

ISEKI

MICROTUNNELLING

DIGITAL CONTROL SYSTEMS

- *Designed to operate and monitor all of the tunnelling equipment on a pipe installation site*
- *Standard ISO shipping container construction*
- *Backward-compatible with non-digital equipment*
- *Systems can be tailored to the client's specific requirements*

Distributor for Iseki Poly-Tech, Inc.
Sales: Europe, Middle-East, Africa,
Indian sub-continent
Hire: Worldwide



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Cabins allow remote control of most tunnelling operations from one secure point.

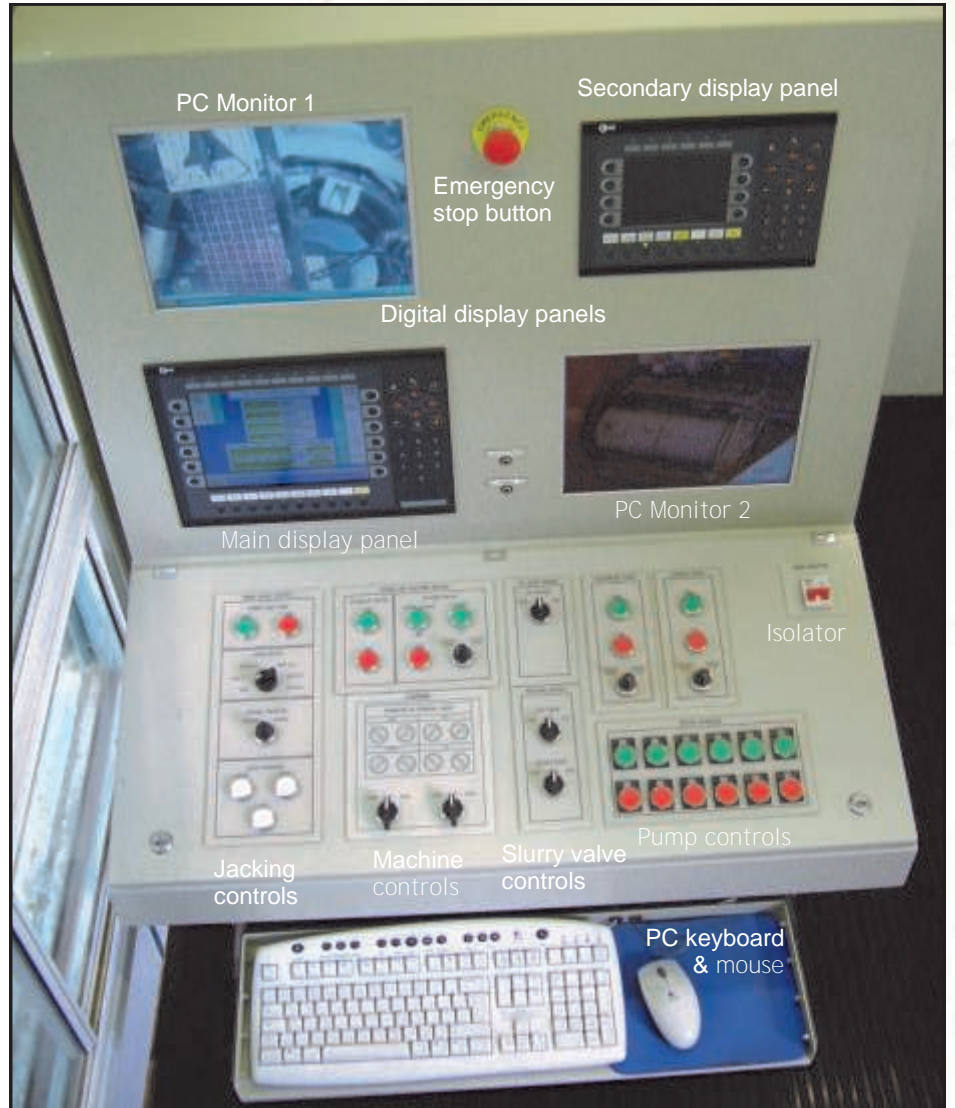


Operators have all controls to hand, and are able to see directly into the jacking shaft.



Systems employ the latest technology for precise control and monitoring.

Control equipment



Control system benefits

- ◆ Integral power distribution system means that only an external power supply (from mains or generator) is required.
- ◆ Self-contained system includes control of most equipment likely to be used in the tunnelling process.
- ◆ The mostly solid-state equipment is very robust and trouble-free.
- ◆ Graphical displays give the operator easy access to all monitoring variables.
- ◆ Trend displays can provide historical information from throughout the previous 24 hours.

