User Manual - Master

Gemini

Two-Pocket Roll Plant

(With Optional Roll Forming Unit)

Enter Serial Number Here:

In the event of an enquiry please quote this serial number

Please store this document safely and ensure it is available at all times

DECLARATION OF CONFORMITY

We hereby declare that this machine complies with the essential health and safety requirements of :-

- The Machinery Directive 2006 / 42 / EC
- The Low voltage Directive 2006 / 95 / EC
- The requirements of the Electromagnetic Compatibility Directive 2004 / 108EC, 91 / 263 / EEC, 92 / 31 / EEC
- The General Safety of Machinery and food processing Standards applicable
- Materials and Articles intended to come into contact with food - Regulation (EC) No. 1935 / 2004
- Good manufacturing practice for Materials intended to come into contact with food - Regulation (EC) No. 2023 / 2006

Signed	
G.A.Williams – Quality Manager	

Date	

Machine FG Code.		**Machine Serial No.**	

A technical construction file for this machine is retained at the following address:

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MONO EQUIPMENT is a business name of **AFE GROUP Ltd**
Registered in England No.3872673 VAT registration No.923428136

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1. Introduction:

MONO's Two-Pocket Roll Plant is designed to effortlessly and reliably produce high volumes of bread rolls with accuracy and consistency and has an output of upto 3,200 rolls per hour. Requiring just one person to operate, the compact Two-Pocket Roll Plant fully automates the dividing and rounding process, producing a wide range of rolls with a weight range of between 30-100g. The highly intuitive colour Touch Screen Controller controls every element of the roll production process and stores upto 60 programs for future use.

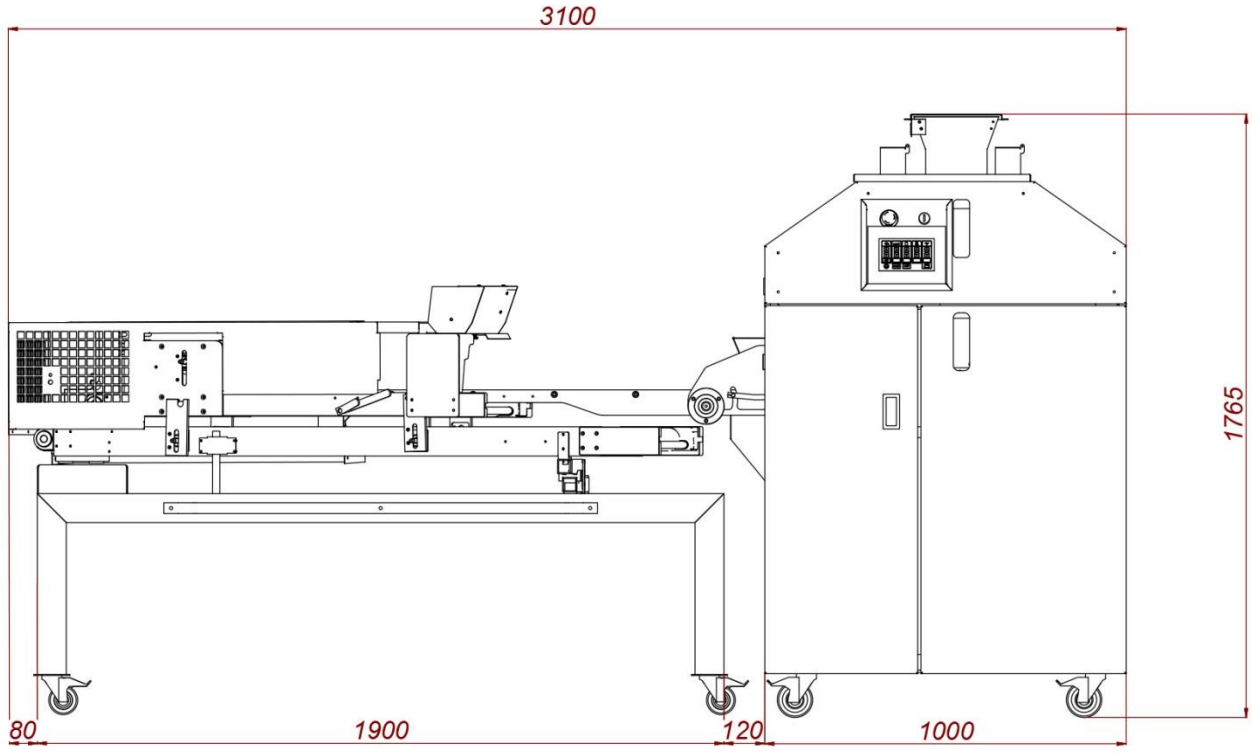
With the addition of MONO's optional Roll Forming Unit, the Two-Pocket Roll Plant's repertoire can be extended to include finger rolls, petit pain and burger buns.

Key Features:

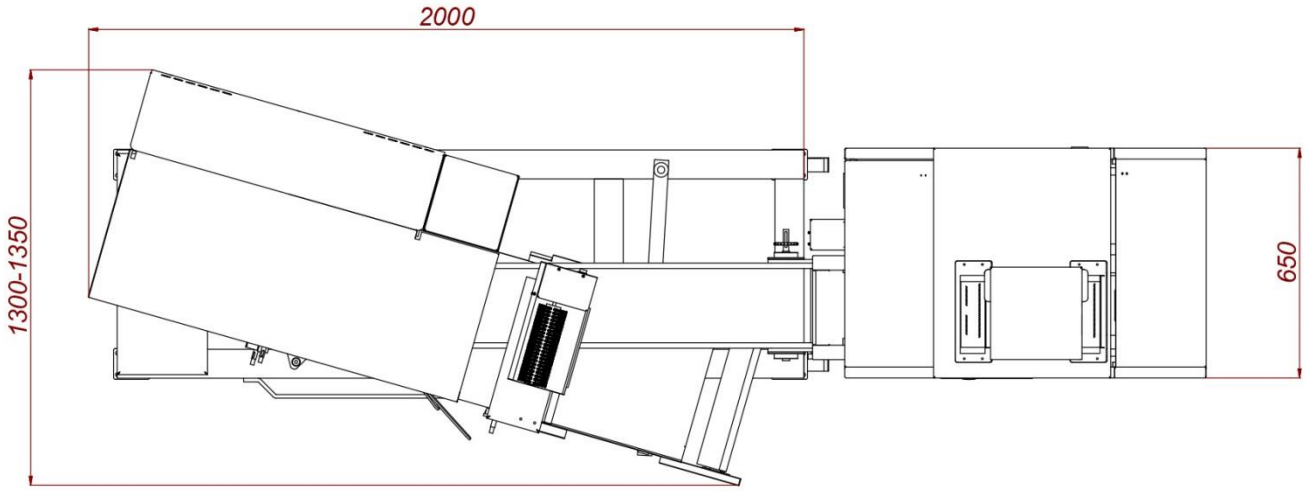
- Fully automated process
- Produces upto 3,200 rolls per hour
- Weight range between 30-100g
- Exceptional accuracy of weight, size and shape
- Small footprint fits most bakeries
- User-friendly, colour Touch Screen Controller
- Stores upto 60 programs
- Integrated Flour Duster
- One person operation
- Locking Safety Castors
- Optional Roll Forming Unit to extend the product range

2. Dimensions:

2.1. Two-Pocket Roll Plant & Roll Forming Unit - Front Elevation:



2.2. Two-Pocket Roll Plant & Roll Forming Unit – Plan View:



3. Specifications:

Two-Pocket Roll Plant	Specification
Length (including switch)	2,360mm
Width (including handle)	710mm
Height	1,765mm
Weight	640Kg
Roll Weight Range	30-100g
Output Capacity	Up to 3,200 rolls per hour
Piston Diameter	64mm
Supply Voltage	415V, 3Phase +N +E, 50-60Hz, 1.8kW
Fuse Rating	16Amp
Noise Level	Less than 85dB
Two-Pocket Roll Plant with Roll Forming Unit	**Specification**
Length	3,160mm
Width – Unit Open	1,350mm
Width – Unit Closed	820mm
Height	1,765mm
Weight	920Kg
Supply Voltage	2.55kW

4. Safety Guide:

4.1. General Safety Precautions:

- Ensure this Manual is read thoroughly before operating the machine
- The equipment must be installed by qualified personnel only
- Ensure the mains power supply matches the power requirements of the machine
- All machine operators should be fully trained before operating the machine
- Always ensure hands are dry before touching any electrical components including cables, switches and plugs
- Ensure the machine is switched OFF at the mains isolator when not in use
- Never use the machine in a faulty condition and always report any damage immediately
- No one under the age of 16 should be permitted to operate this machine
- No loose clothing, ties or jewellery should be worn when operating the machine
- Only trained personnel should be permitted to remove any part of the machine that requires the use of tools
- Never operate the machine with any panels removed
- Safety guards should not be removed under any circumstances
- A responsible manager should carry out daily Safety Checks on the machine
- Do not strike the Touch Screen Controller with a hard or pointed object, or press the panel with excessive force
- Hand contact with moving surfaces may cause friction burns to skin
- **Ensure the machine is switched off at the mains isolator before any cleaning or maintenance work takes place**
- **Do NOT attempt to clean the moulding areas when the machine is running**
- **Do NOT insert hands or any other item into the Flour Duster when the machine is running**
- **As flour dust can be highly combustible please ensure only an ATEX approved Safety Vacuum Cleaner is used for cleaning purposes**

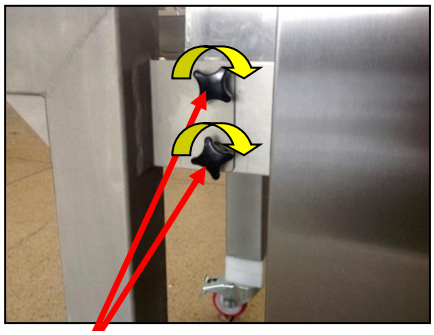
5. Installation:

5.1. The Two-Pocket Roll Plant

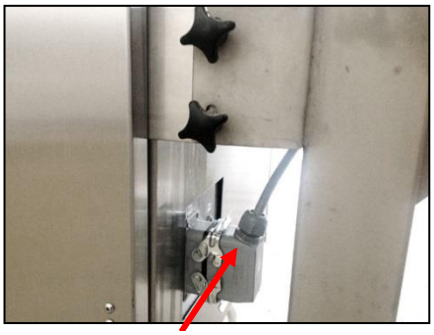
- The machine is fitted with 2 fixed and 2 lockable swivel castors for ease of positioning and safety
- The machine can be picked up using a forklift or pallet truck under the main frame between the wheels
- Ensure the machine is standing level on a solid floor
- When installing the machine, the operator should make the following areas accessible:
    - Control panel
    - Side panels
    - Back panel
- This will aid cleaning during use, without the need to move the machine
- The electrical connection is made using a 16 Amps plug
- The terminal value of the machine is 10 Amps at 415V 3 phases
- An electrical wiring diagram can be found inside the fuse box
- Turn the main isolator switch to ‘‘I’’ position, to power ON

5.2. Connecting the Roll Forming Unit (if purchased)

- To connect the Two-Pocket Roll Plant and the Roll Forming Unit simply position the two pieces of machinery together, ensuring the locating plates on both machines are aligned
- Using the black Thumb Screws provided, secure two in each fixing plate on both sides of the machine and turn until finger-tight
- Once secured, connect the power supply lead from the Roll Forming Unit to the Two-Pocket Roll Plant and secure in place using the integrated top and bottom clips



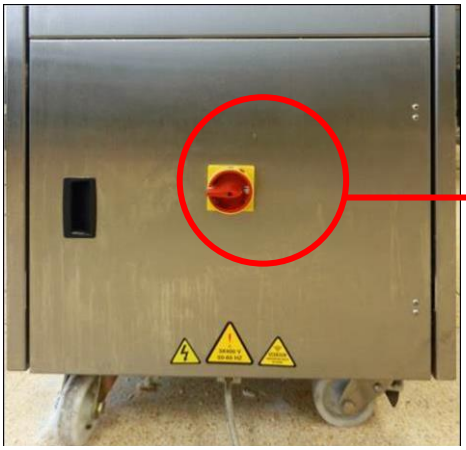
Use the Two Black Thumb Screws to Secure the Connecting Plates on Both Sides of the Machines



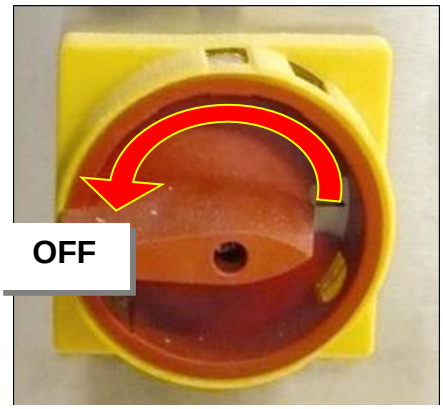
Connect the Roll Forming Unit Power Supply to the Socket on the Two-Pocket Roll Plant and Clip in Place

6. Isolation:

In an emergency, switch the plant OFF at the main power supply, the main isolator on the end panel or push the emergency stop button below the main Control Panel.



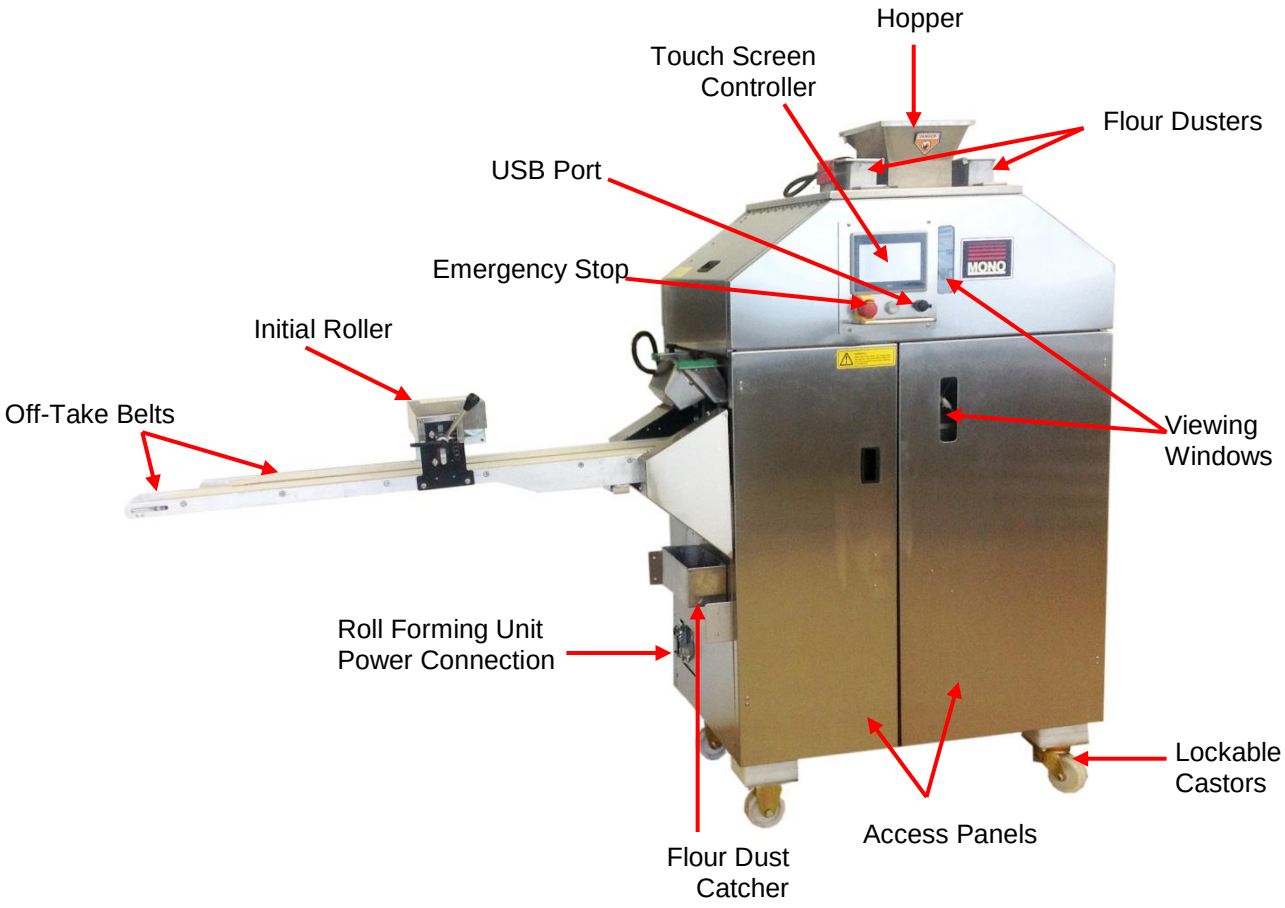
Main Isolator Switch



Touch Control Panel

Twist to Release

7. Operating Instructions – Two-Pocket Roll Plant:



7.1. Start-Up:

- When the machine is first switched on the following 'Home Screen' will appear
- Select the green 'Start' button to continue. This will run through the settings and re-calibrate the machine ready for use
- This will then load the main 'Main Program Screen'

Home Screen Showing 'Start' Button

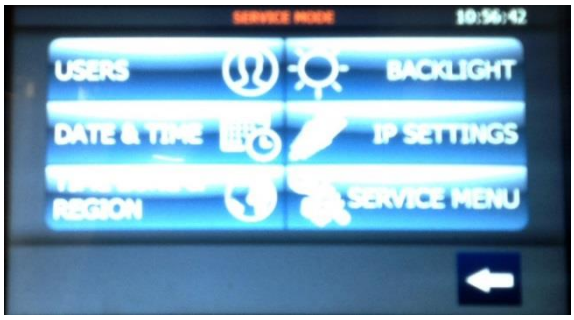
Main Program Screen

- There are 3 large Icon options on the ‘Main Program Screen’:
  - **Automatic** (green) – to load previously stored programs
  - **Manual** (blue) – to run one-off programs, to create new programs and store for future use
  - **Recipes** (orange) – to manage programs, edit, delete, upload and download using a USB stick

- At the bottom of the screen are 4 further icons (from left to right):
  - **Settings** (blue) – general settings screen
  - **Information** (green) – power used, life timer, unit price, consumption, pieces produced etc
  - **Alarms** (yellow) – history of past Alarms in date order
  - **Standby** (red) – returns to the ‘Home Page’

7.2. General Settings:

Settings

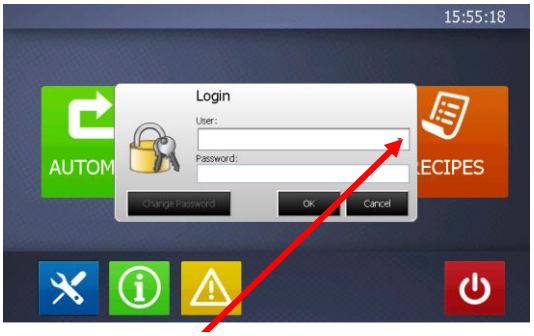


General Settings Menu

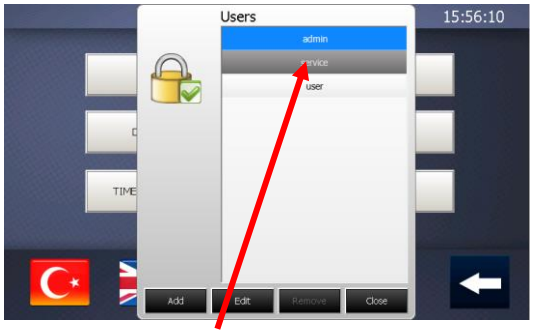
- Selecting on the ‘Settings’ button provides access to the main default settings for the machine
- The ‘Settings ’menu has 6 main options:

  - **Users** – creating, editing & deleting users, changing passwords
  - **Date & Time** – setting the default date and time
  - **Time Zone & Region** – setting the default time zone and region
  - **Backlight** – setting the default backlight settings including, on/off, brightness, idle-time etc
  - **IP Settings** – setting the internal machine communication protocols
  - **Service Menu** – a series of diagnostic screens

7.2.1. Users – Creating, Editing & Deleting:



Drop Down Menu Arrow



Admin, Service, User Defaults

- On entering the ‘Settings’ screen for the first time it will prompt for a ‘User Name’ and ‘Password’
- Touch the ‘Drop-Down Arrow’ at the right hand side of the ‘User Name’ entry and select the relevant ‘User Name’. Enter the corresponding ‘Password’
- Select ‘Users’ to enter the User screens
- The ‘User’ screen provides a list of Users currently set up on the system which can be edited or removed along with the facility to ‘Add’ a new User

Users

Add *Edit* *Remove*

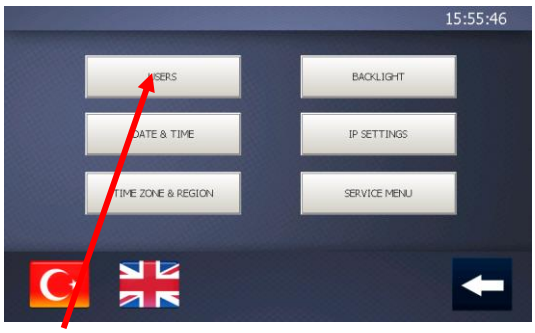
- **To Add** a new User, select the ‘Add’ button and input the ‘User Name’, ‘Password’ and ‘Description’. The next screen will ask you to allocate the new User to a ‘Security Group’:
  - **Administrators**
  - **Operator Admin**
  - **Operators**
- Select the ‘Finish’ button to complete the new User setup
- To remove the pop-up Keyboard at any time select the ‘ESC’ button on the top left hand corner of the Keyboard

- **To Edit** an existing User select the User’s name in the list, which will turn blue, then select the ‘Edit’ button
- Change the ‘User Name’, ‘Password’ or ‘Description’ as required
- Select the ‘Next’ button to be able to change the User’s ‘Security Group’ if required
- Select the ‘Finish’ button to complete the editing

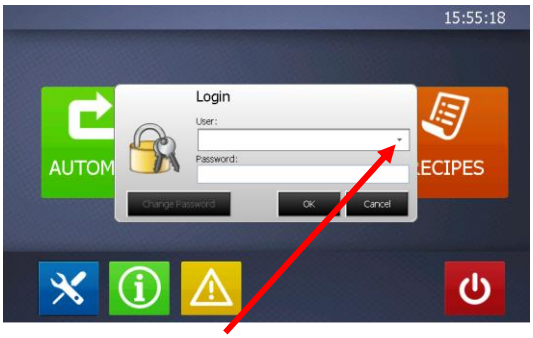
- **To Remove** an existing User select the User’s name in the list, which will turn blue, then select the ‘Remove’ button
- A prompt will ask ‘Do you wish to remove the user?’ with the option of YES or NO. Select the appropriate answer

7.2.2 Change a Password:

- To change a User Password select ‘Users’
- Using the drop down arrow at the side of the ‘User field’, select the User who needs the password changing



Users

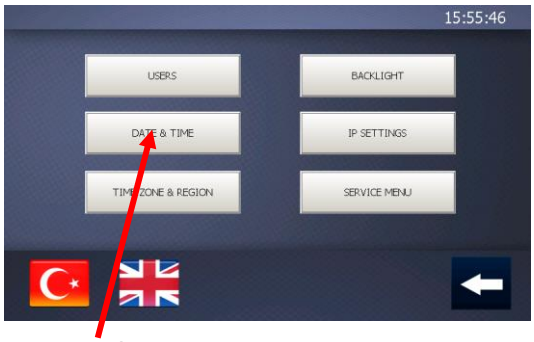


Select User from List

Input Old & New Passwords

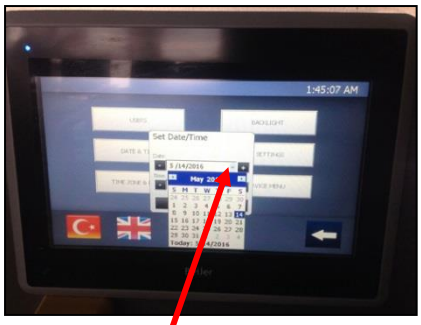
- Input the current password, the new password and confirmation of the new password
- Select the ‘OK’ button

7.2.3. Set Date & Time:



Date & Time

+ and - buttons

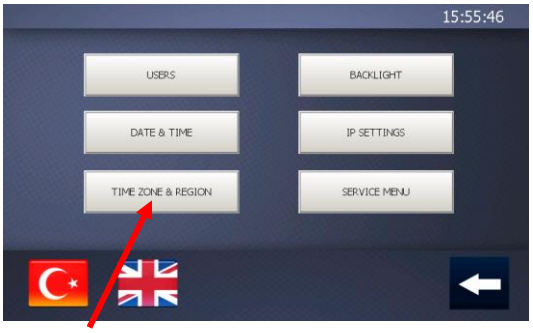


Select Drop-Down Calendar

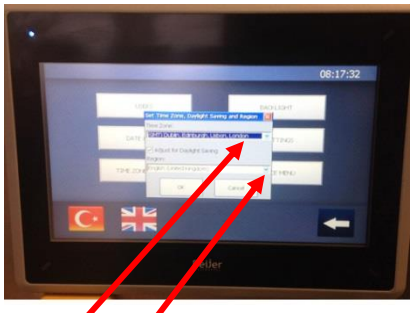
- Select ‘Date and Time’ from the ‘Settings’ menu
- Using either the ‘+’ or ‘-‘ buttons alter the date and time settings as required
- Alternatively selecting the drop-down arrow at the right hand side of the ‘Date’ entry will pop-up a ‘Calendar’ from which the month and date can be chosen
- Once the correct date and time have been set, select the ‘OK’ button

7.2.4. Set Time Zone, Daylight Saving and Region

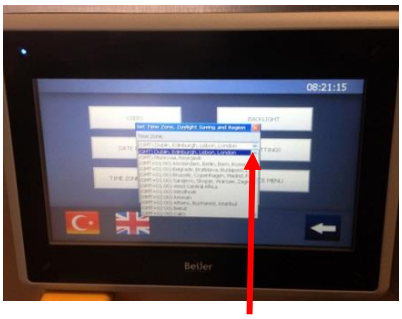
- Select the ‘Time Zone & Region’ button
- To change the Time Zone and Region use the drop down arrows on the right hand side of each field and select the relevant entry from the list



Time Zone & Region



Select Time Zone, Daylight Saving & Region

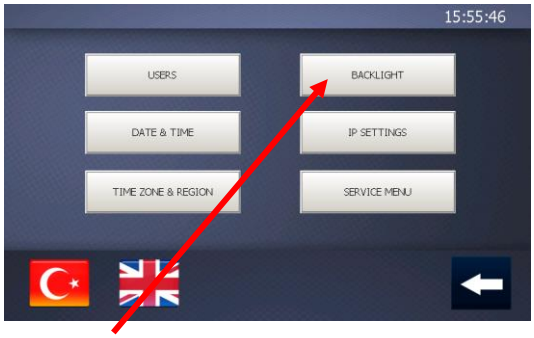


Example of Time Zone Selection Drop Down Menu

- The ‘Daylight Saving’ is set by the use of a tick box – select to toggle between ‘On’ or ‘Off’ which caters for +/- 1 hour
- Once the correct values have been selected click select the ‘OK’ Button

7.2.5. Set the Backlight

- There are a number of settings for the back light on the control panel which can be personalised:
  - Automatically turn off backlight – energy saving feature to switch the screen backlight off after a pre-determined time
  - Keep backlight on if the window is visible – keeps the backlight on if the notifier window is visible
  - Idle time before turn off (in seconds) – the time delay before the backlight switches off
  - Brightness – screen brightness (values 1-100)



