

Hose Clamp Electro-Pneumatic Control Unit

Operation, Parts & Safety Manual
Original Instructions



Images shown may not exactly represent the actual control box





Index

Tooling

The control unit is designed to be used with the following pneumatic tools:

- Piston Tool
- Calliper Tool
- Calliper Tool Dry Cycle
- Ezyklik Calliper Tool
- Ezyklik Caliper Tool Dry Cycle

Operation

- 1.1 Warning & Safety Instructions
- 1.2 Pneumatic Tool Control Unit

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- 2.2 User
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- 2.4 Run, Warning and Advice

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- 3.2 Control Unit Wiring Diagram
- 3.3 Control Unit Pneumatic Diagram

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- 4.1 EC Declaration of Conformity



Images shown may not exactly represent the actual control box



Read these instructions carefully:

ELECTRICAL

An Electrical supply represents a source of considerable potential energy. Precautions should be taken to prevent accidents.

- Electrical supplies must be disconnected before any adjustments, maintenance or dismantling.
- The Maximum allowable electrical supply should be observed.

COMPRESSED AIR

A compressed air supply represents a source of considerable potential energy. Precautions should be taken to prevent accidents.

- Maximum operating pressure – 9.9 Bar
- Recommended air flow into unit – >50L/min.
Note. If the airflow is not achievable a longer time delay may need to be set to allow the jaws or piston to close fully.
- Use a 50 micron filter or better.
- Input air must be non-lubricated.
- Compressed air should never impinge in the body.
- Ports and pipes etc. should never be blocked by hand.
- Before connecting any pneumatic equipment to a compressed air supply, mountings, fittings, pipe work and electrical connections should be checked for security, and all or any protective transit plugs removed.
- No pipe work alterations or removal of fittings should be attempted with air supplies connected
- Compressed air supplies must be disconnected before any adjustments, maintenance or dismantling.
- The maximum allowable operating pressures should be observed.

TRAINING

The control unit must not be used by persons not properly trained in its use. Be certain that you receive proper training from your employer. If you have any questions contact your HCL representative.

WEIGHT

Control Unit – 6.7Kg

NOISE

- Sound pressure level is less than 70dB
- Vibration level is less than 2.5 ms⁻²

Operation – Pneumatic Tool Control Unit



Introduction

Developed exclusively for the range of Herbie Clip and Ezyklik pneumatic tools, the Pneumatic Control system gives a greater level of air pressure control.

Features

In the drive to eliminate error from production lines the control system has a number of features including:

HMI touch screen control

Digital control of air pressure – to maintain a consistent tightening force

Digital control of clamping time – to maintain a consistent tightening time

Dry cycle detection (tool option) – Detects tool use without a clip being in place

In process advisory information screens

Batch and unit count control

Supervisory control

Adjustable orientation of the HMI screen

External Signal Output

A 24v output signal can be supplied to the production line once the prescribed number of clamps has been tightened.

Low Maintenance

The Control Unit has no specific maintenance schedule and HCL Fasteners provide full backup and servicing support.

1 or 2-Preset Program Options

The Control Unit program allows the user to save the following process parameters within the Set Up pages:

- Clamp Time
- Tool Pressure
- Clamp Count (number of clamps per production assembly)
- Batch Count (number of production assemblies in batch)

If required, the Control Unit can also be set up with the ability to save 2 different sets of process parameters.



Images shown may not exactly represent the actual control box

Touch Screen – Administrator

Start Up

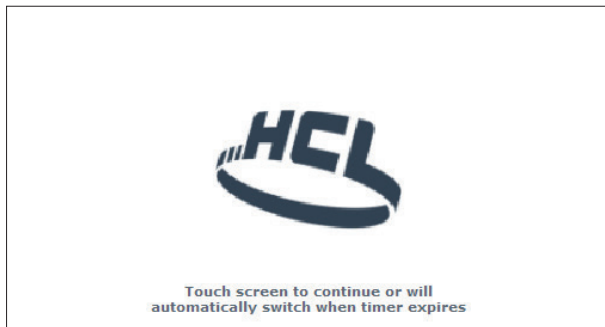


Connect the Control Box to electrical and compressed air supplies. Connect the tool to the Control box. In both cases refer to the images shown in the 'Pneumatic Tool Control unit' section of this manual

Switch on the power to the control box

The 'Start Up' screen is displayed

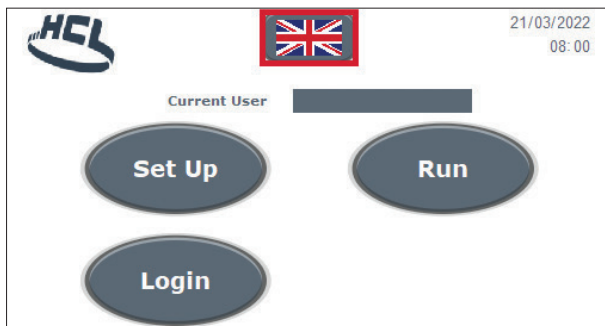
This will switch to the Main screen automatically after a short time but can be switched manually by touching the screen during this period



Language

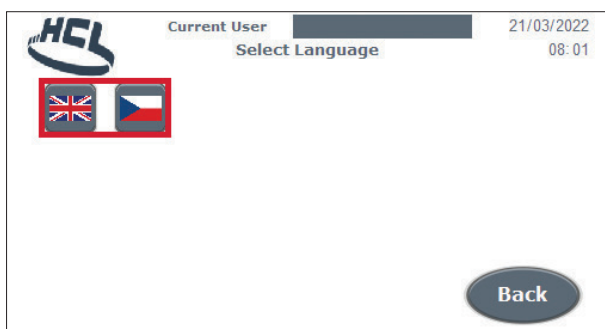


The Language required can be chosen by selecting the flag on the start screen



Select the required language

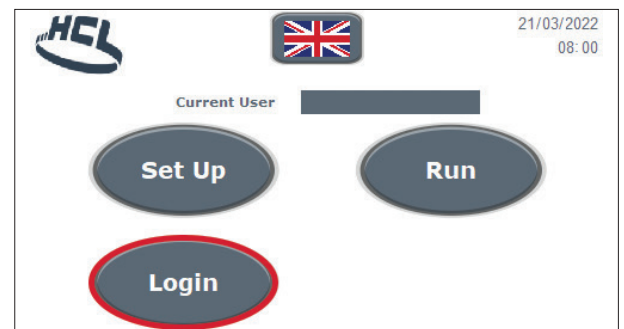
Select 'Back' to return to the Start screen



