



ezPick

Bench Top SMT Pick & Place System

The innovative, patent pending, ezPick SMT vacuum pick and place system provides an elegant, low cost and highly efficient solution to overcome the difficulties of manual SMT prototyping and small batch SMT printed circuit board assembly.

The ezPick system features the magical combination of multi-axis-multi-direction motion, high quality RF remote controlled vacuum pump, agile finger controlled pickup head and gliding X and Y axis operator hand rest. Together, these features assist the operator in assembling SMT circuit boards with fine precision, speed and with maximum comfort.

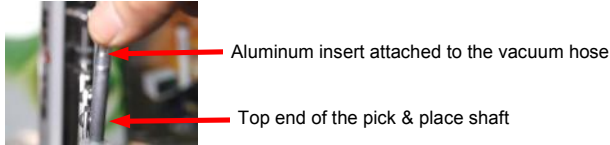


- High quality 12VDC diaphragm vacuum pump
- DC power supply included
- Vacuum ON/OFF control via foot switch
- Configurable for Left Handed or Right Handed operators
- Smooth Ball bearing slides provide effortless motion
- Includes Interchangeable component pick and place tips and vacuum cups
- Includes case of 20 component storage canisters for bulk component picking
- Includes 7 SMD cut tape feeders for 3 common tape widths: 8mm(5), 12mm(1), and 16mm(1)
- 360° rotational PCB deck, ball bearing assisted
- X and Y axis Gliding hand rest
- Spring assisted Z axis pick & place for up, down and center-rest positions
- Multi-axis-Multi-direction motion for rapid component picking & placing
- Assembled and fully operation in minutes
- Small 12in. x 17in. footprint for bench top use
- Approx. 24in. x 17in. operating footprint
- Accommodates PCB sizes up to 9 x 9 inches.
- Perfect for R&D labs
- Perfect for small batch surface mount component assembly and SMT prototyping

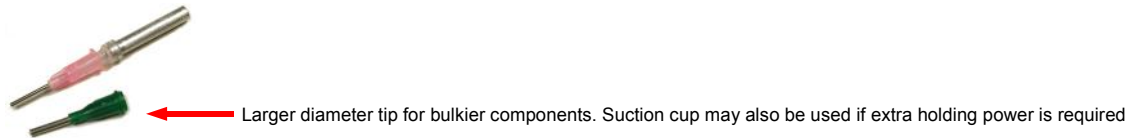
Setup

The ezPick system is supplied fully assembled, with the exception of the vertical support pillar of the pickup expansion arm. This is to economize on freight costs and to prevent possible damage during shipping. Assembly of the support pillar takes only minutes to fasten four screws to mount the pillar into position. ezPick may be configured for left hand or right handed operators through mirroring the main assemblies.

1/ The vacuum air tube is fitted with an aluminum tube insert at one end. This end fits intimately into the top opening of the pick and place shaft. The other end of the vacuum tube slips onto the vacuum port on the front panel of the ezPick vacuum pump. Make sure there is no kinking anywhere in the vacuum air tube that will inhibit air flow. Tip: Sufficient slack must be provided on the vacuum tube to allow full expansion of the arm.



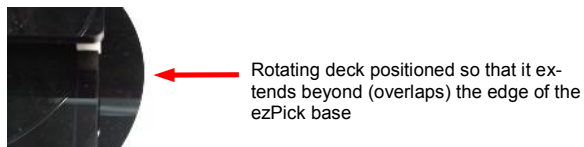
2/ Insert (or exchange) the interchangeable pickup tip of the desired size into the bottom end of the tip head assembly. The tip head assembly slides easily into and out of the pickup shaft to facilitate tip changes. The smaller diameter tips are ideal for small components such as 0805 and smaller chip components such as 0603 and 0402. The larger diameter tip is ideal for larger SMT components such as SOIC packages. For the bulkier components such as 44pin PLCC's, the included suction cup may be inserted onto the smaller diameter tip end to provide extra pick and place. This provides the extra holding power that may be required for bulky components.



