

# FORMATIC

## Instruction Manual



**DEIGHTON**

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# **FORMATIC**

## **CONTENTS**

1. Introduction
2. Technical Specification
3. Installation / Preparation for Production
4. Operating the Machine
5. Cleaning
6. Safety
7. Maintenance
8. Optional Extras;
  - Hoppers
  - Conveyors
  - Auto Wire Clean
  - Paper Attachment
10. Recommended Spares List
11. Wiring Diagrams

## **(1) INTRODUCTION**

The **Formatic** range by Deighton Manufacturing (UK) Ltd guarantees accurate forming and portioning of a wide variety of food mixtures and products.

Encompassing Retail, Commercial and Industrial sized models, the range has been designed to accommodate the needs of both high and low volume producers.

Simplicity is the strength of the Formatic system. Suited to a variety of mixtures of numerous textures and consistencies, the formatic uses synchronised paddles to gently press mixture into the required form shape.

Assisted by the wire drum scraper, the formed product is then smoothly ejected onto the conveyor, presenting it for packaging or further processing.

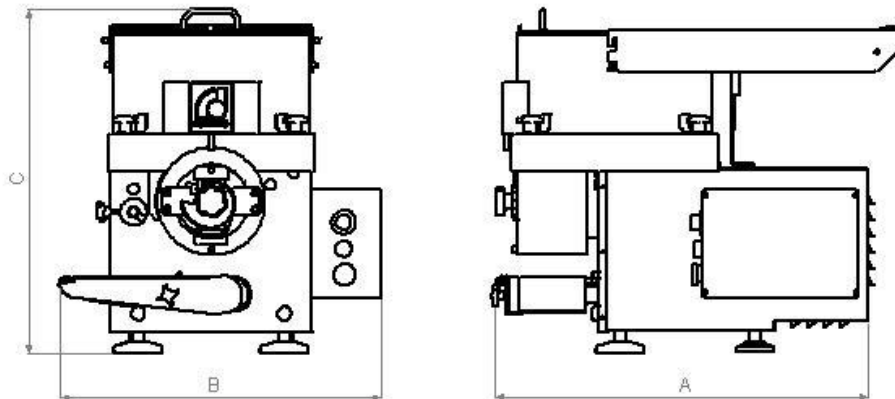
## (2) TECHNICAL SPECIFICATION

### Formatic

#### **UL approved Formatics Only**

Power requirements -

On UL approved machines use a 20 amp Class B GFCI (receptacle).



<b><u>Retail Machine</u></b>	<b><u>R1200</u></b>	<b><u>R2200</u></b>	<b><u>R3000</u></b>
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**Size:**

Length (A)	700	700	700
Width (B)	600	600	600
Height (C)	640	640	640

<b>Weight:-</b>	75 Kg	75 Kg	75 Kg
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<b>Product Output:-</b>	1200/hr	2200/hr	3000/hr
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<b>Hopper Capacity:-</b>	18 litres	18 litres	18 litres
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<b>Product Size (max):-</b>	140mm x 120mm x 24mm thick (34mm deep drop)		
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<b>Electrical Supply:-</b>	220/240V 50 Hz AC		
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<b>Power:-</b>	550 Watt	550 Watt	750 Watt
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It should be noted that on certain products it is possible to increase the product out put by specifying a 180 degree machine. This enables a form to be place on each side of the drum and effectively doubling product output.

<b><u>Commercial Machine</u></b>	<b><u>C2000</u></b>	<b><u>C4000</u></b>
<b>Size:</b>		
Length (A)	700	700
Width (B)	800	800
Height (C)	700	700
<b>Weight:-</b>	90 Kg	90 Kg
<b>Product Output:-</b>	2000/hr	4000/hr
<b>Hopper Capacity:-</b>	20 Kg	20 Kg
<b>Product Size (max):-</b>	135mm x 135mm x 24mm thick (34mm deep drop)	
<b>Electrical Supply:-</b>	220/240V 50 Hz AC	
<b>Power:-</b>	550 Watt	550 Watt

It should be noted that on certain products it is possible to increase the product out put by specifying a 180 degree machine. This enables a form to be place on each side of the drum and effectively doubling product output.

<b><u>Industrial Machine</u></b>	<b><u>I4000</u></b>	<b><u>IR4000</u></b>	<b><u>I4000/50</u></b>
<b>Size:</b>			
Length (A)	800	750	800
Width (B)	850	600	850
Height (C)	700	725	785
<b>Weight:-</b>	100 Kg	90 Kg	150 Kg
<b>Product Output:-</b>	4000/hr	4000/hr	4000/hr
<b>Hopper Capacity:-</b>	30 Kg	15 Kg	30 Kg
<b>Product Size (max):-</b>	150 x 150 x 24	125 x 118 x 50	150 x 150 x 50
<b>Electrical Supply:-</b>	220/240V 50 Hz AC		
<b>Power:-</b>	1500 Watt	1500 Watt	1500 Watt

It should be noted that on certain products it is possible to increase the product out put by specifying a 180 degree machine. This enables a form to be place on each side of the drum and effectively doubling product output.

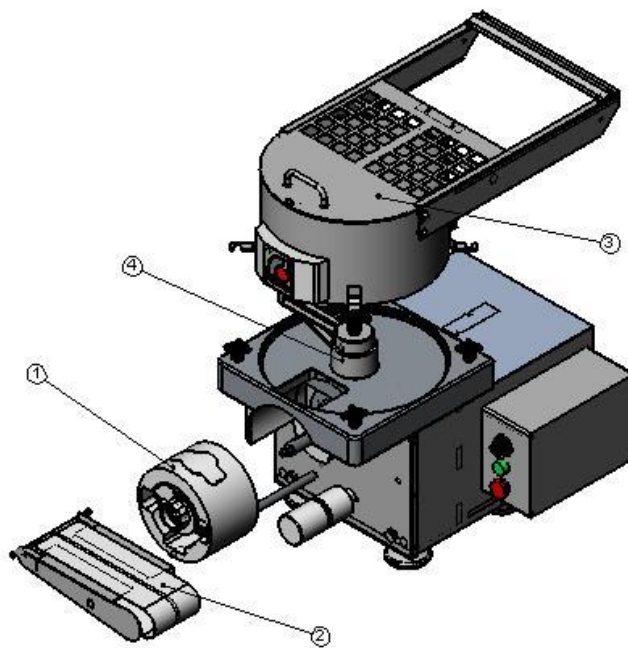
### **(3) INSTALLATION PROCEDURE**

3.1 Check the Formatic for transport damage and report any immediately to Deighton Manufacturing Ltd.

3.2 Before Operating the machine:-

Remove any packaging material

Position the Formatic relative to any other equipment it is to connect with. Connect the machine to the correct supply.



3.3 Step 1; Locate the selected drum onto the drive shaft ensuring that the keyways are aligned and push the drum completely home (if the form is not at the top you may need to lift the ejector set over the cam). Fit the paper cam/guard over the drum on the end of the shaft and secure with locking knob, cam cannot be removed without rotating the hopper due to the safety pin located on each hopper (left hand thread).

