

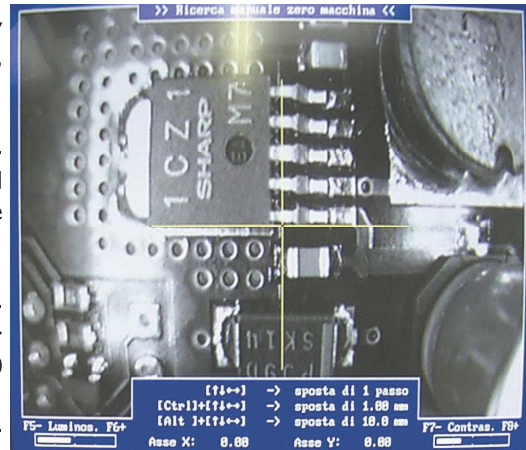
TWS AUTOMATION

Programming modalities: Programming can be performed by several ways as teaching through camera, data loading via CAD file, data entry directly via keyboard .

Automatic fiducial recognition: At the beginning of every assembly cycle, the camera automatically moves to the memorised reference points, searches for their exact position and adjusts the placement positions, for better precision.

Dispensing of adhesives and solder paste: The optional dispenser enables easy and rapid dispensing of adhesive and solder paste. The dispenser is simple to set up and achieves over 4000 dots per hour.

An additional volumetric dispenser, not supplied by TWS Automation, could be mounted on the machine.



Quadra Basic (ref. code: **UX0PPLQ0XX**)
Quadra Basic with dispenser (ref. code: **UX0PPLQDIS**)

TECHNICAL SPECIFICATION

- **Components size and type:** The unit can mount chip components from 0603, Melf, Mini-melf, cylindrical components, Sot transistors, diodes, integrated circuits with 0.8 mm pitch (31.5 mil) up to 35 mm, PLCC and LCCC integrated circuits up to 35 mm, trimmers, inductors, connectors, aluminium electrolytic capacitors up to 10.5 mm high.
- **Placement Area:** 440 x 360 mm. For larger boards, the placement area can be extended by removing feeder magazines on one or two sides of the machine, making the maximum board size 550 x 420 mm.
- **Productivity:** 3400 components per hour. The average productivity is 2800 components per hour.
- **Placement Head:** The unit is supplied with a dual-spindle mechanical centring head where the centring is by means of 4 jaws. The placement head moves along the X and Y axes. Each head is equipped with a vacuum sensor to detect component pick-up failure and to command a new pick-up cycle.
- **Axes Movement:** Stepper motors driven by a controlled gradient, allowing the head motion to accelerate and slow down at the starting and stopping points.
- **Resolution:** 0.02 mm on X and Y axes 0.45° on the Theta axis rotation.
- **Repeatability:** ± 0.12 mm on X and Y axes ± 0.45° on Theta axis
- **Accuracy:** ± 0.20 mm on X and Y axes 0.90° on Theta axis rotation
- **Noise:** 65 dBA (average value), measured at 1 meter from the unit and 1.6 meter from the ground.
- **Power Supply:** AC 230Volt ± 10%, 50/60Hz. Power required less than 1 kW.
- **Air:** : 8 –10 bar air @ 60 Lt / min.
- **Dimensions:** 850x1000x1800 mm (Depth x Width x Height). *The machine needs at least 2 square meters area (including the unit itself) to operate correctly.
- **Weight:** 215 kg
- **Packaging:** 960x1200x1650 mm (Depth x Width x Height)
- **Gross weight:** 300 kg

PICK & PLACE QUADRA BASIC

The TWS Automation Quadra is suitable for prototype and/or for small to medium sized manufacturing batches, representing a lower cost option in the TWS Automation Pick & Place range.

The Quadra Pick & Place machine is supplied with a dual spindle mechanical centring head where the centring is carried out by means of 4 lightweight jaws and if requested, can be equipped with a dispenser for adhesives and solder paste.

The machine accommodates up to 120 feeders in total, in tapes from 8 mm to 44 mm width, 7", 13" or 15" reel diameter and any kind of stick and tray.

