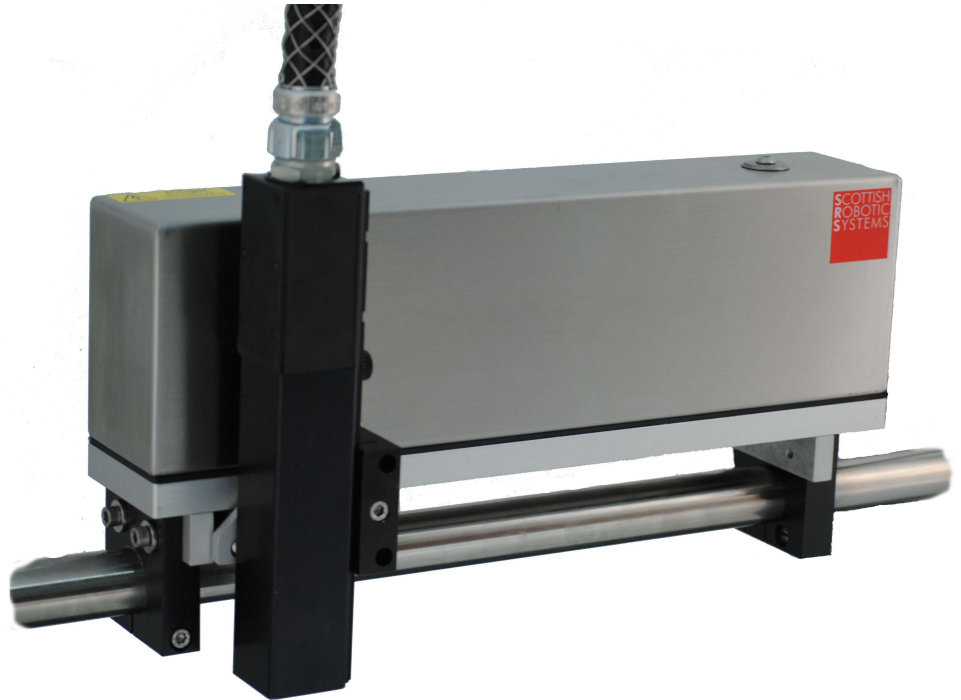


TRAVERSER 2

A Traverser provides a means by which a print head can traverse a production line instead of operating statically. Traversers are programmable to allow multiple prints to be made on each cycle and modify dynamic properties to match line requirements.

The current Traverser is an updated and improved model of the very successful, reliable and cost effective product previously available from Scottish Robotic Systems.



The advantages of the new Traverser over the previous model are:

- All Traversers now come as IP65 as standard, all controls are now built into the axis eliminating the need for a separate control box and cabling.
- Traverser now comes with an encoder for position feedback, which is used to detect and correct stalls or crashes.
- All electrical components are PCB mounted, so fewer components and fewer wires means higher reliability and easier fault finding.
- The Traverser now has storage for up to 16 programs, selectable by host machine, selector switch or PC.

Traverser is available in 5 different stroke lengths. A High Performance model is also available, suitable for very demanding cycle requirements and multi-head applications.

