

FORMATIC

Instruction Manual



DEIGHTON

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FORMATIC

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(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.

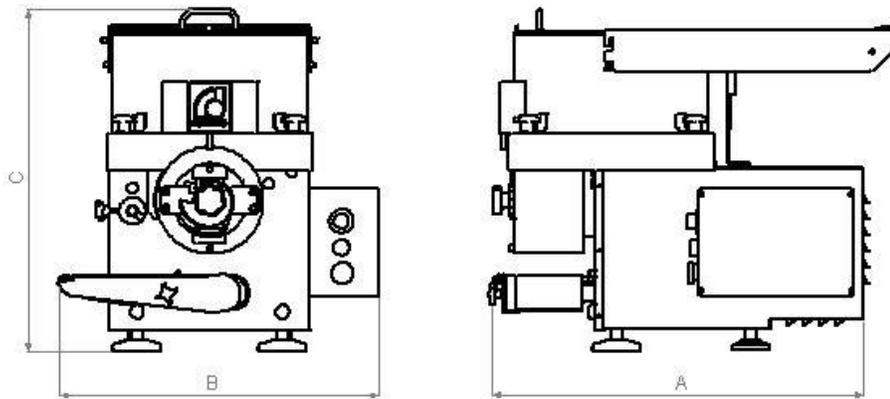
(2) TECHNICAL SPECIFICATION

Formatic

UL approved Formatics Only

Power requirements -

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



All dimensions in millimeters (mm)

<u>Retail Machine</u>	<u>R1200</u>	<u>R2200</u>	<u>R3000</u>	<u>R4000</u>
Size:				
Length (A)	797	797	896	896
Width (B)	536	536	536	536
Height (C)	640	640	640	640
Weight:-	75 Kg	75 Kg	75 Kg	75 Kg
Product Output:-	1200/hr	2200/hr	3000/hr	4000/hr
Hopper Capacity:-	20 litres	20 litres	20 litres	20 litres
Product Size (max):-	140mm x 120mm x 24mm thick (34mm deep drop)			
Electrical Supply:-	220/240V 50 Hz AC			
Power:-	550 Watt	550 Watt	750 Watt	1100 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.

<u>Commercial Machine</u>	<u>C2000</u>	<u>C4000</u>
Size:		
Length (A)	828	828
Width (B)	1079	1079
Height (C)	710	710
Weight:-	90 Kg	90 Kg
Product Output:-	2000/hr	4000/hr
Hopper Capacity:-	35 litres	35 litres
Product Size (max):-	135mm x 135mm x 24mm thick (34mm deep drop)	
Electrical Supply:-	220/240V 50 Hz AC	
Power:-	750 Watt	1100 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.

<u>Industrial Machine</u>	<u>I4000</u>	<u>IR4000</u>	<u>I4000/50</u>
Size:			
Length (A)	877	877	877
Width (B)	1331	1331	1331
Height (C)	832	832	832
Weight:-	100 Kg	100 Kg	100 Kg
Product Output:-	4000/hr	4000/hr	4000/hr
Hopper Capacity:-	30 litres	30 litres	30 litres
Product Size (max):-	150 x 150 x 24	125 x 118 x 50	150 x 150 x 50
Electrical Supply:-	220/240V 50 Hz AC		
Power:-	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.

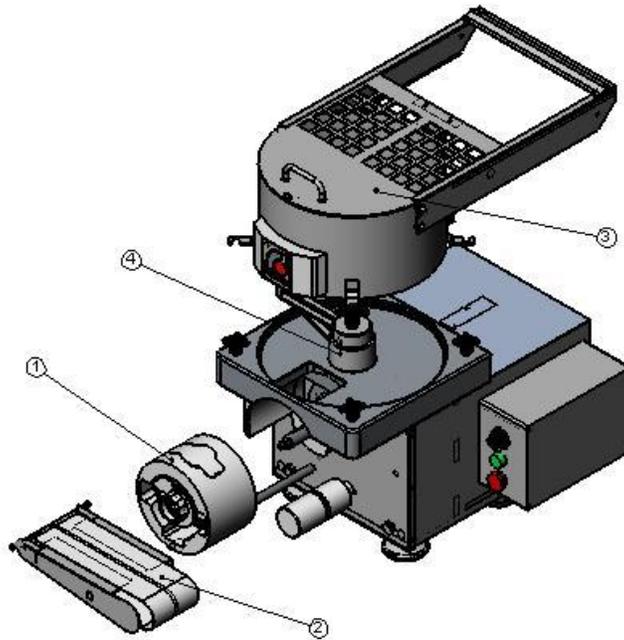
(3) INSTALLATION PROCEDURE

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.

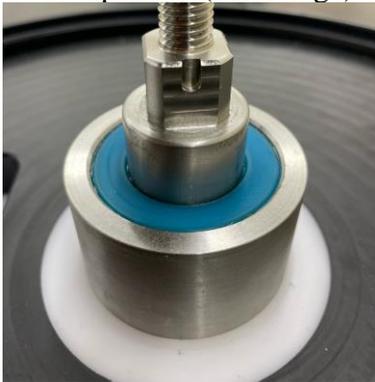
Step 3; Ensure the hopper sealing ring is pressed firmly into its retaining slot in the machine top. Slacken the four hopper securing knobs on the top of the machine. Place the hopper into the top machined recess on the hopper seal and rotate such that the hopper securing lugs engage with the hand knob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

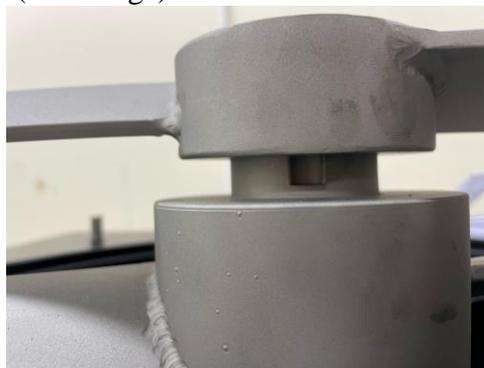
Always ensure the hopper is loaded correctly onto the seal in the hopper top.

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.

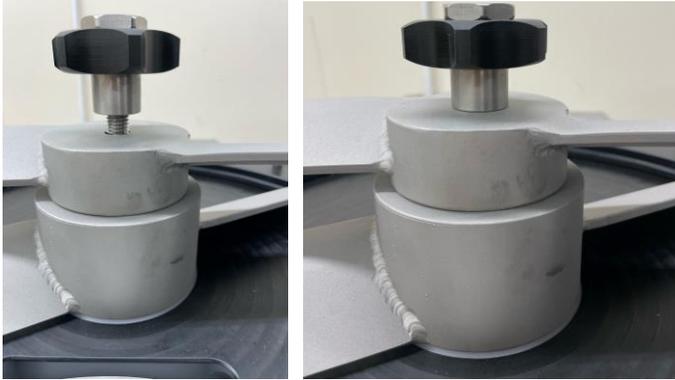
Step 4; Position the chosen paddles onto the square drive paddle shaft at the top of the machine, ensuring the square drives are aligned with pin rebate location on the bottom paddle. (See image)



Next position the top paddle over the drive paddle shaft ensuring the paddle pin engages with paddle slot on the bottom paddle. (See image)



Now secure in place with paddle knob. Screw the paddle knob so this is hand tight and the bottom face of the paddle knob is flush with the top face of the top paddle. (See image)



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.

