



Cap Seal Applicator Model Number CH-100

User Guide



AFM

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User Guide

Revised 11/8/2018

P/N 4510005 Rev A

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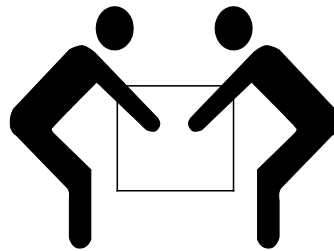
Safety

The AFM Cap Sleeve Label Applying Machine is easy to install, operate and maintain. Please follow these safety steps to insure smooth and safe operation:

All operators should study this manual thoroughly before operating the machine.

- Always follow GMP (Good Manufacturing Practices) when operating this machinery.
- The machine is heavy. While unpacking and setting up the unit, always take care to use proper lifting techniques. Avoid over-reaching and leaning over while handling the machine and accessories. Use more than one person to lift and move the banding system (four is recommended), or use a minimum 1.25-ton forklift.

CAUTION



TEAM LIFT

- Wear safety shoes and work gloves when moving the machine.
- Beware of uneven spots on the factory floor, as the machine could tip over.
- Make sure the electrical power source is properly wired and grounded. The power source should comply with all safety regulations and codes applicable to the installation location.
- Before attempting any service or repair, make sure that the power is turned off and power cable is disconnected from the power source.
- Before connecting the air supply, make sure that the pressure gauge is closed and that the pressure indicator reads zero.
- Do not place any body parts or tools into a running machine!
- Turn off and unplug the machine while servicing and performing maintenance procedures.
- Be sure to use correct lockout/tagout procedures when performing maintenance and repairs on this machinery.

- The blades used on this machine are extremely sharp. Handle with extreme care. Preferably use cut-resistant gloves when replacing blades.
- Never remove any GROUND connection from this equipment. Failure to follow this directive could result in damage to the equipment, fire, serious personal injury, or death.
- Keep water away from the electrical enclosure (at the rear of the machine), the control panel, and all other electrical components.
- This machine is protected by hardware MCR and E-STOP and door safety interlocks. Under no circumstances should these be disabled.
- Take care when lifting heavy rolls of labels. If lifting from ground-level be sure to lift with the large muscles of your legs.
- Always consult with AFM before making any modifications to the electrical circuitry or PLC program.
- Always replace fuses and other protective circuit devices with those of the appropriate current rating.
- When working with glass containers always wear safety glasses with side-shields.
- Some shrink label materials contain toxic chemicals. Be sure to store and dispose of properly.
- E-STOP and safety doors should never be used to stop the machine; E-STOPS are for EMERGENCY ONLY; safety doors should only be opened once the machine has come to a stop. Failure to follow these directives could result in damage to the servo drives and PLCs.



Ensure that machines are grounded.



Crush hazard. Do not place hands or other objects on moving mechanism. Shut down machine before doing any maintenance or troubleshooting.



Cut hazard. Do not place hands or other objects on moving mechanism. Shut down machine before doing any maintenance or troubleshooting.



Electrical hazard. No user serviceable parts. Keep out of power supply.



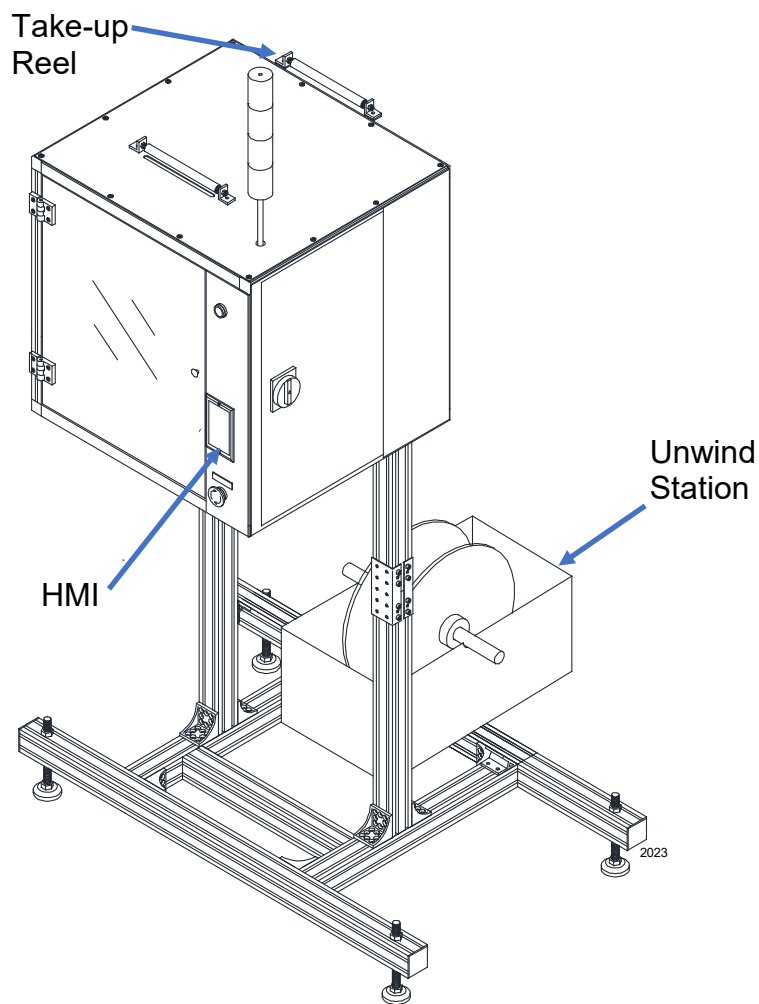
Keep equipment dry and inside.

Introduction

The CH-100 Cap Sealer applicator and Tamper-Evident Band applicator is designed for capping applications. It is designed for low-to-moderate production rates for industries such as food and beverage, pharmaceutical, nutraceutical, health and beauty, and other manufactured goods.

System Components

- CH-100
- HMI
- Unwind Station



CH-100

System Specifications

Power: A.C. 1-Phase, 220 Volt, 50/60Hz

Motor: 150W X 2, 60W X 1, 750W X 2

Film Width: 40-150mm

Length: 20-50mm

Thickness: 0.05-0.07mm

Applied Material: PS, PET, PVC

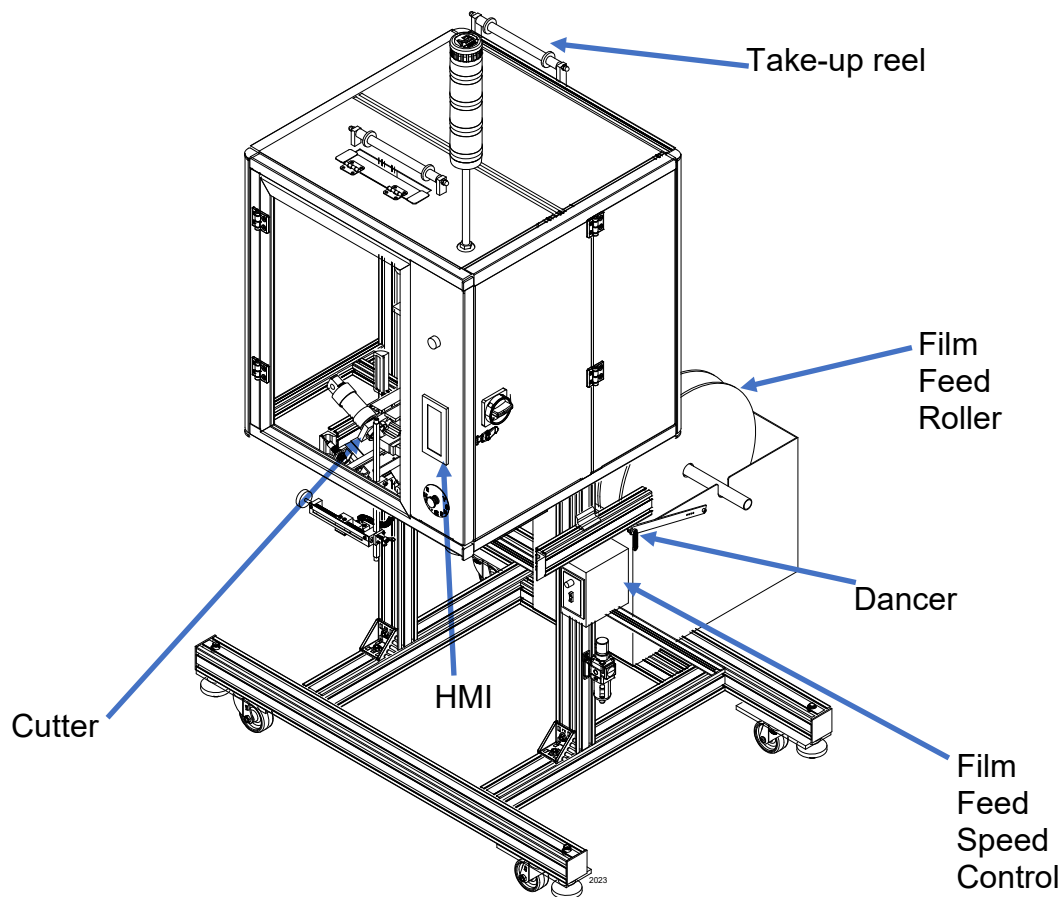
Speed: 20~120 CPM Max.

Air: 80 P.S.I.

Speed will vary with the shape and types of items, thickness, and length of shrinkable film. Correct speed can be determined by actual running conditions.

Description and Main Components

The AFM CH-100 shrink sleeve bandler feeds tubular plastic film (OPS, PET, PETE, PVC, PLA, etc.), opens it around a Mandrel (former or “butterfly”), cuts the film to the required length and places it on the containers passing under the mandrel. The film cut-length can either be triggered by an eye-mark on the film (*print-registration* mode, using the transition between opaque and clear on the printing of the film) or can be based upon a fixed number of pulses generated by the encoder of the Film Feed Drive motor (NO PRINT mode, selectable from the SETTING screen).



With the addition of the perforator option, each band can be perforated on the machine to offer tamper-evidence, or to facilitate removal by the consumer.

The Film Feed Rollers feed the film by one label cut length each cycle, and the wheels holding the Butterfly and film guide it through the mechanism. The cut > film-feed cycle is triggered by the approach of the container, as detected by the Motion Detector Sensor Eye. The film is fed to the desired cut length and the cutter cuts the band. The band is then held in place by a vacuum suction cup, ready to be applied. As the Motion Detect Sensor “sees” the container, it releases the cut part onto the product.

The Dancer system on the CH-100 is designed to maintain back-tension in the film, to maintain correct registration for the Cutter, and to give a cut with minimal tails and burrs.

The Obstruction (Motion) Sensor monitors each band as it passes under the Mandrel and stops the machine automatically if a label fails to make it down below the Mandrel, or if a band becomes stuck at the base of the Mandrel.

Brush-down may be necessary when the bands fail to consistently go down to the desired height on the container (for example, when the containers coming into the machine are wet).

The CH-100 is used in conjunction with its built-in film unwind device. A Conveyor, and a Heater Tunnel (steam, convection or infrared) must be used also.

Installation and Setup

The CH-100 will have been pre-tested with your product prior to shipment.

Included in crate:

- CH-100
- Unwind
- Butterfly
- Spare parts toolbox

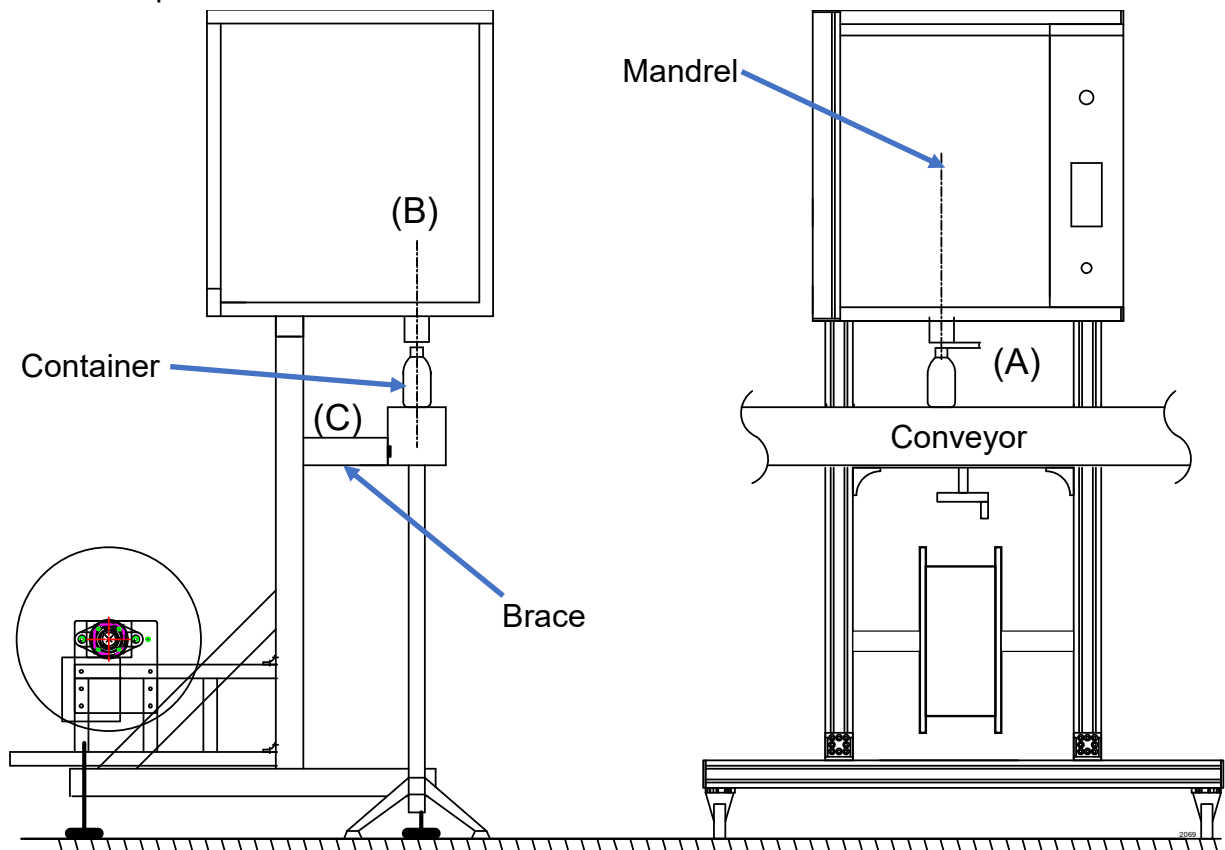
Optional:

- Conveyor
- Heat tunnel
- Timing screw
- Brushdown

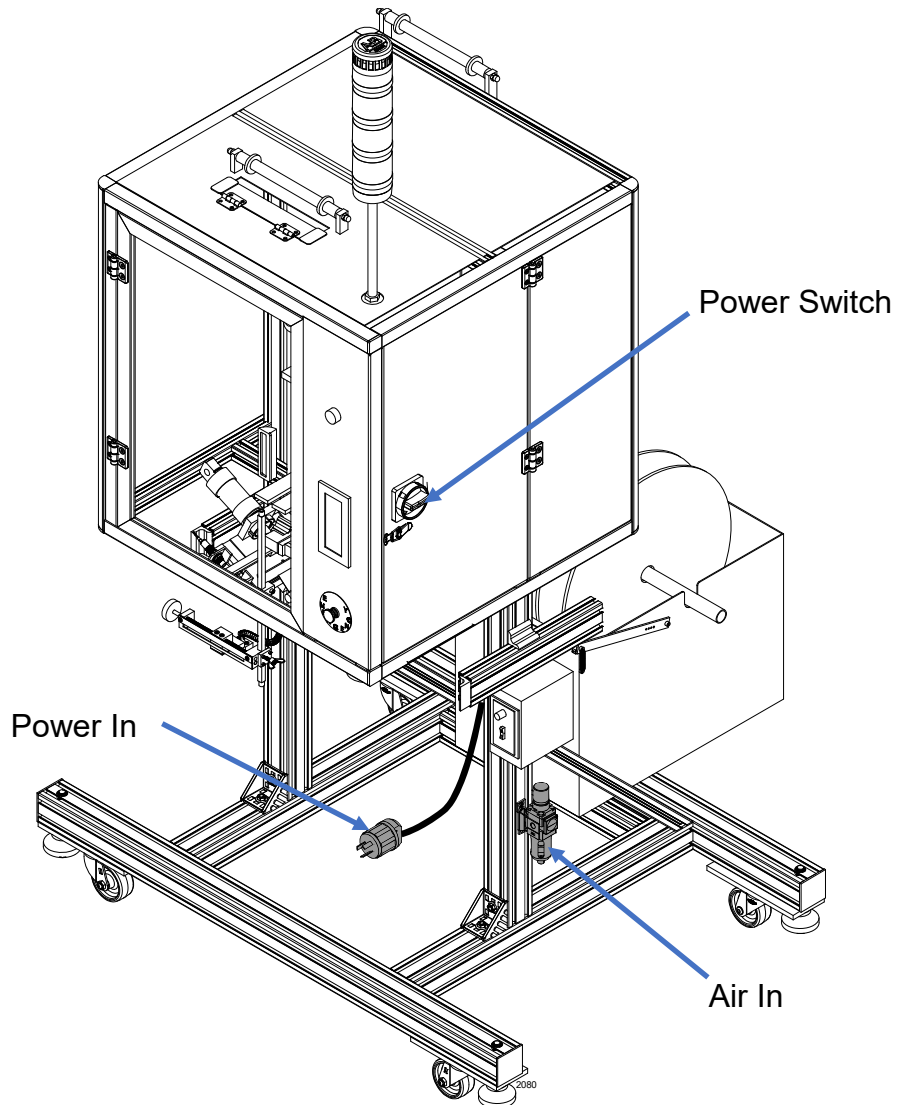
Please see your dealer for any optional equipment needs.

Location Requirements

- Place machine in the location where it can be easily accessed from all sides.
- Ensure that unit is level. Adjust levelling using the levelling feet.
- Align the Mandrel with the center line of the conveyor.
- Adjust the height of the machine by turning the adjustable feet until the space (A) from the top of the container to the bottom of the mandrel (B) is approximately half the length of a band. When this has been completed, tighten the adjustable feet. Most of the adjustment to set the height of the mandrel, relative to the top of the container, is accomplished with the crank on the side of the applicator. The leveling mounts should just be used to put the CH-100 at a height where both the shortest and tallest bottles can be accommodated.
- Secure the conveyor to the machine using a brace.
- After verifying that the supply voltage matches the voltage shown on the name-plate and on the electrical schematics, connect the three-phase power.
- Install the timing screw assembly (if available) so that the screw ends at least 12 inches upstream of the Mandrel.



Power Connections



Make sure power switch is set to “off” before plugging in. Do not “hot plug” any of the assemblies.

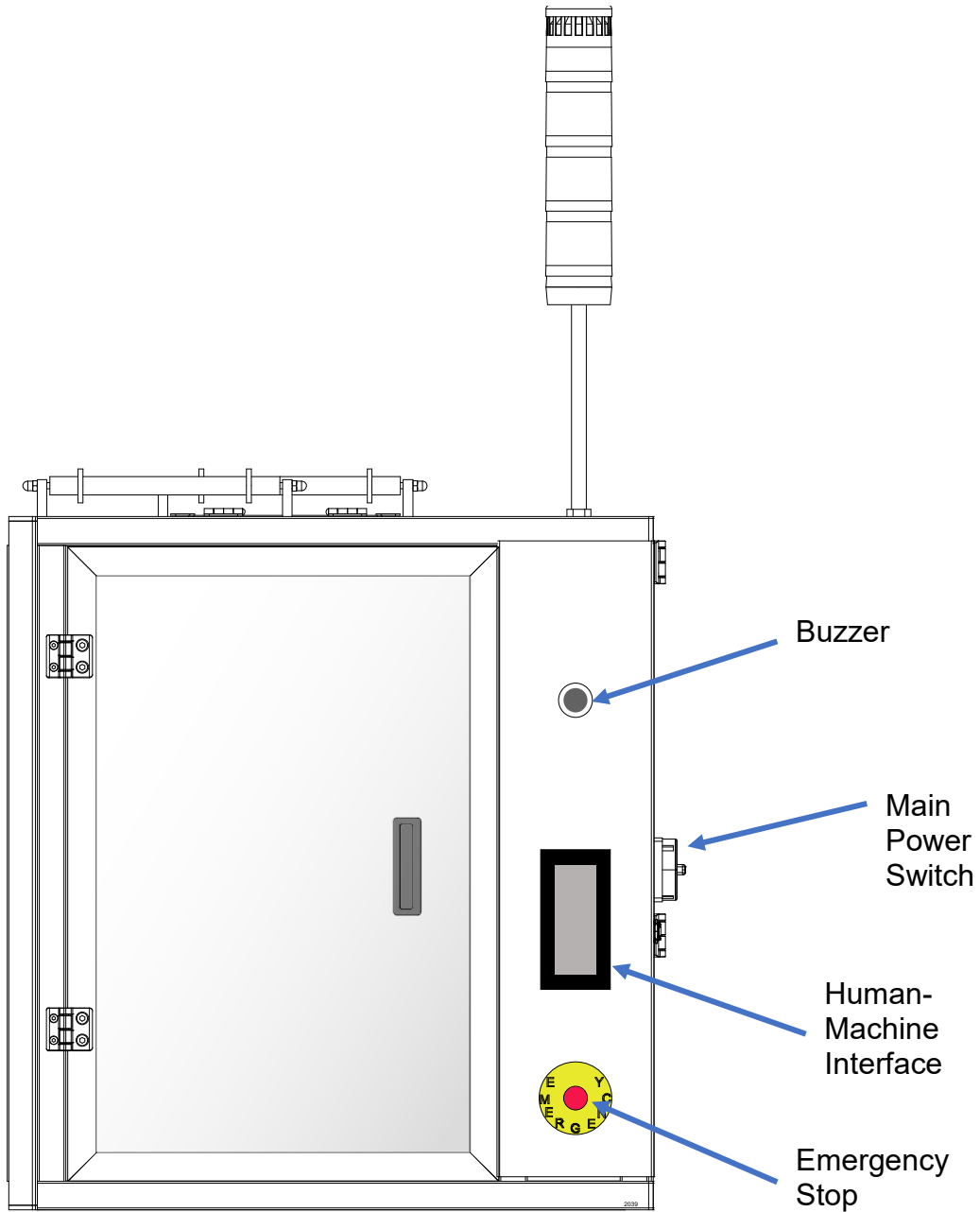
Operation

Before Running Product

Before running product, be sure to check the following:

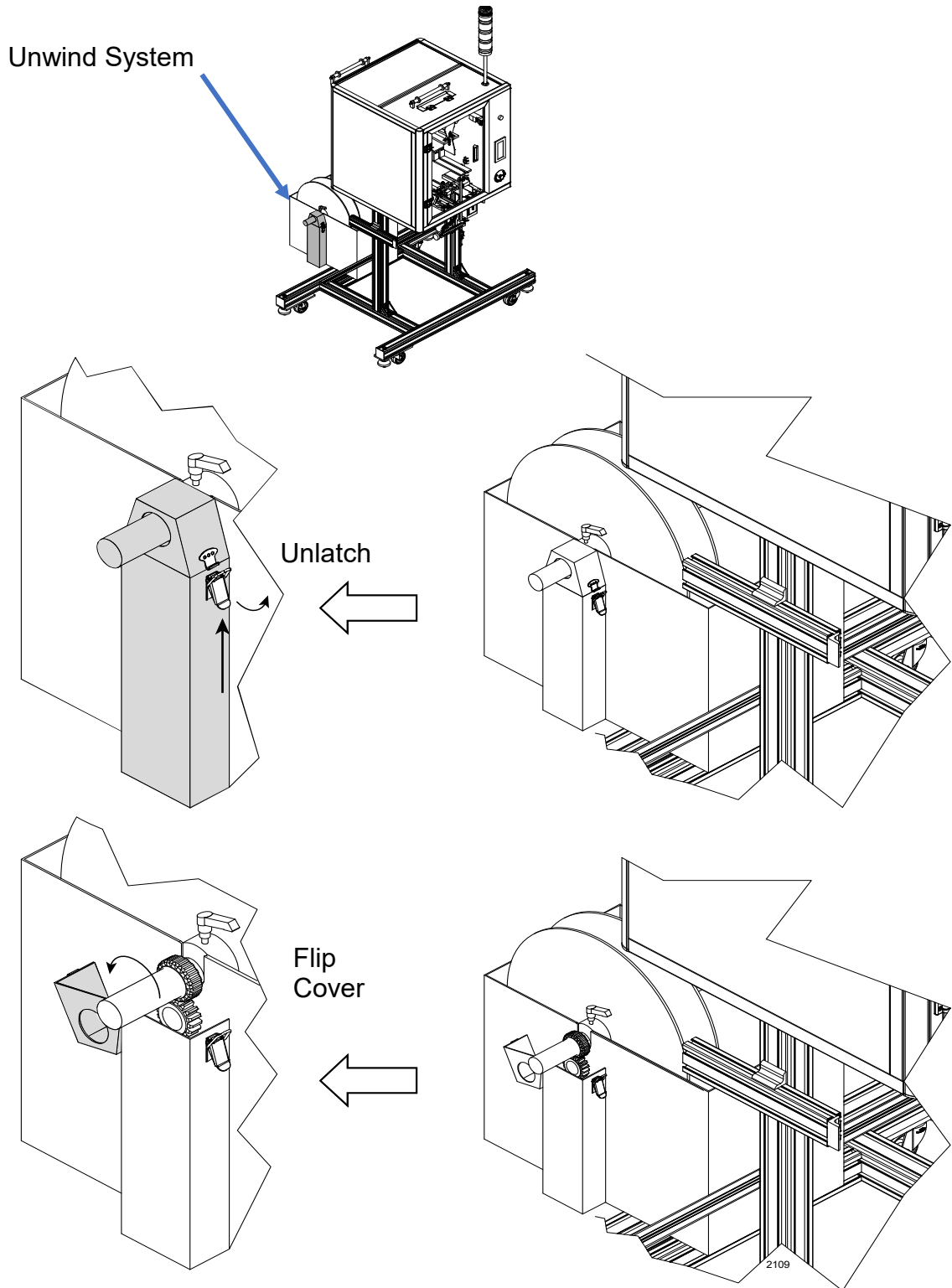
1. Container Conveyor Guide-widths and Timing Screw position should correspond to the width of the container and centering of the Mandrel on the conveyor.
2. Check that the Mandrel is installed securely.
3. Use MANUAL MODE to verify the correct cut and, when applicable, perforation position.
4. Use a container to make sure that the Brush-down units are set correctly (if applicable).
5. Verify that your Heater Tunnel is set up correctly.
6. Verify that the Motion Detector Sensor eye is at the correct height – usually to detect the leading edge of the cap of the product.