Administrator Login



In the Start screen select 'Login'



The 'User Login' Screen is displayed

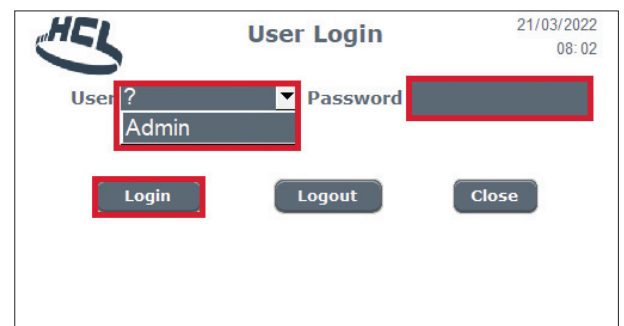
The control box is supplied with a default Administrator level login

From the 'User' drop down menu select 'Admin'

Enter default password 1234

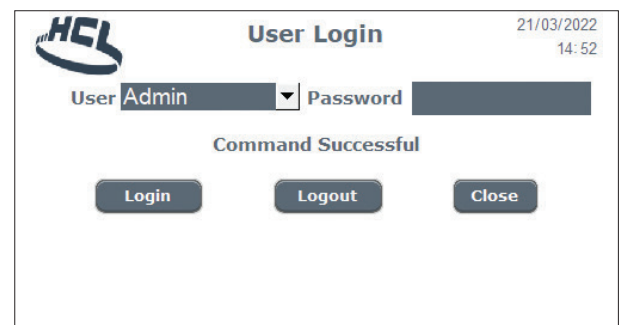
Select 'Login'

Note. For security reasons it is advised that the default User 'Admin' is deleted once administrative users have been set up on the control box



'Command successful' message is displayed within the 'User Login' screen

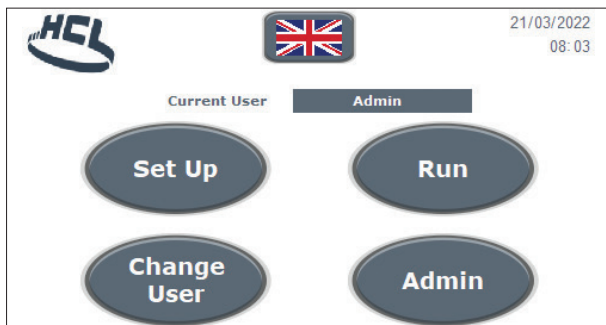
If incorrect login details entered 'Command Unsuccessful' message is displayed



Touch Screen – Administrator

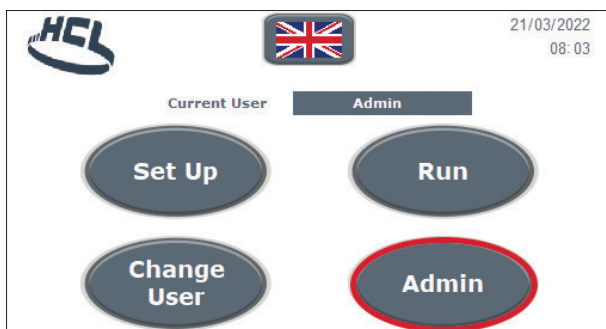
Administrator Login (cont)

- ↓ Start screen opens with the addition of an 'Admin' button

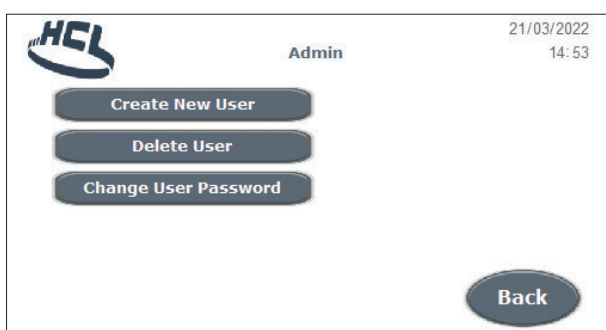


Administrator Actions

- ↓ Login as an Administrator via the front screen. See Administrator Login section
- When logged in as an Administrator the front screen has the option of the 'ADMIN' button.
- Select 'Admin'

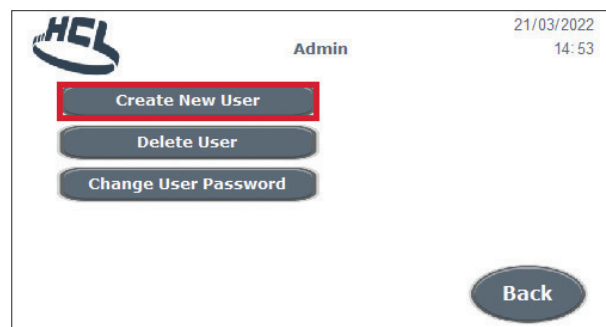


- ↓ The 'Admin' screen is displayed
- To return to the previous page select the 'Back' button

