



Tubular Threading Technologies WLL

In-Situ Phosphating System

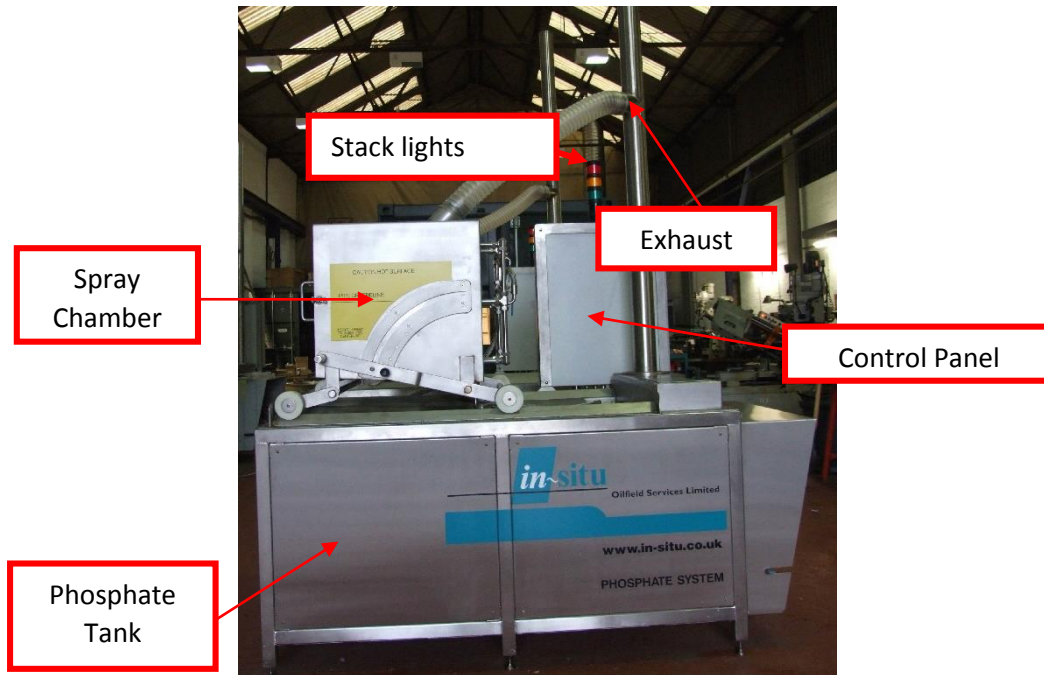


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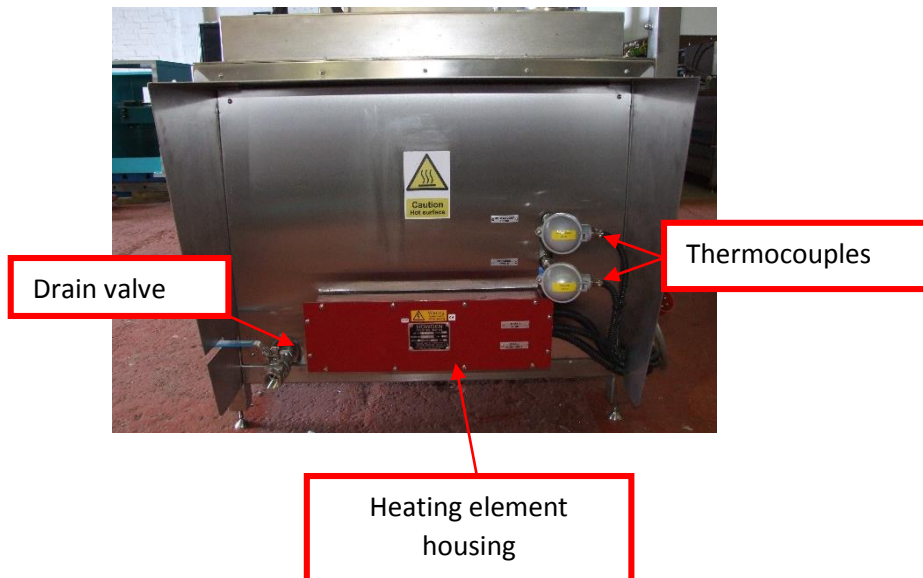
January 2014



1.0 MACHINE OVERVIEW



General Layout of machine





1.1 CONTROLS

The IN-SITU Phosphator Main Operator Station components



The image above shows the MCP (Main Control Panel). This is where the operator can select the mode of operation and control the temperature and duration of the phosphating cycle.