Step 2;           Locate the conveyor platform onto the pivot shaft positioned to the bottom left of the drum. Slip the conveyor belt onto the nylon drive roller and around the platform nose roller, with the platform rotated to the 10 o'clock position. Set the platform down so that it rest on the round conveyor stop and lock in place using the hand knob provided. Fit the scraper wire assembly into the support brackets on the nose of the conveyor and adjust the tension.

Step 3;           Ensure the hopper sealing ring is pressed firmly into its retaining slot in the machine top. Slacken the four hopper securing knobs on the top of the machine. Place the hopper into the top machined recess on the hopper seal and rotate such that the hopper securing lugs engage with the hand knob studs. Secure the hopper in place by tightening the hand knobs.

Note: the hopper will only locate in one position with the hopper bars towards the front right of the machine.

Always ensure the hopper is loaded correctly onto the seal in the hopper top.

Check the hopper bar is secure in the hopper. If it has been removed for any reason when it is replaced use locktight to lock in position.

Step 4;           Position the chosen paddles onto the paddle shaft at the top of the machine, ensuring the keyways are aligned, and secure in place with paddle knob.

Step 5;           The scraper shaft assembly (not shown) locates into the housing on the left hand side of the drum. Before assembling the scraper shaft, ensure that the shaft locking screw is clear of the housing bore. Push home the assembly so that the wire support bar nearest the front of the machine engages in the housing slot. To ensure alignment in the housing slot it will be necessary to rotate the housing clockwise with the aid of the locking screw. When in position secure with locking screw.

The working position of the scraper, although factory set, can be adjusted with a grub screw. This is located under a bung on the left hand side of the machine. The tension of the scraper wire can be adjusted by rotating the front scraper bar hand knob.

#### **(4) OPERATING THE MACHINE**

Connect up to the supply and press the green start button. The form drum conveyor and hopper paddles should rotate smoothly and quietly (if a foot switch is fitted this will need depressing to operate).

If any safety interlock is not in place the machine will not operate. Relocate the interlock and press the green start button to operate.

To stop the machine press the red stop button (or release foot switch if fitted).

If the machine will not operate check the following;

1. The machine power is switched on
2. The hopper guard micro switch is in place
3. There is nothing preventing the free rotation of paddles or drum
4. The stop button is not depressed

If, after carrying out these simple checks, you still do not get any rotation when the start button is depressed, please contact your machine supplier or the manufacturer for further assistance.

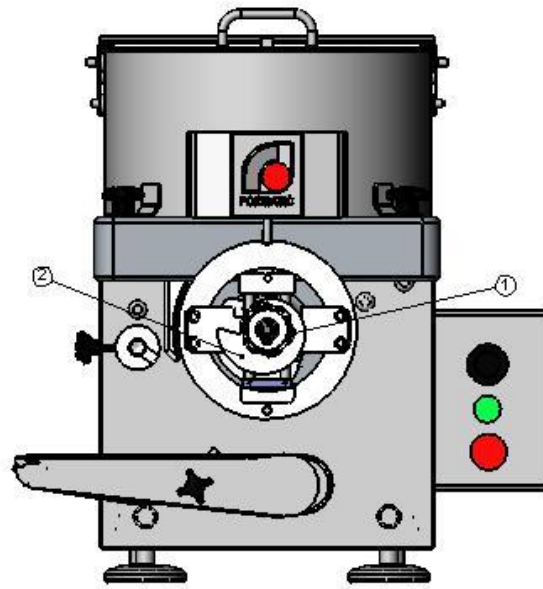
Always clean the machine thoroughly prior to production (see cleaning).

When using an auto wire cleaning system always lubricate the metal shaft the scraper moves along with the food lubrication spray provided prior to using the machine.

Initially practice starting and stopping the machine until you are able to stop the forming drum with the mould at 90 degrees to the hopper, being positioned on the left hand side of the forming drum when viewed from the front. This is the correct rest position and allows for simple removal and replacement of the forming drum and also makes it easy to vary the depth of the form to set the finished products weight.

Always make sure that there are no large pieces of bone or other hard items in the mix as they can damage your machine.

To adjust the thickness and weight of the finished product (the variation available being between 6mm and 34mm, approximately 3 – 8 oz) use the following routine.



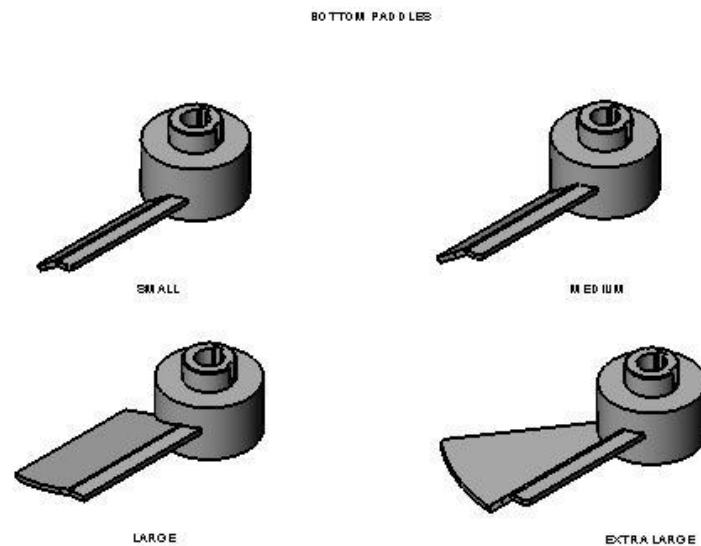
- Approximately half fill the hopper with the mix to be used, checking it's suitability
- Start the machine until two full forms are obtained
- Weigh the fully formed product and either increase or decrease the thickness until the correct weight is achieved. This is done by removing the paper attachment cam/guard, releasing the lock nut (item 1) and turning the spiral cam (item 2) the required amount.
- Re-tighten the lock nut and replace the paper attachment guard/cam and repeat procedure until correct setting is achieved.

The machine is now ready to run.

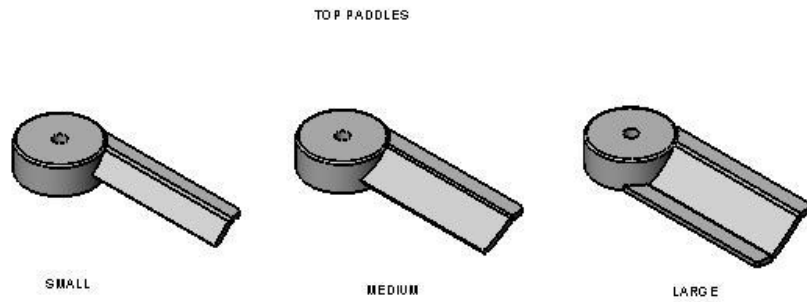
Note; The scraper wire should be kept as clean as possible to aid the release of the product from the drum. The manual scraping of the wire should be carried out in the part of the cycle when the wire is away from the drum.

Generally the size of the paddles should balance with the size of the product being formed i.e., small paddle combination for a small product.