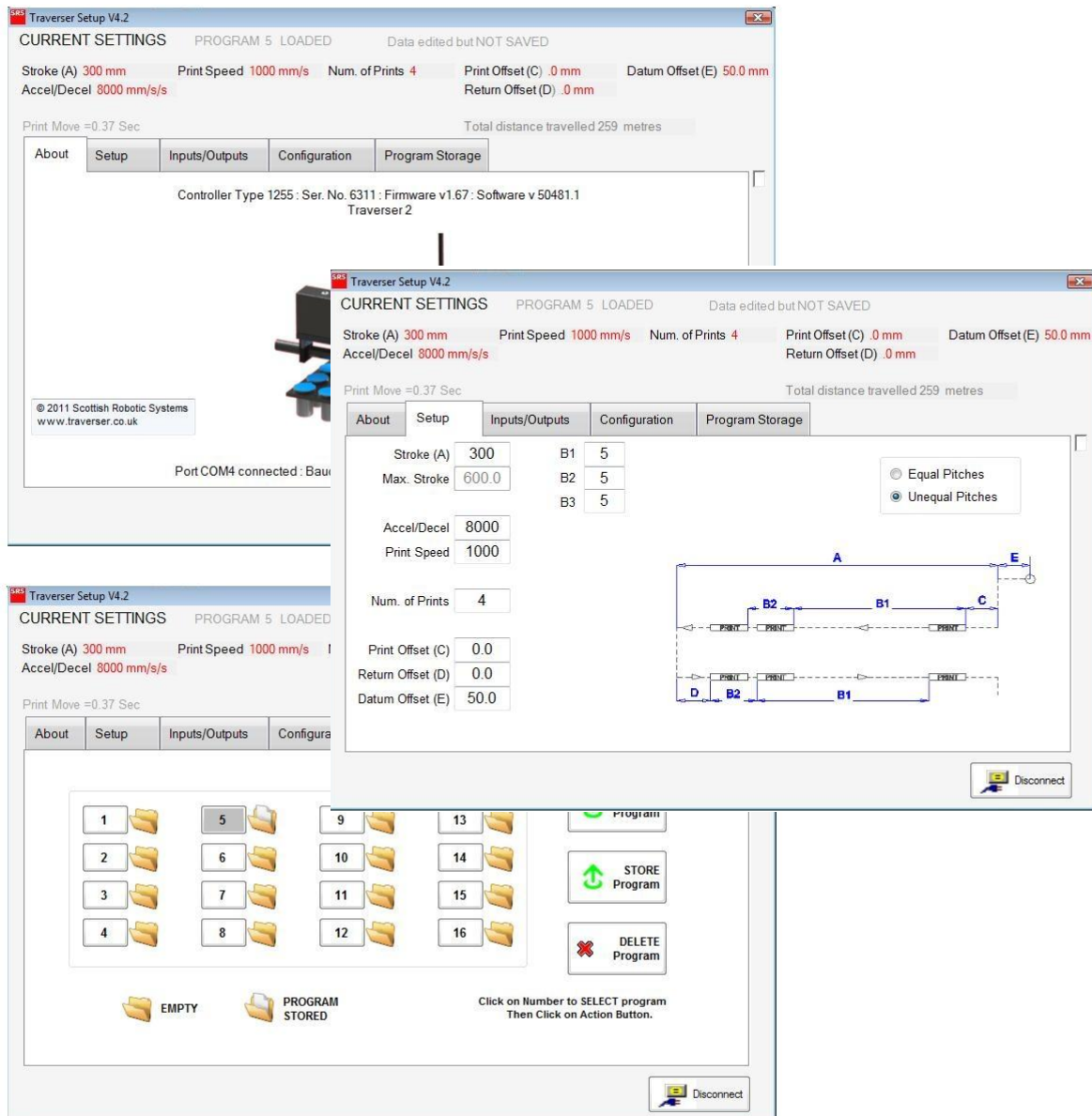


SETUP SOFTWARE

PC based set-up software is supplied to allow the Traverser to be configured to suit the requirements of each installation. The software displays the current movement and printing parameters and allows these to be adjusted on the 'Setup' screen to suit the application's requirements.

The software is also used to change the configuration of the Traverser for example; Changing which direction of travel the Traverser will print on, and when the "Ready" output signal of the Traverser will be sent to the host machine to let the machine know when it can index the next line of products to be printed.

Displays of the Traversers Inputs and Outputs via an LED type display screen and annotated diagrams give an Installation Engineer/Technician real-time feed-back from the Traverser and clear information as to how the selected configuration will affect the Traverser's operation.

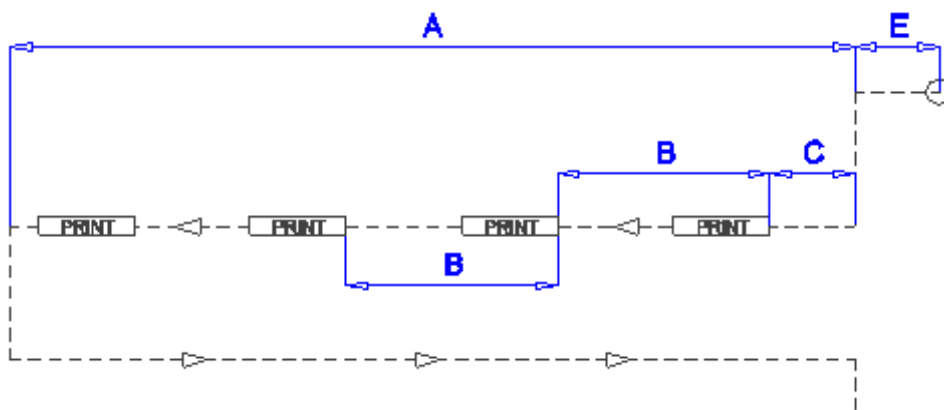


MODES OF OPERATION

Standard:

In this mode the print-head traverses across the product/s as the product is stationary and 'print go' signals are issued to the printer, as it is moving, on a user programmed pitch. The number of 'print go' signals, and the pitch between the signals, can be set using the software that is provided with the Traverser. The Traverser can work in one of 3 ways:

-'Print FROM Home'-The Traverser prints away from the Home position, along its axis of travel. On completion of the print stroke, the traverser will automatically return to its home position.

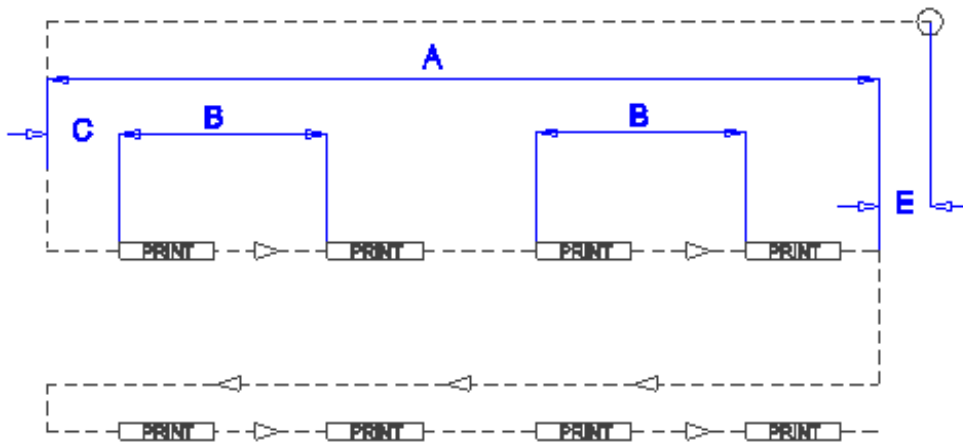


The diagram shows the print direction from the 'Home' position.

