

S.P.I DEVELOPMENTS Ltd

(SPECIAL PURPOSE INSTRUMENTS)

FILTER PUMP ANCHOR APPLICATION SYSTEM

For fitment to Hauni KDF2

FPA2250SYSM

RJ Reynolds USA

PRODUCT MANUAL

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SECTION 7.0 OPERATING INSTRUCTION

When the system is switched on the controller will display the WELCOME SCREEN, when the machine is started and the glue start signal is on the controller will automatically display the RUN SCREEN and show all the live running values.

If the machine is started whilst performing a “bleed or calibration procedure” the system pumps and applicators will not start.

When the machine is running the following values can be changed:-

LAP VALUE

ANCHOR VALUE

At any time when the “RUN MENU” is being displayed the, LAP and or the ANCHOR, adhesive flow can be inhibited by setting them to “YES”. This is used when the machine is required to be run for setting purposes but no glue is required.

SECTION 6.0 CALIBRATING THE SYSTEM

CALIBRATION

When a pump system has first been installed, or the adhesive tank re-filled, it is recommended that both the LAP & ANCHOR pumps be calibrated to remove all traces of air bubbles within the system to ensure accuracy of flow.

- 1) Fill adhesive tank with adhesive.
- 2) Turn on the adhesive tap.
- 3) Bleed both the LAP & ANCHOR pumps as described on Page 6-1

CALIBRATING THE LAP

- 4) Press SETUP button.
- 5) Press CALIBR button
- 6) Press LAP button.
- 7) Follow instruction on screen.

NOTE: be sure to enter the weight of adhesive collected NOT including the weight of the container

CALIBRATING THE ANCHOR

- 4) Press SETUP button.
- 5) Press CALIBR button
- 6) Press ANCHOR button.
- 7) Follow instruction on screen.

NOTE: be sure to enter the weight of adhesive collected NOT including the weight of the container

SECTION 6.0 BLEEDING THE SYSTEM

When a pump system has first been installed, or the adhesive tank re-filled, it is recommended that both the LAP & ANCHOR pumps be bled to remove all traces of air bubbles within the system to ensure accuracy of flow.

- 1) Fill adhesive tank with adhesive.
- 2) Turn on the adhesive tap.

BLEEDING THE LAP

- 3) Place a container under the LAP applicator.
- 4) Press SETUP button
- 5) Press BLEED LAP button
- 6) Press START & wait for adhesive to flow from applicator.
- 7) Lift pump from motor and invert to release aentrapped air, replace pump.
- 9) Repeat (7) several times until a continuous flow of adhesive flows from the nozzle without any interruptions or air bubbles.
- 10) Press STOP, then press EXIT

BLEEDING THE ANCHOR

- 11) Place a container under the ANCHOR applicator.
- 12) Press SETUP button
- 13) Press BLEED ANCHOR button
- 14) Press START & wait for adhesive to flow from applicator.
- 15) Lift pump from motor and invert to release aentrapped air, replace pump.
- 16) Repeat (15) several times until a continuous flow of adhesive flows from the nozzle without any interruptions or air bubbles.
- 17) Press STOP, then press EXIT

SECTION 5.0 POST INSTALLATION SYSTEM CHECKS

When a system has first been installed, the system should be checked for correct functionality, as follows: -

- 1) Switch on Electrical power to controller
- 2) Switch on air to system.
- 3) Press SET-UP MENU button
- 4) Press BLEED LAP button
- 5) Press START and check the following: -
 - a) Check that air is supplied to the LAP applicator and the valve is OPEN
 - b) Remove LAP pump from drive and check motor is rotating.
- 6) Press STOP
- 7) Press EXIT
- 8) Press BLEED ANCHOR
- 9) Press START and check the following: -
 - c) a) Check that air is supplied to the ANCHOR applicator and the valve is OPEN
 - d) Remove ANCHOR pump from drive and check motor is rotating.
- 10) Press STOP
- 11) Press EXIT
- 12) Start machine and check that Indicated machine speed on display matches actual Machine speed.
- 13) Whilst machine is running, switch on the glue signal and check that message on Screen shows "start signal" ON

SECTION 4.0 OPERATING INSTRUCTIONS

CONTROLLER SETTINGS Continued:-

When power is first switched on to the controller the "WELCOME" screen will always be displayed.

