THE FUTURE IN SMT ASSEMBLY
New intelligent hyQ Feeder

Mineral cast chassis for optimum damping characteristics

Maximum easy of use with ePlace

Upto 240 feeder slots

Customizable machine finishing

3 step SMEMA inline system

High-accuracy octagonal placement head
Cobra – high-tech for highly flexible placement

“Designed for even more product changes per day, an even bigger range of components, increasing requirements for placement accuracy, speed and availability combined with high quality – Swiss made – engineering.”

Today, SMD boards are being assembled in increasingly small batch sizes. Just in time or set productions require completely different manufacturing methods. It is not just about the placement rate but about the whole programming and set-up concept. Simultaneously, today’s machines have to ensure that future component types and manufacturing technologies can be utilized. The Cobra mounter has been developed to meet these requirements and represents a quantum leap in the area of highly flexible manufacturing for high throughput.

Leading edge engineering technology, the most feeders per m2 in the marketplace, intelligent feeders and set-up concepts, the largest board sizes together with the most compact system sizes and the software based on “eez-technology” ensure highly efficient and economical SMD manufacturing for service providers and in-house production.
High-Tech materials are the basis for innovative assembly technology

**Machines made in Switzerland**
Cobra is being developed and manufactured in Switzerland according to the highest quality criteria.

**Know How**
Based on the experience of more than 5000 systems installed, the pick&place machine Cobra sets new standards in innovative technology.

**Carbon axis**
Carbon fibre composite material is one of the most promising materials of the 21st century. The Cobra’s X-axis is made of it, allowing for numerous benefits including weight reduction, durability and minimized thermal expansion as well as simultaneously higher dynamic and placement rates with reduced mechanical abrasion.
Linear drives with magnesium heat sinks

Using linear drives on the X and Y axes has the advantage of highly dynamic and fast traverse paths, optimum positioning characteristics and a long lifecycle as well as allowing for additional savings in the areas of belt and spindle attrition. Specially designed magnesium heat sinks ensure the motor’s heat dissipation with their efficient heat conduction and low weight.

Mineral cast

The machine’s chassis consists completely of mineral composite. Compared to conventional cast of iron or steel, mineral composite offers the advantages of better vibration characteristics and thermal stability. This combination ensures much higher precision at faster placement rates. Additionally, mineral composite shows an optimal ecological energy balance for manufacturing as well as for future recycling.

Motion system

The main axes, X and Y, are designed as H-portal with coupled Y axes. Each axis has its own, individually controlled linear motor with a high-resolution optical length measuring system, each for ultra-precise and very fast positioning.

The motion system is constructed as a real-time system and uses local control systems that significantly reduce the number of cables in the machine and, consequently, minimizes service cost and downtime. The 1GB connection ensures very short response time by broadband transmission.

Comparison vibration behaviour
One machine for all components

The days of single, dedicated assemblers for quick chip shooting and additional machines for precision placement are now. Cobra mounts all device packages from 01005, QFPs, complex BGAs, QFNs, CSP, bare dies, and connectors to odd shapes up to 50 x 150 mm on a single machine.
High-flex placement head
The eightfold placement head not only enables ultrafast chip shooting but also allows high accuracy placement on all eight axes. Every axis is controlled by closed loop and a servomotor, all of which have high-resolution encoders even on the rotational axes.

Unique transport system
The SMEMA 3-stage transport system accepts board sizes up to 460 x 640 mm (optional 800 x 640 mm). Specially developed support pins and precise clamping ensure perfect fixation during assembly. Both transport rails can be automatically adjusted and allow for customized installations depending on board size and the desired feeder configuration.
Intelligent feeder lanes allow for maximum flexibility

**Intelligent feeder bus**
All machines have an intelligent feeder bus. Feeders are being logged on and off automatically, and all production data are linked via the integrated database.

**Feeder/feeder lanes**
The Cobra assemblers can use all former Essemtec feeders. This ensures downward compatibility and preserves existing customers’ assets.

*hyQ.* Essemtec’s hyQ-Feeder simplify and fasten setup of component reels to SMD pick-and-place machines. Regarding speed, accuracy and reliability, these feeders rank in the world’s top class. They integrate an active tape pull-back system. hyQ-Feeder are available for 8 and 12 mm tapes.
Most feeders per sqm in the marketplace

The machine offers up to 240 feeder positions. In addition to 120 feeder spaces at the front and the back, feeders can be inserted at the left and right side.

