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## **New Product Announcement**

Along with the increase in the spread of mobile phones in recent years, there has been an acceleration in the expansion of functions and complexity of devices due to the rise in smart phones use and the appearance of tablet computers. In addition, the prices of flat screen televisions such as LCD televisions that are replacing cathode-ray televisions are lowering and the screens are getting larger. These are increasingly being more energy conservative through the use of LED backlighting, which reduces the amount of  $CO_2$  emissions. The demand for large flat screen televisions has swelled due to the synergy created by government programs to promote environmental friendliness.

The remarkable progress of home digital electronics and the highly efficient communications infrastructure have been supported by electronic circuit boards. Surface mount technology has been widely used for these and at the center of this are the electronic assembly machines (mounters). The AIMEX placing machine has been developed as the optimum placing system for assembling LED backlight PCBs for LCD televisions and long PCBs in flat displays as well as communication PCBs and home electronics for high-mix low-volume production.

The AIMEX was cultivated from the NXT series and inherits a wide variety of options such placing heads to make it a flexible all-in-one placing machine that offers the following points in versatility.

1. Component flexibility

In order to support the large volume of part types for high-mix production, up to 180 different part types in tape can be set on the machine. In addition, the supply units can be easily changed to a wide variety of units to supply parts from trays and sticks in addition to tape. As an option, it is possible to place extremely tall parts up to 38.1 mm using vacuum nozzles or motor assisted chucks. This makes it possible to place large odd-form connectors with a high degree of stability.

2. PCB size flexibility

This machine supports small PCBs from 48x48 mm in size to very large PCBs up to 759x610 mm in size. This makes it is possible to efficiently produce long PCBs such as LED light bars\* and large PCBs such as for servers.

3. Production flexibility

It is possible to increase the number of robots during the transition from low-volume production that focuses on trial/test production to full-scale production. This machine can respond flexibly to changes in production volume and in business. There is an option in which backup pins specified in the program are automatically placed in the correct position in order to counter downward warp of large PCBs. This eliminates positioning mistakes caused by manually setting pins and also can drastically reduce the time performing changeover. It is possible to further reduce changeover by using the optimizing software, Multi Job Line Balancer, to group different production programs together for the AIMEX. In conjunction with this, it is possible to increase the operating rate even more by using the option to perform production of different PCBs on double conveyors.

The AIMEX shares various units with the NXT and supports the head exchange function that was developed with the NXT. Mostly by exchanging and using the optimum heads (such as high-speed chip placing V12 head, high-accuracy G04 head, odd-form parts OF head, and glue dispensing GL head), efficient productivity is possible even if the composition of parts is greatly changed. Furthermore, it is possible to use tape feeders, stick feeders, and even tray units for the NXT on the AIMEX. There is also a wealth of assets available such as a part vision processing library.

The new H08M head has been developed with the goal to further improve versatility. This head can handle parts from 0603 (0201") to 45x45 mm in size with a placing accuracy of ±40  $\mu$ m (3 $\sigma$ , CPK ≥1). 0603 (0201") parts can be placed at a rate of one per 0.28 seconds which means that up

to 13,000 parts can be placed per hour. Two to four robots can be freely equipped on an AIMEX. From this, it is possible to put up to four H04M heads into one AIMEX which allows for up to 52,000 placements per hour. In addition, by using V12 heads and the developed V-Advance function for optimizing movement from pickup to placement, up to 108,000 placements per hour can be achieved.

\*: LED light bar: This is the name for a PCB with a large number packaged LED parts. Multiples of these PCBs are used as the backlight in LCD displays.