

MT/71NB	03.71NB	UNDERGROUND MOTOR 24Vdc FOR SWING GATE UP TO 2,20 + 2,20 METERS AND 250 kg PER LEAF
MT/72NB	03.72NB	UNDERGROUND MOTOR 230Vac FOR SWING GATE UP TO 2,20 + 2,20 METERS AND 250 kg PER LEAF
K/74	93.04	STRAIGHT ARM WITH SLIDING GUIDE

Thank you for choosing SERAI ELETTRONICA, we are confident that you will find this product offers the performance you are looking for.

Note that you are about to install a device part of a plant classified for powering automatic gates and doors in commercial or residential buildings for vehicular and pedestrian access, which must be considered to be potentially hazardous. You are responsible by law for making the plant as "safe" as is reasonably possible.

Installation and maintenance of a plant of this type must therefore be entrusted exclusively to a qualified, trained and expert technician, and all work must be performed in compliance with "best practices" as prescribed by all applicable regulations. The construction of plants of this type by insufficiently qualified personnel is prohibited by law.

Product category: electronic device for controlling operators for doors and gates and relative accessory devices
Intended use: control of operators for powering gates for pedestrian and vehicular access in residential, commercial and light industrial environments

Reference directives:

Low Voltage (LVD):	2006/95/EC
Electromagnetic compatibility (EMC):	2004/108/EC
Restriction of hazardous substances (RoHS):	2011/65/UE

Generic reference standards:

Household and similar electrical appliances - Safety - part 1: general requirements:	EN60335-1: 2008
Electromagnetic compatibility - generic standards - part 2: immunity for industrial environments:	EN61000-6-2: 2006
Electromagnetic compatibility - generic standards - part 3: emission standard for residential, commercial and light industrial environments:	EN61000-6-3: 2007

Product-specific reference standards:

Household and similar electrical appliances - Safety - part 2: particular requirements for drives for gates, doors and windows:	EN60335-2-103: 2005
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The installer is advised that the plant, incorporating the CR/61 control unit, must be constructed in compliance also with the following directives and standards:

Machinery directive:	2006/42/EC
Industrial, commercial and garage doors and gates: safety in use of power operated doors - requirements:	EN12453: 2002
Industrial, commercial and garage doors and gates: safety in use of power operated doors - test methods:	EN12445: 2002
Industrial, commercial and garage doors and gates - product standard - part 1: products without fire resistance or smoke control characteristics:	EN13241-1: 2011



WARNING!

SERAI products are designed to allow the construction of plants in compliance with the afore-mentioned standards. Compliance with these legal prescriptions is extremely important, because **responsibility for the plant and its operation in compliance with the law lies with the installer.**

This handbook must be read in full before proceeding with the installation of the various parts of the system.

The installation of the mechanical end stops for gate opening and closure is necessary for system safety purposes and therefore this operation must be performed before proceeding with the installation of the control unit.



IMPORTANT:

PROVIDE AND REALIZE A PROPER AND PERFECTLY FUNCTIONING DRAINING SYSTEM, SO THAT THE WATER STAYS THE LEAST POSSIBLE TIME IN CONTACT WITH THE BOX OF THE MOTOR: usually water can be either acid due to the of impurity existing on the asphalts, or brackish in coastal areas, eventually leading to a higher possibility of corrosion of the external parts, that in time might generate water infiltrations in the motor.

BEFORE INSTALLING THE MOTORS

- 1- Check that the sizes and weight of the gate leaf respect that indicated in table 1
- 2- Check that the gate leaf is supported by 2 hinges at pillar .THE MOTOR IS NOT LOAD-BEARING-
- 3- Check that the gate leaf movement is perfectly levelled for the entire gate run; the telescopic arm of the motor must only work horizontally without any vertical movement.
- 4- Check that the height between the gate and the ground is greater by 60 mm. See Fig. 1

ONE WING LENGHT	ONE WING MAX WEIGHT
2,20 m	kg 250
2,00 m	kg 270
1,80 m	kg 300
1,60 m	kg 330

