

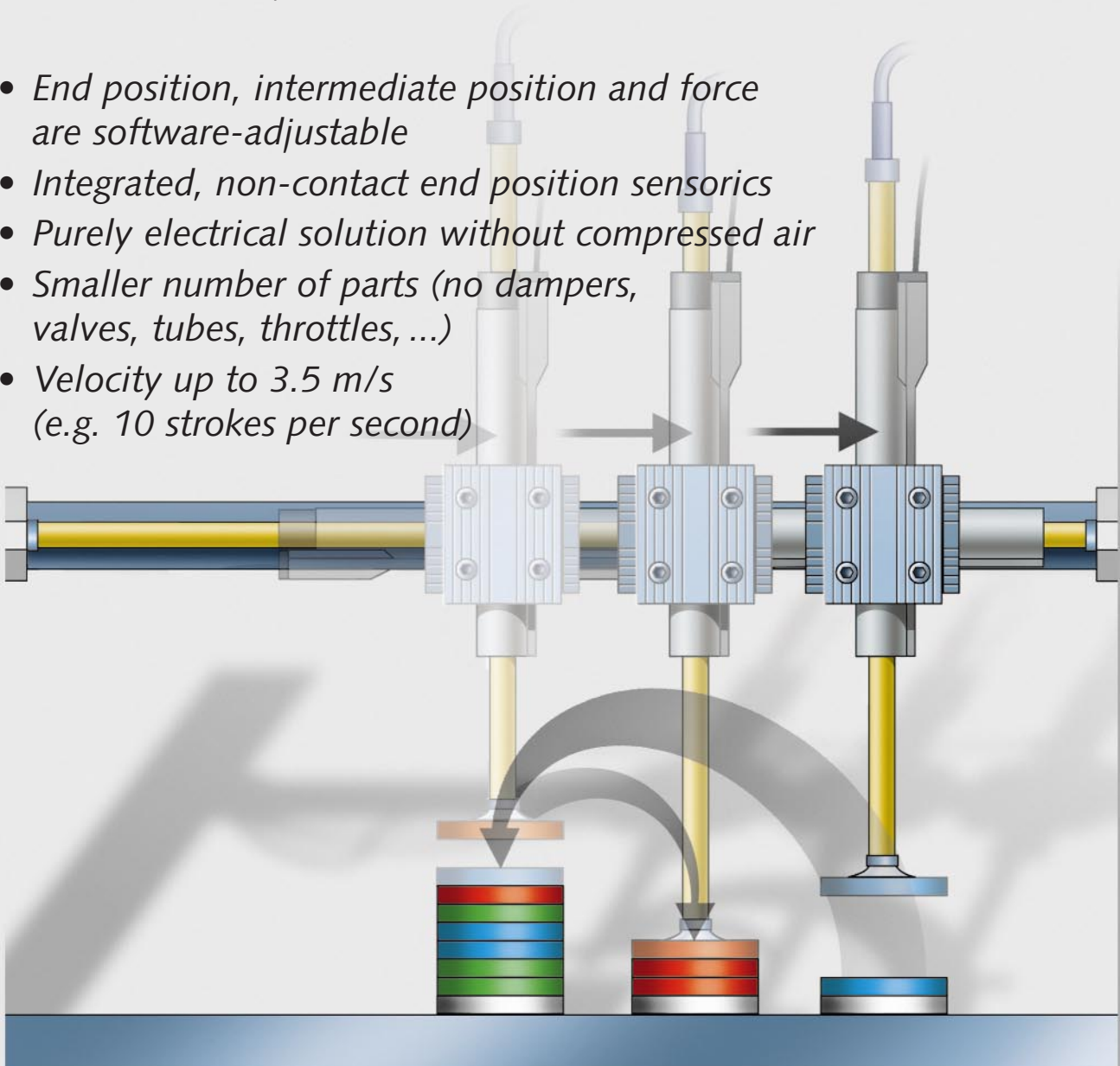
# LinMot®

## Higher Productivity - Linear Motors supplement Pneumatics

LinMot®'s electromagnetic linear motors are of a simple, integrated design. They offer a purely electrical solution (no compressed air!), and can significantly increase the productivity of existing

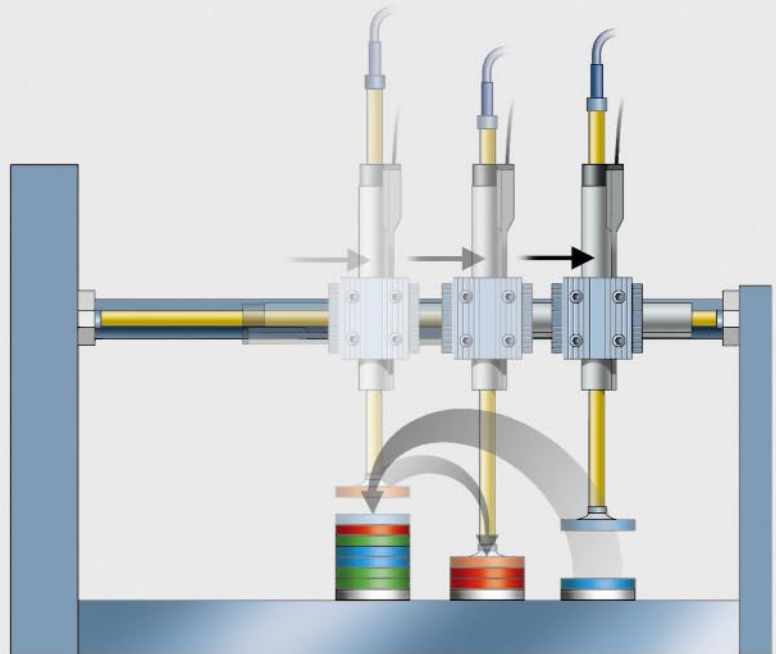
or new installations and machines – especially as a supplement or alternative to pneumatic motion control options.

