Specac manufactures and stocks a full range of IR sampling accessories for solids, liquids and gases and optical components. We design and manufacture fully integrated sampling solutions for the laboratory, at line and in-line process measurement, to cope with extremes of temperature from −190°C to +800°C, pressures from vacuum to 5000psi and corrosive conditions.

♦ **Single and multiple reflection ATR systems**
  Golden Gate ATR (-150°C to +300°C)
  Quest ATR
  Gateway ATR (up to +200°C)
  25 Reflection ATR

♦ **Transmission – Fixed/Variable pathlength gas cells up to 20m**
  Cyclone (up to +200°C)
  Tornado
  Storm (up to +250°C)

♦ **Diffuse Reflectance**
  Selector
  Minidiff Plus

♦ **Specular Reflectance**
  Monolayer
  Fixed Angle

♦ **Transmission – Liquids and Solids**
  Omni-Cell
  Pearl
  Liquid Flow Cells
  Variable Temperature Cell Holder (-190°C to +250°C)
  Heating Jacket (up to +250°C)

♦ **Extreme Conditions**
  Environmental Chamber (up to +800°C, 500psi)
  High Temperature High Pressure Cell (up to +800°C, 1000psi)

♦ **Sample Preparation**
  Presses and Dies (up to 40 tons)
  Film Maker (up to +400°C)

♦ **Polarizers**
## CONTENTS

1. **INTRODUCTION** ................................................................. 5
2. **UNPACKING CHECKING AND INSTALLATION** ......................... 7
3. **GENERAL SAFETY** ............................................................ 11
4. **DIAGRAMS OF THE ATLAS™ AUTOTOUCH 40T PRESS** ............... 15
5. **OPERATION OF THE ATLAS™ AUTOTOUCH 40T PRESS** .......... 18
   - **GENERAL PROCEDURE** .................................................. 18
   - **DISPLAY SCREENS** .......................................................... 19
   - **FUNCTION BUTTONS** ..................................................... 19
   - **OPERATION SYMBOLS** ................................................... 20
   - **OPERATION STEPS TO PRESS A SAMPLE** ......................... 24
   - **CHANGING LANGUAGE DISPLAY AND UNITS OF LOAD** .......... 26
   - **PLACING WORK IN THE ATLAS™ AUTOTOUCH 40T PRESS** ......... 26
   - **APPLYING A LOAD WITH THE ATLAS™ AUTOTOUCH PRESS** .... 27
   - **RELEASE OF THE APPLIED LOAD** .................................... 31
   - **OPERATION - FURTHER FEATURES OF THE PRESS** ............... 35
   - **THE SAFETY GUARDS** ................................................... 35
   - **THE PRESSING AREA** ..................................................... 36
   - **PISTON TRAVEL** ............................................................ 38
   - **TWO-STAGE PRESSING PROCESS FOR HIGHLY COMPRESSIBLE** .. 39
   - **SAMPLES** ................................................................. 39
   - **USE OF THE STOP BUTTON** .............................................. 40
6. **DISPLAY SCREENS - OPERATION, OPTIONS, PROGRAMMING,** ........ 42
   - 1) **MAIN OPERATION SCREEN (MOS)** ................................ 42
   - 2) **OPTIONS SCREEN (OPT)** ............................................ 49
   - 3) **PROGRAMMING SCREEN (PGM)** ..................................... 51
   - 4) **DIRECTORY SCREEN (DIR)** ........................................... 54
   - 5) **EDITING SCREEN (EDIT)** .............................................. 56
7. NON-Routine PROCEDURES FOR THE ATLAS™ AUTOTOUCH
40T PRESS .................................................................................... 67
ABORTING A PRESSING PROCEDURE ........................................ 67
WORK BECOMES "TRAPPED" IN THE PRESSING AREA ............... 67
NO SAMPLE IN THE PRESSING AREA ........................................... 68
8. FAULT FINDING, CAUSES AND REMEDY FOR ATLAS™ AUTOTOUCH
40T PRESSES .................................................................................. 69
9. GENERAL PREVENTATIVE MAINTENANCE OF ATLAS™ AUTOTOUCH
PRESSES .......................................................................................... 74
CHECKING THE OIL LEVEL AND CHANGING THE OIL ............... 74
CHECKING OF PRESS PERFORMANCE ........................................... 75
LEAD SCREW ASSEMBLY LUBRICATION ..................................... 76
10. AUTOMATIC CONTROL OF THE ATLAS™ AUTOTOUCH 40T PRESS
BY USB CONNECTIVITY ................................................................. 77
11. ACCESSORIES FOR ATLAS™ AUTOTOUCH PRESSES ............... 77
12. SPECIFICATIONS OF ATLAS™ AUTOTOUCH PRESSES ............. 78
13. EC DECLARATION OF CONFORMITY ........................................ 79

© November 2016 Specac Ltd. All rights reserved.

Brilliant Spectroscopy is a trademark of Specac Ltd.
Other product names mentioned herein may be trademarks of their respective owners.
1. Introduction

Thank you for purchasing a Specac product.

The Atlas™ Autotouch 40Ton (40T) Hydraulic Presses are automatic and programmable hydraulic presses which have been designed for a wide variety of pressing applications within the laboratory or heavy industrial environments, to apply a load at a minimum of 4 tons up to a maximum of 40 tons. These presses are specifically suited to the preparation of solid sample discs, particularly for pellets at 40mm diameter using Specac Atlas™ evacuable pellet die assemblies, from the higher tonnage loads offered by the pressing system that may be needed to apply across larger surface areas of a sample for compaction.

The Atlas™ Autotouch 40T presses enable the controlled application and release of an applied load via push button or programmable timed functionality and can accommodate large samples up to 240mm wide, 220mm deep and 155mm tall. The operations to set a specific load to apply or create a program for a load application sequence for its duration of hold are carried out via a touch sensitive display screen. There are two physical buttons on the front panel to push for actual operation of the press – a start button to apply a load and a stop button to release the load.

The press works by automatic motorised pumping of a hydraulic fluid (oil) to raise a piston and compress a sample held in the pressing area. The press consists of a motor, pump and oil reservoir assembly from where the oil is transferred across to the base of the pressing area and forced under the piston assembly. As the oil pressure builds up in the press system the load being applied to the sample will be registered on the electronic display. The application of a load will continue until the required load is reached and then held until released by the operator. Alternatively, the load can be applied in a series of load stages via a specific program and automatically released from a programmed time hold function and controlled release rate. The power unit is extremely quiet and operates below 62 dB(A) making the presses ideal for use in all environments.
The sample is held in the pressing area prior to compression by use of a lead screw and top anvil pressing face mechanism. Incorporated into this mechanism are compression disc springs that allow for a slow release of any load to the sample pressing procedure. In the compression process the disc springs will be initially compressed before full resistance is met to stop the travel of the piston. When any stored load is released the disc springs will relax to their non-compressed state and hence provide for a slow release of a full load.

An important part of the press is the safety guard mechanism. For any operation of the press the safety guard must be in its closed (down) position. Accidental raising of the guard, even if the press is under load, will automatically abort the pressing operation and reduce the load from the system to render it safe. Please read section 3 on pages 11 to 14 regarding safe operation before using the press for the first time.

The Atlas™ Autotouch 40T press is provided with USB connectivity if it is a requirement to operate the press remotely from a computer system. For remote operation, please see Section 10 in this manual.

The Atlas™ Autotouch 40T press is fully CE marked to comply with strict European regulations.

**WEEE Directive For Equipment Disposal**

The symbol (above) on the back of the press indicates that this product complies with the Waste Electrical and Electronic Equipment Directive (WEEE). If this product is in use and was purchased within the European Union, please contact your local sales agent or Specac to make arrangements for disposal of this equipment.
2. Unpacking, Checking and Installation

Beware! The Atlas™ Autotouch 40T press is very heavy and care must be taken to transport it correctly. Please keep the press packing materials for future transportation by reversing the following procedure. This will protect you and the press from accident or injury.

The Atlas™ Autotouch 40T press is shipped in a timber packing case with a special pallet base. The press is packed with a lifting “eye bolt” assembly already fitted, ready for lifting with the customer’s crane. Having already removed the screws around the top perimeter of the timber packing case and lifted off the top lid to allow access to the instruction manual (as advised from the external warning label on the packing case), proceed as follows.
Remove the 8 coach bolt (nuts & washers) and blocks securing the 2 retaining timber ribs. Take out the 2 ribs. Remove the 4 screws securing the 50mm x 50mm timber on the inside. Remove the 50mm x 50mm timber by “knocking” upwards if necessary.

The press is now ready to be lifted out of the wooden pallet.

**NOTE:** The press MUST be lifted into its working position using a suitable hoist (or crane) with a lifting hook to pass through the eye bolt. DO NOT ATTEMPT TO LIFT THE PRESS BY ANY OTHER METHOD. When the press has been installed and the lead screw assembly has been fitted, for any subsequent possible repositioning, the press should NEVER be lifted via the lead screw handle. Always use the lifting eye bolt assembly pieces for a re-siting operation.

The press can now be lifted upwards and out of the pallet/box using a crane, after attaching the crane hook to the press lifting ring on the top. The leadscrew assembly and mains power cable will also be located in the box. Cut the straps that hold these items in place.

Place the press in its working position. The bench worktop should be of a minimum thickness of 25mm. The press needs to be sited near to an electrical power supply to connect to the press for operation.

**Removing the Lifting “Eye Bolt” Assembly**

You will need to dismantle the lifting eye bolt pieces from the Atlas™ Autotouch 40T press and fit the lead screw assembly before the press can be used.

Before the lead screw assembly can be put in place the internal packing in the press has to be removed. Cut the tape at the top of the plastic bag and around the base of the bag and lift clear of the press. You will see that there is further protective packing within the pressing area of the press behind the safety guard. The safety guard is in the down position and held in place by sticky tape to the base of the press on the outside. Remove the sticky tape and lift up the safety guard via
the handle to gain access to the internal pressing area. Remove the packing inside.

Using a suitable bar and appropriate spanner undo the eye bolt from the eye bolt assembly of parts. Some force may be needed initially to overcome the thread-locking sealant that is used to ensure the parts do not undo in transit.

Now remove the lifting eye bolt pieces away from the press. The screw bolt and lower spread washer are removed from inside the pressing area by opening of the front safety guard.

Fit the lead screw assembly as shown in the diagram on page 15. For operation ensure the bolster pressing anvil face (10) is securely fixed
in the lead screw. The anvil (10) is held in the hollow end of the lead screw using an O-ring from a compression push fit.

The press is supplied filled with hydraulic oil (VG68, P/N GS25900) and is ready to use.

Specac would strongly advise that the Atlas™ Autotouch 40T press packing materials are retained and not destroyed (if at all possible), for future transportation should it be required. Using the purpose built packaging is the safest way of moving and containing the press to minimize for any possible damage in transit. Replacing an Atlas™ Autotouch 40T press in its packaging is the reverse of the procedure described previously.

For any inquiries to Specac regarding the Atlas™ Autotouch 40T press, the serial number must be quoted. The serial number is a five digit number preceded by a letter and it is found on the electrical appliance label placed on the electrical/motor housing assembly panel at the rear of the press.
3. General Safety

Specac recommends that certain safety precautions should be followed for any operational procedure of the Atlas™ Autotouch 40T press. The press is very heavy and it should only be lifted using suitable equipment and moved in a safe manner.

Safety Regulations

The Atlas™ Autotouch 40T press has been designed with reference to the following Standards:


Testing has been performed by the application of the following Regulations and Standards:

- EN-61326-1 :2013 EMC requirements.

CE Marking

Electrical Safety

• Check that the input voltage (230v, 220v, 110v or 100v) and frequency 50Hz or 60Hz) printed on the appliance label at the back of your press is compatible with your AC mains voltage.

