

Motion Control

Combining HepcoMotion's® renowned mechanical solutions with the systems integration skills of our drives partner SmartDrive®, provides complete electro-mechanical solutions for all your automation needs.

HepcoMotion® & SmartDrive® have enjoyed creating successful customer applications together for more than ten years. We feel it's both companies expertise as product manufacturers that allows us to quickly understand the detail of each unique customer requirement, fully evaluate all technical aspects and work together to recommend and specify perfectly matched electro-mechanical solutions. With all motion aspects taken care of by our successful partnership, project engineers are free to focus their time on other important management tasks.

Popular single axis linear configurations



PDU2 Actuator



Taranis Controller



Stepper Motor

The HepcoMotion PDU2 belt driven unit provides exceptional performance at a competitive price combined with SmartDrive's economic Taranis combined stepper drive controller. This popular combination typically provides speeds up to 2m/s with a repeatability of 100 microns. Ideal for light and medium loads typically 1 - 7kg. Adding a linear encoder to the system increases accuracy to just a few microns!



SBD Actuator



SA Control Unit



Stepper Motor/ Gear

The HepcoMotion SBD Sealed Belt Driven unit is offered in a standard and a clean room compatible version, combined with a powerful SmartDrive SA controller/ stepper drive package and planetary gearbox the combination is capable of delivering up to 3.3kN force! Ideal for heavier loads and low contamination applications.



PSD120 Ballscrew



Servo Drive



Servo Motor

The HepcoMotion PSD120 screw linear drive unit is often used in combination with a dynamic servo drive package. With servo's achieving typical shaft speeds of up to 4000 RPM the motor is usually coupled direct, linear velocity depends on ball screw pitch selected, with a choice of 5, 10 & 16 mm. Working with the SmartDrive engineering team the user can select the best torque/ speed characteristics for the application.



SBD Sealed Belt Drive



SDM Screw Driven Module

The HepcoMotion SBD 20-80 actuator featured with stepper motor, high ratio planetary gear and coupling kit. Two sizes of SDM ball screw driven units are available with five screw pitch options: 16x5/10/16 and 20x5/20.

Popular multi-axis solutions



X,Y,Z Configuration

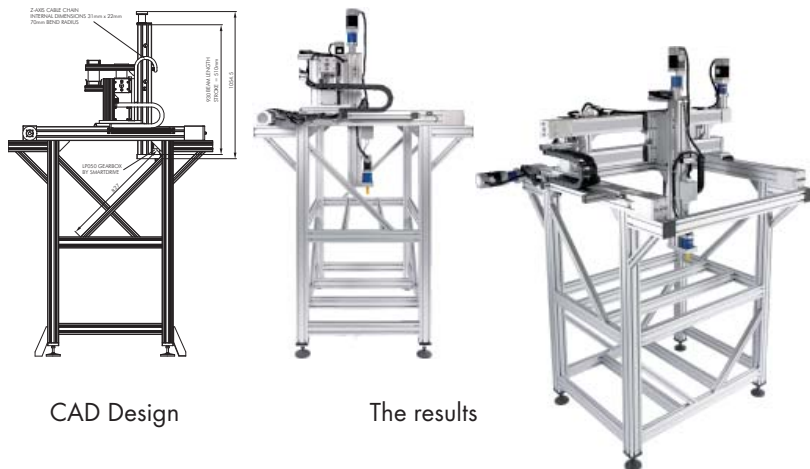


Versatile multi-axis SA Controller

The full HepcoMotion range of linear actuators is easily configurable into bespoke combinations, our dedicated technical team are always available to provide advice and assistance. Popular multi-axis configurations such as X,Y & X,Y,Z can be easily achieved, SmartDrive are on hand to calculate and size appropriate motor and drive combinations ensuring your required speed, torque and accuracy demands are met. Our partnership experience ensures mechanical and electrical components are seamlessly brought together delivering a complete service which could also include control panel and custom control software.

Complete system design and project management

SmartDrive's experienced systems engineering team can take your ideas to fully integrated working systems in a matter of weeks, offering bespoke software, custom hardware and full project management. We can take care of the entire application leaving you free to manage other aspects, just tell us how much of the project you would like us to undertake.



