

MANUALE USO E MANUTENZIONE
INSTRUCTION AND MAINTENANCE MANUAL

QUAD-RAIL



SISTEMA MAGNETICO ELETTROPERMANENTE
PER LAVORAZIONE ROTAIE
PERMANENT ELECTRO-MAGNETIC
RAIL MACHINING SYSTEM



09QURA001 - rev. 07/2009



TECNOMAGNETE®

ITALIANO

ENGLISH

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GENERAL NOTES

We congratulate you on having chosen one of the numerous products manufactured by **TEC-NOMAGNETE S.p.A.**

This manual will help you better understand your new product and we recommend that you read these pages carefully and bear in mind the advice given.

Should you require any further information regarding the system, please contact the **TEC-NOMAGNETE** service department.

THE IMPORTANCE OF THE MANUAL

The INSTRUCTION AND MAINTENANCE MANUAL should be considered an integral part of the system.

The manual must be kept for the duration of the machine's life span.

Ensure that all documents are incorporated into the manual. Make sure to pass along the manual to any other user or subsequent owner.

KEEPING THE MANUAL

Use the manual with care to avoid damaging the contents.

Do not remove or tear out pages for any reason whatsoever.

Keep the manual away from heat and damp.

The descriptions and illustrations in the manual are only intended as a guide.

TECNOMAGNETE S.p.A. reserve the right to make any modifications to their machinery and accessories to improve the product or for operational or sales reasons. Should they do so, this may occur without giving prior notice and without necessarily immediately up-dating this document.

This manual is the property of **TECNOMAGNETE S.p.A.** and it must not be copied (even partially) or made available to third parties without the written consent of the Company. Any modifications to the machine must be agreed with the Company.



0 INTRODUCTION



WARNING

The original machine set-up must not be altered in any way.

Any use of the machining equipment other than that recommended by the manufacturer may cause damage or put the operator at risk.

For clamping special materials other than those mentioned in the manual, the manufacturer's agreement must first be sought.

SYMBOLS



Operations that may create **risk** situations if not carried out correctly



Operations that call for **trained or specialised operators** to avoid possible risks.

1 TRANSPORT AND HANDLING

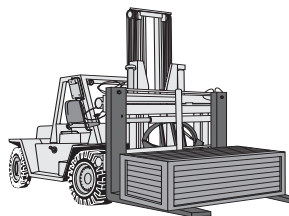
The QUAD-RAIL system can be transported in wooden cases. To facilitate transportation, the unit can be packed on to a pallet.

WARNING

Staff members involved in handling loads are advised to wear **protective gloves and shoes**.

WARNING

When lifting or moving items of machinery, make sure that the surrounding area is clear and kept clear of obstacles and that there is sufficient room for staff to manoeuvre and to prevent any damage or injury to nearby persons, animals or objects.



WARNING

Do not handle QUAD-RAIL systems with electromagnetic lifting equipment.

WARNING

Read all the instructions on the packaging before opening.

WARNING

Storage temperatures must be between 0°C (32 °F) and +55°C (131°F)

KEEP ALL ORIGINAL PACKAGING MATERIALS FOR POSSIBLE FUTURE HANDLING



2 DESCRIPTION OF THE SYSTEM

2.1 Advantages



The best possible clamping conditions that a tooling machine can offer are as follows:

- 1) where the item to be machined is firmly clamped in position
- 2) where the workpiece can easily access the surfaces to be machined

ENGLISH

Magnetic clamping systems offer the advantage of combining the best of these two operating conditions:

- 1) the clamping forces generated by the magnetic “QUAD-RAIL” system, apart from their innate strength, are evenly spread over all contact surfaces;
- 2) the rails to be machined are only clamped where they are in contact with the magnetic system and thus all remaining sections are accessible by the workpiece.

The working principle behind the magnetic system has the unparalleled advantage of significantly reducing vibrations created by machining. This means that items can be machined and advanced while offering greater precision.

Magnetic clamping systems ensure continuous workflow over time as well as flexibility of use. While the workpiece is machining, the system is independent of external power and in the event of a power failure, the clamping forces are not affected.



2.2 Serial number

A **Manufacturer's serial number** is fixed to the magnetic contact surfaces and the electrical control panel.

WARNING

These serial number plates must not be removed under any circumstances including if the equipment is later sold. Please quote the model type (stamped on the plate) when contacting the manufacturer.

The manufacturer will not be held responsible for any damage or injury caused should instructions in the manual not be followed and the operator will assume liability.



 TECNOMAGNETE 	
TECNOMAGNETE S.p.A. Via Nerviano, 31 20020 - LAINATE (Milano) Made in ITALY	
Modello Model	CU/QR Potenza Power 25 kVA max
Alimentazione Power supply	400 V AC monoph - 50/60 Hz
Dimensioni Dimensions	1000 x 600 x 250 mm
Peso Weight	60 kg Protezione Protection IP 54

Made in ITALY TECNOMAGNETE S.p.A. Via Nerviano, 31 20020 - LAINATE (MI) 	
MODELLO	-
PESO Kg	MESE, ANNO
COMANDO - ALIM. V	50/60 Hz
RESIST. Ω	ASS. kW
INDUTT. mH	CYCLE : TEMPO s



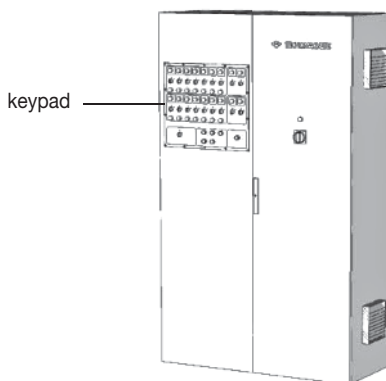
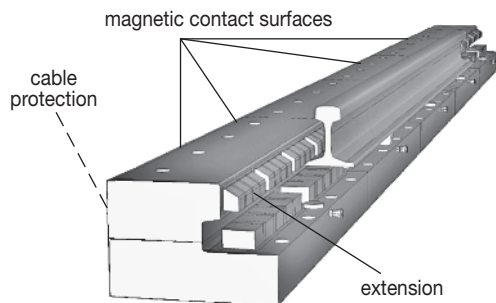
2.3 General supply details

