WCE-HM Case Erector

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ABOUT THIS MANUAL

This manual contains information pertaining to the set-up and operation of a WCE-40HM Case Erector. This manual should be read by any person(s) who will be expected to operate or maintain this piece of equipment.

This manual is organized from the general to the specific starting with definitions of the symbols used in this manual. A general equipment description is then offered followed by discussions with regard to machine safety and specific machine hazards; this is followed by guidelines for installation. Specific machine set up details for each machine adjustment is offered. A quick-reference setup checklist is provided, along with the recommended air pressure settings, for various devices. Recommended preventive maintenance schedules are also presented, along with parts ordering and warranty information.

Brief video clips are utilized in the PDF version of this manual. Appearance is best if the PDF is down-loaded to the computer hard drive. When viewing on the computer, open the file with Adobe Acrobat 6.0 Standard; click on the video icon.

FAILURE TO READ THIS MANUAL BEFORE OPERATING THE EQUIPMENT MAY RESULT IN DAMAGE TO THE PRODUCT, DAMAGE TO THE MACHINE, AND BODILY INJURY TO THE OPERATOR/MAINTENANCE TECHNICIAN!!

SAFETY SYMBOLS

CAUTION! GENERAL

This symbol will be used to point out general areas where machinery operators should use caution. Area of CAUTION may result in injury or damage to the machinery.

WARNING! GENERAL

This symbol is used to offer a general warning to an area on the equipment, which, if not operated properly, may cause injury to the operator or to the equipment.

WARNING! ELECTRICAL

Anytime this symbol is used the operator should follow the manual instructions carefully to insure proper operation and to avoid electrical injuries.

WARNING! HOT

Certain areas of the equipment are hot enough to seriously burn the operator. This symbol warns operators to use extreme caution when working around these specific areas.

WARNING! PINCH POINT

This symbol warns of the potentially hazardous areas on the equipment where operators should use extreme caution to avoid getting pinched by the equipment while making adjustments. Loose clothing should not be worn around machine.

GENERAL DESCRIPTION

The WCE-40HM is an efficient, compact, mechanical motion, bottom sealer. It produces regular slotted (RSC), half-slotted (HSC), and special center-slotted cartons.

The machine may be equipped with either a Nordson ProBlue Hot-Melt System®, or a pressure sensitive, tape applicator head. Equipped with either option, the machine is capable of achieving up to forty (40) cartons per minute, output dependent on case length. Average setup time is ten (10) minutes or less.

The machine is controlled through a microprocessor, supervising the automatic sequential operations in conjunction with sensing devices, such a photoelectric sensors, and proximity switches. The initiation of an operation is determined by the total and satisfactory completion of the preceding operation.

MACHINE SAFETY

- *NEVER reach into any portion of the machine while it is running.*
- *ALWAYS depress an "EMERGENCY STOP" button before reaching into the machine.*
- *ALWAYS turn off air supply to the machine before adjusting or maintaining.*
- *ALWAYS disconnect main power before performing any work on any electrical components.*

- *ALWAYS follow proper lockout/tagout procedures.*
- *DO NOT disable safety switches.*

SAFETY FEATURES

As with any piece of automatic machinery, the motion of cylinder mechanisms, conveyor belts, and drive systems create a hazard when a machine is improperly operated. All guarding must remain in place during operation to prevent operator contact with moving components. DO NOT attempt to make adjustments or remove jammed material without first depressing the EMERGENCY STOP.

MASTER CONTROL RELAY (MCR)

This relay controls power to the PLC output devices. The primary circuit of the MASTER CONTROL RELAY has all of the intrusion switches and all EMERGENCY STOP switches wired in series. When any EMERGENCY STOP is depressed, or when any intrusion guard is opened, the MASTER CONTROL RELAY is de-energized. When the relay is off, motion control devices such as solenoid valves and motor contacts are electrically disabled.

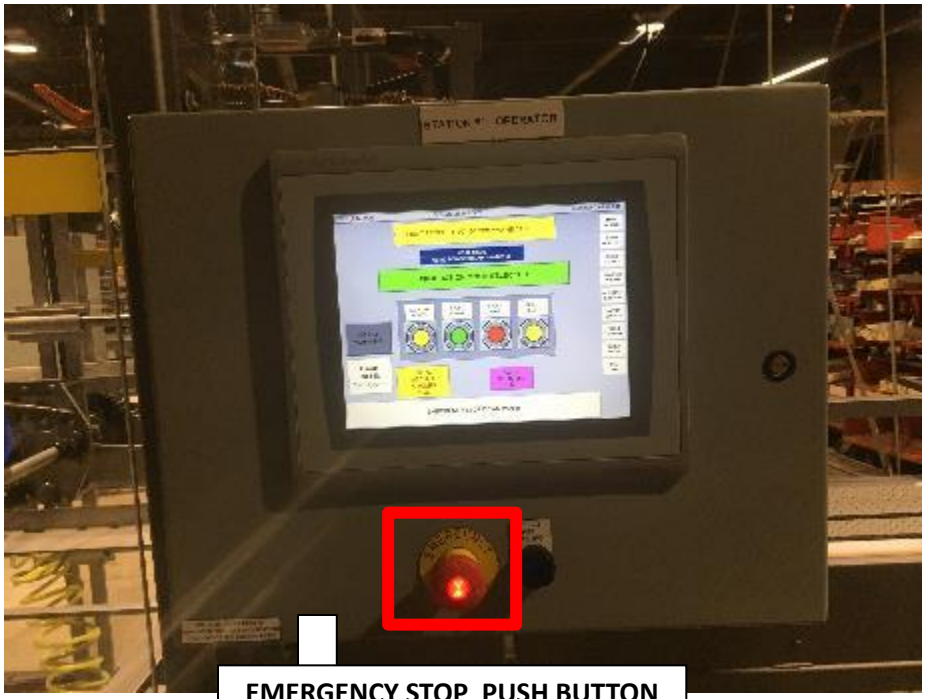
To re-energize the MASTER CONTROL RELAY, all EMERGENCY STOP buttons must be pulled up, and all door guards must be closed. The MASTER CONTROL RELAY is then reset by pushing the "RESET MASTER CONTROL" button.

BEFORE RESETTING THE MASTER CONTROL RELAY, INSURE THAT EVERYONE IS CLEAR OF THE MACHINE. NO AUDIBLE ALARM WILL SOUND BEFORE A MANUAL START.

EMERGENCY STOP BUTTON & INTRUSION DETECTION

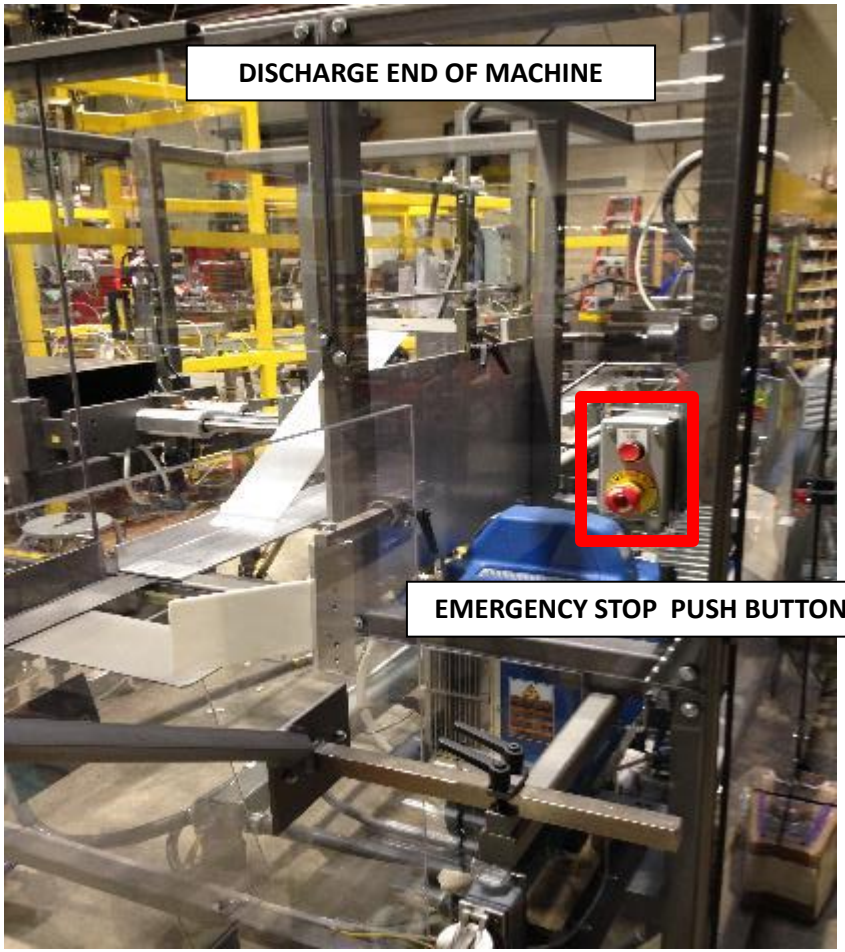
EMERGENCY STOP pushbuttons are located on the Operator Control Console, and at the Discharge End of the machine. Their function is to break the primary circuit of the MASTER CONTROL RELAY, thereby electrically disabling all motion control outputs from the PLC.

