



Sou. Sushila Danchand Ghodawat Charitable Trust's
Sanjay Ghodawat Polytechnic, Atigre

PRESENTATION ON

ITR

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TYEJ (17)





INDUSTRIAL TRAINING REPORT

MANGAL CAMTRONICS, VASAI-EAST, MUMBAI

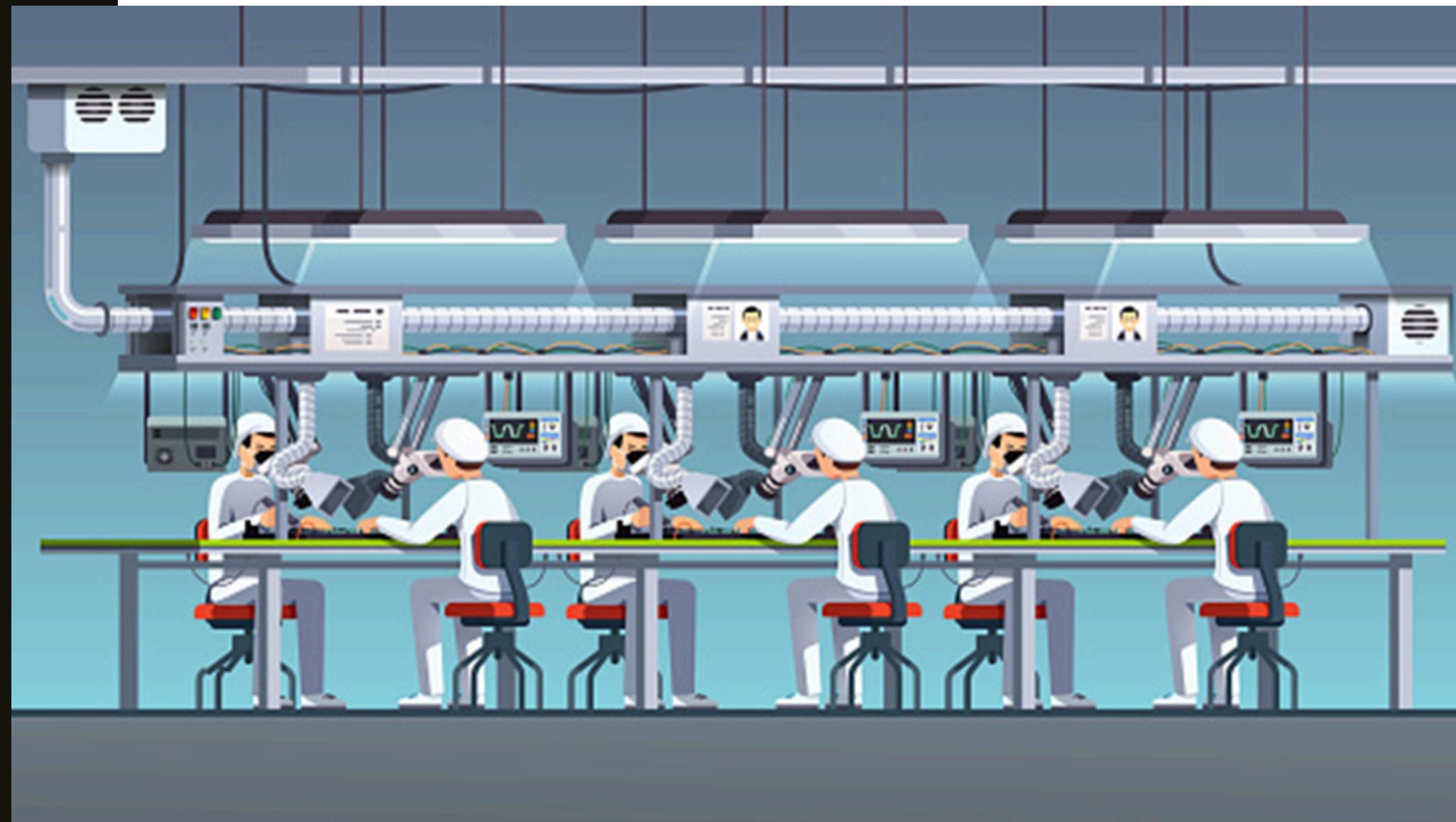
BRIEFING ABOUT COMPANY

DURATION : 05TH JULY 2022 - 22ND AUGUST

2022

INDUSTRY TYPE : MANUFACTURER AND
SERVICE PROVIDER

ANNUAL TURN OVER : 1-2 CR



PARMAR[®]

WELCOME

WELCOME TO THE COMPANY

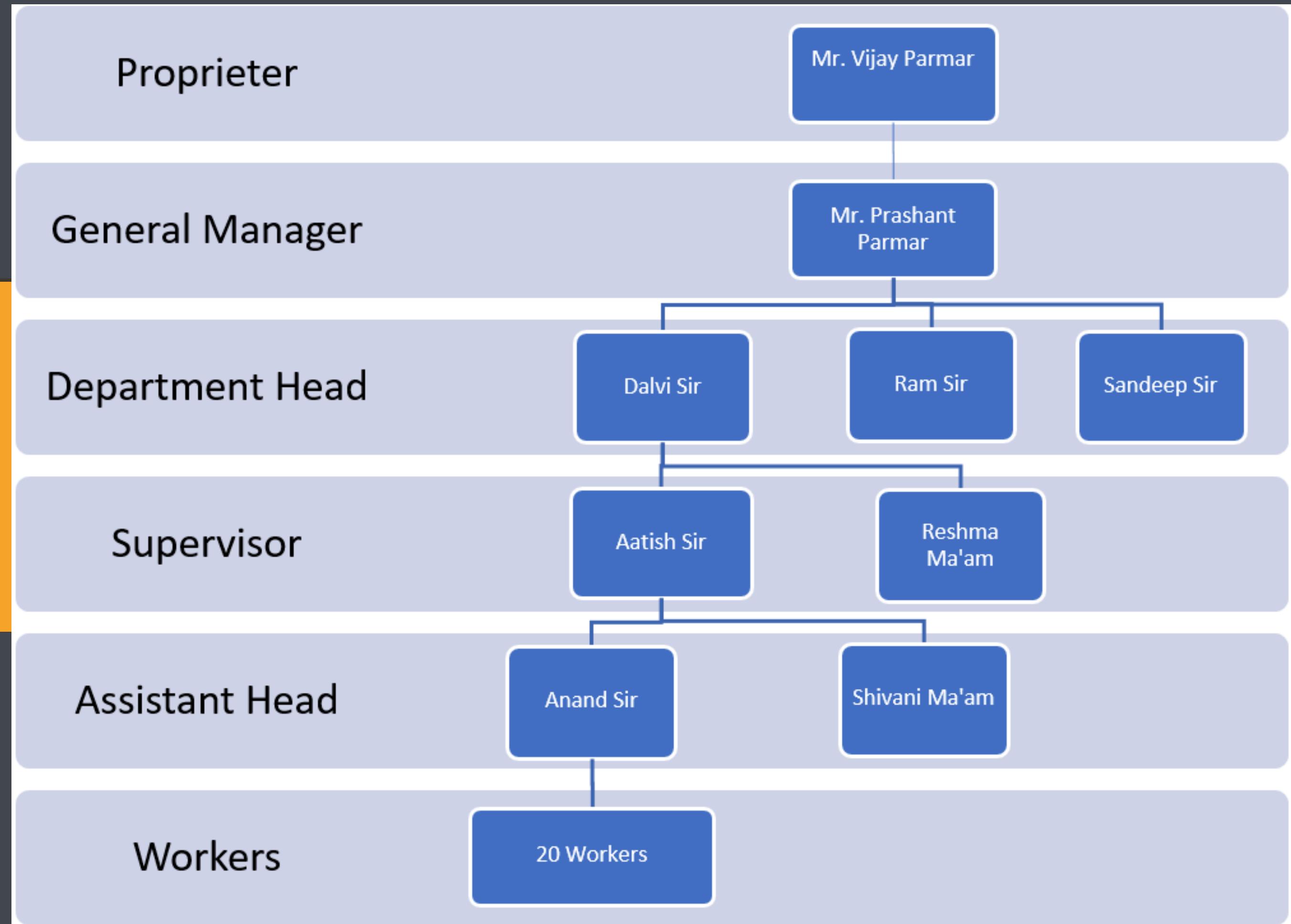
Mangal Camtronics, located in **Vasai east**, Maharashtra, is a small scale manufacturing company with a total of 4600 sq ft workshop area that deals with printed circuit boards, assembly, design and services.