• The electrical supply connection to the power plug must be earthed. The protective action earth contact must not be negated by use of an extension cable without a protective conductor.

• Any interruption of the protective conductor inside or outside the press or disconnection of the protective earth terminal is likely to make the apparatus dangerous. **Intentional interruption is prohibited.**

• If the press is to be energised via an external autotransformer for voltage reduction, make sure its common terminal is connected to the neutral (earth pole) of the power supply.

• **ONLY** suitably rated mains leads (power cables) should be used with this product.

• When the press is connected to the mains power supply, terminals may be live and opening of covers or removal of parts (except those to which access can be gained by hand) is likely to expose live parts. To avoid the risk of electrocution, disconnect the mains power supply **BEFORE** removing any covers to the electrical components or motor assembly.

• Make sure that only fuses with the required current rating and specified type are used for replacement. **The use of make-shift fuses and short-circuiting of fuse holders are prohibited.**

• When the power is switched off from the mains supply, wait one minute before disconnecting the mains input cable, as capacitors can store charge and give severe shock.
Whenever it is likely that electrical protection has been impaired, the press should be made inoperative and be secured against unintended operation.

**Operational Safety**

The Atlas™ Autotouch 40T press is safe to use provided that it is operated as recommended and directed from this instruction manual.

The Front Safety Guard (see page 35) is a very important component and its mechanism is linked to the operation of the press. When the guard is closed (down), in its safe position, the press is enabled to apply a load to a sample. When the guard is open (up) the press operation is disabled. (No power to the motor is allowed). Therefore, there is no risk of accidental harm due to operation of the press whilst handling samples within the pressing area.

The safety guard is operated mechanically and is raised and lowered by hand. If the safety guard shows any visible signs of damage (marks, scratches etc), these may impair its effective performance for safe containment. Specac recommends that the safety guard is replaced if damaged to conform to the correct safety standards.

If power is cut to the press whilst a load is being applied DO NOT RAISE the safety guard. Should this occur please refer to the section on the Safety Guard (see page 35) for the correct procedure under these circumstances.

Other possible operational risks may be due to the specific samples, work or accessories (e.g. Atlas™ Evacuable Pellet Dies) that are being used with the Atlas™ Autotouch 40T press. You should take note of the specific safety considerations involved with these items if they are being used.
• Do not exceed a load limit of 40 tons for the Atlas™ Autotouch 40T Press.

• Do not attempt to press potentially combustible materials or materials with a low flash point temperature.

• Do not operate the press in very hot or very cold environments. Ambient temperature range allowable is 5°C to 40°C.

• Do not operate the press in WET, DAMP or HUMID environments. (Allow time for condensation to evaporate before operation – if the press has been stored in cold conditions).

• Do not operate the press if it shows any visible damage. The press may have been dropped in transit or damaged in use. Seek advice.

• Do not continue operating the press if it fails to perform the intended measurement. Seek advice.

**Repair or Maintenance Safety**

The Atlas™ Autotouch 40T press shall be disconnected from all voltage sources before it is opened for any adjustment, replacement of parts, maintenance or repair.

Any adjustment, maintenance or repair of the opened apparatus under voltage should be avoided as far as possible and if inevitable, should be carried out **only by a skilled person who is aware of the hazards involved**. Capacitors inside the apparatus may still be charged even if the press has been disconnected from all voltage sources.

Front View (Front Safety Guard Closed)
Back View (Front Safety Guard Closed)
Detail of Electronic Front Control Panel

1

2

4

11

12
5. Operation - Atlas™ Autotouch 40T Press

General Procedure

The Atlas™ Autotouch 40T press is used to apply a constant load to a sample contained within the pressing area. The sample will usually take the form of a particular size evacuable pellet die loaded with a sample powder for compaction.

The Autotouch 40T press can apply a load from use of a standard “simple program” (PZ – program zero), or from the loading and running of one of six programs (P1 to P6), which can be custom created and stored in the presses Directory register.

When using the (PZ) program, the load (tonnage) to be applied can be selected from the presses own allowable load range limits by touching the Increase Load symbol from the main Operation Screen menu of the Display Screen (4) and then applied when the start button (11) is pressed. A load that can be set for the Autotouch 40T press is from 4.0 Tons to 40.0 Tons in the range in 0.5 Ton steps.

For the (PZ) program, the load is held from a Maintain Load function step with an automatic “top up” of the load if the tonnage load value set reduces, until the stop (release) button (12) is pressed. Alternatively, the load can be applied for a particular time with use of either the Maintain Load or a Hold Load function by running a particular program sequence (P1 to P6) that has been created and stored into the memory of the Auto press. Programming and Editing for the press operation are explained in their own sections of this instruction manual. (Please see Section 6.)

For the procedural description of operation in how to install, press and remove a sample from an Atlas™ Autotouch 40T press, please refer to the diagrams of the press for the part identification where mentioned. If an evacuable pellet die with a powder sample is to be placed in the Atlas™ Autotouch 40T press, then prior preparation of the die and its sample loading is required. Please follow the instructions for use supplied with the evacuable pellet die.
Important!
Ensure that any tonnage loads used on the press are within the maximum safety limit load of the die.

Display Screens, Function Buttons and Symbols

Display Screens

All operations and the status of the Atlas™ Autotouch 40T press are communicated through the Autotouch Display Screen (4). The Autotouch Display Screen (4) has five principal types of display presentation.

These five “Display Screens” are:

1) Main Operation Screen (MOS).
2) Options Screen (Opt).
3) Programming Screen (Pgm).
4) Directory Screen (Dir).
5) Editing Screen (Edit).

Function Buttons

There are two function buttons on the front panel (2). The top button is the start (apply load) button (11) and the lower is the stop (release load) button (12).

The start (11) and stop (12) buttons are marked on the press panel (2) for their function with appropriate symbols.

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>🔄</td>
<td>Start pressing (apply load) button (11).</td>
</tr>
<tr>
<td>🔄</td>
<td>Stop pressing (release load) button (12).</td>
</tr>
</tbody>
</table>
Note: The stop button (12) should be considered a general “failsafe” function button and can be pressed to cease all operations in running of the press at any time or in case of emergencies.

During the actual running of any program (PZ or a user created P1 to P6 program), if the stop button (12) is pressed once, this action will:

A) Abort a program if the load is actually rising or releasing.
B) Step on to the next segment of a program if a Maintain or Hold Load time (up to 99.9 minutes or Infinite) or Maintain segment is operating.

To stop a program at any stage the stop button (12) is pressed twice in quick succession. In this way use of the stop button (12) acts to release any stored load on the press and allows safe access to any work within the pressing area (6) when the safety guard (5) is raised. A status message “Stop key pressed” in red text will be shown momentarily on the (MOS).

Operation Symbols

The five Display Screen environments utilise various operation symbols that are illuminated to show in simple terms the status of the Atlas™ Autotouch 40T press for a particular stage or process in its operation. The operation symbols have been created in place of text and are used to represent the type of function being carried out when the symbol is illuminated and active as part of a pressing program sequence.

Note: The symbols apply for use of ALL programs - PZ through to P6.

Movement between the Display Screens and interaction with the various sub-screen displays (changing a load or Editing a program, as examples) is achieved by touching and pressing of the appropriate operation symbol box in the green coloured section area of the Autotouch Display Screen (4).
The complete list of operation symbols that are used for the Autotouch 40T press are as follows:

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Symbol]</td>
<td><strong>Increase Load</strong> - Increase of a load to the tonnage load set. (Measured in Tons, Tonnes, US Tons, KgF or KNewton.)</td>
</tr>
<tr>
<td>![Symbol]</td>
<td><strong>Maintain Load</strong> - Maintains a set load for a particular time interval. Auto “top up” of a load is applied if a set load value reduces over the particular time period.</td>
</tr>
<tr>
<td>![Symbol]</td>
<td><strong>Hold Load</strong> - Holds a set load for a particular time interval. <em>No auto “top up” function of the load is applied as with Maintain Load, if the set load decreases.</em></td>
</tr>
<tr>
<td>![Symbol]</td>
<td><strong>Fast/Medium/Slow Load Release Rate</strong> - General symbol for the three load release rate functions.</td>
</tr>
<tr>
<td>![Symbol]</td>
<td><strong>Fast Load Release Rate</strong> – Quickest release of a load to a lower set load value. (Measured in Tons, Tonnes US Tons, KgF or KNewton).</td>
</tr>
<tr>
<td>![Symbol]</td>
<td><strong>Medium Load Release Rate</strong> – Slower release of a load to a lower set load value. (Measured in Tons, Tonnes US Tons, KgF or KNewton).</td>
</tr>
<tr>
<td>![Symbol]</td>
<td><strong>Slow Load Release Rate</strong> – Slowest release of a load to a lower set load value. (Measured in Tons, Tonnes US Tons, KgF or KNewton).</td>
</tr>
<tr>
<td>![Symbol]</td>
<td><strong>Safety Guard</strong> - Front Safety Guard is open when illuminated.</td>
</tr>
<tr>
<td>![Symbol]</td>
<td><strong>Program Number In Operation</strong> - e.g. P1, when illuminated, means program one is active.</td>
</tr>
<tr>
<td>![Symbol]</td>
<td><strong>Program Number Step Forward</strong> – to move forward to a higher program number in a program directory listing.</td>
</tr>
<tr>
<td>Button</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td><strong>P-</strong></td>
<td><strong>Program Number Step Backward</strong> – to move backwards to a lower program number in a program directory listing.</td>
</tr>
<tr>
<td><strong>S:1</strong></td>
<td><strong>Segment Number of a Program Sequence In Operation</strong> - e.g. S1 when illuminated means the first segment of the program is active.</td>
</tr>
<tr>
<td><strong>S+</strong></td>
<td><strong>Segment Number Step Forward</strong> – to move forward to a higher segment number in a program sequence.</td>
</tr>
<tr>
<td><strong>S-</strong></td>
<td><strong>Segment Number Step Backward</strong> – to move backwards to a lower segment number in a program sequence.</td>
</tr>
<tr>
<td><strong>Pgm.</strong></td>
<td><strong>Program Symbol</strong> - To select the Program Display Screen operation environment.</td>
</tr>
<tr>
<td><strong>Dir.</strong></td>
<td><strong>Directory Symbol</strong> - To select the Directory Display Screen operation environment.</td>
</tr>
<tr>
<td><strong>Edit</strong></td>
<td><strong>Edit Symbol</strong> - To select Editing Display Screen operation environment or edit a segment in a stored program.</td>
</tr>
<tr>
<td><strong>Opt.</strong></td>
<td><strong>Options Symbol</strong> - To select the Option Display Screen operation environment.</td>
</tr>
<tr>
<td><strong>Exit</strong></td>
<td><strong>Exit Symbol</strong> - Exit from a particular Display Screen operating environment back to the Main Operation Screen. (MOS).</td>
</tr>
<tr>
<td><strong>Add</strong></td>
<td><strong>Add Symbol</strong> - To add a segment step in a stored program under the Edit operation environment.</td>
</tr>
<tr>
<td>Symbol</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>Del</td>
<td><strong>Delete Symbol</strong> - To delete a segment step in a stored program under the Edit operation environment.</td>
</tr>
<tr>
<td>ok</td>
<td><strong>ok Symbol</strong> - Can re-start the press for application of a load from this point when illuminated, although the piston may not have fully retracted.</td>
</tr>
<tr>
<td>OK</td>
<td><strong>OK Symbol</strong> - The ok changes to OK after a time period of 30 seconds. Can restart the press for application of a load from this point when illuminated, and time has been allowed for greater retraction of the piston to its start position.</td>
</tr>
<tr>
<td>Run</td>
<td><strong>Run Symbol</strong> - Illuminates when a program sequence is running.</td>
</tr>
<tr>
<td>End Stop</td>
<td><strong>End Stop Symbol</strong> – The End Stop step as the final segment in a program.</td>
</tr>
<tr>
<td>Step Back</td>
<td><strong>Step Back Symbol</strong> – Used to step back from inclusion or change of a Fast, Medium or Slow Load Release Rate function in a program segment.</td>
</tr>
<tr>
<td>Cross</td>
<td><strong>Cross Symbol</strong> – Used to reject any changes made in a programming sequence.</td>
</tr>
<tr>
<td>Tick</td>
<td><strong>Tick Symbol</strong> – Used to save any changes made in a programming sequence.</td>
</tr>
</tbody>
</table>
Operation – Steps to Press a Sample

Powering up the Atlas™ Autotouch 40T Press

**Note:** *Before switching on the Atlas™ Autotouch 40T press ensure that the Safety Guard (5) is in its safe/down position.*

When operating the Atlas™ Autotouch 40T press for the first time ensure that the power on/off switch (1) on the front panel (2) is in the off position. The power switch (1) has the markings O and I. The switch is off when O is pressed level with the surface of the panel.