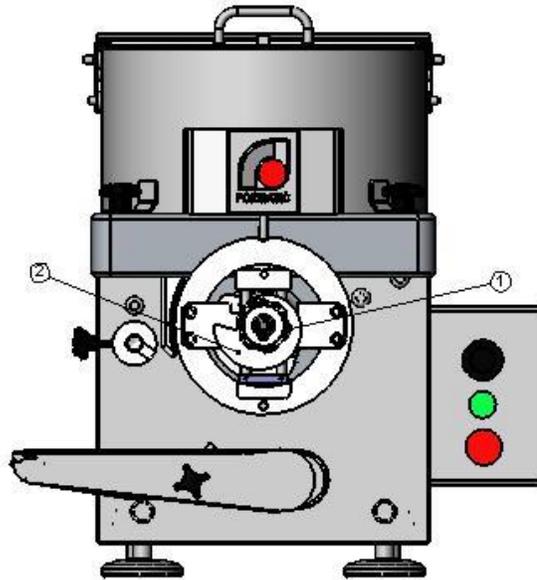
Always clean the machine thoroughly prior to production (see cleaning).

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.



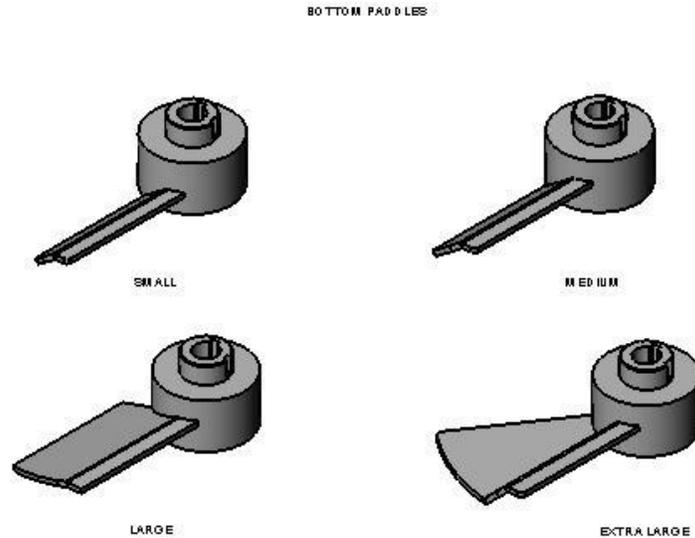
- Approximately half fill the hopper with the mix to be used, checking it's suitability
- Start the machine until two full forms are obtained
- Weigh the fully formed product and either increase or decrease the thickness until the correct weight is achieved. This is done by removing the paper attachment 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.

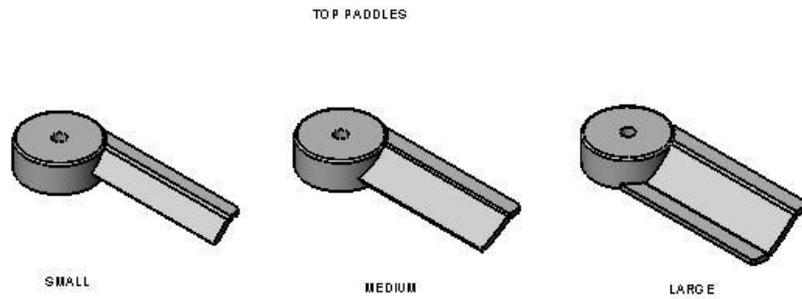
Note; The scraper wire should be kept as clean as possible to aid the release of the product from the drum. The manual scraping of the wire should be carried out in the part of the cycle when the wire is away from the drum.

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.

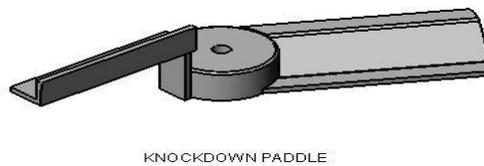
Deighton Manufacturing will supply the machine with a series of paddles suitable for the mix being used and the form sizes being created however you can obtain various sizes and combinations if problems occur with those supplied



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

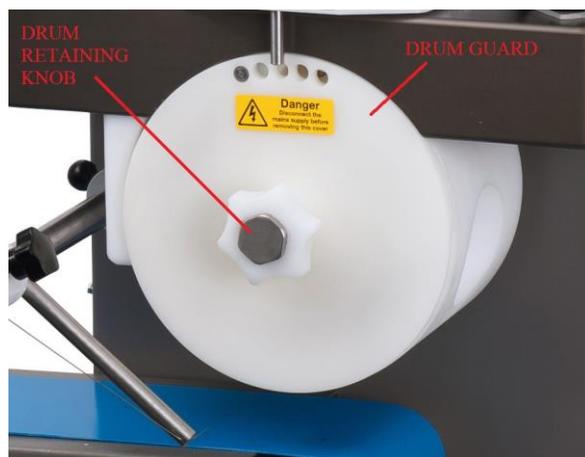
After a days production run it is recommended that the machine is cleaned.

NOTE: ALWAYS ISOLATE THE MACHINE FROM THE MAINS SUPPLY BEFORE COMMENCING CLEANING.

The machine is of a stainless steel and anodised aluminium construction but includes some plastic (P.T.F.E. Polyacetal) components and can be cleaned using hot, soapy water.

Remove any remaining product from the hopper and belt.

Dismantle the Formatic for cleaning, removing the drum guard, drum, hopper and finally the paddles.



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

The conveyor belt can be removed by simply lifting the conveyor platform, this slackens the belt enough to allow its removal. The conveyor platform can be removed by unscrewing the black knob and pulling the platform from its support shaft.



Wash the belt and platform with hot soapy water, rinse with clean water and allow to dry. Do not use strong alkaline/acid based cleaners.

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

Rinse with clean water

Once machine and parts are clean and dry reassemble.



ALWAYS TRY TO KEEP WATER AWAY FROM THE CONTROL BOX INTERFACE SCREEN AND MOTORS. DO NOT PRESSURE WASH.

(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.

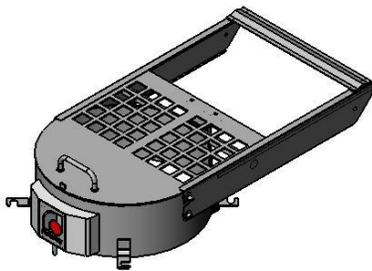
(8) OPTIONAL EXTRAS

Hoppers

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

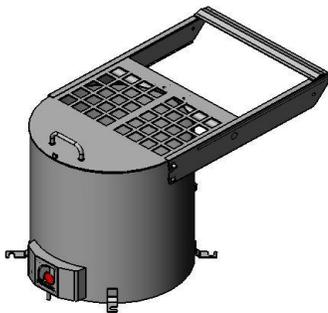
Low Level Hopper

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.