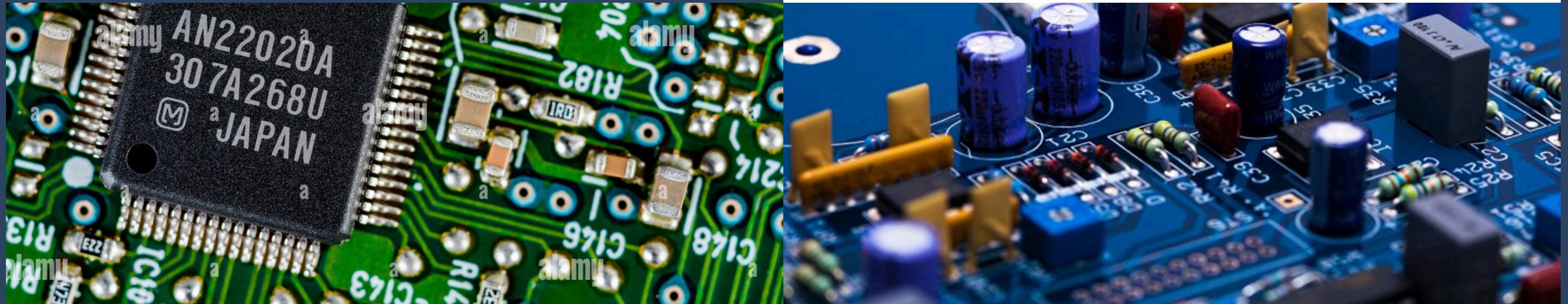
This company is involved in **manufacturing** and **service** providing a broad range of PCB assembly, LED strips, circuit boards, LED bulb PCB, touch switch and soldering services.

The company bounds to provide you **SMT/SMD** services with the enormously high technology machines used in the workshop.



MEET OUR TEAM





SMD/SMT COMPONENTS

ON THE BASIS OF ITS SIZE, SMD COMPONENTS HAVE DIFFERENT TYPES OF PACKAGES FOR EXAMPLE RESISTOR 0603, 0805 AND SO ON. IT HAS COMPONENTS LIKE ICs, CAPCITORs, LEDs AND MANY MORE. VALUE OF SUCH COMPONENTS IS FOUND BY THE METHOD OF CODE.

THROUGH HOLE COMPONENTS

ON THE BASIS OF ITS COLOUR ,COMPONENTS HAVE DIFFERENT TYPES OF VALUES FOR EXAMPLE RESISTOR RED, GREEN, ORANGE, GOLD AND SO ON. IT HAS COMPONENTS LIKE ICs, CAPCITORs, LEDs AND MANY MORE.

DEPARTMENTS



01

THROUGH HOLE

WORKING DURATION: 2 WEEKS

COMPONENTS ARE MANUALLY STUFFED, WAVE SOLDERED, TOCHED UP, CUT, CHECKED AND CLEANED AND THE ARE SENT TO SMD DEPARTMENT FOR PLACING SMD COMPONENTS ON THE RUN. MAKES COMPLETE 500-600 PIECES PER DAY.

02

SMT/SMD

WORKING DURATION: 2 WEEKS

SMD/SMT - SURFACE MOUNTING DEVICES / SURFACE MOUNTING TECHNOLOGY. HIGH USE OF MACHINES, LESS WORK LOAD, MAKES COMPLETE 3000 PIECES PER DAY OR EVEN MORE. PROCESSES LIKE HEATING, QUALITY CHECKING, CLEANING AND PACKING WAS DONE.

03

QUALITY CHECKING

WORKING DURATION: 2 WEEKS

THIS DEPARTMENT WAS ONLY AVAILBLE WHEN THERE WAS A HUGE WORK LOAD ON ANY ONE DEPARTMENT. IN CASE THERE IS A HUGE ORDER OF PCBs, 2 WORKERS FROM EACH DEPARTMENT WERE HEIRD TO DO THE CHECKING OF THE MANUFACTURED PCBs.



THROUGH HOLE

- 01 . STUFFING
- 02 . WAVE SOLDERING
- 03 . TOUCH UP
- 04 . CUTTING
- 05 . QUALITY CHECKING
- 06 . CLEANING
- 07 . PACKING