In the diagram above:

- A= User Programmed Pitch
- B= Pitch Between Prints
- C= Offset to first Print Position
- E= Offset from 'Home' Position

-'Print TO Home'- The Traverser prints towards the Home position, along its axis of travel. On completion of the print stroke, the traverser will automatically return to its start position.

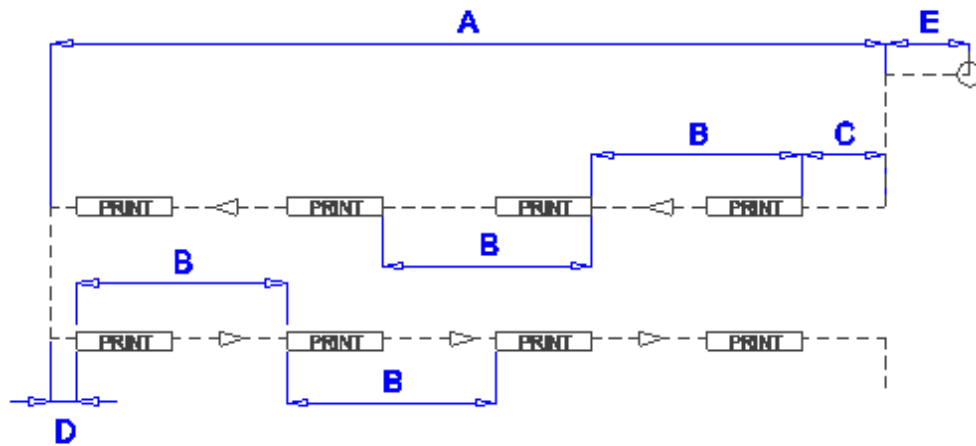


The diagram shows the print direction to the 'Home' position.

In the diagram above:

- A= User Programmed Pitch
- B= Pitch Between Prints
- C= Offset to first Print Position
- E= Offset from 'Home' Position

-'Print BOTH Ways'-The Traverser prints in both directions of travel. On completion of the first print stroke, the traverser will wait at the end of the programmed stroke until the next cycle start signal is received before completing the return move.



The diagram shows the print directions for printing in both directions of travel

In the diagram above:

- A= User Programmed Pitch
- B= Pitch Between Prints
- C= Offset to first Print Position
- D= Offset on the return move of the Traverser
- E= Offset from 'Home' Position

Note: The requirement to print in both directions should be specified when ordered as the 'Print Reverse' cable and splitter does not come with the Traverser as standard.

Print Pitch

The number of prints and the pitch between the prints can be set in the setup software provided with the Traverser. These parameters can be set to have a set number of prints with an equal pitch, or alternatively each print can have it's own pitch setting, up to a maximum of 9 variable print positions.

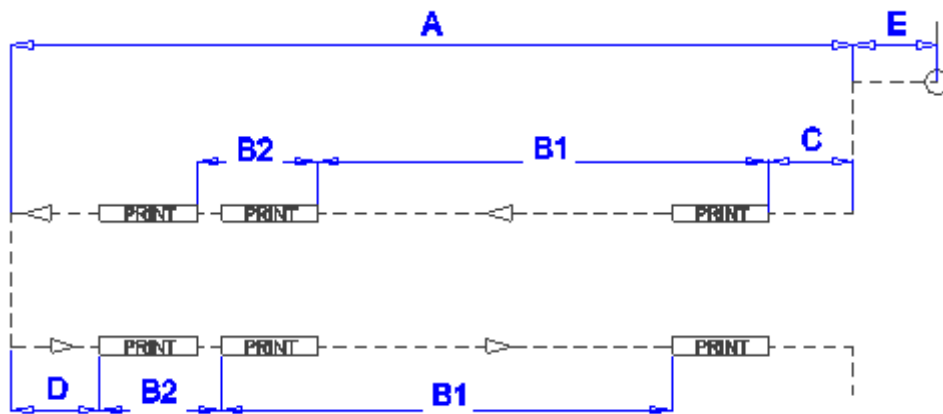


Diagram showing variable print positions

In the diagram above:

- A= User Programmed Pitch
- B1 = Pitch Between Print 1 and Print 2
- B2=Pitch between Print 2 and Print 3
- C= Offset to first Print Position
- D= Offset on the return move of the Traverser
- E= Offset from 'Home' Position

Program Select

Up to sixteen programs (set of movements) can be stored in the Traverser at any one time and these can be accessed using the software provided or through external I/O, for example using outputs from a host machine, or an external program selector switch (see Accessories section of this document)). Once programmed the Traverser can be disconnected from the PC and will not be required to reconnect until changes to the dynamic or print parameters need to be made.

Lane changer (Special Order Only):

In this mode the print-head is stationary as it prints in-line with product movement. The Traverser is used to move the print-head into position, or 'lane' before issuing a print go signal. The delay before moving position can either be set as a time delay or using an encoder can be set as distance travelled by the product.

