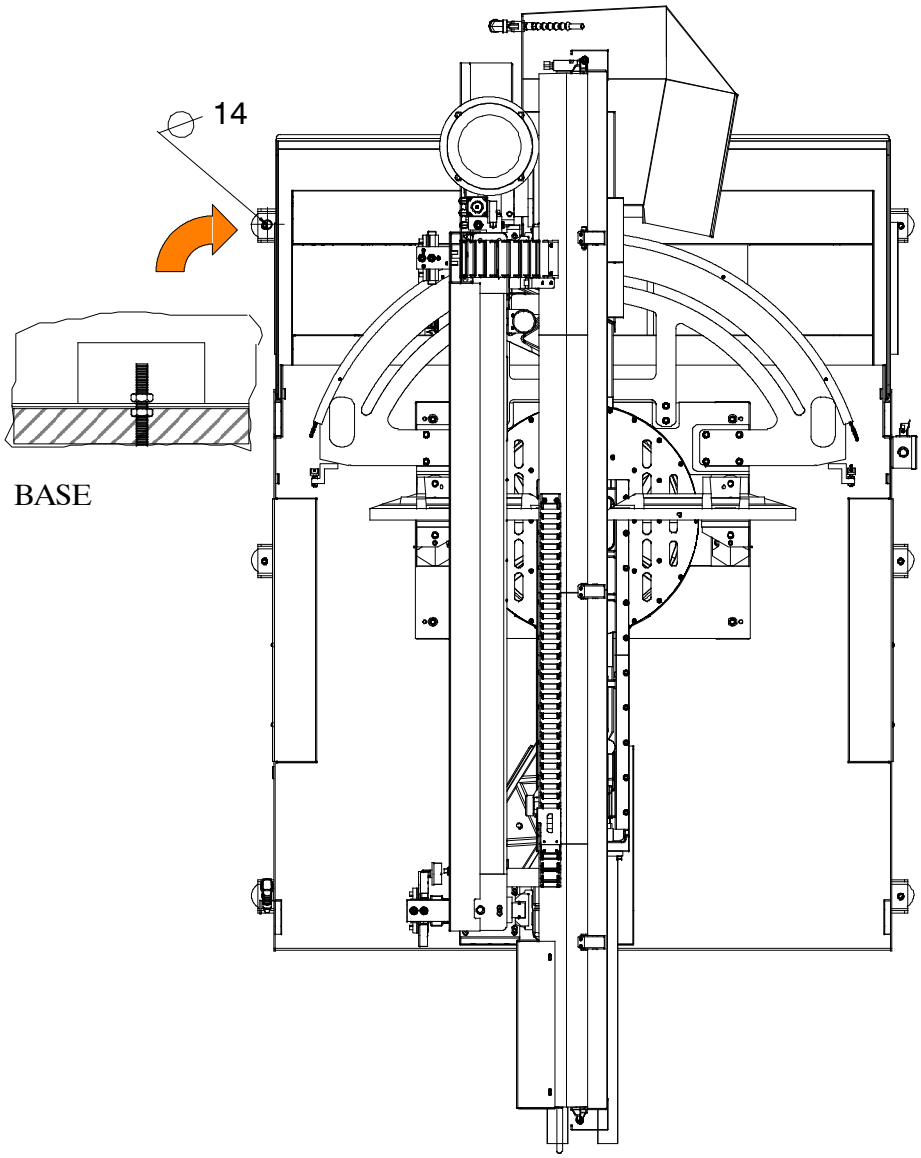
3. remove heat- shrink covering;
4. remove the straps;
5. remove nails from pallet securing planks and remove planks;
6. remove the front panel and insert fork tines.



To locate the machine in the workplace, **the machine dimensions** and necessary operator working space, including **the spaces laid** down in safety standards, **must be taken into account.**

Anchoring the machine

The base of the machine is anchored to the floor by two permanent studs located on the sides of the base. The studs are screwed into nuts previously sunk into the concrete, and tightened from above with lock nuts. The schematic specifications set out in Chapter 1 should be taken into account when positioning the machine.



Minimum requirements

For the machine to function correctly, the room in which it is to be installed must satisfy the following requirements:

- power supply voltage/frequency: refer to the values on the rating plate;
- temperature of machine location: from - 10 to + 50° C;
- relative humidity: not more than 90%;
- lighting: not less than 500 Lux.

Warning The machine is already protected against voltage variations, but will only run trouble-free if the variations do not exceed ± 10%.

Check list

Before starting installation, check that all the accessories, whether standard or optional, supplied with the machine are present. The basic version of the **Shark 652 SXI- EVO** machine is supplied complete with:

CHARACTERISTICS	STANDARD	OPTIONAL
Structure in sturdy cast iron, to absorb vibrations and give the machine a better cutting stability and longer blade life.	✓	
Coolant tank incorporated in the stand, with chip tray that can be replaced by the optional motor- driven ejector	✓	
Motor- driven chip ejector*		✓
Bimetal blade for solid and section materials	✓	
The head stroke is set directly from the control panel according to the dimensions of the bars to be cut, with automatic device for lifting and restoring the blade position.	✓	
Simplified touchscreen control panel managed by next- generation MEP controlled designed exclusively for MEP sawing machines	✓	
Automatic setting of cutting angle on instrument panel with automatic hydraulic clamping	✓	
Blade cleaning brush	✓	
Preset for the movement with lifter or crane	✓	
Working lamp and laser projector to position the bar to be cut accurately	✓	
Bow vertical lowering with double hydraulic cylinder on linear guides with ball- recirculating pre- charged slides, and band sloped by 3° to cope easily with horizontal walls.	✓	
Automatic shearing stress control system with servovalve mounted directly on the cylinder	✓	
Accessory kit	✓	
Electronic transducer for belt tensioning	✓	
Console diagnostics	✓	
Message display	✓	
Hydraulic fastening system with two independent vices on the left and on the right of the cut and vertical vice	✓	
Adjustable blade- guide heads in steel, with roller- slide combined device in widia, with adjusters for the traditional lubrication, preset to install the optional mist lubrication devices	✓	
Electronic speed control (inverter) 15÷150 mt/min	✓	
Fast approach sistem	✓	
Viewer cutting angle	✓	
Vice pressure regulator	✓	
Vertical hydraulic vise	✓	
Min. lubrication system		✓
Automatic alignment of the front blade- guide head according to the dimensions of the bars to be cut	✓	

CHARACTERISTICS	STANDARD	OPTIONAL
Console -set- up	✓	
Band rotation control with stop in real time in case of locked tool	✓	
New latest generation hydraulic control unit, with high efficiency and low energy consumption	✓	
Servocontrol to move the pulley and replace the band	✓	
Couple of pumps to feed high cutting liquid quantities to cool, to wash the working table continuously and convey the evacuated chips	✓	
Head pressure control	✓	
Semi- automatic working cycles	✓	
Display of belt rotation speed	✓	
5 l can of emulsible oil		✓
Preset to be equipped with the blade minimal lubrication kit*		✓
Hydraulic bar lifting rollers on left- hand side (pop- up)*		✓
Hydraulic bar lifting rollers on right- hand side (pop- up)*		✓
Two- metal band blade 6700x41x1.3 M42		✓
Loading/unloading beds with idle rollers		✓
Loading/unloading beds with motorised rollers		✓
Adjustable measuring reference		✓
Motorised transfer beds on loading/unloading side		✓
Cutting system safety enclosure		✓

***ACCESSORIES AVAILABLE ON REQUEST**

The bag of accessories is enclosed in the machine before being packed and contains:

- 3,4,5,6 and 10 mm Allen keys;
- pipe wrench 10 mm;
- 36 mm wrench;
- manual pump for topping up the oil in the pneumatic cylinder.

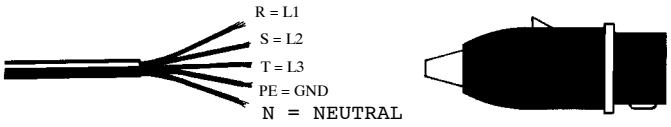
Connection to the power supply

Before connecting the machine to the power supply, check that the socket is not connected in series with other machines. This requirement is fundamental for the good operation of the machine.

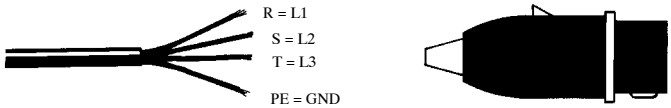
To connect the machine to the power supply, proceed as follows:

▶ connect the power supply cable of the machine to a plug which matches the socket to be used. (EN 60204- 1; par. 5.3.2)

CONNECTION FOR **"5-CORE"** WIRE SYSTEMS WITH NEUTRAL



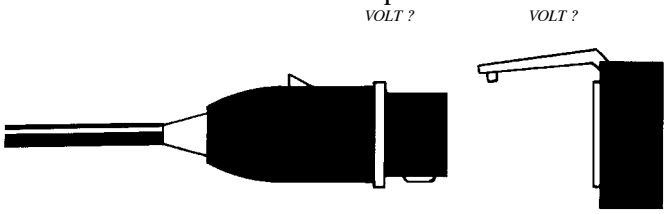
CONNECTION FOR **"4-CORE"** WIRE SYSTEMS WITH NEUTRAL



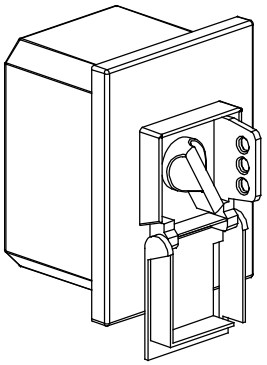
Attention

When using systems with a neutral wire, special care must be taken when connecting the **blue** neutral wire, in that if it is connected to a phase wire it will discharge the **phase voltage** to the equipment connected for **voltage: phase- neutral.**

▶ Insert the plug in the socket, ensuring that the mains voltage is the same as that for which the machine has been setup.

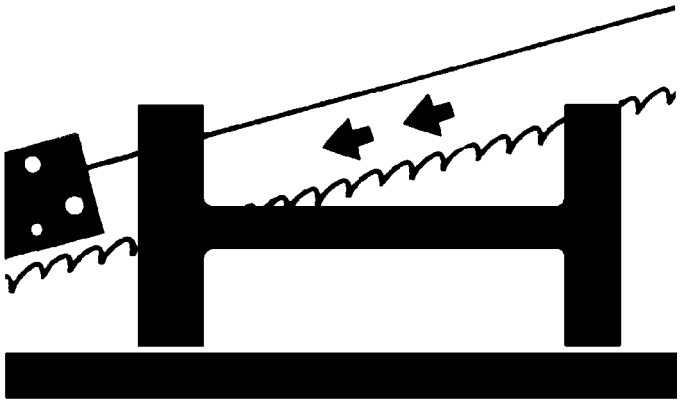


▶ Power the machine, rotating the main switch on the console left side (the control console lights up).



Attention

Ensure that the blade moves in the correct direction as shown in the above figure. If it does not, simply reverse two of the phase wires on the machine power supply input.



The sawing machine is now ready to start the work for which it was designed. Chapter 5 provides a detailed description of the various functions of the machine and its operating cycles.

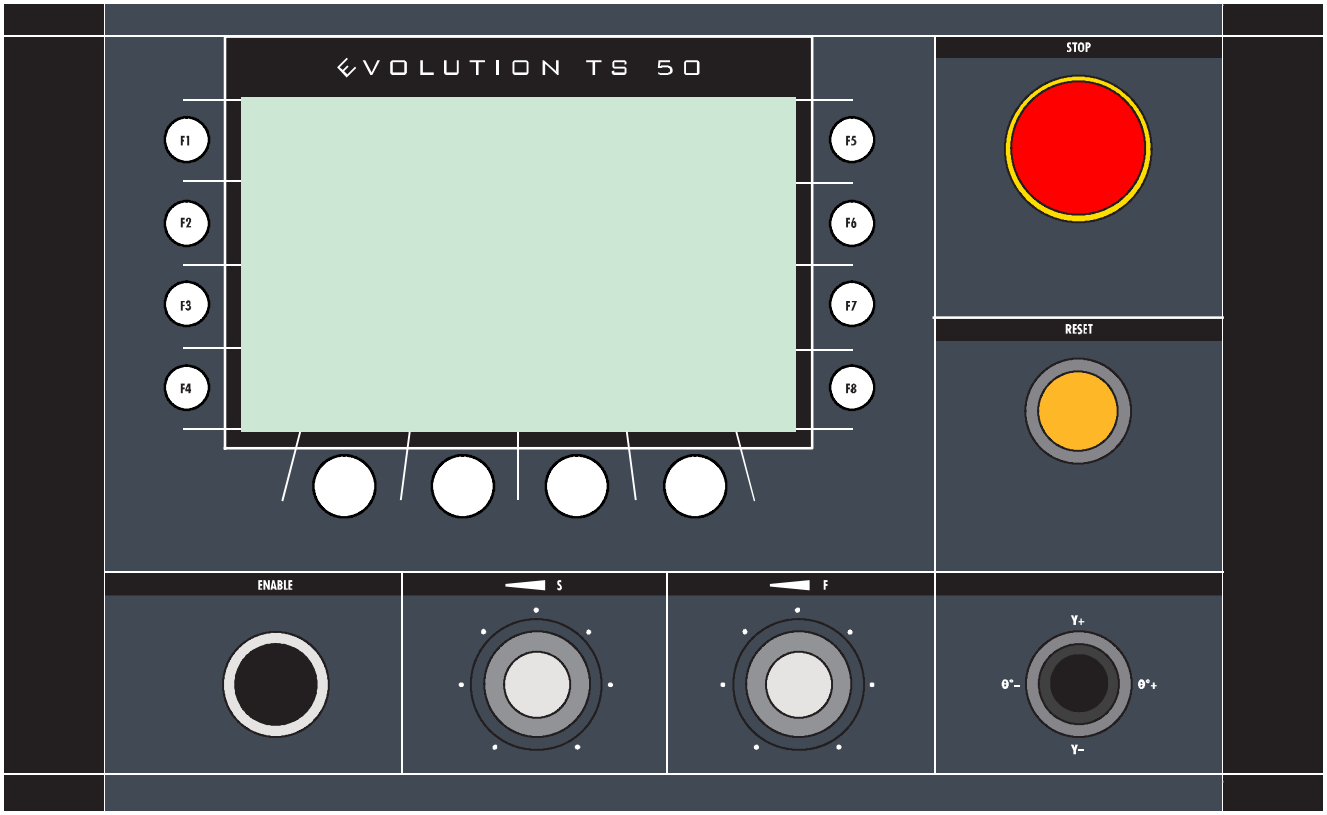
Description of machine operation



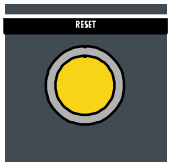
This chapter analyses all the machine functions. We begin with a description of the pushbuttons and other components on the control panel.

Description of the control panel

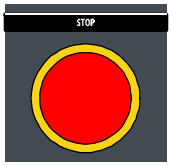
The control console is housed inside the control panel, a tamperproof IP 54 protection class housing sealed against dust and moisture. The control panel swivels on two articulated joints so that it can be positioned as required by the operator for greater ease- of- use and safety. The control board of the **Shark 652 SXI- EVO** is shown in the picture below:



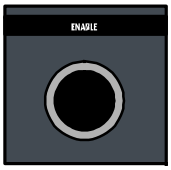
Key of control console keyboard



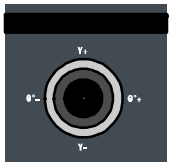
RESET:
Press to reactivate machine functions after an alarm.



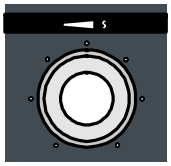
EMERGENCY STOP:
This button will stop both the hydraulic and blade motors. The head motion will cease. The vises remain as they are, but if closed, they will lose gripping force. For this reason all long stock should be supported so that it will not fall.
To reset the button, simply rotate through 45°.



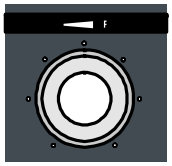
ENABLE COMMANDS:
Hold pressed to enable machine commands.



JOYSTICK:
This moves the head upwards- downwards and rightwards- leftwards while the enable commands button is pressed.



KNOB S:
This adjusts the band rotation speed.



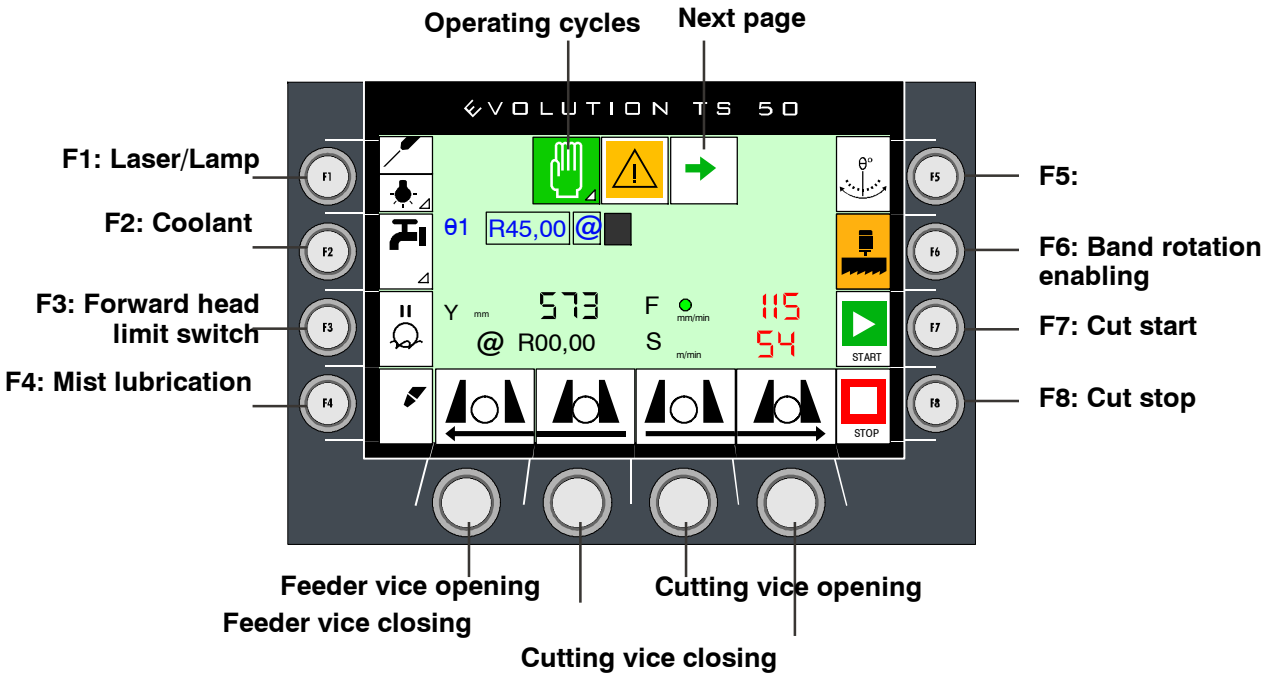
KNOB F:
This adjusts the head descent speed.

THERMAL - MAGNETIC CIRCUIT - BREAKER WITH UNDERVOLTAGE COIL AND DOOR LOCKING DEVICE

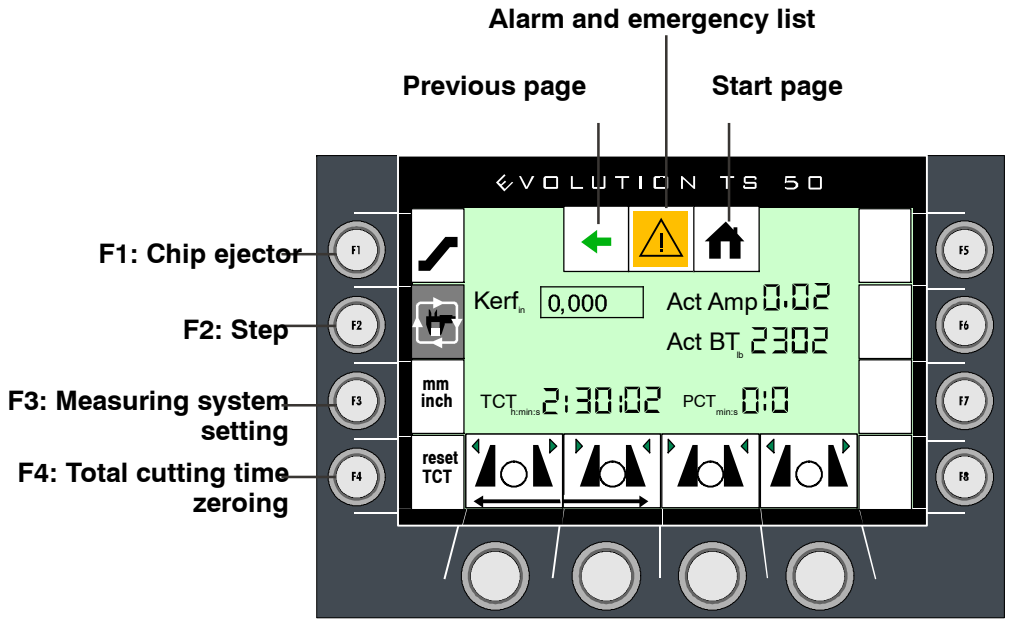
On the right side of the control board, the machine is equipped with a main switch that, when set ON (1), powers the machine.
The main switch is fitted with three power failure protection systems. In fact, in the event of a power failure, this switch disconnects all the electrical devices, causing the machine to immediately shut down, and prevents it from automatically starting up again when power is restored. This device also resets the thermal relay fitted to protect against current overloads.

Symbol key

The key for the symbols used on the display follows.



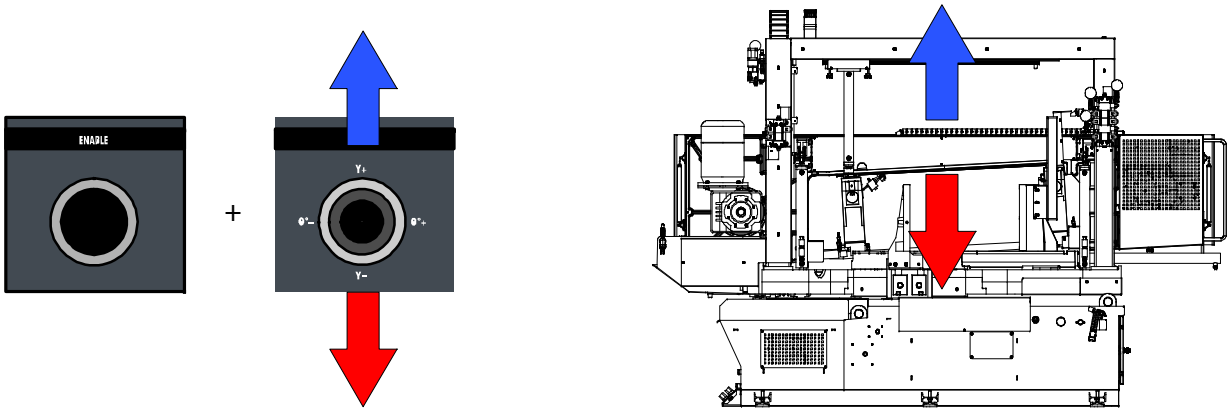
Pressing the “Next page” key, you can display the second machining screen:



Basic instructions for carrying out a cutting operation cycle

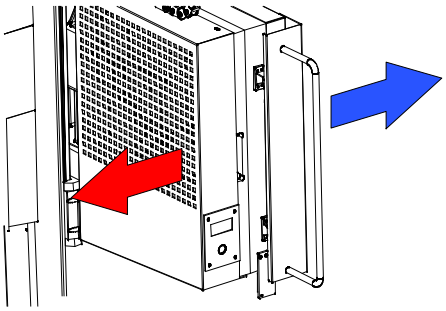
Moving the cutting head up and down

The cutting head can be moved up and down by pressing the enable commands button and using the joystick at the same time. Refer to the control console keyboard description in this chapter.



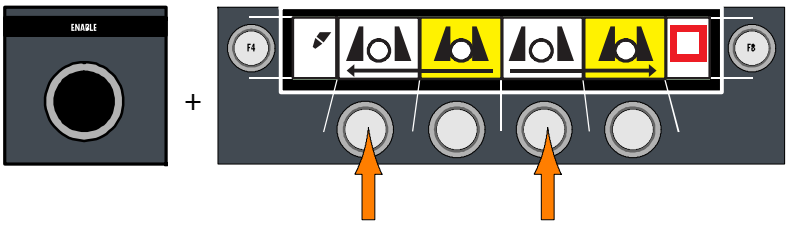
Turning the cutting head

The cutting head can be turned rightwards and leftwards in similar manner.
The operator can rotate the head by the lever on the cutting bow and, after rotating the switch in ”released” position, he can position it at the wished grading, thanks to the LCD. To lock it again, he just has to turn the switch to the head ”locked” position.



Angled cuts

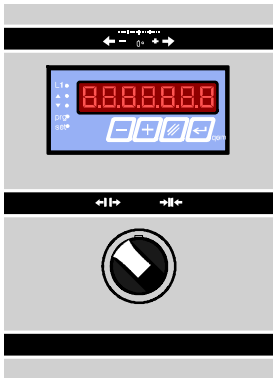
▶ Open both vices pressing the control enabling button and the left and right vice opening button at the same time.



▶ Release the cutting head by rotating the switch to the head ”released” position.

N.B. By this operation, the pop- up rollers automatically lift, if the machine is equipped with this option.

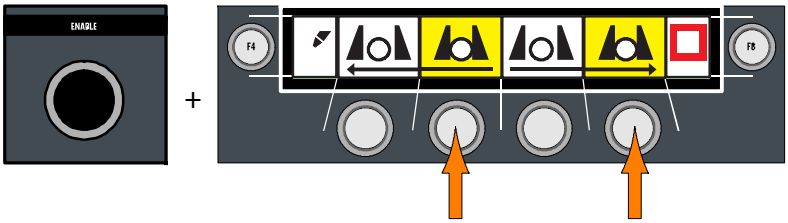
▶ Rotate the head to the wished grading shown on the display next to the cutting head handle.



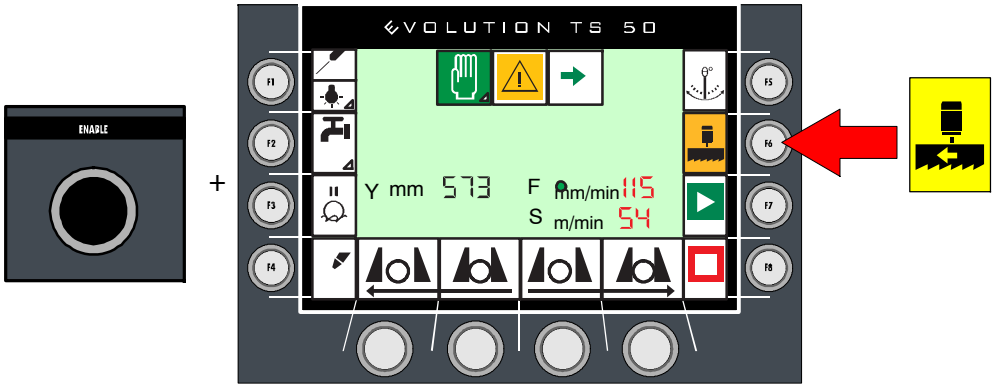
▶ Rotate the switch to lock the head in the obtained position.

N.B. By this operation, the pop- up rollers automatically lower, if the machine is equipped with this option.

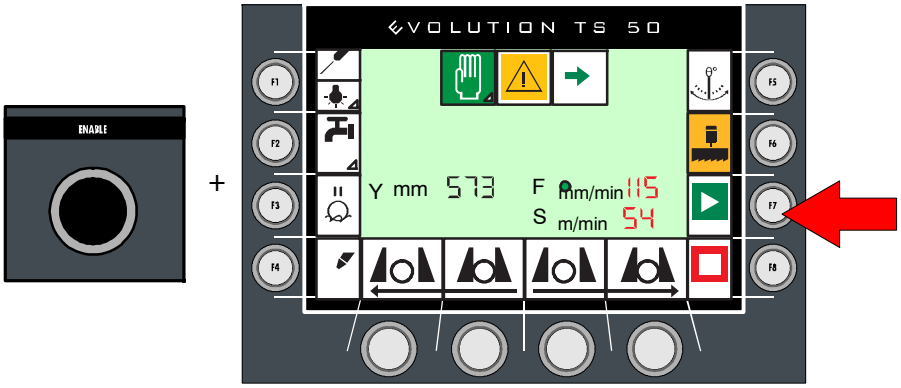
▶ Close one or both vices by pressing the control enabling button and the left and right vice closing button at the same time.



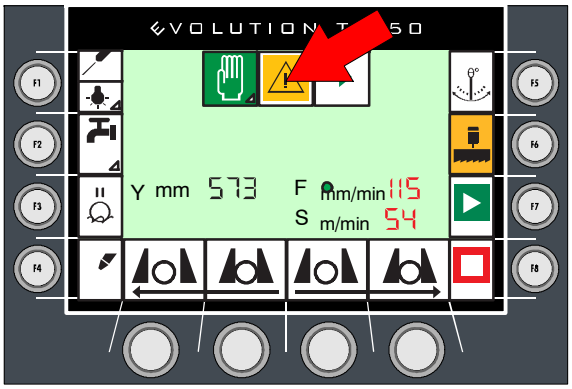
▶ Enable band rotation by pressing the button shown in the figure together with the enable commands button. The box will light up to indicate that its was selected.



▶ Press the button shown in the figure to start the cutting cycle holding the enable commands button pressed at the same time. The band will be start turning and the machine will start cutting.

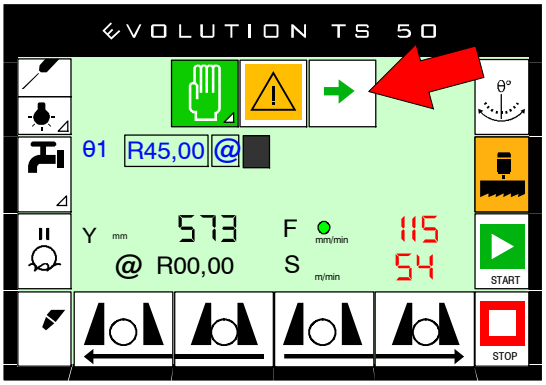


N.B. Tap on the touchscreen box shown in the figure to see problems during operation. The box will turn blue to indicate caution and red to indicate a machine alarm. See chapter 10 for a complete list of alarms.

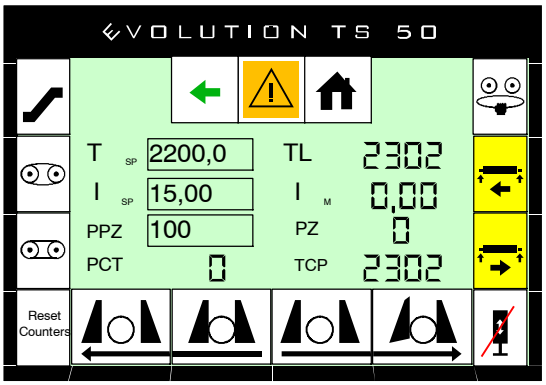


Operating parameters

During the processing cycle it is possible to control the machine operating parameters: Y (cutting head position in mm), F (cutting head lowering speed) and S (band rotation speed).



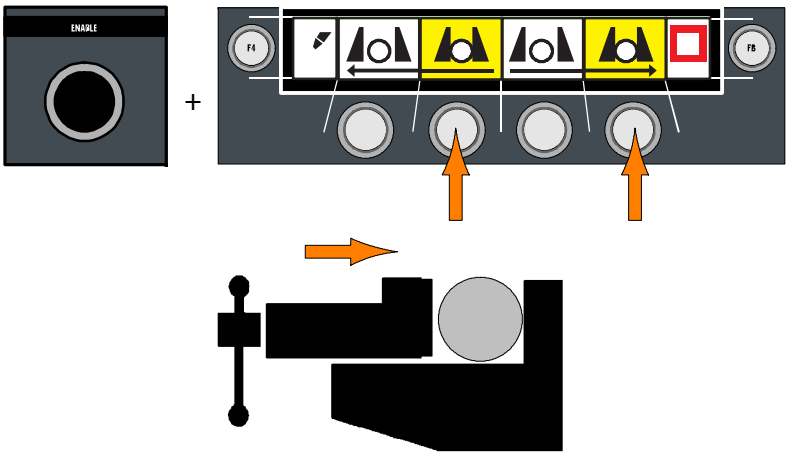
Press the arrow button shown in the figure to see the second operating parameter page: T sp (programmed blade tension - set point), TL (current blade tension), I sp (programmed blade motor current - set point), I m (current blade motor current), PPZ (programmed cuts), PZ (cuts done), PCT (workpiece cutting time), TCP (total cutting time).



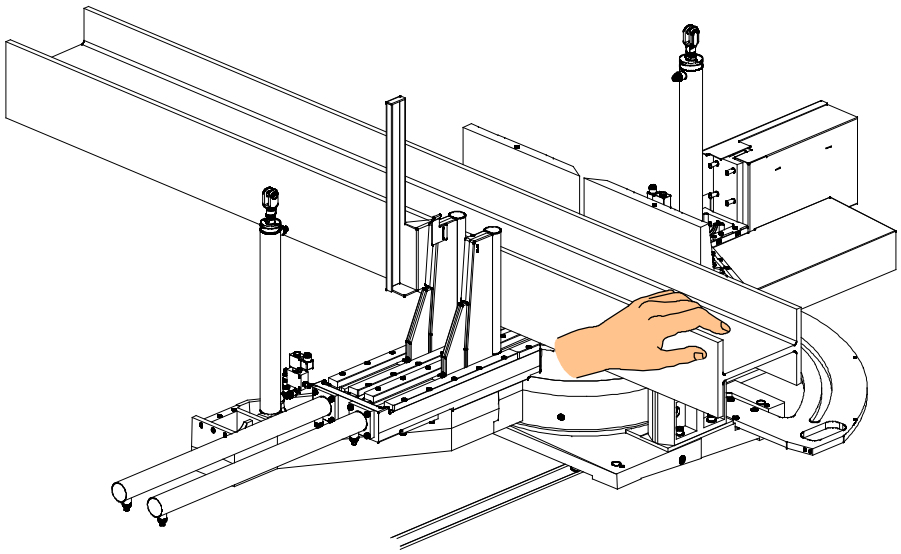
Clamping the work piece in the vice

Vice opening and closure is controlled by the corresponding buttons on the control console. However, to ensure that the workpiece is securely clamped in the vice, proceed as follows:

- Make sure the workpiece dimensions do not exceed the machine's cutting capacity;
- make sure the piece is correctly supported on both sides of the machine;
- enter the material to be cut inside the vices;
- Close one or both vices by holding the enable command button press and then pressing the close left and right vice button.



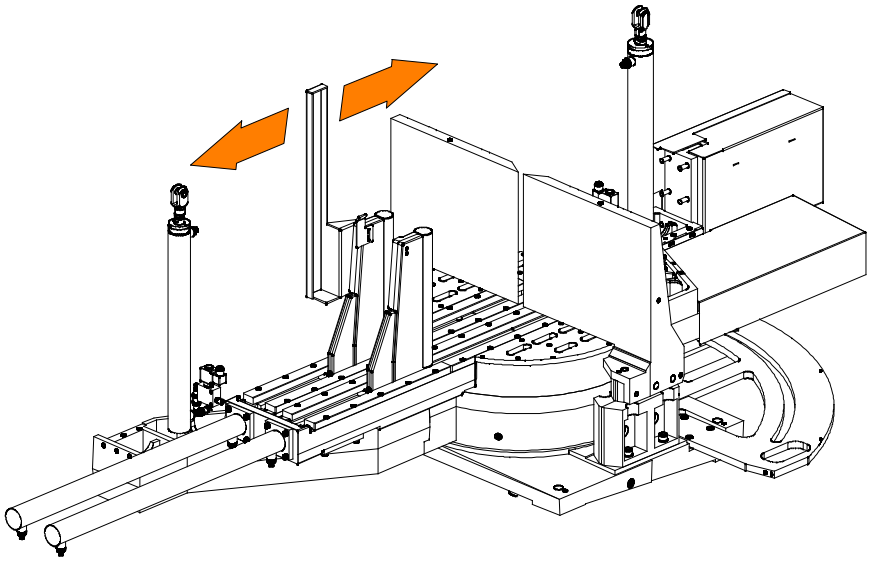
- make sure the workpiece is securely clamped in the vice by trying to move it manually.



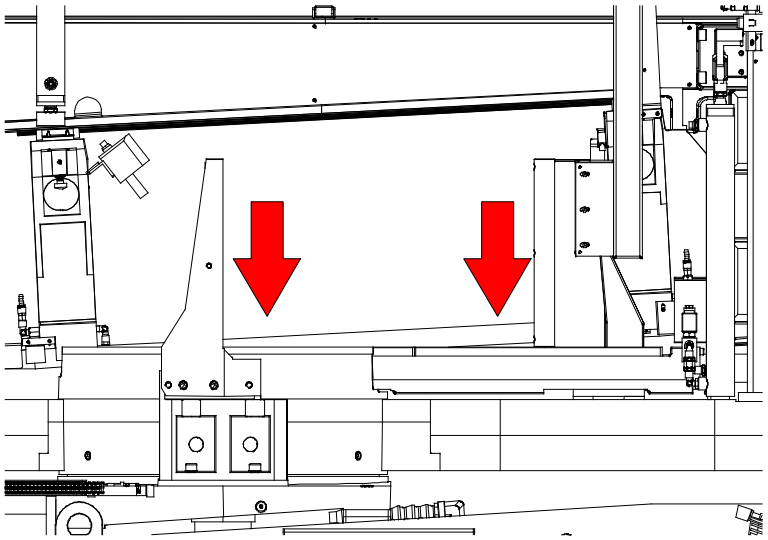
Width of cut

The machine is fitted with protections that protect the entire blade stroke leaving only the part of the blade required to make the cut itself exposed. This includes the rear (fixed) head and the front (mobile) head, as required by current standards.
The cutting width is automatically adapted with the positioning of the cutting vice on the loading side.

N.B. The machine is supplied with a laser projector for the positioning of the material under the blade vertical.



Warning Care must be devoted to the dimensions and geometry of the workpiece because the cutting head is inclined by 3 degrees with respect to the cutting plane and therefore the end of the cut will vary according to the distance from the square. For this reason, the FHLS (forward head limit switch) point must be changed whenever the material is changed.

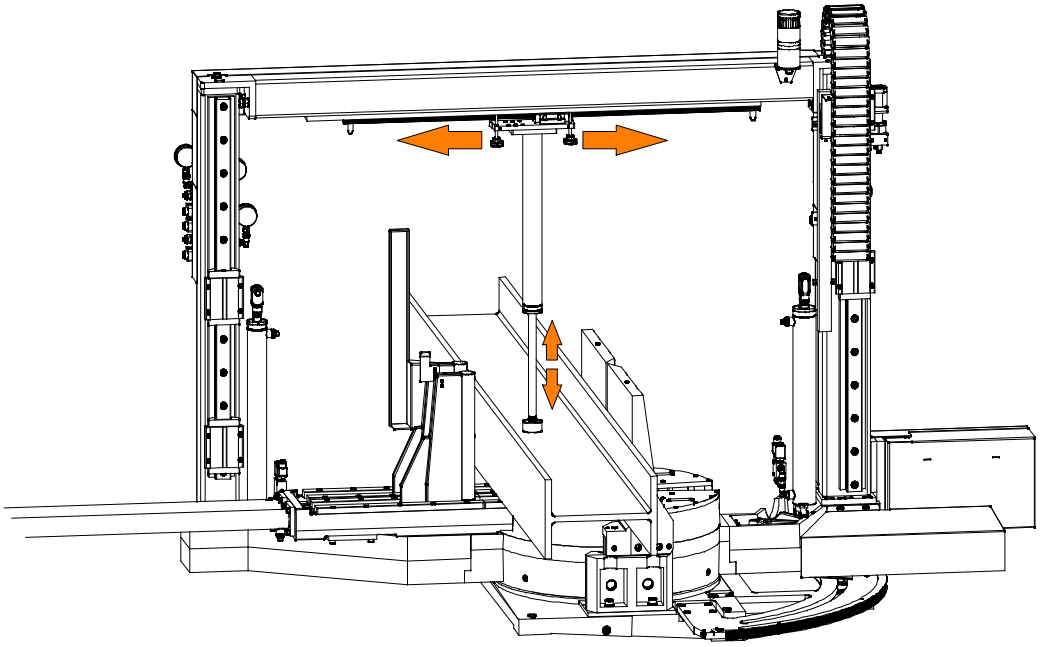


N.B. The machine is equipped with the Fast Approach system, enabling the head fast approach to the material being processed by a laser beam until the cutting start point.

Vertical vice positioning

The vertical vice is positioned manually, by running the slide under the ”H” structure post, depending on the dimensions and geometry of the material being processed.

▶ Pull the release knob, position the vertical vice and release the knob.



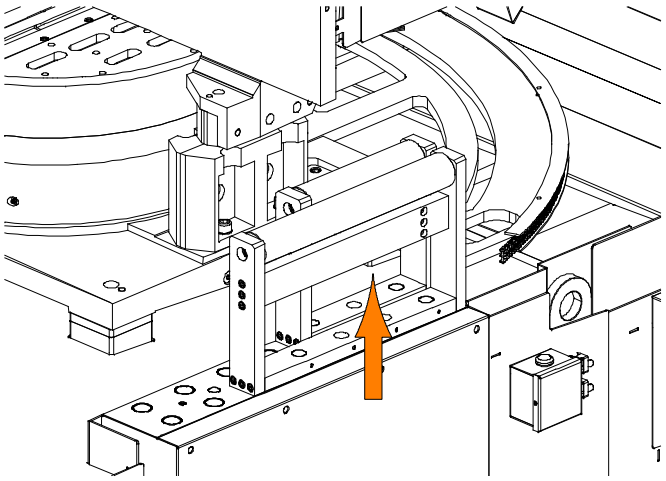
Attention

When the head is rotated, the vices must be previously opened.

Pop-up rollers to lift the cutting material (optional)

The machine may be provided with two hydraulic roller devices position on loading and unloading side to lift the cutting materials. These accessories are very useful when feeding material to access loading and unloading and when turning the head to prevent interference between material and the cutting plane.

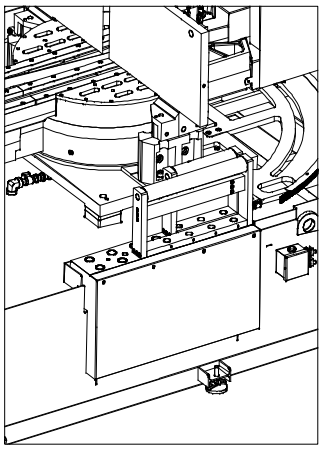
- ▶ Operate the pop- up rollers to lift the workpiece and then unload the cut part and load the material to be cut.
- ▶ Operate the pop- up rollers to lift the material being machine and then turn the head.

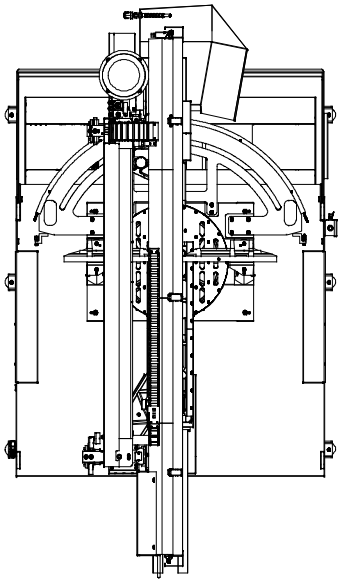


Attention

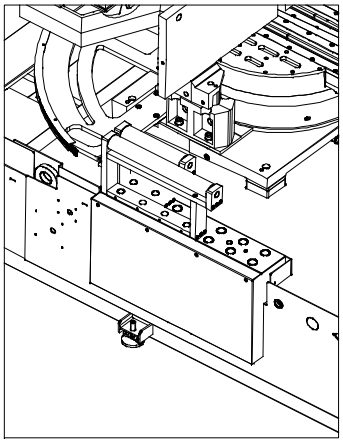
The widest roller must be removed from its seat when the head is turned by more than 45 degrees rightwards or leftwards. Respect the positions shown in the figure below.

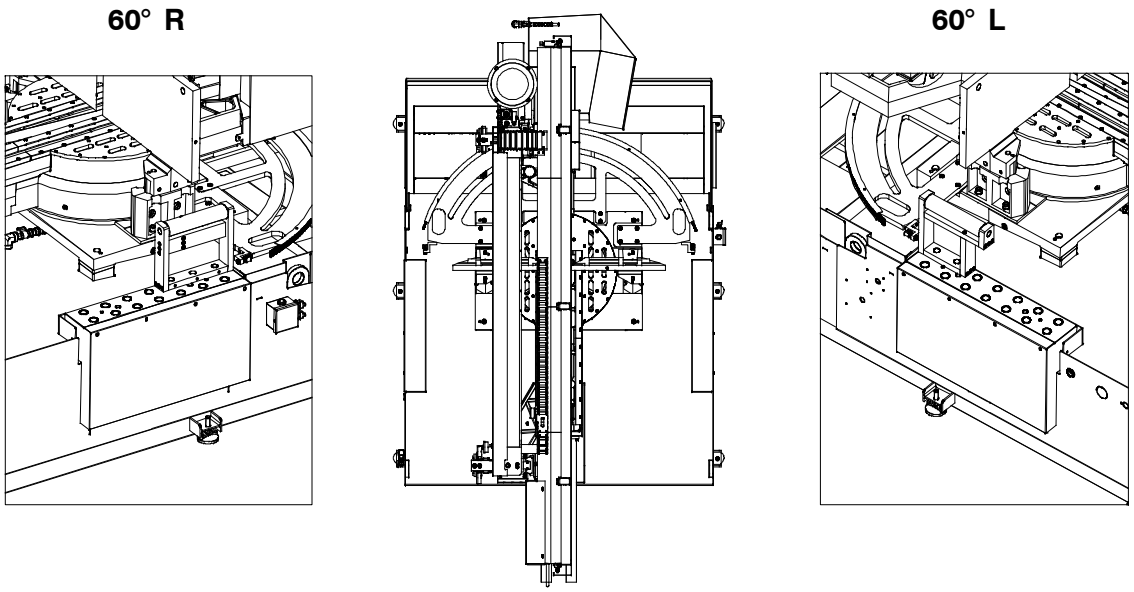
45° R





45° L





Preliminary check list for cutting operation

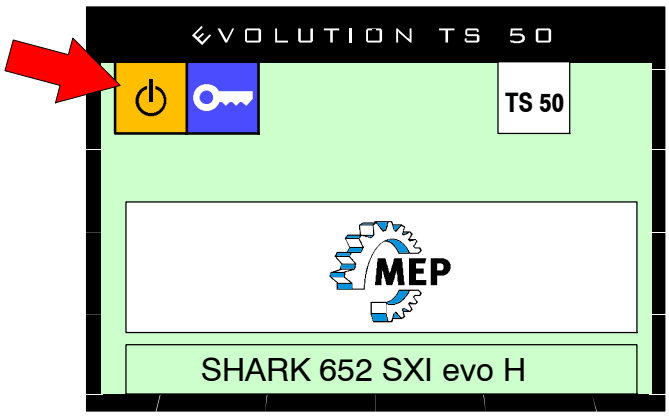
To guarantee complete safety during cutting cycles, the operator should work through a check list of the entire apparatus, checking:

- blade tension;
- that the work piece is properly clamped in place;
- that the blade teeth are correct for the job to be begun;
- that the speed selected is right for the kind of piece to be cut;
- that all protections are in place and correctly locked;
- the level of lubricant/coolant and that the electropump is activated;
- that the blade downstroke speed and the cutting pressure are correct.

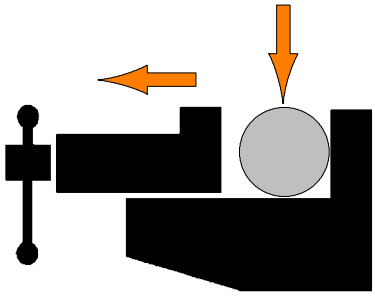
Semi- automatic operating cycle

Sequence of operations for a semi- automatic cut:

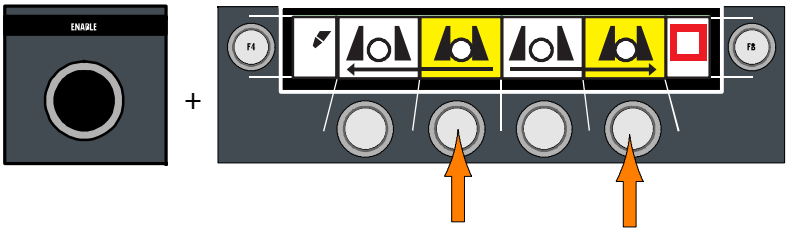
- power up the machine by turning the main switch;
- Tap on the box with the on symbol on the touchscreen.



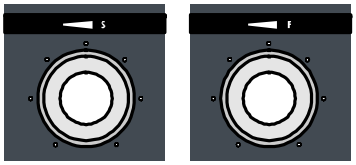
- Press reset.
- Position the material in the vices.



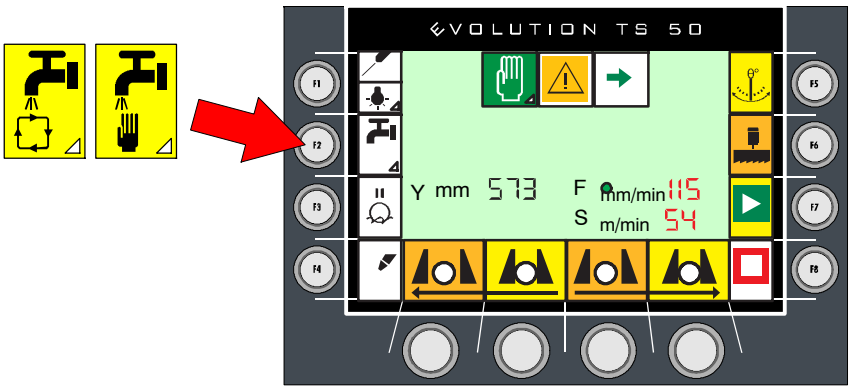
- set the wished cutting angle.
- Re- position the material inside the vice for the machining and calculate the cut length.
- Close one or both vices by holding the enable command button press and then pressing the close left and right vice button.



- Select the band speed and the head descent speed suited to the material type.

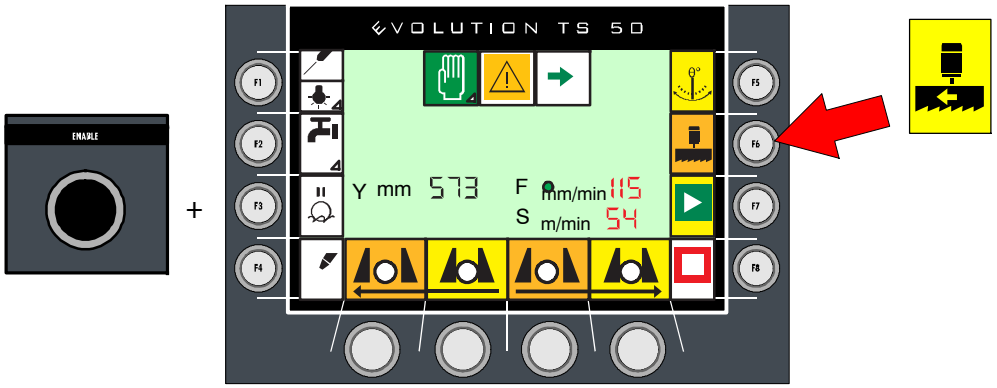


▶ Set the fluid jet by pressing the button shown in the figure. The box will light up to indicate that it is selected. Adjust the amount using the valves on the blade guide head. Press the button repeatedly to select the dispensing mode (automatic or manual).

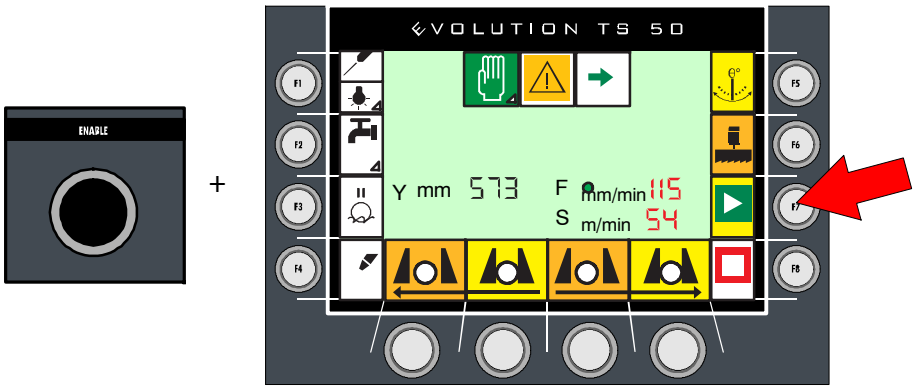


▶ Position the head at approximately 10 mm from the workpiece.

▶ Press the start band button holding the enable commands button pressed at the same time.

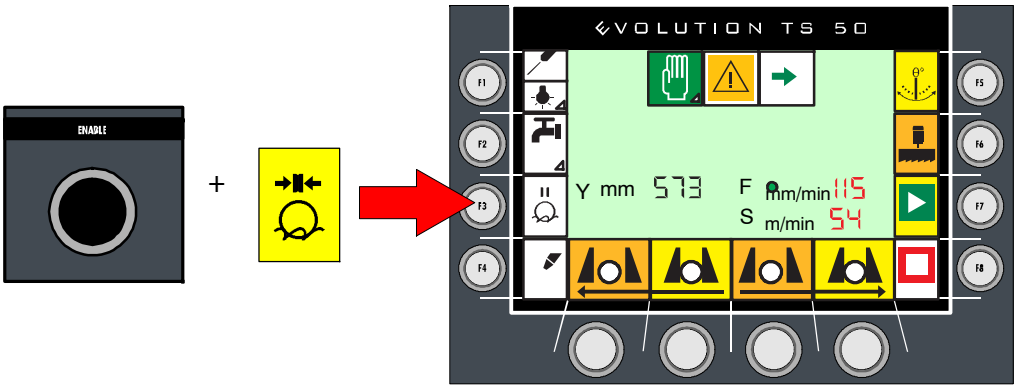


▶ Press the start cycle button holding the enable commands button pressed at the same time. In this manner, the RHLS (reverse head limit switch) point, which determines the cycle start position, is automatically stored.

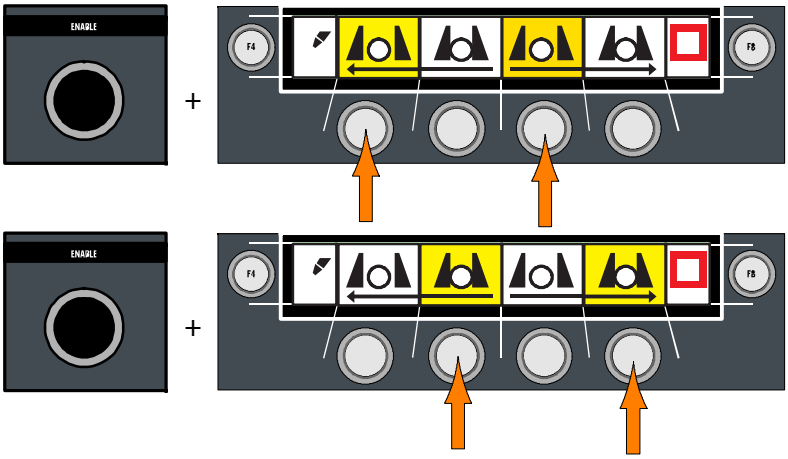


▶ The head will start moving down.

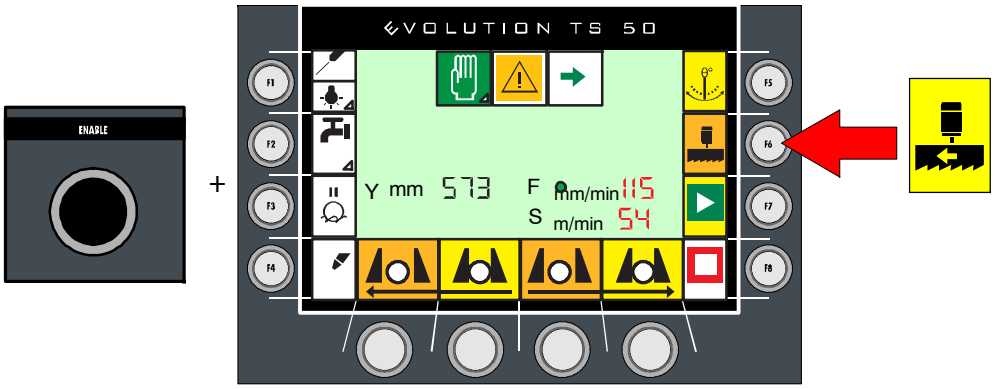
N.B. At this point, hold the enable commands button pressed and move the head down using the joystick to delete the existing FHLS point: the FHLS setup box will start blinking to indicate that the FHLS point was deleted. When the head reaches the required end of cutting point, press the FHLS setup button shown in the figure together with the enable commands button. The corresponding box will light up to indicate that it was selected.



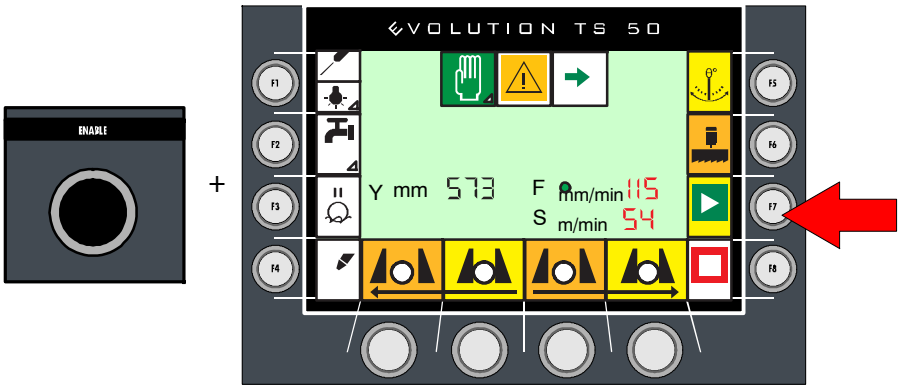
- At this point, the band will stop and the head will go back to the set RHLS point, ready to start a new cutting cycle.
- Open one or both vices by holding the enable commands button pressed together with the open vices button. Then feed the workpiece and finally close one or both vices by pressing the enable commands button and the close vices button at the same time.



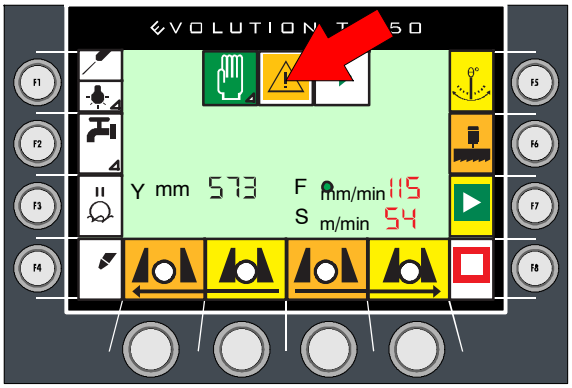
- Enable band rotation by pressing the button shown in the figure together with the enable commands button. The box will light up to indicate that its was selected.



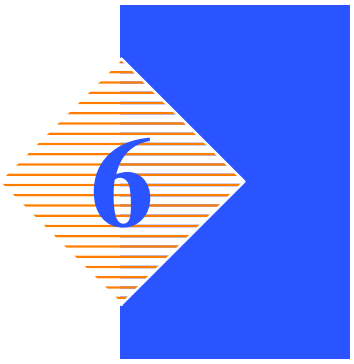
▶ Press the button shown in the figure to start the cutting cycle holding the enable commands button pressed at the same time. The band will be start turning and the machine will start cutting.
The head will move back up at the end of the cutting cycle, ready to start a new cycle.



N.B. Tap on the touchscreen box shown in the figure to see problems during operation. The box will turn blue to indicate caution and red to indicate a machine alarm. See chapter 10 for a complete list of alarms.



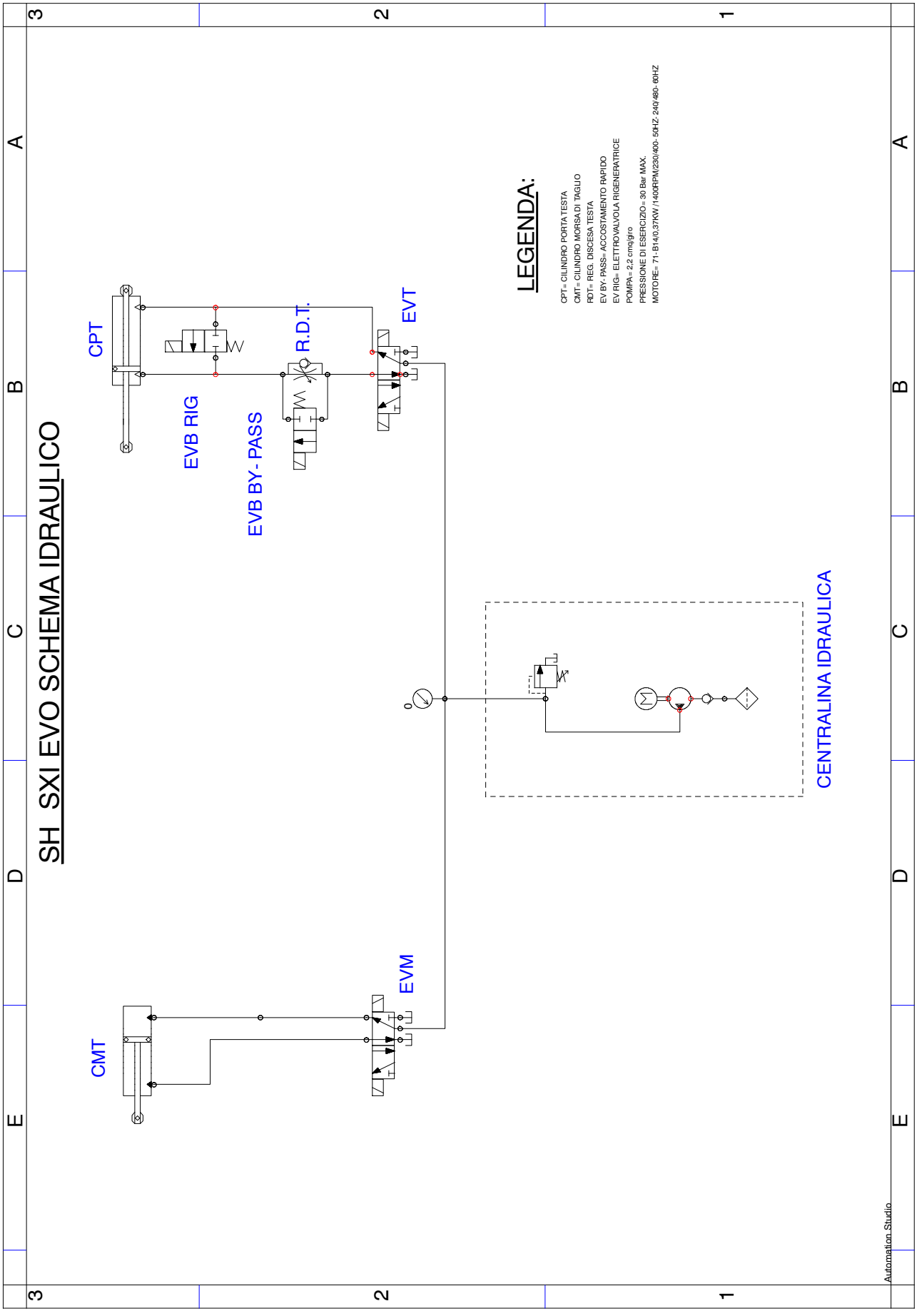
Diagrams, exploded views and replacement parts



This chapter contains functional diagrams and exploded views of the **Shark 652 SXI- EVO**. This document is intended to help in identifying the location of the various components making up the machine, giving information useful in carrying out repair and maintenance operations; This chapter will also enable the user to order replacement parts with no risk of misunderstanding, as all parts are given codes.

Hydraulic components legend					
M1	CPT Mono- control unit	CMT	Cutting clamp cylinder	RDTM	Motorised flow adjuster (cutting head descent speed)
M2	CMT Mono- control unit	RDT	Flow adjuster (cutting head descent speed)	RPP	Cutting head pressure adjuster
RPM	Vice pressure adjuster	EV.RIG	Regenerator electrovalve	CPT	Cutting head holder cylinder

Hydraulic diagram

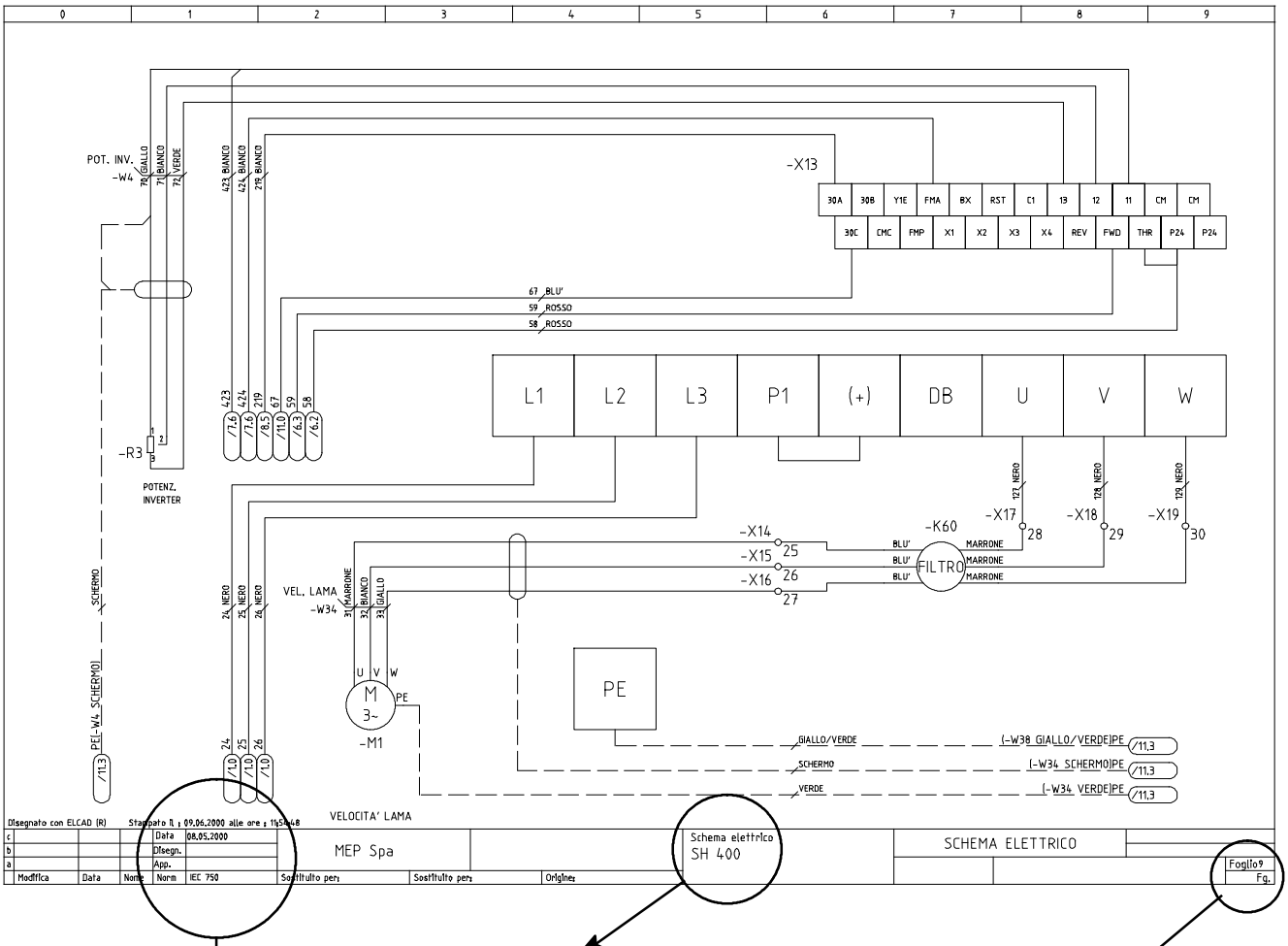


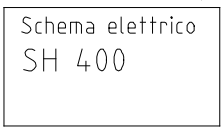
How to read the wiring diagrams

With the introduction of the new standardised wiring diagrams, the following gives an illustration of the way in which they have been drawn up.

Each sheet of the project contains a box which gives the following information:

The numbers indicate the columns into which the entire drawing is divided





Indications of the model of machine

Data	08.05.2000
Disegn.	MARIO ROSSI
App.	
Norm	IEC 750

Indications of the date production started

Identification of the designer

Identification of the Reference Standard

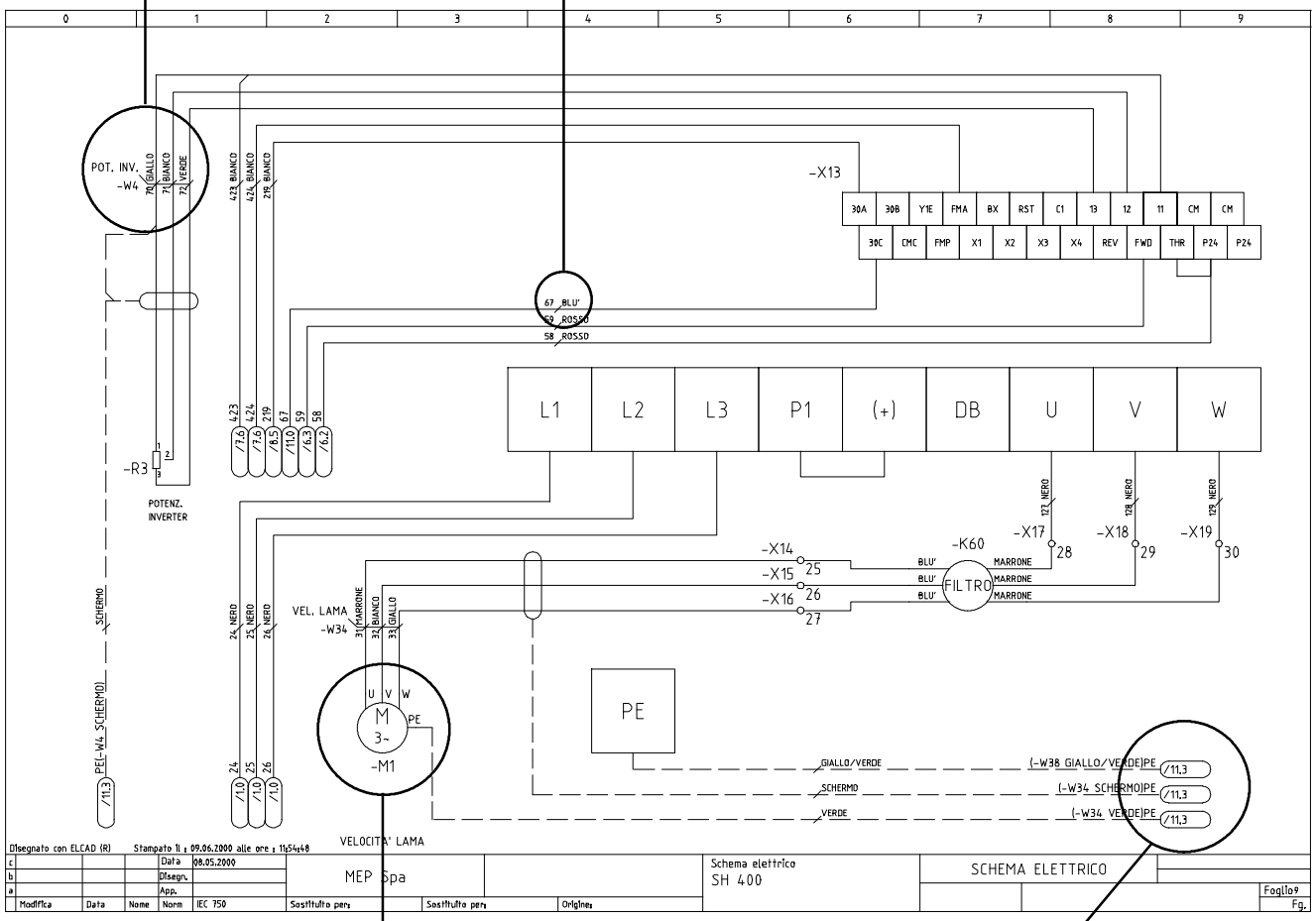
Foglio 9	
Fg.	

Indication of the page number

Each component in the wiring diagram is identified by a unique alphanumeric identification code, in compliance with regulations:

The wire is identified by the code - W4

This symbol identifies the wire with its relative number and colour



The motor is identified by the code - M1

These symbols, known as potentials, are used to provide page references: the first number indicates the page to be referred to, the second number, after the dot, identifies the column on that page; example /11.8 indicates that the wire continues on page no. 11 in column 8

The pages following the wiring diagrams contain the following lists:

1. components list (list of all components) and terminals list (list of all the terminals) with the following information:
   - in- house article code;
   - identification code;
   - reference, no. of the page and column on which it can be found;
   - description;
   - manufacturer.

ART. COD.	ID	PRES. REF	DESCRIPTION	MANUFACTURER
022.2151	- B1	/5.2	STRAIN GAUGE	DELTATEC

2. wires list (list of all wires) with the following information:
   - in- house article code;
   - identification code;
   - description;
   - section of wire (mm2);
   - colour of wire;
   - start: indicates the component (identification code and contact number) at which the wire starts;
   - end: indicates the component (identification code and contact number) at which the wire ends; e.g.

