

# Timing the Automatic Version of Mazzer Automatic Grinder

## Disclaimer:

The modifications of Mazzer Super Jolly and Mini Grinder involve tampering with high-wattage electrical circuits, which could result in electric shock, burns, other serious personal injury or death, as well as fire, explosion and other property damage. This kit is for users with proper electrical safety knowledge only. Attempting to access your grinder machine will void its warranty. You, the user, will assume full responsibility for any modifications undertaken. Auber Instruments Inc is not liable for any damage caused to your property as a result of improper use.

## Mazzer Grinder

Other than the Mazzer Electronic Grinder, which has a built-in electronic timer, there are three types motor control switches on the market:

- 1) On Off switch, Mazzer calls it Manual Version.
- 2) Mechanical timer switch. Mazzer calls it Time version.
- 3) On/Off + Start. Mazzer calls it Automatic Version.

Here we only discuss mazzer automatic version's wiring.

### A. Understanding the Mazzer control circuit

Figure 1 shows the circuit diagram of the Mazzer Automatic Version Grinder. In terms of functionality, the diagram contains two parts. 1) The AC motor wiring with capacitors for phase shift. 2) The switching control circuit. The first part is not related to the modification. The second part is important and should be understood before proceed the modification.

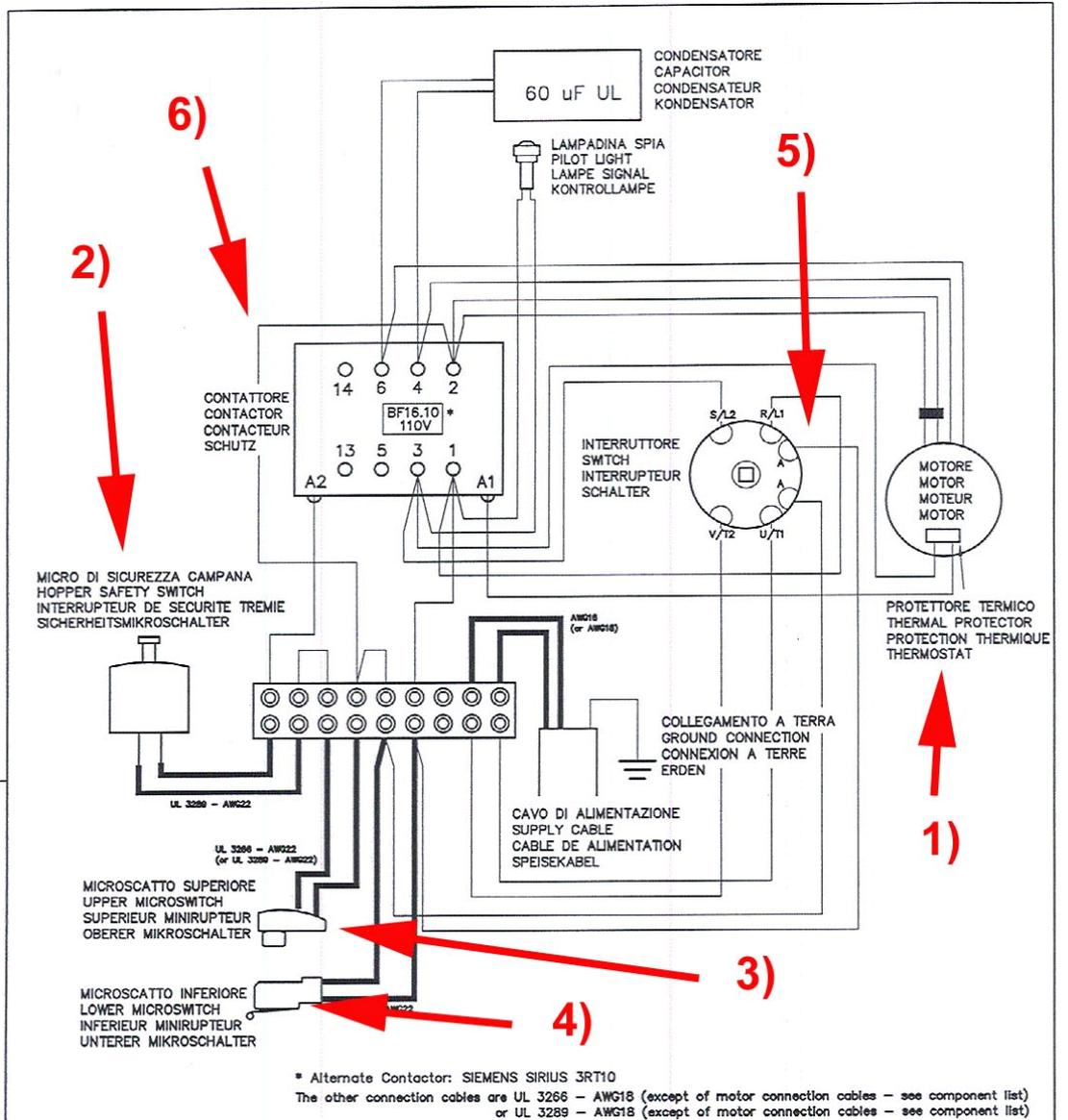
The switching control circuit turns on and off the motor by applying the AC power to the coil of the contactor. The coil is between A1 and A2 on the contactor. When there is electric current going through the coil, it pulls in the contacts to let motor run. Within the coil control circuit loop, there are several important components:

- 1) Motor temperature thermostat. It is a normally closed switch. It is connected between the A2 terminal of the contactor and AC power source. The connecting cable is yellow in color. This switch will open the coil circuit when motor overheats.

- 2) Hopper safety switch. This switch will open the circuit if the hopper is not installed. Only large models have this switch. Small models, such as Mini and Super Jolly do not have this switch.
- 3) Upper microswitch. It is a normally closed switch. This switch is linked to a plate inside the doser, above the coffee entrance. When there is too much coffee in the doser, the coffee will push the plate up. It will open the circuit loop and stop the grinder.
- 4) Lower microswitch. It is a normally open, momentary switch in the bottom of the doser. For every 12 full movements of the doser handle, the switch will be on for once. One end of this switch is connected to the AC power. When it is on, it sends power to the coil so that contact pulls in.
- 5) Start switch. It is a normally open momentary switch in the assembly of the on/off switch. It is connected in parallel with Lower Microswitch 4) and has the similar function to start the grinder motor. When switch is turned to the Start position, it sends power to the coil and starts the motor.
- 6) There is another important wire in the coil control circuit. It is the wire connecting between terminal 2 of the contactor and the upper microswitch. This wire providing the "self maintaining" power for the contactor. When either 4) or 5) turn on the contactor, terminal 2 becomes hot. This wire starts to feed the power from terminal 2 to the coil loop through upper microswitch. After the switch 4) or 5) are opened, the coil will stay energized by the power from this line. The contactor will remain on until either the power switch is turned off, or when any safety switch 1), 2) or 3) is open.

## **B. Timer modification**

Once you understood how the Mazzer motor is controlled, it is easy to figure out what needs to be done. The Auber J72MA provides a time controlled relay that replaces the components 4) 5) and 6) of the control circuit. Components 1) and 2) need to be kept in the control loop for the safety reason. Component 3) can be removed if you are not going to use the doser. Figure 2 provides one example on how to connecting timer to the Major. This modification can be applied to all Mazzer models. The only difference for the smaller machine is that the Mini and SJ do not have switch 2).



Automatic version  
MAJOR 110V/60Hz/1ph

N. No.	Modifiche Modification	Data Date	Prep./Verif. Prep./Check.	Approv.ne Approval



Quote senza indicazione di tolleranza:  
- Dimensioni LINEARI  
Dimensioni ANGOLARI  
MEDIO - UNI ISO 2768/1  
- Tolleranze GEOMETRICHE  
Classe H - UNI ISO 2768/2

Materiale  
Material  
Trattamento  
Treatment

Scala  
Scale

Data  
Date

Prep./Verif.  
Prep./Check.