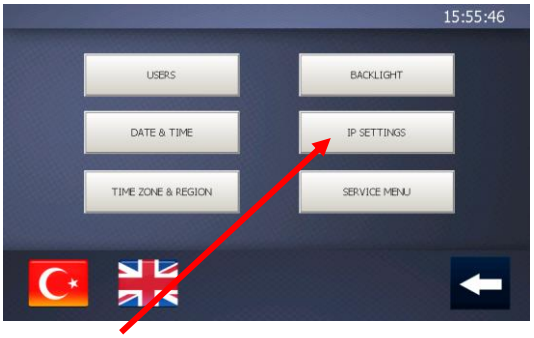
Set the Backlight

Backlight, Idle Time and Brightness Controls

- Select the ‘Backlight’ button and use the tick boxes to set the backlight preferences
- The ‘Brightness’ value can either be entered directly into the value field or by sliding the red brightness bar to the right of the value
- Select ‘OK’ when the values have been set to return to the previous menu

7.2.6. IP Settings

- The IP address is set at the time of manufacturing and should not be changed under any circumstances unless told to do so by the manufacturer

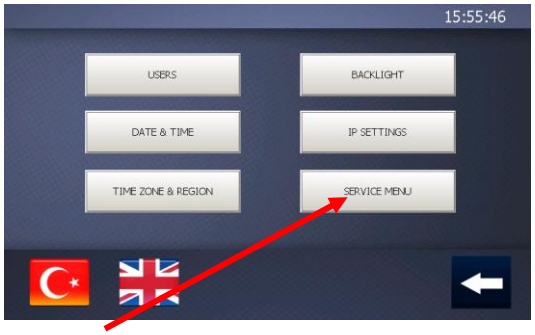


IP Settings

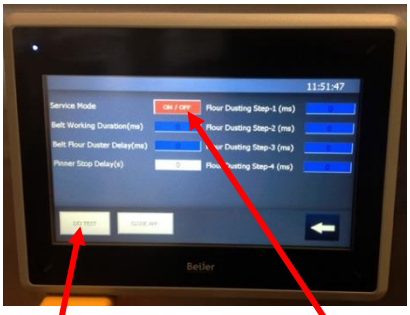
Main IP Address Setup Screen

7.2.7. Service Menu

- The ‘Service Menu’ provides a series of diagnostic screens
- Select the ‘Service’ button to be taken to the main ‘Service’ screen



Service Menu



I/O Test

Service Mode

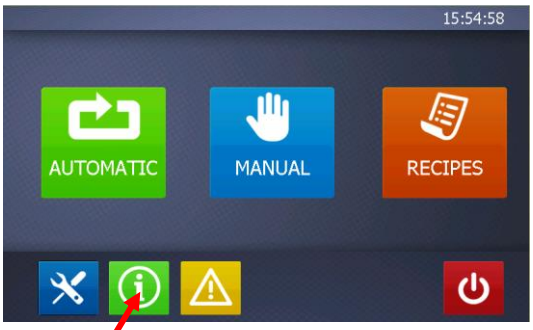
- The ‘Service Mode’ button toggles the safety features of the machine ‘On’ and ‘Off’. When ‘Off’ it allows the safety sensors to be temporarily disengaged so that the machine doors etc can be opened without the alarms sounding
- At the bottom of the ‘Service’ screen the ‘I/O Test’ button provides access to the following Adjustment screen

Adjustment Screen

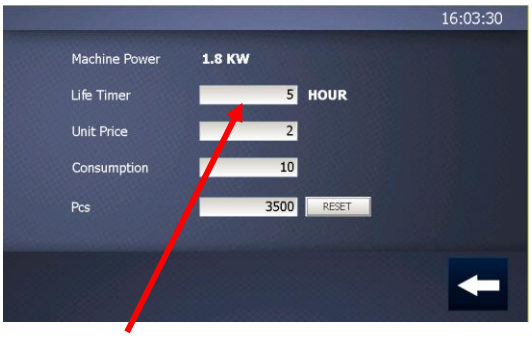
- The black 'Arrow' button takes you back to the previous screen

7.3 Information Screen:

- The 'Information' screen provides basic information on power consumption and products produced:
  - **Life Timer** – the total number of hours the Two-Pocket Roll Plant has been running
  - **Unit Price –** the unit price of electricity being used
  - **Consumption –** the total value of electricity used
  - **Pcs –** the total number of rolls produced since the last 'Reset' took place



Information



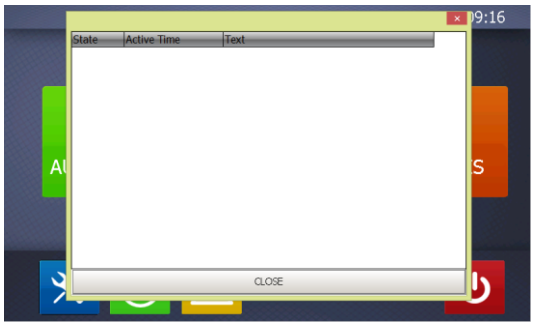
Enter Required Values

- Select the green 'Information' button and input the relevant values for each field stated above
- To reset the production quantity at any time select the 'Reset' button the left of the 'Pcs' field
- Select the 'Arrow' back button to return to the previous menu

7.4. Alarms Log

- Select the yellow ‘Alarm’ button to enter the Alarms screen

Yellow Alarm Button

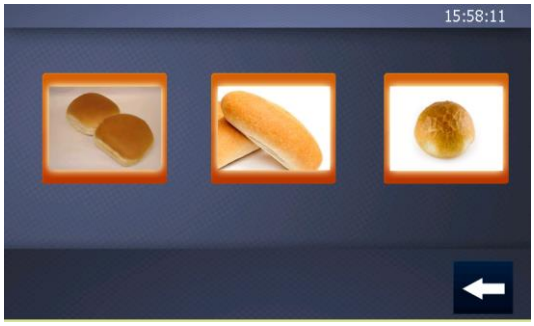


Alarms Log Screen

- The pop up window will list all the alarms that have taken place which have not been generated by the operator
- Select the ‘Close’ button at the bottom of the Alarm logs to close the window

7.5. Automatic Mode

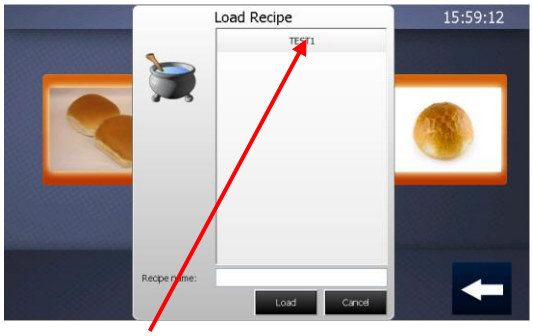
- When the Automatic Mode is selected the following Product Category screen appears:



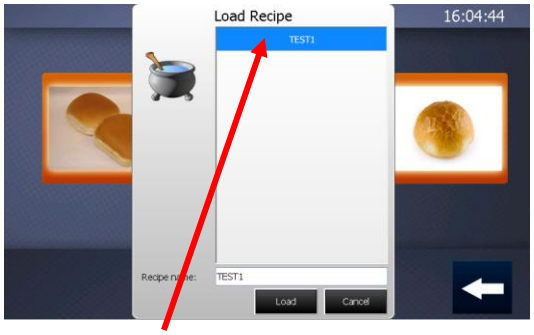
Product Category Screen

- The Product Category Screen has 3 main Roll Type options (from left to right):
  - **Burger Buns** – flattened buns suitable for burgers etc
  - **Finger Rolls** – elongated rolls
  - **Round Rolls** – standard round rolls

- Select the Product Category Type of roll you wish to produce
- This takes you to the ‘Product Recipe List’ of programs you have previously stored



Product Recipe List



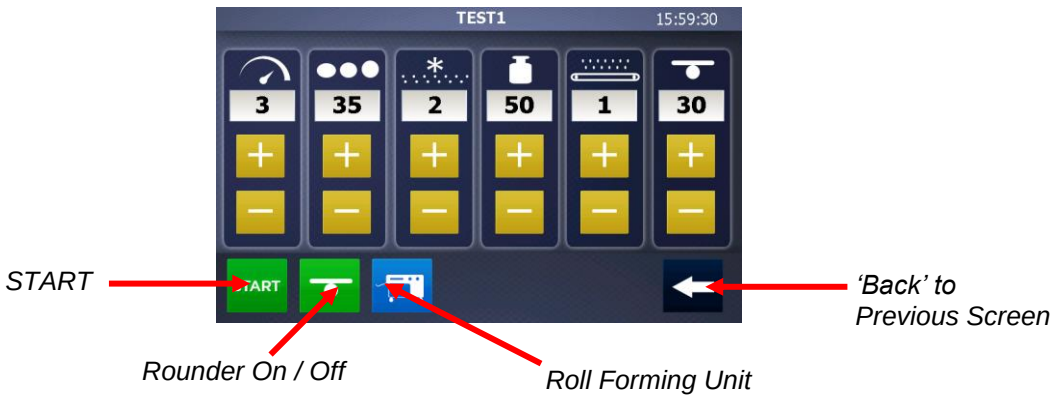
Showing Selected Product Recipe

- Select the 'Product Recipe' you wish to load from the list. When selected program name will turn blue
- If there aren't any programs in the list, you will first need to create them in 'Manual' mode and store them for future use. Please see 'Manual' mode for full details
- Once the correct recipe has been selected press the 'LOAD' button

Product Recipe Program Screen

- The chosen Product Recipe Program will load into the above screen which you can Start
- The 6 columns shown on the screen relate to different elements of the Product Recipe program (from left to right):
  - **Speed** – the speed that the machine is running at
    - Input value 1 to 10, 1 being the fastest
  - **Dough Cavity Depth** – the depth of the dough rounding cup
    - Input value 20 to 46
  - **Pre-Scaler Flour Duster** – the amount of flour deposited at the pre-scaler stage
    - Input value 0 to 3, 0 is Off
  - **Weight** – the weight of the dough piece
    - Input value 30g to 100g
  - **Conveyor Belt Flour Duster** – the amount of flour deposited on the off-take belts
    - Input value 0 to 4
  - **Rounder Tray Speed** – the speed of the Rounder Tray during the rounding process
    - Input value 10 to 70

- Any of the above settings can also be changed at any time during run-time, but will only remain active whilst running and will not overwrite the previously saved ‘Product Recipe’ program
- At the bottom of the screen are 4 more buttons (from left to right):



  - **START** – start the Product Recipe Program. When pressed this will change to a red **STOP** button which can be used to stop the program
  - **Rounder** – to switch the Rounding device ON and OFF
  - **Roll Forming Unit** – to enter the Roll Forming Unit setup screen (optional extra)
  - **Arrow** – found on the bottom right of the screen – returns to the previous screen

7.6. Manual Mode

- Manual Mode is used to run one-off programs and also to design Product Recipe Programs to be saved in Recipes for future use
- When the Manual Mode is selected the following Product Recipe Program screen appears:

Product Recipe Program Screen

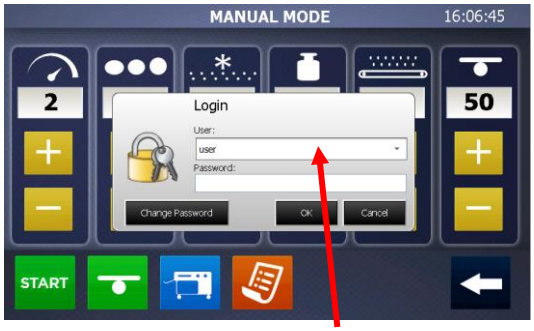
- The 6 columns shown on the screen relate to different elements of the Product Recipe program (from left to right):
  - **Speed** – the speed at which the machine is running
  - **Dough Cavity Depth** – the depth of the dough rounding pocket
  - **Pre-Scaler Flour Duster** – the amount of flour deposited at the pre-scaler stage
  - **Weight** – the weight of the dough piece
  - **Conveyor Belt Flour Duster** – the amount of flour deposited on the off-take belts
  - **Rounder Tray Speed** – the speed of the Rounder Tray during the rounding process
- At the bottom of the screen are 5 more buttons (from left to right):

- **START** – start the Product Recipe Program. When pressed this will change to a red **STOP** button which can be used to stop the program
- **Rounder** – to switch the Rounding device ON and OFF
- **Roll Forming Unit** – to enter the Roll Forming Unit setup screen (optional extra)
- **Recipe** – to save Product Recipe programs
- **Arrow** – found on the bottom right of the screen – returns to the previous screen

7.6.1. To Save a Product Recipe

- Once you are happy with the 'Product Recipe' you can save it for future use by selecting the orange Recipe button
- A new screen will appear asking you to enter your Username and Password

Product Recipe Program Screen



Enter Username and Password

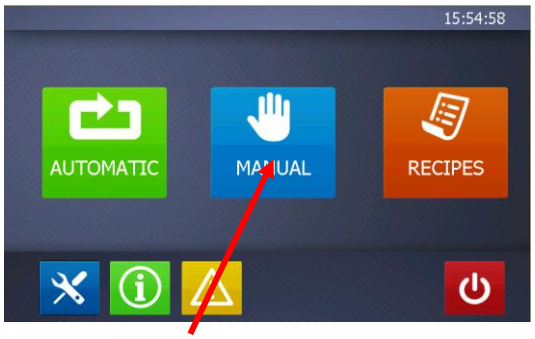
- Default Admin Login:
  - **Username** = Admin
  - **Password** = 0450350
- Once the Username and Password have been entered select the 'OK' button to continue
- This will return you to the Product Recipe Program Screen
- Select the orange 'Recipe' button again which will take you to the 'Product Category' screen
- Select the 'Product Category' under which you wish to store your 'Product Recipe' (from left to right):
  - **Burger Buns** – flattened buns suitable for burgers etc
  - **Finger Rolls** – elongated rolls
  - **Round Rolls** – standard round rolls

- At the bottom of the Save Recipe pop-up window, tap in the area next to ‘Recipe Name’ and enter the name of the product you wish to save
- Select the ‘Save’ button to save your Recipe for future use
- Press the ‘Arrow’ button to return to Main Menu
- To change a Password see 7.2.2 above

7.6.2. To Edit or Copy a Product Recipe

- Load the Product Recipe you wish to Edit up by following the instructions detailed in Automatic mode featured at 7.5 above
- Once the Product Recipe has loaded and you have the detailed information screen shown below click the back ‘Arrow’ button

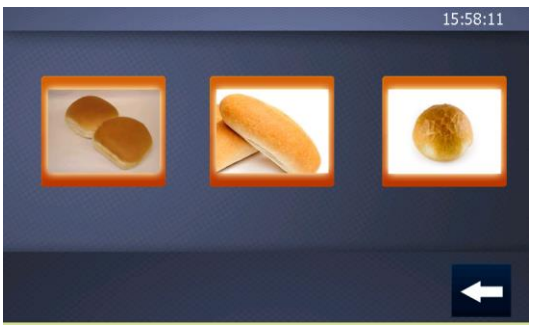
‘Back’ to Previous Screen



Select the ‘Manual’ Button

- Select the ‘Manual’ button and make the necessary changes to the Product Recipe by altering the settings as appropriate

Recipe button



Product Category Screen

- Once satisfied with the new settings select the ‘Recipe’ button
- Select the relevant Product Category group under which the programme is to be saved
- There are now two options available – either update the existing programme with the new Product Recipe values or create a new Product Recipe by saving it under a different name

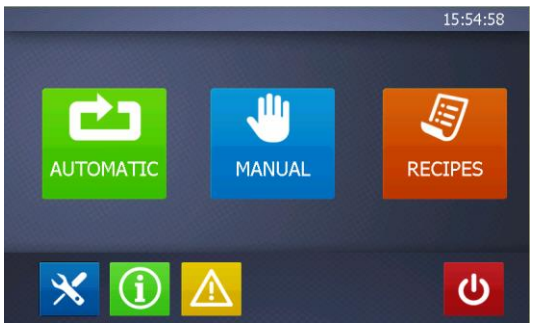
Product Recipe List

Showing Selected Product Recipe

- To update an existing Product Recipe, select the name of the product in the list so that it is highlighted in blue then click on the 'Save' button
- To create a new Product Recipe, type the name of the new product in the Recipe Name box and then select the 'Save' button

7.7. Recipe Mode

- Recipe Mode provides the facility to:
  - **Delete** existing Product Recipe programs from the system
  - **Backup** Product Recipe programs to a USB for backup security
  - **Restore** previously saved programs from USB to the system



Main Product Screen

Backup and Restore Screen

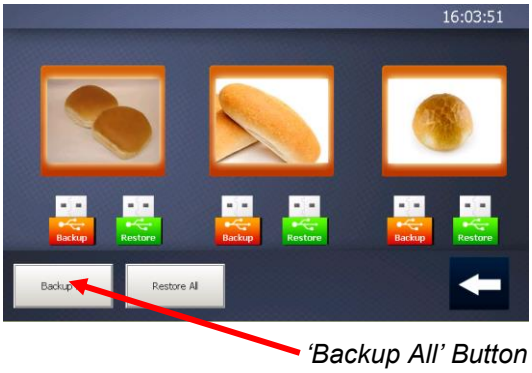
- Select the orange Recipes button
- This takes you to the Backup and Restore screen
- There are four options available:
  - **Backup All** – backs up all Product Recipes onto a USB stick
  - **Restore All** – restores all previously saved Product Recipes from a USB stick to the machine
  - **Selective Backup** – backs up a whole Product Type category ie. Burger Buns, Finger Rolls, Round Rolls

- **Selective Restore** – restores an entire Product Type category ie. Burger Buns, Finger Rolls, Round Rolls

7.7.1 To Backup All Product Recipes

- Flip the black plastic cap of the USB port situated below the bottom right hand corner of the screen
- Insert a standard USB stick

USB Port Uncovered



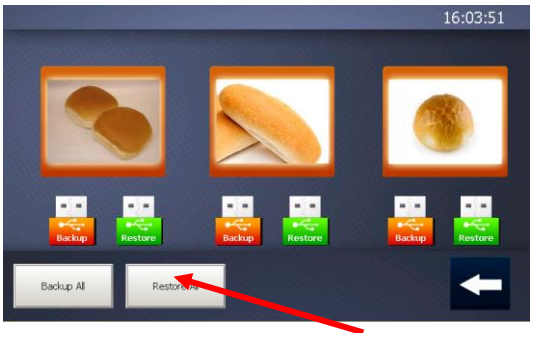
'Backup All' Button

- Select the 'Backup All' button
- The top right hand corner of the screen will indicate that the database is being exported in .csv format. When this message disappears the USB stick can be removed
- Replace the black plastic cap on USB port

7.7.2. To Restore All Product Recipes

- Flip the black plastic cap of the USB port situated below the bottom right hand corner of the screen
- Insert a standard USB stick

USB Port Uncovered



'Restore All' Button

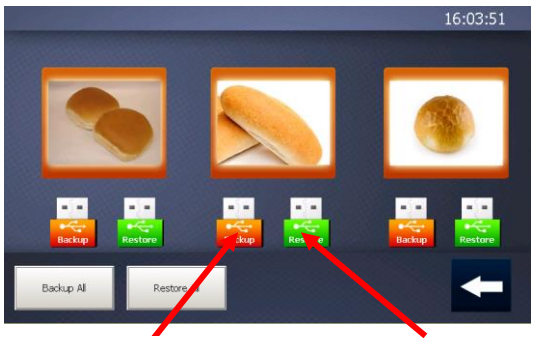
- Select the 'Restore All' button
- The top right hand corner of the screen will indicate that the database is being imported in .csv format. When this message disappears the USB stick can be removed
- Please note that a Restore All will replace all existing Product Recipes in the machine with the information stored on the USB stick

- Replace the black plastic cap on USB port

7.7.3. To Selectively Backup or Restore Product Recipes

- Flip the black plastic cap of the USB port situated below the bottom right hand corner of the screen
- Insert a standard USB stick

USB Port Uncovered

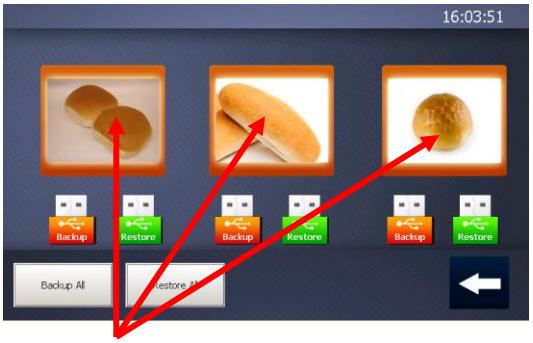


'Backup' Button *'Restore' Button*

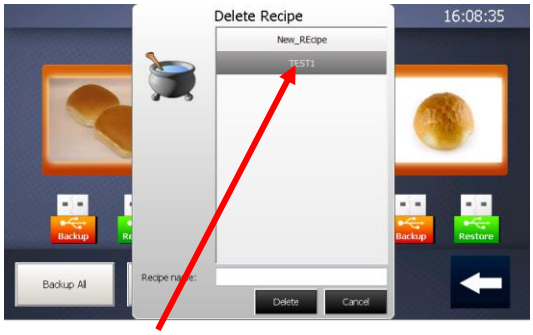
- Beneath each Product Category there are two buttons – a 'Backup' and a 'Restore'
- Select the appropriate button for each Product Category e.g. to Backup all Finger Roll Product Recipes select the orange 'Backup' button beneath the central product image; to Restore all Product Recipes for Round Rolls, select the green 'Restore' button beneath the image on the right of the screen
- The top left hand corner of the screen will indicate that the database is either exporting (Backup) or importing (Restore) the files in .csv format.
- When this message disappears from the screen, the USB stick can be removed
- Please note that a 'Restore' will <u>replace</u> all existing Product Recipes in the chosen Product Category with the information stored on the USB stick
- Replace the black plastic cap on USB port

7.7.4. To Delete Product Recipes

- Select the Relevant Product Category type



Product Category



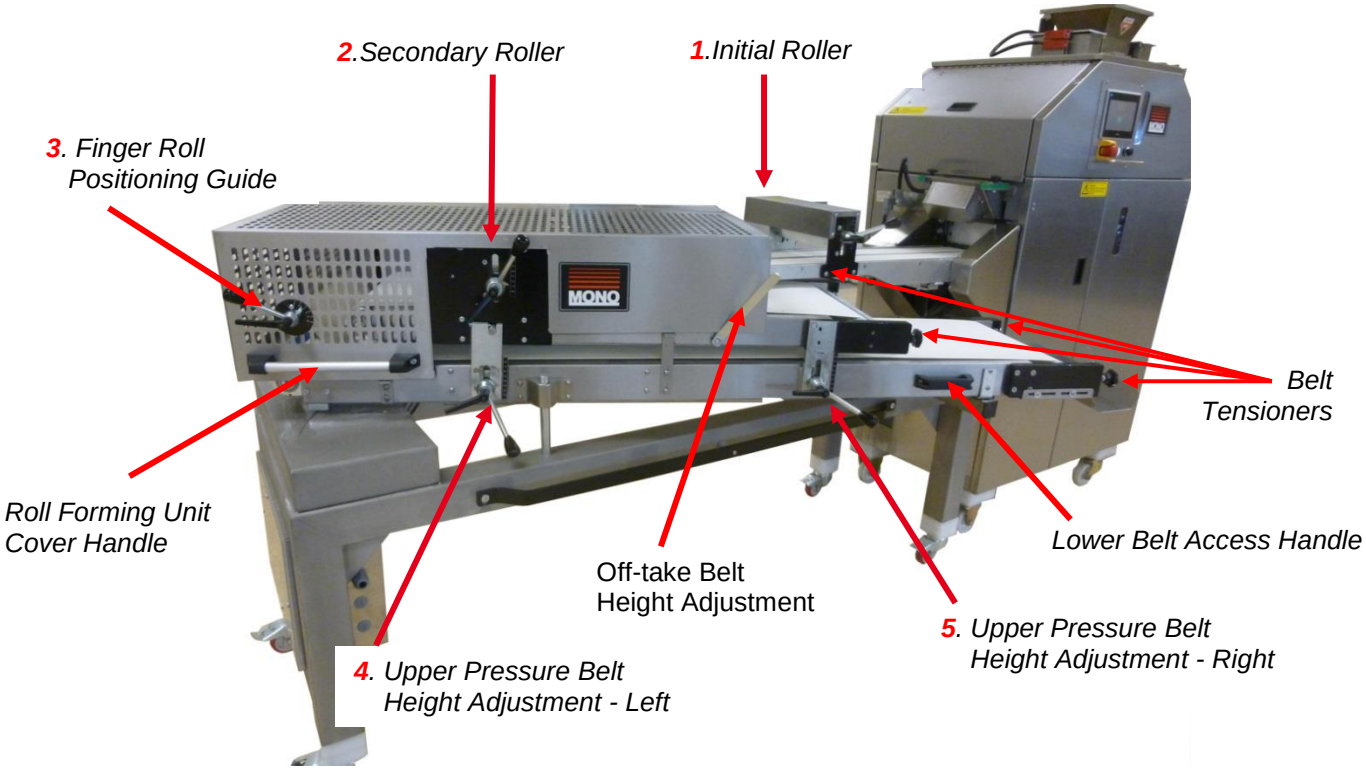
Product Recipe List

- Select the ‘Product Recipe’ that needs to be deleted which should turn blue
- Select the ‘Delete’ button

Confirm Delete Yes / No

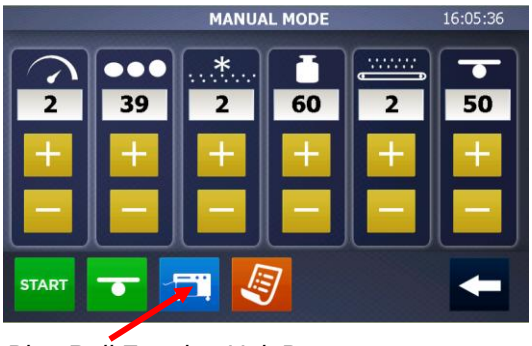
- Confirm whether you wish to permanently delete the ‘Product Recipe’ Yes/ No