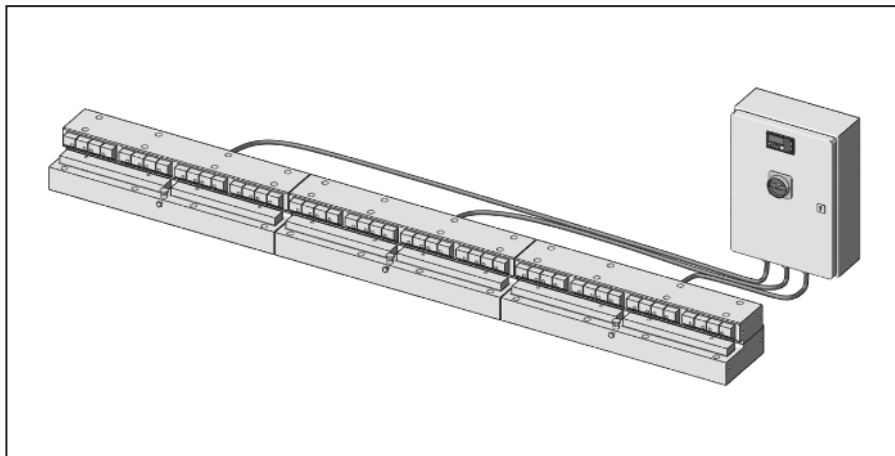
The equipment described in this manual is composed of the following:

- one or more **magnetic contact surfaces**
- **an electronic control unit**
- a command **keypad**
- **electrical cables** connecting the magnetic contact surfaces to the control unit
- **accessories** (polar extensions, cable protection devices, swarf protection, remote control)

The QUAD-RAIL system can be supplied in differing versions: either fixed or retractable with manual or motorised retraction.

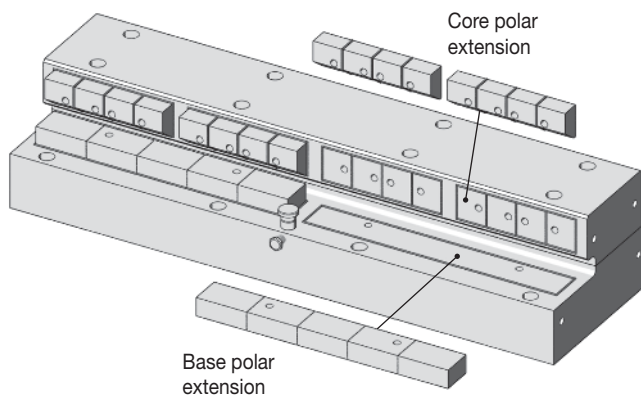
The retractable versions have a moveable upper section along the horizontal axis so as to allow for machining rails without having to move them.





2.4 Accessories

TECNOMAGNETE offers a range of polar extension accessories that allow rails of varying profiles to be machined. These extensions are positioned directly on the magnetic contact surface and vary with the type of rail. The following illustrations show examples of polar extensions.



2.5 Description of the magnetic contact surface

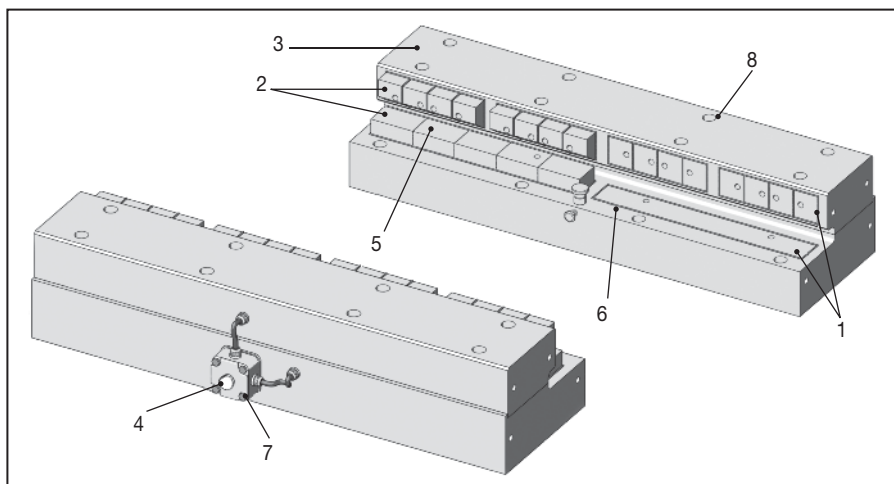
Monoblock structure

QUAD-RAIL modules are formed from solid steel blocks that ensure rigidity, strength and reliability over time without maintenance.

Module flexibility

A QUAD-RAIL system is made up of standard 1000 mm modules that can be positioned to form single or double magnetic banks of differing lengths that can be adapted to deal with the various types of rails to be machined. They have been designed to be easily installed on any type of machine. Each module consists of 2 distinct magnetic clamping sections that are positioned at right angles and respectively clamp the core and base of rails with an overall force of 14 tons/metre.

Quad-rail modules come supplied with a series of fixed polar extensions that can be modified to deal with different profile rails.



- 1 ➡ Poles
- 2 ➡ Extension poles
- 3 ➡ Frame
- 4 ➡ Discharge cable connection
- 5 ➡ Holes for attaching accessories (polar extensions)
- 6 ➡ Resin
- 7 ➡ Input box
- 8 ➡ Holes for bracket bolts



2.6 Description of the control unit

An electronic control box is fitted inside the electrical cabinet (see illustration) that commands the magnetisation and de-magnetisation cycles of modules or individual magnetic sections and these commands can also be given by the remote control system.

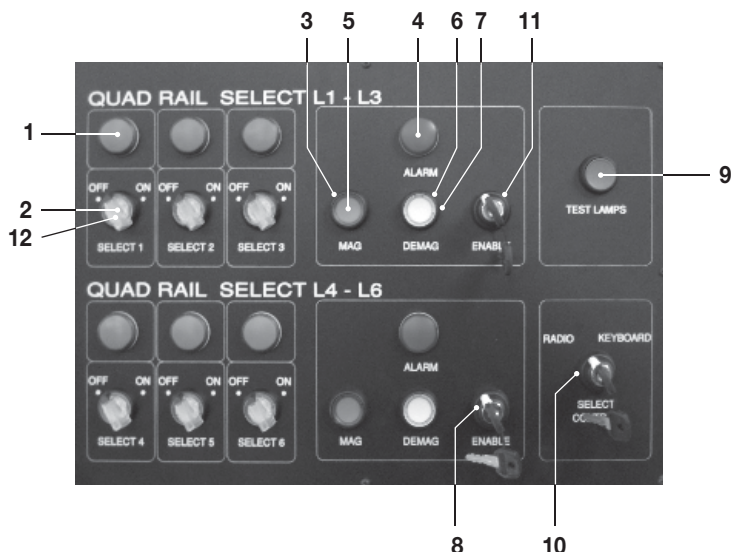
The control unit was designed to be a compact, reliable and safe method for activating and deactivating the TECNOMAGNETE double circuit permanent electromagnetic system.