This screen will automatically change to the "RUN screen if the machine is started and a glue start signal is received, or you can press either the RUN MENU or the SETUPMENU buttons to move to their respective menu's.

When the machine is running and applying adhesive, the run menu is always displayed and you cannot move to a different menu whilst the machine is running.

When the machine is running and applying adhesive to either the Lap and or Anchor, the Values shown as LAP VALUE & ANCHOR VALUE can be *changed* whilst the machine is running, and the actual flow from the pumps will change and the displayed "flow value in g/min" will change.

If the above values are changed during running and ENTER is pressed these new values will be stored in memory and used for all future use.

If the above values are changed during running but enter is "NOT PRESSED" then the pumps and display will change to the new value, but when power is removed the new value will not be stored in memory. Therefore when power is restored the old value will be used.

SECTION 4.0 OPERATING INSTRUCTIONS

CONTROLLER SETUP (continued)

USER SETUP – MENU

NOTE:-

The Filter length value is only required if the **600 or 300** pulses / cut encoder input is selected in the Machine Setup menu. (**not required for Filtrona Indonesia**)

5-1) If one of the above encoder settings are being used, Set the FILTER LENGTH value to the length of filter being made on the machine.

NOTE:- If one of the above encoders is being used and the Filter length has not been entered correctly, the live values displayed in the RUN MENU will be incorrect.

For Filtrona Indonesia this has been factory set to 500 pulses/100mm

RUN MENU

5-2) Set the LAP VALUE to the required flow of LAPadhesive / 100 meters.
Nominal value = (**1.65g/100mtrs**)

5-3) Set the ANCHOR VALUE to the required flow of ANCHOR adhesive / 100 meters.
Nominal Value = (**4.5g/100mtrs for 3 lines**)

Both the Lap & Anchor applicators & pumps can be inhibited during “dry running” or machine testing/setting, by changing the NO to YES.

Anchor Line Configuration Menu

*Selecting “NO” for the “SCATTER SPRAY VALVE” this will turn this function OFF (factory setting is set to OFF as default) (**currently set to OFF**)*

The two messages below the machine speed are advisory messages to indicate if an external signal has been received from the machine.

SECTION 4.0 OPERATING INSTRUCTIONS

CONTROLLER SETTINGS Continued:-

Before the controller can be run, several running settings are required to be entered to allow the controller to work correctly with your specific machine, these values have been highlighted in **RED**. NOTE:- Switch the SECURITY SWITCH to **ON**

See Page 4-3 for explanation of system start & stop sequence

- 5-1) Using the touch screen buttons, navigate through the menu's to the desired menu's and functions and set all the values to the required settings as follows:-

MACHINE SETUP – MENU

- 5-2) The encoder type needs to be entered as there are three options available:-

300 pulses / cut (line driver output)

600 pulses / cut (line driver output)

500 pulses / 100mm paper travel (TTL output)

SELECT - 500 pulses / cut (TTL output) For (Filtrona Indonesia)

- 5-3) Select the desired encoder connected to the controller and press enter

- 5-4) If Rod Heaters are fitted set the respective ON Speeds for both.