Now connect the Atlas™ Autotouch 40T press to a suitable electrical supply using the supplied mains lead and plug. The mains lead is first connected to the press at the rear into the power socket (3). Then the plug is connected to the electrical supply and the power is switched on at the mains. Turn on the Atlas™ Autotouch 40T press by the power on/off switch (1) on the front panel (2). (The indicator I is pressed level with the surface of the panel). The upper edge of the switch (1) shows a green color when in the on position.

Power to the press will also be indicated by illumination of the electronic Autotouch Display Screen (4). From start up the display will show the working software version number and then default to the Main Operation Screen (MOS). The Simple Operation Program (PZ) will be set as standard as the Default Program (Def. Prog) from powering up, unless a previously created user program (P1 to P6) has been saved and stored in the memory for operation via the Options (Opt) Display Screen environment “Def. Prog” option.

**Note:** *The Simple Operation Program (PZ) forms the basis of the instructions for the Operation Procedure and can be used as a form of “Quickstart Guide”.*

At initial startup a typical (MOS) will be presented as shown on the following page. (An example (MOS) is shown for the Autotouch 40T Press which has a minimum low Tonnage setting at 4.0 tons – range is 4.0 Tons to 40.0 Tons).
The (MOS) Display Screen area will be presented having both blue and green coloured backgrounds.

Operation symbols that appear over a green background can be **touched for activation** to move to their individual Display Screen environment for the necessary functions that can be selected within.

Operation symbols that appear over a blue background indicate the current **status** of the press and which particular program has been loaded for operation of the Autotouch press.

When a particular operation symbol on the blue background area is illuminated, then the function being indicated is **currently active** for the program running as loaded onto the press.

**Note:** If the front safety guard (5) is open, the safety guard symbol will be illuminated over the blue background area. Illumination of the safety guard symbol means that all power to the presses motor and pump has been cut to prevent any accidental operation of a load application.
Changing the Language Display and the Units of Load

The Atlas™ Autotouch 40T press displays any message status in English, French, German, Spanish or Italian languages. The change of language is achieved by choosing the Language option from the Options (Opt) screen. (Please see how to change language from the (Opt) Display Screen environment explanation in Section 6 – page 49).

The Atlas™ Autotouch 40T press can display the Units of load in Tons, Tonnes, US Tons, Kgf or KNewtons. If the Units of Tons (set as the (PZ) simple program default value), need to be changed, this is also achieved through the Options (Opt) screen. (Please see how to change the Units of load from the (Opt) Display Screen environment explanation in Section 6 – page 49).

Once a Language and/or Units of load option has been changed, the change will be saved in the memory of the press. The new settings will be retained after power down and when the press is powered up again.

Placing Work in the Atlas™ Autotouch 40T Press

After switching on, raise the front safety guard (5) to its up/load position. The (MOS) Display Screen (4) will now change to show a “Close Guard” message in red text for the press status and the guard open symbol will be illuminated. (See example for the (MOS) display as follows.)
Place the sample in the pressing area (6) on the piston pressing face (7). The maximum height of a sample that can be installed into the pressing area is 140mm.

**Note:** It is essential to always place the sample in the centre of the piston pressing face (7) for safe loading.

Rotate the lead screw (8) via the handle (9) to raise or lower the top bolster anvil pressing face (10) until there is a gap of no more than 2 to 3mm between it and the top surface of the sample to be compressed.

Now close the front safety guard (5) to its down/safe position. The “Close Guard” message will disappear from the display. The press will revert to the (MOS) Display Screen condition as seen from an initial switch on at page 25.

### Applying a Load with the Atlas™ Autotouch 40T Press

Once the sample is correctly positioned and the safety guard (5) has been closed, the “Pump up to” load value as shown for the (MOS) can be applied.

If the “Pump up to” load value that is being shown as the first segment (S1) of the loaded program to run (in this instance (PZ) at 4 Tons), it can be applied simply by pressing the start (apply load) button (11).

However, if the “Pump up to” load value being displayed is to be changed, then the Increase Load operation symbol box on the green background bar area of the Display Screen (4) must be pressed. The (MOS) Display Screen (4) changes to show a Display Screen environment for the setting of a load to apply, which has a slide scale load indicator with the lower (left side green box) and upper (right side green box) load range limits that can be set for the press and a vertical line cursor position on the slide scale corresponding to the current “Pump up to” load value set on the loaded (PZ) program.

**Note:** The range limits are 4.0 to 40.0 tons for the 40T Press.
The first program segment step (S1) is illuminated in yellow (the “Pump up to” load value operation symbol and statement) as this is the condition wished to be changed at this stage for the loaded program (PZ).

**Note:** Changing the load to set and apply is the ONLY aspect of the (PZ) program that can be changed/programmed.

To increase or change the load to set and apply, touch and press the right side green box with the upper range limit figure. Each individual press of the box will raise the load in step increments for the appropriate press being used. As the load is raised the slide cursor will move to the corresponding position on the load range indicator.

**Note:** The load rise (or decrease) is in 0.5 Ton steps for the Autotouch 40T Press.

If either the upper or lower load range limit green box is continually pressed, then the load rise or decrease to a new load set point is accelerated. If the new load to set and apply is “overshot” for the cursor position on the slide scale indicator from an accelerated approach, then individually step press to the precise load to set using the appropriate lower or upper load range limit green box. When the correct load value to apply has been reached, typically the Screen
Display will now be as below. (18 Tons has been used as an example load to be set to apply.)

When the correct “Pump up to” load has been reached, press the “tick” mark in the green box to accept the new load to be set for the (PZ) program. The Autotouch Display Screen (4) will change to show acceptance of the new set load for the (PZ) program, typically as below for the (MOS).

The “Pump up to” load now set on the press for program (PZ) is applied by pressing the start (apply load) button (11) on the press.

**Note:** When either the (ok) or (OK) status is displayed the start button (11) can be pressed to apply any “Pump up to” load that has been selected.
An application of the “Pump up to” load selected is always the first segment (S1 - zero) of the (PZ) program sequence. The segment (S1) will be seen for the Simple Program (PZ) that is running.

When the safety guard (5) is closed and the start button (11) has been pressed, the press motor will start and the Display Screen (4) will show a status of “Load Rising” in red text and the (ok) or (OK) status box changes to (Run). The “Pump up to” load value, first segment step (S1) in the program sequence will be illuminated. The Applied Load Indicator value (top left side of the screen) will change from 0.0 and rise in value as the “Pump up to” load begins to take effect.

Note: During the actual application of the set load to be pumped, only a blue background screen is presented. Any green background screen area for selecting an alternative screen environment to access is not presented.

When the full “Pump up to” load has been applied, the press motor stops running and illumination of the “Pump up to” load value first program step statement will cease. The (Run) status message remains showing in the blue screen box, but the “Maintain load” symbol and statement with an auto “top up” capability will now illuminate, as the second segment step (S2) of the program sequence has been reached and the first segment (S1) symbol and statement is removed. Segment (S1) of the program (PZ) changes to (S2) in the blue screen box and a “Maintaining Load” status is shown in red text.
At this stage in the (PZ) program sequence, a green background display box is presented, but only for the Increase load symbol, which can be pressed for an increase change to the “Pump up to” load to set if desired, up to the maximum load allowable for the press being used.

**Note:** This function step exists for the (PZ) program only. Different program sequence step events are allowable from user created custom programs P1 to P6. (See Programming - Section 6).

**Release of the Applied Load**

Under the (PZ) program when it is running, an applied load is held by the “Maintain load” function for as long as required. There is no set time duration limit to maintain or hold the applied load that can be created with a programming segment step for any custom program (P1 to P6). Additionally, the “Maintain load” function step in the (PZ) program will automatically “top up” to the “Pump up to” load value if the Applied Load Indicator value reduces over the particular time period that a tonnage load is being held.

When the load has been held for the required duration, release it by pressing the stop (release load) button (12). The Fast Release Load Rate function is the next segment step of the (PZ) program and the segment (S3) will now be indicated in the blue box in place of (S2).
The “Maintain load” symbol will cease illumination and the Display Screen (4) will now show illumination of the “Fast rel to” load value, symbol and statement and a message “Fast Release” in red text is shown underneath the Applied Load Indicator and load value.

At this stage the second segment (S2) for the “Maintain load” symbol and statement has disappeared from view as the program sequence for the individual segment steps (S1, S2, S3, S4 etc) begin scrolling upwards from the Display Screen (4) area.

![Diagram](image.png)

**Note:** Whilst the load is releasing only a blue coloured background will be displayed. Any green background screen area for selecting an alternative screen environment to access is not presented.

With release of the load and when the Applied Load Indicator value has reduced to circa 4.0 Tons for the 40T press, there is a change in the Display Screen (4) status. The statement “Piston Retract” replaces “Fast Release” in red text. (This screen display step is shown briefly.)
When the applied load has been fully released and the (PZ) program (Run) steps have been completed, the Display Screen (4) will revert to the same status as the original (MOS), before the start button (11) had been pressed.

Immediately on display of the (MOS) after the (PZ) program has completed, the press will be indicating an (ok) status in the blue box where the (Run) statement had appeared, rather than (OK). When the (ok) status is shown the pressing piston face (7) may not have fully retracted to its natural start/rest position, even though there is no tonnage load being applied. However, during the (ok) stage the press pump oil release valves are still open to allow for the oil to drain back into the oil reservoir, leading to further retraction of the piston if possible. The (ok) status changes to (OK) after a time period of 30 seconds, denoting that the oil release valves are now closed.
Note: The press can be restarted by pressing the start button (11) for application of a load from either the (ok) or (OK) status indicator, but it is possible there may be more piston travel offered for a new pressing event when starting from an (OK) status due to the longer time period allowed for the piston retraction to its start/rest position from the previous pressing event.

The (ok) or (OK) status for the press means that the “Pump up to” load could be re-applied at this point by pressing the start button (11) again. However, if a different “Pump up to” load is to be applied, press the Increase Load operation symbol box on the green background bar area of the Display Screen (4) and follow the steps as outlined for “Applying a Load with the Atlas Autotouch 40T Press” (see page 27).

If the pressing sequence for the sample has been completed, then the sample (or pellet die) can now be removed from the pressing area. When the sample is to be removed from the press, wait until the (MOS) shows the (ok) or (OK) status indicator before raising the safety guard (5) and removing the sample.