The machine control Isolator, control elements, push buttons and E/STOP are also mounted here.

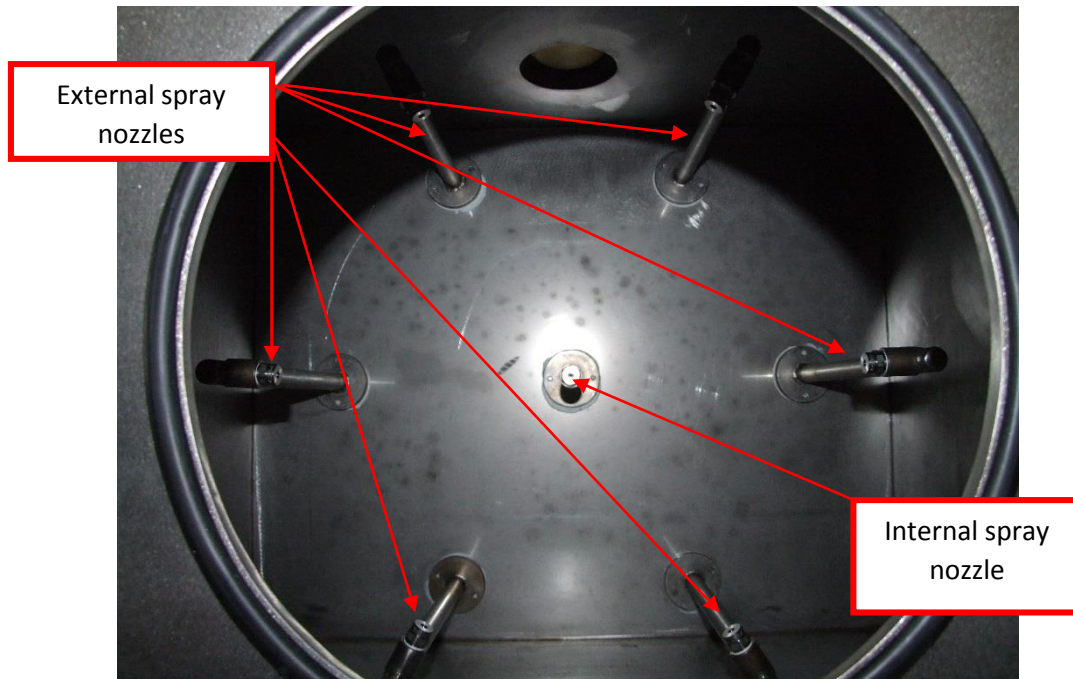


1.2 Pipe loading Aperture

The Pipe to be Phosphated is loaded through the aperture in the spray housing and is sealed via the rubber gasket.

Any leakages are channelled back into the main tank via the channels in the top plate of the tank and are therefore recycled continuously by the system.





Internal view of the spray chamber showing the internal and external spray nozzles 7 off in total.

The nozzles may require to be cleaned periodically, they can be removed easily and cleaned in a bath of solvent, blown through with low pressure compressed air and refitted.

NOTE :- Suitable PPE should be worn when carrying out this procedure.



1.3 CONTROLS

OPERATING PROCEDURES

The information detailed in this section, describes the procedures for operating the IN-SITU Phosphating System.