LAP LINE CONFIGURATION – MENU

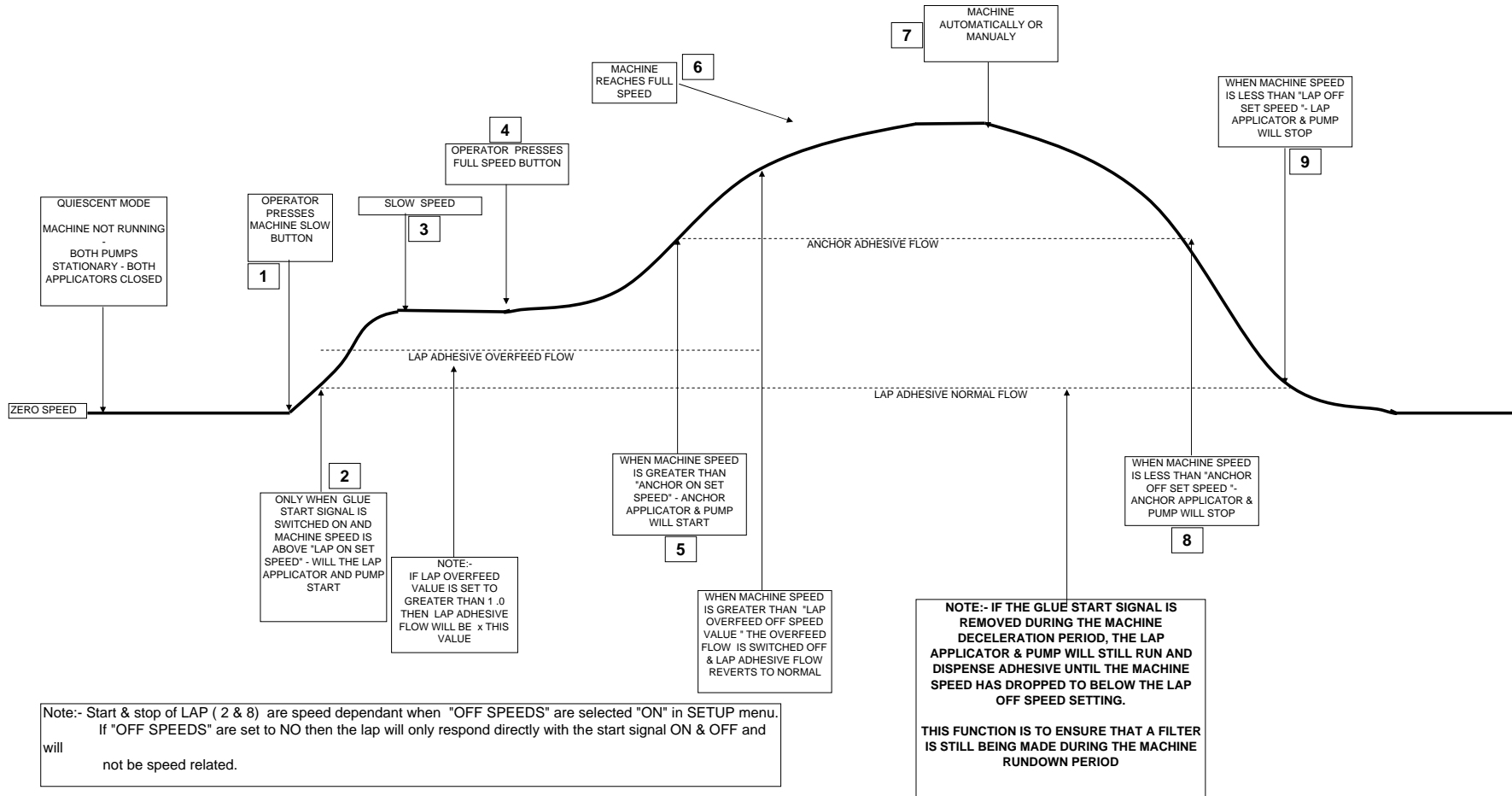
- 5-5) Set the OVERFEED VALUE if required to overfeed the lap flow during acceleration
- 5-6) Set the OVERFEED ON SPEED value if required, (this value controls the speed when the overfeed will be activated during machine ramp up)
- 5-7) Set the OVERFEED OFF SPEED value if required, (this value controls the speed when the overfeed will be de-activated during machine ramp up)
- 5-8) Set the LAP ON SPEED value. (this value controls the speed when the lap solenoid is energised)
- 5-9) Set the LAP OFF SPEED value, (this value represents the speed when the lap solenoid is de-energised during machine ramp down)

ANCHOR CONFIGURATION - MENU

- 5-10) Set the ANCHORAGE ON SPEED value, (this value controls the speed when the anchor solenoid is energised during machine ramp up (set to 80).
- 5-11) Set the ANCHORAGE OFF SPEED value, (this value controls the speed when the anchor solenoid is de-energised during machine ramp down (set to 100)
- 5-12) Set the SCATTER SPRAY VALVE to **NO**

