

**FORTEX**

# **SOLDERPASTE/GLUE DISPENSER MODEL SP1A**



## **OPERATING INSTRUCTIONS**

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## Introduction

The SP1A Dispenser is used for precise control of pneumatically controlled dispensing of Liquids, Glues, Solderpaste etc.

The material pressure can be precisely adjusted with the integrated compressed air regulator and allows for precision dispensing of Solderpaste and or Adhesives etc. The unit has an adjustable time and vacuum suck back feature to aid accurate and easy dispensing

## Technical Data

Model	SP1A
Automatic Output Dispensing Modes	16 Modes Settable with DIP Switch
Automatic Timed Dispensing Range	00.01-99.99 Seconds
Manual Timed Dispensing	Can be set to Dispense Continuously
Minimum Delivery	0.0001ml
Dispensing Time Interval	0.1-9.9 Seconds (Automatic Time Function)
Inlet Air Pressure	10-100PSI
Outlet Air Pressure	1-80PSI
Overall Dimensions	235 x 225 x 63mm
Weight	2.2Kg

Technical Changes reserved

## EG-Declaration of Conformity



### Declaration of Conformity

Supplier:

Fortex Engineering Ltd  
Unit 16  
Freeman Road  
Lincoln  
LN69AP  
United Kingdom

Product:

Dispenser Model SP1A

We hereby declare that the machines described above complies with all relevant provisions of the Machinery Directive 2006/42/EC.

The above machine meets the requirements of the following guidelines and standards:

- Machinery Directive 2006/42/EC
- EMC Directive 2014/10830EC
- Low Voltage Directive 2014/35/EC
- Safety of machinery - Electrical equipment of machines - Part 1: General requirements
- Safety of machinery - Risk assessment - Part 1: Principles
- Safety of machinery - Basic concepts, risk assessment and risk reduction
- DIN EN 55014-1 2012-05 Electromagnetic compatibility Requirements for household appliances, electric tools and similar electrical appliances Part 1: Emission
- DIN EN 55014-2-2009-06 Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity
- Low Voltage Directive 2014/35/EG
- Machinery Directive 2006/42/EG/37/EG

## *Intended Use of Machine*

The SP1A is a precision automatic Digitally controlled intelligent drip glue and paste dispensing machine.

All other applications require our written consent or are at the user's own risk.

## *Safety Regulations*

### **IMPORTANT SAFETY INSTRUCTIONS FOR THE SOLDER PASTE DISPENSER**

#### **Generally**

Please read the following text carefully and pay particular attention to the instructions on safety at work and on commissioning.

Please keep this manual at a safe place. It contains instructions that are also important for later maintenance or cleaning work.

The machines are not intended for integration or interconnection with other machines or equipment. They may only be operated in rooms equipped for this purpose and operated only by qualified specialist personnel (soldering skills). Children and pets are to be kept away!

Do not use the Dispenser if it is damaged or does not work properly.

#### **Electricity**

The machine is manufactured using tested parts according to the usual electrical safety regulations. However, this does not relieve the user of his duty of care when handling electrically operated devices. The main switch disconnects the machine from the power supply. The protection of the circuit and the fault circuit must be carried out by the customer.

After completion of work, the main switch should always be switched off.

Before carrying out any work on the machine (cleaning, etc.), switch off the machine and pull out the mains plug. The power outlet should be near the machine and accessible so that the plug can be pulled quickly in an emergency.

High voltage - the housing may only be opened by qualified persons. High voltages can cause death or serious injury.

Keep the plug and power cord away from liquid. Avoid liquids entering the machine

Should this nevertheless happen once:

Immediately switch off the SP1A Dispenser and unplug the appliance from the socket.

In case of damage, the power cord may only be replaced by qualified persons.

**Never set a pressure higher than 7 bar (10. Psi)!** The dispenser is not designed for this and could be damaged. Maximum working pressure shall not exceed 5.5bar(78psi)

#### **Maintenance**

Do not insert wire or other foreign objects into the air inlet and

Do not wash the machine directly with water in order not to affect the insulation performance of the machine.