The Atlas™ Autotouch 40T press is now ready to accept another sample and a new pressing cycle can be completed.
Operation – Further Features of the Press

The Safety Guards

The Atlas™ Autotouch 40T press incorporates a front safety guard mechanism (5) that is crucial for the safe operation of the press. The front (5) and rear (17) safety guards are made from PETG, a glycol modified polyethylene terephthalate, which is a clear, transparent material offering a high impact resistance to contain any work within the pressing area in the unlikely event there is an immediate release of stored energy in the sample. When the front guard (5) is closed (down) and the (ok) or (OK) status is indicated, the press is enabled to apply a load to a sample. When the front guard (5) is open (up) the press operation is disabled. (No power to the motor is allowed). However, the “Pump up to” load can be adjusted and set with the front guard (5) in the open or closed position.

If the electrical power to the press is disconnected, or there is a cut in the power when a sample has been compressed and is still under load, always ensure that the front guard (5) remains in the closed (down) position before re-establishing power to the press. The indications that this event has happened will be that the power switch (1) on the front panel (2) is showing the green (on) colour bar, but the electronic Display Screen (4) is blank. When the press is re-powered, as a safety measure, the press automatically releases any stored load and any program sequence that was running will have been aborted. When the (MOS) indicates the (ok) or (OK) status, the front guard (5) can be opened, or any previously applied program can be started again by pressing the start button (11).
The Pressing Area

The Atlas™ Autotouch 40T press has a sample compartment size that allows for use of the entire range of Specac evacuable pellet dies. The maximum distance between the pressing faces is 155mm with a fully raised lead screw pressing anvil face (10) and fully retracted piston pressing face (7) and the minimum distance is 60mm with a fully lowered lead screw pressing anvil face (10) and fully retracted piston pressing face (7). The maximum area of a sample that can be accommodated is 240mm wide x 220mm deep (front to back).

Warning! Any “Pump up to” load to be set and applied must not exceed the maximum load capability of the die being used.
From the back view diagram of the pressing area (6), there is protective rear safety guard (13). The rear safety guard is fixed and cannot be raised or lowered similar to the front guard (5). The curved profile of the rear safety guard (13) between the base rear surface edge of the pressing area (6) allows for routing and accommodation of a vacuum pipe supply line when connected to an evacuable pellet die. Specific connectivity to any work to be pressed within via this rear safety guard cut away area (14) means that the front safety guard (5) can be kept in its down, safe position to enable press operation.
Piston Travel

There is a maximum piston travel of 38mm and the press motor and pump will automatically stop when this travel limit is reached. An error message “Reached Piston Limit!” in red text will be momentarily illuminated as an indicator for the status when a program is running.

Important! If at all possible it is desirable to avoid running the press piston to the limit of its travel.

In an example (MOS) Display Screen (4) message as shown above, a custom program (P4) has been created for specific pressing and load hold time steps. (The first four segment steps (S1 to S4) of the program are shown. The program has been loaded and started running after pressing of the start button (11) for the first segment (S1) step. (“Pump up to” 15 Tons.) This condition and message status of the press has been reached because the piston has travelled to its full limit before the “Pump up to” load has been obtained; to be set and maintained for 0.3 minutes for this specific program sequence.

When using highly compressible samples in an evacuable pellet die, it may be possible for the maximum travel of the piston to be reached before the desired “Pump up to” load has been applied to compress the sample accordingly within the die. Usually for this condition to occur, such that the piston of the press has reached its maximum limit of travel, will be evident by little or no load being indicated at the
**Applied Load Indicator** reading during the “Load Rising” status. At the very end of the piston travel the **Applied Load Indicator** value rises almost instantaneously to the “Pump up to” load value and then the “Reached Piston Limit!” message is displayed.

**Note:** This would be similar to the fault condition “No Sample In the Pressing Area” – see Section 7, page 68).

The “Reached Piston Limit!” message appears on the Display Screen (4) for a couple of seconds and then the press automatically releases any pressure that has been applied from the press motor and pump system indicated from the momentary Display Screen (4) condition showing the “Piston Retract” message in red text. (See Display Screen step for Release of an Applied Load on page 33.) The Display Screen (4) will default back to the original start display condition for any program (PZ to P6) that has been loaded to apply, with an (ok) status and after a further period of circa 30 seconds to an (OK) condition status.

In effect, **ANY** program (PZ to P6) that has been loaded and started to be (Run) will be stopped with the release of any partially applied load (oil pressure in the system), to leave the press in a safe condition when a “Reached Piston Limit!” event has occurred and because the piston travel has been reached. In such an instance, if the piston has reached the limit of its travel for any previous pressing operation, it would be best to start any new pressing application when the (OK) status condition has been reached to allow for more (further) retraction of the piston back to its start/rest position.

**Two-Stage Pressing for Highly Compressible Samples**

If a “Reached Piston Limit!” status has occurred because the sample itself is highly compressible and the piston travel has been exceeded before the “Pump up to” load to be set has been applied, any partial oil pressure stored in the system will be released to allow the piston face (7) to retract.
The sample itself, particularly if pressing a sample within an evacuable pellet die, may though have been *partially compressed* from any load condition that had been attained before the piston of the press reached the limit of its travel. With retraction of the piston face (7) to its start/rest position, a gap will be created between the top of the evacuable pellet dies own plunger and the top lead screw anvil pressing surface (10), due to the partially, but not fully, compressed sample within the die. (Typically the gap created could be circa 20mm).

To continue with any pressing process to apply a desired “*Pump up to*” load to the sample, the lead screw (8) should then be adjusted to close the gap so that the top bolster anvil face (10) is 2mm to 3mm from the top of the evacuable pellet die plunger and the “*Pump up to*” load (for the program step) is re-applied by pressing of the start button (11) again, to re-run the program.

It is highly probable that a “pre-compression” of the sample from an initial limit of travel distance movement of the press piston, means that a full “*Pump up to*” load to apply and maintain and/or hold can be achieved within a *second* piston travel limit distance from the load re-application; hence a two-stage pressing process for such sample types.

**Use of the Stop Button (12)**

Given from the important statement “If at all possible it is desirable to avoid running the press piston to the limit of its travel”, it is advisable if using highly compressible samples to observe the pressing process until the desired load level to apply is achieved.

Full compression of the sample may require a two-stage pressing operation. Therefore, for the first pressing stage allow the piston to travel approximately 20mm and then stop the travel of the piston and the pressing process (program) using the stop button (12), particularly if the “*Pump up to*” load has not been reached after this initial distance of travel for the piston. When the stop button (12) is pressed the Screen Display (4) will change to show a “*Stop key pressed!*” message in red text.
Using the same example for a custom program (P4) that has been created to run, *physically stopping the press* by using the stop button (12) displays the “Stop key pressed!” message, whereas allowing the press to stop automatically of its own accord because the piston limit travel has been reached would display the message “Reached Piston Limit!”

Similar though to the process of when the piston has travelled to reach its limit, in stopping the press from pressing the stop button (12), the "Stop key pressed!" message appears on the Display Screen (4) for a couple of seconds and then the press automatically releases any pressure that has been applied from the press motor and pump system indicated from the momentary Display Screen (4) condition showing the “Piston Retract” message *in red text*. (See Display Screen step for Release of an Applied Load on page 33.) The Display Screen (4) will default back to the original start display condition for any program (PZ to P6) that has been loaded to apply with an (ok) status and after a further period of circa 30 seconds to an (OK) condition status.

After the piston has fully retracted to its start/rest position because of the *forced stopping* of the program using the stop button (12), change and close the gap created from an initial pressing between the top pressing surface of the work (typically the plunger of a die) and the top lead screw pressing anvil surface (10), by adjusting the lead screw and re-apply the load from a re-running of the program.
6. Display Screens – Operation, Options, Programming, Directory and Editing

The Different Display Screen Environments

1) Main Operation Screen (MOS)

As stated from Section 5) (Operation Of The Atlas™ Autotouch 40T Press), when the Atlas™ Autotouch 40T press is switched on at the mains, power to the press will also be indicated by illumination of the Electronic Display (4). From start up the display will show its software version number and then default to the Main Operation Screen (MOS).

The (MOS) is the Display Screen that is shown whenever the Atlas™ Autotouch 40T press is running any pressing operation or pre-selected program. From initial powering up, the Simple Operation (PZ) program will be loaded to show in the (MOS) environment to be used in running the press.

Note: The (PZ) program has been used as a “Quickstart Guide” in Section 5) for operation of the Atlas™ Autotouch 40T press to show the various stages and display screen messages found within the (MOS) environment when a program is running.

The (PZ) program enables the user to select a set load from various Units of measurement (see Options (Opt) Screen – page 49) from the load range of the press to apply to a sample - usually a sample to press/compact is within an evacuable pellet die assembly that would be placed in the press. The selected load Units value is applied from the press by pushing the start button (11). The press will maintain the load selected on the (PZ) program with an auto “top up” function until the stop button (12) is pressed.

From the (MOS) access is gained to the other Display Screen environments by touching the representative symbols in their respective boxes displayed on the green coloured background bar.
along the base of the (MOS). When entering a particular Display Screen environment you can carry out the functions allowed within that environment, such as programming for a customized load/hold/release sequence for the sample type to press or editing a particular saved program. When the functions have been established within the particular environment, return to the (MOS) environment is achieved via selection and pressing of the Exit, an accept (tick) or reject (cross) symbol box depending upon the particular Display Screen environment.

Display Screen Environment Access Steps

There are five principle Display Screen environments that can be accessed to view on the Display Screen (4). They are:-

1) Main Operation Screen (MOS).
2) Options (Opt symbol) Screen.
3) Program (Pgm symbol) Screen.
4) Directory (Dir symbol) Screen.
5) Editing (Edit symbol) Screen.

The (Opt), (Pgm), and (Dir) Display Screen environments are accessed from the (MOS), whereas the (Edit) Display Screen environments are accessed after stepping through either a (Pgm) or (Dir) environment route from the (MOS).

There are some slight differences in the Display Screen stepping sequences to gain access to the varying environments depending on whether the (PZ) program or a custom created (P1 to P6) program has been loaded to the (MOS) environment for running.

Display Screen Steps When (PZ) Program Loaded

If the (PZ) program is loaded to the (MOS) environment to run from pressing the start button (11), a typical (MOS) that will be displayed is shown as follows:-
Main Operation Screen (MOS)

From the (MOS) with the (PZ) program loaded, if the (Dir) symbol in the green box is touched and pressed, the (Dir) Screen Display (A) environment is accessed and shown as follows:-

(Dir) Display Screen (A) Accessed from (MOS) with (PZ) Program

Note: From the step sequence from (MOS) to the (Dir) Display Screen (A), further steps to other environments can be made via touch pressing of the (P-), (P+) and (Exit) symbol green boxes. Pressing (P-) steps back and (P+) steps forward for a program Number (P#) to be displayed and loaded. (See further detail in Directory environment page 54). Pressing (Exit) steps back to
the (MOS). The (Edit) symbol box (although shown), is inactive when touched to step to another environment when the (PZ) program details are displayed. The (Pgm) box can be touched to access and step through to the next “free” program register from programs (P1) to (P6), but this (Pgm) button is also inactive if all program registers from (P1) to (P6) are already allocated and filled with details for a user custom created program that could be selected to run.

From the (MOS) with the (PZ) program loaded, if the (Opt) symbol in the green box is touched and pressed, the (Opt) Display Screen environment is accessed and shown as follows:-

**Note:** From the step sequence from (MOS) to the (Opt) Display Screen, only the green tick (accept) and red cross (reject) symbol boxes are presented to touch and to step to another environment. Pressing either of these symbol boxes act as an “Exit” from the (Opt) Display Screen directly back to the (MOS).

![Specac autotouch](image)

(Opt) Display Screen Accessed from (MOS) with (PZ) Program
Display Screen Steps When (P1 to P6) Program Loaded

If a (P1 to P6) program is loaded to the (MOS) environment to run from pressing the start button (11), a typical (MOS) that will be displayed is shown as follows:-

![Main Operation Screen (MOS)](image)

From the (MOS) example shown, a (P4) program has been created and loaded. (P4) is shown in the blue status box as the program selected. The first 4 segment steps (S1 to S4) of the (P4) program are displayed on the blue background area of the screen.