OPERATOR CONTROL CONSOLE



EMERGENCY STOP PUSH BUTTON

DISCHARGE END OF MACHINE



EMERGENCY STOP PUSH BUTTON

EMERGENCY STOP BUTTON & INTRUSION DETECTION

Safety switches are mounted on every panel door . Their function is to break the primary circuit of the MASTER CONTROL RELAY, thereby electrically disabling all motion control outputs from the PLC when the door is open (right picture).

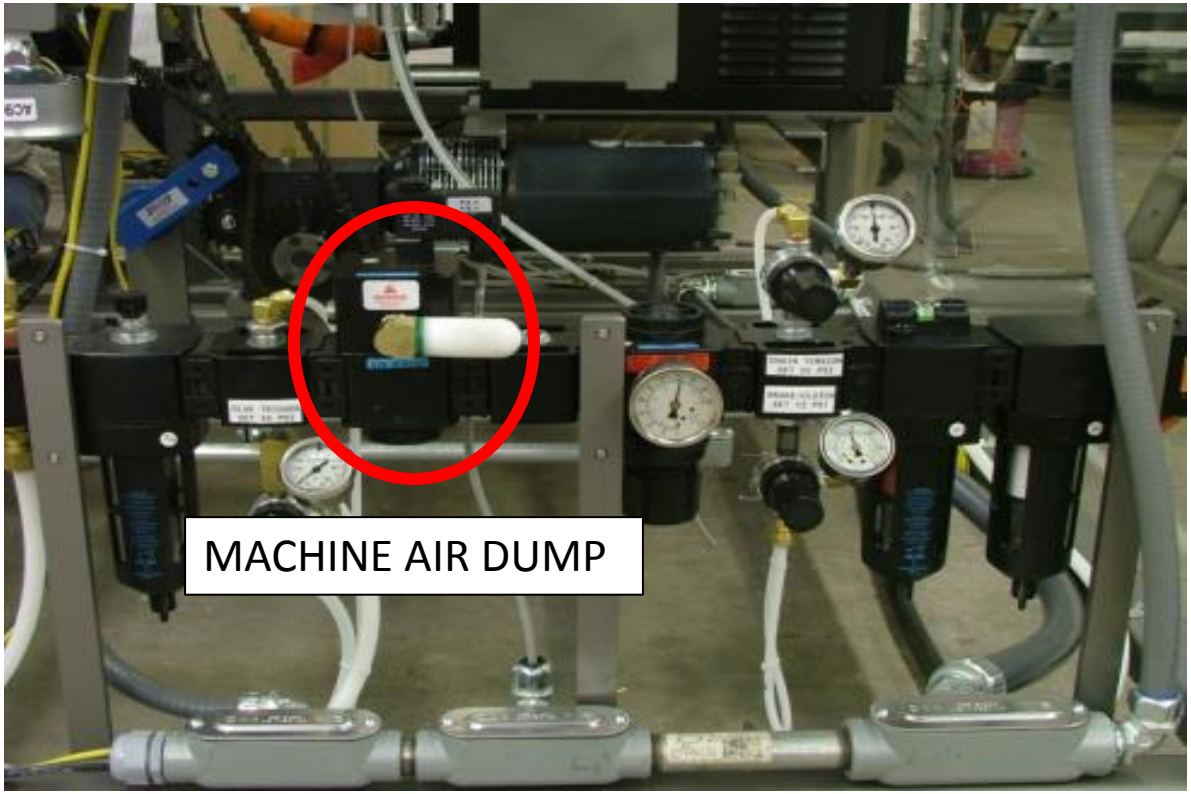
EMERGENCY STOP BUTTON & INTRUSION DETECTION

Make sure all panel doors are closed (left) and emergency buttons are unsuppressed (center) before hitting the Reset Master Control Button (right) to continue the operation of the machine.

MACHINE AIR DUMP & AUDIBLE ALARM

MACHINE AIR DUMP

Incoming compressed air is connected through a Dump Valve that is electrically wired through a set of normally open contacts in the MCR. When the MASTER CONTROL RELAY is energized, the Dump Valve is energized to supply compressed air to the machine. When the MCR is de-energized, the Dump Valve closes off the supply of compressed air and vents the machines air system to atmosphere.



AUDIBLE ALARM

An audible alarm buzzer will sound for the following conditions:

Occurrence of machine fault or material jam
Automatic Machine Restart for Downstream Demand

MACHINE HAZARDS

Machine hazards are areas that cause a danger to the operator. The hazards have been broken into three groups. They are electrical, pneumatic/mechanical, and temperature.

NEVER PERFORM MAINTENANCE ON THE EQUIPMENT UNLESS THE AIR SUPPLY HAS BEEN CLOSED AND THE ELECTRICAL DISCONNECT IS OPEN!

ELECTRICAL

Power supply to the machine is typically 480-volt, 3-phase, 60 Hertz. A lockout disconnect switch on the main enclosure switches power to all of the machine components, with the exception of main power leads to the primary side of the main disconnect switch.

THE OPERATOR/TECHNICIAN IS TO INSURE THAT THE MAIN ELECTRICAL ENCLOSURE IS CLOSED, PRIOR TO OPERATING THE EQUIPMENT

FOLLOW APPROPRIATE LOCKOUT/TAGOUT PROCEDURES

PNEUMATIC/MECHANICAL

A pneumatic cylinder operated by solenoid valve is used to intermittently index the cartons forward to the gate section. Caution must be used around the magazine, which indexes each cycle, as it is typically loaded ***while*** the machine is operating.

All other moving machine parts are enclosed behind hinged or fixed barrier guards. Enclosed in this manner are the varieties of conveyor chains, and reciprocating mechanical devices. Cam operated and cylinder driven motions, do not present a hazard since the operator is isolated from the devices by guards.

NEVER ATTEMPT TO OPERATE THE MACHINERY WITH GUARD DOORS OUT OF PLACE. NEVER ATTEMPT TO DEFEAT GUARD DOOR INTERLOCKS.

The majority of machine accidents occur when personnel reach into machinery to "assist" the devices while the equipment is in operation, and reaching into equipment that can restart automatically.

DO NOT attempt to reach into any part of the equipment without first stopping the machine and depressing EMERGENCY STOP.

TEMPERATURE

The equipment is fitted with a hot-melt glue tank and application system that typically operates to 350□ F. Exposed, heated components of this system, including the tank, hose, and gun can cause serious burns. Use extreme caution when working around these components to avoid contact.

CERTAIN AREAS OF THE EQUIPMENT ARE HOT ENOUGH TO SERIOUSLY BURN THE OPERATOR/TECHNICIAN. USE EXTREME CAUTION WHEN WORKING AROUND THESE AREAS.

If hot glue does contact skin, allow it to cool in the air or touch it to a cool metal surface. DO NOT touch or attempt to remove the glue until it has cooled and hardened.