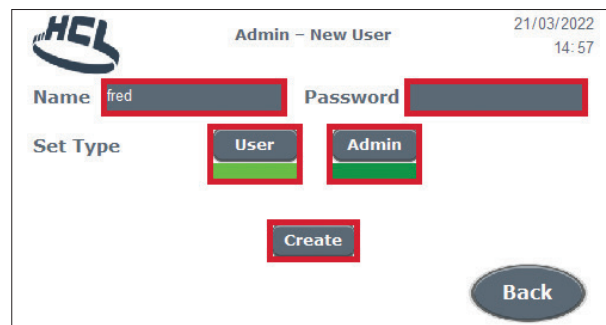


Create New User

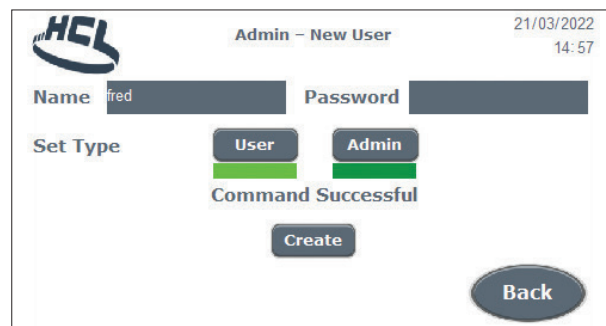
- ↓ In the 'Admin' screen select 'Create New User' – OR – 'Back' To return to the previous screen



- ↓ In the 'Admin – New User' screen enter the name of the new user in the 'Name' field
- Enter the new users password in the 'Password' field
- Decide if the new user is a 'User' or if they also have 'Admin' authority
- Select either the 'User' or 'Admin' fields
- Note. When selecting 'Admin' both the 'Admin' and 'User' fields are highlighted
- When selecting 'User' only the 'User' field is highlighted
- Select 'Create' – OR – Back' To return to the previous screen



- ↓ In the 'Admin' screen the 'Command Successful' message is displayed
- Select 'Back' To return to the previous screen



Touch Screen – Administrator

Delete User



In the 'Admin' screen select 'Delete User'
To return to the previous page select the 'Back' button



In the 'Admin – Delete User' screen select the name of the user to be deleted in the 'Name' drop down menu
Select 'Delete' – OR – 'Back' To return to the previous screen



In the 'Admin – Delete User' screen a confirmation message is displayed
Select 'OK or Cancel' – OR – 'Back' To return to the previous screen



In the 'Admin' screen the 'Command Successful' message is displayed
Select 'Back' To return to the previous screen

Change User Password



In the 'Admin' screen select 'Change User Password' – OR – 'Back' To return to the previous screen



In the 'Admin – Change User Password' screen enter the name of the user in the 'Name' drop down menu
Enter the users new password in the 'Password' field
Enter the users new password in the 'Confirm Password' field

Touch Screen – User

Change User Password (cont)

- ↓ Change Password box is displayed
Select 'Change Password' – OR – Back' To return to the previous screen

- ↓ In the 'Admin – Change Password' screen a confirmation message is displayed
'Please Confirm Operation'
Select 'OK or Cancel'

- ↓ In the 'Admin – Change Password' screen the 'Command Successful' message is displayed
Select 'Back' To return to the previous screen

User Login – Equipment Switch On

In the 'Start' screen Select 'Login'

↓

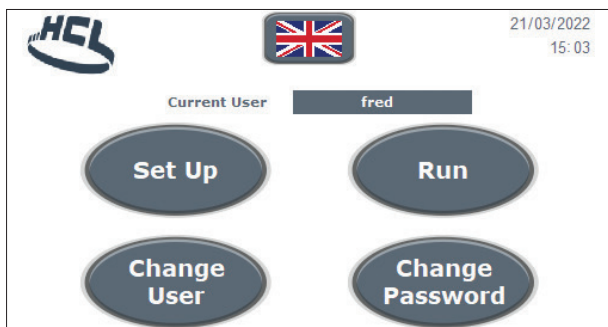
- ↓ The 'User Login' screen is displayed
Select the user from the 'User' drop down menu
Enter the associated password
Select 'Login'

- ↓ 'Command Successful' advice message displayed on screen
If incorrect login details entered 'Command Unsuccessful' message displayed on screen –
Select 'Close'

- ↓ Depending on the type of user logged in the Start screen opens with either:
'Change User' and 'Change Password' or 'Change User' and 'Admin' options

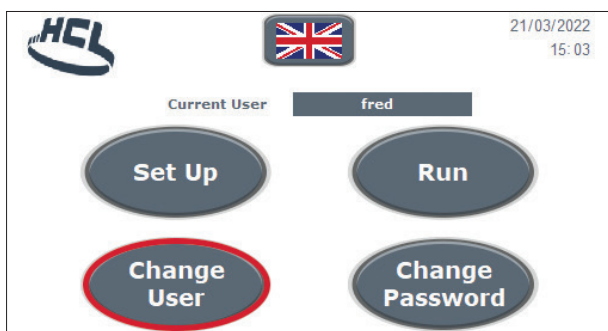
Touch Screen – User

User Login – Equipment Switch On (cont)

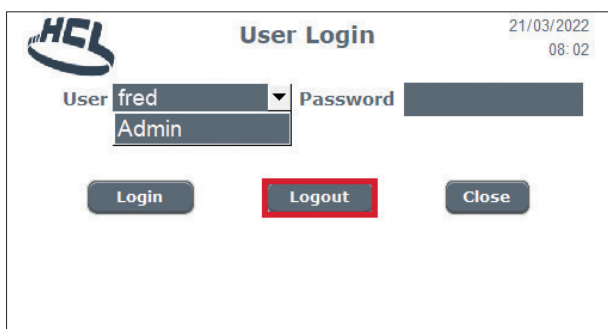


Change User

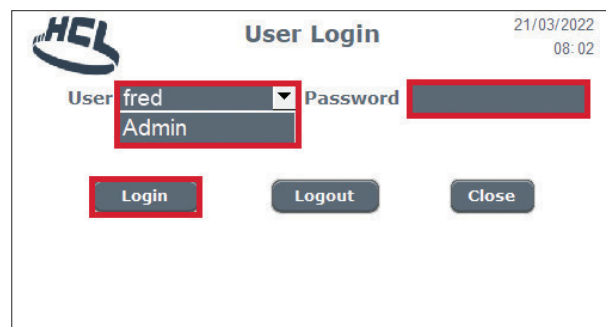
In Start screen Select 'Change User'