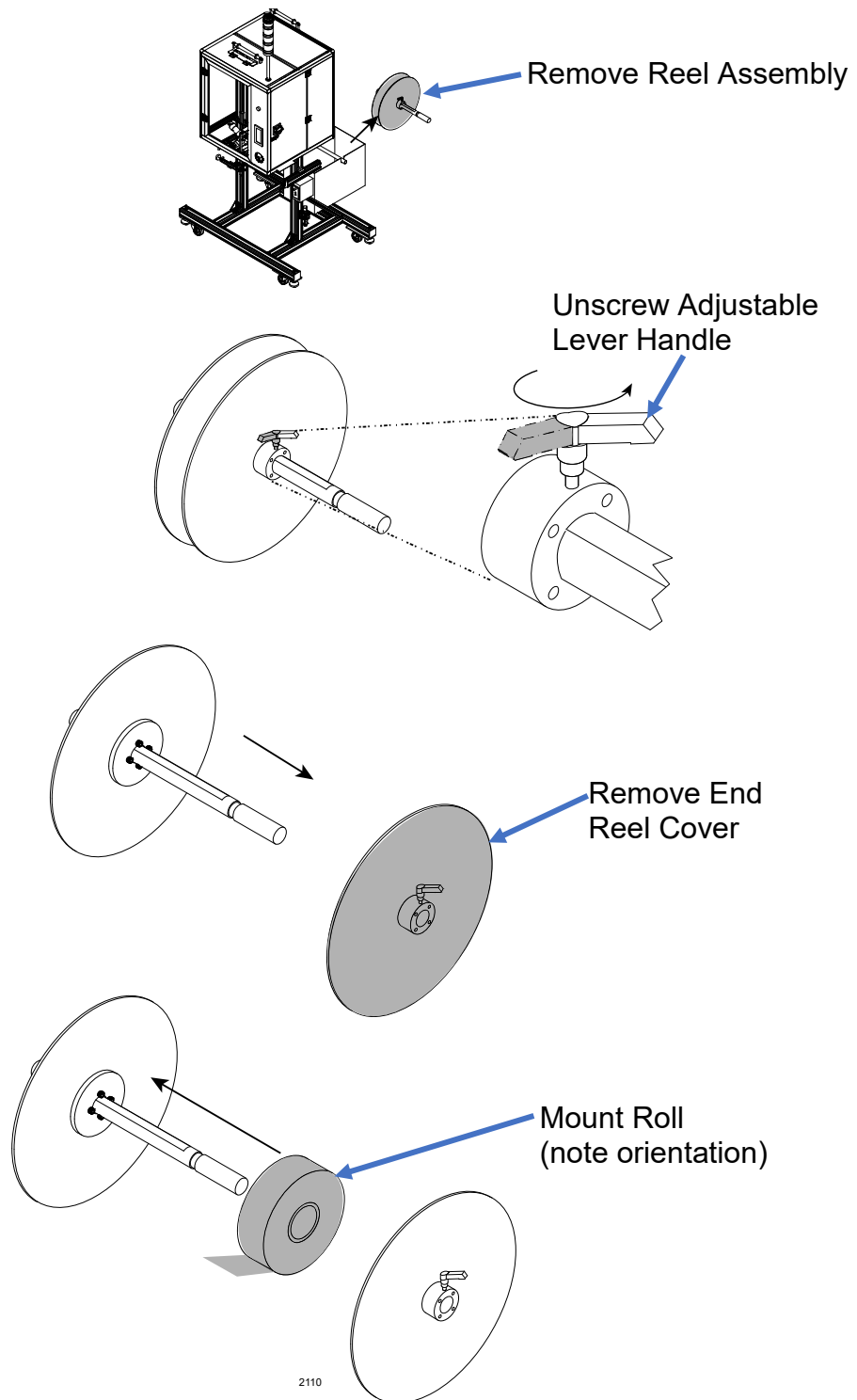
Controls



Loading a Film Roll

To load a film roll onto the CH-100, begin by unhitching the latch on the Unwind System Film Roll Holder found on the lower left-rear of the unit.

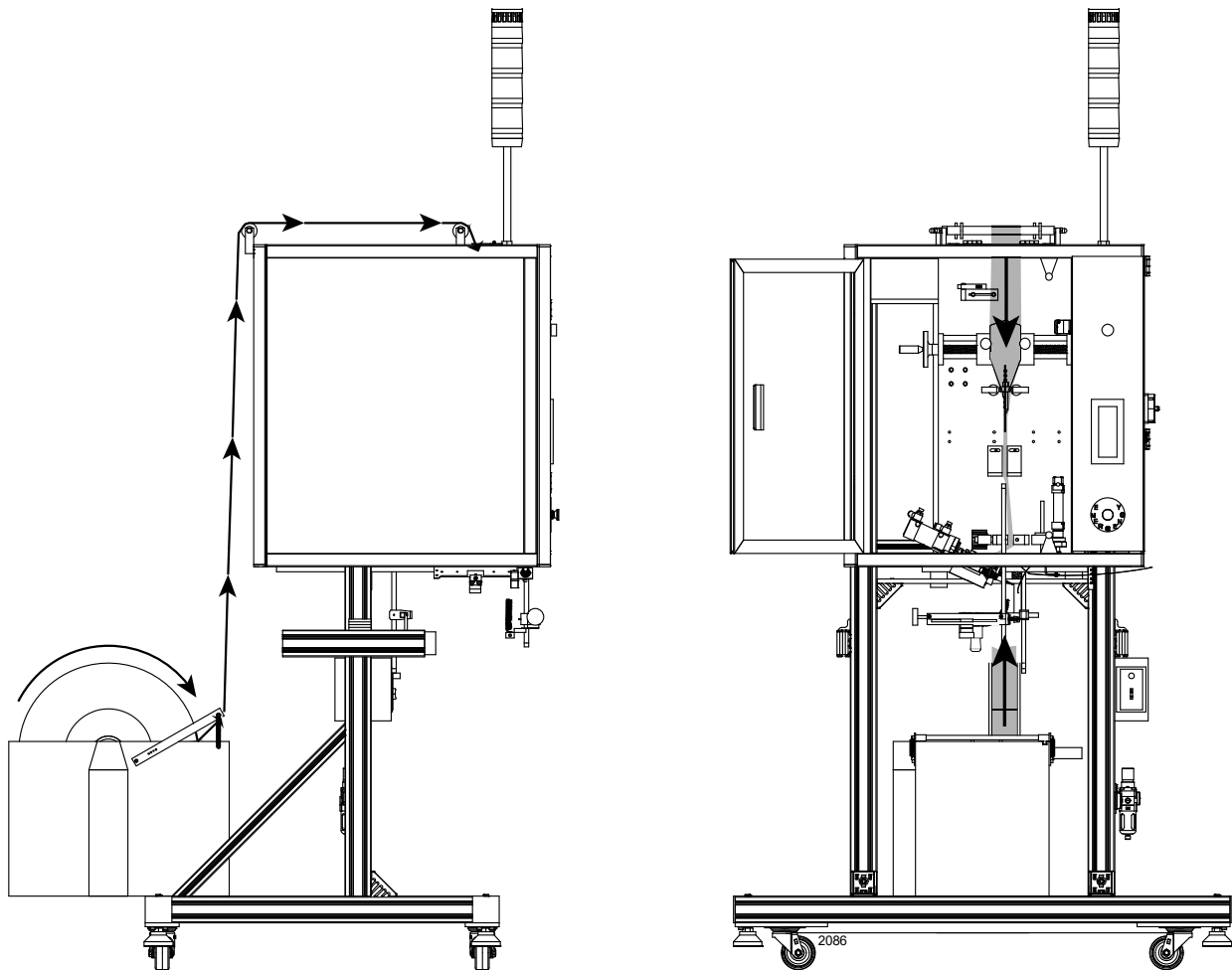




Perform steps in reverse order, to replace reel assembly into Unwind System film roll holder. Engage the gear teeth.

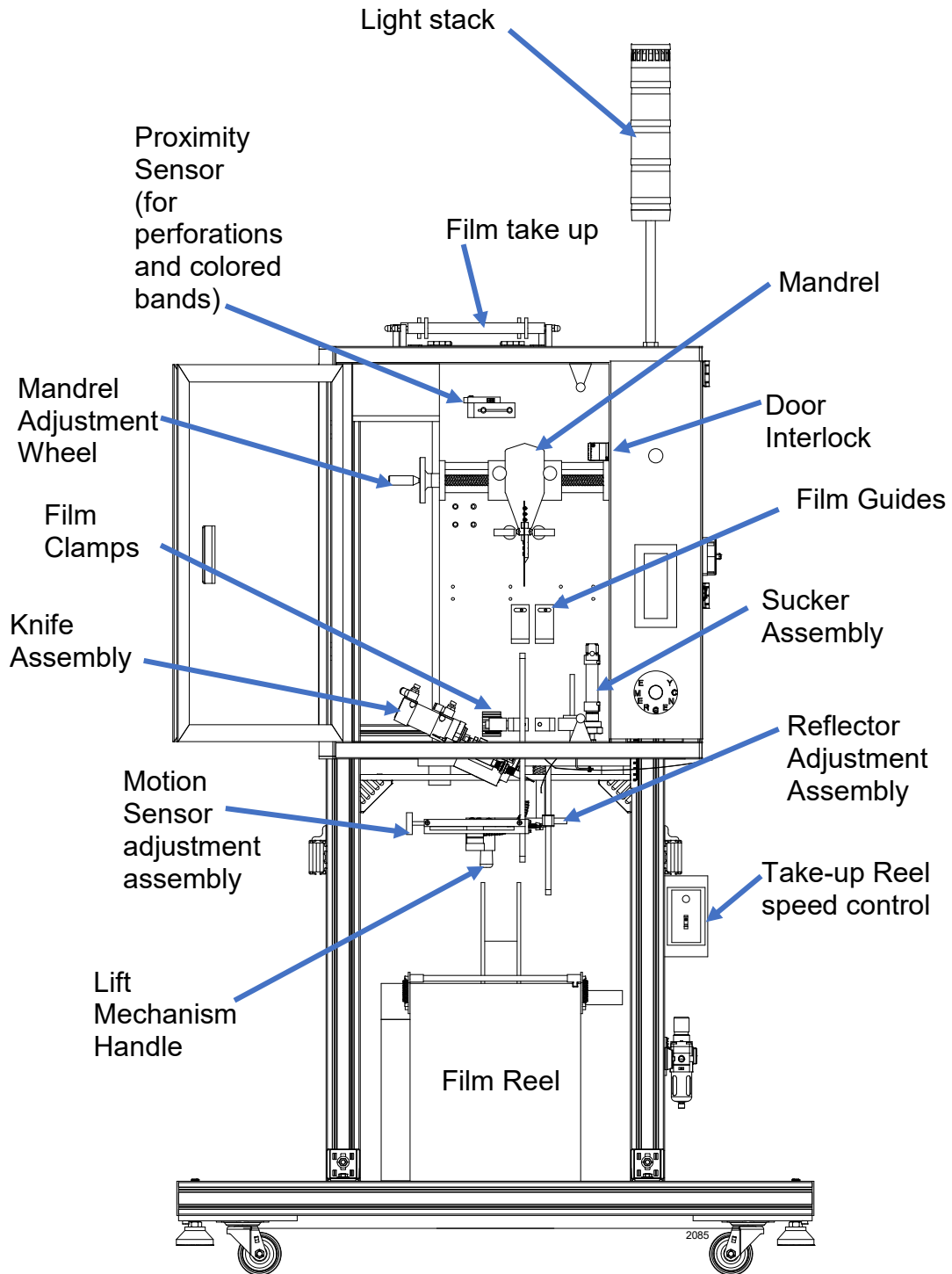
Threading Film

Remove the Reel Plate from the unwind system and load a roll of film; you will need to have the CH-100 powered up to utilize the unwind motor.



Ensure that film roll is centered with butterfly, and that sleeves are facing the correct orientation coming out of the roll if applicable.

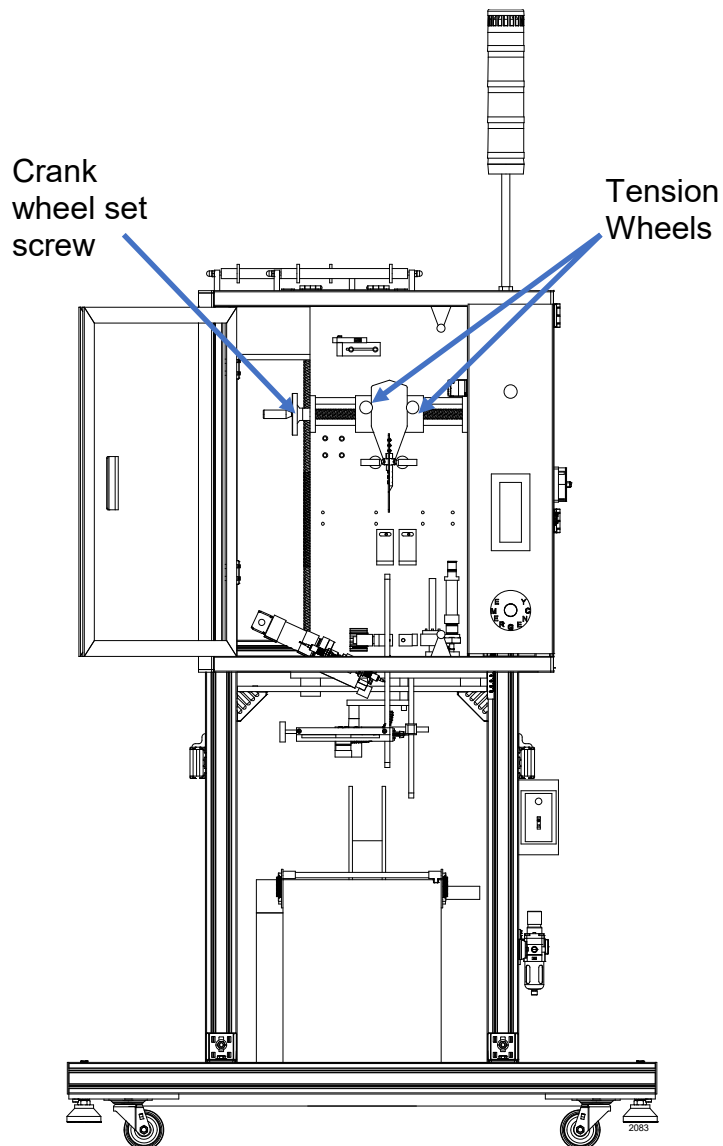
Sub-Assemblies



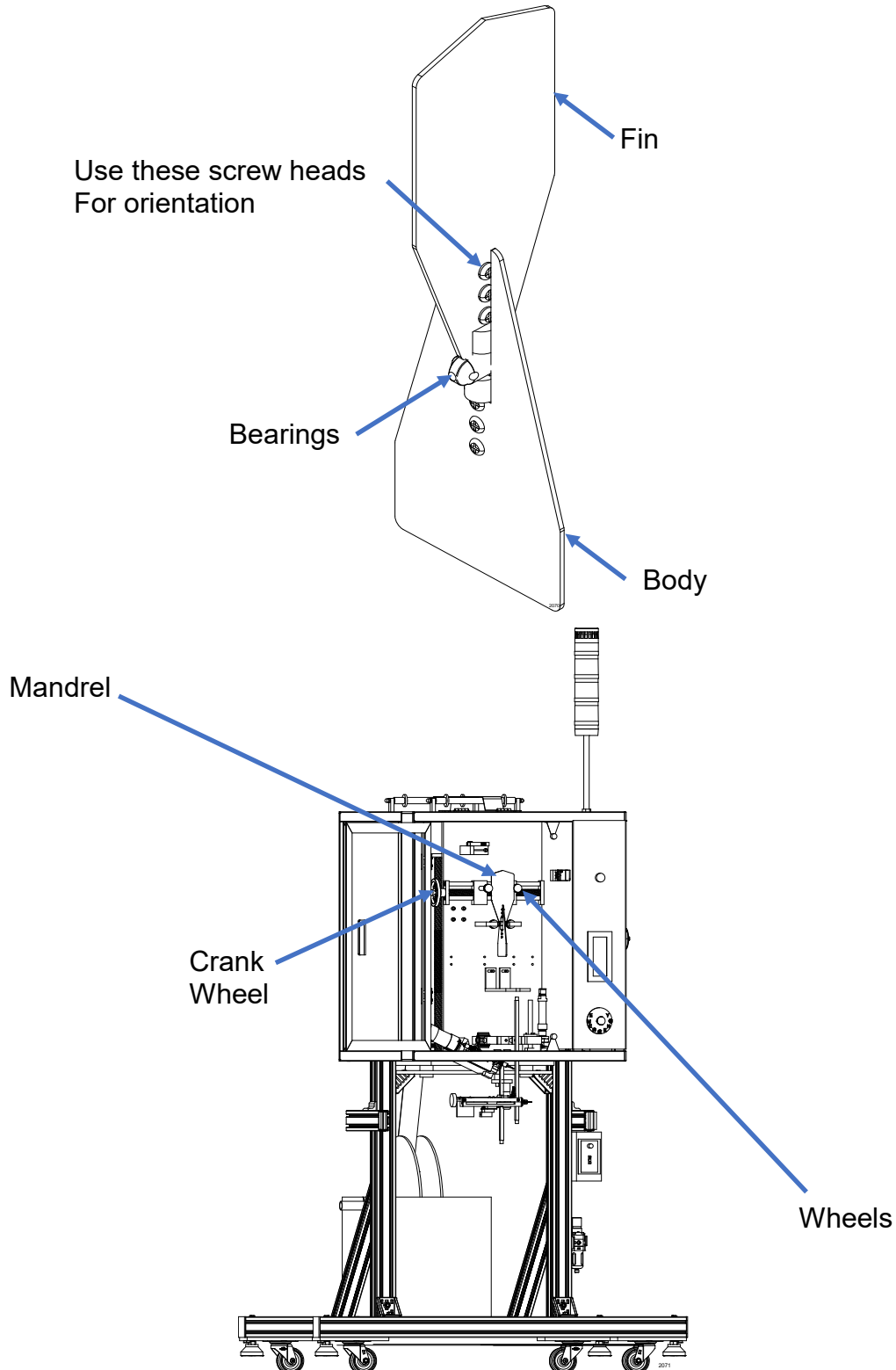
Changing/Installing/Adjusting Mandrels

It is good practice to adjust the Mandrel if it is already installed before putting film on it.

To install the Mandrel, open the front door and loosen the crank wheel holding the tension steel wheels. Turn counter-clockwise to loosen the tension wheels in preparation of setting/installing the Mandrel.



Carefully place the Mandrel down through the center of the two wheels with the screws on the Mandrel towards the user. The sensor is adjustable. Make sure that the mandrel is situated with the mandrel's bearings in line with the wheels (see following for setup). Use crank wheel for adjustment.

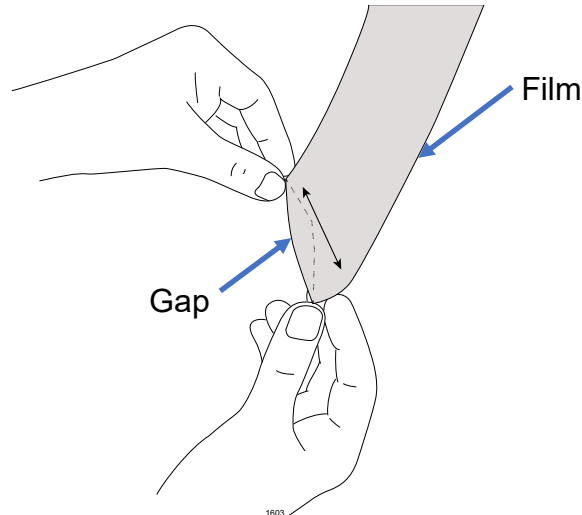


Grasp the Mandrel and hold it in place while adjusting the steel wheels. Using the adjusting wheel, tighten until the steel wheels touch the mandrel. Line up if needed.

Tighten the Support Rollers (bearings) so that they locate the Mandrel in the center of the Cutter unit.

Side wheels should be tight, leaving a slight gap for film. Tighten steel wheels, then back off leaving a gap for the film. Thread film over the film over the film locating rollers, then through the slot on the top (through the door).

Open the end of the film so it is not stuck together.



Pull the film, and slip it over the end of the Mandrel's fin. Pull film past the Print-Reading Sensor so that the amber LED goes out. Continue pulling over the cone-shaped tip, manipulating it as you go. Push the film down onto the Mandrel until it is completely over the Mandrel.

Turn on power at the HMI.

Close the door to engage the safety interlock switch.

Go to the HMI screen and press "**MANUAL**" tab, "**FEED-JOG**".

Film will self-align on the mandrel.

Press "**CUTTER**", The film is cut. Check to see if it is cutting on the gap area of the film. If Cutter is performing correctly, re-tighten the set screws for both sets of wheels.

The Film Feed Roller adjustment is located in the left-hand side inside the cover of the CH-100. The illustration shows the area of location. The wheels of the Film Feed "spitter" are vertically adjustable, and can be loosened or tightened on the Mandrel. Horizontal movement is pre-set, and is not adjustable.

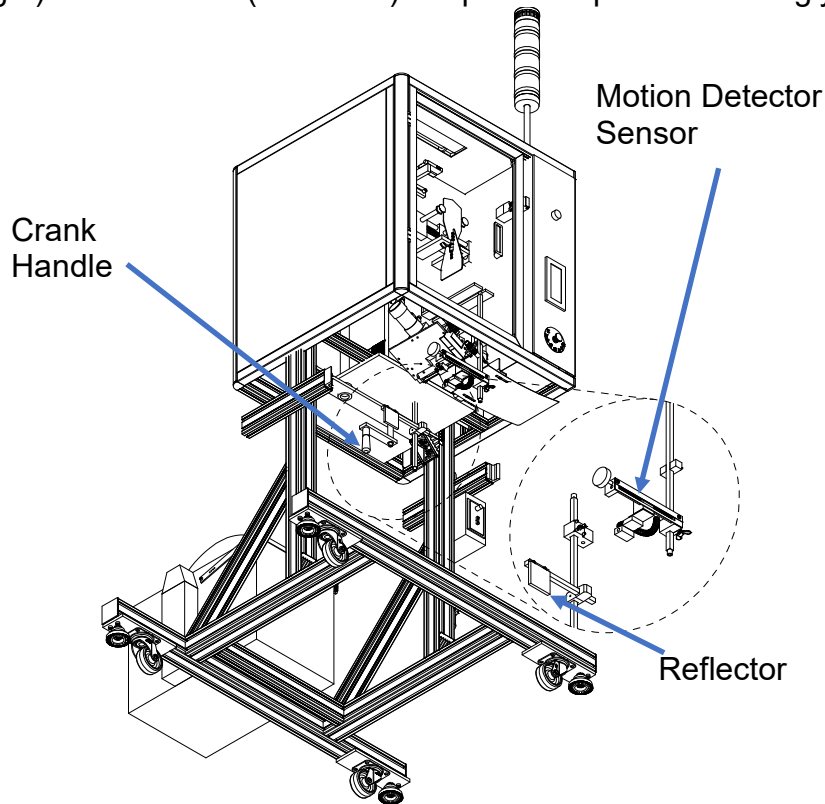
The CH is preliminarily set up, and is ready to accommodate the Conveyor.

Conveyor

The CH-100 is fed by conveyor. Using the lever crank handle on the underside, the cabinet can be raised and lowered to accommodate the introduction of the conveyor. Likewise, the Conveyor can be adjusted for height, and levelled. Raise the CH-100 cabinet, and move the Conveyor underneath it. Check to see that the Conveyor is in line with the cabinet. Place a product on the conveyor and under the cabinet and adjust the height of the CH until the Mandrel is approximately 1-1/2 inches above the product.