CODE	CABLE	DESCRIPTION	SECTION	NO.	COLOUR	START		END	
022.0141	- W7	RESET+EMER-GENZA	0.50	317	BIANCO	- S3	4	- K10	14

In this example, wire no. 317 white, identified as - W7, starts from contact no. 4 on component - S3, and ends at contact no. 14 on component - K10.
Enclosed below is Appendix D2 to European Standard EN 60204- 1

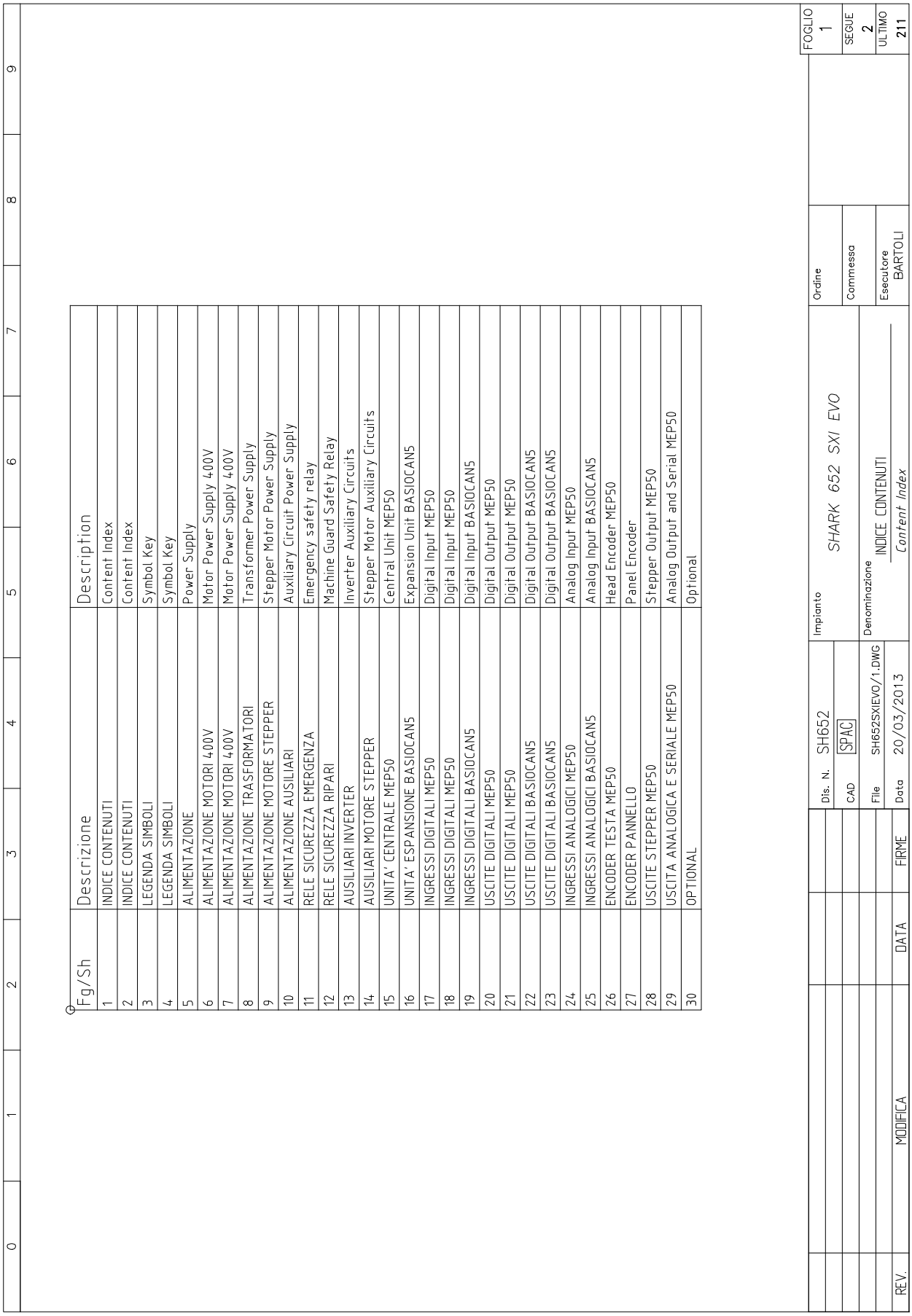
D2- Letter codes used to designate the type of component

LETTER	TYPE OF COMPONENT	EXAMPLES	IDENTIFICATION OF THE APPLIANCE
A	Complex units	Laser Maser Regulator	A
B	Transducers converting a non electrical signal to an electrical signal and vice versa	Transistor amplifier IC amplifier Magnetic amplifier Valve amplifier Printed circuit board Drawer Rack	AD AJ AM AV AP AT AR
C	Capacitors		C
D	Binary operators, timing devices, storage devices	Digital integrated circuits and devices: Delay line Bistable element Monostable element Recorder Magnetic memory Tape or disk recorder	D
E	Various materials	Devices not specified in this table	E

LETTER	TYPE OF COMPONENT	EXAMPLES	IDENTIFICATION OF THE APPLIANCE
F	Protective Devices	Lightning protectors Arrestors	F
		Instant action current threshold protector Delayed action current threshold protector Instant and delayed action current threshold protector Fuse Voltage threshold protector	FA FR FS FU FV
G	Generators, feeders	Rotating generators Crystal oscillators	G
		Accumulator battery Rotating or static frequency converter Power feeder	GB GF GS
H	Signaling Devices	Buzzer Optical signal, indicator light device	HA HL
J			
K	Relays, Contactors	Instant all or nothing relays or instant contactors Bistable relays or interdependent contactors (All or nothing contactors with mechanical contact or permanent magnet etc.) Contactors Polarised relays Reed relays All or nothing timed relays (timers)	KA KL KM KP KR KT
L	Inductors, reactors	Inductor Stop coil Reactor	I
M	Motors		M
N	Analogue intgrated circuits	Operational amplifiers Hybrid analog/digital appliances	N
P	Measurement equipment, test devices	Indicator, recorder and integrator measurement devices Signal generators	P
Q	Power circuit switching appliances	Automatic switch Engine saver switch Knife switch	QF QM QS
R	Resistors	Fixed or variable resistor (rheostat)	R

LETTER	TYPE OF COMPONENT	EXAMPLES	IDENTIFICATION OF THE APPLIANCE
S	Command or control devices	Selector or switch Button (including electronic proximity switch) Numerical all or nothing sensors (single step) of mechanical and electronic type: - Liquid level sensor - Pressure sensor Position sensor (including proximity) - Rotation sensor - Temperature probe	SA SB SL SP SQ SR ST
T	Transformers	Current transformer Control circuit supply transformer Power transformer Magnetic stabiliser Voltage transformer	TA TC TM TS TV
U	Modulators, converters	Discriminator Demodulator Frequency converter Coder Converter Inverter Telegraphic repeater	U
V	Electronic pipes, semiconductors	Electronic pipe Gas discharge pipe Diode Transistor Thyristor	V
W	Transmission lines, wave guides, antennas	Conductor Cable Bar Wave guide Wave guide directional coupler Dipole Parabolic antenna	W
X	Terminals, sockets, plugs	Connector bar Test plug Plug Socket Terminal connector band	XB XJ XP XS XT
Y	Electrically operated mechanical appliances	Electromagnet Electromagnetic brake Electromagnetic clutch Magnetic table spindle Electromagnetic valve	YA YB YC YH YV
Z	Transformers, impedence adapters, equalizers, band limiters	Line equalizer Compresser Crystal filter	Z

Standardised Wiring Diagrams (CENELEC Standard)



Fg/Sh	Descrizione	Description
1	INDICE CONTENUTI	Content Index
2	INDICE CONTENUTI	Content Index
3	LEGENDA SIMBOLI	Symbol Key
4	LEGENDA SIMBOLI	Symbol Key
5	ALIMENTAZIONE	Power Supply
6	ALIMENTAZIONE MOTORI 400V	Motor Power Supply 400V
7	ALIMENTAZIONE MOTORI 400V	Motor Power Supply 400V
8	ALIMENTAZIONE TRASFORMATORI	Transformer Power Supply
9	ALIMENTAZIONE MOTORE STEPPER	Stepper Motor Power Supply
10	ALIMENTAZIONE AUSILIARI	Auxiliary Circuit Power Supply
11	RELE SICUREZZA EMERGENZA	Emergency safety relay
12	RELE SICUREZZA RIPARI	Machine Guard Safety Relay
13	AUSILIARI INVERTER	Inverter Auxiliary Circuits
14	AUSILIARI MOTORE STEPPER	Stepper Motor Auxiliary Circuits
15	UNITA' CENTRALE MEP50	Central Unit MEP50
16	UNITA' ESPANSIONE BASIOCAN5	Expansion Unit BASIOCAN5
17	INGRESSI DIGITALI MEP50	Digital Input MEP50
18	INGRESSI DIGITALI MEP50	Digital Input MEP50
19	INGRESSI DIGITALI BASIOCAN5	Digital Input BASIOCAN5
20	USCITE DIGITALI MEP50	Digital Output MEP50
21	USCITE DIGITALI MEP50	Digital Output MEP50
22	USCITE DIGITALI BASIOCAN5	Digital Output BASIOCAN5
23	USCITE DIGITALI BASIOCAN5	Digital Output BASIOCAN5
24	INGRESSI ANALOGICI MEP50	Analog Input MEP50
25	INGRESSI ANALOGICI BASIOCAN5	Analog Input BASIOCAN5
26	ENCODER TESTA MEP50	Head Encoder MEP50
27	ENCODER PANNELLO	Panel Encoder
28	USCITE STEPPER MEP50	Stepper Output MEP50
29	USCITA ANALOGICA E SERIALE MEP50	Analog Output and Serial MEP50
30	OPTIONAL	Optional

0	1	2	3	4	5	6	7	8	9

Fg/Sh	Descrizione	Description
31	MORSETTIERA QUADRO	Terminal Board
32	INTERNO QUADRO	Board Inside
33	GUAINE E ACCESSORI	Sheaths and Accessories
34	GUAINE E ACCESSORI	Sheaths and Accessories
35	RIASSUNTIVO CAVI	Cable Summary
36	RIASSUNTIVO CAVI	Cable Summary
37	RIASSUNTIVO CAVI	Cable Summary
38	RIASSUNTIVO CAVI	Cable Summary
39	RIASSUNTIVO CAVI	Cable Summary
40	RIASSUNTIVO CAVI	Cable Summary
41	RIASSUNTIVO CAVI	Cable Summary
42	RIASSUNTIVO CAVI	Cable Summary
43	DISTINTA MATERIALI	Material List
44	DISTINTA MATERIALI	Material List
45	DISTINTA MATERIALI	Material List
46	DISTINTA MATERIALI	Material List
47	DISTINTA MATERIALI	Material List
48	DISTINTA MATERIALI	Material List
100	LEGENDA SIMBOLI	Symbol Key
101	CENTRALINA BASE E OPTIONAL POP-UP	Base Central Oil Unit and Optional Pop Up
102	CENTRALINA IDRAULICA (TESTA)	Central Oil Unit (Head)
103	CENTRALINA (MORSE)	Central Oil Unit (Vice)
104	CENTRALINA (MORSE)	Central Oil Unit (Vice)
105	DISPOSIZIONE COMPONENTI	Hydraulic Oil Unit Lay-Out
106	DISTINTA MATERIALI	Material List
107	DISTINTA MATERIALI	Material List
108	DISTINTA MATERIALI	Material List
109	DISTINTA MATERIALI	Material List
110	DISTINTA MATERIALI	Material List
111	DISTINTA MATERIALI	Material List

REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013

Impianto: SHARK 652 SXI EVO

Denominazione: INDICE CONTENUTI
Content Index

Ordine
Commessa
Esecutore: BARTOLI

FOGLIO 2
SEGUE 3
ULTIMO 211

Sim.\Sym.	File	Descrizione\Description
	H5	Lampada *Lamp*
	H11	LED *Led*
	M2	Motore asincrono trifase *Three—phase inductor motor*
	M9	Motore corrente alternata monofase *Single—phase inductor motor*
	Q1360	Int. automatico magnetotermico sezionatore tripolare *Three—phase automatic switch*
	R1	Resistore *Resistor*
	R6	Potenziometro *Potentiometer*
	R60	Potenziometro *Potentiometer*
	S2	Comando a Pulsante NO *Push button NO*
	S4C	Pulsante di emergenza NC *Emergency push button NC*
	S5	Comando rotativo a due posizioni NO *Rotary selector two position*

Sim.\Sym.	File	Descrizione\Description
	S7	Comando a pedale NO *Control pedal NO*
	S13C	Fine corsa comandato a camma libero NC *Limit switch free NC*
	S14C	Fine corsa comandato a camma azionato NC *Limit switch actuated NC*
	S15C	Comandato dal livello di un fluido (livellostato) NC *Water gauge NC*
	T2	Trasformatore per ausiliari con schermo *Trasformer for auxiliary white shield*
	Y1	Elettrovalvola (A) *Solenoid valve (A)*
	Y1A	Elettrovalvola (B) *Solenoid valve (B)*
	KA1	Bobina rele' Aux *Auxiliary relay coil*
	KM1	Bobina contattore *Contactor coil*
	BLK11	Trasformatore per ausiliari con schermo *Trasformer for auxiliary white shield*
	BLK12	Inverter (potenza) *Inverter (power)*

Sim.\Sym.	File	Descrizione\Description
	BLK13	Azionamento (potenza) *Drive (power)*
	BLK14	Inverter (ausiliari) *Inverter (auxiliary)*
	BLK15	Azionamento (ausiliari) *Drive (auxiliary)*
	BLK21	Motore passo-passo *Stepper motor*
	BLK41	Raccordo SX *Connector SX*
	BLK42	Raccordo DX *Connector DX*
	BLK43	Tubo corrugato *Corrugated pipe*
	BLK44	Riduzione PG *PG adapter*
	BLK51	Dado PG *PG nut*
	BLK56	Terminale a puntale *Terminal*
	BLK57	Filo unipolare *Wire*

REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013

Impianto
SHARK 652 SXI EVO

Denominazione
LEGENDA SIMBOLI
Symbol Key

Ordine

Commessa

Esecutore
BARTOLI

FOGLIO 3
SEGUE 4
ULTIMO 211

0	1	2	3	4	5	6	7	8	9

Sim.\Sym.	File	Descrizione\Description
	BLK58	Fascette plastiche di fissaggio *Plastic clamp*
	BLK60	Terminale a occhiello *Terminal*
	BLK66	Sacchetto portafusibile *Bag fuse*
	SPX08E	Dispositivo di prossimita' induttivo D.C. NO *Sensor of proximity fed DC NO*

Sim.\Sym.	File	Descrizione\Description

Sim.\Sym.	File	Descrizione\Description

REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013

Impianto
SHARK 652 SXI EVO

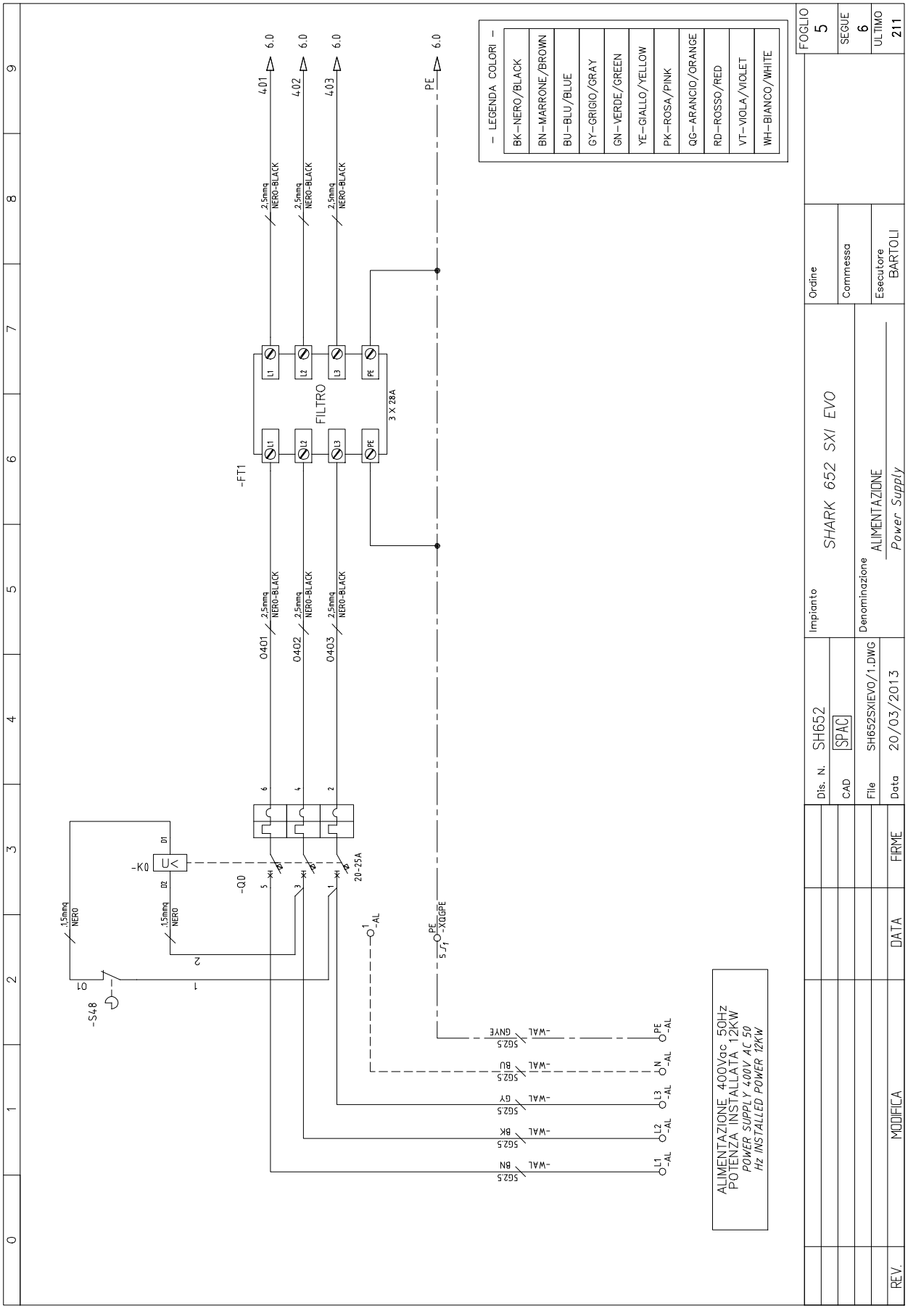
Denominazione
LEGENDA SIMBOLI
Symbol Key

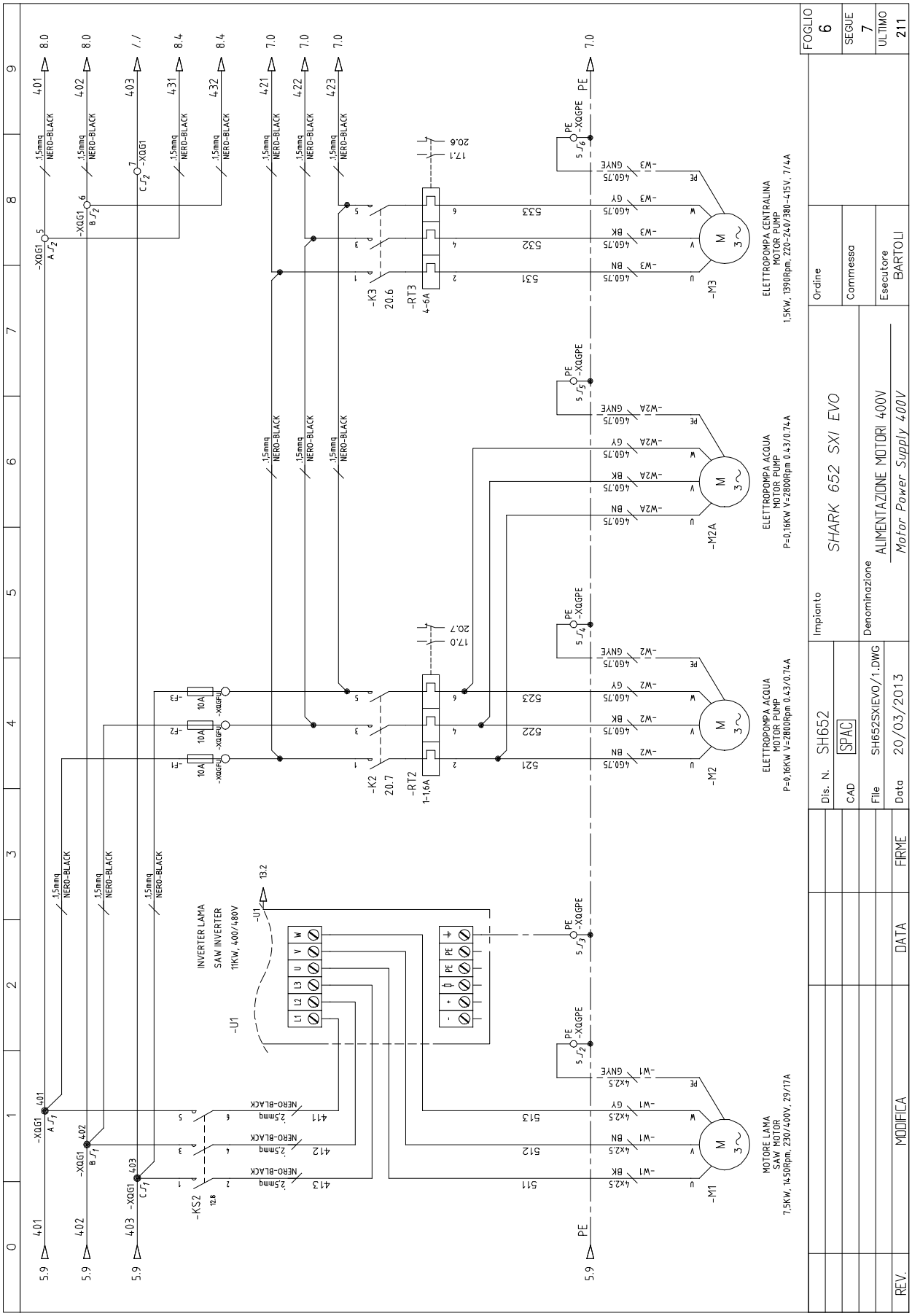
Ordine

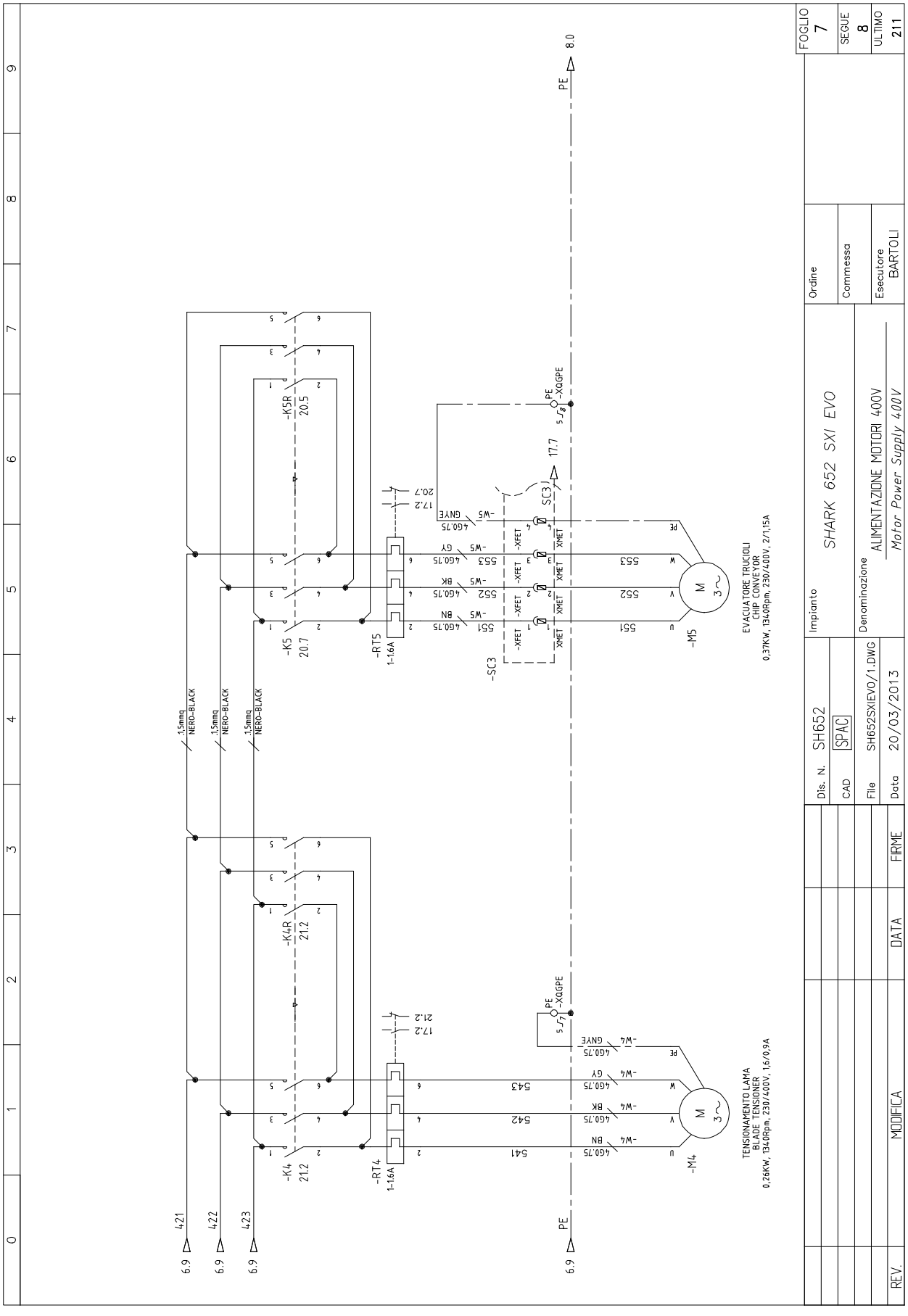
Commessa

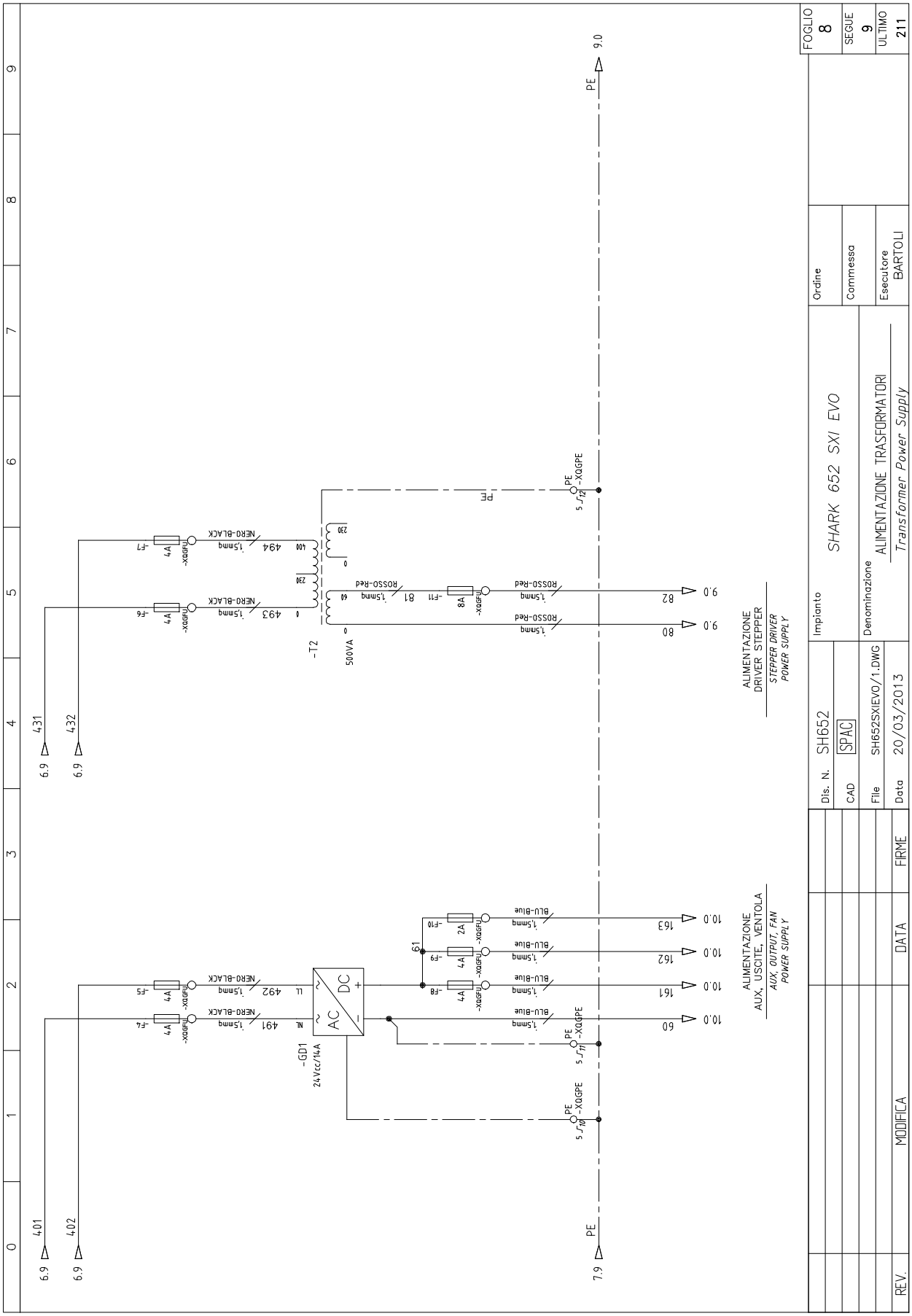
Esecutore
BARTOLI

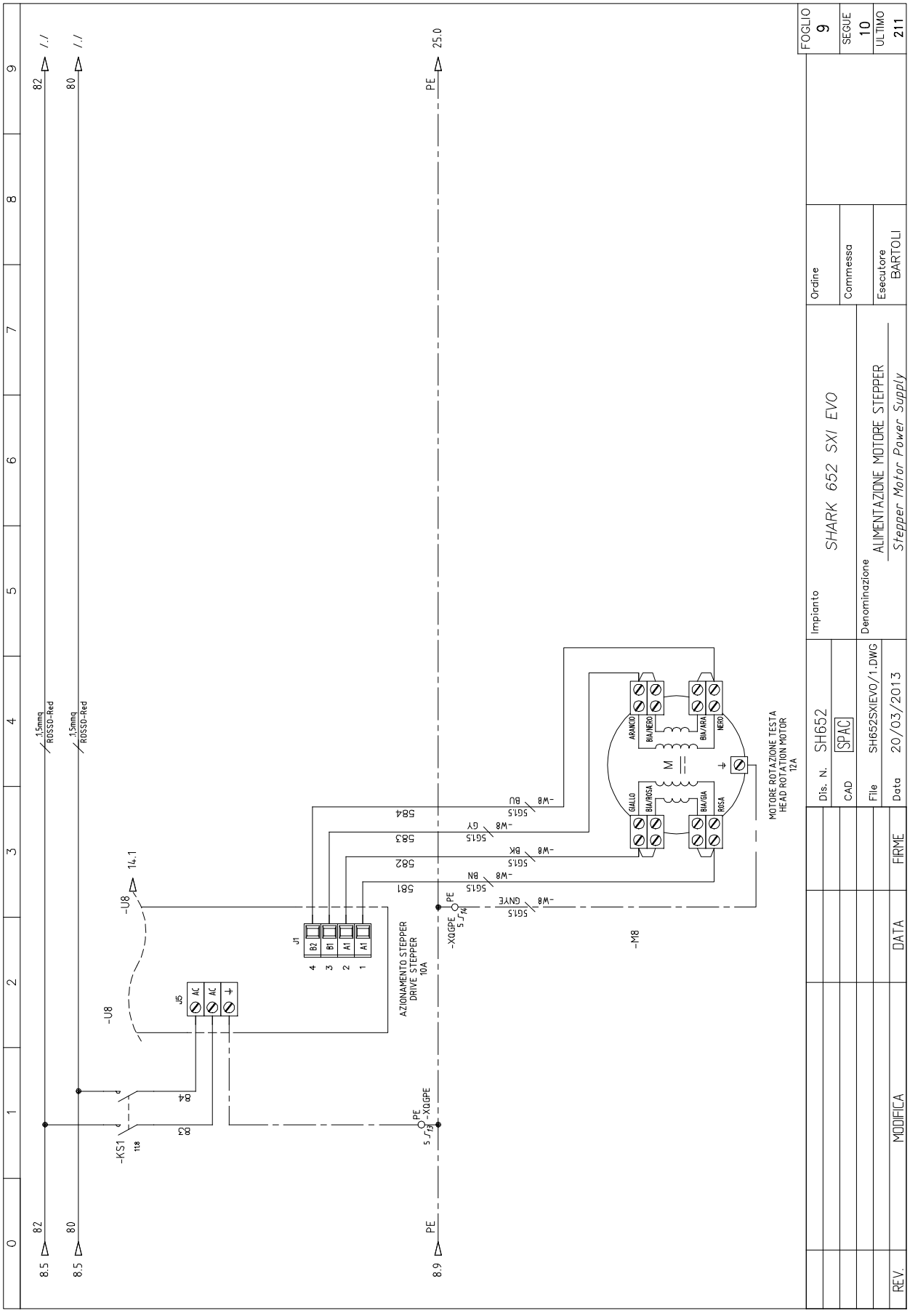
FOGLIO 4
SEGUE 5
ULTIMO 211

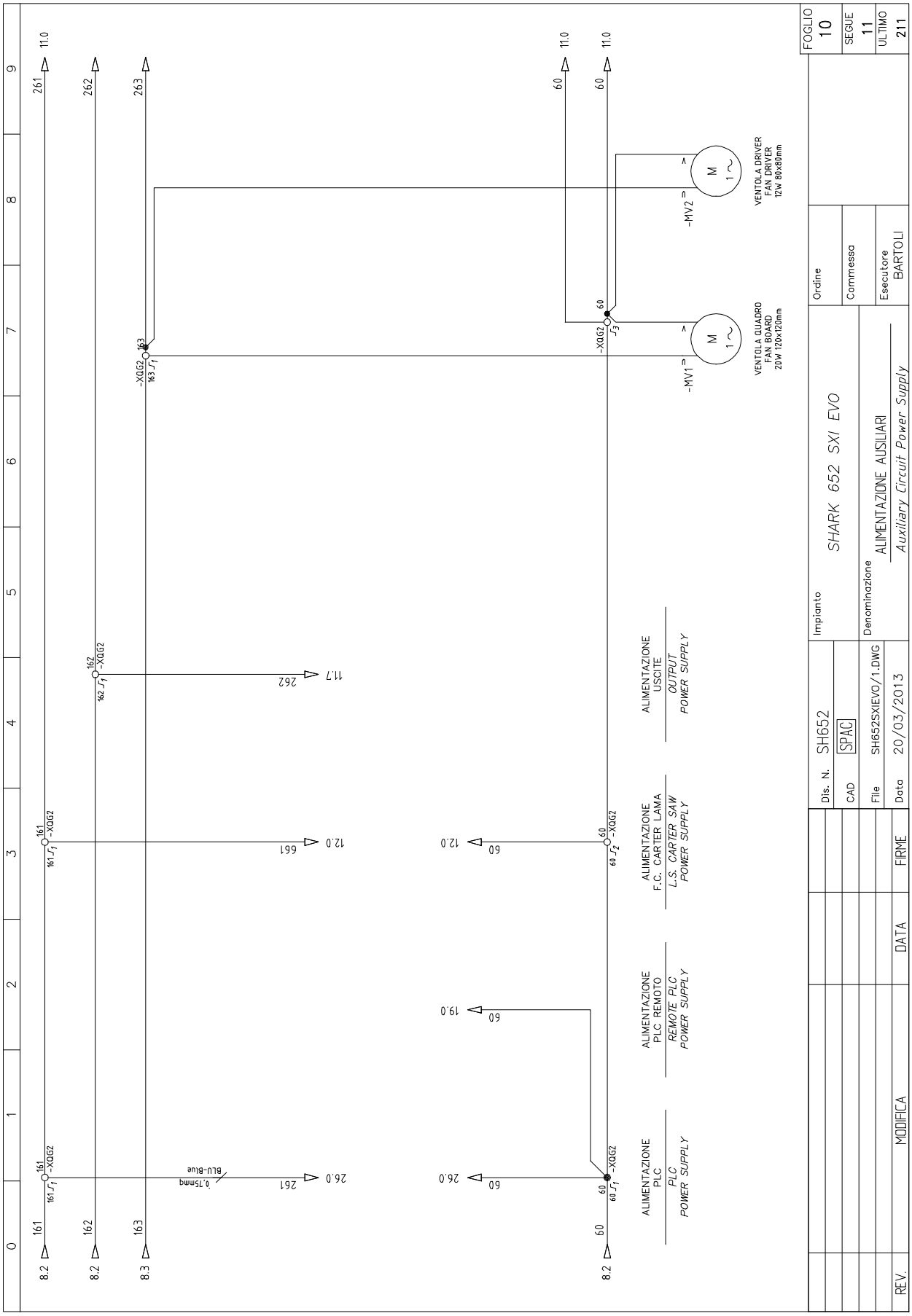

– LEGENDA COLORI –
BK–NERO/BLACK
BN–MARRONE/BROWN
BU–BLU/BLUE
GY–GRIGIO/GRAY
GN–VERDE/GREEN
YE–GIALLO/YELLOW
PK–ROSA/PINK
QG–ARANCIO/ORANGE
RD–ROSSO/RED
VT–VIOLA/VIOLET
WH–BIANCO/WHITE
FOGLIO 5
SEGUE 6
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto SHARK 652 SXI EVO
Denominazione ALIMENTAZIONE
Power Supply
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV. MODIFICA DATA FIRME
ALIMENTAZIONE 400Vac 50Hz
POTENZA INSTALLATA 12KW
POWER SUPPLY 400V AC 50
Hz INSTALLED POWER 12KW
-FT1
FILTRO
3 X 28A
-K0
-Q0
20-25A
-S48
-AL
-XGGPE
401
402
403
PE
6.0
2,5mmq NERO-BLACK
0401
0402
0403
1,5mmq NERO
-WAL SGZ,5 BN
-WAL SGZ,5 BK
-WAL SGZ,5 GY
-WAL SGZ,5 BU
-WAL SGZ,5 GNYE
L1 -AL
L2 -AL
L3 -AL
N -AL
PE -AL

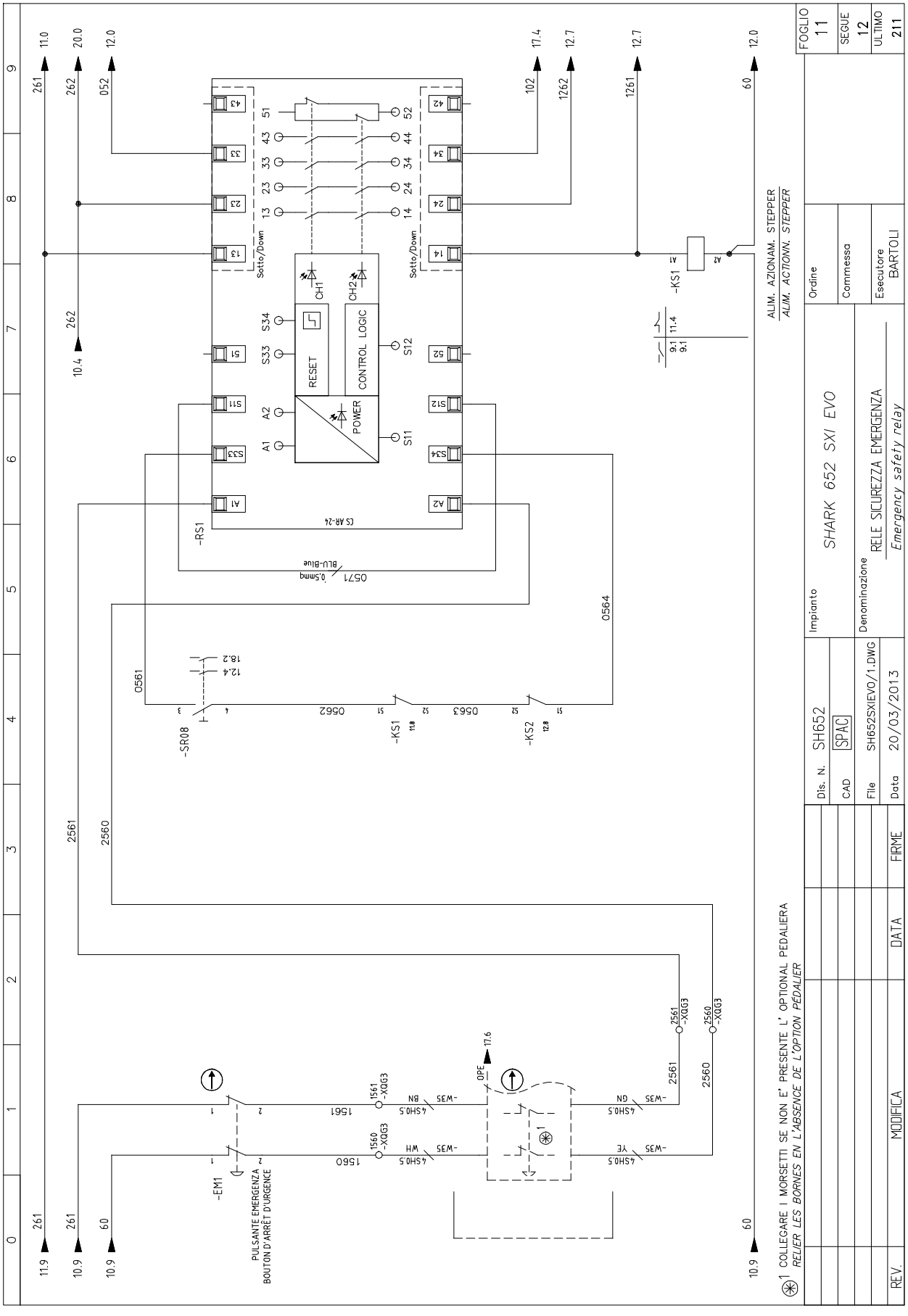

FOGLIO 6
SEGUE 7
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto
SHARK 652 SXI EVO
Denominazione
ALIMENTAZIONE MOTORI 400V
Motor Power Supply 400V
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV.
MODIFICA
DATA
FIRME
-M1 MOTORE LAMA SAW MOTOR 7,5KW, 1450Rpm, 230/400V, 29/17A
-M2 ELETTROPOMPA ACQUA MOTOR PUMP P=0,16KW V=2800Rpm 0.43/0.74A
-M2A ELETTROPOMPA ACQUA MOTOR PUMP P=0,16KW V=2800Rpm 0.43/0.74A
-M3 ELETTROPOMPA CENTRALINA MOTOR PUMP 1,5KW, 1390Rpm, 220-240/380-415V, 7/4A
INVERTER LAMA SAW INVERTER 11KW, 400/480V
-U1
-K2 20.7
-RT2 1-1,6A
-K3 20.6
-RT3 4-6A
-KS2 12.8
-F1 10A
-F2 10A
-F3 10A
-XQF1
-XQF2
-XQF3
-XQG1
-XQGPE
1,5mmq NERO-BLACK
2,5mmq NERO-BLACK
4x2,5 GNYE
4x2,5 GY
4x2,5 BN
4x2,5 BK
4x0,75 GNYE
4x0,75 GY
4x0,75 BN
4x0,75 BK
4x0,75 W
4x0,75 PE
L1 L2 L3 U V W
- + PE PE PE +
401 402 403 411 412 413 421 422 423 431 432 511 512 513 521 522 523 531 532 533
4.01 4.02 8.0 8.0 8.4 8.4 7.0 7.0 7.0 5.9

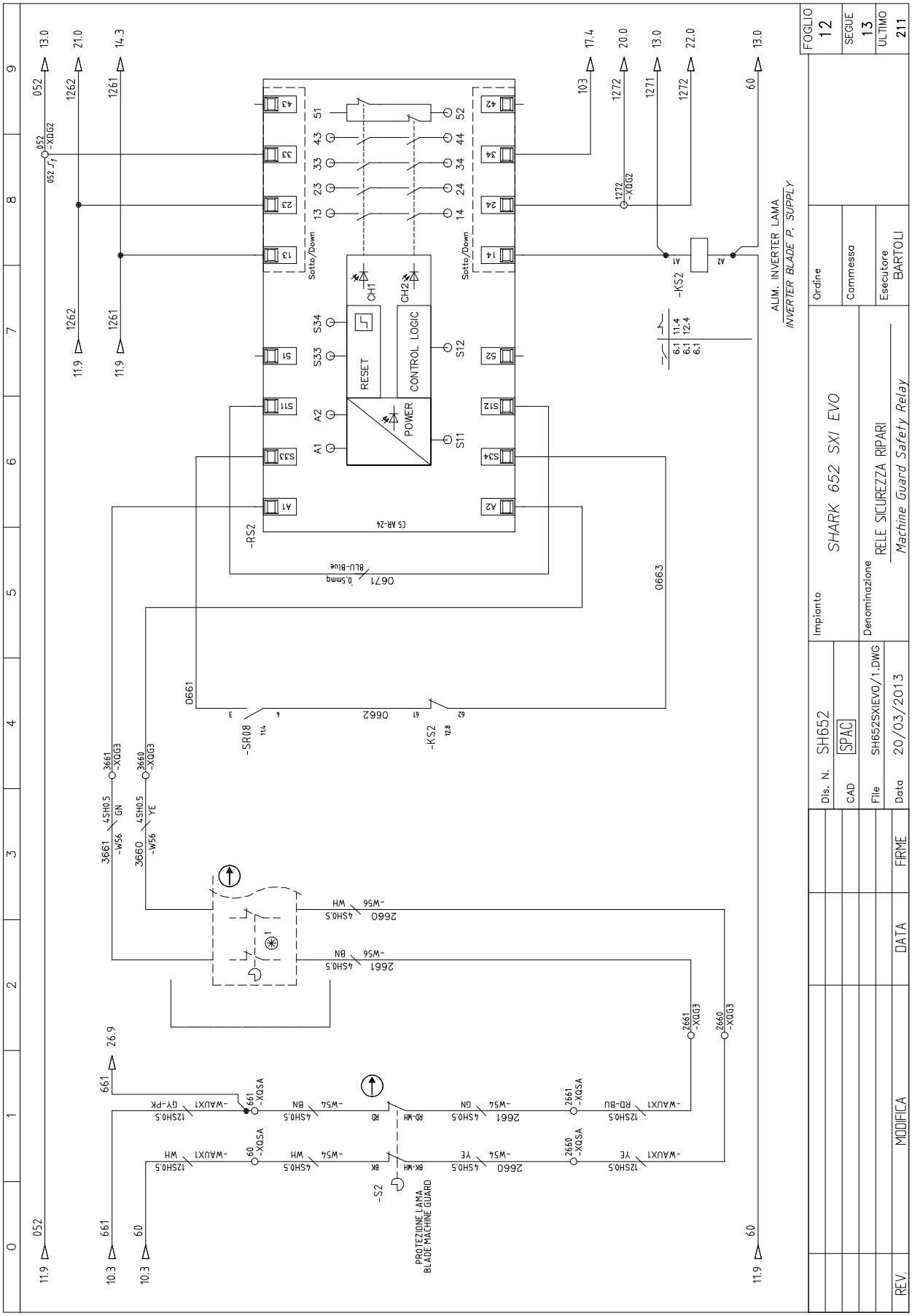

FOGLIO 7
SEGUE 8
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto SHARK 652 SXI EVO
Denominazione ALIMENTAZIONE MOTORI 400V
Motor Power Supply 400V
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV. MODIFICA DATA FIRME
EVACUATORE TRUCIOLI
CHIP CONVEYOR
0,37KW, 1340Rpm, 230/400V, 2/1,15A
TENSIONAMENTO LAMA
BLADE TENSIONER
0,26KW, 1340Rpm, 230/400V, 1,6/0,9A
-K5R 20.5
-K5 20.7
-K4R 21.2
-K4 21.2
-RT5 1-1.6A
-RT4 1-1.6A
-SC3
-M5
-M4
-XQGPE
PE
1,5mmq NERO-BLACK
4,21
4,22
4,23
6.9
8.0
17.7
20.7
17.2
21.2

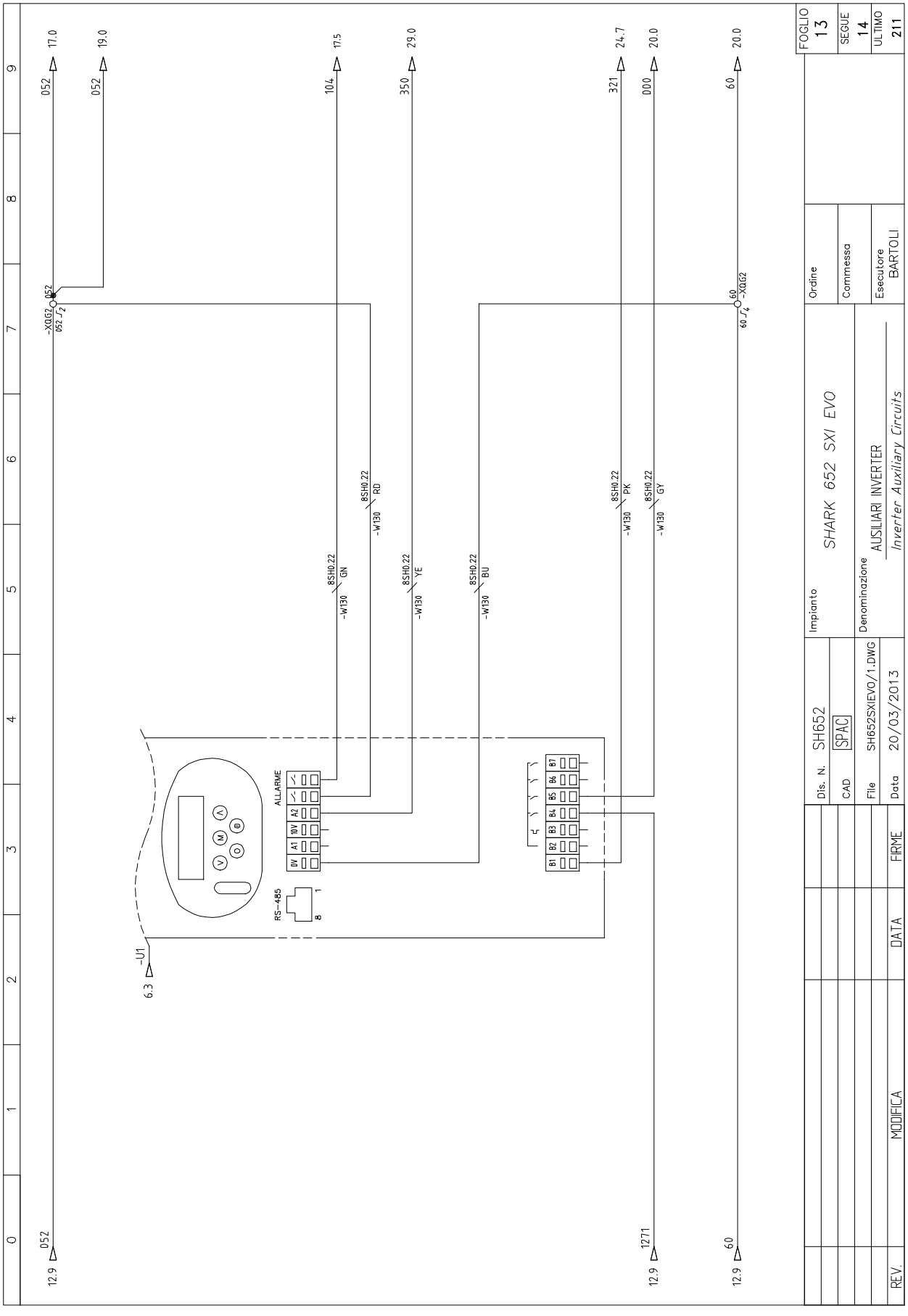

FOGLIO 8
SEGUE 9
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto
SHARK 652 SXI EVO
Denominazione
ALIMENTAZIONE TRASFORMATORI
Transformer Power Supply
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV.
MODIFICA
DATA
FIRME
ALIMENTAZIONE DRIVER STEPPER
STEPPER DRIVER POWER SUPPLY
ALIMENTAZIONE AUX, USCITE, VENTOLA
AUX, OUTPUT, FAN POWER SUPPLY
-T2
500VA
-GD1
24Vcc/14A
AC
DC
PE
NERO-BLACK
ROSSO-Red
BLU-Blue

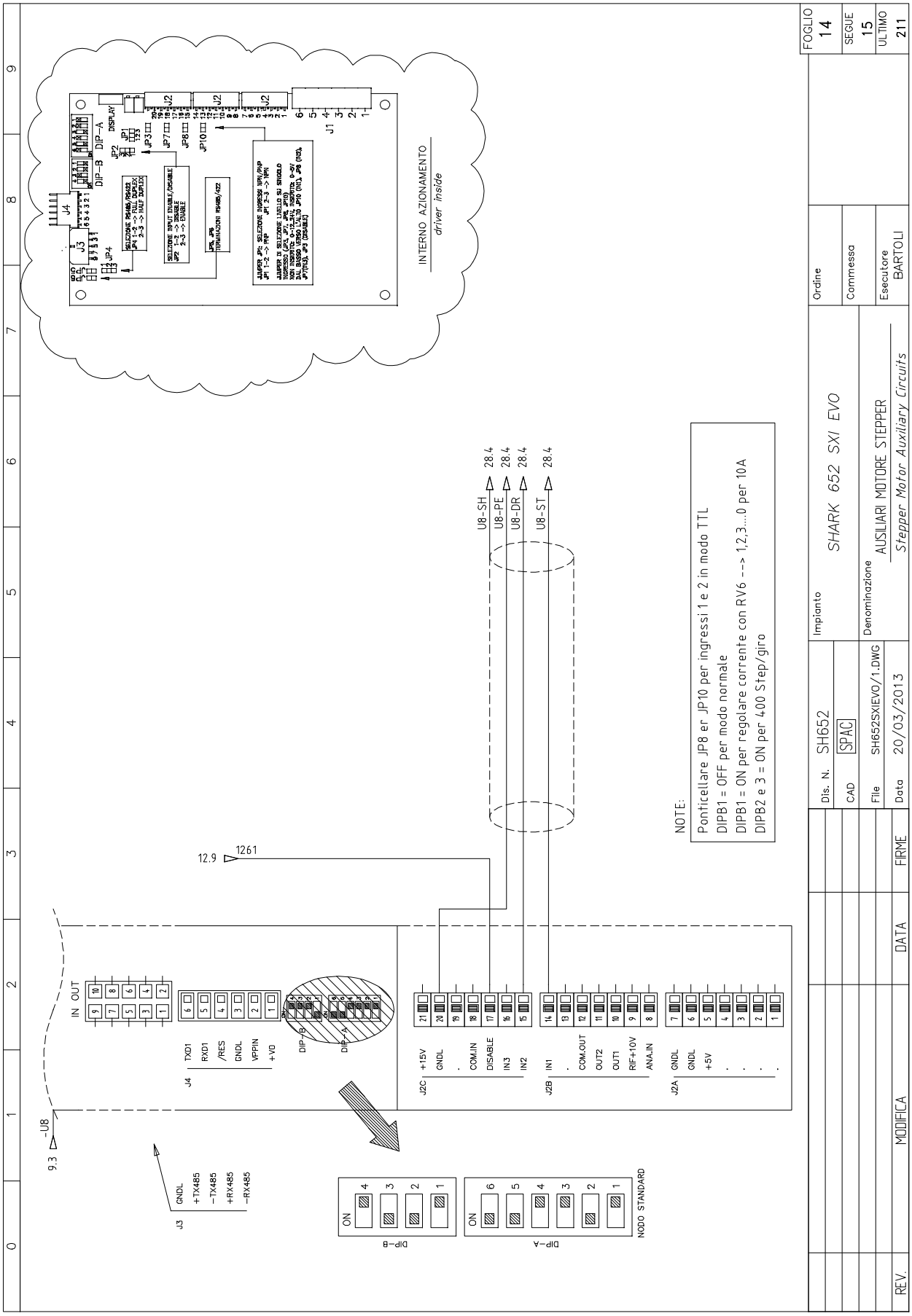

FOGLIO 9
SEGUE 10
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto SHARK 652 SXI EVO
Denominazione ALIMENTAZIONE MOTORE STEPPER
Stepper Motor Power Supply
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV. MODIFICA DATA FIRME
-U8
-M8
-XGGPE
-KS1
AZIONAMENTO STEPPER
DRIVE STEPPER
10A
MOTORE ROTAZIONE TESTA
HEAD ROTATION MOTOR
12A
1,5mmq ROSSO-Red
PE
82
80
84
83
ARANCIO
GIALLO
NERO
BIA/NERO
BIA/ARA
BIA/ROSA
BIA/GIA
ROSA

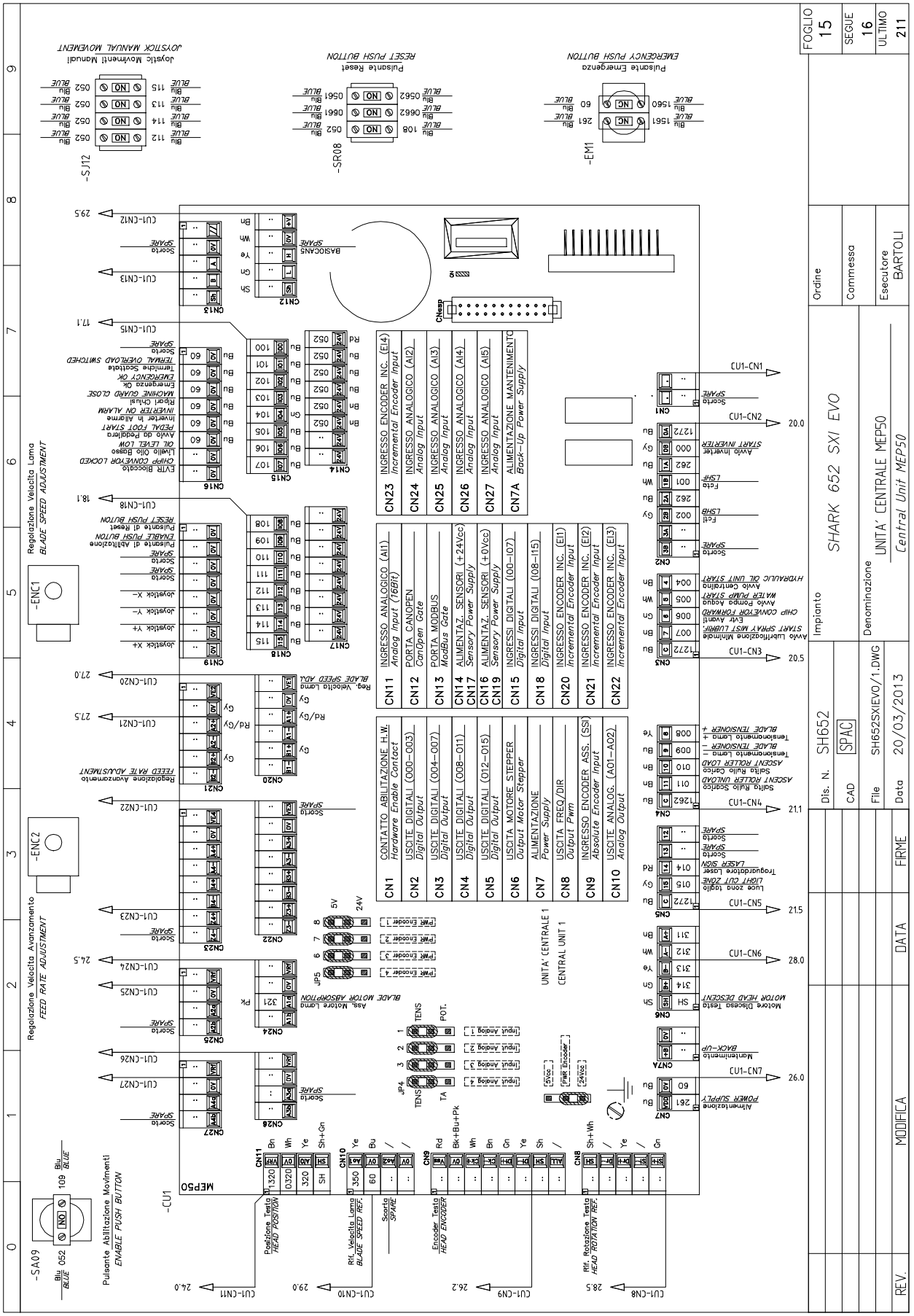

FOGLIO 10
SEGUE 11
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto SHARK 652 SXI EVO
Denominazione ALIMENTAZIONE AUSILIARI
Auxiliary Circuit Power Supply
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV. MODIFICA DATA FIRME
ALIMENTAZIONE PLC
PLC POWER SUPPLY
ALIMENTAZIONE PLC REMOTO
REMOTE PLC POWER SUPPLY
ALIMENTAZIONE F.C. CARTER LAMA
L.S. CARTER SAW POWER SUPPLY
ALIMENTAZIONE USCITE
OUTPUT POWER SUPPLY
VENTOLA QUADRO FAN BOARD 20W 120x120mm
VENTOLA DRIVER FAN DRIVER 12W 80x80mm
-MV1
-MV2
-XQG2
0,75mmq Blu-Blue

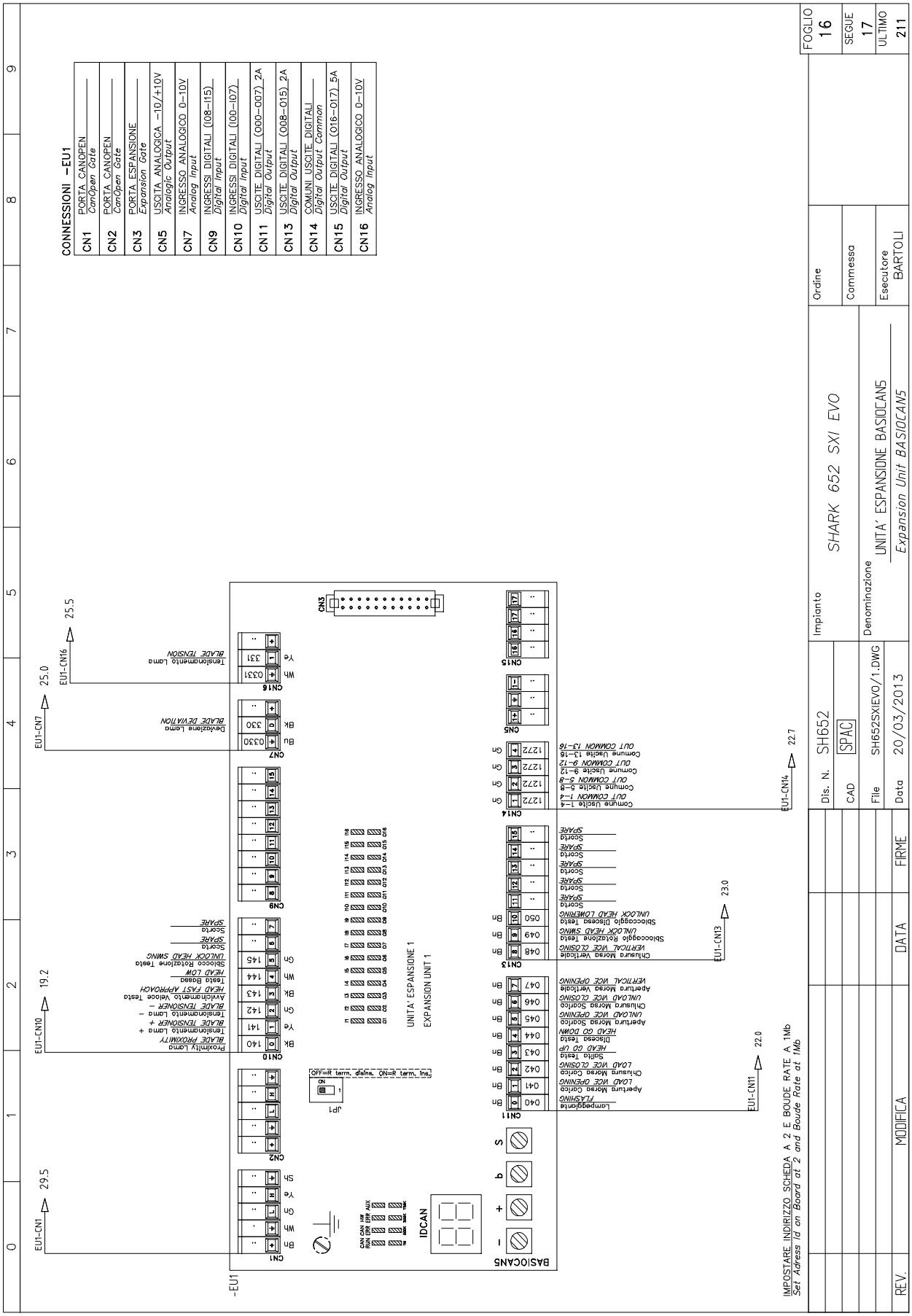

SHARK 652 SXI EVO
RELE SICUREZZA EMERGENZA
Emergency safety relay
SH652
SH652SXIEVO/1.DWG
20/03/2013
FOGLIO 11
SEGUE 12
ULTIMO 211
-RS1
-KS1
-KS2
-SR08
-EM1
-KS1
POWER
CONTROL LOGIC
RESET
CH1
CH2
Sotto/Down
ALIM. AZIONAM. STEPPER
ALIM. ACTIONN. STEPPER
PULSANTE EMERGENZA
BOUTON D'ARRÊT D'URGENCE
1 COLLEGARE I MORSETTI SE NON E' PRESENTE L' OPTIONAL PEDALIERA
RELIER LES BORNES EN L'ABSENCE DE L'OPTION PÉDALIER
REV.
MODIFICA
DATA
FIRME

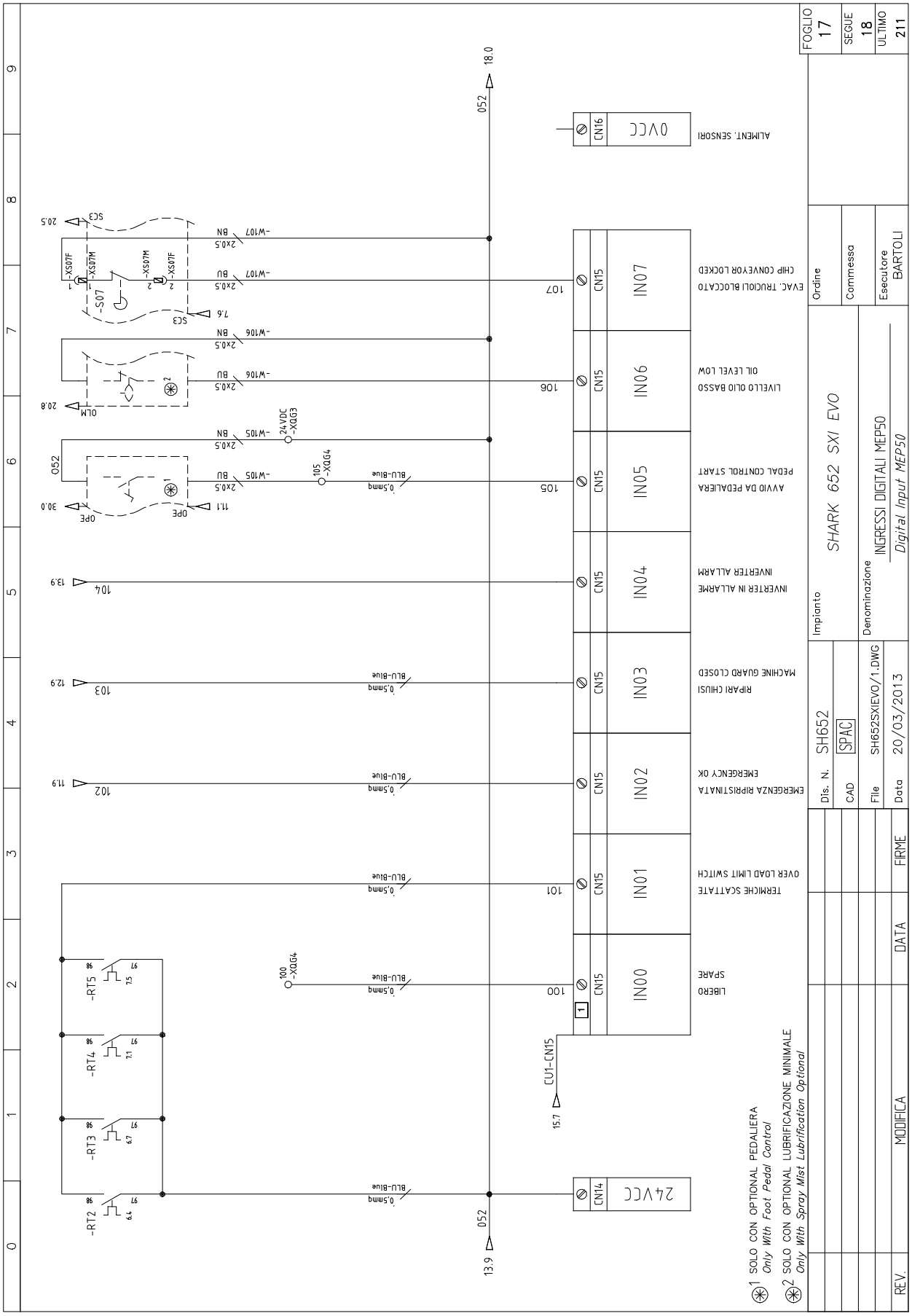

FOGLIO 12
SEGUE 13
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto SHARK 652 SXI EVO
Denominazione RELE SICUREZZA RIPARI
Machine Guard Safety Relay
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV. MODIFICA DATA FIRME
ALIM. INVERTER LAMA
INVERTER BLADE P. SUPPLY
-RS2
-KS2
-SR08
-S2
PROTEZIONE LAMA
BLADE MACHINE GUARD
Sotto/Down
CONTROL LOGIC
RESET
POWER
CH1
CH2

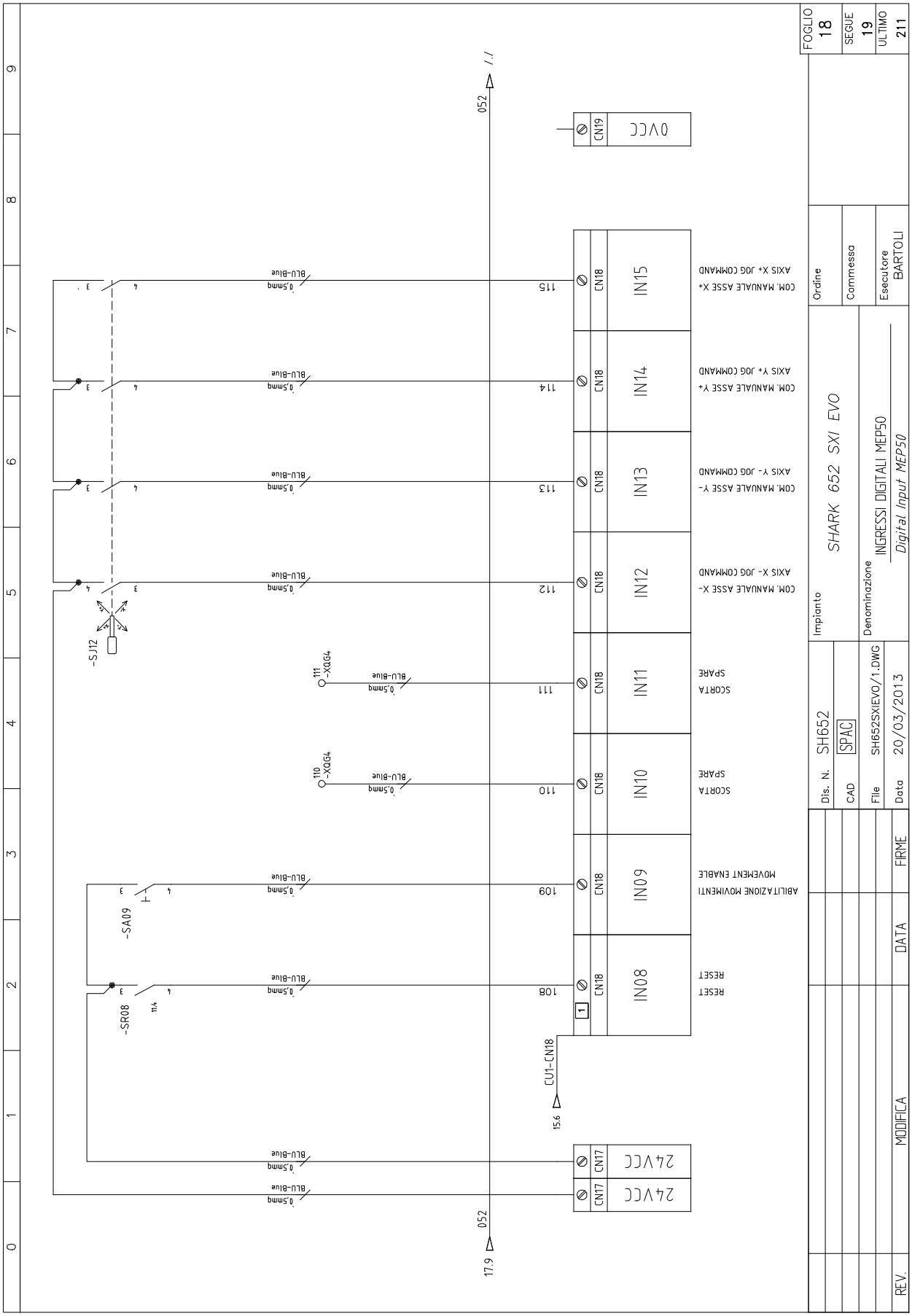

FOGLIO 13
SEGUE 14
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto SHARK 652 SXI EVO
Denominazione AUSILIARI INVERTER
Inverter Auxiliary Circuits
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV. MODIFICA DATA FIRME
-XQG2
-XQG1
-U1
ALLARME
RS-485
8SH0.22 GN -W130
8SH0.22 RD -W130
8SH0.22 YE -W130
8SH0.22 BU -W130
8SH0.22 PK -W130
8SH0.22 GY -W130