Table 1

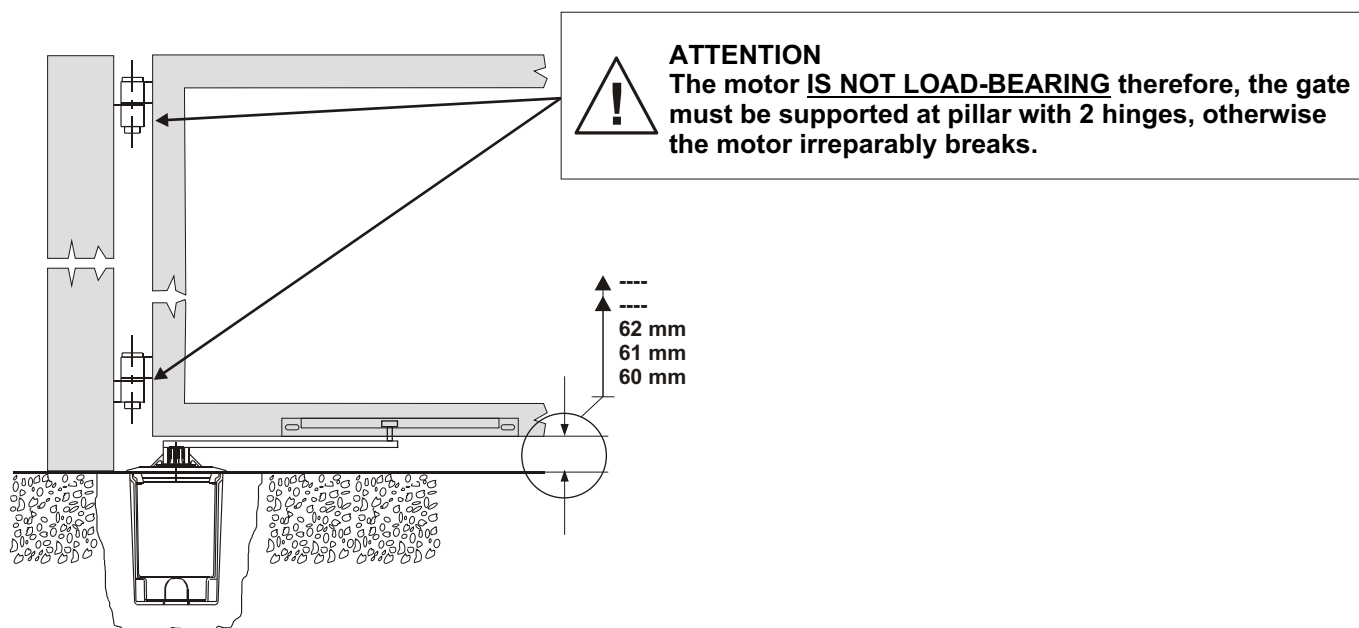
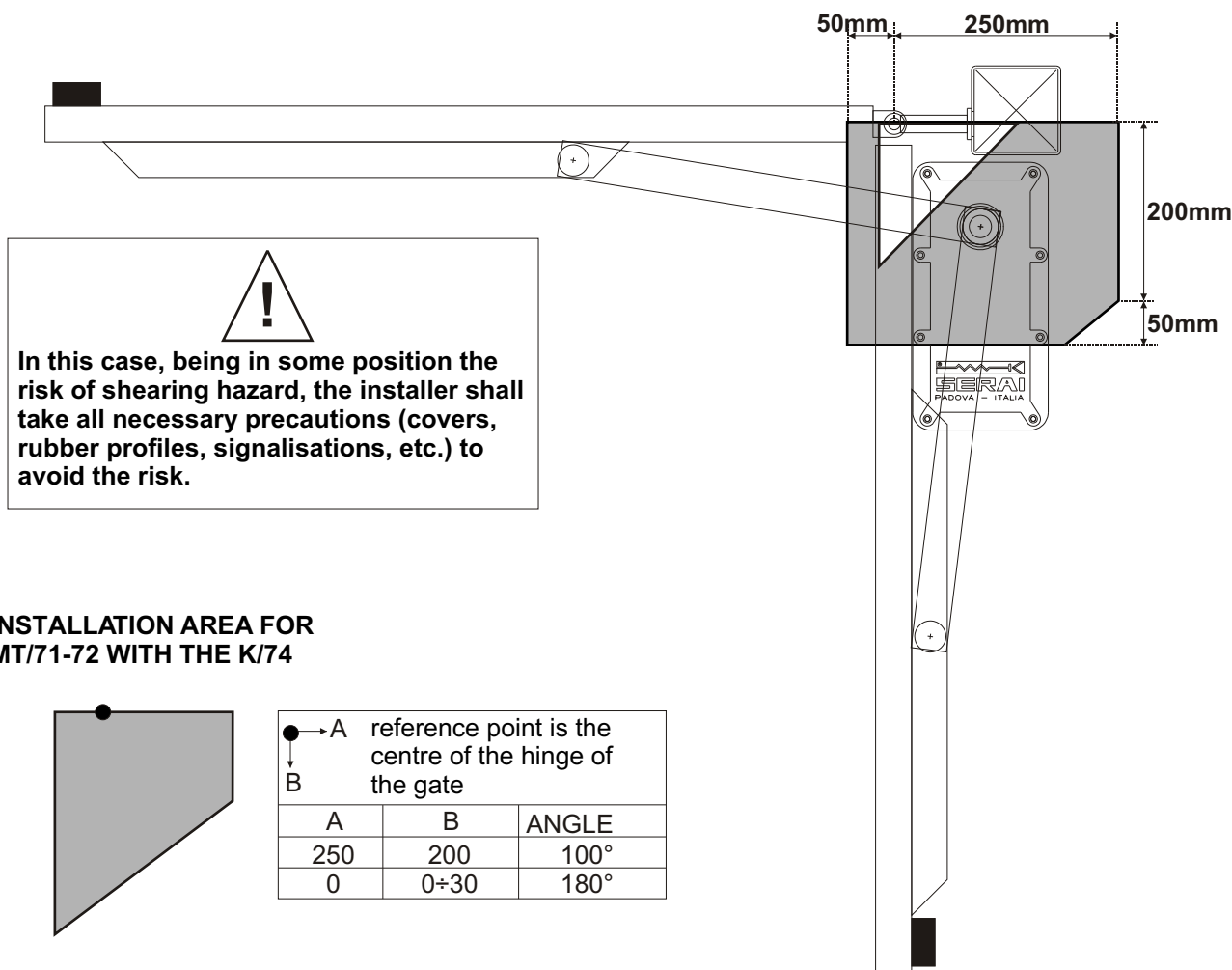
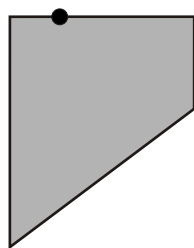