This type of system would typically be used on an extrusion line where multiple extrusions are produced in parallel or on a web where prints are required evenly spaced in parallel with the line movement. The Lane changer facility is not supplied as standard and must be ordered as a special.



PERFORMANCE

Stroke:	Programmable up to 280/440/600/800/1000 mm
Speed:	Programmable from 10 mm/s up to 1000 mm/s
Acceleration:	Programmable from 500 mm/s/s up to 10000 mm/s/s
Duty Cycle:	100%

ENVIRONMENT

Temperature Range:	5-45°C
Humidity:	10 – 90% RH (non condensing)
Electrical Requirements:	Single Phase, 120-230 VAC, 50/60 Hz, 40VA
Protection:	All units are IP65 rated
Operating Noise:	<70 dB(A)

CONSTRUCTION

Traversers are constructed using stainless steel and anodised aluminium.

INPUTS

- Cycle Start
- 4 binary program select inputs allow 1 of 16 stored programs to be selected (Program selector switch available as an accessory, see below)
- Program select input to initiate program change following change of binary inputs
- Encoder input available for lane changer operation (Not supplied as standard)

OUTPUTS

- Print Go
- Ready (Contact closure rated 2A 30vdc)
- Virtual Encoder (maintains print width during acceleration/deceleration)
- Print Reverse

The 'Print Go' and 'Print Reverse' outputs on the Traverser are PNP as standard, however where required to be changed to NPN, for example when used in conjunction with a Domino A-Series *Classic* Printer, Converter cables are available and are detailed in the Accessories section of this document.

STANDARD COMPONENTS

The following parts are supplied as standard with all traversers

- Software CD
- Operation and maintenance manual
- RS232 communication cable
- Print Go/Encoder cable (T10199)

MOUNTING DIMENSIONS

Dimensions for 32mm Diameter Round Mountings:



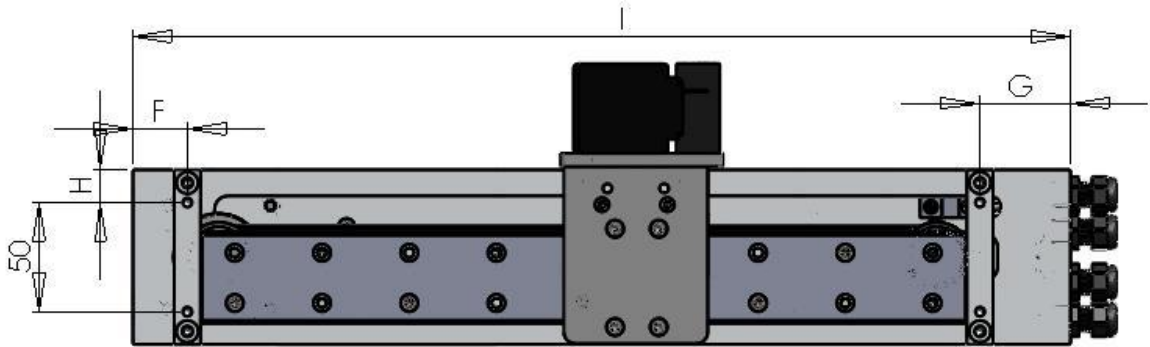
The values of A,B,C,D and E will be different on different strokes of traverser these values are as follows:

Part Number	Stroke (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
T10177	280	351.5	375.5	395.5	430	128.5
T10253	440	512	536	555.5	590	128.5
T10178	600	672	696	715.5	750	128.5
T10179	800	872	896	915.5	950	128.5
T10180	1000	1072	1096	1115.5	1150	128.5

Dimensions For High Performance Traversers

Part Number	Stroke (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
T10201	600	672	676	716	765	158
T10202	800	872	876	916	965	158
T10203	1000	1072	1076	1116	1165	158

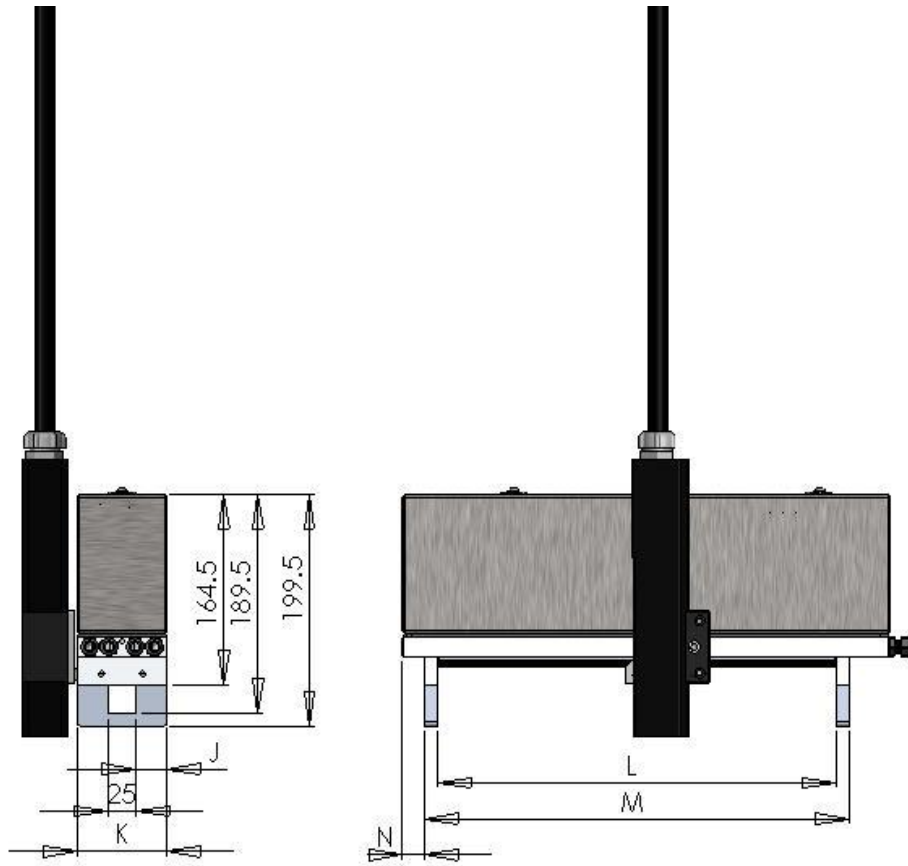
Dimensions for Mounting Bar Hole Positions:



Different Stroke Lengths of Traverser will have a different value for F,G,H and I these are as follows:

Model Number (stroke length)	F (mm)	G (mm)	H (mm)	I (mm)
T10177 (280mm)	25	41.5	15	430
T10253 (440mm)	25	41.5	15	590
T10178 (600mm)	25	41.5	15	750
T10179 (800mm)	25	41.5	15	950
T10180 (1000mm)	25	41.5	15	1150
T10201 (600mm HP)	40	41	30	765
T10202 (800mm HP)	40	41	30	965
T10203 (1000mm HP)	40	41	30	1165

Dimensions for 25X25mm Square Mounting Brackets:



Sizes of J,K,L,M and N will change depending on the length of stroke of Traverser.

Model Number (stroke length)	J (mm)	K (mm)	L (mm)	M (mm)	N (mm)
T10177 (280mm)	27.5	80	351.5	375.5	19
T10253 (440mm)	27.5	80	512	536	19
T10178 (600mm)	27.5	80	672	696	19
T10179 (800mm)	27.5	80	872	896	19
T10180 (1000mm)	27.5	80	1072	1096	19
T10201 (600mm HP)	42.5	110	672	696	34
T10202 (800mm HP)	42.5	110	872	896	34
T10203 (1000mm HP)	42.5	110	1072	1096	34

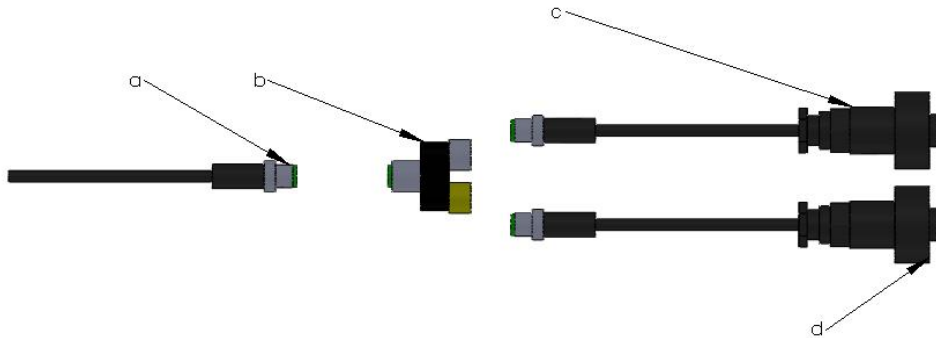
WEIGHTS

Part Number	Stroke Length	Weight
T10177	280mm stroke Traverser	7kg
T10253	440mm stroke Traverser	8.5kg
T10178	600mm stroke Traverser	10kg
T10179	800mm Stroke Traverser	11kg
T10180	1000mm Stroke Traverser	12kg
T10201	600mm Stroke High Performance Traverser	13kg
T10202	800mm Stroke High Performance Traverser	16kg
T10203	1000mm Stroke High Performance Traverser	19kg

ACCESSORIES

PRINT REVERSE CABLE

Traverser is supplied as standard without the print reverse connector to connect to the Domino user port. A splitter and cable are available to allow use of print reverse signal. The splitter enables the print reverse cable to be plugged in alongside the print go connector as shown below:



Splitter (b) Part No T10197

Print Reverse Cable (d) Part No T10198

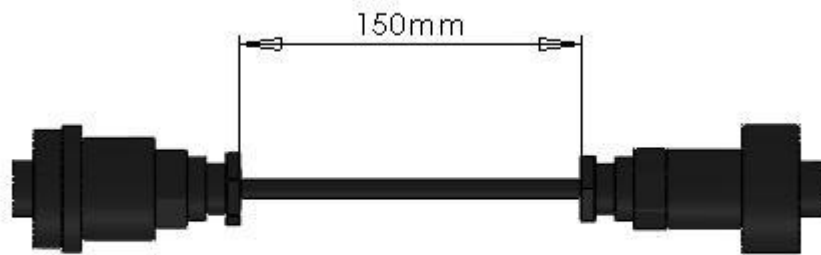
PRINTER CABLE EXTENSION

The cable which takes Print Go, Encoder and Print reverse signals from the Traverser to the Domino A-series is supplied approximately 3m long. Extension cables are available, with a length of 2m. If necessary, more than one of these cables can be joined end to end.

