

69MPa PRESSURE MAINTAINER ©

The ErgoTech pressure maintainer has a modular design.

The hydraulic assembly module - stepper motor, gear box, ballscrew unit assembly, piston and pressure cylinder - sits on a purpose designed base module. This is a compact box with demountable side panels for accessing controls - stepper motor power pack and driver and maintainer printed circuit.

Easy construction, maintenance and repair This stems from the modular design. Proper operation within design parameters allows long term continuous rated use to the full pressure specification. Any maintenance or repair other than premature failure of the safety hydraulic bursting disk to be carried out by Ergotech.

The load is developed by the hydraulic pressure on the piston. In this design configuration the piston is directly mounted on the ballscrew which travels within the pressure cylinder. This requires a mechanically linked stiff vertical traverse assembly (piston, ballscrew, reduction gear box, stepper motor and brake) travelling within set top and bottom limits. The drive torque transmission and accurate linear motion is achieved by a pair of high rigidity precision linear bearings. High Intensity low friction seal

A fluoroelastomer rubber energised PTFE compound seal with PEEK anti-extrusion is specially selected for stepper motor rotary motion.

The system is designed for clean sub-micron filtered particle free hydraulic and high temperature oil only, such as transformer oil at room temperature. It is principally a pressure maintainer and although it operates as a "single shot" 200ml pump, it is desirable to fill the excess volume of core flow cells by other simple means such as manual charge, gravity feed or vacuum filling, etc.



Specifications

Working Pressure: 69MPa (10,000 psi) at room conditions.

Design Temperature: Room Temperature 25°C

Pressure maintenance accuracy is within 1% between 6.9 MPa (1,000 psi) and 69 MPa (10,000 psi)

Cylinder capacity: 200ml approx

Pumping Rate: 3.2ml/min approx

control unit is fitted with a special RS232 socket for linking to a pc and display of output in bits (scale length 27,150 bits equals 69 MPa) in Windows Terminal application.

Mains suppression unit fuse: 250V 6A maximum

Safety Features

Bursting Disc (advisable to replace once a year) rated at 11,698 psi at 21°C (70°F)

2 Levels of safety for vertical travel limit switches (top and bottom)

1st level stops any vertical travel and leaves manual operation intact

2nd level cuts power to system until manually repositioned (see troubleshooting)

Fail Safe Brake

Normally on i.e. braking when power off. Brake acts instantaneously and maintains near pressure up to full maximum working pressure when loss of mains power is experienced.

Deep set IP65 membrane switches behind polycarbonate front cover

Safe two step operation

1st Step **Enter** desired pressure value using thumbnail switches.

2nd Step **Enable** system by pressing go to set pressure button

Actuator direction movement logic translates to user friendly button pushing sequence.

Actuation is always preceded by safety pause of 2-3 seconds