8. Operating Instructions – Roll Forming Unit (if fitted)



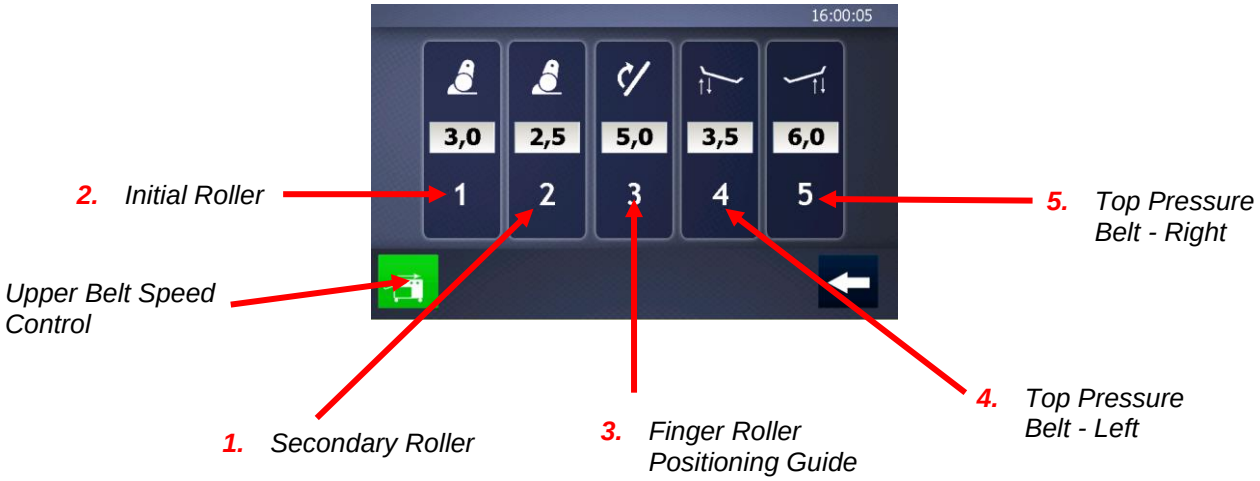
- The Roll Forming Unit is available as an optional extra to the Two-Pocket Roll Plant and provides the additional facility to produce a wider range of roll including Burger Buns and Finger Rolls
- The roll shapes can be created by adjusting a series of rollers and pressure belts which mould the round roll output from the Two-Pocket Roll Plant into either a flattened burger roll or an enlongated finger roll
- There are 5 key devices on the Roll Forming Unit to achieve the desired results:
    1. **Initial Roller** – provides first flattening (burger buns)
    2. **Secondary Roller** – provides further reduction (burger buns)
    3. **Finger Roller Positioning Guide** – positions dough piece on bottom belt
    4. **Upper Pressure Belt Left Side** – height adjustment for final product
    5. **Upper Pressure Belt – Right Side** – height adjustment for final product
- Also located at the front of each Belt are two Belt Tensioners which can be used to adjust the tension of the top and bottom belts should the need arise
- Once the desired roll size, shape and dimensions have been achieved the values from each of the Rollers and Belts needs to be transferred into the Product Recipe program for future use

— To store the values from the Roll Forming Unit to the Product Recipe programme for future reference, select the blue ‘Roll Forming Unit’ button at the bottom of the screen

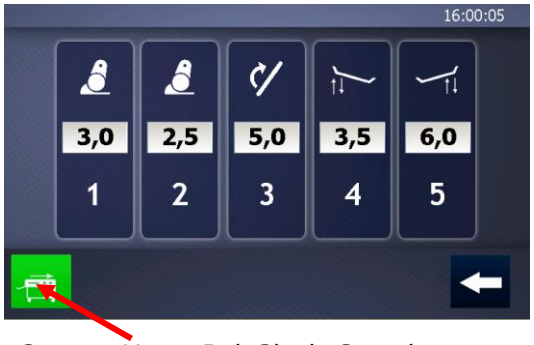


Blue Roll Forming Unit Button

— Following the numbers featured on the Rollers, Guide and Pressure Belts, enter the value of each Lever to the corresponding number on the Roll Forming Values screen



— The green button at the bottom left hand corner of the screen toggles the Upper Belt speed between standard single speed or double speed (x2)



Green = Upper Belt Single Speed

Blue = Upper Belt Double Speed

- Once all values have been entered, select the ‘Arrow’ button to return to the previous screen

9. Two-Pocket Roll Plant - Cleaning & Maintenance

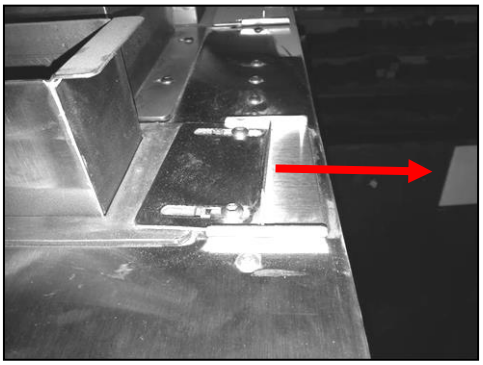
Note: Switch Off and Isolate the Machine from the Mains Power Supply Before Commencing any Cleaning or Maintenance Work

9.1 General Advice:

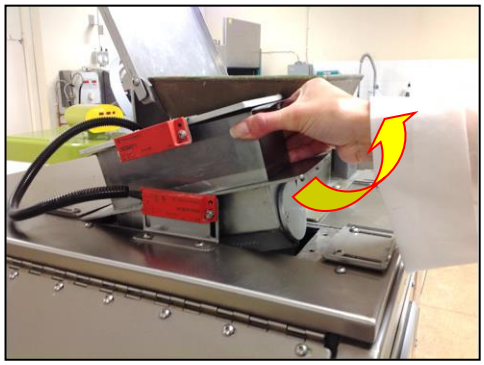
- Always ensure the machine is disconnected from the main power supply before cleaning
- To obtain optimum performance and results it is essential to follow the recommended Cleaning Schedule
- For speed and efficiency ALWAYS clean the Two-Pocket Roll Plant from the top down
- All surfaces coming into contact with dough should be cleaned daily
- Remove all scraps of dough from the filling chamber and clean with food-based oil from a spray can
- Do not use jets of water to clean the machine or control panel
- Do not use solvents which could damage the paint and synthetic materials
- Only plastic scrapers and brushes should be used – do not use steel scrapers
- Compressed air should not be used to clean the machine, however, the use of an appropriate ATEX approved Safety Vacuum cleaner is recommended. Please see Safety Guidelines for details
- All external surfaces should be wiped down with a damp cloth and cleaner

9.2 The Flour Dusters:

- The two Flour Dusters situated either side of the Hopper can be cleaned using a stiff brush
- Both Flour Dusters can be removed from the machine for a more thorough cleaning by sliding the Retaining Plates to the unlocked position and easing the Flour Duster out front side first
- It is also advisable to vacuum clean the Flour Dusters to prevent infestation using an ATEX approved Safety Vacuum Cleaner
- When replacing the Flour Dusters insert the cog-end of the unit first then lower the remainder of the Flour Duster into position, then slide the Retaining Plates back into the locked position



Slide the Retaining Plate to the Unlocked Position on Each Sides of the Flour Duster



Lift the Front of the Flour Duster Upwards to Remove and Insert the Cog-End First in Order to Replace

9.3 The Dough Hopper:

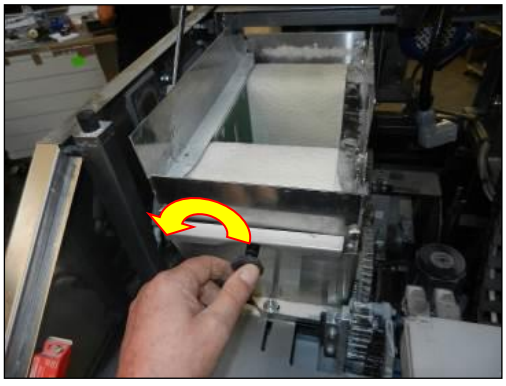
- This should be done after every production run or at the end of each day
- Do NOT leave dough in the hopper as this will be difficult to clean later and may cause a malfunction
- Lift the top access panel, then use the handle inside to raise the hopper as far as it will go
- The integrated gas struts will support the panel in position and prevent it from falling closed
- Clean the hopper and surrounding area thoroughly
- To close, pull the handle down and gently lower the assembly into place, then close the outer access door

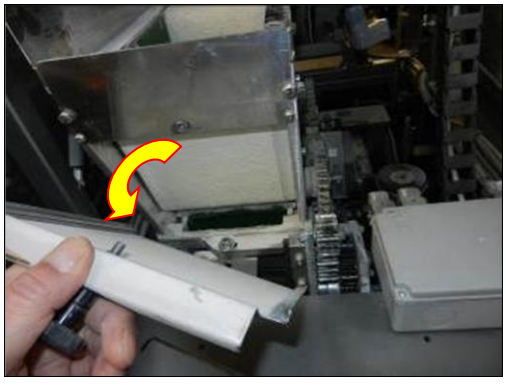
Lift the Outer Access Door Upwards

Use the Internal Handle to Lift the Unit Upwards

9.4 The Pre-Scaler:

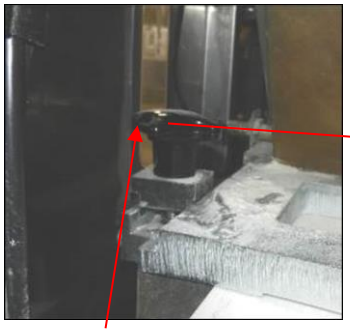
- Open the Cleaning Plate by unscrewing the cross handled screw
- Once unscrewed, remove the Plate and clean the Pre-Scaler area of any residue dough or flour
- Once clean securely screw the Cleaning Plate back in position

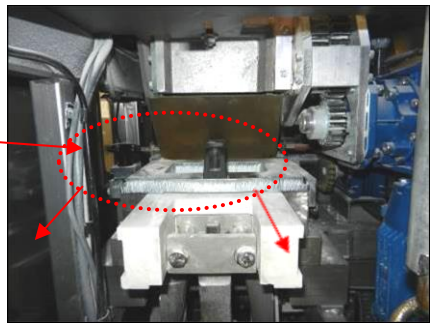




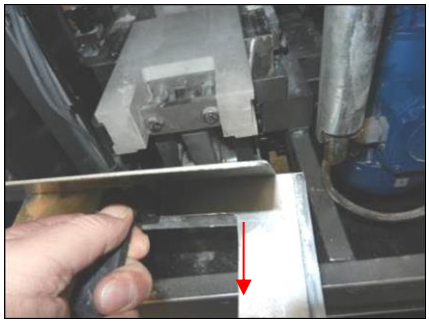
9.5 The Filling Chamber and Filling Piston:

- Loosen the Retaining Knob positioned on the top left hand side of the Piston Plate sufficiently to allow the Plate to be removed
- Grab the handle on the Piston Plate and pull towards you to remove



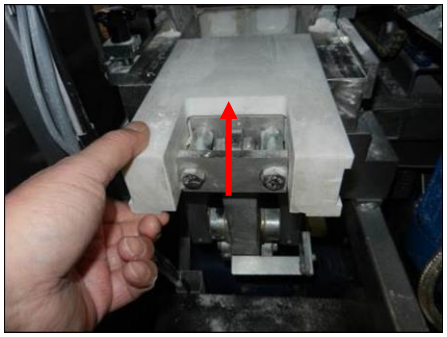


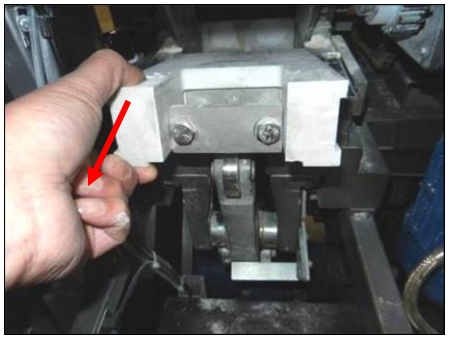
Loosen Retaining Knob



Remove Piston Plate to Access

- Lift Piston upwards over the roller and remove completely



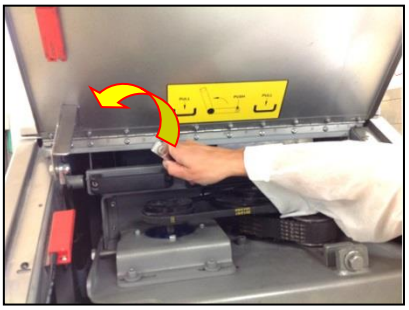


- Clean the Piston thoroughly and return to its position
- Clean the filling chamber
- Ensure that the two perspex side panels are clear of flour dust
- Replace the Piston Plate and hand tighten the retaining knob

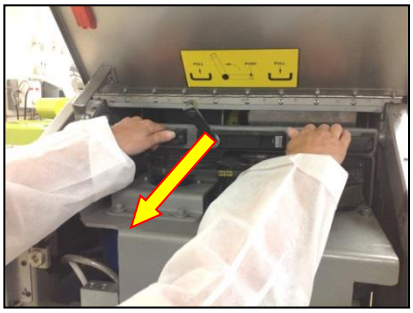
9.6 The Drum and Rounder:

- Open the access door upwards
- Press the Release Button to release the Handle
- Rotate the Handle anti-clockwise until it stops to release the retaining pin
- Grabbing both handles firmly pull the Rounding Unit forwards. The Unit is quite heavy but is supported by gas struts which prevents it from falling back into place

Press the Button to Release the Handle

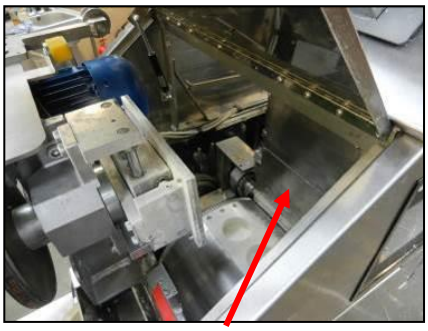


Rotate the Handle Completely to the Left

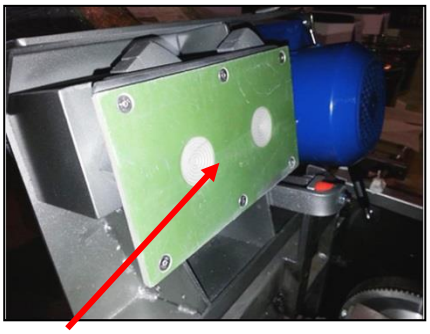


Grab hold of Both Handles and Pull Forwards

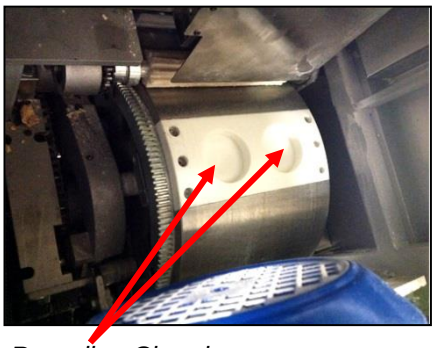
- Clean all accessible areas including the Base Plate, Side Guides, Rounding Plate and Chambers with a plastic scraper or brush
- Remove the Piston Plate to clean the pre-scaling area from this side of the machine



Lift Piston Plate to Clean



Rounding Plate



Rounding Chambers

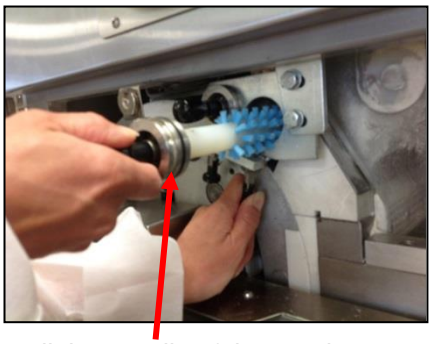
- The metal pieces of the drum should be oiled weekly to ensure easy movement
- The Rounding Plate, especially the grooves can be cleaned with a stiff brush
- For maintenance, the Rounding Plate can also be removed by pivoting the plate and releasing the 6 countersunk screws. This will need to be done if the groves are no longer sharp.

9.7 The Pressure Roller and Cleaning Brushes

- The Pressure Roller and Cleaning Brushes are easily accessed via the left hand door
- To remove each component pull the Locking Pin downwards and slide the Roller or Brush from its position
- Clean both items thoroughly to remove any residual dough or flour with a scraper
- Flour the Pressure Roller before replacing
- When replacing, ensure the Locking Pins are located to secure the Roller and Brush in the correct position

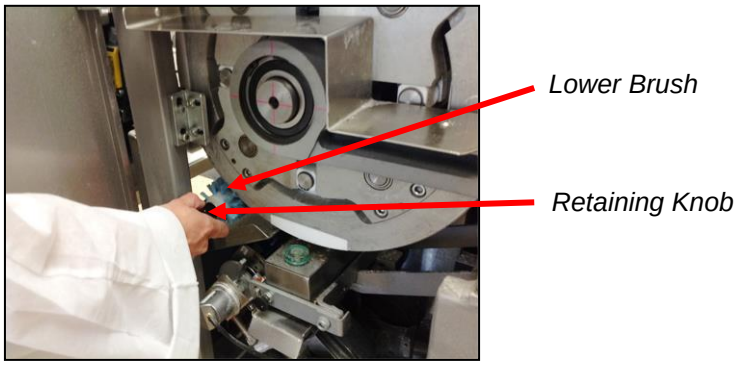
Pull Downwards to Release The Locking Pins

Pull the Handle of the Pressure Roller to Remove



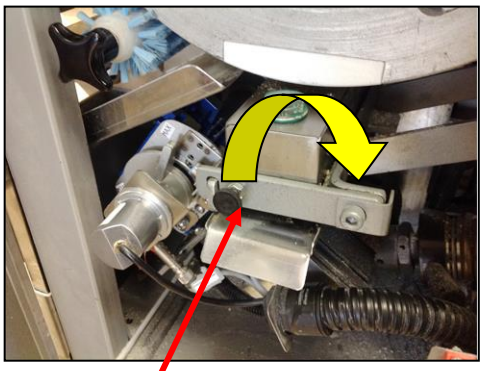
Pull the Handle of the Brush to Remove

- The lower Brush is removed by turning the Retaining Knob to the right and pulling the Roller Brush out smoothly
- Once removed, this gives access to the metal platform immediately below.
- Clean both the platform and Brush thoroughly and replace by inserting the Roller Brush onto the receiving rod and rotating until it engages with the retaining pin at the back. Turn anti-clockwise to lock in place

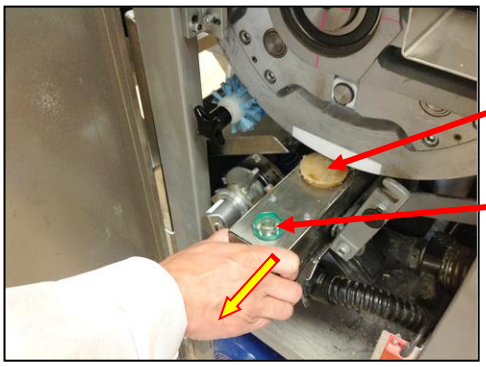


9.8 Oil Reservoir:

- Turn the knob on the Retaining Bar located in front of the Oil Reservoir in a clockwise direction to release the Reservoir
- Grab both sides of the Oil Reservoir and pull it towards you to remove it
- Clean any residue oil from the surface and Oil Cap



Lift the Knob on the Oil Reservoir Retaining Bar Clockwise to Release



Gently pull the Oil Reservoir Towards You to Remove

- Dough residue on the oiling pads should be checked daily and removed as required.
- The oiling pads should be changed when worn; otherwise changing them every 2 to 3 years should be sufficient
- To replace them remove the top lid of the oil reservoir for easy access
- Please ensure the pressure springs are replaced after changing the pads
- The Oil Reservoir should be filled between ½ or ¾ with food-safe divider oil.
- Once cleaned and replenished with oil, return the Oil Reservoir to its position and lock in place with the Retaining Bar by clicking it back in the locked position

9.9. The Flour Dust Catcher

- The Flour Duster Catcher is located below the main Off-Take Arms of the machine
- Simply lift the unit upwards off the locating pins using the keyhole locators
- Clean the Flour Dust Catcher thoroughly and replace

Flour Dust Catcher Positioning

Note:

Once the above cleaning procedures have been actioned, open all access doors and ensure any residue dough pieces and flour dust are removed from around the inside of the machine. If vacuuming please ensure you use an ATEX approved Safety Vacuum Cleaner to avoid the potential for combustion.

Failure to adhere to the Cleaning and Maintenance instructions detailed in this document may affect the performance of the machine and ultimately the machine's warranty.

10. Roll Forming Unit - Cleaning and Maintenance (if fitted):

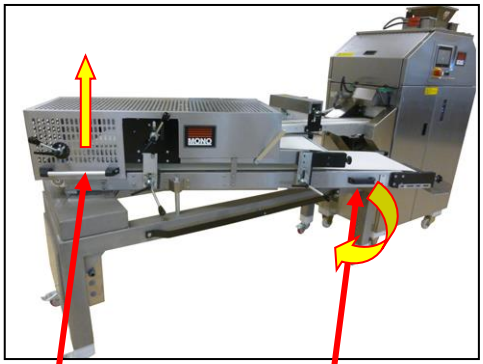
Note: Switch Off and Isolate the Two-Pocket Roll Plant from the Mains Power Supply Before Commencing any Cleaning or Maintenance Work is Carried out on the Roll Forming Unit

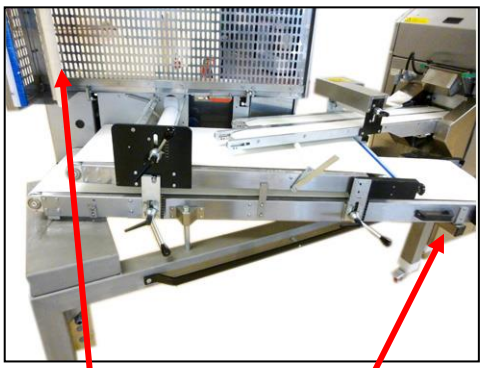
10.1 General Advice:

- Always ensure the Two-Pocket Roll Plant is disconnected from the mains power supply before cleaning the Roll Forming Unit
- To obtain optimum performance and results it is essential to follow the recommended Cleaning Schedule
- For speed and efficiency ALWAYS clean the Roll Forming Unit from the top down
- All surfaces coming into contact with dough should be cleaned daily
- Remove all scraps of dough from the rollers, brushes and belt systems
- Do not use jets of water to clean any part of the machine
- Do not use solvents which could damage the paint and synthetic materials
- Only plastic scrapers and brushes should be used – do not use steel scrapers
- Compressed air should not be used to clean the machine, however, the use of an appropriate ATEX approved Safety Vacuum cleaner is recommended. Please see Safety Guidelines for details
- All external surfaces should be wiped down with a damp cloth and cleaner

10.2. The Cleaning Position

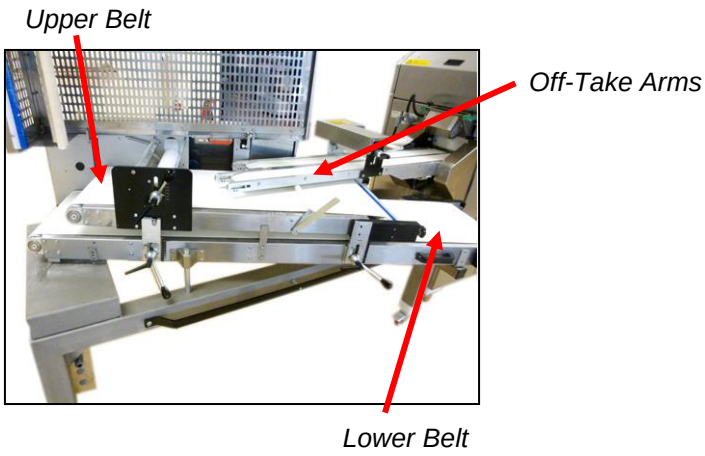
- If the Roll Forming Unit's lower belt has not been pulled out, do so to gain access to the belts



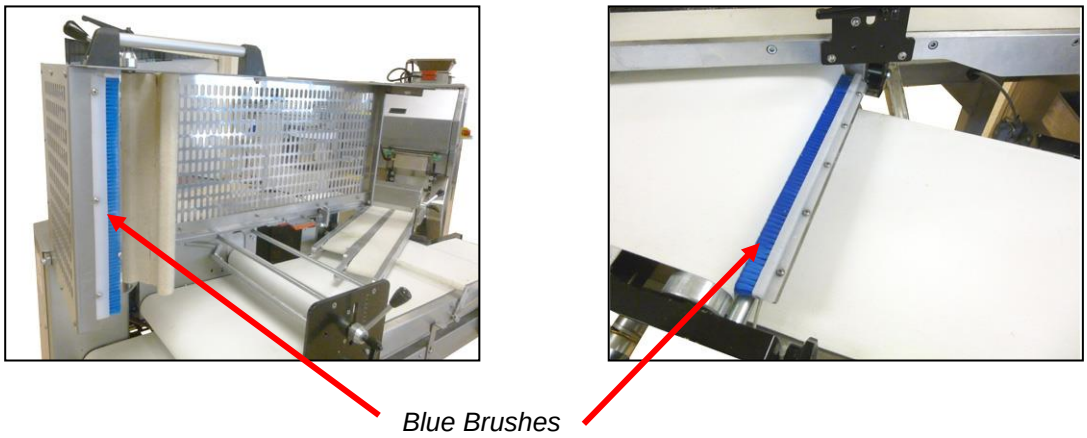


10.3. Belts, Brushes, Rollers & Guides

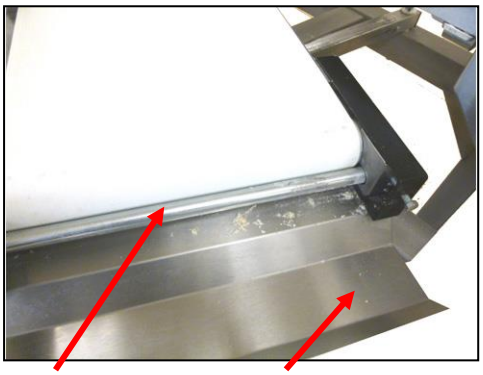
- Using the Roll Forming Unit Cover Handle, lift upwards to gain access to the Upper Belt, Brushes and Rollers etc
- Clean any flour or dough residue from the Two-Pocket Roll Plant's Off-take Arms and both Upper and Lower Belts



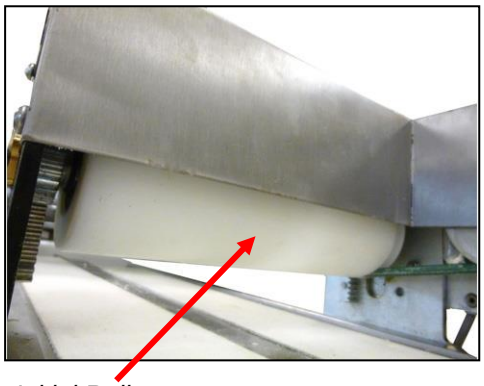
- Clean both sets of Blue Brushes found at the end of the Roll Forming Unit Cover and at the front of the Top Belt assembly, ensuring any flour or dough residue is removed
- Clean any dough remnants from the edge of the belts



- Clean any dough and flour deposits from the edges of the belts and the collecting tray at the front of the Lower Belt
- Clean the Initial Roller and ensure it turns freely

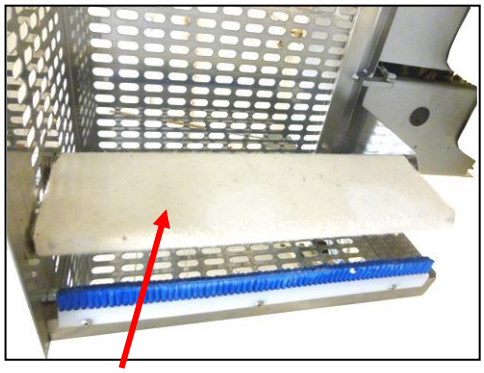


Edge of Belt & Collecting Tray



Initial Roller

- Clean the 'Roll Positioning Flap' and ensure no dough has stuck to the material
- Clean the 'Finger Roll Positioning Guide' so that the Upper Belt can run freely without obstruction