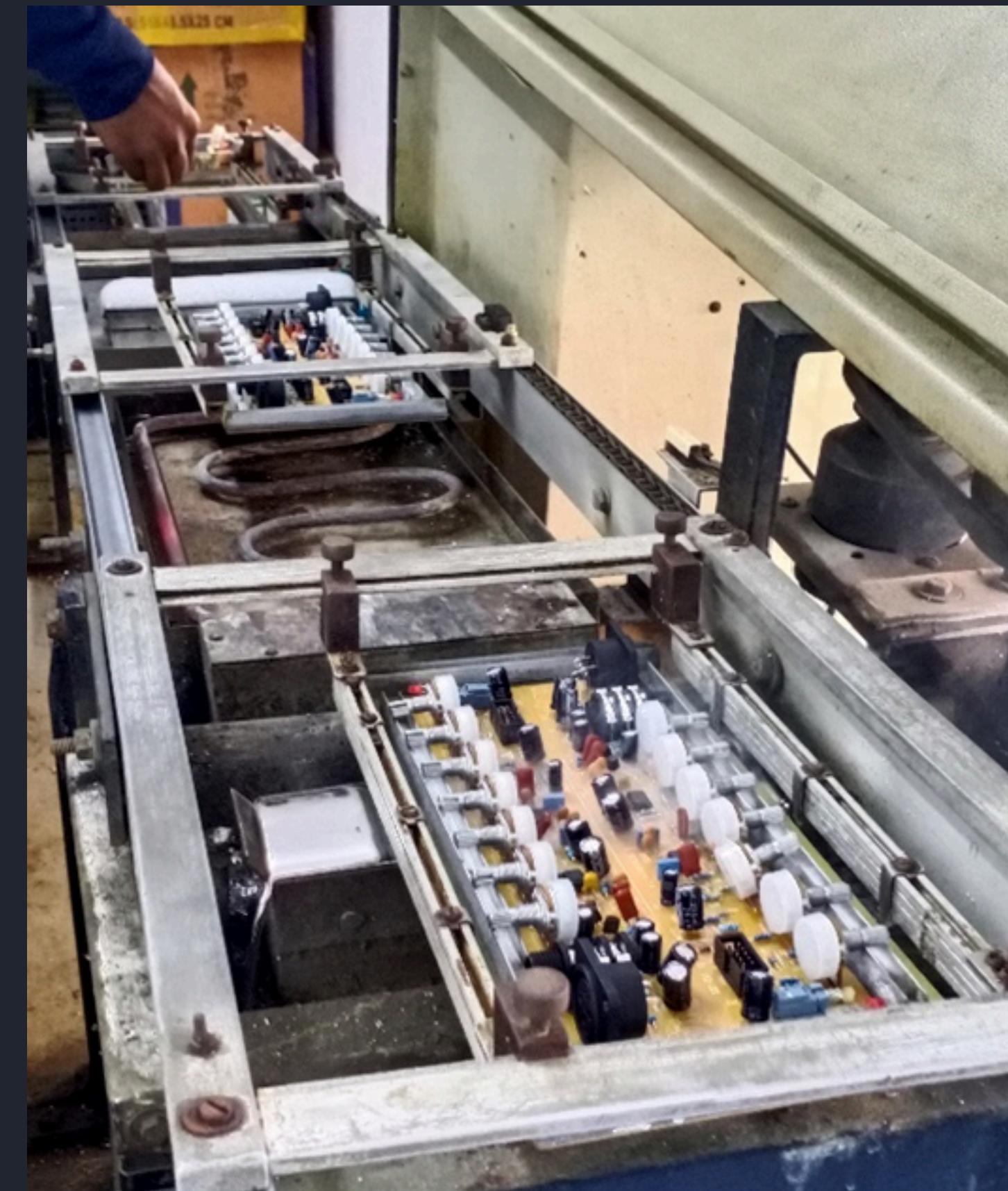
MACHINE USED

WAVE SOLDER (18000 W, Aplab)

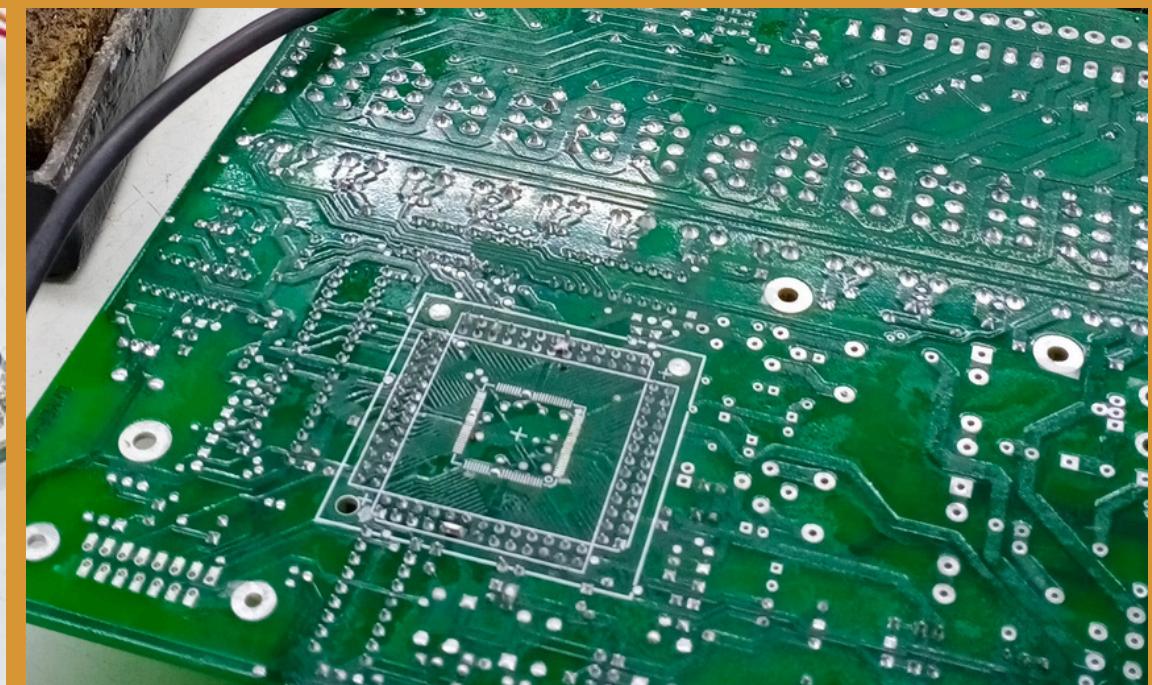
