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These steps should be conducted after the printer has been unpacked according to the unpacking instructions.

If there is any difficulty or questions please contact 3D INDUSTRIES. If requested a session can be scheduled with 3D industries to guide you through the operation.

The white cable ties securing the printer during shipping should have been removed.
The spool holder should have been fitted.

Check that the printer carriage can be gently moved to the NW NE SW and SE corners and then to the centre.
There will be some resistance because of the belts connected to the motors.

Plug the printer into the mains and observe the LCD screen.
It has four lines and should display as shown.

Line 1	Nozzle temperature / Target temperature bed temperature / Target temperature
Line 2	X 0 (position) Y 0 (position) and Z 0000.00 (position)
Line 3	FR100% (speed) SD -----% (percentage printed) o--:-- (elapsed print time)
Line 4	PRINTER READY (last status display)

The LCD Controller has a knob with both a rotate function and a push to select or confirm operation.

Check the pre heat operation:
- Push the knob. A menu is displayed
- Rotate the knob to select **Utilities** and push to confirm
- The next menu should be displayed

- Rotate the knob to select **Pre heat PLA** and push to select.
- The next menu should be shown

- Rotate the knob to select **PLA 1** and push to select.
- The status screen will then be displayed

The printer will start preheating.
The Status display and will indicate the:
- Nozzle temperature and the target temperature (180)
- The bed temperature and the target temperature (50)

Mount the Filament spool on the spool holder and insert the filament into the filament cleaner through the PTFE tuning and into the extruder.

The filament cleaner contains sponge and the movement of the
filament past the sponge removes any electrostatically attracted dust

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Sample PLA filament is provided if the filament spool is not available.

There are two nuts on the adjustable extruder. These should be loosened to enable the filament to be pushed into the extruder and down into the hot end (13 cm). Make sure the end of the filament has been straightened before doing this. Pushing the filament down should result in some filament being extruded from the nozzle.

Tighten the two nuts on the extruder carefully so that the filament is held firm and cannot be moved. Do not over tighten.
Note: There is documentation in greater details on the subject of changing the filament.
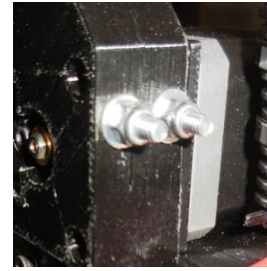
Ensure the glass bed is clipped to the aluminium bed.
For PLA printing the glass bed can be sprayed with a suitable adhesive.
Cedel hair spray pictured here works well. It is best to get this version (Woolworths etc)

For ABS printing 3D Industries recommends the use of the FlashForge bed material. If this is used then PLA can be printed to this as well.

IMORTANT:
Using the FlashForge bed for the first time INCREASE the Z GAP first and then adjust because of the extra thickness of the FlashForge material on the glass. (Turn the adjuster knob anticlockwise a few turns)
DO NOT uses any adhesive on the FlashForge bed.

Check the Z Gap
To check that this has not moved during shipping or if the FlashForge bed has been fitted. If using a FlashForge bed the first time increase the Z Gap first.

First place a piece of paper between the nozzle and the glass with the nozzle in the centre of the bed.
Raise the bed upwards by turning the coupler at the bottom of the Z Axis in a clockwise direction

- Observe the Z Axis sensor light. This will light up when the bed is detected. The paper should be able to be moved but some resistance felt.
  The printer was shipped with the gap set to wide to allow for different bed materials to be used.
- If the gap is too big, turn the Z Gap adjuster pictured in an anticlockwise direction (looking from the top) so that the bed has to travel further upwards before actuating the sensor.
- Lower and raise the bed gain to check.
- Repeat this until the paper offers some resistance when the sensor light comes on.
  (Note the Z gap may need to be adjusted minutely if using different bed surg-faces and in some cases differing filament. This is explained in the documentation)

Printing the first cube
There are two calibration objects supplied. First print the cube or start to print to check that everything is working.
To print the cube:

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Push the LCD control knob a menu will be displayed.
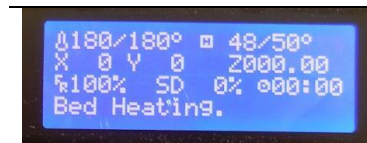Rotate the knob to select "**Print from SD**" push t select

Rotate the knob to select "**Calibration**" push to select

Rotate the knob to select "**Cube**" push to select

The printer will raise the temperature f the bed to that set in the Gcode file.

The printer first waits for the bed temperature to reach the target temperature

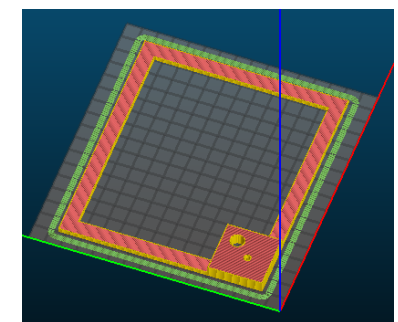The printer will then perform homing functions on the X Y and Z axis

The printer will then wait for the nozzle target temperature to be reached

The printing process will begin.

The printer will then start to print the cube. It will first print a "skirt" around the cube to ensure that the filament is flowing well and the nozzle reservoir is filled.

Here is the bed level object wit the skirt shown in green.

It is not necessary to print the entire cube, it is important to check that the printing of the first layers were correct and that the filament sticks to the print bed. If the plastic is not sticking to the bed it will be necessary to slightly reduce the z gap (turn the Z Gap adjuster a third f a turn clockwise. (So the bed has to travel further upwards before it is detected this resulting in a smaller gap)

Printing the bed level test object
When the cube starts t print a few layers well, then the z gap is set K and the bed levelling should be checked. This was set and tested before delivery s it should be OK.
A calibration object is provided to test the bed levelness.

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Push the LCD control knob a menu will be displayed.
Rotate the knob to select "**Print from SD**" push to select

Rotate the knob to select "**Calibration**" push to select

Rotate the knob to select "**Cube**" push to select

The calibration object prints over a larger area and is a good test as to whether the bed is level. If it is not one side or the back or from may not be printing correctly or sticking to the bed.
There is no need to print the entire object just enough layers to check the printing.

If the bed level is adjusted then the Z gap will also need rechecking.
If adjustment is required refer to the detailed documentation on this supplied.

When the cube and bed level object can be printed the printer is ready for use.

The documentation has been produced on request as a series of separate one or two pager sheets that can if desired by printed and laminated to be kept near the machine.

The documentation is also being converted to the o Line Prezi system. See the link to the Prezi SLIC3R documentation.

The End to End Process

The printer is now ready for use. Refer to the documentation for details aspects.
The end to end process is as follows:

- The software (SIC3R 1.2.9 supplied by 3D Industries on the USB stick should be installed (it can be run from the memory stick if necessary).
- The Slicer is loaded and the appropriate config.ini file is loaded
- The CAD files are prepared or obtained and are added to the platter.
- Optionally the settings can be checked or changed.
- The SLIC3R converts the file to gcode and exports it to a file
- The Converted CAD file to a GCODe file can be viewed on SLIC3R particularly to check the different layers, the infill used and so forth.
  if satisfactory the gcode file is copied t the SD Card that is then put back into the printer.
- The file can then be printed as described above