Fig. 1

INSTALLATION WITH ARM WITH SLIDING GUIDE K/74 -cod. 93.04-



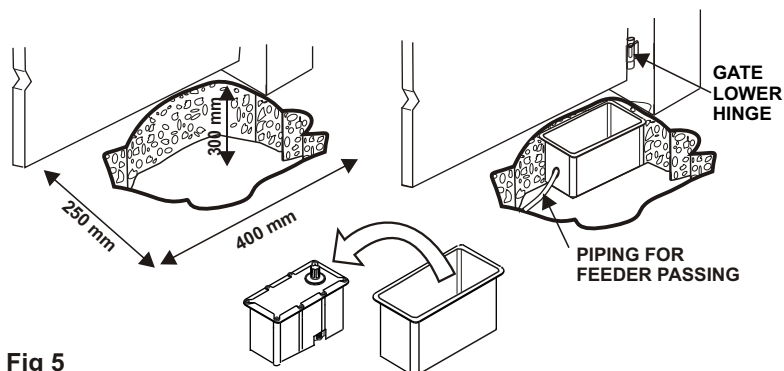
INSTALLATION AREA FOR MT/71-72 WITH THE K/74



A reference point is the centre of the hinge of the gate B		
A	B	ANGLE
250	200	100°
0	0÷30	180°

MOTOR INSTALLATION

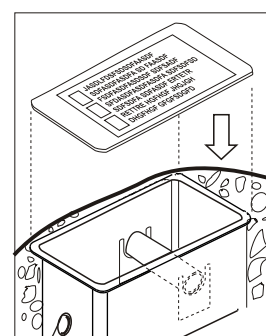
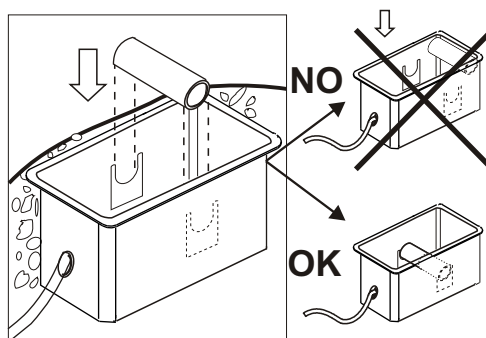
- 1- Prepare the excavation for the housing of the foundation box. Remove the motor from the foundation box, place the foundation box ground level and verify the horizontal level and the vertical alignment of the pivots. See Fig. 5
- 2- Prepare the piping and open the cable entries on the foundation box for the electric connections. See Fig. 5