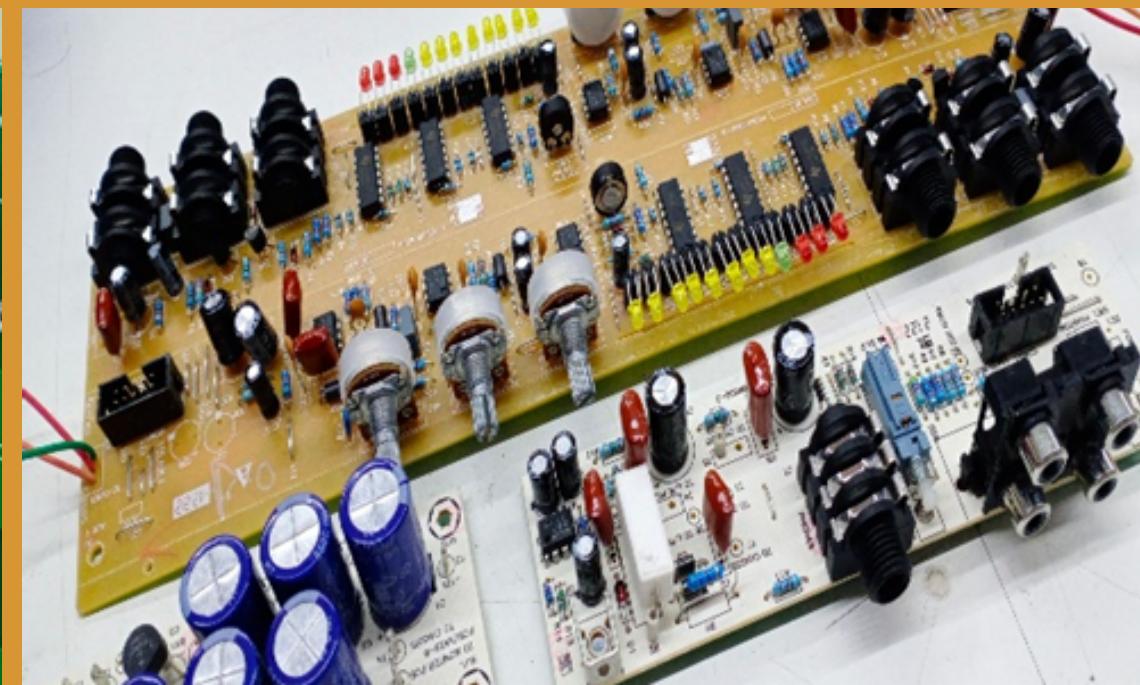
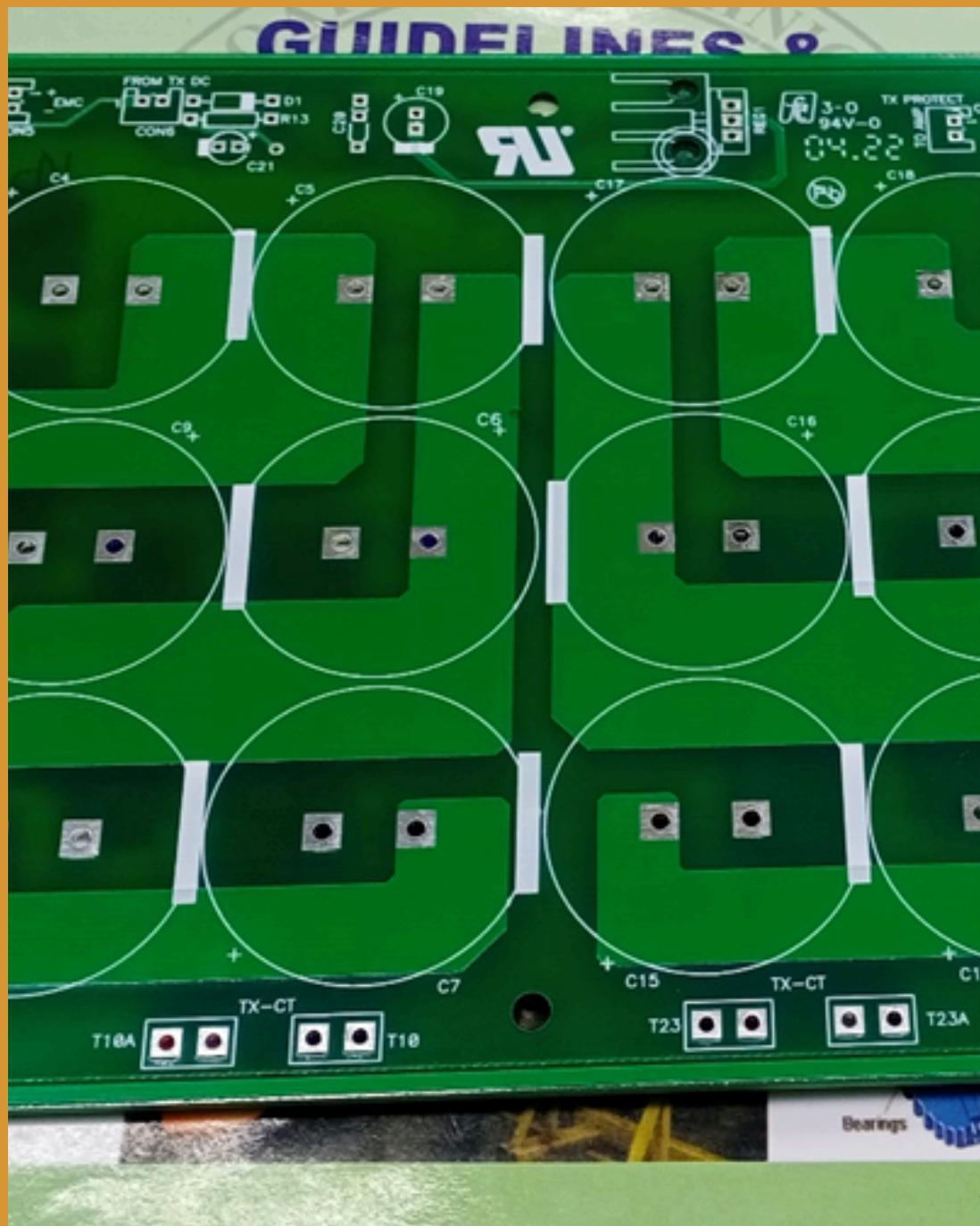
THIS MACHINE HAS 3 PARTS :