3/ Plug in the 12V DC wall adaptor to the DC socket at the rear of the foot switch controlled vacuum pump. If the pump switches on when plugged in, key the transmitter to switch the pump off.

4/ Position the removable rotating deck so that it is offset to the right of the ezPick base (or to the left for left handed models)

The ideal position is with two of the four rubber feet in line with the right edge of the ezPick base. (or to the left edge of the ezPick base for left-handed configurations)



5/ Position the hand rest slide (truck) on the top deck



6/ Place your PCB onto the rotational PCB deck and organize your bulk component feeders (tins) and/or cut tape feeders on the rotating PCB deck or a preferred position according to your workflow, ready for picking and placing.



7/ ezPick should now be set up and ready for pick and placing components. With the hand edge resting on the truck and the pickup pencil gripped between thumb and forefinger move to pick a component from a components canister or tape feeder. Momentarily tap the foot switch to run the pump for component picking. After picking up a component move to its location and place the component, then tap the foot switch again to switch the vacuum pump OFF to finish placing the component.

TIP: The solder paste typically has enough tack to hold some components in place without the need to release the vacuum to complete a component placement. This way, you can leave the pump running as you continue to pick and place components, and then only cycle the vacuum when needed

8/ Plug in the foot switch into the foot switch socket located at the rear of the vacuum pump. A full press on the foot switch operates the pump continuously. A light press on the foot switch will operate the pump momentarily.

Operating Suggestions

With just a few minutes of practice will have you operating the ezPick with speed and agility. Practice your own techniques to discover your preferred operating regime. Start by experiencing the mutli-axis-multi-direction motion of the ezPick slides, hand rest and pickup tube. You will immediately recognize the extraordinary control you have at your finger tips to begin picking and placing components with the ease, agility and remarkable precision.

SMT Components for Volume production and for Small batches for ezPick

When SMT components are purchased for volume applications, they are typically supplied in taped reels which are attached to automatic reel feeders on high end CNC pick and place machines costing thousands of dollars. For prototyping and small production batches, SMT components are available and supplied in small quantities of 'cut tape'. Cut tape is simply a small quantity that has been physically cut from a large quantity reel. ezPick system is designed to adapt to the use of cut tape, where the components can be removed from the cut tape and organized into the small component canisters included with ezPick. The ezPick canisters serve as components storage, component organizing and as **canister component feeders** for ezPick pick and place. Additionally, ezPick includes three cut tape feeders for common tape widths of 5mm (5pcs), 12mm (1pc) and 16mm (1pc).



ezPick canister component feeders. The adhesive labels sheet allows for labeling the lid **and** canister for ultimate organization and component/project management



Cut Tape feeder. Feed the component tape into the modular feeder. Peel back the tape film to expose the components for picking. Feed the pulled film back through the top feeder slot. Then, when retracting the film will advance the cut tape forwards to expose the next component for picking.