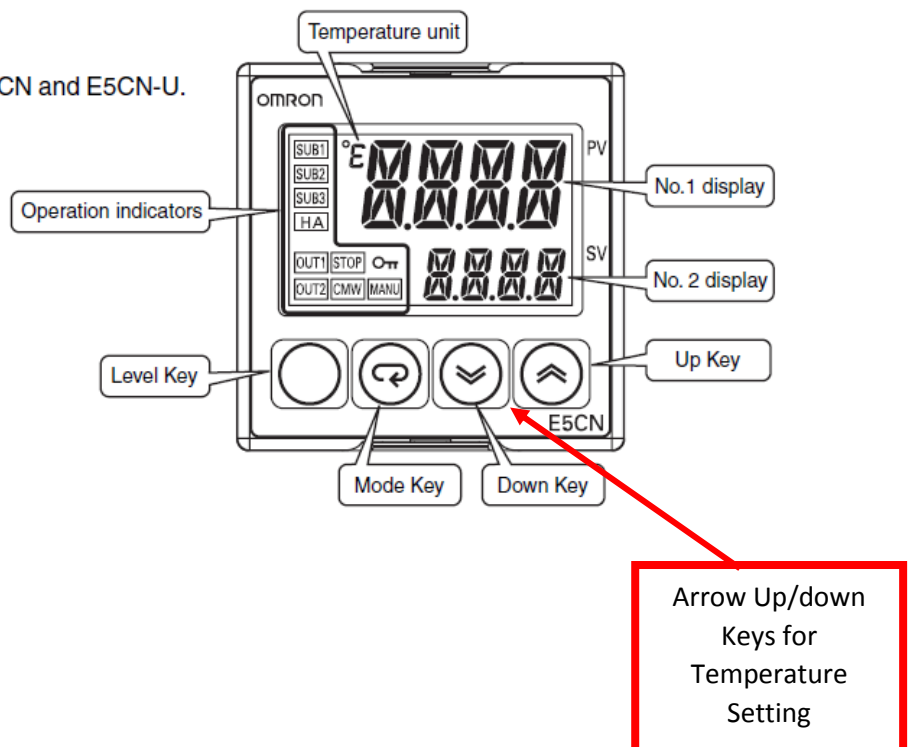
Process Temperature

The process temperature has to be manually set by the operator using the arrow Up/Down buttons on the controller as highlighted below.

E5CN

E5CN-U

The front panel is the same for the E5CN and E5CN-U.



The parameters of the Temperature controller are all preset before dispatch.

The full setting and instruction manual is include in Section 7 at the rear of this manual.

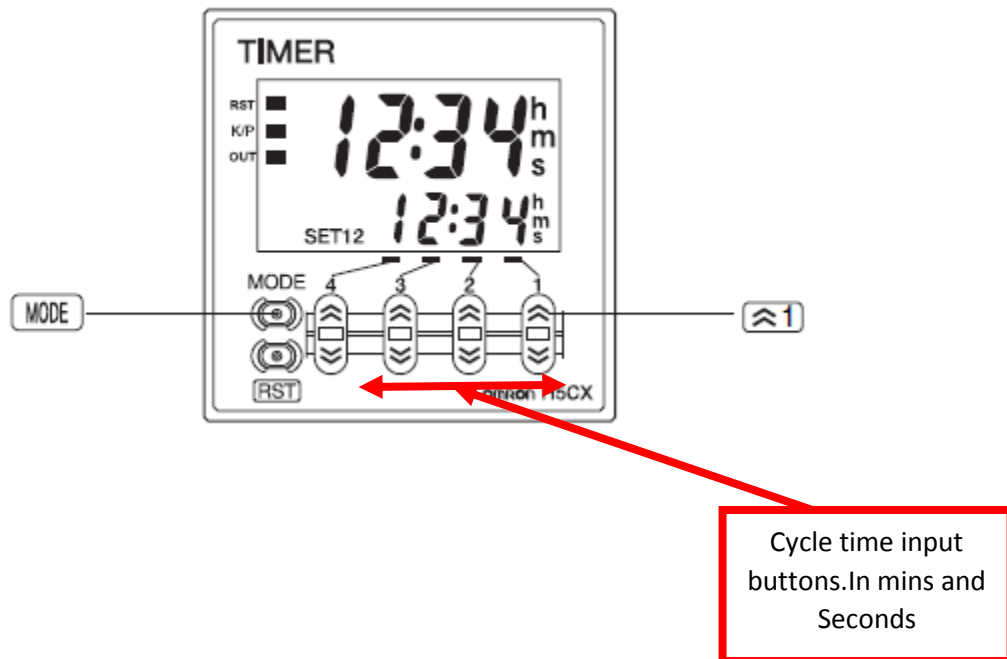


1.3 CONTROLS

Cycle Complete Timer

The machine is equipped with a cycle complete timer.