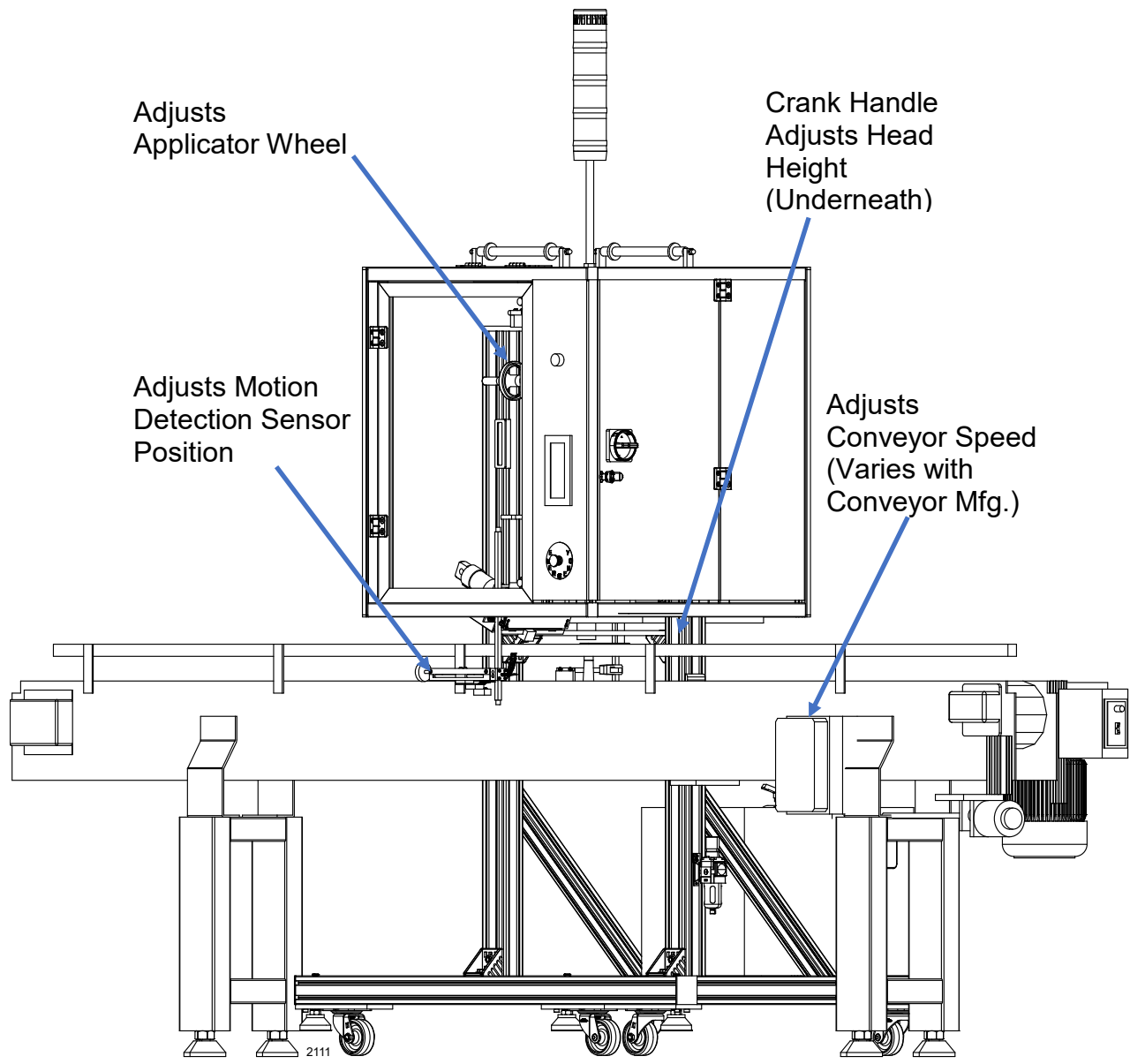
Motion Detector Sensor (product trigger)

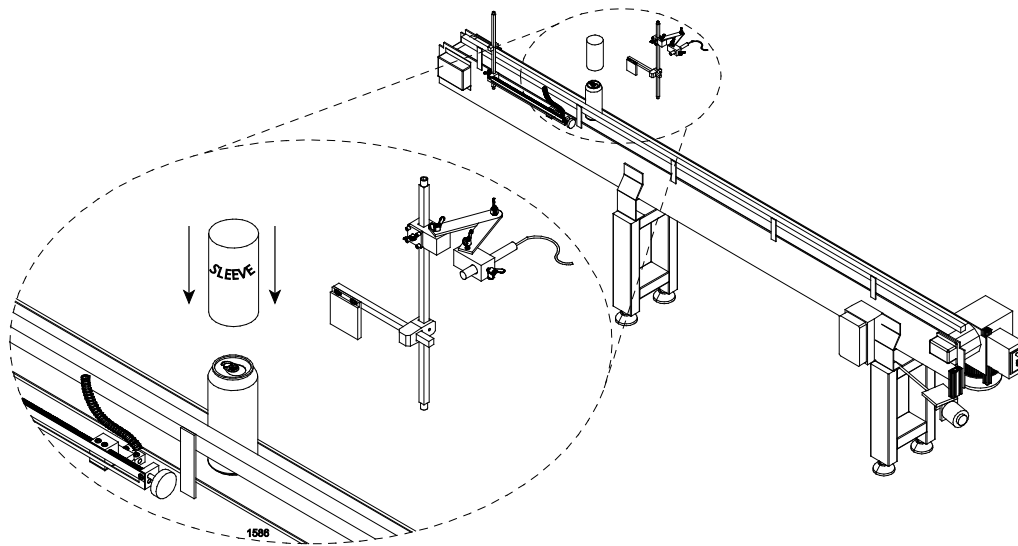
Adjust the Motion Detector Sensor on the CH-100 to vary the timing of the band application. Using the knob on the front Motion Detector Sensor, the user can delay (to the right) and advance (to the left) the product speed accordingly.



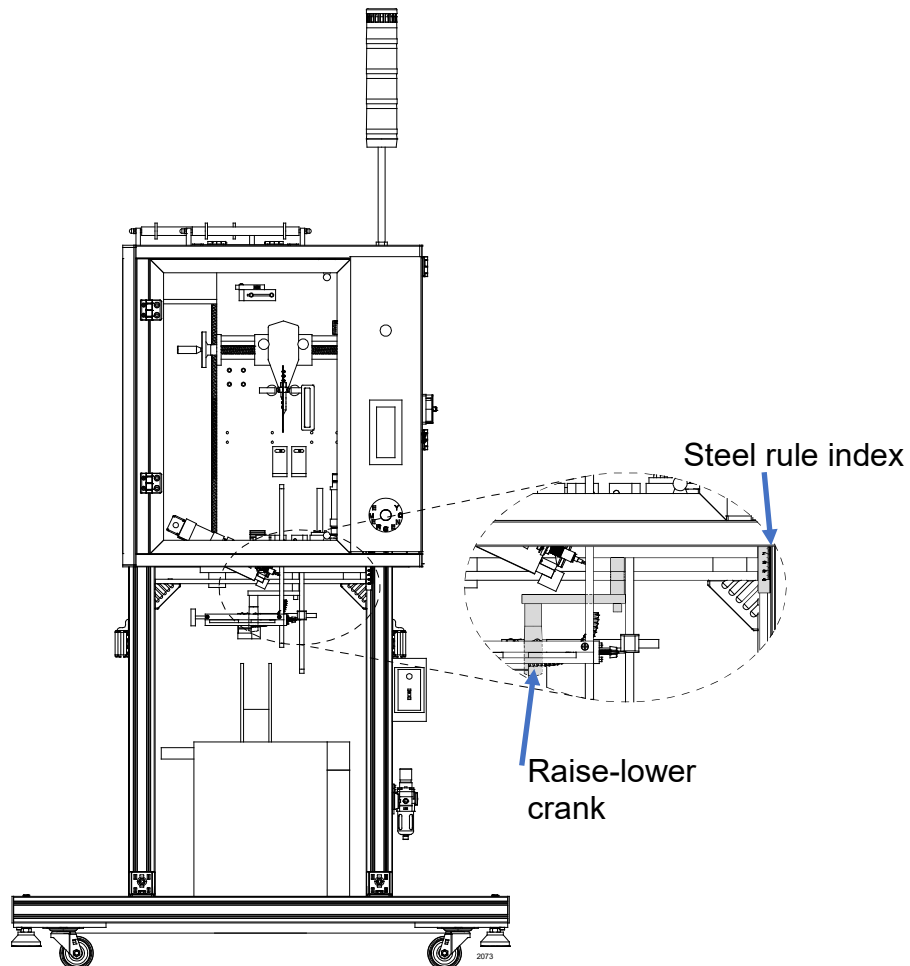
The item being banded breaks the sensor as it goes by on the conveyor. The Sensor determines whether the item is “there” and if so, gets banded.

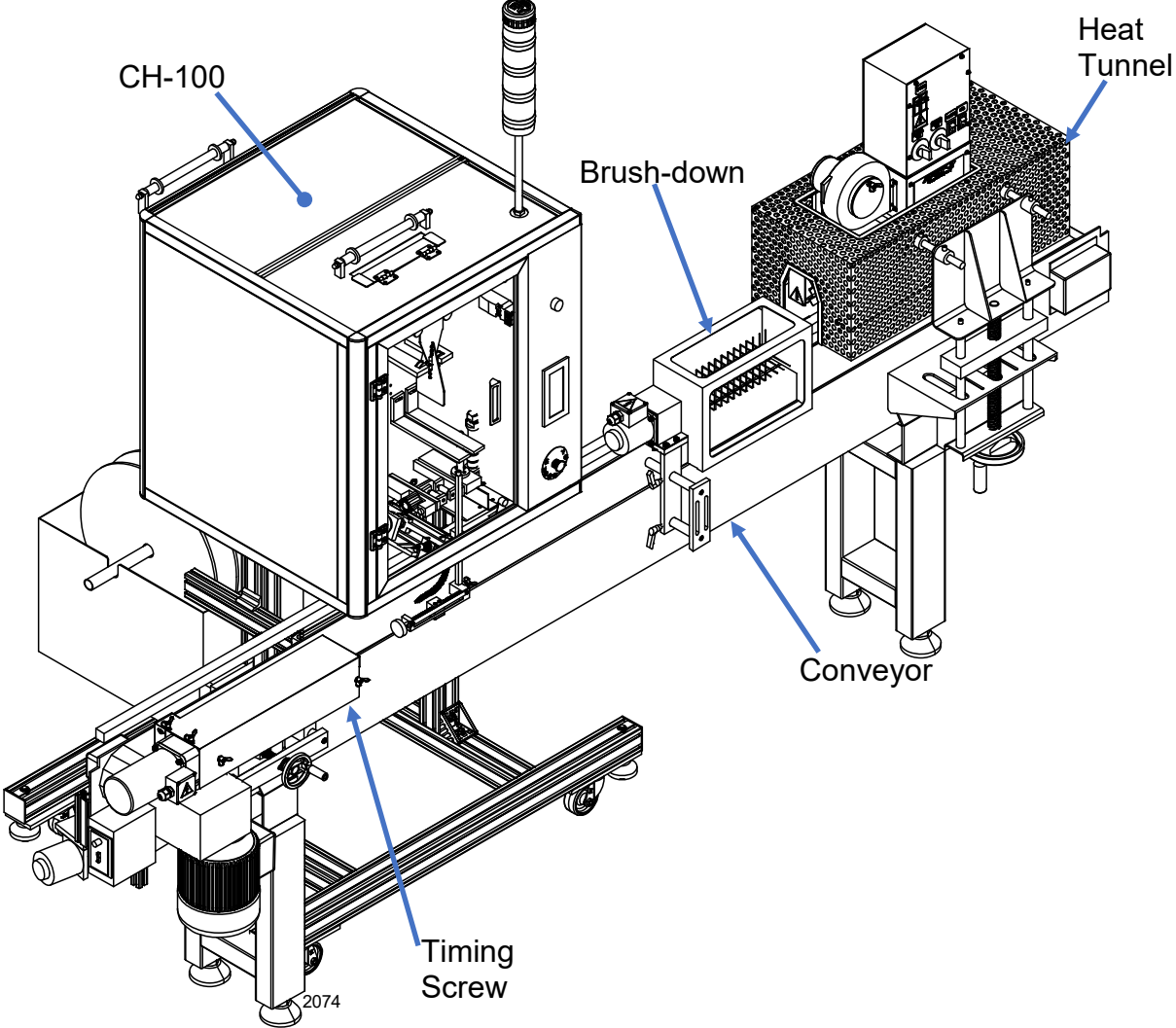
Adjustment Locations





The CH-100 is lowered or raised to accommodate the conveyor using the handle on the underside of the unit. There is a steel rule on the side to show which number it has been indexed to so it may be placed in the same position if the same product is run again.

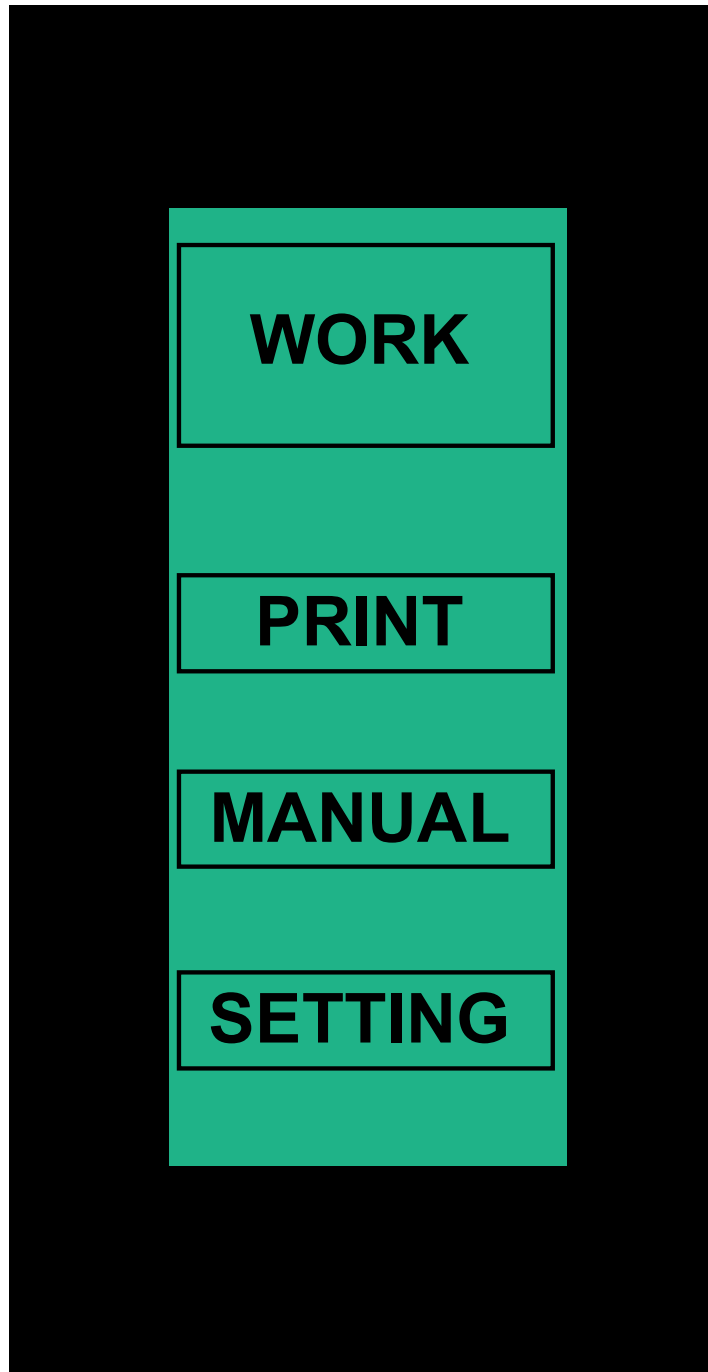




Typical setup

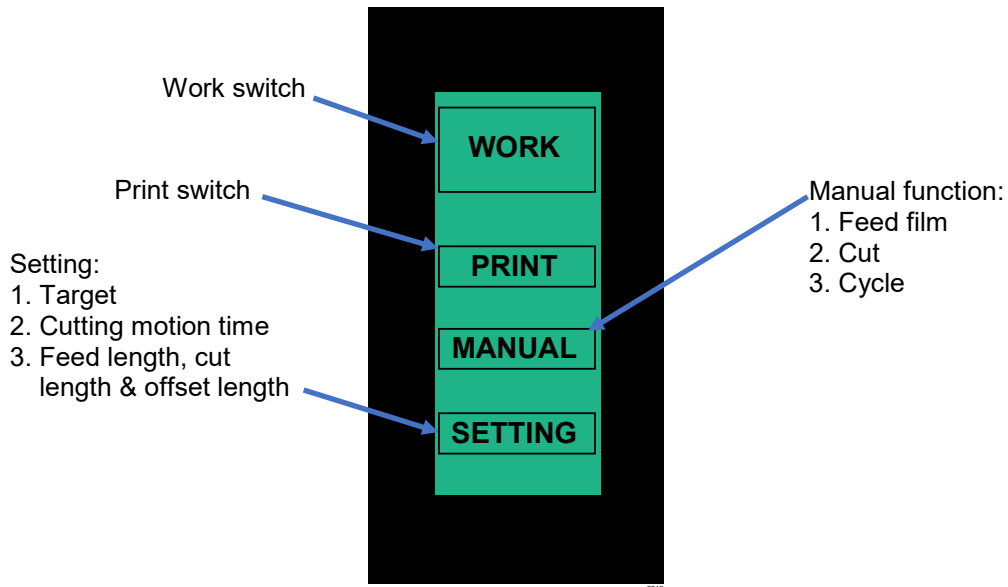
Running the CH-100

First screen on power-up



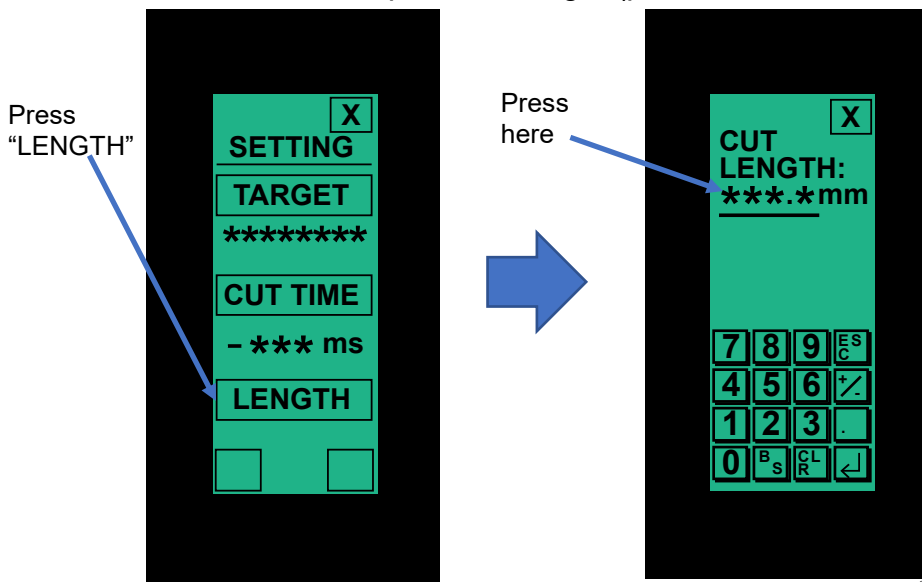
Testing

A. Without using the reading print sensor



Press "SETTING"


1. Press "LENGTH" to set up the cut length (press the "star" to access the keyboard).



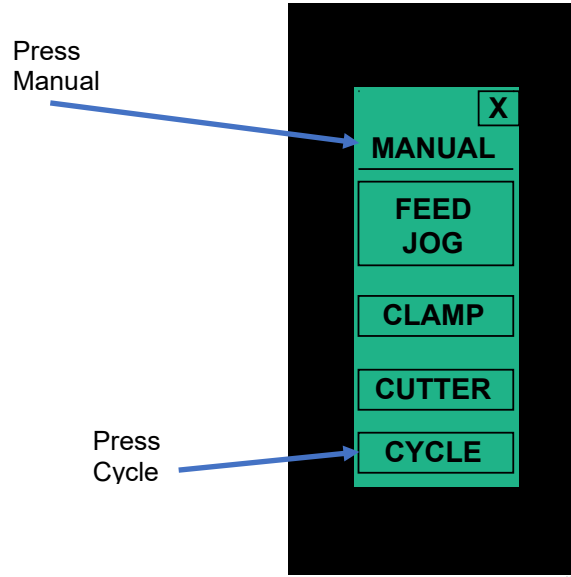
Example:




Cut length has been set. The feed motor will send 30.5mm of film.

Press  twice to jump to main function screen.

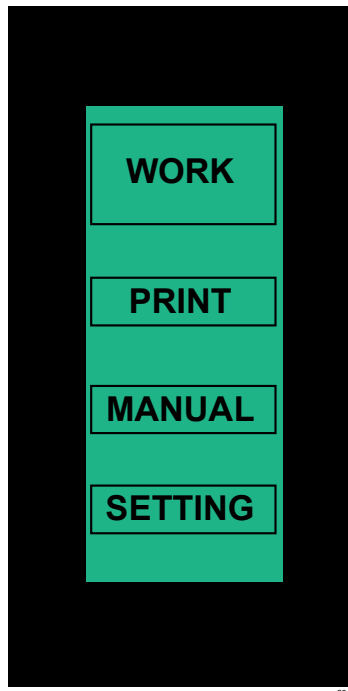
2. Press "MANUAL" for manual function screen.



Press "CYCLE", Test run the machine to check if it is working properly. (You must test run at least 3 times to check the Label)

Press  to jump to the main function screen.

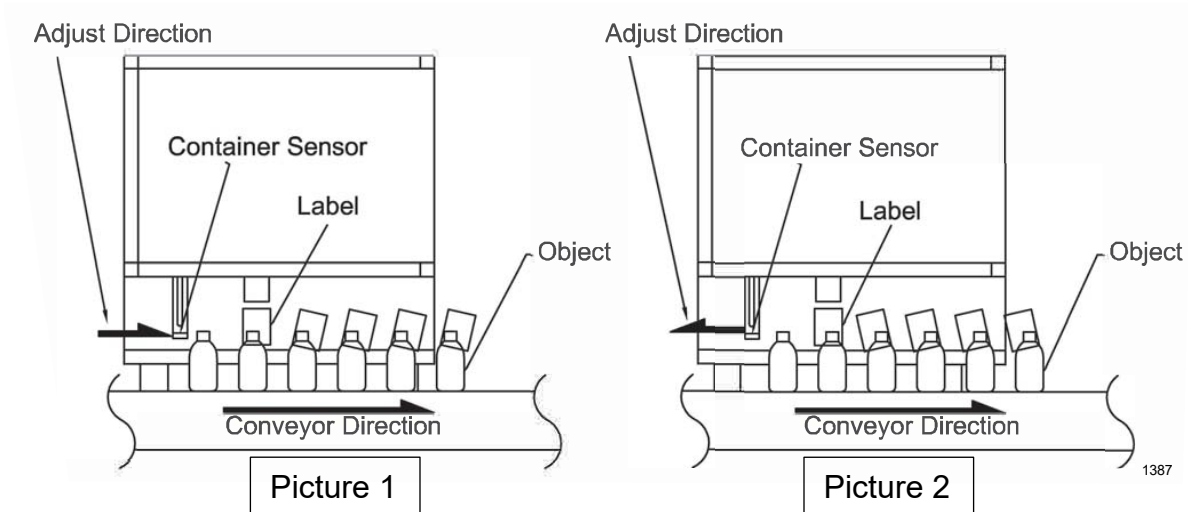
3. Press "WORK" for the work screen.



4. Test run with the actual object being banded and adjust the work detect sensor's position to apply the band over the bottles accurately.

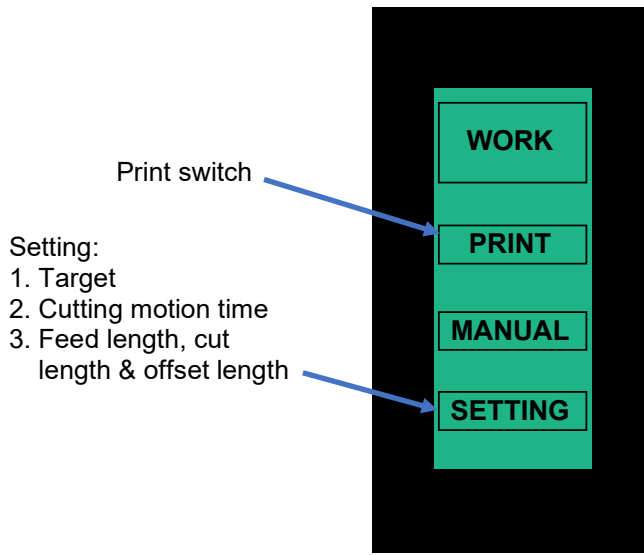
** If the band falls too soon, before the bottle is underneath the center line of the mandrel, move the sensor towards the mandrel (as shown in Picture 1).

** If the band falls too late, after the bottle has passed underneath the center, line of the mandrel, move the sensor away from the mandrel (as shown in Picture 2).



B. Using the reading print sensor

1. Press the “PRINT” switch.



2. Press “SETTING”

Press “LENGTH” to set up the cut length (press the “star” to access the keyboard). (Press the star, and the keyboard will appear.) Measure the frame length by ruler, then key in the data.


EXAMPLE:




Cut length has been set. Mean frame length is 10.5mm.
Set the offset makeup to “0”

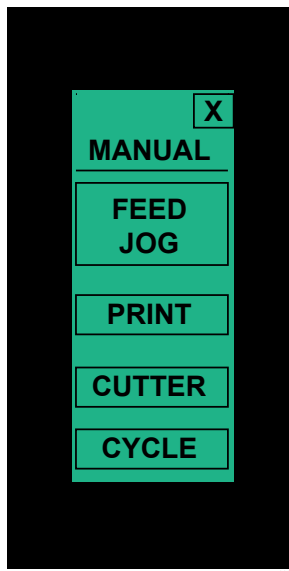
(Press the star, and the keyboard will appear.)