Approv.ne  
Approval

Denominazione  
Denomination

Versione automatica  
MAJOR 110V/60Hz/1ph

Sostituito dal

Sostituisce il

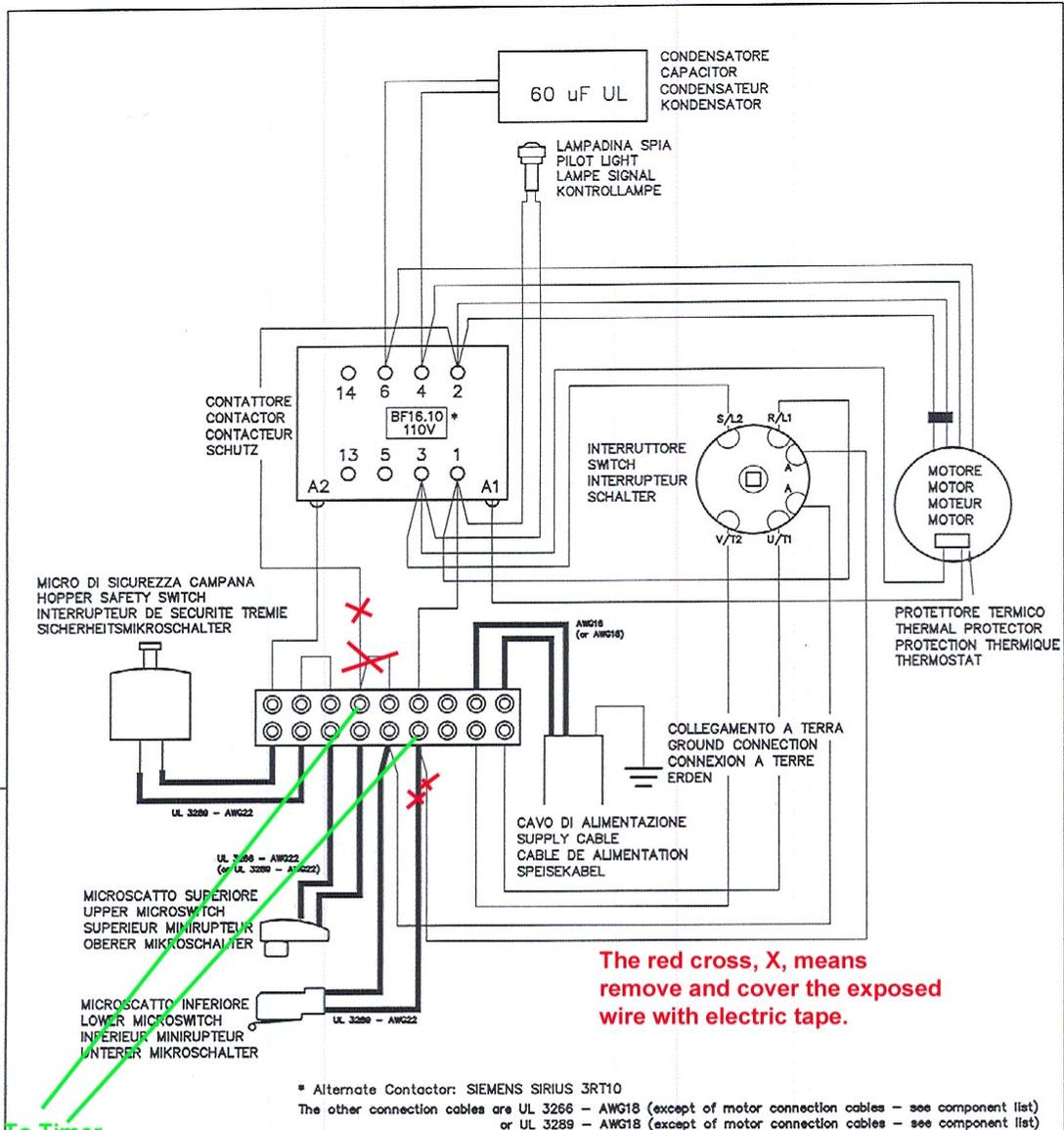
Rif. fornitore

Disegno  
Drawing

MJA09 A00

Formato A4

Figure 1



To Timer

Automatic version  
MAJOR 110V/60Hz/1ph

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Quote senza indicazione di tolleranza:  
- Dimensioni LINEARI  
Dimensioni ANGOLARI  
MEDIO - UNI ISO 2768/1  
- Tolleranze GEOMETRICHE  
Classe H - UNI ISO 2768/2

Materiale Material  
Trattamento Treatment

Scala  
Scale

Data Date 25/11/04

Prep./Verif. Prep./Check. Gasparini

Approv.ne Approval E.G.

Denominazione Denomination  
Versione automatica  
MAJOR 110V/60Hz/1ph

Sostituito dal

Sostituisce il

Rif. fornitore

Disegno Drawing  
MJA09 A00

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Figure 2