The 'User Login' screen is displayed
Select Logout

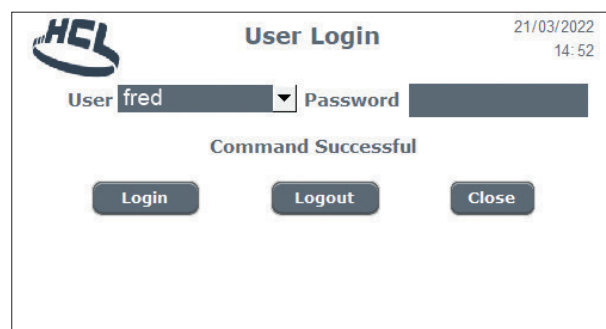


Select the user from the 'User' drop down menu
Enter the associated password
Select 'Login'

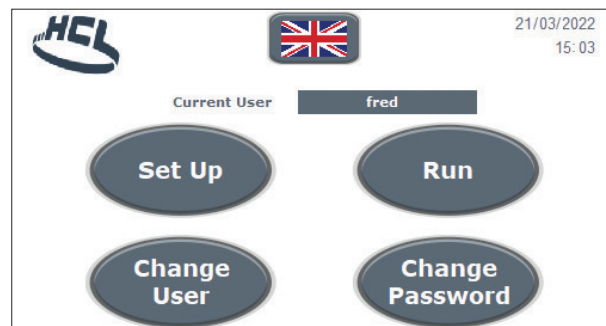


'Command Successful' advice message displayed on screen

If incorrect login details entered 'Command Unsuccessful' message displayed on screen

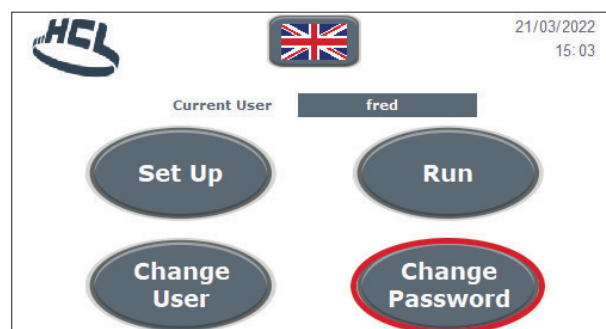


The start screen is displayed after a short time delay



Change Password

Select 'Change Password'



Touch Screen – User / Set Up

Change Password (cont)



The 'Current User – Password Change' screen is displayed
Enter 'Current Password'
Enter 'New Password'
Enter 'Confirm Password'
The 'Change Password' field is displayed
Note. If the 'Change Password' field is not displayed there is an error with the information entered in the password fields
Select 'Change Password' – OR – Select 'Back' to return to the previous screen



The 'Please confirm the operation' message is displayed
Select 'OK' or 'Cancel'

Logout



In Start screen Select 'Change User'



In the 'User Login' screen Select 'Logout'



In the 'User Login' screen the 'Command Successful' message is displayed
Select 'Close'



The front screen is displayed

Set Up



A user or Admin must be logged in to use the 'Set Up' and 'Run' functions.

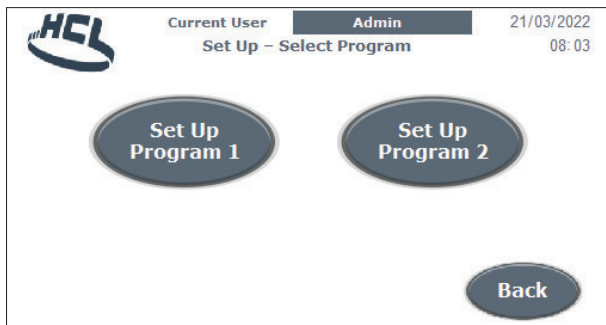
In Start screen Select 'Set Up'

Touch Screen - Set Up

Set Up (cont)



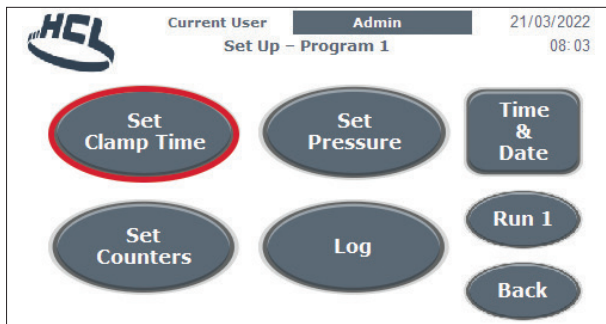
The 'Set Up – Select Program' screen is displayed
Select program



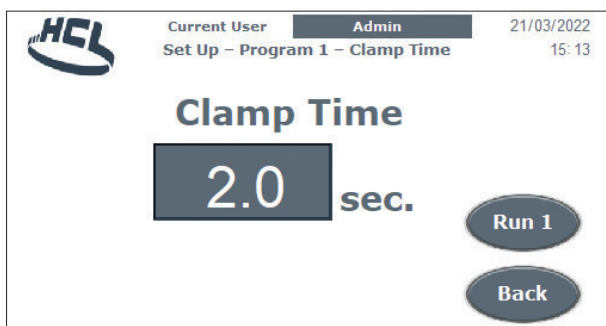
Clamp Time



In the 'Set-Up – Program #' screen select 'Set Clamp Time'



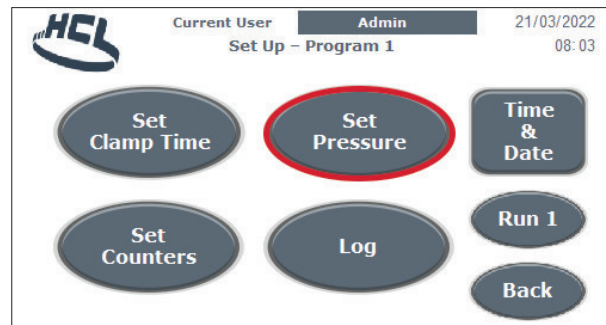
The 'Set-Up – Program # – Clamp Time' screen is displayed
Select the 'Clamp Time' field. The on-screen keypad will be displayed
Enter the desired clamp time
Select 'Run #' to use equipment – OR – Select 'Back' to return to the previous screen