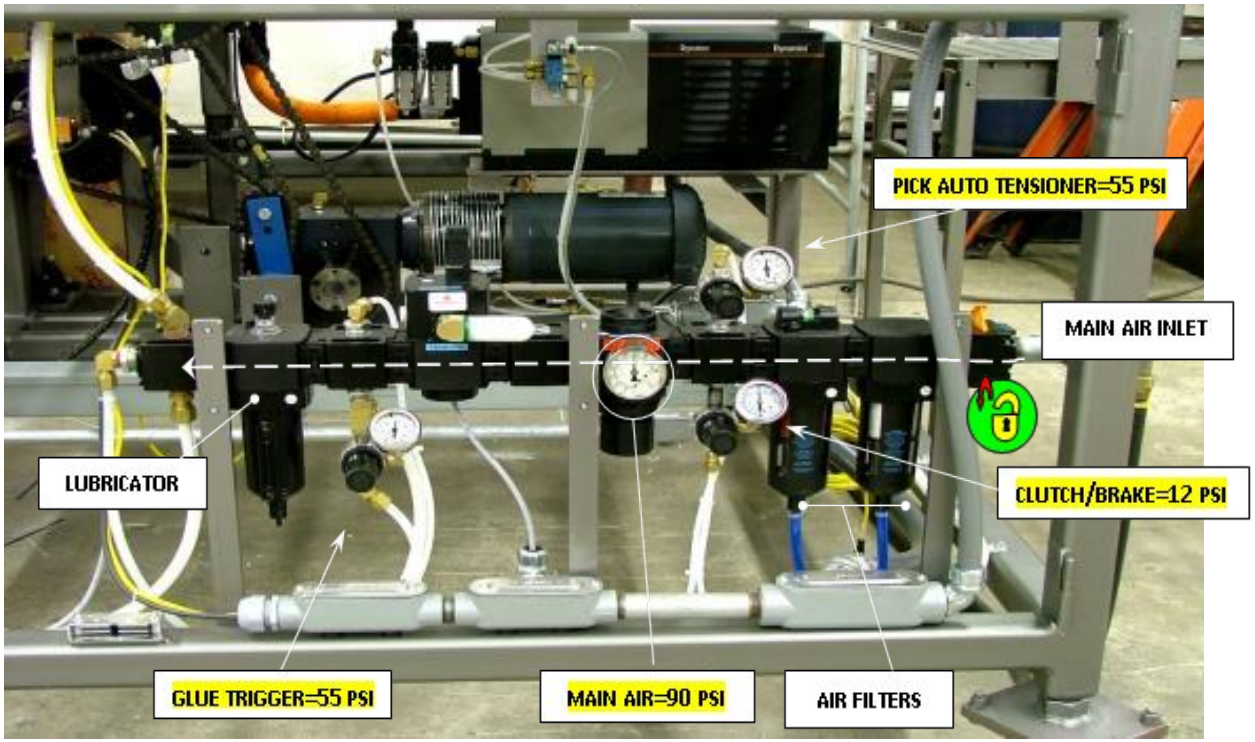
MACHINE INSTALLATION

The machine is shipped fully assembled and skidded. Re-install the castors and floor locks. Hardware is provided. Verify machine level.
The Inside Compression cylinder and guard, as well as discharge chute were removed for shipment. Re-install each item; hardware is provided.

AIR SUPPLY REQUIREMENT

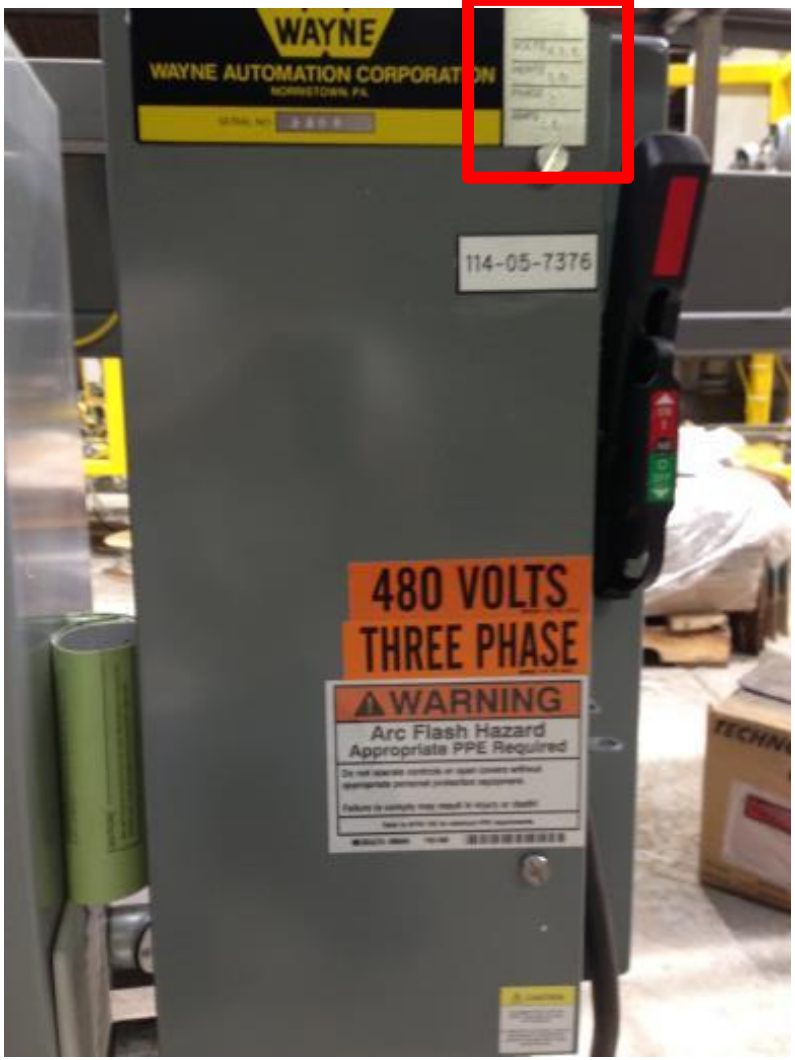
Provide the Case Erector with clean, dry air using a minimum 3/4" hose no longer than 50 ft. from a larger air supply header. Do not use any nipples or fittings smaller than 3/4" ID, or any quick disconnect with smaller restrictions.

Verify a minimum of 90 psi air pressure at the infeed regulator. Air consumption at 25 cycles per minute is 64 scfm, (standard cubic feet per minute). This is equal to 10 cfm, at 60 psig (pounds per square inch, gauge).



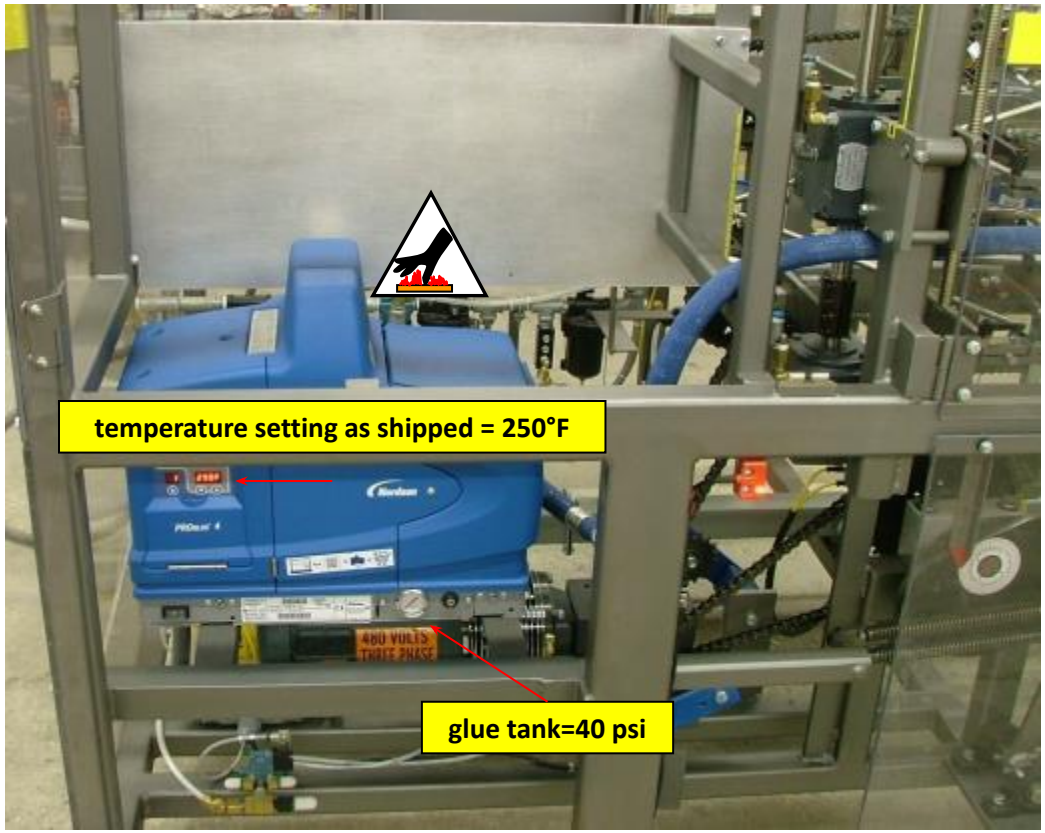
ELECTRICAL REQUIREMENT

Electrical service to the machine is 3-wire, 480 volt, 3-phase, and 60 hertz. A good hardwired safety ground (protective earth) connection is required for safety and performance of solid state devices.