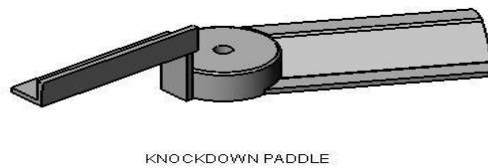
Deighton Manufacturing will supply the machine with a series of paddles suitable for the mix being used and the form sizes being created however you can obtain various sizes and combinations if problems occur with those supplied



With each mix you use for the first time start it with the smallest bottom paddle available with no top paddle (In this case a top paddle spacer will have been supplied if deemed appropriate). If the form will not fill, fit the smallest top paddle and if problems still occur continue to fit a larger bottom then top paddle until the form is filled.



If a mix is sticking to the hopper a causing a ‘tunnelling’ effect a knockdown paddle can be supplied to release the product from the hopper and push it into the path of the pressure paddles.



If, in the unlikely event, problems still occur in filling and forming it may be necessary to modify the mix slightly to achieve the desired results.

## **(5) DISMANTLING AND CLEANING**

**Please ensure the machine is disconnected from the mains supply before proceeding to clean.**

Dismantle the machine in the reverse order to assembly.

Wash all parts with hot water (at a temperature no greater than 60 c) before the product has a chance to dry. Do not use strong alkaline/acid based cleaners.

Parts should not be scraped with metal objects, a plastic scraper is an ideal cleaning aid.

## **(6) SAFETY**

1. Always disconnect mains supply before servicing, cleaning or changing the drum
2. Disconnect mains supply when removing drum and guard
3. The machine should not be run when the drum guard is removed
4. During operation the hopper guard can be opened to refill. This will automatically stop the machine
5. When replacing the scraper wire remove the assembly from the machine. The machine must be disconnected from the mains supply before removing assembly.
6. No attempt should be made to override the safety switches or run the machine without the guards in place
7. Use a 13 amp fuse in the plug

Ensure all operatives read these instructions and are fully conversant with the machines operations and safety procedures

These machines are to be operated by one person, in the case where an open hopper is used the machine is to be isolated before any attempt is made to put hands in the hopper. The machine is not to be operated when anyone is reaching into the hopper whether for cleaning, blockages or any other reasons.

## **(7) MAINTENANCE**

The only maintenance that is required is a light oiling (food lube) of the form drum mechanism and scraper shaft after cleaning. The most beneficial thing to extend the life of the machine is;

- Keep it clean and dry when not in use
- Ensure there are no large, hard objects within the mix
- Ensure lubricated air is used to supply cylinder (if fitted)
- Ensure how the operator knows how the machine works

## **GUARANTEE**

The machine is guaranteed for twelve months against breakdown. The items not covered under the guarantee are those which wear through normal operation. Replacements are readily available from the manufacturer.

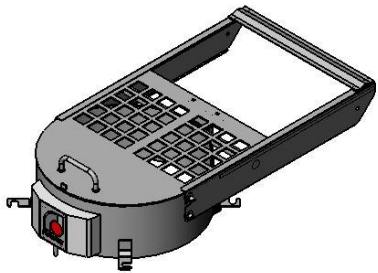
## **(8) OPTIONAL EXTRAS**

### **Hoppers**

As well as the standard hopper supplied with the machine several other hopper options are available for all the range of Formatics.

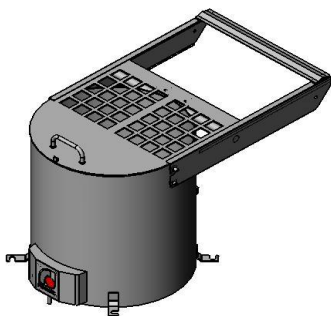
#### **Low Level Hopper**

Generally used for delicate mixes where the product quality can deteriorate when over mixed by the paddles. Requires more regular filling.



#### **Extended Hopper**

Used in situations where a large batch of products is being produced to reduce the frequency of filling.



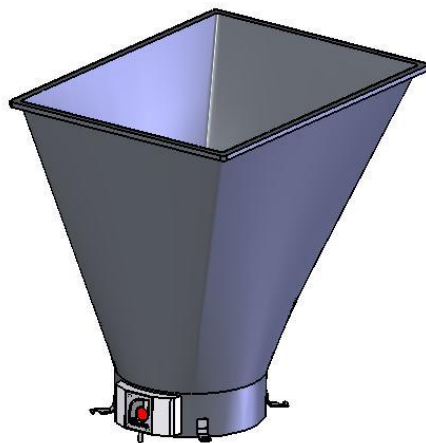
### 75 Litre Hopper

Used in large batch production to reduce the frequency of refilling

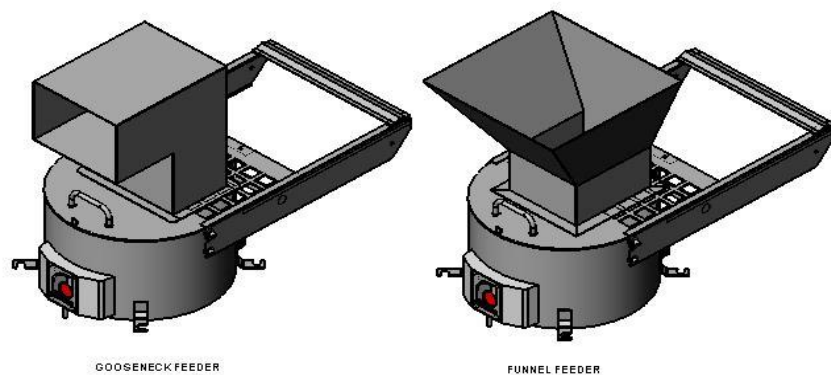


### 200 Litre Hopper

Again used in very large production to reduce frequency of refilling. Can be filled using a 200kg bin lift.



We can also supply a 'gooseneck' or 'funnel' feeder for the standard, low level and extended hoppers. These enable the machine to be continually filled whilst in operation.



## **Conveyors**

The Formatic machines come supplied with a standard length conveyor (length varies depending on model). Also available are extended and jointed conveyors.

Retail Formatic;	Extended conveyors of 750mm and 1200mm long and a jointed conveyor of 750mm long are available.
Commercial Formatic;	Extended conveyors of 1000mm and 1500mm are available and a jointed conveyor of 1000mm.
Industrial Formatic;	Extended conveyors of 1000mm and 1500mm are available and a jointed conveyor of 1000mm.

### **Auto Wire Clean**

On the standard machine the scraper wire is cleaned manually at regular intervals to improve the release of the formed product. On a lot of meat products it is essential to clean the wire after every form.

This can be done automatically with the use of the Auto Wire Clean system. The system uses a pneumatic cylinder and therefore requires a compressed air supply to the machine. A small silent run compressor can also be supplied if required.

Maximum air pressure 145PSI (10Bar) (1MPa).

Minimum air pressure 101.5PSI (7Bar) (0.7MPa).

Food lubrication spray.