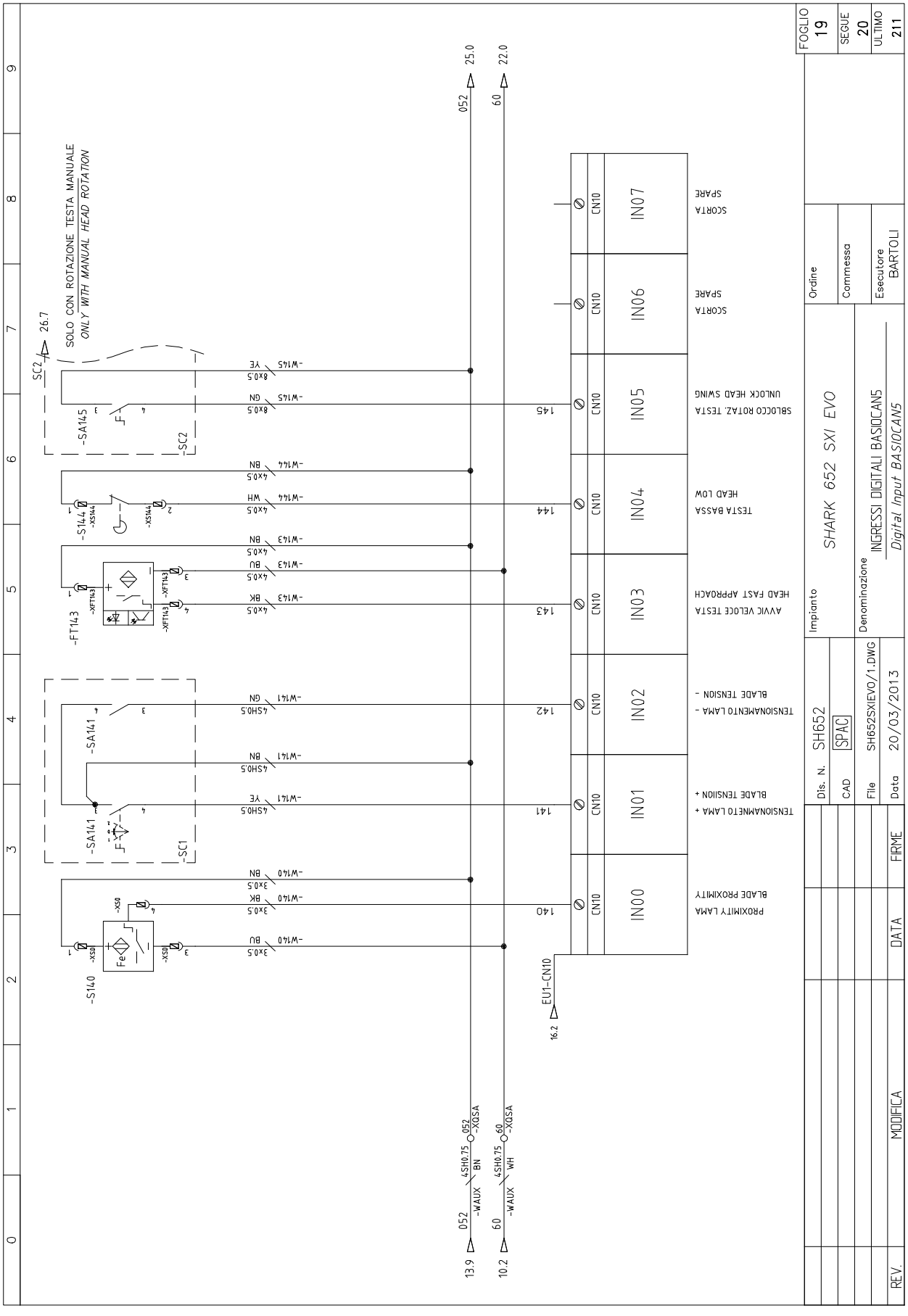

INTERNO AZIONAMENTO
driver inside
NOTE:
Ponticellare JP8 er JP10 per ingressi 1 e 2 in modo TTL
DIPB1 = OFF per modo normale
DIPB1 = ON per regolare corrente con RV6 ---> 1,2,3....0 per 10A
DIPB2 e 3 = ON per 400 Step/giro
U8-SH
U8-PE
U8-DR
U8-ST
28.4
12.9
12.61
9.3
-U8
J3
J4
J2C
J2B
J2A
DIP-A
DIP-B
NODO STANDARD
SHARK 652 SXI EVO
AUSILIARI MOTORE STEPPER
Stepper Motor Auxiliary Circuits
SH652
SH652SXIEVO/1.DWG
20/03/2013
BARTOLI
FOGLIO 14
SEGUE 15
ULTIMO 211

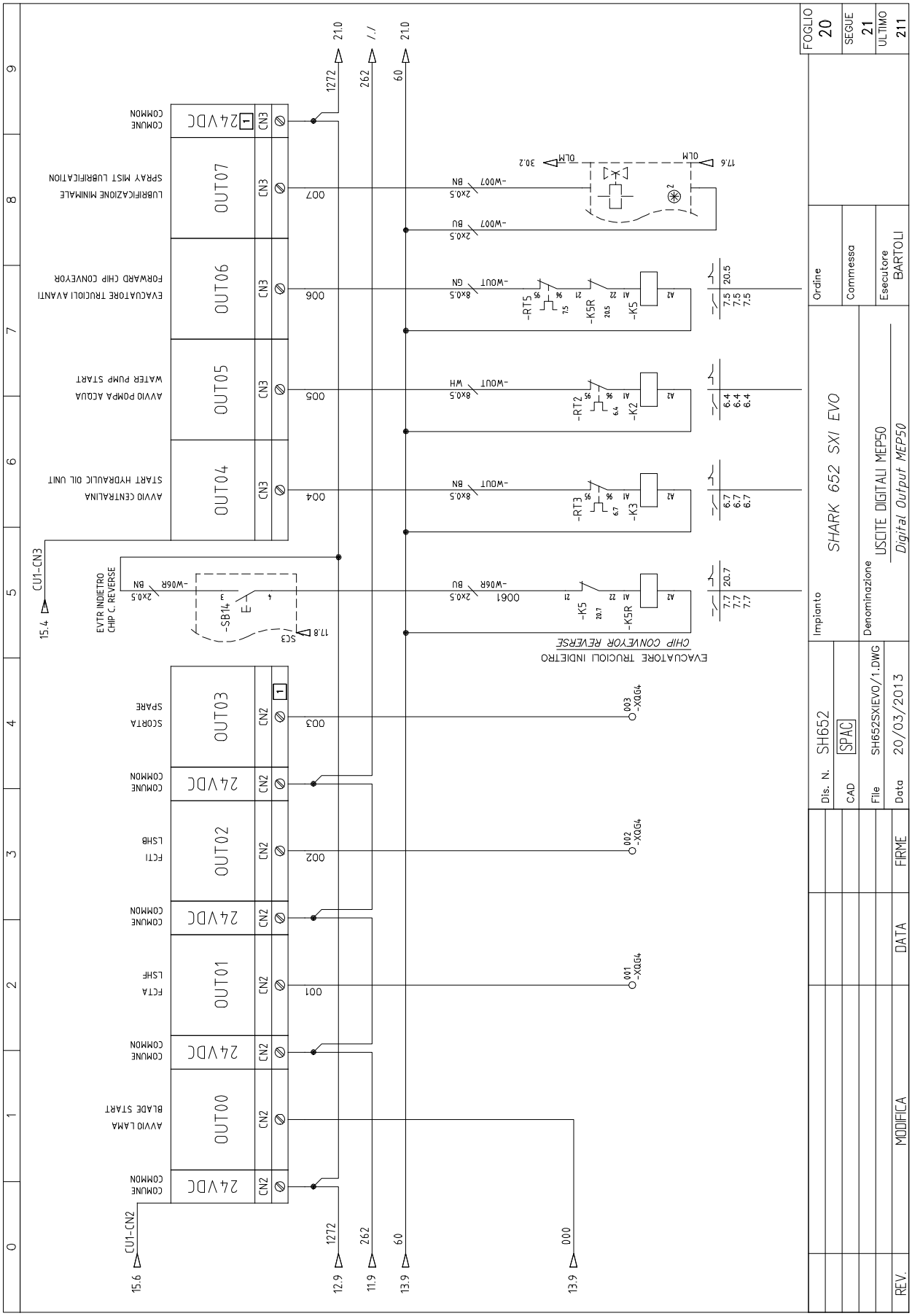

FOGLIO 15
SEGUE 16
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto
SHARK 652 SXI EVO
Denominazione
UNITA' CENTRALE MEP50
Central Unit MEP50
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV. MODIFICA DATA FIRME
CN1 CONTATTO ABILITAZIONE H.W. Hardware Enable Contact
CN2 USCITE DIGITALI (000–003) Digital Output
CN3 USCITE DIGITALI (004–007) Digital Output
CN4 USCITE DIGITALI (008–011) Digital Output
CN5 USCITE DIGITALI (012–015) Digital Output
CN6 USCITA MOTORE STEPPER Output Motor Stepper
CN7 ALIMENTAZIONE Power Supply
CN8 USCITA FREQ./DIR Output Pwm
CN9 INGRESSO ENCODER ASS. (SS) Absolute Encoder Input
CN10 USCITE ANALOG. (A01–A02) Analog Output
CN11 INGRESSO ANALOGICO (AI1) Analog Input (16Bit)
CN12 PORTA CANOPEN CanOpen Gate
CN13 PORTA MODBUS ModBus Gate
CN14 ALIMENTAZ. SENSORI (+24Vcc) Sensory Power Supply
CN16 ALIMENTAZ. SENSORI (+0Vcc) Sensory Power Supply
CN19 INGRESSI DIGITALI (100–107) Digital Input
CN15 INGRESSI DIGITALI (108–115) Digital Input
CN18 INGRESSO ENCODER INC. (EI1) Incremental Encoder Input
CN20 INGRESSO ENCODER INC. (EI2) Incremental Encoder Input
CN21 INGRESSO ENCODER INC. (EI2) Incremental Encoder Input
CN22 INGRESSO ENCODER INC. (EI3) Incremental Encoder Input
CN23 INGRESSO ENCODER INC. (EI4) Incremental Encoder Input
CN24 INGRESSO ANALOGICO (AI2) Analog Input
CN25 INGRESSO ANALOGICO (AI3) Analog Input
CN26 INGRESSO ANALOGICO (AI4) Analog Input
CN27 INGRESSO ANALOGICO (AI5) Analog Input
CN7A ALIMENTAZIONE MANTENIMENTO Back-Up Power Supply
-CU1
MEP50
-ENC1
-ENC2
-SA09
-SJ12
-SR08
-EM1
Joystic Movimenti Manuali
JOYSTICK MANUAL MOVEMENT
Pulsante Reset
RESET PUSH BUTTON
Pulsante Emergenza
EMERGENCY PUSH BUTTON
Pulsante Abilitazione Movimenti
ENABLE PUSH BUTTON
Regolazione Velocità Lama
BLADE SPEED ADJUSTMENT
Regolazione Velocità Avanzamento
FEED RATE ADJUSTMENT
UNITA' CENTRALE 1
CENTRAL UNIT 1
Posizione Testa
HEAD POSITION
Rif. Velocità Lama
BLADE SPEED REF.
Encoder Testa
HEAD ENCODER
Rif. Rotazione Testa
HEAD ROTATION REF.
Motore Discesa Testa
MOTOR HEAD DESCENT
Luce zona taglio
LIGHT CUT ZONE
Soffia Rullo Carico
ASCENT ROLLER LOAD
Soffia Rullo Scarico
ASCENT ROLLER UNLOAD
Avvio Lubrificazione Minimale
START SPRAY MIST LUBRIF.
Avvio Pompa Aqua
WATER PUMP START
Avvio Centralina
HYDRAULIC OIL UNIT START
Avvio Inverter
START INVERTER
Alimentazione
POWER SUPPLY
Mantenimento
BACK-UP

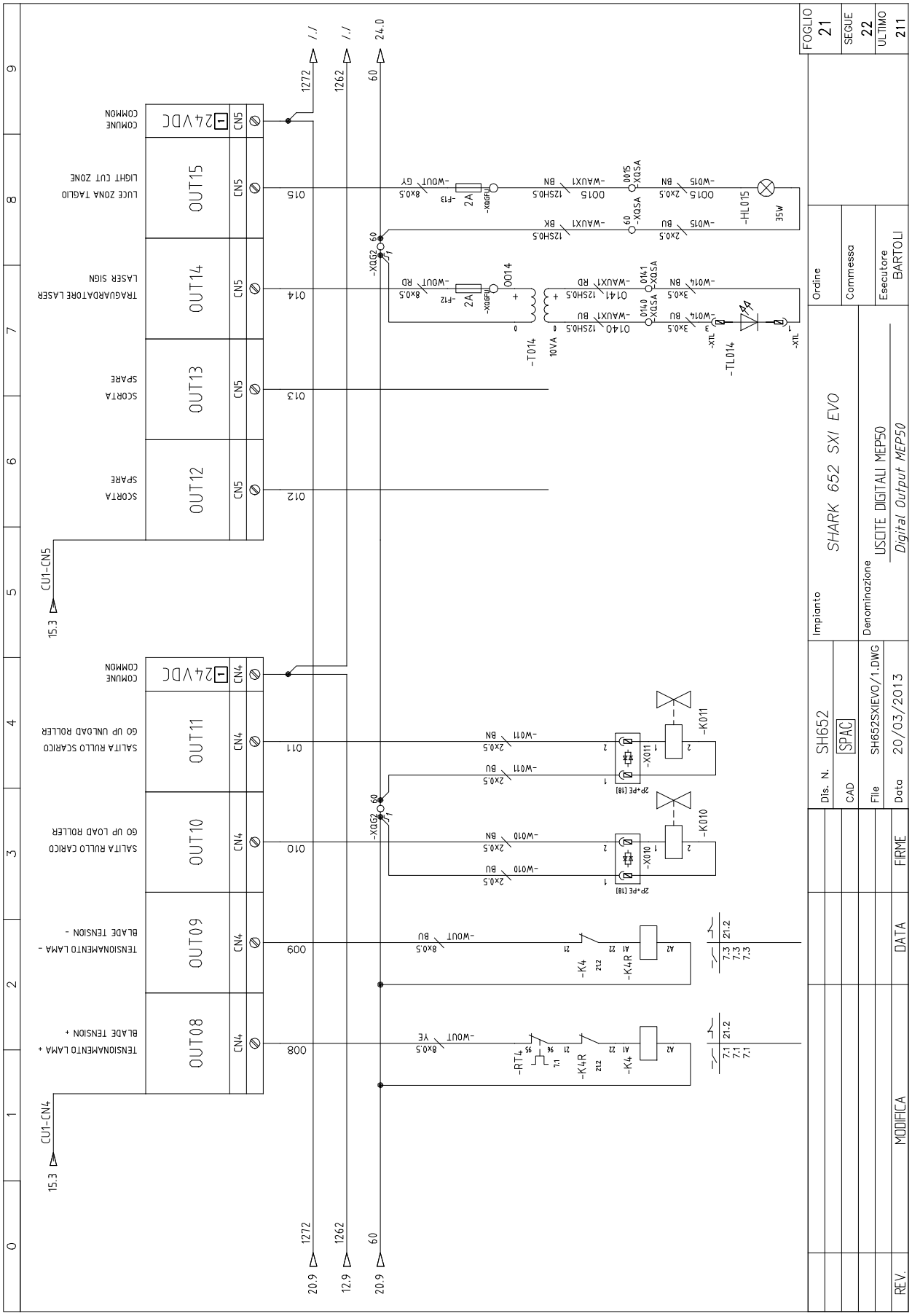

CONNESSIONI -EU1
CN1 PORTA CANOPEN CanOpen Gate
CN2 PORTA CANOPEN CanOpen Gate
CN3 PORTA ESPANSIONE Expansion Gate
CN5 USCITA ANALOGICA -10/+10V Analogic Output
CN7 INGRESSO ANALOGICO 0-10V Analog Input
CN9 INGRESSI DIGITALI (108-115) Digital Input
CN10 INGRESSI DIGITALI (100-107) Digital Input
CN11 USCITE DIGITALI (000-007) 2A Digital Output
CN13 USCITE DIGITALI (008-015) 2A Digital Output
CN14 COMUNI USCITE DIGITALI Digital Output Common
CN15 USCITE DIGITALI (016-017) 5A Digital Output
CN16 INGRESSO ANALOGICO 0-10V Analog Input
-EU1
BASIOCANS
UNITA' ESPANSIONE 1
EXPANSION UNIT 1
IDCAN
JP1
OFF=R term. disins. ON=R term. ins.
EU1-CN1 29.5
EU1-CN10 19.2
EU1-CN7 25.0
EU1-CN16 25.5
EU1-CN11 22.0
EU1-CN14 22.7
EU1-CN13 23.0
IMPOSTARE INDIRIZZO SCHEDA A 2 E BOUDE RATE A 1Mb
Set Adress Id on Board at 2 and Boude Rate at 1Mb
Impianto
SHARK 652 SXI EVO
Denominazione
UNITA' ESPANSIONE BASIOCANS
Expansion Unit BASIOCANS
Ordine
Commessa
Esecutore BARTOLI
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
FRME
DATA
MODIFICA
REV.
FOGLIO 16
SEGUE 17
ULTIMO 211

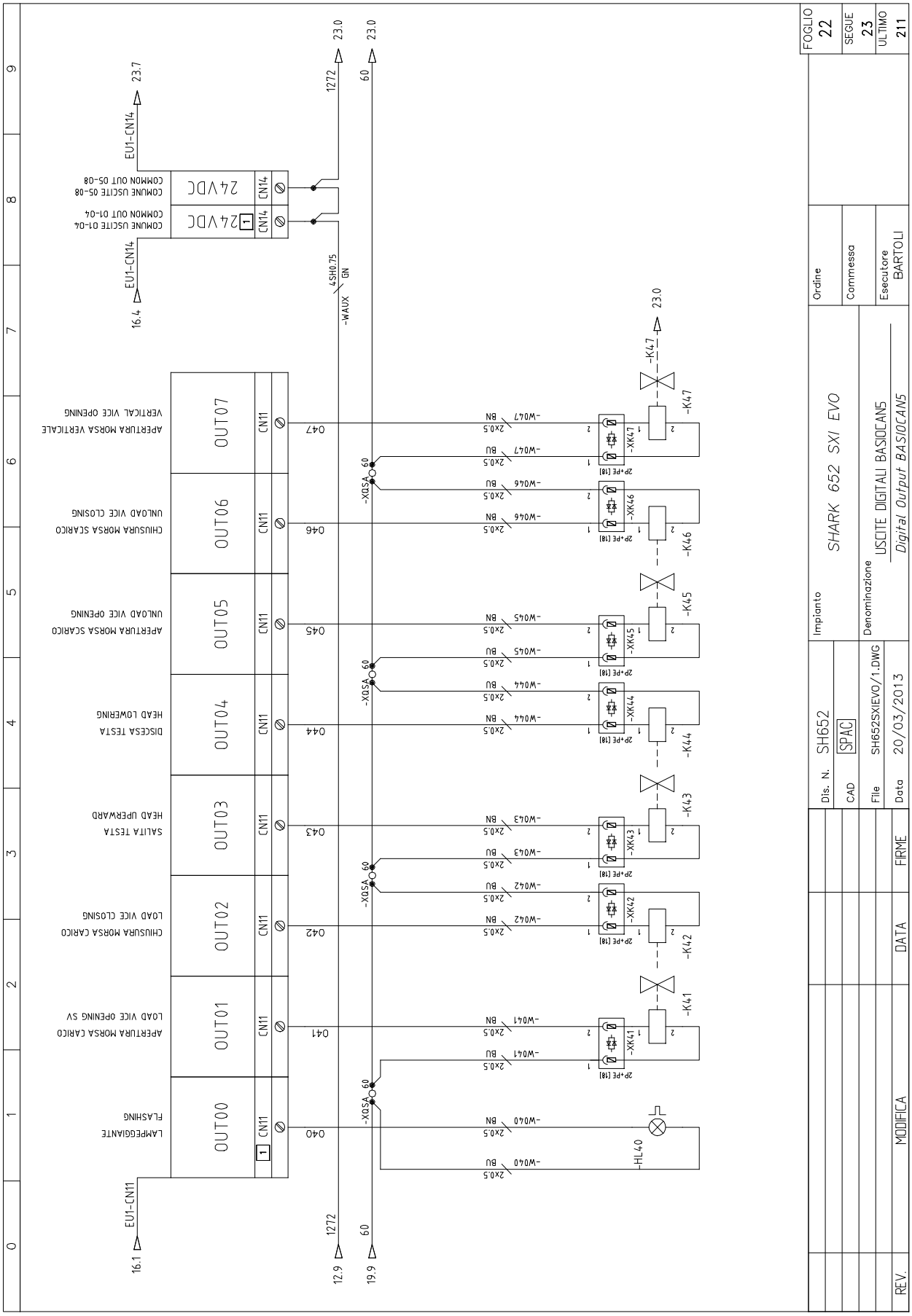

FOGLIO 17
SEGUE 18
ULTIMO 211
Impianto SHARK 652 SXI EVO
Denominazione INGRESSI DIGITALI MEP50
Digital Input MEP50
Ordine
Commessa
Esecutore BARTOLI
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV. MODIFICA DATA FIRME
0VCC ALIMENT. SENSORI
IN07 EVAC. TRUCIOLI BLOCCATO / CHIP CONVEYOR LOCKED
IN06 LIVELLO OLIO BASSO / OIL LEVEL LOW
IN05 AVVIO DA PEDALIERA / PEDAL CONTROL START
IN04 INVERTER IN ALLARME / INVERTER ALLARM
IN03 RIPARI CHIUSI / MACHINE GUARD CLOSED
IN02 EMERGENZA RIPRISTINATA / EMERGENCY OK
IN01 TERMICHE SCATTATE / OVER LOAD LIMIT SWITCH
IN00 LIBERO / SPARE
24VCC
-S07 -XS07F -XS07M
-RT2 -RT3 -RT4 -RT5
-XQG3 24VDC
-XQG4
0,5mmq BLU-Blue
2x0,5 BN -W107 -W106 -W105
2x0,5 BU -W107 -W106 -W105
SC3 SCJ OLM OPE
CU1-CN15
1 SOLO CON OPTIONAL PEDALIERA / Only With Foot Pedal Control
2 SOLO CON OPTIONAL LUBRIFICAZIONE MINIMALE / Only With Spray Mist Lubrification Optional

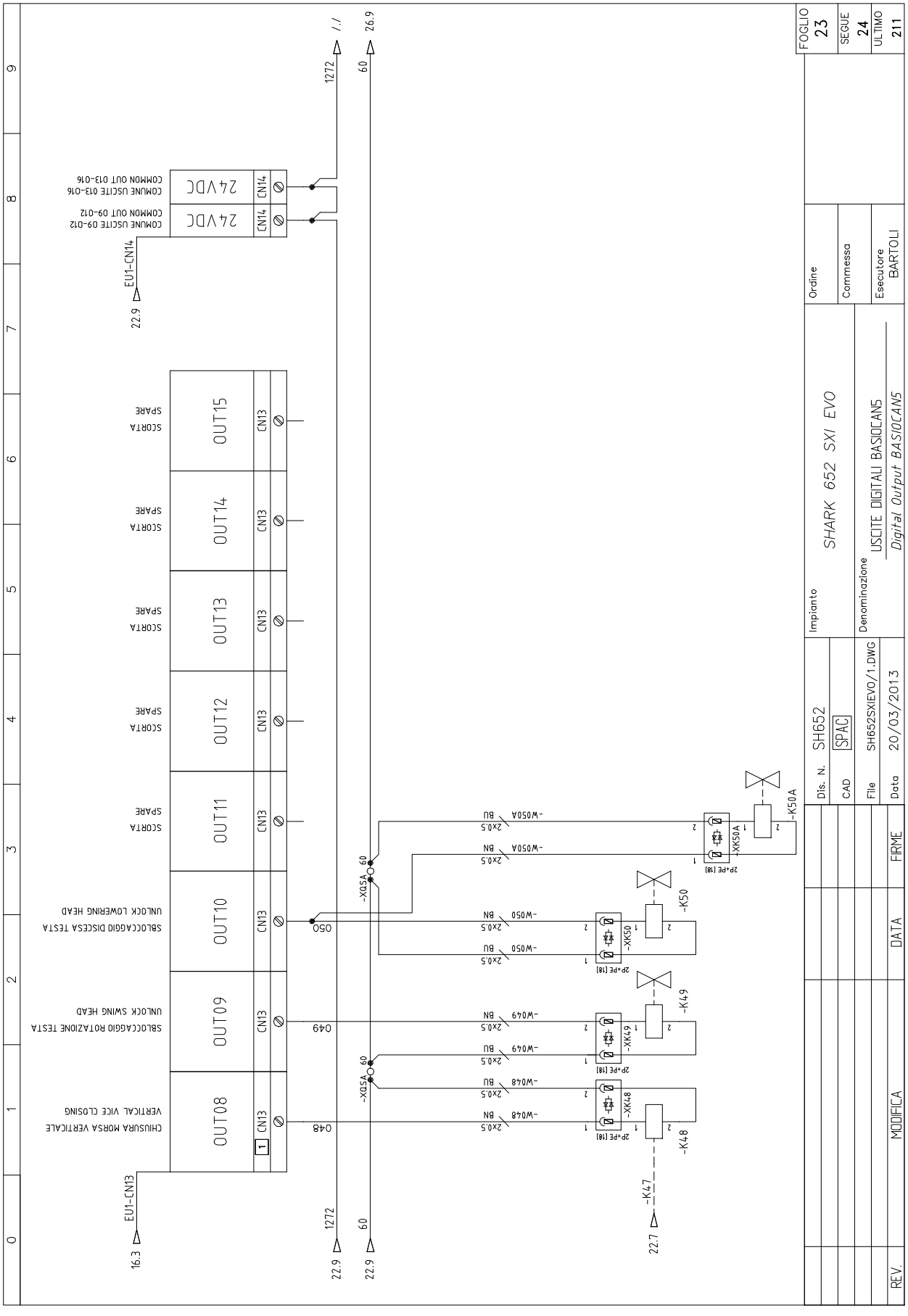

FOGLIO 18
SEGUE 19
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto SHARK 652 SXI EVO
Denominazione INGRESSI DIGITALI MEP50
Digital Input MEP50
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV. MODIFICA DATA FIRME
0VCC
24VCC
24VCC
IN15
IN14
IN13
IN12
IN11
IN10
IN09
IN08
COM. MANUALE ASSE X+
AXIS X+ JOG COMMAND
COM. MANUALE ASSE Y+
AXIS Y+ JOG COMMAND
COM. MANUALE ASSE Y-
AXIS Y- JOG COMMAND
COM. MANUALE ASSE X-
AXIS X- JOG COMMAND
SCORTA
SPARE
SCORTA
SPARE
ABILITAZIONE MOVIMENTI
MOVEMENT ENABLE
RESET
RESET
-SJ12
-SA09
-SR08
-XQG4
-XQG4
CU1-CN18
052
052
0,5mmq BLU-Blue

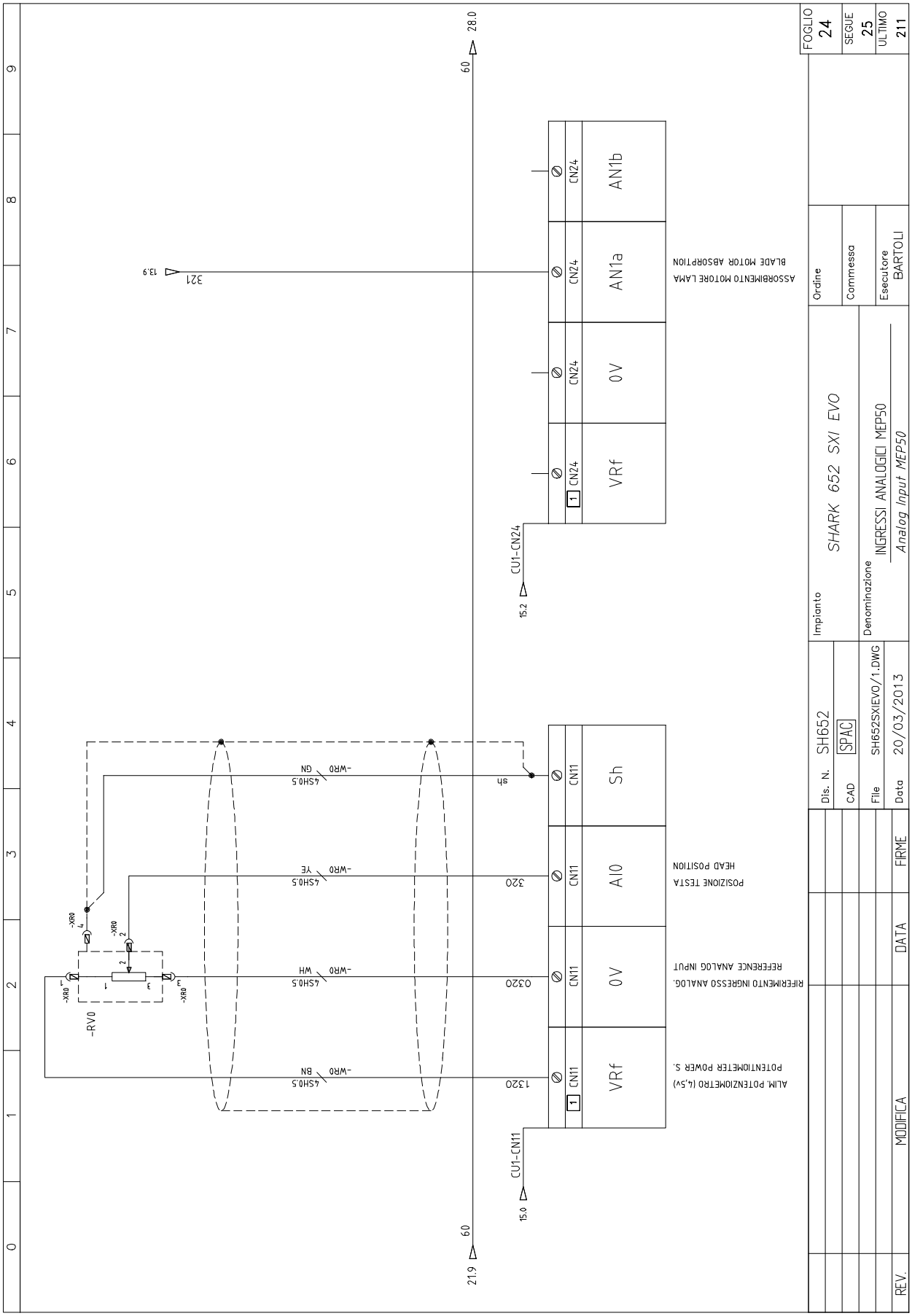

SOLO CON ROTAZIONE TESTA MANUALE
ONLY WITH MANUAL HEAD ROTATION
SC2
SC1
-SA145
-SA141
-S144
-S140
-FT143
-XFT143
-XS44
-XS0
-W145
-W144
-W143
-W141
-W140
-WAUX
-XQSA
-CN10
IN00
IN01
IN02
IN03
IN04
IN05
IN06
IN07
PROXIMITY LAMA
BLADE PROXIMITY
TENSIONAMENTO LAMA +
BLADE TENSION +
TENSIONAMENTO LAMA -
BLADE TENSION -
AVVIC VELOCE TESTA
HEAD FAST APPROACH
TESTA BASSA
HEAD LOW
SBLOCCO ROTAZ. TESTA
UNLOCK HEAD SWING
SCORTA
SPARE
FOGLIO 19
SEGUE 20
ULTIMO 211
Impianto
SHARK 652 SXI EVO
Ordine
Commessa
Esecutore BARTOLI
Denominazione
INGRESSI DIGITALI BASIOCAN5
Digital Input BASIOCAN5
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV.
MODIFICA
DATA
FIRME

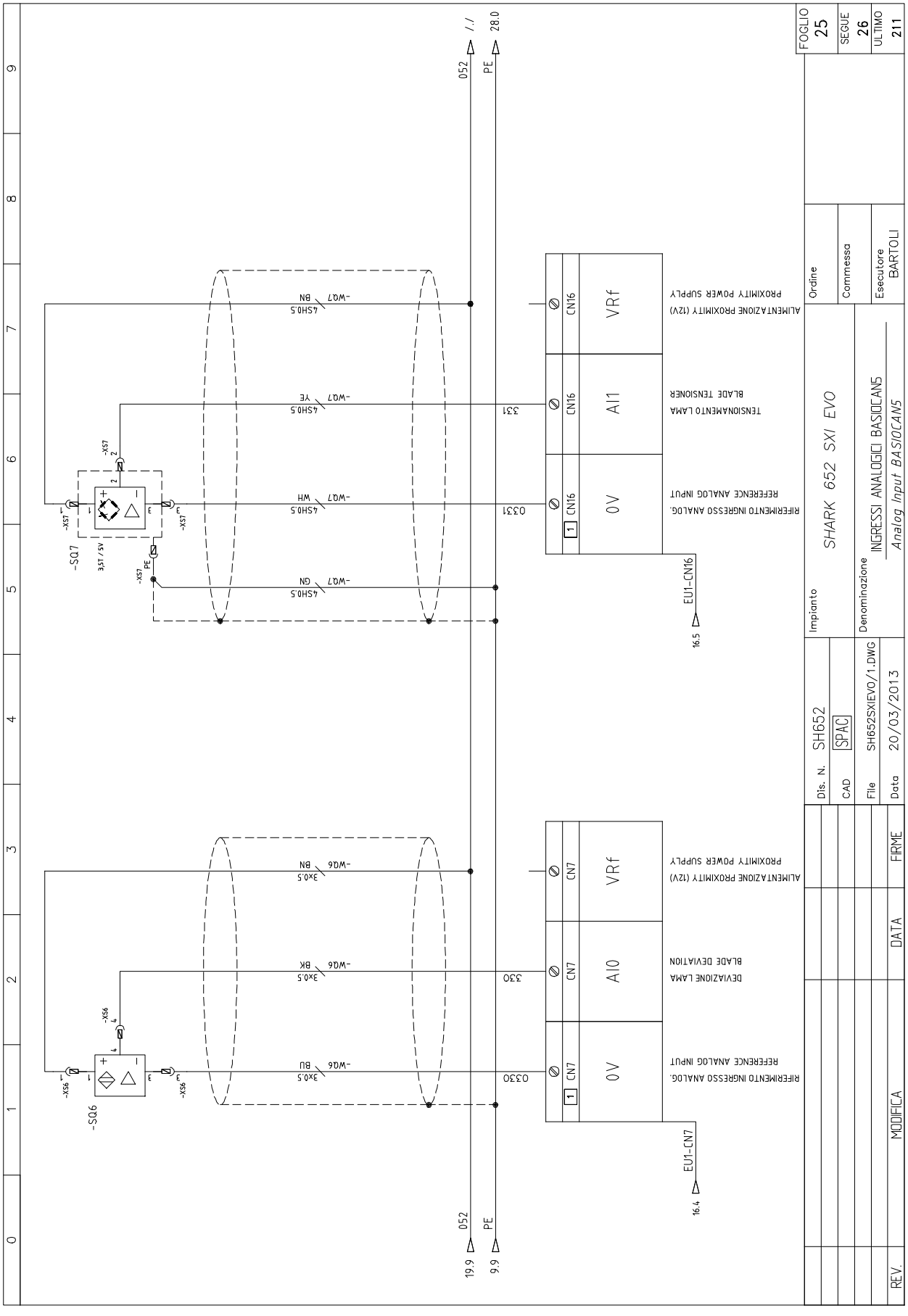

FOGLIO 20
SEGUE 21
ULTIMO 211
Impianto
SHARK 652 SXI EVO
Denominazione
USCITE DIGITALI MEP50
Digital Output MEP50
Ordine
Commessa
Esecutore BARTOLI
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV.
MODIFICA
DATA
FIRME
CU1-CN2
CU1-CN3
24VDC COMUNE COMMON
OUT00 AVVIO LAMA BLADE START
OUT01 FCTA LSHF
OUT02 FCTI LSHB
OUT03 SCORTA SPARE
OUT04 AVVIO CENTRALINA START HYDRAULIC OIL UNIT
OUT05 AVVIO POMPA ACQUA WATER PUMP START
OUT06 EVACUATORE TRUCIOLI AVANTI FORWARD CHIP CONVEYOR
OUT07 LUBRIFICAZIONE MINIMALE SPRAY MIST LUBRIFICATION
EVACUATORE TRUCIOLI INDIETRO CHIP CONVEYOR REVERSE
EVTR INDIETRO CHIP C. REVERSE
-SB14
-K5
-K5R
-K2
-K3
-RT5
-RT2
-RT3
-W007
-W06R
-W0UT
-XAG4
DLM

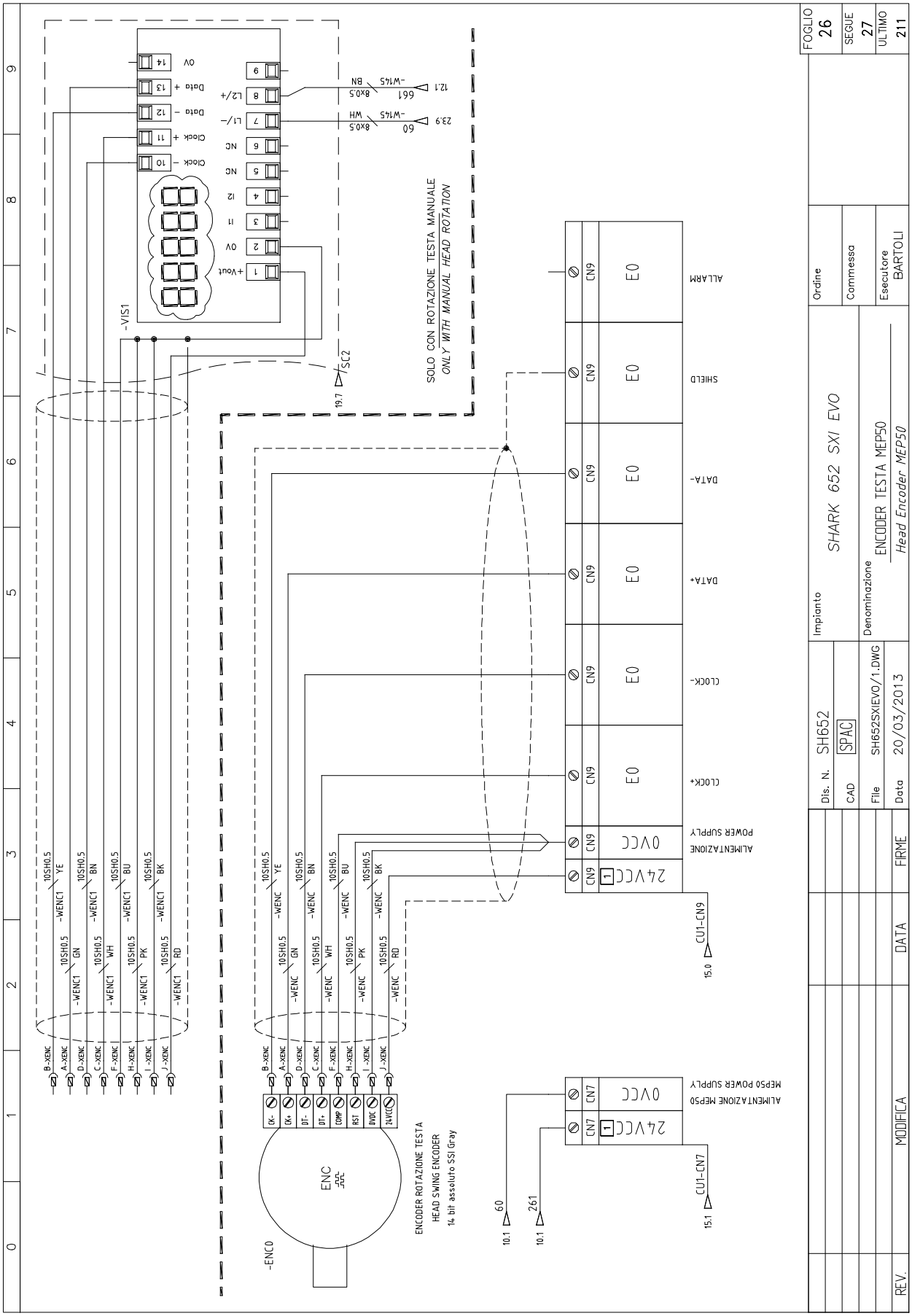

SHARK 652 SXI EVO
USCITE DIGITALI MEP50
Digital Output MEP50
SH652
SH652SXIEVO/1.DWG
20/03/2013
OUT15
OUT14
OUT13
OUT12
OUT11
OUT10
OUT09
OUT08
24VDC
COMUNE COMMON
LUCE ZONA TAGLIO LIGHT CUT ZONE
TRAGUARDATORE LASER LASER SIGN
SCORTA SPARE
SCORTA SPARE
SALITA RULLO SCARICO GO UP UNLOAD ROLLER
SALITA RULLO CARICO GO UP LOAD ROLLER
TENSIONAMENTO LAMA - BLADE TENSION -
TENSIONAMENTO LAMA + BLADE TENSION +
CU1-CN5
CU1-CN4
-HL015
-T014
-TL014
-K011
-K010
-K4
-K4R
-RT4
FOGLIO 21
SEGUE 22
ULTIMO 211

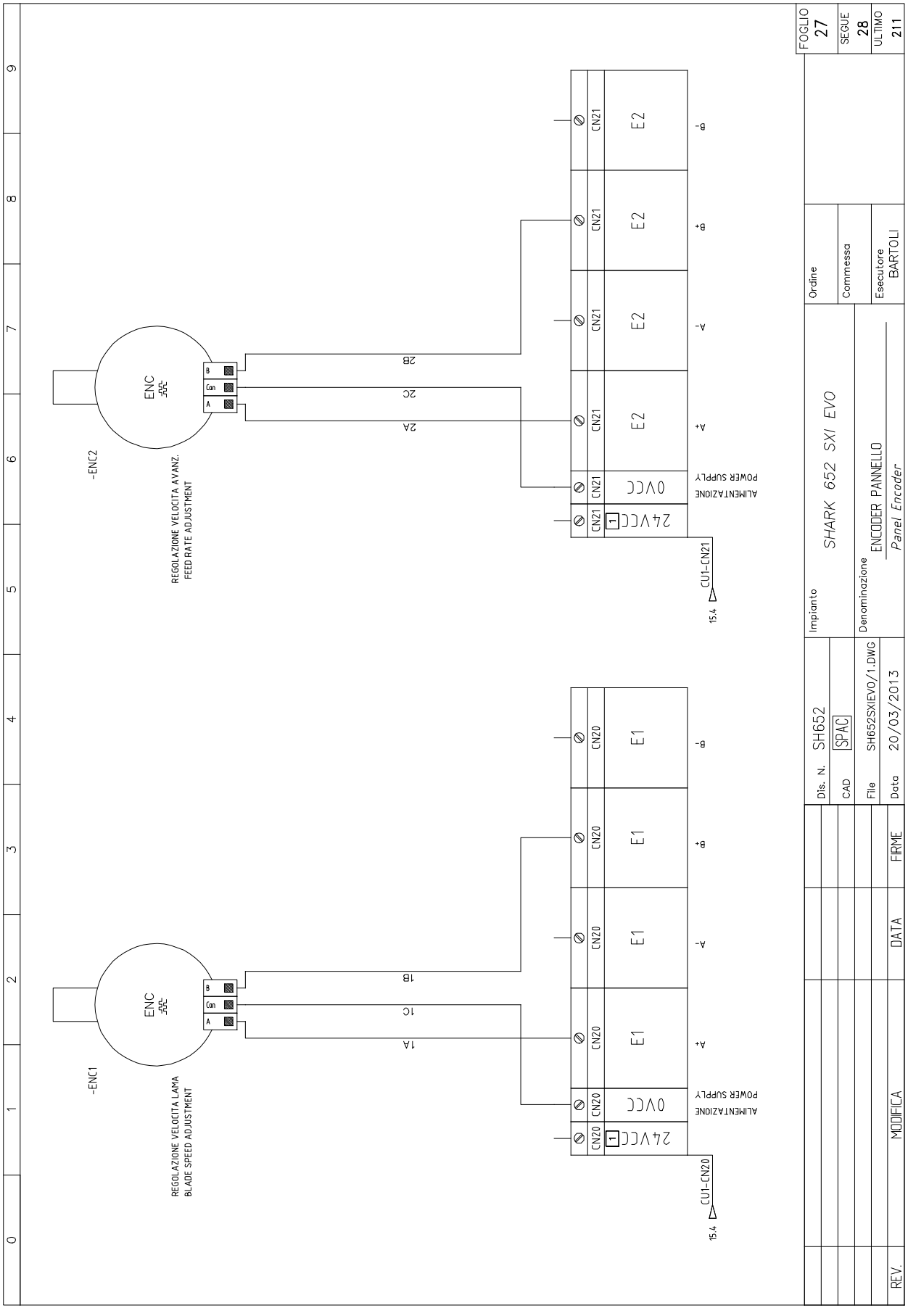

FOGLIO 22
SEGUE 23
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto
SHARK 652 SXI EVO
Denominazione
USCITE DIGITALI BASIOCAN5
Digital Output BASIOCAN5
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV.
MODIFICA
DATA
FIRME
OUT00
OUT01
OUT02
OUT03
OUT04
OUT05
OUT06
OUT07
LAMPEGGIANTE FLASHING
APERTURA MORSA CARICO LOAD VICE OPENING SV
CHIUSURA MORSA CARICO LOAD VICE CLOSING
SALITA TESTA HEAD UPERWARD
DISCESA TESTA HEAD LOWERING
APERTURA MORSA SCARICO UNLOAD VICE OPENING
CHIUSURA MORSA SCARICO UNLOAD VICE CLOSING
APERTURA MORSA VERTICALE VERTICAL VICE OPENING
COMUNE USCITE 01-04
COMMON OUT 01-04
COMUNE USCITE 05-08
COMMON OUT 05-08
24VDC
EU1-CN11
EU1-CN14
-WAUX
-XDSA
-K41
-K42
-K43
-K44
-K45
-K46
-K47
-XK41
-XK42
-XK43
-XK44
-XK45
-XK46
-XK47
-HL40

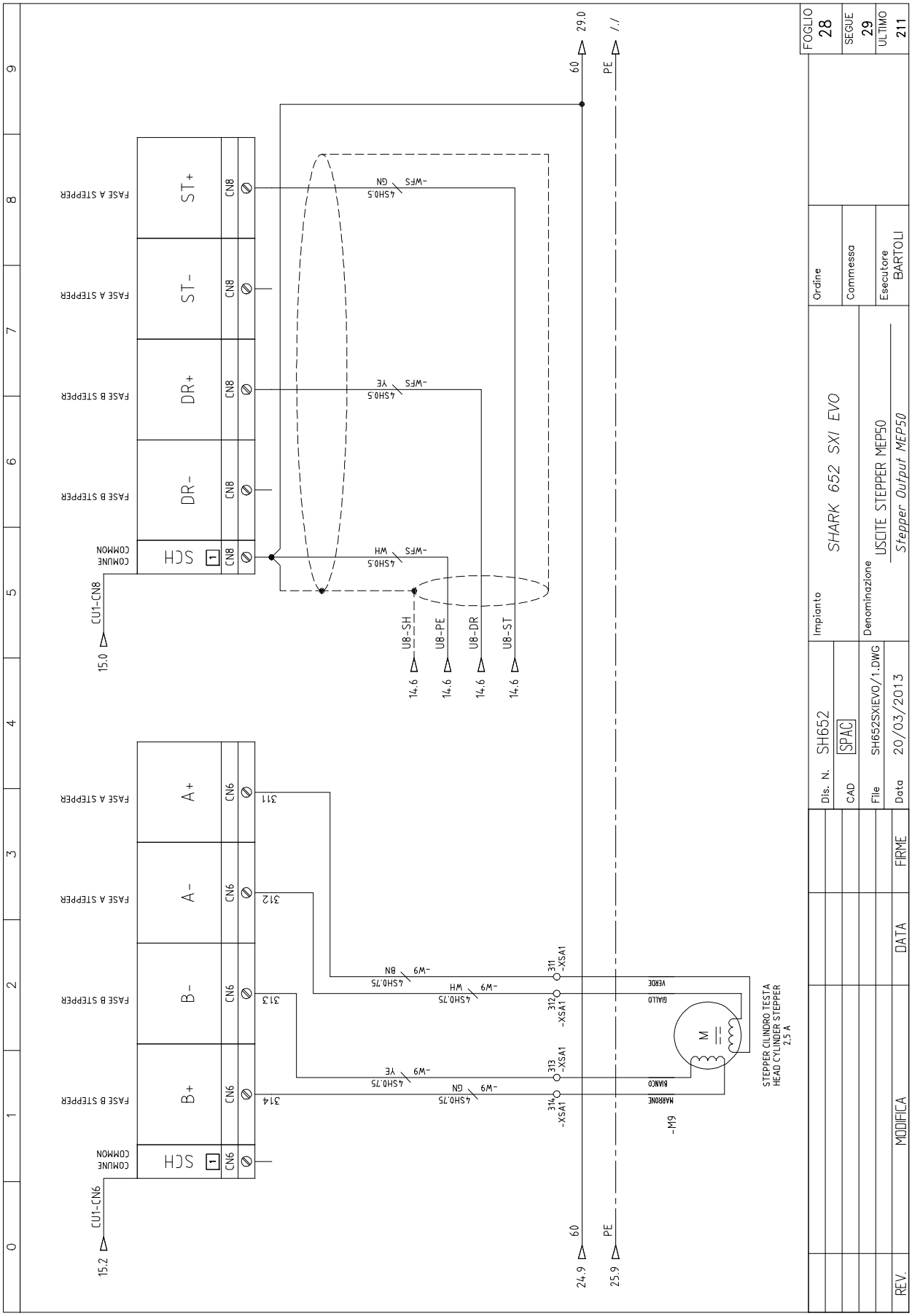

FOGLIO 23
SEGUE 24
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto SHARK 652 SXI EVO
Denominazione USCITE DIGITALI BASIOCANS
Digital Output BASIOCANS
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV. MODIFICA DATA FIRME
EU1-CN14
COMUNE USCITE 09-012
COMMON OUT 09-012
COMUNE USCITE 013-016
COMMON OUT 013-016
24VDC
CN14
EU1-CN13
OUT08
OUT09
OUT10
OUT11
OUT12
OUT13
OUT14
OUT15
CN13
CHIUSURA MORSA VERTICALE
VERTICAL VICE CLOSING
SBLOCCAGGIO ROTAZIONE TESTA
UNLOCK SWING HEAD
SBLOCCAGGIO DISCESA TESTA
UNLOCK LOWERING HEAD
SCORTA SPARE
-K47
-K48
-K49
-K50
-K50A
-XK48
-XK49
-XK50
-XK50A
-W048
-W049
-W050
-W050A
2x0.5
2P+PE [18]
048
049
050
1272
60
16.3
22.7
22.9
26.9

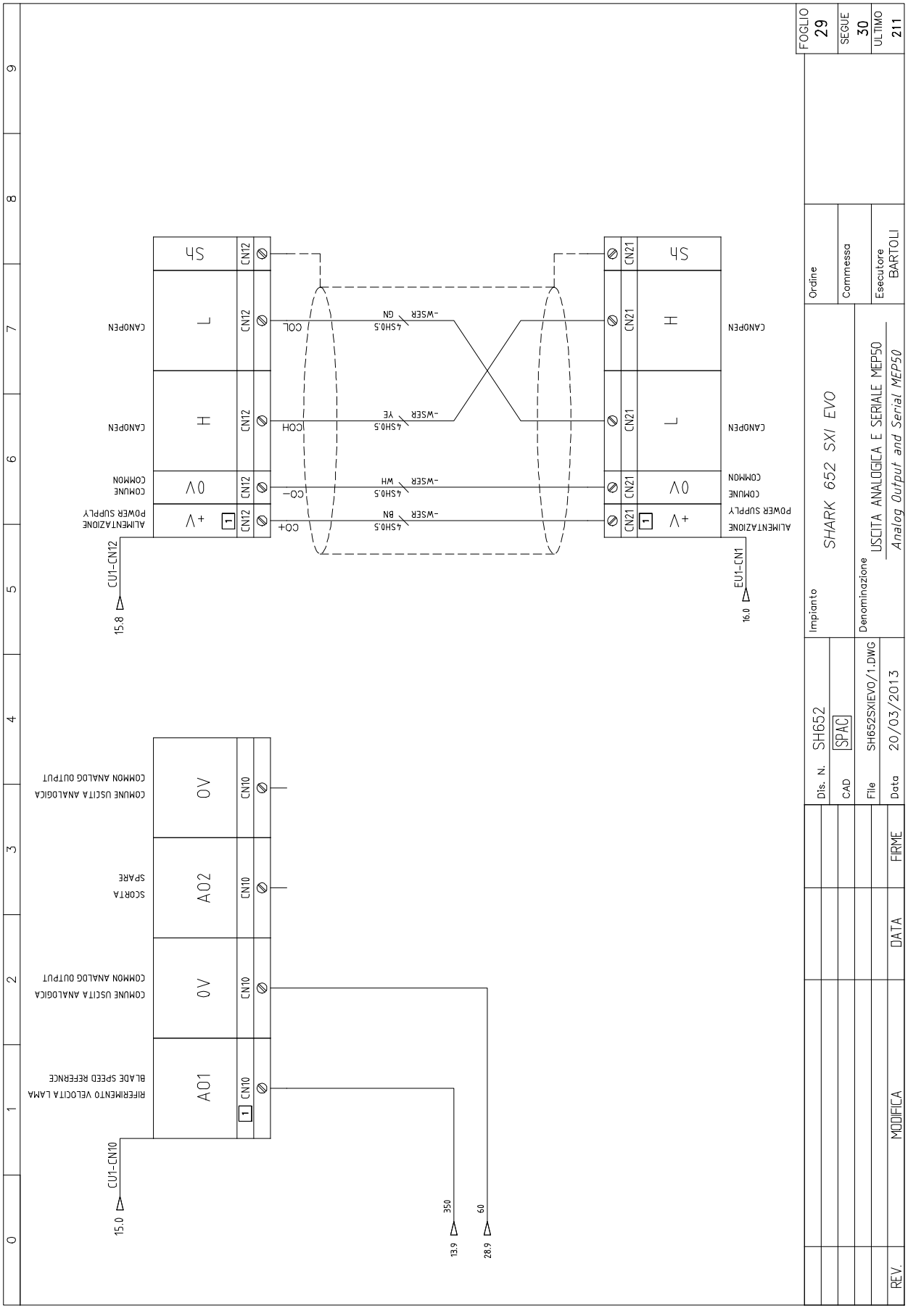

FOGLIO 24
SEGUE 25
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto
SHARK 652 SXI EVO
Denominazione
INGRESSI ANALOGICI MEP50
Analog Input MEP50
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV.
MODIFICA
DATA
FIRME
ASSORBIMENTO MOTORE LAMA
BLADE MOTOR ABSORPTION
POSIZIONE TESTA
HEAD POSITION
RIFERIMENTO INGRESSO ANALOG.
REFERENCE ANALOG INPUT
ALIM. POTENZIOMETRO (4,5V)
POTENTIOMETER POWER S.
CU1-CN24
CU1-CN11
-RV0
AN1b
AN1a
0V
VRf
AI0
Sh
CN24
CN11
4SH0,5
-WR0
GN
YE
WH
BN
-XR0
28.0
21.9
15.2
15.0
13.9
321
320
0320
1320

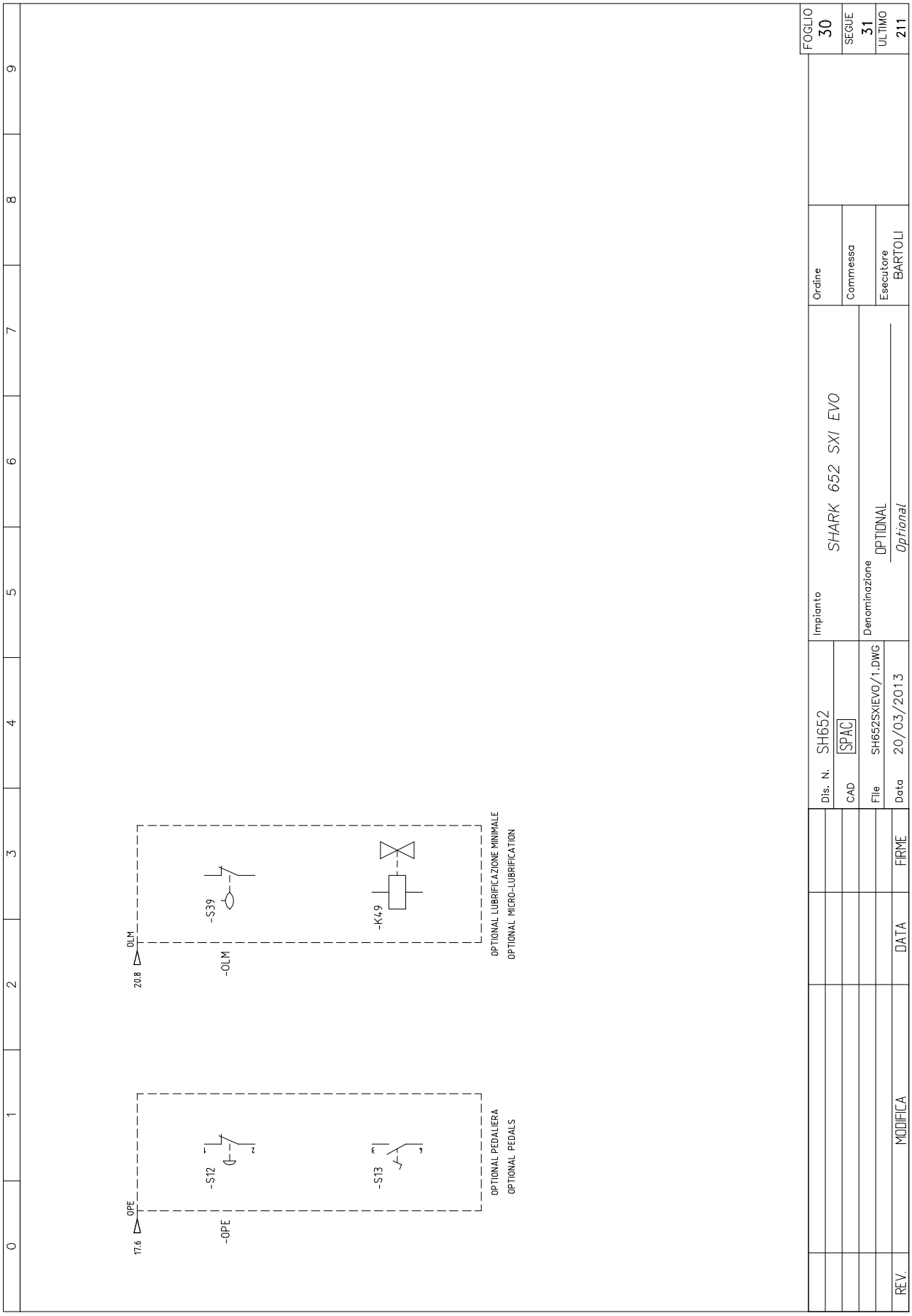

FOGLIO 25
SEGUE 26
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto SHARK 652 SXI EVO
Denominazione INGRESSI ANALOGICI BASIOCAN5
Analog Input BASIOCAN5
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV. MODIFICA DATA FIRME
ALIMENTAZIONE PROXIMITY (12V)
PROXIMITY POWER SUPPLY
RIFERIMENTO INGRESSO ANALOG.
REFERENCE ANALOG INPUT
TENSIONAMENTO LAMA
BLADE TENSIONER
DEVIAZIONE LAMA
BLADE DEVIATION
VRf
AI1
0V
AI0
CN16
CN7
EU1-CN16
EU1-CN7
-SQ7
-SQ6
4SH0.5
3x0.5
-WQ7
-WQ6
052
PE
28.0
19.9
9.9
16.5
16.4

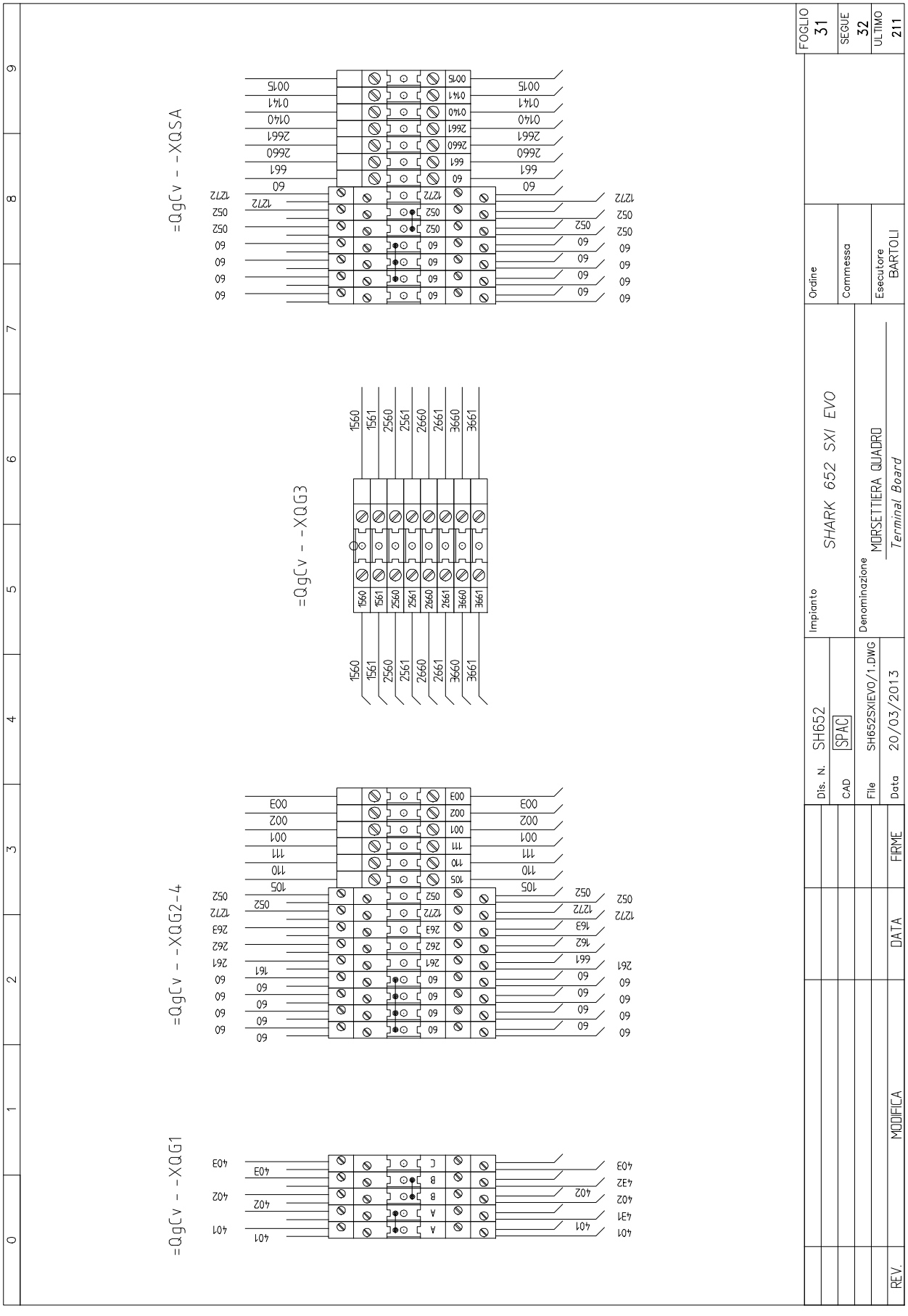

FOGLIO 26
SEGUE 27
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto
SHARK 652 SXI EVO
Denominazione
ENCODER TESTA MEP50
Head Encoder MEP50
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV. MODIFICA DATA FIRME
SOLO CON ROTAZIONE TESTA MANUALE
ONLY WITH MANUAL HEAD ROTATION
-VIS1
-SC2
ENCODER ROTAZIONE TESTA
HEAD SWING ENCODER
14 bit assoluto SSI Gray
-ENC0
ALIMENTAZIONE MEP50 POWER SUPPLY
ALIMENTAZIONE POWER SUPPLY
CU1-CN9
CU1-CN7
ALLARM
SHIELD
DATA-
DATA+
CLOCK-
CLOCK+
0 Data + Data - Clock + Clock - NC NC 12 11 0V +Vout

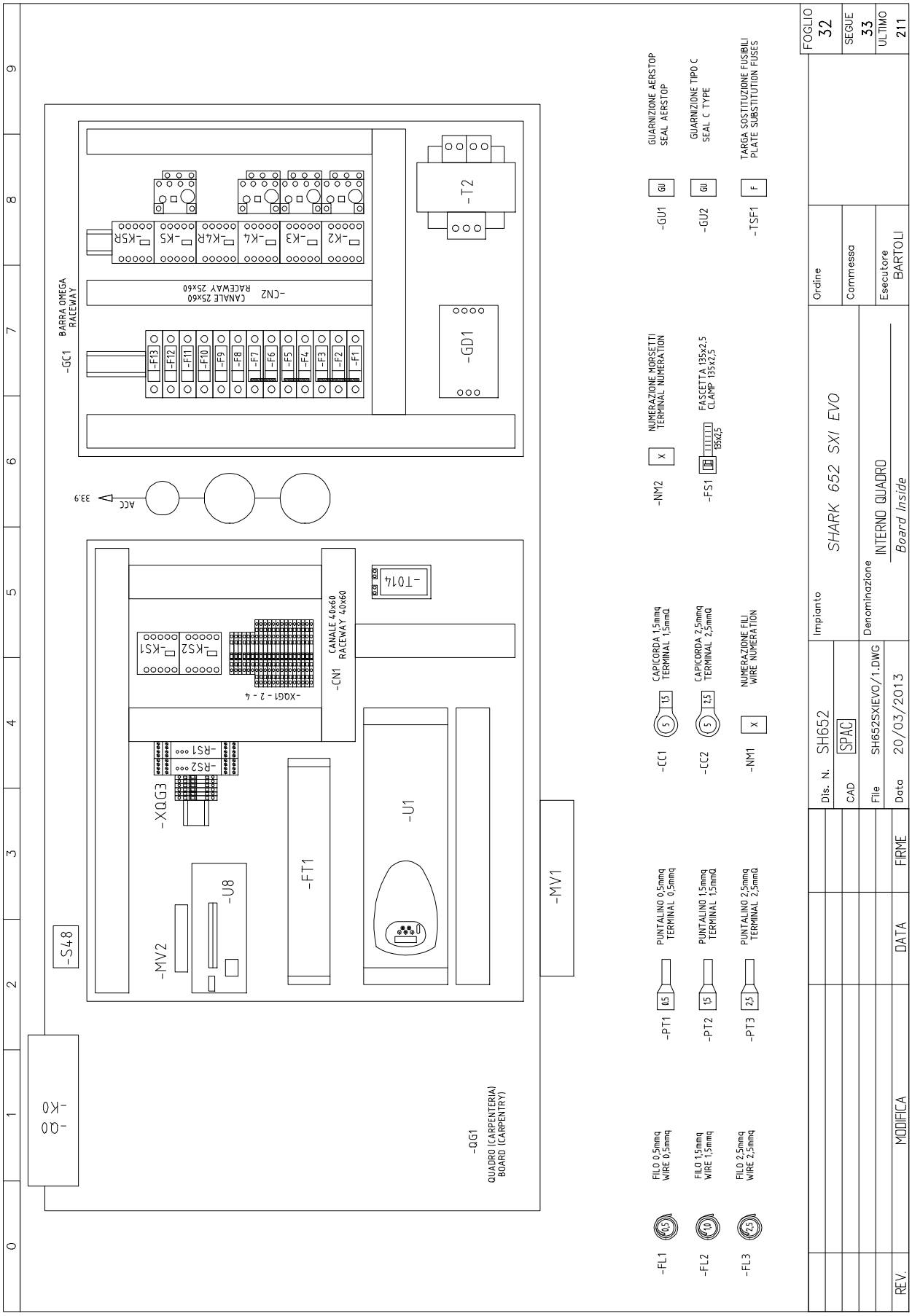

-ENC2
ENC
B
Con
A
2B
2C
2A
REGOLAZIONE VELOCITA AVANZ.
FEED RATE ADJUSTMENT
CN21
E2
24VCC
0VCC
ALIMENTAZIONE
POWER SUPPLY
CU1-CN21
15.4
-ENC1
1B
1C
1A
REGOLAZIONE VELOCITA LAMA
BLADE SPEED ADJUSTMENT
CN20
E1
CU1-CN20
FOGLIO 27
SEGUE 28
ULTIMO 211
Impianto
SHARK 652 SXI EVO
Ordine
Commessa
Esecutore BARTOLI
Denominazione
ENCODER PANNELLO
Panel Encoder
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV.
MODIFICA
DATA
FIRME

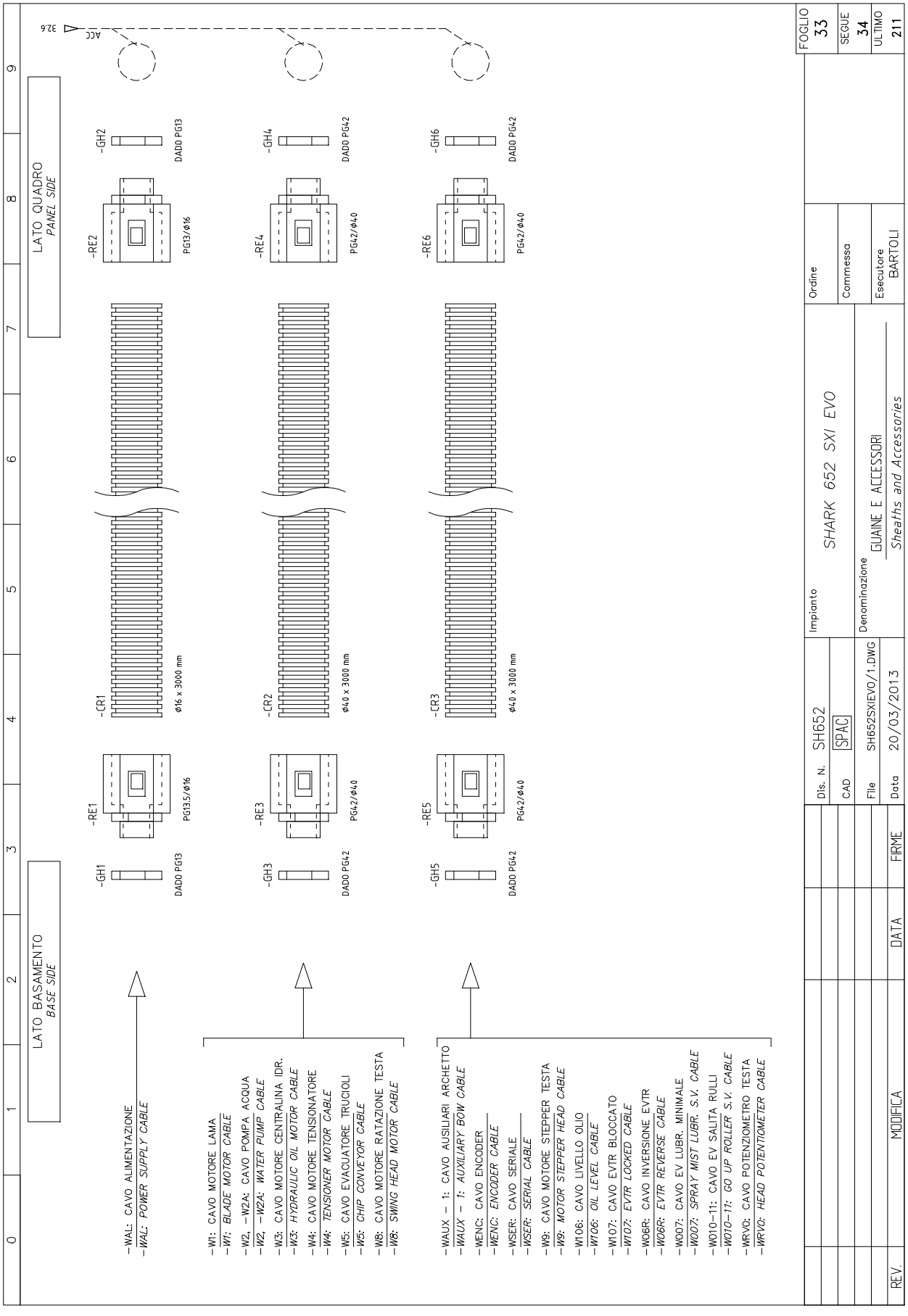

FOGLIO 28
SEGUE 29
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto SHARK 652 SXI EVO
Denominazione USCITE STEPPER MEP50
Stepper Output MEP50
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV. MODIFICA DATA FIRME
CU1-CN8
CU1-CN6
COMMUNE COMMON
CN8
CN6
ST+
ST-
DR+
DR-
A+
A-
B+
B-
FASE A STEPPER
FASE B STEPPER
-WFS 4SH0.5 GN
-WFS 4SH0.5 YE
-WFS 4SH0.5 WH
4SH0.75 BN
4SH0.75 WH
4SH0.75 YE
4SH0.75 GN
-W9
U8-SH
U8-PE
U8-DR
U8-ST
311
312
313
314
-XSA1
-M9
STEPPER CILINDRO TESTA
HEAD CYLINDER STEPPER
2.5 A
VERDE
GIALLO
BIANCO
MARRONE
15.0
15.2
14.6
24.9
25.9
29.0
60
PE