This also has to be set by the operator for the desired cycle time.



To adjust the cycle time required, use the 4 buttons 1-4 to input the required time for the part being treated.

The full setting and instruction manual is include in Section 7 at the rear of this manual.

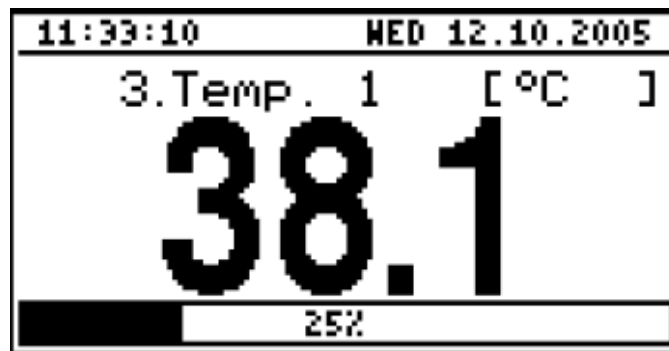
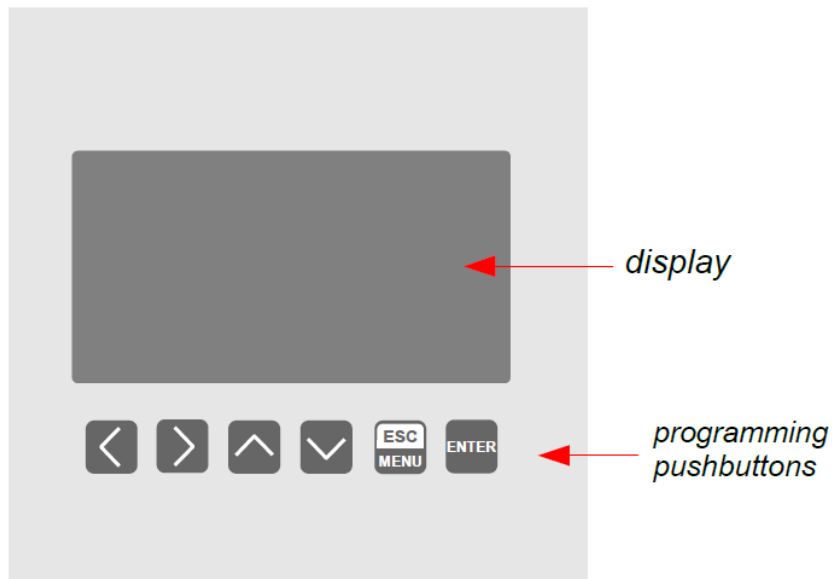


1.3 CONTROLS

Data Logger

The machine is fitted with a SIMEX Multi logger device to record the data set for each individual component that has been treated.

The data can be removed from the unit as required via the supplied 8GB USB Memory stick for archiving by the end user.

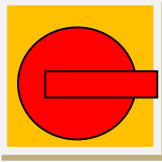
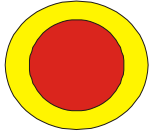
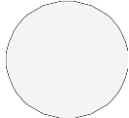
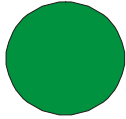
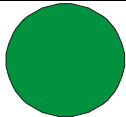


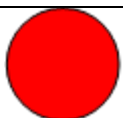


Display of Data Logger

The full setting and instruction manual is include in Section 7 at the rear of this manual.