### **Paper Attachment**

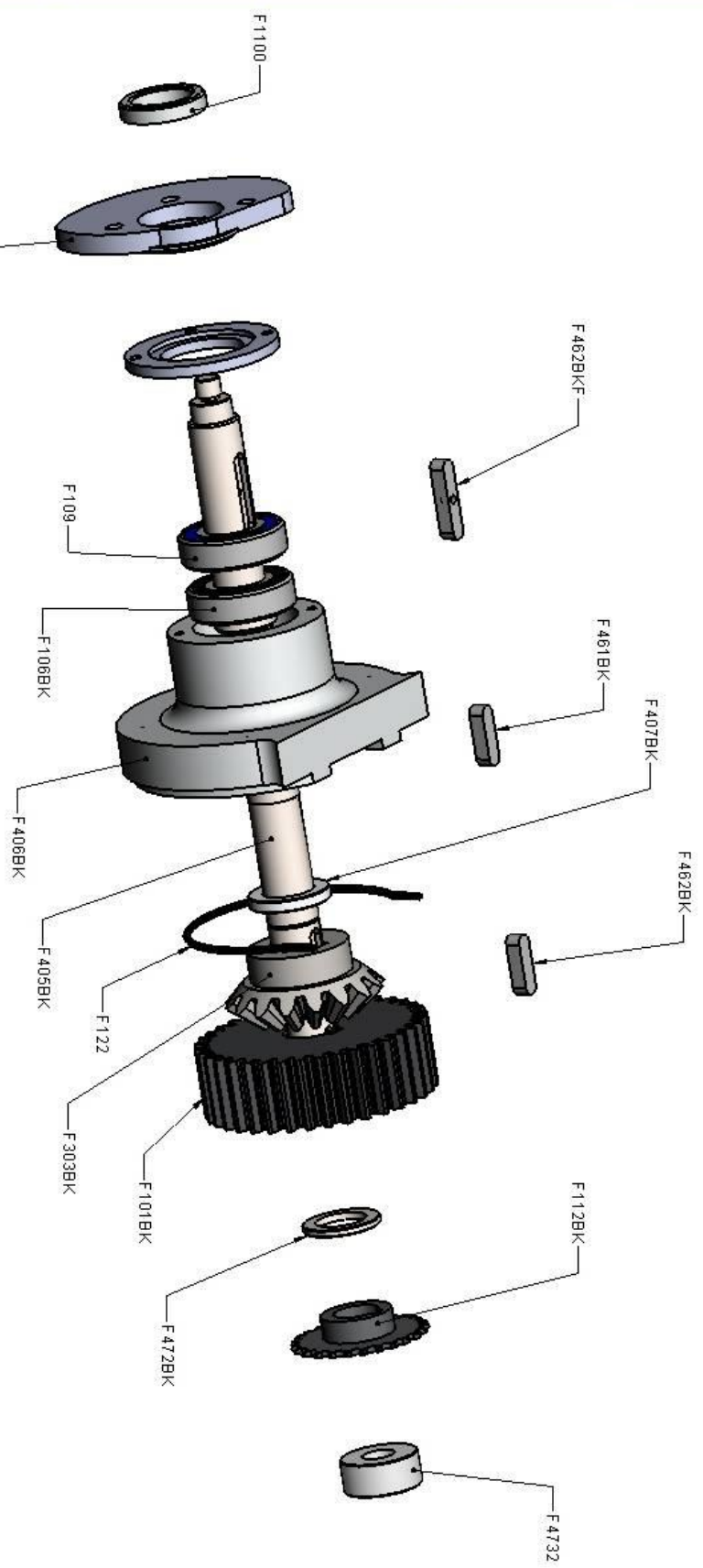
Mainly used in the meat industry when there is a requirement to put paper interleaves between formed products. The papers (which can also be supplied by Deighton Manufacturing) are loaded onto a cartridge and then released onto the base of the formed product before being ejected onto the conveyor. Position of the paper relative to the form can be adjusted simply by rotating the paper attachment cam.

## RECOMMENDED SPARES LIST

<u>Description</u>	<u>Part Number</u>
Scraper Wire	F145
Conveyor Scraper Holder	F452
Scraper Wire Adjustment Screw	F805W
Scraper Tensioning Stud	FM4150
Hopper Seal	F117A (Retail Machine) F117C (Commercial Machine) F135 (Industrial Machine)
Scraper Wire Bush Assembly	F4323
Hopper Knob	F124
Drum Knob	F129A
Paddle Knob	F130
Conveyor Pivot Knob	F127
Start Button Boot	F1004A
Relay	F1039
Relay Base	F1040
Elobau	F1015A
Conveyor Scraper Assem	F496BK (Retail/Commercial) F496 (Industrial)
Drive Chain	F124BK
Split Link	F115

Paddle Shaft Seal	F1141
Drum Shaft Seal	F1100
Scraper Arm (Metal)	F522-1
Scraper Arm (Plastic)	F5221

Part No. FF201C A3



ASSEMBLY DATE - FROM DECEMBER 2014

Detail Tolerances +/- 0.1		Material Specification		Scale 1:2		DO NOT SCALE REMOVE SHARP EDGES		Used On ASSY No	
DIMENSIONS IN MM DRAWING TO BS308 DIMENSIONS ARE FINISHED SIZE		FOR QUOTE ONLY		THIRD ANGLE PROJECTION		Product: COMMERCIAL FO RIMATIC		Sheet 1	
DATE	REV	DATE	REV	DATE	REV	DATE	REV	DATE	REV
000000	1	09/12/11							
Name		Name		Name		Name		Name	
A.L.		A.L.		A.L.		A.L.		A.L.	
CHKD		CHKD		CHKD		CHKD		CHKD	
CMT		CMT		CMT		CMT		CMT	
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REV		REV		REV		REV		REV	
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REV		REV		REV		REV		REV	
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REV		REV		REV		REV		REV	
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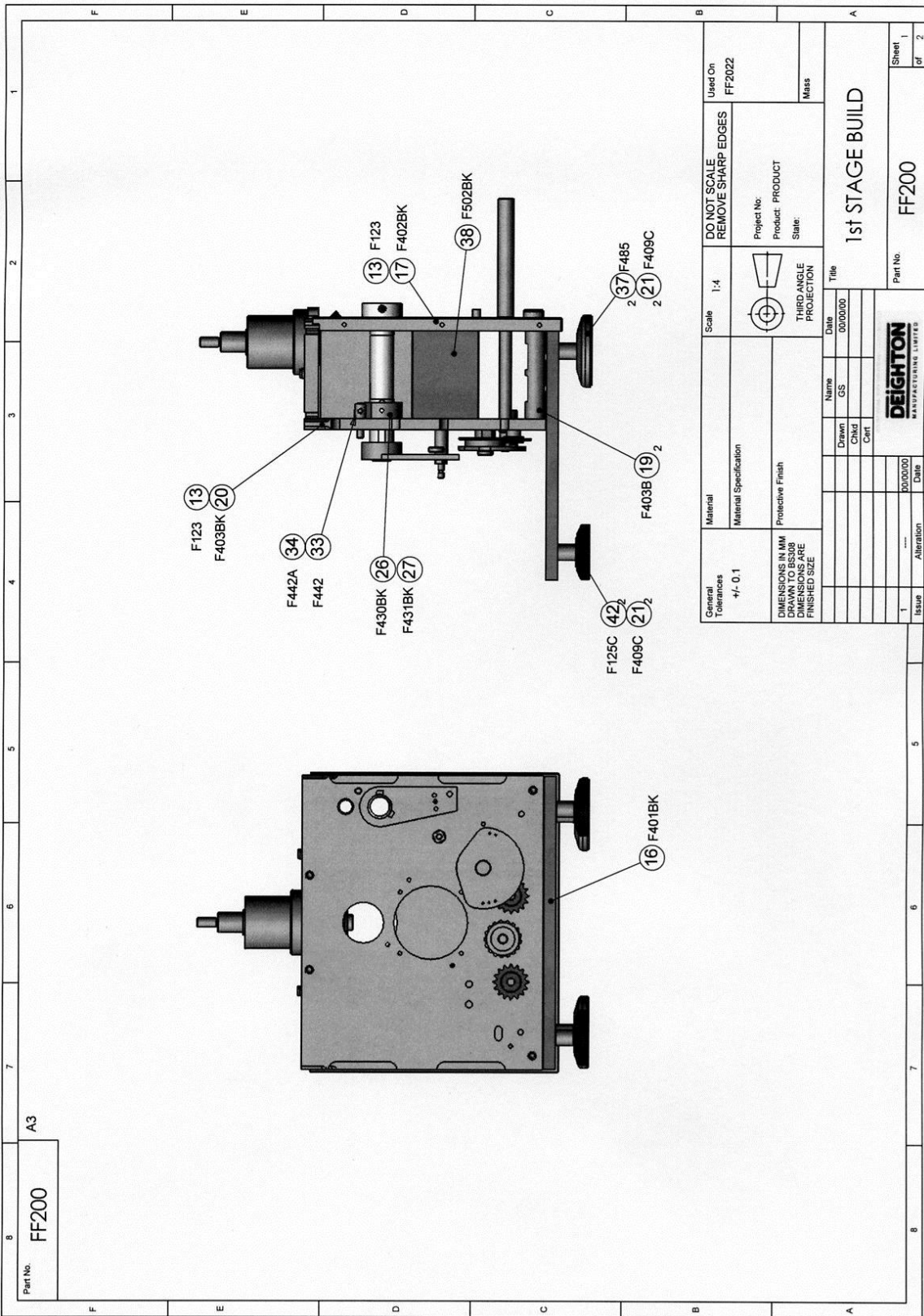