The control unit combines the power of electronics with SCRs with electronic digital control and micro-control by means of a single electronic board thus minimising wiring and increasing reliability.



2.7 Description of the keypad

MODULE SELECTION SWITCHES AND LIGHTS



- 1 → **MODULE MAGNETIZED indicator light** when lit, indicates that the module is magnetized.
- 2 → **SWITCH for module activation** allows each module to be activated/deactivated.
- 3 → **MAG indicator light** when lit, it indicates that all the selected modules are magnetized.
- 4 → **ALARM indicator light** when lit, indicates a state of alarm.
- 5 → **MAG** button when pressed, allows contact surfaces to be magnetised using switch "2".
- 6 → **DEMAG button** when pressed, allows contact surfaces to be demagnetised using switch "2".
- 7 → **DEMAG indicator light** indicates that the selected modules are demagnetised.
- 8 → **ENABLE:** selector to enable the buttons. If turned, it enables buttons MAG and DEMAG
- 9 → **Test Lamps:** for testing that indicator lights are working properly.
- 10 → **Select control:** this selector enables the remote control or keypad
- 11 → **SECTION switch** allows the activation/deactivation of individual module sections.
- 12 → **MODULE ACTIVE indicator light** when lit, indicates that the module to magnetize has been selected.



2.8 Remote control

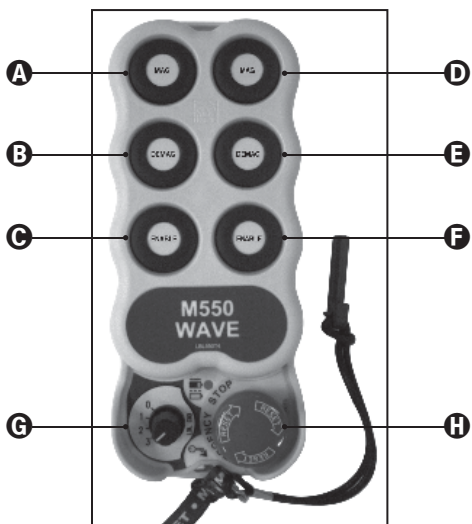
For QR / S and QR / D systems:

- A** → Magnetisation button (MAG)
- B** → Demagnetisation button (DEMAG)
- C** → ENABLE button

For QR / D systems:

- D** → Magnetisation button (MAG)
- E** → Demagnetisation button (DEMAG)
- F** → ENABLE button

G and **H** → Optionals



2.9 Nominal controller operational characteristics

The system is designed to work under the following conditions:

Voltage:	nominal $\pm 10\%$
Frequency:	nominal $\pm 1\%$
Working temperature:	$-5^{\circ}\text{C} \div +40^{\circ}\text{C}$ ($23^{\circ}\text{F} \div 104^{\circ}\text{F}$)
Humidity:	$< 50\%$ at 40°C (104°F)
Maximum altitude:	2000 m ASL

The system has a noise emission level of < 70 dB.

- Maximum activation/deactivation speed.
- Load setting can be used with all TECNOMAGNETE new generation double magnet systems.
- Electrical insulation is ensured by opto-isolators and impulse transformers.
- PLC interface possible for external command of indicators and safety features by means of a dedicated terminal board.
- The systems have IP54 level protection.
- Monitoring system of current flow in contact surfaces with malfunction warnings.



3 INSTALLATION

3.1 Checking the product

When the product is delivered, check that:

- the packaging is complete and undamaged;
- the items delivered correspond to order specifications;

If all the packaging is intact, remove it (unless otherwise instructed by TECNOMAGNETE) and check that the equipment has not been damaged in transit.

Check for possible damage to the equipment and for crimped or broken electrical connections.

WARNING

Any damage or malfunction must be reported within ten days of delivery.

3.2 Warnings

Magnetic contact surfaces must not be used at working temperatures in excess of 80 °C (176°F).

WARNING

The machinery must only be connected up to the mains by qualified personnel.

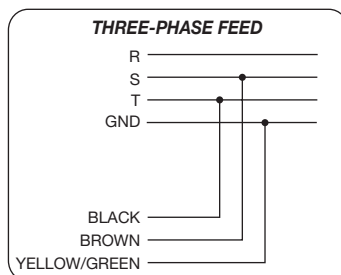
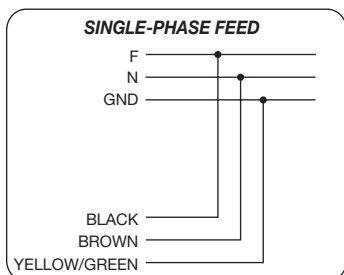
The electrical supply system where the equipment is to be installed must meet all current safety standards.

Consult the ENCLOSED wiring diagrams.



3.3 Connecting to the mains

The electrical supply to the controller must be single-phase 220V/380V/480V (phase+neutral) or two-phase (phase+phase). The maximum power requested depends on the number of poles for each inverted discharge on the contact surfaces but will not exceed 25 kVA for 380V surfaces, 15kVA for 220V surfaces and 32 kVA for 480V surfaces



3.4 Electrical cables

TECNOMAGNETE provides a discharge cable that is sufficiently heavy to ensure that under normal circumstances there are no problems with over-heating or power loss to the contact surfaces. Normal circumstances mean operational cycles of activation/deactivation of TECNOMAGNETE modules with intervals in excess of 1 minute.

As far as possible, all cables must be connected to the equipment in line with the following points:

- a) minimum curvature radius must be greater than 10 times cable diameter;
- b) cable tension must not exceed 15 N/mm²
- c) cable positioning and installation must meet the requirements laid down by CEI EN 60204/1.

Once the cables have been positioned, check for mechanical wear and tear while the equipment is working.