1. FLUX (-99°C)
2. PRE-HEATER (99°C)
3. SOLDER (90°C)

THE STUFFED PCB IS PLACED ON A TRAY AND AUTOMATICALLY PASSED THROUGH THE 3 PARTS OF THE MACHINE HENCE SOLDERING THEM IN A VERY SHORT TIME.



THROUGH HOLE



SMD

SMD/SMT

STENCIL PRINTER (4 FEET , 40 - 50 W)

THIS IS A MANUAL MACHINE WHICH PASTES SOLDER ON THE DRY PCBs FOR THE SMD COMPOMENTS TO STICK PROPERLY ON THE PLACE UNTIL OVENED HENCEFORTH.

PICK AND PLACE MACHINE (YV100-X , 13K - 14K CPH)

THIS MACHINE NEEDS SOLDER PASTING, PROGRAMMING, POSITIONING OF COMPONENTS, LOADING COMPONENT REELS ON THE FEEDER, OVENING QUALITY CHEKCING AND PACKAGING OF PCBs.

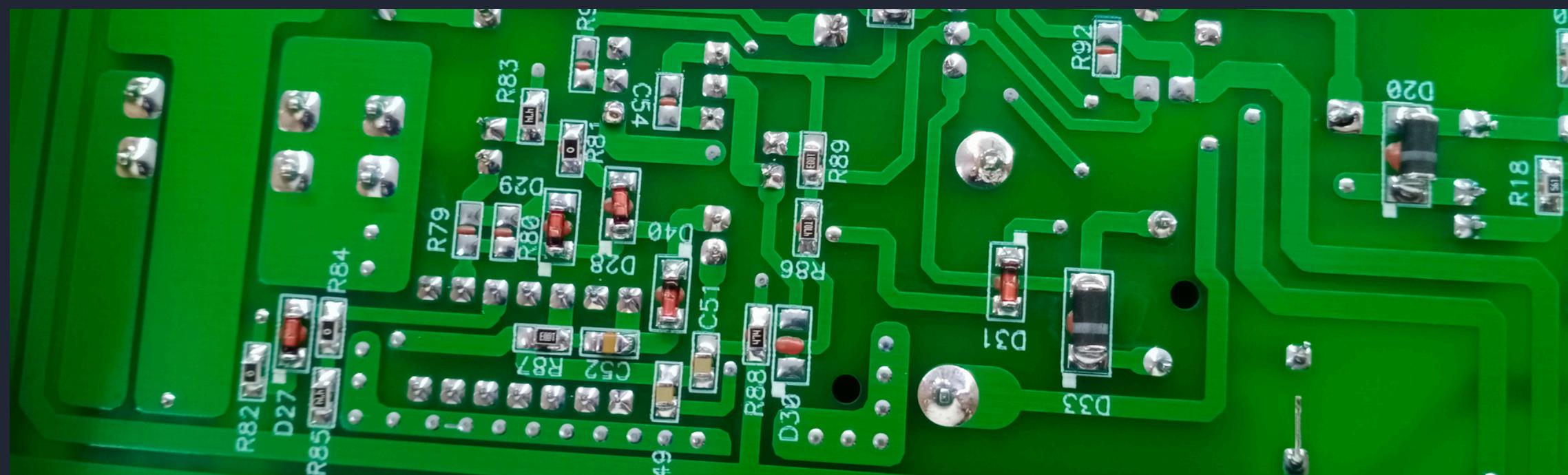
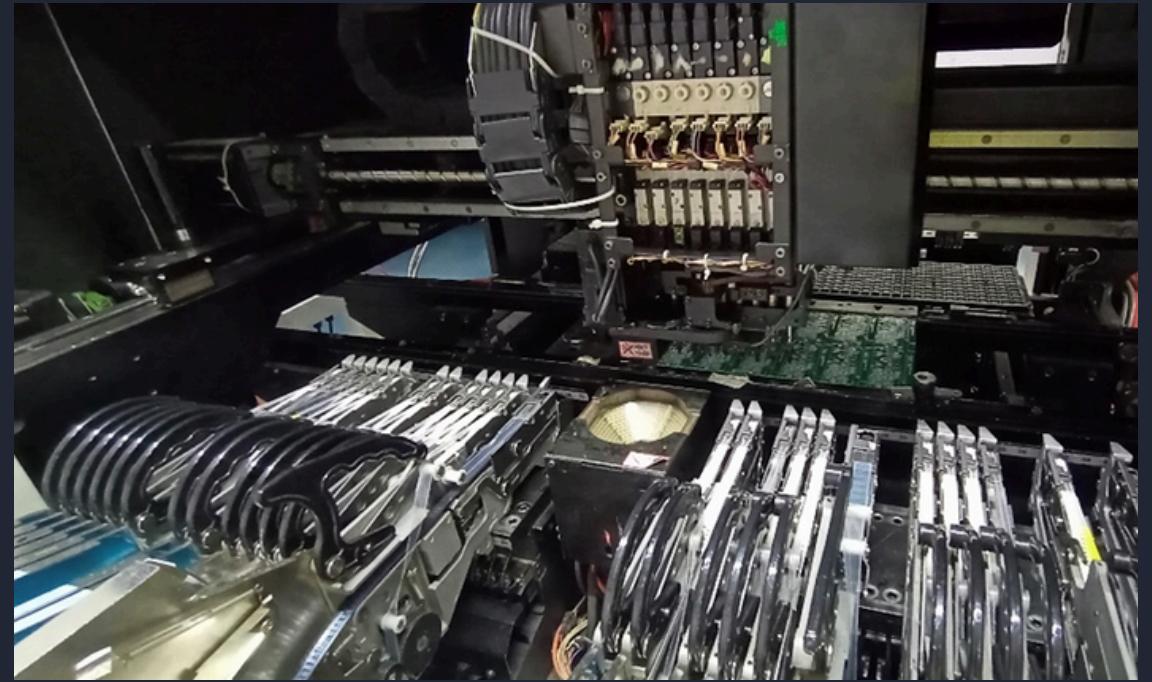
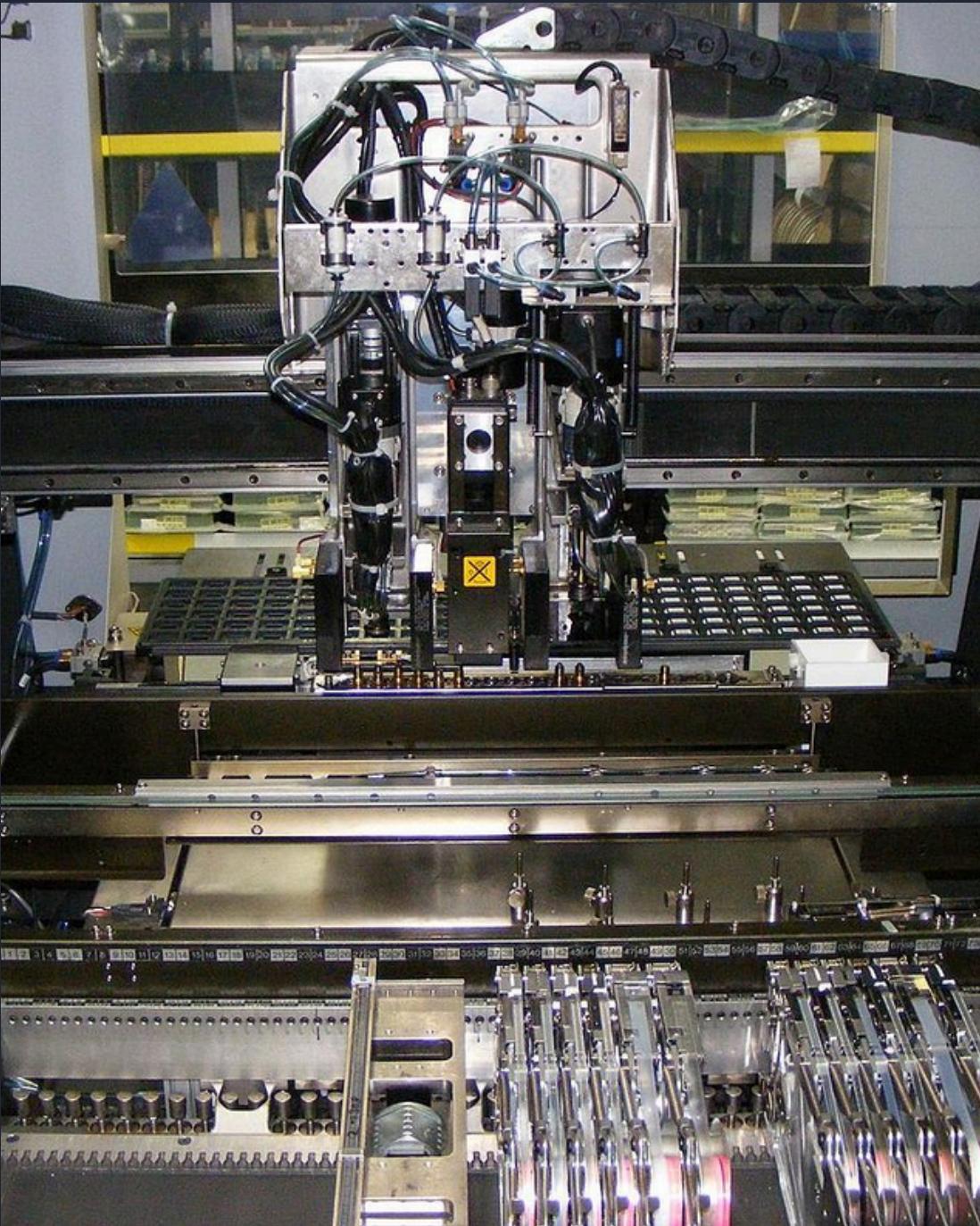
REFLOW OVEN (PUHUI , 5 ZONE , 1500W)

THIS MACHINE COMES IN USE WHEN PCBs GET SOLDERED FROM PICK AND PLACE MACHINE AND THE PASTED SOLDER NEEDS TO BE DRIED AS THE COMPONENT NEED TO STICK PROPERLY TO THE PCB.