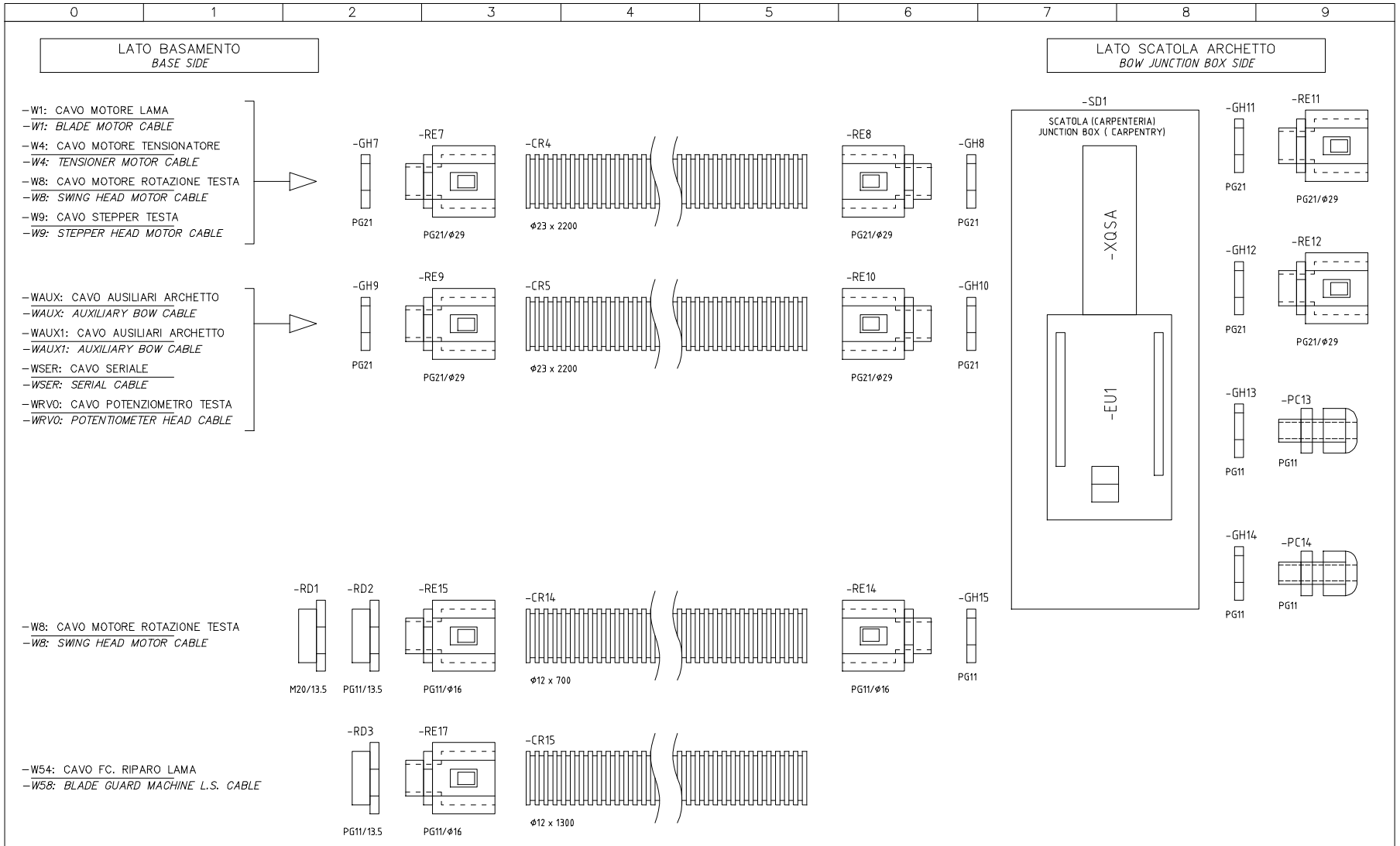

FOGLIO 29
SEGUE 30
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto SHARK 652 SXI EVO
Denominazione USCITA ANALOGICA E SERIALE MEP50
Analog Output and Serial MEP50
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV. MODIFICA DATA FIRME
CU1-CN12
15.8
EU1-CN1
16.0
CU1-CN10
15.0
13.9
28.9
CN12
CN21
CN10
+V
0V
H
L
SH
CANOPEN
COMMON
COMUNE
ALIMENTAZIONE
POWER SUPPLY
AO1
AO2
SPARE
SCORTA
BLADE SPEED REFERENCE
RIFERIMENTO VELOCITA LAMA
COMMON ANALOG OUTPUT
COMUNE USCITA ANALOGICA
4SH0.5
-WSER
GN
YE
WH
BN
COL
COH
CO-
CO+


0
1
2
3
4
5
6
7
8
9
17.6 OPE
-OPE
-S12
-S13
OPTIONAL PEDALIERA
OPTIONAL PEDALS
20.8 OLM
-OLM
-S39
-K49
OPTIONAL LUBRIFICAZIONE MINIMALE
OPTIONAL MICRO-LUBRIFICATION
REV.
MODIFICA
DATA
FIRME
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
Impianto
SHARK 652 SXI EVO
Denominazione
OPTIONAL
Optional
Ordine
Commessa
Esecutore BARTOLI
FOGLIO 30
SEGUE 31
ULTIMO 211


=QgCv - -XQSA
=QgCv - -XQG3
=QgCv - -XQG2-4
=QgCv - -XQG1
FOGLIO 31
SEGUE 32
ULTIMO 211
Ordine
Commessa
Esecutore BARTOLI
Impianto SHARK 652 SXI EVO
Denominazione MORSETTIERA QUADRO
Terminal Board
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
REV.
MODIFICA
DATA
FIRME


-GC1 BARRA OMEGA RACEWAY
-CN2 CANALE 25x60 RACEWAY 25x60
-GD1
-T2
-K1 -K2 -K3 -K4 -K4R -K5 -K5R
-F1 -F2 -F3 -F4 -F5 -F6 -F7 -F8 -F9 -F10 -F11 -F12 -F13
-S48
-MV2
-U8
-XQG3
-RS1 -RS2
-FT1
-U1
-XQG1 - 2 - 4
-KS1 -KS2
-CN1 CANALE 40x60 RACEWAY 40x60
-T014
-MV1
-QG1
QUADRO (CARPENTERIA)
BOARD (CARPENTRY)
-FL1 FILO 0,5mmq WIRE 0,5mmq
-FL2 FILO 1,5mmq WIRE 1,5mmq
-FL3 FILO 2,5mmq WIRE 2,5mmq
-PT1 PUNTALINO 0,5mmq TERMINAL 0,5mmq
-PT2 PUNTALINO 1,5mmq TERMINAL 1,5mmq
-PT3 PUNTALINO 2,5mmq TERMINAL 2,5mmq
-CC1 CAPICORDA 1,5mmq TERMINAL 1,5mmQ
-CC2 CAPICORDA 2,5mmq TERMINAL 2,5mmQ
-NM1 NUMERAZIONE FILI WIRE NUMERATION
-NM2 NUMERAZIONE MORSETTI TERMINAL NUMERATION
-FS1 FASCETTA 135x2,5 CLAMP 135x2,5
-GU1 GUARNIZIONE AERSTOP SEAL AERSTOP
-GU2 GUARNIZIONE TIPO C SEAL C TYPE
-TSF1 TARGA SOSTITUZIONE FUSIBILI PLATE SUBSTITUTION FUSES
ACC
33,9
REV.
MODIFICA
DATA
FIRME
Data 20/03/2013
File SH652SXIEVO/1.DWG
CAD SPAC
Dis. N. SH652
Impianto
Denominazione
SHARK 652 SXI EVO
INTERNO QUADRO
Board Inside
Ordine
Commessa
Esecutore BARTOLI
FOGLIO 32
SEGUE 33
ULTIMO 211


LATO BASAMENTO
BASE SIDE
LATO QUADRO
PANEL SIDE
-WAL: CAVO ALIMENTAZIONE
-WAL: POWER SUPPLY CABLE
-W1: CAVO MOTORE LAMA
-W1: BLADE MOTOR CABLE
-W2, -W2A: CAVO POMPA ACQUA
-W2, -W2A: WATER PUMP CABLE
-W3: CAVO MOTORE CENTRALINA IDR.
-W3: HYDRAULIC OIL MOTOR CABLE
-W4: CAVO MOTORE TENSIONATORE
-W4: TENSIONER MOTOR CABLE
-W5: CAVO EVACUATORE TRUCIOLI
-W5: CHIP CONVEYOR CABLE
-W8: CAVO MOTORE RATAZIONE TESTA
-W8: SWING HEAD MOTOR CABLE
-WAUX – 1: CAVO AUSILIARI ARCHETTO
-WAUX – 1: AUXILIARY BOW CABLE
-WENC: CAVO ENCODER
-WENC: ENCODER CABLE
-WSER: CAVO SERIALE
-WSER: SERIAL CABLE
-W9: CAVO MOTORE STEPPER TESTA
-W9: MOTOR STEPPER HEAD CABLE
-W106: CAVO LIVELLO OLIO
-W106: OIL LEVEL CABLE
-W107: CAVO EVTR BLOCCATO
-W107: EVTR LOCKED CABLE
-W06R: CAVO INVERSIONE EVTR
-W06R: EVTR REVERSE CABLE
-W007: CAVO EV LUBR. MINIMALE
-W007: SPRAY MIST LUBR. S.V. CABLE
-W010-11: CAVO EV SALITA RULLI
-W010-11: GO UP ROLLER S.V. CABLE
-WRV0: CAVO POTENZIOMETRO TESTA
-WRV0: HEAD POTENTIOMETER CABLE
-GH1
-GH2
-GH3
-GH4
-GH5
-GH6
-RE1
-RE2
-RE3
-RE4
-RE5
-RE6
-CR1
-CR2
-CR3
DADO PG13
DADO PG42
PG13,5/Φ16
PG13/Φ16
PG42/Φ40
Φ16 x 3000 mm
Φ40 x 3000 mm
ACC
32.6
REV.
MODIFICA
DATA
FIRME
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
Impianto
SHARK 652 SXI EVO
Denominazione
GUAINE E ACCESSORI
Sheaths and Accessories
Ordine
Commessa
Esecutore BARTOLI
FOGLIO 33
SEGUE 34
ULTIMO 211



REV.	MODIFICA	DATA	FIRME

Dis. N.	SH652
CAD	SPAC
File	SH652SXIEVO/1.DWG
Data	20/03/2013

Impianto: *SHARK 652 SXI EVO*

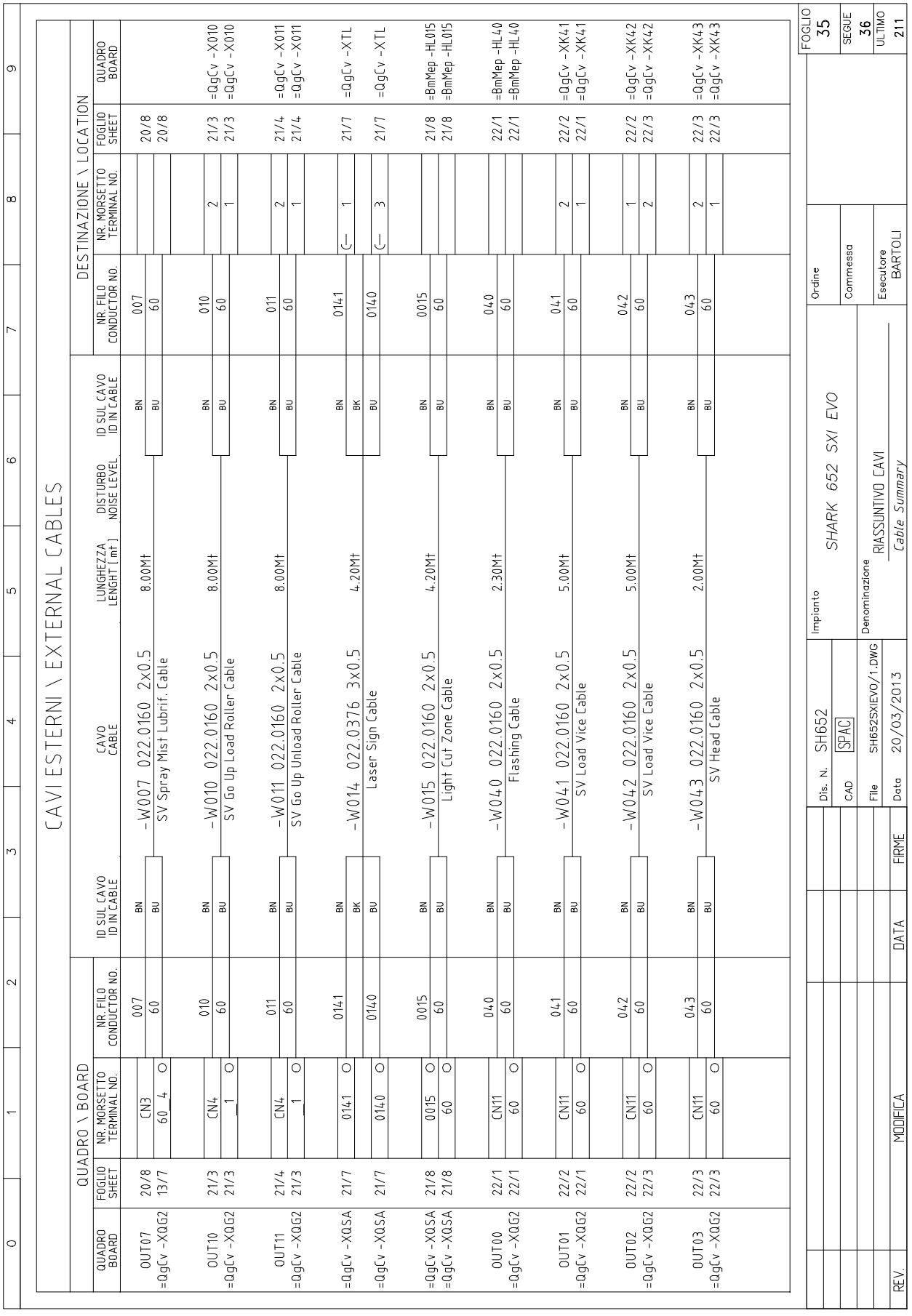
Denominazione: GUAINE E ACCESSORI
Sheaths and Accessories

Ordine

Commessa

Esecutore: BARTOLI

FOGLIO	34
SEGUE	35
ULTIMO	211


CAVI ESTERNI \ EXTERNAL CABLES
QUADRO \ BOARD
DESTINAZIONE \ LOCATION
QUADRO BOARD
FOGLIO SHEET
NR. MORSETTO TERMINAL NO.
NR. FILO CONDUCTOR NO.
ID SUL CAVO ID IN CABLE
CAVO CABLE
LUNGHEZZA LENGHT [mt]
DISTURBO NOISE LEVEL
ID SUL CAVO ID IN CABLE
NR. FILO CONDUCTOR NO.
NR. MORSETTO TERMINAL NO.
FOGLIO SHEET
QUADRO BOARD
OUT07 =QgCv -XQG2 20/8 13/7 CN3 60_4 007 60 BN BU -W007 022.0160 2x0.5 SV Spray Mist Lubrif. Cable 8.00Mt 007 60 20/8 20/8
OUT10 =QgCv -XQG2 21/3 21/3 CN4 1 010 60 BN BU -W010 022.0160 2x0.5 SV Go Up Load Roller Cable 8.00Mt 010 60 2 1 21/3 21/3 =QgCv -X010 =QgCv -X010
OUT11 =QgCv -XQG2 21/4 21/3 CN4 1 011 60 BN BU -W011 022.0160 2x0.5 SV Go Up Unload Roller Cable 8.00Mt 011 60 2 1 21/4 21/4 =QgCv -X011 =QgCv -X011
=QgCv -XQSA 21/7 0141 0141 BN BK -W014 022.0376 3x0.5 Laser Sign Cable 4.20Mt 0141 BK BU 1 3 21/7 21/7 =QgCv -XTL =QgCv -XTL
=QgCv -XQSA 21/7 0140
=QgCv -XQSA 21/8 0015 0015 BN BU -W015 022.0160 2x0.5 Light Cut Zone Cable 4.20Mt 0015 60 21/8 21/8 =BmMep -HL015 =BmMep -HL015
=QgCv -XQSA 21/8 60
OUT00 =QgCv -XQG2 22/1 22/1 CN11 60 040 60 BN BU -W040 022.0160 2x0.5 Flashing Cable 2.30Mt 040 60 22/1 22/1 =BmMep -HL40 =BmMep -HL40
OUT01 =QgCv -XQG2 22/2 22/1 CN11 60 041 60 BN BU -W041 022.0160 2x0.5 SV Load Vice Cable 5.00Mt 041 60 2 1 22/2 22/1 =QgCv -XK41 =QgCv -XK41
OUT02 =QgCv -XQG2 22/2 22/3 CN11 60 042 60 BN BU -W042 022.0160 2x0.5 SV Load Vice Cable 5.00Mt 042 60 1 2 22/2 22/3 =QgCv -XK42 =QgCv -XK42
OUT03 =QgCv -XQG2 22/3 22/3 CN11 60 043 60 BN BU -W043 022.0160 2x0.5 SV Head Cable 2.00Mt 043 60 2 1 22/3 22/3 =QgCv -XK43 =QgCv -XK43
REV. MODIFICA DATA FIRME
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
Impianto SHARK 652 SXI EVO
Denominazione RIASSUNTIVO CAVI Cable Summary
Ordine
Commessa
Esecutore BARTOLI
FOGLIO 35
SEGUE 36
ULTIMO 211

CAVI ESTERNI \ EXTERNAL CABLES

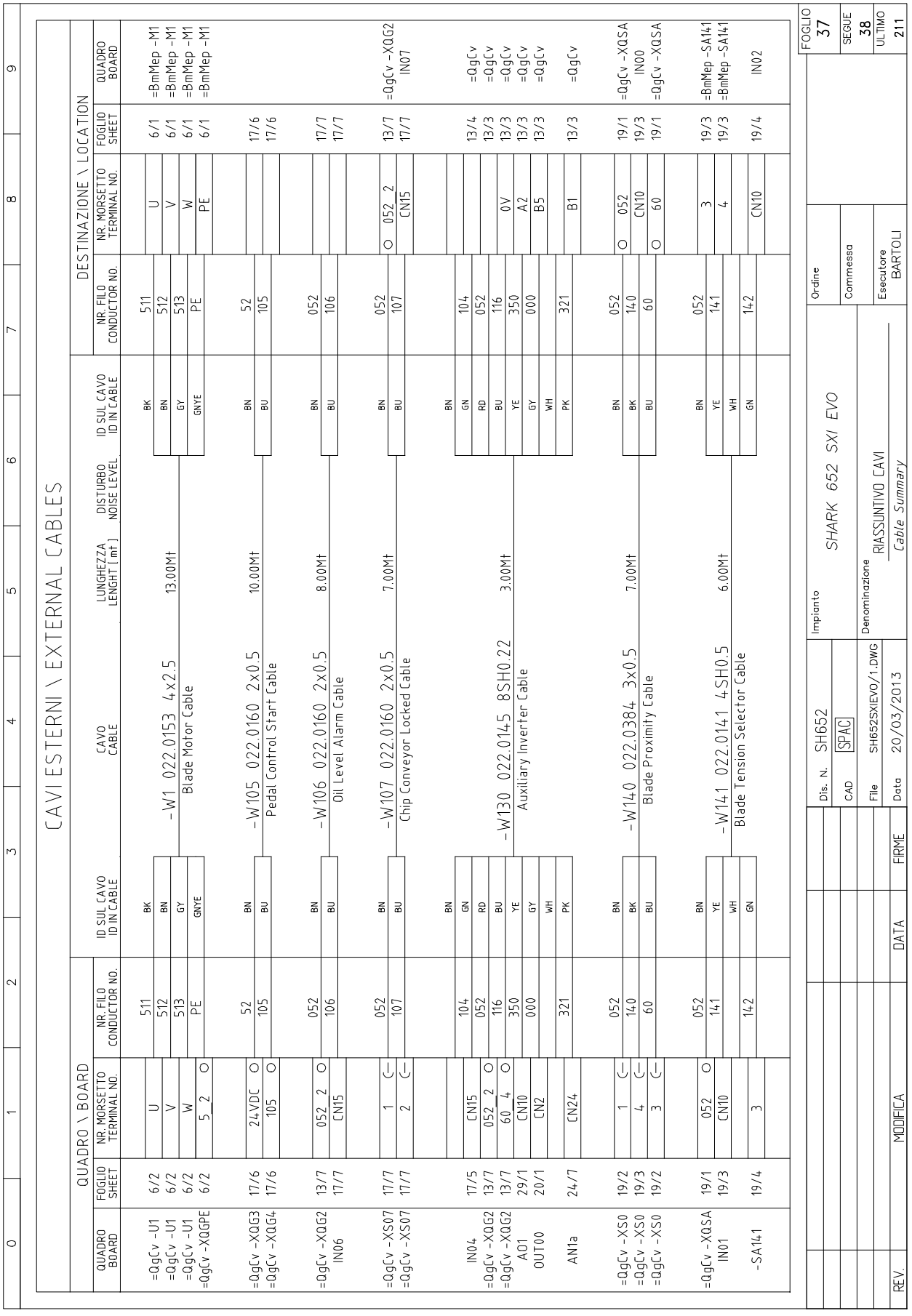
QUADRO \ BOARD									DESTINAZIONE \ LOCATION			
QUADRO BOARD	FOGLIO SHEET	NR. MORSETTO TERMINAL NO.	NR. FILO CONDUCTOR NO.	ID SUL CAVO ID IN CABLE	CAVO CABLE	LUNGHEZZA LENGHT [mt]	DISTURBO NOISE LEVEL	ID SUL CAVO ID IN CABLE	NR. FILO CONDUCTOR NO.	NR. MORSETTO TERMINAL NO.	FOGLIO SHEET	QUADRO BOARD
OUT04	22/4	CN11	044	BN	-W044 022.0160 2x0.5	2.00Mt		BN	044	1	22/4	=QgCv -XK44
=QgCv -XQG2	22/4	60	60	BU	SV Head Cable			BU	60	2	22/4	=QgCv -XK44
OUT05	22/5	CN11	045	BN	-W045 022.0160 2x0.5	5.00Mt		BN	045	2	22/5	=QgCv -XK45
=QgCv -XQG2	22/4	60	60	BU	SV Unload Vice Cable			BU	60	1	22/4	=QgCv -XK45
OUT06	22/6	CN11	046	BN	-W046 022.0160 2x0.5	5.00Mt		BN	046	1	22/6	=QgCv -XK46
=QgCv -XQG2	22/6	60	60	BU	SV Unload Vice Cable			BU	60	2	22/6	=QgCv -XK46
OUT07	22/6	CN11	047	BN	-W047 022.0160 2x0.5	5.00Mt		BN	047	2	22/6	=QgCv -XK47
=QgCv -XQG2	22/6	60	60	BU	SV Vertical Vice Cable			BU	60	1	22/6	=QgCv -XK47
OUT08	23/1	CN13	048	BN	-W048 022.0160 2x0.5	5.00Mt		BN	048	1	23/1	=QgCv -XK48
=QgCv -XQG2	23/1	60	60	BU	SV Vertical Vice Cable			BU	60	2	23/1	=QgCv -XK48
OUT09	23/2	CN13	049	BN	-W049 022.0160 2x0.5	6.00Mt		BN	049	2	23/2	=QgCv -XK49
=QgCv -XQG2	23/1	60	60	BU	SV Unlock Head Swing Cable			BU	60	1	23/1	=QgCv -XK49
OUT10	23/2	CN13	050	BN	-W050 022.0160 2x0.5	6.00Mt		BN	050	2	23/2	=QgCv -XK50
=QgCv -XQG2	23/3	60	60	BU	SV Unlock Head Cable			BU	60	1	23/2	=QgCv -XK50
OUT10	23/2	CN13	050	BN	-W050A 022.0160 2x0.5	1.30Mt		BN	050	1	23/3	=QgCv -XK50A
=QgCv -XQG2	23/3	60	60	BU	SV Unlock Head Cable			BU	60	2	23/3	=QgCv -XK50A
24VDC	20/0	CN2	1272	BN	-W06R 022.0160 2x0.5	7.00Mt		BN	1272	3	20/5	=BmCv -SB14
=QgCv -K5	20/5	21	0061	BU	Reverse Chip Conveyor Cable			BU	0061	4	20/5	=BmCv -SB14

REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013

Impianto: SHARK 652 SXI EVO
Denominazione: RIASSUNTIVO CAVI / Cable Summary
Ordine
Commessa
Esecutore: BARTOLI

FOGLIO 36
SEGUE 37
ULTIMO 211


CAVI ESTERNI \ EXTERNAL CABLES
QUADRO \ BOARD
DESTINAZIONE \ LOCATION
QUADRO BOARD
FOGLIO SHEET
NR. MORSETTO TERMINAL NO.
NR. FILO CONDUCTOR NO.
ID SUL CAVO ID IN CABLE
CAVO CABLE
LUNGHEZZA LENGHT [mt]
DISTURBO NOISE LEVEL
ID SUL CAVO ID IN CABLE
NR. FILO CONDUCTOR NO.
NR. MORSETTO TERMINAL NO.
FOGLIO SHEET
QUADRO BOARD
=QgCv -U1 6/2 U 511 BK -W1 022.0153 4x2.5 13.00Mt BK 511 U 6/1 =BmMep -M1
=QgCv -V1 6/2 V 512 BN Blade Motor Cable BN 512 V 6/1 =BmMep -M1
=QgCv -W1 6/2 W 513 GY GY 513 W 6/1 =BmMep -M1
=QgCv -XQGPE 6/2 5_2 PE GNYE GNYE PE PE 6/1 =BmMep -M1
=QgCv -XQG3 17/6 24VDC 52 BN -W105 022.0160 2x0.5 10.00Mt BN 52 17/6
=QgCv -XQG4 17/6 105 105 BU Pedal Control Start Cable BU 105 17/6
=QgCv -XQG2 13/7 052_2 052 BN -W106 022.0160 2x0.5 8.00Mt BN 052 17/7
IN06 17/7 CN15 106 BU Oil Level Alarm Cable BU 106 17/7
=QgCv -XS07 17/7 1 052 BN -W107 022.0160 2x0.5 7.00Mt BN 052 13/7 =QgCv -XQG2
=QgCv -XS07 17/7 2 107 BU Chip Conveyor Locked Cable BU 107 O 052_2 17/7 CN15 IN07
BN
IN04 17/5 CN15 104 GN GN 104 13/4 =QgCv
=QgCv -XQG2 13/7 052_2 052 RD -W130 022.0145 8SH0.22 3.00Mt RD 052 13/3 =QgCv
=QgCv -XQG2 13/7 60_4 116 BU Auxiliary Inverter Cable BU 116 13/3 =QgCv
AO1 29/1 CN10 350 YE YE 350 0V 13/3 =QgCv
OUT00 20/1 CN2 000 GY GY 000 A2 13/3 =QgCv
WH WH B5 13/3 =QgCv
AN1a 24/7 CN24 321 PK PK 321 B1 13/3 =QgCv
=QgCv -XS0 19/2 1 052 BN -W140 022.0384 3x0.5 7.00Mt BN 052 O 052 19/1 =QgCv -XQSA
=QgCv -XS0 19/3 4 140 BK Blade Proximity Cable BK 140 CN10 19/3 IN00
=QgCv -XS0 19/2 3 60 BU BU 60 O 60 19/1 =QgCv -XQSA
BN
=QgCv -XQSA 19/1 052 O 052 BN -W141 022.0141 4SH0.5 6.00Mt BN 052 3 19/3 =BmMep -SA141
IN01 19/3 CN10 141 YE Blade Tension Selector Cable YE 141 4 19/3 =BmMep -SA141
WH WH
-SA141 19/4 3 142 GN GN 142 CN10 19/4 IN02
REV. MODIFICA DATA FIRME
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
Impianto SHARK 652 SXI EVO
Denominazione RIASSUNTIVO CAVI
Cable Summary
Ordine
Commessa
Esecutore BARTOLI
FOGLIO 37
SEGUE 38
ULTIMO 211

0	1	2	3	4	5	6	7	8	9

CAVI ESTERNI \ EXTERNAL CABLES

QUADRO \ BOARD								DESTINAZIONE \ LOCATION			
QUADRO BOARD	FOGLIO SHEET	NR. MORSETTO TERMINAL NO.	NR. FILO CONDUCTOR NO.	ID SUL CAVO ID IN CABLE	CAVO CABLE	LUNGHEZZA LENGHT [mt]	DISTURBO NOISE LEVEL	ID SUL CAVO ID IN CABLE	NR. FILO CONDUCTOR NO.	NR. MORSETTO TERMINAL NO.	FOGLIO SHEET	QUADRO BOARD
=QgCv -XFT143	19/5	1	052	BN				BN	052	052	19/1	=QgCv -XQSA
=QgCv -XFT143	19/5	4	143	BK	-W143 022.0397 4x0.5	5.00Mt		BK	143	CN10	19/5	IN03
=QgCv -XFT143	19/5	3	60	BU	Fast Approach Cable			BU	60	60	19/1	=QgCv -XQSA
				WH				WH				
=QgCv -XS144	19/6	1	052	BN				BN	052	052	19/1	=QgCv -XQSA
				BK	-W144 022.0397 4x0.5	6.50Mt		BK				
				BU	LS Low Head Cable			BU				
=QgCv -XS144	19/6	2	144	WH				WH	144	CN10	19/6	IN04
				BN				BN				
				GY				GY				
				BU				BU				
IN05	19/6	CN10	145	GN	-W145 022.0159 8x0.5	7.50Mt		GN	145	4	19/6	=BmCv -SA145
				RD	Unlock Swing Head Cable			RD				
=QgCv -XQSA	19/1	052	052	YE				YE	052	3	19/6	=BmCv -SA145
				WH				WH				
				PK				PK				
=QgCv -RT2	6/4	2	521	BN				BN	521	U	6/4	=BmMep -M2
=QgCv -RT2	6/4	4	522	BK	-W2 022.0162 4G0.75	7.00Mt		BK	522	V	6/4	=BmMep -M2
=QgCv -RT2	6/4	6	523	GY	Water Pump Cable			GY	523	W	6/4	=BmMep -M2
=QgCv -XQGPE	6/5	5_4	PE	GNYE				GNYE	PE	PE	6/4	=BmMep -M2
=QgCv -RT2	6/4	2	521	BN				BN	521	U	6/6	=BmMep -M2A
=QgCv -RT2	6/4	4	522	BK	-W2A 022.0162 4G0.75	7.00Mt		BK	522	V	6/6	=BmMep -M2A
=QgCv -RT2	6/4	6	523	GY	Water Pump Cable			GY	523	W	6/6	=BmMep -M2A
=QgCv -XQGPE	6/7	5_5	PE	GNYE				GNYE	PE	PE	6/6	=BmMep -M2A

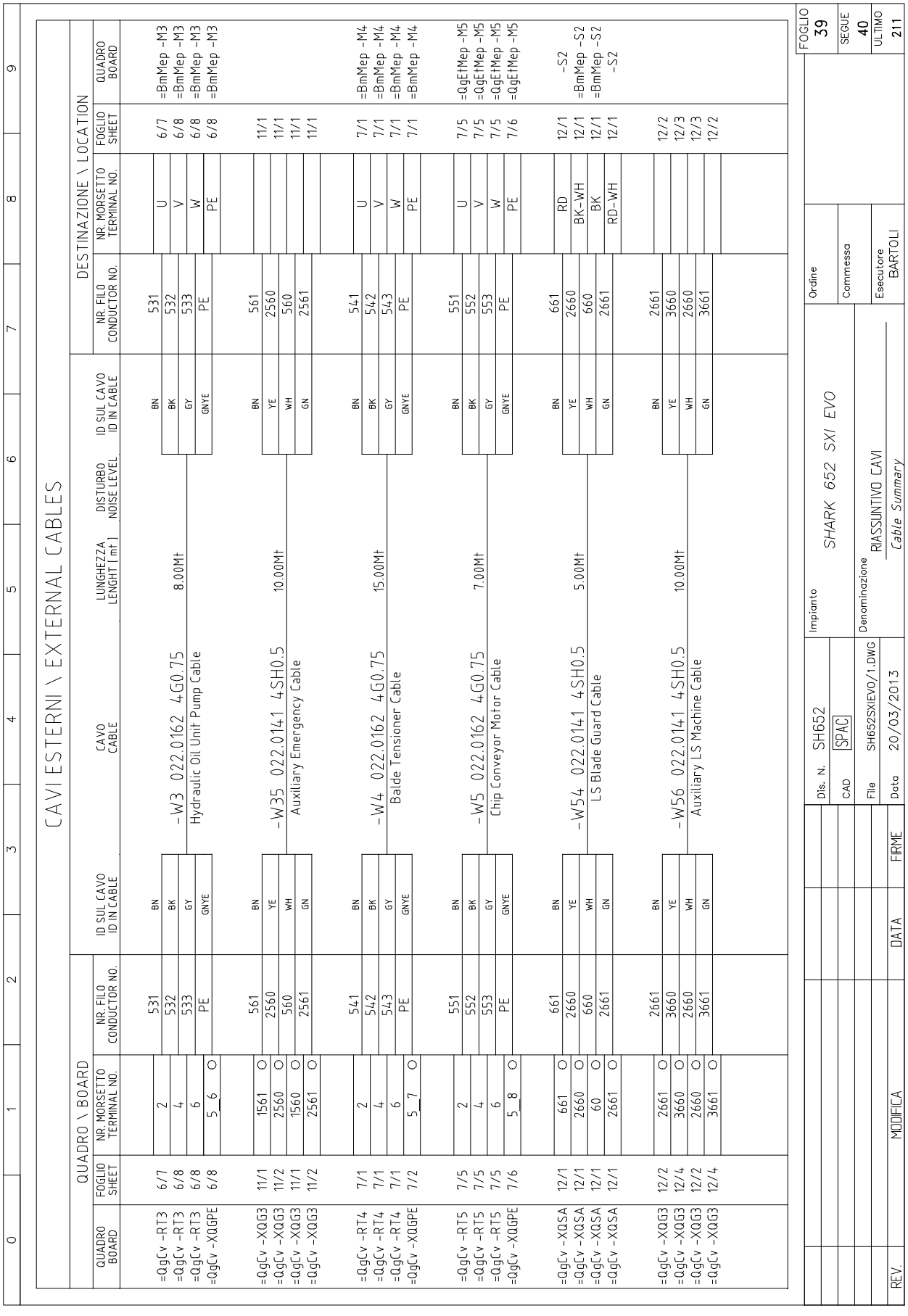
REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013

Impianto: SHARK 652 SXI EVO
Denominazione: RIASSUNTIVO CAVI / *Cable Summary*

Ordine
Commessa
Esecutore: BARTOLI

FOGLIO 38
SEGUE 39
ULTIMO 211



CAVI ESTERNI \ EXTERNAL CABLES

QUADRO \ BOARD				DESTINAZIONE \ LOCATION								
QUADRO BOARD	FOGLIO SHEET	NR. MORSETTO TERMINAL NO.	NR. FILO CONDUCTOR NO.	ID SUL CAVO ID IN CABLE	CAVO CABLE	LUNGHEZZA LENGHT [mt]	DISTURBO NOISE LEVEL	ID SUL CAVO ID IN CABLE	NR. FILO CONDUCTOR NO.	NR. MORSETTO TERMINAL NO.	FOGLIO SHEET	QUADRO BOARD
=QgCv -RT3	6/7	2	531	BN	-W3 022.0162 4G0.75	8.00Mt		BN	531	U	6/7	=BmMep -M3
=QgCv -RT3	6/8	4	532	BK				BK	532	V	6/8	=BmMep -M3
=QgCv -RT3	6/8	6	533	GY	Hydraulic Oil Unit Pump Cable			GY	533	W	6/8	=BmMep -M3
=QgCv -XQGPE	6/8	5_6 O	PE	GNYE				GNYE	PE	PE	6/8	=BmMep -M3
=QgCv -XQG3	11/1	1561 O	561	BN	-W35 022.0141 4SH0.5	10.00Mt		BN	561		11/1	
=QgCv -XQG3	11/2	2560 O	2560	YE				YE	2560		11/1	
=QgCv -XQG3	11/1	1560 O	560	WH	Auxiliary Emergency Cable			WH	560		11/1	
=QgCv -XQG3	11/2	2561 O	2561	GN				GN	2561		11/1	
=QgCv -RT4	7/1	2	541	BN	-W4 022.0162 4G0.75	15.00Mt		BN	541	U	7/1	=BmMep -M4
=QgCv -RT4	7/1	4	542	BK				BK	542	V	7/1	=BmMep -M4
=QgCv -RT4	7/1	6	543	GY	Balde Tensioner Cable			GY	543	W	7/1	=BmMep -M4
=QgCv -XQGPE	7/2	5_7 O	PE	GNYE				GNYE	PE	PE	7/1	=BmMep -M4
=QgCv -RT5	7/5	2	551	BN	-W5 022.0162 4G0.75	7.00Mt		BN	551	U	7/5	=QgEfMep -M5
=QgCv -RT5	7/5	4	552	BK				BK	552	V	7/5	=QgEfMep -M5
=QgCv -RT5	7/5	6	553	GY	Chip Conveyor Motor Cable			GY	553	W	7/5	=QgEfMep -M5
=QgCv -XQGPE	7/6	5_8 O	PE	GNYE				GNYE	PE	PE	7/6	=QgEfMep -M5
=QgCv -XQSA	12/1	661 O	661	BN	-W54 022.0141 4SH0.5	5.00Mt		BN	661	RD	12/1	-S2
=QgCv -XQSA	12/1	2660 O	2660	YE				YE	2660	BK-WH	12/1	=BmMep -S2
=QgCv -XQSA	12/1	60 O	660	WH	LS Blade Guard Cable			WH	660	BK	12/1	=BmMep -S2
=QgCv -XQSA	12/1	2661 O	2661	GN				GN	2661	RD-WH	12/1	-S2
=QgCv -XQG3	12/2	2661 O	2661	BN	-W56 022.0141 4SH0.5	10.00Mt		BN	2661		12/2	
=QgCv -XQG3	12/4	3660 O	3660	YE				YE	3660		12/3	
=QgCv -XQG3	12/2	2660 O	2660	WH	Auxiliary LS Machine Cable			WH	2660		12/3	
=QgCv -XQG3	12/4	3661 O	3661	GN				GN	3661		12/2	

REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013

Impianto
SHARK 652 SXI EVO
Denominazione
RIASSUNTIVO CAVI
Cable Summary

Ordine
Commessa
Esecutore BARTOLI

FOGLIO 39
SEGUE 40
ULTIMO 211

0	1	2	3	4	5	6	7	8	9

CAVI ESTERNI \ EXTERNAL CABLES

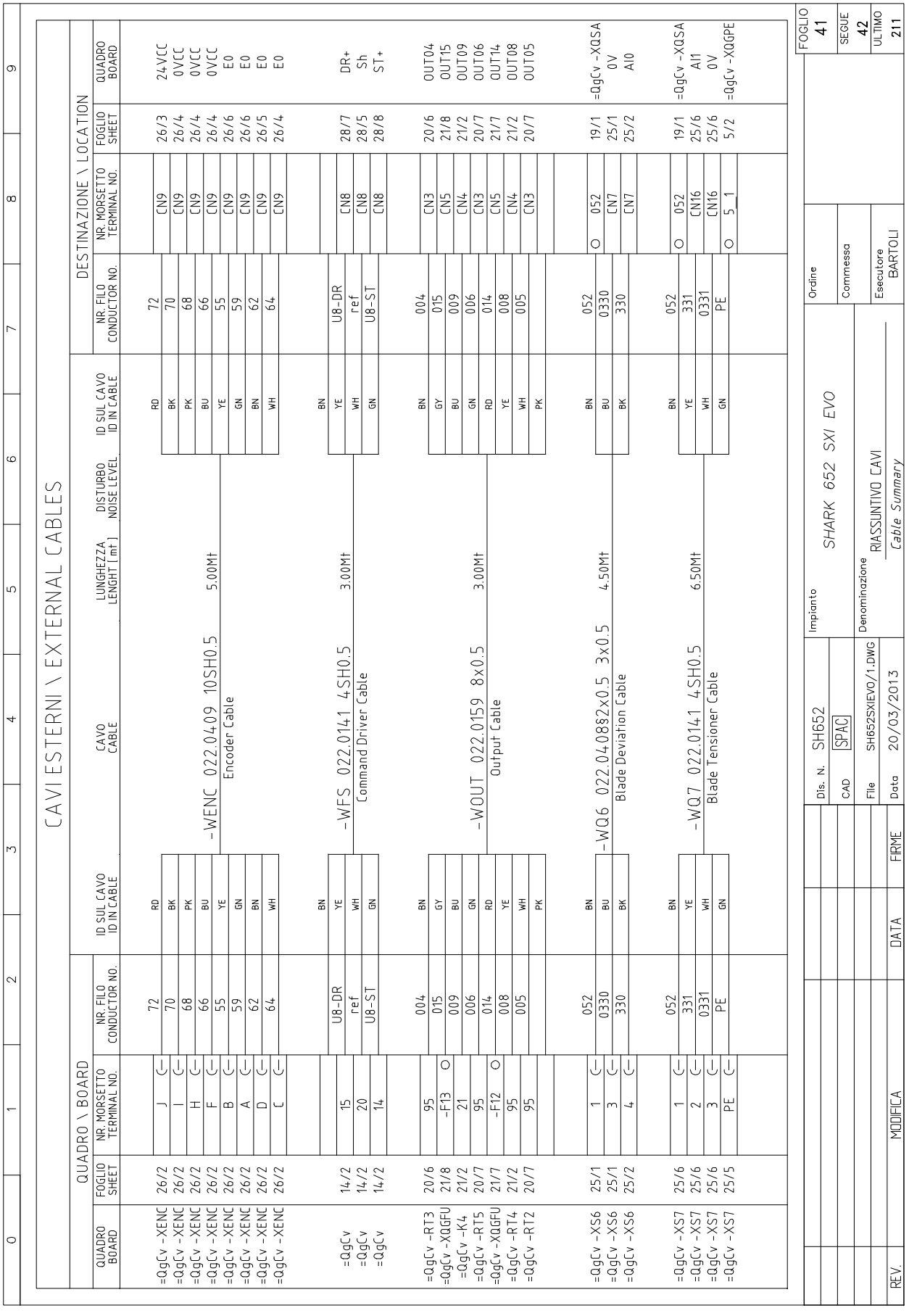
QUADRO \ BOARD								DESTINAZIONE \ LOCATION			
QUADRO BOARD	FOGLIO SHEET	NR. MORSETTO TERMINAL NO.	NR. FILO CONDUCTOR NO.	ID SUL CAVO ID IN CABLE	CAVO CABLE	LUNGHEZZA LENGHT [mt]	DISTURBO NOISE LEVEL	ID SUL CAVO ID IN CABLE	NR. FILO CONDUCTOR NO.	NR. MORSETTO TERMINAL NO.	FOGLIO SHEET	QUADRO BOARD
=QgCv -U8	9/3	A1	581	BN	-W8 022.0158 5G1.5	11.00Mt		BN	581	BIA/GIA	9/3	=BmMep -M8
=QgCv -U8	9/3	A1	582	BK	Swing Head Stepper Motor Cable			BK	582	GIALLO	9/3	=BmMep -M8
=QgCv -U8	9/3	B2	584	BU				BU	584	NERO	9/4	=BmMep -M8
=QgCv -U8	9/3	B1	583	GY				GY	583	ARANCIO	9/4	=BmMep -M8
=QgCv -XQGPE	9/3	5_14 ○	PE	GNYE				GNYE	PE		9/4	=BmMep -M8
=QgCv -AL	5/1	L1 ○	L1	BN	-WAL 022.0164 5G2.5	10.00		BN	L1	5	5/3	=QgCv -Q0
=QgCv -AL	5/1	L2 ○	L2	BK	Power Supply Cable			BK	L2	3	5/3	=QgCv -Q0
=QgCv -AL	5/1	L3 ○	L3	GY				GY	L3	1	5/3	=QgCv -Q0
=QgCv -AL	5/1	N ○	N	BU				BU	N	○ 1	5/2	=QgCv -AL
=QgCv -AL	5/2	PE ○	PE	GNYE				GNYE	PE	○ 5_1	5/2	=QgCv -XQGPE
=QgCv -XQSA	19/1	60 ○	60	WH	-WAUX 022.0137 4SH0.75	10.00Mt		WH	60		0/1	
				YE	Head Auxiliary Cable			YE				
24VDC	22/8	CN14	1272	GN				GN	1272	○ 1272	12/8	=QgCv -XQG2
=QgCv -XQSA	19/1	052 ○	052	BN				BN	052	○ 052_2	13/7	=QgCv -XQG2
=QgCv -XQSA	21/8	0015 ○	0015	BN	-WAUX1 022.0147 12SH0.5	10.00Mt		BN	0015	○ -F13	21/8	=QgCv -XQGFU
				GY	Head Auxiliary Cable			GY				
=QgCv -XQSA	21/7	0140 ○	0140	BU				BU	0140	0	21/7	=QgCv -T014
				GN				GN				
=QgCv -XQSA	21/7	0141 ○	0141	RD				RD	0141	+	21/7	=QgCv -T014
=QgCv -XQSA	12/1	2660 ○	2660	YE				YE	2660	○ 2660	12/2	=QgCv -XQG3
=QgCv -XQSA	12/1	60 ○	60	WH				WH	60	○ 60_2	10/3	=QgCv -XQG2
				PK				PK				
=QgCv -XQSA	21/8	60 ○	60	BK				BK	60	○ _1	21/8	=QgCv -XQG2
				VT				VT				
=QgCv -XQSA	12/1	2661 ○	2661	RD-BU				RD-BU	2661	○ 2661	12/2	=QgCv -XQG3
=QgCv -XQSA	12/1	661 ○	661	GY-PK				GY-PK	661	○ 161_1	10/3	=QgCv -XQG2

REV.	MODIFICA	DATA	FIRME

Dis. N.	SH652
CAD	SPAC
File	SH652SXIEVO/1.DWG
Data	20/03/2013

Impianto	SHARK 652 SXI EVO
Denominazione	RIASSUNTIVO CAVI *Cable Summary*
Ordine	
Commessa	
Esecutore	BARTOLI

FOGLIO	40
SEGUE	41
ULTIMO	211


CAVI ESTERNI \ EXTERNAL CABLES
QUADRO \ BOARD
DESTINAZIONE \ LOCATION
QUADRO BOARD
FOGLIO SHEET
NR. MORSETTO TERMINAL NO.
NR. FILO CONDUCTOR NO.
ID SUL CAVO ID IN CABLE
CAVO CABLE
LUNGHEZZA LENGHT [mt]
DISTURBO NOISE LEVEL
ID SUL CAVO ID IN CABLE
NR. FILO CONDUCTOR NO.
NR. MORSETTO TERMINAL NO.
FOGLIO SHEET
QUADRO BOARD
=QgCv -XENC 26/2 J 72 RD -WENC 022.0409 10SH0.5 5.00Mt RD 72 CN9 26/3 24VCC
=QgCv -XENC 26/2 I 70 BK Encoder Cable BK 70 CN9 26/4 0VCC
=QgCv -XENC 26/2 H 68 PK PK 68 CN9 26/4 0VCC
=QgCv -XENC 26/2 F 66 BU BU 66 CN9 26/4 0VCC
=QgCv -XENC 26/2 B 55 YE YE 55 CN9 26/6 E0
=QgCv -XENC 26/2 A 59 GN GN 59 CN9 26/6 E0
=QgCv -XENC 26/2 D 62 BN BN 62 CN9 26/5 E0
=QgCv -XENC 26/2 C 64 WH WH 64 CN9 26/4 E0
=QgCv 14/2 15 U8-DR BN -WFS 022.0141 4SH0.5 3.00Mt BN YE U8-DR CN8 28/7 DR+
=QgCv 14/2 20 ref YE Command Driver Cable WH ref CN8 28/5 Sh
=QgCv 14/2 14 U8-ST WH GN U8-ST CN8 28/8 ST+
=QgCv -RT3 20/6 95 004 BN -WOUT 022.0159 8x0.5 3.00Mt BN 004 CN3 20/6 OUT04
=QgCv -XQGFU 21/8 -F13 O 015 GY GY 015 CN5 21/8 OUT15
=QgCv -K4 21/2 21 009 BU Output Cable BU 009 CN4 21/2 OUT09
=QgCv -RT5 20/7 95 006 GN GN 006 CN3 20/7 OUT06
=QgCv -XQGFU 21/7 -F12 O 014 RD RD 014 CN5 21/7 OUT14
=QgCv -RT4 21/2 95 008 YE YE 008 CN4 21/2 OUT08
=QgCv -RT2 20/7 95 005 WH WH 005 CN3 20/7 OUT05
PK PK
=QgCv -XS6 25/1 1 052 BN -WQ6 022.0440882x0.5 3x0.5 4.50Mt BN 052 O 052 19/1 =QgCv -XQSA
=QgCv -XS6 25/1 3 0330 BU BU 0330 CN7 25/1 0V
=QgCv -XS6 25/2 4 330 BK Blade Deviation Cable BK 330 CN7 25/2 AI0
=QgCv -XS7 25/6 1 052 BN -WQ7 022.0141 4SH0.5 6.50Mt BN 052 O 052 19/1 =QgCv -XQSA
=QgCv -XS7 25/6 2 331 YE YE 331 CN16 25/6 AI1
=QgCv -XS7 25/6 3 0331 WH Blade Tensioner Cable WH 0331 CN16 25/6 0V
=QgCv -XS7 25/5 PE PE GN GN PE O 5_1 5/2 =QgCv -XQGPE
REV. MODIFICA DATA FIRME
Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013
Impianto SHARK 652 SXI EVO
Denominazione RIASSUNTIVO CAVI
Cable Summary
Ordine
Commessa
Esecutore BARTOLI
FOGLIO 41
SEGUE 42
ULTIMO 211

0	1	2	3	4	5	6	7	8	9

CAVI ESTERNI \ EXTERNAL CABLES

QUADRO \ BOARD								DESTINAZIONE \ LOCATION			
QUADRO BOARD	FOGLIO SHEET	NR. MORSETTO TERMINAL NO.	NR. FILO CONDUCTOR NO.	ID SUL CAVO ID IN CABLE	CAVO CABLE	LUNGHEZZA LENGHT [mt]	DISTURBO NOISE LEVEL	ID SUL CAVO ID IN CABLE	NR. FILO CONDUCTOR NO.	NR. MORSETTO TERMINAL NO.	FOGLIO SHEET	QUADRO BOARD
			1320	BN				BN	1320			
=QgCv -XR0	24/2	1 ⊂—	320	YE	-WR0 022.0141 4SH0.5	11.00Mt		YE	320	CN11	24/1	VRf
=QgCv -XR0	24/2	2 ⊂—	0320	WH	Position Head Cable			WH	0320	CN11	24/3	AI0
=QgCv -XR0	24/2	3 ⊂—	sh	GN				GN	sh	CN11	24/2	0V
=QgCv -XR0	24/3	4 ⊂—								CN11	24/4	Sh
			312	WH				WH	312			
=SaCv -XSA1	28/2	312 ○	313	YE	-W9 022.0137 4SH0.75	13.00Mt		YE	313	CN6	28/3	A-
=SaCv -XSA1	28/1	313 ○	314	GN	Stepper Head Cable			GN	314	CN6	28/2	B-
=SaCv -XSA1	28/1	314 ○	311	BN				BN	311	CN6	28/1	B+
=SaCv -XSA1	28/2	311 ○								CN6	28/3	A+
			72	RD				RD	72			
=QgCv -XENC	26/2	J ⊂—	70	BK				BK	70	CN9	26/3	24VCC
=QgCv -XENC	26/2	I ⊂—	68	PK				PK	68	CN9	26/4	0VCC
=QgCv -XENC	26/2	H ⊂—	66	BU	-WENC1 022.0402 10SH0.5	10.00Mt		BU	66	CN9	26/4	0VCC
=QgCv -XENC	26/2	F ⊂—	55	YE	Encoder Cable			YE	55	CN9	26/4	0VCC
=QgCv -XENC	26/2	B ⊂—	59	GN				GN	59	CN9	26/6	E0
=QgCv -XENC	26/2	A ⊂—	62	BN				BN	62	CN9	26/6	E0
=QgCv -XENC	26/2	D ⊂—	64	WH				WH	64	CN9	26/5	E0
=QgCv -XENC	26/2	C ⊂—								CN9	26/4	E0

REV.	MODIFICA	DATA	FIRME

Dis. N.	SH652	Impianto	SHARK 652 SXI EVO
CAD	SPAC		
File	SH652SXIEVO/1.DWG	Denominazione	RIASSUNTIVO CAVI
Data	20/03/2013		*Cable Summary*

Ordine	
Commessa	
Esecutore	BARTOLI

FOGLIO	42
SEGUE	43
ULTIMO	211

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NOME/ITEM	TIPO/TYPE	DESCRIZIONE IT (DB)	DESCRIZIONE EN (DB)	CODICE INTERNO (DB)	Q.TA/Q.TY	FG/SH	QUADRO/BOARD
'-K41	V.d.Id.	Vedi distinta idraulica	See hydraulic list	V.d.Id.	1	22	'=BmMep
'-K43	V.d.Id.	Vedi distinta idraulica	See hydraulic list	V.d.Id.	1	22	'=BmMep
'-K45	V.d.Id.	Vedi distinta idraulica	See hydraulic list	V.d.Id.	1	22	'=BmMep
'-K47	V.d.Id.	Vedi distinta idraulica	See hydraulic list	V.d.Id.	1	22	'=BmMep
'-K49	V.d.Id.	Vedi distinta idraulica	See hydraulic list	V.d.Id.	1	23	'=BmMep
'-K50	V.d.Id.	Vedi distinta idraulica	See hydraulic list	V.d.Id.	1	23	'=BmMep
'-K50A	V.d.Id.	Vedi distinta idraulica	See hydraulic list	V.d.Id.	1	23	'=BmMep
'-K010	V.d.Id.	Vedi distinta idraulica	See hydraulic list	V.d.Id.	1	21	'=BmMep
'-K011	V.d.Id.	Vedi distinta idraulica	See hydraulic list	V.d.Id.	1	21	'=BmMep
'-M1	'019.2015	Motore KW 7,5 B14 GR132S 4P V.230/400.50 275/480.60 1450/1740giri	Motor KW 7,5 B14 GR132S	'019.2015	1	6	'=BmMep
'-M2	'028.0260	Elettropompa V.220-254/380-440.50-60 HZ 150W	Electropump V.220-254/380-440.50-60 HZ 150W	SPV33 o 4COA6-12HP1	1	6	'=BmMep
'-M2A	'028.0260	Elettropompa V.220-254/380-440.50-60 HZ 150W	Electropump V.220-254/380-440.50-60 HZ 150W	SPV33 o 4COA6-12HP1	1	6	'=BmMep
'-M3	'019.4008	Motore KW0,74 1400Rpm	Motor KW0,74 1400Rpm	C80 B14 4P V.230 400.50	1	6	'=BmMep
'-M8	'019.3407	Motore stepper 12Nmt 6A 1,8°	Stepper motor 12Nmt 6A 1,8°	FL886TH156-5708AL FULLING	1	9	'=BmMep
'-M9	'019.3555	Motore stepper 1,9Nmt 2,8A 1,8°	Stepper motor 1,9Nmt 2,8A 1,8°	FL57STH76-2804-A-12 FULLING	1	28	'=BmMep
'-SQ6	'022.0537	Sensore induttivo uscita 0-16mA / 1-2,5mm con M8	Inductive Sensor 0-16mA / 1-2,5mm with conn. M8	DCALX/4919B BDC	1	25	'=DlMep
'-XS6	'022.0369	Connettore 3 poli per tensionatore elettronico		'022.0369	1		'=DlMep
'-S07	'022.0542	Finecorsa a pulsante 1NO+1NC conn. M12 laterale	Limit Switch with button 1NO+1NC	NB B110AA-DMK PIZZATO	1	17	'=EtMep
'-XS07M	022.0282 + 022.0267	Connettore volante ILME (CK03VS pioli + CKM04) 5 poli per evacuatore trucioli		022.0282 + 022.0267	1		'=EtMep
XMET	022.0282 + 022.0261	Connettore volante ILME (CK03VS pioli + CKM03) 4 poli per evacuatore trucioli		022.0282 + 022.0261	1		'=EtMep
'-OLM	'090.1601	Gruppo lubrificazione minimale SHARK	Spray mist oil system for Shark		1	30	'=LmMep
'-OPE	'090.0672	Comando supplementare a pedaliera per Shark	Foot-pedal device for Shark		1	30	'=PeMep
'-CC1	'022.0308	Terminale a occhiello (Rosso)	Wire Terminal Connection Red	Ø5 da 1,5mmq	6	32	'=QgCv
'-CC2	'022.0296	Terminale a occhiello (Blu)	Wire Terminal Connection Blue	Ø5 da 2,5mmq	2	32	'=QgCv
'-CN1	'022.0903	Canalina portacavi in plastica	Cable holding plastic channel	40x60	3.00	32	'=QgCv
'-CN2	'022.0921	Canalina portacavi in plastica	Cable holding plastic channel	25x60	0.70	32	'=QgCv
'-CR1	'022.0185	Guaina rivestita treccia acciaio Øi16	Cable Screening Braid	FTR16 RTA	3.00	33	'=QgCv
'-CR2	'022.2606	Guaina rivestita treccia acciaio Øi40	Cable Screening Braid	FTR40 RTA	3.00	33	'=QgCv
'-CR3	'022.2606	Guaina rivestita treccia acciaio Øi40	Cable Screening Braid	FTR40 RTA	3.00	33	'=QgCv
'-CU1	'022.2825	Controllore Mep50C		16DI/O, 5AI, 2AO, 4Enc Inc, 1Step M, 1Step F, 1 CanOpen	1	15	'=QgCv
'-EM1	'022.1245	Fungo emergenza	Emergency push button	M22-PVT cod.263467	1	11	'=QgCv
'-EM1	'022.0911	Portacontatti per pulsantiera		M22-A cod. 216374	1	11	'=QgCv
'-EM1	'022.0936	Contatto pulsantiera NC	Normally close contact	M22-K01 cod. 216678	1	11	'=QgCv
'-EM1	'022.0936	Contatto pulsantiera NC	Normally close contact	M22-K01 cod. 216678	1	11	'=QgCv
'-ENC1	'022.1322	Encoder da pannello Mep50			1	27	'=QgCv
'-ENC1	'010.3744	Manopola Alluminio Nero e Logo Mep	Black Knob with Mep Icon	Ø38x23mm - Albero Ø6	1	27	'=QgCv
'-ENC2	'022.1322	Encoder da pannello Mep50			1	27	'=QgCv
'-ENC2	'010.3744	Manopola Alluminio Nero e Logo Mep	Black Knob with Mep Icon	Ø38x23mm - Albero Ø6	1	27	'=QgCv

REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013

Impianto: SHARK 652 SXI EVO
Denominazione: DISTINTA MATERIALI / Material List
Ordine
Commessa
Esecutore: BARTOLI

FOGLIO 43
SEGUE 44
ULTIMO 211

0	1	2	3	4	5	6	7	8	9

NOME/ITEM	TIPO/TYPE	DESCRIZIONE IT (DB)	DESCRIZIONE EN (DB)	CODICE INTERNO (DB)	Q.TA/Q.TY	FG/SH	QUADRO/BOARD
'-EU1	'022.3706	Scheda espansione Remota Mep50 16DI, 16DO, 2AI, 1AO	Exspansion Remote Board Mep50	Basiocan5 - Isac	1	16	'=QgCv
'-FL1	'022.0171	Cordicella unipolare 0,50mmq	Single wire 0.5mmq		5.00	32	'=QgCv
'-FL2	'022.0172	Cordicella unipolare 1,50mmq	Single wire 1,50mmq		21.50	32	'=QgCv
'-FL3	'022.0263	Cordicella unipolare 2,50mmq	Single wire 2,50mmq		7.50	32	'=QgCv
'-FS1	'019.5353	Fascetta in plastica 140x3,5	Plastic clamp 140x3,5	32031 Legrand	40	32	'=QgCv
'-FT1	'022.2955	Filtro EMC 400V 3x28A	Filter EMC 400V 3x28A	FIN1700.025M FINMOTOR	1	5	'=QgCv
'-GC1	'022.0900	Barra omega	Omega guide		1.20	32	'=QgCv
'-GD1	'022.0908	Alimentatore Switching Vi 230-400-500VAC Vu 24Vdc 14A	Switching power supply Vi 240-400-500VAC Vu 24Vcc 14A	FLEX28024B AdelSystem	1	8	'=QgCv
'-GH3	'022.2722	Ghiera in ottone PG42	Metal nut PG42	86629 RTA	1	33	'=QgCv
'-GH4	'022.2722	Ghiera in ottone PG42	Metal nut PG42	86629 RTA	1	33	'=QgCv
'-GH5	'022.2722	Ghiera in ottone PG42	Metal nut PG42	86629 RTA	1	33	'=QgCv
'-GH6	'022.2722	Ghiera in ottone PG42	Metal nut PG42	86629 RTA	1	33	'=QgCv
'-GH11	'022.2721	Dado PG21	Nut PG21		1	34	'=QgCv
'-GH12	'022.2721	Dado PG21	Nut PG21		1	34	'=QgCv
'-GH13	'022.2701	Dado PG11	Nut PG11	BL03	1	34	'=QgCv
'-GH14	'022.2701	Dado PG11	Nut PG11	BL03	1	34	'=QgCv
'-GU1	'022.0604	Guarnizione aerstop adesiva	Control panel gasket		3.00	32	'=QgCv
'-GU2	'025.0696	Guarnizione a "C"	Control panel gasket	Guarnizione EPDM	4.50	32	'=QgCv
'-K0	'022.0555	Bobina di minima		U-PKZ0 V.400.50 Moeller	1	5	'=QgCv
'-K2	'022.3012	Contattore 3KW NO (24 V Dc)	Contactor 3KW NO (24 V Dc)	DILM7-10 cod.276565 Moeller	1	20	'=QgCv
'-K3	'022.3012	Contattore 3KW NO (24 V Dc)	Contactor 3KW NO (24 V Dc)	DILM7-10 cod.276565 Moeller	1	20	'=QgCv
'-K4	'022.3011	Contattore 3KW - NC (24 V Dc)	Contactor 3KW NC (24 V Dc)	DILM7-01 cod.276600 Moeller	1	21	'=QgCv
'-K4R	'022.3011	Contattore 3KW - NC (24 V Dc)	Contactor 3KW NC (24 V Dc)	DILM7-01 cod.276600 Moeller	1	21	'=QgCv
'-K4R	'022.3924	Kit ponti potenza per teleinvertitore	Kit for contactor reversing	DILM12-XLR	1	21	'=QgCv
'-K5	'022.3011	Contattore 3KW - NC (24 V Dc)	Contactor 3KW NC (24 V Dc)	DILM7-01 cod.276600 Moeller	1	20	'=QgCv
'-K5	'022.3924	Kit ponti potenza per teleinvertitore	Kit for contactor reversing	DILM12-XLR	1	20	'=QgCv
'-K5R	'022.3011	Contattore 3KW - NC (24 V Dc)	Contactor 3KW NC (24 V Dc)	DILM7-01 cod.276600 Moeller	1	20	'=QgCv
'-KS1	'022.3012	Contattore 3KW NO (24 V Dc)	Contactor 3KW NO (24 V Dc)	DILM7-10 cod.276565 Moeller	1	11	'=QgCv
'-KS1	'022.0938	Contatto ausiliario 2 NC per contattore DILM9-10	Auxiliary contact for DILM9-10	DILA-XHI02 cod.276420 Moeller	1	11	'=QgCv
'-KS2	'022.3014	Contattore 11KW (24 V Dc)	Contactor 3KW (24 V Dc)	DILM25-10 (RDC24) cod.277146 Moeller	1	12	'=QgCv
'-KS2	'022.0938	Contatto ausiliario 2 NC per contattore DILM9-10	Auxiliary contact for DILM9-10	DILA-XHI02 cod.276420 Moeller	1	12	'=QgCv
'-MV1	'019.5220	Ventola raffreddamento 120x120 24Vdc	Fan cooling 120x120 24Vdc	V108MBW24DC AlfaPlastic	1	10	'=QgCv
'-MV1	'019.5117	Griglia per ventola 120x120	Cover for fan cooler 120x120	ALFA GM120	1	10	'=QgCv
'-MV1	'034.0431	Base per ventola 120x120 230V	Base for fan cooling 120x120	A12-7032	1	10	'=QgCv
'-MV1	'028.0174	Filtro per ventola 120x120	Fan filter 120x120	M12R	1	10	'=QgCv
'-MV1	'034.0414	Coperchio alettatore per ventola 120x120	Fan filter 120x120	M12C-7032	1	10	'=QgCv
'-NM1	'022.0290	Etichetta segnafilo	Cable maker and wire		1000	32	'=QgCv
'-NM2	'022.0290	Etichetta segnafilo	Cable maker and wire		41	32	'=QgCv

REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013

Impianto: SHARK 652 SXI EVO
Denominazione: DISTINTA MATERIALI
Material List

Ordine
Commessa
Esecutore: BARTOLI

FOGLIO 44
SEGUE 45
ULTIMO 211

0	1	2	3	4	5	6	7	8	9

NOME/ITEM	TIPO/TYPE	DESCRIZIONE IT (DB)	DESCRIZIONE EN (DB)	CODICE INTERNO (DB)	Q.TA/Q.TY	FG/SH	QUADRO/BOARD
'-PC13	'022.0237	Pressacavo PG11	Cable Gland	BS03	1	34	'=QgCv
'-PC14	'022.0237	Pressacavo PG11	Cable Gland	BS03	1	34	'=QgCv
'-PT1	'022.0311	Terminale a puntale da (Bianco)	Wire Terminal Connection White	0,5mmq DZ5CE005	250	32	'=QgCv
'-PT2	'022.0312	Terminale a puntale da (Nero)	Wire Terminal Connection Black	1,5mmq DZ5CE015	70	32	'=QgCv
'-PT3	'022.0313	Terminale a puntale da (Grigio)	Wire Terminal Connection Grey	2,5mmq DZ5CE025	50	32	'=QgCv
'-Q0	'022.0124	Custodia isolante con manopola rossa	Housing with red handle	E-PKZ0-GR - Moeller	1	5	'=QgCv
'-Q0	'022.0125	Blocco porta luchettabile	Lockable block	SBV-PKZ0-E cod.35127 - Moeller	1	5	'=QgCv
'-Q0	'022.0126	Barretta per neutro	Lockable device	N-PKZ0 cod. 82160 - Moeller	1	5	'=QgCv
'-Q0	'022.1292	Magnetotermico 20-25A	Magneto-termal overload 20-25A	PKZM0-25 cod. 46989 Moeller	1	5	'=QgCv
'-QG1	'016.0739	Quadro elettrico SH 652 Sxi Evo H	Electric panel SH 652 Sxi Evo H	'016.0739	1	32	'=QgCv
'-RE1	'022.0221	Raccordo per guaina metallica con ghiera PG13,5/Ø16	Joint for Cable Screening Braid with Nut	PG13,5/Ø16	1	33	'=QgCv
'-RE2	'022.0221	Raccordo per guaina metallica con ghiera PG13,5/Ø16	Joint for Cable Screening Braid with Nut	PG13,5/Ø16	1	33	'=QgCv
'-RE3	'022.2753	Raccordo per guaina metallica PG42/Ø40	Connector for metal covering PG42/Ø40	82033 RTA	1	33	'=QgCv
'-RE4	'022.2753	Raccordo per guaina metallica PG42/Ø40	Connector for metal covering PG42/Ø40	82033 RTA	1	33	'=QgCv
'-RE5	'022.2753	Raccordo per guaina metallica PG42/Ø40	Connector for metal covering PG42/Ø40	82033 RTA	1	33	'=QgCv
'-RE6	'022.2753	Raccordo per guaina metallica PG42/Ø40	Connector for metal covering PG42/Ø40	82033 RTA	1	33	'=QgCv
'-RE11	'022.0213	Raccordo rapido dritto PG21/Ø29		SEM PG21/Ø29	1	34	'=QgCv
'-RE12	'022.0213	Raccordo rapido dritto PG21/Ø29		SEM PG21/Ø29	1	34	'=QgCv
'-RS1	'022.3811	Rele sicurezza 4NO, 1NC cat.3	Safety relay 4NO, 1NC cat.3	CS AR-24M024 PIZZATO	1	11	'=QgCv
'-RS2	'022.3811	Rele sicurezza 4NO, 1NC cat.3	Safety relay 4NO, 1NC cat.3	CS AR-24M024 PIZZATO	1	12	'=QgCv
'-RT2	'022.3820	Rele termico 1-1,6A	Termal overload 1-1,6A	ZB12-1,6A cod. 278436Moeller	1	6	'=QgCv
'-RT3	'022.3813	Rele termico 4-6A	Termal overload 4-6A	ZB12-6A cod. 278439 Moeller	1	6	'=QgCv
'-RT4	'022.3820	Rele termico 1-1,6A	Termal overload 1-1,6A	ZB12-1,6A cod. 278436Moeller	1	7	'=QgCv
'-RT5	'022.3820	Rele termico 1-1,6A	Termal overload 1-1,6A	ZB12-1,6A cod. 278436Moeller	1	7	'=QgCv
'-S48	'022.0037	Finecorsa di sicurezza con chiave 1NO + 1NC	Safety Switch with key 1NO + 1NC	LS S11 ZB - MOELLER	1	5	'=QgCv
'-SA09	'022.1405	Pulsante nero	Black push button	M22-D-S cod. 216590	1	18	'=QgCv
'-SA09	'022.0911	Portacontatti per pulsantiera		M22-A cod. 216374	1	18	'=QgCv
'-SA09	'022.0937	Contatto pulsantiera NA		M22-K10 cod. 216376 Moeller	1	18	'=QgCv
'-SD1	'016.2256	Scatola derivazione metallica	Metal Junction Box	380x280 P:150	1	34	'=QgCv
'-SF1	'047.0182	Sacchetto portafusibili	Printed envelopes		1	32	'=QgCv
'-SJ12	'022.3920	Joystick 4 posizioni instabile con sblocco	Joystic 4 positions unstable with unlocking	MSJ12-60B cod. EL770 4 - ABB	1	18	'=QgCv
'-SJ12	'022.0932	Contatto pulsantiera NA		MCB-10 cod. E0570 5 - ABB	1	18	'=QgCv
'-SJ12	'022.0932	Contatto pulsantiera NA		MCB-10 cod. E0570 5 - ABB	1	18	'=QgCv
'-SJ12	'022.0932	Contatto pulsantiera NA		MCB-10 cod. E0570 5 - ABB	1	18	'=QgCv
'-SJ12	'022.0932	Contatto pulsantiera NA		MCB-10 cod. E0570 5 - ABB	1	18	'=QgCv
'-SR08	'022.1408	Pulsante blu	Blue push button	M22-D-B cod. 216600	1	11	'=QgCv
'-SR08	'022.0911	Portacontatti per pulsantiera		M22-A cod. 216374	1	11	'=QgCv
'-SR08	'022.0937	Contatto pulsantiera NA		M22-K10 cod. 216376 Moeller	1	11	'=QgCv

REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013

Impianto: SHARK 652 SXI EVO
Denominazione: DISTINTA MATERIALI / *Material List*
Ordine
Commessa
Esecutore: BARTOLI