Set Pressure



In the 'Set-Up – Program #' screen select 'Set Pressure'



The 'Set-Up – Program # - Tool Pressure' screen is displayed

Select the 'Unit Of Pressure' type:

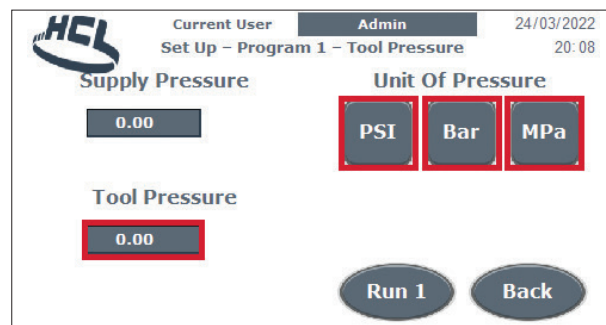
PSI , Bar or MPa

The 'Supply Pressure' field is advisory and cannot be set

Select the 'Tool Pressure' field. The on-screen keypad will be displayed

Enter the desired tool pressure

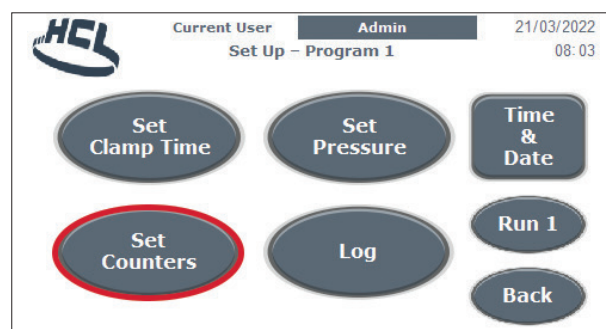
Select 'Run #' to use equipment – OR – Select 'Back' to return to the previous screen



Set Counters



In the 'Set-Up – Program #' screen select 'Set Counters'



Touch Screen – Set Up



The 'Set-Up – Program # - Counters' screen is displayed

Note. The 'Clamp Count' and 'Batch Count' fields are advisory only and cannot be set

Select the 'Clamp Count Total' field. The on-screen keypad will be displayed

Enter the desired 'Clamp Count Total' per batch

Repeat for the 'Batch Count Total' field

The counters can be zeroed by selecting 'Reset Counters'

The 'Dry Cycles' field is advisory and cannot be set

but can be zeroed by selecting 'Reset Dry Cycle'

Select 'Run #' to use equipment – OR – Select 'Back' to return to the previous screen

Set Logs



In the 'Set-Up – Program #' page select 'Log'



In the 'Set-Up – Program # – Logs' screen

The 'Total Clamps', 'Total Batches' and 'Total Dry Cycles' fields are advisory and cannot be set. They can be zeroed by selecting 'Reset All Logs'

Select 'Run #' to use equipment – OR – Select 'Back' to return to the previous screen

Set Time & Date



In the 'Set-Up – Program #' screen select 'Time & Date'



In the 'Set Time & Date' screen

The 'Current Time / Date' – 'DD' / 'MM' / 'YYYY' and 'hh' : 'mm' fields are advisory and cannot be set

In the 'New Time / Date' the fields for 'DD' / 'MM' / 'YYYY' and 'hh' : 'mm' can be individually selected.

For each selection the on-screen keypad will be displayed

Enter the desired figure for 'DD' / 'MM' / 'YYYY' and 'hh' : 'mm'

Select 'Set New Time / Date'

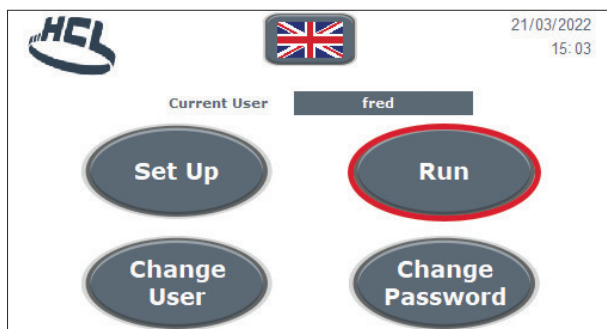
The newly entered selections will become the 'Current Time / Date'

Select 'Back' to return to the previous screen

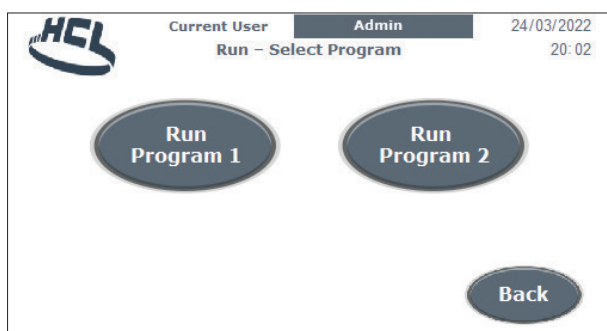
Touch Screen – Run, Warning and Advice Screens

Run

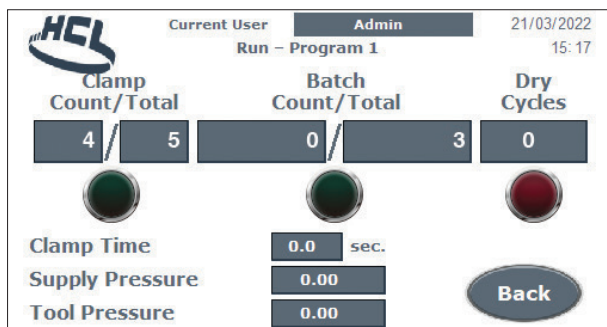
In the 'Start' screen select 'Run'



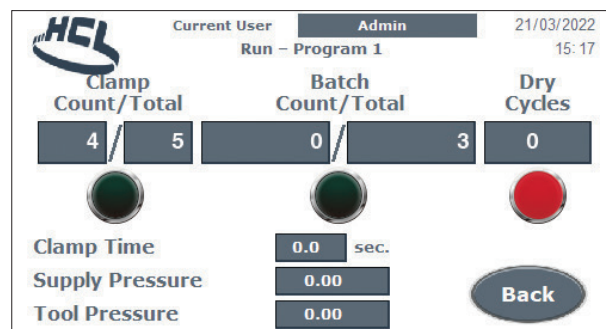
The 'Run – Select Program' screen is displayed. Select the program number required –OR– Select 'Back' to return to the previous screen