If the (Pgm) symbol in the green box is touched and pressed, the (Pgm) Display Screen (B) environment is accessed and shown as follows:-

![Pgm) Display Screen (B) Accessed from (MOS) with (P4) Program](image)
Note: From the step sequence from (MOS) to the (Pgm) Display Screen (B), further steps to other environments can be made via touch pressing of the (S-), (S+), (Edit), (Add), (Del) and (Exit) symbol green boxes. Pressing (S-) steps back to highlight a segment of the program as created and loaded, and pressing (S+) steps forward to highlight the segment. Pressing (Edit) accesses the (Edit) environment (See page 56). Pressing (Add) will place a new blank segment into the program for the highlighted segment shifting any following filled segments along one (S#) and pressing (Del) will remove the highlighted segment of the program. (See Editing environment page 56). Pressing (Exit) steps back to the Display Screen (A) environment.

From the (MOS) with the (P4) example program loaded, if the (Dir) symbol in the green box is touched and pressed, the (Dir) Display Screen (A) environment is accessed and shown as follows:-

(Dir) Display Screen (A) Accessed from (MOS) with (P4) Program

Note: From the step sequence from (MOS) to the (Dir) Display Screen (A), further steps to other environments can be made via touch pressing of the (P-), (P+) and (Exit) symbol green boxes. Pressing (P-) steps back and (P+) steps forward for a program Number (P#) to be displayed and loaded. (See further detail in Programming Section page 51). Pressing (Exit) steps back to
the (MOS). In this instance for Screen Display (A) the (Edit) and (Pgm) boxes are active when touched to step to another environment when the (P1 to P6) program details are displayed. Pressing (Edit) takes you to the (Edit) environment (See page 56). Pressing (Pgm) steps to Display Screen (B), as seen on page 46, for the same loaded (P#), similar to the (Pgm) button being pressed as the first step directly from the (MOS). However, the (Pgm) box can be touched to access and step through to the next “free” program register from programs (P1) to (P6), but pressing of the (Pgm) button defaults to the Display Screen (B) environment if all program registers from (P1) to (P6) are already allocated and filled with details for a user custom created program that could be selected to run.

From the (MOS) with the (P4) example program loaded, if the (Opt) symbol in the green box is touched and pressed, the (Opt) Display Screen environment is accessed and shown as follows:-

**Note:** From the step sequence from (MOS) to the (Opt) Display Screen, only the green tick (accept) and red cross (reject) symbol boxes are presented to touch and to step to another environment. Pressing either of these symbol boxes act as an “Exit” from the (Opt) Display Screen directly back to the (MOS).

![Specac autotouch interface](image)

(Opt) Display Screen Accessed from (MOS) with (P4) program

As a general note the (Opt) Display Screen is the same for ANY program that is loaded (P2 to P6) when the (Opt) button is pressed.
2) Options Screen (Opt)

The Options Screen (Opt) is accessed from the (MOS) or any Display Screen environment where the green coloured background box with the (Opt) symbol is touched/pressed. An example of the (Opt) screen is shown above.

Under the (Opt) screen the option settings that can be changed are presented in the green colored background area to touch and press. The options are:-

1) **Backlight** - Pressing the **Backlight** option box presents the following typical Display Screen:-

The Display Screen intensity can be set from a sliding scale indicator setting between a minimum intensity (15) and maximum intensity (95)
box to press. To change the cursor setting on the sliding scale indicator the (15) or the (95) box is pressed respectively to dim or brighten the overall display. If the display intensity is changed the change is saved by pressing the green tick box to return to the Opt screen. If a change is made to the display intensity, pressing the red cross box returns to the Opt screen, but the change is not saved.

**Note:** When the Backlight sliding scale indicator display screen is shown, the Language, Units, End Beep and Def. Prog box options are inactive. The green tick or red cross boxes must be pressed to return to the (Opt) screen to reactivate these options.

2) **Language** - Successive pressing of the Language box scrolls and loops around through the options of English, French, German, Spanish and Italian settings in this order.

3) **Units (Load Value to Apply)** - Successive pressing of the Units box scrolls and loops around through the options of Tons (2240lbs), Tonnes (2204lbs), US Tons (2000lbs), Kgf (force) and KNewtons in this order.

4) **End Beep** - Successive pressing of the End Beep box switches between On or Off for an audible alarm relating to specific functions of the press.

5) **Def. Prog** - Successive pressing of the Def. Prog box scrolls and loops around through the options of 0, 1, 2, 3, 4, 5 and 6 in this order as the program number to save and be loaded automatically to the (MOS) for operation when the press has been switched off and switched on again. (0 = (PZ), 1 = (P1), etc.)

For options boxes 2) to 5) as presented at the (Opt) screen stage, if a change is made it is saved for use by pressing the green tick box to return to the (MOS). If an option setting is changed but is not wished to be saved, then the red cross box is pressed to return to the (MOS) for use with the original Language, Units, End Beep and Def, Prog settings.
Option Screen (Opt) Status Conditions

On the blue coloured background area, the (Opt) screen also shows the status conditions of the press for the Pump Temp. (motor/pump temperature), and the Pressure Cal. (pressure calibration) factor. The values shown are display parameters only and cannot be changed.

Pump Temp. - If the motor/pump temperature reaches approximately 55°C, the press will be inactivated for pumping a load. A warning message “Pump Too Hot!” will be displayed on the screen. Only when the pump cools down sufficiently will the message disappear and the press can be used again to apply a load. If the press motor/pump continues to overheat, please contact Specac for advice.

Pressure Cal. – A typical value shown (circa 1.090) is a factory set calibration factor for load application readings that is a standard factor for any Autotouch 40T press.

3) Programming Screen (Pgm)

If it is a requirement to operate the Atlas™ Autotouch 40T press just for a simple set load application under a maintain load function for an unspecified time (an auto “top up” of the load is operating) and a fast release function, then the Simple Operation Program (PZ) is used. (This program is loaded as standard when the press is initially powered up).

However, the Atlas™ Autotouch 40T press can be programmed for a sequence of up to 10 (ten) segments (S#’s), to create a particular sequence of events of set load applications (Maintain or Hold Load functions), specified hold times (from 0.1 up to 99.9 minutes as a defined hold time or indefinitely - infinity) and varying load release rates. The maximum number of programs (P#’s) that can be stored in the Atlas™ Autotouch 40T press is 6 (six) – (P1 to P6). (The (PZ) simple program is always stored and can never be edited or overwritten).
“Pump up to” Loads

The “Pump up to” loads that can be programmed are dependent upon the load range and the tonnage steps offered from each press variant. For the Autotouch 40T press the “Pump up to” load can be a minimum of 4.0 tons to a maximum of 40.0 tons in 0.5 ton steps.

Load Hold Times

The Load Hold Time can be from a range of 0.1 minutes to 99.9 minutes or indefinitely as a particular timed function. To Maintain or Hold the load for an indefinite time period, the infinity symbol is selected when the slider bar for a timed function is moved towards 0 (zero) minutes. (See Edit environment page 56.)

Under a program (P1 to P6) that can be custom created, the Hold Load function (symbol) for no “top-up” of the load can be included as a segment (S#). In the (PZ) simple program, the Maintain Load function is used as the second segment (S2) program step and any load being applied will be held for an infinite period as any stored load is released from pressing the stop button (12). Any time duration for the holding of the load is subject to an automatic “top-up” of the applied load. Automatic “top-up” of a load means that during the maintaining of an applied load, if the “Pump up to” load reading reduces in value (e.g. the sample being pressed may be yielding), then the press automatically works to re-apply the load to the intended set “Pump up to” load value.

Release Load Rates

Under a program (P1 to P6) that can be custom created, there is a choice of three different Release Load Rates – Fast, Medium or Slow – that can be selected for a particular program segment. Under the (PZ) simple program the standard Release Load Rate is set to a Fast release.
Programming

The (Pgm) box button can be pressed directly from the (MOS), only when a user created custom program from (P1) to (P6) has been loaded to run from the (MOS). (See details for a typical (Pgm) screen display (B) environment accessed when program P4 is loaded on page 46.)

If any program from (P1 to P6) is loaded, the (Pgm) Display Screen (B) access step from the (MOS) will allow a next step access route through to an immediate program editing of the displayed program segment steps as shown (see Editing Screen page 56), but only when all of the (P1 to P6) program registers are full. However, if a program register (P1 to P6) is empty, then pressing the (Pgm) box directly from the (MOS) will step through to the next free (P#) register and fills the empty program register with the segment details of the currently loaded (P#) into the (MOS).

On initial supply of an Atlas Autotouch 40T press, the program registers for (P1 to P6) will be “empty” for creation of an users own custom defined program sequences of applied loads, load hold times and load release rate steps. When all six of these (P#’s) are filled and have a user created and defined program stored, then if a new program to be created for application is required, a specific (P#) from (P1 to P6) will require editing and restoring.

Note: Access to the different user custom created programs as (P1 to P6) for their reprogramming, via editing and restoring, is achievable following any Directory (Dir) step sequence path from the (MOS) environment.
4) Directory Screen (Dir)

The Directory Screen (Dir) allows for checking of any programs and their segment details that have been stored on the Atlas Autotouch press for its operation. Up to 6 user (custom) created programs (P1 to P6) can be stored at any one time and selected for use. The simple operation program (PZ) is always stored and cannot be changed for the basic program segment steps of applying a load, maintaining the load and fast release of the load from manual function start (11) and stop (12) button pressing.

The (Dir) screen is accessed from the (MOS) by pressing the green coloured background (Dir) box. It depends on whether the (PZ) or a custom created (P1 to P6) program has been loaded for a typical type of (Dir) Display Screen (A) environment to be shown for the program segment step details of the particular program that has been created and stored in the program numbers (P#) register. (See pages 44, 46 and 47.)

If (PZ) is loaded, typically (Dir) Display Screen (A) is shown.

If (P1 to P6) is loaded, typically (Dir) Display Screen (A) is shown. (P4 has been used as an example program.)
The last program that was stored and used is presented to the (Dir) screen. From the example of (Dir) screen display (A) for (P4) being loaded, program number 4 is shown displayed for 7 (seven) segments (S#'s) that have been used in this program in the blue background area of the display screen.

To step through the Directory to see the status for the other programs (P#'s) that have been created for use, either the (P-) or (P+) green background boxes can be pressed. Pressing (P-), steps back a (P#) and pressing (P+) steps forward a (P#). The (P#) sequence scrolls numerically from Z, 1, 2, 3, 4, 5 and 6 in this order. (Z is for PZ). If (P6) is accessed and displayed and then (P+) is pressed, the sequence scrolls around to start at (PZ) again.

If a particular program (P#) that has been created and is displayed from scrolling through the Directory matches the program steps and sequence for a load application to be used, then pressing of the (Exit) box will return to the (MOS) and load the selected (P#) to use. However, if from scrolling through the Directory a particular (P#) program sequence is close to, but does not exactly match the requirements for application, the program can be edited (changed) by pressing the (Edit) box. Pressing the (Edit) box at this stage accesses the Display Screen (B) environment (as shown below), for stepping on to the (Edit) functions. (See Editing Screen page 56.) The example below, for (P4), has been used to show for a typical Display Screen (B) environment and the program sequence that may be edited.
5) Editing Screen (Edit)

Editing of a program for a segment (S#) addition, deletion or change of function can only be achieved for programs (P1 to P6) when loaded for potential operation and displayed as accessed through to the (Edit) Display Screen (B) environment. (See example of screen display (B) for program (P4) on page 55). The (Edit) Display Screen (C) environment is accessed directly from the (MOS) environment from pressing the (Dir) box when any program from (P1 to P6) is loaded and then pressing the (Edit) box in the screen display (B) environment. (See page 57).