- *End position, intermediate position and force are software-adjustable*
- *Integrated, non-contact end position sensorics*
- *Purely electrical solution without compressed air*
- *Smaller number of parts (no dampers, valves, tubes, throttles, ...)*
- *Velocity up to 3.5 m/s (e.g. 10 strokes per second)*



## Flexible solutions, zero set-up time

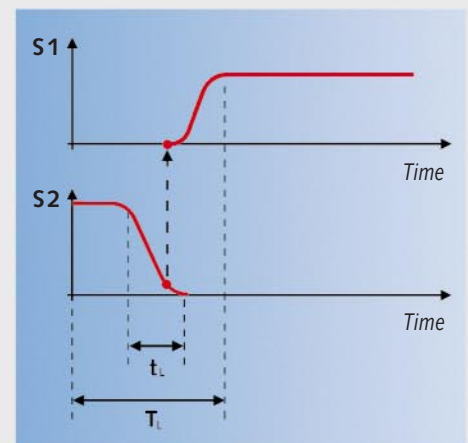
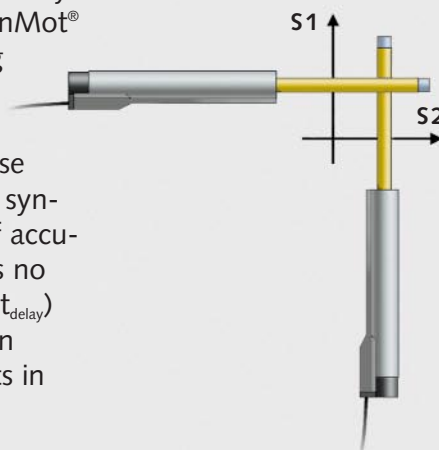
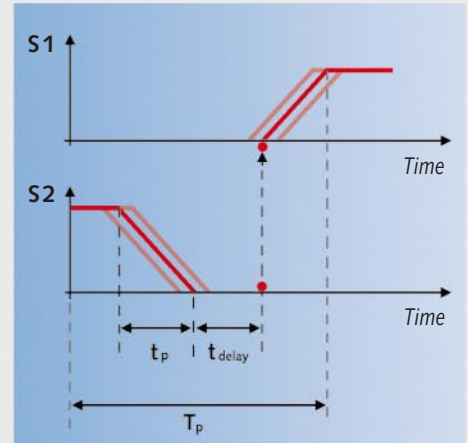
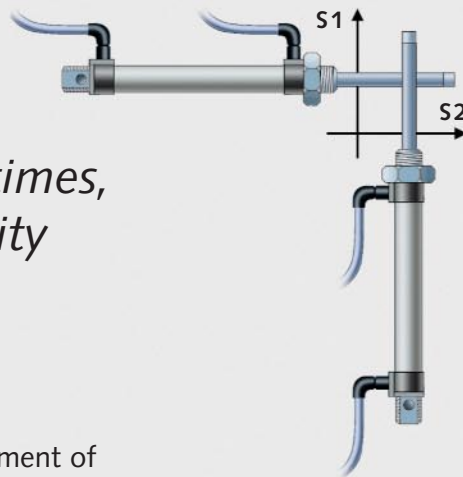
LinMot® linear motors allow movement to be stopped at any position – without need for mechanical constructions to realize stops between the end positions. All parameters such as stroke, stop positions, velocity and acceleration are repeatable and freely adjustable by way of LinMot®'s software. Set-up time is zero, and simple and universal usable designs can be created.



XY-Pick-and-Place-unit build on two LinMot® linear motors

## Shorter moving times, higher productivity

Simple point to point movement of pneumatic cylinders can be directly emulated and improved by LinMot® linear motors. Shorter moving time ( $t_L < t_p$ ) and smoother motion (without mechanical damper) are the result. Because LinMot® linear motors can be synchronized to a high degree of accuracy and repeatability, there is no need for an additional delay ( $t_{\text{delay}}$ ) between two motions that run against each other. This results in shorter cycle times ( $T_L < T_p$ ).



## *Additional functionality: touching and measuring*

LinMot® linear motors offer much more than the simple functionality of a pneumatic cylinder. Integrated sensors make these linear motors an optimum solution for applications that require touching or measuring, and they eliminate the need for additional distance sensors or light barriers. The analysis of the force and position feedback delivered by the motor can also eliminate the need for an additional video inspect system, and can be used for a number of different quality checks.