Press  to jump to the setting function screen.

Press  to jump to the main function screen.

3. Press "MANUAL" for manual function screen.

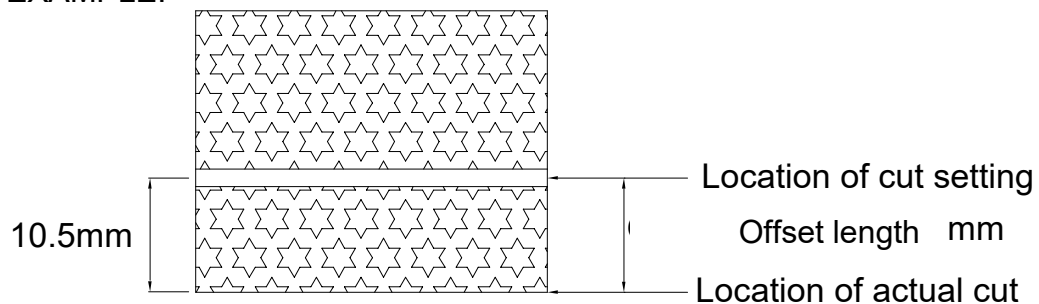


Press "CYCLE", Test run the machine to check if it is working properly. (You must test run at least 3 times to check the Label).
Next, determine the offset number.

Press the  twice. The screen returns to the main function screen.

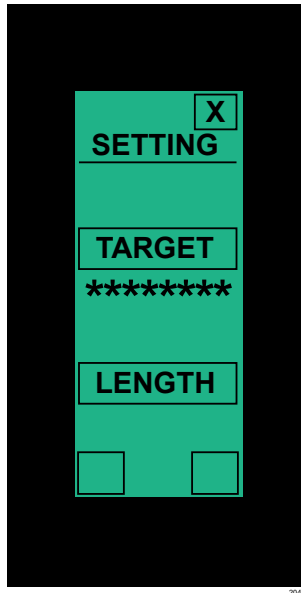
4. Measure the offset with a ruler

EXAMPLE:



5. Modify the offset length setting.


Press "SETTING", then press "LENGTH" to set up the offset length.



(Press the star, and the keyboard will appear.)

EXAMPLE:



Press the  twice. The screen returns to the main function screen.

6. Repeat step 4 of above to check where the bands are being cut after you have entered the offset length.

7. If the band's actual cutting location is below the location of the planned cut, then the offset length should be increased.

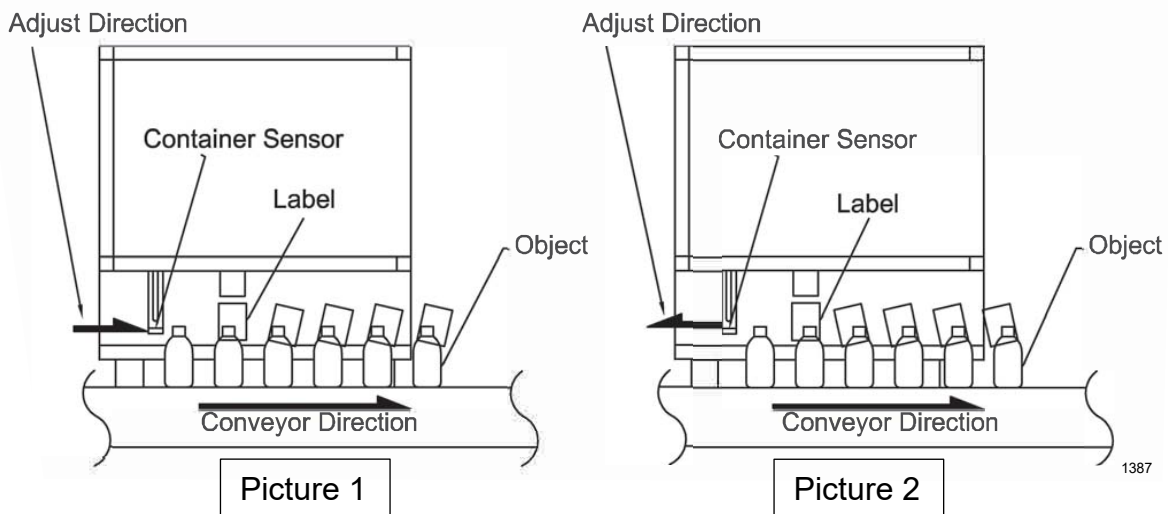
** If the band's actual cutting location is above the location of the planned cut, the offset length should be decreased.

8. Turn on the work switch.

9. Test run with the actual objects being banded, adjust the work detect sensor's position to shoot the bands onto each bottle accurately.

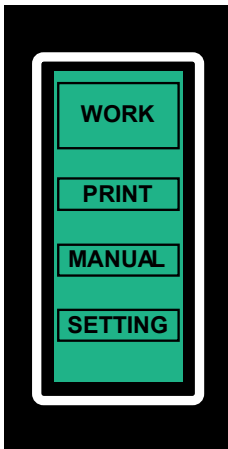
** If the band falls too soon, before the bottle is underneath the center line of the mandrel, move the sensor towards the mandrel (as shown in Picture 1).

** If the band falls too late, after the bottle has passed underneath the center line of the mandrel, move the sensor away from the mandrel (as shown in Picture 2).



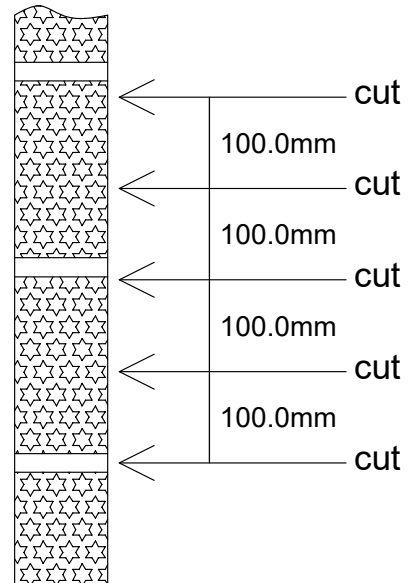
Printing and none-printing

None-printing mode

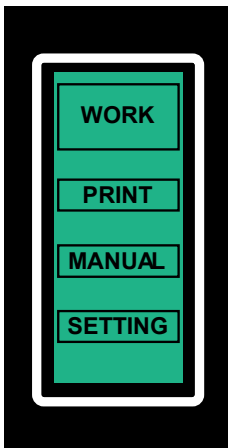


“PRINT” switch is off.

CUT LENGTH = 100.0 mm



Printing mode

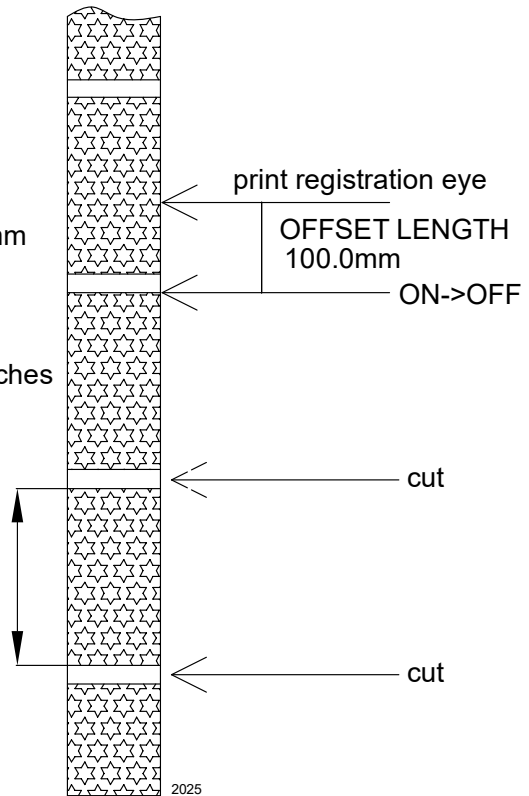


“PRINT” switch is on.

CUT LENGTH = 200.0 mm
OFFSET LENGTH = 100.0 mm

Sends 100mm more when
print registration eye signal switches
from on to off.

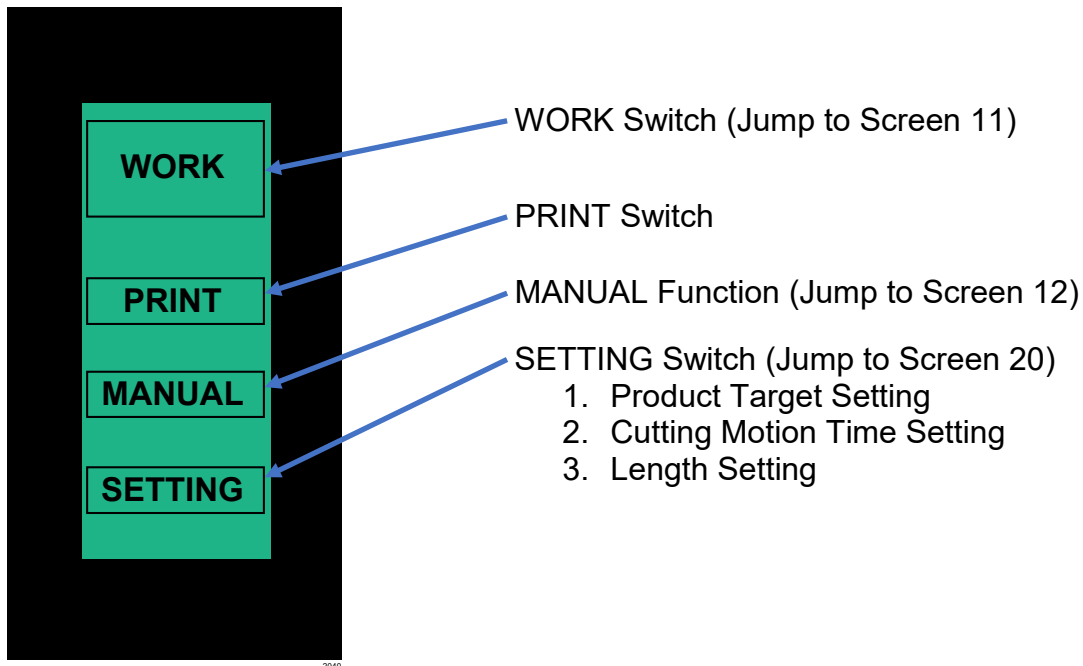
Frame length
(Cut length)
200.0mm



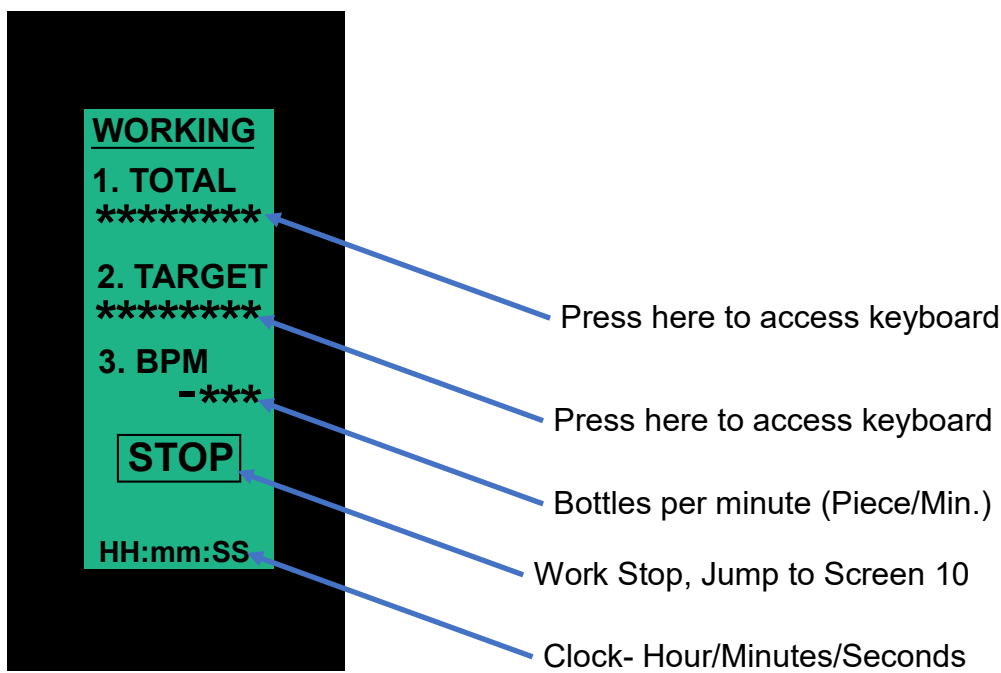
Check registration on film. Keep a pair of scissors handy to cut off the film at clear spot in the film. Make sure that it is smooth and “un-crinkled”.

Touch Panel Screens

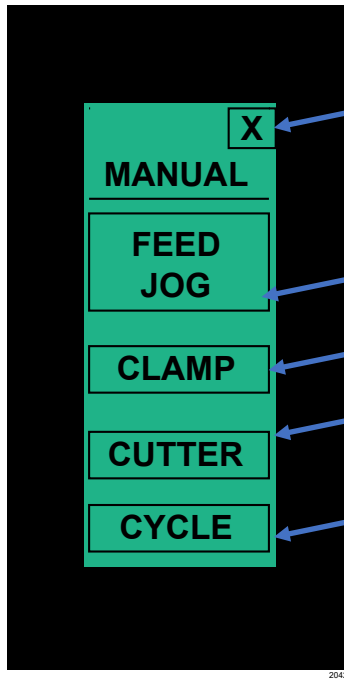
Screen 10



Screen 11



Screen 12



Jump to Screen 10

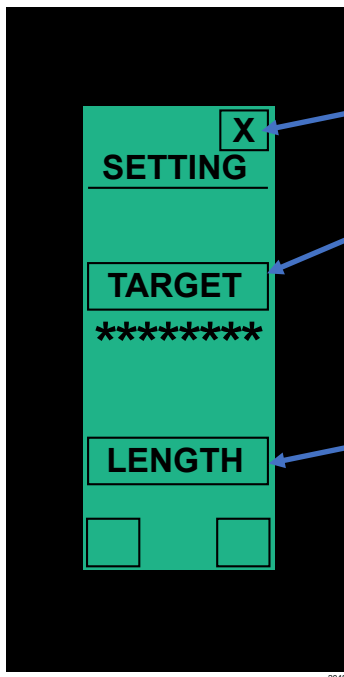
Feeding Film

Clamping Wheel

CUTTER

FEED + CUT

Screen 30

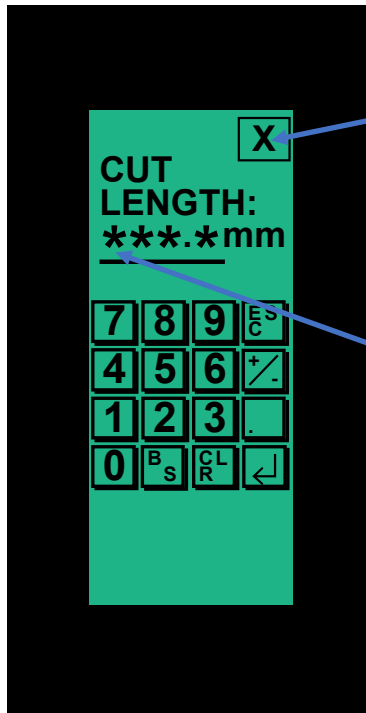


Jump to Screen 10

Jump to Screen 31

If the PRINT key is on,
Pressing the key will jump to Screen 14
If the PRINT key is off,
Pressing the key will jump to Screen 13

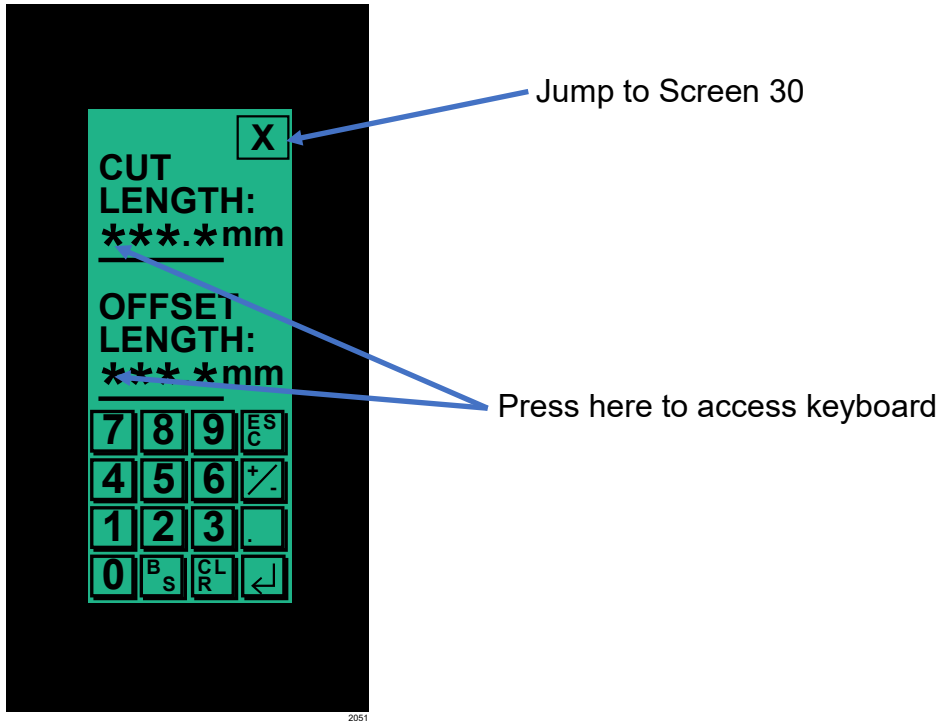
Screen 13



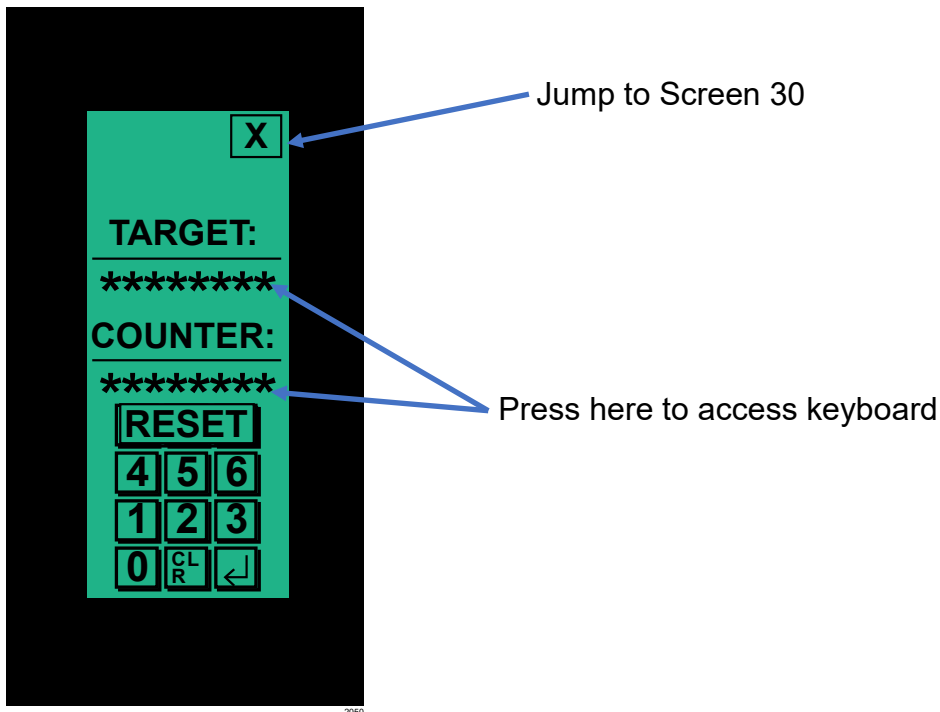
Jump to Screen 30

Press here to access keyboard

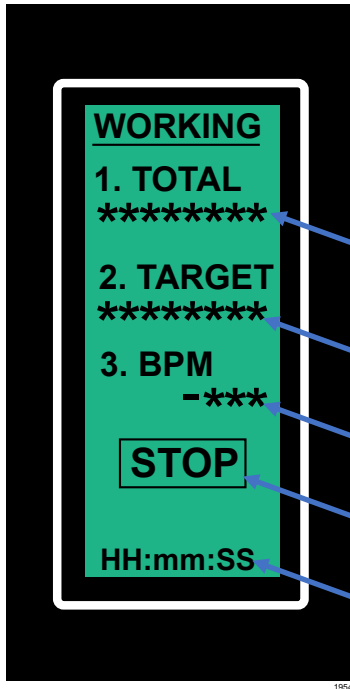
Screen 14



Screen 31



Screen 11



Press here to access keyboard

Press here to access keyboard

Bottles per minute (Piece/Min.)

Work Stop, Jump to Screen 10

Clock- Hour/Minutes/Seconds

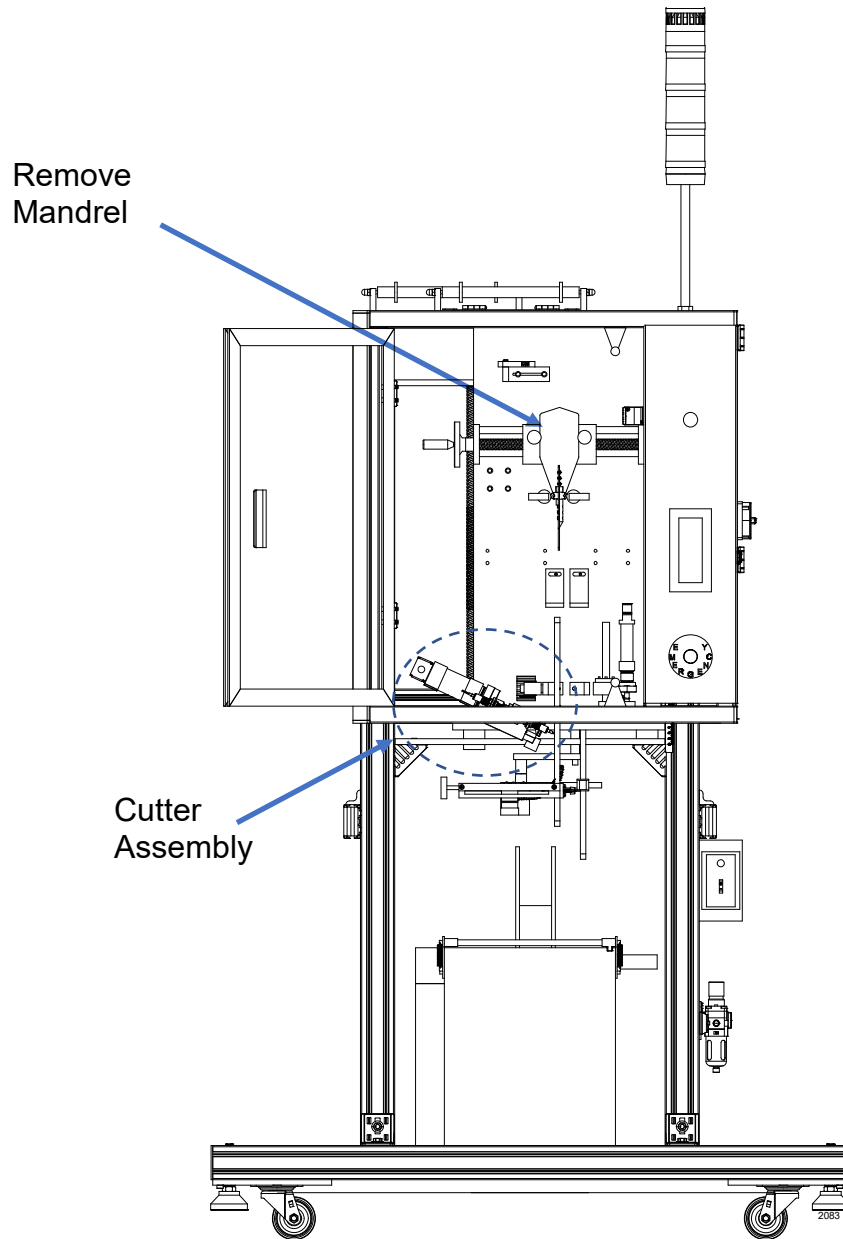
Maintenance

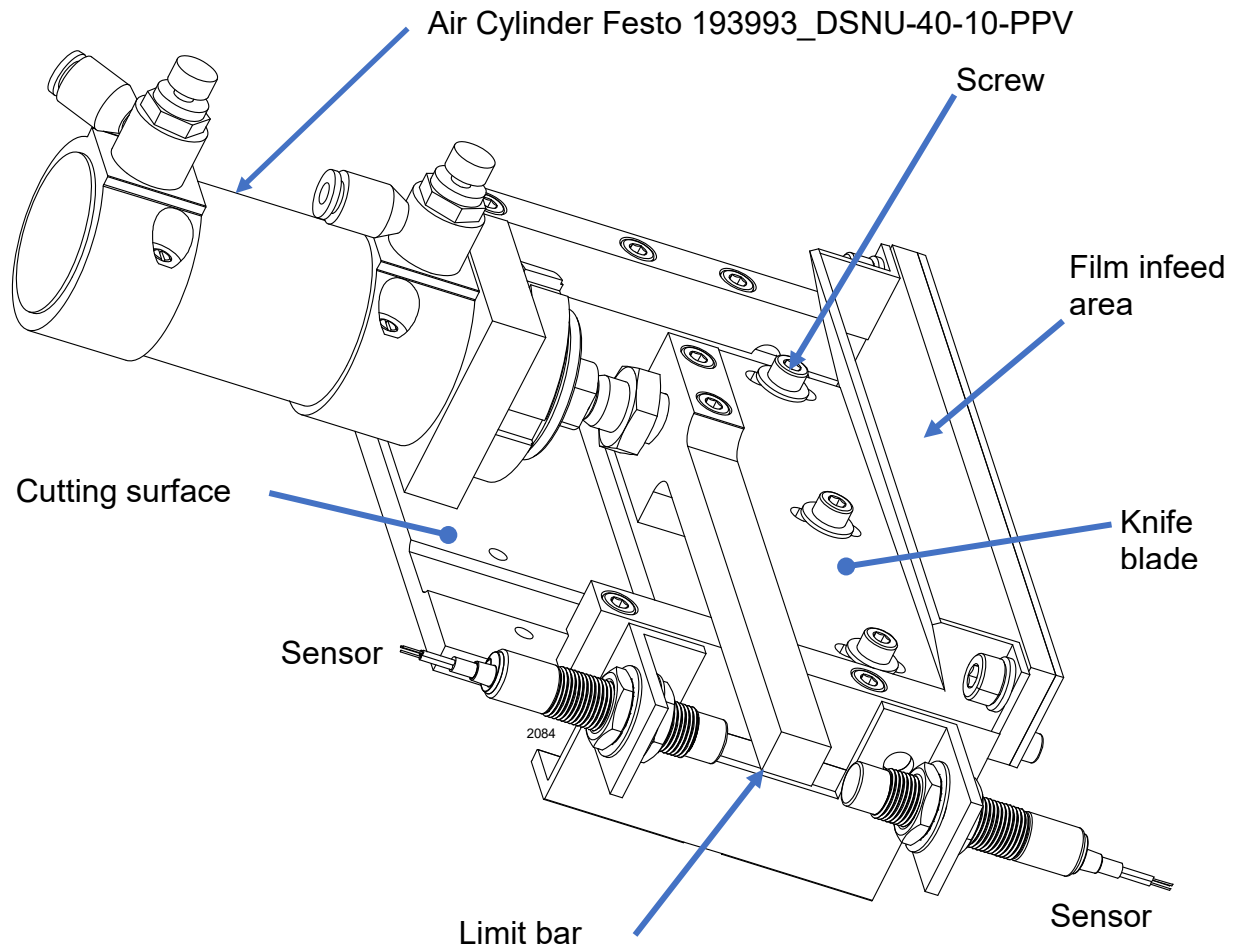
Changing Cutter Blade

Ensure that the power is off and that the unit is unplugged.

