



Precision Linear Actuators

Presentation

Thomson

Thomson is one of the leading suppliers of mechanical motion control products in the world. Linear actuators, linear motion systems, lead screws, clutches, brakes and linear guides are just some of the products manufactured by Thomson. Thomson has plants, support centers and sales offices all around the globe. In addition we have a large network of distributors and system houses that all are ready to support you throughout the entire life cycle of the product.

Precision linear actuators

The precision linear actuator range is a result of over 40 years of actuator development and represents the state of the art in linear actuator design. Designed for the most demanding applications they are ideal when the maximum available performance and longest life cycle are required. Thomson precision linear actuators guarantees trouble-free operation even in the toughest applications.

Perfect your own actuator or chose a packaged model

The precision linear actuators are divided in to two categories. The T-series which consist of the basic actuator that is equipped by the customer with motors and gears of his own choice, either bought from Thomson or sourced from his own suppliers allowing maximun freedom of choice. The ECT-series is a range of packaged and predefined actuators that comes with motors and gears mounted and tested. The ECT-series gives the benefit of knowing that all performance data has been verified in tests and that all components works together perfectly. An added bonus is of course the faster design and ordering process and the benefit of dealing with one supplier only.

On-line selection software

On www.thomsonlinear.com/selectors you can select a precision linear actuator by using the PLA advisor. This easy to use software lets you play with all the parameters and will give you all the relevant data and the correct ordering information for your choice.



Features and Benefits

Precision linear actuators are ideal for positioning loads that are either externally-guided and supported, or pivoting. They are also ideal where there is a high concentration of airborne contaminants, as rodless actuators are inherently less well protected. Another suitable area is the replacement of hydraulic or pneumatic cylinders where they bring many benefits compared to the traditional technologies.

Handling, machining and manufacturing

Precision linear actuators can successfully be used in handling, machining and manufacturing applications. The broad range of options and accessories makes it easy to find the perfect actuator for most applications.

Strong, fast and accurate

The hallmark for the entire range of precision linear actuators is the ability to work hard, fast and accurately, day in and day out, under the toughest conditions.

Hydraulics and pneumatics replacement

Precision linear actuators are direct descendants of hydraulic and pneumatic cylinders. Possessing many of the same unique design characteristics that made hydraulic and pneumatic cylinders popular, actuators benefit from cleaner, simpler and more energy-efficient power transmission. They are also much easier to integrate with modern programmable controls, have greater accuracy and are less noisy.

Harsh environments

Chemical plants, paper mills, welding operations and outdoor applications are all suitable for precision linear actuators. IP65 protection, a robust design and the use of high-quality components makes them suitable for almost every location.

Minimum maintenance



All precision linear actuators are designed to require a minimum of maintenance. There are no parts that need to be replaced due to wear. And only in applications where the actuators need to work very hard and frequently will any regular lubrication be needed.

Customized units

Customization is one of our strengths. Do you need a special stroke, a unique mounting bracket or some other adaptation of the standard product? No problem. Just contact us and we will be glad to help you to find the perfect solution to your application.



Performance Overview

		T60	T90	T130
				
Load				
Maximum load, Fx	[N]	10 000	20 000	60 000
Maximum load, Fy	[N]	100	500	800
Maximum load, Fz	[N]	100	500	800
Maximum load torque, Mx	[Nm]	-	-	-
Maximum load torque, My	[Nm]	50	150	300
Maximum load torque, Mz	[Nm]	50	150	300
Stroke				
Maximum standard stroke	[mm]	1500	1500	2000
Speed				
Maximum speed	[m/s]	2,5	2,0	2,0
Accuracy				
Repeatability	[±]	0,05	0,05	0,05
Backlash	[mm]	0,11	0,11 (0,18) ¹	0,21
General data				
Profile size (width × height)	[mm]	75 × 60	90 × 92	130 × 130
Operating temperature limits	[°C]	-20 – +70	-20 – +70	-20 – +70
Maximum duty cycle	[%]	100	100	100
Lead screw diameter	[mm]	25	25, 32	40, 50
Lead screw type		ball screw	ball screw	ball screw
Protection class - standard / optional		IP65	IP65	IP65
Features				
AC servo motor / Three phase AC motor		-	-	-
Single point lubrication		•	•	•
Mounting options				
Magnetic position sensors		•	•	•
Mounting feet kit		on request	•	•
Trunnion mounting kit		•	•	•
Clevis mounting kit		•	•	•
Tube end - inside / outside thread / spherical joint		- / • / •	• / • / •	• / • / •

¹ Depending on the screw diameter used in the actuator.