Depending on board size, these spaces may be inserted in front or behind the transport system as well as in the transport system. In this mode, it is possible to reach optimum layout and minimum changeover time.

For the Cobra and Paraquda mounter series, there are additional ultrafast and precise feeders available that augment the placement rate of these models by 20 percent.
Throughput instead of placement speed

Throughput vs. placement speed
The given figures for placement speed do not tell much about possible board throughput. Especially in the area of highly flexible manufacturing, there are various more significant parameters that influence the attainable results.

Programming (ePlace)
Cobra is the second generation of assembly systems based on “ePlace,” the new software standard for pick&place machines.

ePlace, the new software designed entirely by Essemtec, is based on the company’s “eez-technology.” It has been fully developed in .net, uses an integrated database and offers a modern, interactive, intelligent and intuitive tool for controlling all parameters.

Changeover/reloading
The Cobra assembly system has been developed for highly flexible manufacturing and contains all functions necessary for set up and reloading with zero downtime. Using a freely configurable CAD converter, whole assembly programs and production optimizations can be developed offline as well as capturing components and allocating feeders.

During operation it is possible to insert, replace or reload and splice feeders. LED indicators on the feeders ensure that the operator knows exactly how to process the task at hand.

The machine indicates optimal feeder set-ups with the prospective placement speed in order to achieve optimum process conditions.

Upgrading feeders
All feeders are equipped for quick loading. FLX feeders are available in compact and lightweight cartridges. The Cobra feeders allow for even faster loading due to an integrated direct haul-off of the cover band. This eliminates the need for connecting a tape haul-off.

Neither system requires expensive guide adapters without longer for short set up times.
Unique software for best ease of use – ePlace

The Cobra stands out because of best ease of use. This machine features self-opening cover in order to provide both quick and ample access. Simultaneously, the touch screen display can be adjusted ergonomically in height and inclination for each individual operator. The 19” wide touch screen revolutionizes the use of assembly machines. Real-time display of all machine activities, touch screen interfaces, zoom functions in camera windows, a multitude of search and filter functions including automated input check and correction are just a few of the features that help the machine operate safely and efficiently. ePlace software offers context-sensitive help to assist users directly with current tasks. Additionally, it is possible to define individual settings for each user, even dedicated language options.
Lowest maintenance costs

Cobra is designed for three-shift operation. The selection of high-class components, the linear drives and the robust machine base made of mineral composite allows for calculating the upkeep expenses with minimal costs.

All elements have a modular design and enable fast replacement in minutes.

The detailed service and maintenance manuals available online, the integrated user trainings (CBT), worldwide remote access from the Essemtec service centre as well as good accessibility of all modules ensure the highest possible machine uptime.

eMIS - Managing your SMT production

The new eMIS Management Software Suite for SMD production lines includes functions for job planning, feeder setup optimization, stock management, traceability, line management and much more. With eMIS, managers and operators can keep track of actual, future and past production. Flexible interfaces simplify integration into the existing ERP environment.
Essemtec is the only manufacturer worldwide to cover the entire production process, from printers and dispensers, to pick & place and soldering equipment, to handling and storage solutions. The customer benefits from the experience and the know-how of a complete process solution supplier. Essemtec provides turnkey lines for prototyping, small and mid-size volumes and customized solutions from one single source.
Add-on values for SMT production machines

Flex2 services offer add-on values for financing, investment security and value conservation for your SMT production machines. The Flex2 services portfolio includes tailored support and financing solutions, a capital expenditure protection program, the customized transfer of expertise, as well as the adaptation of equipment to the customers requirements.

Customized support solutions
- Remote support software
- 24 hour hotline
- Local support
- Local spare parts

Flexible services
- Financing solutions
- Investment protection
- Rental programs

Individual know-how transfer
- Computer based training modules
- Onsite training
- Intranet for customers
- Worldwide competence centers

Essemtec Solutions
- Customer specific application solutions

Nearly all Essemtec machines can be adapted to customer needs.
For a complete list of all representatives and more product information please visit our website:

www.essemtec.com

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