PICK AND PLACE MACHINE (FCM - MULTIFIX , 50K CPH)

THIS MACHINE IS USED ONLY FOR LEDs. FOR MAKING TUBE LIGHT STRIPS THIS IS A SPECIAL KIND OF PICK AND PLACE MACHINE OF 50K CPH .

S M D / S M T M A C H I N E S



QC



QUALITY CHECKING / VISUAL INSPECTION

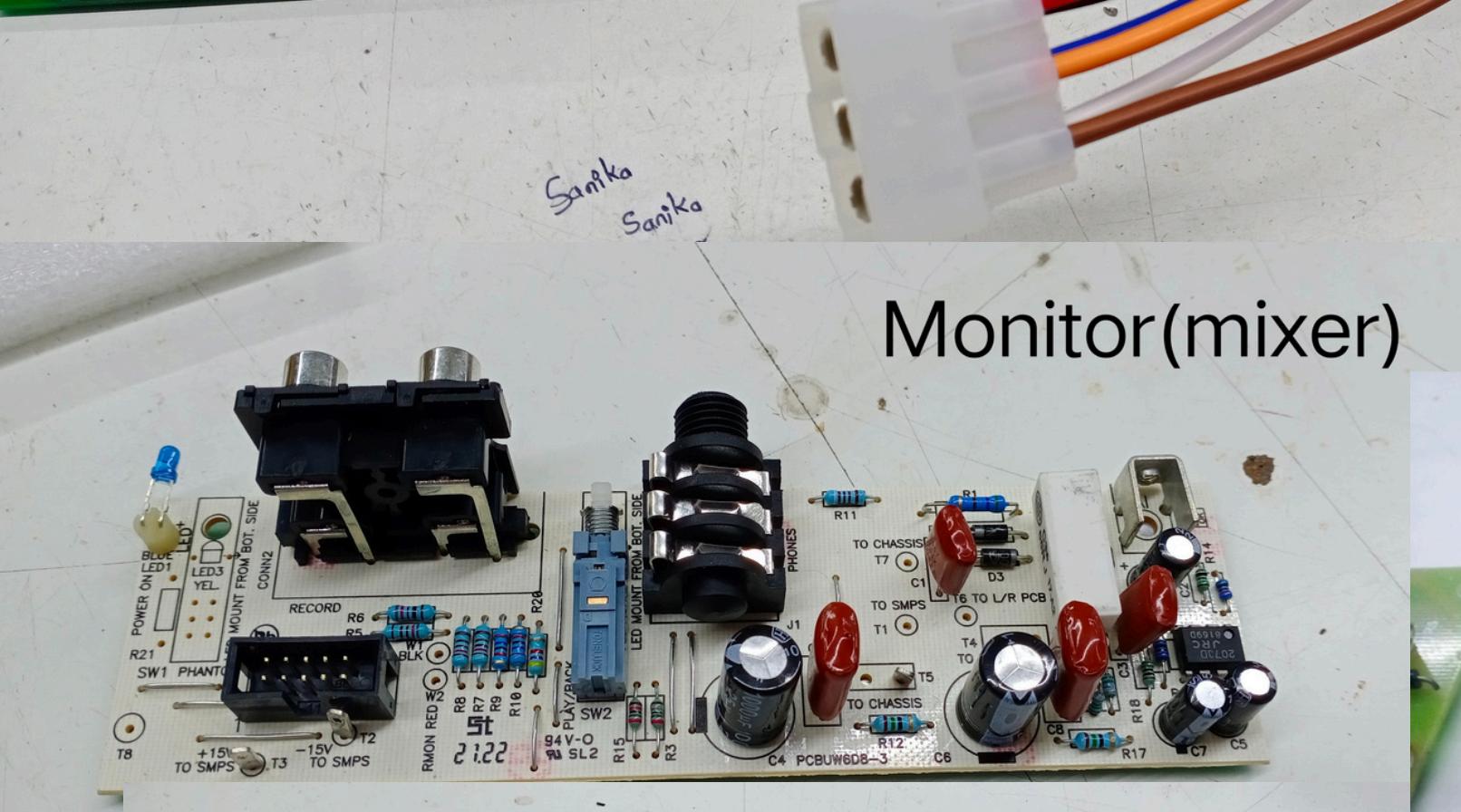
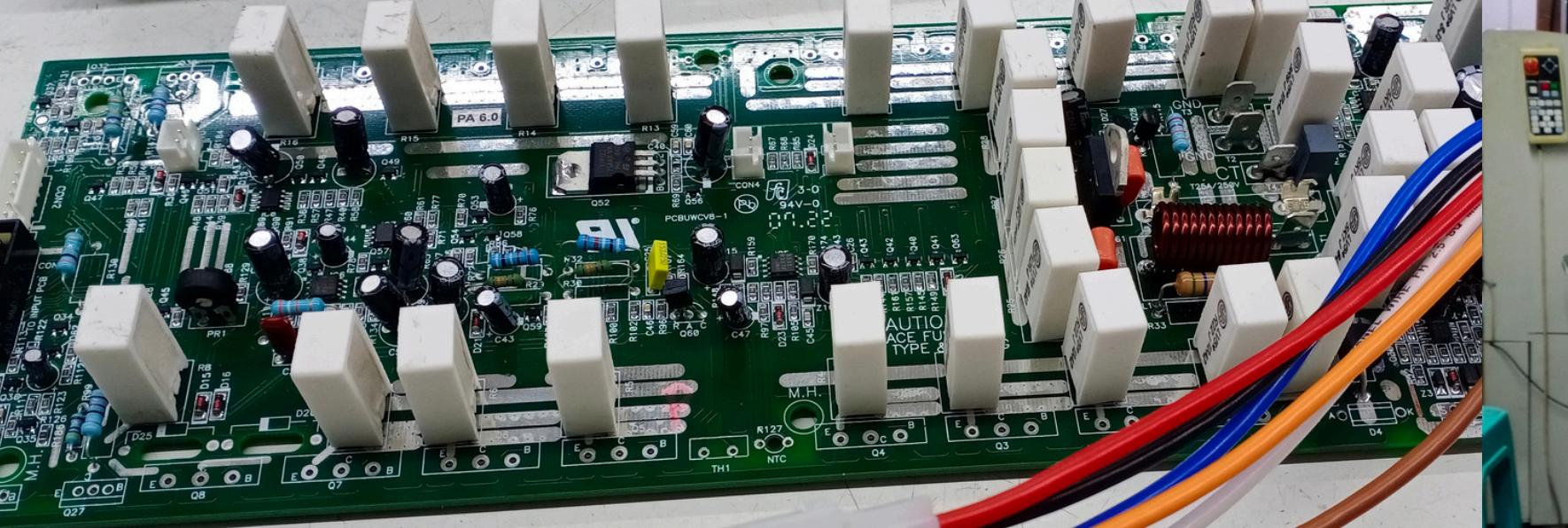
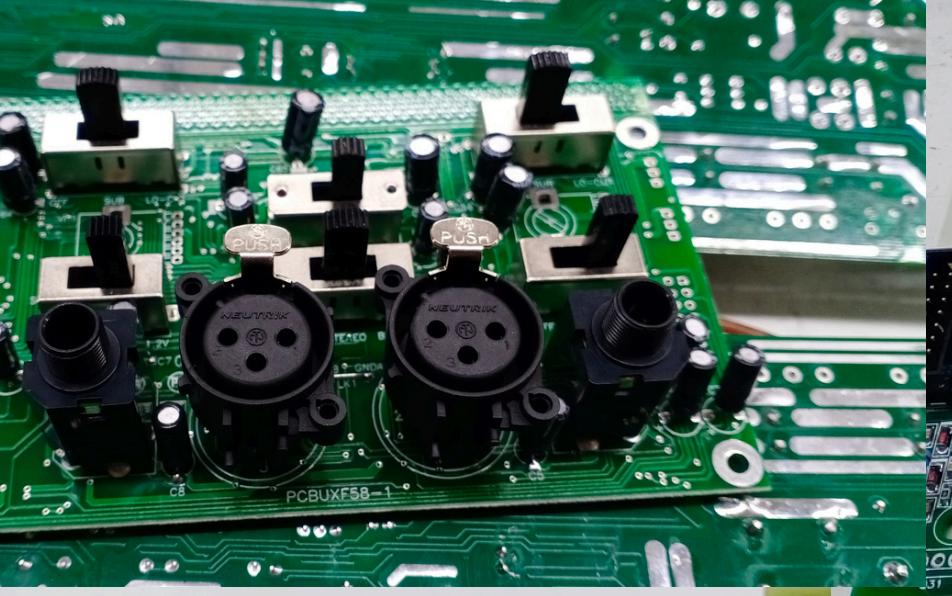
THIS DEPARTMENT USUALLY CHECKS WHETHER THE POLARITY OF THE COMPONENT IS RIGHT OR NOT, SOLDER HAS GONE OUT THE TRACK OR NOT, IF YES THEN SORTING IS DONE PROPERLY, IF ANY COMPONENT IS OUT OF PLACE, IT IS PLACED PROPERLY.