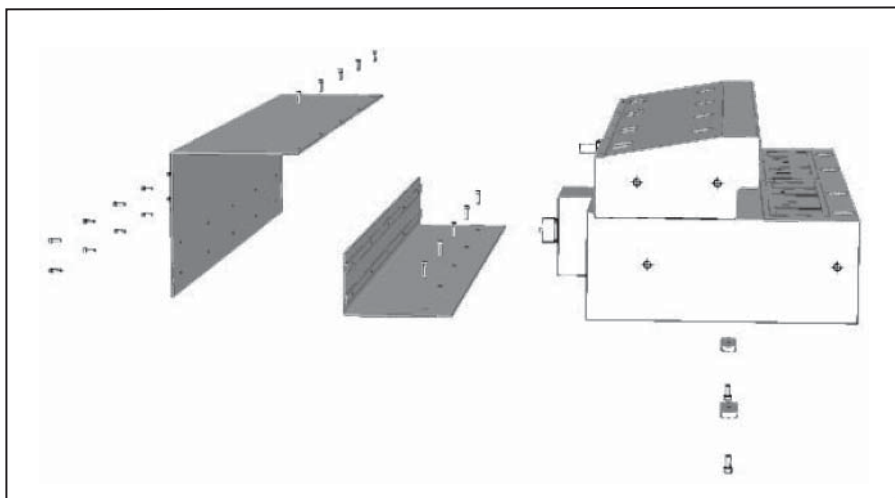
All the desired ducting routes and safety measures previously mentioned can easily be met within the product specifications.



3.5 Positioning of contact surfaces

Before positioning the QUAD-RAIL system, make sure that the magnetic contact surfaces are completely clean. The system is anchored in place by means of bolts that match up with holes on the base of the machinery. On the QUAD-RAIL base there is also a key that allows the magnetic surfaces to be aligned.

When installation is complete, check that the contact surface magnetisation and demagnetisation cycles are working correctly.



4 USING THE CONTACT SURFACES

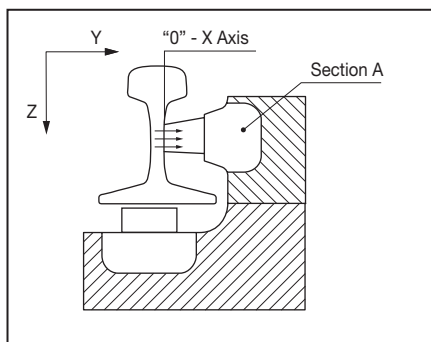


4.1 System procedures

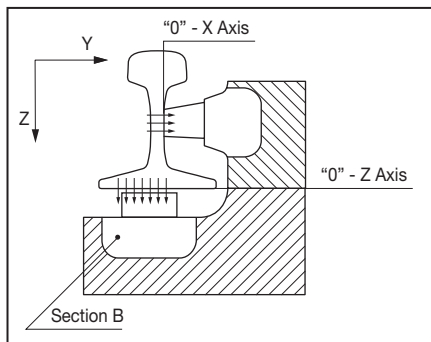
Magnetisation procedure

To lock individual rails in position prior to machining, there are two sequentially activated magnetic clamping points set at right angles to each other. Each contact surface has a linear sequence of permanent magnetic square surface area with alternate polarity (North/South). The activation and deactivation of these surfaces is carried out by means of an electronic control unit housed in a separate electrical cabinet that acts for only a few seconds in the magnetisation and demagnetisation phases.

- Position the centre of the rails to be machined near the polar extensions of the vertical module (section A).



- Position the foot of on the polar extensions of the horizontal module (section B).



WARNING

Use polar extensions that are designed and specified for each type of rail to be machined.



- Turn “ON” the master switch on the controller.
- Check that the white light near the main switch and that the white “DEMAG” light on the keypad and controller are lit.
- If you wish to use the REMOTE CONTROL or the AUXILIARY KEYPAD, make your selection on the auxiliary keypad.
- Use the auxiliary keypad to select the magnetic modules to be activated. (you are recommended to activate only the modules relating to the rail to be machined).
- To demagnetise, press the “DEMAG” and “ENABLE” buttons at the same time.
- To magnetise, press the “MAG” and “ENABLE” buttons at the same time.
- Check that the ORANGE “DEMAG” goes out and that the GREEN “MAG” light comes on. Make sure that all the modules selected have the GREEN “MAG” light showing on the auxiliary keypad.
- The system is operational. Start the machining cycle.

Demagnetisation procedure

- To demagnetise, press the “DEMAG” and “ENABLE” buttons at the same time.
- Check that the GREEN “MAG” lights switch off. Make sure that all the modules selected do not have the GREEN “MAG” light showing on the auxiliary keypad.
- The system is now ready to be evacuated.

WARNING

Any interfacing with the machine PLC controller must be carried out following a check of the “MAG” and “DEMAG” cycles.

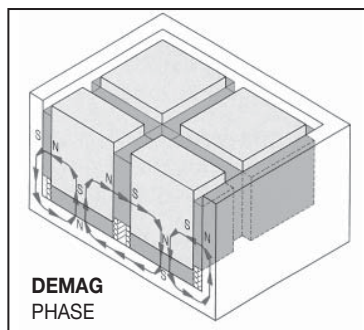
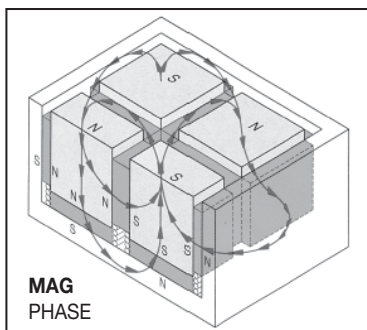


4.2 Working principles

The remarkable clamping force of the permanent electro-magnetic system is ensured by a closed circuit series of independent poles with alternating polarisation (North/South). The ferromagnetic frame housing the system allows for magnetic flux over all the surfaces.

The item to be clamped is positioned along the QUAD-RAIL contact surfaces and acts as a connecting bridge between the SOUTH and NORTH poles, creating a magnetic flow that securely clamps it in place.