FOGLIO 45
SEGUE 46
ULTIMO 211

0	1	2	3	4	5	6	7	8	9

NOME/ITEM	TIPO/TYPE	DESCRIZIONE IT (DB)	DESCRIZIONE EN (DB)	CODICE INTERNO (DB)	Q.TA/Q.TY	FG/SH	QUADRO/BOARD
'-SR08	'022.0937	Contatto pulsantiera NA		M22-K10 cod. 216376 Moeller	1	11	'=QgCv
'-SR08	'022.0937	Contatto pulsantiera NA		M22-K10 cod. 216376 Moeller	1	11	'=QgCv
'-T014	'022.0909	Alimentatore Switching Vi 4-28Vac/dc Vu 1,2-24Vdc 2A	Switching power supply Vi 4-28Vac/dc Vu 1,2-24Vdc 2A	PFALVP3 AdelSystem	1	21	'=QgCv
'-TSF1	'031.2622	Targa sostituzione fusibili	Replace fuse adhesive sign		1	32	'=QgCv
'-U1	'022.0739	Inverter V380-480.50.60 KW11 e modbus	Inverter V380-480.50.60 KW11	SK 2403 ControlTechniques	1	6	'=QgCv
'-X010	'022.0429	Connettore EV idra. in DC con varistore (V1401)	Connector for solenoid valve DC	2 poli + PE - Din 43650-A int. 18mm	1	21	'=QgCv
'-X011	'022.0429	Connettore EV idra. in DC con varistore (V1401)	Connector for solenoid valve DC	2 poli + PE - Din 43650-A int. 18mm	1	21	'=QgCv
'-XK41	'022.0429	Connettore EV idra. in DC con varistore (V1401)	Connector for solenoid valve DC	2 poli + PE - Din 43650-A int. 18mm	1	22	'=QgCv
'-XK42	'022.0429	Connettore EV idra. in DC con varistore (V1401)	Connector for solenoid valve DC	2 poli + PE - Din 43650-A int. 18mm	1	22	'=QgCv
'-XK43	'022.0429	Connettore EV idra. in DC con varistore (V1401)	Connector for solenoid valve DC	2 poli + PE - Din 43650-A int. 18mm	1	22	'=QgCv
'-XK44	'022.0429	Connettore EV idra. in DC con varistore (V1401)	Connector for solenoid valve DC	2 poli + PE - Din 43650-A int. 18mm	1	22	'=QgCv
'-XK45	'022.0429	Connettore EV idra. in DC con varistore (V1401)	Connector for solenoid valve DC	2 poli + PE - Din 43650-A int. 18mm	1	22	'=QgCv
'-XK46	'022.0429	Connettore EV idra. in DC con varistore (V1401)	Connector for solenoid valve DC	2 poli + PE - Din 43650-A int. 18mm	1	22	'=QgCv
'-XK47	'022.0429	Connettore EV idra. in DC con varistore (V1401)	Connector for solenoid valve DC	2 poli + PE - Din 43650-A int. 18mm	1	22	'=QgCv
'-XK48	'022.0429	Connettore EV idra. in DC con varistore (V1401)	Connector for solenoid valve DC	2 poli + PE - Din 43650-A int. 18mm	1	23	'=QgCv
'-XK49	'022.0429	Connettore EV idra. in DC con varistore (V1401)	Connector for solenoid valve DC	2 poli + PE - Din 43650-A int. 18mm	1	23	'=QgCv
'-XK50	'022.0429	Connettore EV idra. in DC con varistore (V1401)	Connector for solenoid valve DC	2 poli + PE - Din 43650-A int. 18mm	1	23	'=QgCv
'-XK50A	'022.0429	Connettore EV idra. in DC con varistore (V1401)	Connector for solenoid valve DC	2 poli + PE - Din 43650-A int. 18mm	1	23	'=QgCv
'-XENC	'022.0409	Cavo per encoder Lika EC-M10F-LK-A8-5		'022.0409	1		'=QgCv
'-XFET	022.0281 + 022.0262	Connettore fisso ILME (CK03I + CKF03) 4 poli per evacuatore trucioli		022.0281 + 022.0262	1		'=QgCv
'-XFT143	'022.0376	Connettore F303N5000 per prossimity		'022.0376	1		'=QgCv
'-XQG1	'022.2258	Morsetto da 2.5 mm singolo per 4 fili a molla	Quadruple pole spring terminal 2,5mmq	56.703.5155.0	5		'=QgCv
'-XQG2	'022.2258	Morsetto da 2.5 mm singolo per 4 fili a molla	Quadruple pole spring terminal 2,5mmq	56.703.5155.0	9		'=QgCv
'-XQG3	'022.2256	Morsetto da 2.5 mm singolo per 2 fili a molla	Single pole spring terminal 2,5mmq	56.703.0055.0	8		'=QgCv
'-XQG4	'022.2256	Morsetto da 2.5 mm singolo per 2 fili a molla	Single pole spring terminal 2,5mmq	56.703.0055.0	6		'=QgCv
'-XQGFU	'022.2253	Portafusibile 1 x (10,3x38) - 690V 32A	Fuse holding terminal 1 x (10,3x38) 690V 32A	2031038 BCH 32A ItalWeber	5		'=QgCv
'-XQGFU	'022.2240	Portafusibile 2 x (10,3x38) - 690V 32A	Fuse holding terminal 2 x (10,3x38) 690V 32A	2032038 BCH 32A ItalWeber	2		'=QgCv
'-XQGFU	'022.2239	Portafusibile 3 x (10,3x38) - 690V 32A	Fuse holding terminal 3 x (10,3x38) 690V 32A	2033038 BCH 32A ItalWeber	1		'=QgCv
'-XQGFU	'022.1162	Fusibile 10,3x38 AM (ritardato) 4A	Fuse 10,3x38 AM	500V 4AMP	12		'=QgCv
'-XQGFU	'022.1159	Fusibile 10,3.x38 AM (ritardato) 10A	Fuse 10,3x38 AM	500V 10AMP	6		'=QgCv
'-XQGFU	'022.1163	Fusibile 10,3x38 AM (ritardato) 2A	Fuse 10,3x38 AM	500V 2AMP	6		'=QgCv
'-XQGPE	'022.2321	Barra da 15x15mm con 10 fori 6mm			1		'=QgCv
'-XQGPE	'022.2247	Morsetto PE da 2.5 mm singolo per 4 fili a molla	Quadruple pole PE spring terminal 2,5mmq	WK4/D2/2 SLU	5		'=QgCv
'-XQGPE	'022.0377	Morsetto PE da 2.5 mm singolo per 2 fili a molla	Single pole PE spring terminal 2,5mmq	WK4 SLU	3		'=QgCv
'-XQSA	'022.2256	Morsetto da 2.5 mm singolo per 2 fili a molla	Single pole spring terminal 2,5mmq	56.703.0055.0	7		'=QgCv
'-XQSA	'022.2258	Morsetto da 2.5 mm singolo per 4 fili a molla	Quadruple pole spring terminal 2,5mmq	56.703.5155.0	6		'=QgCv
'-XS0	'022.0376	Connettore F303N5000 per prossimity		'022.0376	1		'=QgCv
'-XS07F	022.0281 + 022.0268	Connettore fisso ILME (CK03I + CKF04) 5 poli per evacuatore trucioli		022.0281 + 022.0268	1		'=QgCv

REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013

Impianto: SHARK 652 SXI EVO
Denominazione: DISTINTA MATERIALI / Material List
Ordine
Commessa
Esecutore: BARTOLI

FOGLIO 46
SEGUE 47
ULTIMO 211

0	1	2	3	4	5	6	7	8	9

NOME/ITEM	TIPO/TYPE	DESCRIZIONE IT (DB)	DESCRIZIONE EN (DB)	CODICE INTERNO (DB)	Q.TA/Q.TY	FG/SH	QUADRO/BOARD
'-XS144	'022.0376	Connettore F303N5000 per prossimity		'022.0376	1		'=QgCv
'-XTL	'022.0376	Connettore F303N5000 per prossimity		'022.0376	1		'=QgCv
'-CR4	'022.2604	Guaina POLIFLEX Ø29	Poliflex covering Ø29	NW 23-1200232	2.20	34	'=QgMep
'-CR5	'022.2604	Guaina POLIFLEX Ø29	Poliflex covering Ø29	NW 23-1200232	2.20	34	'=QgMep
'-CR15	'022.2601	Guaina POLIFLEX Ø16	Poliflex Covering Ø16	NW 12-1200127	1.30	34	'=QgMep
'-ENC0	'022.1316	Encoder assoluto 14 bit monogiro servoflangia IP54	Absolute encoder 14Bit single-turn IP54	AS5814/GA-6-ER - LIKA	1	26	'=QgMep
'-FT143	'022.0518	Fotocellula laser con conn. M12	Laser Light with connector M12	XD100PA3 WENGLOR	1	19	'=QgMep
'-FT143	'034.1633	Catarifrangente per fotocellula laser port. 0,5-10mt RE6040BA WENGLOR		'034.1633	1	19	'=QgMep
'-GH7	'022.2721	Dado PG21	Nut PG21		1	34	'=QgMep
'-GH8	'022.2721	Dado PG21	Nut PG21		1	34	'=QgMep
'-GH9	'022.2721	Dado PG21	Nut PG21		1	34	'=QgMep
'-GH10	'022.2721	Dado PG21	Nut PG21		1	34	'=QgMep
'-HL40	'022.3251	Lampeggiante 24VAC x SH NC	Flashing 24Vac x SH NC	SL-CB + SL-AP24 + SL-BL24-Y + SL-L24	1	22	'=QgMep
'-HL015	'022.0346	Lampada vetro alogena	Glass Lamp	35W 24V Ø30 3000K	1	21	'=QgMep
'-RD3	'022.0218	Riduzione		M/F PG 13,5/11	1	34	'=QgMep
'-RE7	'022.0213	Raccordo rapido dritto PG21/Ø29		SEM PG21/Ø29	1	34	'=QgMep
'-RE8	'022.0213	Raccordo rapido dritto PG21/Ø29		SEM PG21/Ø29	1	34	'=QgMep
'-RE9	'022.0213	Raccordo rapido dritto PG21/Ø29		SEM PG21/Ø29	1	34	'=QgMep
'-RE10	'022.0213	Raccordo rapido dritto PG21/Ø29		SEM PG21/Ø29	1	34	'=QgMep
'-RE17	'022.0210	Raccordo rapido dritto PG11/Ø16	Rapid Joint	SEM PG11/Ø16	1	34	'=QgMep
'-RV0	'022.1809	Potenziometro lineare corsa 600mm	Linear potentiometer 600mm	TLH600 cod. 025324 NOVOTECNIK	1	24	'=QgMep
'-S2	'022.0538	Finecorsa di sicurezza con chiave 2NC	Safety Limit Switch with Key 2NC	FD993-F3 PIZZATO	1	12	'=QgMep
'-S140	'022.0522	Sensore di prossimita PNP lungo conn. M12	Proximity PNP (long) with connector M12		1	19	'=QgMep
'-S144	'022.0543	Finecorsa a rotella 1NO+1NC conn. M12 laterale	Limit Switch with roll 1NO+1NC	NB B110BB-DMK PIZZATO	1	19	'=QgMep
'-SA141	'022.1227	Selettore instabile 3 pos.	3 position unstable selector	M22WK3 C.216870	1	19	'=QgMep
'-SA141	'022.0937	Contatto pulsantiera NA		M22-K10 cod. 216376 Moeller	1	19	'=QgMep
'-SA141	'022.0937	Contatto pulsantiera NA		M22-K10 cod. 216376 Moeller	1	19	'=QgMep
'-SA145	'022.1226	Selettore stabile 2 pos.	2 position stable selector	M22-WKV cod.216874	1	19	'=QgMep
'-SA145	'022.0937	Contatto pulsantiera NA		M22-K10 cod. 216376 Moeller	1	19	'=QgMep
'-SB14	'022.1405	Pulsante nero	Black push button	M22-D-S cod. 216590	1	20	'=QgMep
'-SB14	'022.0937	Contatto pulsantiera NA		M22-K10 cod. 216376 Moeller	1	20	'=QgMep
'-SC1	'034.0719	Scatola quadrata a un foro per emergenza o selettore		'034.0719	1	19	'=QgMep
'-SC2	'016.0776	Scatola metallica per MC135.02	Metal Junction Box	140x100 P:100	1	19	'=QgMep
'-SC2	'031.2120	Consolle di programmazione SH652 con MC135.02	Programming consolled SH652 with MC135.02		1	19	'=QgMep
'-SC3	'016.1271	Scatola derivazione metallica	Metal junction box	95x95 P.70	1	7	'=QgMep
'-SQ7	'022.2154	Tensionatore elettronico 3,5T	Tensionatore elettronico 3,5T	TR-S-A/3,5T 4V- 2800Kg Deltateck	1	25	'=QgMep
'-TL014	'022.0513	Traguardatore laser	Laser Sign		1	21	'=QgMep
'-VIS1	'022.1365	Visualizzatore Angolo Encoder SSI	Display for Encoder SSI	MC135.02 - QEM	1	26	'=QgMep

REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013

Impianto: SHARK 652 SXI EVO
Denominazione: DISTINTA MATERIALI / *Material List*

Ordine
Commessa
Esecutore: BARTOLI

FOGLIO 47
SEGUE 48
ULTIMO 211

0	1	2	3	4	5	6	7	8	9

NOME/ITEM	TIPO/TYPE	DESCRIZIONE IT (DB)	DESCRIZIONE EN (DB)	CODICE INTERNO (DB)	Q.TA/Q.TY	FG/SH	QUADRO/BOARD
'-XR0	'022.0369	Connettore 3 poli per tensionatore elettronico		'022.0369	1		'=QgMep
'-XS7	'022.0369	Connettore 3 poli per tensionatore elettronico		'022.0369	1		'=QgMep
'-MV2	'019.5221	Ventola raffreddamento 80x80 - 24Vdc	Fan cooling 80x80 - 24Vdc	V108 DSW24V - ALFAELECTRIC	1	10	'=RtmCv
'-MV2	'019.5123	Griglia per ventola 80x80	Cover for fan cooler 80x80	ALFA GM 80	1	10	'=RtmCv
'-MV2	'016.0624	Staffa per ventola azionamento P/P	Support for driver fan cooler		1	10	'=RtmCv
'-T2	'022.1601	Trasformatore	Transformer	500 0-230-400 V.0-60/0-220	1	8	'=RtmCv
'-U8	'022.1330	Azionamento per motori passo-passo (60VAC +20% - 10A) + modbus	Driver for step motor (60VAC.10A) + modbus	APSL3 E OP/S80 - SHS	1	9	'=RtmCv
'-XQGFU	'022.2253	Portafusibile 1 x (10,3x38) - 690V 32A	Fuse holding terminal 1 x (10,3x38) 690V 32A	2031038 BCH 32A ItalWeber	1		'=RtmCv
'-XQGFU	'022.1160	Fusibile 10,3x38 AM (ritardato) 8A	Fuse 10,3x38 AM	500V 8AMP	2		'=RtmCv
'-CR14	'022.2601	Guaina POLIFLEX Ø16	Poliflex Covering Ø16	NW 12-1200127	0.80	34	'=RtmMep
'-GH15	'022.0245	Dado grigio PG11		PG11	1	34	'=RtmMep
'-RD1	'022.0349	Riduzione		M/F M20/PG13,5	1	34	'=RtmMep
'-RD2	'022.0218	Riduzione		M/F PG 13,5/11	1	34	'=RtmMep
'-RE14	'022.0210	Raccordo rapido dritto PG11/Ø16	Rapid Joint	SEM PG11/Ø16	1	34	'=RtmMep
'-RE15	'022.0210	Raccordo rapido dritto PG11/Ø16	Rapid Joint	SEM PG11/Ø16	1	34	'=RtmMep

REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
CAD SPAC
File SH652SXIEVO/1.DWG
Data 20/03/2013

Impianto: SHARK 652 SXI EVO
Denominazione: DISTINTA MATERIALI
Material List

Ordine
Commessa
Esecutore: BARTOLI

FOGLIO 48
SEGUE 100
ULTIMO 211

Sim.\Sym.	File	Descrizione\Description
	BLK106	Raccordo *Union*
	FFLH53	Valvola di massima *Maximum valve*
	FFLH97	Valvola direz. 4/3 centri chiusi *Maximum valve*
	FFLP40	Valvola di esclusione *Maximum valve*
	FFLP42	Manometro *Maximum valve*
	FFLP53	Motore elettrico *Maximum valve*
	FFLP54	Valvola controllo flusso *Maximum valve*
	FFLP62A	Valvola unidirezionale *Maximum valve*
	FFLP62B	Valvola apertura reg. *Maximum valve*
	FFLP75A	Cilindro a doppio effetto *Maximum valve*
	FFLP154	Elettrovalvola 2/2 ritorno a molla meccanica *Maximum valve*

Sim.\Sym.	File	Descrizione\Description
	CIL-VERT	Cilindro a doppio effetto
	FILTROID	Filtro
	POMPAID	Pompa idraulica
	REG-IDM	Blocco controllo pressione e flusso

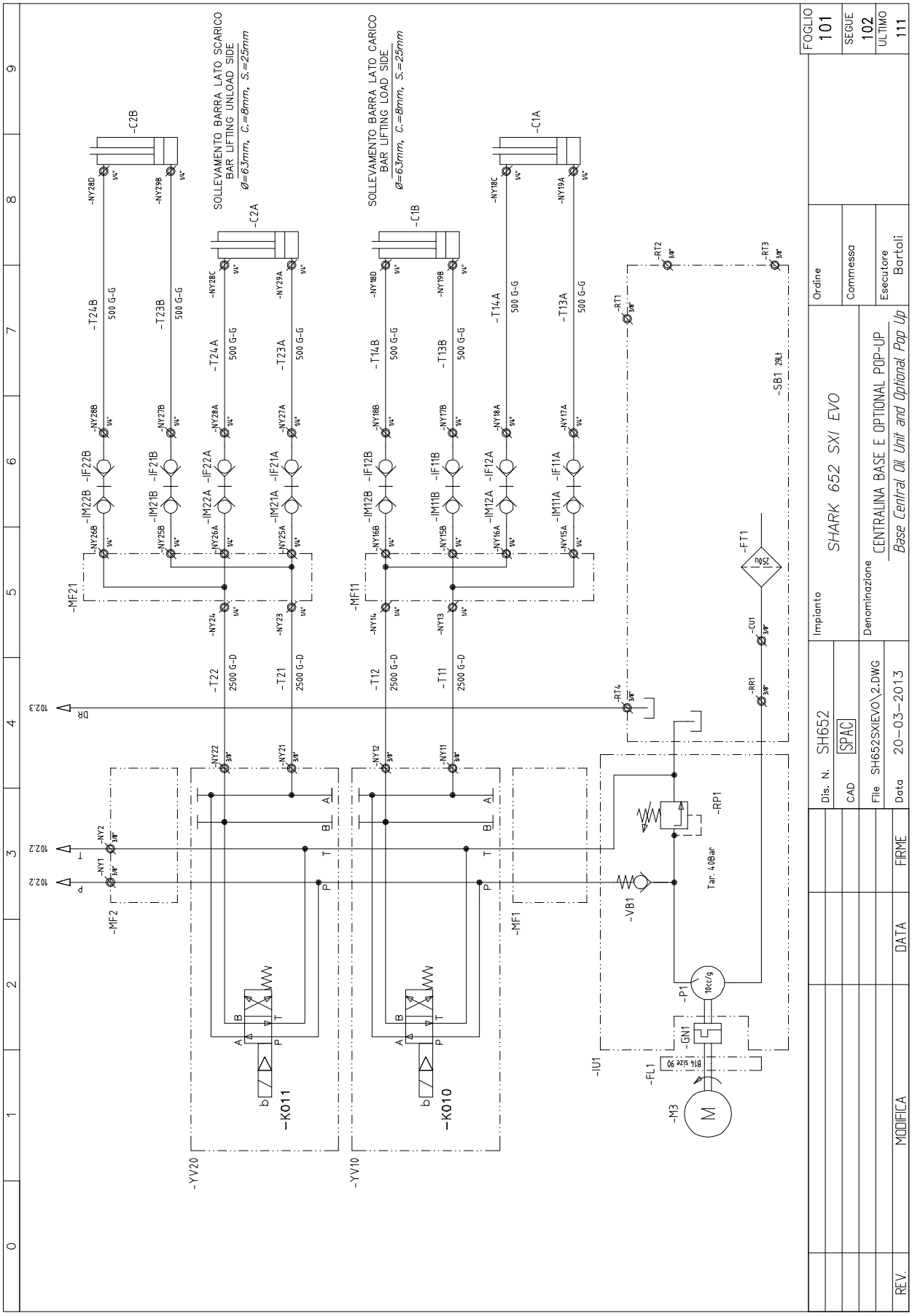
Sim.\Sym.	File	Descrizione\Description

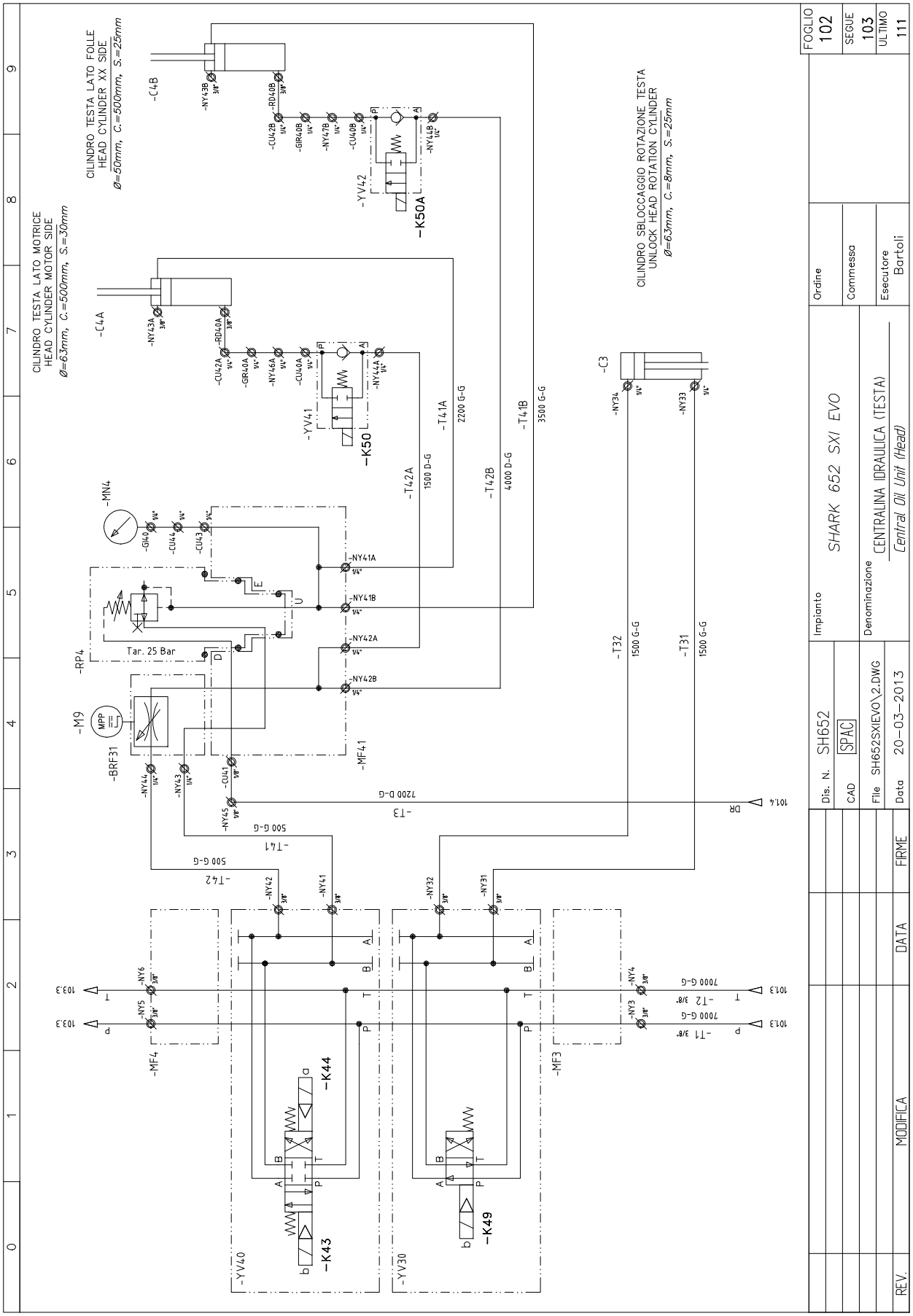
REV.	MODIFICA	DATA	FIRME

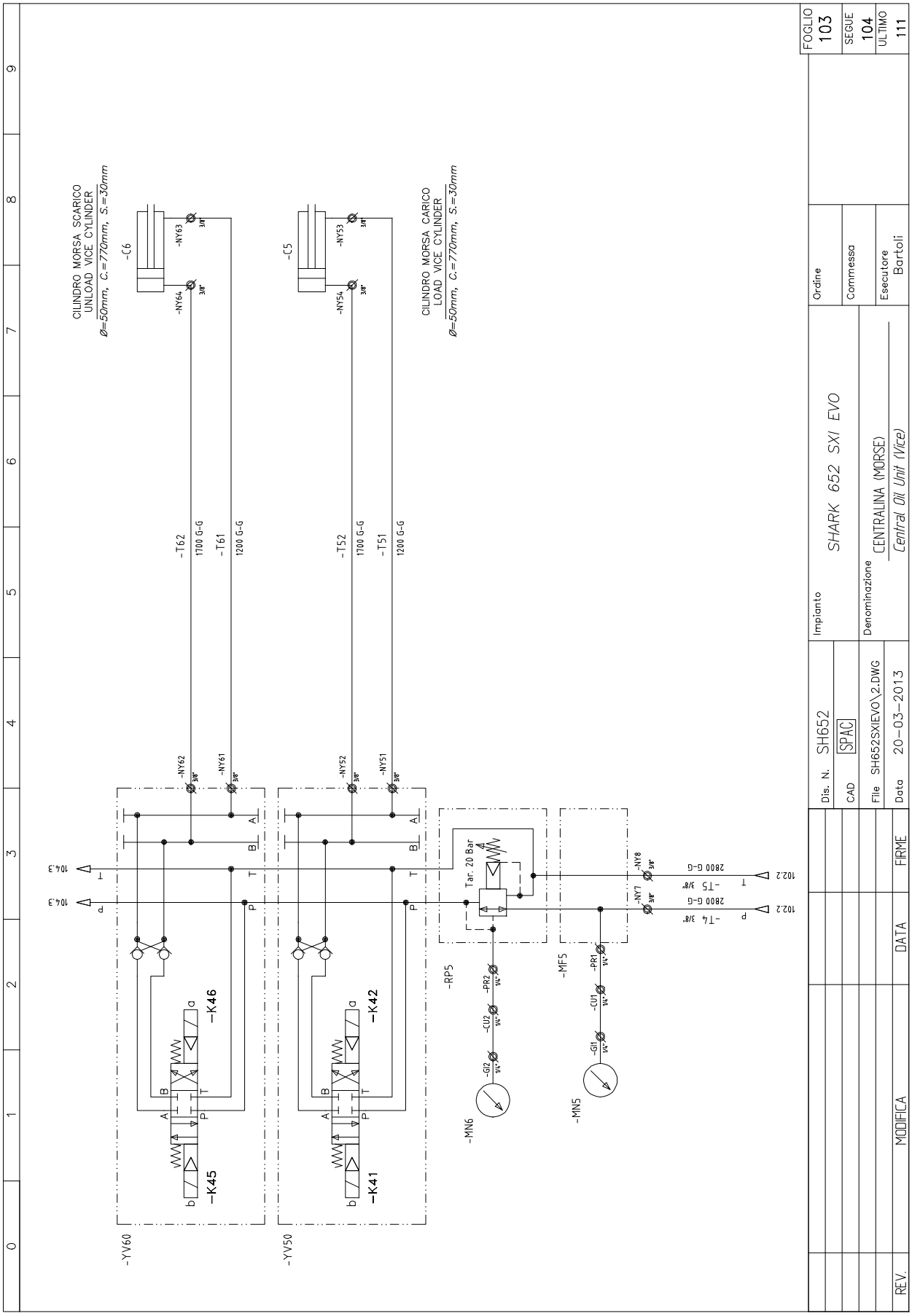
Dis. N.	SH652
CAD	SPAC
File	SH652SXIEVO\2.DWG
Data	20-03-2013

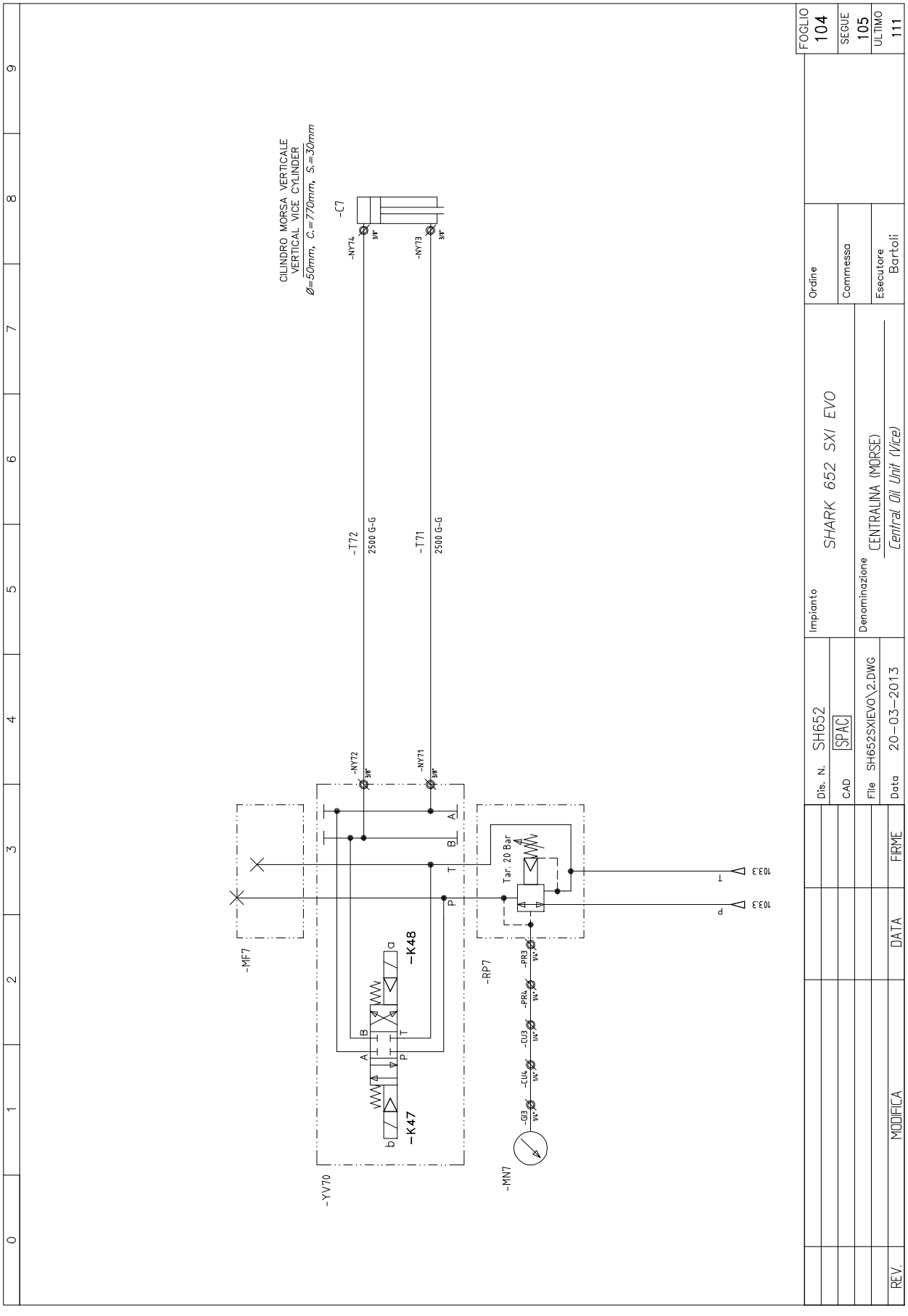
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Denominazione	LEGENDA SIMBOLI *Symbol Key*
Ordine	
Commessa	
Esecutore	Bartoli

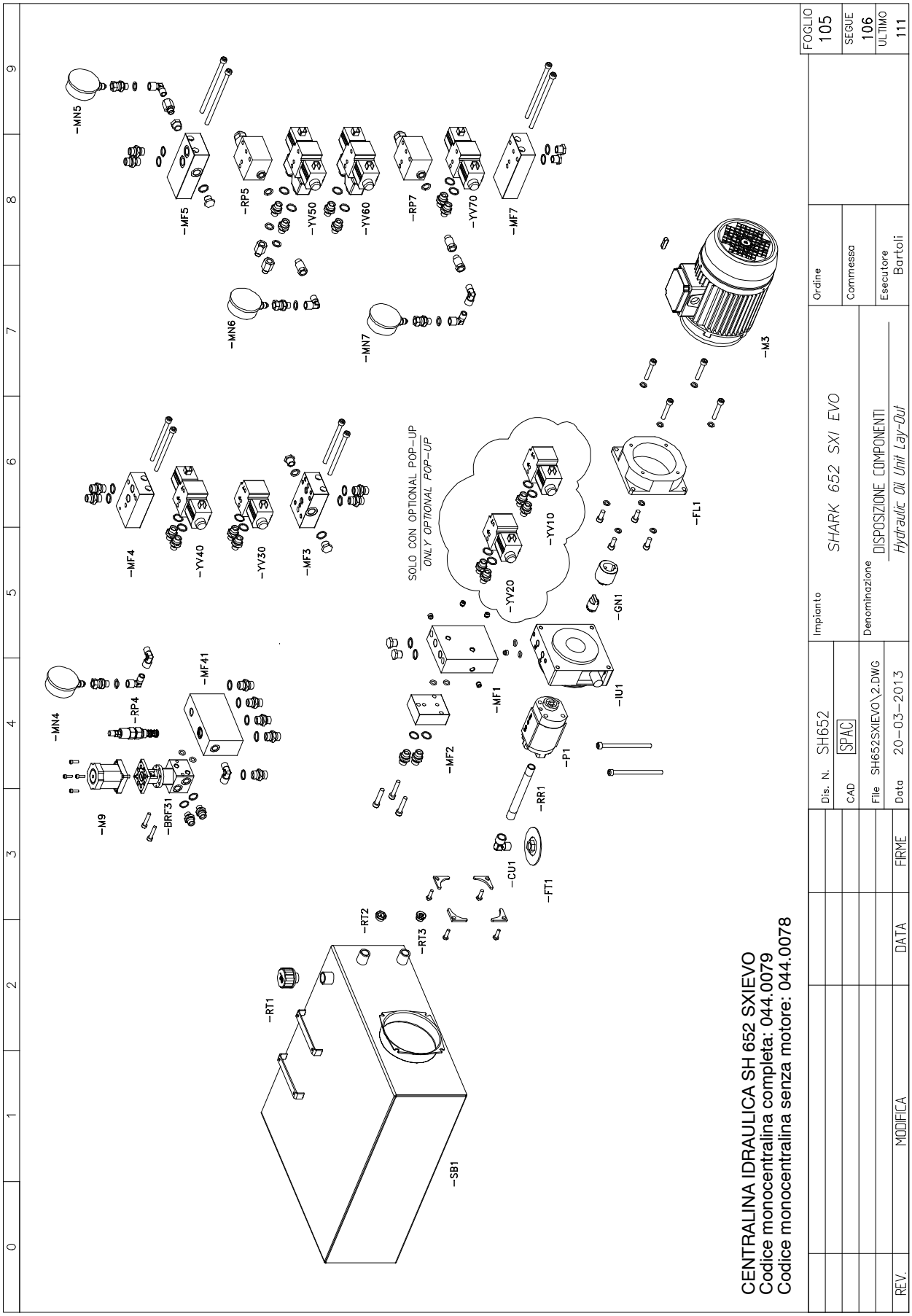
FOGLIO	100
SEGUE	101
ULTIMO	111


SOLLEVAMENTO BARRA LATO SCARICO
BAR LIFTING UNLOAD SIDE
Ø=6.3mm, C.=8mm, S.=25mm
SOLLEVAMENTO BARRA LATO CARICO
BAR LIFTING LOAD SIDE
Ø=6.3mm, C.=8mm, S.=25mm
-C2B
-C2A
-C1B
-C1A
-MF21
-MF11
-MF2
-MF1
-YV20
-YV10
-K011
-K010
-IU1
-M3
-FL1
-GN1
-P1
-VB1
-RP1
-RT1
-RT2
-RT3
-RT4
-FT1
-CU1
-RR1
-SB1
-T24B
-T23B
-T24A
-T23A
-T14B
-T13B
-T14A
-T13A
-T22
-T21
-T12
-T11
500 G-G
2500 G-D
Tar. 40Bar
Dis. N. SH652
CAD SPAC
File SH652SXIEVO\2.DWG
Data 20-03-2013
Impianto
SHARK 652 SXI EVO
Denominazione
CENTRALINA BASE E OPTIONAL POP-UP
Base Central Oil Unit and Optional Pop Up
Ordine
Commessa
Esecutore Bartoli
FOGLIO 101
SEGUE 102
ULTIMO 111
REV.
MODIFICA
DATA
FIRME


CILINDRO TESTA LATO MOTRICE
HEAD CYLINDER MOTOR SIDE
Ø=63mm, C.=500mm, S.=30mm
CILINDRO TESTA LATO FOLLE
HEAD CYLINDER XX SIDE
Ø=50mm, C.=500mm, S.=25mm
CILINDRO SBLOCCAGGIO ROTAZIONE TESTA
UNLOCK HEAD ROTATION CYLINDER
Ø=63mm, C.=8mm, S.=25mm
-C4A
-C4B
-C3
-K50
-K50A
-YV41
-YV42
-MN4
-RP4
Tar. 25 Bar
-M9
-BRF31
-MF41
-MF4
-MF3
-YV40
-YV30
-K43
-K44
-K49
-T41A
-T41B
-T42A
-T42B
-T32
-T31
-T3
-T41
-T42
-T1
-T2
2200 G-G
3500 G-G
1500 D-G
4000 D-G
1500 G-G
7200 D-G
500 G-G
7000 G-G
103.3
101.4
101.3
FOGLIO 102
SEGUE 103
ULTIMO 111
Impianto
SHARK 652 SXI EVO
Ordine
Commessa
Esecutore Bartoli
Denominazione
CENTRALINA IDRAULICA (TESTA)
Central Oil Unit (Head)
Dis. N. SH652
CAD SPAC
File SH652SXIEVO\2.DWG
Data 20-03-2013
REV.
MODIFICA
DATA
FIRME


CILINDRO MORSA SCARICO
UNLOAD VICE CYLINDER
Ø=50mm, C.=770mm, S.=30mm
CILINDRO MORSA CARICO
LOAD VICE CYLINDER
Ø=50mm, C.=770mm, S.=30mm
-C6
-C5
-NY64
-NY63
-NY54
-NY53
-T62
1700 G-G
-T61
1200 G-G
-T52
1700 G-G
-T51
1200 G-G
-NY62
-NY61
-NY52
-NY51
-YV60
-YV50
-K45
-K41
-K46
-K42
-RP5
Tar. 20 Bar
-MF5
-MN6
-MN5
-GI2
-CU2
-PR2
-GI1
-CU1
-PR1
-NY8
-NY7
-T5 3/8"
-T4 3/8"
2800 G-G
2800 G-G
102.2
102.2
104.3
104.3
FOGLIO 103
SEGUE 104
ULTIMO 111
Dis. N. SH652
CAD SPAC
File SH652SXIEVO\2.DWG
Data 20-03-2013
Impianto
SHARK 652 SXI EVO
Denominazione
CENTRALINA (MORSE)
Central Oil Unit (Vice)
Ordine
Commessa
Esecutore Bartoli
REV.
MODIFICA
DATA
FIRME


CILINDRO MORSA VERTICALE
VERTICAL VICE CYLINDER
Ø=50mm, C.=770mm, S.=30mm
-C7
-NY74
-NY73
-T72
2500 G-G
-T71
2500 G-G
-NY72
-NY71
-MF7
-K48
-K47
-YV70
-RP7
Tar. 20 Bar
-PR3
-PR4
-CU3
-CU4
-GI3
-MN7
103.3
103.3
FOGLIO 104
SEGUE 105
ULTIMO 111
Impianto
SHARK 652 SXI EVO
Ordine
Commessa
Esecutore Bartoli
Denominazione
CENTRALINA (MORSE)
Central Oil Unit (Vice)
Dis. N. SH652
CAD SPAC
File SH652SXIEVO\2.DWG
Data 20-03-2013
REV.
MODIFICA
DATA
FIRME


CENTRALINA IDRAULICA SH 652 SXIEVO
Codice monocentralina completa: 044.0079
Codice monocentralina senza motore: 044.0078
SOLO CON OPTIONAL POP-UP
ONLY OPTIONAL POP-UP
-MN5
-MF5
-RP5
-YV50
-YV60
-RP7
-YV70
-MF7
-MN6
-MN7
-M3
-MF4
-YV40
-YV30
-MF3
-YV10
-YV20
-FL1
-GN1
-MF41
-MN4
-RP4
-M9
-BRF31
-MF1
-IU1
-MF2
-P1
-RR1
-CU1
-FT1
-RT2
-RT3
-RT1
-SB1
FOGLIO 105
SEGUE 106
ULTIMO 111
Impianto
SHARK 652 SXI EVO
Ordine
Commessa
Esecutore Bartoli
Denominazione
DISPOSIZIONE COMPONENTI
Hydraulic Oil Unit Lay-Out
Dis. N. SH652
CAD SPAC
File SH652SXIEVO\2.DWG
Data 20-03-2013
REV.
MODIFICA
DATA
FIRME

0	1	2	3	4	5	6	7	8	9

NOME/ITEM	TIPO/TYPE	DESCRIZIONE IT (DB)	DESCRIZIONE EN (DB)	CODICE INTERNO (DB)	Q.TA/Q.TY	FG/SH	QUADRO/BOARD
'-C3	V.d.M.	Vedi distinta meccanica	See mechanical list	V.d.M.	1	102	'=CiBmMep
'-C4A	V.d.M.	Vedi distinta meccanica	See mechanical list	V.d.M.	1	102	'=CiBmMep
'-C4B	V.d.M.	Vedi distinta meccanica	See mechanical list	V.d.M.	1	102	'=CiBmMep
'-C5	V.d.M.	Vedi distinta meccanica	See mechanical list	V.d.M.	1	103	'=CiBmMep
'-C6	V.d.M.	Vedi distinta meccanica	See mechanical list	V.d.M.	1	103	'=CiBmMep
'-C7	V.d.M.	Vedi distinta meccanica	See mechanical list	V.d.M.	1	104	'=CiBmMep
'-CU1	'044.0564	Raccordo a gomito ID. MF-1"G	Hydraulic elbow coupling M/F 1"G		1	103	'=CiBmMep
'-CU2	'044.0552	Raccordo a gomito ID. MF-1/4"G	Hydraulic elbow coupling M/F 1/4"		1	103	'=CiBmMep
'-CU3	'043.0250	Raccordo gomito M/F da 1/4"G	Elbow coupling M/F 1/4"		1	104	'=CiBmMep
'-CU4	'043.0250	Raccordo gomito M/F da 1/4"G	Elbow coupling M/F 1/4"		1	104	'=CiBmMep
'-CU40A	'044.0564	Raccordo a gomito ID. MF-1"G	Hydraulic elbow coupling M/F 1"G		1	102	'=CiBmMep
'-CU40B	'044.0564	Raccordo a gomito ID. MF-1"G	Hydraulic elbow coupling M/F 1"G		1	102	'=CiBmMep
'-CU41	'044.0564	Raccordo a gomito ID. MF-1"G	Hydraulic elbow coupling M/F 1"G		1	102	'=CiBmMep
'-CU42A	'044.0564	Raccordo a gomito ID. MF-1"G	Hydraulic elbow coupling M/F 1"G		1	102	'=CiBmMep
'-CU42B	'044.0564	Raccordo a gomito ID. MF-1"G	Hydraulic elbow coupling M/F 1"G		1	102	'=CiBmMep
'-CU43	'044.0552	Raccordo a gomito ID. MF-1/4"G	Hydraulic elbow coupling M/F 1/4"		1	102	'=CiBmMep
'-CU44	'044.0552	Raccordo a gomito ID. MF-1/4"G	Hydraulic elbow coupling M/F 1/4"		1	102	'=CiBmMep
'-GI1	'044.0553	Raccordo girevole ID.per manometro MF-1/4"G	Hydraulic rotating coupling for manometer M/F 1/4"		1	103	'=CiBmMep
'-GI2	'044.0553	Raccordo girevole ID.per manometro MF-1/4"G	Hydraulic rotating coupling for manometer M/F 1/4"		1	103	'=CiBmMep
'-GI3	'044.0553	Raccordo girevole ID.per manometro MF-1/4"G	Hydraulic rotating coupling for manometer M/F 1/4"		1	104	'=CiBmMep
'-GI40	'044.0553	Raccordo girevole ID.per manometro MF-1/4"G	Hydraulic rotating coupling for manometer M/F 1/4"		1	102	'=CiBmMep
'-GIR40A	'044.0502	Raccordo girevole ID. da MF-1/4"G	Hydraulic rotating coupling M/F 1/4"		1	102	'=CiBmMep
'-GIR40B	'044.0502	Raccordo girevole ID. da MF-1/4"G	Hydraulic rotating coupling M/F 1/4"		1	102	'=CiBmMep
'-MF41	'007.6730	Manifold idraulico reg. flusso motorizzato e reg. pressione	Hydraulic manifold with flow and pressure adjustment	'007.6730	1	102	'=CiBmMep
'-MN4	'043.0557	Manometro ID. 0-60bar Ø40 con attacco radiale da 1/4"G	Hydraulic manometer Ø60 1/4"G	WIKA	1	102	'=CiBmMep
'-MN5	'043.0557	Manometro ID. 0-60bar Ø40 con attacco radiale da 1/4"G	Hydraulic manometer Ø60 1/4"G	WIKA	1	103	'=CiBmMep
'-MN6	'043.0557	Manometro ID. 0-60bar Ø40 con attacco radiale da 1/4"G	Hydraulic manometer Ø60 1/4"G	WIKA	1	103	'=CiBmMep
'-MN7	'043.0557	Manometro ID. 0-60bar Ø40 con attacco radiale da 1/4"G	Hydraulic manometer Ø60 1/4"G	WIKA	1	104	'=CiBmMep
'-NY3	'044.0507	Nipplo ID. MM-3/8"G	Hydraulic nipple MM-3/8"G		1	102	'=CiBmMep
'-NY4	'044.0507	Nipplo ID. MM-3/8"G	Hydraulic nipple MM-3/8"G		1	102	'=CiBmMep
'-NY5	'044.0507	Nipplo ID. MM-3/8"G	Hydraulic nipple MM-3/8"G		1	102	'=CiBmMep
'-NY6	'044.0507	Nipplo ID. MM-3/8"G	Hydraulic nipple MM-3/8"G		1	102	'=CiBmMep
'-NY7	'044.0507	Nipplo ID. MM-3/8"G	Hydraulic nipple MM-3/8"G		1	103	'=CiBmMep
'-NY8	'044.0507	Nipplo ID. MM-3/8"G	Hydraulic nipple MM-3/8"G		1	103	'=CiBmMep
'-NY33	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	102	'=CiBmMep
'-NY34	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	102	'=CiBmMep
'-NY41A	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	102	'=CiBmMep
'-NY41B	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	102	'=CiBmMep

REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
CAD SPAC
File SH652SXIEVO\2.DWG
Data 20-03-2013

Impianto: SHARK 652 SXI EVO
Denominazione: DISTINTA MATERIALI / Material List
Ordine
Commessa
Esecutore: Bartoli

FOGLIO 106
SEGUE 107
ULTIMO 111

0	1	2	3	4	5	6	7	8	9

NOME/ITEM	TIPO/TYPE	DESCRIZIONE IT (DB)	DESCRIZIONE EN (DB)	CODICE INTERNO (DB)	Q.TA/Q.TY	FG/SH	QUADRO/BOARD
'-NY42A	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	102	'=CiBmMep
'-NY42B	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	102	'=CiBmMep
'-NY43	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	102	'=CiBmMep
'-NY43A	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	102	'=CiBmMep
'-NY43B	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	102	'=CiBmMep
'-NY44	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	102	'=CiBmMep
'-NY44A	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	102	'=CiBmMep
'-NY44B	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	102	'=CiBmMep
'-NY45	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	102	'=CiBmMep
'-NY46A	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	102	'=CiBmMep
'-NY47B	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	102	'=CiBmMep
'-NY51	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	103	'=CiBmMep
'-NY52	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	103	'=CiBmMep
'-NY53	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	103	'=CiBmMep
'-NY54	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	103	'=CiBmMep
'-NY61	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	103	'=CiBmMep
'-NY62	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	103	'=CiBmMep
'-NY63	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	103	'=CiBmMep
'-NY64	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	103	'=CiBmMep
'-NY73	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	104	'=CiBmMep
'-NY74	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	104	'=CiBmMep
'-PR1	'044.0651	Prolunga esagonale ID. da 25mm M/F 1/4"G	Hydraulic extension 25mm M/F 1/4"G		1	103	'=CiBmMep
'-PR2	'044.0650	Prolunga esagonale ID. da 36mm M/F 1/4"G	Hydraulic extension 36mm M/F 1/4"G		1	103	'=CiBmMep
'-PR3	'044.0650	Prolunga esagonale ID. da 36mm M/F 1/4"G	Hydraulic extension 36mm M/F 1/4"G		1	104	'=CiBmMep
'-PR4	'044.0650	Prolunga esagonale ID. da 36mm M/F 1/4"G	Hydraulic extension 36mm M/F 1/4"G		1	104	'=CiBmMep
'-RD40A	'044.0602	Riduzione ID M/F da 3/8-1/4"G	Reductions M/F da 3/8-1/4"G		1	102	'=CiBmMep
'-RD40B	'044.0602	Riduzione ID M/F da 3/8-1/4"G	Reductions M/F da 3/8-1/4"G		1	102	'=CiBmMep
'-RP4	'044.1267	Valvola riduttice idraulica a cartuccia cavità 08/3 reg. a vite da 5-50Bar	Hydraulic pressure reduction cartridge 5-50Bar	'044.1267	1	102	'=CiBmMep
'-T1	'044.0173	Tubo idraulico 3/8"G 7000 D-G	Hydraulic flex pipe 3/8"G 7000 E-C		1	102	'=CiBmMep
'-T2	'044.0173	Tubo idraulico 3/8"G 7000 D-G	Hydraulic flex pipe 3/8"G 7000 E-C		1	102	'=CiBmMep
'-T3	'044.0128	Tubo idraulico 1/4"G 7200 D-G	Hydraulic flex pipe 1/4"G 7200 D-C		1	102	'=CiBmMep
'-T4	'044.0174	Tubo idraulico 3/8"G 2800 G-G	Hydraulic flex pipe 3/8"G 2800 C-C		1	103	'=CiBmMep
'-T5	'044.0174	Tubo idraulico 3/8"G 2800 G-G	Hydraulic flex pipe 3/8"G 2800 C-C		1	103	'=CiBmMep
'-T31	'044.0107	Tubo idraulico 1/4"G 1500 G-G	Hydraulic flex pipe 1/4"G 1500 C-C	'044.0107	1	102	'=CiBmMep
'-T32	'044.0107	Tubo idraulico 1/4"G 1500 G-G	Hydraulic flex pipe 1/4"G 1500 C-C	'044.0107	1	102	'=CiBmMep
'-T41	'044.0172	Tubo idraulico 1/4"G 500 G-G	Hydraulic pipe	'044.0172	1	102	'=CiBmMep
'-T41A	'044.0145	Tubo idraulico 1/4"G 2200 G-G	Hydraulic flex pipe 1/4"G 2200 C-C		1	102	'=CiBmMep
'-T41B	'044.0154	Tubo idraulico 1/4"G 3500 G-G		'044.0154	1	102	'=CiBmMep

REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
CAD SPAC
File SH652SXIEVO\2.DWG
Data 20-03-2013

Impianto: SHARK 652 SXI EVO
Denominazione: DISTINTA MATERIALI
Material List

Ordine
Commessa
Esecutore: Bartoli

FOGLIO 107
SEGUE 108
ULTIMO 111

0	1	2	3	4	5	6	7	8	9

NOME/ITEM	TIPO/TYPE	DESCRIZIONE IT (DB)	DESCRIZIONE EN (DB)	CODICE INTERNO (DB)	Q.TA/Q.TY	FG/SH	QUADRO/BOARD
'-T42	'044.0172	Tubo idraulico 1/4"G 500 G-G	Hydraulic pipe	'044.0172	1	102	'=CiBmMep
'-T42A	'044.0106	Tubo idraulico 1/4"G 1500 G-D		'044.0106	1	102	'=CiBmMep
'-T42B	'044.0156	Tubo idraulico 1/4"G 4000 D-G		'044.0156	1	102	'=CiBmMep
'-T51	'044.0131	Tubo idraulico 1/4"G 1200 G-G		'044.0131	1	103	'=CiBmMep
'-T52	'044.0143	Tubo idraulico 1/4"G 1700 G-G		'044.0143	1	103	'=CiBmMep
'-T61	'044.0131	Tubo idraulico 1/4"G 1200 G-G		'044.0131	1	103	'=CiBmMep
'-T62	'044.0143	Tubo idraulico 1/4"G 1700 G-G		'044.0143	1	103	'=CiBmMep
'-T71	'044.0125	Tubo idraulico 1/4"G 2500 G-G	Hydraulic flex pipe 1/4"G 2500 C-C		1	104	'=CiBmMep
'-T72	'044.0125	Tubo idraulico 1/4"G 2500 G-G	Hydraulic flex pipe 1/4"G 2500 C-C		1	104	'=CiBmMep
'-YV41	'044.1278	Elettrovalvola idraulica 2/2 unidirezionale NC mont. in linea da 1/4"G 24Vcc senza connettore	Hydraulic electrovalve 2/2 NC 1/4"G 24Vdc	Oil system	1	102	'=CiBmMep
'-YV42	'044.1278	Elettrovalvola idraulica 2/2 unidirezionale NC mont. in linea da 1/4"G 24Vcc senza connettore	Hydraulic electrovalve 2/2 NC 1/4"G 24Vdc	Oil system	1	102	'=CiBmMep
'-BRF31	'043.0598	Regolatore di flusso motorizzato	Flow adjustment with motor	'043.0598	1	102	'=CiCv
'-CU1	'043.0252	Raccordo gomito M/F da 3/8"G		'043.0252	1	101	'=CiCv
'-FL1	'044.5173	Flangia accoppiamento motore C90 B14	Power pack motor flange C90 B14	Bosh	1	101	'=CiCv
'-FT1	'044.5001	Filtro aspirazione ID. Ø 80mm 250micron 3/8"G fem.	Oil filter for hydraulic unit Ø 80mm 250micron 3/8"G fem.	200.5461.12010 Bucher	1	101	'=CiCv
'-GN1	'044.4643	Giunto elas. lato motore C90 B14	Connecting coupling motor side C90 B14	90-S - Bosh	1	101	'=CiCv
'-GN1	'044.4642	Giunto elas. lato pompa	Connecting coupling pump side	S - Bosh	1	101	'=CiCv
'-IU1	'044.5120	Base Ponpa Bosch	Housing Pump Bosch	M02KE - Bosch	1	101	'=CiCv
'-IU1	'044.5153	Staffe fissaggio base / serbatoio	Power pack tank bracket	200.6774.0040.0 Bucher	1	101	'=CiCv
'-M9	'019.3555	Motore stepper 1,9Nmt 2,8A 1,8°	Stepper motor 1,9Nmt 2,8A 1,8°	FL57STH76-2804-A-12 FULLING	1	102	'=CiCv
'-MF1	'007.6720	Manifold idraulico per Uscita Base BOSCH	Hydraulic manifold Output Bosch	007.6720 - EV Integrate - MEP	1	101	'=CiCv
'-MF2	'007.6723	Manifold idraulico per Chiusura Valvole BOSCH	Hydraulic manifold CLose Valve Bosch	007.6723 - EV Integrate - MEP	1	101	'=CiCv
'-MF3	'007.6718	Testata Ingresso Valvole BOSCH	Input Headboard Valve Bosch	H=100 - EV Integrate - MEP	1	102	'=CiCv
'-MF4	'007.6719	Testata Uscita Valvole BOSCH	Output Headboard Valve Bosch	H=100 - EV Integrate - MEP	1	102	'=CiCv
'-MF5	'007.6725	Testata Ingresso Valvole BOSCH	Input Headboard Valve Bosch	H=130 - EV Integrate - MEP	1	103	'=CiCv
'-MF7	'007.6726	Testata Uscita Valvole BOSCH	Output Headboard Valve Bosch	H=130 - EV Integrate - MEP	1	104	'=CiCv
'-NY1	'044.0507	Nipplo ID. MM-3/8"G	Hydraulic nipple MM-3/8"G		1	101	'=CiCv
'-NY2	'044.0507	Nipplo ID. MM-3/8"G	Hydraulic nipple MM-3/8"G		1	101	'=CiCv
'-NY31	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	102	'=CiCv
'-NY32	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	102	'=CiCv
'-NY41	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	102	'=CiCv
'-NY42	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	102	'=CiCv
'-NY71	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	104	'=CiCv
'-NY72	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	104	'=CiCv
'-P1	'044.4516	Pompa 10cc/giro per base	Pump 10cc/rev fou housings	10CC/Giro	1	101	'=CiCv
'-RP5	'044.1277	Valvola idraulica riduttice integrata 3-35Bar	Moduler valve pressure reduction 3-35Bar	TI 03 00 VI AL - Bosch	1	103	'=CiCv
'-RP7	'044.1277	Valvola idraulica riduttice integrata 3-35Bar	Moduler valve pressure reduction 3-35Bar	TI 03 00 VI AL - Bosch	1	104	'=CiCv
'-RR1	'044.5160	Tubo pescante idraulico M-M3/8"G lung. 150mm	Suction pipe M-M3/8"G lung. 150mm		1	101	'=CiCv

REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
CAD SPAC
File SH652SXIEVO\2.DWG
Data 20-03-2013

Impianto: SHARK 652 SXI EVO
Denominazione: DISTINTA MATERIALI
Material List

Ordine
Commessa
Esecutore: Bartoli

FOGLIO 108
SEGUE 109
ULTIMO 111

0	1	2	3	4	5	6	7	8	9

NOME/ITEM	TIPO/TYPE	DESCRIZIONE IT (DB)	DESCRIZIONE EN (DB)	CODICE INTERNO (DB)	Q.TA/Q.TY	FG/SH	QUADRO/BOARD
'-RT1	'034.0906	Tappo plastico da 1/2"G con sfiato	Breather plastic. cap 1/2"G		1	101	'=CiCv
'-RT2	'034.0900	Tappo livello olio 3/8"G	Oil level cap 3/8"G	SLNT 38	1	101	'=CiCv
'-RT3	'044.5162	Tappo scarico olio 3/8"G con OR	Oil drain tap 3/8"G with OR	AN612	1	101	'=CiCv
'-RT4	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	101	'=CiCv
'-SB1	'016.2096	Serbatoio centralina idraulica cap.29Lt per SH652	Hydraulic oil unit 29 lt for SH652	450x500x130	1	101	'=CiCv
'-YV30	'044.2001	Elettrovalvola idraulica 4/2 Monostabile Integrata 24Vcc	Hydraulic electrovalve 4/2 one solenoid 24Vdc	B8008 Y301 0C01 3000 - BOSCH	1	102	'=CiCv
'-YV40	'044.2002	Elettrovalvola idraulica 4/3 centri chiusi Integrata 24Vcc	Hydraulic electrovalve 4/3 close center 24Vdc	B8008 B201 0C01 3000 - BOSCH	1	102	'=CiCv
'-YV50	'044.2004	Elettrovalvola idraulica 4/3 centri chiusi + Valvole Blocco Integrata 24Vcc	Hydraulic electrovalve 4/3 close center + check valve 24Vdc	B8048 B201 0C01 3330 - BOSCH	1	103	'=CiCv
'-YV60	'044.2004	Elettrovalvola idraulica 4/3 centri chiusi + Valvole Blocco Integrata 24Vcc	Hydraulic electrovalve 4/3 close center + check valve 24Vdc	B8048 B201 0C01 3330 - BOSCH	1	103	'=CiCv
'-YV70	'044.2002	Elettrovalvola idraulica 4/3 centri chiusi Integrata 24Vcc	Hydraulic electrovalve 4/3 close center 24Vdc	B8008 B201 0C01 3000 - BOSCH	1	104	'=CiCv
'-C1A	V.d.M.	Vedi distinta meccanica	See mechanical list	V.d.M.	1	101	'=CiPoUp
'-C1B	V.d.M.	Vedi distinta meccanica	See mechanical list	V.d.M.	1	101	'=CiPoUp
'-C2A	V.d.M.	Vedi distinta meccanica	See mechanical list	V.d.M.	1	101	'=CiPoUp
'-C2B	V.d.M.	Vedi distinta meccanica	See mechanical list	V.d.M.	1	101	'=CiPoUp
'-IF11A	'044.0453	Innesto rapido femmina ID. F-1/4"G	Hydraulic female quick lock coupling F-1/4"G		1	101	'=CiPoUp
'-IF11B	'044.0453	Innesto rapido femmina ID. F-1/4"G	Hydraulic female quick lock coupling F-1/4"G		1	101	'=CiPoUp
'-IF12A	'044.0453	Innesto rapido femmina ID. F-1/4"G	Hydraulic female quick lock coupling F-1/4"G		1	101	'=CiPoUp
'-IF12B	'044.0453	Innesto rapido femmina ID. F-1/4"G	Hydraulic female quick lock coupling F-1/4"G		1	101	'=CiPoUp
'-IF21A	'044.0453	Innesto rapido femmina ID. F-1/4"G	Hydraulic female quick lock coupling F-1/4"G		1	101	'=CiPoUp
'-IF21B	'044.0453	Innesto rapido femmina ID. F-1/4"G	Hydraulic female quick lock coupling F-1/4"G		1	101	'=CiPoUp
'-IF22A	'044.0453	Innesto rapido femmina ID. F-1/4"G	Hydraulic female quick lock coupling F-1/4"G		1	101	'=CiPoUp
'-IF22B	'044.0453	Innesto rapido femmina ID. F-1/4"G	Hydraulic female quick lock coupling F-1/4"G		1	101	'=CiPoUp
'-IM11A	'044.0452	Innesto rapido maschio ID. F-1/4"G	Hydraulic male quick lock coupling F-1/4"G		1	101	'=CiPoUp
'-IM11B	'044.0452	Innesto rapido maschio ID. F-1/4"G	Hydraulic male quick lock coupling F-1/4"G		1	101	'=CiPoUp
'-IM12A	'044.0452	Innesto rapido maschio ID. F-1/4"G	Hydraulic male quick lock coupling F-1/4"G		1	101	'=CiPoUp
'-IM12B	'044.0452	Innesto rapido maschio ID. F-1/4"G	Hydraulic male quick lock coupling F-1/4"G		1	101	'=CiPoUp
'-IM21A	'044.0452	Innesto rapido maschio ID. F-1/4"G	Hydraulic male quick lock coupling F-1/4"G		1	101	'=CiPoUp
'-IM21B	'044.0452	Innesto rapido maschio ID. F-1/4"G	Hydraulic male quick lock coupling F-1/4"G		1	101	'=CiPoUp
'-IM22A	'044.0452	Innesto rapido maschio ID. F-1/4"G	Hydraulic male quick lock coupling F-1/4"G		1	101	'=CiPoUp
'-IM22B	'044.0452	Innesto rapido maschio ID. F-1/4"G	Hydraulic male quick lock coupling F-1/4"G		1	101	'=CiPoUp
'-MF11	'007.6713	Manifold idraulico per derivazione Sollevatori barre	Hydraulic manifold for PopUp	'007.6713	1	101	'=CiPoUp
'-MF21	'007.6713	Manifold idraulico per derivazione Sollevatori barre	Hydraulic manifold for PopUp	'007.6713	1	101	'=CiPoUp
'-NY11	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	101	'=CiPoUp
'-NY12	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	101	'=CiPoUp
'-NY13	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY14	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY15A	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY15B	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp

REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
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File SH652SXIEVO\2.DWG
Data 20-03-2013

Impianto: SHARK 652 SXI EVO
Denominazione: DISTINTA MATERIALI
Material List

Ordine
Commessa
Esecutore: Bartoli

FOGLIO 109
SEGUE 110
ULTIMO 111

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NOME/ITEM	TIPO/TYPE	DESCRIZIONE IT (DB)	DESCRIZIONE EN (DB)	CODICE INTERNO (DB)	Q.TA/Q.TY	FG/SH	QUADRO/BOARD
'-NY16A	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY16B	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY17A	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY17B	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY18A	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY18B	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY18C	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY18D	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY19A	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY19B	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY21	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	101	'=CiPoUp
'-NY22	'044.0503	Nipplo ID. MM-3/8"G - 1/4"G	Hydraulic nipple MM-3/8"G - 1/4"G		1	101	'=CiPoUp
'-NY23	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY24	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY25A	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY25B	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY26A	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY26B	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY27A	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY27B	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY28A	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY28B	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY28C	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY28D	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY29A	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-NY29B	'044.0501	Nipplo ID. MM-1/4"G	Hydraulic nipple MM-1/4"G		1	101	'=CiPoUp
'-T11	'044.0111	Tubo idraulico 1/4"G 2500 G-D		'044.0111	1	101	'=CiPoUp
'-T12	'044.0111	Tubo idraulico 1/4"G 2500 G-D		'044.0111	1	101	'=CiPoUp
'-T13A	'044.0172	Tubo idraulico 1/4"G 500 G-G	Hydraulic pipe	'044.0172	1	101	'=CiPoUp
'-T13B	'044.0172	Tubo idraulico 1/4"G 500 G-G	Hydraulic pipe	'044.0172	1	101	'=CiPoUp
'-T14A	'044.0172	Tubo idraulico 1/4"G 500 G-G	Hydraulic pipe	'044.0172	1	101	'=CiPoUp
'-T14B	'044.0172	Tubo idraulico 1/4"G 500 G-G	Hydraulic pipe	'044.0172	1	101	'=CiPoUp
'-T21	'044.0111	Tubo idraulico 1/4"G 2500 G-D		'044.0111	1	101	'=CiPoUp
'-T22	'044.0111	Tubo idraulico 1/4"G 2500 G-D		'044.0111	1	101	'=CiPoUp
'-T23A	'044.0172	Tubo idraulico 1/4"G 500 G-G	Hydraulic pipe	'044.0172	1	101	'=CiPoUp
'-T23B	'044.0172	Tubo idraulico 1/4"G 500 G-G	Hydraulic pipe	'044.0172	1	101	'=CiPoUp
'-T24A	'044.0172	Tubo idraulico 1/4"G 500 G-G	Hydraulic pipe	'044.0172	1	101	'=CiPoUp
'-T24B	'044.0172	Tubo idraulico 1/4"G 500 G-G	Hydraulic pipe	'044.0172	1	101	'=CiPoUp

REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
CAD SPAC
File SH652SXIEVO\2.DWG
Data 20-03-2013

Impianto: SHARK 652 SXI EVO
Denominazione: DISTINTA MATERIALI
Material List

Ordine
Commessa
Esecutore: Bartoli

FOGLIO 110
SEGUE 111
ULTIMO 111

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NOME/ITEM	TIPO/TYPE	DESCRIZIONE IT (DB)	DESCRIZIONE EN (DB)	CODICE INTERNO (DB)	Q.TA/Q.TY	FG/SH	QUADRO/BOARD
'-YV10	'044.2001	Elettrovalvola idraulica 4/2 Monostabile Integrata 24Vcc	Hydraulic electrovalve 4/2 one solenoid 24Vdc	B8008 Y301 0C01 3000 - BOSCH	1	101	'=CiPoUp
'-YV20	'044.2001	Elettrovalvola idraulica 4/2 Monostabile Integrata 24Vcc	Hydraulic electrovalve 4/2 one solenoid 24Vdc	B8008 Y301 0C01 3000 - BOSCH	1	101	'=CiPoUp

REV.	MODIFICA	DATA	FIRME

Dis. N. SH652
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Impianto: SHARK 652 SXI EVO
Denominazione: DISTINTA MATERIALI
Material List

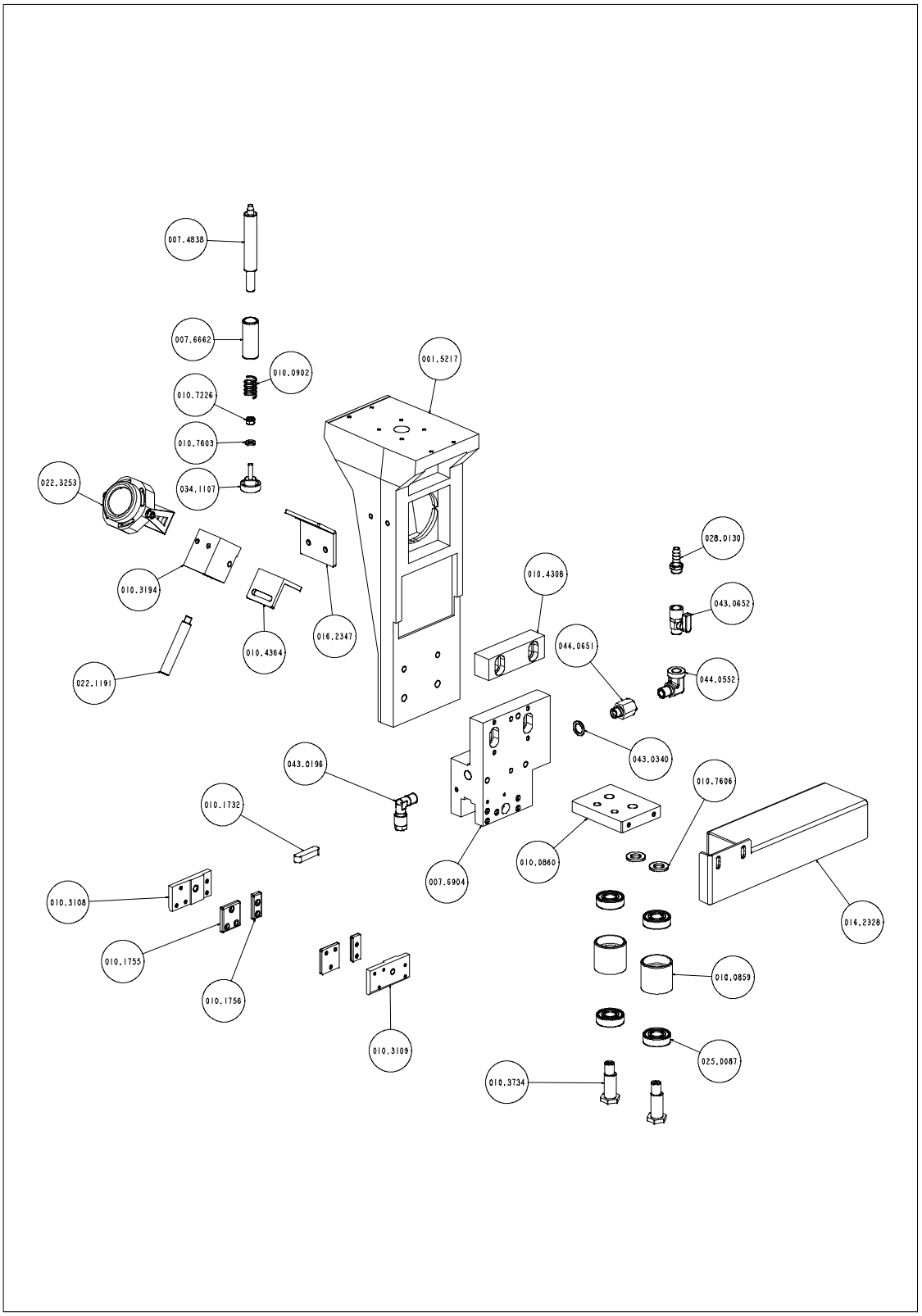
Ordine
Commessa
Esecutore: Bartoli

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Exploded views

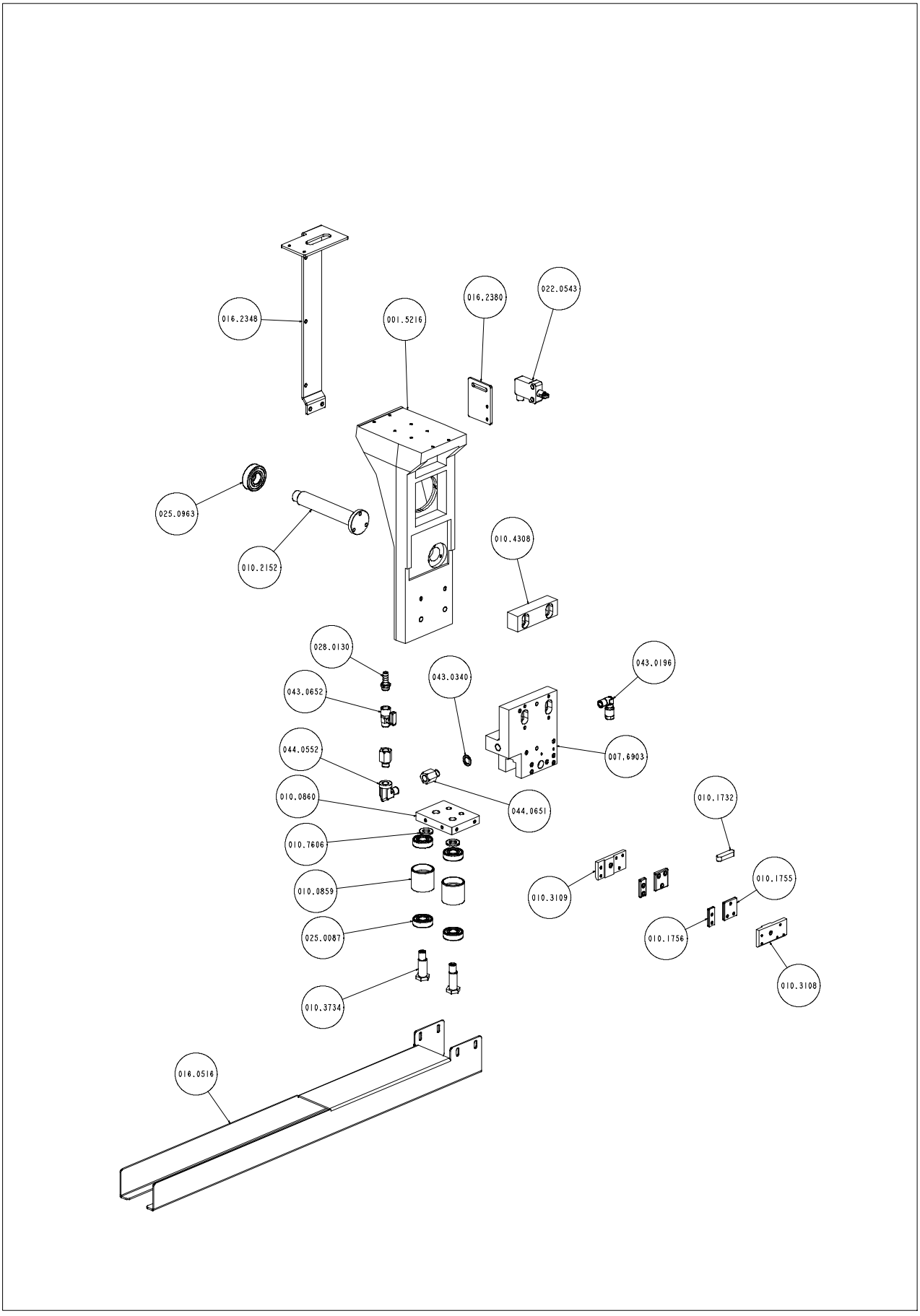
This part of the manual contains detailed exploded views of the machine which can help to gain a deeper knowledge of how it is made.