DRUMSHAFT  
ASSEMBLY

Part No. FF201C

Sheet 1 of 1

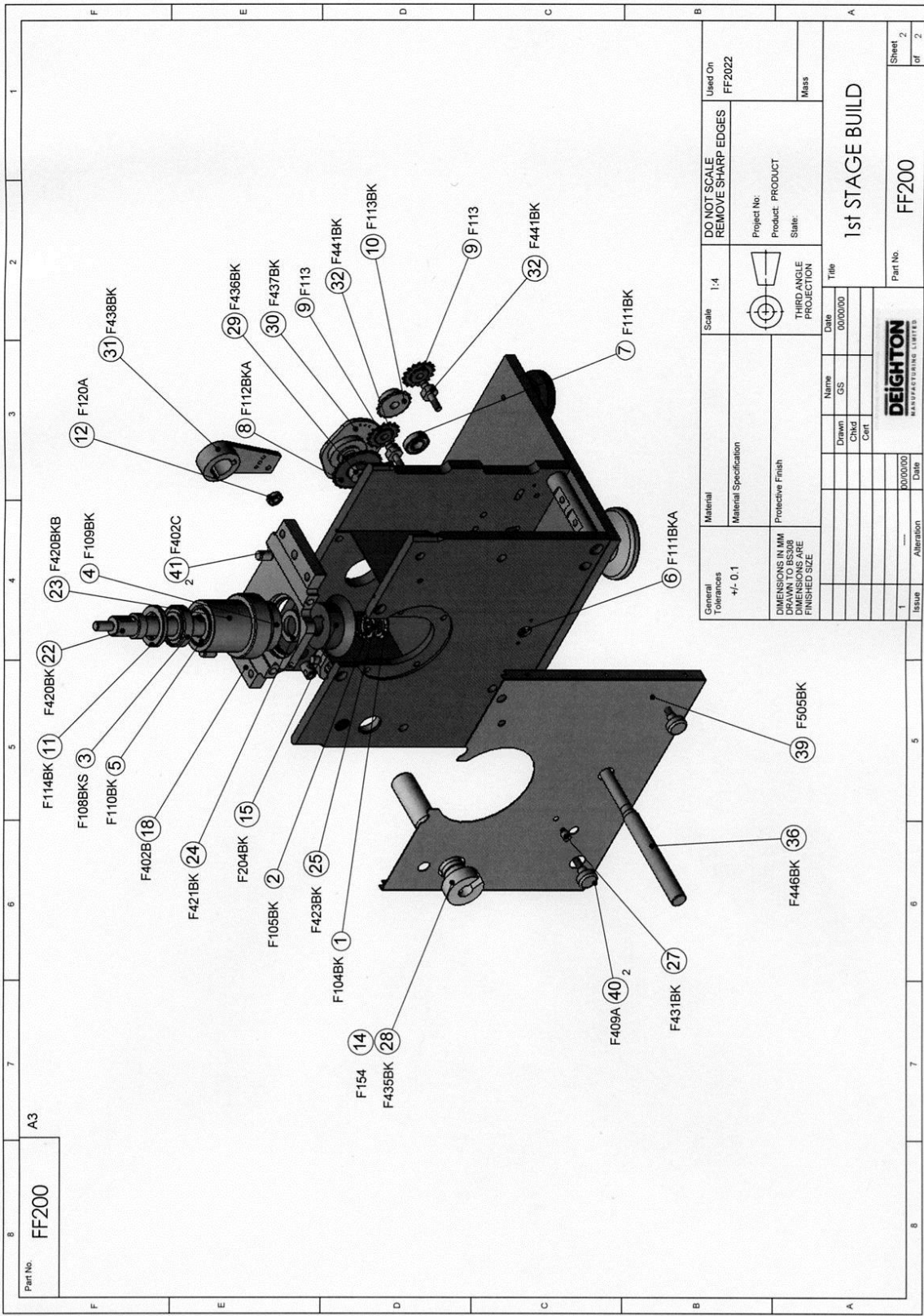




Part No. **FF200**  
A3

General Tolerances +/- 0.1	Material Material Specification	Scale 1:4	Lead On FF2022
DIMENSIONS IN MM DIMENSIONS ARE FINISHED SIZE	Protective Finish	THIRD ANGLE PROJECTION	Project No. Product: PRODUCT State:
	Drawn G.S.	Name G.S.	Title 1st STAGE BUILD
Checked	Date 00/00/00	Checked	Mass
Certified		Certified	
Issue 1	Alteration Date 00/00/00		Part No. FF200
			Sheet 1
			of 2