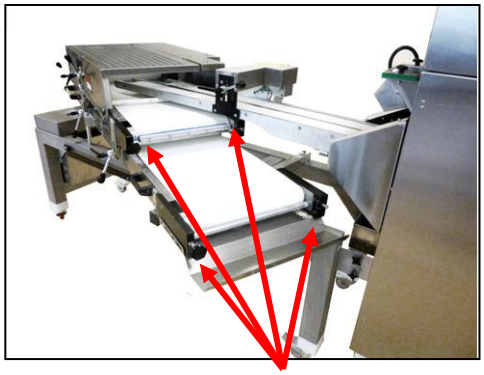


Roll Positioning Flap & Brush

Finger Roll Positioning Guide

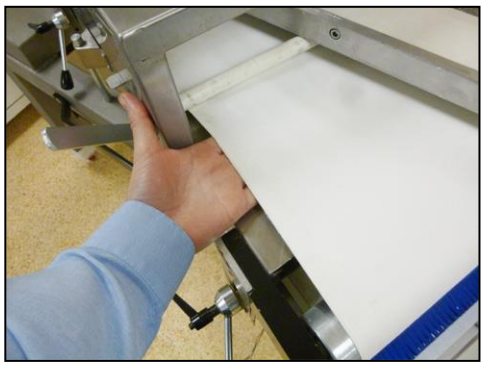
10.4. Belt Tensioning Adjustment

- Occasionally the Upper and Lower Belts of the Roll Forming Unit may need tensioning
- This should only be undertaken by a trained maintenance person
- Care should be taken when undertaking this process to ensure the belts are tensioned on the right and left hand sides to ensure the correct alignment is retained



Belt Adjustment Knobs

- Failure to have equal tension right and left may result in the conveyor belts running unevenly and loose tracking
- The correct level of tensioning is achieved when a person's hand can just be inserted under the belt and the metal work frame



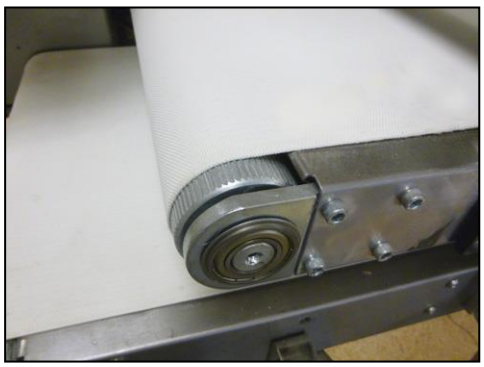
Upper Belt Tensioning

Lower Belt Tensioning

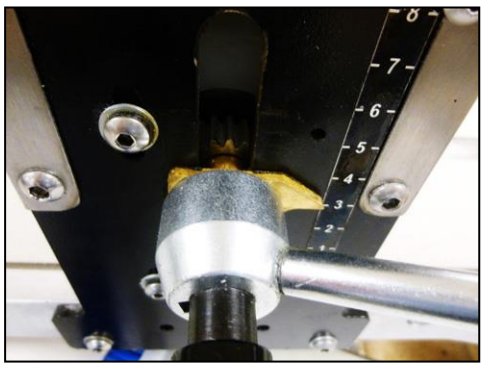
- Check the general condition of the belts to ensure there are no rips or tears. Report any damages so the belt can be replaced

10.5. Lubricating the Bearings, the Adjustment Levers & the Support Cross Bar

- Any operational noise generated during normal running of the machine may be due to the bearings needing lubrication or replacement
- Oil the bearings to see if the noise stops. If the noise persists after lubrication, then the bearings may need replacing

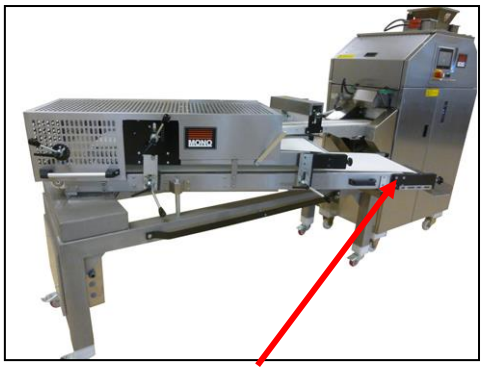


Typical Bearings

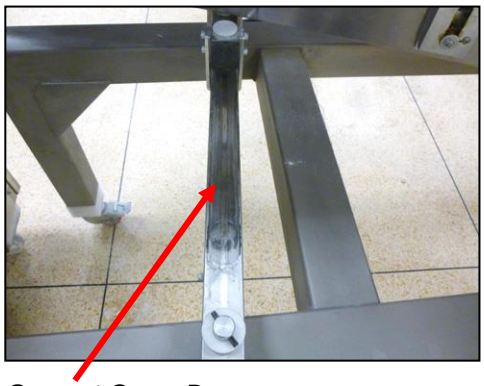


Adjustment Levers

- The adjustment levers should be free and easy to move and position. If any of the levers become tight in operation, it may be necessary to lubricate the mechanism



Roll Forming Unit with Upper Belt Open



Support Cross Bar

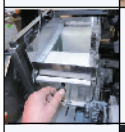
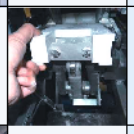
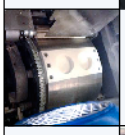
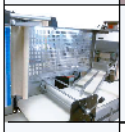
- Pull the Roll Forming Unit's Upper Belt mechanism to the open position to gain access to the Support Cross Bar which may need cleaning and lubricating from time to time

11. Recommended Cleaning Schedule:

— In order to maintain the high quality of roll production it is essential that regular cleaning of the Two-Pocket Roll Plant and Roll Forming Unit (if fitted) is carried out. Failure to do so may dramatically affect the quality of the output

Cleaning Schedule

Two-Pocket Roll Plant & Roll Forming Unit (if fitted)

Part	Daily	Weekly
Flour Dusters		
Hopper System		
 Pre-Scaler		
Filling Chamber & Piston System 		
 Drum & Rounder		
Roller & Brushes		
 Roll Forming Unit		
All External Surfaces		
All Internal Surfaces		

Cleaning Materials:

Brush	Scraper	Vacuum Cleaner	Damp Cloth

- *Always ensure that the machine is switched OFF at the mains power supply before any cleaning or maintenance work takes place*
- *Before beginning daily work, start the machine for 2-3 minutes without dough to ensure any loose residue is dislodged from the system*

Note:

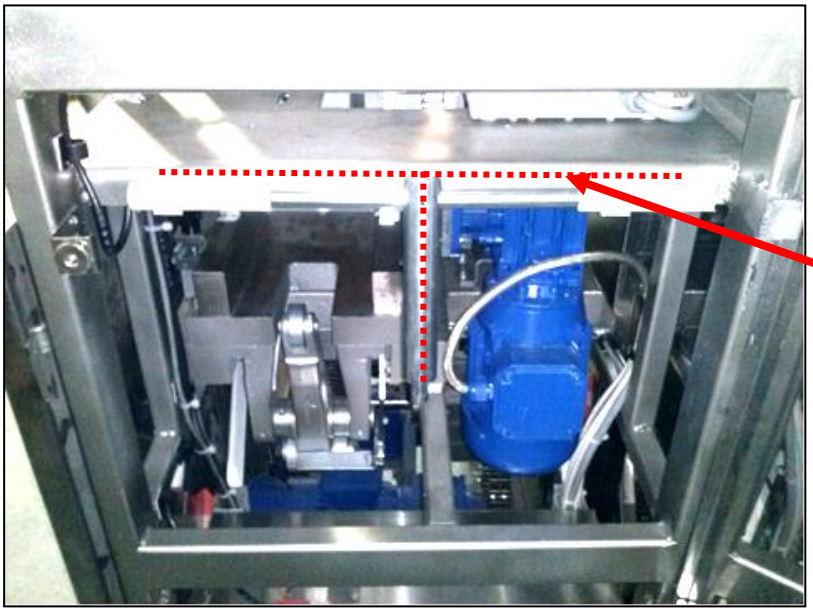
— **Before beginning any type of maintenance or cleaning ensure the machine is disconnected from the mains power supply.**

— **If vacuuming ensure only an appropriate ATEX approved Safety Vacuum Cleaner is used to avoid the potential flour combustion**

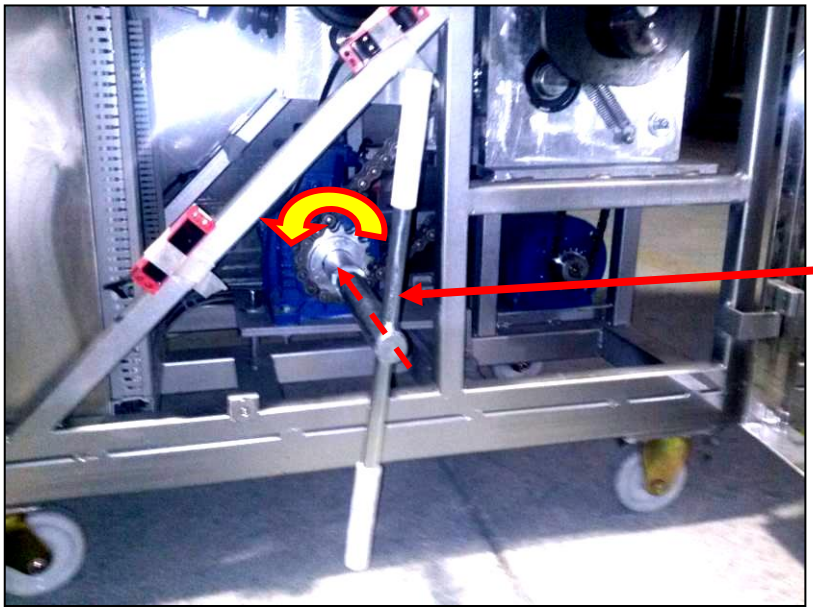
— **A copy of the above Cleaning Schedule can also be found on the inside of the right hand door of the Two –Pocket Roll Plant**

12. Manual Operation – Power OFF:

- With the help of a crank handle, the drive can be rotated manually with the power off
- The manual crank handle is clipped to the machine behind the end safety door. It should be unclipped and inserted into the drive in the side of the machine.
- When turning, the correct machine rotation direction is "left" (direction of arrow below).
- Remove Handle and Replace in the Clips Before Turning Power on.



Manual Crank Handle (Stowed)

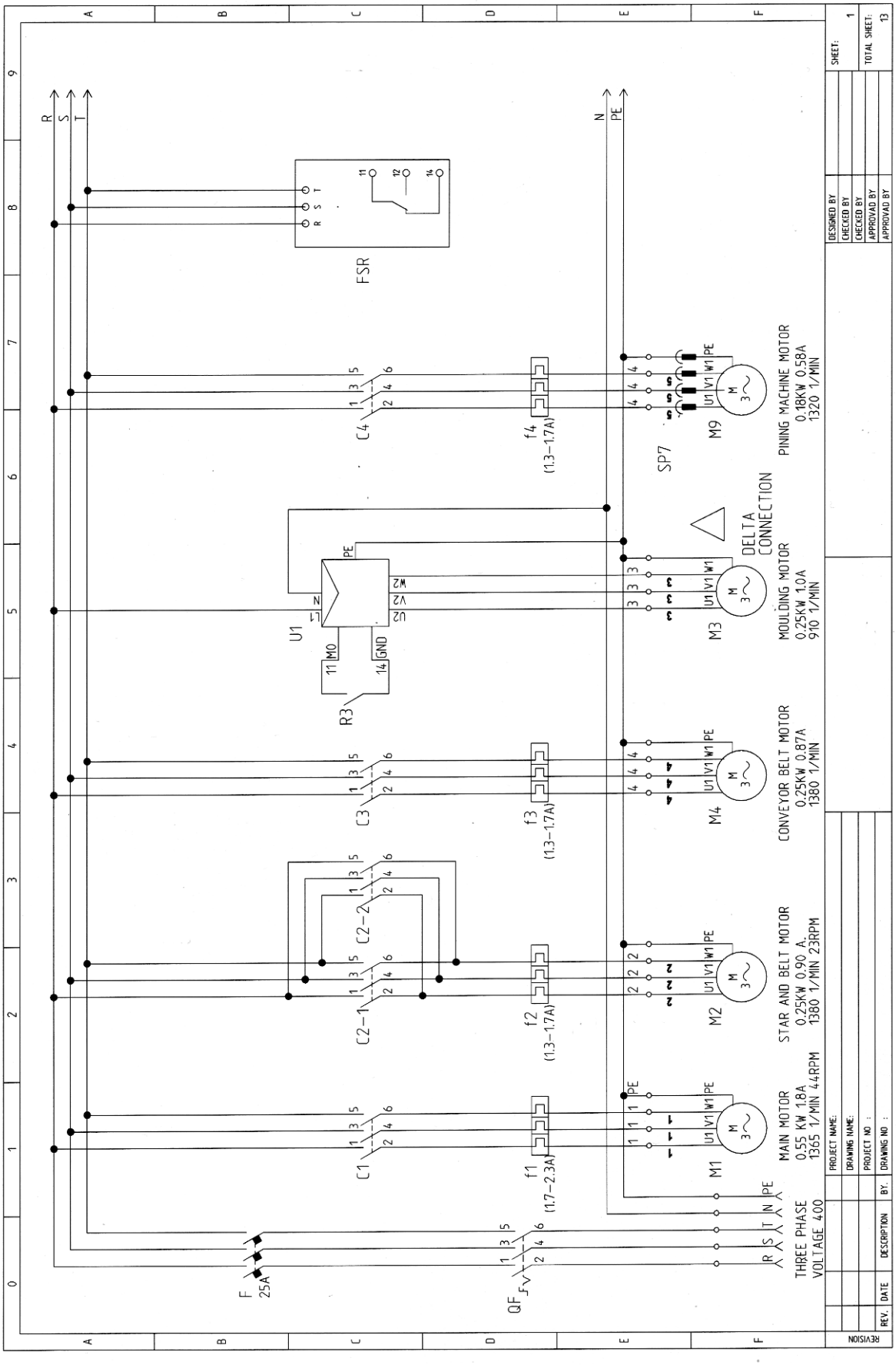


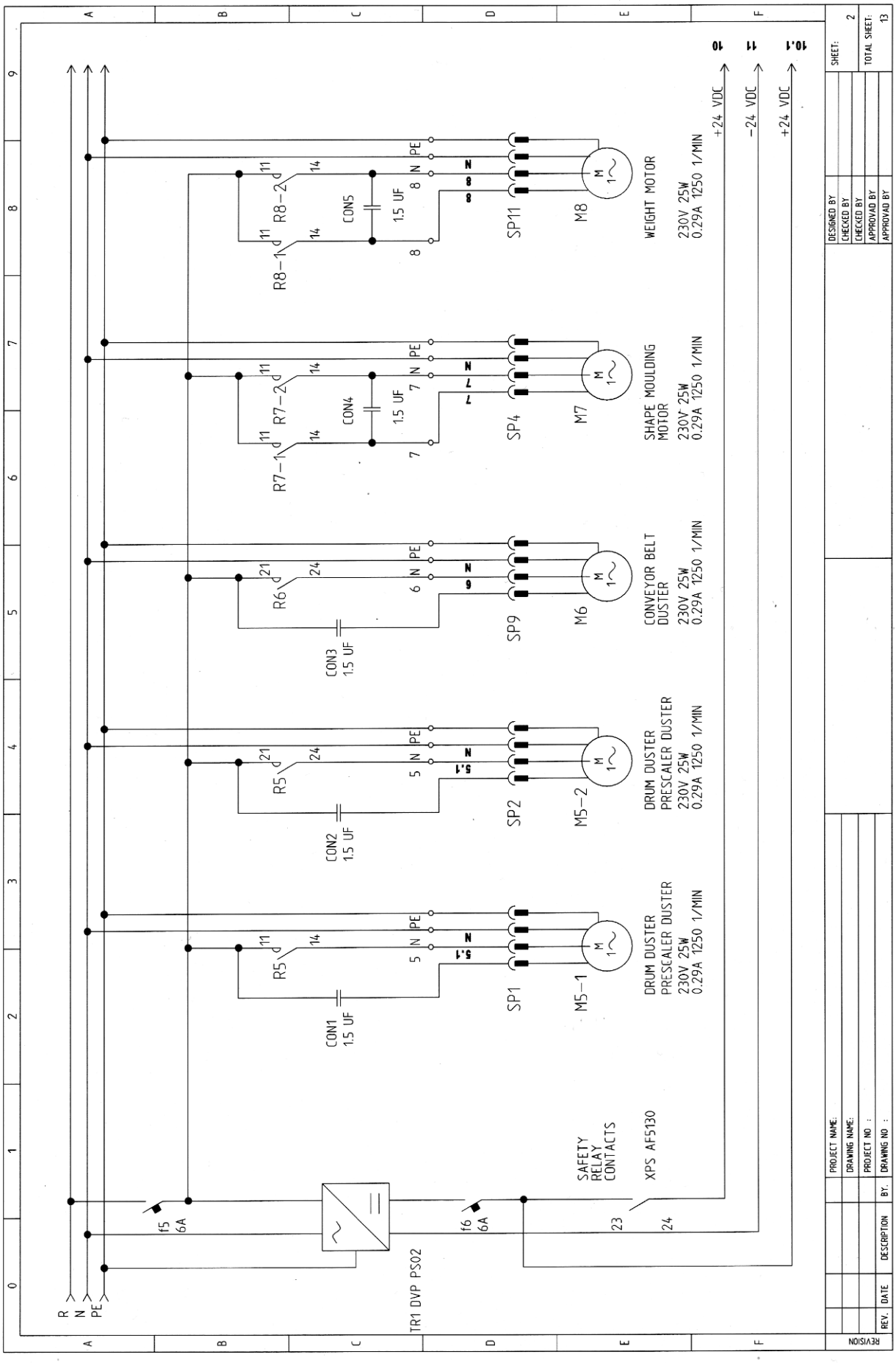
Manual Crank Handle (Working Position)

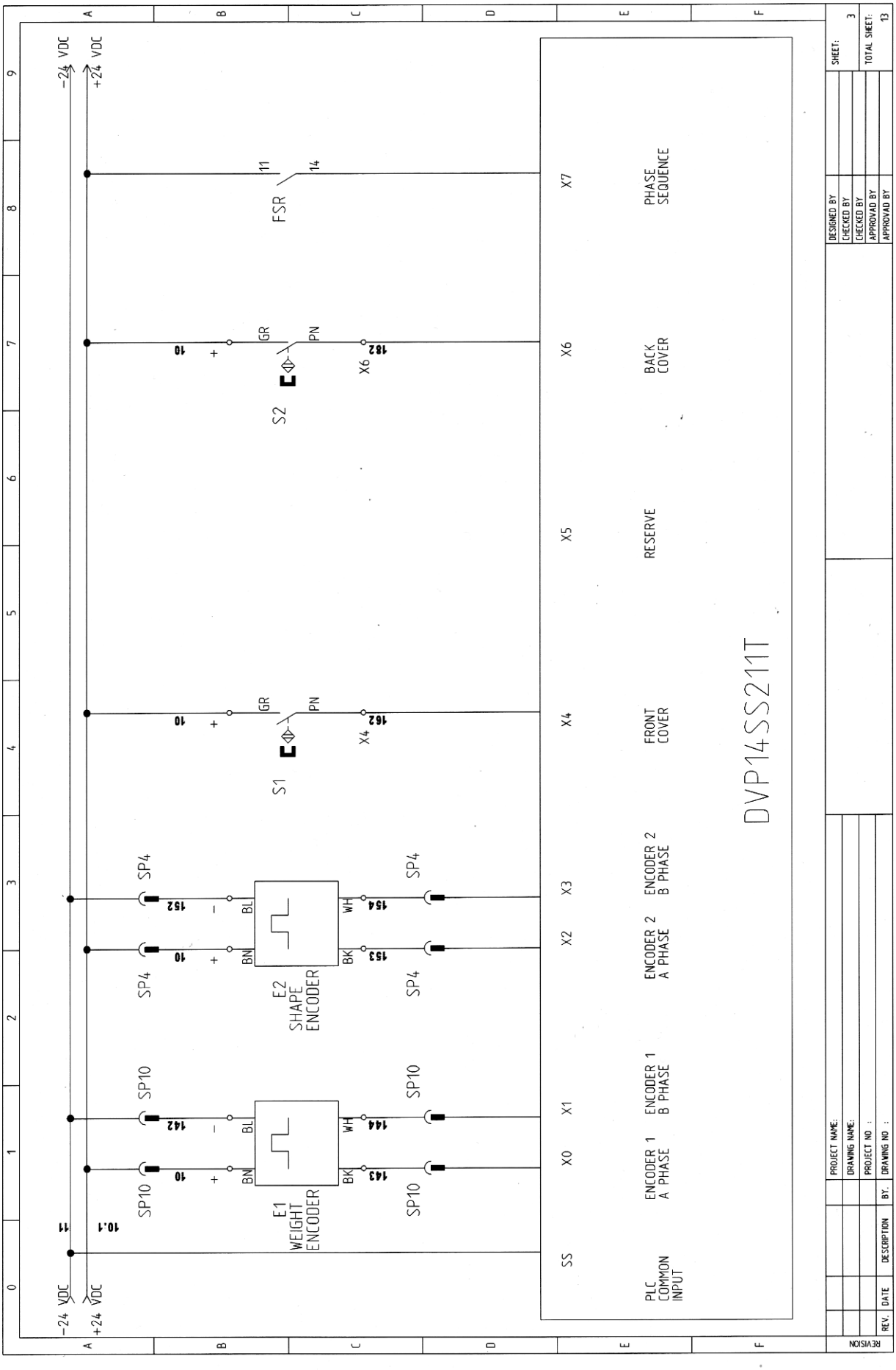
13. Hints & Tips:

- For best results, ensure the dough piece is gently stretched into an elongated shape before loading into the Hopper
- For best results, it is advised not to cut the dough into too many pieces
- The Product Recipe settings on Two-Pocket Roll Plant are based on the current QPIG which are the optimum settings to produce the best quality product
- Always check the weight of the dough pieces at the start of production and tweak the settings if required. Continue to check the weights at regular intervals to ensure consistency
- Transfer the Roll Forming Unit values from the Screen to the actual belt settings to ensure the correct shape is achieved before operating the machine.
- For finger roll production, ensure that the Upper Belt runs at a faster speed than the Lower Belt
- The Two-Pocket Roll Plant and Roll Forming Unit works well with a wide range of doughs and it shouldn't be necessary to remove water from the recipes in order for it to work effectively
- The Two-Pocket Roll Plant and Roll Forming Unit have been designed to provide full access to the internal workings for thorough cleaning
- As flour dust can be highly combustible please ensure ONLY an ATEX approved Safety Vacuum Cleaner is used for cleaning purposes
- For a quick guide to the cleaning process refer to the Cleaning Schedule which can be found on the inside of the left hand door of the main Two-Pocket Roll Plant

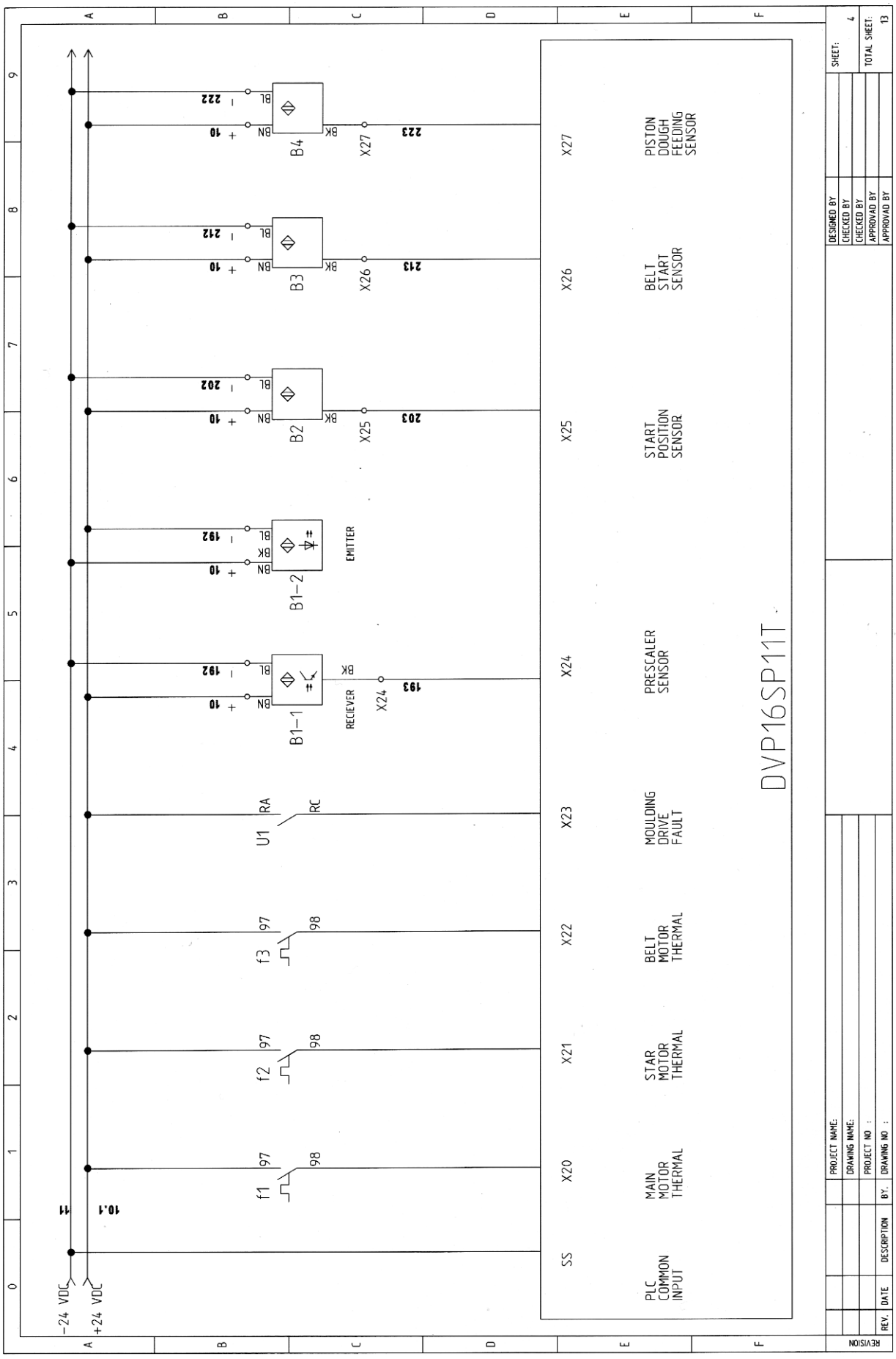
14. Electrical Information – Roll Plant:


R
S
T
N
PE
FSR
11
12
14
R S T
C4
f4
(1.3–1.7A)
SP7
M9
PINING MACHINE MOTOR
0.18KW 0.58A
1320 1/MIN
DELTA
CONNECTION
U1
L1
N
PE
W2
V2
U2
11 MO
14 GND
R3
M3
MOULDING MOTOR
0.25KW 1.0A
910 1/MIN
C3
f3
(1.3–1.7A)
M4
CONVEYOR BELT MOTOR
0.25KW 0.87A
1380 1/MIN
C2–2
C2–1
f2
(1.3–1.7A)
M2
STAR AND BELT MOTOR
0.25KW 0.90 A
1380 1/MIN 23RPM
C1
f1
(1.7–2.3A)
M1
MAIN MOTOR
0.55 KW 1.8A
1365 1/MIN 44RPM
F
25A
QF
R S T N PE
THREE PHASE
VOLTAGE 400
SHEET: 1
TOTAL SHEET: 13
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
REVISION
REV.
DATE
DESCRIPTION
BY.