Rear blade- guide head unit



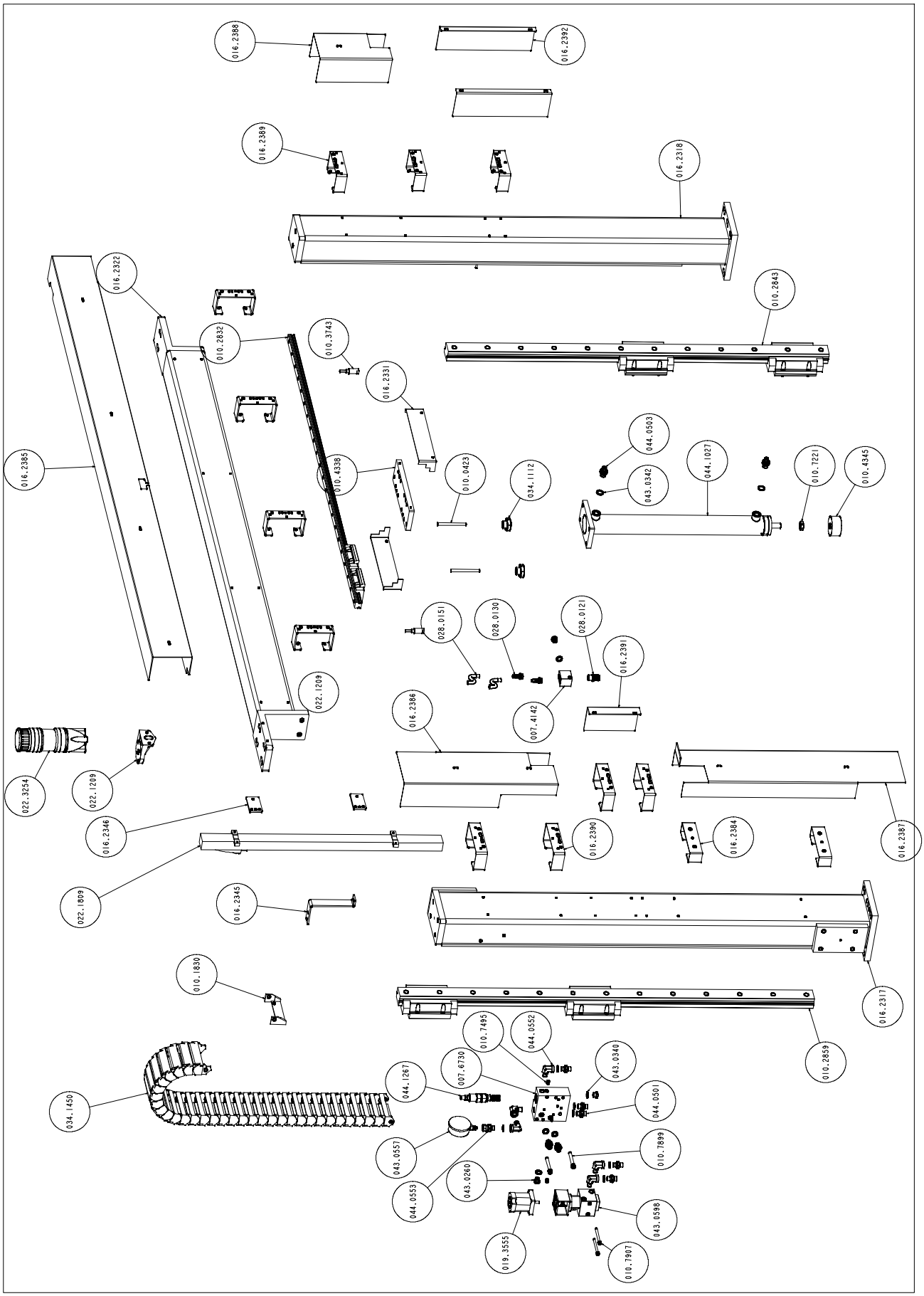
Code	Description	Description	Quantity
001.5217	STAFFA TEST. GUIDAL. POSTERIORE	REAR BAND GUIDE BRACKET	1.000
007.4838	PERNO BLOCCAGGIO TESTINA GUIDA-LAMA POSTERIORE	LOCKING PIN REAR HEADGUIDE	1.000
007.6662	BOCCOLA PUNTO FISSO SHARK 452	FIXING BUSHING SHARK 452	1.000
007.6904	TESTINA GUIDALAMA POSTERIORE	REAR HEAD GUIDING BLADE	1.000
010.0859	RULLO PREMILAMA SH 420 CNC- HS	BAND PUSHER ROLLER	2.000
010.0860	SUPPORTO PERNI ECCENTRICI TESTI-NA GUID.	ECCENTRIC PIN HEAD BAND GUIDE SUP.	1.000
010.0902	MOLLA PUNTO FISSO TESTA MOD. 95	HEAD FIXED POINT SPRING	1.000
010.1732	CHIAVETTA PREMILAMA TESTINA	CARBIDE PAD KEY SH 410 CNC HS	1.000
010.1755	PLACCHETTA GUIDALAMA ANTERIORE	ANTERIOR GUIDE BLADE PLATE	2.000
010.1756	PLACCHETTA GUIDALAMA POSTE-RIORE	ANTERIOR GUIDE BLADE PLATE	2.000
010.3108	SUPPORTO DESTRO PLACCHETTE GUIDALAMA	GUIDE BLADE RIGHT PLATE SUPPORT	1.000
010.3109	SUPPORTO SINISTRO PLACCHETTE GUIDALAMA	GUIDE BLADE LEFT PLATE SUPPORT	1.000
010.3734	PERNO ECCENTRICO CUSCINETTI PREMILAMASH	BLADEPUSHER BEARING ECCENTRIC PIN	2.000
010.4308	STAFFA REGOLAZIONE TESTINE GUI-DALAMA	BANDGUIDE REGUL.BRACKET	1.000
010.4364	STAFFA SOSTEGNO LASER	LASER SUP.BRACKET	1.000
010.7226	DADO AUTOBLOCCANTE M6 (010.7226)	M6 SELF- LOCKING SCREW NUT	1.000
010.7603	RONDELLA 0 6 (010.7603)	0 6 WASHER (010.7603)	1.000
016.2328	CARTER LAMA POSTERIORE MOBILE	MOBLE REAR CARTER BLADE	1.000
016.2347	STAFFA FISSAGGIO LASER	LASER FIXING BRACKET	1.000
025.0087	CUSCINETTO 6202 2ZPER	BEARING 6202 2Z PH 100	4.000
028.0130	RACCORDO 1/4- 9 CL 2601	JOINT 1/4- 9 CL 2601	1.000
034.1107	VOLANTINO O 30 M6 X 20	O 30 M6 X 20 HANDWHEEL	1.000
043.0196	RACCORDO A GOMITO MF 8X1/4 CL 1020	MF 8X1/4 CL 1020 ELBOW JOINT	1.000
043.0340	RONDELLA RAME 13X19X1,5- 1/4	13X19X1,5- 1/4 COPPER WASHER	1.000
043.0652	RUBINETTO 1/4 F.M.	1/4 F. M. TAP	1.000
044.0552	RACCORDO A GOMITO IDRAULICO MF 1/4 ALTAPRESSIONE	HYDR. ELBOW JOINT M/F 1/4 HIGH PRESSURE	1.000
044.0651	PROLUNGA 1/4’ M.F. ESAGONALE 25MM.	”1/4”” M.F. EXTENSION 20 MM”	1.000
022.3253	FARO LED 9W 12/24 VCC 70	HEADLIGHT LED 9W 12/24 VCC 70	1.000
010.3194	SOSTEGNO LASER LUCE N.T.	LIGHT AND LASER SUPPORTING N.T.	1.000
022.1191	DISPOSITIVO LASER MOD.5OEM 24V OTTICA A RIGA CON M8 MASCHIO PAN-NELLO SENZA CAVO	LASER DEVICE 24V MOD.5OEM OPTIC LINE WITH M8 MALE PANEL WIRELESS	1.000

Front blade- guide head unit



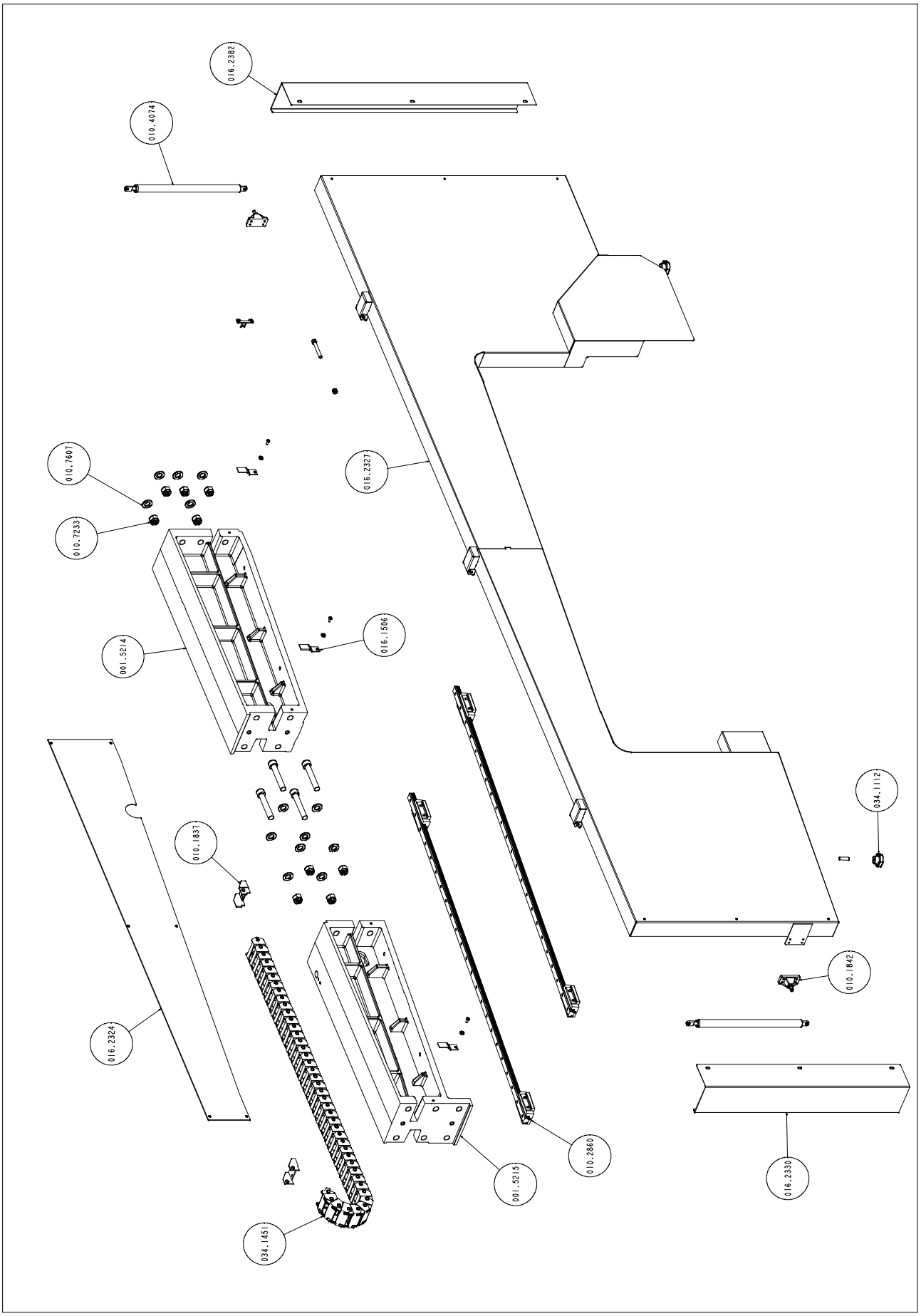
Code	Description	Description	Quantity
001.5216	STAFFA TEST. GUIDAL. ANTERIORE	FRONT BAND GUIDE BRACKET	1.000
007.6903	TESTINA GUIDALAMA ANTERIORE	FRONT HEAD GUIDING BLADE	1.000
010.0859	RULLO PREMILAMA SH 420 CNC- HS	BAND PUSHER ROLLER SH 420 CNC-HS	2.000
010.0860	SUPPORTO PERNI ECCENTRICI TESTINA GUID.SSH 420 CNC- HS	ECCENTRIC PIN HEAD BAND GUIDE SUP.SH420	1.000
010.1732	CHIAVETTA PREMILAMA TESTINA SH 410 CNCHS- SH 500 HRC	CARBIDE PAD KEY SH 410 CNC HS	1.000
010.1755	PLACCHETTA GUIDALAMA ANTERIORESH 410- 420 CNC- HS	ANTERIOR GUIDE BLADE PLATE SH 410	2.000
010.1756	PLACCHETTA GUIDALAMA POSTERIORESH 410- 420 CNC- HS	ANTERIOR GUIDE BLADE PLATE SH 410	2.000
010.2152	ALBERO TRASCINAMENTO TEST. GUID. ANT.SHASHARK 652 SXI EVO	FRONT BAND GUIDE DRAG. SHAFT SH652 SXI	1.000
010.3108	SUPPORTO DESTRO PLACCHETTE GUIDALAMASH 410- 420 CNC- HS	GUIDE BLADE RIGHT PLATE SUPPORT SH 410	1.000
010.3109	SUPPORTO SINISTRO PLACCHETTE GUIDALAMASH 410- 420 CNC- HS	GUIDE BLADE LEFT PLATE SUPPORT SH 410	1.000
010.3734	PERNO ECCENTRICO CUSCINETTI PREMILAMASHSH 420 CNC- HS	BLADEPUSHER BEARING ECCENTRIC PIN SH420	2.000
010.4308	STAFFA REGOLAZIONE TESTINE GUIDALAMASH 310 CNC- HS	BANDGUIDE REGUL.BRACKETSH310CNCHS	1.000
016.2348	TRASCINATORE TUBO LIQUIDO	LIQU.TUBE PULLER SH 652 SXI EVO	1.000
016.2380	STAFFA FISSAGGIO FINECORSA ARCHETTO SH652 SXI EVO HCH- 18/25	BRACKET SWITCH BOW	1.000
022.0543	FINECORSA A ROTELLA X SH 230	LIMIT SWITCH	1.000
025.0087	CUSCINETTO 6202 2ZPER PH 100	BEARING 6202 2Z PH 100	4.000
025.0963	CUSCINETTO 6204 2Z	BEARING 6204 2Z	1.000
028.0130	RACCORDO 1/4- 9 CL 2601	JOINT 1/4- 9 CL 2601	1.000
043.0196	RACCORDO A GOMITO MF 8X1/4 CL 1020	MF 8X1/4 CL 1020 ELBOW JOINT	1.000
043.0340	RONDELLA RAME 13X19X1,5- 1/4	13X19X1,5- 1/4 COPPER WASHER	1.000
043.0652	RUBINETTO 1/4 F.M.	1/4 F. M. TAP	1.000
044.0552	RACCORDO A GOMITO IDRAULICO MF 1/4 ALTAPRESSIONE	HYDR. ELBOW JOINT M/F 1/4 HIGH PRESSURE	1.000
044.0651	PROLUNGA 1/4’ M.F. ESAGONALE 25MM.	”1/4”” M.F. EXTENSION 20 MM”	2.000
016.0516	CARTER LAMA ANTERIORE SH 652 SXI EVO N.T	FRONT BAND COVER SH 652 SXI EVO N.T.	1.000
010.7606	RONDELLA 0 12	0 12 WASHER	1.000

Column unit


016.2388
016.2392
016.2389
016.2318
016.2322
010.2843
010.2832
010.3743
016.2331
016.2385
010.4338
010.0423
034.1112
044.0503
044.1027
010.7221
010.4345
043.0342
028.0151
028.0130
028.0121
016.2391
022.1209
016.2386
007.4142
022.3254
022.1208
016.2346
016.2390
016.2384
016.2387
022.1809
016.2345
010.1830
016.2317
010.7495
044.0552
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007.6730
043.0340
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010.7907

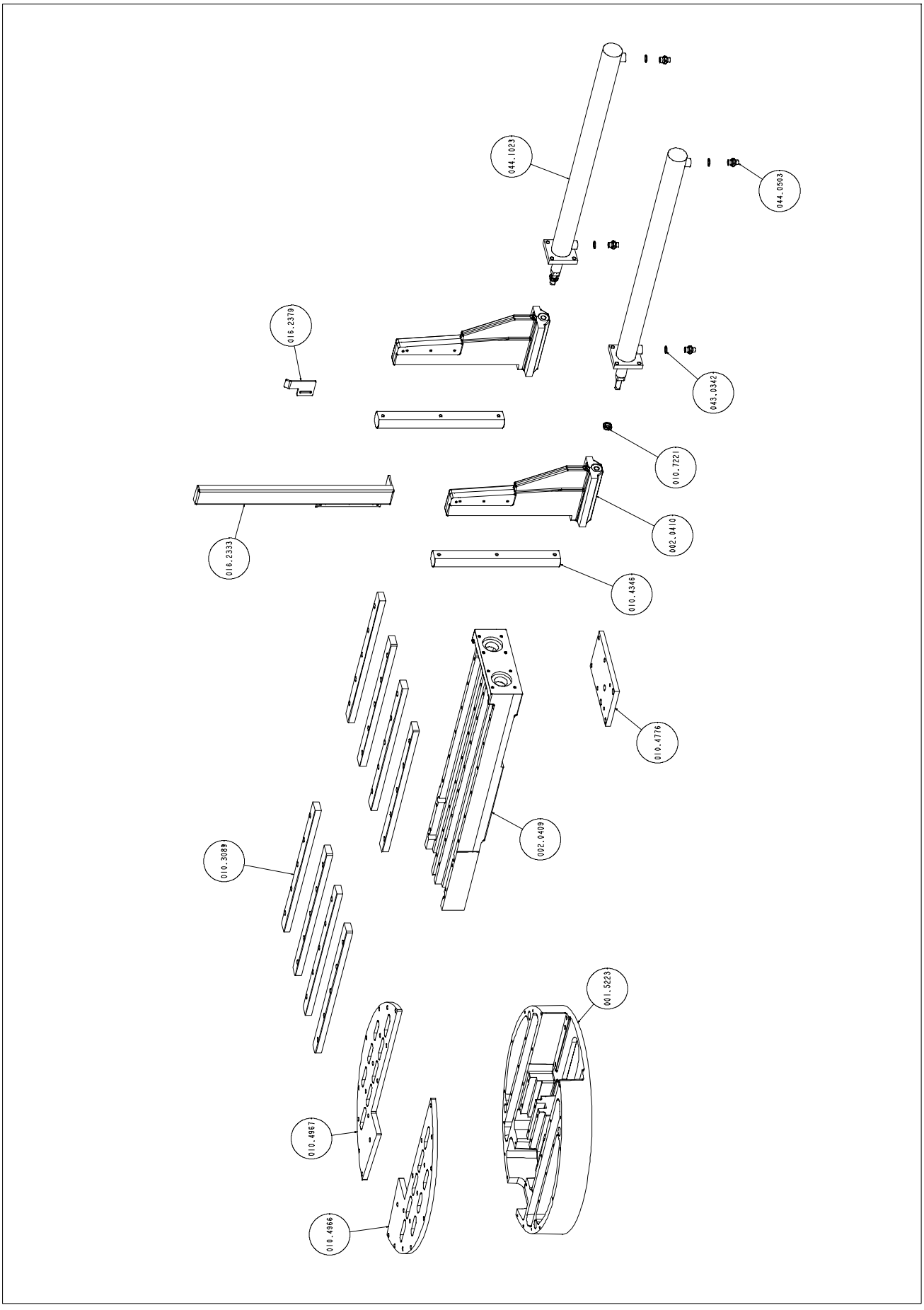
Code	Description	Description	Quantity
007.4142	SQUADRETTO PER LIQUIDO	PLATE SH 320- 330	1.000
010.0423	GRANO PUNTA PIANA 8X90 TI	GRUB SCREW 8X90 TI	2.000
010.1830	SET ATTACCHI 117.7.12P	SET CONNECTIONS 117.7.12P	1.000
010.2832	GUIDA PATTINO HGW25- HC- 2- R1300- ZB- H	SIDE GUIDE HGW25- HC- 2- R1300- ZB- H	1.000
010.2843	GUIDA PATTINO HGW45- HC2R1200ZB- H	PRELOADED LINE GUIDE LEN.45	1.000
010.2859	GUIDA PATTINO HGW45- HC- 2- R1305- E22,5- ZBH	PRELOADED LINE GUIDE HGW45- HC- 2- R1305- E22,5- ZBH	1.000
010.3743	PERNO BATTUTA MORSA VERTICALE IDRAULICA	BEAT VICE PIN HYDRAULIC VERTICAL VICE	2.000
010.4338	SUPPORTO PATTINI MORSA VERT.	SUPPORT SLIDER VERTICAL VICE	1.000
010.4345	GANASCIA MORSA VERTICALE	VICE JAW VERTICAL	1.000
010.7221	DADO M16 BASSO	M16 LOW SCREW NUT	1.000
016.2317	COLONNA DESTRA	RIGHT COLUMN	1.000
016.2318	COLONNA SINISTRA SHARK 652 SXI EVO	LEFT COLUMN	1.000
016.2331	PROTEZIONE PATTINI MORSA VERTICALE IDR.S	PROTECTION PADS GRIP VERTICAL HYDR	2.000
016.2345	PIASTRA FIX CURSORE POTENZIOMETRO TESTAS	FIX PLATE SLIDER POT HEAD	1.000
016.2346	PIASTRA FIX POTENZIOMETRO TESTA	PLATE FIX POTENTIOMETER HEAD	2.000
016.2384	SUPPORTO CARTER CAVI COLONNA POST.	SUPPORT FOR COLOUMN CABLE PROTECT.	2.000
016.2385	CARTER CAVI TRAVE CENTRALE	CENTRAL BEAM CABLE PROTECT.	1.000
016.2387	CARTER CAVI COLONNA POST.	REAR COLOUMN CABLE PROTECT.	1.000
016.2388	CARTER CAVI COLONNA ANT.	FORWARD COLOUMN CABLE PROTECT.	1.000
016.2389	SUPPORTO CARTER CAVI COLONNA POST.	SUPPORT FOR COLOUMN CABLE PROTECT.	7.000
016.2391	CARTER PANNELLO IDRAULICO P1	PROTECTION GUARD HYD. PANEL P1	1.000
016.2392	CARTER PANNELLO IDRAULICO P2	PROTECTION GUARD HYD. PANEL P2	2.000
022.1205	SUPPORTO A SQUADRO X LAMPEGGIANTE	FLASH LIGHT SUPPORT	1.000
022.1809	POTENZIOMETRO LINEARE TLH 600 025324	LINEAR POTENTIOMETER	1.000
022.3254	LAMPEGGIANTE LED 24 VAC SL7- CB- IMH +	FLASHING LED	1.000
028.0121	RACCORDO 3/8- 17 CL 2601	JOINT 3/8- 17 CL 2601	1.000
028.0130	RACCORDO 1/4- 9 CL 2601	JOINT 1/4- 9 CL 2601	2.000
028.0151	TUBO PLASTIFICATO 07- 11	PLASTIC HOSE 07- 11	2.000
034.1112	VOLANTINO O 40 M8 X PIEDISTALLO	O 40 M8 HANDWHEEL X STEEL BASE	2.000
034.1450	CATENA PORTACAVI 17.07.100.0 SH 652 SXI	CHAIN CABLE 17.07.100.0 SH 652 SXI	1.000
043.0260	TAPPO TTE4 1/4 - CL 2611	1/4 TAP TTE4	1.000
043.0340	RONDELLA RAME 13X19X1,5- 1/4	13X19X1,5- 1/4 COPPER WASHER	1.000
043.0342	RONDELLA RAME 3/8	3/8 COPPER WASHER	2.000
044.0503	NIPPLO IDRAULICO M 3/8- M 1/4	HYDRAULIC FITTING M 3/8 M 1/4	2.000
044.1027	CILINDRO IDRAULICO 0 50X25X465MORSA VERT	HYDRAULIC CYLINDER 0 50X25X465 V.VICE	1.000
019.3555	MOTORE FL57STH76- 2804A- 12 X CILINDRO NC	MOTOR F257STH76- 2804 FOR CYLINDER	1.000
044.0552	RACCORDO A GOMITO IDRAULICO MF 1/4 ALTA	HYDR. ELBOW JOINT M/F 1/4 HIGH PRESSURE	2.000
044.0501	NIPPLO NP 1/4 IDRAULICO	NP 1/4 HYDRAULIC NIPPLE	6.000
016.2386	CARTER CAVI SUPERIORE COLONNA POSTERIORE	CARTER CABLE COLUMN UPPER REAR	1.000
016.2390	SUPPORTO PANNELLO IDRAULICO SPM SH 652	PANEL SUPPORT HYDRAULIC SPM SH 652	4.000
044.0553	RACCORDO IDRAULICO MF 1/4 GIREVOLE X	HYDRAULIC COUPLING FOR POWER PACK MANOM.	1.000
043.0557	MANOMETRO 0- 60 WIKA P.1275 PER	WIKA 0 60 MANOMETER SH 310 SXI	1.000
044.1267	VALVOLA RIDUTTRICE PRESS. DIRETTA SENZA	DIRECT PRESSURE RIDUC.VALVE SH310CN- CHS	1.000
007.6730	PANNELLO IDRAULICO REGOLAZIONE TESTA	HYDR.PANEL HEAD REG. SH 652 SXIEVO	1.000
010.7495	GRANO VCE PUNTA PIANA 1/8 GAS	1/8"X9 FLAT POINT VCE GRUB SCREW	1.000
010.7907	VITE TCEI 6 X 65	TCEI 6 X 65 SCREW	1.000
043.0598	REGOLATORE DISCESA TESTA COMPLETO SH 330	HEAD DOWN STROKE REGULATOR SH330CN	1.000
010.7899	VITE TCEI 8 X 60	TCEI 8 X 60 SCREW	1.000
016.2322	TRAVE CENTRALE COLONNE SHARK 652 SXI EVO	CENTRAL BEAM SHARK 652 SXI EVO	1.000

Bow beam unit



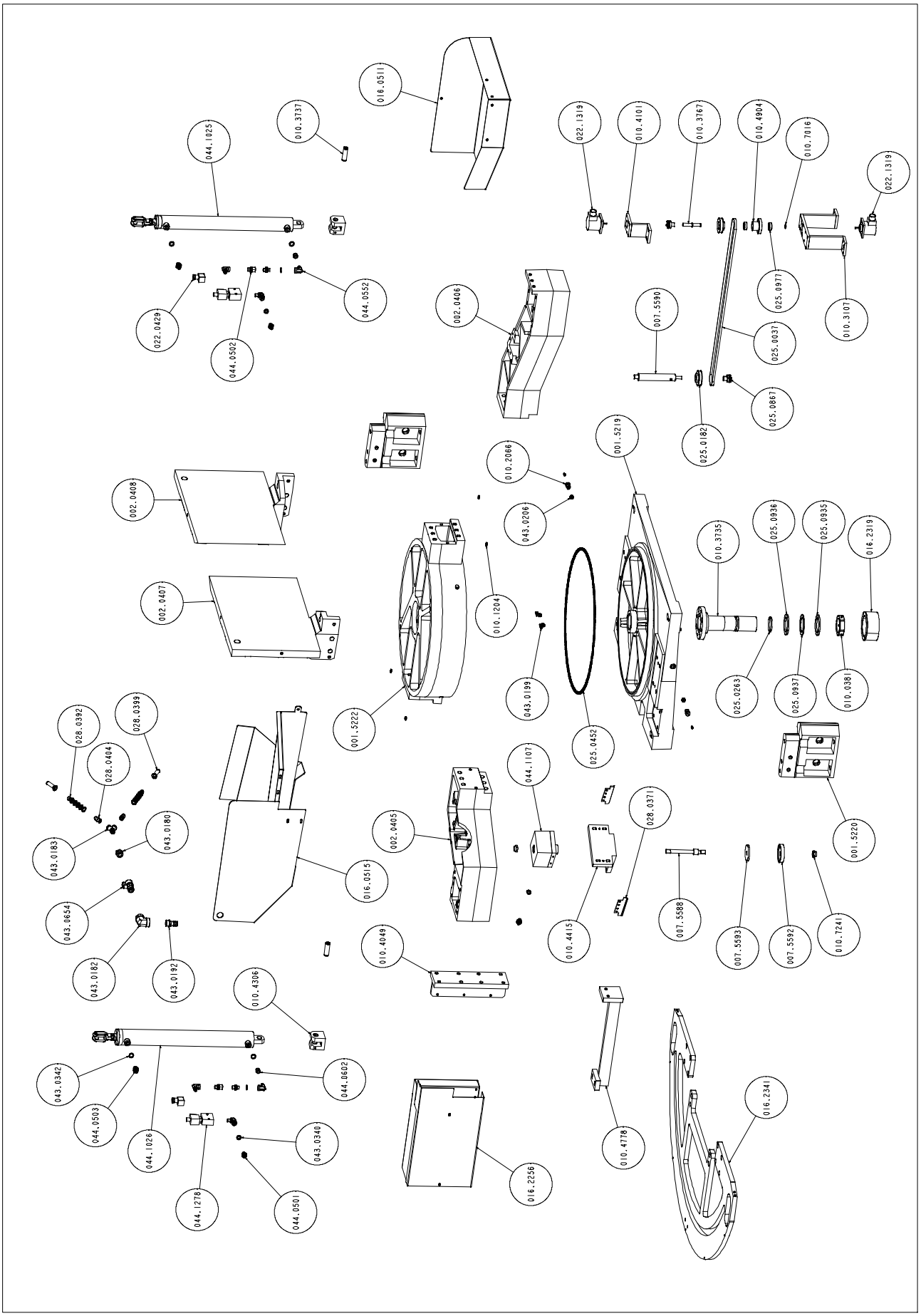
Code	Description	Description	Quantity
001.5214	TRAVE ARCHETTO SPM	BEAM BOW MOTO PULLEY SEC	1.000
001.5215	TRAVE ARCHETTO SPF	BEAM BOW IDLER PULLEY SEC	1.000
010.1837	SET ATTACCHI 905.010- 905.011 AX-CNC	ATTACHMENTS SET AX- CNC	2.000
010.1842	SUPPORTO MASCHIO X MOLLA A GAS	SPRING MALE SUPPORT	2.000
010.2860	GUIDA PATTINO HGW20- HC- 2- R1360- E20- ZB- H	SLIDE GUIDE HGW20- HC- 2- R1360- E20- ZB- H	2.000
010.4074	MOLLA GAS 300 MM 500N	GAS SPRING 300 MM 500N	2.000
010.7233	DADO AUTOBLOCCANTE M16	M16 SELF- LOCKING SCREW NUT	9.000
010.7480	GRANO VCE PUNTA PIANA 8 X 30	8 X 30 FLAT POINT VCE GRUB SCREW	2.000
010.7607	RONDELLA 0 16 (010.7607)	0 16 WASHER (010.7607)	13.000
016.2324	CARTER TRAVI ARCHETTO	BOW BEAM CARTERSHARK 652 SXI EVO	1.000
016.2327	COPERCHIO ARCHETTO SH 652 SXI EVO	BOW COVER SH 652 SXI EVO	1.000
016.2330	PROTEZIONE ANT. MOLLA COPERCHIO ARCHETTOSH 652 SXI EVO HCH- 18/25	FRONT BOW SPRING COVER SH 652 SXIEVO	1.000
016.2382	PROTEZIONE POST.MOLLA COPER-CHIO ARCHETTOSH 652 SXI EVO HCH- 18/25	REAR SPRING PROTECTION COVER BOW	1.000
034.1112	VOLANTINO O 40 M8 X PIEDISTALLO SH- CB 330	O 40 M8 HANDWHEEL X STEEL BASE SH	2.000
034.1451	CATENA PORTACAVI 17.04.63.0 AX-CNC	CABLES CHAIN AX- CNC	28.000
016.1506	STAFFA DI FERMO SH 320- 330- 332	LOCKING BRACKET SH 320- 330	1.000

Vice assembly



Code	Description	Description	Quantity
001.5223	PIATTAFORMA ROTANTE SUPERIORE	UPPER DECK ROTARY	1.000
002.0409	MORSA DI TAGLIO	VICE OF CUT	1.000
002.0410	SCORREVOLE MORSA DI TAGLIO	SLIDING CLAMP CUT	2.000
010.3089	GUIDA SCORREVOLE MORSA	VICE GUIDE SLIDING	8.000
010.4346	GANASCIA MOBILE SH 652 SXI EVO	MOVABLE JAW SH 652 SXI EVO	2.000
010.4776	SUPPORTO MORSA SH 652 SXI EVO	SUPPORT CLAMP	1.000
010.4966	PIANO DI TAGLIO SINISTRO	CUTTING BOARD LEFT	1.000
010.4967	PIANO DI TAGLIO DESTRO	CUTTING BOARD RIGHT	1.000
010.7221	DADO M16 BASSO (010.7221)	M16 LOW SCREW NUT (010.7221)	2.000
016.2333	STAFFA TRASCINAMENTO TESTINA GUID. ANT.SH 652 SXI EVO	FRONT BAND GUIDE DRAG BRACKET SH 652 SXI	1.000
016.2379	STAFFA COMANDO FINECORSA AR-CHETTO SH 652SXI EVO HCH- 18/25	BRACKET CONTROL LIMIT BOW	1.000
043.0342	RONDELLA RAME 3/8	3/8 COPPER WASHER	4.000
044.0503	NIPPLO IDRAULICO M 3/8- M 1/4	HYDRAULIC FITTING M 3/8 M 1/4	4.000
044.1023	CILINDRO IDRAULICO 0 50X30X770 MORSA DITAGLIO SH 652 SXI EVO	CUT VICE HYD CYL.0 50X30X770 SH652SXIEVO	2.000

Cutting plane unit

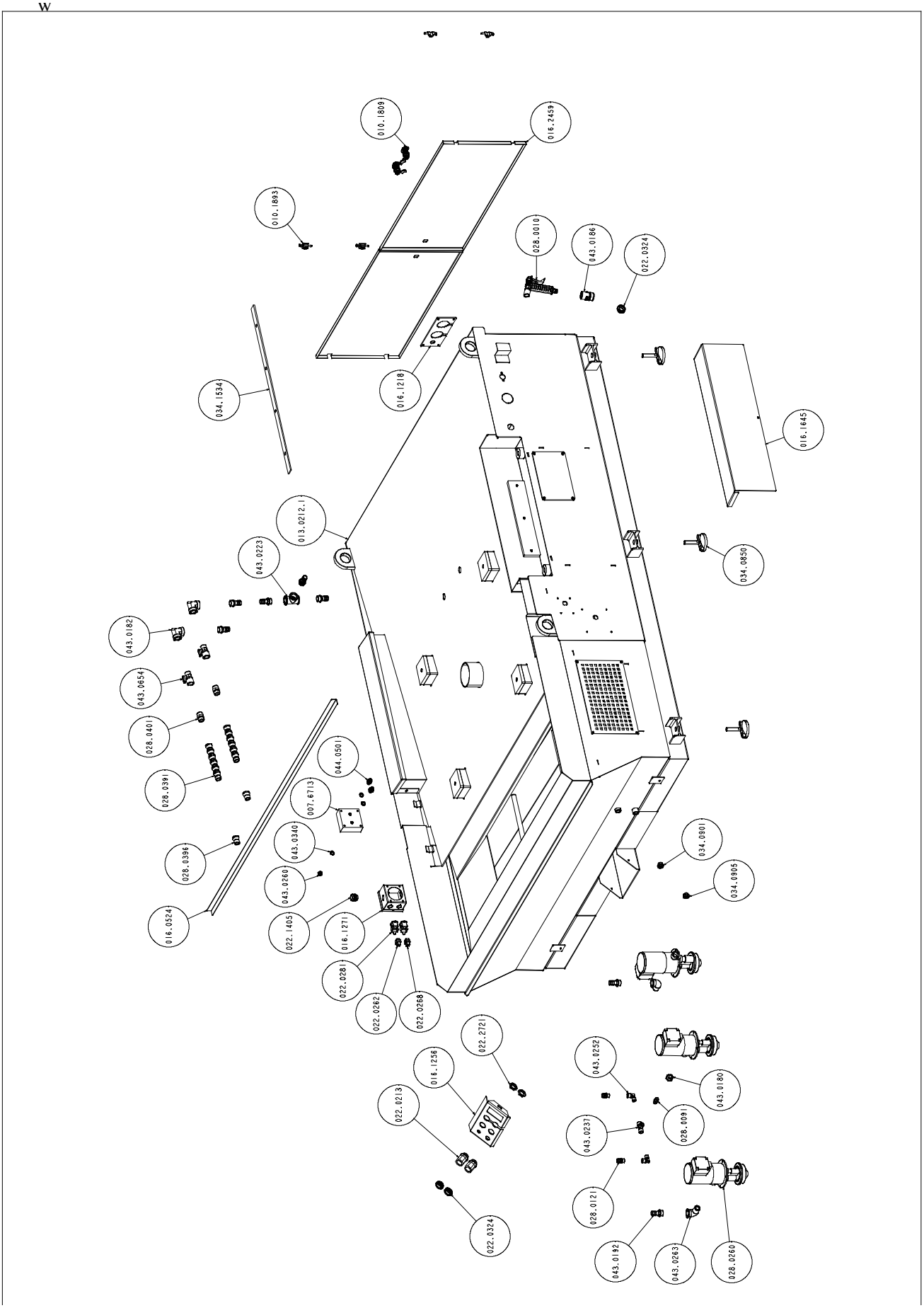


Code	Description	Description	Quantity
001.5219	PIATTAFORMA FISSA	FIXED PLATFORM SH652SXI- EVO	1.000
001.5220	SUPPORTO SQUADRO MORSA	VICE BACK STOP SUPPORT SH 652 SXI EVO	2.000
001.5222	PIATTAFORMA ROTANTE	ROTATING PLATFORM SH 652 SXI- EVO	1.000
002.0405	BRACCIO CULLA SPM SH 652 SXI- EVO M.1665	MOTO PULLEY SEC.CRADLE ARM	1.000
002.0406	BRACCIO CULLA SPF SH 652 SXI- EVO M.1666	IDLER PULLEY SEC.CRADLE ARM	1.000
002.0407	SQUADRO SINISTRO	LEFT VICE BACK STOP SH 652 SXI EVO	1.000
002.0408	SQUADRO DESTRO SH652 SXI- EVO MOD.1672	RIGHT VICE BACK STOP SH 652 SXI EVO	1.000
007.5588	PERNO VOLAMPRESS BLOCC. PIANO GIR.	TURNTABLE CLAMPING PIN SH 652 SXI EVO	1.000
007.5590	PERNO TRASM. ANGOLO DI TAGLIO	TRANS.ANGLE CUT PIN SH 652 SXIEVO	1.000
007.5592	SUPPORTO FERODO BLOCCAGIO ROTA- ZIONE	ROTATION LOCKING SUPPORT FERODO	1.000
007.5593	FERODO BLOCCAGIO ROTAZIONE	FERODO BLOCCAGGIO ROTAZIONE	1.000
010.0381	GHIERA M65 FILETTO SINISTRO	RING NUT M65 LEFT THREAD SH410DC	1.000
010.2066	BOCCOLA FISSAGGIO INGRASSATORE	FIXING BUSHING SH 260- 280	2.000
010.3735	PERNO ROTAZIONE PIANO GIREVOLE	TURNTABLE ROTATION PIN SH 652 SXI EVO	1.000
010.3737	PERNO SNODO CIL. TESTA ARCHETTO	BOW CYLIND.ARTIC.PIN SH 652SXI EVO	2.000
010.4049	RINFORZO POST. CULLA SPM SH 652 SXI EVO	SPM CRADLE REAR REIFORCE	1.000
010.4306	STAFFA AGGAN. CILIN. DISCESA TESTA CULLASPM	DOWN STROKE M.P.S.CYL.COUPLER BRAC- KET	2.000
010.4778	SUPPORTO PIASTRA BLOCCAGGIO PIANOGIREVOLE SH 652 SXI EVO HCH- 18/25	SUPPORT LOCKING PLATE REVOLVING	1.000
010.7241	DADO AUTOBLOCCANTE M16 BASSO US	M16 LOW SELF- LOCKING SCREW NUT	2.000
016.2319	FLANGIA PROTEZIONE PERNO ROTAZIONE	ROTATION PIN FLANGE SH 652 SXI EVO	1.000
016.2341	PIASTRA BLOCCAGGIO PIANO GIREVOLE	TURNTABLE CLAMPING PLATE	1.000
025.0263	ANELLO DI TENUTA OR 6225	SEAL 6225	1.000
025.0452	RULLI 6X6 AISI 420	ROLLERS 6X6 AISI 420	321.000
025.0935	RALLA GS 81113	WASHER GS 81113	1.000
025.0936	RALLA WS 81113	WASHER WS 81113	1.000
025.0937	GABBIA ASSIALE A RULLINI AXK 6590	AXIAL CAGE WITH ROLLERS AXK 6590	1.000
025.0977	CUSCINETTO 7201BE	BEARING 7201BE	2.000
028.0371	BARRETTA VULCANIZZATA TIPO VAJ A17	VULCANIZED RUBBER TYPE VAJ A17	2.000
043.0199	ATTACCO A GOMITO GIREVOLE 4X1/8 CL 6521	4X1/8 TURNING ELBOW JOINT	2.000
043.0206	ATTACCO A ESAGONO 4X1/8 - CL 6511	4X1/8 - CL 6511 HEXAGONAL COUPLING	2.000
043.0340	RONDELLA RAME 13X19X1,5- 1/4	13X19X1,5- 1/4 COPPER WASHER	22.000
043.0342	RONDELLA RAME 3/8	3/8 COPPER WASHER	2.000
044.0501	NIPPLO NP 1/4 IDRAULICO	NP 1/4 HYDRAULIC NIPPLE	22.000
044.0503	NIPPLO IDRAULICO M 3/8- M 1/4	HYDRAULIC FITTING M 3/8 M 1/4	1.000
044.0552	RACCORDO A GOMITO IDR. MF 1/4 ALTA- PRESSIONE	HYDR. ELBOW JOINT M/F 1/4 HIGH PRESSU- RE	1.000
044.1025	CILINDRO IDR. 0 50X25X510DISCESA TESTA	D.STROKE HYD.CYL 0 50X25X510	1.000
044.1026	CILINDRO IDR. 0 60X30X510DISCESA TESTA	D.STROKE HYD.CYL.0 60X30X510	1.000
044.1107	CILINDRO IDRAULICO 0 100 DOPPIO EFFET- TO	HYDRAULIC CYLINDER 0 100 SH652SXIEVO	1.000
044.0602	RIDUZIONE 3/8 - 1/4 MF IDRAULICA	MF 3/8 - 1/4 HYDRAULIC REDUCTION	1.000
044.0502	NIPPLO IDRAULICO GIREVOLE GMF 1/4	GMF 1/4 ROTATING HYDRAULIC NIPPLE	1.000
016.2256	SCATOLA DI DERIVAZIONE ARCHETTO	DERIVATION BOW BOX SH 652 SXI EVO	1.000
025.0182	PULEGGIA DENTATA METR. PASSO 5 40 DENTI	WHEEL 40 5M 9	1.000
025.0037	CINGHIA DENTATA METRICA PASSO 5 LARG. 9	TIMING BELT 5M 9 1270	1.000
010.4904	TAMPONE PERNO ENCODER SH 652 SXI EVO	ENCODER PIN PAD SH 652 SXI EVO	1.000
010.3107	SUPPORTO ENCODER	ENCODER SUPPORT	1.000
022.1319	ENCODER AST614/GA- 6- QRCP	ENCODER	1.000
025.0867	CALETTATORE TLK 110 12X18 SH 652 SXI EVO	KEY TLK 110 SH 652 SXI EVO	1.000
044.1278	VALVOLA BLOCCAGGIO PIANO GIREVOLE V3 DC	ROTATING TABLE LOCKING VALVE V. 24 DC	1.000
043.0192	RACCORDO RB 9889 3/4X20	RB 9889 JOINT 3/4X20	1.000
043.0182	RACCORDO A GOMITO FF ZINCATO 3/4	3/4 ELBOW ZINKED JOINT	1.000
043.0654	RUBINETTO M/F 3/4 CL 6310	M/F 3/4 CL 6310 TAP	1.000
043.0183	RACCORDO A Y 90 MASCHIO 3/8	Y MALE JOINT 3/8	1.000
043.0180	RIDUZIONE M 3/4- F 3/8	REDUCTION M 3/4- F 3/8	1.000
028.0392	TUBO LOOC LINE BZ44BO.0350 3/8	LOOC LINE HOSE BZ44BO.0350 3/8	1.000
028.0404	RACCORDO 3/8 NPT LOOC LINE 1/2 ART.59864	FITTING 3/8 NPT	1.000
028.0399	UGELLO 0 12,7 - 1/2 ART. 59863	NOZZLE 0 12,7 - 1/2	1.000
016.0515	CARTER MOTORE ROTAZIONE PIANO GIRE- VOLE	COVER MOTOR ROTATING TABLE SH652SXI N.T.	1.000
010.4415	SUPPORTO VOLAMPRESS BLOCCAGGIO PIANO	TURNTABLE CLAMPING SUPP.SH 652 SXI EVO	1.000

Code	Description	Description	Quantity
022.0429	CONNETTORE ELETTROVALVOLA IN DC+LED+FILTRO V1401	ELECTROVALVE CONNECTOR IN DC+LED+FILTER	1.000
010.1204	INGRASSATORE M 6	M 6 LUBRICATOR	1.000
016.0511	RACCOGLITORE LIQUIDO ANTERIORE SH 652	FRONT COOLANT TRAY SH 652	1.000
010.3767	PERNO ENCODER ANGOLO DI TAGLIO SH 652	ENCODER ANGLE CUT PIN SH 652SXI EVO	1.000
010.7016	ANELLO SEEGER DIAM. 12	0 12 SEEGER RING	1.000
022.1319	ENCODER AST614/GA- 6- QRCP	ENCODER	1.000
010.4101	SUPPORTO DOPPIO ENCODER X VISUALIZ. ANGOLO DI TAGLIO SH 652	SUPPORT DOUBLE CUTTING ANGLE ENCODER VIEWER FOR SH 652	1.000

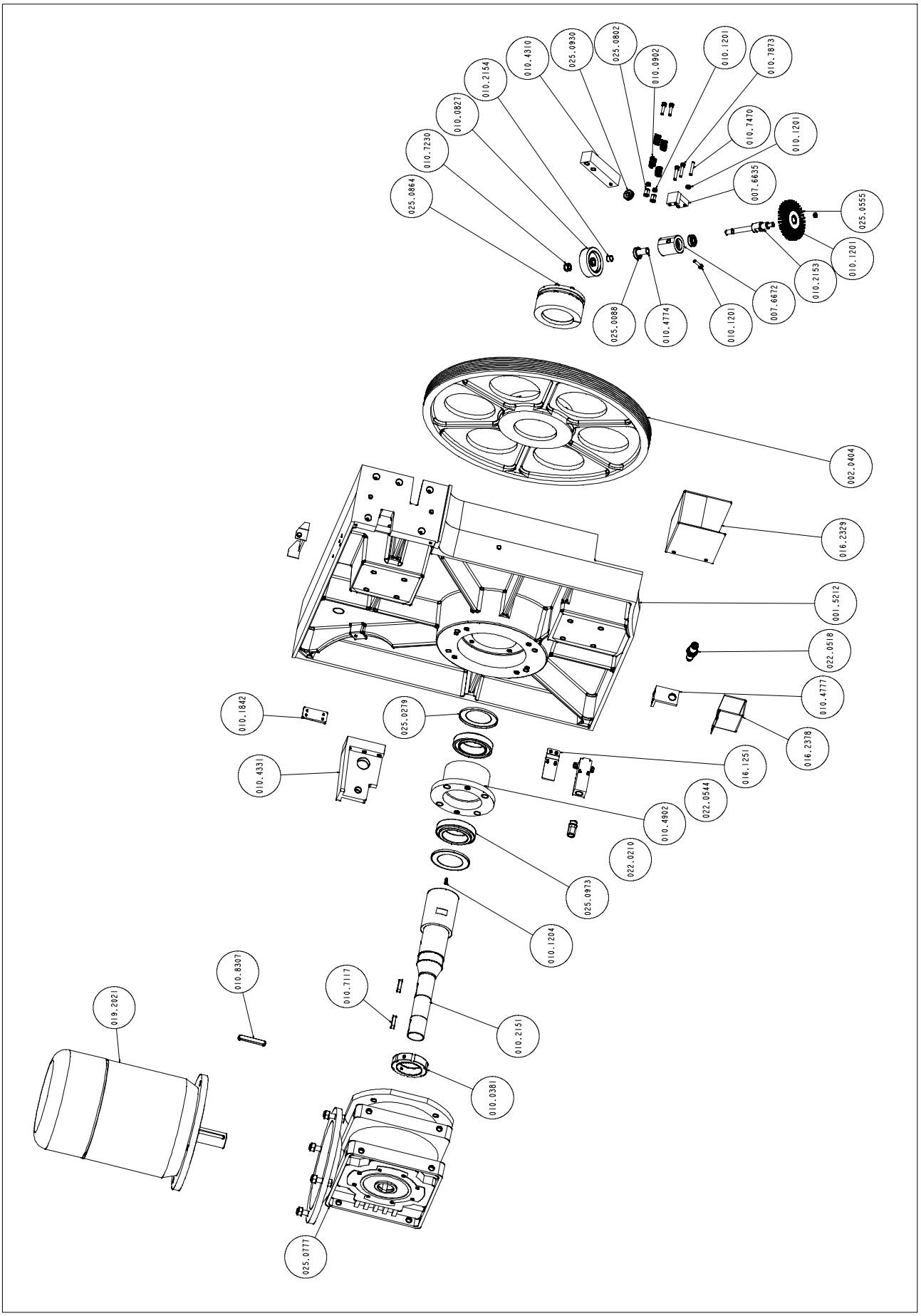
Base unit

W


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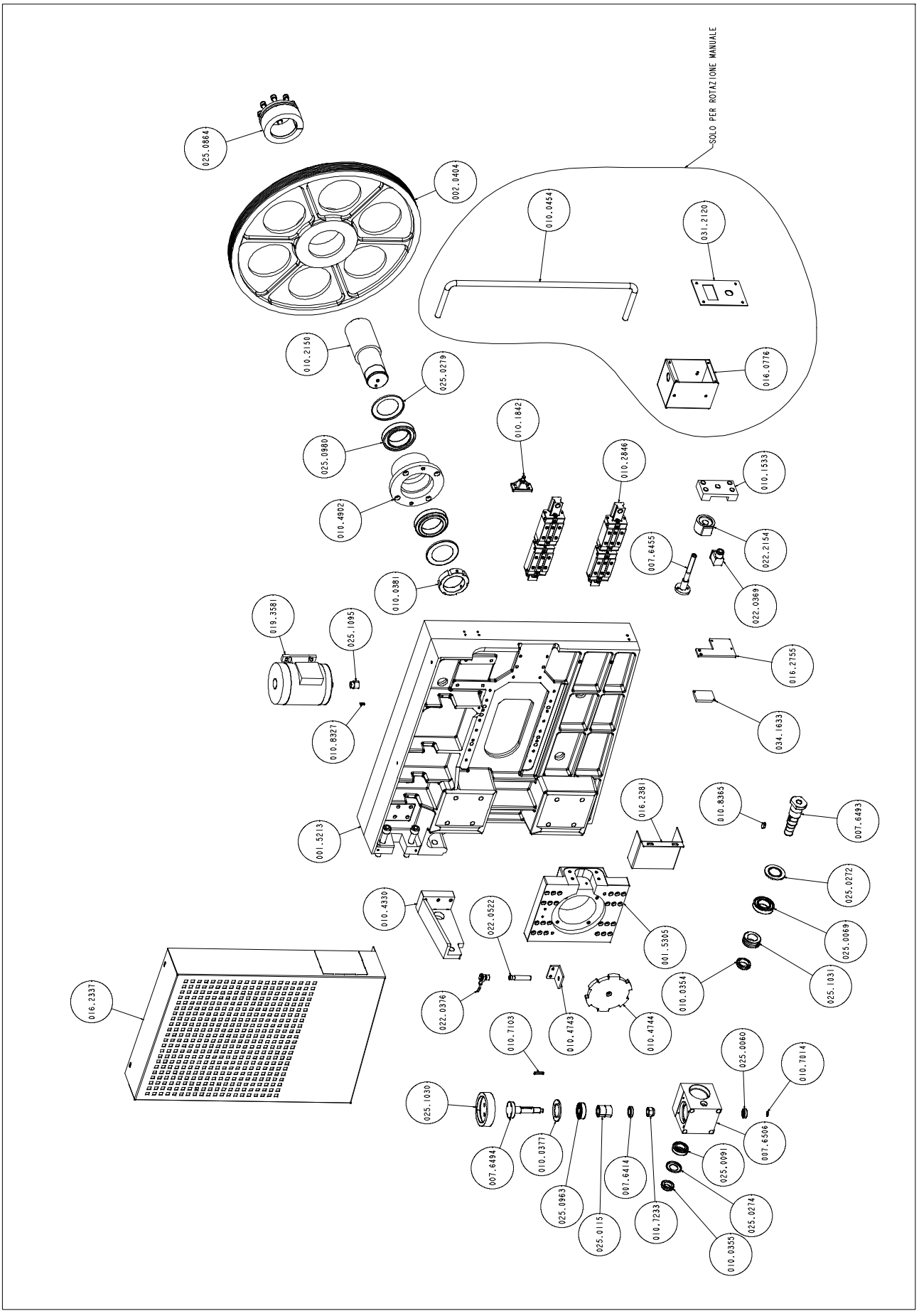
Code	Description	Description	Quantity
007.6713	BLOCCO DI DERIVAZIONE IDR. X ADAT-TATORI	BLOCK JUNCTION IDR. X ADAPTERS	2.000
016.1271	SCATOLA DI GIUNZIONE PICCOLA 95X95X70	JUNCTION BOX 95X95X70	1.000
022.0324	PASSACAVI 24 INC.MM.2.5	FAIRLEADS 24 INC.M M.2.5	3.000
028.0010	PISTOLA SH- TI ART. 8966	COOLANT PISTOL SH- TI 8966	1.000
028.0091	NIPPLO 3/8' - CL 2500	NIPPLE 3/8" - CL 2500	1.000
028.0121	RACCORDO 3/8- 17 CL 2601	JOINT 3/8- 17 CL 2601	2.000
028.0260	ELETTROPOMPA V.220- 240/380- 415.50HZ SPV33	ELECTROPUMP 230- 400.50 HZ SPV33	2.000
028.0391	TUBO LOOC LINE SPD ART.69540 3/4	LOOC LINE HOSE SPD ART.69540 3/4	2.000
028.0396	UGELLO 0 20 SPD FP50.11B50	NOZZLE 0 20 SPD FP50.11B50	2.000
028.0401	RACCORDO 3/4 SPD FP50.17A20	FITTING 3/4 SPD FP50.17A20	2.000
034.0850	PIEDINO ZINCATO DIAM. 80 M16	ZINCATO FOOT DIAM. 80 M16	6.000
034.0901	TAPPO LIVELLO OLIO 1/2 'GAS.	1/2"GAS. OIL LEVEL CAP	1.000
034.0905	TAPPO OLIO TAO/3 1/2' NERO	TAO/3 1/2" BLACK OIL CAP"	1.000
034.1534	POLIZENE X SCORRIMENTO CASSET-TO CENTR.	POLIZENE X SLIDING DRAWER CENTR.	2.000
043.0180	RIDUZIONE M 3/4- F 3/8	REDUCTION M 3/4- F 3/8	1.000
043.0182	RACCORDO A GOMITO FF ZINCATO 3/4	3/4 ELBOW ZINKED JOINT	2.000
043.0186	RACCORDO FEMMINA 1/2 ACQUASTOP	1/2 WATERASTOP FEMALE JOINT	1.000
043.0192	RACCORDO RB 9889 3/4X20	RB 9889 JOINT 3/4X20	6.000
043.0223	RACCORDO TE FFF ZINCATO 3/4	TE FFF GALVANISED 3/4 JOINT	1.000
043.0237	RACCORDO A T FFF 3/8	3/8 T JOINT	1.000
043.0252	GOMITO MF 3/8 CL 2020	MF 3/8 CL 2020 ELBOW	2.000
043.0260	TAPPO TTE4 1/4 - CL 2611	1/4 TAP TTE4	12.000
043.0340	RONDELLA RAME 13X19X1,5- 1/4	13X19X1,5- 1/4 COPPER WASHER	21.000
044.0501	NIPPLO NP 1/4 IDRAULICO	NP 1/4 HYDRAULIC NIPPLE	8.000
022.0213	RACCORDO RAPIDO SEM PG 21	RAPID JOINT SEM PG 21	1.000
016.1256	PIASTRA PASSACAVI POSTERIORE	CABLE REAR PLATE SH 652 SXI	1.000
022.2721	CONTRODADO PG 21	LOCK NUT PG 21	1.000
016.1218	PIASTRA PASSACAVI ANTERIORE SH652SXI- EVO	CABLE FRONT PLATE SH652SXI-EVO	1.000
022.0268	FRUTTO PRESA 5P. 10A. CKF04	YIELD SOCKET 5P. 10A. CKF04	1.000
022.0262	FRUTTO PRESA 4P. 10A. CKF03	YIELD SOCKET 4P. 10A. CKF03	1.000
022.0281	CUSTODIA PRESA A PARETE 4P. CK03I	SOCKET HOUSING 4P. CK03I	1.000
022.1405	PULSANTE M22- D- S COD.216590 + PORTA CONT	BUTTON + CONTACT HOLDER	1.000
043.0654	RUBINETTO M/F 3/4 CL 6310	M/F 3/4 CL 6310 TAP	1.000
013.0212.1	PIEDISTALLO SH 652 SXI EVO N.T.	STEEL BASE SH 652 SXI- EVO	1.000
010.1893	CERNIERA SPORTELLO PIEDISTALLO N.T.	PROTECTION DOOR HINGE N.T.	1.000
010.1809	CHIUSURA SPORTELLO	DOOR LOCKING WIT KEY	1.000
016.2459	SPORTELLO PIEDISTALLO SH 652 SXI EVO	STEEL BASE DOOR SH 652 SXI EVO	1.000
022.0324	PASSACAVI 24 INC.MM.2.5	FAIRLEADS 24 INC.M M.2.5	1.000
016.1645	COPERCHIO SEDE ADATTATORI DI-SOLLEVAMENTO	LIFTING ADAPTOR COVER SH 652 SXI EVO	1.000
043.0263	RACCORDO A GOMITO M/F ZINCATO 3/4	3/4 ELBOW JOINT	1.000
016.0524	PARETE ROMPI FLUTTI PIEDISTALLO SH652	JET BREAKER WALL FOR STEEL BASE	1.000

SPM bow unit


010.4310
025.0930
025.0802
010.0902
010.1201
010.7873
010.2154
010.0827
010.7230
025.0864
010.7470
010.1201
007.6635
025.0555
010.1201
010.2153
007.6672
025.0088
010.4774
010.1201
002.0404
016.2329
001.5212
022.0518
010.4777
016.2378
016.1251
022.0544
010.4902
022.0210
025.0973
010.1204
010.1842
025.0219
010.4331
010.8307
010.7117
010.2151
010.0381
019.2021
025.0177

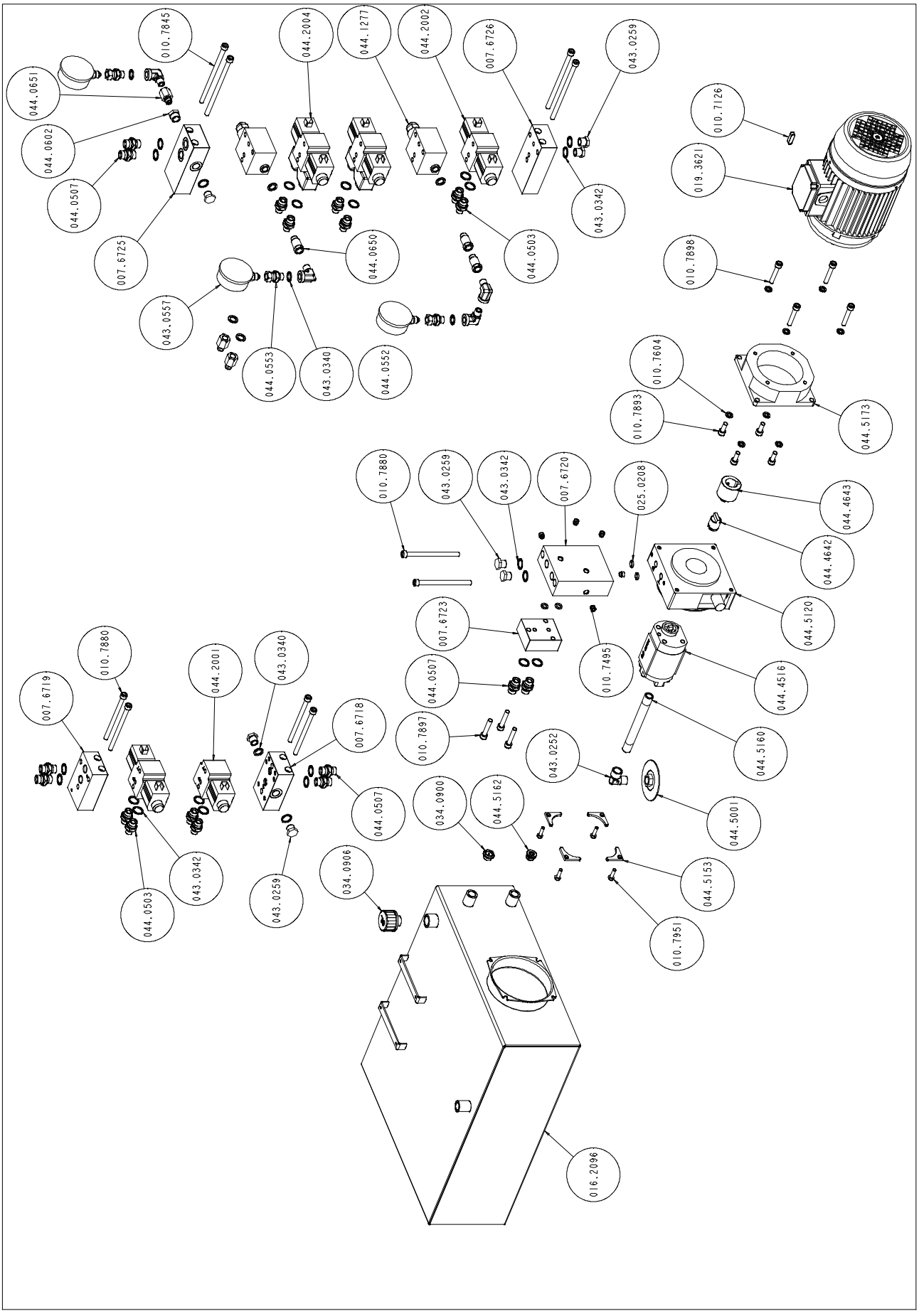
Code	Description	Description	Quantity
001.5212	ARCHETTO SPM SH 652 SXI- EVO M.1659	BOW WITH OUT MOTOR WHEEL	1.000
002.0404	PULEGGIA DIAM. 580	PULLEY DIAM.560 580	1.000
007.6635	PIASTRINO REGISTRAZIONE SPAZZOLA PULILAMA SHARK 452	BRUSH REGULATING PLATE	1.000
007.6672	SUPPORTO ALBERO SPAZZOLA PULIL.	BRUSH SHAFT SUPPORT	1.000
010.0381	GHIERA M65 FILETTO SINISTRO	RING NUT M65 LEFT THREAD	1.000
010.0827	RUOTA IN GOMMA X SPAZZOLA PULIL.	RUBBER WHEEL F. CHIP BRUSH	1.000
010.0902	MOLLA PUNTO FISSO TESTA MOD. 95	HEAD FIXED POINT SPRING	2.000
010.1204	INGRASSATORE M 6	M 6 LUBRICATOR	1.000
010.1842	SUPPORTO MASCHIO X MOLLA A GAS	SPRING MALE SUPPORT	1.000
010.2151	ALBERO PULEGGIA MOTRICE	MOTO PULLEY SHAFT	1.000
010.2153	ALBERO SPAZZOLA PULILAMA	BRUSH SHAFT	1.000
010.2154	DISTANZIALE RUOTA SPAZZOLA PULIL.	BLADE BRUSH SPACER	1.000
010.4310	STAFFA FISSAGGIO ALBERO PULILAMA	BAND BRUSH SHAFT FIX BRACKET	1.000
010.4331	STAFFA AGGANCIO CILINDRO SPM	HYDR.CYL.COUPLER BRACKET	1.000
010.4774	DISTANZIALE CUSCINETTO PULILAMA	BEARING PUSH BAND LOWER SPACER	1.000
010.4902	TAMPONE	PAD	1.000
010.7117	CHIAVETTA 10 X 8 X 35 (010.7117)	10 X 8 X 35 KEY (010.7117)	2.000
010.8307	CHIAVETTA 10 X 8 X 70 US. 010.120	KEY 10 X 8 X 70 US. 010.120	1.000
016.1251	PIASTRA ATTACCO F.C. CHIUSURA COPERCHIOARCHETTO SH N.T.	PLATE FIXING SAFETY SWITCH	1.000
016.2329	CARTER LAMA POSTERIORE FISSA	REAR CARTER BLADE	1.000
025.0088	CUSCINETTO 6001 2Z PH 100	BEARING 6001 2Z PH 100	2.000
025.0279	ANELLO DI PROTEZIONE NILOS 32013	NILOS 32013	2.000
025.0555	SPAZZOLA PULILAMA 3103 0 100 SH 400	BAND BRUSH 3103 0 100 SH 400	1.000
025.0777	RIDUTTORE ARCHETTO SH 420 CNC-HSFCNDKO110/RATIO=40:1,132 B14	BOW REDUC.SH 410 DCFCNDKOIIO/RA-TIO=1:40	1.000
025.0802	BOCCOLA GRAFITATA L. 15 DIAM. 10	GRAPHITIZED BUSHING L. 15 DIA M. 10	2.000
025.0864	CALETTATORE TLK 130 80X120	KEY TLK 130	1.000
025.0930	CUSCINETTO 51100	BEARING 51100	1.000
010.4777	STAFFA FISSAGGIO EMETTITORE LASER	BRACKET LASER TRANSMITTER SH 652	1.000
016.2378	PROTEZIONE EMETTITORE LASER	PROTECTION LASER TRANSMITTER	1.000
022.0518	EMETTITORE LASER M18 XD100 PA 3	LASER LIGHT M18 XD100 PA 3	1.000
019.2021	KW 9,2 B.14 4P GR132S V.230- 400 CON	KW 9,2 B.14 4P GR132S V.230- 400	1.000
022.0210	RACCORDO RAPIDO SEM PG 11	RAPID JOINT SEM PG 11	1.000
022.0544	INTERRUTTORE DI SICUREZZA CON CHIAVE	SAFETY SWITCH FR993- D10 SH 230 NC- HS	1.000
025.0973	CUSCINETTO 32013X	BEARING 32013X	1.000
010.1201	VITERIA E BULLONERIA	SCREWS AND BOLTS	4.000
010.7470	GRANO VCE PUNTA PIANA 6 X 35	6X35 FLAT POINT VCE GRUB SCREW	1.000
010.7230	DADO AUTOBLOCCANTE M10	M10 SELF- LOCKING SCREW NUT	1.000

SPF bow unit


SOLO PER ROTAZIONE MANUALE
025.0864
002.0404
010.0454
031.2120
010.2150
025.0279
016.0776
025.0980
010.1842
010.2846
010.1533
010.4902
007.6455
022.2154
010.0381
022.0369
019.3581
025.1095
016.2755
010.8327
034.1633
001.5213
016.2381
010.8365
007.6493
025.0272
010.4330
022.0522
001.5305
025.0069
016.2337
022.0376
010.0354
025.1031
010.7103
010.4743
010.4744
025.0060
010.7014
025.1030
007.6506
007.6494
010.0377
025.0091
007.6414
025.0963
025.0274
025.0115
010.7233
010.0355

Code	Description	Description	Quantity
001.5213	ARCHETTO SPF	BOW WITH OUT IDLER WHEEL	1.000
001.5305	SLITTA TENDILAMA	BAND TENSION SLIDE	1.000
002.0404	PULEGGIA DIAM. 580	PULLEY DIAM.560 580	1.000
007.6414	DISTANZIALE VITE SENZA FINE TESA-TORE ELETTROMECCANICO SH 500	SPACER WORM SCREEW TENSIONER SH 500	1.000
007.6455	PERNO TESATURA LAMA TESATORE ELET- TROMECCANICO SH 500	BLADE TENSIONER PIN SH 500	1.000
007.6493	ALBERO CORONA ELICOIDALE TESA-TORE ELETTROMECCANICO SH 500	WORM SCREW SHAFT TI 350 4 SPEEDS	1.000
007.6494	ALBERO VITE SENZA FINE TESATORE ELETTROMECCANICO SH 500	SHAFT WORM SCREEW SH 500	1.000
007.6506	SCATOLA INGRANAGGI TESATORE ELETTRO MECCANICO SH 500	GEARING BOX TENSIONER SH 500	1.000
010.0354	GHIERA AUTOBLOCCANTE 30X1,5	SELF- LOCKING RING NUT 30X1,5	1.000
010.0355	GHIERA AUTOBLOCCANTE 25X1,5	SELF- LOCKING RING NUT 25X1,5	1.000
010.0377	GHIERA FISSAGGIO CUSCINETTO TE-SATORE ELETTROMECCANICO SH 500	FIXING IRON RING BEARING SH 500	1.000
010.0381	GHIERA M65 FILETTO SINISTRO	RING NUT M65 LEFT THREAD SH410DC	1.000
010.1533	STAFFA AGGANCIO PERNO TESATORE ELETTROMECCANICO SH 500- 420- 310	BRACKET, POWERED BLADE TEN-SIONER	1.000
010.1842	SUPPORTO MASCHIO X MOLLA A GAS	SPRING MALE SUPPORT	1.000
010.2150	ALBERO PULEGGIA FOLLE	IDLER PULLEY SHAFT	1.000
010.2846	GUIDA PATTINO RGH30CA- 2- RO310E20- ZA- H	PRELOADED LINE GUIDE LEN.30	2.000
010.4330	STAFFA AGGANCIO CILINDRO SPF	HYDR.CYL.COUPLER BRACKET	1.000
010.4743	SUPPORTO PROXIMITY	PROXIMITY SUPPORT	1.000
010.4744	DISCO LETTURA PROXIMITY	BLADE PROXIMITY SENSOR	1.000
010.4902	TAMPONE SH 420 CNC- HS	PAD SH410DC	1.000
010.7014	ANELLO SEEGER DIAM. 10	0 10 SEEGER RING	1.000
010.7103	CHIAVETTA 5 X 5 X 30	5 X 5 X 30 KEY	1.000
010.7233	DADO AUTOBLOCCANTE M16	M16 SELF- LOCKING SCREW NUT	1.000
010.8327	CHIAVETTA 4 X 4 X 15	KEY 4 X 4 X 15	1.000
010.8365	CHIAVETTA 8 X 7 X 18	KEY 8 X 7 X 18	1.000
016.2337	CARTER SLITTA SPF	SLEDGE CARTER	1.000
016.2381	CARTER LAMA ANTERIORE FISSO	FRONT BAND COVER FIXED	1.000
019.3581	MOTORE KW 0,26 V.230- 400 B3 MB VR M63C4TESATORE ELETTROMECC	MOTOR KW 0,26 V.230- 400 B3 MB VR M63C4	1.000
022.0369	CONNETTORE PER BOBINA U2 E TEN-SIONATORETRSA/3T.00	CONNECTOR F.U2 COIL AND TEN-SIONER	1.000
022.0376	CONNETTORE 90 M12 CON 5 MT. CAVO 3X0,5PER PROSSIMITY	CONNECTOR FOR PROXIMITY	1.000
022.0522	SENSORE PROSSIMITA' PNP	PROXIMITY PNP	1.000
022.2154	CELLA DI CARICO KG.3500	STRAIN GAUGE KG. 3500	1.000
025.0060	CUSCINETTO 6000 2Z	BEARING 6000 2Z	1.000
025.0069	CUSCINETTO 32007X	BEARING 32007X	1.000
025.0091	CUSCINETTO 32005X	BEARING 32005X	1.000
025.0115	VITE SENZA FINE WY	WORM SCREW WY	1.000
025.0272	ANELLO DI PROTEZIONE NILOS 32007	NILOS SEAL RING 32007	1.000
025.0274	ANELLO DI PROTEZIONE NILOS 32005	NILOS GUARD RING 32005	1.000
025.0279	ANELLO DI PROTEZIONE NILOS 32013X	NILOS 32013XSH 410 DC	2.000
025.0864	CALETTATORE TLK 130 80X120	KEY TLK 130 SH 410 DC	1.000
025.0963	CUSCINETTO 6204 2Z	BEARING 6204 2Z	1.000
025.1030	RUOTA DENTATA ALBERO VSF	TOOTHED WHEEL FOR SHAFT SC-REEW	1.000
025.1031	CORONA ELICOIDALE TESATORE ELETTRO MECCANICO	HELICOIDAL CROWN- GEAR	1.000
025.1095	PIGNONE TENSIONATORE LAMA	BLADE TENSIONER PINION	1.000
025.0980	CUSCINETTO 32013X CEMENTATO	TAPERED ROLLER BEARING 32013X	1.000
034.1633	RIFLETTORE RE 6040 BA	LASER LIGHT WITH MIRRORS RE6040BA	1.000
016.2755	STAFFA FISSAGGIO RIFLETTORE N.T. SH 652 HCH- 18/25	REFLECTOR BRACKET SH652SXIEVO.- HCH- 18/25	1.000
010.0454	MANIGLIA INOX SATINATO SH 652 SXI EVO	STAINLESS HANDLE SH 652 SXI EVO	1.000
031.2120	TARGA QUADRO COMANDI SH 652 SXI EVO H	CONTROL PANEL PLATE SH 652 SXI EVO H	1.000
016.0776	QUADRO COMANDI SH 652 SXI EVO H VERSIONE MANUALE	CONTROL PANEL SH 652 SXI EVO H	1.000