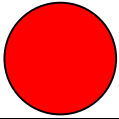
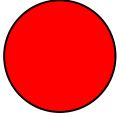








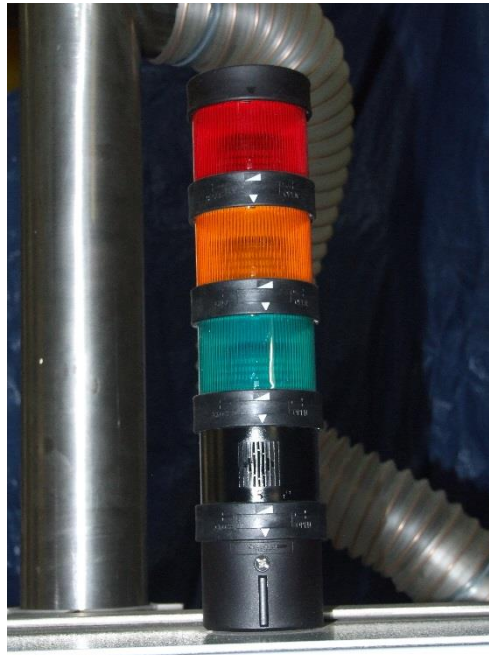
1.4 CONTROL ELEMENTS

<u>LEGEND</u>	<u>DEVICE</u>	<u>DESCRIPTION</u>
	<u>ISOLATOR</u>	MAIN ISOLATOR USED TO TURN OFF/ON THE ELECTRICAL SUPPLY TO THE MACHINE
	<u>EMERGENCY STOP PUSHBUTTON</u>	EMERGENCY STOP PUSHBUTTON USED TO ESTOP THE MACHINE. TWIST TO RELEASE
	<u>WHITE POWER ON INDICATOR</u>	POWER ON INDICATOR ILLUMINATED WHEN POWER IS APPLIED
	<u>GREEN ILLUMINATED PUSHBUTTON</u>	AUTO START ILLUMINATED PUSHBUTTON USED TO INITIATE CYCLE AND LIT WHEN IN CYCLE, FLASHES IF CYCLE PAUSED.
	<u>GREEN LED INDICATOR</u>	TEMP IN RANGE INDICATOR ILLUMINATED WHEN TEMPERATURE IS WITHIN RANGE
	<u>RED LED INDICATOR</u>	E/STOP ACTIVATED ILLUMINATED WHEN E/STOP IS DEPRESSED
	<u>RED LED INDICATOR</u>	HEATER OVERLOAD ILLUMINATED IF HEATER O/LOAD TRIPPED
	<u>RED LED INDICATOR</u>	LOW TEMP ILLUMINATED IF TEMPERATURE TOO LOW



Phospating System Manual

	RED LED INDICATOR	HIGH TEMP ILLUMINATED IF TEMPERATURE TOO HIGH
	RED LED INDICATOR	HIGH STAT TEMP INDICATOR ILLUMINATED IF HIGH TEMP STAT TRIPPED
	GREEN LED INDICATOR	TANK HEATING ACTIVE INDICATOR ILLUMINATED WHEN SYSTEM CALLS FOR HEATING
	BLACK PUSHBUTTON	E/STOP RESET PRESS TO RESET E/STOP CONDITION
	2 POSITION SELECTOR SWITCH	SYSTEM AUTO/MAN USED TO SELECT EITHER AUTO OR MANUAL OPERATION. AUTO IS SET WHEN THE 7 DAY TIMER IS USED.
	AMBER LED INDICATOR	SYSTEM READY ILLUMINATED WHEN SYSTEM IS READY TO RUN
	2 POSITION SELECTOR SWITCH	TIMER PAUSE / RUN USED TO SELECT EITHER CONTINUOUS RUN OR TO PAUSE TIMER CYCLE
	BLACK PUSHBUTTON	TIMER CYCLE RESET PRESS TO RESET THE PRESET TIMER VALUE