ATTENTION: PROVIDE AND REALIZE A PROPER AND PERFECTLY FUNCTIONING DRAINING SYSTEM, SO THAT THE WATER STAYS THE LEAST POSSIBLE TIME IN CONTACT WITH THE BOX OF THE MOTOR: usually water can be either acid due to the of impurity existing on the asphalts, or brackish in coastal areas, eventually leading to a higher possibility of corrosion of the external parts, that in time might generate water infiltrations in the motor.

- 3- Insert the spacing plastic tube on the Foundation box. See Fig. 6

CAUTION: ensure that the spacing tube is centred both in horizontal and vertical position with reference to the foundation box.



- 4- Insert the spacing sheet on the Foundation box. See Fig. 7

5- Seal up with adhesive tape. See Fig. 8

6- Cement definitively with concrete. See Fig. 9



ATTENTION:
During the cementing phase the foundation box may rise up. Keep the foundation box anchored. See fig 10.

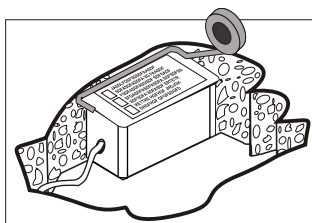


Fig 8

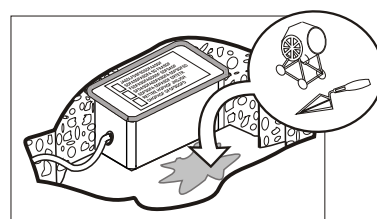


Fig 9

7- Before inserting the motoreducer take off the spacing sheet and the plastic tube. See Fig. 11

Fig 10

8- To make easy the eventual removal of the motor and avoid any damage of the foundation box, insert the 4 galvanized plates (which are supplied) in the 4 ends-inside the special circular places. See picture no. 12.

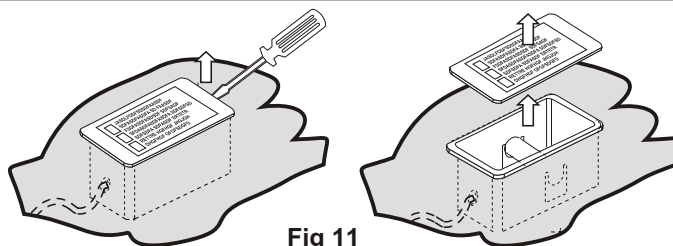


Fig 11

9- Insert the motor, the arm and fix the bracket on the gate. See Fig. 13.

IMPORTANT: lubricate the arm with grease.

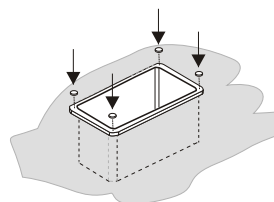
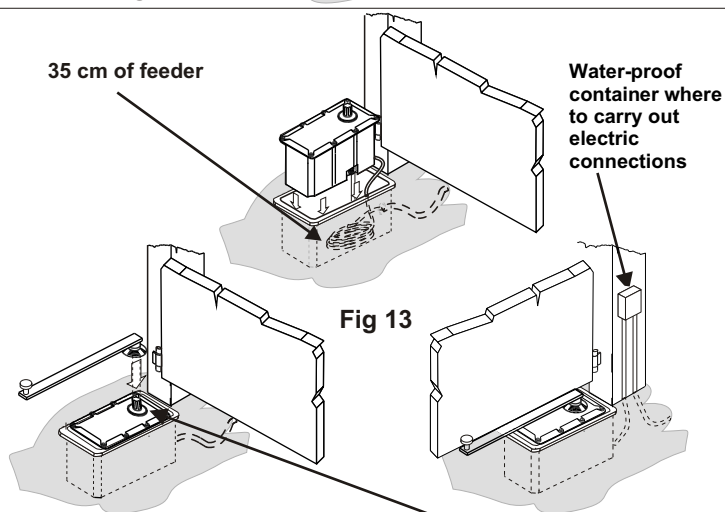


Fig 12



- ATTENTION:**
- Leave at least 35 cm of feeder under the motor, for taking out the motor in case of maintenance. Fig. 13
 - The connection between the power supply cable of the motor and the cable of the control panel has to be carried out outside the foundation box and inside a weather proof housing. On the contrary a water infiltration may be occur through the power supply cable causing the motor failure. See Fig. 13



10- Give power supply to the motor.

