

DYNAMICS

VIDEO



OUR DYNAMICS SOLUTIONS

CLASSIC SOLUTIONS

- **PNEUMATIC CYLINDER:** $F_{max} < 1.000\text{ N}$
- **HYDRAULIC CYLINDER WITH SERVO-VALVE:**
 $F_{max} < 500.000\text{ N}$



NEW ELECTROMECHANICAL SOLUTION (DIRECT DRIVE)

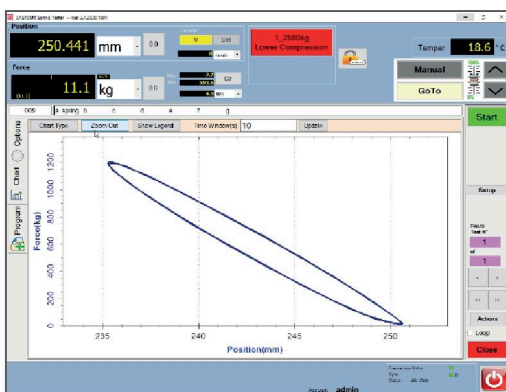
- **DIRECT-DRIVE LINEAR MOTOR:** $F_{max} < 10.000\text{ N}$
- **DIREC-DRIVE WITH TORQUE MOTOR & BALL SCREW:**
 $F_{max} < 500.000\text{ N}$



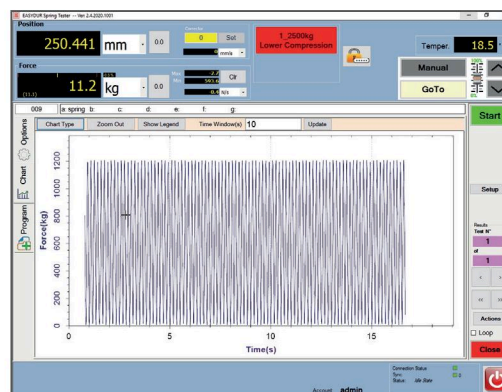
MAIN PLUSES of our DIRECT-DRIVE Solution (Green)



- High Efficiency and Energy Savings due to Direct-Drive (No Crank System)
- High Accuracy/No Backlash thanks to Ball Screws - based on Ball Guide Line Systems
- Energy Recovery System through Condensers + Brake Energy Regeneration, reducing Energy Consumption by 90%
- Noise Abatement: No Moving Part Vibrations
- "EASY-DYNAMICS Software" for Automatic Stroke Adjustment Setup



FORCE-POSITION CHART



FORCE-TIME CHART

CASE STUDY



SOFTWARE & CONTROL SYSTEM

EasyTester Software by Easydur is based on Windows 10 on a Beckhoff Hardware Platform, a PLC-typical Real-Time System (TwinCAT) combined with Windows versatility

TwinCAT® 3
BECKHOFF
New Automation Technology

SOFTWARE STEPS

• **Pre-processing:** Operator creates the Test Programme (fully customisable)

Including:

- All operations to be performed during the test run
- All Testing & Result Conditions via selection of Force, Movement, Speed & Frequency Parameters and Acquisition Time

• **Processing:** Test Run

• **Post-processing:** Once the test is complete, all charts and desired values are shown on the PC screen. All results may be exported to XML format or PDF template

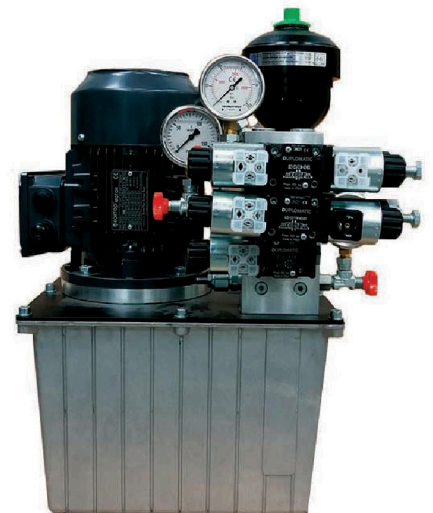
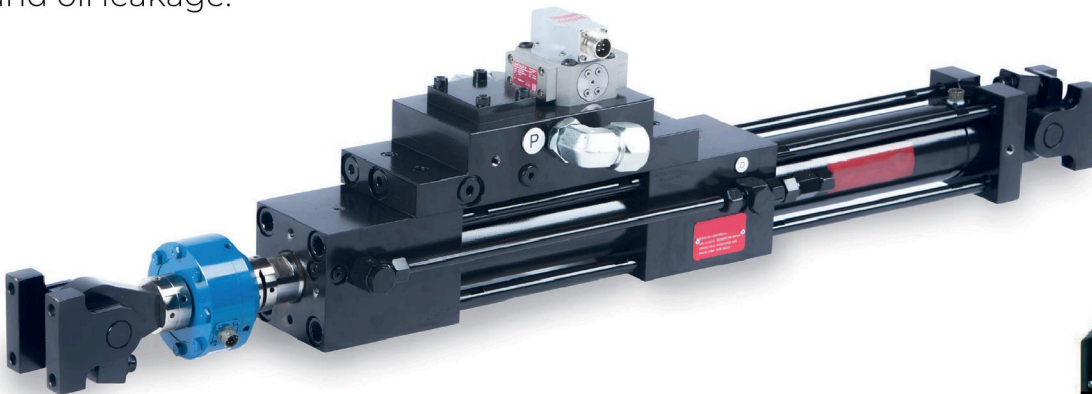
TECHNOLOGIES

Pneumatic Cylinder

The pneumatic cylinder solution is ideal for low-load tests, in clean environments with little space, when pneumatic air supply is enough. The cylinder is a low-friction cylinder (metal seal type) with an extra-compact positioning system directly integrated into the cylinder rod.

Hydraulic Cylinder

The servo valve controlled hydraulic cylinder solution is a standard in dynamic testing. However, high performance is guaranteed at the expense of high costs and high energy consumption and requires the installation of a hydraulic pack involving problems of space and oil leakage.



DIRECT-DRIVE LINEAR MOTOR

Our Direct-Drive linear motor allows high speeds and accelerations to be achieved with low loads:

- **F max** < 10.000 N
- **V max** = 2,5 m/s
- **A max** = 80 m/s² (8G)

Note: With increasing force and consequently decreasing speed/acceleration, an accurate technical evaluation is required at all times.



DIRECT-DRIVE BALL SCREW

Our system is based on Direct-Drive Ball Screws, and enables to reach high testing loads with great dynamic performance in terms of acceleration/speed and cost saving in comparison to standard hydraulic solutions.

- **F max** < 500.000 N
- **V max** = 0.5 m/s
- **A max** = 20 m/s² (2G)

Note: With increasing force and consequently decreasing speed/acceleration, an accurate technical evaluation is required at all times.