Stack indicator LED lights and sounder

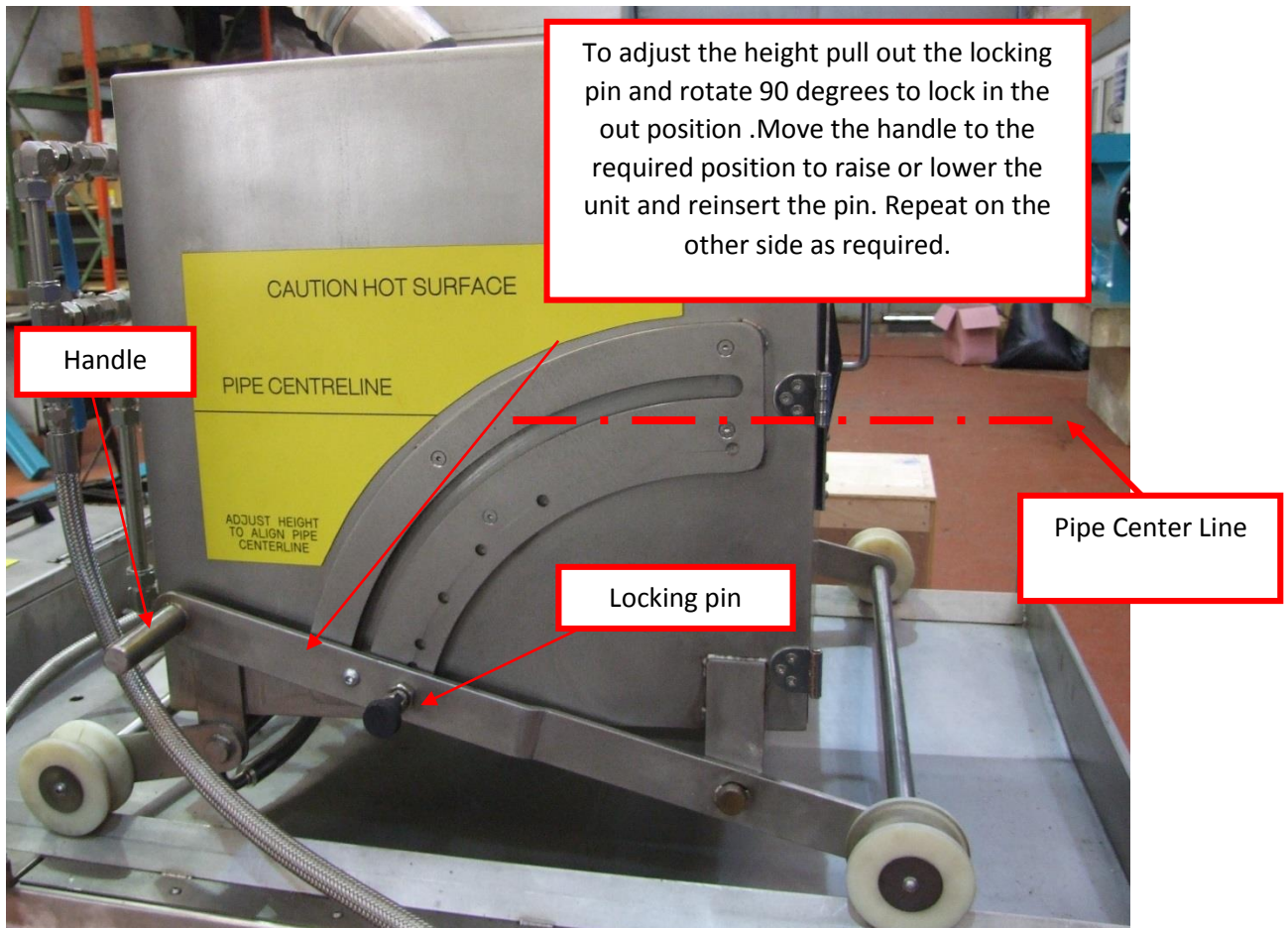
Colour	Constant	Flashing
Red	Alarm for E/stop or Overtemp.	Lamp test active
Amber	Ready	Lamp test active
Green	In Cycle	Paused or lamp test active



1.5 POSITIONING THE PIPE

Before a pipe can be treated we have to set the height of the aperture dependant on the Diameter of the pipe being used.

The machine has an adjuster mechanism to set the various heights required as shown below: The Adjuster mechanism has 7 settings.



Always set the centre line of the aperture to the centre line of the pipe prior to phosphating to ensure even coverage and coating.

The following pictures show the full range of travel available.