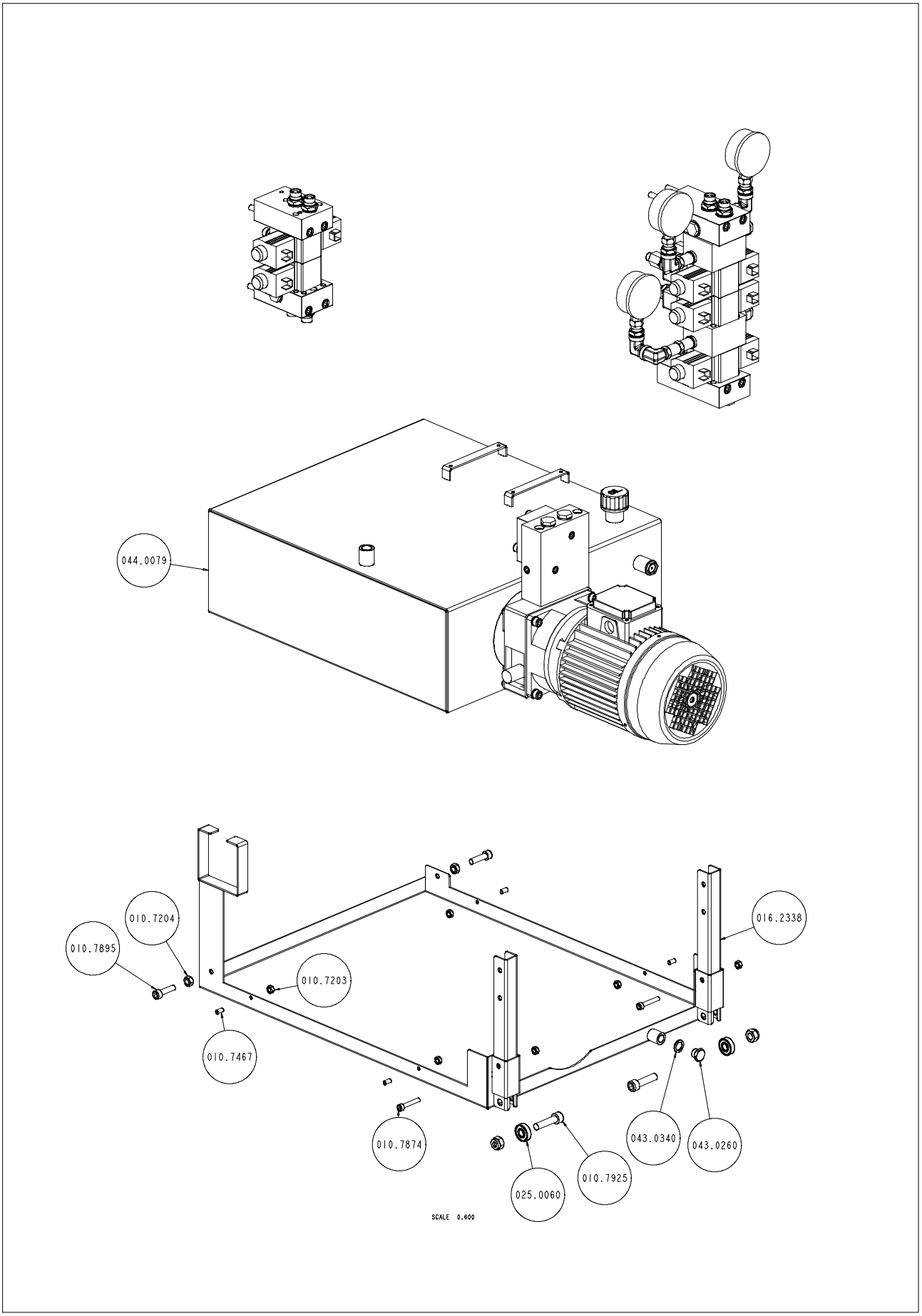
Hydraulic control unit



Code	Description	Descriprion	Quantity
019.3621	KW 2,2 M90L4P.B14V.230-400 50/255-440.60 S6 60%	MOTOR KW 2,2	1,000
016.2096	SERBATOIO CENTRALINA	UNIT TANK SH652SXIEVO --A--	1,000
025.0208	ANELLO TENUTA OR 109-9,13	O RING 109-9,13	11,000
043.0557	MANOMETRO 0-60 WIKA P.1275 PER-CENTRALINA IDRAULICA	WIKA 0 60 MANOMETER SH 310 SXI	2,000
044.0503	NIPPLO IDRAULICO M 3/8-M 1/4	HYDRAULIC FITTING M 3/8 M 1/4	13,000
043.0340	RONDELLA RAME 13X19X1,5-1/4	13X19X1,5-1/4 COPPER WASHER	15,000
043.0342	RONDELLA RAME 3/8	3/8 COPPER WASHER	17,000
044.5160	ASTA PESCANTE L 150 2X3/8 S20A ”A”L150 2X3/8”	PICK UP TUBES S20A ”A”	1,000
044.5001	FILTRO OLIO X CENTRALINA IDRAULI-CA	OIL FILTER FOR HYDRAULIC UNIT	1,000
043.0252	GOMITO MF 3/8 CL 2020	MF 3/8 CL 2020 ELBOW	1,000
044.5153	STAFFA SERBATOIO X MONOCENTRA-LINASXI-EVO	POWER PACK TANK BRACKET	4,000
034.0900	TAPPO LIVELLO OLIO SLNT 38 3/8	SLNT 38 3/8 OIL LEVEL CAP	1,000
034.0906	TAPPO OLIO CENTRALINA IDRAULICA	HYDRAULIC UNIT OIL CAP SH 310 SXI	1,000
044.5162	TAPPO SCARICO OLIO -A-AN 612 - 3/8 OR	OIL DRAIN TAP -A- AN 612 - 3/8 OR”	1,000
007.6719	TESTATA CHIUSURA X ELETTROVALVO-LA	HEAD LOCK FOR SOLENOID	1,000
010.7880	VITE TCEI M8 X 115	TCEI 8 X 115 SCREW	1,000
044.2001	ELETTROVALVOLA MODULARE SINGO-LA EDBZ 4/2	MODULAR SINGLE SOLENOID EDBZ 4/2	1,000
043.0340	RONDELLA RAME 13X19X1,5- 1/4	13X19X1,5- 1/4 COPPER WASHER	2,000
007.6718	TESTATA INGRESSO X ELETTROVALVO-LA	HEAD INLET FOR SOLENOID	1,000
044.0507	NIPPLO IDRAULICO 3/8	NIPPLEE 3/8	1,000
043.0259	TAPPO 3/8 CL 3020	3/8 TAP	1,000
010.7897	VITE TCEI 8 X 40	TCEI 8 X 40 SCREW	1,000
007.6723	TESTATA CHIUSURA X ELETTROVALVO-LA	HEAD LOCKING FOR SOLENOID	1,000
010.7951	VITE TE 6 X 20	TE 6 X 20 SCREW	1,000
010.7495	GRANO VCE PUNTA PIANA 1/8 GAS	1/8”X9 FLAT POINT VCE GRUB SCREW	1,000
044.4516	POMPA IDR. MONOCEN. CC 10 - - S- -	HYDR.PUMP FOR HYDR.UNIT CC 10 - - S- -	1,000
044.5120	COLLETTORE PER POMPA TIPO KE-M02 - - S- -	PUMP COLLECTOR KE- M02 - - S- -	1,000
044.4642	GIUNTO COLLEGAMENTO LATO POMPA X	PUMP CONNECTING COUPLING FOR CENTRALUNIT	1,000
044.4643	GIUNTO COLLEGAMENTO LATO MOTORE GR 90	CONNECTING COUPLING FOR CEN-TRAL UNIT	1,000
044.5173	FLANGIA MONOCENTRALINA X MOTORE C90B14	POWER PACK MOTOR FLANGE C90B14 - - S- -	1,000
010.7126	CHIAVETTA 8 X 7 X 28	8 X 7 X 28 KEY	1,000
010.7898	VITE TCEI 8 X 45	TCEI 8 X 45 SCREW	1,000
010.7604	RONDELLA 0 8	0 8 WASHER	1,000
010.7893	VITE TCEI 8 X 20	TCEI 8 X 20 SCREW	1,000
007.6720	ADATTATORE X COLLETTORE TIPO KE-M02	ADAPTER FOR COLLECTOR TYPE KE-M02	1,000
043.0342	RONDELLA RAME 3/8	3/8 COPPER WASHER	1,000
043.0259	TAPPO 3/8 CL 3020	3/8 TAP	1,000
010.7880	VITE TCEI M8 X 115	TCEI 8 X 115 SCREW	1,000
044.0552	RACCORDO A GOMITO IDRAULICO MF 1/4 ALTA	HYDR. ELBOW JOINT M/F 1/4 HIGH PRE-SSURE	1,000
044.2004	ELETTROVALVOLA MODULARE EDBZ-VR 4/3 CON VALVOLA DI BLOCCO SU A E B - - S- -	MODULAR VALVE EDBZ VR-4/3 WITH SHUT UP AND B - S -	1,000
044.1277	VALVOLA MODULARE RIDUTTRICE DI PRESSIONE TI- 03- 00- V1- AL - - S- -	MODULAR PRESSURE REDUCING VAL-VE TI- 03- 00- V1- AL - - S- -	1,000
044.2002	ELETTROVALVOLA MODULARE EDBZ 4/3 - - S- -	MODULAR VALVE EDBZ 4/3 - S -	1,000

Code	Description	Descriprion	Quantity
044.0553	RACCORDO IDRAULICO MF 1/4 GIRE-VOLE X MANOMETRO CENTRALINA	HYDRAULIC COUPLING FOR POWER PACK MANOM.	1,000
007.6725	TESTATA INGRESSO X ELETTROVALVO-LA MODULARE LUNGA	INPUT X MODULAR VALVE HEAD LONG	1,000
044.0602	RIDUZIONE 3/8 - 1/4 MF IDRAULICA	MF 3/8 - 1/4 HYDRAULIC REDUCTION	1,000
044.0651	PROLUNGA 1/4' M.F. ESAGONALE 25MM.	"1/4"" M.F. EXTENSION 20 MM"	1,000
010.7845	VITE TCEI 8 X 150	TCEI 8 X 150 SCREW	1,000
044.0650	PROLUNGA 1/4 MF ESAGONALE 36 MM. SH 310	1/4 MF HEX EXTENSION SH310SXI 36 MM	1,000
044.0503	NIPPLO IDRAULICO M 3/8- M 1/4	HYDRAULIC FITTING M 3/8 M 1/4	1,000
043.0342	RONDELLA RAME 3/8	3/8 COPPER WASHER	1,000
043.0259	TAPPO 3/8 CL 3020	3/8 TAP	1,000
007.6726	TESTATA CHIUSURA X ELETTROVALVO-LA MODULARE LUNGA	HEAD CLOSE X MODULAR VALVE LONG	1,000
044.0507	NIPPLO IDRAULICO 3/8	NIPPLEE 3/8	4,000

Hydraulic unit



Code	Description	Descriprion	Quantity
044.0079	MONOCENTRALINA IDRAULICA X SH 652 SXIEVO	HYDRAULIC UNIT X SH 652 SXI EVO	1,000
010.7204	DADO M8	M8 SCREW NUT	1,000
010.7895	VITE TCEI 8 X 30	TCEI 8 X 30 SCREW	1,000
010.7467	GRANO VCE PUNTA PIANA 6 X 12	6 X 12 FLAT POINT VCE GRUB SCREW	1,000
010.7203	DADO M6	M6 SCREW NUT	1,000
016.2338	CASSETTO ESTRAIBILE CENTRALINA SH 652	MONOUNIT DRAWER SH 652SXIEVO	1,000
043.0260	TAPPO TTE4 1/4 - CL 2611	1/4 TAP TTE4	1,000
043.0340	RONDELLA RAME 13X19X1,5- 1/4	13X19X1,5- 1/4 COPPER WASHER	1,000
010.7925	VITE TCEI 10 X 40	TCEI 10 X 40 SCREW	1,000
025.0060	CUSCINETTO 6000 2Z	BEARING 6000 2Z	1,000
010.7874	VITE TCEI 6 X 35	TCEI 6 X 35 SCREW	1,000

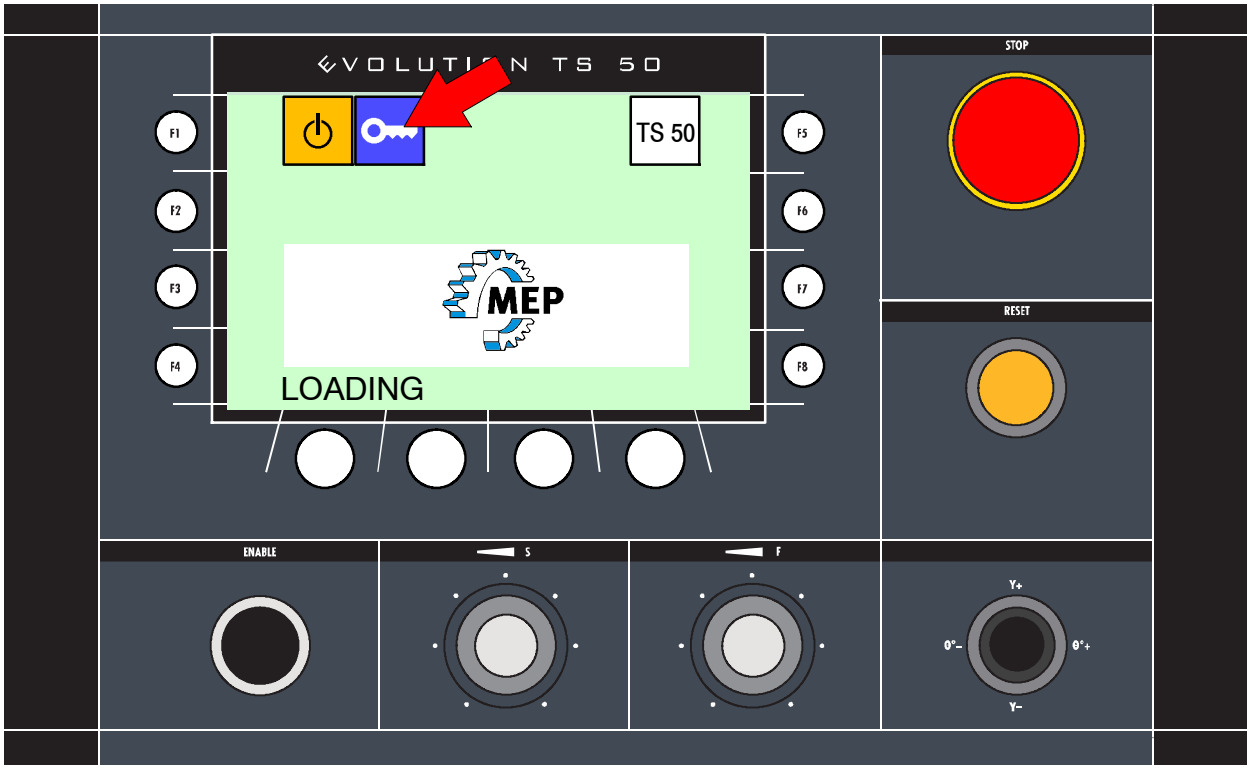
Adjustments

This chapter describes the operations required to adjust the electronic, mechanical and the hydraulic systems. By following these instructions, you can "customise" your machine to suit the type of cut required, thereby optimising cutting times.

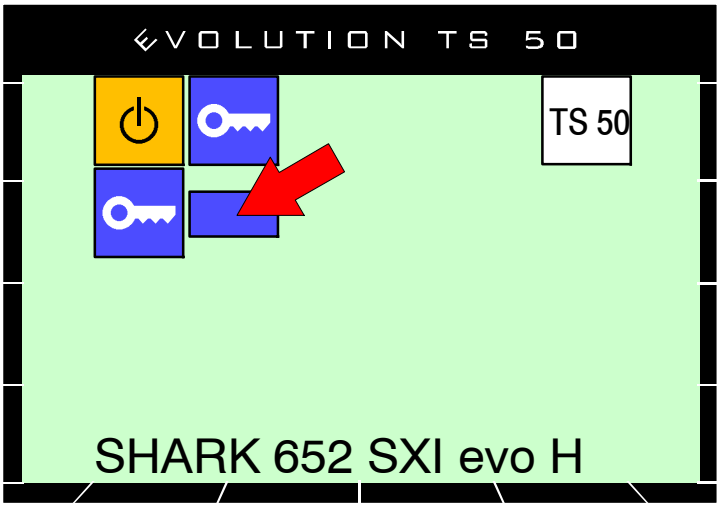
Displaying and editing the set- up parameters

The machine set- up parameters may be programmed directly from the control console.

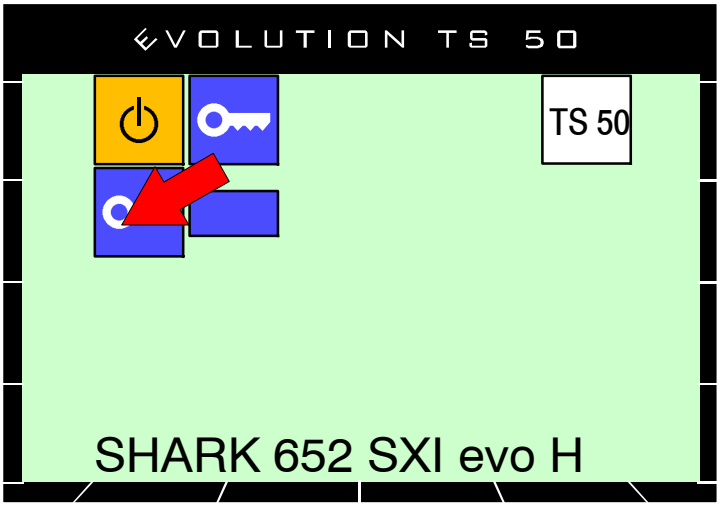
- ▶ Power the machine by turning the main switch on the left of the control board.
- ▶ Tap on the box on the touchscreen shown in the figure.



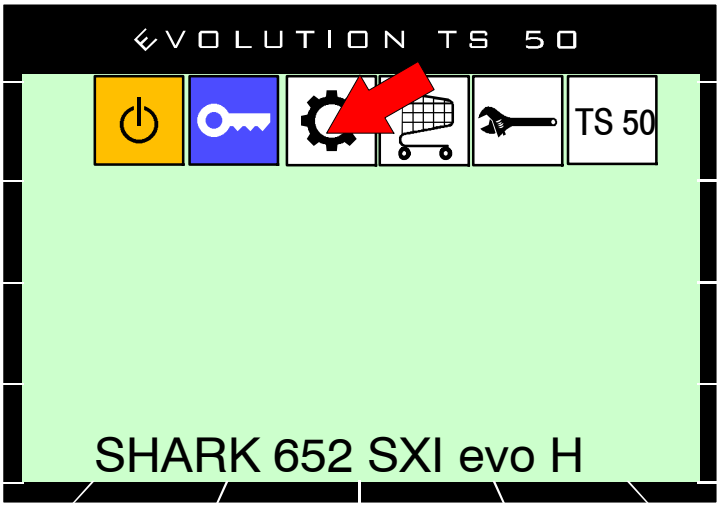
▶ The password entry box will open. Tap the box to open the keypad. Enter 734533.



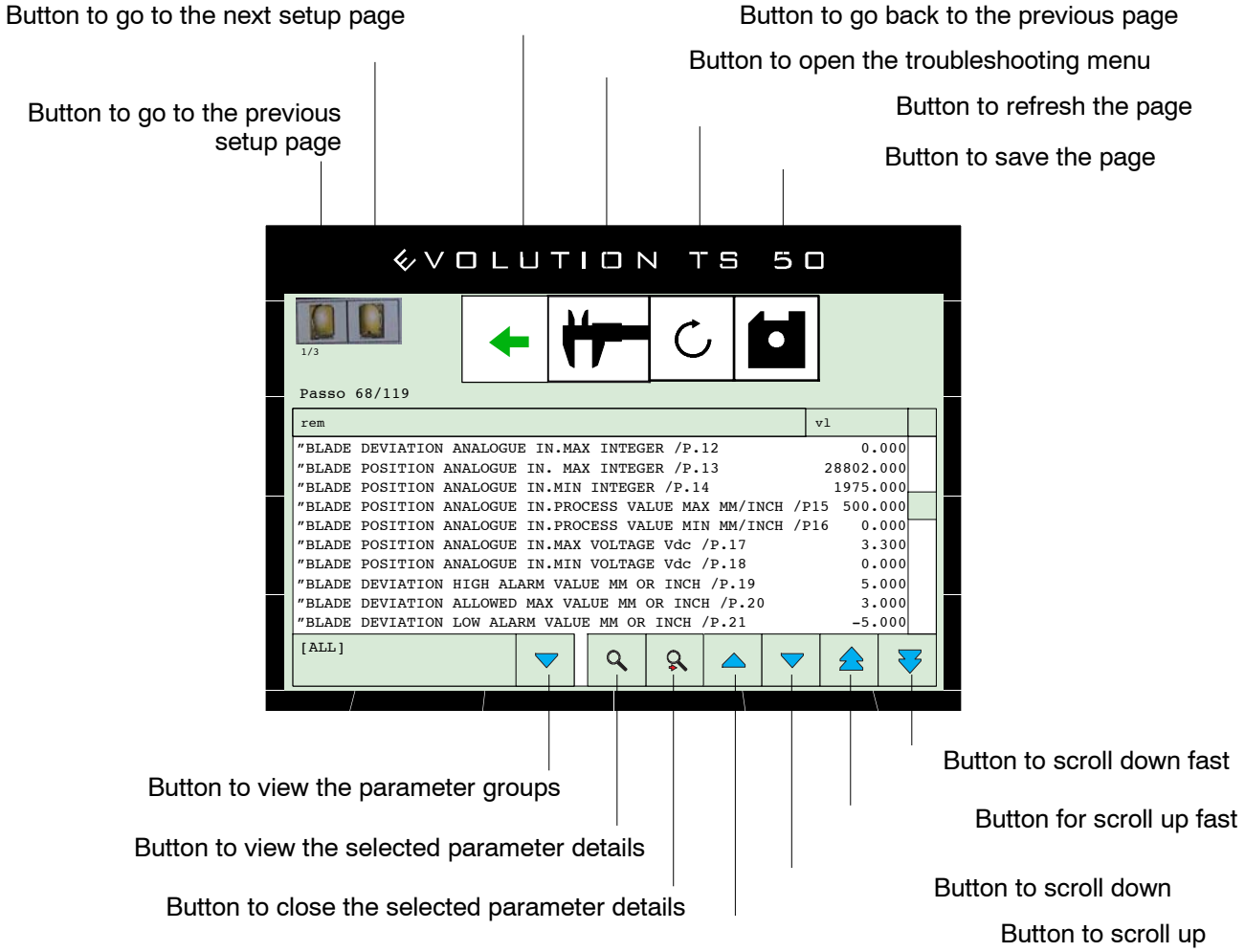
▶ Tap on the box shown in the figure.



▶ Tap on the box shown in the figure.



▶ Once inside the SET- UP menu, use the following three keys to navigate through the different menu screens:



Setup parameters

The machine setup parameters divided by topic are shown below.

BLADE MOTOR:

1. **Blade Ampere Analogue In Max Integer:** Analogue input counter value corresponding to the maximum ampere**(12723.000).**
2. **Blade Ampere Analogue In Min Integer:** Analogue input counter value corresponding to the minimum ampere **(0.000).**
3. **Blade Ampere Analogue In Progress Value Max Ampere:** Ampere corresponding to maximum analogue input value **(12.900).**
4. **Blade Ampere Analogue In Progress Value Min Ampere:** Ampere corresponding to minimum analogue input value **(0.000).**
5. **Blade Ampere Analogue In Progress Max Voltage:** Voltage corresponding to maximum analogue input value **(10.000).**
6. **Blade Ampere Analogue In Progress Min Voltage:** Voltage corresponding to minimum analogue input value **(0.000).**
7. **Blade Ampere Control Check Time Period sec:** Control execution time (sec) **(0.500).**
8. **Blade Ampere Control Before Enabling On Delay sec:** Activation delay in seconds (if 0 is off) **(3,000).**
9. **Blade Ampere Control Feed Reduction Step M/min:** Correction step **(25,000).**

10. **Blade Ampere Control Max Allowed Ampere:** Maximum allowed current **(20.000).**
11. **Blade Ampere Control Max Ampere Alarm On Delay sec:** Maximum motor current alarm filter (sec) **(1.000).**
12. **Blade Ampere Control Set Point Ampere:** Motor current set point **(15.000).**
13. **Blade Speed Control Max Allowed M/min:** Speed set point maximum value **(120.000).**
14. **Blade Speed Control Min Allowed M/min:** Speed set point minimum value **(5.000).**
15. **Blade Speed Control An In Max Integer Value:** Speed reference maximum value (analogue input maximum value) **(32767.000).**
16. **Blade Speed Control An In Min Integer Value:** Speed reference minimum value (analogue input minimum value) **(0.000).**
17. **Blade Speed Control Before Stopping On Delay sec:** Stop delay for cleaning cut (sec) **(1.000).**
18. **Blade Speed Encoder Counting Direction Inverting:** Blade speed encoder counter inversion **(1.000).**
19. **Blade Speed Encoder Max Counter Valve M/min:** Blade speed maximum value **(150.000).**
20. **Blade Speed Encoder Min Counter Valve M/min:** Blade speed minimum value **(5.000).**
21. **Blade Speed Encoder Pulse Scaling Resolution MM or INCH/Pulse:** Blade speed encoder resolution scale factor **(1.000).**
22. **Blade Speed Encoder Speed To Pulse Adding Enabling = 1: (1.000).**
23. **Blade Speed Encoder Max Pulse Speed Limitation Fwd Dir: (10.000).**
24. **Blade Speed Encoder Min Pulse Speed Limitation Rev Dir: (0,000).**
25. **Blade Speed Encoder Scaling Proportional Constant: (1.000).**
26. **Blade Speed Encoder Counter Value Retention Enabling = 1,0: (1.000).**
27. **Blade Motor Status On Man Cycle End Motor On = 1.0:** Blade motor on time at end of manual cycle **(1.000).**
28. **Blade Ampere Control Limit Max Set Point Ampere: (15.000).**

BLADE DEVIATION:

29. **Blade Deviation Analogue In. Max Integer:** Maximum counter value **(32767.000).**
30. **Blade Deviation Analogue In. Min Integer:** Minimum counter value **(0,000).**
31. **Blade Deviation Analogue In. Process Value Max MM or INCH:** Maximum value in mm or inch **(10.000).**
32. **Blade Deviation Analogue In. Process Value Min MM or INCH:** Minimum value in mm or inch **(- 10.000).**
33. **Blade Deviation Analogue In. Max Voltage:** Blade deviation enable (1 enabled) **(1.000).**
34. **Blade Deviation Analogue In. Min Voltage:** Voltage value corresponding to minimum counter value **(10.000).**
35. **Blade Deviation Analogue In. Max Integer:** Voltage value corresponding to maximum counter value **(0.000).**
36. **Blade Deviation High Alarm Value MM or INCH:** Maximum blade deviation which emits the alarm **(5.000).**

37. **Blade Deviation Allowed Max Value MM or INCH:** Maximum allowed blade deviation (mm or inch) **(3.000).**
38. **Blade Deviation Low Alarm Value MM or INCH:** Minimum blade deviation which emits the alarm **(- 5.000).**
39. **Blade Deviation Allowed Min Value MM or INCH:** Minimum allowed blade deviation (mm or inch) **(- 3.000).**

HEAD ENCODER:

40. **Blade Position Analogue In. Max Integer:** Maximum counter value **(28008.000).**
41. **Blade Position Analogue In. Min Integer:** Minimum counter value **(2106.000).**
42. **Blade Position Analogue In. Process Value Max MM or INCH:** Maximum value in mm or inch **(500.000).**
43. **Blade Position Analogue In. Process Value Min MM or INCH:** Minimum value in mm or inch **(0.000).**
44. **Blade Position Analogue In. Max Voltage Vdc:** Voltage value corresponding to maximum counter value **(3.300).**
45. **Blade Position Analogue In. Min Voltage Vdc:** Voltage value corresponding to minimum counter value **(0.000).**
46. **Enabled Blade Minimum Speed Control (1=Enabled):** Blade speed proximity enable **(1.000).**

HEAD ROTATION:

47. **Blade Speed Monitoring Before Enabling On Delay sec:** Activation delay in seconds (0 is disabled) (initial blade start wait time to check minimum speed) **(8.000).**
48. **Blade Speed Monitoring Wheel Diameter MM or Inch:** Pulley diameter (mm or inch) **(540,000).**
49. **Blade Speed Monitoring Number of Pick- up Pulses for Round:** Number of pulses per revolution **(6.000).**
50. **Blade Speed Monitoring Watch Dog On Delay sec:** Watch dog in sec (0 disabled) control between pulses **(0.500).**
51. **Blade Speed Monitoring Min Speed Watch Dog Value M or FT/Min:** Minimum watch dog speed in m/min or foot/min. Alarm is emitted if watch dog time threshold is not exceeded with watch dog enabled **(10.000).**
52. **XB Braking Status Rises After Specified SECs Form Command:** Rotation release time after reaching position **(0.300).**
53. **XB Tolerance Position MM:** XB axis positioning tolerance (mm). The axis is considered positioned when the error is less than the set tolerance **(0,050).**
54. **XB Unbraking Status Rises After Specified SECs From Command:** Rotation brake time after reaching position **(0.500).**
55. **XP Jog Feed (Percentage Feed Max : 1- 100): (100.000).**

BLADE TENSION:

56. **Blade Tension Control Large Pulse Width sec:** Adjustment pulse used for rough adjustment (sec) **(4.000).**
57. **Blade Tension Control Off Between Pulses Awaiting sec:** Pause time between adjustment pulses (sec) **(2.000).**
58. **Blade Tension Control Small Pulse Width sec:** Adjustment pulse used for fine adjustment (sec) **(0.100).**

59. **Blade Tension Control Max Alarm Tension KN:** Maximum voltage allowed to apply adjustment **(3000.000).**
60. **Blade Tension Control Min Alarm Tension KN:** Minimum voltage allowed to apply adjustment **(600.000).**
61. **Blade T. Control Error Large to Small Pulse Change Over Threshold KN:** Error threshold which determines adjustment variation from rough to fine **(100.000).**
62. **Blade Tension Control Max Error Tolerance KN:** Maximum error for adjustment tolerance **(50.000).**
63. **Blade Tension Control Min Error Tolerance KN:** Minimum error for adjustment tolerance **(- 50,000).**
64. **Blade Tension Control Setpoint KN:** Required set point for calculating adjustment error **(2400.000).**
65. **Blade Tension Control An. In. Load Cell Max Integer Value:** Maximum counter value from load cell analogue input **(4941.000).**
66. **Blade Tension Control An. In. Load Cell Min Integer Value:** Minimum counter value from load cell analogue input **(0.000).**
67. **Blade Tension Control An. In. Load Cell Process Value Max KN:** Load cell analogue input maximum value allowed for acquisition **(1050,000).**
68. **Blade Tension Control An. In. Load Cell Process Value Min KN:** Load cell analogue input minimum value allowed for acquisition **(0.000).**
69. **Blade Tension Control Enabling:** Automatic blade tension adjustment enable **(1.000).**
70. **Blade Tension Control An. In. Load Cell Voltage Value Max Vdc:** Load cell analogue input voltage maximum value **(10.000).**
71. **Blade Tension Control An. In. Load Cell Voltage Value Min Vdc:** Load cell analogue input voltage minimum value **(0.000).**

CLAMPS ENCODER:

72. **Clamps Locking Status Rises After Specified Secs From Command:** Time needed to allow clamp closed **(3.000).**
73. **Clamps Unlocking Status Rises After Specified Secs From Command:** Time needed to allow clamp open **(3.000).**
74. **Anti- Crushing Blade Enabled (1= enabled):** Enables the blade anti- crushing function **(1,000).**
75. **XB Angle Anti- Crushing Activated:** Angle over which the blade anti- crushing function is activated **(20.000).**
76. **Y Position Anti- Crushing Activated:** Head position under which the blade anti- crushing function is activated **(50.000).**

VARIUS:

77. **Cooling Pump Control Enabling = 1.0:** Water pump enable **(1,000).**
78. **MKS Imperial Unit System Switchover Enabling:** Imperial = 0.0: sets measuring system MKS (0) or IMPERIAL (1) **(1.000).**
79. **Demo Mode Activation = 1.0:** This defines the machine type (set automatically with machine cns loading) **(0.000).**
80. **Absolute Transducer Encoder Offset:** This determines the absolute transducer offset for setting zero in required position (automatically set on maintenance menu) **(240.000).**

CUT HEAD:

81. **Feed Encoder Counting Direction Inverting = 1.0: (1,000).**

82. **Feed Encoder Max Counter Value M/Min: (480,000).**
83. **Feed Encoder Min Counter Value M/Min: (0,000).**
84. **Feed Encoder Pulses Scaling Resolution MM or Inch/Pulse: (1.000).**
85. **Feed Encoder Speed to Pulse Adding Enabling = 1.0: (1.000).**
86. **Feed Encoder Max Pulse Speed Limitation FWD DIR : (100.000).**
87. **Feed Encoder Max Pulse Speed Limitation REW DIR : (0.000).**
88. **Feed Encoder Scaling Proportional Constant: (0.010).**
89. **Feed Encoder Counter Retention Enabling = 1.0:** Storage of set encoder value **(1,000).**
90. **UY Feed Axis Full Stroke Width MM or Inch:** U axis maximum stroke (mm or inch) **(300.000).**
91. **Y Cutting Axis Maximum Position MM or Inch:** Y axis maximum limit switch (mm or inch) **(500.000).**
92. **Y Cutting Axis Minimum Position MM or Inch:** Y axis minimum limit switch (mm or inch) **(0.000).**
93. **Y Cutting Axis After Piece Detection Run Before Stopping MM or Inch:** Space travelled in rapid mode after part detection **(35.000).**
94. **Y Cutting Axis ½ Auto Cycling Slow Down From Target MM or Inch:** Deceleration space (mm or inch): distance from target position at which slow descent is set **(10.000).**
95. **Y Cutting Axis Cutting Feed PID Control Error MM or Inch: (2.000).**
96. **Y Cutting Axis Cutting Feed PID Control Enable (1 = Enabled):** PID control enable (F reduction according to blade motor consumption) **(1,000).**
97. **Y Cutting Axis Jog Mode Downgoing Feed MM or Inch:** Y descent speed in jog mode (mm/min or inch/min) **(2000.000).**
98. **Y Cutting Axis ½ Auto Cycling Slow Down Feed MM or Inch:** Slow Y position speed (mm/min or inch/min) **(120,000).**
99. **Y Cutting Axis All Modes Upgoing Feed MM or Inch:** Y upward speed (mm/min or inch/min) **(2500,000).**
100. **Y Cutting Axis U Opening Y Feed Curve Bypass = 1.0:** Descent speed linearizing curve enable (F) **(0,000).**
101. **Y Cutting Axis Cutting Feed PID Control Increase Correction (degree):** F correction factor **(1.000).**
102. **Y Cutting Axis Cutting Feed PID Control Time (sec):** Time between one correction and the next **(0.300).**

OPTIONAL:

103. **Laser Guide Piece Approach Enabling = 1.0:** Workpiece search laser enable (fast approach) **(1.000).**
104. **Minimal Lubrification Enabling = 1.0:** Minimum lubrication enable **(1.000).**
105. Trim Handling Device Enabling = 1.0: **(1.000).**
106. Piece Handling Positioned Status Rises After Specified Secs From Command: **(3,000).**
107. **Y Raise Up On Manual Cycle (1=Enabled):** Y axis upward stroke enabled at end of manual cycle (1=enabled; 0=disabled). Y axis returns to RHLS at the end of the manual cycle **(1.000).**
108. **Chip Conveyor Enabled (1=Enabled):** Chip ejector enable **(1.000).**
109. **Enable Encoder Lika (1=Enabled):** Encoder type selection: 1 = Lika 2 = Stegmann **(1.000).**

110. **XB Rotation Extern Handling Enabling (1=Enabled):** Head manual rotation enable **(0,000).**

TIMER:

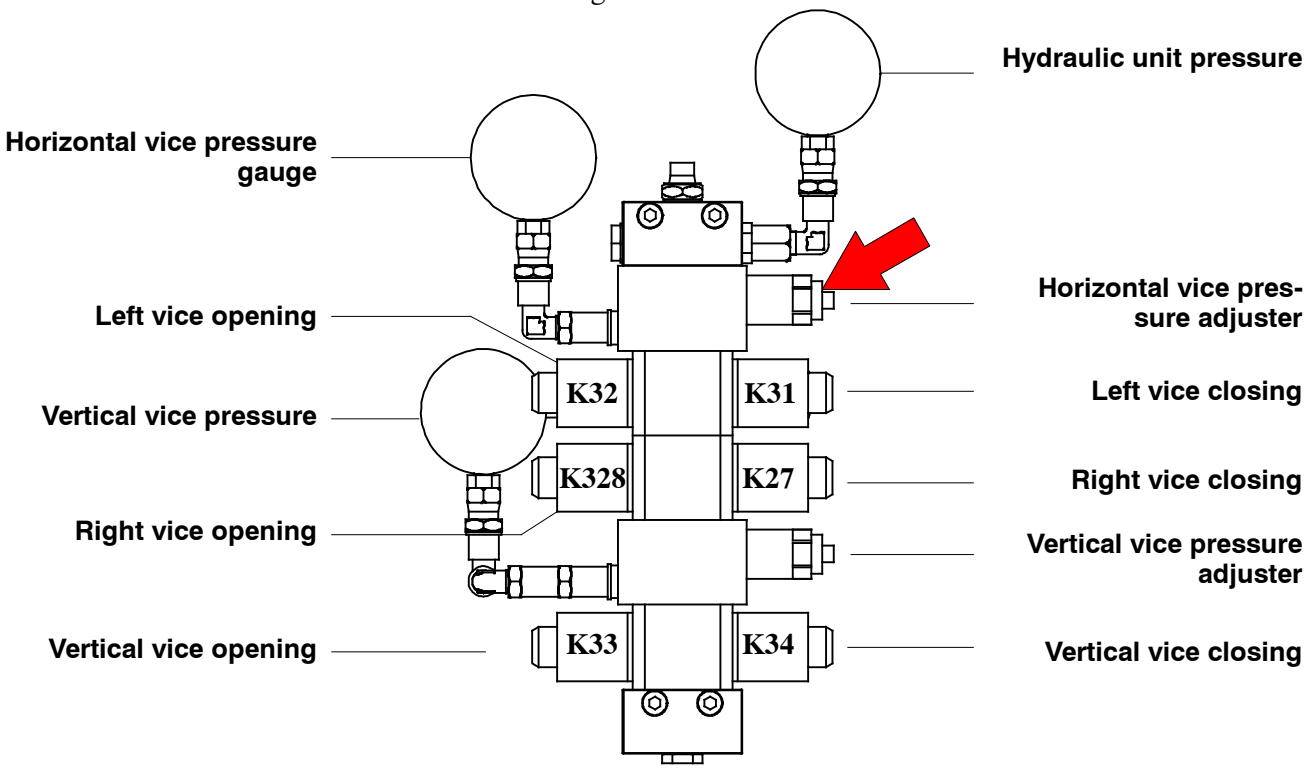
111. **Hydraulic Pump Off Delay Awaited Before Stopping Sec:** Hydraulic pump off delay before stopping (seconds) **(50.000).**
112. **Chip Conveyor Time On In Auto (M in): (0.500).**
113. **Chip Conveyor Time Off In Auto (M in): (0.500).**

Machine working pressures

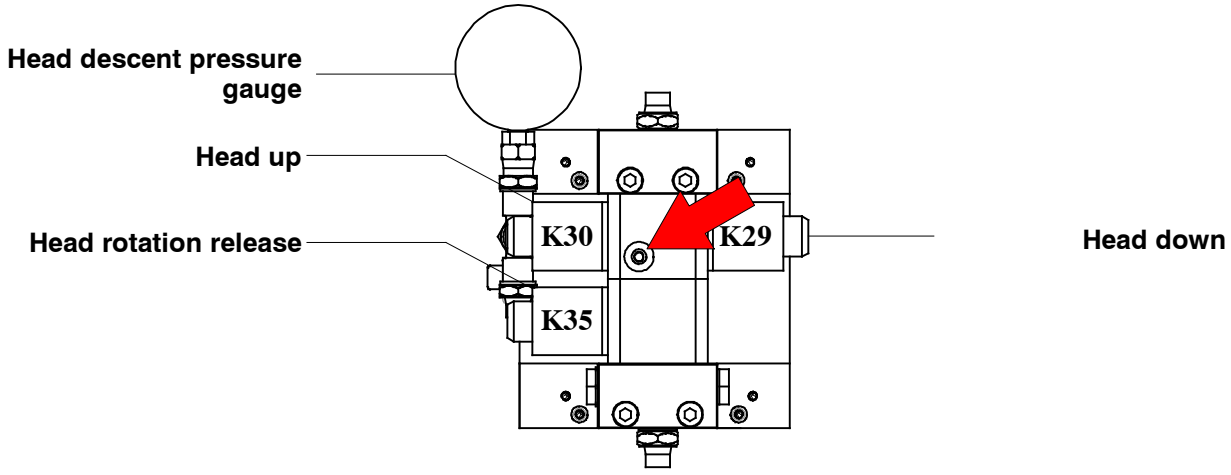
This section describes the procedures for adjusting the clamping pressure of the horizontal and vertical vices and the cutting head descent.

N.B. The vice working pressure is tightly bound to the type of material being worked and can be set if the material could be deformed or results unstable during cutting.
Both pressures can be adjusted by adjusting the valves shown in the figure.

▶ Set the pressure of the horizontal and vertical vices by tightening the grub screw shown in the figure.



▶ Set the head descent pressure by tightening the grub screw shown in the figure.



Blade guide components

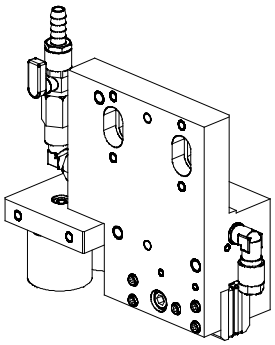
Band saw blades offer enormous advantages to cutting applications, without requiring any special skills by the operator. A description follows of the blade guide adjustments required to ensure correct operation of the saw.

Blade guide heads

The first blade adjustment involves adjustment of the heads. The blade guide heads comprise the blade guide plates which ensure correct longitudinal alignment, the blade steady buttons which control vertical blade flexure and the coolant delivery cocks.

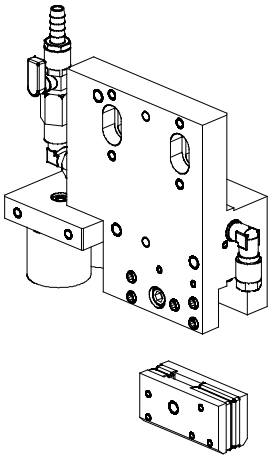
Blade steady buttons

The blade steady buttons prevent upward blade flexure caused by the vertical action of the cutting force. These buttons are fitted on both the front and rear heads and need no adjustment.



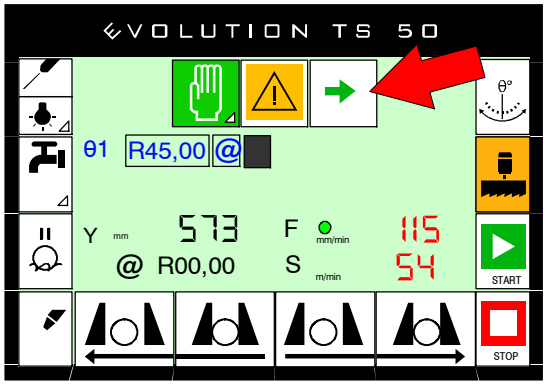
Blade guide plates

The plate contact points feature widia inserts which guide the blade longitudinally. A small amount of play must exist between the plates and blade to ensure that the blade runs smoothly and perpendicular to the work table.

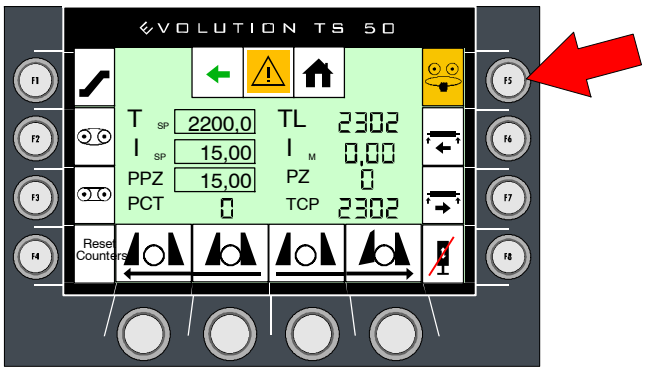


Thanks to the widia inserts, the working life of the guide plates is practically the same as that of the machine itself. However, if due to wear or the assembly of a new blade with a different thickness, the following adjustments must be made:

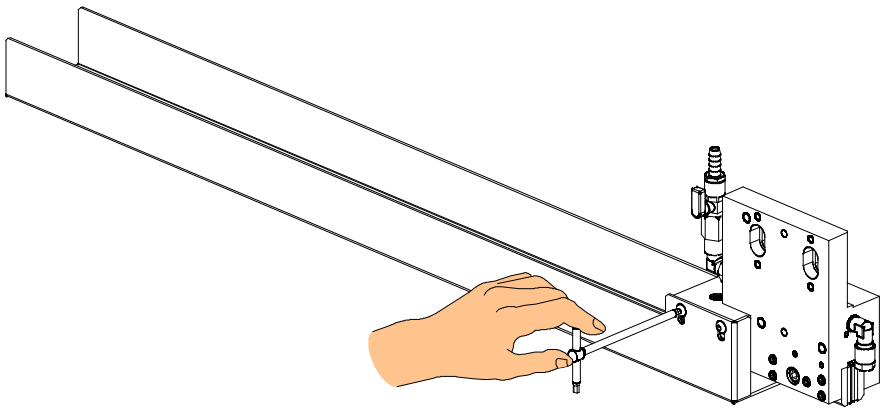
- Take the head completely up to the mechanical stop.
- Press the key shown in the figure.



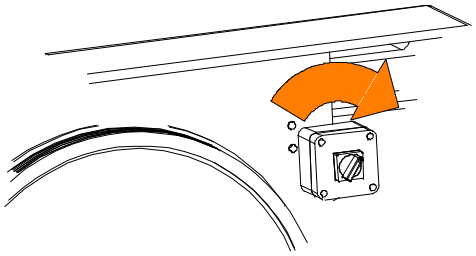
- Enable the switch to tension / detensioning belt located inside the arc cutting, pressing the F5 function key.



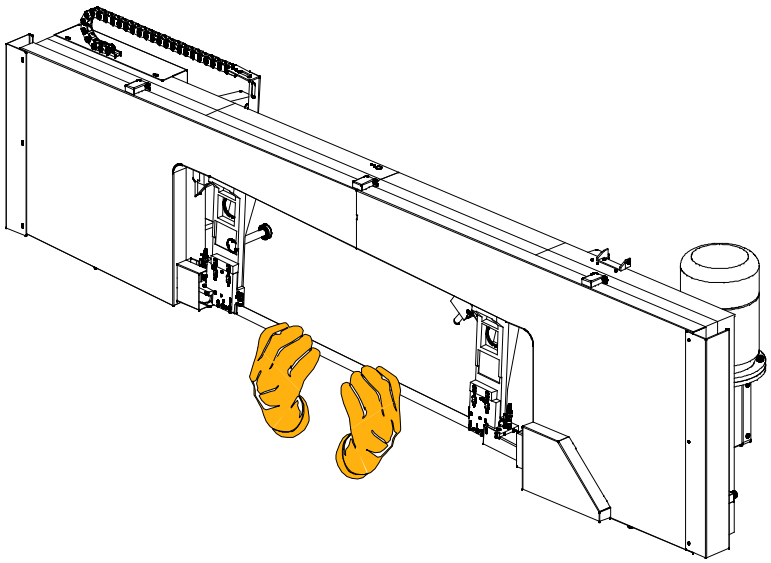
- Open the protective casing front by removing the two knobs lower closing.
- Remove the blade protections from the heads by loosening the fastening screws.



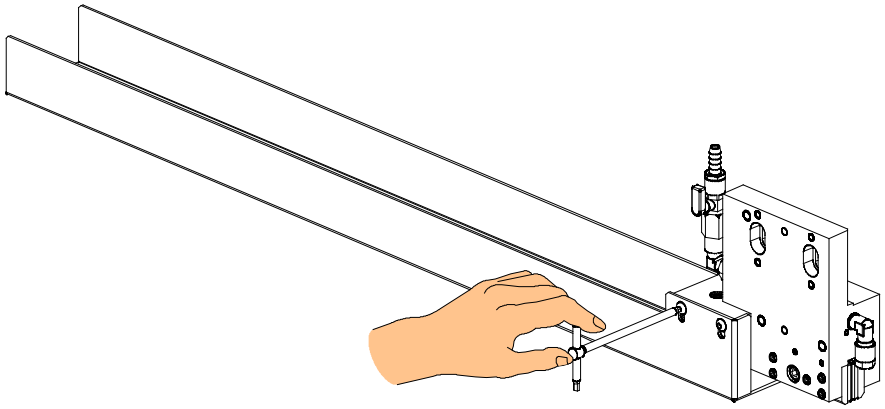
- Wear protective gloves when changing the blade;
- De- tension the band rotating the suitable switch inside the cutting bow.



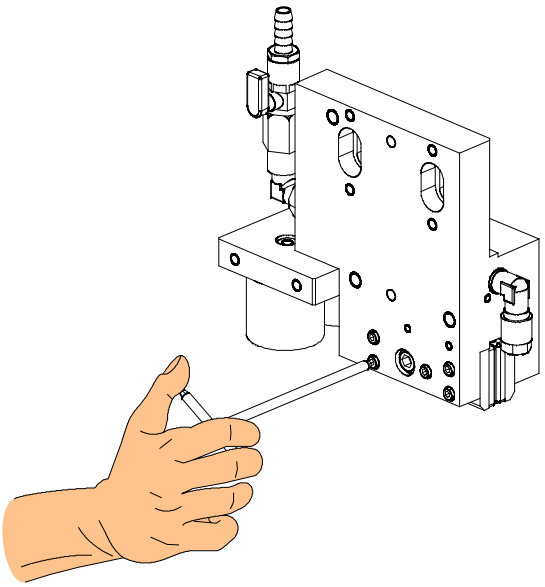
- Cut the machine off.
- Wear protective gloves when changing the blade;
- Make sure there is a small amount of play between the blade and guide plate inserts;



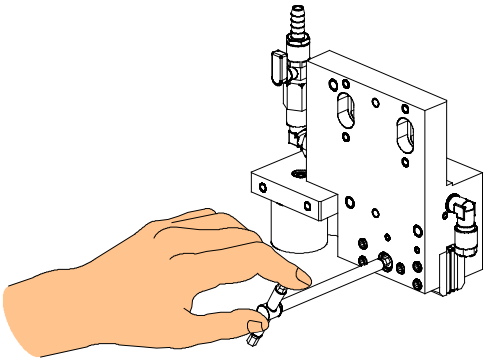
- Remove the blade protections from the heads by loosening the fastening screws.



- if the amount of play is not sufficient for the blade to run smoothly, adjust the locking torque of the two grub screws with a hex wrench;



▶ replace any worn plates by replacing the plate fixing screw:



▶ repeat the above sequence on the front blade guide head;
▶ Restore the blade protections of the front and rear heads.
▶ Close the blade cover and power the machine again.

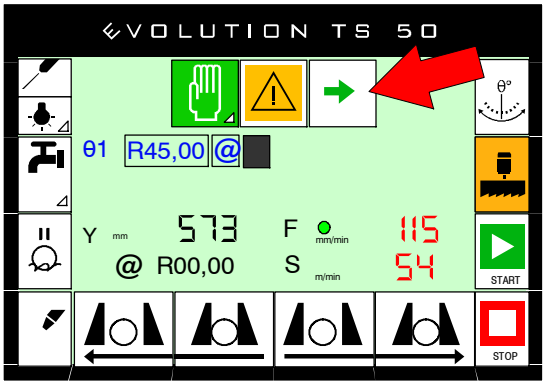
Blade

The adjustments required to ensure correct operation of the blade are described below. For further information regarding band saw blades, refer to Chapter 9 which provides a more detailed description of the different types of blade.

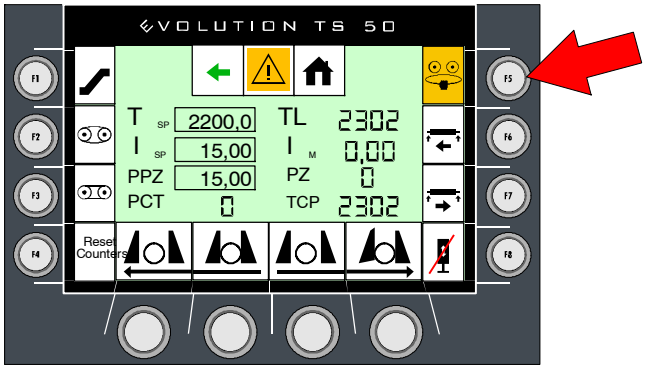
Tool changeover

Optimum working conditions both enhance operator safety and extend the tool service life. The cutting tool should in any case be replaced when poor cutting performance starts to affect productivity. The tool changeover procedure is described as follows:

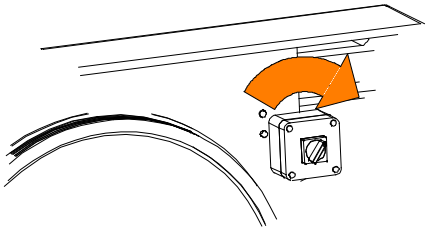
- ▶ Take the head completely up to the mechanical stop.
- ▶ Press the key shown in the figure.



- ▶ Enable the switch to tension / detensioning belt located inside the arc cutting, pressing the F5 function key.

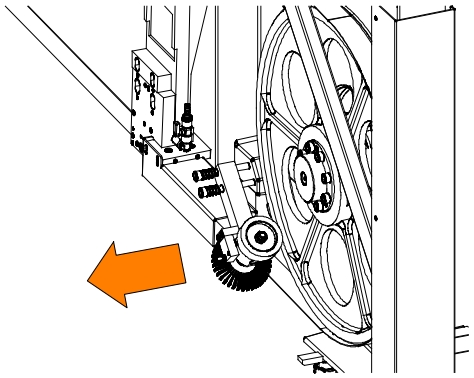


- ▶ Open the protective casing front by removing the two knobs lower closing.
- ▶ De- tension the band rotating the suitable switch inside the cutting bow.

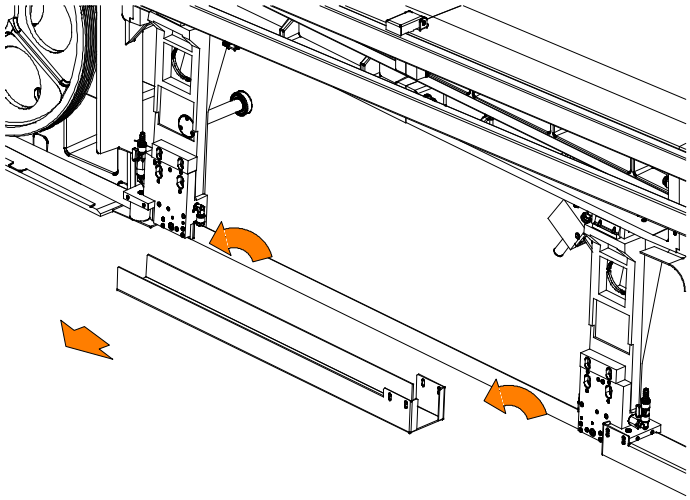


- ▶ Cut the machine off.

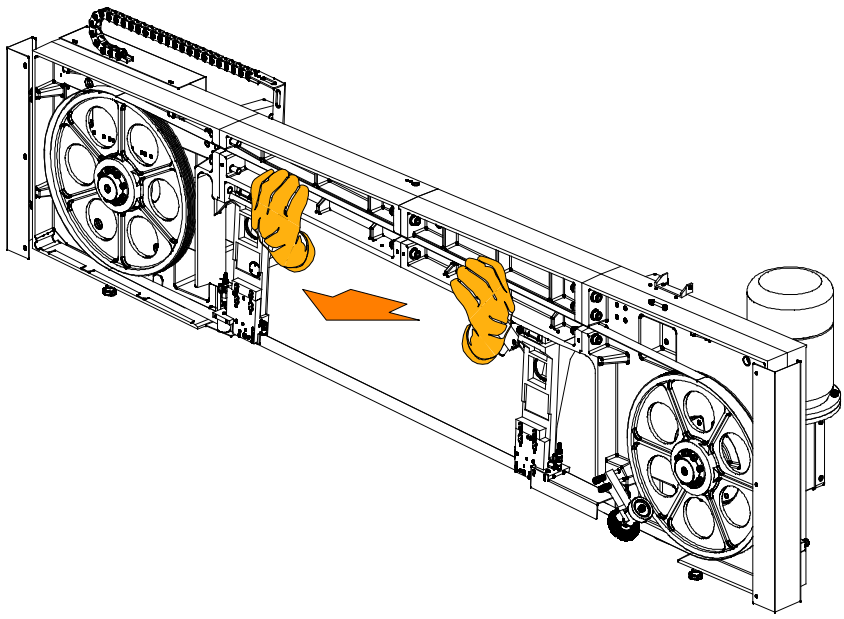
- Wear protective gloves when changing the blade;
- move the blade cleaning brush away by loosening the knob and pulling it outwards;



- remove the blade protections from the heads by loosening the fastening screws.



- Remove the worn blade by sliding it off the flywheels and front and rear heads;



- fit the new blade into the blade guide heads and make sure there is a minimum amount of play between the blade and the plates;
- restore the blade protections of the front and rear heads and position again the blade- cleaning brush correctly.

▶ Close the blade cover and power the machine again.

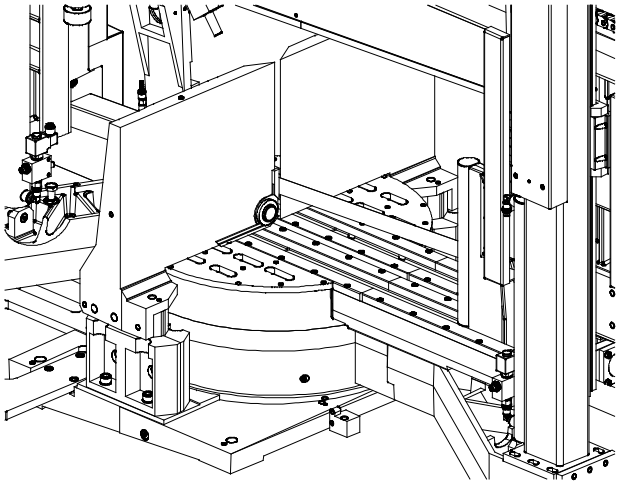
Blade perpendicularity

The perpendicularity of the blade to the work surface plus the blade tension are vital for achieving straight cuts. This adjustment is carried out with the help of a goniometer and a workshop square which should be placed adjacent to the blade resting on the work surface.

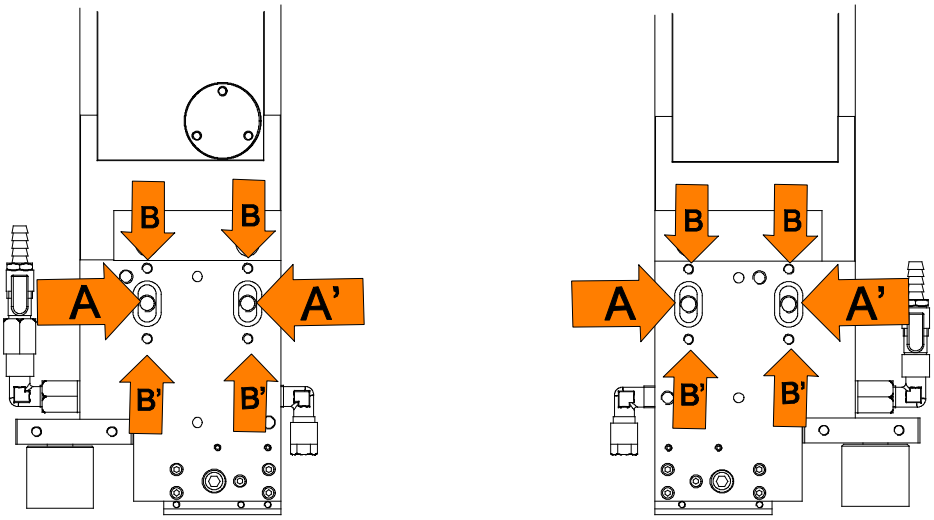
▶ Open the cutting vice;

▶ position the head so that the band is above the vice jaws;

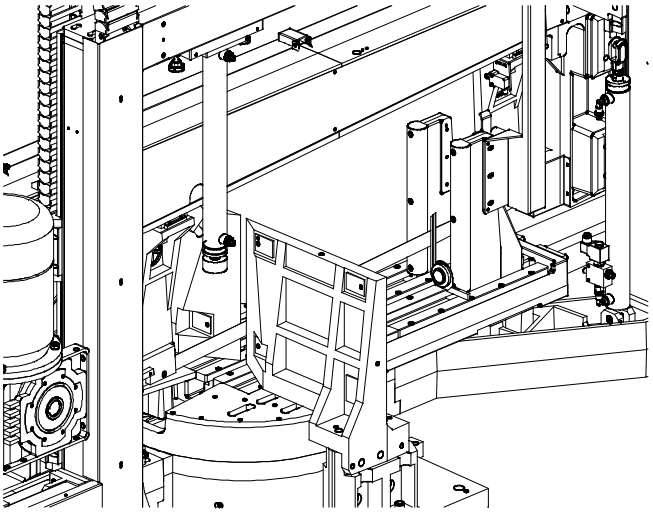
▶ position the square on the well cleaned reference plane and rest it on the blade, close to the movable vice square and head, in a position where teeth do not hinder the contact.



▶ If the band has the contact point in the upper part of the square: loosen the socket head screws (A and A') fastening the head, loosen the two dowels (B' and B') and tighten the two dowels (B and B). If instead the contact point is in the lower part, loosen the socket head screws (A and A'), loosen the two dowels (B and B) and tighten the dowels (B' and B') until the band is perpendicular to the square.



▶ Position the square on the working table close to the fixed vice square and head.

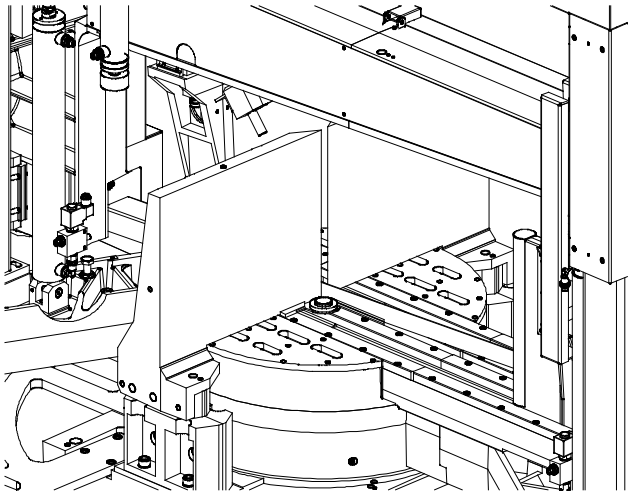


▶ Repeat the squaring operations as for the rear head.

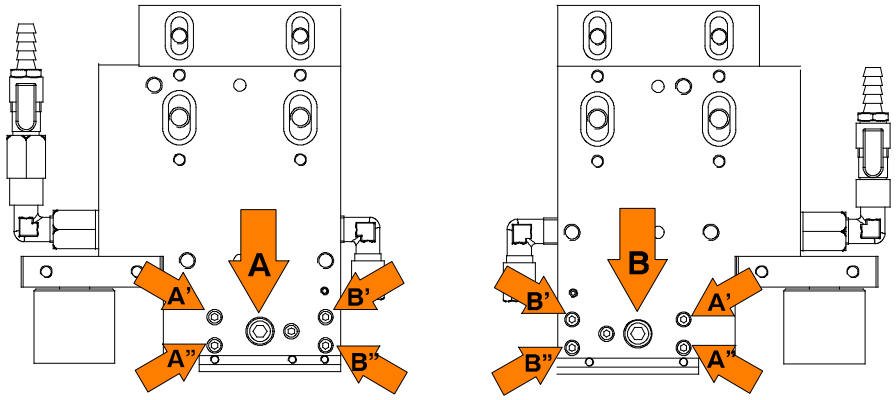
Blade orthogonality

The procedure for correcting and adjusting the blade to 0 degrees in order to make cuts at right angles to the fxed vice jaw.
To make orthogonal adjustments at 0°, use a workshop goniometer or a simple 90° square. Operation sequence:

- Lay a grounded plate on the feeder rollers;
- lower the head to HDL;
- position the square, resting it on the movable vice square, close to the band;



- loosen the socket head screws (A and B) fastening the head, and adjust the dowels (A', A'', B' and B'') evenly until the band is perpendicular to the piece-supporting shoulder.

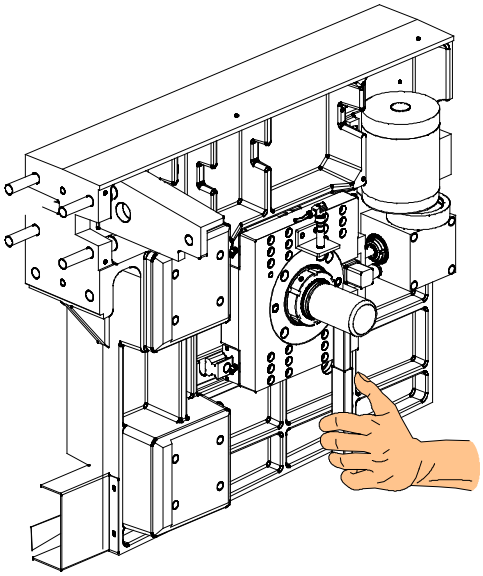


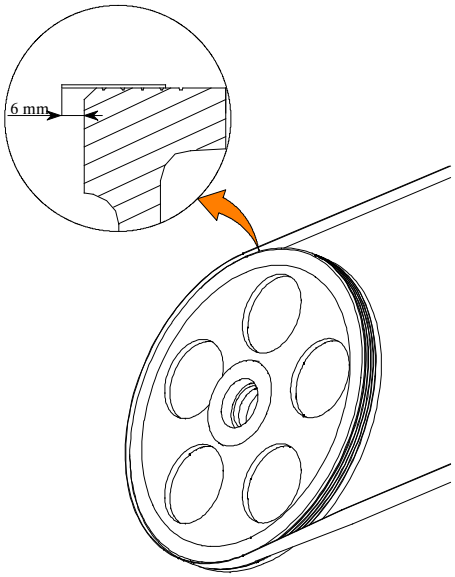
- After adjusting, check and restore blade perpendicularity.

Rotation axis control

Pulleys must be adjusted in their coplanarity. The adjustment is aimed at ensuring the belt rotation, keeping approx. 6 mm of distance from the point of the belt teeth to the pulley machined surface. This prevents an early wear of the belt.

- ▶ De- tension the band and remove the blade protection;
- ▶ slacken the grub screw and, using a mallet, tap the shaft in or out;
- ▶ Position again the blade protection and make the blade turn;
- ▶ check the distance between the blade and edge of the wheels;

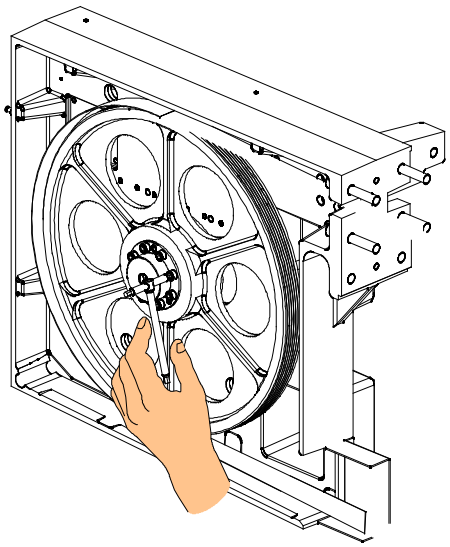




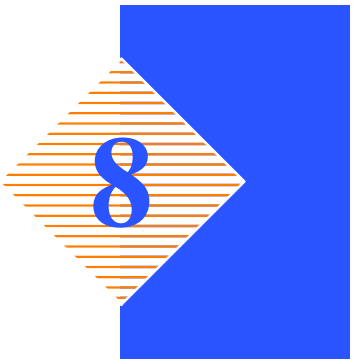
- ▶ if necessary, repeat the operation till getting the correct position.

Rear flywheel alignment is closely linked to adjustment of the front flywheel.

- ▶ Adjust by loosening all pulley locking screws and moving the pulley manually inwards or outwards according to the distance of the blade from the pulley machined surface. Tighten the screws again and check the coplanarity making the belt turn a few times.



Maintenance and choice of consumables



Shark 652 SXI- EVO is built to be sturdy and long- lasting It has no need of any special maintenance, though, like all other tools, it needs adjusting from time to time, especially if not regularly looked over or used without due care.

This chapter, therefore, is intended as a guide for those who want to look after the machine and get the most out of it for as long as possible.

The role of the operator

The person operating and maintaining the machine must follow these instructions for his own safety, as well as for the safety of other personnel, and in the interests of machine productivity:

- check that his own work and that of the other operators of the machine always complies with the relevant safety standards. Therefore, check that the safety devices are in position and work perfectly and that personal safety requirements are complied with.
- Ensure that the working cycle is efficient and guarantees maximum productivity, checking:
  - the functions of the main components of the machine;
  - the sharpness of the blade and coolant flow;
  - the optimum working parameters for the type of material.
- Check that the quality of the cut is that required and that the final product does not have any machining defects.

Maintenance requirements

- All ordinary and extraordinary maintenance must be carried out with the power switched off and the machine in emergency condition.
- To guarantee perfect operation, all spare parts must be MEP S.p.A originals.
- On completion of maintenance works, ensure that the replaced parts or any tools used have been removed from the machine before starting it up.
- Any behaviour not in accordance with the instructions for using the machine may create risks for the operator.
- Therefore, read and follow all the instructions for use and maintenance of the machine and those on the product itself.

General maintenance

Daily

- ▶ remove all swarf from the machine (preferably with a non- fibrous cloth);
- ▶ empty the swarf drawer (this is located on the right side of the base);
- ▶ top up the lubricant/coolant level;
- ▶ check state of blade wear and replace if necessary;
- ▶ check the blade cleaning brush, clean and relocate; if worn, replace;

Weekly

- ▶ remove all swarf;
- ▶ clean the vices and lubricate all articulation points and sliding surfaces, preferably with a good quality oil;
- ▶ check the oil level in the hydraulic power pack and, if necessary, top up. Check for oil leaks in the hydraulic hose connections and make sure the hoses are free of kinks.

Monthly

- check the perpendicularity of the blade to the work surface; if it is necessary to adjust the blade setting, follow the instructions set out in Chapter 7;
- check on blade orthogonality with respect to the workpiece rest shoulder; if adjustment is necessary, proceed as instructed in Chapter 7;
- check the state of the widia inserts and the blade steady button; replace if worn or chipped; check their positions and adjust if necessary (see Chapter 7);
- thoroughly clean the bottom of the water tank and the electropump filter.