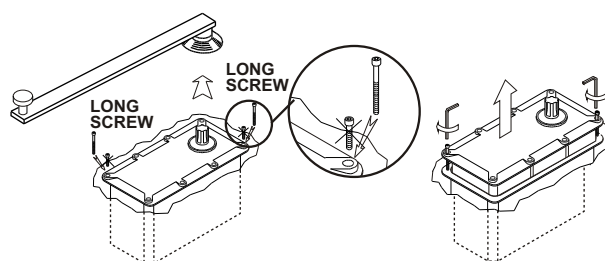


REMOVAL OF THE MOTOR FROM THE FOUNDATION BOX

1- Remove the arm

2- Remove two screws from the opposite angles of the motor

3- In their place, simultaneously tighten two long screws to lift the motor



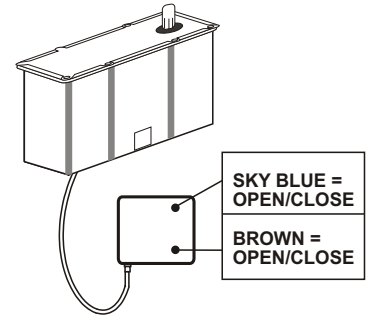
ELECTRIC CONNECTIONS OF MOTOR

MT/71NB:

Connect the motors to the electronic control unit by means of cables with a section of 2.5 mm².

SKY BLUE cable : Open/Close

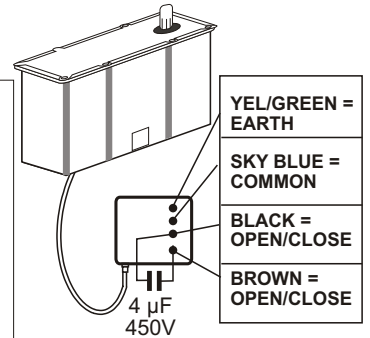
BROWN cable: Open/Close



MT/72NB:

Connect the motors to the electronic control unit by means of cables with a section of 1.5 mm². Observe terminal connections as follows:

SKY BLUE cable : Common
 BLACK cable : Open/Close - Capacitor
 BROWN cable: Open/Close - Capacitor
 YELLOW/GREEN cable: Earth



Advice for wiring up in non-specialised environments.

1. Fit an omnipolar switch upstream of the system, choosing one with a gap of at least 3mm between the contacts. Or, alternatively, use a 10A thermal magnetic circuit breaker switch.
2. Make all types of connection with the system disconnected from the power, i.e. with the main switch set to OFF (symbol "0"). The control unit, in particular, must never be connected to the power supply either during the wiring up, or when fitting any expansion cards.
3. The following cables must be used for installation of the system:
 - for the motor power supplies: 4x1.5mm² version 230V, **2x2.5mm² version 24V**,
 - for the battery and electric lock power supplies: minimum 2.5 mm²
 - for the control unit power supplies: 1.5mm² section for lengths of up to 19m, 2.5mm² section for lengths of up to 31m,
 - for the flashing light: 0.75mm² section for lengths of up to 3m, 1.5mm² section for lengths of up to 19m,
 - for the low voltage and current lines, (e.g. for the photocells, control buttons, electromechanical key, sensitive edges and other safety devices: 0.5mm² section for lengths of up to 50m, 0.75mm² section for lengths of up to 100m.