HOT MELT REQUIREMENT

The Hot-Melt System is shipped intact, ready for service. Adhesive tested and shipped is Henkel Adhesives, Technomelt 250F™ Cool-Lok. Temperature setting for all components in the system (tank, hose and head) is set from 250°F.



NOTE!

DO NOT MIX WITH OTHER ADHESIVES. PURGE SYSTEM WHEN NECESSARY.

MAIN CONTROL CABINET

The Main Control Panel requires one external electrical power source (480/3/60). Incoming power is protected by fuses and then branched to the desired components. Machine control voltages (120 VAC, 24VDC, etc.) are transformed from the power source and fuse protection has been installed as required. All motor circuits contain the proper fusing as well as motor starters. In addition, all motors are protected by electronic overloads or variable frequency drives. Fuses mounted in blocks with built in fuse pullers provide protection for all input and output devices, as well as supply power to the PLC.

Electrical Shock Hazards exists when the machine has power applied to it AND the Control Enclosure is OPEN. Use extreme caution during installation, servicing or when performing program changes or while observing diagnostic indicators.

FOLLOW APPROPRIATE LOCKOUT/TAGOUT PROCEDURES! **PROCEED WITH CAUTION!**

PANELVIEW/HMI

Mounted at the Magazine, above and slightly behind the controls enclosure is an Allen Bradley PanelView Plus 7. Standard machines use a 6” display. Optional 10” display is available. The PanelView is used for motion control, to monitor machine status, display fault codes, and provide access to adjustable parameters (timers and counters) used in the recipe setup.

HMI-PANELVIEW PLUS 7 – 10”

EMERGENCY STOP /RESET MASTER CONTROL

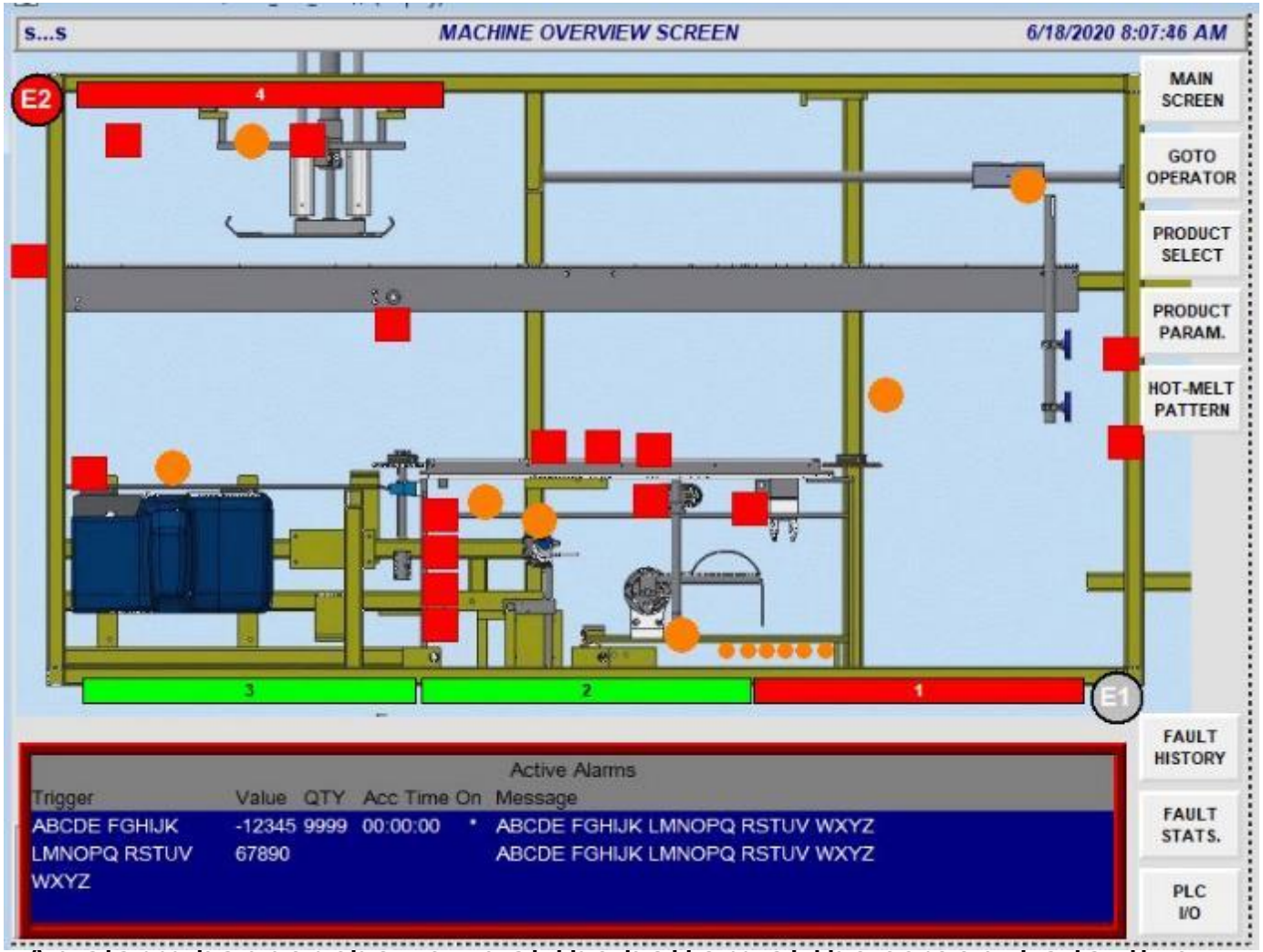
MACHINE OVERVIEW

This screen shows E-Stop locations and indicates if they are pressed.

Doors are also indicated green if closed, red if open.