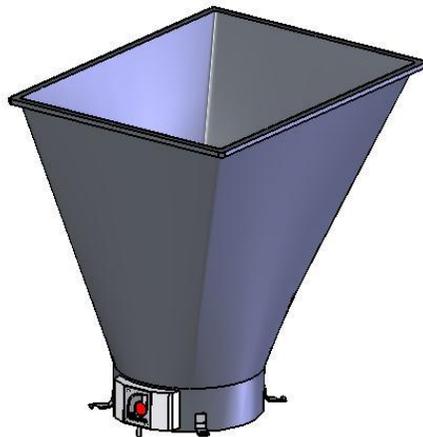
75 Litre Hopper

Used in large batch production to reduce the frequency of refilling

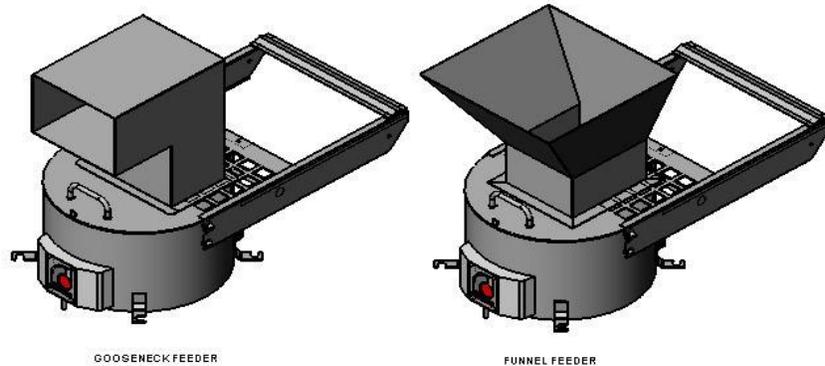


200 Litre Hopper

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).

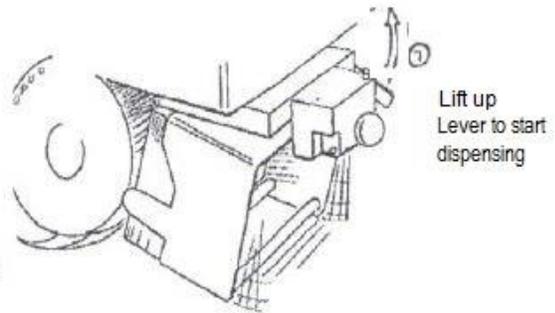
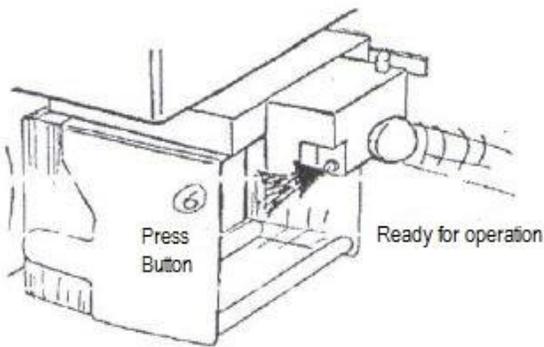
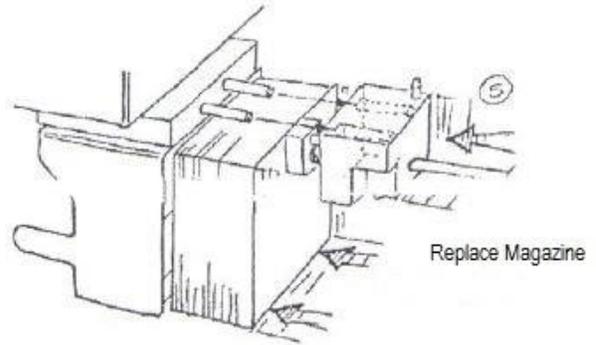
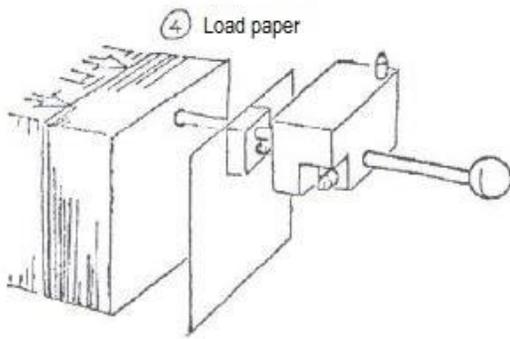
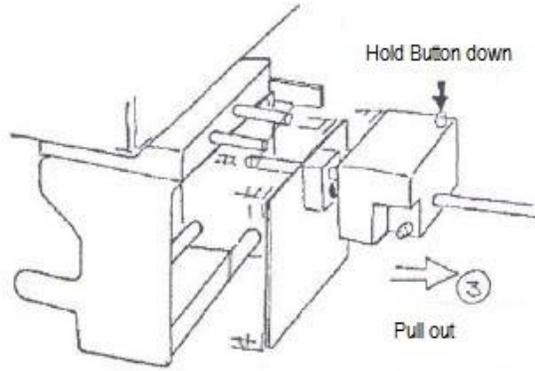
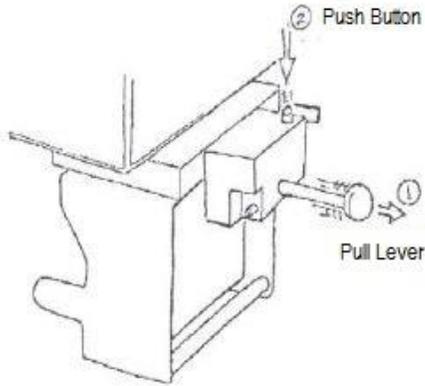
Minimum air pressure 101.5PSI (7Bar) (0.7MPa).

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.