Continued:-

FPSA1220SYSM PUMP START & STOP SEQUENCE

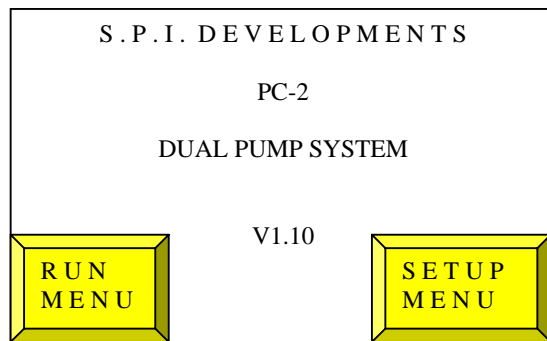


SECTION 4.0 OPERATING INSTRUCTIONS

CONTROLLER SETUP

Refer to Screen Algorithm drawing on opposite page.

When the controller is switched on the welcome screen is always displayed as follows:-

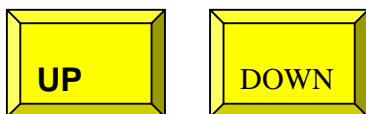


The adjacent drawing shows all the screens that are accesable via the key pads. The **Green arrows** indicate what screens can be accessed with the security keyswitch removed.


The **Red & Blue** arrows indicate what screens can be accessed with the keyswitch activate.

Pressing any touch screen button will take you to the selected function.

If the screen selected has variable data that can be changed, the function selected will be surrounded in a black border. To change the selection, use the :-



Keys to move the black border to the desired function to be changed

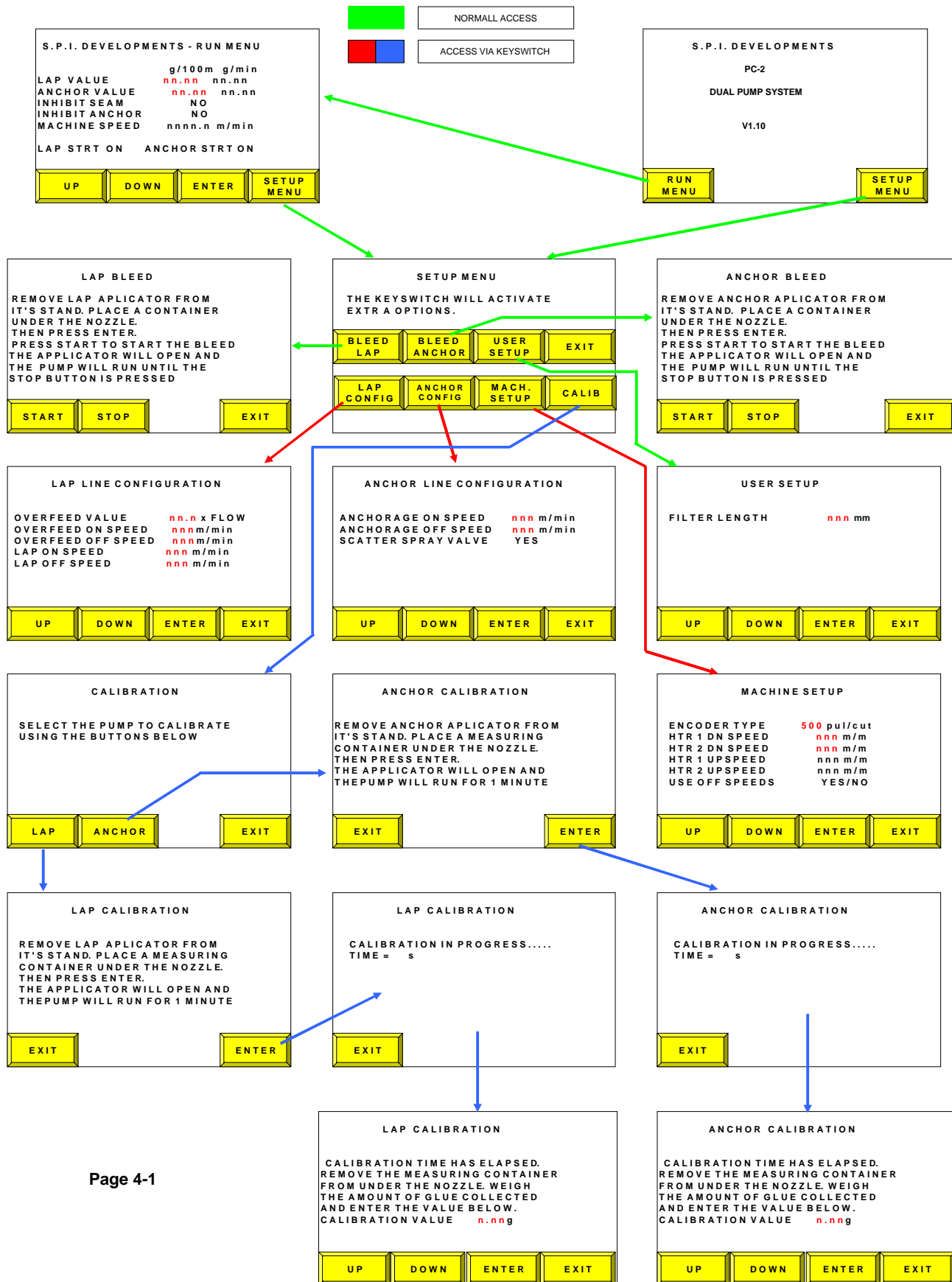
When  is pressed the border moves to the value adjacent to the function.