Maintenance of working parts

The machine maintenance operator must pay special attention to the sliding mechanical systems and to the hydraulic circuit power pack. No maintenance intervention is required for the worm screw reducer installed on the machine.

Consumable materials

It is essential to use specific oils for the pneumatic and lubricant/coolant circuits. The oils suitable for each of these circuits are listed below.

Oil for transmission box

The machine can be equipped with a worm gear which is permanently lubricated and therefore maintenance- free.
Otherwise, the machine can be equipped with a worm gear having filler cap, level checker and drain to top the oil up if necessary. Below, there is a short list of synthetic oils for permanent lubrication:

SHELL Omala Oil 460 - AGIP Blasia 460 - API DT 460 - BP Energol GR XP 460 - CASTROL Alpha SP 460 - FIAT EPZ 460 - MOBIL Mobilgear 634 - Q8 Goya 460

- reducer capacity 0.320 litres

Oils for hydraulic circuit

The machine is supplied with FOX YE 32 oil. This oil is used by the head cylinder and hydraulic power packs. The following oils may also be regarded as compatible or having equivalent specifications:The machine is supplied with FOX YE 32 oil. This oil is used by the head cylinder and hydraulic power packs. The following oils may also be regarded as compatible or having equivalent specifications:

API Cis 22 - ARAL Dural SR 22 - CASTROL Hyspin AWS 22 - ESSO Spinesso 22 - IP Hydrus oil 22 - TOTAL Azolla ZS 22 - VALVOLINE ETC 22 - MOBIL Velocite oil D - Mobil DTE 22 - MOBIL ATF 220 - OLIO FIAT HTF 22 - Q8 Haydn 22 - SHELL Tellus oil 22 - BP AUTRAN GM- MP.

- reservoir capacity 2,5 litres

Oil for lubricant/coolant fluid

The oil used for the machine lubricant/coolant fluid is CASTROL Syntolin TFX. Though there are no specific standards for these types of oils, MEP considers that the above product has the best price/quality rapport. The following oils can also be said to have similar characteristics and are therefore compatible:

AGIP NB 200 - SHELL Lutem TT - IP Utens Fluid- F

Finally, a lubricant/coolant guaranteed and distributed by a band saw manufacturer (LENOX) is BAND- ADE SAWING FLUID LENOX.

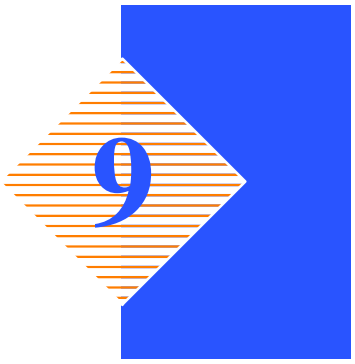
- tank capacity Lt.95
- oil concentration 5- 6 %

Oils for spray mist system (optional)

The oil type used for the machine spray mist system is the cutting oil: Blaser Vascomill F 22.
Though there are no specific standards for these types of oils, MEP considers that the above product has the best price/quality rapport. The following oils can also be said to have similar characteristics and are therefore compatible:

SHELL MACROM 401 F22 - AGIP ESTRAMET F20

Cutting speed and choice of tools



The cutting speed is determined by the blade speed and the head feed speed. While the head speed is provided by the downstroke movement of the head, the blade rotation speed can either be fixed or variable. This chapter describes the cutting speeds the machine can operate at in the standard version, as well as the speeds for which the optional electronic speed controller (inverter) is necessary. When using the **Shark 652 SXI- EVO**, it is important to select the correct type of blade for the material to be cut. This chapter explains the limitations and specific applications of the different types of blades.

Cutting speed

Standard machine

The basic version with 4 pole motor, is provided with the following cutting speeds:

- 1st speed = 15 ÷ 115 m/min. (4 pole)

The inverter is an electronic instrument fitted to the **Shark 652 SXI- EVO** for varying spindle motor rpm. The inverter makes life easier for the operator carrying out special cutting tasks by enabling a changing of rotation speed to suit the kind of material being cut. Blade use can thus be optimised, inasmuch as a blade not especially suitable for cutting a certain material can be adjusted all the same to the task, and premature wear is avoided.

Inverter technical specifications	
Protection rating	IP 31
Vibration and shock resistance (EN50178)	0.6 gn from 10 to 50 Hz 2 gn from 50 to 150 Hz
Max. relative humidity	93% without condensation or drop-forming
Acceptable Temperature Range (EN 50178)	For warehouse storing: from -25° C to +65° C For operating purposes: from -10° C to +40° C
Max. altitude	1000mt. with no derating
Supply	- single phase: 200V - 15% to 240V + 10%
	- three phase: 200V - 15% to 230V + 10% 380V - 15% to 460V + 10%
Frequency	50/60 Hz ± 5%
Output voltage	Maximum voltage equal to the supply voltage
Output frequency range	0,5 a 320 Hz
Max. transients	150% of electronic speed control rated current for 60 secs.
Frequency resolution	- Display: 0.1 Hz - Analog inputs: 0.1 Hz per 100 Hz max.
Switching frequency	Adjustable from 2.2 to 12 Hz max.

Inverter technical specifications	
Electronic speed control protection and safety devices	Galvanic insulation between power and control panel
	Short circuit protection: - of available internal supplies; - between U- V- W output phases between phase and earth for calibres from 5.5 to 15Kw
Motor protections	Thermal protection against overheating and overcurrents
Motor protections	Protection integrated in the electronic speed control with 1^2t calculation
	Protection integrated in the electronic speed control with 1^2t calculation
Motor protections	Protection integrated in the electronic speed control with 1^2t calculation

Choice of blade

When using band saws to cut metals, an important factor is the choice of pitch, i.e. the number of teeth per inch (25.4 mm.), which must be suitable for the workpiece material. The following recommendations may be taken as general guidelines:

- thin- walled materials, such as sheet steel, tubes and profiles require a fine pitch frequency. 3 to 6 teeth should be engaged in the breadth of the material at any one time;
- large section cutting requires a coarse pitch to cope with the higher volume of swarf and optimal tooth penetration;
- soft materials (aluminium alloys, soft bronze etc.) also require a coarse tooth pitch.

Saw tooth pitch

The choice of teeth per inch, therefore, depends on various factors:

- the size of the section;
- the hardness of the material;
- workpiece wall breadth.

Very large dimensions require coarse teeth, while small dimensions require finer teeth. Whatever the case, ensure that there are always at least six teeth engaged in the cut, with reference to the thinnest vertical walls positioned transversally to the blade.
Concerning the type of Shark machine, a first broad distinction can be made according to the hardness of materials:

	Mild steels < 61 HRB < 55 kg/mm^2	Hard steels > 65 HRB > 65 kg/mm^2
	NR. TEETH/INCH	**NR. TEETH/INCH**
MINIMUM	3 / 4	5 / 8
OPTIMUM	4 / 6	6 / 10
MAXIMUM	8 / 12	10 / 14

Cutting speed and downstroke speed

The cutting speed (m/min) and the downstroke speed (cm^2/min) are limited by the heat generated around the points of the teeth. If the downstroke speed is too

high, the cut will not be straight, either vertically or horizontally.

The cutting speed depends, as indicated above, on the tensile strength of the material (kg/mm^2), its hardness (HRB) and the thickness of largest sections. The downstroke speed depends on the material thickness. Therefore, large- section, solid or thick- walled materials (s > 5 mm), can be cut at high speeds, providing there is sufficient swarf removal from the blade; thin- walled materials, such as slim piping or profiles, must be cut using low and especially constant downstroke speeds.

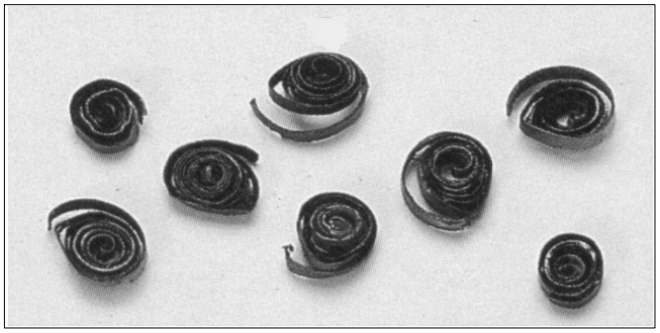
A new blade must be worn in, which in effect means lowering the downstroke speed to about half that of normal (from 60 to 70 cm^2/min on normal steels), equal to a removed surface area of about 300 - 600 cm^2.

Types of swarf:

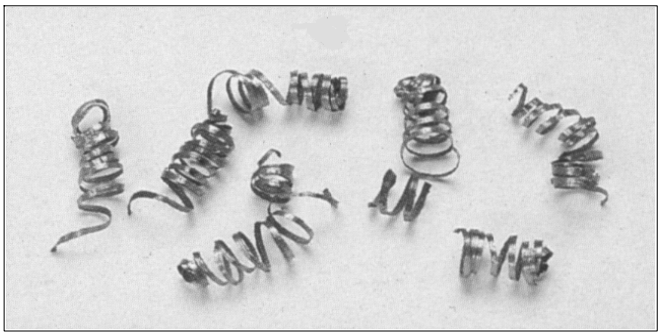
- Very fine or fragmented swarf indicates that the downstroke speed and/or cutting pressure is too low.



- Thick and/or blue swarf indicates that the blade is overloaded.



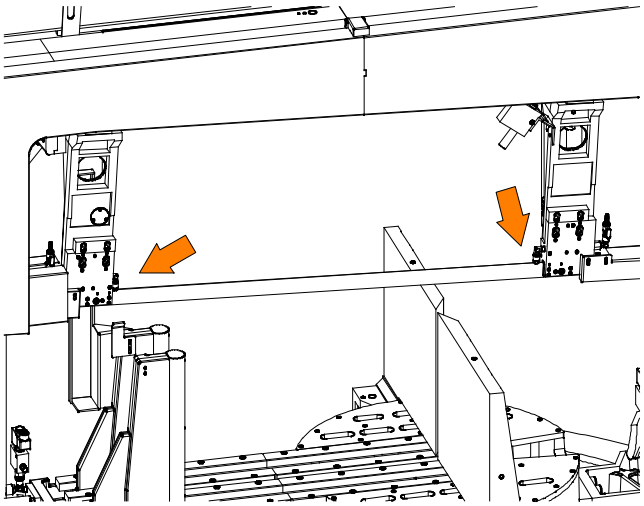
- Long coils of swarf indicate ideal cutting conditions.



Lubricant/coolant fluid

The lubricant/coolant fluid must ensure so that neither the saw teeth nor the work piece material in the cutting zone overheat. Furthermore, there must be a

sufficient quantity and pressure of lubricant/coolant to remove swarf from the cutting zone. The lubricant/coolant fluid must be of the highest quality in order to prevent tooth abrasion and welding of swarf to the teeth themselves (seizing).



Blade structure

The most commonly used blades are the bimetal types, i.e. manufactured with a silicon steel body and having a high fatigue strength, and super high- speed steel teeth; the two parts are welded by electronic or laser- welding.

Standardised teeth types are termed M2 and M42; the difference being that M42 teeth are harder due to the addition of cobalt to the steel used to make the teeth.

Key									
Mo	Molybdenum	Ni	Nickel	Si	Silicon	V	Vanadium	W	Tungsten
Al	Aluminium	C	Carbon	Co	Cobalt	Cr	Chromium	Mn	Manganese

TYPE OF BLADE	*C*	*Mn*	*Si*	*Cr*	*W*	*Mo*	*V*	*Ni*	*Co*	*Al*	*HRC*
	0,47	0,75	0,22	1,00		1,00	0,12	0,52		0,08	45- 50
HSS M2 HRC 65- 66 / HRC 45- 50	0,85	0,25	0,30	4,15	6,37	5,00	1,92				64- 66
HSS M42 HRC 67- 68 / HRC 45- 50	1,07	0,25	0,20	3,75	1,50	9,50	1,15		8,00		67- 69

N.B. The numbers in the columns indicate the % content of the element in the steel.

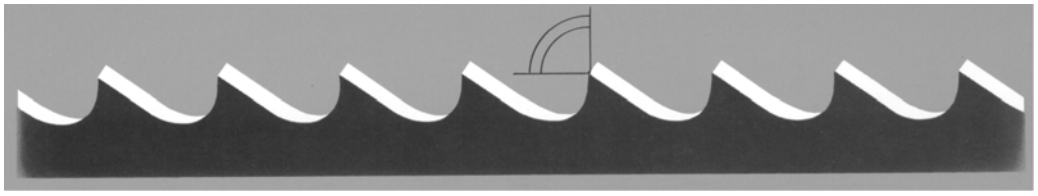
Blade types

The blades mounted on the **Shark 652 SXI- EVO** are 6700x41x1,3 mm.; the length can vary between 6720 mm. and 6680 mm., thanks to the blade tensioner device. The blades, however, apart from size and tooth pitch, are differentiated by other geometrical characteristics which determine their specialised uses:

- tooth cutting angle (rake), can be 0° or positive;
- the tooth pitch can be constant or variable;
- the set, i.e. the various teeth alignments, have many possible configurations.

Conventional rake

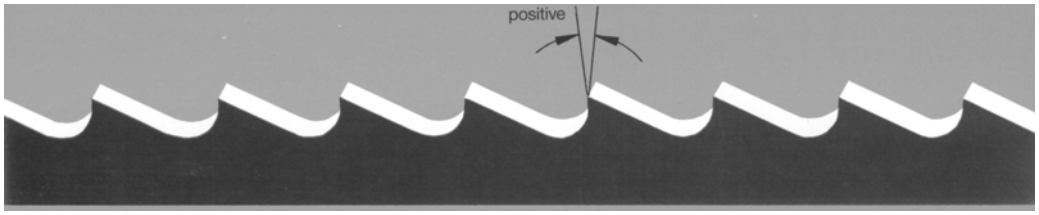
Cutting angle 0°, constant pitch.



In general use, for small or medium section cast iron or steels and rolled materials, for straight or angled cuts.

Positive rake

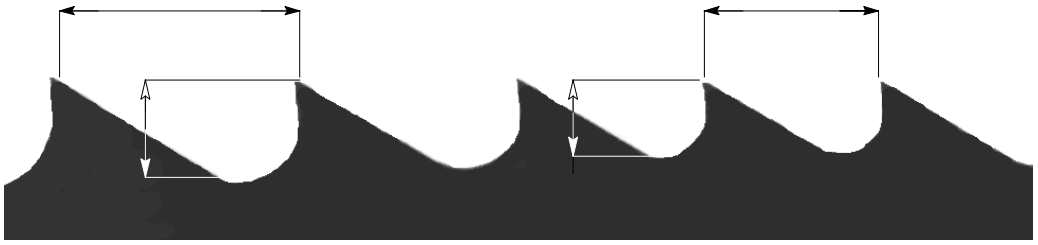
Positive cutting angle 9- 10°, constant pitch.



Can be used for cutting all types of materials, and is particularly suited to low- carbon and non- ferrous steels. Used for cutting very large sections and diameters.

Variable pitch

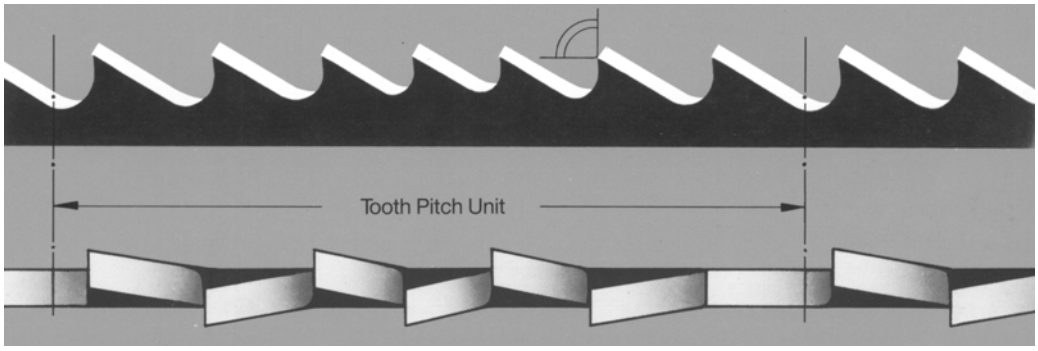
These blades have groups of teeth having different pitches and, as a consequence, have various tooth dimensions and differing relief angles. These are also available in M2 and M42 types with zero and positive rakes. The alternation of the different types of teeth helps to prevent vibration and noise. Elimination of vibration increases the useful life of the tool and improves the cut surface finish.



A further advantage in using these types of blades lies in the fact that a wide range of different material types and dimensions can be cut with the same blade.

Variable pitch blades with 0° cutting angle

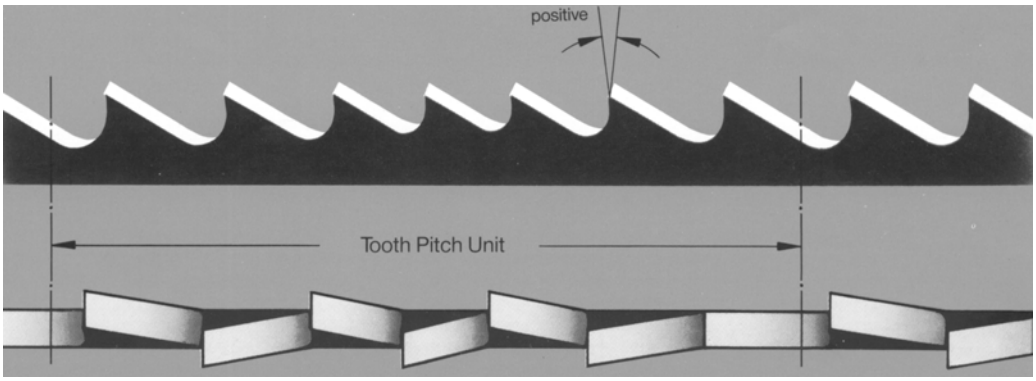
This type of tooth formation is ideal for cutting single pipes or medium size bundles, in accordance with the capacity of the machine.



Pitches available: 3- 4 / 4- 6 / 5- 7 / 5- 8 / 6- 10 / 8- 12 / 10- 14.

Variable pitch with positive rake (from 9 to 10 degrees)

This toothing type is the most suitable for cutting large dimension pipes and profiles, including large sections, as well as for cutting solid sections up to the machine capacity limit.



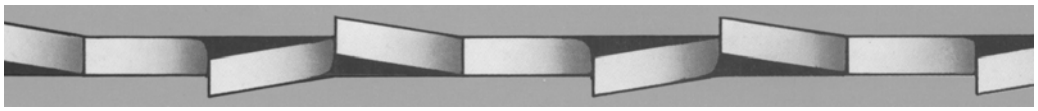
Pitches available: 3- 4 / 4- 6.

Set:

The term set refers to the section of material removed by the blade during the cutting operation, i.e. relating to width of cut and the offset position of the teeth with respect to the blade back.

Standard or splayed set

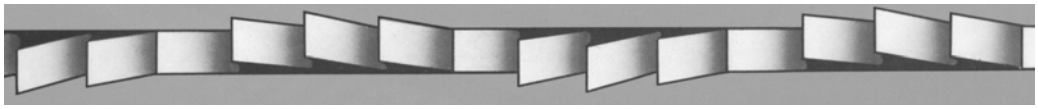
This term is used to describe an alternated angling of the teeth: one to the right, one to the left and one straight.



For general use on materials over 5 mm. thick. Suitable for cutting steels, castings and non- ferrous hard materials.

Undulated set

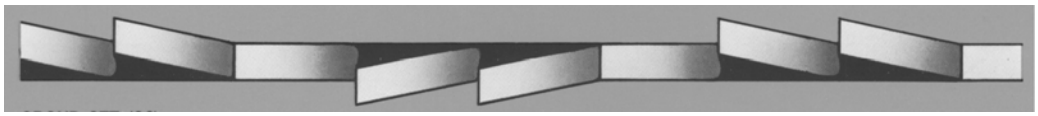
Used to describe groups of teeth undulating alternatively to the right and left.



This type of set is used with very fine teeth for cutting thin pipe walls and small- section profiles (from 1 to 3 mm).

Alternating grouped sets

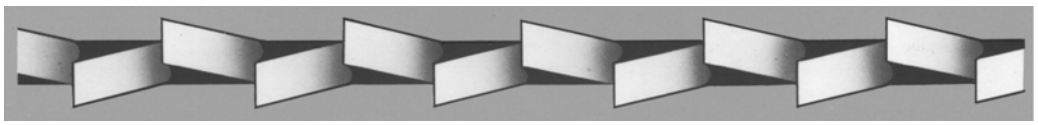
These are groups of teeth angled to the right, one straight tooth, then a further group angled to the left.



This set is used for very fine teeth for cutting very thin sections (less than 1 mm).

Alternating set

This set is one tooth to the right followed by one to the left.



This set is used for soft non- ferrous materials, plastics and wood.

Blade selection table relating to cutting speed and downstroke speed

Cutting material	Cutting speed mt./min	Dimensions of the cutting section S (mm)												Lubrication	sq. mt./min. cut
		S10		10S30		30S50		50S80		80S120		120S230			
Structural steel Casehardened steel Steel for turning Mild steel	50 / 70	14	10 / 14	10	10 / 14	8	6 / 10	6	5 / 8	4	4 / 6	3	3 / 4	Emulsible oil Cutting fluid	60 - 70
High- duty cast iron Rolled steel Spring steel	40 / 50	14	10 / 14	10	10 / 14	8	6 / 10	6	5 / 8	4	4 / 6	3	3 / 4	Emulsible oil	50 - 60
Alloy steel Tool steel Valve steel	30 / 40	14	10 / 14	10	10 / 14	8	6 / 10	6	5 / 8	4	4 / 6	3	3 / 4	Emulsible oil Cutting fluid	15 - 20
Stainless steel Nodular cast iron	30 / 40	14	10 / 14	10	10 / 14	8	6 / 10	6	5 / 8	4	4 / 6	3	3 / 4	Emulsible oil	15 - 20
Copper Soft bronze	90 / 150	14	10 / 14	10	10 / 14	6	5 / 8	4	4 / 6	3	3 / 4	3	3 / 4	Emulsible oil	75 - 90
Brass	90 / 300	14	10 / 14	10	10 / 14	6	5 / 8	4	4 / 6	3	3 / 4	3	3 / 4	Emulsible oil	80 - 90
Hard bronze	20 / 40	14	10 / 14	10	10 / 14	6	5 / 8	4	4 / 6	3	3 / 4	3	3 / 4	Emulsible oil	25 - 40
Aluminium	80 / 800	14	10 / 14	6	10 / 14	4	4 / 6	3	3 / 4	3	3 / 4	3	3 / 4	Emulsible oil	70 - 80
Plastics	90 / 400	14	10 / 14	6	10 / 14	4	4 / 6	4	4 / 6	3	3 / 4	3	3 / 4	Emulsible oil	80 - 90

Blade pitch **Number of teeth per inch**

Classification of steels

This page provides a table giving the user specific information on the cutting materials, in order that they can be classified on the basis of their hardness, and thus the correct tool can be selected for the task in hand.

Types of steel				Hardness		
UNI	DIN	BS	AISI	Brinell HB	HRB	Kg/mmq
C 22 - C 35	CK 22 - CK 3	En 2 C - En 6	1022 - 1035	160 - 170	34 - 87	55 - 59
C 45	CK 45	En 8	1040	160 - 180	84 - 89	55 - 61
C 10 - C 15	CK 10 - CK 15	En 32 C - En 328	1010 - 1015	150 - 175	81 - 87	51 - 59
C 60	CK 60	En 9	1060	160 - 180	84 - 89	55 - 61
		4360 - 50 A		160 - 180	84 - 89	55 - 61
	17100	3706 - 1.2.3.	ASTMA - 36/68	160 - 180	84 - 89	55 - 61
45 Cr Si 9	17115	4360		160 - 180	84 - 89	55 - 61
		En 20 A		190 - 215	91 - 97	64 - 73
34 Cr Mo 5	17221	970 - 1955	1065	180 - 205	89 - 94	61 - 69
		En 18 B	5135 - 5145	180 - 200	89 - 93	61 - 67
35 Cr Mo 4	34 Cr Mo	En 19 B	4135	200 - 230	93 - 99	67 - 77
	36 Ni Cr 6	En 111	3135	190 - 230	91 - 99	64 - 77
		En 36	3310 - 3315	200 - 230	93 - 99	67 - 77
20 Nc Cr Mo 2		En 362	4315	200 - 225	93 - 98	67 - 75
		En 100 D	8645	190 - 220	91 - 97	64 - 74
	1880 X C 95	DX	W 1	150 - 190	80 - 91	51 - 64
100 Cr 6	100 Cr 6	En 31	52100	210 - 230	96 - 99	71 - 77
		B 2	L 6	190 - 230	91 - 99	64 - 77
52 Nc Cr Mo KU	56 Ni Cr Mo V 7			217 - 248	97 - 102	73 - 83
	2750 (280W18)	18 % W	T 1	217 - 248	97 - 102	73 - 83
		1507 - 825	1310	160 - 220	84 - 91	55 - 64
		A 2	M 13	200 - 230	93 - 99	67 - 77
	210 Cr 46	A 1	D 3	215 - 240	97 - 101	73 - 81
	4845	En 58 G	309 S	150 - 200	80 - 93	51 - 67
X 12 Cr 13	4001	En 56 A	410	150 - 200	80 - 93	51 - 67
X 6 Cr Ni 1810	4301	En 58 E	304	130 - 170	74 - 86	45 - 58
X Cr Ni 1910						
X 8 Cr Ni Mo 1713	4401	1501 - 845	316	160 - 200	84 - 93	55 - 67
Phosphor bronze				60 - 100	56,5	36
Aluminium bronze				70 - 90	49	32
Manganese bronze				95 - 120	51 - 69	34 - 42
Silicon bronze				70 - 100	56,5	36

Classification of steels

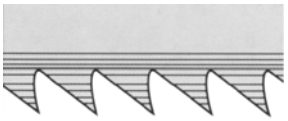
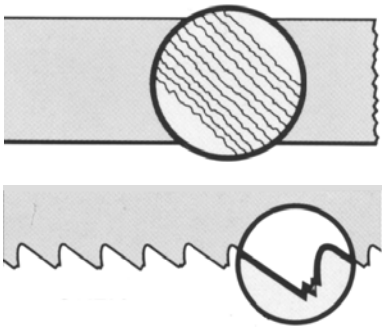
Material							
Carbon steels	1311	1015 - 1035	C 22 - C 35	050 A 20	C 15 - C 35	XC 18
			20 Mn 5 - 28 Mn 6	080 M 46 - 50	C 22 Mn	XC 38 H 1
	1572		CK 22 - CK 50	120 M 19	C 28 Mn	20 M 5
				150 M 28		
Carbon steels	1650	1040 - 1064	CK 60 - CK 101	060 A 40 - 060 A 96		XC 60 - XC 75
			36 Mn 5	070 M 55		40 M 5
	1880	1770 - 1880	Cm 45 - Cm 55	080 A 40 - 080 A 62	C 45 - C 60	XC 42 H 1
						XC 55 H 1
Alloy steel	2120	1335 - 1345		1717 CDS 110		25 CD 4
			25 Cr Mo 4 - 42 Cr Mo 4	708 A 37	25 Cr Mo 4 - 42 Cr Mo 4	
	2255	4130 - 4140		708 M 40		42 CD 4
Alloy steels	2541	4337 - 4340	40 Ni Cr Mo 6	735 A 50, 534 A 99	40 Ni Cr Mo 2 - 40 Ni Cr Mo 7	35 NCD 6
	2230	50100 - 52100	40 Ni Cr Mo 73	817 M 40	30 Ni Cr Mo 8 - 35 Ni Cr Mo 6 KB	50 CV 4
		6145 - 6152				
	2258	8630 - 8645	34 Cr Ni Mo 6, 100 Cr 6	311 rodzaj 6, 7	50 Cr V 4, 100 Cr 6	100 C 6
Tool steels	2310 - 12	D - 2, D - 3	X 210 Cr 12	BD 2, BD 3	X 205 Cr 12 KU	Z 160 CVD 12
	2754 - 55		X 155 Cr V Mo 121		X 155 Cr V Mo 121 KU	Z 200 C 12
Tool steel	2550	S - 1	60 W Cr V 7	BS 1	55 W Cr V 8 Ku	55 NCVD 7
	2710		55 Ni Cr Mo V 6		55 Ni Cr Mo V 6	
Stainless steels	2324	201, 202	X 2 Cr Ni 189	304 S 15	X 2 Cr Ni 18.11	Z 2 CN 18.10
	2333	302, 304	X 5 Cr Ni 189	304 C 12	X 5 Cr Ni 18.10	Z 6 CN 18.09
			G - X 2 Cr Ni 189	304 S 12	G - X 2 Cr Ni 19.10	Z 3 CN 19.10
Stainless steel	2343	314, 316	X 15 Cr Ni Si 2520	316 S 16	X 16 Cr Ni Si 2520	Z 12 CNS 25.20
			X 5 Cr Ni Mo 1812		X 5 Cr Ni Mo 1713	
	2353	317	X 5 Cr Ni Mo 1713	317 S 16	X 5 Cr Ni Mo 1815	Z 6 CND 17.12

Troubleshooting

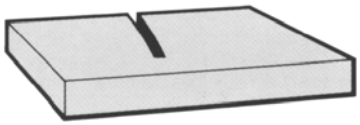
10

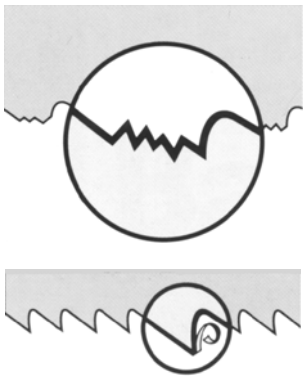
This chapter describes the inspection and troubleshooting procedures for the **Shark 652 SXI- EVO**. Regular inspections and efficient maintenance are essential to ensure your machine gives you a long, trouble- free service life. The chapter is divided into two sections: the first being dedicated specifically to TROUBLESHOOTING BLADE AND CUTTING PROBLEMS, while the second TROUBLESHOOTING section concerns troubleshooting general machine operating faults. Taken together they form a comprehensive trouble-shooting guide which will enable you to follow a methodical procedure for solving any problem.

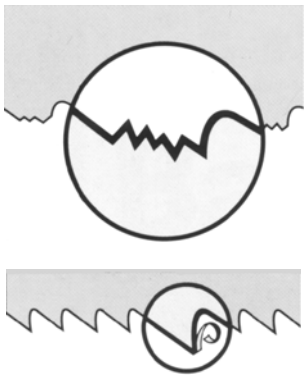
Troubleshooting blade and cutting problems

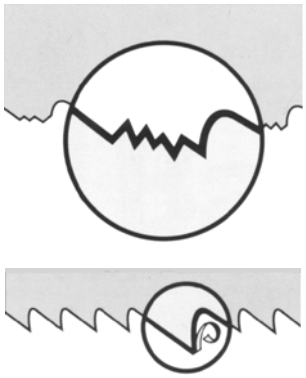
PROBLEM	PROBABLE CAUSE	SOLUTION
Blade scored or scratched 	◗ Widia inserts chipped or worn	☞Replace
	◗ Widia inserts loose or tight	☞Adjust
	◗ Widia inserts dirty	☞Clean and re- adjust correctly
Cutting surfaces scored 	◗ Blade teeth worn	☞Replace blade
	◗ Head downstroke speed too fast	☞Reduce downstroke speed
	◗ Cutting speed too slow	☞Increase cutting speed
	◗ Blade teeth too wide	☞Change for wider teeth
	◗ Free blade guide head too far away	☞Move blade guide head closer so as to leave only that part of the blade free which is needed to effect the cut
	◗ Blade tension low	☞Reset tension to rated tension
	◗ Broken teeth on blade	☞Check and replace blade

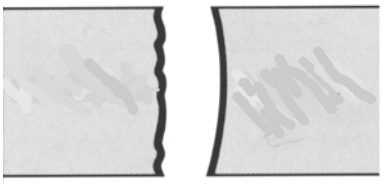
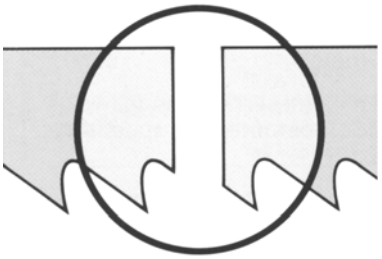
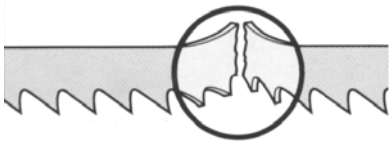
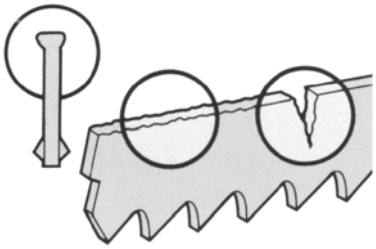
PROBLEM	PROBABLE CAUSE	SOLUTION
Rapid tooth wear 	◗ Teeth pointing in the wrong direction	☞Set teeth in correct direction
	◗ Blade worn in wrongly	☞With a new blade cutting should be done at half- speed and with downstroke speed also at half normal speed. After the blade has been worn in (about 300 cm^2 of work for hard cutting materials and about 1000 cm^2 for soft cutting materials) the cutting and downstroke speeds can be brought up to rated levels
	◗ Material too hard	☞Check cutting speed, downstroke speed and blade pressure, as well as type of band saw being used
	◗ Material defective	☞Surface defects: oxides, sand, surface hardening. Hardened inclusions in section. Reduce cutting and downstroke speeds or clean surface.
	◗ Cutting speed too high	☞The teeth slide on the material without cutting: reduce cutting speed
	◗ Head downstroke speed too slow	☞The band saw runs over the material without removing it: increase downstroke speed
	◗ Insufficient coolant	☞Check coolant level and clean pipes and jets
	◗ Incorrect fluid concentration	☞Check and use the correct concentration
	◗ New blade inserted into a partially- made cut	☞The cutting surface might have been subject to a localised heat- induced alteration, making it harder: recommence cut using a slower cutting and downstroke speed. There may be a broken tooth from the old blade lodged in the cut: check and remove before recommencing work
	◗ Flutter	☞Blade tension too low: tighten. Tooth shape or pitch unacceptable: change type of blade used. Widia blade steady buttons too far from the blade back: adjust guide heads, rotating them slightly to bring them closer to the blade back.

PROBLEM	PROBABLE CAUSE	SOLUTION
Cuts not orthogonal or inclined 	◗ Head downstroke speed too fast	☞Reduce head downstroke speed
	◗ Widia inserts worn	☞Replace
	◗ Inserts loose	☞Adjust width
	◗ Blade guide head positioned wrongly	☞Move mobile head up to the workpiece using the guide plate to leave free only that part of the blade actually needed to make the cut
	◗ Orthogonality of blade to workpiece rest shoulder	☞Check and realign the blade guide heads, then reset the blade orthogonality with the shoulder using the adjustment pin at 0°; then set the stops at 45° right and left by means of the appropriate screws
	◗ Perpendicularity of the blade to the work surface	☞Check and realign the blade guide heads then adjust the blade using the appropriate screws so that it is perpendicular to the work surface
	◗ Blade tension incorrect	☞Bring pressure up to 60 Bar
	◗ Blade worn	☞Replace blade
	◗ Tooth pitch unsuitable	☞Probably a blade with too many teeth per inch is being used; change for a coarser blade
	◗ Cutting speed too slow	☞Increase the cutting speed
	◗ Wrong coolant	☞Check the water and oil emulsion; check that none of the holes or hoses are blocked; direct the jets correctly
	◗ Broken teeth	☞Check the hardness of the material being cut

Broken teeth 	◗ Cutting speed too high	☞Reduce cutting speed
	◗ Downstroke speed too high	☞Reduce downstroke speed

PROBLEM	PROBABLE CAUSE	SOLUTION
Broken teeth 	◗ Cutting pressure too high	☞Check and set to correct pressure
	◗ Tooth pitch unsuitable	☞Teeth too close together: change blade for one with a coarser tooth pitch
	◗ Swarf welded to teeth and gullets	☞Check blade- cleaning coolant jets. Check the blade-cleaning brush. If the swarf is not removed from the blade it will be drawn back into the cut and weld to the teeth, causing tooth breakage
	◗ Swarf welded to teeth and gullets	☞Check blade- cleaning fluid jets. Check blade- cleaning brush. If the swarf is not removed from the blade it will be drawn back into the cut and weld to the teeth, causing the teeth to break.
	◗ Material defects	☞The material may have altered surface areas, such as oxides or sand, or subcooled inclusions in the section. These areas are much harder than the blade and will cause the teeth to break: scrap or clean these materials.
	◗ Workpiece not clamped	☞The blade may break if the workpiece moves during cutting: check the vice, jaws and clamping pressure
	◗ The blade stops in the cut	☞Cutting pressure too high: check and restore to rated pressure. Downstroke speed too fast: reduce speed. Cutting speed too slow: increase. The blade slips on the flywheels: either the wheels are worn and need to be replaced or the blade tension is incorrect (too low) and must be re- adjusted.
	◗ New blade inserted in a partially made cut	☞The cutting surface may have been subjected to a localised heat- induced alteration, making it harder: recommence cut using a slower cutting and downstroke speed. A tooth from the old blade may be left in the cut: check and remove before restarting work.

PROBLEM	PROBABLE CAUSE	SOLUTION
Broken teeth 	◗ Widia inserts positioned incorrectly	☞Adjust the position of the inserts, especially the width, since blade thicknesses can exceed the manufacturer's declared tolerance ratings
	◗ Widia blade steady buttons	☞Two widia blade steady buttons are located in the top of the blade guide heads which press on the back of the blade to transmit cutting pressure. If these buttons are too far from the blade, the blade may be prone to an up and down undulating action or abnormal vibrations, liable to cause the teeth to break: adjust the position of the heads by rotating them downwards so as to bring the blade steady buttons up against the back of the blade
	◗ Sections with large thickness variations	☞The cutting speed and downstroke speed must be chosen to suit the most critical part of the cut
	◗ Teeth angled in the wrong direction	☞Fit blade so that teeth point in the right direction
	◗ Blade run in wrongly	☞When using a new blade, the cutting and downstroke speeds must be reduced to half the normal operating speed. After the blade has been worn in (about 300 cm2 for hard materials and about 1000 cm2 for soft materials) the cutting and downstroke speeds may be returned to their rated levels
	◗ Insufficient coolant	☞Check coolant level and clean fluid lines and jets
	◗ Incorrect fluid concentration	☞Check and use the correct concentration
	◗ Blade tension too high or too low	☞Check and reset to rated tension

PROBLEM	PROBABLE CAUSE	SOLUTION
Blade path fault 	◗ Front flywheel position incorrect	☞Check that the band saw is correctly positioned on the flywheel. Adjust the position of the flywheel under the blade, moving the shaft of the flywheel
	◗ Flywheels worn	☞Replace
	◗ Gaps full of swarf	☞Clean inside machine using blown air.
	◗ Blade guide head alignment	☞Check and adjust
Blade broken    	◗ Cutting speed too high	☞Reduce cutting speed
	◗ Head downstroke too fast	☞Reduce head downstroke speed
	◗ Cutting pressure too high	☞Check and set to correct pressure
	◗ Tooth pitch unsuitable	☞Teeth too close together: change the blade for one with coarser tooth spacings
	◗ Workpiece not clamped properly	☞The blade may break if the workpiece moves during cutting: check the vice, jaws and clamping pressure.
	◗ Widia inserts positioned incorrectly	☞Adjust inserts position, especially the width, since blade thickness can exceed the manufacturer's declared tolerance ratings
	◗ Widia blade steady buttons	☞Can have a milling action on the back of the blade if worn or chipped, causing cracks from the back towards the teeth.
	◗ Position of blade on flywheels incorrect	☞The blade may be scraping on the edges of the flywheels: this problem is generally caused by blades which are deformed or wrongly welded (conical) Adjust the position of the front flywheel by moving the pin, or change the blade
	◗ Blade tension incorrect	☞If the blade tension is too high or too low, the blade will be subjected to abnormal stress: set the tension back to the rated value.

PROBLEM	PROBABLE CAUSE	SOLUTION
	◗ Blade weld fault	☞The point at which a blade is welded is its most critical point; problems could be caused by welds which are not aligned perfectly or have inclusions or blowholes
	◗ Free blade guide head	☞The head is too far away from the workpiece: move the head closer, leaving free only that part of the blade actually needed to make the cut
	◗ Teeth in contact with the material before starting the cut	☞Always check the position of the blade before starting a new job, especially for the semi- automatic cycle
	◗ Widia inserts	☞If worn, the inserts can score the blade, weakening it even to breaking point. If the inserts are too far apart, the blade will whip, striking both the inserts and the material. Replace or adjust
	◗ Insufficient coolant	☞Check coolant fluid level; clean pipes and jets
	◗ Incorrect fluid concentration	☞Check and use the correct concentration
	◗ The blade stops in the cut	☞Cutting pressure too high: check pressure and reset to rated pressure. Head downstroke speed too fast: reduce. Head downstroke speed too slow: increase. The blade slips on the flywheels: incorrect or low blade tension; readjust or increase.

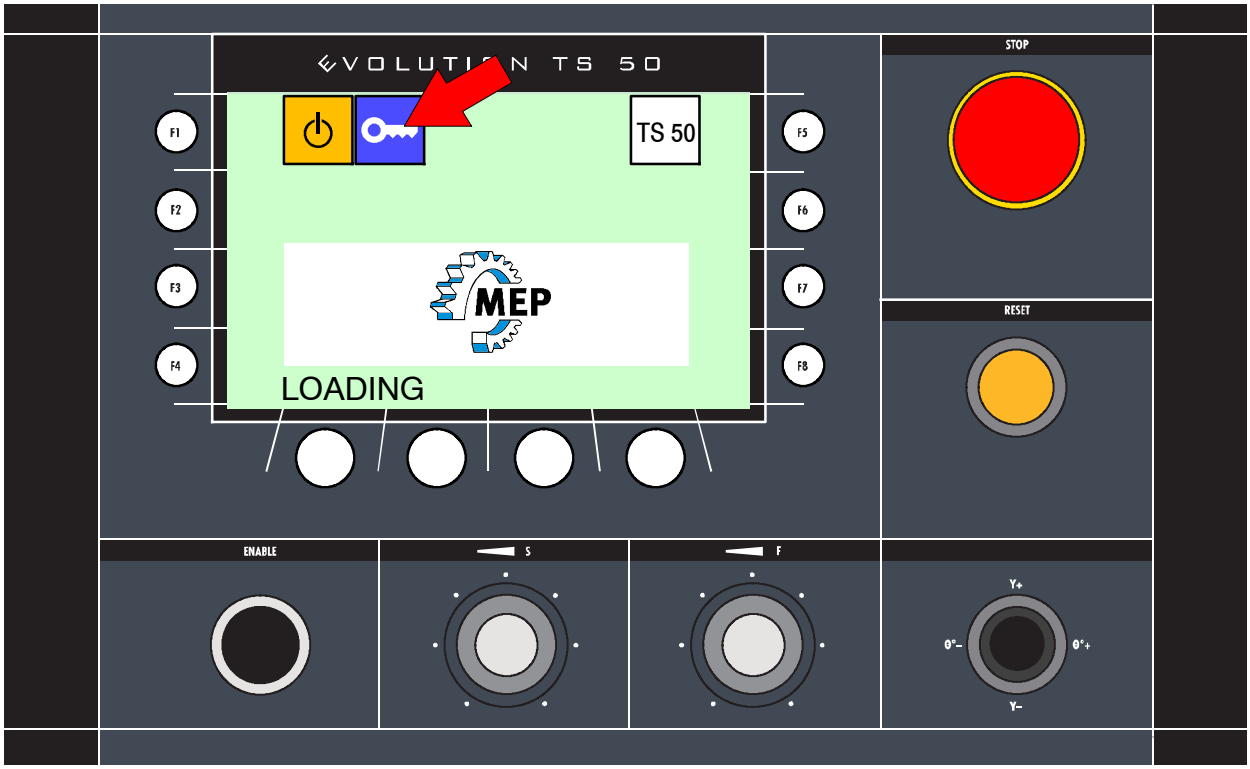
Troubleshooting

This section deals with the problems which may occur during machine operation. The MEP 50 controller allows you to test all the machine's electric and electronic devices by checking the status of the input and output signals on the IUD/IUV card (see Chapter 6).

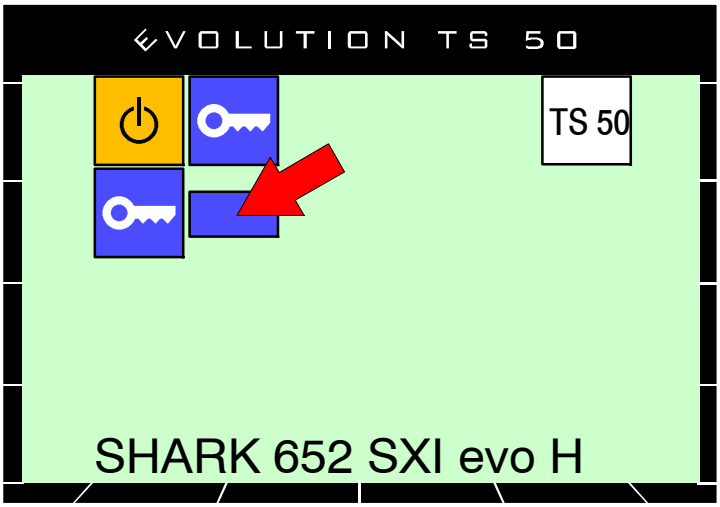
The board IUD/IUV is inside the electric board.

Displaying the diagnostics menu

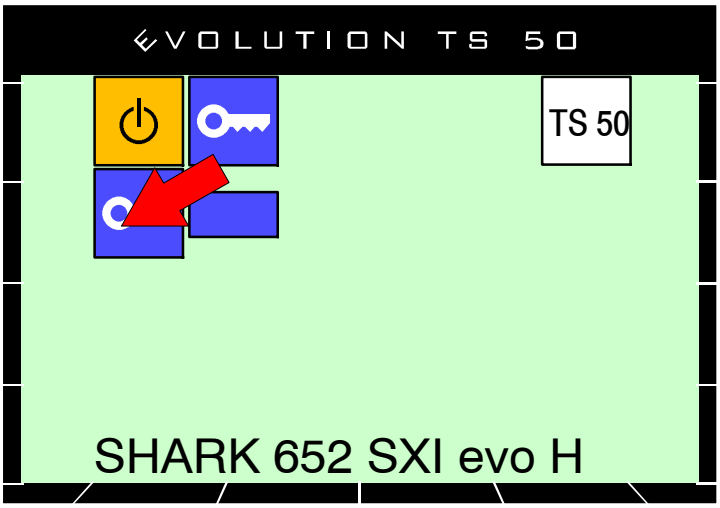
- ▶ Power the machine by turning the main switch on the left of the control board.
- ▶ Tap on the box on the touchscreen shown in the figure.



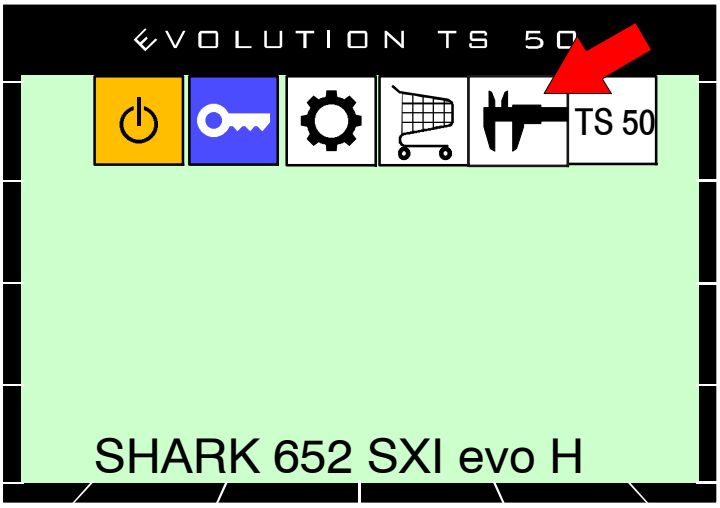
- ▶ The password entry box will open. Tap the box to open the keypad. Enter 734533.



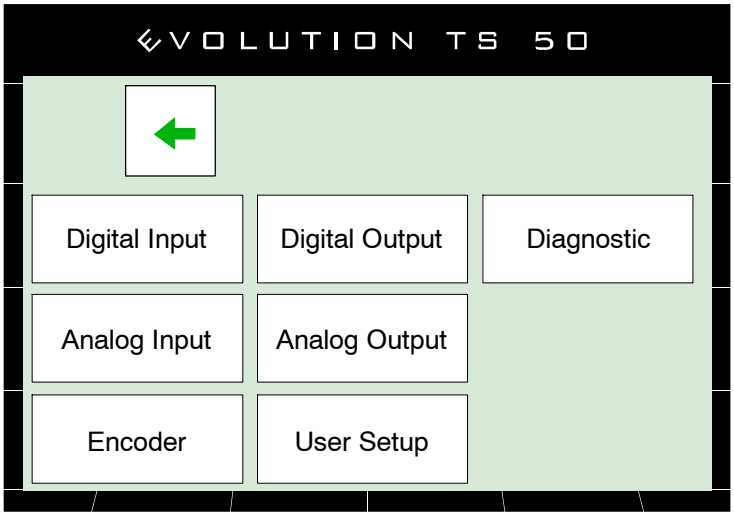
▶ Tap on the box shown in the figure.



▶ Tap on the box shown in the figure.



▶ In the Troubleshooting menu, select the type of input/output to be checked by tapping on the corresponding box:

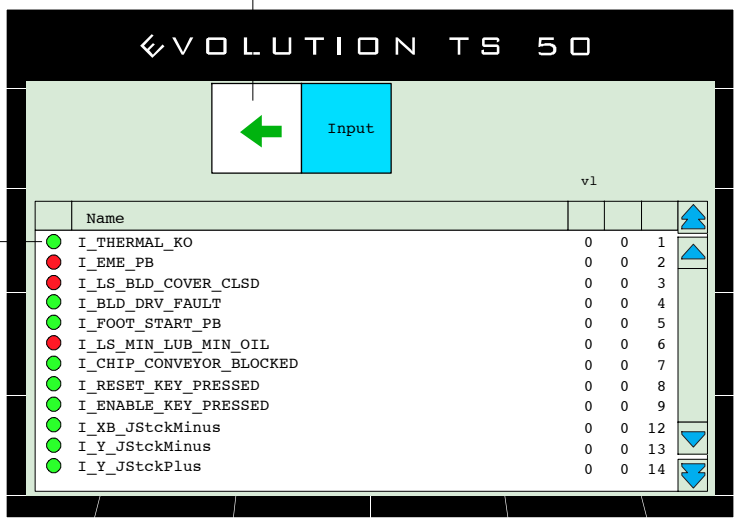


Digital Input

This page can be used to check the state of digital inputs. Information is organised in a table:

Box to go back to the initial list of all inputs and outputs

The icon indicates whether the respective output is on (green) or off (red)



Digital INPUT list

CN13- ALL	**+ 24 VDC**
CN15- ALL	**0 VDC**
CN14- 1 INP 0	**SPARE**
CN14- 2 INP 1	**THERMAL SWITCHES TRIPPED**
CN14- 3 INP 2	**EMERGENCY STOP BUTTON OK**
CN14- 4 INP 3	**BLADE GUARD CLOSED LIMIT SWITCH**
CN14- 5 INP 4	**ALARM INVERTER**
CN14- 6 INP 5	**START FROM PEDAL BOARD**
CN14- 7 INP 6	**LOW OIL LEVEL**
CN14- 8 INP 7	**EVTR BLOCKED**
CN16- ALL	**+ 24 VDC**

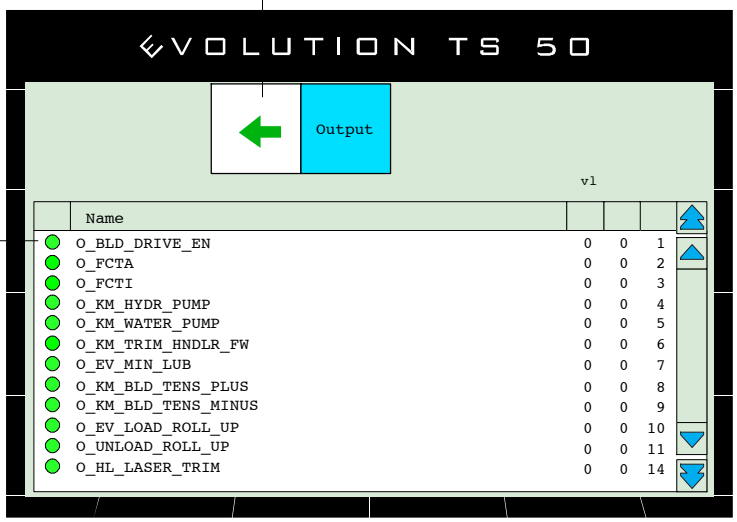
CN19- ALL	**0 VDC**
CN17- 1 INP 8	**RESET BUTTON**
CN17- 2 INP 9	**ENABLE BUTTON**
CN17- 3 INP 10	**SPARE**
CN17- 4 INP 11	**SPARE**
CN17- 5 INP 12	**JOYSTICK X-**
CN17- 6 INP 13	**JOYSTICK Y-**
CN17- 7 INP 14	**JOYSTICK Y+**
CN17- 8 INP 15	**OYSTICK Y+**

Digital Output

This page can be used to check the state of digital outputs. Information is organised in a table:

Box to go back to the initial list of all inputs and outputs

The icon indicates whether the respective output is on (green) or off (red)



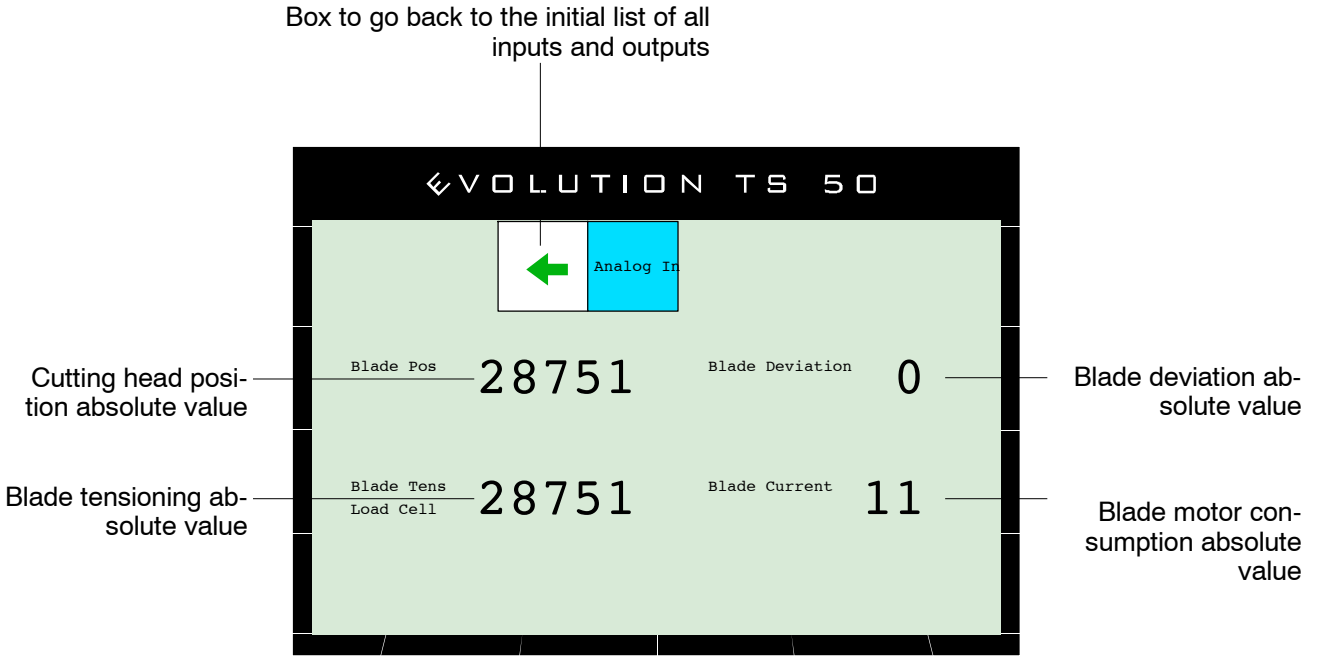
Digital OUTPUT list

CN21- 1 OUT 0	**START INVERTER**
CN21- 2 COM	**+24 VDC**
CN21- 3 OUT 1	**RHLS**
CN21- 4 COM	**+24 VDC**
CN21- 5 OUT 2	**FHLS**
CN21- 6 COM	**+24 VDC**
CN21- 7 OUT 3	**SPARE**
CN21- 8 COM	**+24 VDC**
CN22- 1 OUT 4	**UNIT START KM**
CN22- 2 OUT 5	**WATER PUMP START KM**
CN22- 3 OUT 6	**EVTR FORWARD KM**
CN22- 4 OUT 7	**LOW LUBRICATION SOLENOID VALVE**
CN22- 5 COM	**+24 VDC**
CN23- 1 OUT 8	**TENSIONING + KM**
CN23- 2 OUT 9	**TENSIONING - KM**
CN23- 3 OUT 10	**LOADING ROLLER UP SOLENOID VALVE**
CN23- 4 OUT 11	**UNLOADING ROLLER UP SOLENOID VALVE**
CN23- 5 COM	**+24 VDC**

CN24- 1 OUT 12	**SPARE**
CN24- 2 OUT 13	**SPARE**
CN24- 3 OUT 14	**LASER PROJECTOR**
CN24- 4 OUT 15	**CUTTING ZONE LIGHT**
CN24- 5 COM	**+24 VDC**

Analog Input

This page can be used to check the state of analogue inputs. Information is organised in a table:

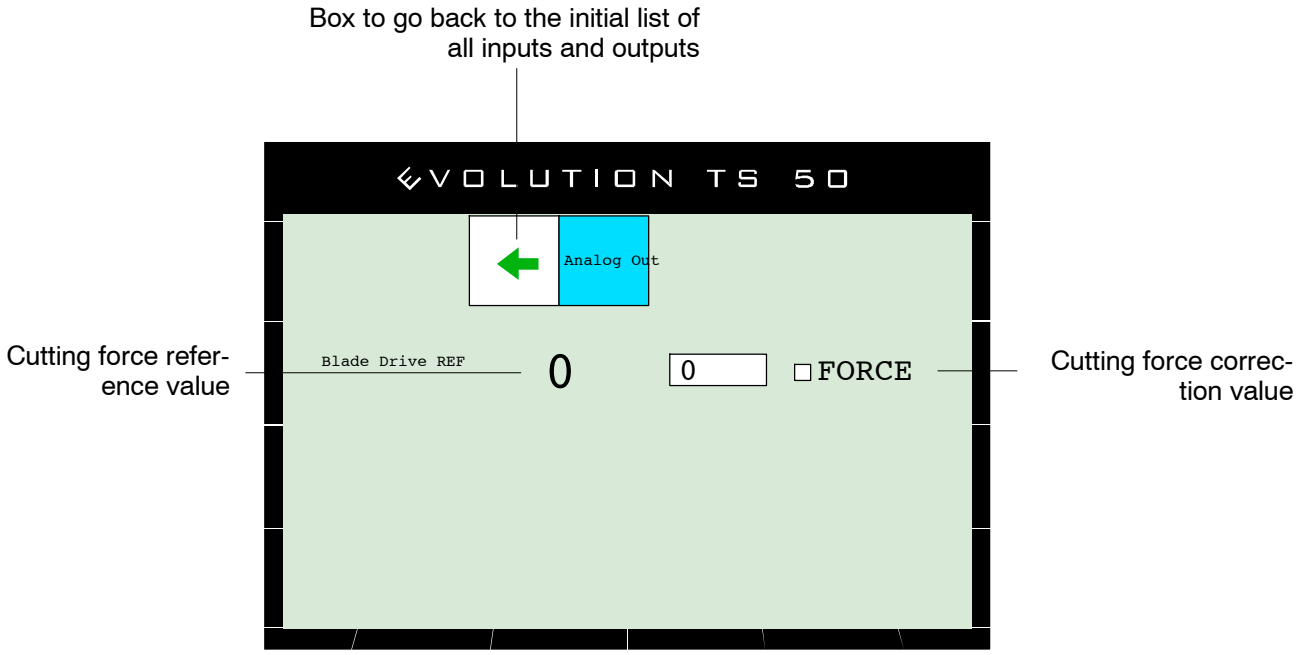


Analog INPUT list

CN26 INP 1 (16B)	**HEAD POSITIONING POTENTIOMETER**
CN27 INP 2	**BLADE MOTOR CONSUMPTION**
CN28 INP 3	**SPARE**
CN29 INP 4	**SPARE**
CN30 INP 5	**SPARE**

Analog Output

This page can be used to check the state of analogue outputs. Information is organised in a table:



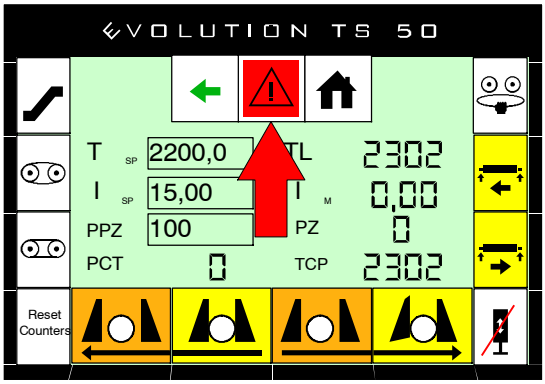
Analogue output list

CN25 OUT 1	**BLADE SPEED REFERENCE**
CN25 OUT 2	**SPARE**

Machine alarms and warning messages

Alarms

The machine's controller notifies the operator of any alarm or emergency condition which may occur during production by way of acoustic and visual signals. This section lists the messages shown on the display.

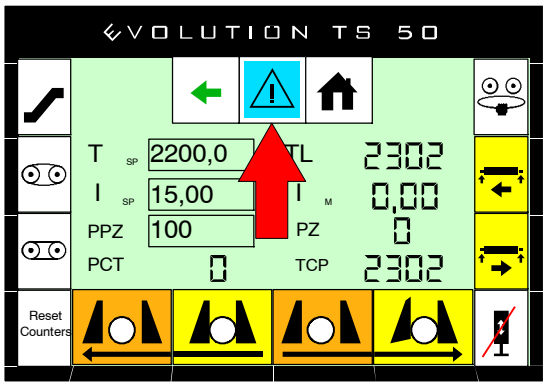


AL1: EMERGENCY: ONE OR MORE ALARMS HAVE TRIPPED	This appears in case of a generic emergency. A specific message follows
AL2: BLADE TENSIONING OUT OF MIN-MAX LIMITS	It is displayed when a mechanical problem occurs in the blade tensioning
AL3: BLADE MOTOR OVERCURRENT	It is displayed during the cutting when the value of the motor absorption is too high
AL4: INSUFFICIENT BLADE REVOLUTION SPEED	This appears when the blade jams in the cut or breaks ▶ Check blade integrity ▶ Check cutting parameters
AL5: HMI EMERGENCY - LOGO OR RESERVED PAGE	This appears in case of controller malfunction
AL6: EMERGENCY STOP BUTTON OR UNIT OPERATED	It is displayed when the emergency mushroom button is pressed
AL7: U AXIS NOT AVAILABLE OR FAULTY OR NOT REFERENCED: CLOSE THE LOGO PAGE AND GO BACK TO THE OPERATIVE PAGE	This appears when the head descent speed adjustment valve is not reset
AL8: XB AXIS NOT AVAILABLE OR FAULTY	This is shown when the pop- up rollers interfere with head revolution ▶ Position the pop- up rollers correctly as shown in Chapter 5
AL9: U AXIS DRIVE FAULTY	This appears in case of head descent adjustment valve malfunction
AL10: XB AXIS DRIVE FAULTY	This appears when there is a head revolution drive malfunction

AL11: LOW MINIMUM LUBRICATION	It is displayed when the oil level in the min. lubrication system lowers. ▶ Top the oil up in the tray till restoring the level.
AL12: BLADE GUARD OPEN @ BLADE CHANGE SEQUENCE DEACTIVATED	This message is displayed if the blade guard is opened, for example, to change the blade. ▶ Make sure the blade guard is closed. ▶ Check the safety limit switch. ▶ Check the connections.
AL13: XB AXIS ENCODER REVOLUTION BLOCKED	This appears in case of head revolution problem
AL14: BLADE DRIVE OR MOTOR FAULTY	This is shown when the blade motor inverter does not work correctly
AL15: CUTTING HEAD VICE VERTICAL INTERFERENCE LIMIT SWITCH	This appears when an attempt is made to close the vice must be head is not all up ▶ Take the head all up This appears when an attempt is made to move the head down and the vice is not all up ▶ Open the vices completely
AL16: FORWARD SOFTWARE LIMIT SWITCH UNDER STARTING POSITION (RHLS < YPOS)	This message is displayed when the cutting start position is lower than the previous position saved for the cutting end position. ▶ Save both the RHLS and FHLS positions again.
AL17: PARAMETER LOADING FAILED: RESTART THE MACHINE	This appears when the parameter reading procedure is not successful
AL18: BLADE POSITION ERROR: CHECK ANALOGUE INPUT	This appears when the potentiometer is broken or sends a message which is not compatible with the machine
AL19: LASER ENGAGED AT START OF CYCLE	This is shown when the cutting cycle is started and the fast approach laser is busy

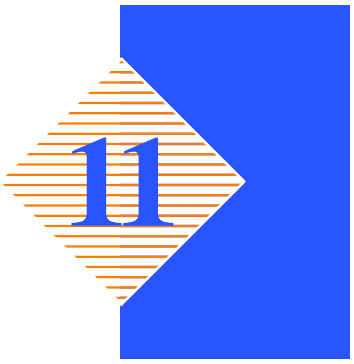
Warning messages

Tap on the box shown on the figure to see warning messages:



WR1: MANUAL CUTTING UNDERWAY	This appears when the manual cycle is underway
WR2: SEMI-AUTOMATIC CUTTING UNDERWAY	This appears when the semi- automatic cycle is underway
WR3: POSITIONING UNDERWAY	This appears when the head positioning is underway
WR4: MINIMUM LUBRICATION: MINIMUM OIL LEVEL REACHED	This appears when there is no oil for minimum lubrication
WR5: SOFTWARE LIMIT SWITCH FORWARD UNDER REVERSE POSITION (RHLS > RHLS)	This appears when the RHLS and RHLS are not coherent
WR6: HYDRAULIC PUMP AUTO-OFF	This appears when the machine switches to power save mode after a given time
WR7: COMMAND INHIBITED	This appears when an incorrect operation is attempted
WR8: CHECK START CUT CONDITIONS: NO ALARMS, BLADE ENABLED, BENCH BRAKED, VICES CLOSED, RHLS < RHLS	This appears when an attempt is made to start the cutting cycle without having checked that the cutting conditions are correct
WR9: AUTOMATIC DESCENT SPEED REDUCTION FOR HIGH CURRENT	This appears when the blade motor current exceeds the setting and correction is applied
WR10: BLADE AT ZERO CUTTING FEED SPEED: CANNOT CUT	This appears when the blade setting is too low
WR11: THERMAL SWITCHES NOK	This appears when a thermal switch trips in the control panel
WR12: CHIP EJECTOR BLOCKED	This appears when the chip ejector is blocked

Accessory Installation



This chapter provides a list of the available accessories that can be fitted to this machine, along with assembly instructions.

Optional

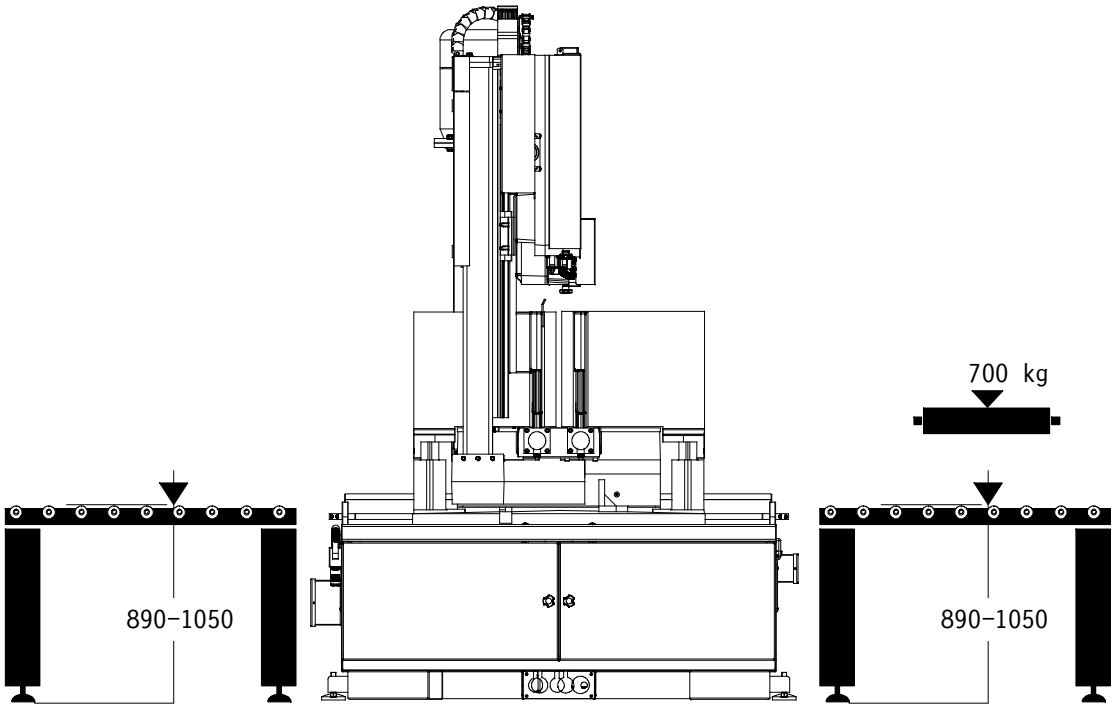
Blade

The blades that can be used on this machine include:

- 6700 x 41 x 1,3 bimetal blade for solid and section materials;

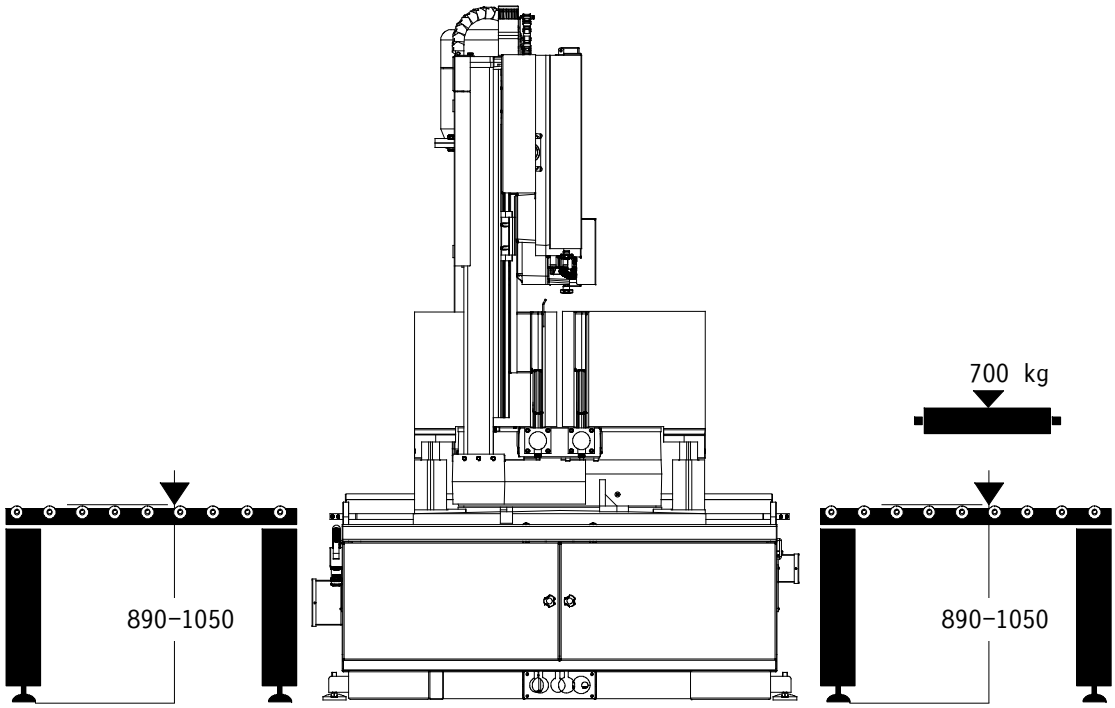
Loading/unloading side planes with idle rollers

- modular bed on loading/unloading side 1500 mm



Loading/unloading side planes with motorized rollers

- modular bed on loading/unloading side 1500 mm



Can of emulsible oil

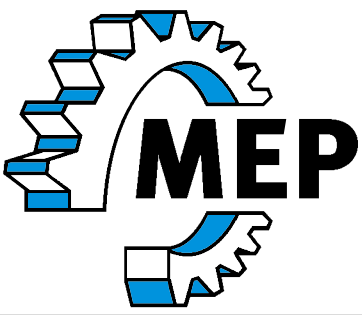
5 l can of emulsible oil.

Minimal lubrication system

This device was designed to improve lubrication of the tool during cutting.

▶ An instruction book is supplied with the kit to explain how to install this optional unit.

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The guarantee shall not apply if the buyer was aware of defects in the product when buying it or if defects were clearly recognizable.
Regulations by the Italian law shall apply to this article.


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