Control equipment options

Data logging, either to hard disc or to optional printer

Off-site monitoring and support via communications link

Additional equipment support for any extra site requirements, or additional technological systems

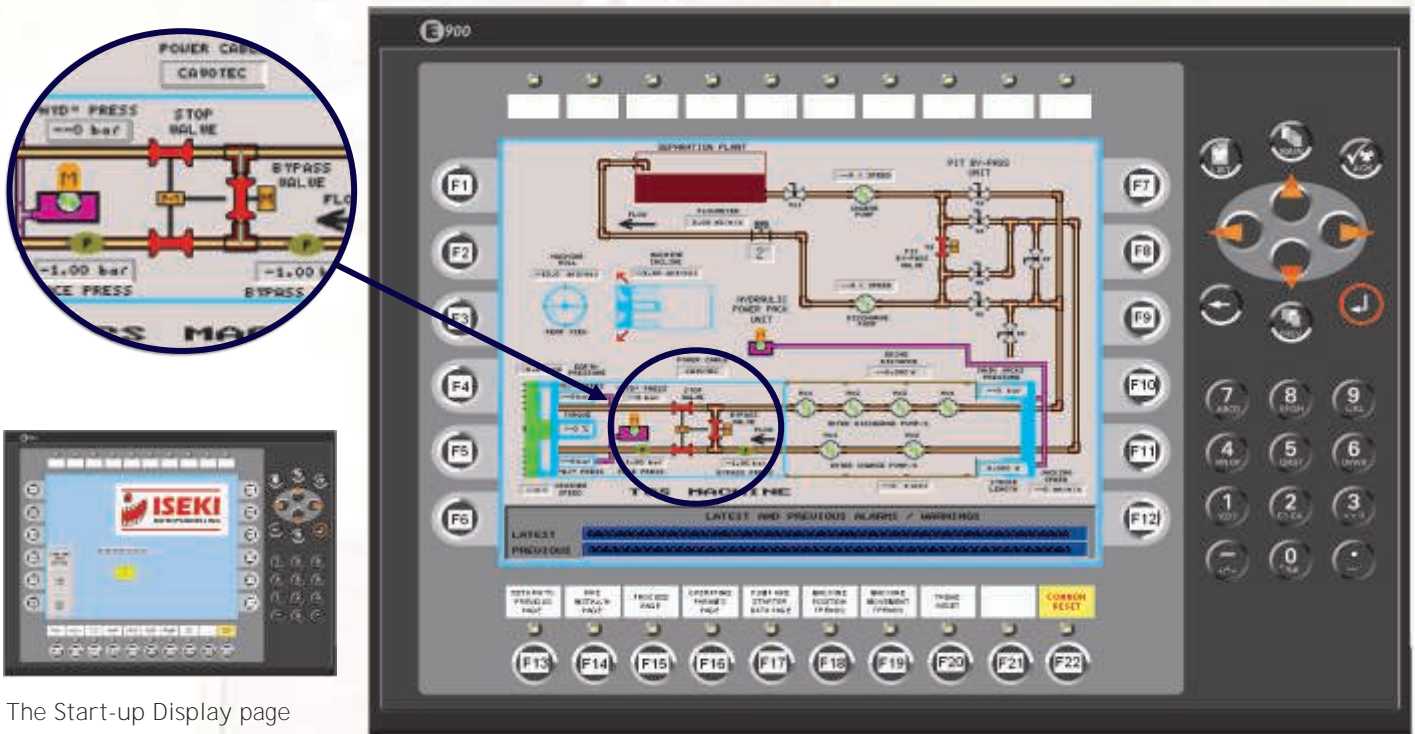
Standard digital control system

The monitoring, co-ordination and control of all plant and equipment is achieved from the Operation Desk. This contains a PC and a Master PLC Controller, which co-ordinates the control system via an Ethernet communications system.

The Operation Desk is used specifically to control individual items of plant, and also provides audible and visual warnings of any potential problems.

The Main Display (E900 HMI) provides a graphical representation of the plant status. Six separate pages of graphics are provided, the function and utilisation of these pages being as follows: -

The Full Process Display page provides an overview of all plant. This page is particularly useful for the display of the operational status of ancillary plant and valves.



The Start-up Display page



The Operational Parameters page provides the specific information which needs to be closely monitored when tunnelling is in progress.



The Pipe Jointing page displays all information required to permit the system to be prepared for tunnelling.



The Trend Data pages allow the operator, by selecting various parameters, to view graphs of the performance of the machine. These are drawn by the system, using historical data stored during operation.



