

## **Agreed contribution for AutoCAD**

### **Precision in height adjustment - with the Movotec Spindle Motor System (SMS) of SUSPA, large loads are also easy to move**

*The innovative ideas for adjustment and lifting systems for a variety of sectors from the furniture to the automotive industry come from Altdorf-based SUSPA GmbH near Nürnberg. With the Movotec adjustment system, the globally-oriented company has made a name for itself in lifting systems. A smart solution for large loads that should be moved vertically with ease and precision: the electromechanical Movotec Spindle Motor System (SMS). The powerful lifting lifts of the SMS bring nearly all working surfaces to the correct individual height and adjust for ergonomic workplace configuration.*

The Movotec adjustment system comprises two series: the hydraulic series and the newer Movotec SMS electromechanical series. The hydraulic Movotec adjustment system of SUSPA consists of cylinders and a pump powered by a hand crank or electric motor. The accumulated pressure forces the hydraulic oil from the pump into the cylinders. The oil moves the cylinders in their adjustment range for the reliable upward displacement of loads. The weight of the raised object will also force the hydraulic oil back into the pump while lowering.

The Movotec SMS supplements the proven hydraulic Movotec System with the advantages of an electric spindle drive. The objects can be pushed upwards or raised with the mechatronic system. This means that loads can be moved in both the pushing and pulling directions. A four-leg standard system comprises a control unit with four lifting elements that consists of a quiet DC electric motor with connected spindle gear units and spindles.

Like its hydraulic counterpart, the SMS can move large loads with continuous variability and is distinguished by its flexibility. SUSPA was able to draw on extensive knowledge from the development of extendable and retractable spoilers in the development of the Movotec SMS. As a result, the goal of integrating small and powerful DC electric motors and delicate, yet solid lifting elements into a profile of 35 mm was achieved. A wrap spring brake was also integrated to prevent the lifting power from failing in case of a power failure.

### **Powerful, precise and environmentally friendly**

A Movotec hydraulic cylinder lifts loads of up to 136 kg. Its electromechanical partner system was developed exclusively for high lifting loads. Therefore, the SMS, which also permits load movement in the pulling direction, can even achieve a load of up to 1500 N in the pushing direction and 750 N in the pulling direction per lift element (actuator). The Movotec SMS is driven by a central control unit that can lift up to 600 kg with the four-leg standard system. An additional control unit can be added

with the optional link function in order to enable movement of very heavy or large loads of 1.2 tons with up to eight lifting elements.

Up to four lifting elements are driven and synchronized by means of a control unit. In the process, the system works with a lifting speed of 8 mm/s. The Movotec SMS is offered in four sizes with stroke lengths of 150, 200, 300 and 400 mm. If, for instance, the version with a stroke length of 300 mm is installed, a weight can be lifted up to 300 mm with continuous variability and millimeter precision.

Should a component be damaged, replacement only takes a few minutes. Since the Movotec Spindle Motor System operated without hydraulics and thus without oil, there is no risk of losing oil and, of course, adding oil and bleeding the system can also be dispensed with. In this manner, the SMS provides an environmental advantage over the hydraulic system. The frugal power consumption of the central control unit, which is very low in standby mode (< 4 W), is an additional environmentally-friendly feature.

The Movotec Spindle Motor System is very well suited for retrofitting. The lifting elements have a slim design: the housing diameter is only 35 mm. The small, powerful cylinders are well-suited for integration into existing production and assembly lines or in existing workbenches in order to provide continuously variable height adjustment. Existing Movotec systems can be replaced by the Movotec Spindle Motor System quickly and without the need to drill additional holes.

### **Ergonomics with height adjustment**

With its simple assembly and operation, slim design and high reliability, the Spindle Motor System is especially well-suited for use in variable, customized work station configuration. Whether at the workbench, the machining table, in the kitchen or at the sales counter, flexible height adjustment is often necessary in order to enable continuous ergonomic work without back stress. Continuous strain on the spinal column causes painful myogelosis and potentially chronic back pain. By sitting and standing correctly while working at the appropriate height for the individual, poor posture is minimized. Painless sitting and standing add to worker motivation and thus productivity and efficiency in day-to-day work.

The Spindle Motor System from SUSPA has a wide range of applications in industry, in rehabilitation and health care technology and in the furniture industry. Customizable, height-adjustable furniture is especially important in kitchens, office work stations and in the commercial sector: Simple adjustment of kitchen islands, wash basins, work surfaces and other kitchen equipment to the size of the user, as well as height-adjustable desks or CAD work stations facilitate daily work. In industrial applications, the system is used for height-adjustable work benches, conveyor and assembly belts, assembly lines and machinery. The system can also accommodate a workplace that uses several people in shift operation: the Spindle Motor System can save the individual settings for up to three persons.

### **Images:**



Image caption: The Movotec Spindle Motor System (SMS) is a comfortable alternative to hydraulic systems. It enables continuously variable height adjustment of work benches in an ergonomic work environment. *Figure: © SUSPA GmbH*



Image caption: Ergonomic work with extendable table legs. *Figure: © SUSPA GmbH*



Image caption: SMS or hydraulic: Movotec adapts to the employee's physical constitution and ensures ergonomic work at different heights. *Figure: © SUSPA GmbH*



Image caption: Movotec also provides ergonomics for retrofitting. With the bolt-on profile, Suspa provides intelligent accessories for the Spindle Motor System (SMS) and the hydraulic system. Now previously static work environments can become ergonomic. *Figure: © SUSPA GmbH*

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Media contact:

Wassenberg Public Relations für

Industrie & Technologie GmbH

Michaela Wassenberg

[m.wassenberg@wassenberg-pr.de](mailto:m.wassenberg@wassenberg-pr.de)

+49 (0) 911 / 598 398-0