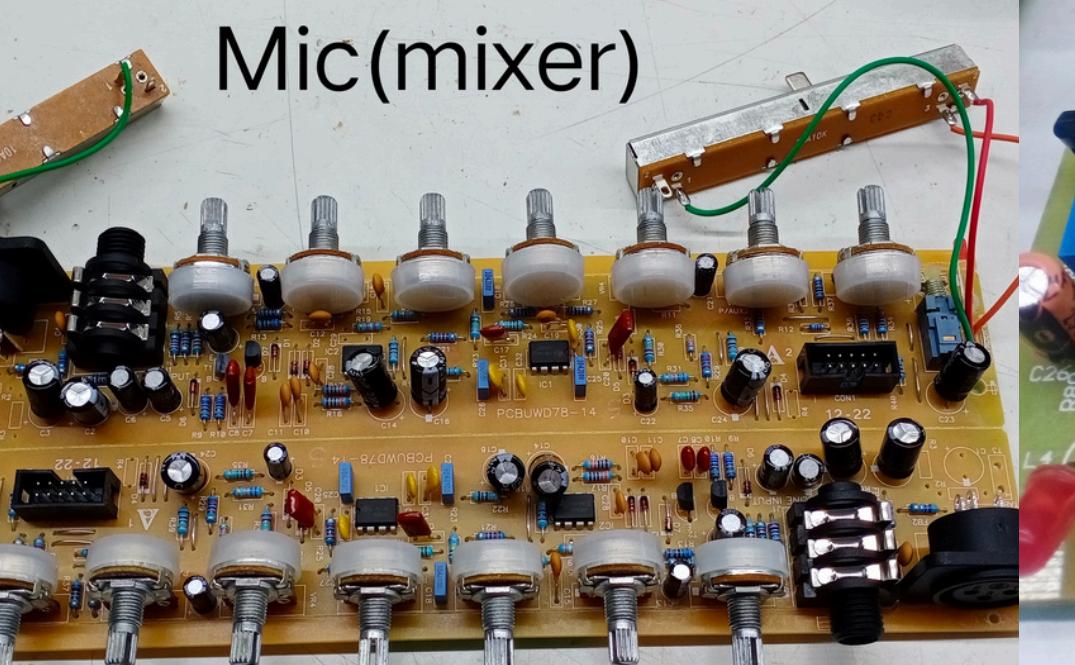
CLEANING ELEMENT

FOR ELECTRONIC PRINTED CIRCUIT BOARD (PCB) ASSEMBLY, ISOPROPYL ALCOHOL IS BEING USED EITHER TO CLEAN FLUX RESIDUES FROM RECENTLY SOLDERED CIRCUIT BOARDS, OR IN PCB REPAIR AND REWORK.

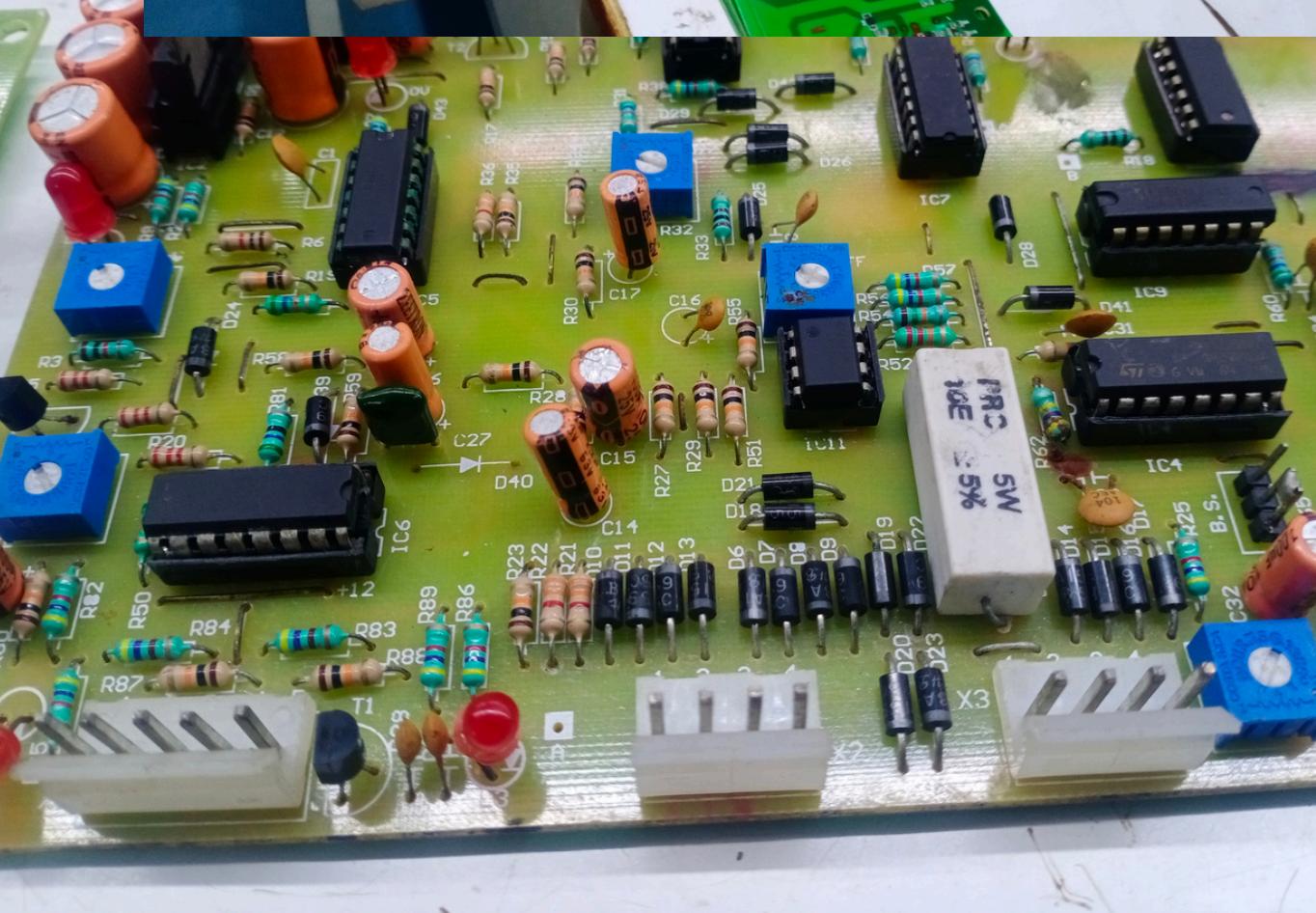
IPA IS ALSO USED TO REMOVE SOLDER PASTE OR ADHESIVE FROM SMT STENCILS.