**DEIGHTON**  
MANUFACTURING LIMITED



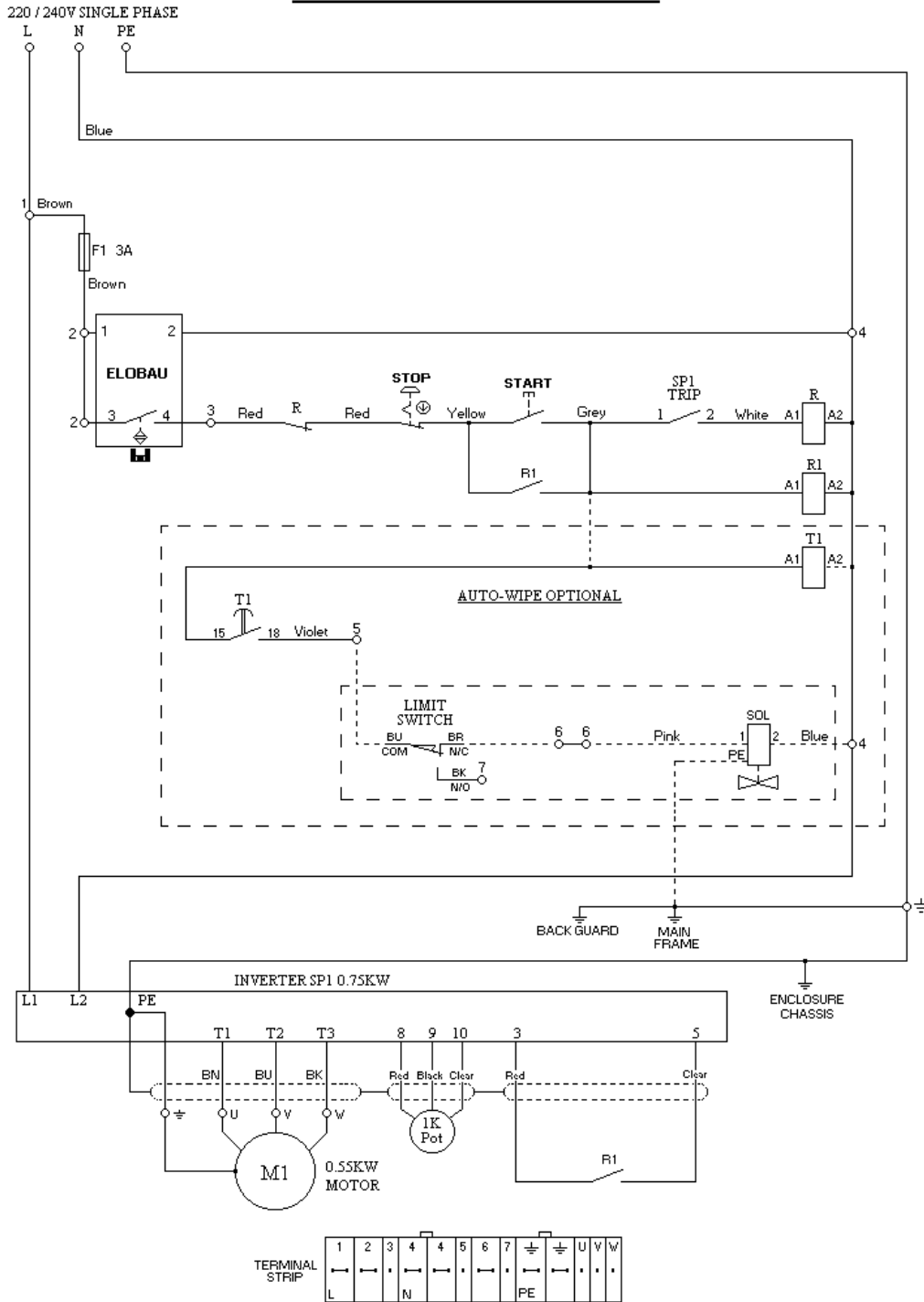
Part No. **FF200**  
A3

General Tolerances +/- 0.1	Material Material Specification	Scale 1:4	Used On FF2022
DIMENSIONS IN MM DRAWING TO BS2000 DIMENSIONS ARE FINISHED SIZE		Project No. Product: PRODUCT State:	Mass
Issue	Alteration	Date	Title
1		00/00/00	1st STAGE BUILD
 THIRD ANGLE PROJECTION			Part No. <b>FF200</b>
 DEIGHTON MANUFACTURING LIMITED			Sheet <b>2</b> of <b>2</b>