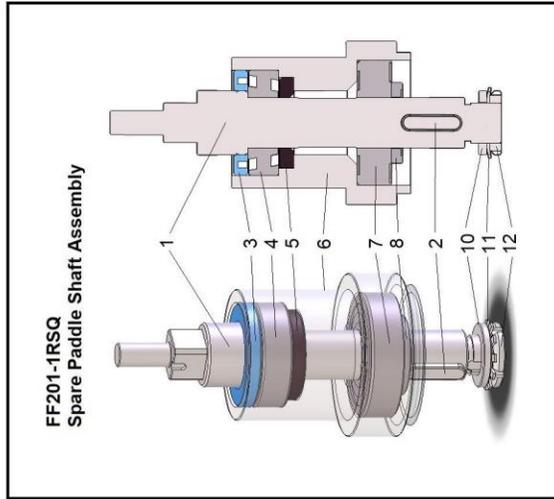
PAPER ATTACHMENT LOADING



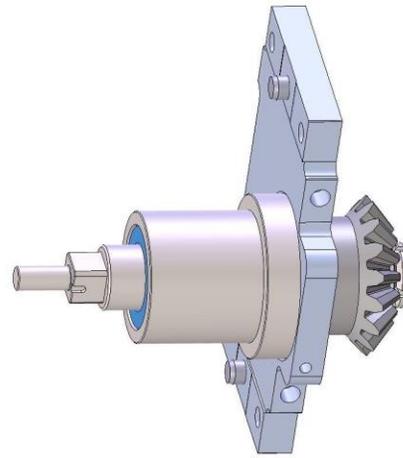
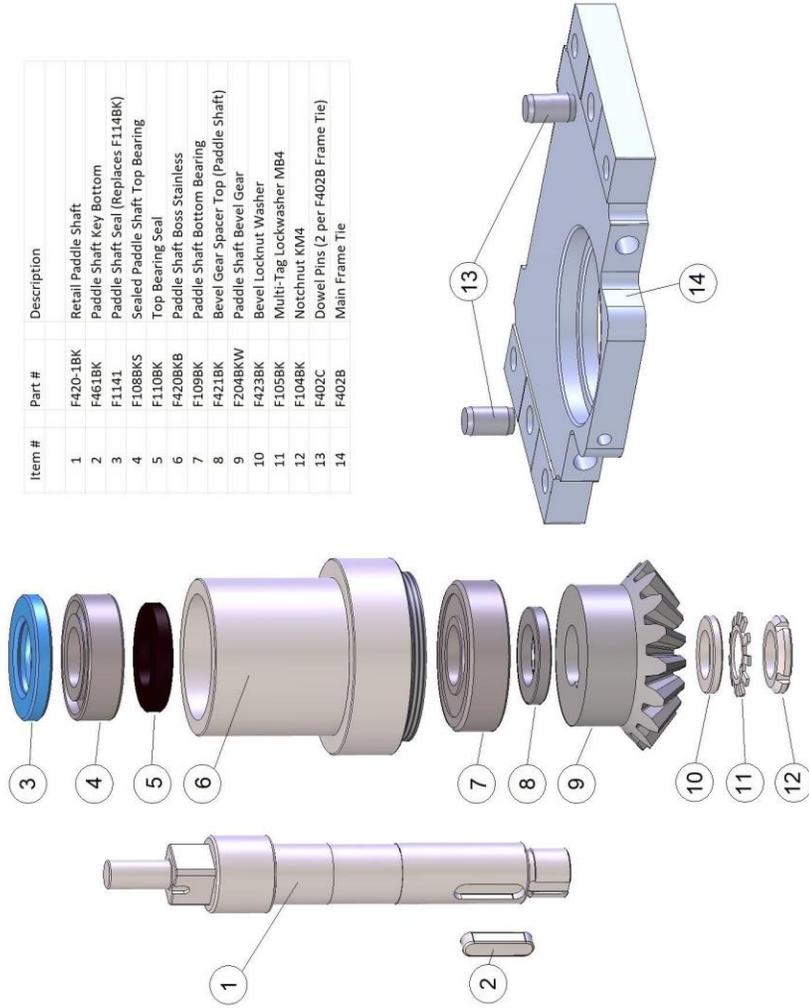
(9) RECOMMENDED SPARES LIST

<u>Description</u>	<u>Part Number</u>
Hopper Seals	
- diameter 364mm	F117A
- diameter 402mm	F117C
- diameter 435mm	F135FDA
Hopper Knob	F124
Drum Knob	F129A
Paddle Knob	F130B
Conveyor Pivot Knob	F127
Scraper Wire (5m length)	F145
Scraper Arm (Manual & Auto)	F522-1X
Scraper Arm Bush Assemblies	
Auto Wire Clean	F4323
Manual Wire Clean	FF431
Conveyor Scraper Holder	F452
Conveyor Scraper Assemblies	
R-Series	F496BK
C-Series	F496C
I-Series	F496
Start Button Boot	F1004A
Elobau Control Unit	F1015A
Drive Chain	F124BK
Split Link	F115