R
N
PE
TR1 DVP PS02
f5
6A
f6
6A
SAFETY
RELAY
CONTACTS
XPS AF5130
23
24
+24 VDC
-24 VDC
+24 VDC
10
11
10.1
M5-1
SP1
CON1
1.5 UF
R5
DRUM DUSTER
PRESCALER DUSTER
230V 25W
0.29A 1250 1/MIN
M5-2
SP2
CON2
1.5 UF
R5
DRUM DUSTER
PRESCALER DUSTER
230V 25W
0.29A 1250 1/MIN
M6
SP9
CON3
1.5 UF
R6
CONVEYOR BELT
DUSTER
230V 25W
0.29A 1250 1/MIN
M7
SP4
CON4
1.5 UF
R7-1
R7-2
SHAPE MOULDING
MOTOR
230V 25W
0.29A 1250 1/MIN
M8
SP11
CON5
1.5 UF
R8-1
R8-2
WEIGHT MOTOR
230V 25W
0.29A 1250 1/MIN
REVISION
REV.
DATE
DESCRIPTION
BY.
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
SHEET: 2
TOTAL SHEET: 13



DVP14SS211T
PLC COMMON INPUT
SS
ENCODER 1 A PHASE
X0
ENCODER 1 B PHASE
X1
ENCODER 2 A PHASE
X2
ENCODER 2 B PHASE
X3
FRONT COVER
X4
RESERVE
X5
BACK COVER
X6
PHASE SEQUENCE
X7
E1 WEIGHT ENCODER
E2 SHAPE ENCODER
S1
S2
FSR
SP10
SP4
-24 VDC
+24 VDC
SHEET: 3
TOTAL SHEET: 13
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
REV.
DATE
DESCRIPTION
BY.
REVISION


DVP16SP11T
PLC COMMON INPUT
SS
MAIN MOTOR THERMAL
X20
STAR MOTOR THERMAL
X21
BELT MOTOR THERMAL
X22
MOULDING DRIVE FAULT
X23
PRESCALER SENSOR
X24
START POSITION SENSOR
X25
BELT START SENSOR
X26
PISTON DOUGH FEEDING SENSOR
X27
-24 VDC
+24 VDC
11
10.1
f1
f2
f3
U1
RA
RC
B1-1
B1-2
EMITTER
RECIEVER
B2
B3
B4
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
DESIGNED BY
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APPROVAD BY
APPROVAD BY
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TOTAL SHEET: 13
REVISION
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DESCRIPTION
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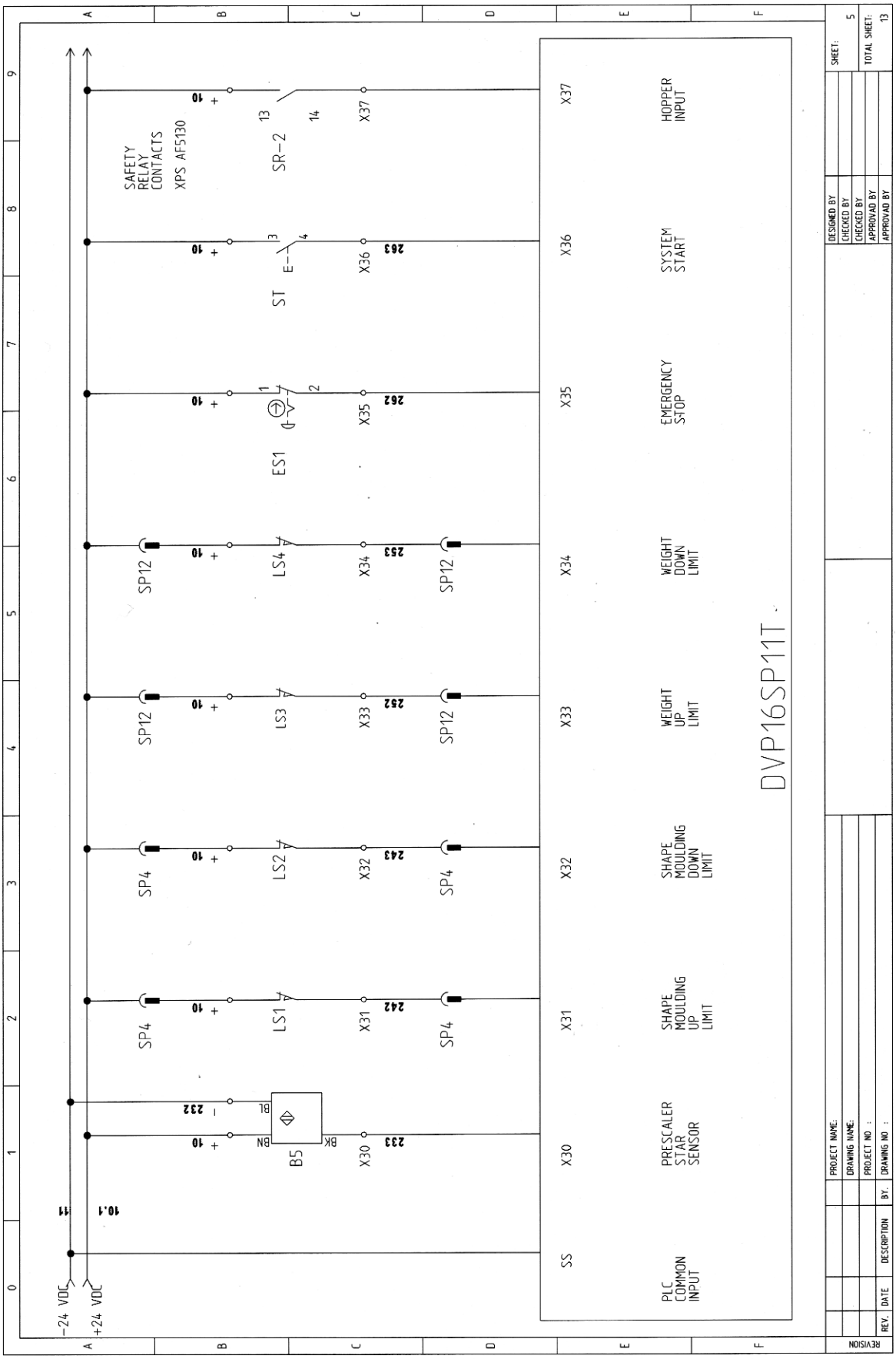
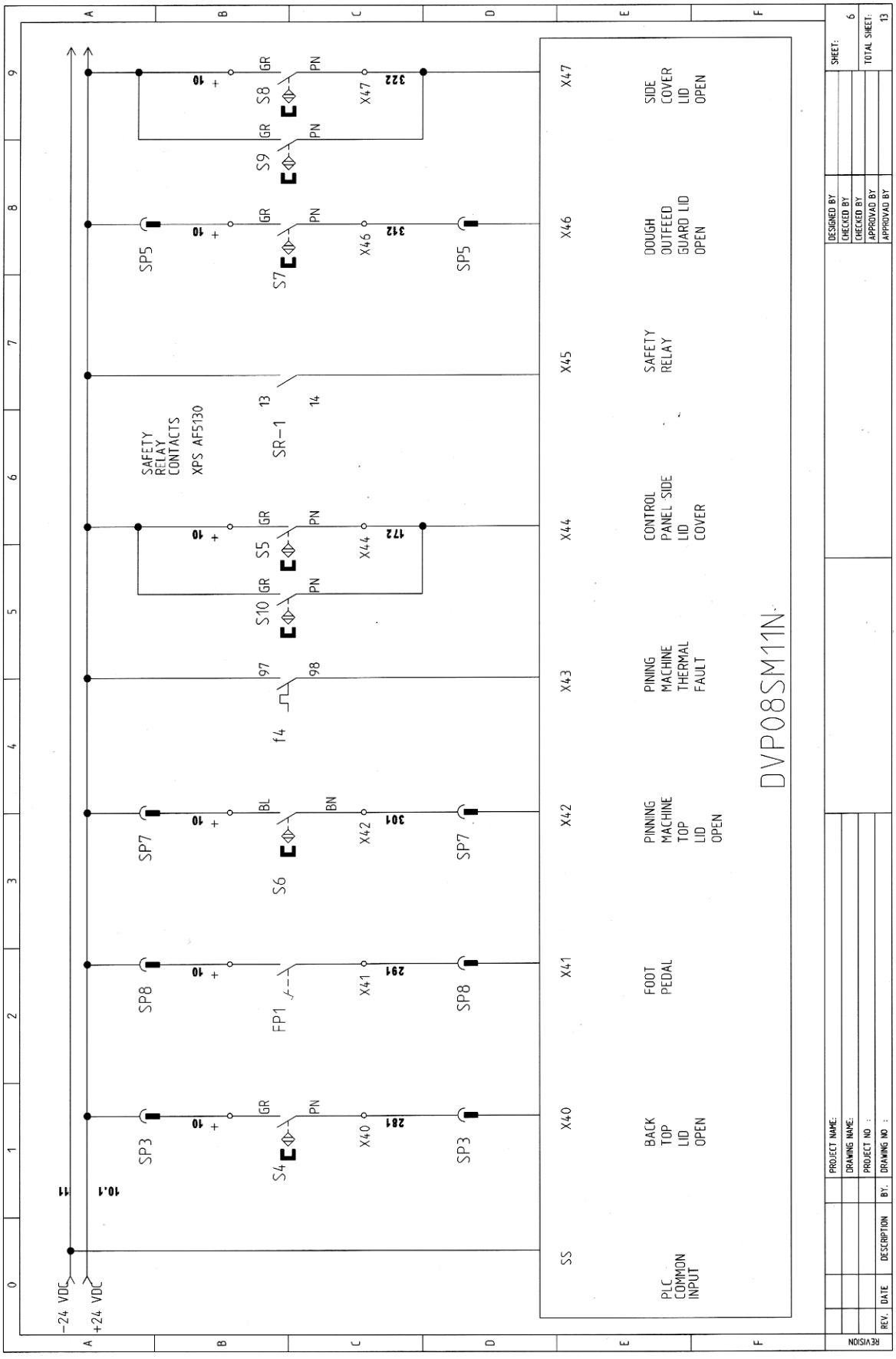
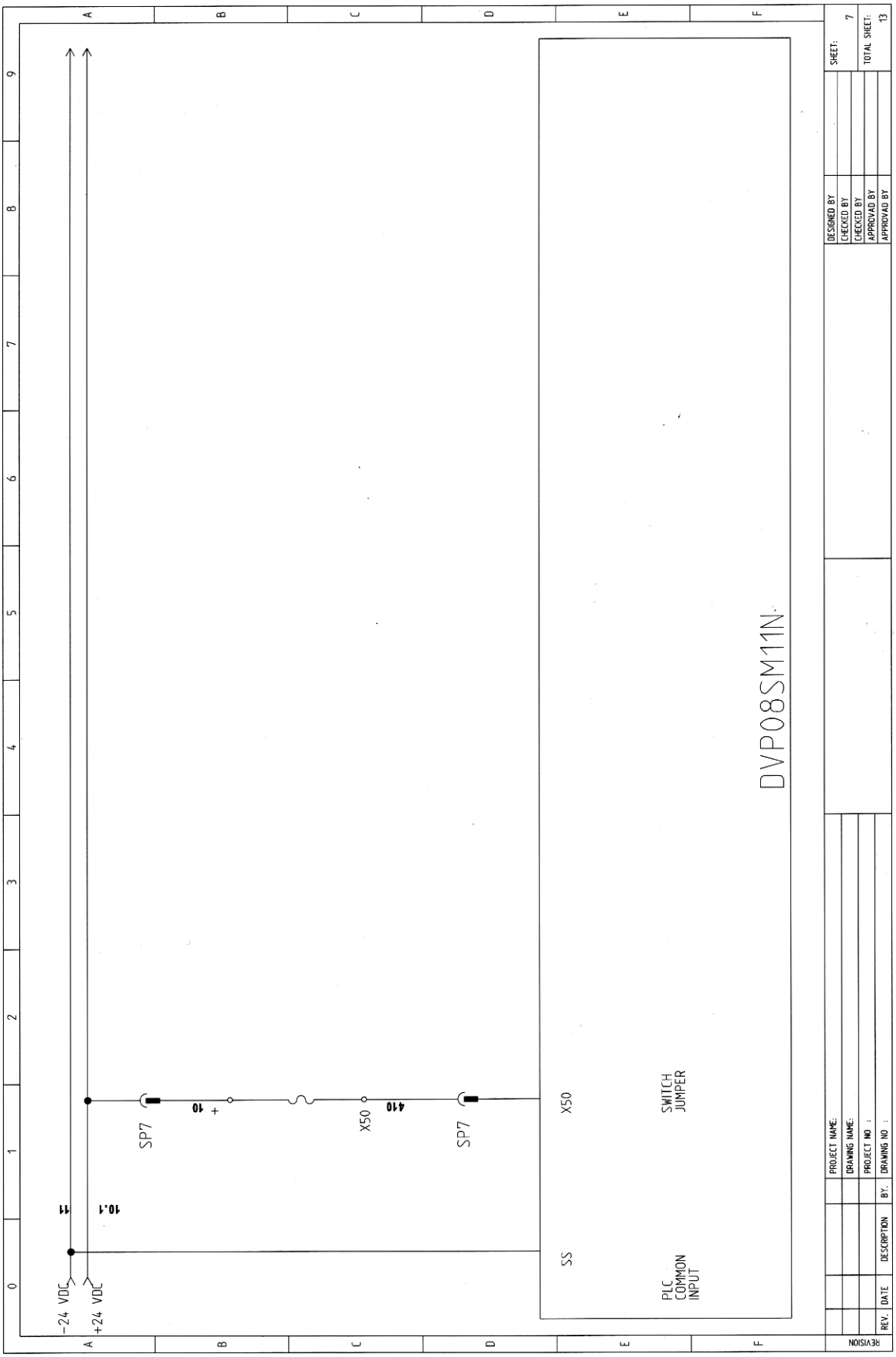
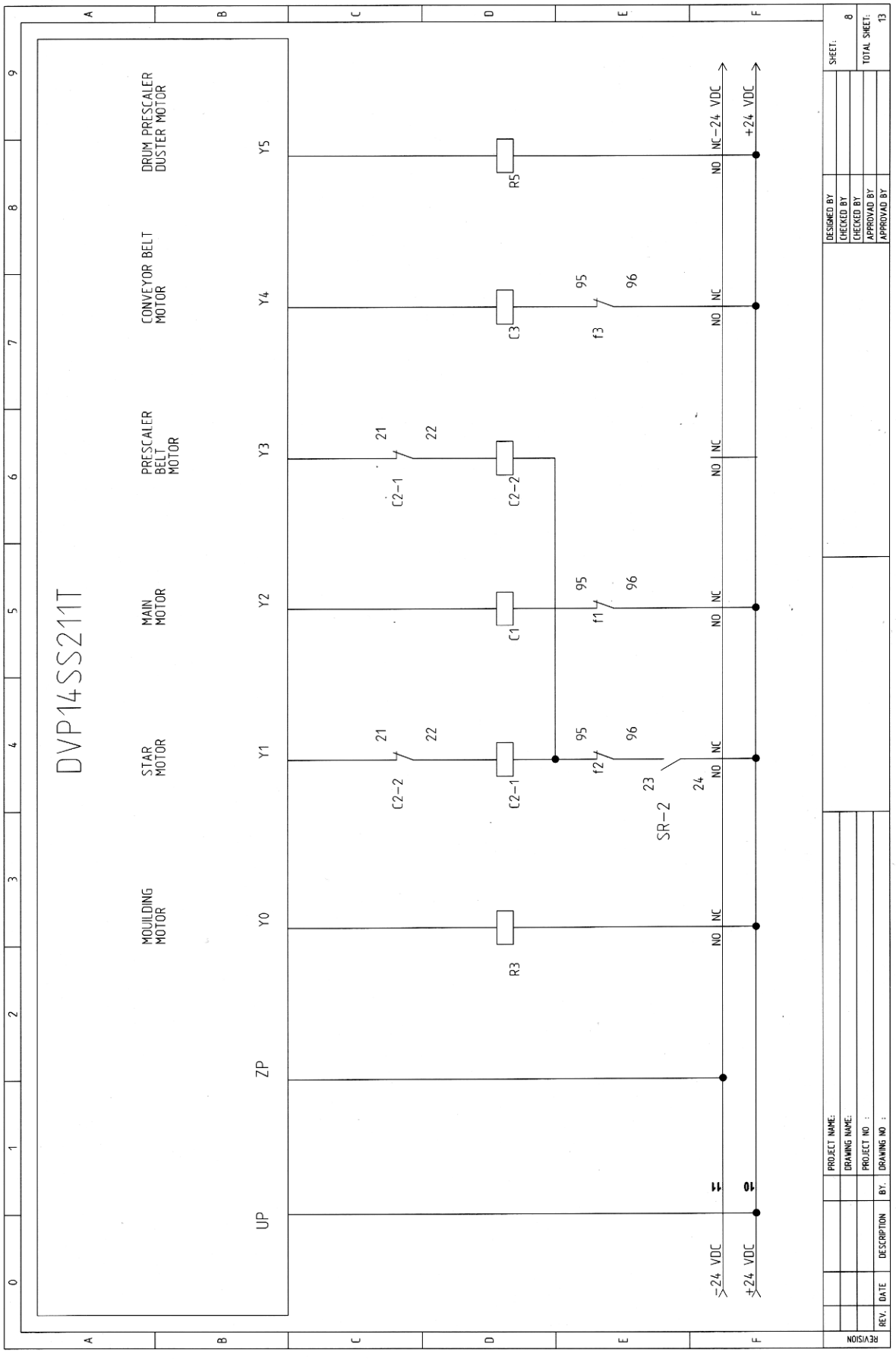
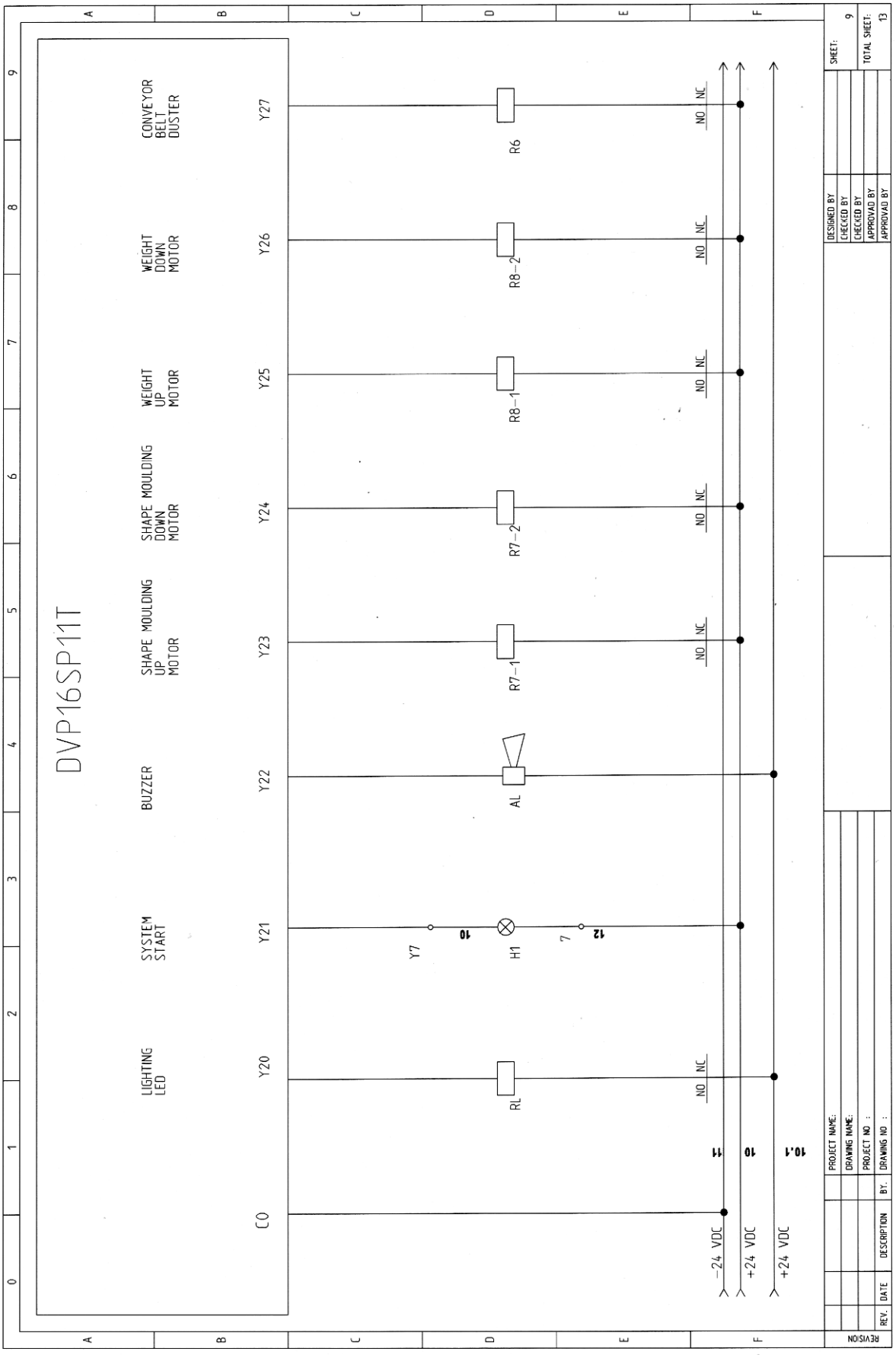
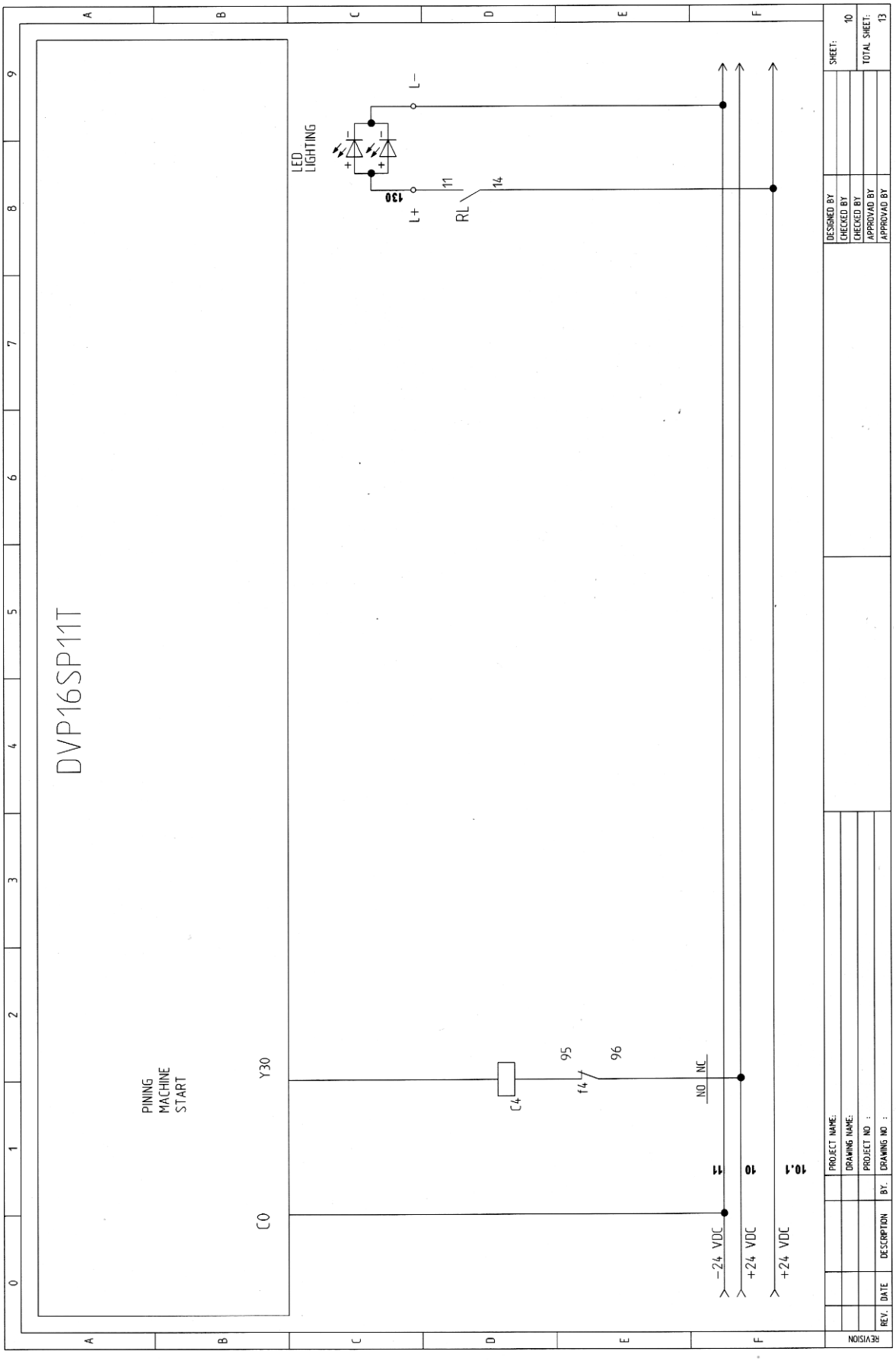

SAFETY RELAY CONTACTS XPS AF5130
SR-2
ST
ES1
B5
DVP16SP11T
PRESCALER STAR SENSOR
SHAPE MOULDING UP LIMIT
SHAPE MOULDING DOWN LIMIT
WEIGHT UP LIMIT
WEIGHT DOWN LIMIT
EMERGENCY STOP
SYSTEM START
HOPPER INPUT
PLC COMMON INPUT
+24 VDC
-24 VDC
SHEET: 5
TOTAL SHEET: 13
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
REVISION
REV.
DATE
DESCRIPTION
BY.