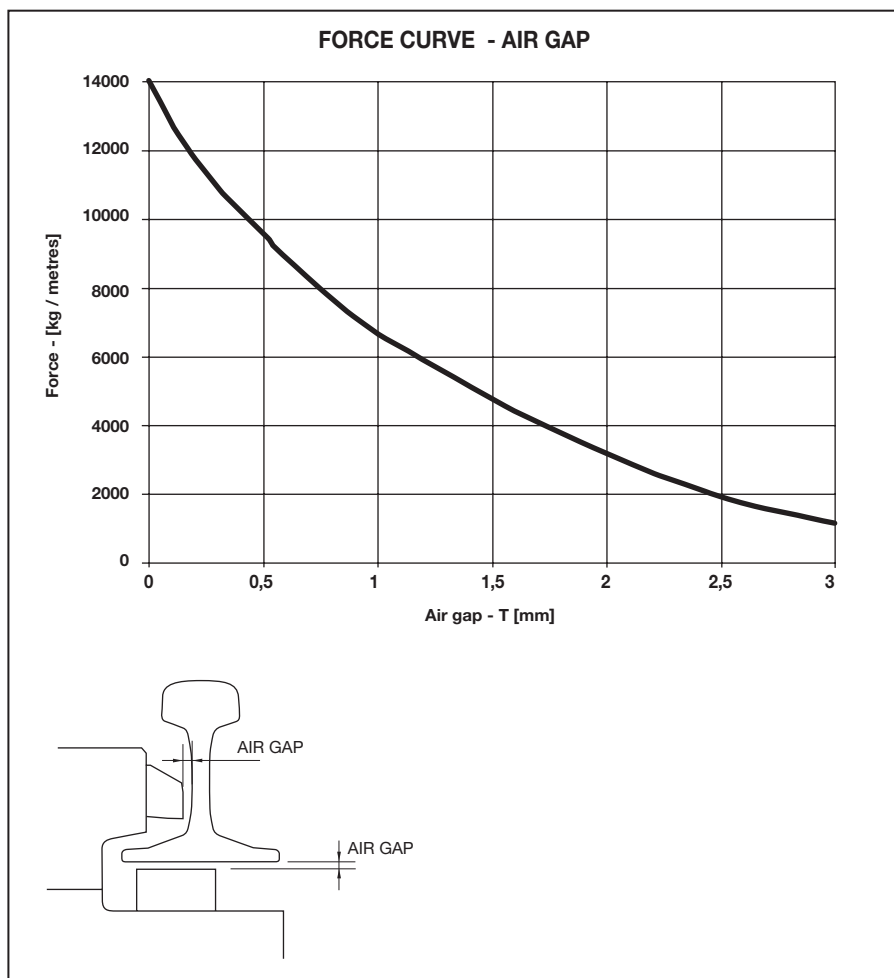
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4.3 Magnetic forces

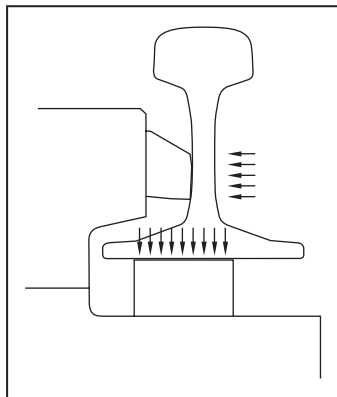
Force curvature has been created without taking into consideration a reduction factor of 1/5 owed to the tangential force component (see page 56, Para 4.4.2).

Quad-Rail clamping force is shown in the diagram below with the following operating conditions described earlier, i.e.: the item to be clamped is in soft steel with a suitable spacer to allow for even, planar surface magnetic contact flow.



4.4 Information on use

4.4.1 Clamping force



QUAD-RAIL clamping force is directly proportional to the number of poles covered, to the type of material to be machined and to the linearity and continuity of contact with the rails.

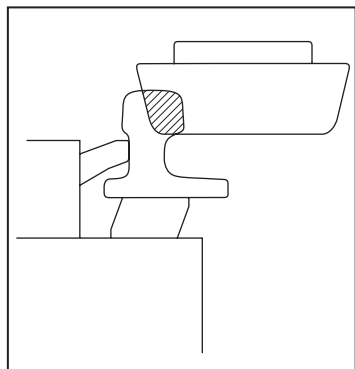
Clamping force is evenly distributed.

The clamping force is always directed to the magnetic surfaces of the system.

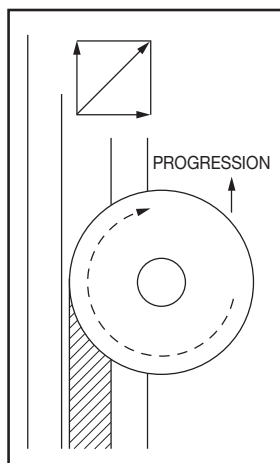
4.4.2 Cutting force

Cutting force during any machining operation depends upon the workpiece operating conditions (depth of cut, progression, rpm) and upon the hardness of the material.

The cutting force exercised by any workpiece tends to cause the item to slide along the magnetic contact surfaces.



The horizontal component of this tendency stems from the geometry created by workpiece progression. The clamping force must be greater than the cutting force that can be broken down into varying directional components so that the item to be machined is securely clamped in position.



It is therefore very important that the clamping forces that are directed perpendicularly in relation to the two working magnetic surfaces are reduced by one fifth to offset tangential force components that tend to make the rail slide.

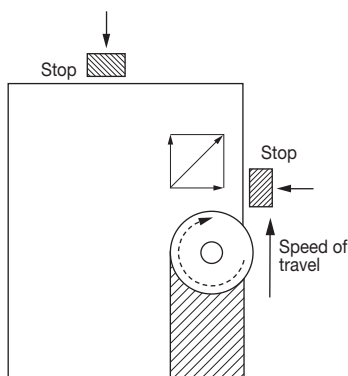
E.g. Cutting force 1000 N
Clamping force 4000 N

$$\text{Clamping force} = 4000 \text{ daN} / 5 = 800 \text{ daN}$$

Therefore Clamping force 800 N < cutting force 1000 N

If mechanical stops are introduced to offset tangential force components and thus allow for the fact that the item to be machined may slide on the magnetic contact surface, changes in the forces in action can be observed.

Clamping force 4000 N > cutting force 1000 N



In other words, introducing mechanical stops eliminates the tangential component that makes the item slide when being machined and provides excellent safety conditions.

The correct positioning of the mechanical stops is extremely important especially when the surface area between the item and the magnetic contact surfaces is limited. (the same principle applies to clamping forces).

A mechanical stop can be utilised as a reference point. (the zero point of the machine).



4.4.3 Example applications

The machining parameters relating to some practical applications are listed as follows: These parameters are intended as guidelines only as they can be affected by other operational conditions. We therefore recommend that each individual machining stage be checked during operational phase.