Extension Cable Part No T10204

CONVERTER CABLES

The Traverser 2 is designed for use with Domino A-Series *plus* printers. If the Traverser is to be used with an A-Series classic printer, in-line converters for print/go and print reverse (if used) will be required.



Print Go Converter Part No T10152.

Print Reverse Converter Part No T10153

USB-SERIAL CONVERTER

An RS232 serial connection is required to connect a PC to the traverser. Many computers are supplied without serial ports. Part no T10079 USB-Serial converter can be used to communicate with a Traverser on computers that do not have a serial port.



PROGRAM SELECTOR

An external program select switch is available which allows the user to select between 8 different programs. The selector is mounted in an enclosure manufactured from 304 grade stainless steel. A push button is also installed to allow the program selection to be activated. Normal operating procedure is that the required program number is selected on the rotary switch then the push-button is pressed to trigger the Traverser to load the new program data. The program selector is supplied with a 3m cable, if a longer cable is required 2m extension cables are available.



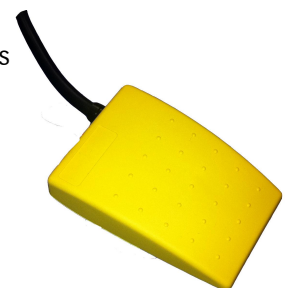
Program Select Box

Program Selector part number T10207
Extension Cable (2m) part number T10204

FOOT-SWITCH

If the Traverser is to be operator triggered a simple foot-switch is available, this switch can also be hand operated if necessary.

Foot-switch Part No T10205.



POSITIVE PRESSURE

For use in very wet or humid environments. Positive air pressure is fed into the Traverser enclosure.

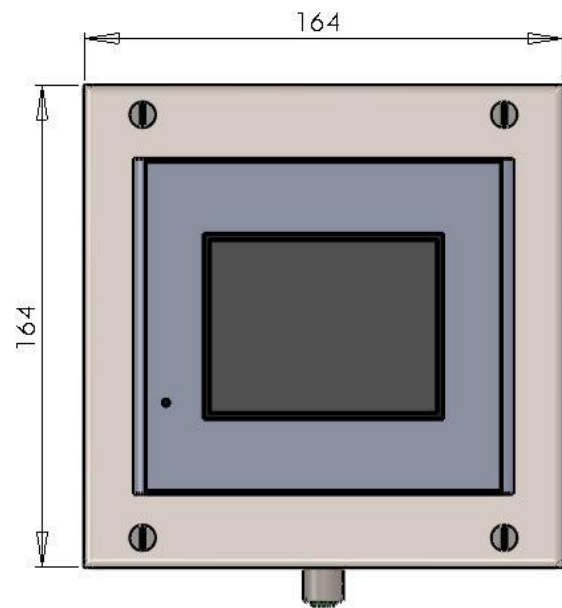
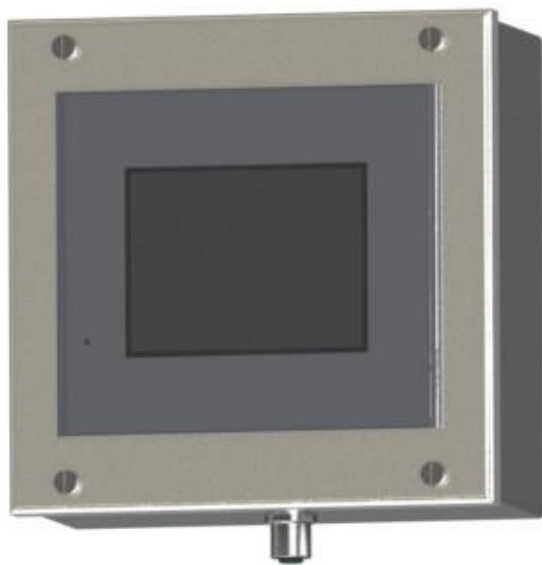
Not currently available – coming soon.