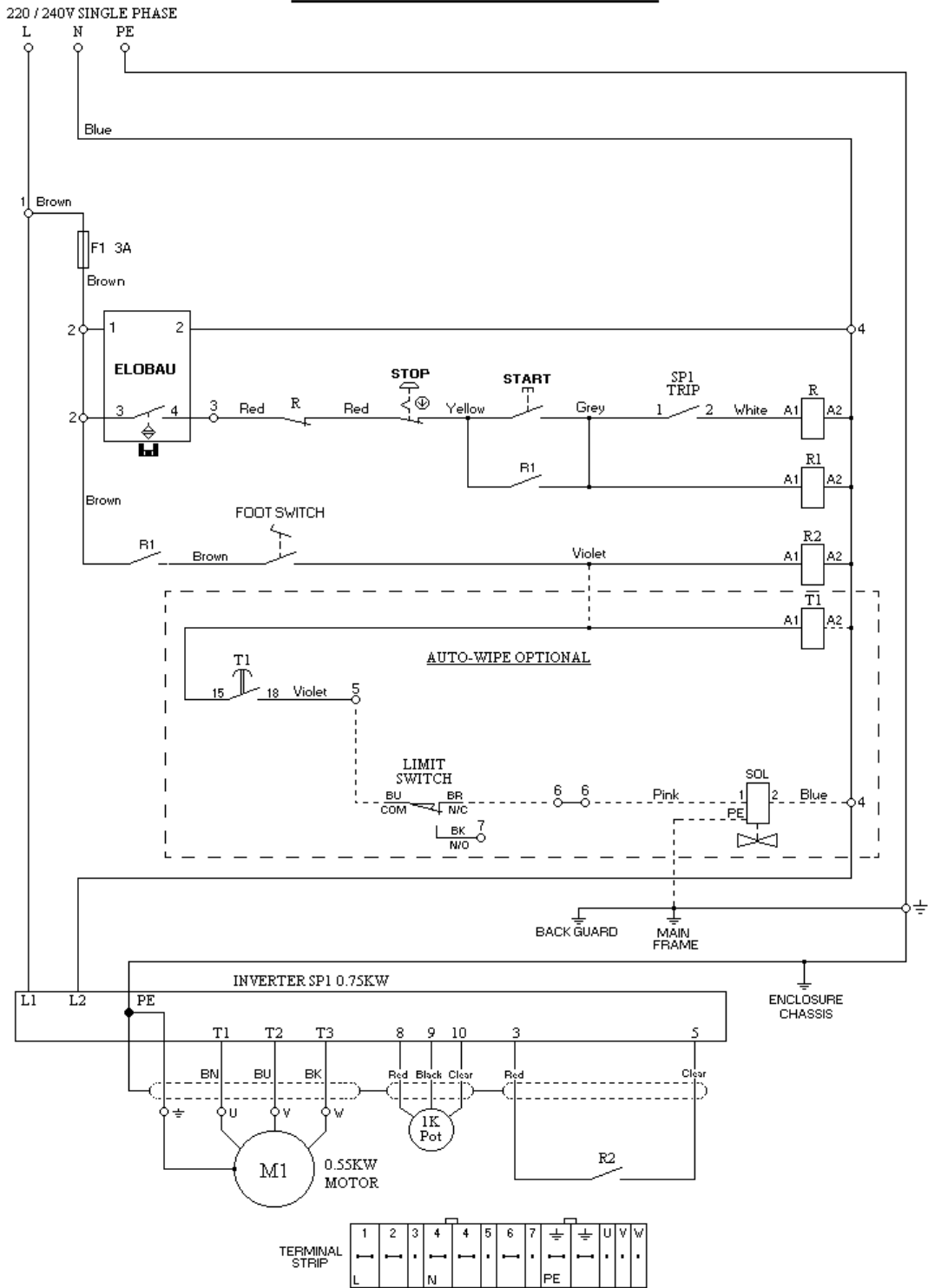
# WIRING DIAGRAMS

## RETAIL R1200 FORMATIC DIAGRAM



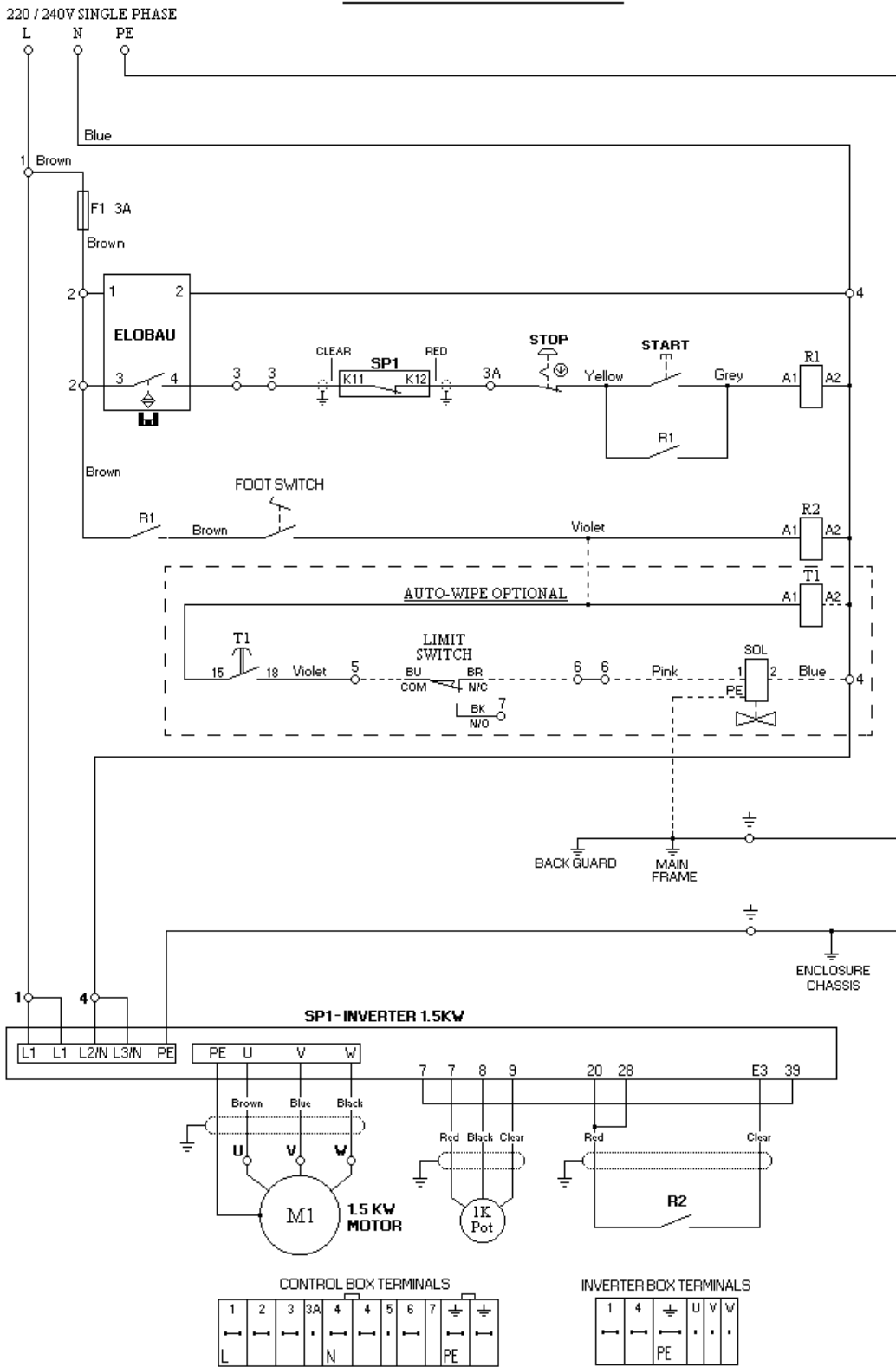
APRIL 2007

## RETAIL R2200 FORMATIC DIAGRAM

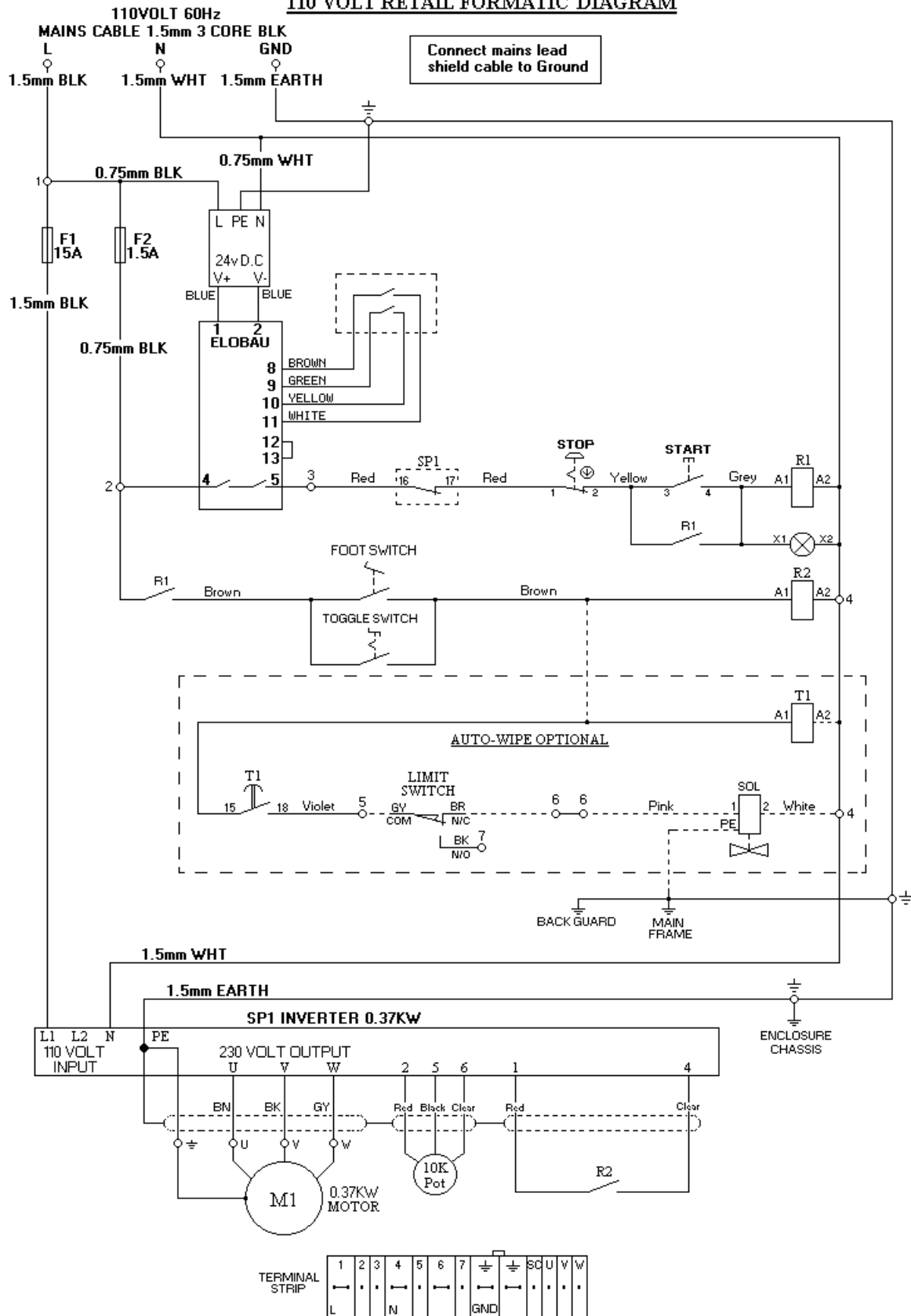


APRIL 2007

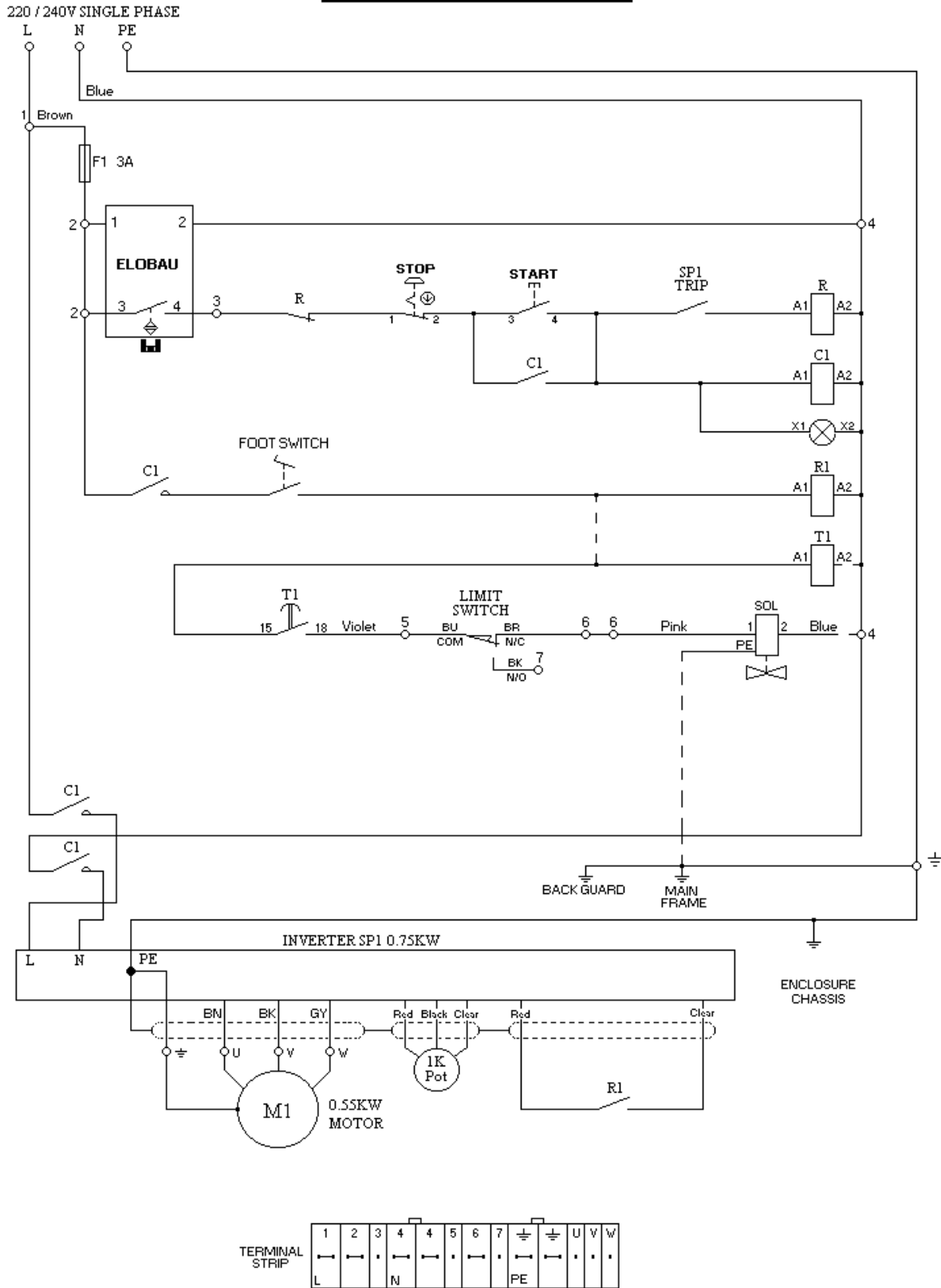
# I4000 FORMATIC DIAGRAM



# 110 VOLT RETAIL FORMATIC DIAGRAM



## RETAIL FORMATIC DIAGRAM



## EC DECLARATION OF CONFORMITY

### Declaration

We hereby declare that the following machinery complies with the essential Health and Safety requirements of the Machinery Directives 2006/42/EC, EMC Directive 2014/30/EU, Low Voltage Directive 2014/35/EU and regulation EC 1935/2004 on materials and articles in contact with food.

### Harmonised Standards and Applicable Amendments

EN 61000-6-2 Electromagnetic compatibility (EMC) - Generic standards - Immunity standard for industrial environments.

EN 61000-6-4 Electromagnetic compatibility (EMC) - Generic standards - Emission standard for industrial environments.

EN60204-1: A1 2009 Safety of Machinery - Electrical equipment of machines - Specification for general requirements.

EN ISO 13849-1: 2015 Safety of Machinery - Safety related parts of control systems - Part1: General principles for design (ISO 13849-1: 2006).

EN ISO 13857: 2008 Safety of machinery - Safety distances to prevent danger zones being reached by the upper and lower limbs.

**Machine Description:** -----

**Serial Number:** -----

**Manufactured By:**

Deighton Manufacturing UK Ltd, Gibson Street, Leeds Road, Bradford, BD3 9TR. ENGLAND.

**Person Authorised to draw up declaration of conformity.**

**Position:** Managing Director

**Name:** A Hamilton

**Signed:**

**Date:**

**Person Authorised to Compile Technical File-**

J.Wade – Deighton Manufacturing UK Ltd, Gibson Street, Leeds Road, Bradford, BD3 9TR, England.