Monitor(mixer)



power supply (mixer)



WEEKLY REPORT

WEEK 1

STARTING OFF WITH KNOWING THE COMPONENTS AND PLACING THEM ON DRY PCBs STEP WISE. FIRSTLY, JUMPERS, RESISTORS, CAPACITORS, DIODES, LEDs, POT, ETC ARE PLACED ACC TO THEIR SIZE.

WEEK 3

THIS WEEK WAS ABOUT KNOWING HOW TO DO QUALITY CHECKING, CLEANING PCBs, WITH THINNER, IPA AND CHECKING THE READY PCBs WITH A BOM. (BILL OF MATERIAL)

WEEK 5

LEARNT HOW TO HANDLE THE MACHINES LIKE PICK AND PLACE, REFLOW OVEN ETC, THE STEPS INVOLVED IN MAKING PCBs, TEACHING WHILE PRODUCTION AND SO ON

WEEK 2

IN THE FIRST FEW DAYS OF THIS WEEK, I HAVE BEEN OBSERVING HOW EXACTLY THE WAVE SOLDERING MACHINE WORKS AND LATER ON DOING TOUCH UP, CUTTING THE EXTRA LEADS OF RESISTORS AND CAPACITORS ETC.

WEEK 4

CHANGED MY DEPARTMENT TO SMD SECTION AND STARTED OFF WITH KNOWING SMD COMPONENTS AND THEIR PACKAGES OF RESISTORS, CAPACITORS, DIODES ,ETC. AND GOT A ROUGH IDEA ABOUT MACHINES.

WEEK 6

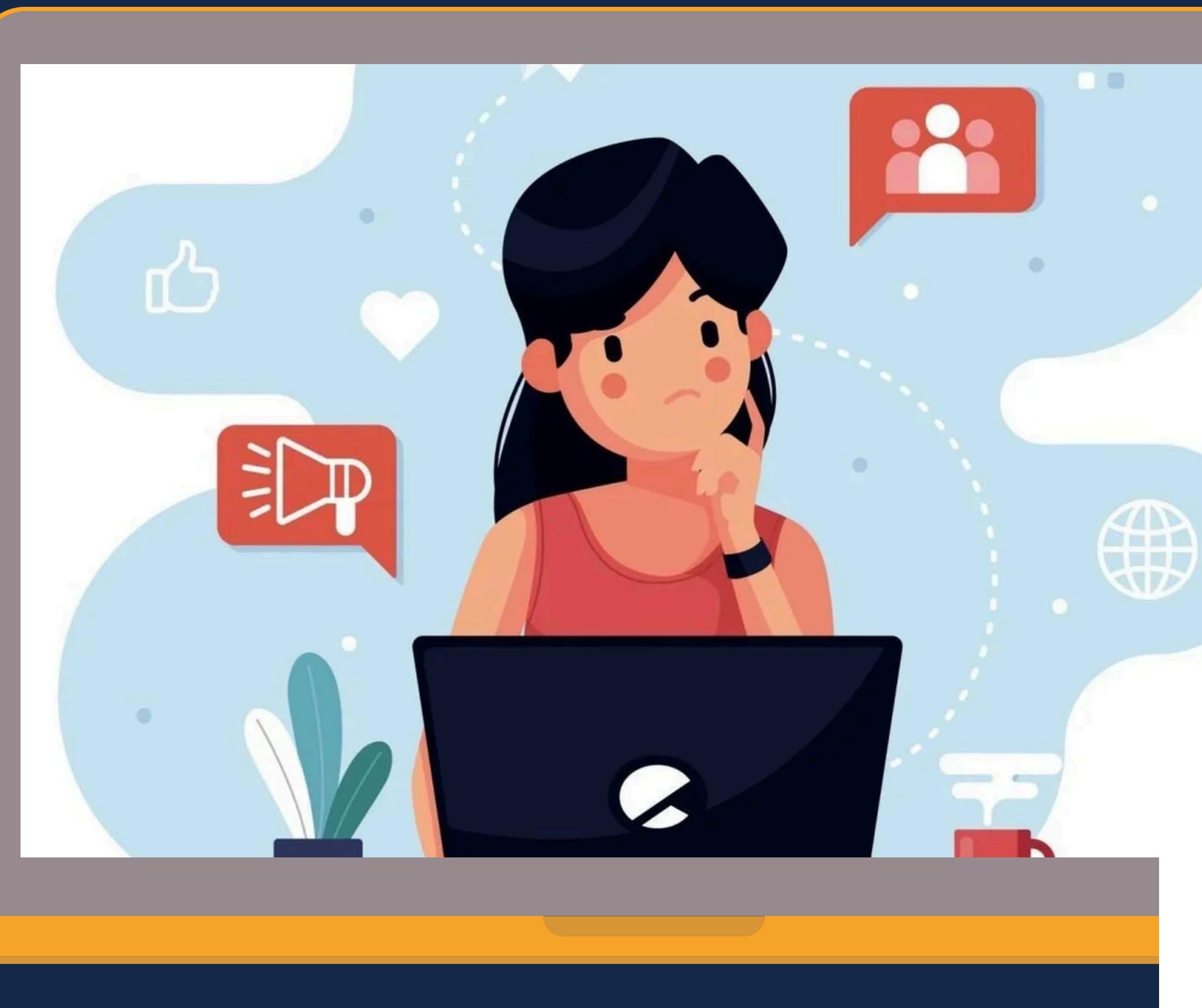
LEARNT AND DID MANUFACTURING OF 100 PCBs FOR ABOUT 2-3 DAYS AND THEN OVENING THEM AND LATER PACKING THEM INTO PIECES OF 25 EACH.

CONCLUSION

CONCLUSION

THIS INTERNSHIP PROGRAM WAS A GREAT OPPORTUNITY FOR ME TO INTERACT WITH ELECTRONIC MANUFACTURING MACHINES AND HOW THEY OPERATE.

IT GAVE A BETTER IDEA OF MANUFACTURING OF PCBs.



THANK YOU