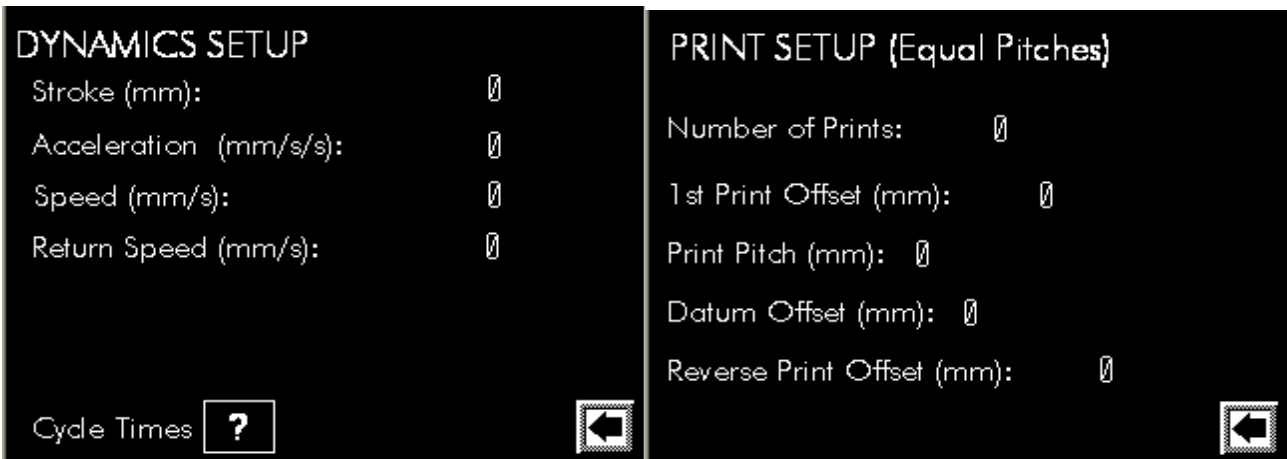
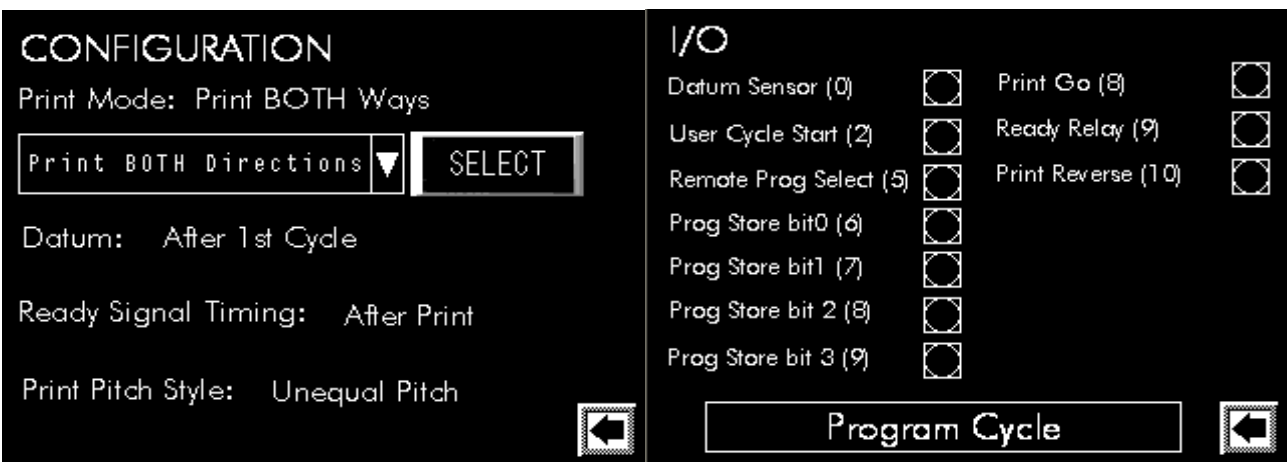
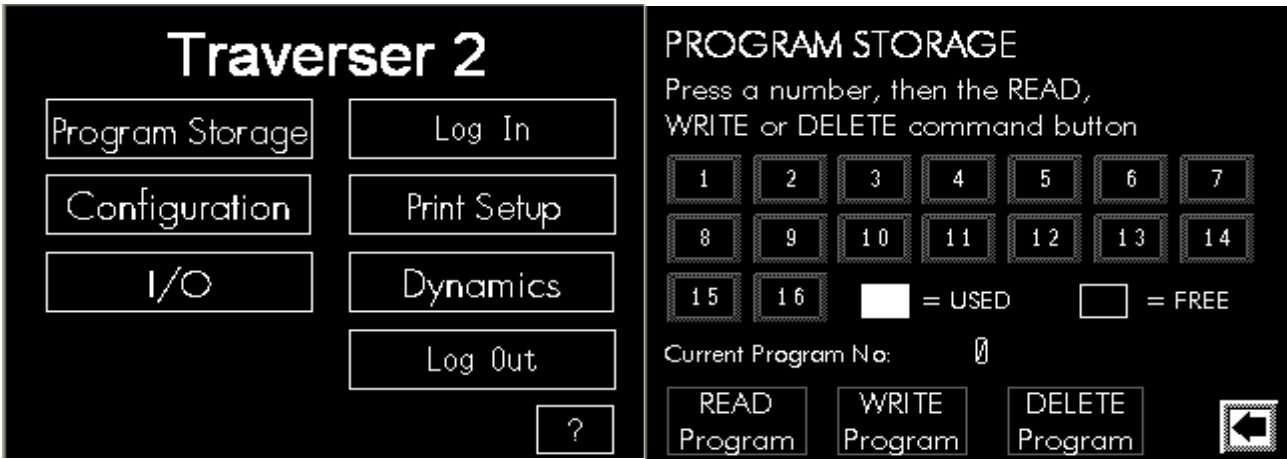
TOUCH-SCREEN

The option of a touch-screen HMI can be provided with the Traverser to make the system as easy as possible to use and with minimal effort to set up.

The HMI allows the engineer/technician to change motion parameters, print parameters, monitor inputs/outputs and manage the program storage function of the Traverser.

The HMI comes in a high quality, compact, stainless steel enclosure, which is IP65 rated for wet environments. The touch-screen is supplied with a 3m cable to connect to the traverser, if necessary this can be extended using 2m long extension cables.