Disconnect the air.

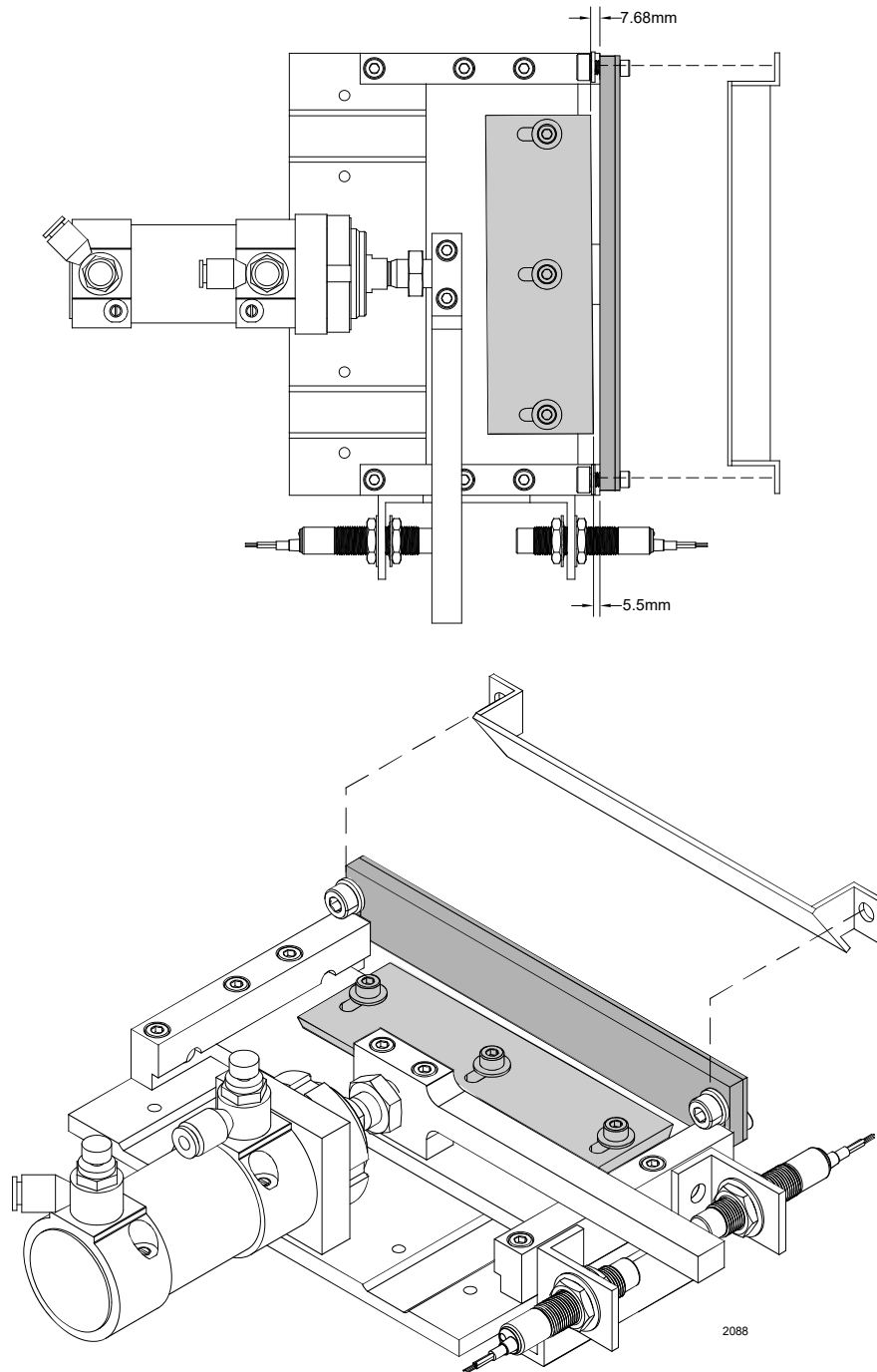
Open the door. Remove the mandrel and place it in a safe place.





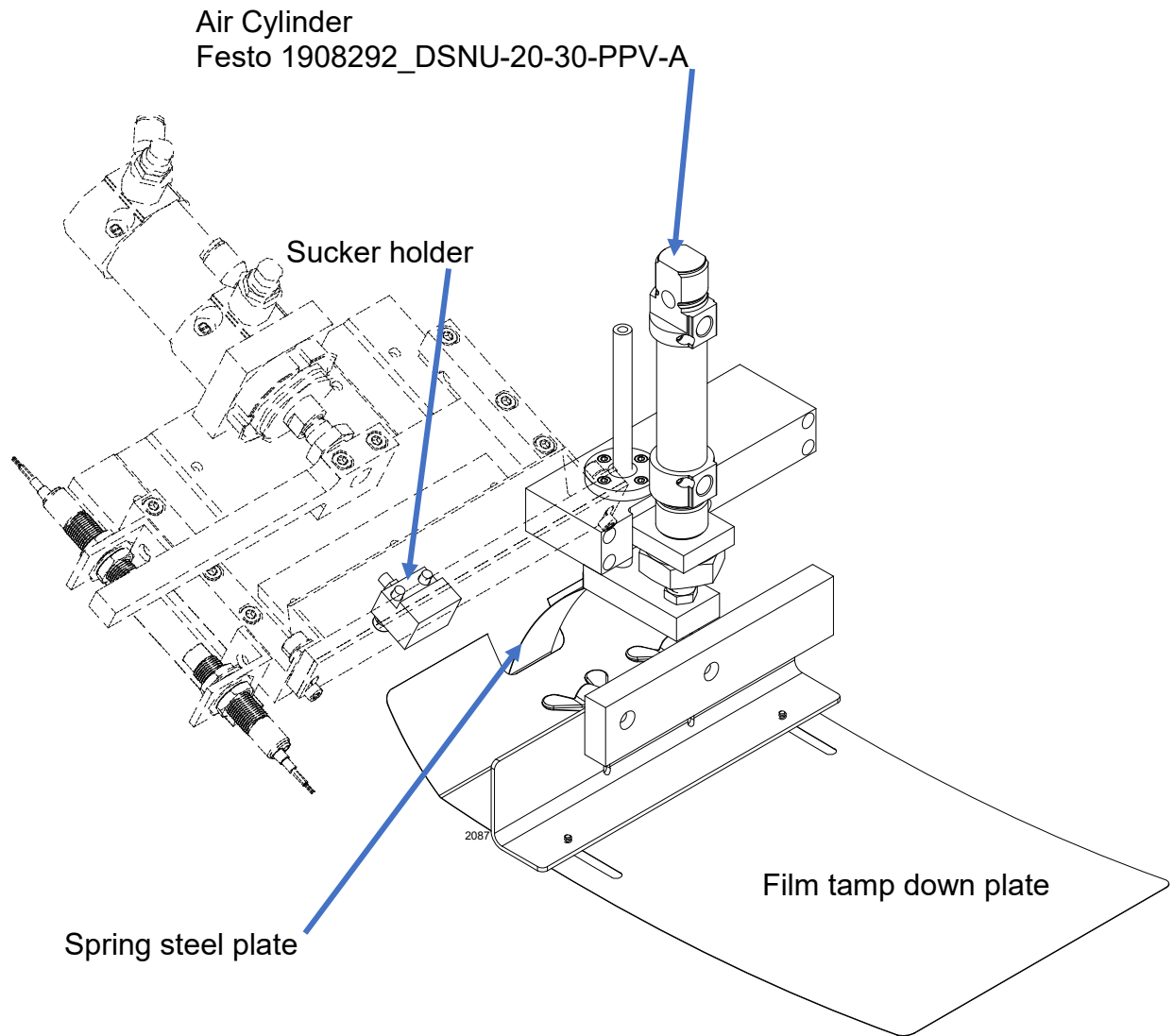
View of Cutter Assembly

Remove screws from Limit bar/Air cylinder assembly and the three (3) SHC screws. Replace blade and screws in reverse order.



Set angle of Knife blade

Knife blade needs to be at approximately a 5° angle. This is best achieved by having a technician align it. Either send the Knife Blade Assembly to AFM Technical Services, or request that a Technician visits your facility for repair.



View of Sucker Assembly

CH-100 Maintenance

Weekly

- Use a Lint-free cloth to clean fibers off film registration eye (do not use compressed air, as this may damage fibers).
- Use a cloth to clean off the Motion Detector Sensor eye (for bottle sensing under the mandrel) and reflector.

Every three weeks

- It is acceptable to use a little light, food-grade oil once the bearings are free of dust.
- Verify that supporting rollers for mandrel can spin freely; clean as necessary.

Every six months

- Check for wear on film feed drive rollers. If the machine is continuously in use, it should not be necessary to clean these rollers too often, however, depending on the film, there may be a build-up of shiny, plastic residue on the rollers which could cause the band to slip as it is being fed (leading to loss of registration). If necessary, the rollers can be cleaned with distilled (or de-ionized or reverse osmosis filtered) water.
- Check adjustment of idler on dancer, making sure it is engaging with drive roller
- Apply grease to gears and bearing blocks for head height adjustment, applicator height adjustment, and mandrel holder.
- Check for excessive dust in electrical enclosures. Vacuum as necessary.
- Check Knife Blade.

Annually

- Replace supporting (metal) rollers for mandrel.
- Check cutter unit.
- Check bearings of applicator assemblies.

Every two to three years

- Replace film feed rollers.
- Replace dancer drive rollers.
- Replace applicator bearings.
- Replace applicator wheels.

Unwind System

Daily

- Check to make sure film end eye (fiber) is not caked in dust; clean as necessary – use a *light brush*.

Every six months

- Check drive rollers on dancer for wear; replace as necessary; check adjustment of dancer idler, making sure it is engaging the drive rollers.

Every two years

- Replace bearings on dancer assembly
- Replace dancer drive roller.

Troubleshooting

General

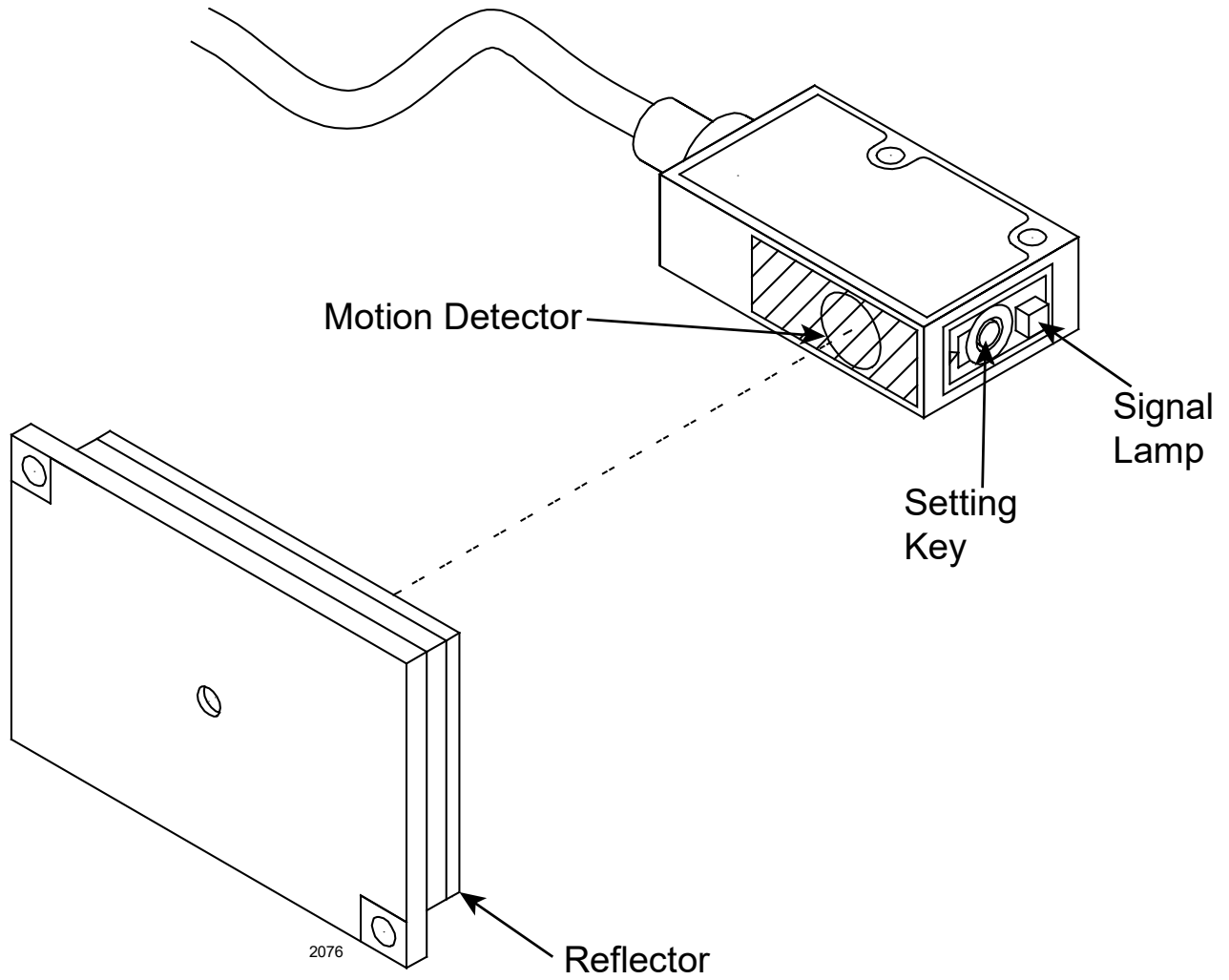
Problem	Cause	Solution
Power shutting down	Internal plant or machine shut-off	<ol style="list-style-type: none"> 1. Check if power cable is connected 2. Check fuse 3. Check air connection 4. Turn switch to "OFF" position, and re-start 5. Replace switch if loose.
Motor stops working	<ol style="list-style-type: none"> 1. Fuse is blown 2. Motor's phase is incorrect 3. The stepper and servo motor drives have failed-setting parameters are incorrect 4. Motor burned out 	<ol style="list-style-type: none"> 1. Replace the fuse 2. Check main power and cords 3. Check to see if stepper and servo motors are ok and that the parameters are set correctly 4. Replace motor.
PLC Control is incorrect	<ol style="list-style-type: none"> 1. Switch is off 2. No power connection to PLC 3. No signal at sensor 4. Relay is not working 5. PLC is damaged 	<ol style="list-style-type: none"> 1. Turn switch to "RUN" position 2. Check the source voltage 3. Check to see if sensor is working, and is correctly wired 4. Check to see if there is sound at the relay and the lines are correctly connected. Replace relay if it is damaged. 5. Replace the PLC
HMI display problems	<ol style="list-style-type: none"> 1. No power to HMI input 2. No signal from PLC 3. HMI is damaged 	<ol style="list-style-type: none"> 1. Check the DC Voltage 2. Check the wiring connections between the PLC and the HMI 3. Replace the HMI

Problem	Cause	Solution
Sensor is not working	<ol style="list-style-type: none"> 1. The relay is not functioning 2. No signal at the sensor 3. Sensor is damaged 	<ol style="list-style-type: none"> 1. Check to see if the sensor is in the right position and that the gap is correct 2. Check the sensor's signal contacts and check the DC Voltage 3. Replace motor.
Cutter and feeder device malfunctioning	<ol style="list-style-type: none"> 1. Check cutter switch 2. Check Air 3. The relay is damaged 4. The cutter is damaged 5. The cutter and feeding stroke is damaged 	<ol style="list-style-type: none"> 1. Check to see if switch is ON 2. Air must be ON 3. Check to see if there is sound at the relay, and if the wiring is correct, replace the relay 4. Replace cutter with the spare. 5. Check to see if there are foreign objects in the stroke, and see if it is damaged. Replace if damaged.
Film is running well, cutter is not	<ol style="list-style-type: none"> 1. Air pressure not set to correct pressure 2. Cutter is not moving smoothly 3. Solenoid valve failure 	<ol style="list-style-type: none"> 1. Check air pressure 2. Check cutter 3. Check solenoid valve

Film length is not cut exactly	<ol style="list-style-type: none">1. Digital unit controller setting incorrect2. Printing sensor in incorrect position	<ol style="list-style-type: none">1. Reset digital unit controller2. Check printing sensor position
Film length is out of parameter	<ol style="list-style-type: none">1. Stepper motor not functioning properly2. Printer sensor not in position3. Film not fitting correctly4. Butterfly mandrel is binding up	<ol style="list-style-type: none">1. Check stepper motor2. Check sensor3. Check film position4. Check mandrel for correct snugness.

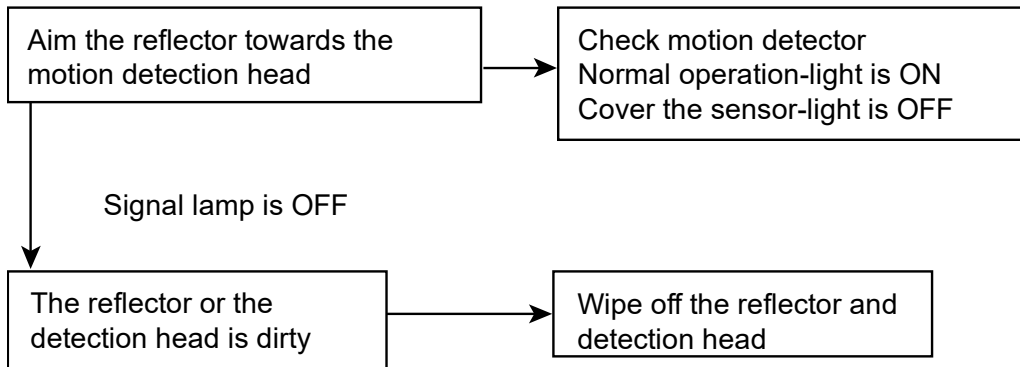
Motion Detector

Motion Detector Sensor Details

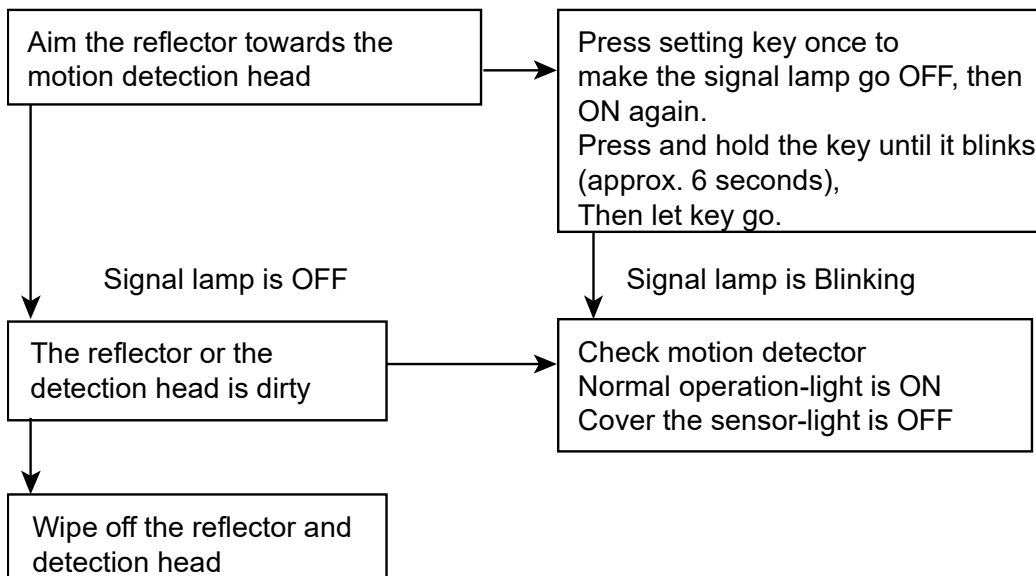


Motion Detector Sensor Setup

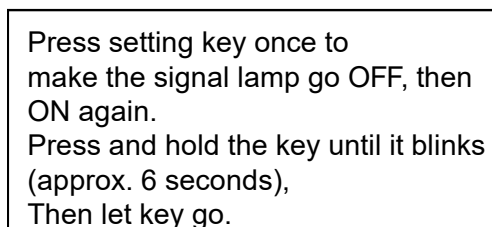
1. Detecting a non-transparent object.



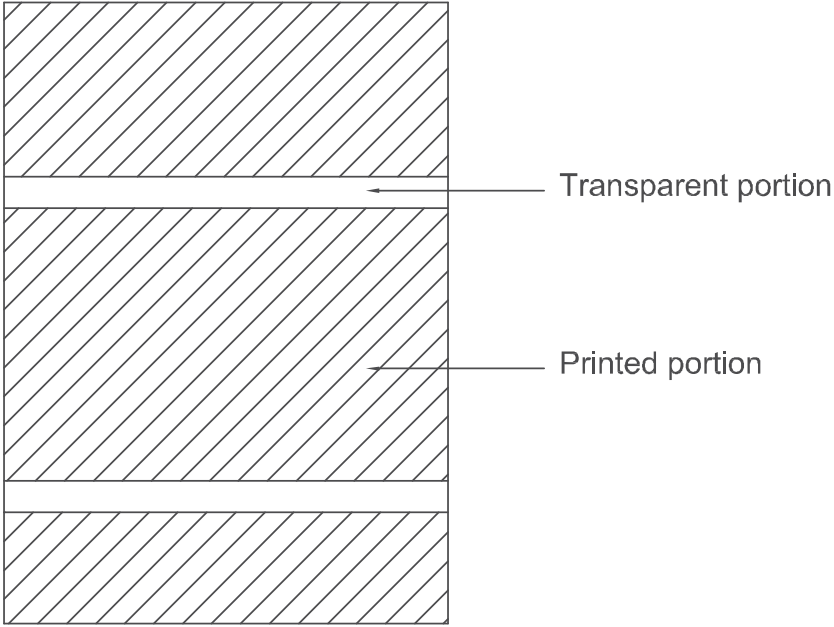
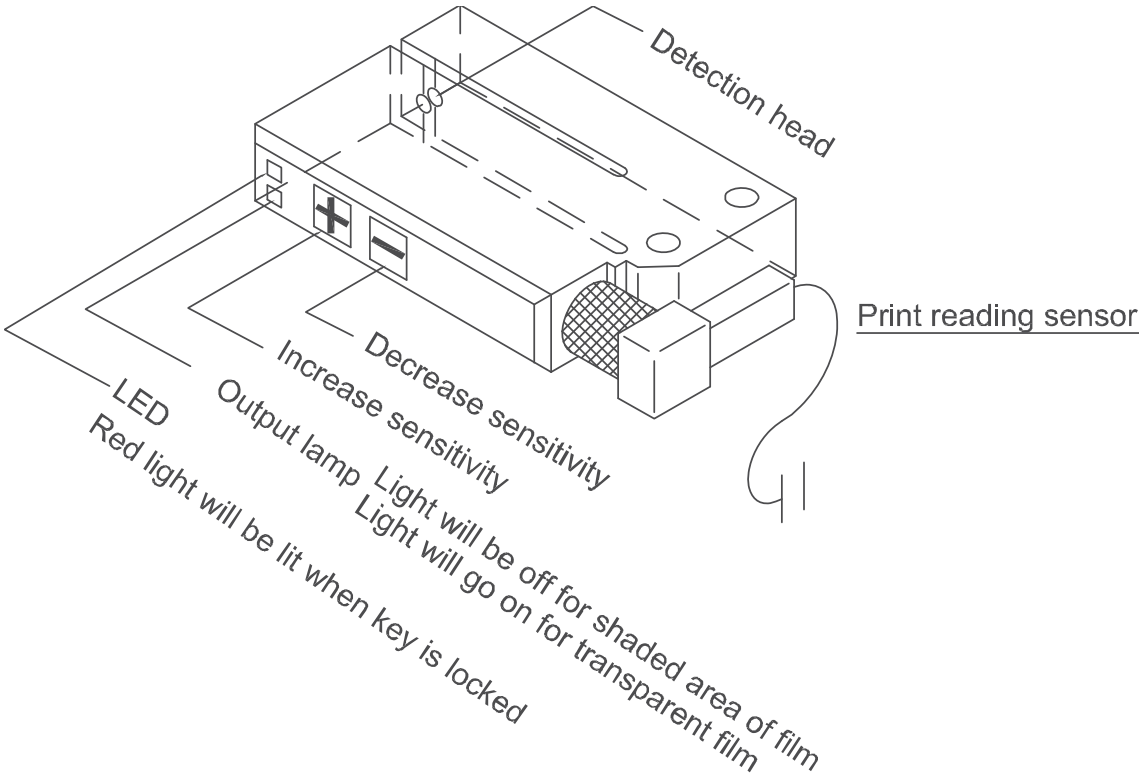
2. Detecting a semi-transparent, or fully transparent object.