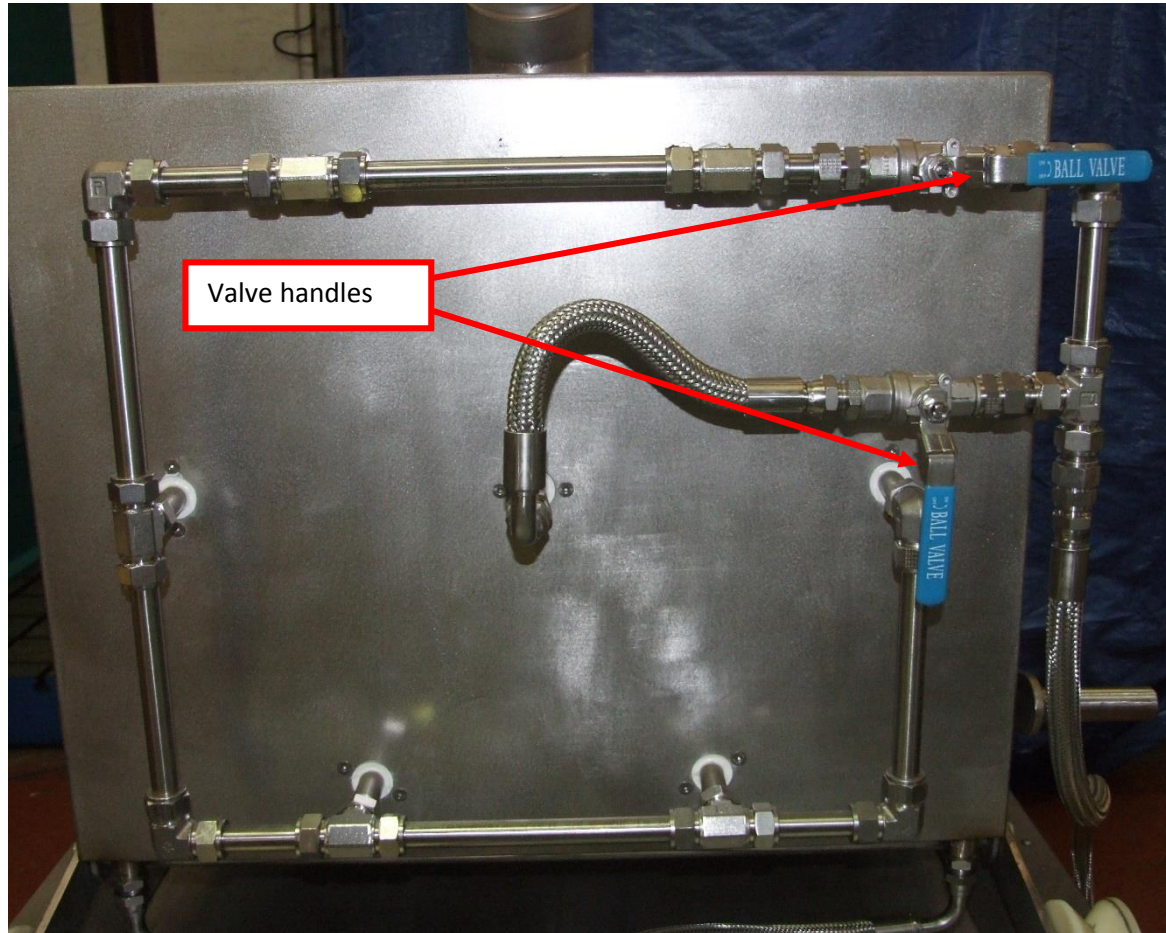
Above photo shows the fully **lowered** position.



Above photo shows the fully **raised** position.



1.6 SETTING THE VALVES



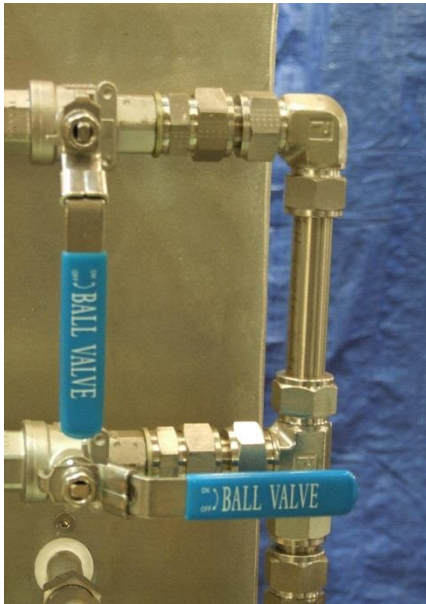
The above picture shows the valves and piping to the flow nozzles.