CAD Design

The results

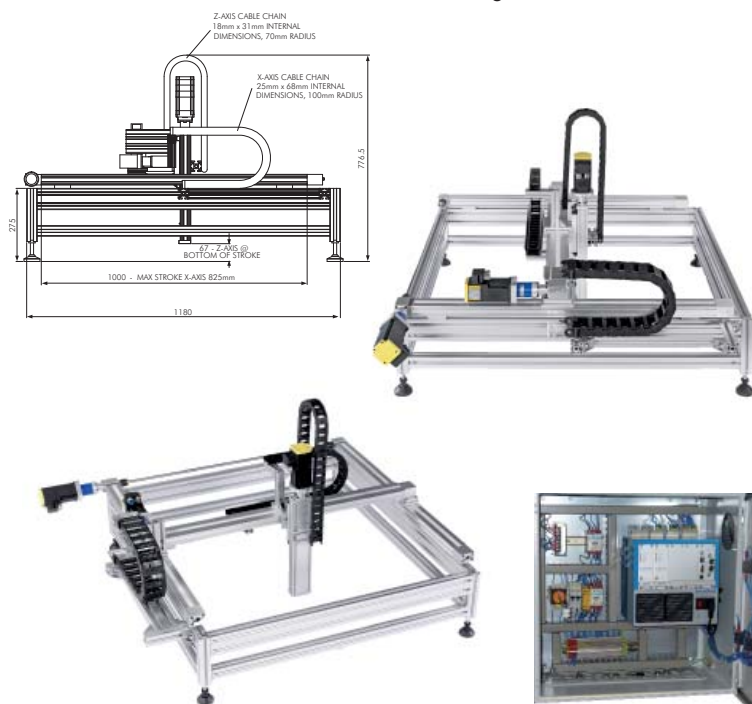
Heavy Duty X,Y,Z & Rotate System

Standing over 3m tall this powerful R&D torque system was programmed to automatically conduct multiple soil samples within the given X,Y area. The system comprises two geared pairs of Hepco SBD 30-100 actuators performing X,Y motion with a Hepco SDM 30-100 delivering a huge 3kN of down force! All axes are engineered to accommodate the carefully calculated reflected stresses, in particular those exerted on the supporting MCS frame profile.

All four axes are driven from the intelligent SmartDrive multi-axis SA46 drive system, with suitable gears and stepper motors carefully selected to ensure the required speeds and torques are achieved. The system user interface and motion profiles are then programmed to meet the customer's requirements by the SmartDrive engineering team.

Above and below, examples of motion control systems designed to customer requirements.

The HepcoMotion/SmartDrive partnership supplied detailed CAD drawings and onsite project meetings to establish the exact specification before manufacturing began. Once completely satisfied and agreed at the design stage, hardware manufacturing and custom control software construction can begin.



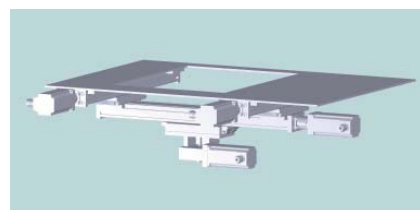
High speed X,Y,Z Table

This high speed system achieves interpolated motion in excess of 2.5 m/s!

The system comprises two geared and coupled HepcoMotion PDU2 actuators performing X motion and a single geared ridged PDU2M performing Y.

A direct driven 5mm pitch PSD80 lead screw actuator delivers the accurate Z motion.

All axes are servo motor driven from the bespoke SmartDrive control panel, featuring safety E-stop circuitry. All motion can be programmed via the on board controller in a high level programming language or connected to other intelligent devices such as PC or PLC's via high speed communications and direct I/O.



Bespoke control panels...

Incorporating: motion drives, controls, I/O handling, intelligent communications, HMI & safety circuitry.



3D CAD drawings

All systems can be supplied with 3D drawings allowing the design to be comprehensively reviewed before cutting metal, saving time and money.

Contact HepcoMotion or SmartDrive direct to discuss your application or project ideas in detail.

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