## *Scope of delivery*

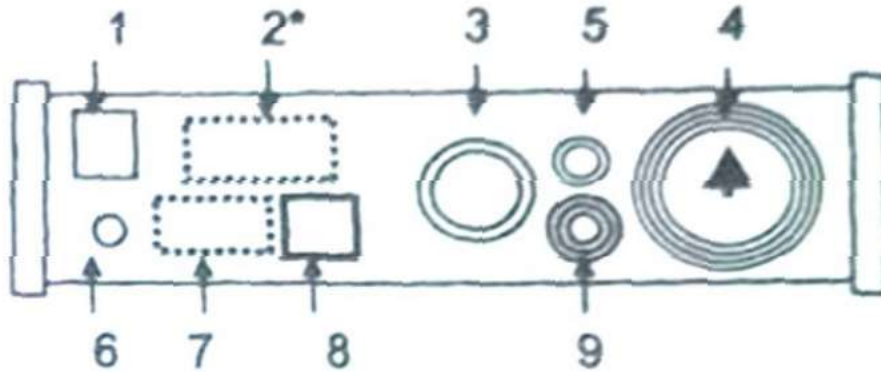
- SP1A Solder Paste Dispenser Unit
- Foot Pedal Switch
- Air line for connection between dispenser and air compressor
- Spare Syringes/Needles and Syringe adapter with hose tail
- Syringe holder
- Syringe Electrical activation Trigger switch
- This manual
- IEC Mains Lead

## *Installation*

### **Takeover from transport companies**

After receiving and unpacking the machine, check for possible transport damage. In case of transport damage, please inform your insurance company, the carrier and the manufacturer / supplier.

### Front Panel

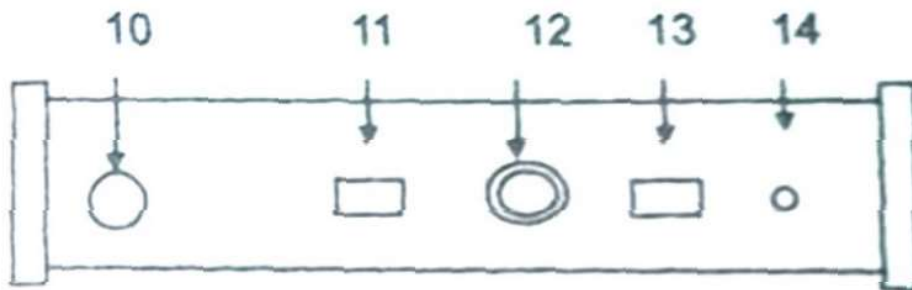


On the front panel you have the following controls:

1. POWER - Turns the dispenser on and off
2. SET TIME - Adjusts the time the air solenoid stays open in seconds (adjustable from 00.01 to 99.99 seconds)
3. AIR PRESSURE - Sets the pressure of the air feeding the syringe
4. PRESSURE DIAL - Shows the pressure of the syringe air
5. VACUUM - Adjusts the amount of vacuum or pull-back suction applied to the syringe when you are not sending it pressurized air. Just leave this shut as it is not needed for solder paste
6. SHOT - Sends the trigger command. The remote pedal and syringe trigger connect via a jack on the rear panel and duplicate this function
7. SET TIME - Adjusts the time the air solenoid stays open in seconds (adjustable from 00.01 to 99.99 seconds)
8. INTERVAL - Adjusts the delay between air solenoid activations (only used in some modes)

9. AIR OUT - Not labelled but this is where the syringe air tube line connects

## Rear Panel



10. AIR IN - This is where the compressed air source connects to
11. DRIP - DIP switches used to select the various modes detailed in the table in Appendix 1
12. FOOTSWITCH - The foot pedal or syringe switch connection
13. Power cable Fuse (14)



## Operating Instructions

Once the air compressor/trigger switch etc are connected, the first thing to do is setup the correct required mode via the **DIP switches** on the rear of the unit using the below table:-

OFF OFF OFF OFF	Engage foot switch, spits out continuously. Release switch to stop
ON OFF ON ON	Step on foot switch once, spits out according to preset duration. Step on foot switch again to stop
OFF ON ON ON	Engage foot switch, spits out continuously according to the preset duration. Step on foot switch again to stop.
ON ON ON ON	Automatically spit out according to timer settings.
ON OFF OFF OFF	Step on foot switch once, spit out 1x according to the preset time.
OFF ON OFF OFF	Step on foot switch once, spit out 2x according to the preset time.
ON ON OFF OFF	Step on foot switch once, spit out 3x according to the preset time.
OFF OFF ON OFF	Step on foot switch once, spit out 4x according to the preset time.
ON OFF ON OFF	Step on foot switch once, spit out 5x according to the preset time.
OFF ON ON OFF	Step on foot switch once, spit out 6x according to the preset time.
ON ON ON OFF	Step on foot switch once, spit out 7x according to the preset time.
OFF OFF OFF ON	Step on foot switch once, spit out 8x according to the preset time.
ON OFF OFF ON	Step on foot switch once, spit out 9x according to the preset time.
OFF ON OFF ON	Step on foot switch once, spit out 10x according to the preset time.
ON ON OFF ON	Step on foot switch once, spit out 11x according to the preset time.
OFF OFF ON ON	Step on foot switch once, spit out 12x according to the preset time.