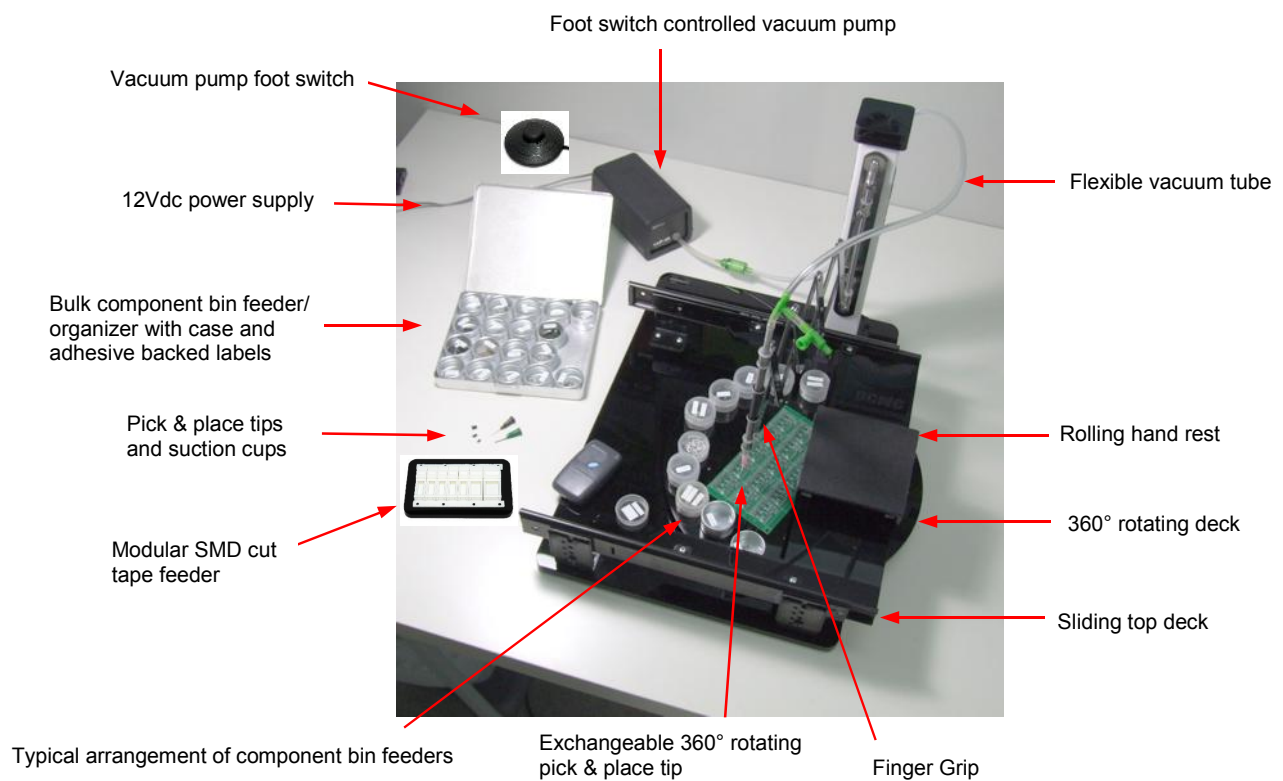
Using suction cupped tips

The air flow and vacuum pressure is sufficient for most components to be placed without the use of vacuum cups. However for those bulkier components, the use of vacuum cups may be necessary.

Vibration Damping

Gentle vibration from the vacuum pump may be dampened by placing the pump on top of a user supplied soft foam or sponge.

ezPick Anatomy



Left Handed or Right Handed Reconfiguration

ezPick may be reconfigured for left handed or right handed operators by simply (1) moving the vertical post (z-axis assembly) to the adjacent side and (2) by rotating the XY slide assembly 180 degrees.

The reconfiguration is simple to do and takes only a few minutes.

Package Checklist

- Base XY axis assembly
- Rotating platen
- 3x Pickup tips
- 3x Small, Medium ,and Large suction cups
- Vacuum pump
- Foot switch
- 12V DC power supply (North American plug) (International customers please see *note below)
- Z axis Expanding Arm Assembly
- 4x #6-32 cap head socket screws with 4 nuts and 4 washers
- Hand rest
- 1x case of CBF20 component bin feeders
- 1x sheet miniature bin labels
- SMD cut tape feeder module with 7 feeders: 5x 8mm, 1x 12mm, 1x 16mm
- User Manual

Note:

Due to different mains outlet plug styles around the world, the vacuum pump DC power supply is included for North American orders only. Non-North American customers will need to supply their own suitable power supply adaptor or provide an alternative suitable DC power supply for their region. Any wall adaptor type power supply, that provides the following output characteristics will be suitable to power the ezPick vacuum pump:

- 12V DC
- 1000 mA (minimum)
- Standard 2.1 mm barrel type connector with centre positive polarity