Example 1

WORKPIECE BEING USED	Diam. 200 mm
INSERT GEOMETRY	76°
WORKPIECE RPM	200
NUMBER OF INSERTS	8 files with 4 inserts
RATE OF PROGRESSION	300 mm/1'
REMOVAL	1200 mm ² 15kW
MACHINING	Raw rail type ZU1-60 and 60D in both thrust and pull

Example 2

WORKPIECE BEING USED	Diam. 200 mm
INSERT GEOMETRY	76°
WORKPIECE RPM	200
NUMBER OF INSERTS	8 files with 4 inserts
RATE OF PROGRESSION	500 ÷ 600 mm/1'
REMOVAL	1200 mm ² 30kW
MACHINING	Raw rail type ZU1-60 and 60D in both thrust and pull

Example 3

WORKPIECE BEING USED	Diam. 200 mm
INSERT GEOMETRY	76°
WORKPIECE RPM	350
NUMBER OF INSERTS	8 files with 4 inserts
RATE OF PROGRESSION	700 mm/1'
REMOVAL	60 mm ² 1,7kW
MACHINING	Finishing - ZU1-60 and 60D rails



Example 4

WORKPIECE BEING USED	Diam. 160 mm
INSERT GEOMETRY	90°
WORKPIECE RPM	180
NUMBER OF INSERTS	10 files with 3 inserts
RATE OF PROGRESSION	600 mm/1'
REMOVAL	40x10 mm ²
MACHINING	Raw wrought rail type 60D

Example 5

WORKPIECE BEING USED	Diam. 160 mm
INSERT GEOMETRY	90°
WORKPIECE RPM	180
NUMBER OF INSERTS	10 files with 3 inserts
RATE OF PROGRESSION	500 mm/1'
REMOVAL	30x18 mm ²
MACHINING	Raw rail type 60D by thrust

Example 6

WORKPIECE BEING USED	Diam. 160 mm
INSERT GEOMETRY	90°
WORKPIECE RPM	180
NUMBER OF INSERTS	10 files with 3 inserts
RATE OF PROGRESSION	300 mm/1'
REMOVAL	65x12 mm ²
MACHINING	Raw rail type 60D free-standing without feet



4.5 Procedure for use – Retractable module QUAD-RAIL

4.5.1 Handling the upper module* (manually retractable system)

The following operations must be carried out to correctly position and clamp the upper module (please refer to the illustrations that follow).

- 1) Undo the bolts M 16 (pos. C) and withdraw them so as to completely free the upper module.

At this stage, the elastomers on the linear guide are no longer compressed by the bolts and raise the level of the upper module by about 5 mm above the lower module.

The upper module is now free to travel on the rails using the linear guides.

- 2) Re-position upper module using the handle (pos. A) and place it in the desired location. (Pay attention at this stage that the module travels on the linear guides without any friction between the surfaces apart from the friction between the two guides and the rails (pos. E).

When the upper module is positioned against the stops (pos. D), the switch located at the end of its travel (pos. B) sends a signal to the controller that starts the magnetisation cycle on the lower module only.

When the upper module is positioned against the stop step (pos. F), the controller starts both modules.

- 3) When the lower module is in the desired position, relocate the bolts M16 (pos. C) then tighten them according to the following instructions:

Preload “P” and tightening torque “M” for metric ISO bolts M 16 - UNI 5737 - Mat. 8.8

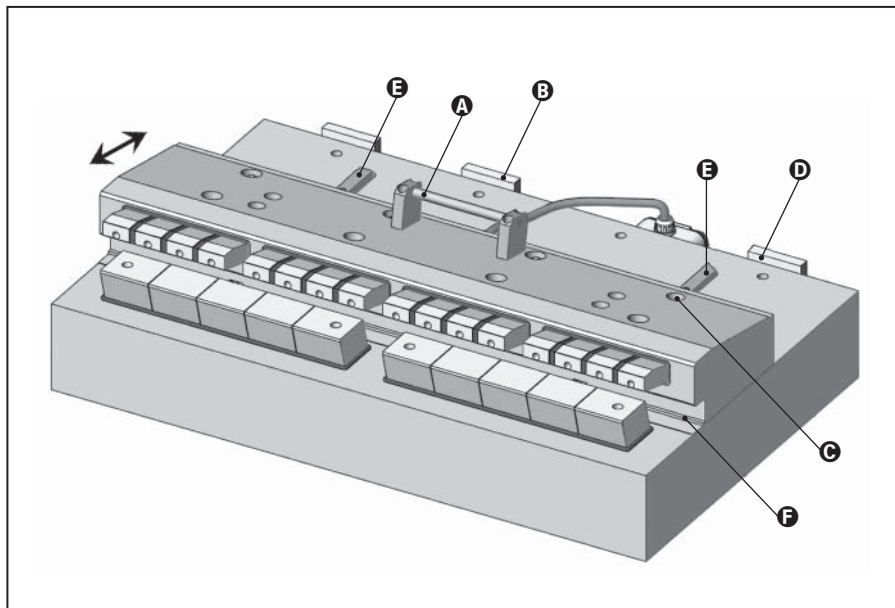
“M” = (torque) = 205 Nm

“P” = (axial preload) = 70300 N

WARNING

If tightening is carried out by automatic air guns, the torque (M) should be reduced by 10%.



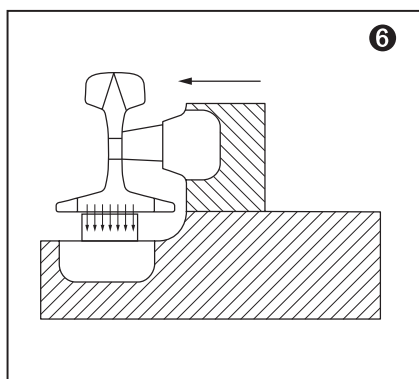
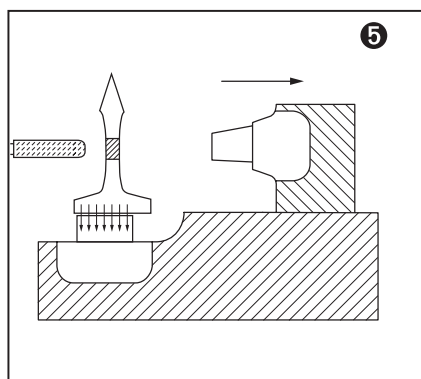
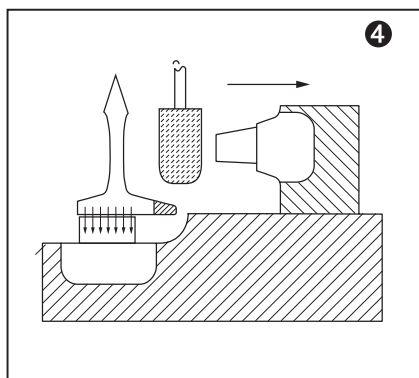
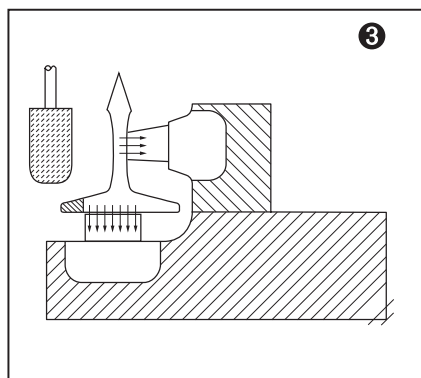
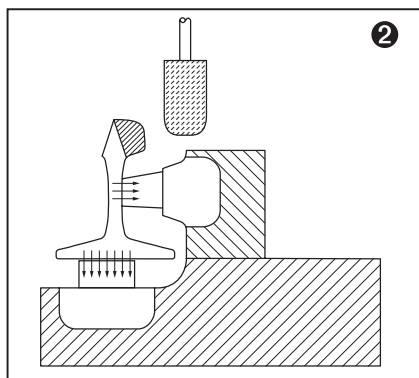
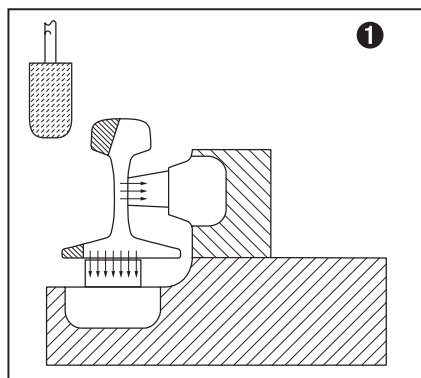