Now the front panel controls can be set up.

First turn on the **POWER**.

Then set the **TIME INTERVAL** to say 00.20 seconds.

Then set the **INTERVAL** to 0.1 seconds (this setting doesn't really come into play in some modes except that you can't trigger the next shot till after this has timed out. So the lower the better, but it can't be 0.0.

Next set the **AIR PRESSURE** to 50 PSI. You will see this on the pressure gauge.

For Solderpaste Dispensing turn the **VACUUM** right off. This controls the amount of air sent through a venturi. This creates a vacuum which is applied to the syringe airline when a shot of air is not being sent.

The vacuum stops a thinner glue from dripping. You should not need this if using the unit with solderpaste. It also makes a lot of noise as it bleeds off the air it needs.

# FORTEX

Now connect the syringe that you have filled with solder paste or glue. Holding the syringe on a paper towel you can try a shot. It may take a while to clear the air out of the syringe but eventually you should get a blob of solder squeezed out on each shot. If you don't, there are several things to adjust:

- Turn up the pressure (It is not recommended to go above 60 PSI to avoid stressing the dispenser plumbing)
- Make the **SET TIME** longer
- Change the tip size. The solder paste typically comes with a tip but you can try the ones you may have been supplied with the dispenser

There is no magic setting, so you will just have to experiment. You should see the gauge move and the feel the syringe pulse with every shot. The brand, viscosity and temperature of the solder paste will all impact the performance. You will find that the heat from your hand holding the syringe will cause the paste to thin a bit, so you may have to adjust parameters as you work.

Once you get a small blob from the syringe on every shot, it is time to try pasting up a PCB.

## Precautions and Maintenance

Compounds used with this dispenser may be toxic and flammable, please refer to the manufacturers MSDS sheet/Instructions for safe use

Before commencement of work liquid material must be stirred evenly to give good consistency,

Temperature of liquid material must also be considered following suppliers guidelines to give consistent results in the dispenser.

Avoid reversing the syringe so that liquid material is drawn into the air hose damaging internal components of the dispenser machine,

Do not quickly add vacuum to prevent vacuum from inhalation of the material.

When work is finished the dispensing needles should be cleaned in a timely manner otherwise the cylinder will be very difficult to remove after the material has cured.

The machine can be cleaned when power is Isolated.

## Guarantee

All machines are submitted before distribution to examination on tightness, function and continuous operation firmness. On the machine we grant a work warranty of 12 months to our customers starting from purchase date on accuracy in material and processing. We warrant at our choice by exchange of incorrect parts or by repair of the machine in our house. Old parts change into our possession.

## *Disclaimer of Warranty*

Fortex Engineering Ltd reserves the right to change or enhance its machines or machine specifications according to its judgement, if necessary. Fortex cannot be held responsible to implement aforesaid changes into machines sold already.

Fortex products and services are liable to the current prices and conditions, which are subject to change. The instructions and definitions in this document are also subject to change and mark no assurance on the part of Fortex.

Please regard the "Sales terms and delivery conditions". These are available after fulfilment of the contract. We don't furnish a guarantee or warranty in cause of damages at material or hurts of people because of

Incorrect use of the machine

Wrong setup, installing and operating of the machine or incapable service

Use of the machine with defective safety equipment

Non-observance of the service manual in regard to transport, stocking, setup, installation and service of the machine

Unlicensed modifications at the machine

Incorrect or incomplete repairs

Destructive force effect at the machine in cause of foreign objects or external use of force

Use of non-original spare parts

normal wear parts.

We cannot accept subsequent claims from damage or destruction of work pieces worked on in the machine, because we have no knowledge or control over the operating conditions at your site. This is valid in a general manner also for requirements from damage to articles, buildings and persons as well as the environment.

We do not warrant that the function of the machine will meet the customer's requirements or that the operation of the machine will to this regard be error free.

In no event will we be liable to the customer for any incidental, consequential, or indirect damages of any kind, including loss of profit and prosecution for environmental pollution, even if we could have been aware of the possibility of such damages.

All information was arranged with great care. We reserve ourselves however mistake and technical changes without previous announcement.

Running the machine in corroding, humid, dusty, extremely hot or explosive atmosphere happens at the operator's own risk and responsibility.

We explicitly exclude any warranty for damages resulting from running the machine in in corroding, humid, dusty, extremely hot or explosive atmosphere.

## *Copyright*

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