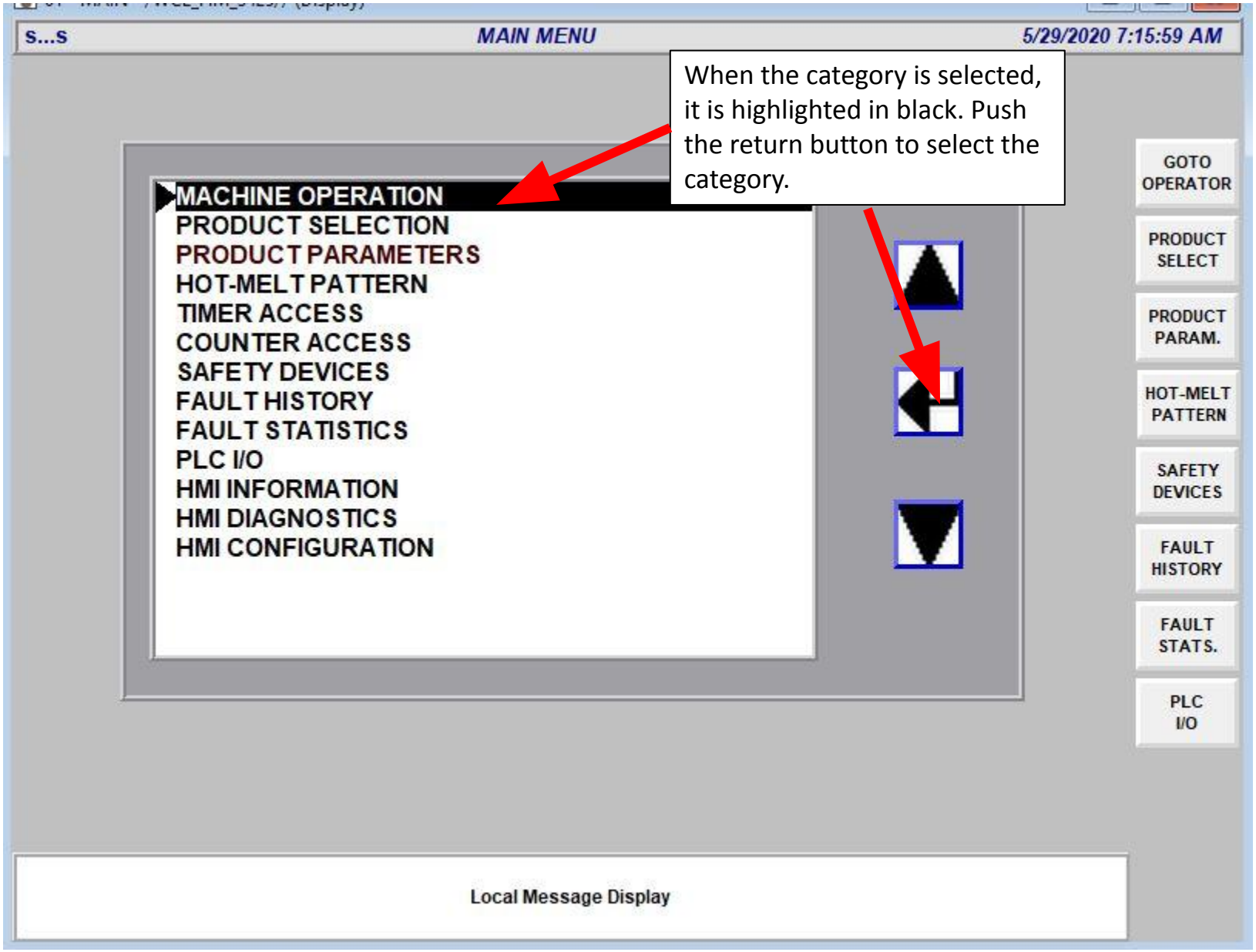
The squares indicate inputs (prox switches, photo-eyes) and relatively where they are in the machine.

Circles indicate outputs and where the valves/indicators are located.



An alarm banner shows up at the bottom of the screen if a fault is present.

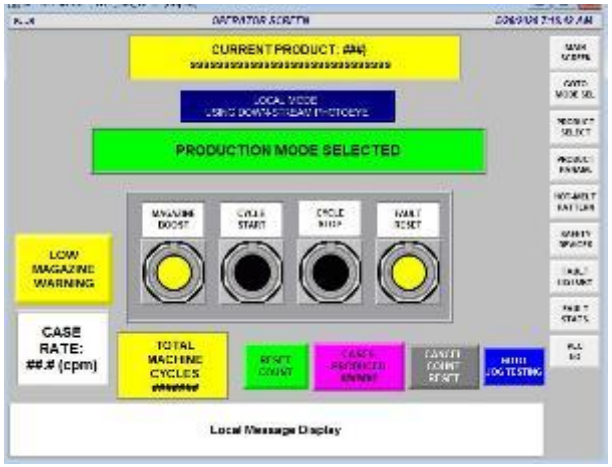
MAIN MENU DISPLAY



OPERATOR SCREEN

From the Main Screen, press OPERATOR SCREEN to navigate to the Operator Display. This display is the most frequently used. It is comprised of motion control pushbuttons, (Cycle Start and Cycle Stop) and a manual control pushbutton, (Boost Magazine).

Above the control buttons is a display field and the FAULT RESET control block.



Machine Cycle START Pushbutton:

This pushbutton is used to initiate all cycle sequences, in conjunction with the MCR ON. If JOG mode is selected, pulsing (press/release) Machine Cycle START will step the Case Conveyor to any position desired.

Machine Cycle STOP Pushbutton:

This pushbutton, typically red, will bring the machine to a controlled stop at the completion of a normal cycle.

BOOST MAGAZINE:

Pressing this pushbutton will allow the cartons to be advanced against the Magazine Gates.

The pushbutton operates both Magazine Boost solenoid valves. After the MCR has been RESET, the Operator/technician must press the pushbutton until the proximity switch MAGAZINE EMPTY is turned OFF.

This button is ***disabled in dry cycle*** and during some portions of the normal machine cycle.

FAULT RESET

This pushbutton is used to quickly reset any machine fault.

Pressing the Fault Reset pushbutton is an acknowledgement of the fault. By subsequently pressing Machine Cycle START, production may be resumed.

MODE SELECTION SCREEN

JOG / RUN: After the MCR has been RESET, with JOG selected, the operator may pulse the Machine Cycle Start pushbutton, and step (move) the machine conveyor to any desired point.

This mode selection gives the operator the tool to refine the setup and observe clearances and/or contact with the carton panels.

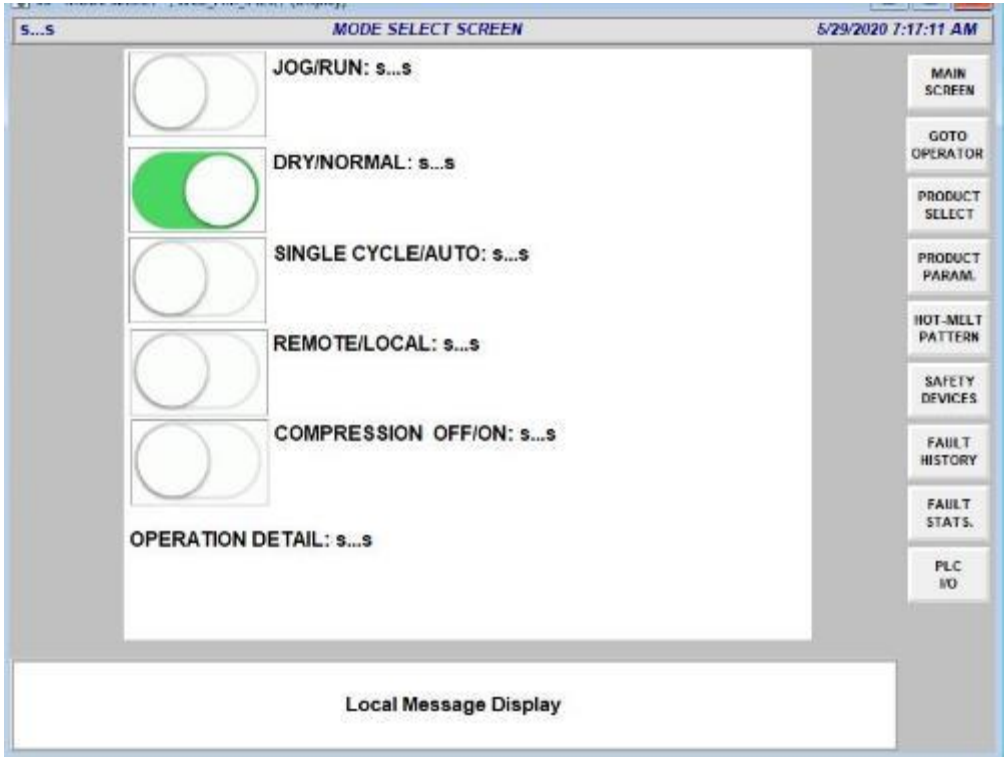
JOG mode selected automatically disables the Hot-melt System.

Selecting DRY enables the machine to be cycled without material (cartons) present.

DRY mode selected disables the operation of the vacuum system. All other devices will operate, with the exception of the Magazine Boost cylinders.

NORMAL mode selected produces cartons.

REMOTE/LOCAL: REMOTE applies when the machine is being controlled by another panel from a separate machine. LOCAL applies when the panel control is being control by the panel on this machine.