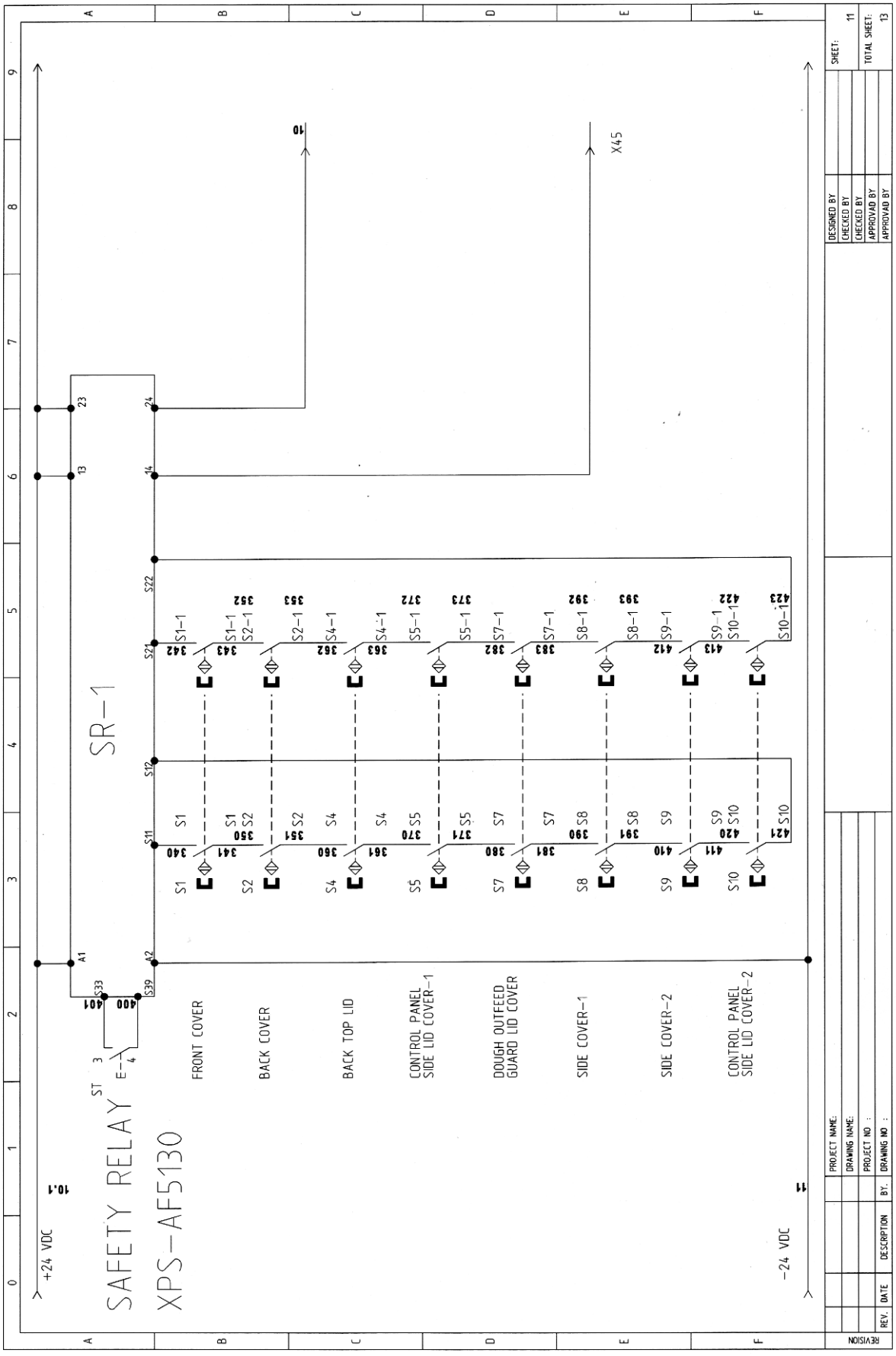

DVP08SM11N
SAFETY RELAY CONTACTS XPS AFS130
SR-1
SP5
SP7
SP8
SP3
S4
S5
S6
S7
S8
S9
S10
FP1
f4
X40
X41
X42
X43
X44
X45
X46
X47
SS
PLC COMMON INPUT
BACK TOP LID OPEN
FOOT PEDAL
PINNING MACHINE TOP LID OPEN
PINNING MACHINE THERMAL FAULT
CONTROL PANEL SIDE LID COVER
SAFETY RELAY
DOUGH OUTFEED GUARD LID OPEN
SIDE COVER LID OPEN
-24 VDC
+24 VDC
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
SHEET: 6
TOTAL SHEET: 13
REVISION
REV. DATE DESCRIPTION BY.

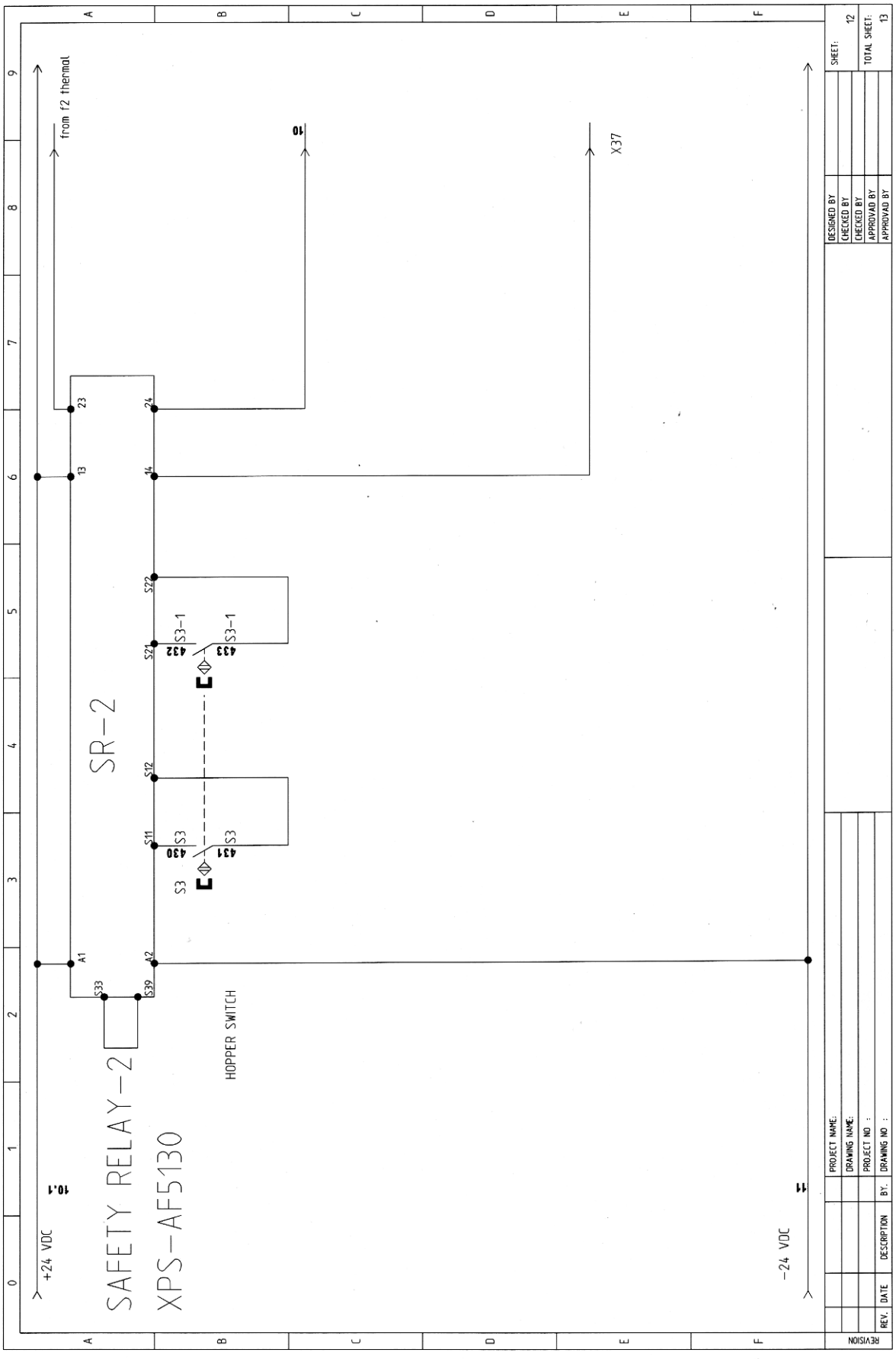

DVP08SM11N
-24 VDC
+24 VDC
11
10.1
SP7
10
+
X50
410
SP7
X50
SS
SWITCH
JUMPER
PLC
COMMON
INPUT
SHEET: 7
TOTAL SHEET: 13
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
REV.
DATE
DESCRIPTION
BY.
REVISION

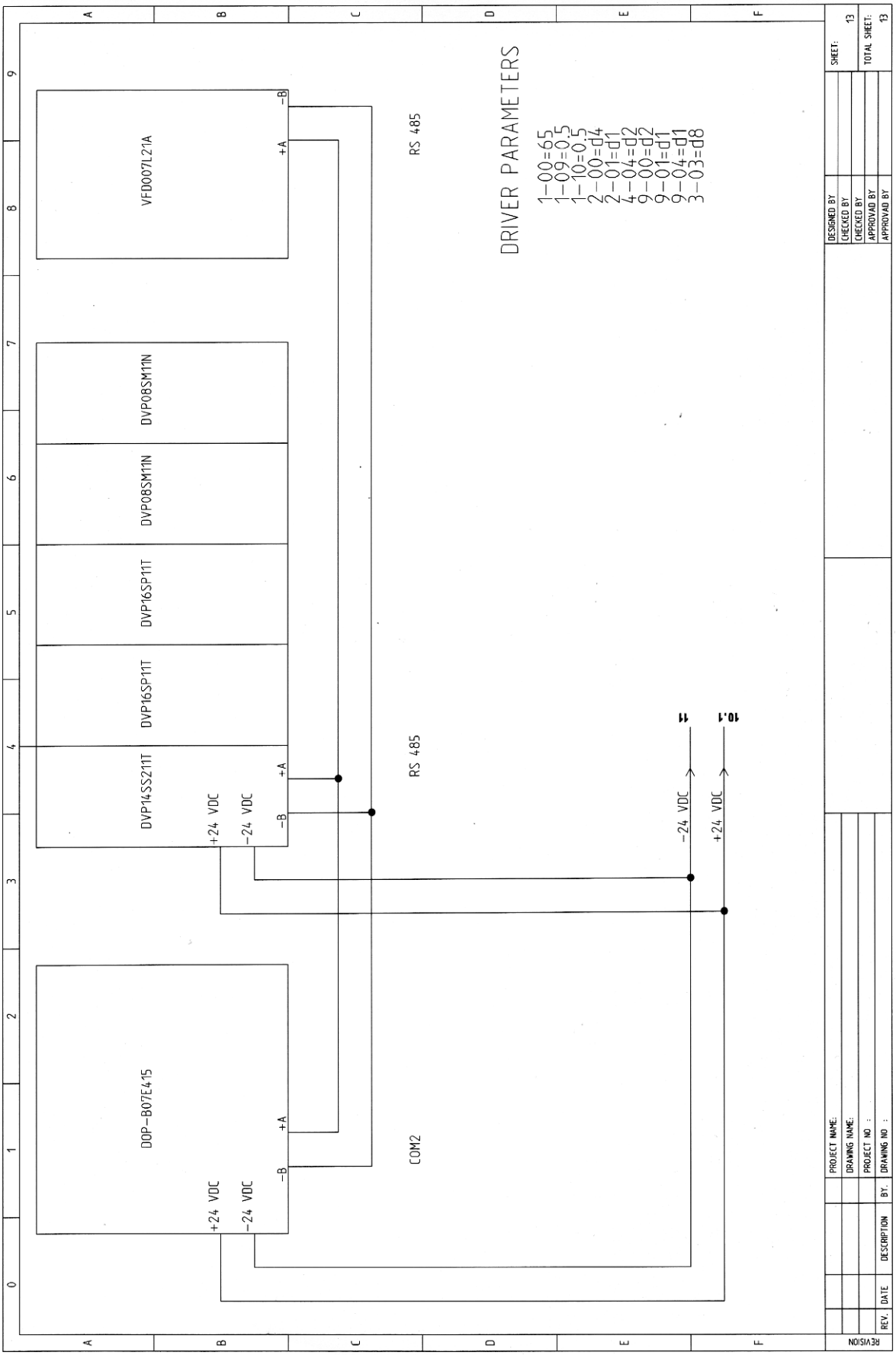

DVP14SS211T
MOUILDING MOTOR
STAR MOTOR
MAIN MOTOR
PRESCALER BELT MOTOR
CONVEYOR BELT MOTOR
DRUM PRESCALER DUSTER MOTOR
UP
ZP
Y0
Y1
Y2
Y3
Y4
Y5
R3
C2-2
C2-1
C1
C2-1
C2-2
C3
R5
f2
f1
f3
SR-2
21
22
23
24
95
96
NO
NC
-24 VDC
+24 VDC
REVISION
REV.
DATE
DESCRIPTION
BY.
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
SHEET: 8
TOTAL SHEET: 13


DVP16SP11T
LIGHTING LED
SYSTEM START
BUZZER
SHAPE MOULDING UP MOTOR
SHAPE MOULDING DOWN MOTOR
WEIGHT UP MOTOR
WEIGHT DOWN MOTOR
CONVEYOR BELT DUSTER
Y20
Y21
Y22
Y23
Y24
Y25
Y26
Y27
C0
RL
AL
R7-1
R7-2
R8-1
R8-2
R6
NO NC
Y7
H1
10
7
12
11
10
10.1
-24 VDC
+24 VDC
+24 VDC
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
SHEET: 9
TOTAL SHEET: 13
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
REV. DATE DESCRIPTION BY.
REVISION

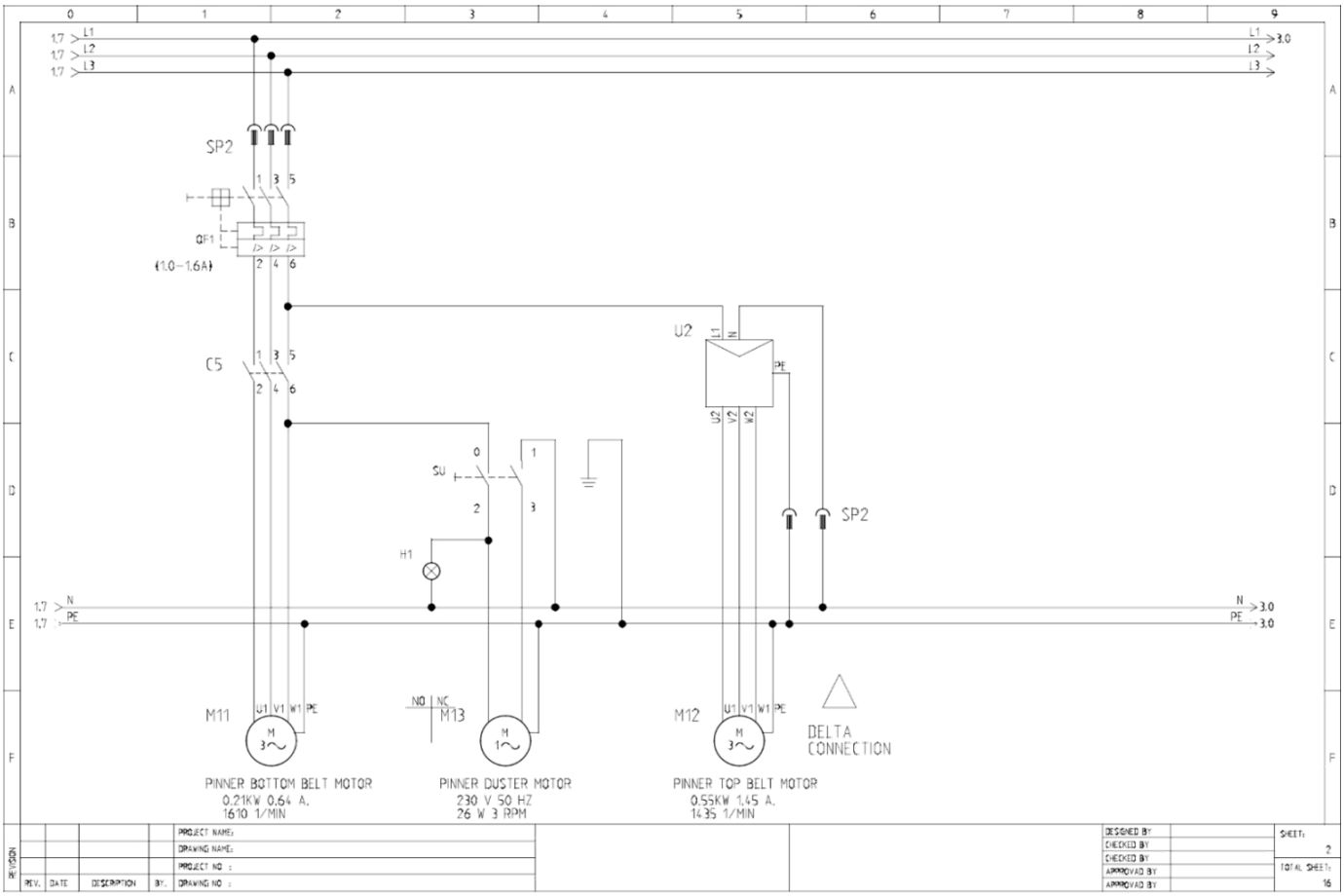

DVP16SP11T
PINING
MACHINE
START
Y30
CO
LED
LIGHTING
L-
L+
130
11
14
RL
C4
95
96
f14
NO
NC
-24 VDC
+24 VDC
+24 VDC
11
10
10.1
SHEET: 10
TOTAL SHEET: 13
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
REV.
DATE
DESCRIPTION
BY.
REVISION

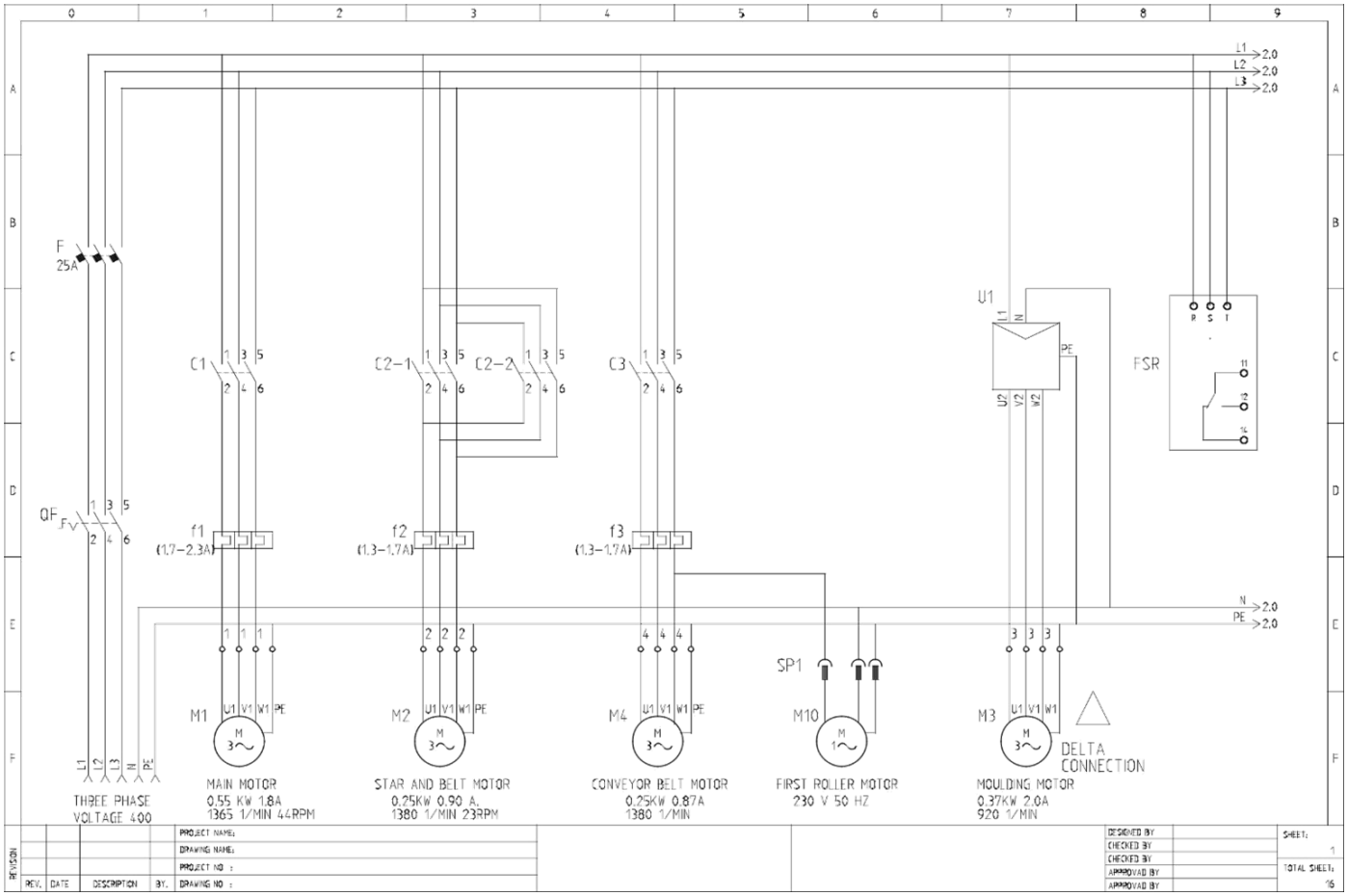

SAFETY RELAY
XPS-AF5130
SR-1
+24 VDC
-24 VDC
FRONT COVER
BACK COVER
BACK TOP LID
CONTROL PANEL SIDE LID COVER-1
DOUGH OUTFEED GUARD LID COVER
SIDE COVER-1
SIDE COVER-2
CONTROL PANEL SIDE LID COVER-2
X45
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
SHEET: 11
TOTAL SHEET: 13
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
REVISION
REV.
DATE
DESCRIPTION
BY.

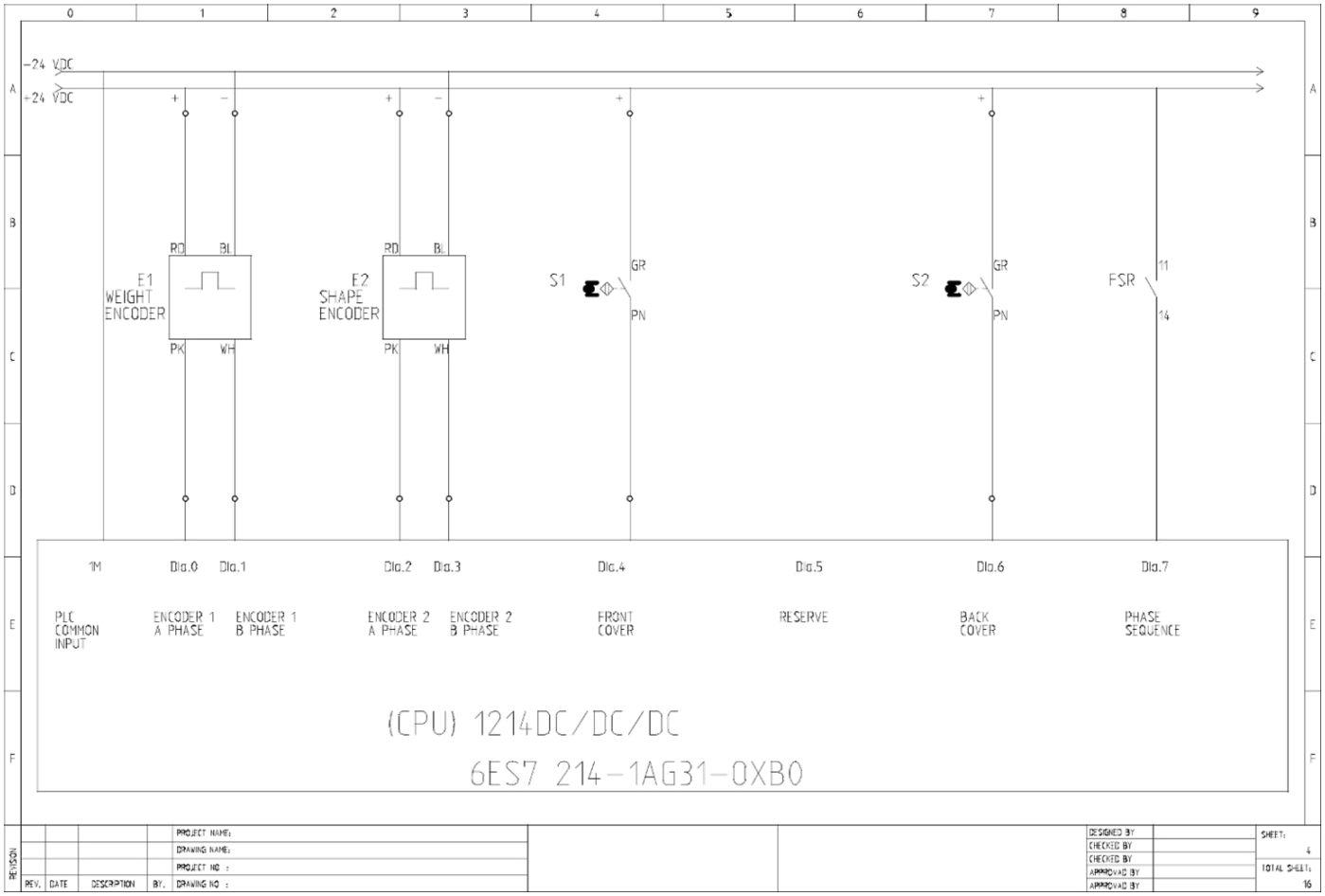

SAFETY RELAY-2
XPS-AF5130
SR-2
HOPPER SWITCH
+24 VDC
-24 VDC
from f2 thermal
X37
10
10.1
11
S3-1
S3
432
433
430
431
A1
A2
S33
S39
S11
S12
S21
S22
13
14
23
24
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
REV.
DATE
DESCRIPTION
BY.
REVISION
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
SHEET: 12
TOTAL SHEET: 13

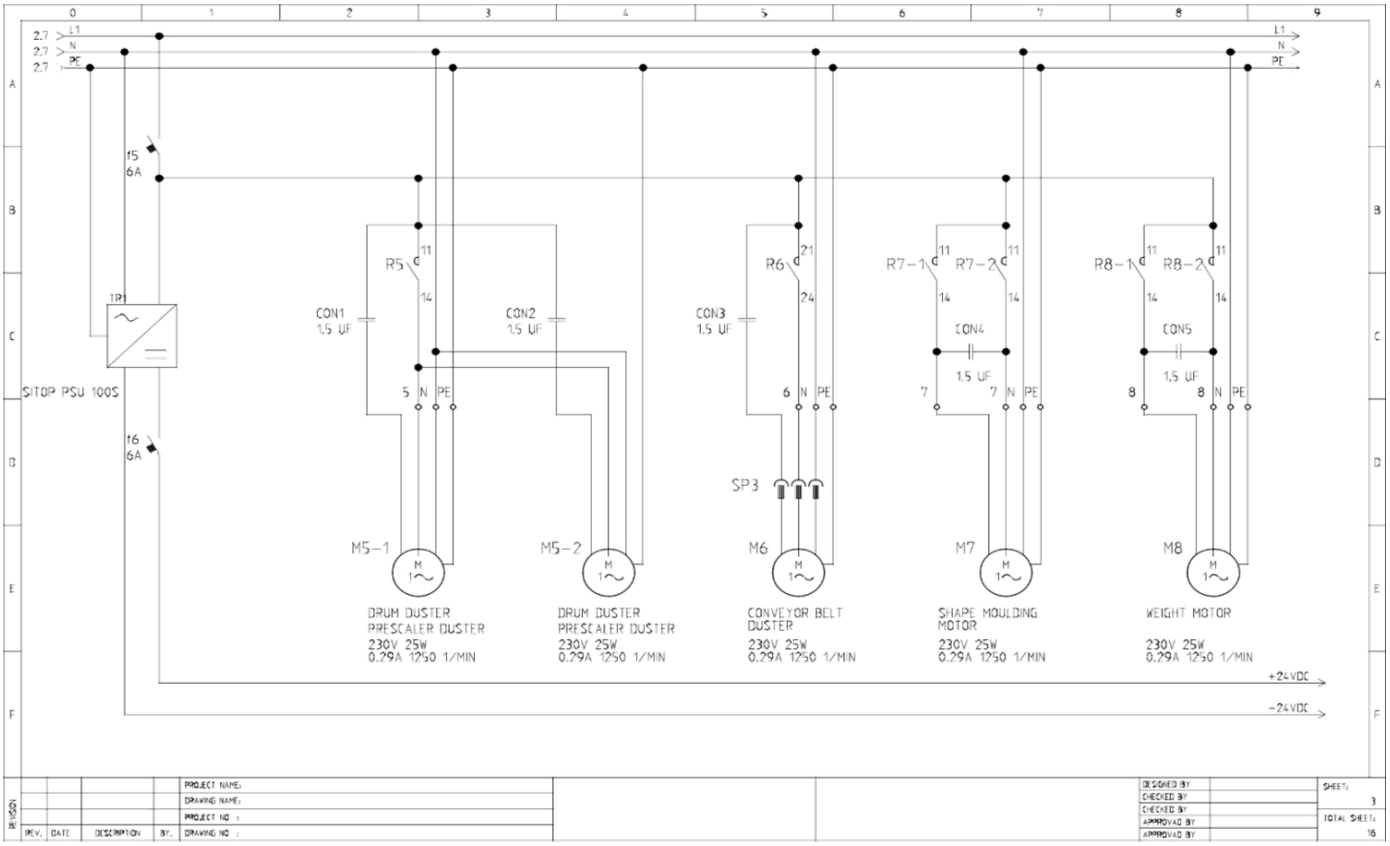

DRIVER PARAMETERS
1-00=65
1-09=0.5
1-10=0.5
2-00=d4
2-01=d1
4-04=d2
9-00=d2
9-01=d1
9-04=d1
3-03=d8
VFD007L21A
DVP08SM11N
DVP08SM11N
DVP16SP11T
DVP16SP11T
DVP14SS211T
DOP-B07E415
RS 485
RS 485
COM2
+24 VDC
-24 VDC
+24 VDC
-24 VDC
+A
-B
+A
-B
+A
-B
10.1
11
SHEET: 13
TOTAL SHEET: 13
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
REVISION
REV.
DATE
DESCRIPTION
BY.