MOTOR FORCE ADJUSTMENT

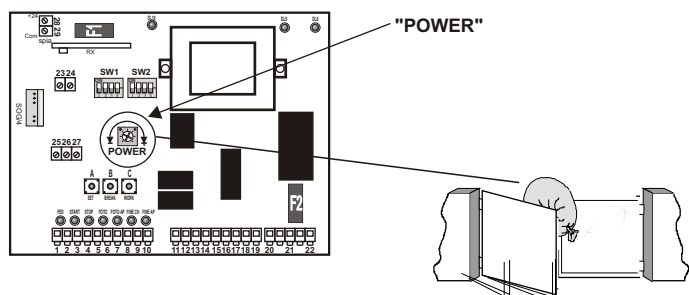
The SERAI CR/41-CR/41/24 control unit allows:

- A- adjustment of the motors strength by acting on the "Power" potentiometer in the control unit
- B- programming of the slowing which prolongs the life of the motor avoiding the gate banging against the mechanical stops



If slowing has been inserted, the motor has less strength and therefore the gate, if not well-done, may stop before having completed the manoeuvre.
By excluding the slowing the gate bangs against the mechanical stops causing a, more or less, loud noise, according to installation. Also, the internal gears are subject to greater stresses.

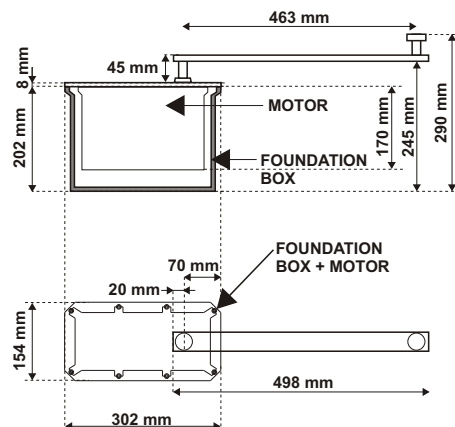
The considerable differences in temperature between summer and winter can cause differing rates of expansion in all materials, including those used in the building of our motors. That is why we recommend you check the impact force setting at the start of winter and summer.



GEARMOTOR TECHNICAL SPECIFICATIONS

Reversing electromechanical motor for wing gates up to 2.20m each gate-wing and max. weight 250 kg.

	MT/71NB	MT/72NB
Power supply	24Vcc ±25%	230 V~ ±10% 50/60 Hz
Max absorption	2,8 A	1 A
Power	60 W	120 W
Max thrust.	175 Nm	175 Nm
Angular speed	0,12 rad/s	0,09 rad/s
Opening time for 90°	17 s	20 s
Max opening angle	180°	180°
Max leaf weight	250 Kg	250 Kg
Capacitor	---	4 µF
Operating temperature	-20° ÷ +60°C	-20° ÷ +60°C
Protection rating	IP67	IP67
Motor thermal protection	---	150 °C
Weight	10,7 Kg	11,7 Kg



TROUBLESHOOTING GUIDE

PROBLEM	CAUSE	SOLUTION
The gearmotor is not working	No power supply to motors	- Check the motor power supply input terminals to see if they are live - Check that the power supply cable is not cut or broken (cable replacement must be carried out by an authorised technician) - Check the control unit fuses
The gate does not complete its run	Stop of the gate	Verify that there are no obstacles on moving the gate by hand. Remove possible obstacles.
	Position of the arm not correct	The arm is not positioned according to the spaces shown
Water inside the motor	Feeder connection inside the foundation box	The connection between the motor cable and the control panel has to be carried out inside a watertight box

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2011/65/UE DIRECTIVE ON THE RESTRICTION OF THE USE OF CERTAIN HAZARDOUS SUBSTANCES IN ELECTRICAL AND ELECTRONIC EQUIPMENT (RoHS)

2012/19/UE DIRECTIVE ON WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

This appliance was manufactured according to the restrictions set by the RoHS directive. To protect the environment: when the equipment is no longer required for use, take it to a WEEE (Waste of Electric and Electronic Equipment) collection centre. Do not dispose of it with normal household waste.

CE CONFORMITY DECLARATION

SERAI spa declares that the product MT/71NB-MT/72NB was designed and manufactured in full compliance with the above mentioned directives and standards.



TERMS OF GUARANTEE

The company reserves the right to make any modifications to the equipment without prior notice. The conventional guarantee of SERAI products is valid for 24 months from the date of issue of the fiscal document which proves purchase. Guarantee service will be provided on the company's premises at Legnaro - PD - or at authorised After-sales Centres. The transport costs are under the Customer's responsibility. The warranty terminates in the event of tampering with or removal of the label specifying lot of the product and in the event of tampering with the product itself.