

Soldering Robot and Types

Everything you need to know about a Soldering Robot

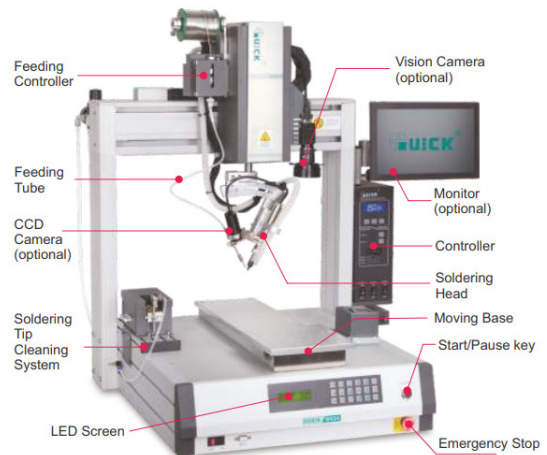
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A **Soldering Robot** is an automatic **Soldering Station** (soldering machine) that is specifically designed and manufactured to do repetitive mass soldering jobs very precisely. It is an ideal machine for soldering small chip components (SMDs) and through-hole components on the Printed Circuit Board (PCB) very accurately.

All the soldering joints made by the Soldering Robot are identical and can be greatly customised to address the exact needs of a manufacturer. It not only gives you accurate and identical solder joints but also saves a lot of money on unnecessary wastage of **solder wire**. Some of the Soldering Robots can save up to 60% soldering cost when compared to manual soldering jobs.

A soldering robot is relatively faster than a conventional soldering station (with auto solder feeder) and manual hand soldering (using soldering iron). However a soldering robot is comparatively slower than 'wave soldering system' and a 'reflow soldering system'. The advantage of a Soldering Robot is that it is very cost effective when compared to Wave Soldering Station and Reflow Soldering System.

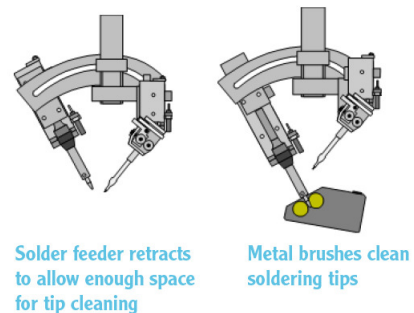
A Soldering Robot gives one of a kind synergy of precision, reliability and continuity of soldering tasks. It has a robust and sturdy construction design to give precise soldering joint every time you turn it on.



A Soldering Robot is very flexible and can be programmed to handle various sizes of PCB and complexities of a circuit board – without compromising on quality, reliability and speed.

A high resolution **illuminated cameras** fixed directly on a soldering joint gives a real-time magnified view of each solder joint for Processed Steps and Quality Assessment (and monitoring).

A Soldering Robot comes with an integrated tip cleaning system that is an effective solution for tip cleaning without any additional cumbersome chores for the operators. Soldering robots come with variety of tip options and various wattages to handle all types of soldering requirements.



Soldering wire feeder unit is located very close to the soldering tip. Soldering wire is very gently pulled from the solder wire reel minimizing any tolerance deviation resulting in precise dispensing of solder wire on to the Printed Circuit Board (PCB).

Software that operate the Soldering Robots are designed very carefully, they are easy to learn and are self-explanatory. Drop down menus makes your job of configuring a soldering task a lot easier. With just few clicks your soldering robot is customised to solder your components on a PCB accurately and immaculately.

Soldering Robot has an inbuilt fume extraction system that absorber particles, fumes and gases to protect the operator, work place and equipments.

A Soldering Robot increases productivity without making a deep hole in your pocket. The benefits are immense.

Soldering Robot Axis

Traditionally there are 3-Axis and 4-Axis type soldering robots currently available in the market X-Y-Z and R.

- **Three Axis Soldering Robot**

It is the type of [Soldering Robot](#) where the soldering tip is moved in 3 directions – X, Y and Z. Where Z is the movement of base plate (where the PCB is placed for soldering). It is the cheapest one available in the market. There are various brands like Quick, Weller, Hakko, Thermaltronics etc.



- **Four Axis Soldering Robot**

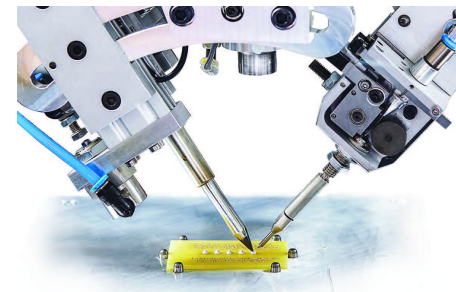
It is the type of Soldering Robot where the soldering tip is moved in a conventional 3 directions – X,Y and Z, plus there is an angular momentum of the soldering tip to ensure that the soldering joint can be more customised (for angled joints). Here soldering tip can change it's angle to exactly match the any angular surface on a PCB to make a joint in a specific direction. These type of soldering robots are relatively expensive than Three Axis Soldering Robots.



- **Six Axis Soldering Robot**

It is a new type of Soldering Robot that strictly complies with soldering standards set by the IPC. It works slightly different than the 3-Axis and 4-Axis type soldering robot.

Conventionally a solder wire is fed to the soldering tip to perform a solder joint on a PCB. However, as per the IPC soldering standards – the solder needs to be fed to the joint and NOT to the soldering tip. So the manufacturers (like Thermaltronics) came up with a Six Axis Soldering Robot that has two independent mechanisms one feeds the soldering wire to the joint (to be soldered) directly and the other mechanism performs solder on to the PCB yielding more efficiency, reliability and accuracy.



Six Axis Soldering Robots are expensive but worth looking for if your company stringently needs to comply with the set IPC standards.

Where to buy a Soldering Robot?

[Soldering Robot in India](#) can be purchased at:

INDE Enterprises

Contact Persons: Mr. Paras &/or Mr. Romesh

Mobile: 9316134502

Email: info@indeonline.in

Know more about the available soldering robots here:

<https://indeonline.in/inde/category/robots/soldering-robots/>