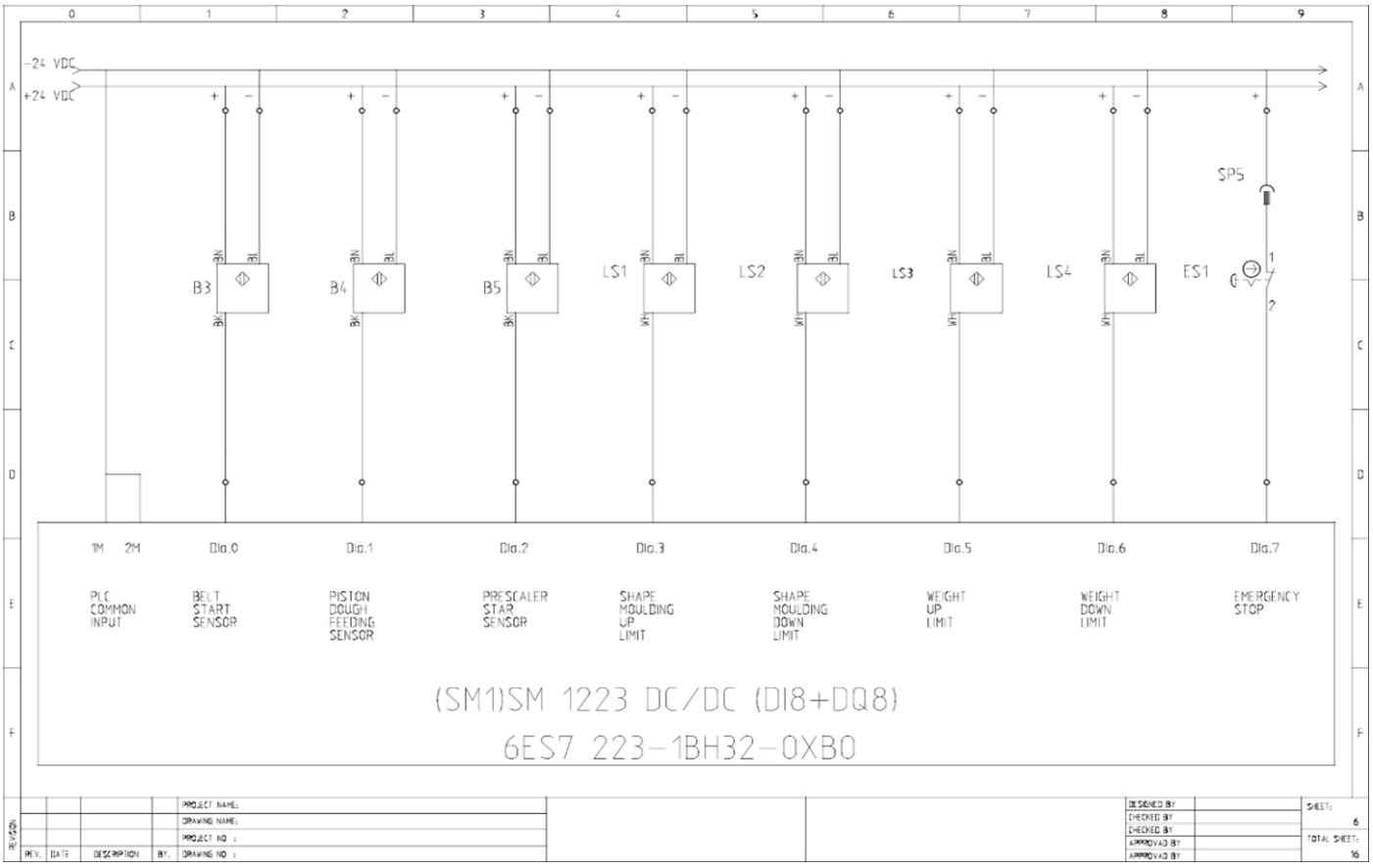
15. Electrical Information – Roll Forming Unit (if fitted):

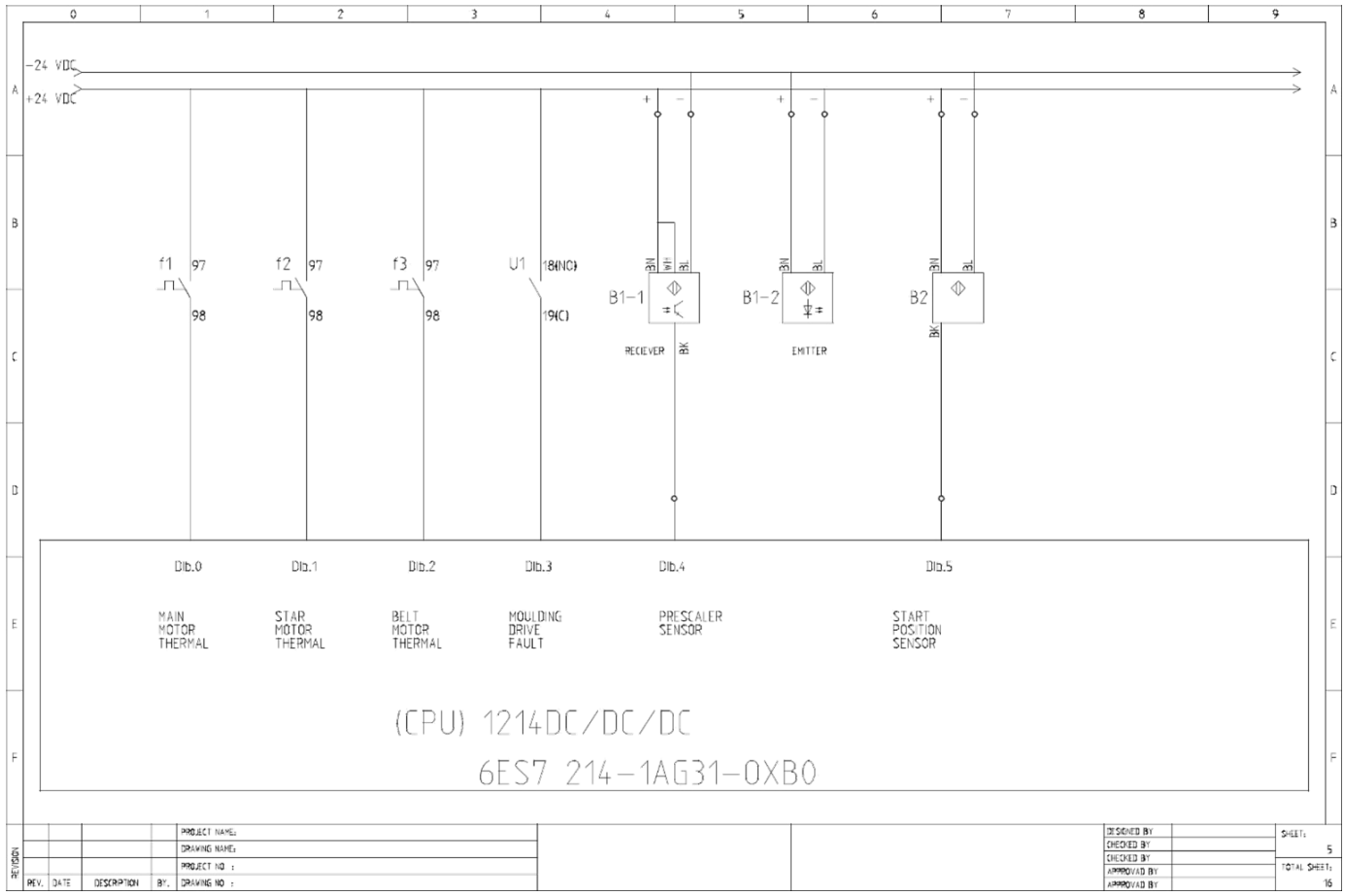


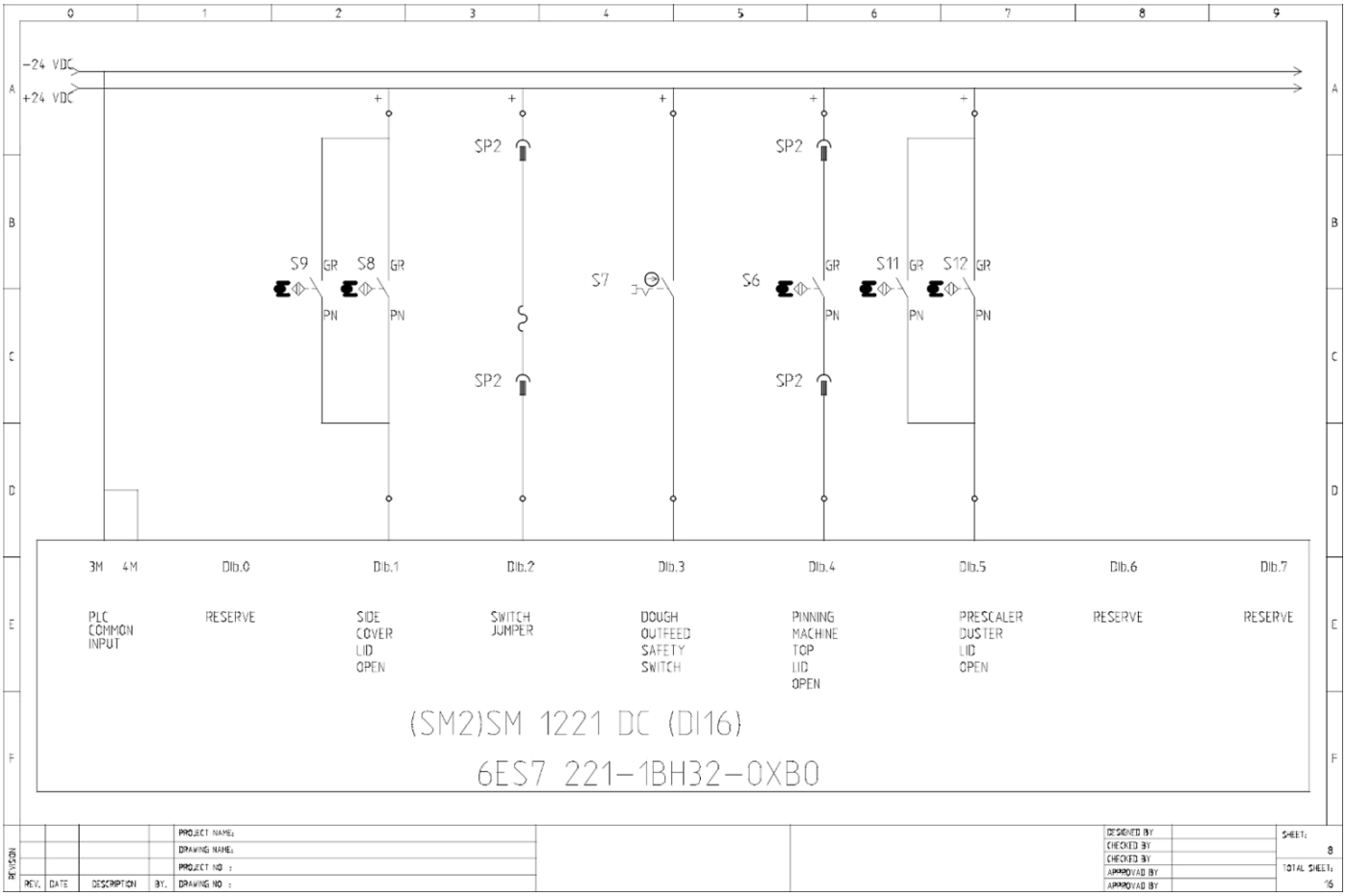

L1 2.0
L2 2.0
L3 2.0
F 25A
QF
C1
C2-1
C2-2
C3
f1 (1.7–2.3A)
f2 (1.3–1.7A)
f3 (1.3–1.7A)
U1
FSR
N 2.0
PE 2.0
SP1
M1
M2
M4
M10
M3
THREE PHASE VOLTAGE 400
MAIN MOTOR 0.55 KW 1.8A 1365 1/MIN 44RPM
STAR AND BELT MOTOR 0.25KW 0.90 A. 1380 1/MIN 23RPM
CONVEYOR BELT MOTOR 0.25KW 0.87A 1380 1/MIN
FIRST ROLLER MOTOR 230 V 50 HZ
MOULDING MOTOR 0.37KW 2.0A 920 1/MIN
DELTA CONNECTION
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
SHEET: 1
TOTAL SHEET: 16

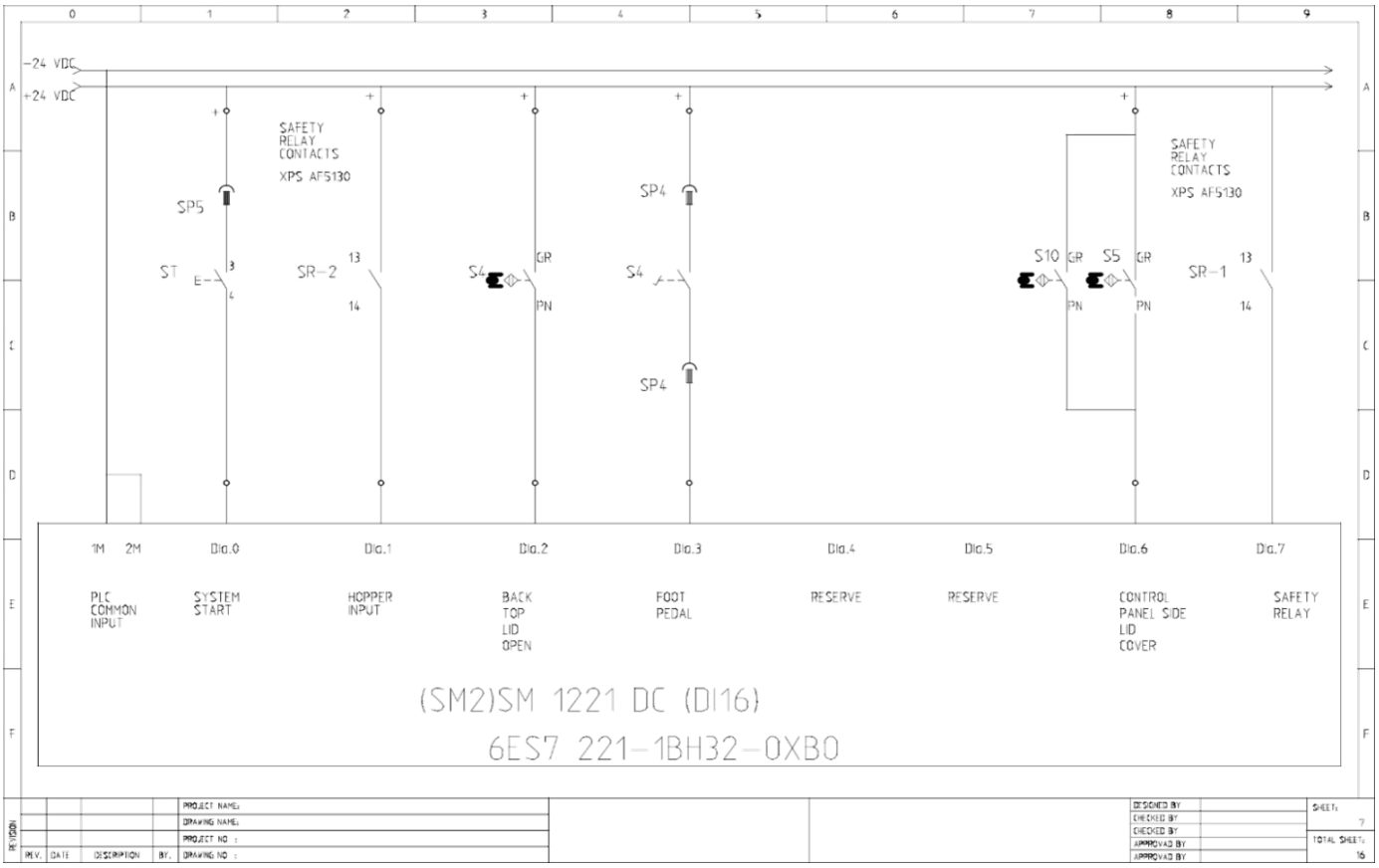

-24 VDC
+24 VDC
E1 WEIGHT ENCODER
E2 SHAPE ENCODER
S1
S2
FSR
PD
BL
PK
WH
GR
PN
1M
Dia.0
Dia.1
Dia.2
Dia.3
Dia.4
Dia.5
Dia.6
Dia.7
PLC COMMON INPUT
ENCODER 1 A PHASE
ENCODER 1 B PHASE
ENCODER 2 A PHASE
ENCODER 2 B PHASE
FRONT COVER
RESERVE
BACK COVER
PHASE SEQUENCE
(CPU) 1214DC/DC/DC
6ES7 214-1AG31-0XB0
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
SHEET: 4
TOTAL SHEET: 16

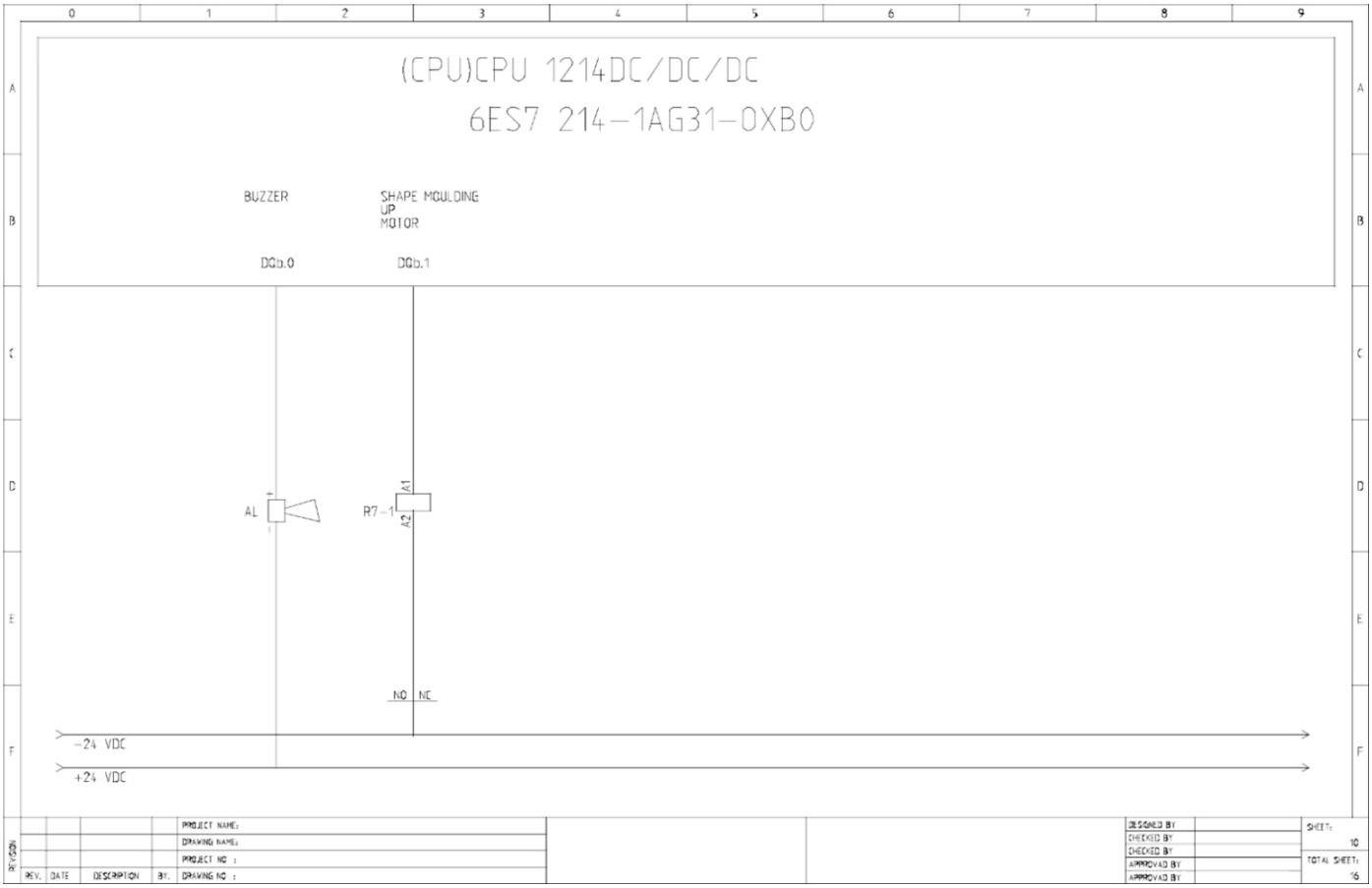

L1
N
PE
f5
6A
f6
6A
TR1
SITOP PSU 100S
R5
R6
R7-1
R7-2
R8-1
R8-2
CON1
1.5 UF
CON2
1.5 UF
CON3
1.5 UF
CON4
1.5 UF
CON5
1.5 UF
SP3
M5-1
M5-2
M6
M7
M8
DRUM DUSTER
PRESCALER DUSTER
230V 25W
0.29A 1250 1/MIN
DRUM DUSTER
PRESCALER DUSTER
230V 25W
0.29A 1250 1/MIN
CONVEYOR BELT
DUSTER
230V 25W
0.29A 1250 1/MIN
SHAPE MOULDING
MOTOR
230V 25W
0.29A 1250 1/MIN
WEIGHT MOTOR
230V 25W
0.29A 1250 1/MIN
+24VDC
-24VDC
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVED BY
APPROVED BY
SHEET: 3
TOTAL SHEET: 16


-24 VDC
+24 VDC
SP5
B3
B4
B5
LS1
LS2
LS3
LS4
ES1
1M
2M
DIa.0
DIa.1
DIa.2
DIa.3
DIa.4
DIa.5
DIa.6
DIa.7
PLC
COMMON
INPUT
BELT
START
SENSOR
PISTON
DOUGH
FEEDING
SENSOR
PRESCALER
STAR
SENSOR
SHAPE
MOULDING
UP
LIMIT
SHAPE
MOULDING
DOWN
LIMIT
WEIGHT
UP
LIMIT
WEIGHT
DOWN
LIMIT
EMERGENCY
STOP
(SM1)SM 1223 DC/DC (DI8+DQ8)
6ES7 223-1BH32-0XB0
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVED BY
APPROVED BY
SHEET: 6
TOTAL SHEET: 16


-24 VDC
+24 VDC
f1 97 98
f2 97 98
f3 97 98
U1 18(NO) 19(C)
B1-1
B1-2
B2
RECIEVER
EMITTER
BN
WH
BL
BK
Dib.0
Dib.1
Dib.2
Dib.3
Dib.4
Dib.5
MAIN MOTOR THERMAL
STAR MOTOR THERMAL
BELT MOTOR THERMAL
MOULDING DRIVE FAULT
PRESCALER SENSOR
START POSITION SENSOR
(CPU) 1214DC/DC/DC
6ES7 214-1AG31-0XB0
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
REV. DATE DESCRIPTION BY.
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
SHEET: 5
TOTAL SHEET: 16


-24 VDC
+24 VDC
SP2
SP2
SP2
SP2
S9 GR PN
S8 GR PN
S7
S6 GR PN
S11 GR PN
S12 GR PN
3M 4M
Dib.0
Dib.1
Dib.2
Dib.3
Dib.4
Dib.5
Dib.6
Dib.7
PLC COMMON INPUT
RESERVE
SIDE COVER LID OPEN
SWITCH JUMPER
DOUGH OUTFEED SAFETY SWITCH
PINNING MACHINE TOP LID OPEN
PRESCALER DUSTER LID OPEN
RESERVE
RESERVE
(SM2)SM 1221 DC (DI16)
6ES7 221-1BH32-0XB0
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
REV. DATE DESCRIPTION BY.
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
SHEET: 8
TOTAL SHEET: 16


-24 VDC
+24 VDC
SAFETY RELAY CONTACTS XPS AF5130
SP5
ST
SR-2
S6
SP4
S4
SP4
SAFETY RELAY CONTACTS XPS AF5130
S10
S5
SR-1
GR
PN
1M
2M
DIa.0
DIa.1
DIa.2
DIa.3
DIa.4
DIa.5
DIa.6
DIa.7
PLC COMMON INPUT
SYSTEM START
HOPPER INPUT
BACK TOP LID OPEN
FOOT PEDAL
RESERVE
RESERVE
CONTROL PANEL SIDE LID COVER
SAFETY RELAY
(SM2)SM 1221 DC (DI16)
6ES7 221-1BH32-0XB0
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
REV.
DATE
DESCRIPTION
BY.
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
SHEET:
TOTAL SHEET:
16