Note: If a (P#) from (P1 to P6) to be edited is different to that which is currently loaded and shown in the (Dir) Display Screen (A) environment, (see page 47), the appropriate (P#) should be changed by pressing either the (P-) or (P+) box to be displayed prior to pressing the (Edit) box to gain access to the Display Screen (B) environment.

Editing Functions

From the screen display (B) environment with the correct (P#) loaded to be edited, a particular segment (S#) must first be highlighted to change. The example program details for (P4) have been used to explain the following editing steps.

Pressing (S-) or (S+) Boxes

From the Display Screen (B) environment with (P4) loaded to edit (as shown on page 55), (S1) is illuminated for the initial step of applying 15 tons as the “Pump up to load” in the program sequence. Pressing the (S+) box for successive, individual pushes advances the white illuminated segment (S#) of the blue coloured program segments one step at a time. For our example the (S+) box has been pressed three times from the (S1) segment illuminated condition to illuminate (S4); the step to apply a 20 tons as the “Pump up to load” in the program sequence. It is at this point when a particular segment (S#) has been illuminated that a choice to (Add) a new segment, (Del) the illuminated segment or (Edit) for the illuminated segment details, can be made.
Adding (Add) a Segment to a Program Sequence

Up to 10 (ten) segments (S#’s) can be created for use in a program. From our example, if a segment is to be added at the (S4) position in (P4), when (S4) is illuminated as shown, press the (Add) box. A new blank, white illuminated box segment is created at (S4) and the Display Screen (B) environment changes to the (Edit) Display Screen (C) environment. The new blank segment created for (S4) can now be filled for the particular function from the (Edit) Display Screen (C) environment function symbols. Adding a new segment moves any previous following segment details up a (S#). (e.g. S4 becomes S5).
At this stage if the segment being added is not required, the (Add) change can be corrected by pressing the (Exit) box from the Display Screen (C) environment. The press condition steps to the (Dir) Display Screen (A) environment for any loaded (P1 to P6) program as shown on page 54.)

Deleting (Del) a Segment from a Program Sequence

Up to 10 (ten) segments (S#'s) can be created for use in a program. From our example, a segment is to be deleted at the (S4) position in (P4). When (S4) is illuminated as shown below (see Display 1), press the (Del) box. The details for segment (S4) are removed from the program sequence and the Display Screen (B) environment is retained. (See Display 2). Deleting a new segment moves any previous following segment details down a (S#). (e.g. S5 becomes S4).
At this stage if the deleted segment (S4) was not to have been removed from (P4), the (Del) change can be corrected by pressing the (Exit) box from the Display Screen (B) environment. An intermediate Display Screen for choice of saving any changes to a displayed program sequence can be made by pressing of either a green tick or red cross box. Pressing the red cross box returns to the (Dir) screen display (A) environment with the original program details unaffected. Pressing the green tick box returns to the (Dir) Display Screen (A) environment with the deleted change of the original segment (S4) details being made.

Display Screen to Save or Discard Program Change Steps

(Edit) Box Function Symbols (Display Screen (C) Environment)

If either a segment (S#) has been newly added (Add) or illuminated for editing, the segment details are filled from pressing of the appropriate Increase Load, Maintain Load, Hold Load or Release Load Rate function symbol boxes to access their individual screen display environments.

Increase Load Function Symbol Program Segment

When creating a segment (S#) with an Increase Load function symbol for any program (P1 to P6), pressing the Increase Load symbol box from the Display Screen (C) environment accesses the following:
For our example program (P4), segment (S4) is illuminated to change the “Pump up to” load from its current 20 tons setting. However, in this instance of a program creation and sequence of events, the previous load holding setting has been at 7 tons for segment step (S3), from a Fast Release Load Rate function of the load initially being “Pumped up to” and maintained for 0.3 minutes at 15 tons (segments (S1 and S2) steps). For this example program and use of the Autotouch 40T press, the maximum load that can be set (increased to) is 40 tons, hence the load range presented by the slide cursor on the gradient scale is from a minimum 7.0 tons (already fixed at (S3)) to the maximum of 40 tons.

Change the “Pump up to” load to apply accordingly from the slide cursor position by touching and pressing the left side (lower load limit) green box to reduce the tonnage load value or pressing the right side (upper load limit) green box to increase the tonnage load value. Each individual press of the box will change the load in step increments for the appropriate press being used and be shown for its value in the illuminated segment (S4) underneath the Increase Load symbol. As the load value is changed the slide cursor will move to the corresponding position on the load range indicator.

**Note:** The load rise (or decrease) is in 0.5 Ton steps for the Autotouch 40T press.
If either the upper or lower load range limit green box is continually pressed, then the load rise or decrease to a new load set point is accelerated. If the new load to set and apply is “overshot” for the cursor position on the slide scale indicator from an accelerated approach, then individually step press to the precise load to set using the appropriate lower or upper load range limit green box.

When the correct “Pump up to” load has been reached, press the green tick box to accept the new load value to be set for segment (S4) of the (P4) program. The press reverts to the Display Screen (B) environment with the new Increase Load details accepted for the segment (S4) and showing the full program segments sequence for (P4). If the red cross box is pressed, the new load details are not accepted and the press reverts to the Display Screen (B) environment.

Maintain or Hold Load Function Symbol Program Segment

The Maintain Load function symbol is used in a program sequence if the load value is to be maintained at the applied “Pump up to” load value by the auto top up facility offered by the press. The Hold Load function symbol is used in a program sequence if the applied “Pump up to” load value does not have to be maintained by the auto top up facility. (A pre-applied higher load value can be allowed to relax to a steady lower state if this type of pressing requirement is needed using the Hold Load function in a program sequence.)

When creating a highlighted segment (S#) with either the Maintain or Hold Load symbol for any program (P1 to P6), pressing the Maintain or Hold Load symbol box from the Display Screen (C) environment accesses the following Display Screen.
For our example program (P4), segment (S2) is illuminated to change the Maintain Load function from its current 0.3 minute setting having pressed the Maintain Load symbol box from the Display Screen (D) environment. The time slide scale cursor position indicator for minutes has a green box with 0.0 on the left side and a green box with 99.9 on the right side.

Change the timing for maintaining (or holding) a load in minutes accordingly by touching and pressing the left side (lower time limit) green box to reduce the time value or pressing the right side (upper time limit) green box to increase the time value. Each individual press of the box will change the time in 0.1 minute step increments for any of the Atlas Autotouch press variants being used and the time will be shown for its value in the illuminated segment (S2) underneath the Maintain Load (or Hold Load – if chosen) symbol. As the time value is changed the slide cursor will move to the corresponding position on the minute time range indicator.

**Note:** A minimum time setting is 0.1 minute. If the lower time limit box is pressed towards the 0.0 end stop indication for the time value, an untimed (infinity) setting can be applied for the Maintain or Hold Load function.
If either the upper or lower time range limit green box is continually pressed, then the time rise or decrease to a value is accelerated. If the new time to set and apply is “overshot” for the cursor position on the slide scale indicator from an accelerated approach, then individually step press to the precise time to set using the appropriate lower or upper time range limit green box.

When the correct time has been reached, press the green tick box to accept the new time value for the Maintain or Hold Load symbol to be set for segment (S2) of the (P4) program. The press reverts to the Display Screen (B) environment with the new time details for the Maintain or Hold Load function accepted for the segment (S2) and showing the full program segments sequence for (P4). If the red cross box is pressed, the new time details for the Maintain or Hold Load function are not accepted and the press reverts to the Display Screen (B) environment for its original program details, but the change of symbol will be retained. Therefore, to program and set a correct segment (S#) detail for either the Maintain or Hold Load symbols and for an associated hold time value, if the red cross box has been pressed, it is advisable to immediately re-edit the details for the segment in the program and use the green tick box to accept the new segment details before continuing to any other segments (S#’s) that may require editing in a program sequence.

Note: If say a time of 120 minutes (2 hours) is required to maintain or hold a load, then two successive Maintain or Hold Load function symbols can be placed in a program sequence and both function steps can be set at 60 minutes each for their timing. Additionally, if an initial delay before the start of a complete pressing sequence is required, the first step segment (S1) of a program sequence could be a Maintain Load function with the minimum tonnage load setting (e.g. 4 tons for the Autotouch 40T press), at say 10 minutes. An initial “Pump up to” load step becomes segment (S2) and activates 10 minutes after the start button (11) has been pressed.
Release Load Rate Function Symbol Program Segment

To release any load being applied by a **Maintain** or **Hold Load** function segment from a running program, a **Release Load Rate** function is used as the next segment (S#) of a program sequence after the **Maintain** or **Hold Load** timed function. There are 3 (three) different **Load Release Rates** – **Fast**, **Medium** and **Slow**. (See symbols on page 21.) The main (general) **Release Load Rate** symbol shown from the (**Edit**) Display Screen (**C**) environment for creating a program segment with a **Release Load Rate** is a collection of all three speed rates.

When creating a highlighted segment (S#) with a **Release Load Rate** function symbol for any program (**P1** to **P6**), pressing the general **Release Load Rate** function symbol from the Display Screen (**C**) environment accesses the following Display Screen.

![Display Screen after General Release Load Rate Symbol Box Pressed from Display Screen (C) Environment](image)

The three different **Fast**, **Medium** and **Slow Release Load Rate** symbols are presented to choose as the segment (S#) detail.

**Note:** There is a green box displayed with a **Step Back** symbol next to the (**Exit**) box if the step function to include a **Release Load Rate** is not required. Pressing the **Step Back** box will return the
press to the screen display (C) environment with no changes to the program. Pressing the (Exit) box at this stage returns the press to the (Dir) Display Screen (A) environment.

Press the Fast, Medium or Slow Release Load Rate box to set for the segment (S#) detail. The following Display Screen will be shown for the load value to set against the particular Release Load Rate function symbol selected.

![Display Screen after Fast, Medium or Slow Release Load Rate Box Pressed](image)

For our example program (P4), segment (S3) is illuminated to change the Fast Release Load Rate function from its current 7.0 tons setting to a Medium Release Load Rate function to 5 tons. However, in this instance of a program creation and sequence of events, the previous load holding setting has been at 15 tons for the “Pump up to” load step at segment (S1) and maintained for 0.3 minutes at the segment (S2) step. Therefore in this example for use of the Autotouch 40T press, the maximum load that can be set for a Load Release Rate to drop to is 15 tons, hence the load range presented by the slide cursor on the gradient scale is from the minimum 0.0 tons to the maximum of 15 tons dictated by the previous segment (S1) setting.

Change the Release Load Rate load value level to apply, accordingly indicated at the slide cursor position, by touching and pressing the left side (lower load limit) green box to reduce the tonnage load value or
pressing the right side (upper load limit) green box to increase the tonnage load value. Each individual press of the box will change the load in step increments for the appropriate press being used and be shown for its value in the illuminated segment (S3) underneath the **Release Load Rate** symbol chosen. As the load value is changed the slide cursor will move to the corresponding position on the load range indicator.

**Note:** *The load rise (or decrease) is in 0.5 Ton steps for the Autotouch 40T press.*

If either the upper or lower load range limit green box is continually pressed, then the load rise or decrease to a new load set point is accelerated. If the new load to set and apply is “overshot” for the cursor position on the slide scale indicator from an accelerated approach, then individually step press to the precise load to set using the appropriate lower or upper load range limit green box.