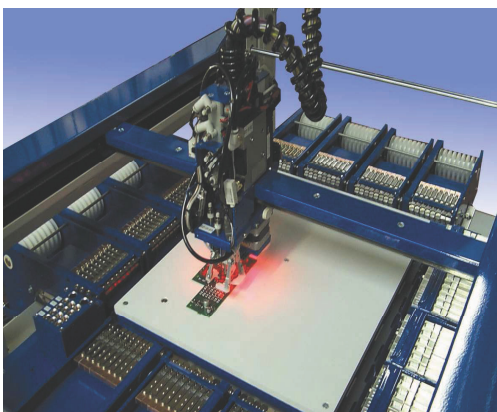
The most important features are:

Cost effective: the machine, having mechanical centring, has been designed to considerably reduce the capital equipment cost compared to other similar machines currently available. The low cost of the feeders enables users to work with a large feeder inventory to speed up the assembly operation.

High durability: the simple mechanical design uses no delicate mechanisms, and the Quadra has been tested to have a long and reliable life span.

Easy to manage: the machine's software uses very simple menus, enabling the operator to gain a high level of confidence in a short time.

The machine comes with a detailed user manual and maintenance guide, and with a practical guide for assembly that includes all stages of production, such as SMD component analysis, solder paste, adhesives, screen printing, soldering, board inspection and verification, repairing and cleaning.



Easy to maintain: all parts of the machine are easy to access and maintain. Maintenance can be carried out by the Operator, who can, if required, call upon our assistance if needed.

The machine is driven by an industry standard PC. Spare parts are low in cost and always available from stock with a fast turnaround.

An integrated system provides diagnostics for testing and measuring power absorption of the boards inside the machine. The integral CPU also controls the machine I/O's such as vacuum, electro-magnets, laser centring, axis movement and status of the limit switches.

Quick feeder changeover: the feeders can handle various tapes or stick sizes.

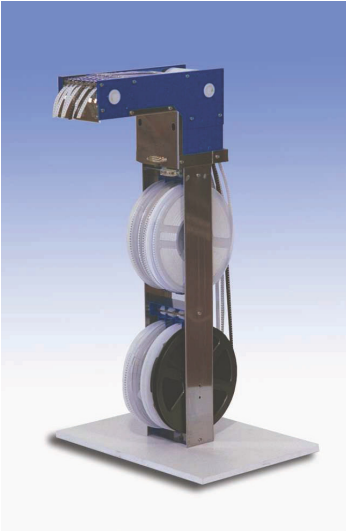
New feeders can be prepared off-line in order to reduce downtime for program changeovers.

High numbers of feeders: The unit can handle all the main types of components and accommodates up to 120 feeders in total, in tape from 8 mm to 44 mm width with 7", 13" or 15" reel diameter.

A catalogue is available for stick components. IC lanes for components not listed in the catalogue may be prepared in a short time.



FEEDER BANKS MOD.608 (TAPES) AND MOD.808 (STICKS)



REF. CODE: KAPPLC6080

Tape feeder bank model 608

The new smart feeder banks increase their performance: new motor, new belt to improve their reliability, new recognition system through a new electronic control. The feeders are organised in banks which can accommodate up to eight reels. This dramatically reduces both costs and set-up time.

The feeder banks are configurable. The operator may decide at any time to change the combination of tape sizes. For instance, three 8mm tapes can be replaced with two 12mm tapes or one 16mm plus one 8mm tape. The feeder banks can be thus configured to suit individual requirements. Feeder sets are available for virtually every kind of tape on the market.

Reels can be replaced easily and quickly.

The work principle is very simple and reliable, tested on thousands of feeder banks already sold. No maintenance is needed.

REF. CODE: KAPPLC8080

Stick feeder bank model 808

Stick feeders are also organised in similar feeder banks able to accommodate up to six tubes, retaining the advantages of low cost and fast set-up speed.

Stick feeder sets for virtually any kind of component and any kind of tube are held in stock. Sets that are not in our catalogue can be custom made in a short time.

The stick feeders work by using a gentle pulse of compressed air which moves the components along the tube to the pick-up position. This is more reliable than using vibration feeders.



The low cost of the feeders banks allows the user to keep a high number in stock, dedicating their use to a specific board or to different customer's boards.

TECHNICAL SPECIFICATION

- **608 feeder bank dimension:** 280x610x100 mm (Depth x Width x Height)
- **Net weight:** 4 kg
- **808 feeder bank dimension:** 150x650x105 mm (Depth x Width x Height)
- **Net weight:** 3 Kg
- **Packaging:** 360x770x150 mm (Depth x Width x Height)
- **608 gross weight:** 5 kg
- **808 gross weight:** 4 kg