The 'Run – Program #' page is displayed. The 'Clamp Count / Total', 'Batch Count / Total', 'Dry Cycles', 'Clamp Time', 'Supply Pressure' and 'Tool Pressure' fields are advisory and cannot be set

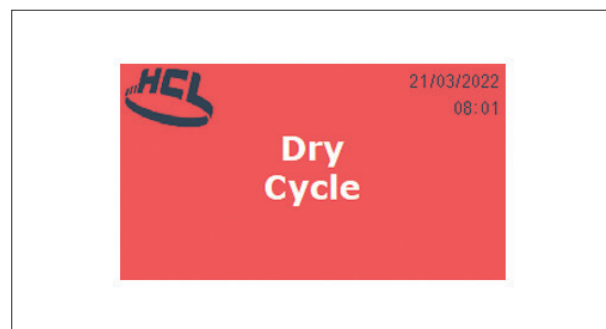


If a 'Dry Cycle' is registered the indicator light illuminates red

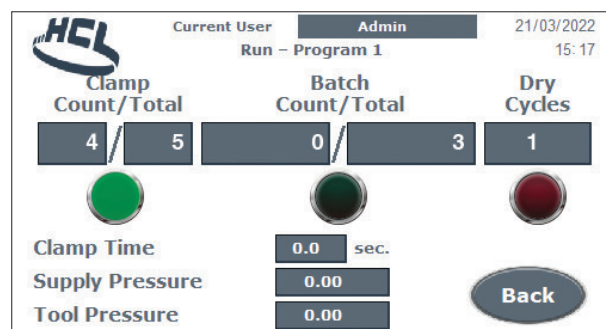


To accompany the red indicator light on the 'Run – Program #' screen an on screen message box 'Dry Cycle' is displayed

This Indicates that the tool has been operated but has not fitted a Hose Clamp unit. Message disappears on screen after completion of the operation cycle



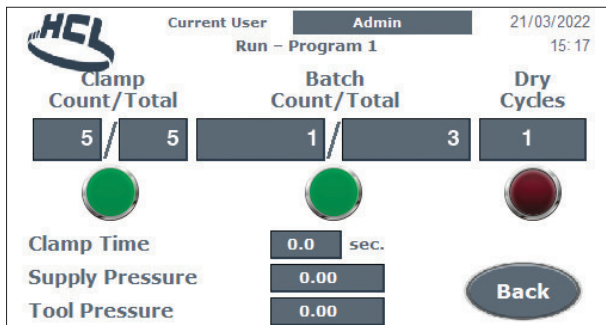
On completion of a good clamp cycle the 'Clamp Count/Total' indicator light will be illuminated green



Touch Screen – Run, Warning and Advice Screens

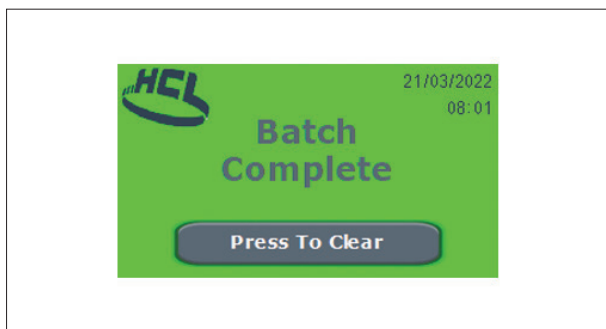
Run (cont)

- ↓ On completion of the 'Batch Total' the 'Batch Count/Total indicator light will also be illuminated green

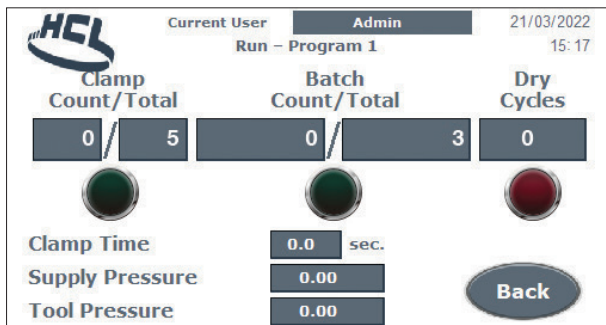


- ↓ To accompany the 'Batch Total' green indicator light an on screen message box 'Batch Complete' is displayed

Select 'Press To Clear' to return to the previous page



- ↓ The 'Run - Program#' screen is displayed with the count totals reverting to zero