3. Changing the setting from detecting a semi-transparent, or fully transparent object to detecting a non-transparent object.

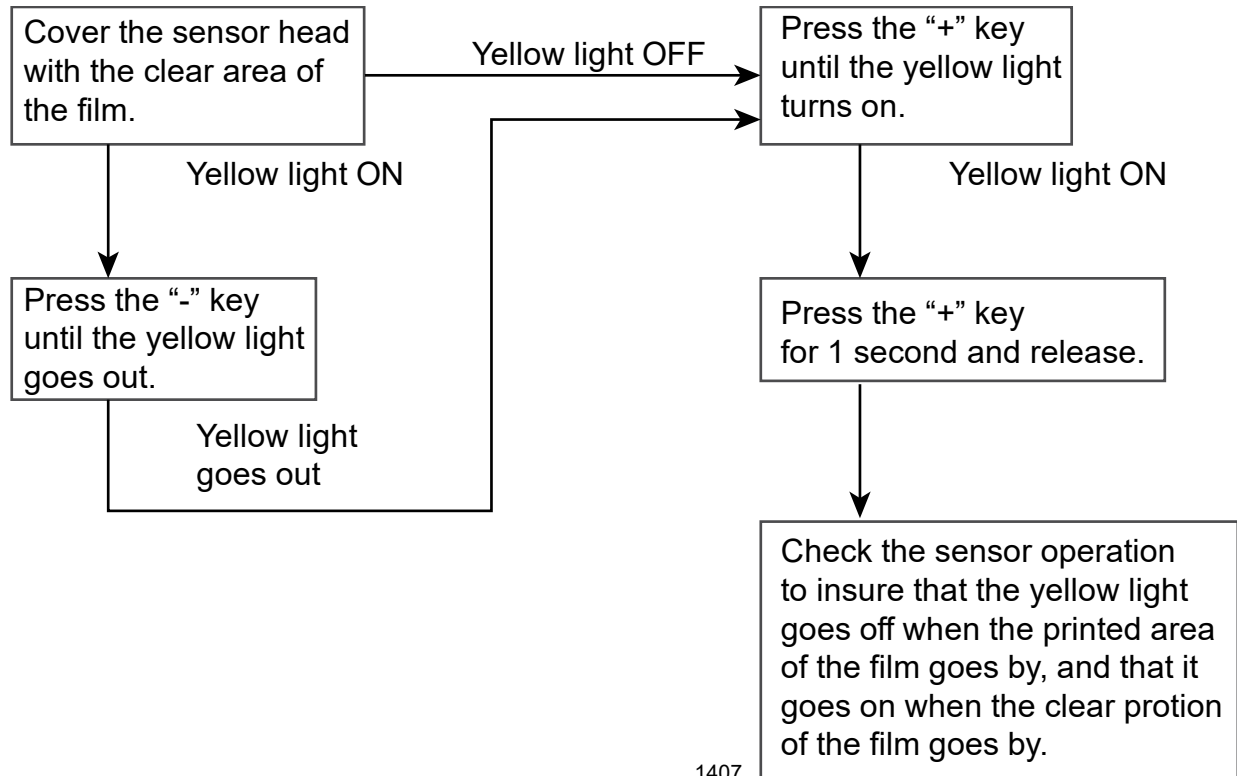


Print Reading Sensor details



Printed label to be scanned for setup

Print Reading Sensor setup



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Note:

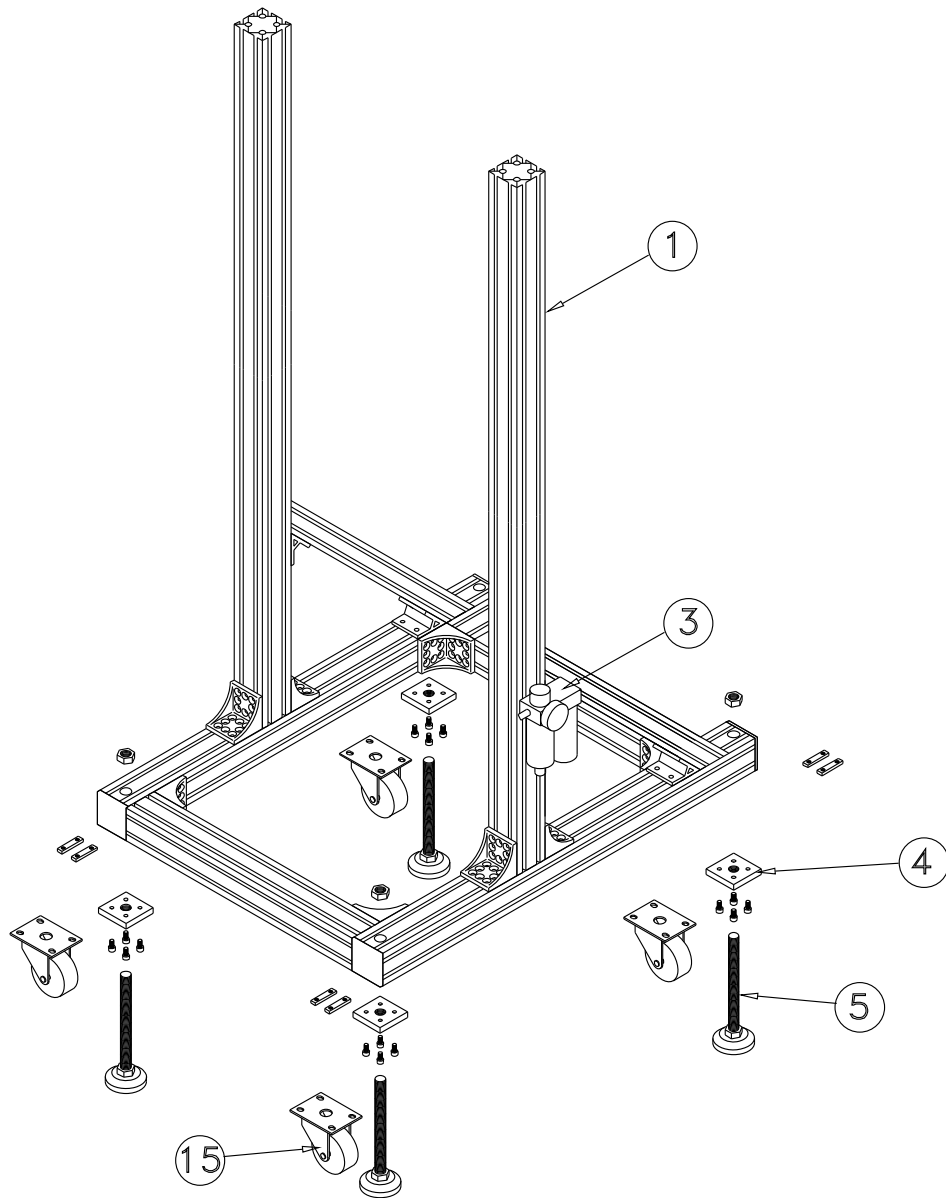
- When pressing "+" or "-", the red light will turn on.
- Pressing the "+" or "-" key for 3 seconds will turn on the on/off key lock function. When red light is on, the sensor's sensitivity cannot be adjusted.
- The dark/light switching can be set if you press the "+" and "-" keys simultaneously (6s).
Factory setting: Transparent film = yellow light on
shading film = yellow light off
- The printing sensor has four wires:
 - Brown- Connects 10-30V
 - Blue- Connects to OV
 - White- Connects to NPN type PLC infeed
 - Black- Connects to PNP type PLC infeed
 This machine uses an NPN connection
(The white wire is connected to the PLC, and the black wire is not used.)

Operation Appendix

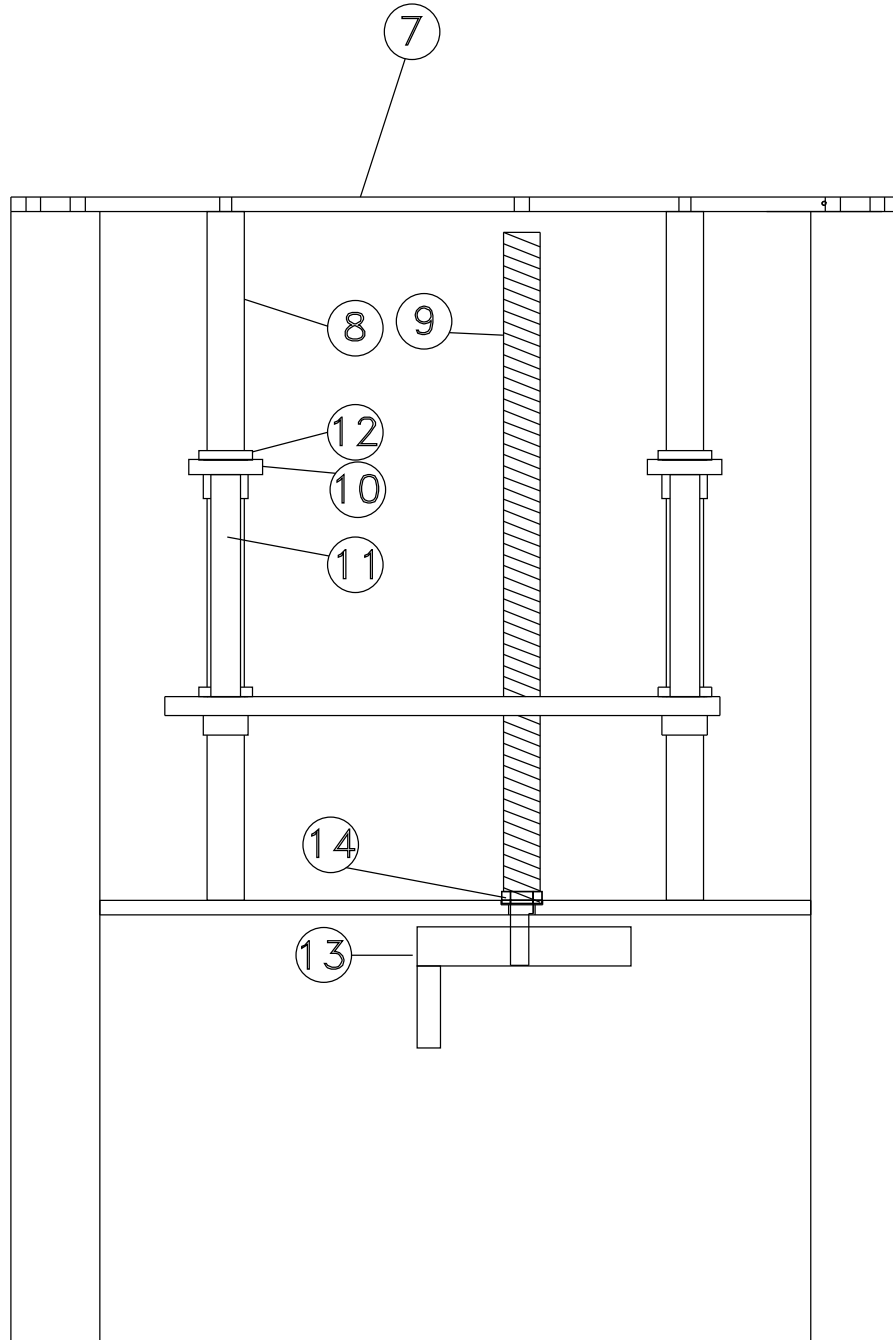
Exploded Assembly Diagrams

EXPLODED DRAWING

CH100-A COMPONENT PARTS (FRAME BASE)



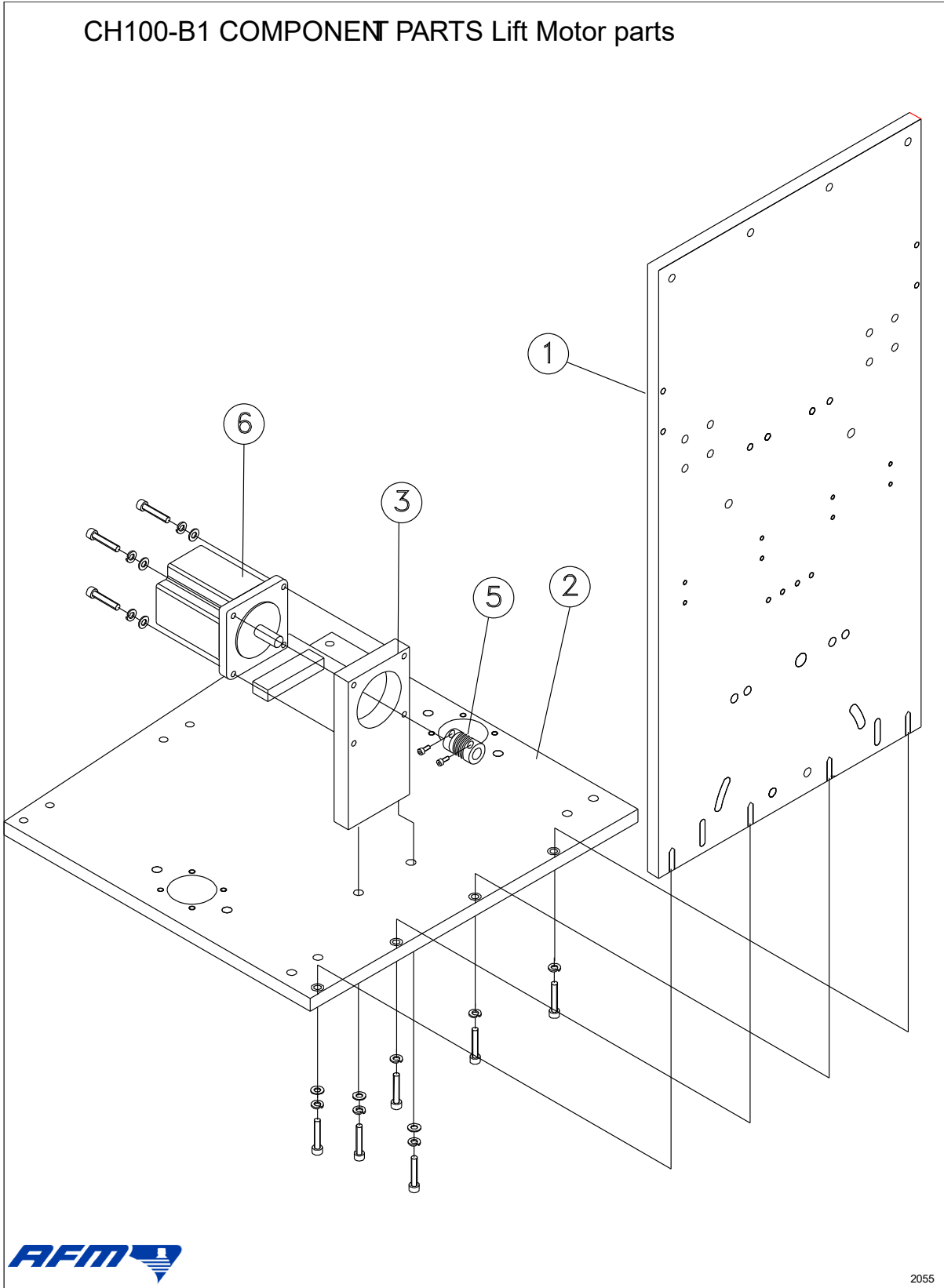
CH100-A COMPONENT PARTS (Lift Mechanism)



Component List CH100-A

Item	Part Number	Drawing	Part Name	Qty.	Remarks
1	5HHLAH100AC01	AC01	Alum. Rack	1	Half Fin. Product
3	5DB33LFR3 / 8D		Air Filter	1	LFR-3/8-D-Mini
	5DB33HL3 / 8D			1	HL-3/8-D-Mini
	5DB33HFOED			1	HFOE-D-MINI
4	5HGCH100AMM3	AM07	Foot Holder	4	Half Fin. Product
5	5BD31M16X180		Footing Set	4	M16X180L
6	5HGCH100AMM3	AP03	Fix Board (Frt)	2	Half Fin. Product
7	5HGCH100AMM3	AM01	Top Board	1	Half Fin. Product
8	5HGCH100AMM3	AM03	Guide Rod	2	Half Fin. Product
9	5HGCH100AMM3	AM06	Screw Rod	1	Half Fin. Product
10	5HGCH100AMM3	AM05	Bearing Holder	2	Half Fin. Product
11	5HGCH100AMM3	AM04	Rod	4	Half Fin. Product
12	5BE06SFPJ25		Line Bearing	4	SFPJ25
13	5BC01KRN125+FR65		Handle Wheel	1	KRN125 D=15 M6-2+FR65
14	5BE0151102		Bearing	1	51102
15	5BS01075X25		Caster	4	3" X 1"

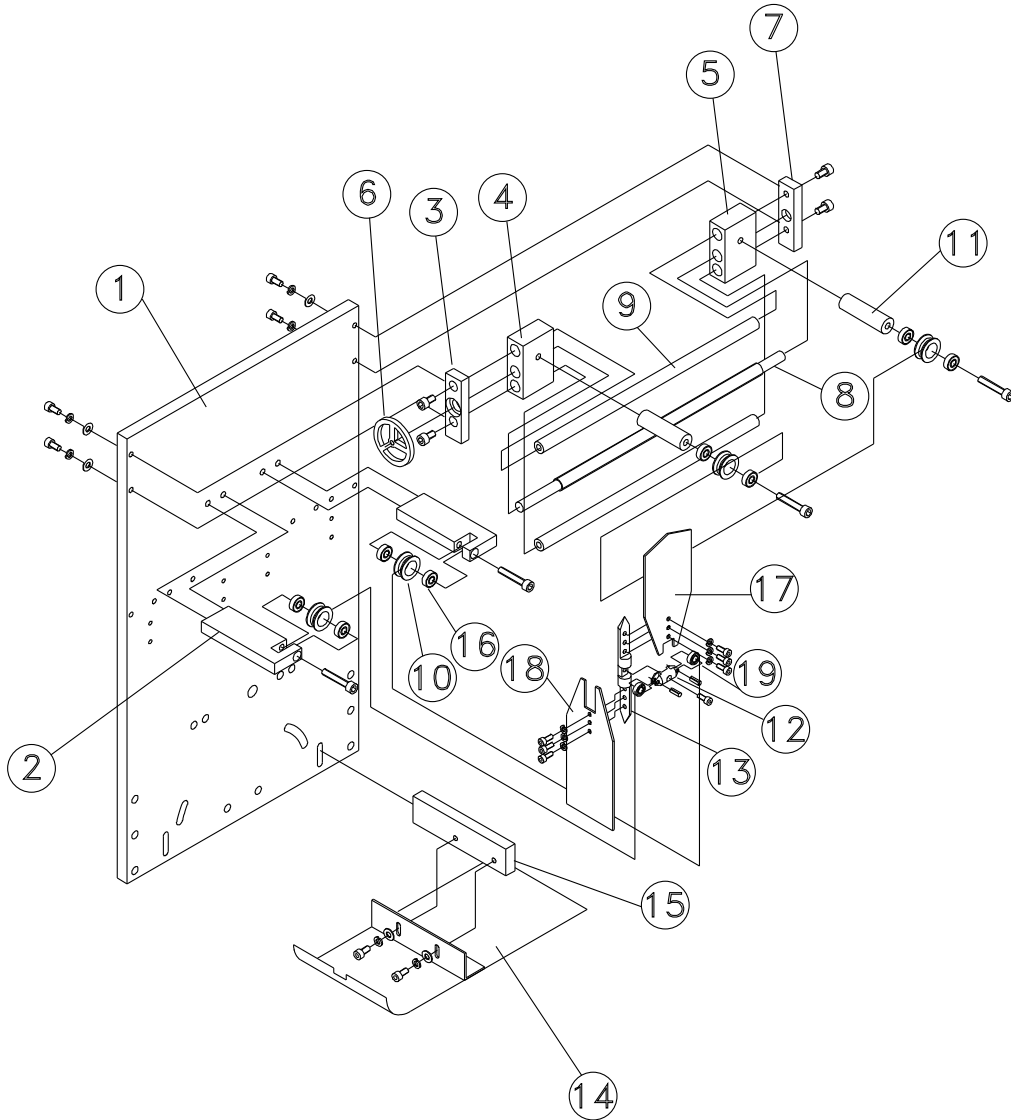
CH100-B1 COMPONENT PARTS Lift Motor parts



Component List CH100-B1

Item	Part Number	Drawing	Part Name	Qty.	Remarks
1	5HGCH100BMM1	BM03	Vert. Board	1	Half Fin. Product
2	5HGCH100BMM1	BM01	Horiz. Board	2	Half Fin. Product
3	5HGCH100BMM1	BM10	Bottom Board for Head Holding	1	Half Fin. Product
4					
5	5BE04MJC33X08X14		Axle Connection	1	MJC-33 8X14
6	5CB04TK599A1		Stepper Motor	1	TR514-2 AC220V/1.4A

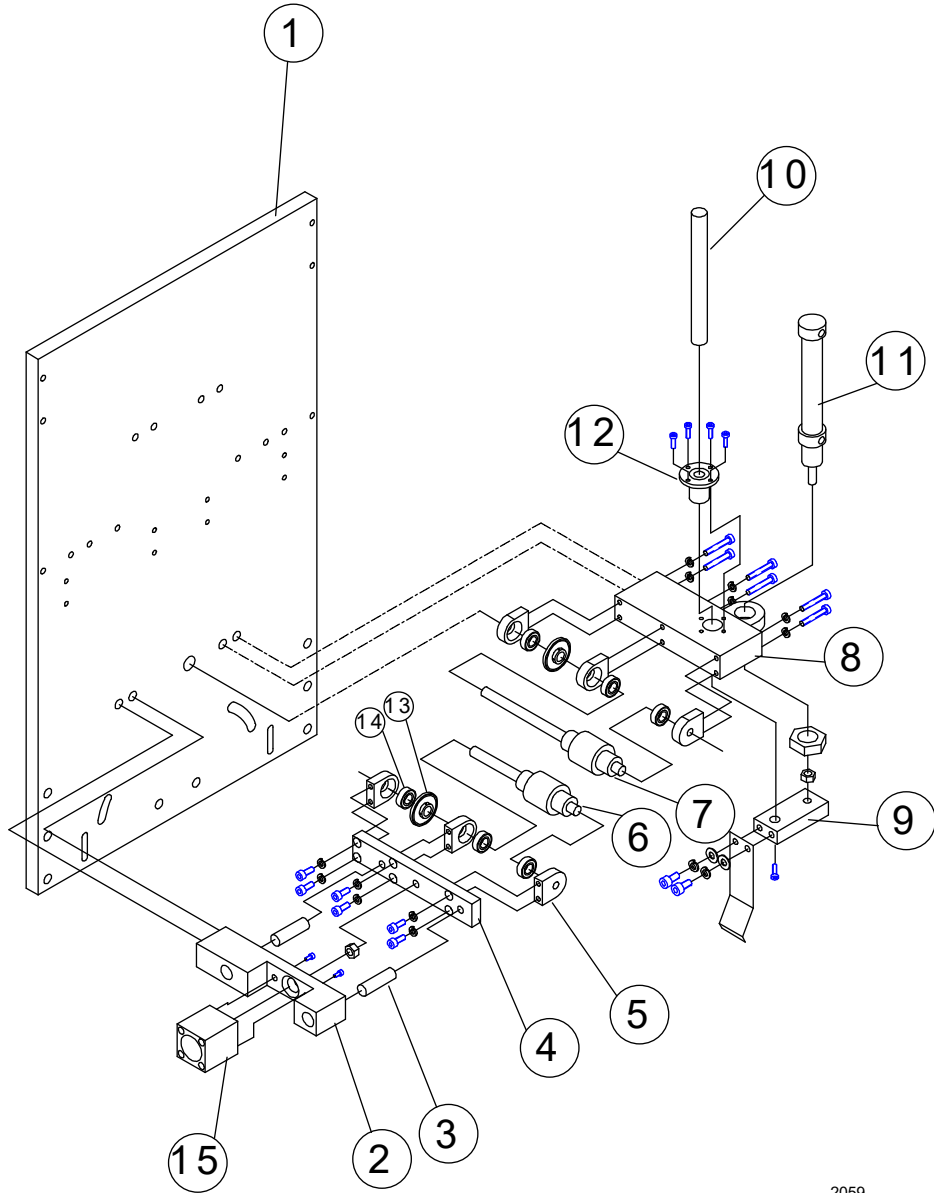
CH100-B2 COMPONENTSPARTS (Main operating components)



