

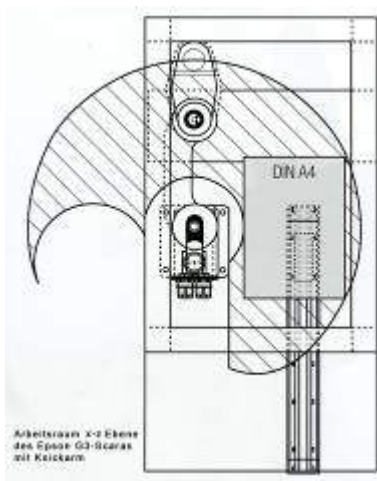


## Introducing Epson Germany, Factory Automation division

Epson is one of the pioneers in the SCARA robot segment. Originally these machines were used solely for internal applications at Epson's sister company Seiko (subsequently Seiko Epson Corporation) for the production of watches. However, Epson has steadily continued to refine and advance SCARA technology, enabling the machines' availability on the open market since 1984. Today's latest developments are reflected in the development of the G3 SCARA series. The sine and cosine models of the series, launched in February 2009, feature a flexible arm that can be rotated to the left (sine) or to the right (cosine). Thanks to this innovative, patented solution the robots can simultaneously achieve maximum reach with minimum footprint: The sine/cosine models are the only SCARA of this size on the market with a reach covering more than an entire DIN A4 sheet. Thanks to the enlarged working envelope it is also possible to use even more compact models.



Epson 1 – the first Epson SCARA



Workingspace of the Epson G3 SCARA. The bended arm allows a maximum working range



Epson G3 Sinus – the second last development step

## Epson Spider – a new concept

Despite the progression of SCARA systems there is, as always, room for improvement.

Even very simple design improvements can have a truly incredible effect. For example, the SCARA Epson RS Spider, launched in March 2009, hangs from the ceiling like a spider. By so doing, the second arm can maneuver under the first arm eliminating the classic Achilles' heel of the SCARA: the "kidney shaped" workspace including the dead space. The deep swiveling Spider can reach each point within a cylindrical work envelope. Thanks to its improved kinematics, the standard SCARA's need to maneuver around its base to get into position has been eliminated. Instead of this, the Epson RS SPIDER takes the direct route, thereby reducing cycle times up to 15 percent vs. conventional SCARA and that with minimum footprint. The Spider is perfect for cramped spaces like, for example, in cleanrooms of pharmaceutical companies and (micro)chip manufacturers where it is vital to optimise use of existing space.

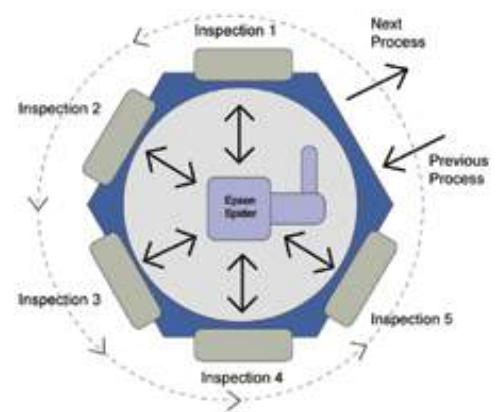


Epson Spider – a SCARA without dead space

## Flexible instead of linear

Thanks to the working envelope of the Epson Spider, entirely new options for mechanical and plant engineers are now possible. Epson is now proudly presenting its honeycomb cell concept: The circular footprint of the Spider working envelope can be easily integrated into a honeycomb cell without reducing working space due to its lack of dead space. At each of the six sides a further working process can be connected modularly. The effect: Instead of a linear, inflexible production line an assembly unit is created within the smallest space which can be flexibly adapted to a small series or various productions.

Within the beehive-like honeycomb structure working cells can be combined, moved or reconfigured. Designers no longer need to consider the capabilities of the robots and their



Honeycomb concept – possible with the Epson Spider due to its lack of dead space.

working envelopes – the Epson Spider is a compact working tool that can be flexibly adapted to existing space and production requirements.

### **Epson SCARA portfolio**

With the new G series Epson is launching its latest SCARA generation. The complete series encompasses over 200 models ranging from 250mm to 1000mm in reach and a payload from 3kg to 20kg. Options include pedestal, wall or ceiling mount configurations. Moreover, the machines can be optionally supplied in class 10 clean and ESD configuration.

Equipped with Epson's Smart Motion Technology, the G-Scara models are much faster than their predecessors and feature a higher reach, yet with the same reliable high precision and dependability. In combination with the Epson RC180 compact controller, the G-Series offers outstanding performance and ease of use.

Optionally, Epson offers a broad range of efficient supplementary features: In addition to a Vision System and Conveyor Tracking System, a sensor to measure forces applied is also available. The advantage of all options: They can be seamlessly integrated into the programming surface and activated via the Epson language.



The Epson Miniscara robot prototype – ready for small site assembling



Epson offers the largest portfolio of SCARA robots available on the market

**(Image source: Epson)**

### **The Epson 6-axis robots**

from 2004 onwards Epson has enhanced its portfolio of small size handling robots by a series of 6-axis robots. The Epson Pro Six family provide superior performance along with our industry leading PC based controls. Whether you are looking for high speed, low vibration, higher payloads, more reach, or robots for special environment use, Epson has the Pro Six model to fit your application requirements. The rigid arm designs combined with advanced Epson servo control technology results in high speed motion and low vibration even when high precision high speed cycles are required. All Pro Six 6-Axis robots feature brakes on all axes and most models have the flexibility of being mounted in table top, wall or ceiling configurations. Epson Pro Six Robots are ideal for applications where 6 axis dexterity is required such as: small parts assembly, dispensing, lab automation, machine tending, material handling, medical device manufacturing, packaging, food handling and many other applications requiring speed, precision and/or smooth motion.



Epson's 6-axis robots round out the broad portfolio of handling robots



### **Epson – exceed your vision**

In “Exceed Your Vision”, Epson has established a global tagline that encapsulates its brand identity. In a world where rapid advancements in technology are matched only by the speed with which lifestyles evolve and diversify, it is precisely these two concepts that help us keep ahead: a commitment to customer satisfaction above all else, and a willingness to challenge even the most firmly held assumptions and limitations in the search for ever-higher-quality products and services.

Working under the “Exceed Your Vision” tagline, Epson is determined to keep responding to the challenges of our rapidly changing society by fusing its store of established technologies with innovative thinking that breaks through the barriers of what is currently possible. Drawing on the creativity and openness to challenge of each individual in our global team and the strength of the Epson Group as a whole, we will continue to create reality from our most far-reaching visions.