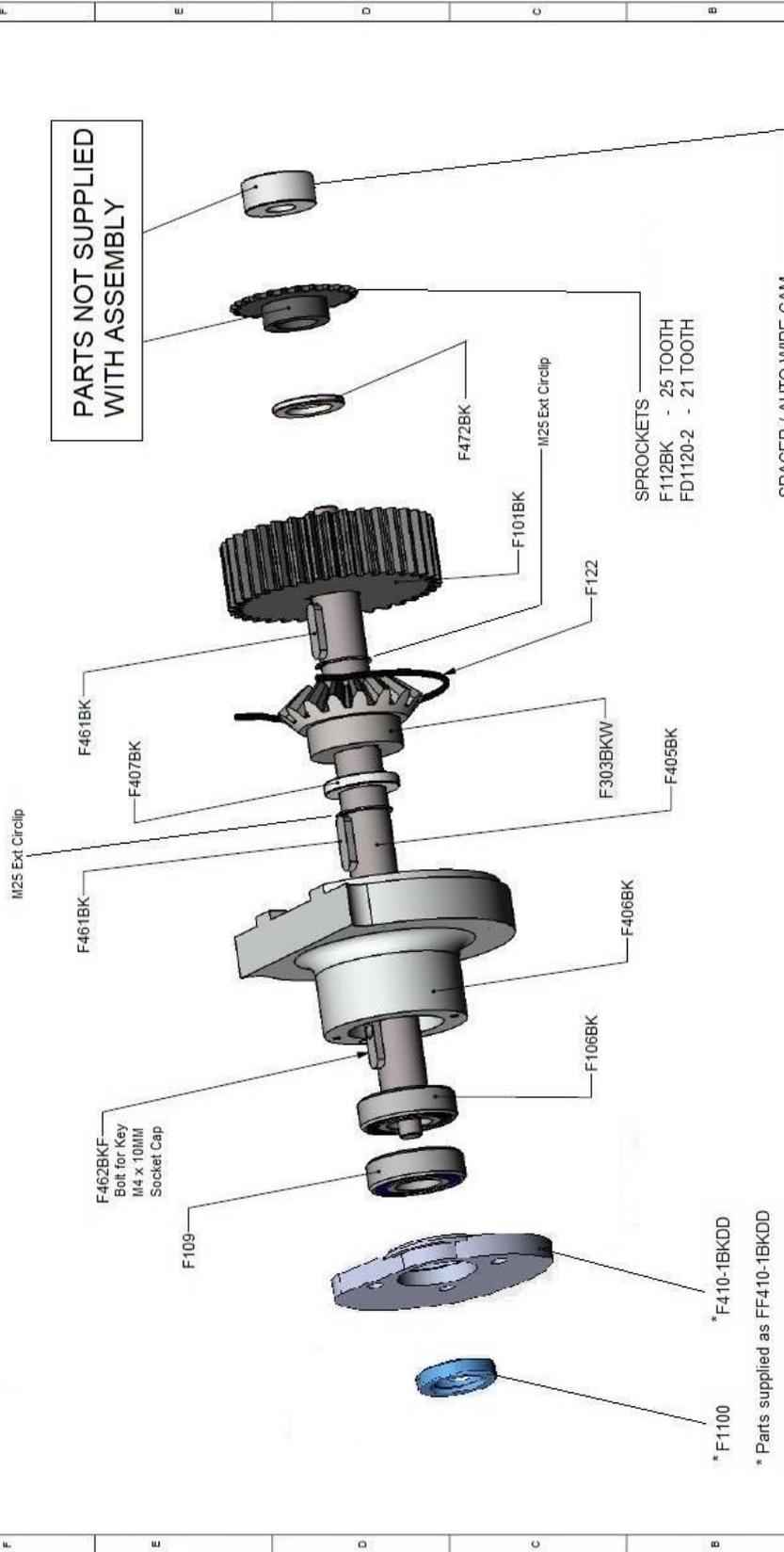
FORMATIC PADDLE SHAFT ASSEMBLY



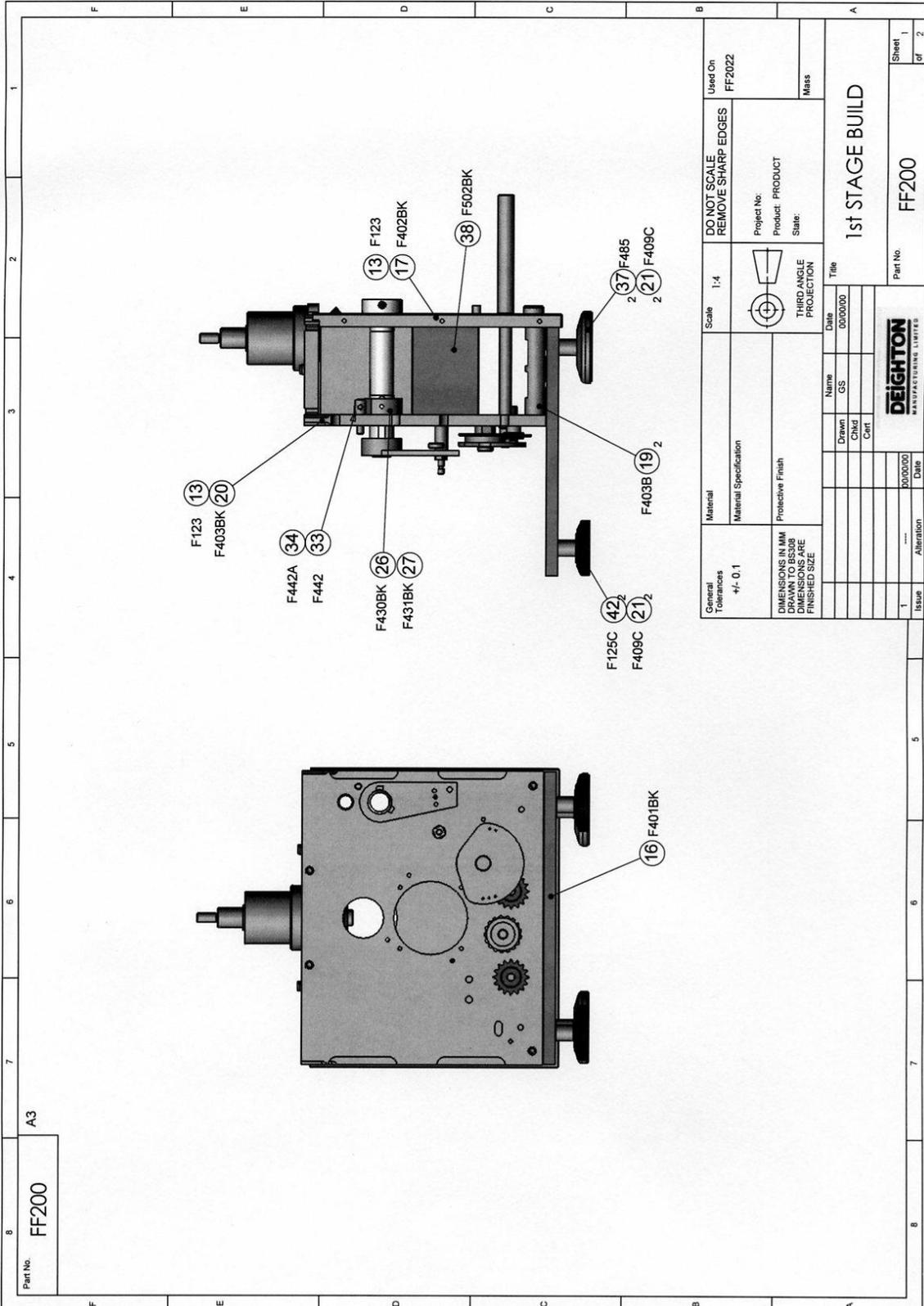
Item #	Part #	Description
1	F420-1BK	Retail Paddle Shaft
2	F461BK	Paddle Shaft Key Bottom
3	F1141	Paddle Shaft Seal (Replaces F114BK)
4	F108BK	Sealed Paddle Shaft Top Bearing
5	F110BK	Top Bearing Seal
6	F420BK	Paddle Shaft Boss Stainless
7	F109BK	Paddle Shaft Bottom Bearing
8	F421BK	Bevel Gear Spacer Top (Paddle Shaft)
9	F204BK	Paddle Shaft Bevel Gear
10	F423BK	Bevel Locknut Washer
11	F105BK	Multi-Tag Lockwasher MB4
12	F104BK	Notchnut KM4
13	F402C	Dowel Pins (2 per F402B Frame Tie)
14	F402B	Main Frame Tie



FF201R-1 RETAIL DRUMSHAFT ASSEMBLY (R-SERIES)



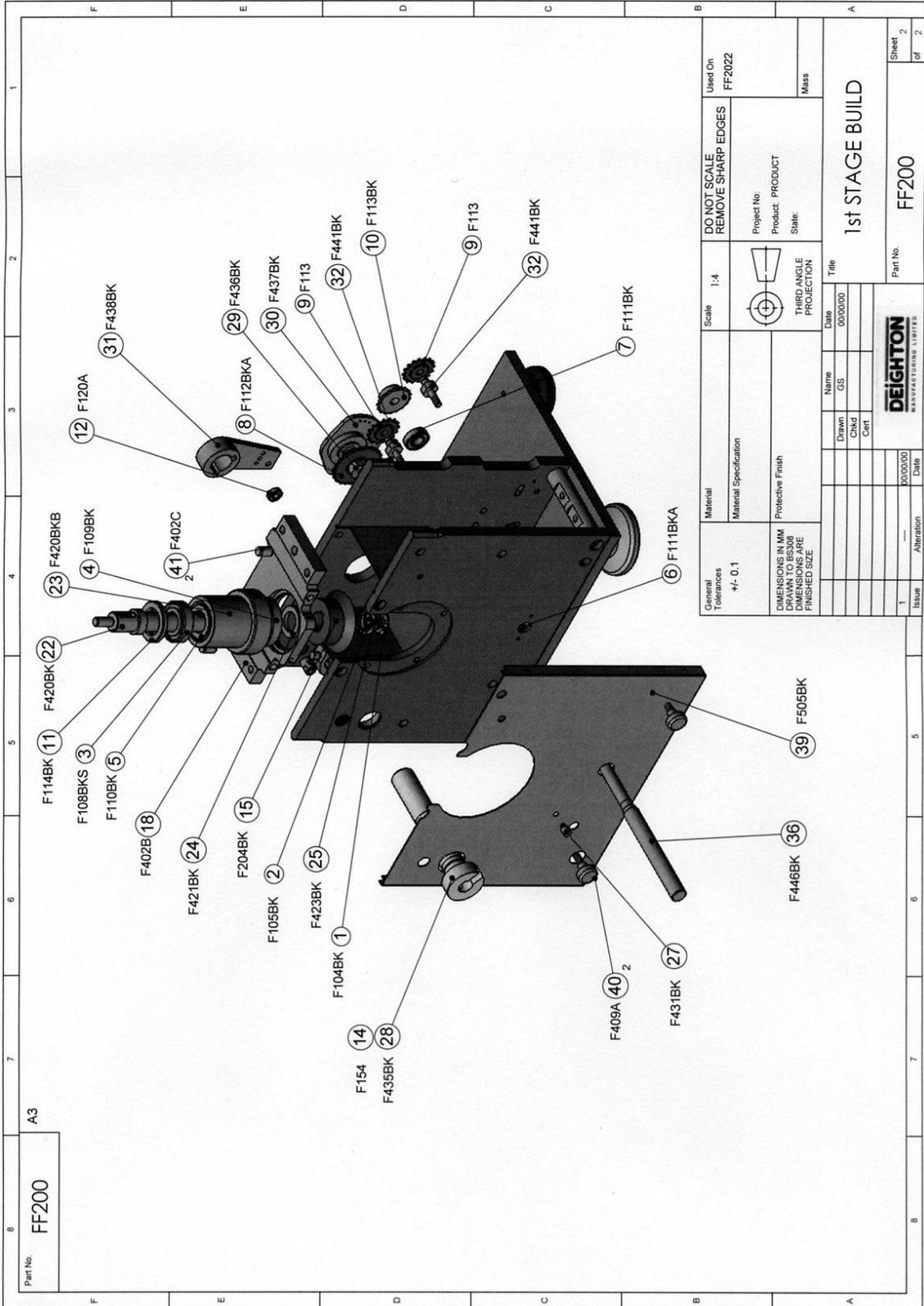
ASSEMBLY DATE - FROM DECEMBER 2014
(JWS OCT16 / JAN23)