The values can now be changed using the UP / DOWN buttons, when the desired value has been set, press the ENTER button and the value will be stored.

Continued:-

PC-2 SCREEN ALGORITHM

Version 3 - 12/3/02



SECTION 3.0 **INSTALATION - ELECTRICAL**

Connections

Wiring of the system is confined to connections to the machine interface cable Part No PCC8100.

Referring to drawing Page 3-1.

- 3-1 Drill a suitable hole in the parent machine control cabinet to accept the conduit fitting on the end of the machine interface cable.
- 3-2 Feed cables through hole and secure conduit adaptor in place.
- 3-2 Mount Terminal strip provided in a suitable place within the machine electrical cabinet.
- 3-3 Connect wires from Pump Assembly to terminal strip as shown on Page 3-1

Mains Power Connection

- 3-4 Connect 240vac (minimum rating of 2 amps) supply to terminals 1-2-3.

ENCODER INPUT

- 3-5 Connect the encoder wires from the Encoder to terminals 4-6-9 as shown on page 3-1, it should give 500 pulses for every 100mm travel of the paper.

GLUE START SIGNAL (12 - 24vdc)

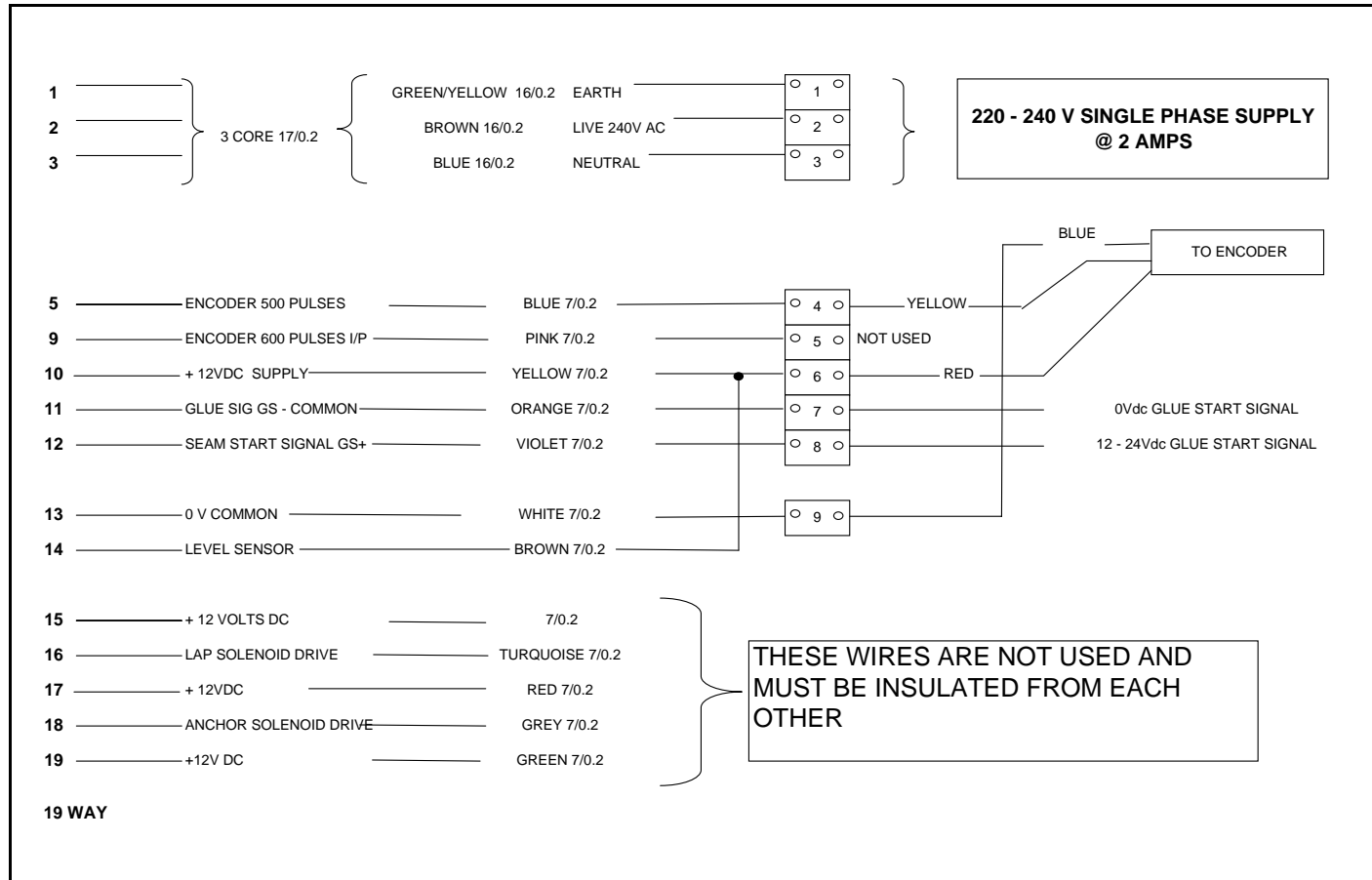
The PC-2-F Controller requires a glue start signal to tell the unit when the operator Requires to make a rod, this signal normally comes from a switch on the machine control Panel, but this signal must automatically swith OFF whenever the machine stops.

- 6) Connect Start signal + ve (minimum 12vdc - maximum 24vdc) from the machine to terminal 8
- 7) Connect Start Signal –ve from the machine to terminal 7

NOTE:- All unused wires should be suitably terminated or insulated

PCC-8 CONNECTING CABLE

KDF-2 RJR



SECTION 2.0

MECHANICAL INSTALLATION

2-6 Adhesive Piping

2-6-1 Connect 12mm bore silicon tubing from Adhesive reservoir to both pump inlets as shown on Page 2-1.

2-6-2 Connect 8mm adhesive pipe to single line applicator as shown on Page 2-1.