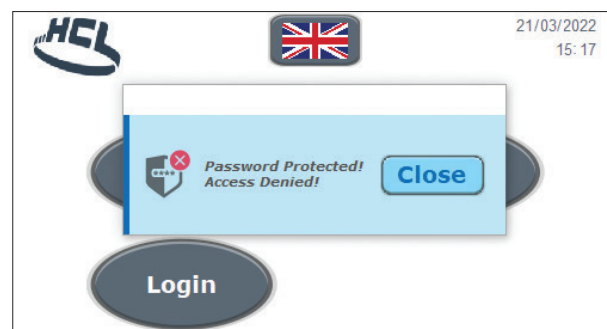


Warning and Advice Screens

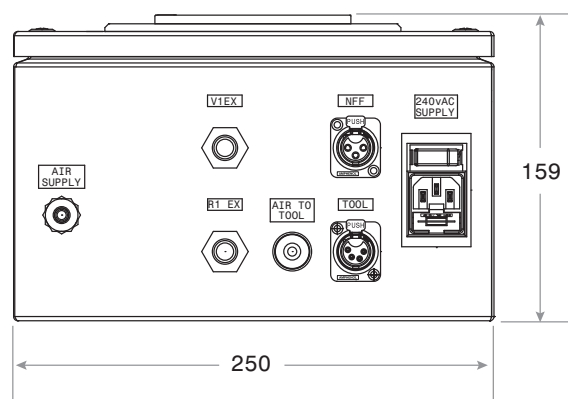
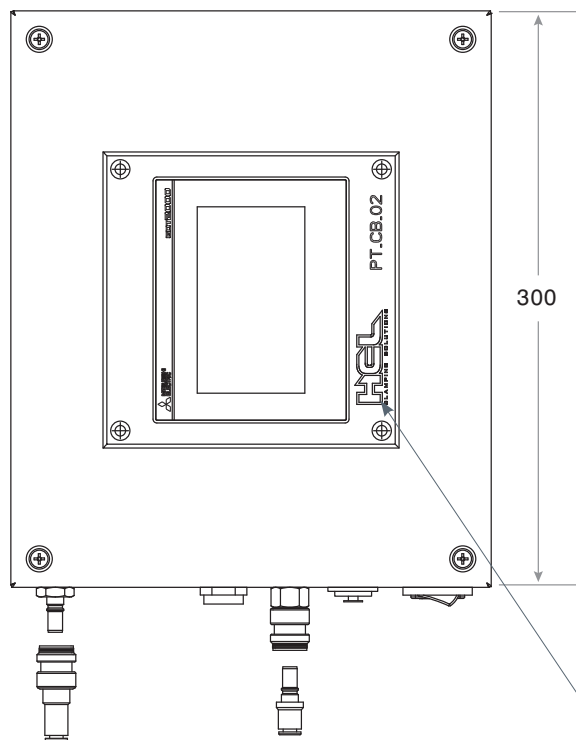
- ↓ 'Supply Pressure Too Low' warning
Check supply pressure and adjust



- ↓ Should a user try to access the 'Set Up' screens without being logged in a warning message is displayed 'Password Protected – Access Denied'
Select 'Close' to return to the Front screen



Reference – Control Unit Schematic



Note. The orientation of the HMI unit is adjustable by 90, 180 and 270 degrees. This is to allow the control unit to be located in the most suitable position for the operator and also for access to services.

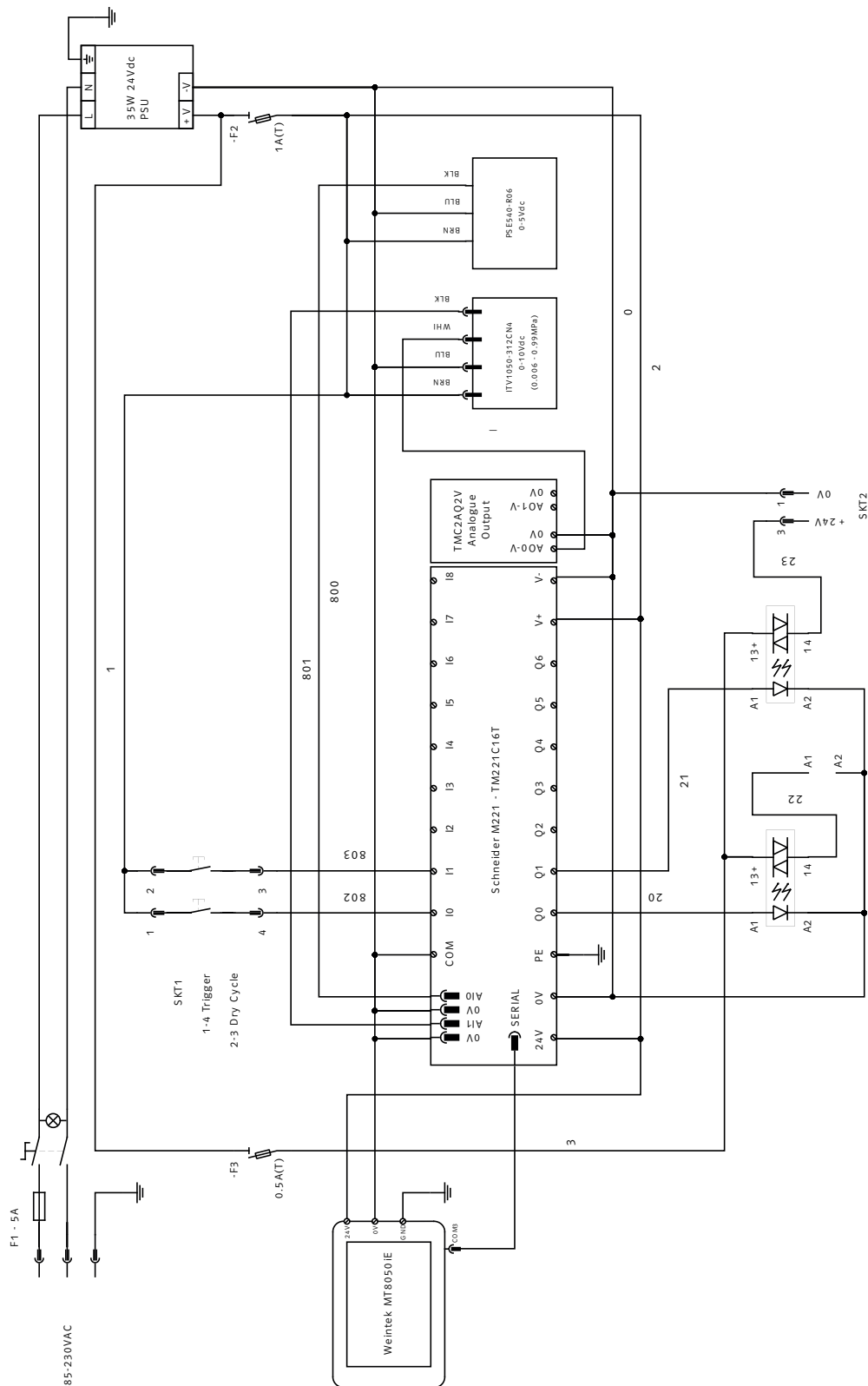
This feature requires the removal of the control unit front cover to enable the HMI unit to be repositioned.

Ensure that the Control Unit is turned off before gaining access. Refer to the Warning & Safety Instructions within this manual.