The Time and Date page displays the time and date as set within the system (not shown above).

The Secondary Display (E700 HMI) is used principally for the purpose of plant status and alarm monitoring. Additionally, the E700 is used to set up the system and enable system fault diagnostics.

The Power Distribution Board contains all power distribution equipment together with a number of drive motor starters.

Typically the plant controlled and the conditions monitored via the Power Distribution Board comprise: -

- Mains Power Supply.
- Machine Crusher and Auxiliary Supply Socket Outlet.
- Discharge Pump, Supply Socket Outlet.
- Charge Pump, Supply Socket Outlet.
- Lubrication Unit, Supply Socket Outlet.
- Power Pack, Spare, Supply Socket Outlet.
- Auxiliary / Spare, Supply Socket Outlet.
- Auxiliary Motor Starter, Status Control and Supply Socket Outlet.
- Slurry Flowmeter.

Modular system suits all machine sizes

The Iseki modular control system permits one operation cabin to be used to control the complete range of Iseki microtunnelling machines.

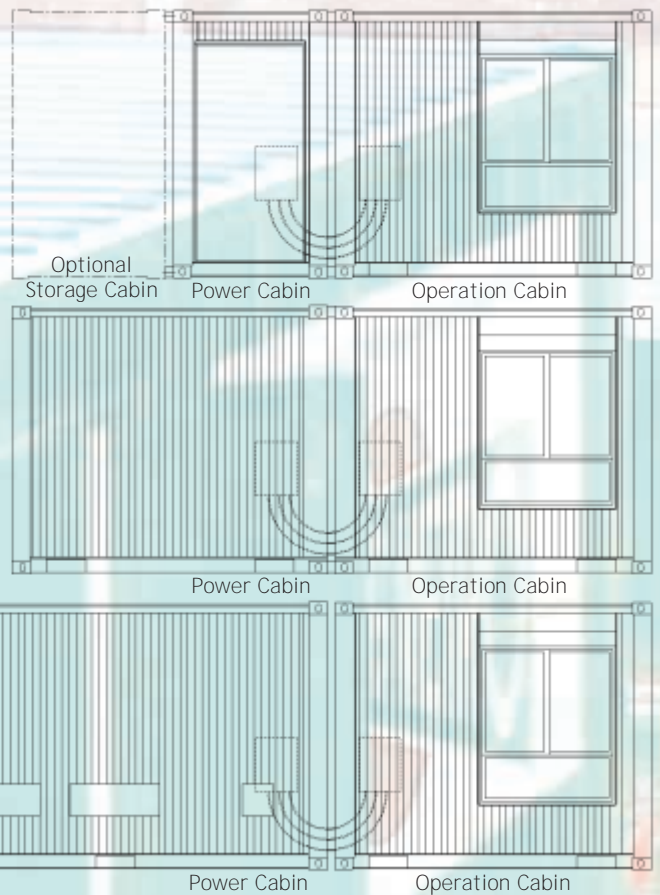
The cabins are all of standard ISO shipping container construction, and the standard operation cabin is 10ft/3m in length.

The differing power requirements of the various machines are catered for by power cabins specific to four ranges of machines:

Machine nominal i.d.	Distribution cabin length
250-500mm	5ft/1.5m
600-900mm	10ft/3m
1000-1350mm	10ft/3m
1500mm+	20ft/6m

The 5ft/1.5m power cabin is designed to be either joined with twist-lock couplings to the operation cabin or mounted separately on site. It can also be supplied with a second 5ft/1.5m container which can be locked to it, making up a 20ft/6m module for transportation.

The 10ft/3m power cabins can also be locked to the operation cabin to make a 20ft/6m module for transportation or use. The control cabin can also be mounted on top of the power cabin if required on confined sites.



The 20ft/6m power cabin has several power cable access ports, and as with the 10ft/3m power cabins, the operation cabin may be mounted above the power cabin if necessary.

Standard features

- Ergonomically designed for the operator
- Hard-wearing, easily-cleaned surfaces
- No trailing cables



Roller shutter



Internal partition

Construction options

As all the equipment is made to order, we are able to offer various construction options, or a standard design, as required.

Some of the options that we have already produced are listed below, but with our in-house design and fabrication facilities, we are always prepared to tailor any design to your exact requirements.

- Roller shutters or hinged steel shutters over windows
- Jack legs
- Integral power pack section or workshop/store section within either control cabin or power supply cabin
- Single-cabin construction with both power and control sections in one cabin
- Air conditioning
- **Heating and lighting to customer's requirements**
- Internal partitions with pedestrian doors/cupboards/windows etc.

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