Ensure the valves are set correctly for external or internal pipe operation as shown in detail on the following page.

NB :- The machine is shipped with the valves set for external coating.

Always ensure that one of the valves is in the open position.

Never start the system with both valves closed



SET FOR INTERNAL COATING

One of the positions of the lockable valve handles is shown in this picture.

In this instance they are shown set for **Internal** pipe phosphating.

The upper valve is in the closed position and the lower valve is in the open position.



SET FOR EXTERNAL COATING

The second position of the lockable valve handle is shown in this picture.

In this instance they are shown set for **External** pipe phosphating.

The upper valve is in the open position and the lower valve is in the closed position.

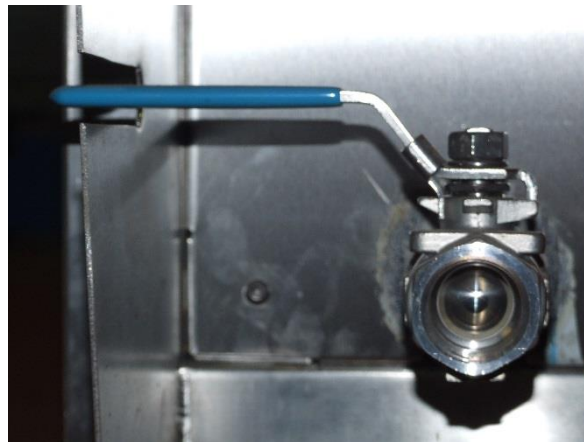


1.7 FILLING AND DRAINING



Filling of the unit is via the hinged lid shown above.

PLEASE ENSURE THAT THE HEATING ELEMENTS ARE SUFFICIENTLY COVERED AT ALL TIMES.



The drain valve is shown above.

The drain valve is normally in the closed position and is only opened to drain the contents of the tank into a suitable receptacle for safe disposal.



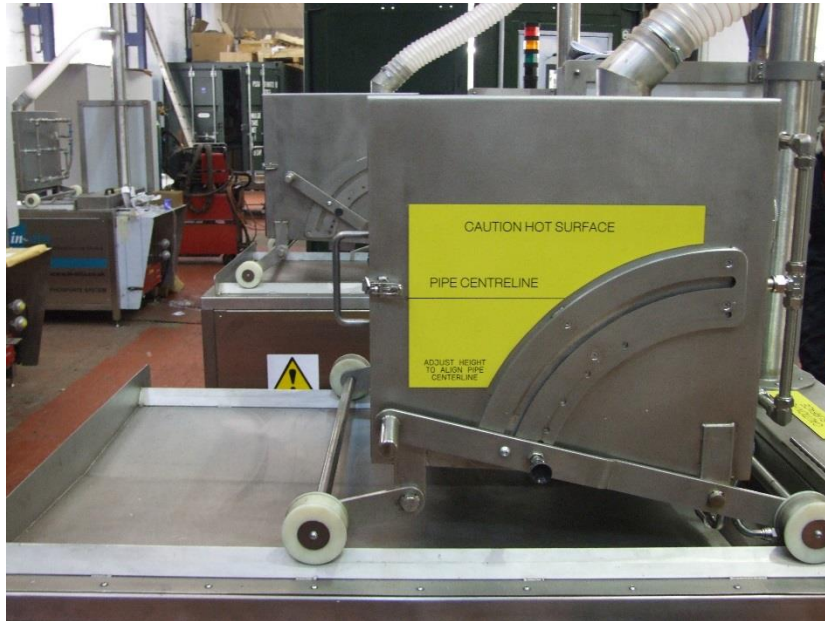
1.8 CARRIAGE POSITIONS.

The Spraying head carriage is mounted on 4 off rollers and can be manually moved over the end of the pipe.

Ensure that the pipe is fully entered into the spray chamber before pressing cycle start.



Carriage fully forward.



Carriage fully retracted.

In this position it allows easy access to inspect the pipe after phosphating is completed to ensure correct application of chemical and the plug can be removed more easily in this position.