Component List CH100-B2

Item	Part Number	Drawing	Part Name	Qty.	Remarks
1	5HGCH100BMM1	BM03	Vert. Board	1	Half Fin. Product
2	5HGCH100BMM1	BM16	Bearing Holder	2	Half Fin. Product
3	5HGCH100BMM1	BM19	Adjusting Holder-1	1	Half Fin. Product
4	5HGCH100BMM1	BM17	Adjusting Holder-2	1	Half Fin. Product
5	5HGCH100BMM1	BM18	Adjusting Holder-3	1	Half Fin. Product
6	5BC01KRN80+CB50		Wheel	1	KRN80 D=10 M6-2+CB50
7	5HGCH100BMM1	BM20	Adjusting Holder-4	1	Half Fin. Product
8	5HGCH100BMM1	BM21	Adjusting Holder-5	1	Half Fin. Product
9	5HGCH100BMM1	BM22	Adjusting Holder-6	2	Half Fin. Product
10	5HGCH100BMM1	BM15	Crack's Holder	4	Half Fin. Product
11	5HGCH100BMM1	BM23	Holder Prolongation	2	Half Fin. Product
12	5HGCH100BMM1	BM24	Crack's Rack-1	1	Half Fin. Product
13	5HGCH100BMM1	BM25	Crack's Rack-2	1	Half Fin. Product
14	5HGCH100BMM1	BP01	Film Pressing Plate	1	Half Fin. Product
15	5HGCH100BMM1	BM26	Plate Holder	1	Half Fin. Product
16	5BE010696ZZ		Bearing	8	696ZZ
17		BP02	Upper Crack	1	Half Fin. Product
18		BP03	Bottom Crack	1	Half Fin. Product
19	5BE010694ZZ		Bearing	2	694ZZ (R-1140ZZ)

CH100-B3 COMPONENT PARTS



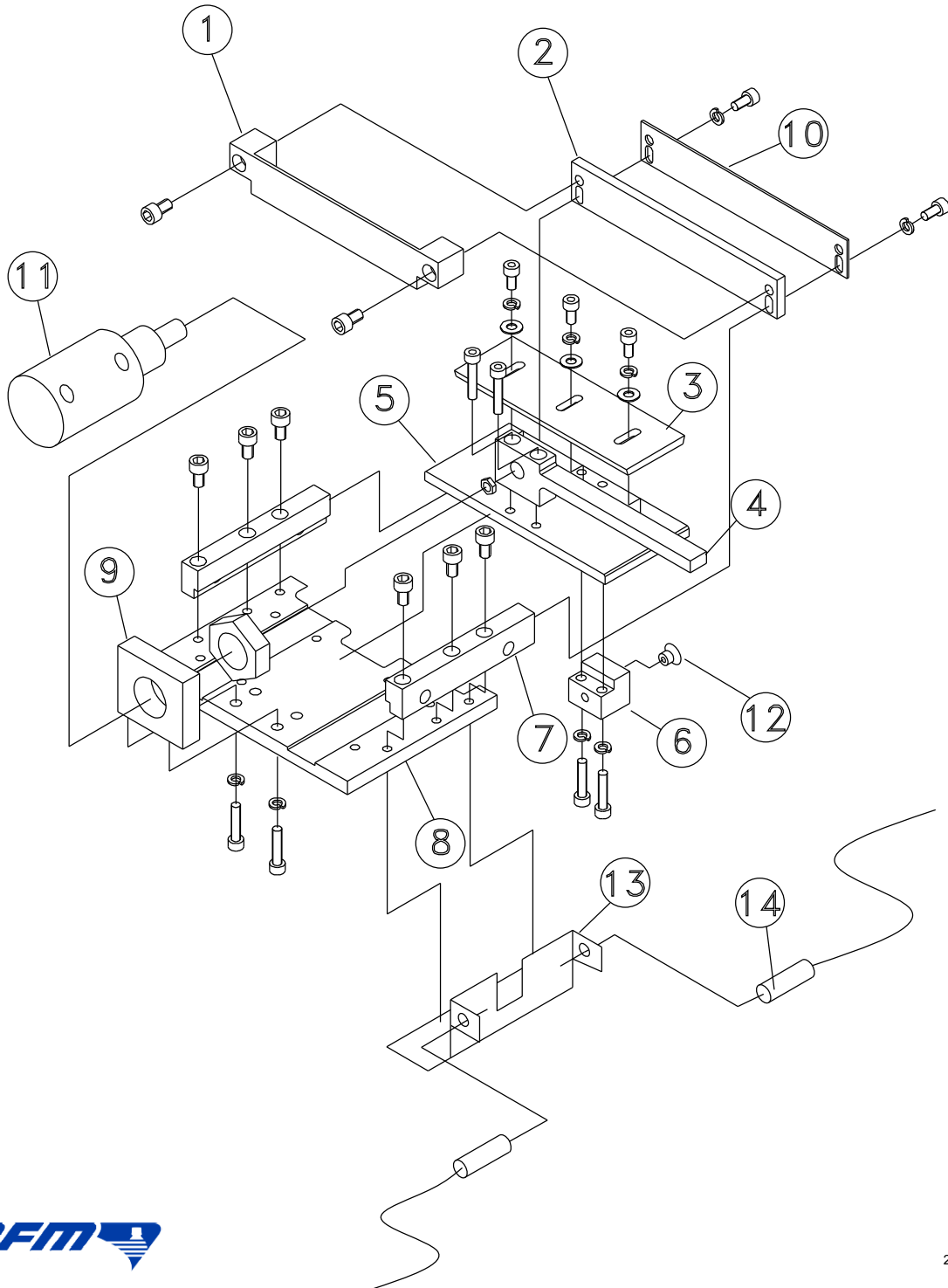
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Component List CH100-B3

Item	Part Number	Drawing	Part Name	Qty.	Remarks
1	5HGCH100BMM1	BM03	Vert. Board	1	Half Fin. Product
2	5HGCH100BMM1	BM07	Cylinder Holder	1	Half Fin. Product
3	5HGCH100BMM1	BM11	Guide Rod	2	Half Fin. Product
4	5HGCH100BMM1	BM06	Bearing Holder-1	1	Half Fin. Product
5	5HGCH100BMM1	BM04	Bearing Holder-2	6	Half Fin. Product
6	5HGCH100BMM1	BM14	Film Supply Roller-1	1	Half Fin. Product
7	5HGCH100BMM1	BM13	Film Supply Roller-2	1	Half Fin. Product
8	5HGCH100BMM1	BM05	Cylinder Holder	1	Half Fin. Product
9	5HGCH100BMM1	BM08	Pressing Plate Holder	1	Half Fin. Product
10	5HGCH100BMM1	BM12	Guiding Rod	1	Half Fin. Product
11	5Y2032X2		Film Pressing Cylinder	1	DSNU-40-12-PPV-A-MQ
12	5HMLB120XC1M1		Liner Bearing	1	LB-120
13	5BF06AHP1300M23		Gear	2	24PX24T D=8 M4-2
14	5BE010688ZZ		Bearing	6	688ZZ
15	5DA06JD20X05B		Cylinder	1	JD20X05-B

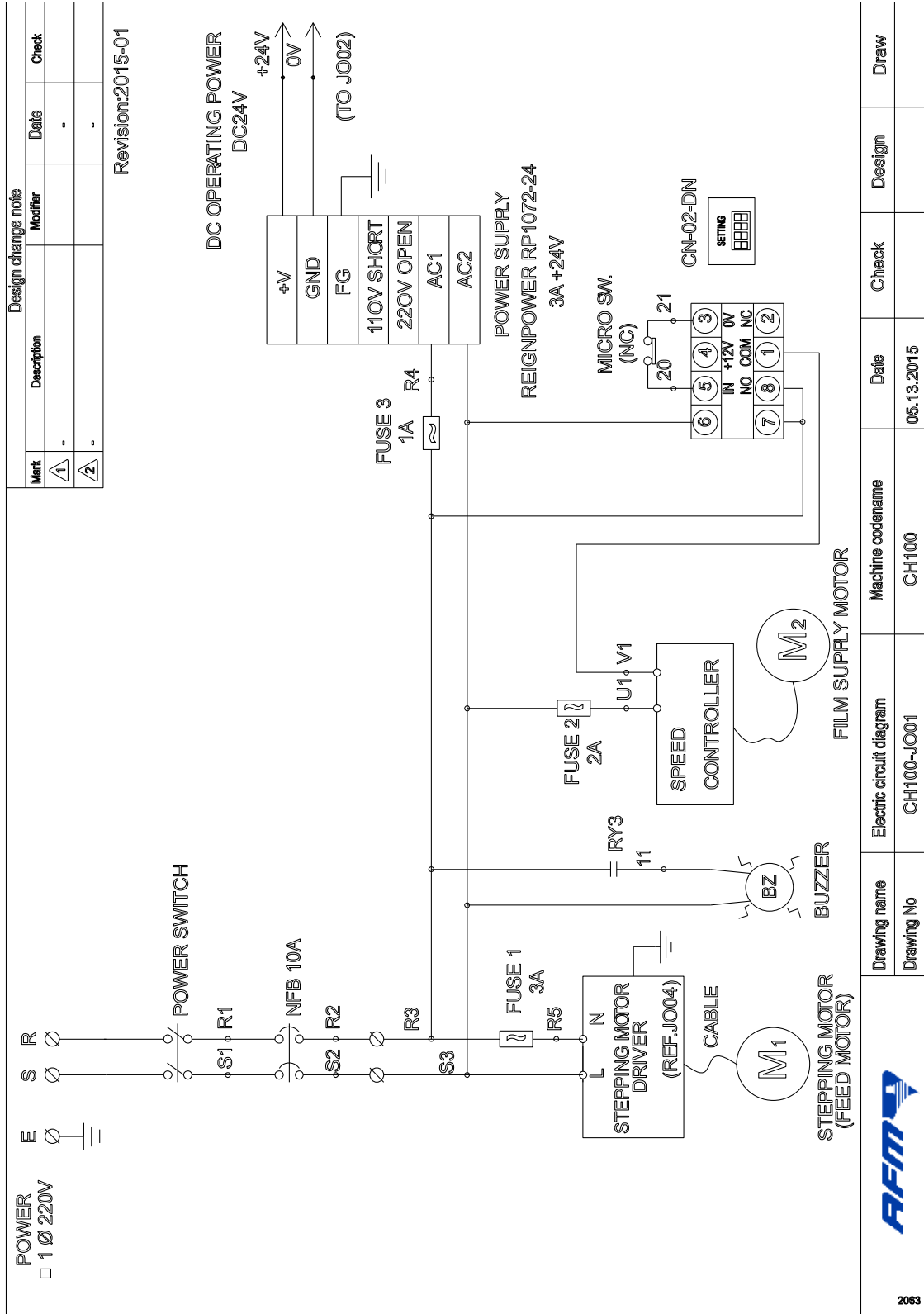
CH100-E COMPONENT PARTS



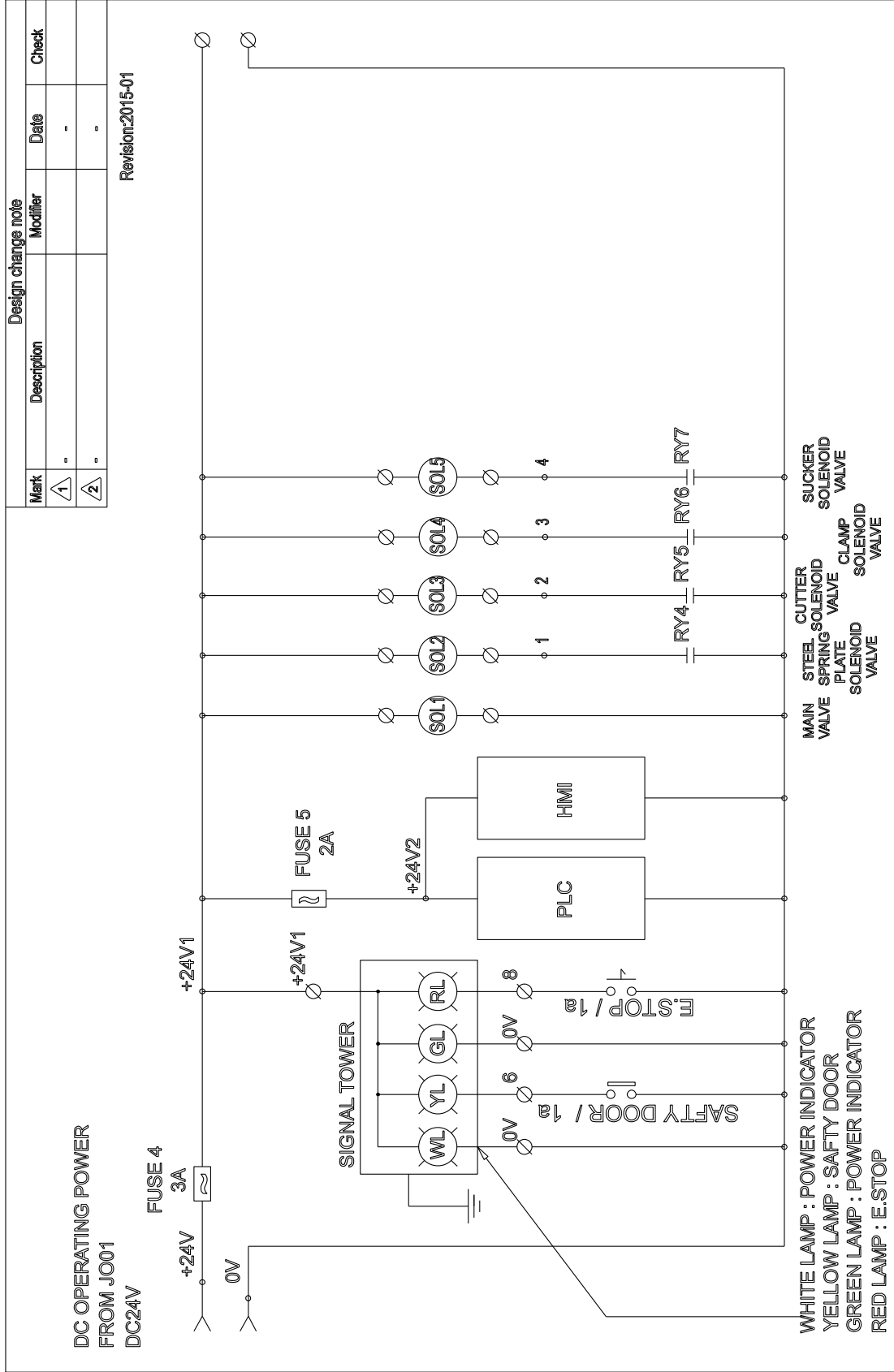
Component List CH100-E

Item	Part Number	Drawing	Part Name	Qty.	Remarks
1	5HG03CH100	EP02	Feeding Inlet	1	Half Fin. Product
2	5HG03CH100	EM08	Chopping Board	2	Half Fin. Product
3	5HG03CH100	EM02	Cutting Plate	1	Half Fin. Product
4	5HG03CH100	EM07	Touching Rod1		Half Fin. Product
5	5HG03CH100	EM01	Plate	1	Half Fin. Product
6	5HG03CH100	BM28	Sucker Holder	1	Half Fin. Product
7	5HG03CH100	EM03	Cutter Guide		Half Fin. Product
8	5HG03CH100	EM05	Guide Holder		Half Fin. Product
9	5HG03CH100	BM06	Cylinder Holder		Half Fin. Product
10	5HHLB120EP1	EP01	Knife Protector		Half Fin. Product
11	5Y2032X1		Cutter Cylinder		DSNU-20-30-P-A-MQ
12	5DB3925		Acetabulum		Ø25
13		EP06	Sensor Holder		Half Fin. Product
14	5AB051M1204NNSZW1		Proximity Switch		IM12-04NNS-ZW1

Schematic Diagrams



Drawing name	Electric circuit diagram	Machine codename	Date	Check	Design	Draw
Drawing No	CH100-JO01	CH100	05.13.2015			



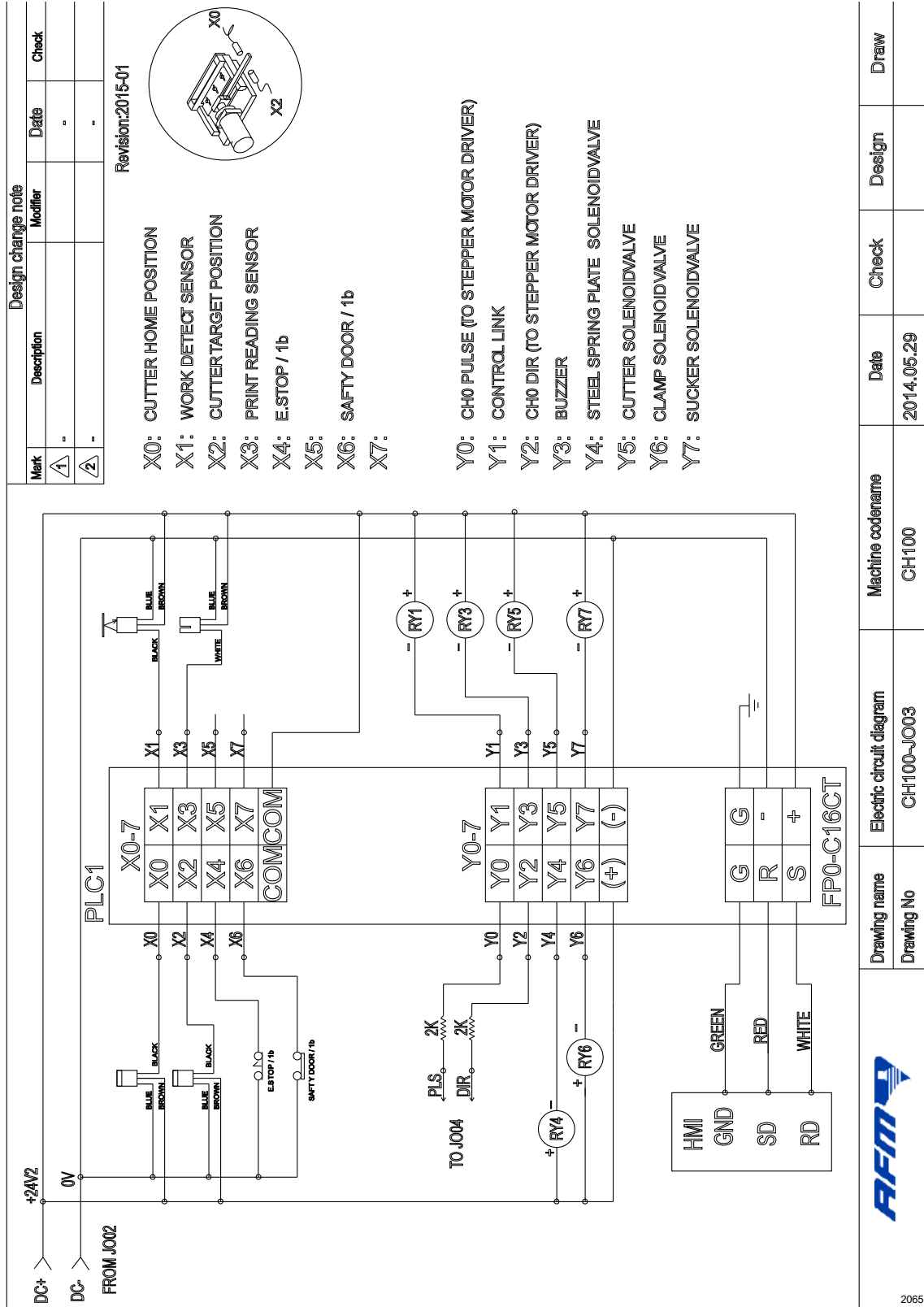
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Revision:2015-01

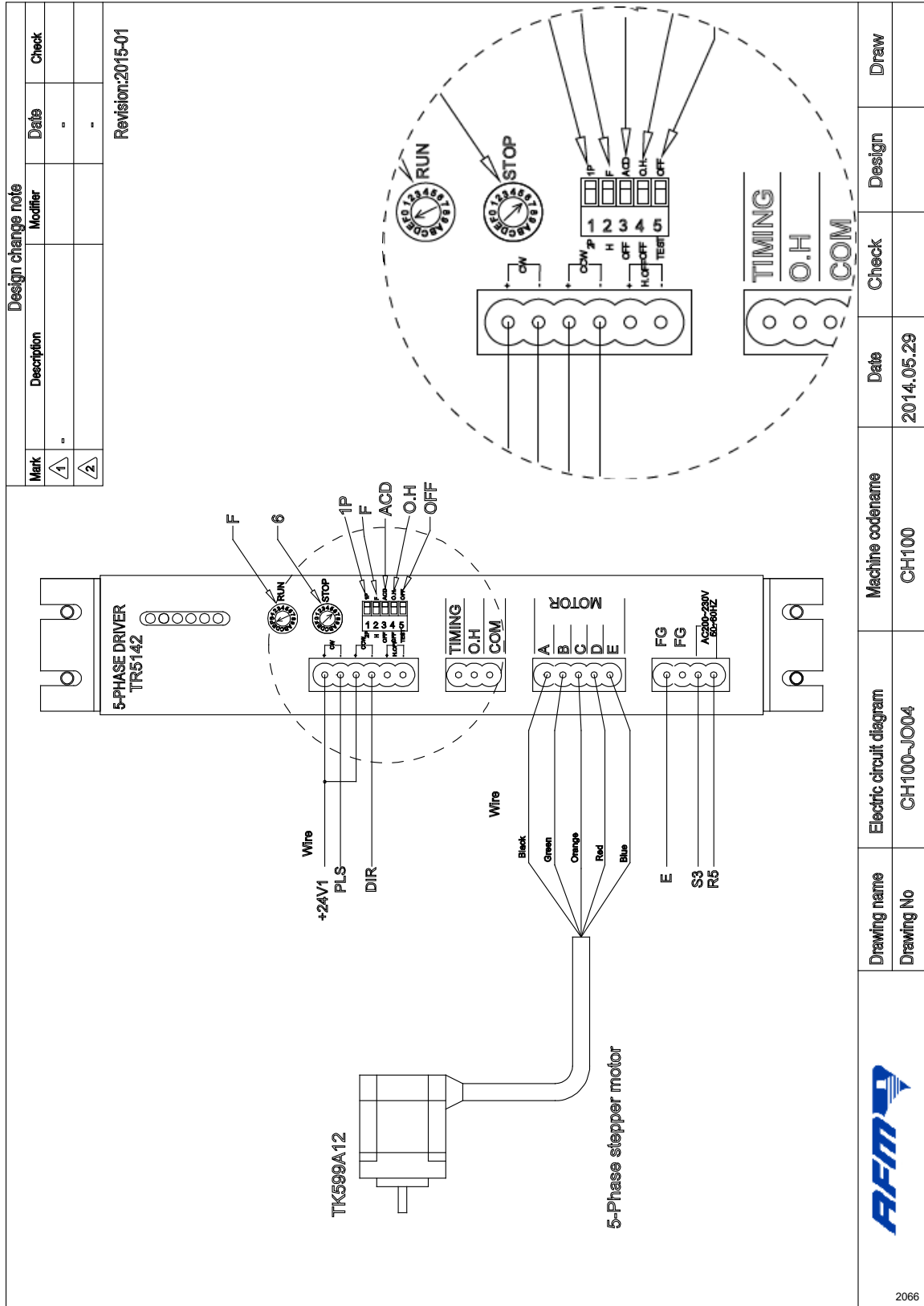
Drawing name	Electric circuit diagram	Machine codename	Date	Check	Design	Draw
Drawing No	CH100-JO02	CH100	05.13.2011			



70 Schematic Diagrams



Drawing name	Electric circuit diagram	Machine codename	Date	Check	Design	Draw
Drawing No	CH100-J003	CH100	2014.05.29			



Design change note			
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Revision:2015-01