When the correct **Release Load Rate** load value has been reached, press the green tick box to accept the new load value to be set for segment (S3) of the (P4) program. The press reverts to the screen display (B) environment with the new **Release Load Rate** details accepted for the segment (S3) and showing the full program segments sequence for (P4). If the red cross box is pressed, the new **Release Load Rate** details are not accepted for a change of any load value and the press reverts to the screen display (B) environment, but the **change of symbol** will be retained.

Therefore, to program and set a correct segment (S#) detail for either the **Fast**, **Medium** or **Slow Release Load Rate** symbols and for an associated tonnage load value, *if the red cross box has been pressed*, it is advisable to immediately re-edit the details for the segment in the program and use the green tick box to accept the new segment details before continuing to any other segments (S#’s) that may require editing in a program sequence.

Abortting a Pressing Procedure

Should you wish to cancel or change the pressing procedure after the start button (11) has been pushed, the pressing routine from the program (P#) running can be aborted at any time by pushing the stop button (12). One push of the stop button (12) halts a current program step that is being run and the program progresses to any next segment step detail for continuation, but two pushes of the stop button (12) aborts completely any applied program that is running.

As a safety feature, raising the front safety guard (5) will also abort the pressing cycle and program (P#), but this is not the recommended way of stopping a process.

**Note:** The stop button (12) should be used at all times to abort any pressing cycle or program.

Work Becomes “Trapped” in the Pressing Area

If, following the completion of a pressing cycle or running of a program (P#), the sample cannot be removed from between the piston pressing face (7) and the top bolster anvil pressing face (10), (the work has become trapped), try to release the force by loosening of the lead screw (8), turning the handle (9) anti-clockwise.

If the lead screw (8) cannot be loosened because the force holding the work in place is too great, it may be possible that the lower piston pressing face (7) and the piston itself has not fully retracted to its minimum start/rest position before the oil return drain valves have fully closed; when the (ok) symbol changes to the (OK) symbol condition status. Therefore, try re-applying a load force from a program to run (PZ to P6 - e.g. a load of circa 4 tons) to the trapped work by pressing
the start (11) button. When the load to reset has been re-applied (which may be a fairly rapid event due to the fact that the work components have probably already been fully compressed), press the stop button (12). Whilst the re-applied load is being released as indicated by the display screen message (4) and as oil is draining back into the press oil reservoir, trying turning the lead screw handle (9) anticlockwise now to loosen the components involved in the pressing process. If a slight movement downwards of the piston can be achieved, the trapped work can be released.

No Sample in the Pressing Area

If the press is operated with no sample in the pressing area (6), the piston will continue moving until it reaches the limit of its travel, unless aborted by pressing the stop button (12). (See Piston Travel – page 38). The load indicated at the limit of the pistons travel point will be at or near to any applied “Pump up to” load. A message “Reached Piston Limit!” will be momentarily illuminated.

If the piston has been allowed to travel to its full limit because there has been no sample in the pressing area, the piston may not return to its natural start point/rest position in the time period for the retraction event, for a further re-application of any load if the “Reached Piston Limit!” message has been displayed. If this situation does occur, place a block of unyielding metal as a “sample” to press onto the piston surface and bring the top lead screw anvil pressing face (10) to rest on top of the sample block by turning the lead screw (8) accordingly. When the metal block sample is carefully positioned and the front safety guard is closed, press the start button (11) to set any pressing program in action. When the “Load Rising” message is seen on the (MOS) (see example page 30), press the stop button (12) and the load will be released and allow the piston to retract. The stop button (12) may need to be pressed again before the (ok) condition status changes to the (OK) status to allow the piston to retract further to its original start position.

Note: If at all possible avoid running the piston to the limit of its travel.

The Atlas™ Autotouch 40T Hydraulic Presses should give years of trouble free operation, if used and cared for correctly. If there is a failure of the press operation, it is recommended that you contact your local Specac representative immediately, particularly if your press is still within a warranty period of usage. It will be a requirement to identify your press from its unique serial number found on the appliance label at the rear of the press and provide a brief and clear description of the fault. For technical faults Specac may be contacted via email at techsupport@specac.co.uk.

However, some faults that may develop can be identified and fixed without the potential need for return of the press to Specac. The following information is provided to identify some faults and carry out the necessary repairs and adjustments should you decide to do so.

**Fault 1:** There is no power to the press when the on/off power switch (1) is pressed on but power from a mains connection has been established.

**Cause:** The mains fuse (15) is broken or damaged.

**Remedy:** Replace the mains fuse with the appropriate current (amperage) type for both 220 volts and 110 volts mains operation. The fuse is located within the mains fuse holder (15) at the rear of the press. (See page 16.) The fuse holder is a slot screw, push in and turn, spring release type. The fuse to use is a 32mm long, 5amp, anti-surge type (P/N 254-072). FOR SAFETY, DISCONNECT THE PRESS FROM A MAINS POWER SUPPLY BEFORE REMOVING THE FUSE. If the fault persists when a new fuse has been replaced, please contact Specac for further advice.

**Fault 2:** The motor/pump does not run when the start/apply load button (11) is pushed.

**Cause:** The press front safety guard (5) is still open.

**Remedy:** Fully close the front safety guard (5).
If the fault still persists when the guard has been closed, please contact Specac for further advice.

Fault 3: The motor/pump runs but the main pressing piston surface (7) does not raise (with no sample or metal block in the press).

Cause: The oil level in the system is too low.
Remedy: Fill oil reservoir to correct level with the piston cylinder fully retracted and proceed to bleed any air in the oil out of the system using the Oil Kit of parts P/N GS25890 – Press Service Procedure 2S-25890-2.

Fault 4: The oil pressure is not increasing and hence there is no rise in applied load with a solid block of metal in the press.

Cause: There is air trapped in the pumping system.
Remedy: Fill oil reservoir to correct level with the piston cylinder fully retracted and proceed to bleed any air in the oil out of the system using the Oil Kit of parts P/N GS25890 – Press Service Procedure 2S-25890-2.

Fault 5: A tonnage load can be applied but the load cannot be held and decreases.

Cause A: The sample itself is collapsing/yielding under force.
Remedy: Check there is no fault with press system by using a solid metal block to press.

Cause B: There is a loss of oil (oil leak) from the system.
Remedy: Check for signs of oil beneath the electronics box (possible motor/pump problem) or beneath the pressing frame area (possible piston cylinder assembly problem). If there is an oil leak contact Specac and give serial number of press. Replace the main piston assembly from the Atlas™ Autotouch 40T Press using the Piston Assembly Kit of parts P/N GS25891 – Press Service Procedure 2S-25891-2.
Cause C: There is air trapped in the pumping system.
Remedy: Fill oil reservoir to correct level with the piston cylinder fully retracted and proceed to bleed any air in the oil out of the system using the Oil Kit of parts P/N GS25890 – Press Service Procedure 2S-25890-2.

Cause D: Solenoid valves dirty or damaged.
Remedy: Contact Specac and give serial number of press.

Cause E: Pressure relief valve dirty or damaged.
Remedy: Contact Specac and give serial number of press.

Cause F: Motor/pump damaged or worn out.

Fault 6: Oil pressure in system increases but a full tonnage load capability cannot be applied.

Cause A: Oil temperature has become too hot from excessive running of the motor/pump assembly. (Oil is now too thin).
Remedy: Stop using the press for 15 minutes to allow the oil to cool down and re-apply a full tonnage load.

Cause B: There is a loss of oil (oil leak) from the system.
Remedy: Check for signs of oil beneath the electronics box (possible motor/pump problem) or beneath the pressing frame area (possible piston cylinder assembly problem). If there is an oil leak contact Specac and give serial number of press. Replace the main piston assembly from the Atlas™ Autotouch 40T Press using the Piston Assembly Kit of parts P/N GS25891 – Press Service Procedure 2S-25891-2.

Cause C: There is air trapped in the pumping system.
Remedy: Fill oil reservoir to correct level with the piston cylinder fully retracted and proceed to bleed any air in the oil out of the system using the Oil Bleed Kit of parts P/N GS25890 – Press Service Procedure 2S-25890-2.
Cause D: Pressure relief valve dirty or damaged.  
Remedy: Contact Specac and give serial number of press.

Cause E: Motor/pump damaged or worn out.  

Fault 7: Pressing Piston will not retract.  
Cause A: The program running on the press has become “confused”.  
Remedy: Power down the press (switch off (1)) and then re-power the press (switch on (1)).

Cause B: An internal fuse has blown.  
Remedy: Contact Specac and give serial number of press. Replace the fuse for the Atlas™ Autotouch 40T Press from the Replacement Fuse Kit of parts P/N GS25894 - Press Service Procedure 2S-25894-2.

Fault 8: Creaking sound when load being applied and released.  
Cause: Friction movement of compression spring rings.  
Remedy: Contact Specac and give serial number of press. Lubricate the compression spring rings for the Atlas™ Autotouch 40T Press from the Compression Spring Ring Lubrication Kit P/N GS25895 – Press Service Procedure 2S-25895-2.

Fault 9: Damage has occurred to the lead screw assembly and it cannot be removed from the press.  
Cause: Incorrect pressing of a sample.  
Fault 10: Bleeping sound and ERROR 304 message.

**Cause:** Pressure Transducer not connected or faulty.
**Remedy:** Contact Specac and give serial number of press. Reconnect or replace transducer.

Fault 11: Bleeping sound and ERROR 305 message.

**Cause:** On board Printed Circuit Board fuse has blown.
**Remedy:** Contact Specac and give serial number of press. Obtain replacement fuse.

As stated in the previous Fault Finding, Causes and Remedy section, the Atlas™ Autotouch 40T Hydraulic Presses should give years of trouble free operation, if used and cared for correctly.

It is recommended to keep the press in as clean a condition as possible, particularly within the lower piston pressing face area (7) of the press to help prolong the working lifetime of the components involved in the pressing procedure. If working in an excessively dusty or dirty environment or with fine powdery samples to be pressed, try to avoid an accumulation of dirt or residue building up around the pressing position cylinder assembly. In normal operation there will be a thin film of protective oil around the outer circumference of the piston as it travels up and down in its cylinder assembly to protect the metal surface. However, if this mixes with dirt deposits, over time excessive wear may occur from the piston travel within the cylinder that can lead to an oil system pressure failure from inadequate sealing of the O-ring components.

Checking the Oil Level and Changing the Oil

The Atlas™ Autotouch Press is supplied from new filled with VG68 grade hydraulic oil. The oil reservoir within the electronics box at the rear of the press is accessible by removal of the rear cover. There is a maximum and minimum oil level mark on the oil reservoir and 0.8 litres of oil is in the reservoir when it is filled to the maximum mark.

Depending on a typical suspected usage of the press (circa 50 pressings per day at maximum tonnage loads), Specac would recommend that the oil in the pressing system is changed every year. However, if there is an increased rate of usage on daily basis, then it may be prudent to change the oil every 6 months. Change of the oil and a subsequent bleed of any trapped air in the oil which may be introduced from a new fill of oil is a procedure that can be carried out by the user of the Atlas™ Autotouch Presses, if it is not convenient or
desirable to have the press returned to Specac or a local supplier to carry out this service. Change of the oil requires use of an Oil Kit of parts P/N GS25890 to carry out this procedure correctly and within the first year of warranty of the press (for the 6 monthly time scale of usage requirement), if this is a procedure that is wished to be carried out by the user.

**Checking of Press Performance**

Periodically, Specac would recommend that the Atlas™ Autotouch Press is tested for it operation using a “reference” sample to press such that the press can be verified that it is performing to specification, particularly with respect to a load that can be applied and sustained.

It is also prudent to check periodically that the “failsafe” mechanism of the front Safety Guard (5) is functional too. When the front guard (5) is raised (open), then power for operation of the motor/pump assembly will be cut, such that there can be no pressurising of the pressing piston for an accidental application of a load to a sample.