***OPTIONAL:** Motorised upper module that is retracted automatically and can be locked in position magnetically.



4.5.2 Machining stages in moveable modules

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5 MAINTENANCE

5.1 Introduction

Correct maintenance is a major factor in the life span and of the system and it also ensures the best results and safety over time.

WARNING

Maintenance operations must only be carried out by **TRAINED PERSONNEL ONLY**.

5.2 Safety standards during maintenance

The main precautions to be taken during maintenance work are as follows:

- ⚠ **Never touch** bare connections or components until the electrical supply has been disconnected.
- ⚠ **Disconnect the electrical supply** before removing any part or replacing any electrical components.
- ⚠ **Do not wear** rings, watches, chains, bracelets etc. during maintenance work.
- ⚠ **Stand** on a rubber insulating mat (if possible) when doing maintenance work. Avoid working on wet floors or under very damp conditions.
- ⚠ **Always** wear safety gloves and shoes and any other type of PPE required including overalls that cover as much of the body as possible.



5.3 Periodical maintenance

MONTHLY

- ☞ Visual inspection of the magnetic plates.
- ☞ Check that all bolts on the magnetic plates are properly tightened.
- ☞ Remove any rough surfaces and rust.
- ☞ Check the surfaces of the magnetic plates.
- ☞ Check the warning lights.
- ☞ Check the keypads.
- ☞ Visual inspection of the terminal boards on both the magnetic contact plates and the controller.

EVERY SIX MONTHS

- 1 - Disconnect the discharge cables between the magnetic contact surfaces and the connection boxes.
- 2 - Check resistance levels and insulation at 500 V.
- 3 - Reconnect the discharge cables between the magnetic contact surfaces and the connection boxes.
- 4 - Pass a piece of steel over the contact areas to check for any traces of residual magnetism.



5.4 Trouble shooting

This chapter gives some information about dealing with possible problems that may occur during use.

A cross (✖) indicates a problem.

An oval (●) indicates a solution.

- ✖ The power light does not come on when the mains switch is turned on.
 - Check that the supply cable is connected to the controller and that there is current.
 - Check the line and logic fuses.
 - Check the lamp.
- ✖ The keypad doesn't work.
 - Check the electrical connections at the numbered terminal boards.
 - Keep the buttons pressed for at least 550 ms.
 - Check the logic fuses and that the warning light is working properly.
- ✖ The system is showing a state of USC alarm.
 - Check that the resistance and insulation of the lifter is as described in the manufacturer's test sheet.
 - Check the electrical connections between the magnetic contact areas and the controller.
- ✖ The system won't interface with the equipment.
 - Check the electrical connections.
 - Check the logic input fuses.
 - Check that the interface contacts are as described in the wiring diagram.
- ✖ The MAG/DEMAG commands do not respond.
 - Check the electrical connections.
 - Check the logic input fuses.
 - Check the position of the switch on the remote control keypad.
 - Check that the controller has been selected by at least one magnetic contact surface.



6 DISMANTLING



6.1 Storage

Should the machinery will not be required for some time, the following actions are recommended:

- Disconnect the controller from the magnetic contact surfaces
- Clean and oil the magnetic contact surfaces
- Cover the magnetic surfaces with a waterproof sheet
- Store the system in a dry place at between 0 and 40 °C.

6.2 Decommissioning

Should you decide at whatever stage and for whatsoever reason to decommission the machinery, it is essential to observe the standards pertaining to protecting the environment.



WARRANTY

TECNOMAGNETE products are guaranteed for 24 months from the date of manufacture except where otherwise indicated in writing. The warranty covers all manufacturing materials and includes the replacement of spare parts or the repair of faulty parts at our expense and exclusively at our premises.

Materials to be repaired will be sent at the SENDER'S EXPENSE.

When the material has been repaired, it will be returned to the customer.

TECNOMAGNETE will bear the DELIVERY EXPENSES.

The warranty does not cover expenses relating to our engineers visiting the installation site nor machine dismantling. Should a site visit by one of our engineers be necessary, an invoice for his work at current rates will be made possible along with travelling expenses.

The warranty in no way implies rights to compensation for damages or injury caused directly or indirectly by our equipment or for repair work to be carried out by the buyer or external companies.

The warranty does not cover:

- ✘ malfunctions caused by incorrect use or fitting
- ✘ damage caused by using unauthorised spare parts
- ✘ damage caused by incrustation.

EXPIRY OF WARRANTY:

- ✘ The warranty shall be deemed to have expired if payments are late or the terms of the contract not complied with; any repairs carried out while the machine is still under warranty shall not affect statutory rights
- ✘ if repairs or changes are made to the machine without our prior written approval,
- ✘ if the serial number has been changed or cancelled,
- ✘ if damages have been caused by improper use or the machine has been mishandled or treated in any way which cannot be considered as normal working conditions,
- ✘ if the machine has been taken apart, tampered with, or repaired without prior written authorisation from TECNOMAGNETE.

For any disputes arising out of the interpretation or terms of this warranty, jurisdiction will be held by Milan District Court.

For help or further information, contact our technical services department at the following address:

TECHNICAL SERVICES DEPARTMENT



TECNOMAGNETE®

TECNOMAGNETE S.p.A.