Part No. **FF200**

A3

General Tolerances +/- 0.1	Material Material Specification	Scale 1:4	Used On FF2022
Protective Finish		THIRD ANGLE PROJECTION	Project No.
DIMENSIONS IN MM AND DIMENSIONS ARE FINISHED SIZE			Product: PRODUCT
Date		State:	
Drawn GCS	Name GCS	Title	
CHKD GCS	Date 00/00/00	1st STAGE BUILD	
Date 00/00/00		Part No. FF200	
Alteration		Sheet 1 of 2	
Date		DEIGHTON MANUFACTURING LIMITED	



Part No. **FF200**

Material: **Material Specification**

General Tolerances: **+/- 0.1**

Scale: **1:4**

Used On: **FF202**

Project No.: **PRODUCT**

Product: **PRODUCT**

State: **Mass**

THIRD ANGLE PROJECTION

1st STAGE BUILD

Part No. **FF200**

Sheet 2 of 2

DEIGHTON MANUFACTURING LIMITED

Issue Alteration Date

Drawn GS

Chkd

Cert

Date 00/00/00

Name

Title

DIMENSIONS IN MM DRAWN TO BS308 DIMENSIONS ARE FINISHED SIZE

DO NOT SCALE REMOVE SHARP EDGES

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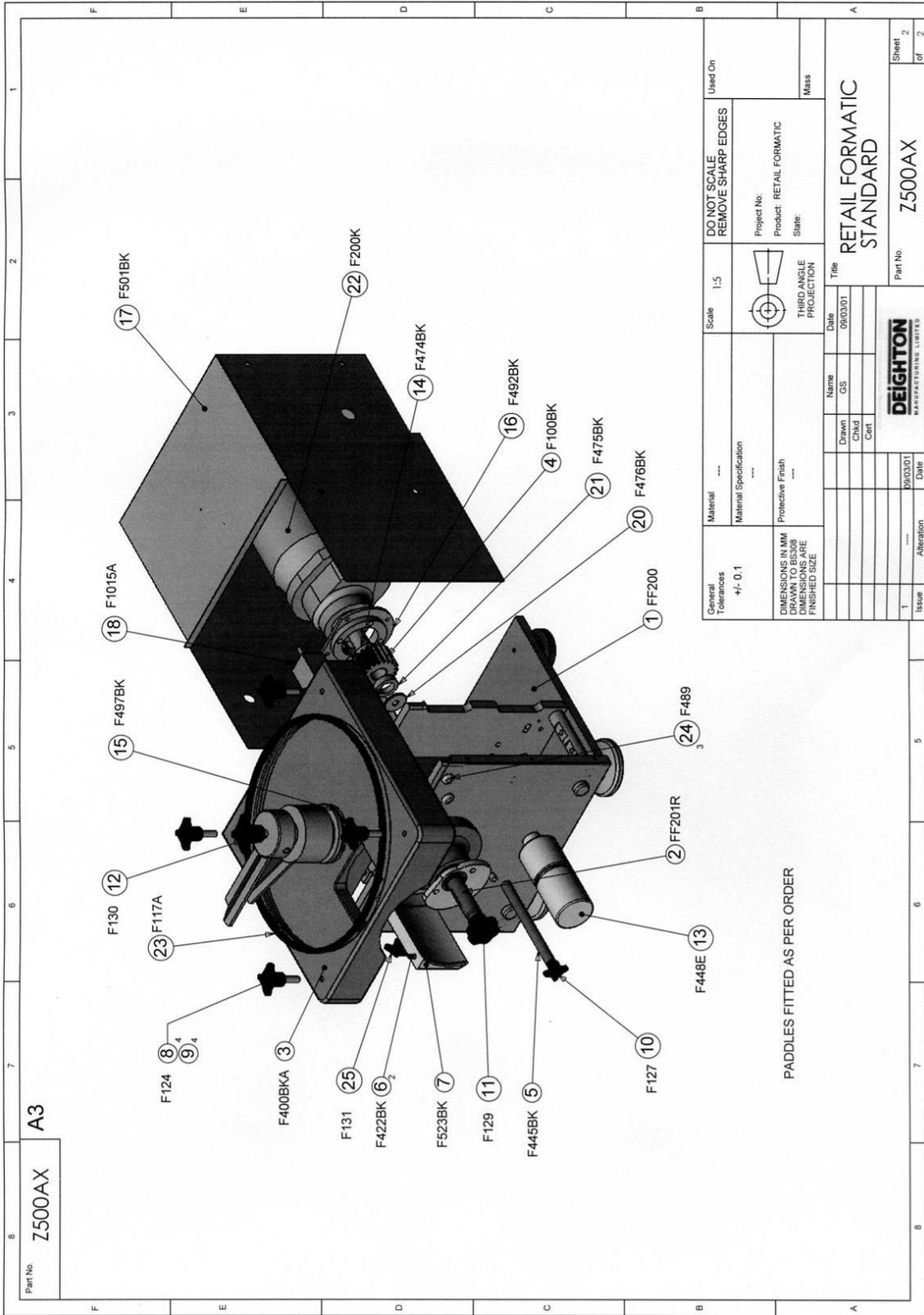
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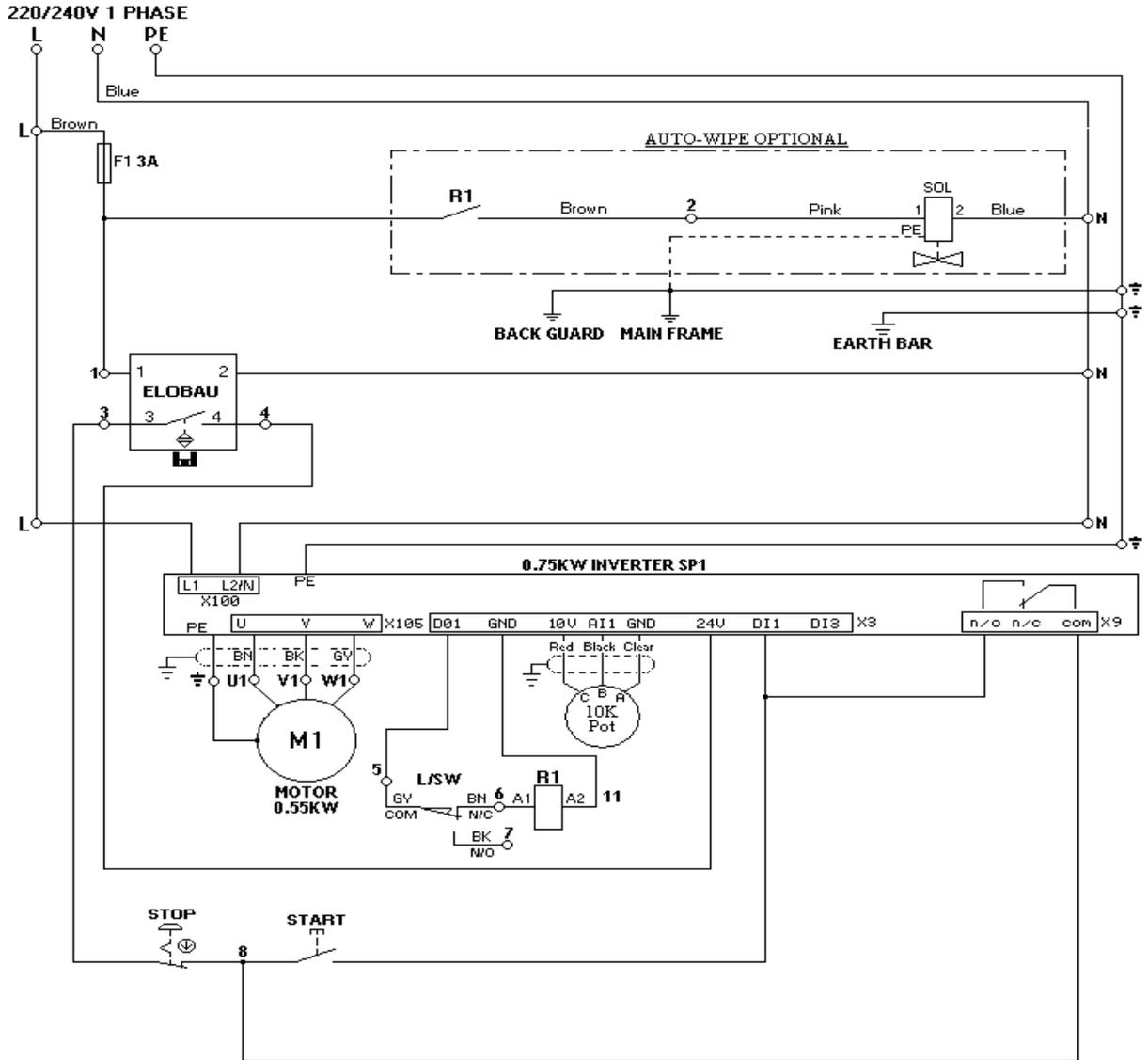
Part No. Z500AX A3