JOG SCREEN

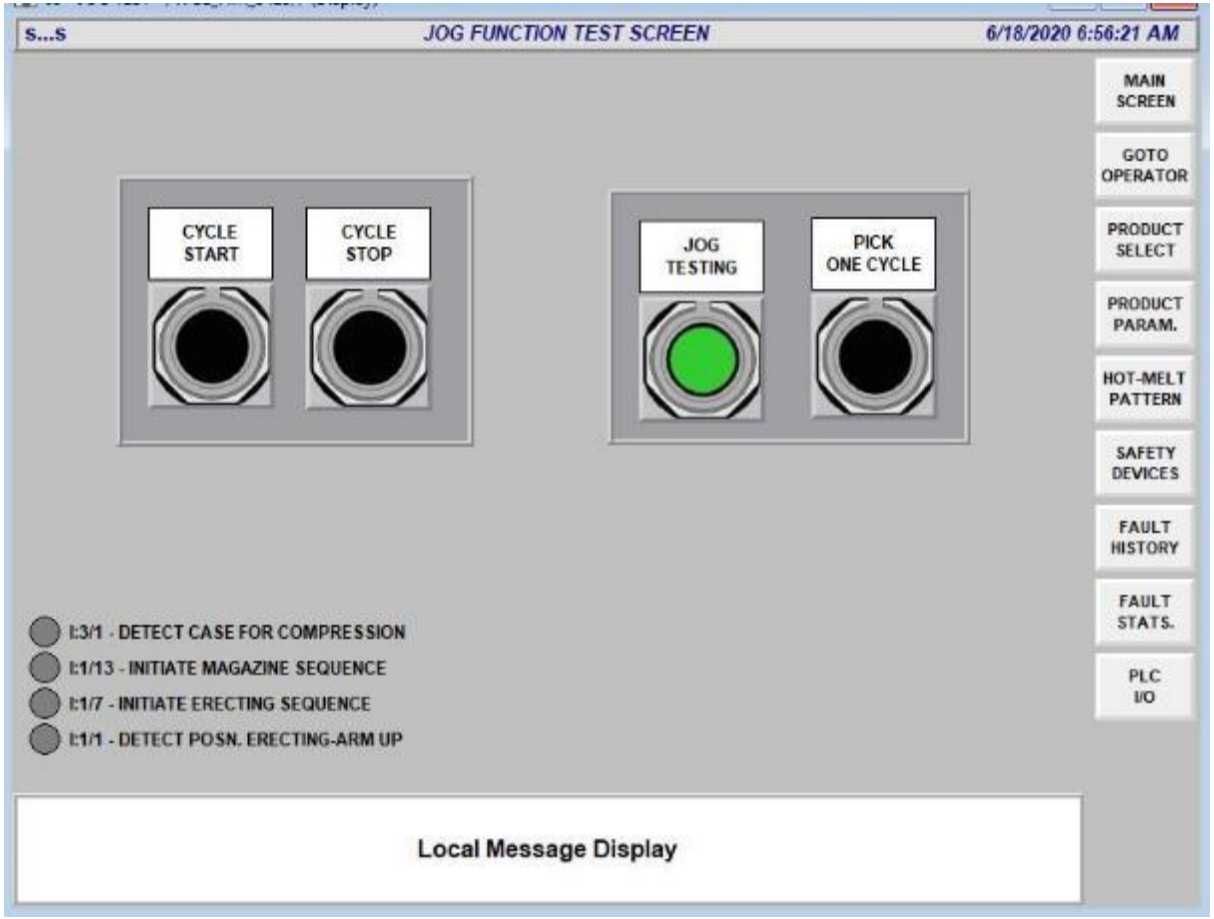
Cycle Start: Same as Operator screen. If Jog Testing is not active it will jog while held, or start up the Main Drive Motor to cycle the machine in dry or for production.

Cycle Stop: Same as Operator screen. If producing, machine will stop picking product, complete to compression and then wind down to a stop. Action required to re-start.

Jog Testing: Pressing this button enables the jog mode timing and changes the cycle start to toggle the VFD on and off at jog speed.

Pick One Cycle: While the Main drive is turning at jog speed, this button will enable next cycle pick vacuum and boost, producing a case at jog speed, with timers adjusted appropriately to act on the case at this slower speed.

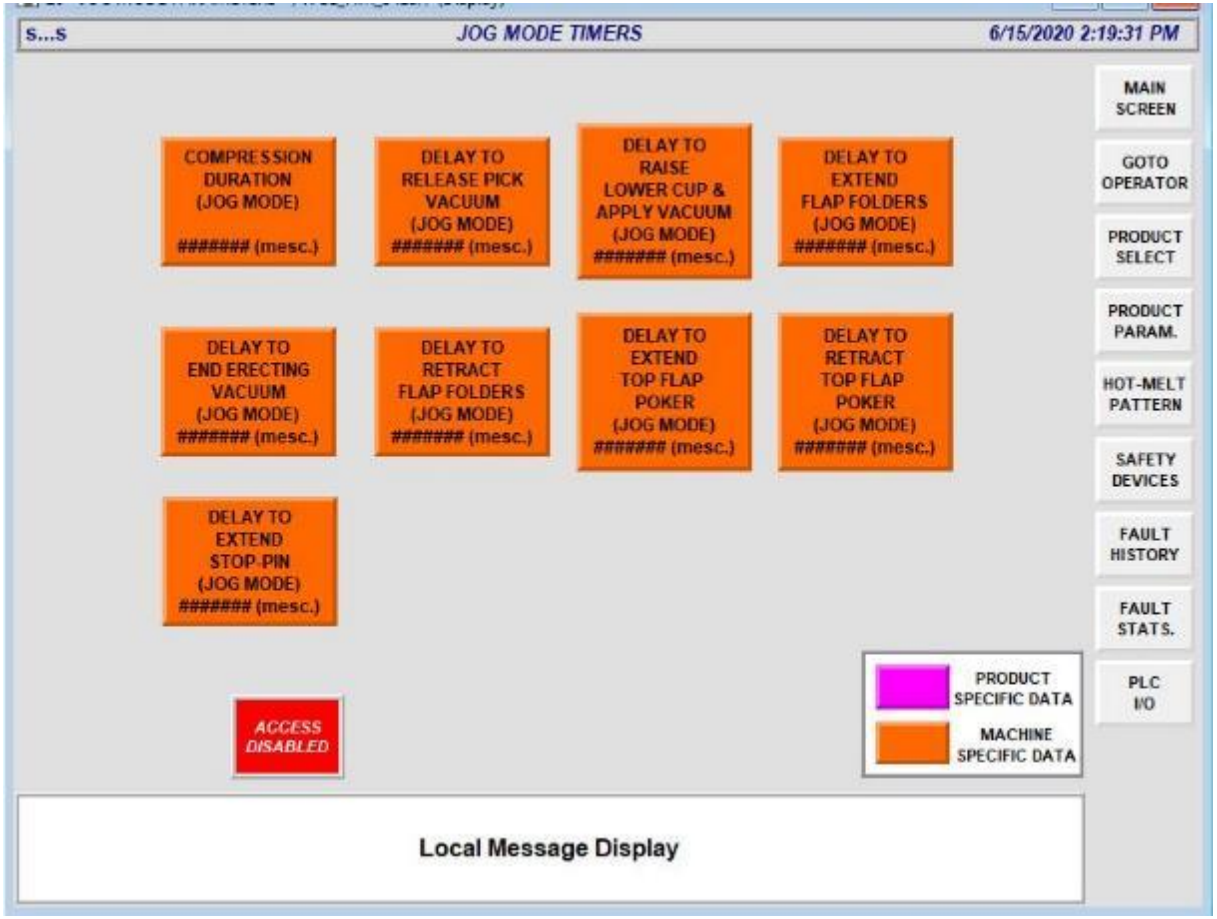
Jog testing is a very easy way to check mechanical setup, and to setup a new case size.