ECT90



ECT130



20 000

500

500

-

150

150

1500

1,6

0,05

0,11 (0,18) ¹

90 × 92

-20 – +70

100

25, 32

ball screw

IP65

•/•

•

•

•

•

•

•/•/•

38 000

800

800

-

300

300

2000

2,0

0,05

0,21

130 × 130

-20 – +70

100

40

ball screw

IP65

•/•

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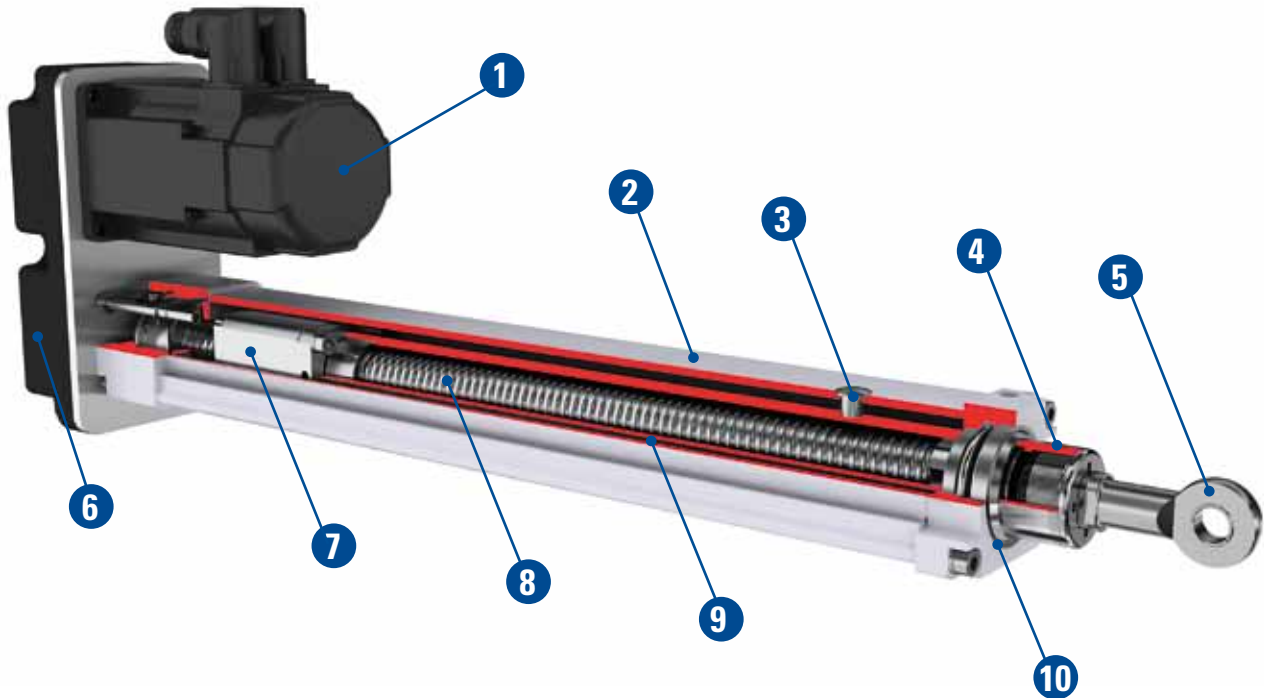
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Technical Overview

The design of an precision linear actuator is quite basic. An electric motor – through either a belt gear, a worm gear, a planetary gear or via a coupling directly – rotates a ball screw which translates the torque into axial force through the extension tube. While the concept is straight

forward, as illustrated by the cutaway on this page, significant expertise and development have been invested in the specification and design of each component. Each actuator is also built to meet the highest quality standards and are thoroughly tested before shipment.