(CPU)CPU 1214DC/DC/DC
6ES7 214-1AG31-0XB0
BUZZER
SHAPE MOULDING UP MOTOR
DQb.0
DQb.1
AL
R7-1
A1
A2
NO
NC
-24 VDC
+24 VDC
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
REV.
DATE
DESCRIPTION
BY.
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
SHEET:
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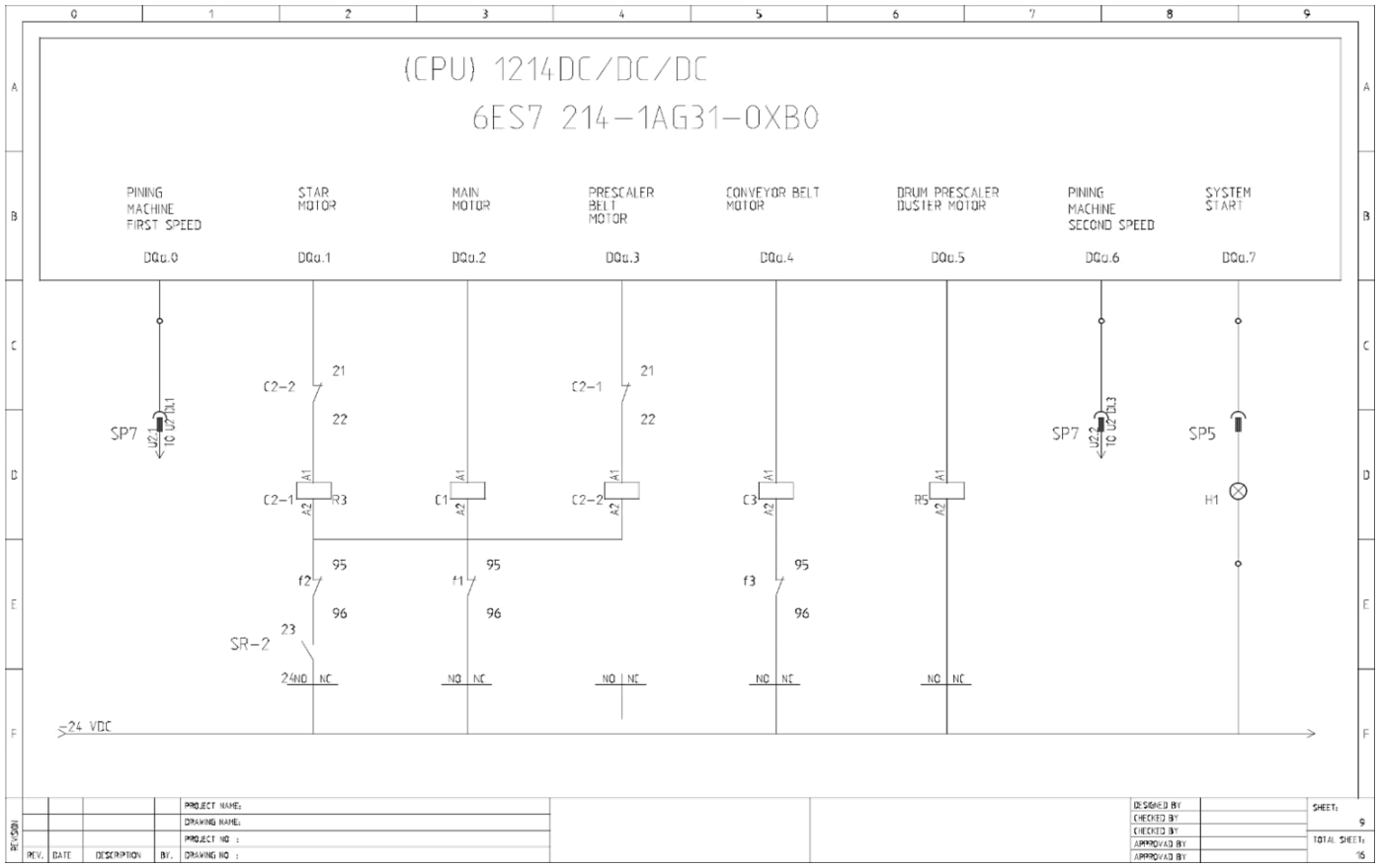
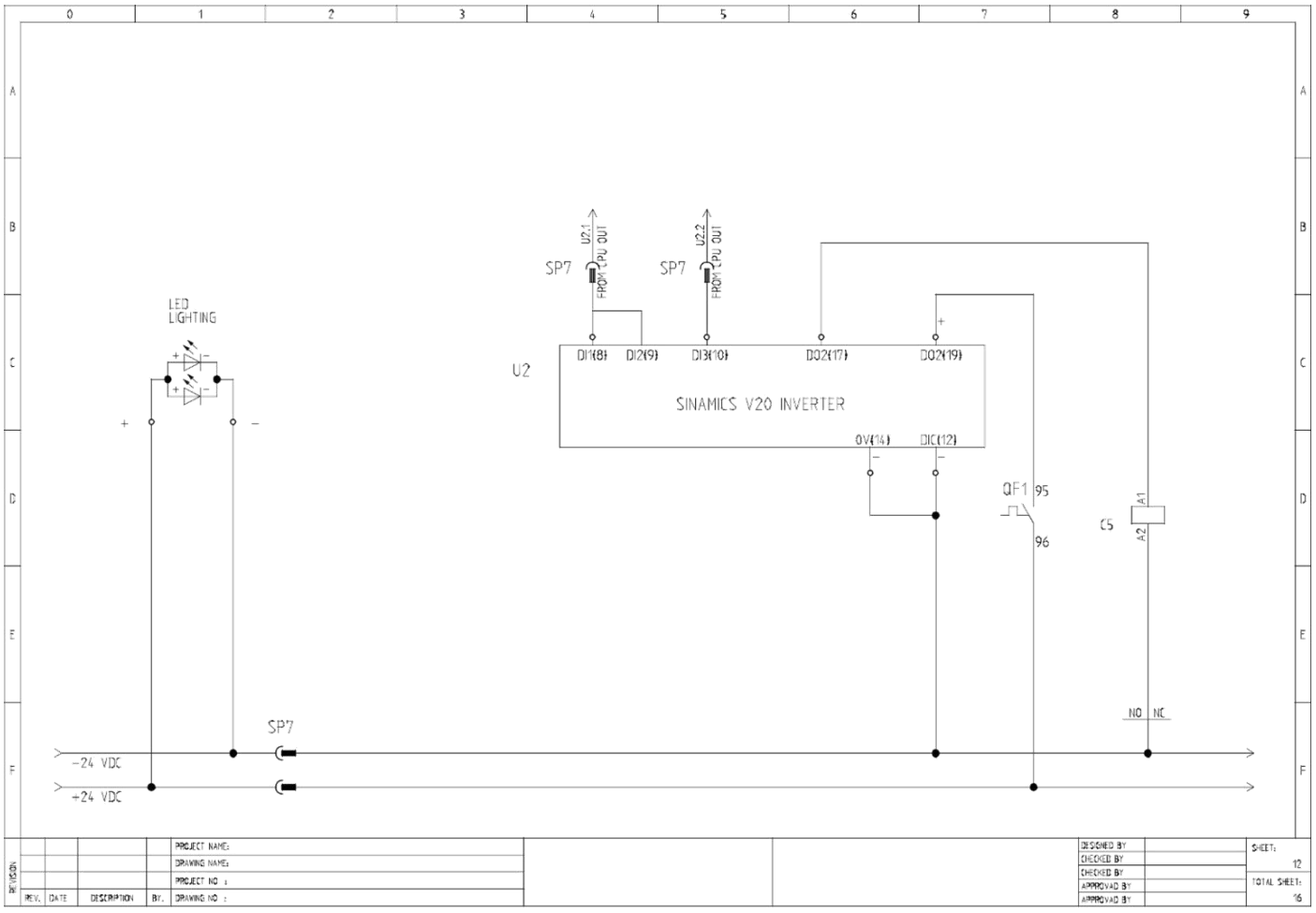
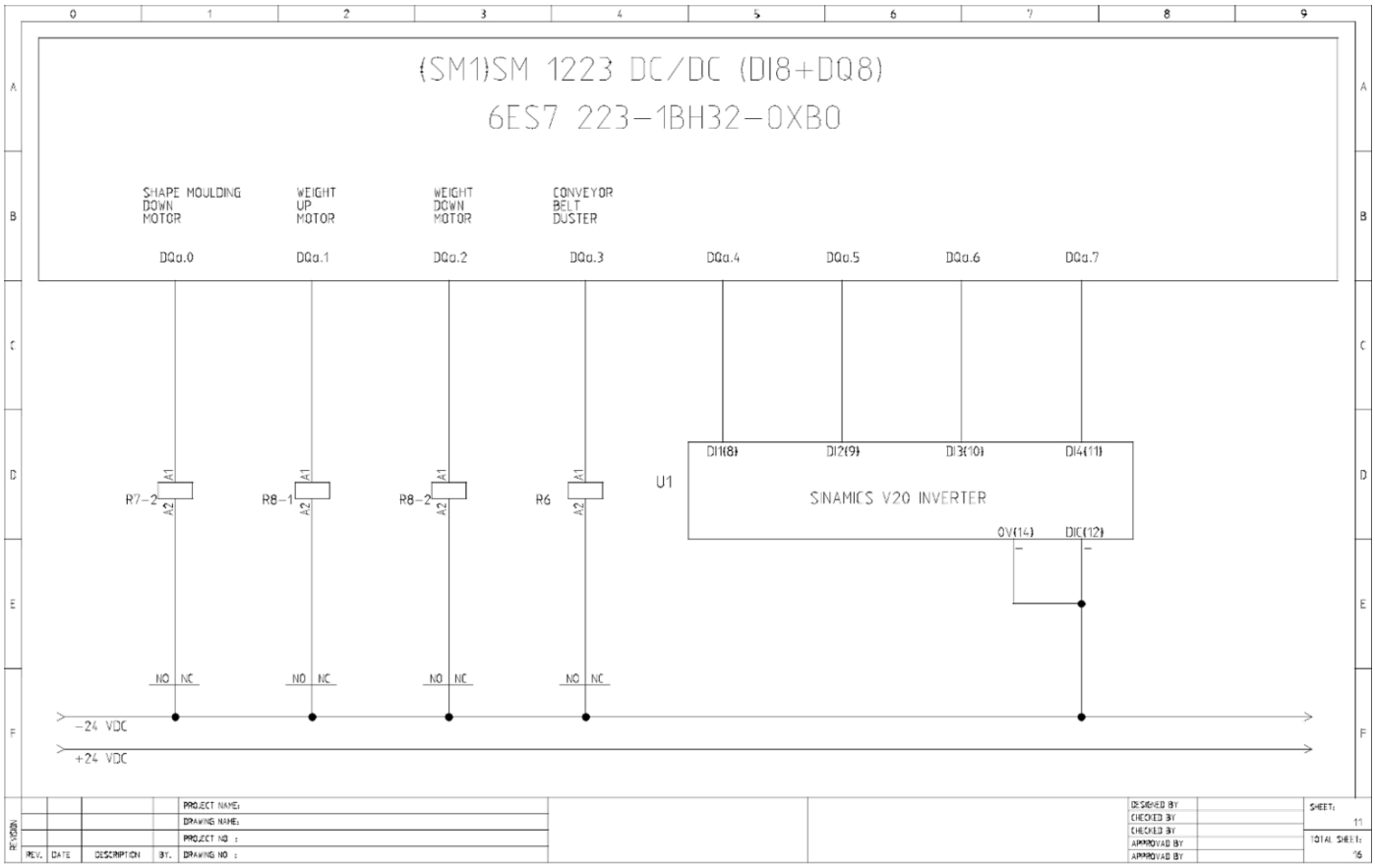
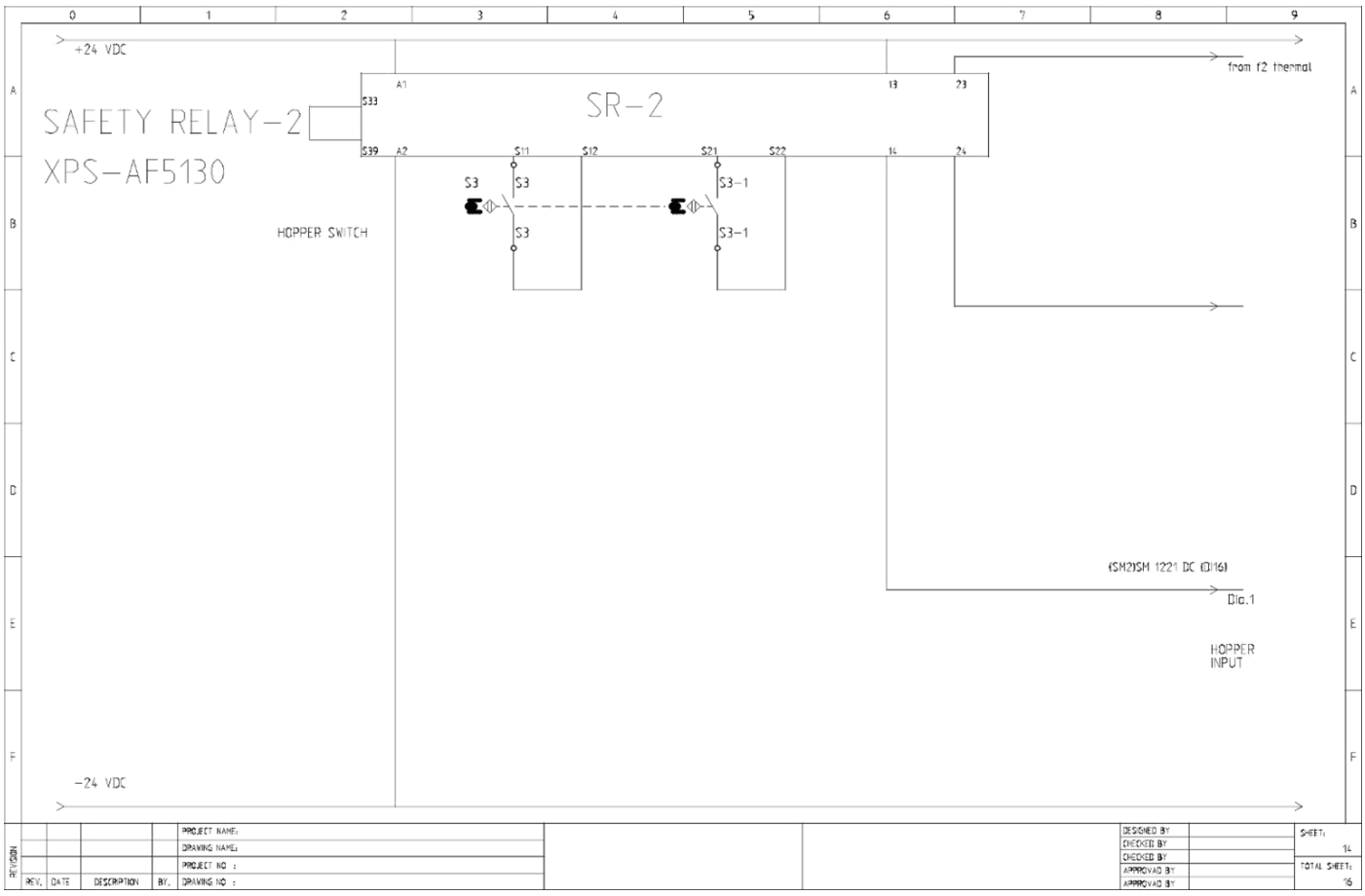
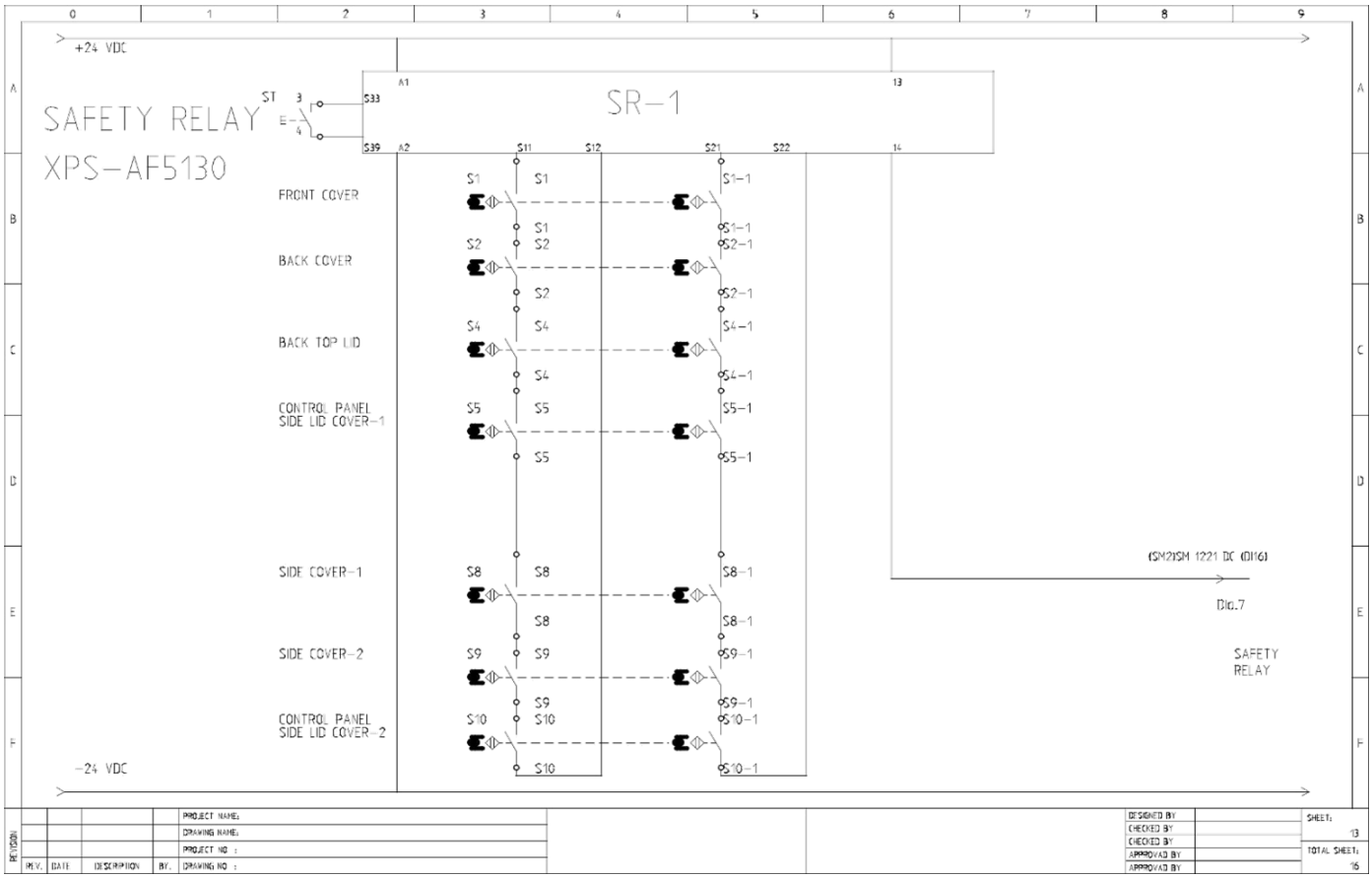
TOTAL SHEET:
16


(CPU) 1214DC/DC/DC
6ES7 214-1AG31-0XB0
PINING MACHINE FIRST SPEED
STAR MOTOR
MAIN MOTOR
PRESCALER BELT MOTOR
CONVEYOR BELT MOTOR
DRUM PRESCALER DUSTER MOTOR
PINING MACHINE SECOND SPEED
SYSTEM START
DQa.0
DQa.1
DQa.2
DQa.3
DQa.4
DQa.5
DQa.6
DQa.7
SP7
C2-2
C2-1
C1
C3
R5
SP5
H1
SR-2
+24 VDC
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
DESIGNED BY
CHECKED BY
APPROVAD BY
SHEET: 9
TOTAL SHEET: 16


LED LIGHTING
SP7
U2
SINAMICS V20 INVERTER
DI1(8)
DI2(9)
DI3(10)
DO2(17)
DO2(19)
0V(14)
DIC(12)
QF1
C5
-24 VDC
+24 VDC
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
DESIGNED BY
CHECKED BY
APPROVAD BY
SHEET: 12
TOTAL SHEET: 16

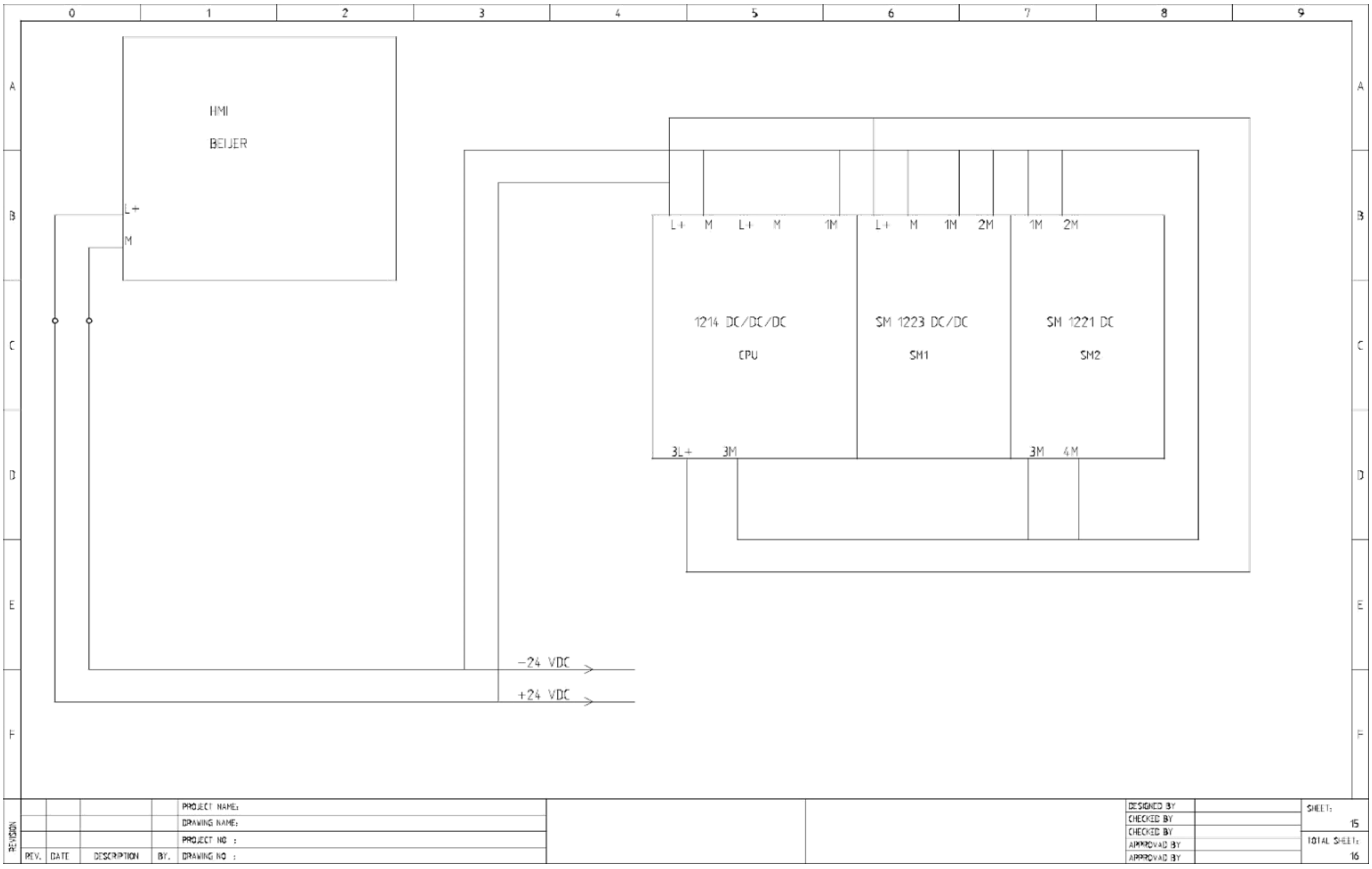

(SM1)SM 1223 DC/DC (DI8+DQ8)
6ES7 223-1BH32-0XB0
SHAPE MOULDING DOWN MOTOR
WEIGHT UP MOTOR
WEIGHT DOWN MOTOR
CONVEYOR BELT DUSTER
DQa.0
DQa.1
DQa.2
DQa.3
DQa.4
DQa.5
DQa.6
DQa.7
R7-2
R8-1
R8-2
R6
A1
A2
NO NC
U1
DI1(8)
DI2(9)
DI3(10)
DI4(11)
SINAMICS V20 INVERTER
0V(14)
DIC(12)
-24 VDC
+24 VDC
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
REV. DATE DESCRIPTION BY.
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
SHEET: 11
TOTAL SHEET: 16


+24 VDC
from f2 thermal
SAFETY RELAY-2
XPS-AF5130
SR-2
A1
A2
S33
S39
13
23
14
24
S11
S12
S21
S22
S3
S3-1
HOPPER SWITCH
(SM2)SM 1221 DC (DI16)
DIc.1
HOPPER INPUT
-24 VDC
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
REV. DATE DESCRIPTION BY.
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
SHEET: 14
TOTAL SHEET: 16



	U1 PARAMETERS (MOULDING MOTOR)		U2 PARAMETERS (PINNER TOP MOTOR)	
MOTOR VOLTAGE	P 0304	230 V	P 0304	230 V
MOTOR CURRENT	P 0305	2.0 A	P 0305	1.45 A
MOTOR POWER	P 0307	0.37 KW	P 0307	0.55 KW
MOTOR COSQ	P 0308	0.892	P 0308	0.892
USER ACCESS	P 003	4	P 003	4
COMMISSIONING	P 0010	1	P 0010	1
MOTOR FREQUENCY	P 0310	50 HZ	P 0310	50 HZ
MOTOR SPEED	P 0311	920 RPM	P 0311	1435 RPM
CONNECTION MACRO	P 0717	CN 004	P 0717	CN 003
DIGITAL OUT 2	P0732	52.7	P 0732	52.2
MIN. FREQUENCY	P 1080	10 HZ	P 1080	10 HZ
MAX. FREQUENCY	P 1082	75 HZ	P 1082	75 HZ
RAMP-UP TIME	P 1120	0.5	P 1120	0.5
RAMP-DOWN TIME	P 1121	0.5	P 1121	0.5
FIRST SPEED	P 1001	10 HZ	P 1001	25 HZ
SECOND SPEED	P 1002	15 HZ	P 1002	60HZ
	P 1003	20 HZ		
	P 1004	25 HZ		
	P 1005	30 HZ		
	P 1006	35 HZ		
	P 1007	40 HZ		
	P 1008	45 HZ		
	P 1009	50 HZ		
	P 1010	55 HZ		
	P 1011	60 HZ		
	P 1012	65 HZ		
	P 1013	70 HZ		
	P 1014	75 HZ		

PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
SHEET: 16
TOTAL SHEET: 16


HMI
BEIJER
L+
M
L+ M L+ M 1M L+ M 1M 2M 1M 2M
1214 DC/DC/DC
CPU
SM 1223 DC/DC
SM1
SM 1221 DC
SM2
3L+ 3M
3M 4M
-24 VDC
+24 VDC
PROJECT NAME:
DRAWING NAME:
PROJECT NO :
DRAWING NO :
REV. DATE DESCRIPTION BY.
DESIGNED BY
CHECKED BY
CHECKED BY
APPROVAD BY
APPROVAD BY
SHEET: 15
TOTAL SHEETS: 16

16. Environmental Disposal:

- Care should be taken when deposing of the machine when it comes to the end of its working life
- All parts should be disposed of in the most appropriate, environmentally-friendly manner possible, either by recycling or other means of disposal which complies with local regulations
- Only dispose of the machine safely and legally
- The Environmental Protection Act 1990 applies in the UK

17. Service & Spares – Contact Details:

If a fault arises with the Two-Pocket Roll Plant or the Roll Forming Unit (if fitted), please do not hesitate to contact MONO's Customer Service Department, quoting the machine's **Serial Number** which can be found on the Manufacturer's Plate and on the front cover of this document.

MONO Equipment
Queensway
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Swansea.
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United Kingdom

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