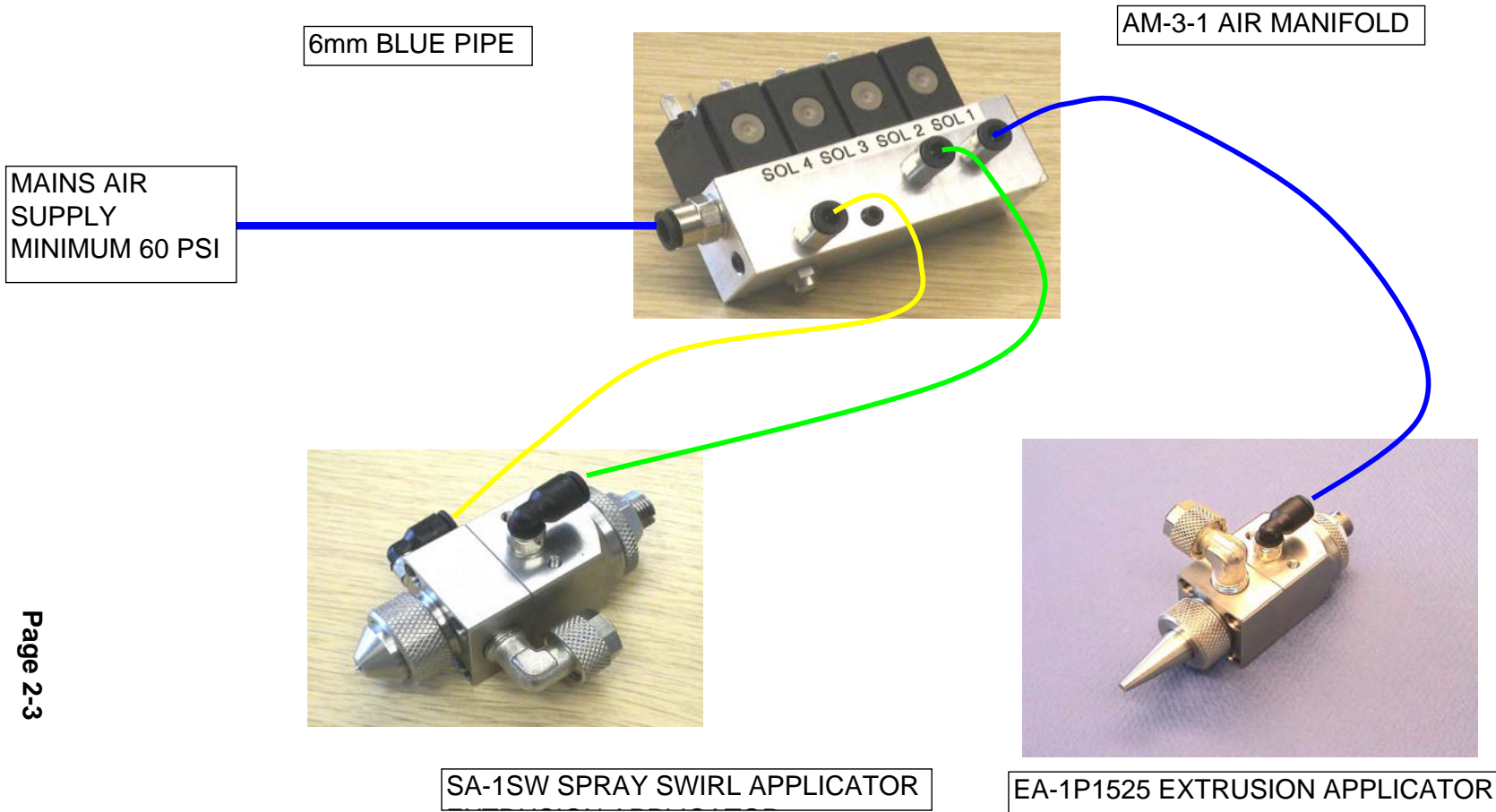
2-6-3 Connect 8mm adhesive pipe to spray applicator as shown on Page 2-1.