Screen-shots of the Traverser HMI Menus

MOUNTING BRACKET OPTIONS

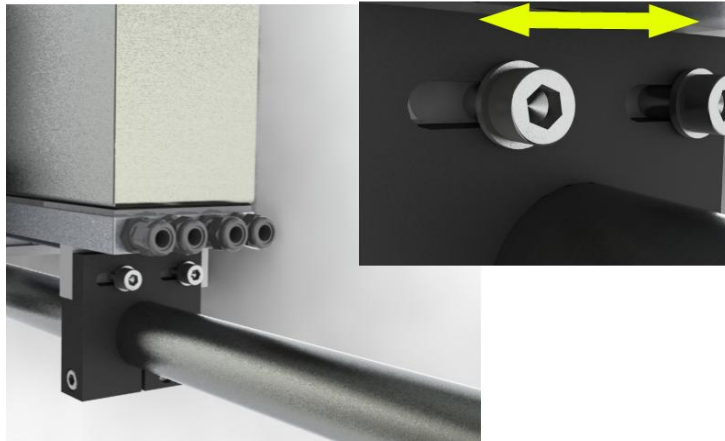
Mounting brackets are available to mount the Traverser on either 32mm diameter round tubing or 25mm square tubing.

- 32mm diameter brackets mount directly to standard Domino mounting system.
- 25mm square brackets mount onto mounting system available separately.



Brackets for 25mm square Part No T10131

The 32mm diameter brackets allow 10mm of perpendicular movement which is useful for fine adjustment of Traverser position. Slots are provided in the brackets to accept locking rings (Domino Part No 5-0161129) these give additional anti-rotation support.



Brackets for 32mm diameter Part No T10185

MOUNTING SYSTEM

A 25mm rail mounting system is available as a goalpost kit in 2 different widths to suit all stroke lengths.

T10161 Goalpost system 1m wide.

Contents: 3x 1 metre long 25x25mm stainless steel tubes.
 2x 90deg clamp blocks.
 2x pedestal clamps.
 4x end caps.

T10162 Goalpost system 1.5m wide.

Contents: 2x 1 metre long 25x25mm stainless steel tubes.
 1x 1.5 metre long 25x25mm stainless steel tubes.
 2x 90deg clamp blocks.
 2x pedestal clamps.
 4x end caps.

Individual mounting system components and lengths of rail available on request.

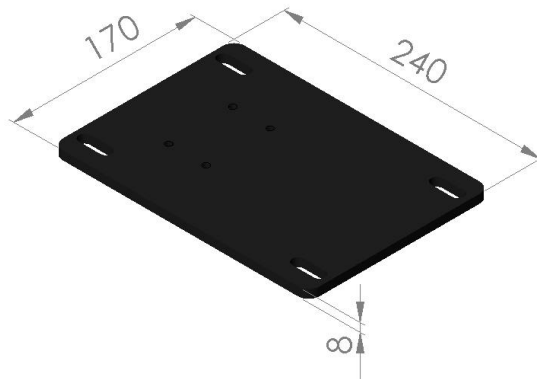


25x25mm Stainless Steel Goalpost System

MOUNTING SYSTEM BASE PLATES

Base plates are also available that fit beneath the pedestal clamps to allow a rigid connection to the floor or other surface. These plates are designed to be bolted to the floor or any other surface and have tapped holes to accept tube clamp connectors.

The plates incorporate slots that allow the position of the mounting system to be varied by ± 10 mm. These plates are suitable for use with Domino 32mm diameter floor/wall mount clamps (5-0161126) and 25mm pedestal clamps detailed previously.



The Plates are manufactured from 8mm thick steel plate and treated with a durable powder coat finish.

Mounting System Base Plates Part No T10206.

A-SERIES DUO PRINthead MOUNT SPACER

The Domino A-Series duo printer has a larger print-head which requires a spacer under the print-head mount block to allow it to be mounted to the Traverser.



The block is supplied complete with longer mounting screws for the print-head mount block.

A-Series duo print-head mount block spacer Part No T10214.

CONDUIT SUPPORT

The conduit support allows the print-head conduit to be supported and be free to move with the Traverser at the same time.

The Conduit Support kit consists of a polyurethane hanger, which can be adjusted to allow the conduit to be supported from different heights, a stainless steel adjustment collar, a stainless steel tensioning collar, a stainless steel snap ring to release the mounting and a stainless steel loop bracket. The loop bracket can be fitted to, for example the roof of the host machine.

There are additional components available to clamp the conduit support top mounting hook to 25mm x 25mm rail and 32mm diameter rail.

The polyurethane hanger is looped around itself and tensioned against the print-head conduit with the stainless steel tensioning collar.



Conduit Support Kit
Part No. T10208



25mm by 25mm Square Bar Conduit
Kit Clamp Part No T10209



Diameter 32 Round Bar
Conduit Kit Clamp Part No T10210

LUBRICATION

To ensure that the Traverser maintains its high level of performance and low level of maintenance, the linear slide should be lubricated at regular intervals.

The recommended interval for lubrication is every 100km, however this figure is dependent on environment and conditions of use and may vary. The amount of travel the Traverser has done can be monitored using the software that is supplied with the Traverser.

The following parts can be used to lubricate the traverser:

Traverser Grease Gun Part No T10221, which consists of the grease gun, which uses 70g refill tubes of grease and 2 applicator nozzles which help accurately pipe the lubricant onto the greasing nipples of the Traverser.

Traverser Grease Part No T10222, which is a 70g tube of grease, specially suited to the high speeds which the Traverser is capable of moving at.