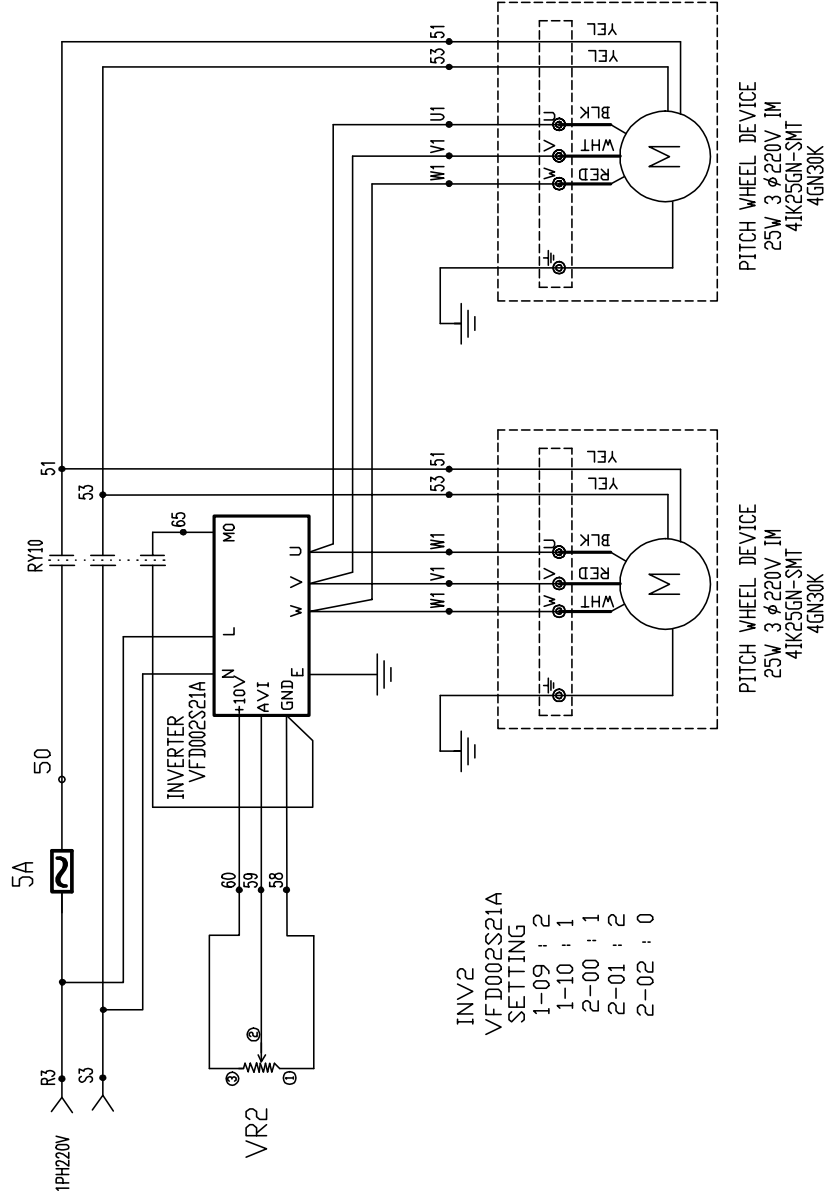
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Drawing No	CH100-J004	CH100	2014.05.29			



72 Schematic Diagrams

Design change note			
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Revision: 98-01

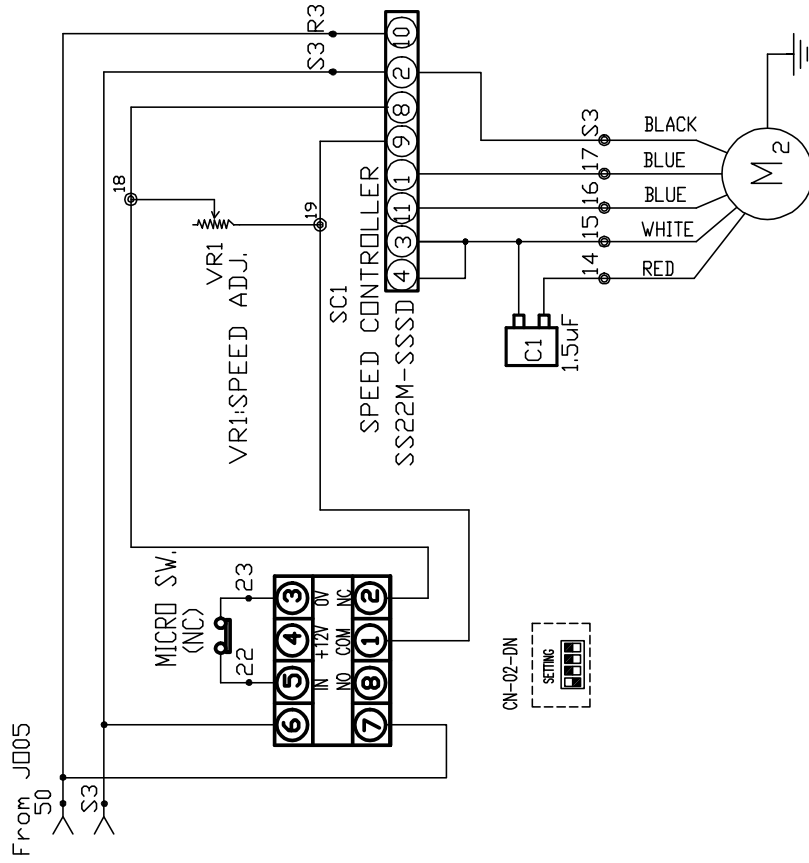


Drawing name	Electric circuit diagram	Machine codename	Date	Check	Design	Draw
Drawing No	CH100-J005	CH100	04.29.2011			ALAN

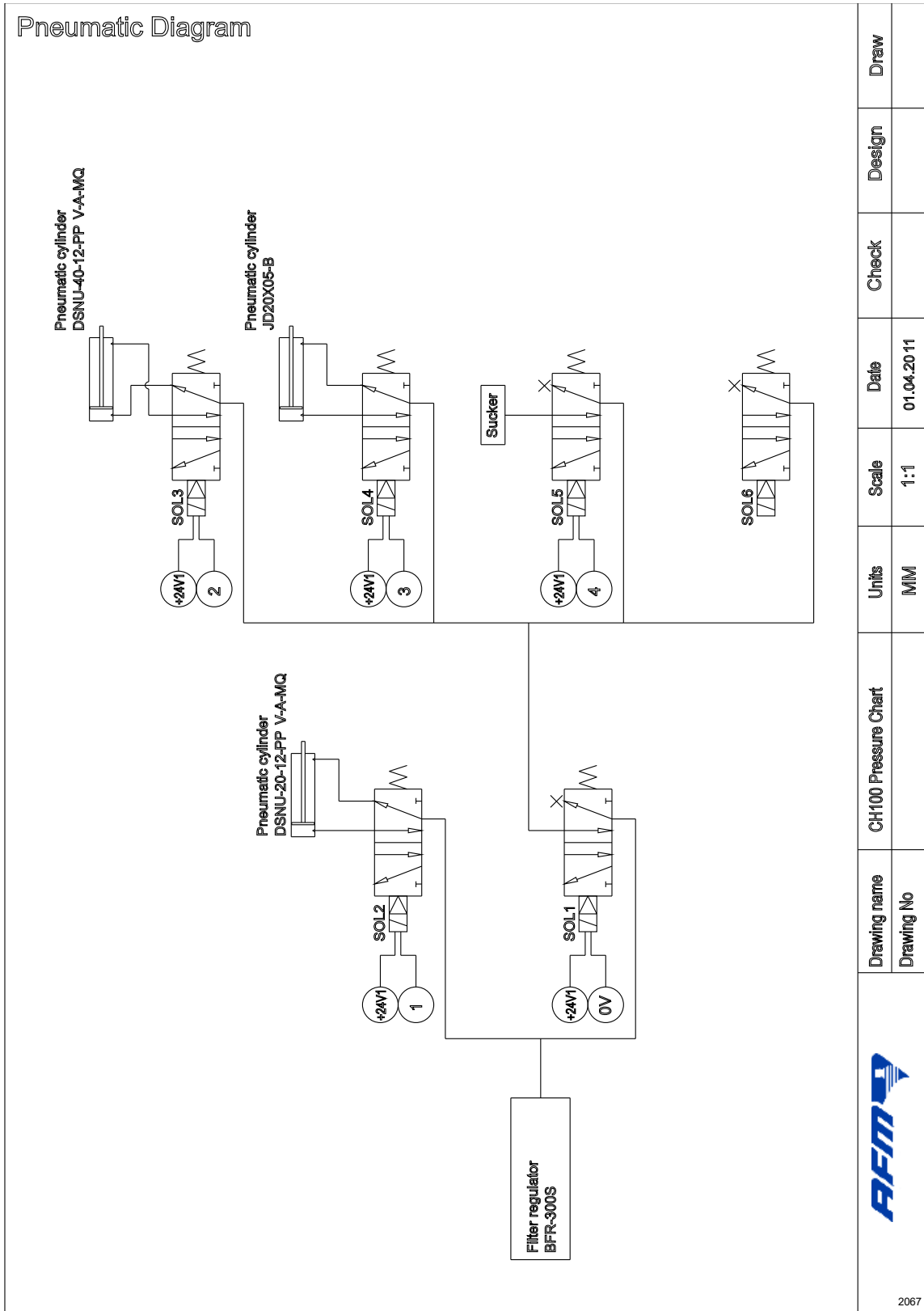


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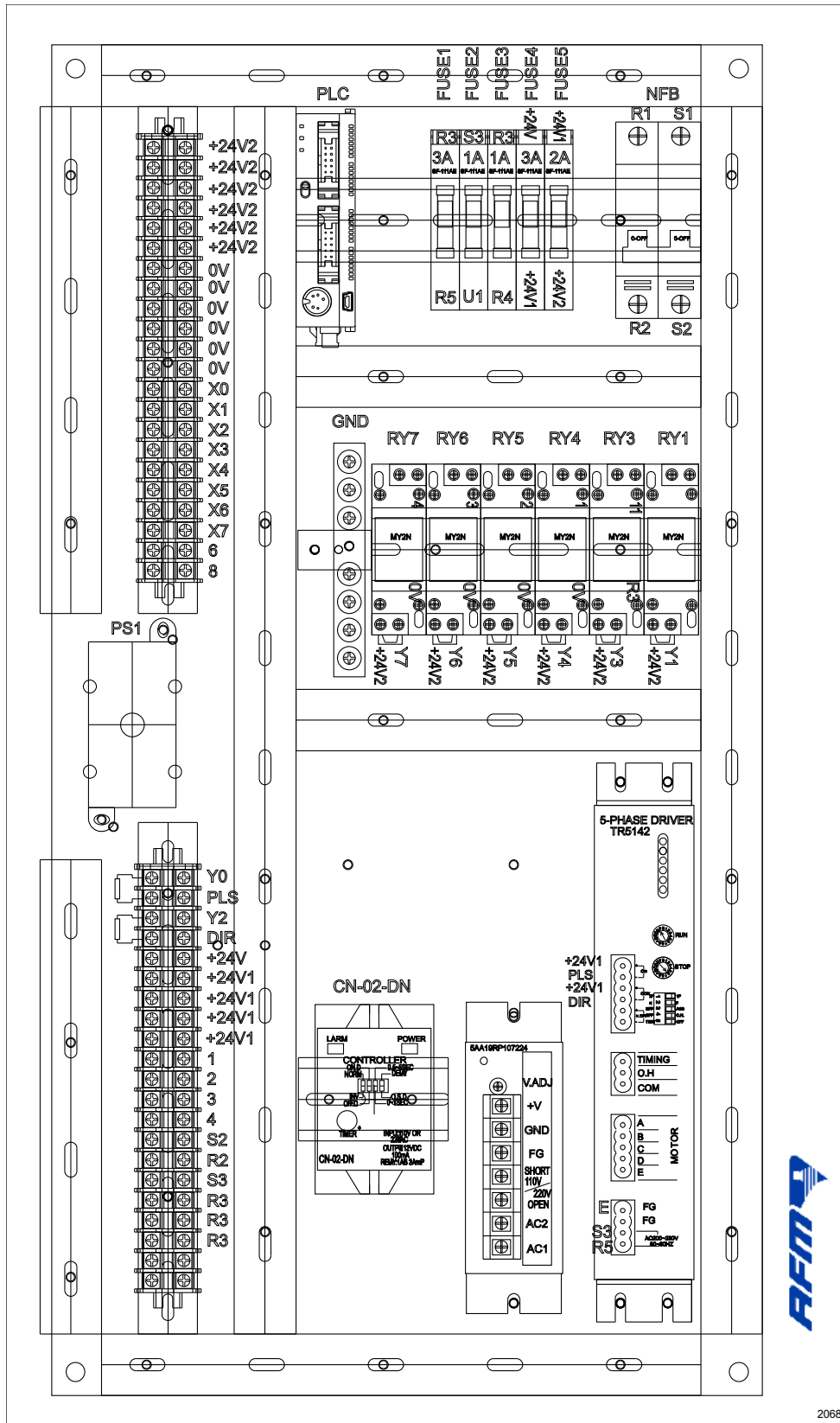
Revision: 92-01



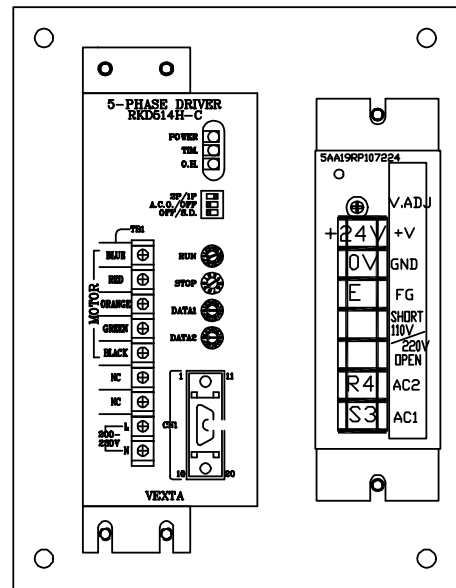
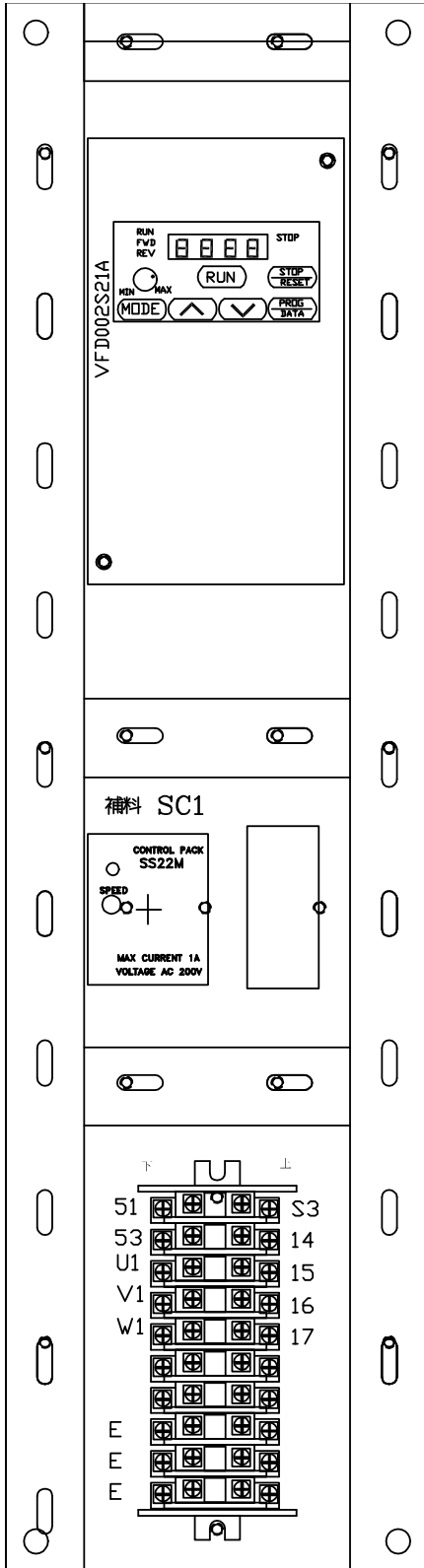
	Drawing name	Electric circuit diagram	Machine codename	Date	Check	Design	Draw
	Drawing No	CH100-J006	CH100	04.29.2011			



Drawing name Drawing No	CH100 Pressure Chart	Units MM	Scale 1:1	Date 01.04.2011	Check	Design	Draw
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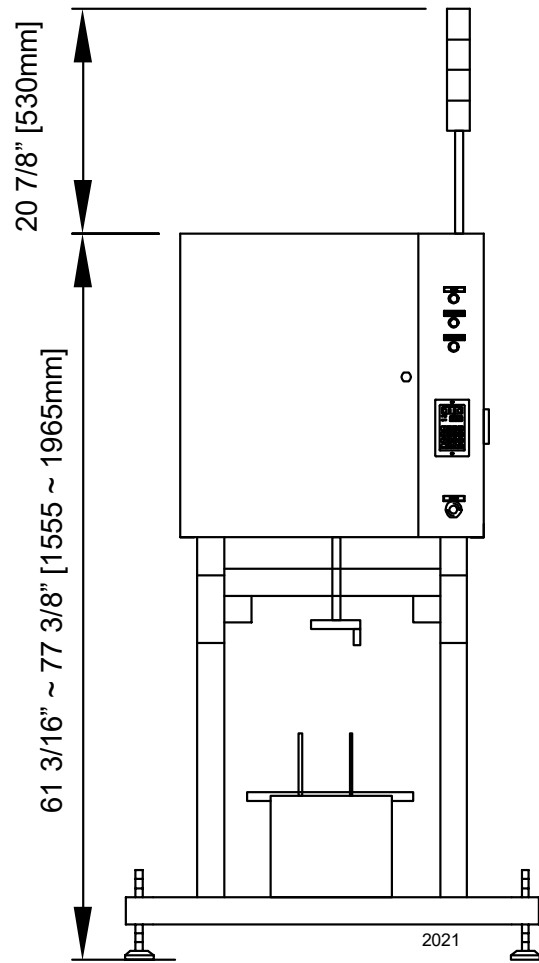
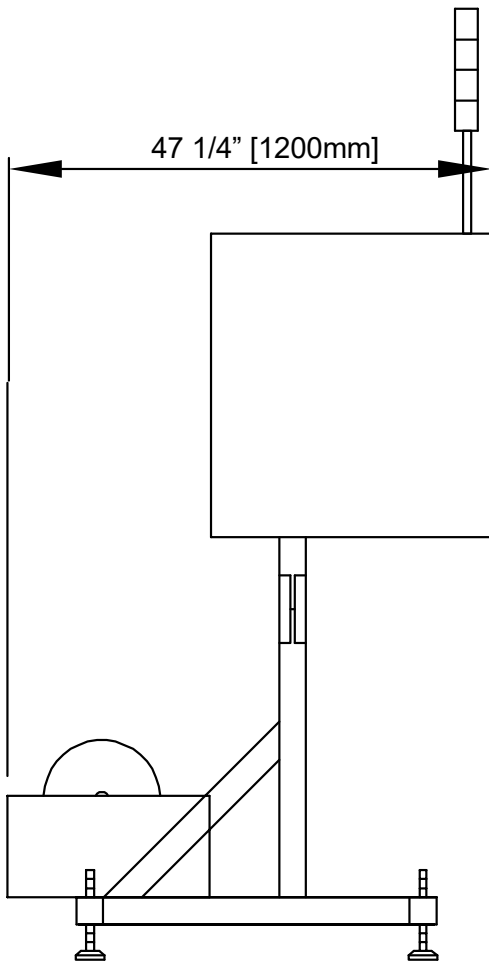
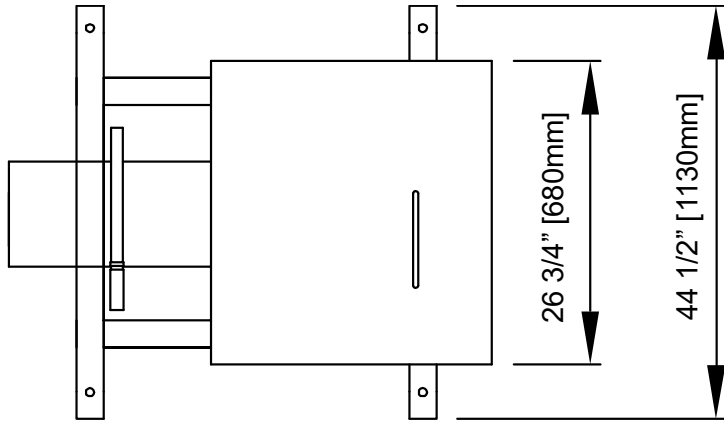


76 Schematic Diagrams



Code Number	Description	Specifications	Illustration
5AA19RP107224	Power Supply	RP1072-24 3A +24V	
5CB66RKD514HC	Stepper Motor Driver	RkD514H-C 1ph22V	
5CB04PK599AW	Stepper Motor	PK599AW	
5AB04WL92N131PO2	Photoelectric Switch	WL9-2N131PO2	Applicating Sensor
5AB05IM1204NNSZW1	Proximity Switch	IM12-04NNS-ZW1	
5AB94M08 5ABO4WF540B410	Cable Photoelectric Switch	M8, 4-Pin, 2M WF5-40B410	Printing Sensor

System Dimensions



Warranty Statement AFM Products

Warranty Statement

American Film & Machinery (AFM) warrants that all of the products it ships will be in good working order and free from defects in material and workmanship for a period of one year from the date of shipment by AFM and will conform to the published specifications for that product.

Limitations

The warranty of AFM is contingent upon installation, operation, and maintenance of equipment under normal operating conditions. The warranty is void on equipment or parts: damaged by corrosion, improper use, accident, negligence or not operating within the specifications provided; damaged by fire, flood, earthquake, or such other causes beyond the control of AFM; that have been altered or repaired in any way changing the original performance and; that are normally expendable in the usual course of operation. Expendable items include, but are not limited to, heater elements, cutter blades and belts. The warranty period on each replacement equipment or part in fulfillment of the warranty on new equipment or parts shall be for the unexpired portion of the original warranty.

Repairs

All in-house repairs are rigorously tested for optimum operation and performance and warranted to be, under normal and proper use, free from defects in material and workmanship for a period of 90 days from the date of service.

Shrinking Quality

Shrinking quality achieved in a given application is dependent on the film, product, installation, material handling, and the maintenance provided. AFM makes no warranty that the shrinking quality achieved in an application will be the same as that achieved on a test piece in our demo facility.

Shipping Policy

Customer pays all incoming shipping charges for replacement components. If the item is defective and under warranty, AFM will pay all return shipping charges via the least costly method. If expedited shipping is desired, the customer must furnish their shipping account number and shipping fees will be charged to that account.

Exclusions

Damage due to tampering, abuse, improper adjustment, electrical interference, or the use of non-approved components will void any and all warranties by AFM and its distributors.



Warranty Verification

If you believe that a product or component may be defective and may be covered by warranty, obtain a Return Material Authorization number by calling our technical support number (toll free at 1-800-835-9344, or 763-428-4846 or Fax: 763-795-8867) or e-mail: info@afmsleeves.com. Based on the recommendation from AFM technical support, replacement components may be shipped out via UPS Ground or similar method. If expedited shipping is desired, customer must furnish their shipping account and shipping fees will be charged to that account.

Customer is required to return the defective component to AFM. If, after 30 days, AFM hasn't received the defective component, the customer will be invoiced for the replacement component. If the returned component is found to not be eligible for warranty, AFM will contact the customer, and the customer will be invoiced for the replacement component.

Warranty within 60 days of invoice

For warranty questions that take place within 60 days of the original invoice, AFM will allow cross-shipment of a replacement component to an end-user customer or AFM distributor. The customer will be invoiced for the replacement component 60 days after it ships. Upon receipt of the returned component, AFM will evaluate it and issue credit where necessary.

For components that have been misused or externally damaged, AFM will not issue credit, and will contact the customer to determine whether or not they want the component repaired and/or returned.

Warranty Eligibility

The warranty provided by AFM is only to the original buyer.

Limited Warranty

THIS WARRANTY SHALL NOT APPLY IF ANY MODIFICATION, ALTERATION, OR ADDITION IS MADE TO THE PRODUCT WITHOUT AFM'S PRIOR WRITTEN APPROVAL. FURTHERMORE, THIS WARRANTY DOES NOT APPLY TO PRODUCT DEFECTS DUE TO MISUSE, ABUSE, NEGLIGENCE, OR FAILURE TO FOLLOW RECOMMENDED PROCEDURES. ANY PRODUCT REPAIRED OR ALTERED BY PERSONS OTHER THAN AUTHORIZED AFM REPRESENTATIVES WILL NOT BE COVERED BY THIS WARRANTY. THIS WARRANTY DOES NOT APPLY TO CONSUMABLE ITEMS.

EXCEPT AS EXPRESSLY PROVIDED IN THIS WARRANTY, AFM MAKES NO REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, WITH RESPECT TO THE PRODUCT, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT OR ANY OTHER MATTER.

AFM SHALL HAVE NO LIABILITY TO ANY PERSON FOR INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES OF ANY DESCRIPTION WHETHER ARISING OUT OF WARRANTY OR INABILITY TO USE THESE PRODUCTS EVEN IF AFM HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. OTHER CONTRACT, NEGLIGENCE OR OTHER TORT, OR OTHERWISE. NO AGENT, EMPLOYEE, OFFICER OR OTHER REPRESENTATIVE OF AFM, INC. HAS AUTHORITY TO BIND EASTEY TO ANY REPRESENTATION OR WARRANTY EXCEPT AS STATED HEREIN. UNDER NO CIRCUMSTANCES SHALL EASTEY'S LIABILITY HEREUNDER, FOR ANY REASON OR CAUSE EXCEED THE PRICE PAID TO EASTEY FOR THE PRODUCT.

Disclaimer of Damages

REGARDLESS OF WHETHER ANY REMEDY SET FORTH HEREIN FAILS OF ITS ESSENTIAL PURPOSE, IN NO EVENT WILL AFM BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL, INDIRECT, OR SIMILAR DAMAGES, INCLUDING LOST PROFIT OR LOST OPPORTUNITIES OF ANY TYPE ARISING OUT OF THE USE OR INABILITY TO USE THESE PRODUCTS EVEN IF AFM HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Customer Support

AFM Technical Service

For help installing or operating the CH-100, please contact your authorized AFM reseller or AFM Technical Service at one of the numbers listed below.

Phone	714-974-9006
Fax	763-795-8867
E-mail	info@afmsleeves.com
Web	www.afmsleeves.com

Thanks again for your purchase of AFM products. We are pleased to be a part of your shrink sleeving needs.