2-7 Air Piping

2-7-1 Connect air pipe supplied as per drawing on Page 2-3

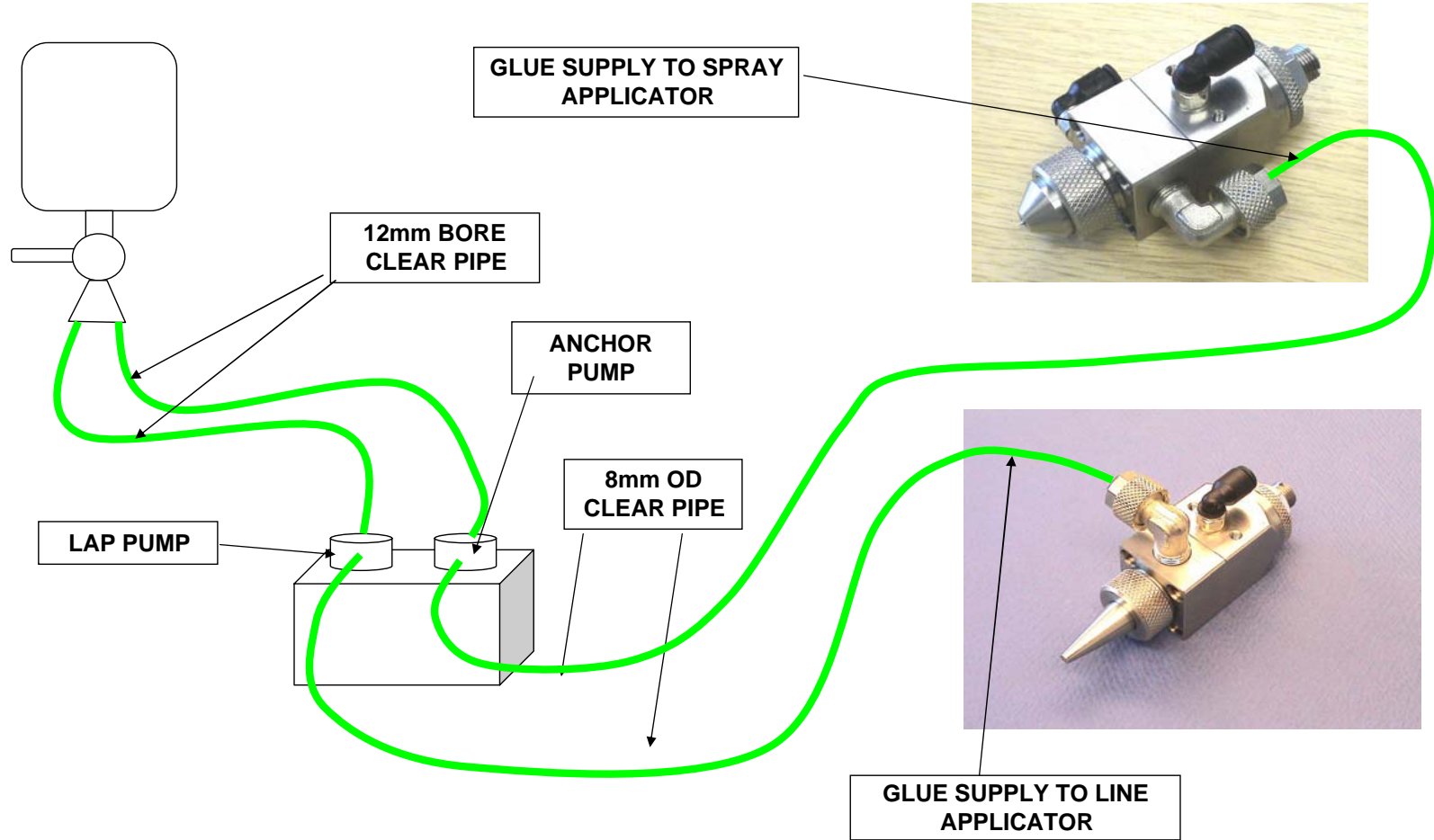
FPA2250 AIR PIPE CONNECTIONS

FOR RJR



FPA2250 ADHESIVE PIPE CONNECTIONS

FOR RJR



SECTION 1.0

PRODUCT DESCRIPTION

The FPA2250SYSM anchor dual pump system is designed for fitment to the Hauni KDF-2 Rod Making machine. This system provides two independently pumped adhesive channels and applicators, to give the flexibility of applying one internal anchorage line or one internal spray swirl line to the inner surface of the plug wrap, prior to the filter being closed. The system consists of a dedicated microprocessor based Pump Controller (dual channel) for controlling the speed of two special stepper motors that drive the two adhesive pumps for supplying a separate and accurately controlled flows of adhesive to both the applicators.

The controller receives pulses from an encoder fitted to the parent machine; these pulses are proportional to the machines speed.

The PC-2 controller has a touch panel screen for user-friendly operation, and displays all the relevant information required for the control of the pumps.

The control / speed of the pump is via a programmable divide by “n” software routine with logic functions.

The control unit is built in a rugged sealed housing with an external fan cooling the rear heat sink, because there is no air entry into the inside of the controller, this eliminates the possibility of dirt or carbon dust affecting the electronics.

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SECTION 8 – Recommended Spares List

For 2 systems

Part No	Description
2 off PC-2	Dual Pump Controller
2 off EA-1	Extrusion Applicator
4 off EA11525	Nozzle & Needle Assembly
2 off EA-1-RK	Extrusion Repair Kit
2 off SA-1-SW	Spray Applicator
2 off SA-1SW-RK	Spray Valve Repair Kit
2 off AP-2-1	Adhesive Pump Assembly
2 off AP-2-RK	Pump Repair Kit
2 off P2E-KV32B1	Solenoid (12v)
2 off SR291-4248	Encoder Assembly