



“Automatic PCB soldering Machine”

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ABSTRACT

Now days in industries many applications are available according to need and application we need a soldering machine that will be small in size, durable and flexible hand- hold machine.

Printed circuit board (PCB) is base of any electronics /electrical equipment .A PCB provided the connectivity to the electronic component such as resistor, capacitor, coils, pots, diodes, FET, transistors, ICs, transformer ect. to from a complete electronic circuit. in the present scenario, the existence of electronics equipments cannot be imagined without a PCB.

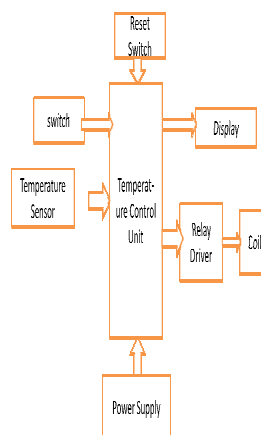
INTRODUCTION

Now days in industries many applications are available according to need and application we need a soldring machine that will be small in size, durable and flexible hand- hold machine.

Soldering is a process used for joining metal parts to form a mechanical or electrical bond. It typically uses a low melting point metal alloy (solder) which is melted and applied to the metal parts to be joined and this bonds to the metal parts and forms a connection when the solder solidifies. It is different to welding in that the parts being joined are not melted and are usually not the same material as the solder. soldering is a common practices for assembling electrical components and wiring.

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BLOCK DIAGRAM



WORKING

In this block diagram main base is temperature control unit . A Temperature control unit (TCU) works by using an electric heater, either immersion or continuous, to heat the fluid in the system, then circulating it from the TCU to the machine tools and vice-versa. The fluid used may be water, pressurised water or oil, depending on the temperature range.

Once having reached the set operating temperature, the unit can continue to heat the fluid, or alternatively may act as a cooling system. If the fluid used in the TCU is water, cooling is performed by adding fresh water (direct cooling), while if the fluid is pressurised water or oil, a fluid-water heat exchanger is used (indirect cooling).

A relay driver circuit is a circuit which can drive, or operate, a relay so that it can function appropriately in a circuit. The driven relay can then operate as a switch in the circuit which can open or close, according to the needs of the circuit and its operation.

A power supply takes the AC from the wall outlet, converts it to unregulated DC, and reduces the voltage using an input power transformer, typically stepping it down to the voltage required by the load. For safety reasons, the transformer also separates the output power supply from the mains input.

An inductor is a passive electronic component which is capable of storing electrical energy in the form of magnetic energy. Basically, it uses a conductor that is wound into a coil, and when electricity flows into the coil from the left to the right, this will generate a magnetic field in the clockwise direction

Temperature sensors are simple devices that sense the degree of cold or heat and transform it into a simple unit. But, do you ever think about how the temperature of the soil, land boreholes, great concrete dams, or houses is detected? Well, this is done by using some of the particular temperature sensors.

They are devices to measure temperature readings through electrical signals. The sensor is made up of two metals, which generate electrical voltage or resistance once it notices a change in temperature .

A 7 segment display is made of seven different illuminating segments. These are arranged in a way to form numbers and characters by displaying different combinations of segments. The binary information is displayed using these seven segments. ... These LED's or LCD's are used to display the required numeral or alphabet.



Objective -

- 1) To manufacture automatic PCB soldering machine.
- 2) To design small product for low cost.

CONCLUSION

Automatic PCB soldering machine has been develop as per industry requirement. This helps to reduce man power requirement.

REFERENCES

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- <https://www.directindustry.com/industrial-manufacturer/semi-automatic-soldering-machine-243773.htmls:>
 - https://en.wikipedia.org/wiki/Wave_soldering
 - https://www.electronics-notes.com/articles/constructional_techniques/soldering/wave-soldering.php