Via Nerviano, 31 - 20020 Lainate (Mi) - ITALY
Tel. +39-02.937.59.208 - Fax. +39-02.937.59.212
service@tecnomagnete.it

società soggetta alla direzione e al coordinamento
della Finmagneti S.p.A. con sede in Lainate, via Nerviano 31



TECNOMAGNETE®

TECNOMAGNETE SERVICES NETWORK

HEAD OFFICE (ITALY)

TECNOMAGNETE SpA

Via Nerviano, 31
20020 Lainate - Italy
Tel. +39 02 937591
Fax +39 02 93759212
info@tecnomagnete.it

FRANCE - BELGIUM - LUXEMBURG

TECNOMAGNETE SARL

52 Av. S. Exupéry
01200 Bellegarde Sur Valserine
Tel. +33 04 50560600 (FRANCE)
Fax +33 04 50560610
tecnomagnete@wanadoo.fr

GERMANY - AUSTRIA - HUNGARY

SWITZERLAND - SLOVAKIA - HOLLAND

TECNOMAGNETE GmbH

4 Ohmstraße
63225 Langen (GERMANY)
Tel. +49 6103 750730
Fax +49 6103 7507311
kontakt@tecnomagnete.com

SWEDEN - NORWAY - DENMARK

FINLANDI - BALTIC REPUBLIC

TECNOMAGNETE AB

16 Gustafsvagen
63346 Eskilstuna (SWEDEN)
Tel. +46 016 132200
Fax +46 016 132210
info@tecnomagnete.se

U.S.A. - CANADA - MEXICO

TECNOMAGNETE Inc.

1307 Allen Dr. Suite AA
48083 Troy - MI (U.S.A.)
Tel. +1 248 5775959
Fax +1 248 5775969
infousa@tecnomagnete.com

JAPAN

TECNOMAGNETE Ltd.

1-9-7 Shibaura,
Minato - KU
1005-0023 Tokyo
Tel. +81 3 5765 9201
Fax +81 3 5765 9203
infojapan@tecnomagnete.com

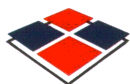
CHINA

TECNOMAGNETE R.O.

Pudong Lujiazui Dong road 161,
SHANGHAI- Room 2110 - PC: 200120
Tel: +86 21 68882110
Fax + 86 21 58822110
info@tecnomagnete.com.cn



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TECNOMAGNETE®

sede in Lainate, Via Nerviano 31

Sede Legale in Milano, P.le Cadorna 10

Sede Operativa ed Amministrativa in Lainate (Mi), via Nerviano 31 - 20020 Italy



Nr. 50 100 7816

DICHIARAZIONE DI CONFORMITÀ

LA SOCIETÀ

CE- DECLARATION OF CONFORMITY

THE FIRM

**TECNOMAGNETE SPA
VIA NERVIANO 31
20020 – LAINATE(MI) ITALY**

DICHIARA SOTTO LA PROPRIA RESPONSABILITÀ
CHE:

I SISTEMI MAGNETICI ELETTRICI PERMANENTI

DECLARES ON ITS OWN RESPONSIBILITY THAT:

THE ELECTRO PERMANENT MAGNETIC SYSTEMS

Serie/Series: **LAVORAZIONE ROTAIE**

MODELLI/MODELS: QUAD RAIL

AI QUALI QUESTA DICHIARAZIONE SI RIFERISCE
SONO CONFORMI ALLE SEGUENTI NORME O ALTRI
DOCUMENTI NORMATIVI:

- DIRETTIVA 2004/108/CE
(COMPATIBILITÀ ELETTROMAGNETICA) E
SUCCESSIVE MODIFICHE ED
INTEGRAZIONE
- DIRETTIVA BASSA TENSIONE 2006/95/CE

E PER LA LORO REALIZZAZIONE SONO STATE
UTILIZZATE LE SEGUENTI NORME E SPECIFICHE
TECNICHE.

TO WHICH THIS DECLARATION REFERS ARE
CONFORMED TO THE FOLLOWING DIRECTIVE AND
OTHER NORMATIVED DOCUMENTS:

- DIRECTIVE 2004/10/CE
(ELECTROMAGNETIC COMPATIBILITY)
AND FOLLOWING AMENDMENTS
- LOW TENSION DIRECTIVE 2006/95/CE

THEIR REALIZATION IS CONFORMING TO THE
FOLLOWING NORMS AND TECHNICAL
SPECIFICATIONS

EN55011(1999) PAR. 5.2 – 4.3, EN61000, EN60204/1, UNI EN ISO 9001:2000

THE LEGAL REPRESENTATIVE
MICHELE CARDONE

SIGNATURE AND STAMP OF AUTHORIZED PERSON

Attestati – Certificate: EMC 004/07; EMC 005/07

Organismo di certificazione notificato – Notified body with identification n° 0066

ICEPI S.p.a. Via P. Belizzi, 29/31/33 – 29100 PIACENZA – ITALY –

Luglio 2009 – Rev.01



TECNOMAGNETE®

• **IT**

TECNOMAGNETE S.p.A.

20020 Lainate (MI)
Via Nerviano 31
Tel. +39 02.937.591
Fax +39 02.935.708.57
info@tecnomagnete.com
www.tecnomagnete.com

• **FR**

TECNOMAGNETE S.A.R.L.

52 avenue Saint-Exupéry
01200 Bellegarde-sur-Valserine
Tel. +33 (0)4 50 56 06 00
Fax + 33 (0)4 50 56 06 10

• **DE**

TECNOMAGNETE GmbH

Ohmstraße 4, D - 63225 Langen
Tel. +49 6103 750 730
Fax +49 6103 750 7311

• **SE**

TECNOMAGNETE AB

Gustafsvägen 16
633 46 Eskilstuna
Tel. +46 016 132 200
Fax +46 016 132 210

• **US**

TECNOMAGNETE Inc.

6655 Allar Drive,
Sterling Hts, MI 48312
Tel. +1 586 276 6001
Fax +1 586 276 6003

• **JP**

TECNOMAGNETE Y.K. Ltd.

Omodaka Building 1F
1-9-7 Shibaura, Minato-ku
1005-0023 Tokyo
Tel. +81 (0)3-5765-9201/02
Fax +81 (0)3-5765-9203

• **CN**

TECNOMAGNETE Shanghai R.O.

Pudong Lujiazui Dong road 161,
Room 2110 - PC: 200120
Tel. +86 21 68882110
Fax + 86 21 58822110

• **SG**

TECNOMAGNETE Singapore R.O.

350 Orchard Road
#11-08 Shaw House
Singapore 238868
Phone: +65 6887 3721
Fax +65 6887 3784