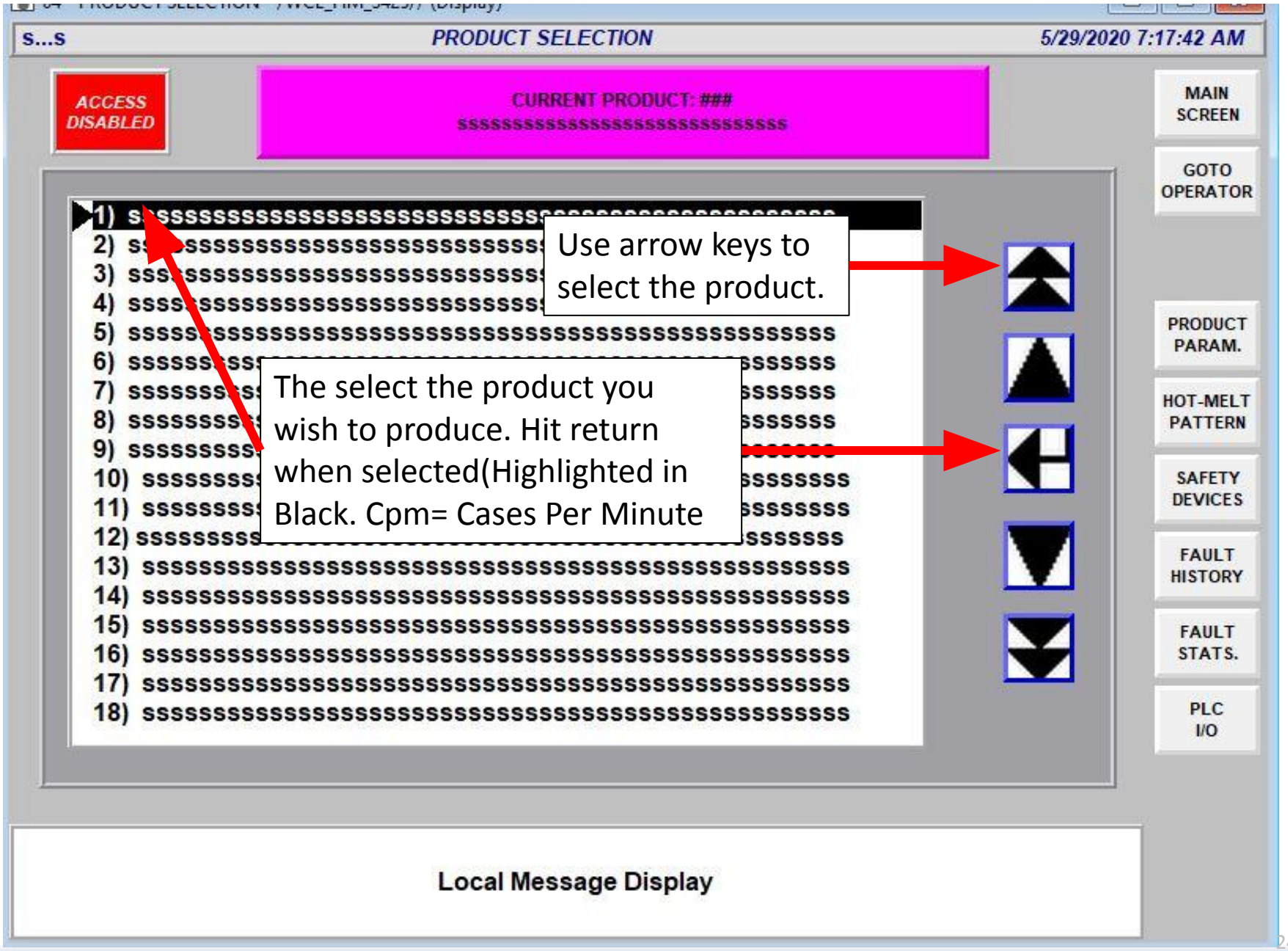
The WCE actions are triggered from 4 prox switches labeled in the lower left corner. Those switches are triggered once per cycle and are set based on the mechanical timing chart for the machine. This means the timing is related to the speed of the Main Drive Motor.

JOG SCREEN TIMERS

Jog Testing Timers are orange/machine specific timers because the same jog speed is used regardless of product selected. Most products will handle the same at the low speed, so timing can be used across the range of products running on the machine in jog test.



PRODUCT SELECTION SCREEN

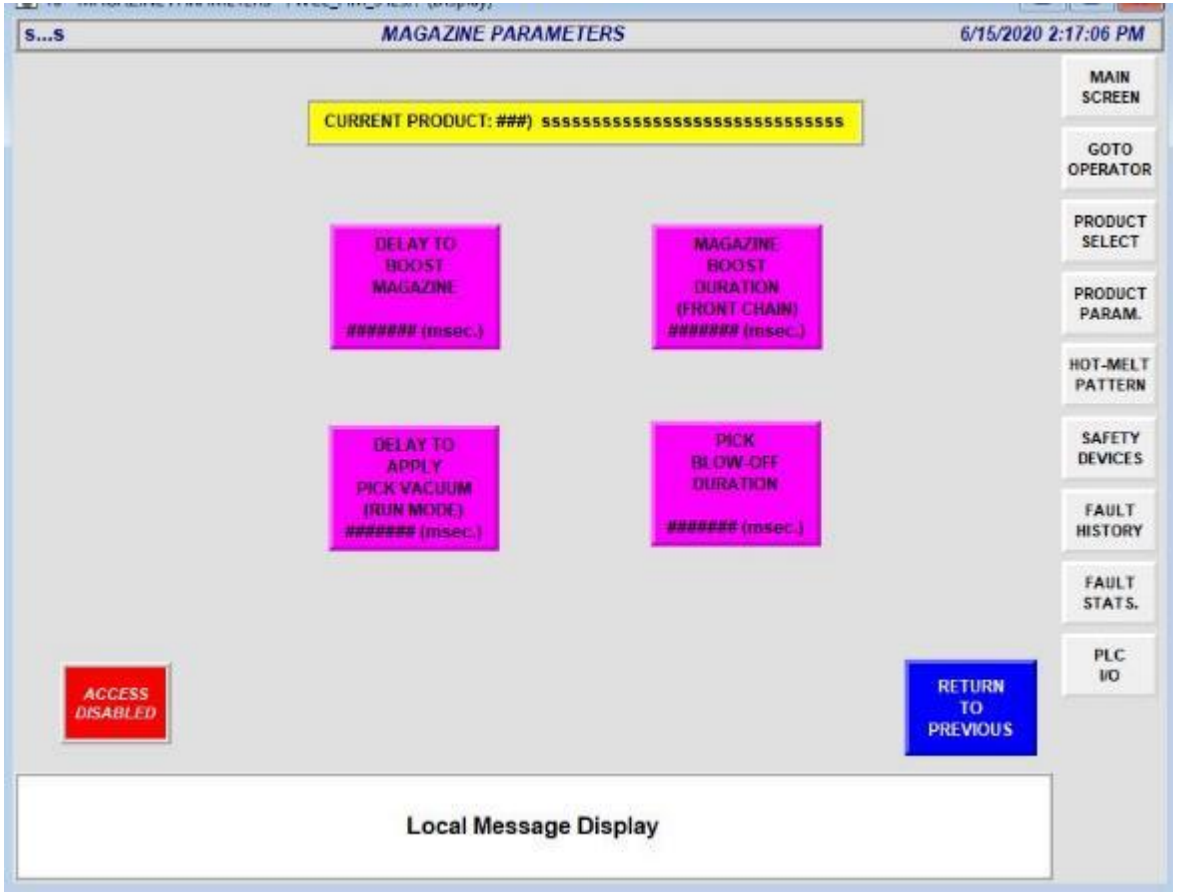


MAGAZINE PARAMETERS SCREEN

I:1/13 - INITIATE MAGAZINE SEQUENCE

Delay To Boost Magazine – From the above prox switch turning on, how long to delay boosting, so the Pick Arm is approaching the magazine as the boost starts.

Delay to Apply Pick Vacuum (Run Mode) – How long to delay before turning on the vacuum output, this is off of a venturi generator, so excessive vacuum timing is a waste of air, but not effecting vacuum strength.



Magazine boost duration – Timer goes once boost is initiated. This determines how far the front boost chain pulls the product per cycle, and needs to index one full case forward.