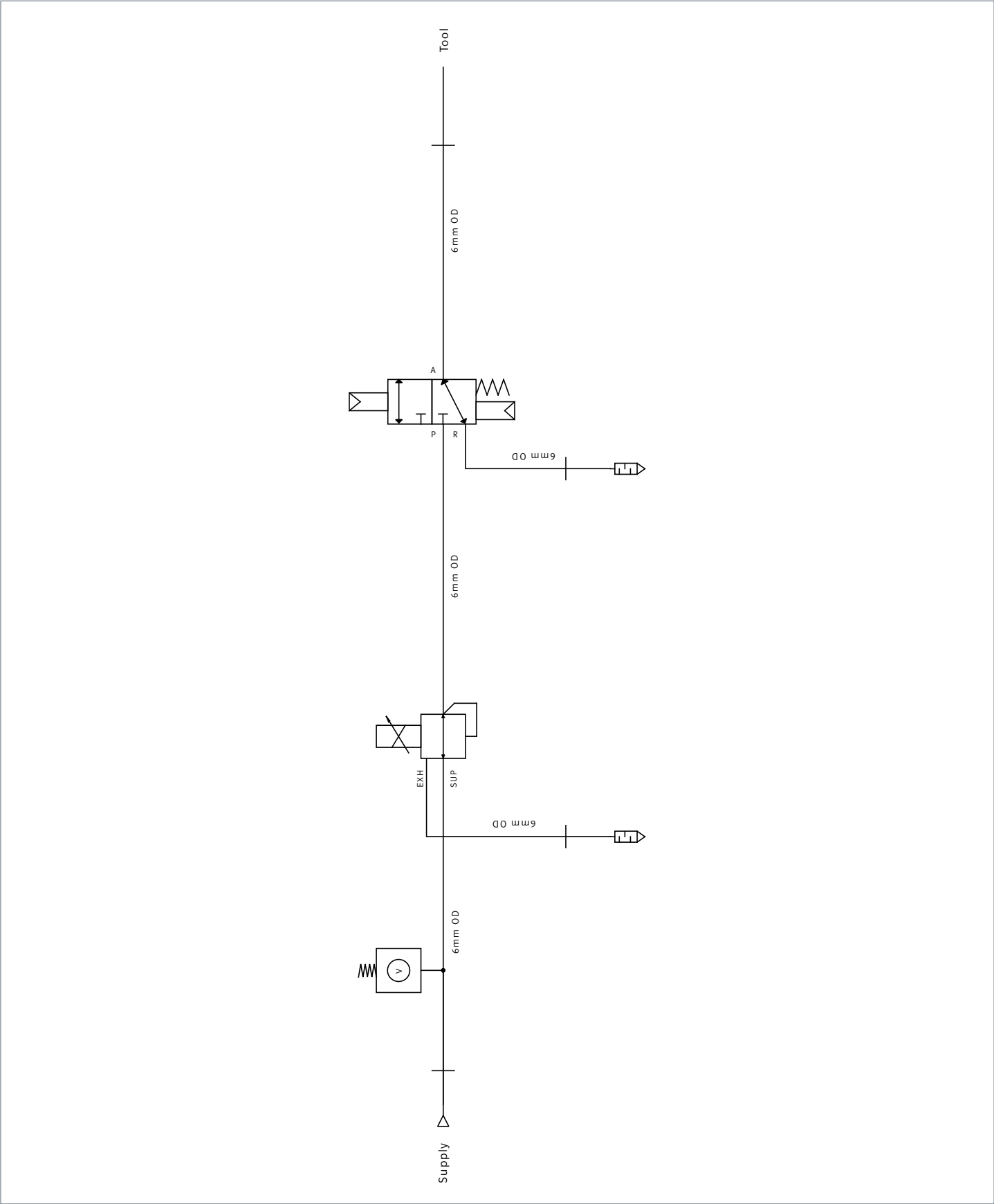


Images shown may not exactly represent the actual control box

Reference - Control Unit Wiring Diagram



Reference – Control Unit Pneumatic Diagram



EC Declaration of Conformity

In accordance with EN ISO 17050-1-2004



Document reference
No. CE-1000

Name of manufacturer: HCL Fasteners Ltd
Address of manufacturer: First Avenue, Westfield Industrial Estate, Radstock, Bath, BA3 4BS, UK
Telephone: +44 (0)1761 417714
Email: sales@hcl-clamping.co.uk

We hereby declare that the following machinery is in conformity with the Machinery Directive 2006/42/EC:

Machinery description: Control Unit

Part No: PT-CB-02

Serial No: PT-CB-02- -

Year of
manufacture

Consecutive
number

Applied Harmonised Standards:

| Ref. No. | Title |
|----------------------------|--|
| BS EN 12100:2010 | Safety of machinery. General principles for design. Risk assessment and risk reduction |
| BS EN ISO 4414:2010 | Pneumatic fluid power. General rules and safety requirements for systems and their components |

In Accordance with BS EN ISO/IEC 17050-1:2010

| | |
|---------------------|--|
| BS EN ISO 4414:2010 | Pneumatic fluid power. General rules relating to systems |
| BS EN 60204-1:2018 | Safety of Machinery. Electrical equipment & machines |
| BS EN 50565-1:2014 | Use for cables with rated voltage not exceeding 450/750V |

I hereby declare that the equipment named above has been designed to comply with the relevant sections of the above referenced specifications and is in accordance with the requirements of the Directive.

Name: David Coles
Position: Managing Director
Address: First Avenue, Westfield Industrial Estate, Radstock, Bath, BA3 4BS, UK
Date: 1st July 2018

The technical documentation for the machinery is available from the above address.

Considerable effort has been made to ensure that this product conforms to our high quality standards. However, should you experience any difficulties, please contact your Sales representative providing samples and the serial code specified on the tool.

HCL – UK & Rest of the World

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Email: sales@hcl-clamping.co.uk

HCL – North America

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Email: sales@hcl-clamping.com

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April 2022

COMPANY WITH
QUALITY SYSTEM
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ISO 9001