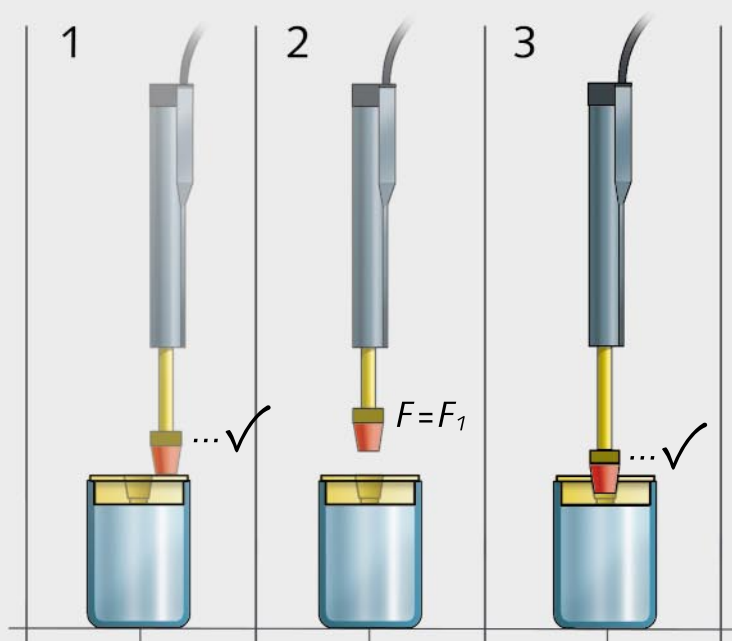
*LinMot® linear motor used as touching sensor to check, if (a) the hole A is drilled or (b) the part B is assembled.*



## *Fast and smooth parts assembly*

Components can be assembled faster and under defined force when using LinMot® linear motors. The position feedback signal provided by the linear motor itself can be used to check if the assembling process is finished correctly.

*Inserting of a tap into a bottle. (1) check if tap is gripped and cover is on place, (2) press tap into cover under defined force ( $F_1$ ) until linear motor is stalled, (3) check if stalled position is identical to the required end position.*



## LinMot® linear motor technology

LinMot® linear motors (linear actuators) employ a direct electromagnetic motor principle. Essentially, electromagnetic force leads directly to linear motion - without using additional mechanical items.



Bearings and position sensors are fully integrated into the motor casing. These linear motors are designed for use in a variety of industrial environments. Compact single and multi-axis controllers enable stand-alone solutions, or flexible integration into complex automation equipment via field-bus (Profibus, DeviceNet, and ServoNet).

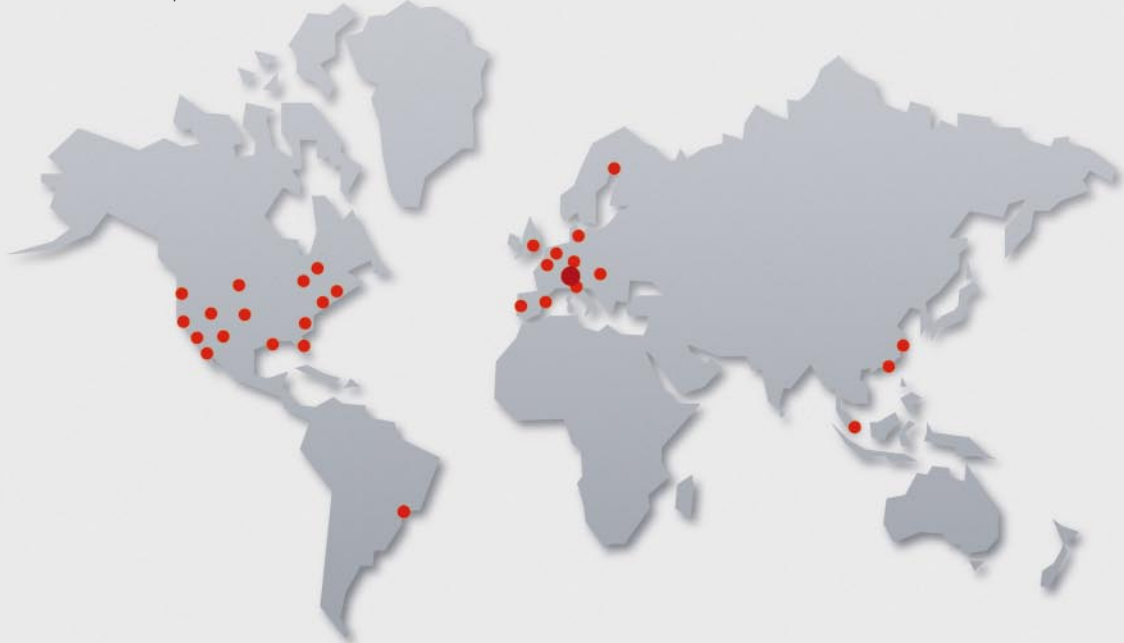
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