PADDLES FITTED AS PER ORDER

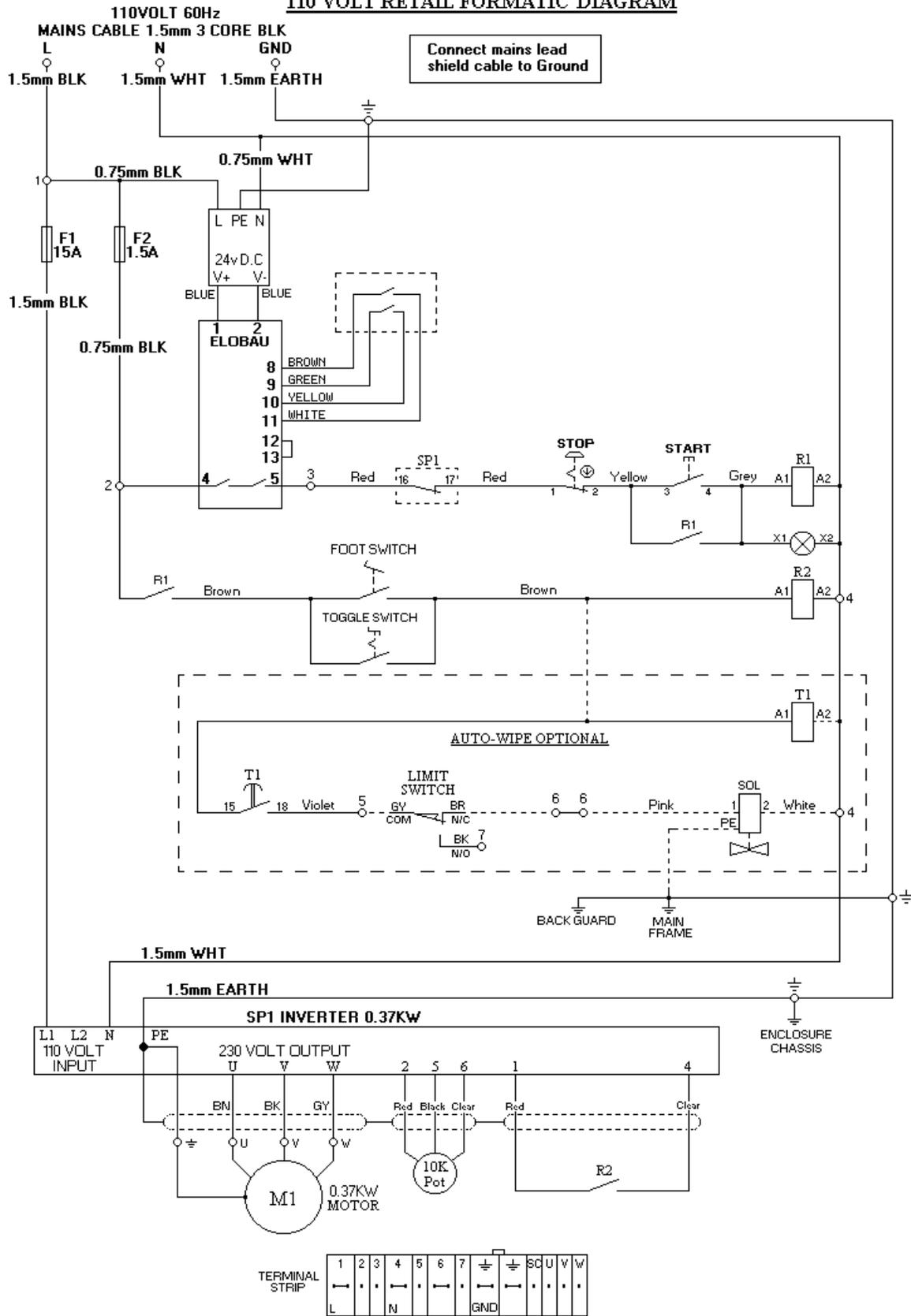
General Tolerances	Material	Scale	Used On
+/- 0.1	Material Specification	1:5	DO NOT SCALE REMOVE SHARP EDGES
DIMENSIONS IN MM DIMENSIONS IN INCHES DIMENSIONS IN PAPER FINISHED SIZE	Protective Finish	THIRD ANGLE PROJECTION	Project No. Product: RETAIL FORMATIC State:
Issue	Alteration	Date	Name
1		09/03/01	GCS
			Drawn
			CHK'd
			Cert
			Title
			MISS
DEIGHTON MANUFACTURING LIMITED			Part No. Z500AX
			Sheet 2 of 2