**For Load Testing**

Use an unyielding “dummy or reference” sample to press, such as a metal block. Place the metal block into the press and apply a set load to press from a **custom created program** with a **Hold Load** program step segment for a time of 15 minutes. If testing, for example, the Atlas™ Autotouch 25T Press, choose loads of 5 tons, 15 tons and 25 tons to apply representing the full spread of load range that can be applied from this press. Similarly, for the 8T Press choose 2 tons, 5 tons and 8 tons and for the 15T Press choose 3 tons, 9 tons and 15 tons as the typical load ranges that can be obtained from these presses.

Press and hold the load(s) for 15 minutes to observe the stability of the press in being able to **hold** the load that has been set and is being applied to the metal block. (Note, no auto-top of load function would be applied.) The press is functioning correctly and to specification if the rate of load loss is no greater than 1 ton within the 15 minute period for any load that is set.
For Safety Guard Testing

There are two tests that can be carried out to check the on/off power supply to the press motor/pump assembly from the front safety guard (5) mechanism.

1. Leave the front safety guard (5) deliberately open and press the start/apply load button (11). If the motor/pump will not run with the guard open the mechanism is functioning correctly. Now close the front safety guard (5) and without any sample in place press the start/apply load button (11). If the motor/pump now runs with the front safety guard (5) closed, the mechanism is functioning correctly. Stop the piston from any full travel by pressing the release/remove load button (12).

Note: It is recommended to stop any piston travel and pressing function always using the release/stop load button (12) in preference to raising/opening the front safety guard (5).

2. Place a solid metal block sample correctly into the press to apply a load. Select a load to apply and press the start button (11). Before any load has been applied to the metal block, rather than pressing the release button (12) to halt the operation (which is the normal and correct operational procedure), raise the safety guard (5) to open. If the motor/pump stops running, then the safety guard mechanism is functioning correctly.

Lead Screw Assembly Lubrication

Periodically, Specac would recommend lubrication of the lead screw (8) assembly threading when raising or lowering it through the central threaded boss housing part. This helps prevent the risk of seizure and trapping of the lead screw assembly in use and turning by hand.

When the press is initially supplied the lead screw (8) assembly threading has been pretreated with a silicone spray lubricant, but in further lubrication a light oil or suitable light grease will suffice in keeping the parts fully functional. Avoid any grime or dirt to accumulate in the threading which risks impairment of smooth operation.

76
10. Automatic Control of the Atlas™ Autotouch 40T Press by USB Connectivity

The Atlas™ Auto 40T press is supplied as standard with a USB connectivity port. This can be used to connect the press to a personal computer for automatic operation if desired.

Please contact Specac Ltd for details of how you might wish to use this function.

11. Accessories for Atlas™ Autotouch Presses

Atlas™ Evacuable Pellet Dies

<table>
<thead>
<tr>
<th>Size (diameter)</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>10mm</td>
<td>GS03100</td>
</tr>
<tr>
<td>13mm</td>
<td>GS03000</td>
</tr>
<tr>
<td>20mm</td>
<td>GS03165</td>
</tr>
<tr>
<td>32mm</td>
<td>GS03300</td>
</tr>
<tr>
<td>40mm</td>
<td>GS03290</td>
</tr>
<tr>
<td>32mm (Atlas™ Lightweight)</td>
<td>GS25410</td>
</tr>
<tr>
<td>40mm (Atlas™ Lightweight)</td>
<td>GS25411</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specification</th>
<th>UK/EURO (230v, 50Hz) version part number</th>
<th>USA (110v, 60Hz) version part number</th>
<th>JAPAN (100v, 50/60Hz) version part number</th>
<th>CHINA (230v, 50Hz) version part number</th>
<th>KOREA (230v, 60Hz) version part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Load on Ram (Piston)</td>
<td>P/N GS25830</td>
<td>P/N GS25831</td>
<td>P/N GS25832</td>
<td>P/N GS25833</td>
<td>P/N GS25834</td>
</tr>
<tr>
<td>Load Applied Increments (Displayed to)</td>
<td>40 Tons</td>
<td>0.5 Ton</td>
<td>4 - 40 Ton</td>
<td>38mm</td>
<td>95mm</td>
</tr>
<tr>
<td>Load Range</td>
<td>38mm</td>
<td>82mm</td>
<td>82mm</td>
<td>38mm</td>
<td>38mm</td>
</tr>
<tr>
<td>Top Bolster Diameter</td>
<td>38mm</td>
<td>95mm</td>
<td>95mm</td>
<td>95mm</td>
<td>95mm</td>
</tr>
<tr>
<td>Top Lead Screw Vertical Travel</td>
<td>82mm</td>
<td>38mm</td>
<td>38mm</td>
<td>38mm</td>
<td>38mm</td>
</tr>
<tr>
<td>Ram (Piston) Bolster Diameter</td>
<td>82mm</td>
<td>38mm</td>
<td>38mm</td>
<td>38mm</td>
<td>38mm</td>
</tr>
<tr>
<td>Ram (Piston) Stroke</td>
<td>240mm x 220mm</td>
<td>430mm x 405mm</td>
<td>240mm x 220mm</td>
<td>430mm x 405mm</td>
<td>240mm x 220mm</td>
</tr>
<tr>
<td>Maximum/Minimum Distance Between Pressing Faces</td>
<td>155mm - 60mm</td>
<td>550mm</td>
<td>550mm</td>
<td>580mm - 660mm</td>
<td>550mm</td>
</tr>
<tr>
<td>Sample Area Size (Width x Depth)</td>
<td>240mm x 220mm</td>
<td>430mm x 405mm</td>
<td>240mm x 220mm</td>
<td>430mm x 405mm</td>
<td>240mm x 220mm</td>
</tr>
<tr>
<td>Base Footprint (Width x Depth)</td>
<td>240mm x 220mm</td>
<td>430mm x 405mm</td>
<td>240mm x 220mm</td>
<td>430mm x 405mm</td>
<td>240mm x 220mm</td>
</tr>
<tr>
<td>Height (Without Lead Screw)</td>
<td>15°C to 30°C</td>
<td>15°C to 30°C</td>
<td>15°C to 30°C</td>
<td>15°C to 30°C</td>
<td>15°C to 30°C</td>
</tr>
<tr>
<td>Height (Lead Screw At Minimum And Maximum Distances Between Pressing Faces)</td>
<td>15°C to 30°C</td>
<td>15°C to 30°C</td>
<td>15°C to 30°C</td>
<td>15°C to 30°C</td>
<td>15°C to 30°C</td>
</tr>
<tr>
<td>Oil Type</td>
<td>VG68</td>
<td>VG68</td>
<td>VG68</td>
<td>VG68</td>
<td>VG68</td>
</tr>
<tr>
<td>Oil Reservoir Capacity</td>
<td>1.0 litre (Typical use 0.8 litres)</td>
<td>1.0 litre (Typical use 0.8 litres)</td>
<td>1.0 litre (Typical use 0.8 litres)</td>
<td>1.0 litre (Typical use 0.8 litres)</td>
<td>1.0 litre (Typical use 0.8 litres)</td>
</tr>
<tr>
<td>Press Weight</td>
<td>130Kg</td>
<td>130Kg</td>
<td>130Kg</td>
<td>130Kg</td>
<td>130Kg</td>
</tr>
<tr>
<td>Package (crated) Weight</td>
<td>180Kg</td>
<td>180Kg</td>
<td>180Kg</td>
<td>180Kg</td>
<td>180Kg</td>
</tr>
</tbody>
</table>

**Fuses**

<table>
<thead>
<tr>
<th>Fuses</th>
<th>P/N GS25830 (UK/EURO)</th>
<th>P/N GS25831 (USA)</th>
<th>P/N GS25832 (JAPAN)</th>
<th>P/N GS25833 (CHINA)</th>
<th>P/N GS25834 (KOREA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 internal anti-surges, 3amp and 1amp.</td>
<td>1 internal anti-surge, 5amp</td>
<td>2 internal anti-surges, 4amp and 1amp.</td>
<td>2 internal anti-surges, 4amp and 1amp.</td>
<td>2 internal anti-surges, 3amp and 1amp.</td>
<td>2 internal anti-surges, 3amp and 1amp.</td>
</tr>
</tbody>
</table>
13. EC Declaration Of Conformity

---

**EC Declaration of Conformity**

This is to certify that the:

**ATLAS AUTOTOUCH PRESS (40T)**
25830/25834

Manufactured by:

**SPECAC LIMITED**

Conforms with the protection requirements of Council directives 2006/42/EC, relating to the **MACHINERY DIRECTIVE**, by the application of:

1) Testing to the following Regulations and SAFETY standards:
   EN61010-1:2010
   EN61010-2-010:2003
2) Supported by SPECAC Technical File No. **TF25830**

Conforms with the protection requirements of Council directives 2004/108/EC, relating to the **EMC DIRECTIVE**, by the application of:

1) Testing to the following standard:
   EN-61326:2013. EMC (Emissions/Immunity) requirements for Electrical Equipment for measurement, control and laboratory use.
2) Supported by SPECAC Technical File No. **TF25830**

and also conforms to the general safety requirements of Council Directives 2006/95/EC, relating to the **LOW VOLTAGE DIRECTIVE**, by the application of:

1) EN61010-1:2010, Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory use.
2) Supported by SPECAC Technical File No. **TF25830**

and also conforms to the requirements of Council Directives 2011/65/EC, relating to the **ROHS DIRECTIVE**, by the application of:

---

**Responsible Person:**

Name: Mr G.Poulter
Position: Technical Director
Serial No:
Name: Serial:
Position:

Signature: Of: Specac Ltd. Date: 1st Nov 2014

conforms to the above

Signature: Of: Specac Ltd. Date:

Original to file/1 Copy to Customer:

FS. No.: 642-142. Rev. No.: 01.

---

TF25830 MELRTemplate03.doc
Legend for Atlas™ Autotouch 40T Press Diagrams

(1) On/off power switch.
(2) Front panel.
(3) Rear power mains socket connection.
(4) Electronic display screen.
(5) Front movable safety guard.
(6) Pressing area.
(7) Lower piston pressing face.
(8) Lead screw.
(9) Handle of lead screw.
(10) Top lead screw anvil pressing face.
(11) Start (apply load) button.
(12) Release (remove load) button.
(13) Rear fixed safety guard.
(14) Gap by rear safety guard to feed through vacuum pipe hosing for use with evacuable pellet dies.
(15) Mains fuse holder.
Worldwide Distribution

France
Eurolabo - Paris.
Tel. 01 42 08 01 28
Fax 01 42 08 13 65
email: contact@eurolabo.fr

Germany
L.O.T. - Oriel GmbH & Co,
KG - Darmstadt
Tel: 06151 88060
aFax: 06151 880689
email:info@LOT-Oriel.de
Website: www.LOT-Oriel.com/de

Japan
Systems Engineering Inc. -Tokyo
Tel: 03 3946 4993
Fax: 03 3946 4983
email:systems-eng@systems-eng.co.jp
Website: www.systems-eng.co.jp

Spain
Teknokroma S.Coop C. Ltda
Barcelona
Tel: 93 674 8800
Fax: 93 675 2405
email: comercial@teknokroma.es

Switzerland
Portmann InstrumentsAG
Biel-Benken
Tel: 061 726 6555
Fax: 061 726 6550
email: info@portmann-instruments.ch
Website: www.portmann-instruments.ch

USA
SPECAC INC.
414 Commerce Drive
Suite 175,
Fort Washington,
PA 19034, USA
Tel: 215 793 4044
Fax: 215 793 4011

United Kingdom
Specac Ltd. - London
River House, 97 Cray Avenue,
Orpington
Kent BR5 4HE
Tel: +44 (0) 1689 873134
Fax: +44 (0) 1689 878527
Registered No. 1008689 England