1. Choose between a high performance AC servo motor or the robust, cheaper and simpler three phase AC motor.
2. High quality extension tube in extruded aluminium with grooves for sensors and T-slot bolts.
3. One point lubrication for easy and fast service.
4. Robust hard chromed steel extension tube.
5. Choose between extension tube with inside or outside thread, clevis or spherical joint ends.
6. Choose between direct drive, belt gear, worm gear or planetary gear for optimum performance.
7. High precision safety ball nut that will hold the load even if the balls break.
8. High quality ball screw drive.
9. Internally guided extension tube with anti-rotation mechanism which also acts as a screw support.
10. IP65 sealing of the actuator allows it to operate in harsh environments.

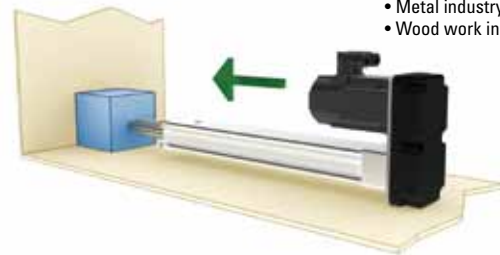
Applications

The precision linear actuator range is used for many tasks in industry. Combining the actuators with controls and drives from Kollmorgen makes it easy to design linear motion equipment in a fast and simple way. Some of the most common applications are described below. Our application engineers have a broad knowledge

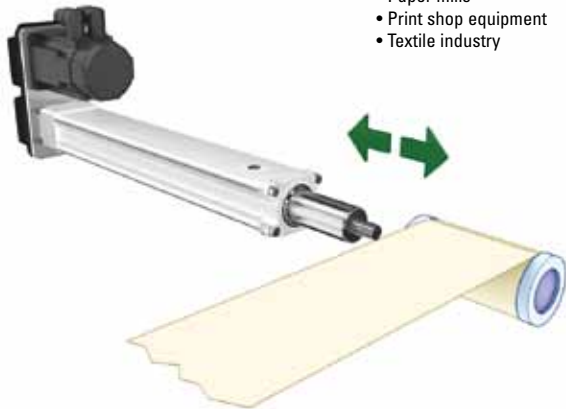
base built on decades of linear motion experience and they can help you find the ultimate solution for your application. They can also assist you with sizing and selection as well as with the design and commissioning of your equipment.



- Valve Control
- Process industry
 - Ventilation equipment
 - Vehicle applications
 - Packaging industry



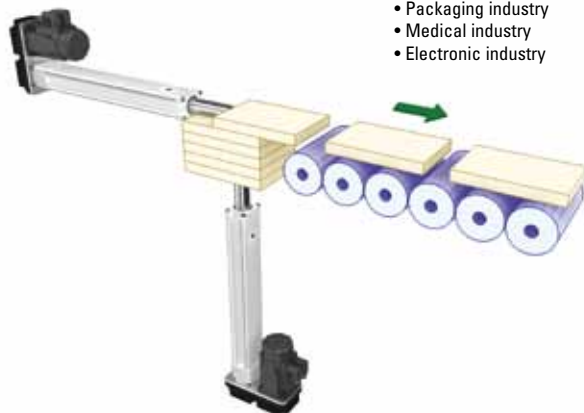
- Pressing and clamping
- Machine tools
 - Electronic industry
 - Plastic industry
 - Metal industry
 - Wood work industry



- Edge Guide Control
- Paper mills
 - Print shop equipment
 - Textile industry



- Backstop Adjust
- Wood work industry
 - Machine tools
 - Metal industry



- Loading or Unloading
- Handling equipment
 - Packaging industry
 - Medical industry
 - Electronic industry



- Drilling, Welding, Gluing or Thermo-forming
- Machine tools
 - Plastic industry
 - Metal industry
 - Wood work industry
 - Electronic industry
 - Packaging industry