(10) WIRING DIAGRAMS

R1200 FORMATIC DIAGRAM

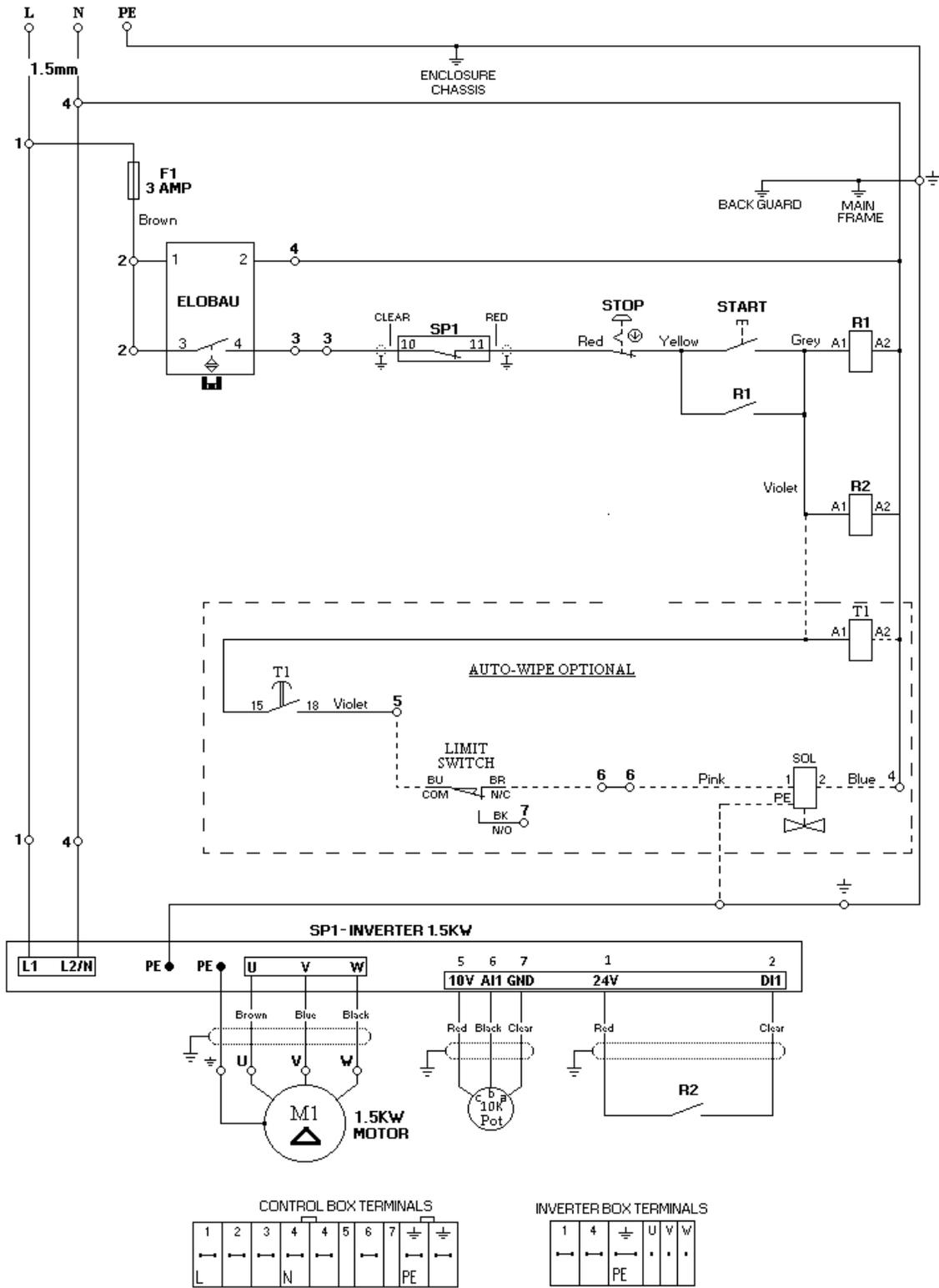


110 VOLT RETAIL FORMATIC DIAGRAM



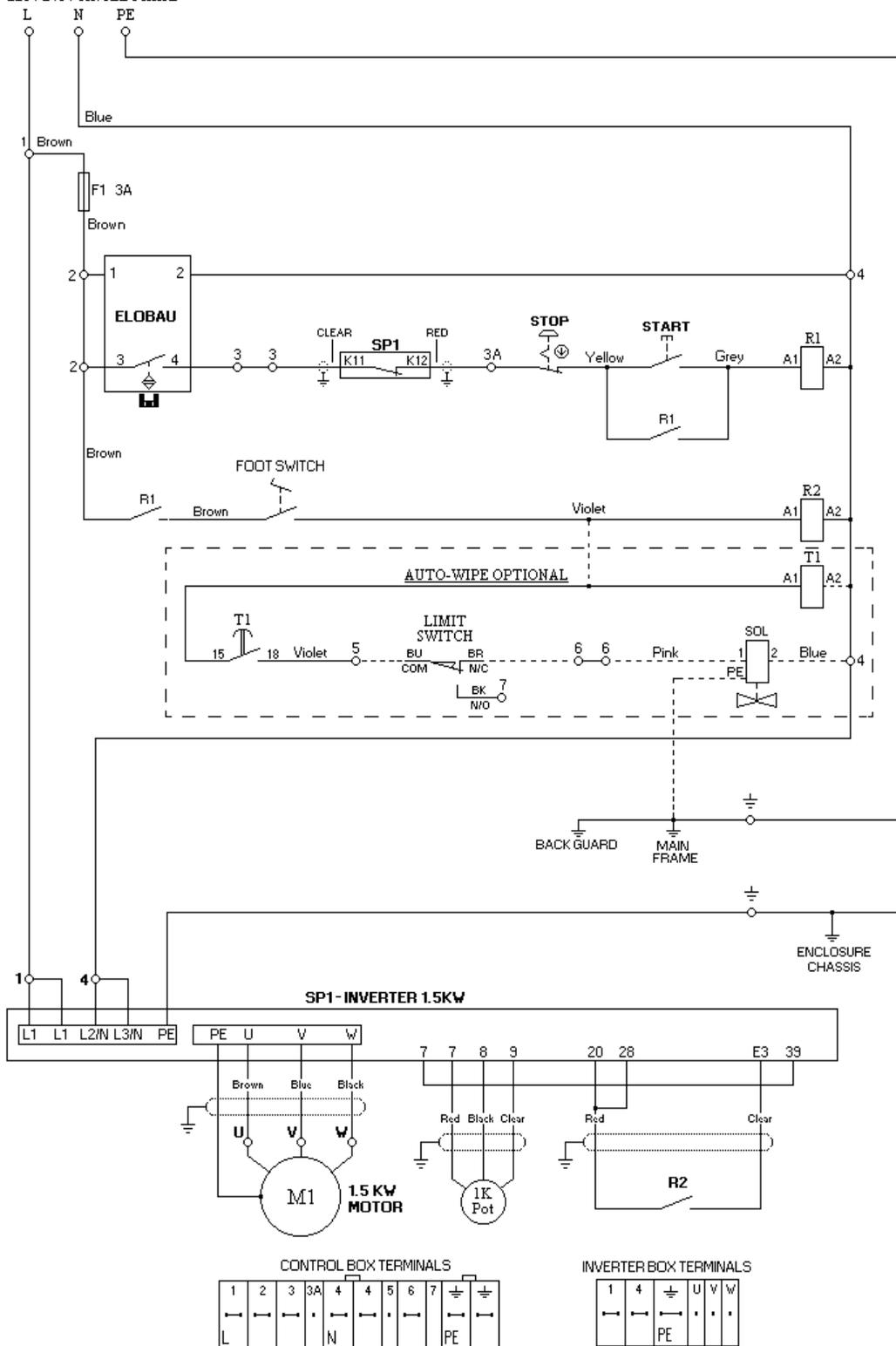
C / I4000 FORMATIC

220 / 240v SINGLE PHASE 50Hz



I4000 FORMATIC DIAGRAM

220 / 240V SINGLE PHASE



JUNE 2007

