WATCHDOG (and ULN)

The watchdog is a small PCB that should replace ULN2003A, but you can in emergency use ULN2003A instead of a watchdog. The ULN2003A is a commonly available chip.

The watchdog cuts the power if there is an electric problem and resets when it cools off after a couple of minutes. You will need to address the underlying problem if it would cut the power to the solenoids repeatedly.

Short circuit
If the ejector (the feeding mechanism) is constantly pulled when the Duplimate is powered on (=the ejector moves to the left and stays there), there is a short circuit in the watchdog or ULN (or eprom). You must be quick to power off the Duplimate before the main solenoid is burnt (i.e. destroyed) when this happens.

Duplimate does not respond
You should suspect the watchdog if you get the message "Duplimate does not respond" when you start duplication. In this case you can try to remove the watchdog (or ULN) and start duplication without it. The outcome should be that the bands move after which "Card jam" is displayed on the screen. If nothing happens, you have a communication problem.

No cards fed
If you get the message "No cards fed, check that the ejector feeds the cards properly", then the problem can be that one of the watchdog's connection pins on its left hand side (seen from the back of the machine) is not properly connected.
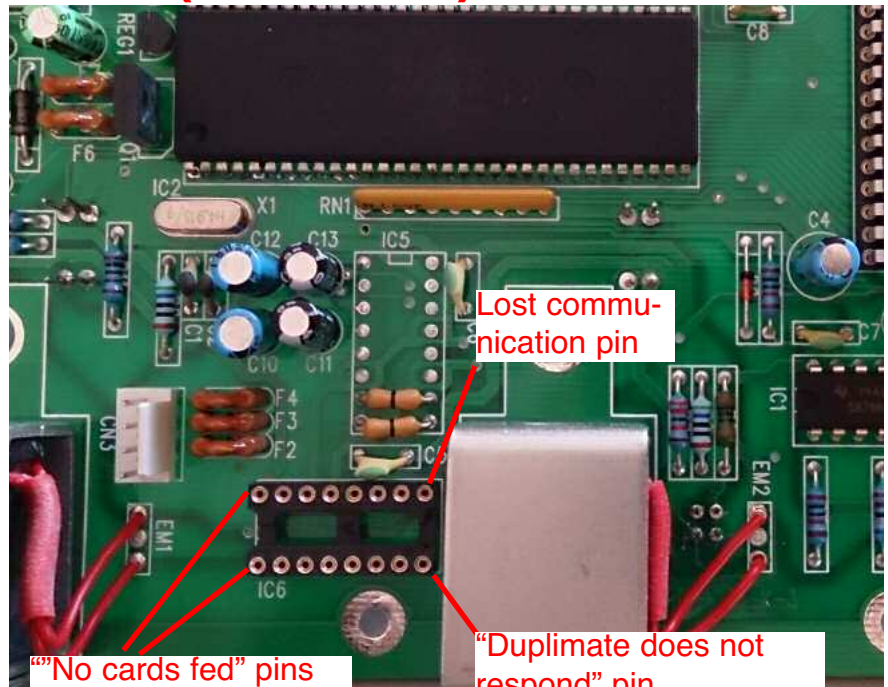
Communication lost
When the message "Communication lost" is displayed **and the machine completes the deal correctly,** you should suspect that the pin in the upper right corner of the watchdog (or ULN) is not correctly connected.

How to remove the ULN
The ULN sits at the lower end of the main PCB (between the solenoids lifting the gates). You will probably need a small knife or screw driver to remove the ULN from its socket.

Mount the watchdog
The watchdog is mounted on the same socket as the ULN. Make sure that all pins (legs) on the watchdog are all in position before forcing the watchdog into the socket.

Lost communication pin

"No cards fed" pins

"Duplimate does not respond" pin.

Strange things can happen at power on, e.g. that the gates flip, when this pin is not in contact with the motherboard.