Pick Blow-off Duration – Clears vacuum out of the pick arm

ERECTING PARAMETERS SCREEN

I:1/7 - INITIATE ERECTING SEQUENCE

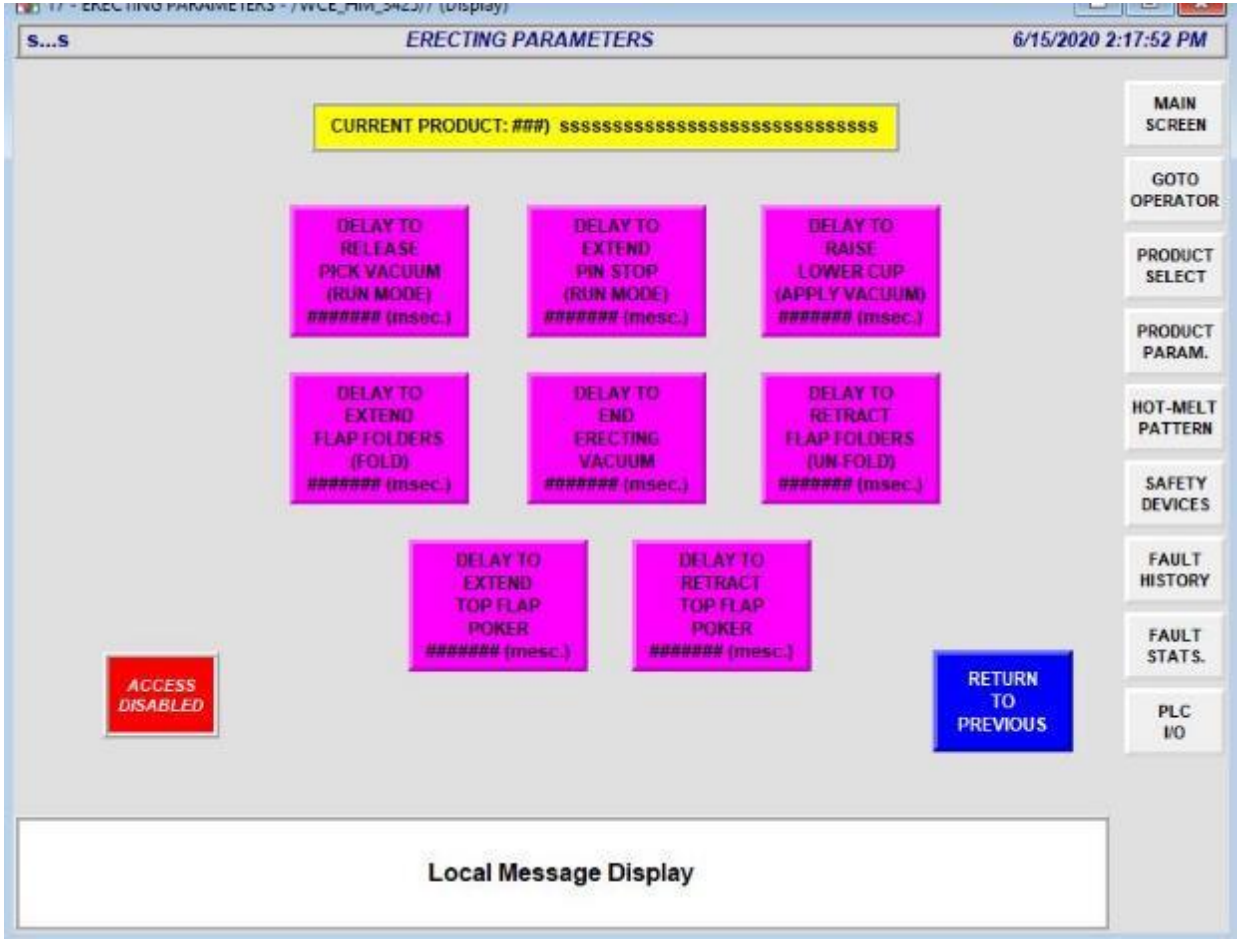
Delay to Release Pick Vacuum (Run Mode): When the above switch turns on, this timer determines when to turn off pick vacuum output and to turn on blow off. It determines where the case sets at the erecting station

Delay to Extend Pin Stop (Run Mode: Using similar timing, the pin stop extends to prevent the case from sliding beyond the Erecting station, making a reliable starting point for opening the case.

Delay to Raise Lower Cup (Apply Vacuum): This needs to be set so the case is fully delivered and the erecting arm is most of the way down before extending the lower cup cylinder, and turning on erecting station vacuum to seal to the case.

Delay to Extend Flap Folders (Fold): While the case is opening, this timer sets when to rotate the folders in. Too early and the folders will stall on the minor flaps. If they go in after the case is fully open, there might not be enough time to fold before the pushers arrive to move the case.

Delay to Retract Folders: This times from turning on the output to extend the folders.



I:1/1 - DETECT POSN. ERECTING-ARM UP

Delay to End Erecting Vacuum: Releasing the case once it is fully open, and the minor flaps are folded. Release too early and the case will collapse. Too late and the pushers will damage the case.

Delay to Extend Top Flap Poker: This should be timed close to the vacuum release, to force the top major flap down, capturing the minor flaps.
Delay to Retract Top Flap Poker: Timer begins when the poker output is turned on to extend.

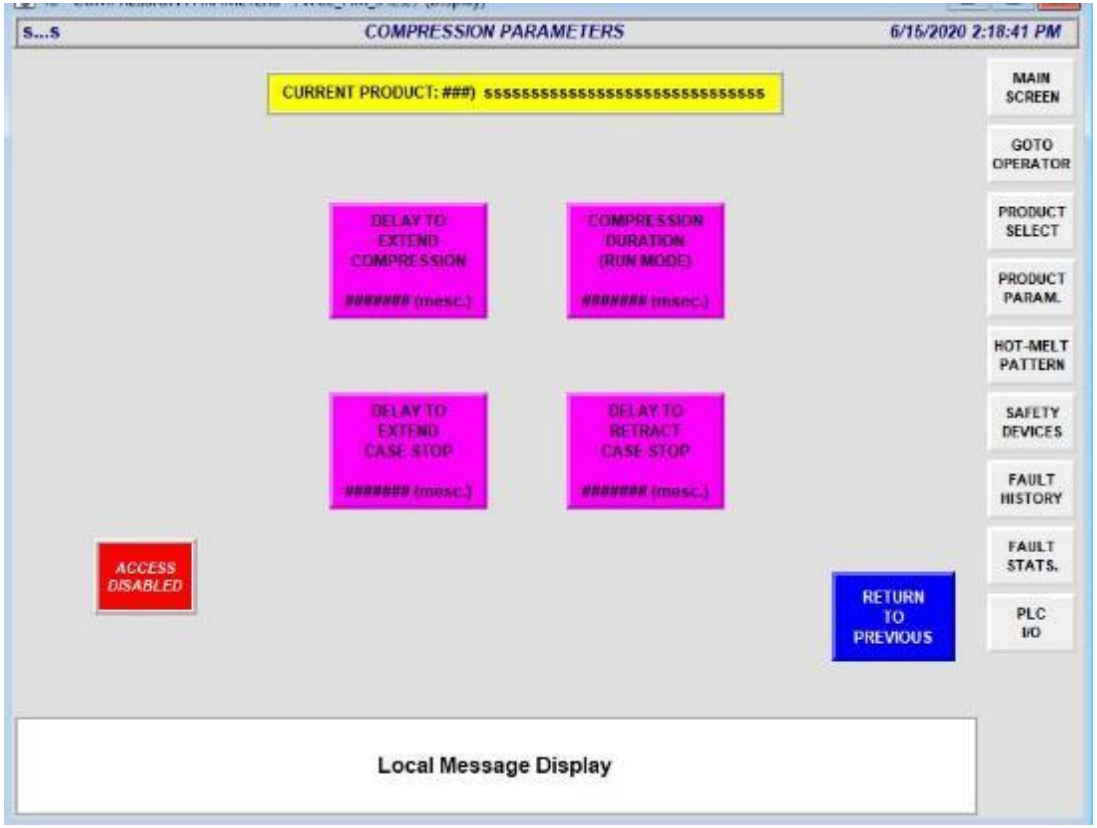
COMPRESSION PARAMETERS SCREEN

I:3/1 - DETECT CASE FOR COMPRESSION

Delay to Extend Compression: This timer starts off the prox switch above. It needs to be set so the case is fully delivered. Too early and the case will be damaged by compression, too late and compression will not dwell long, or will be in the case when the next case arrives

Compression duration (Run Mode): This timer runs once the output to extend compression turns on. This needs to be long enough to set the glue in the case. At slow rates this can be longer to optimize glue setting.

Delay to Extend Case Stop: This timer starts off the I:3/1 prox. It should be set to extend the stop just as the case is pushed most of the way into compression. It prevent the case from sliding beyond compression as the pushers rotate back around to the return side of the chain track. If timed too early it will stall on the case leaving compression and create a jam. Too late and the case may slide past compression and be damaged by the compression plate.



Delay to Retract Case Stop: This timer begins when the output is turned on for extending the case stop. It should be set long enough to stop the case, but short enough to be clear when the next case begins pushing into compression area.

MISC. PARAMETERS SCREEN

Main Drive Speed (Hz): Sets the VFD speed, which is converted through the gearmotor to an output RPM. This determines the machine cycle rate.

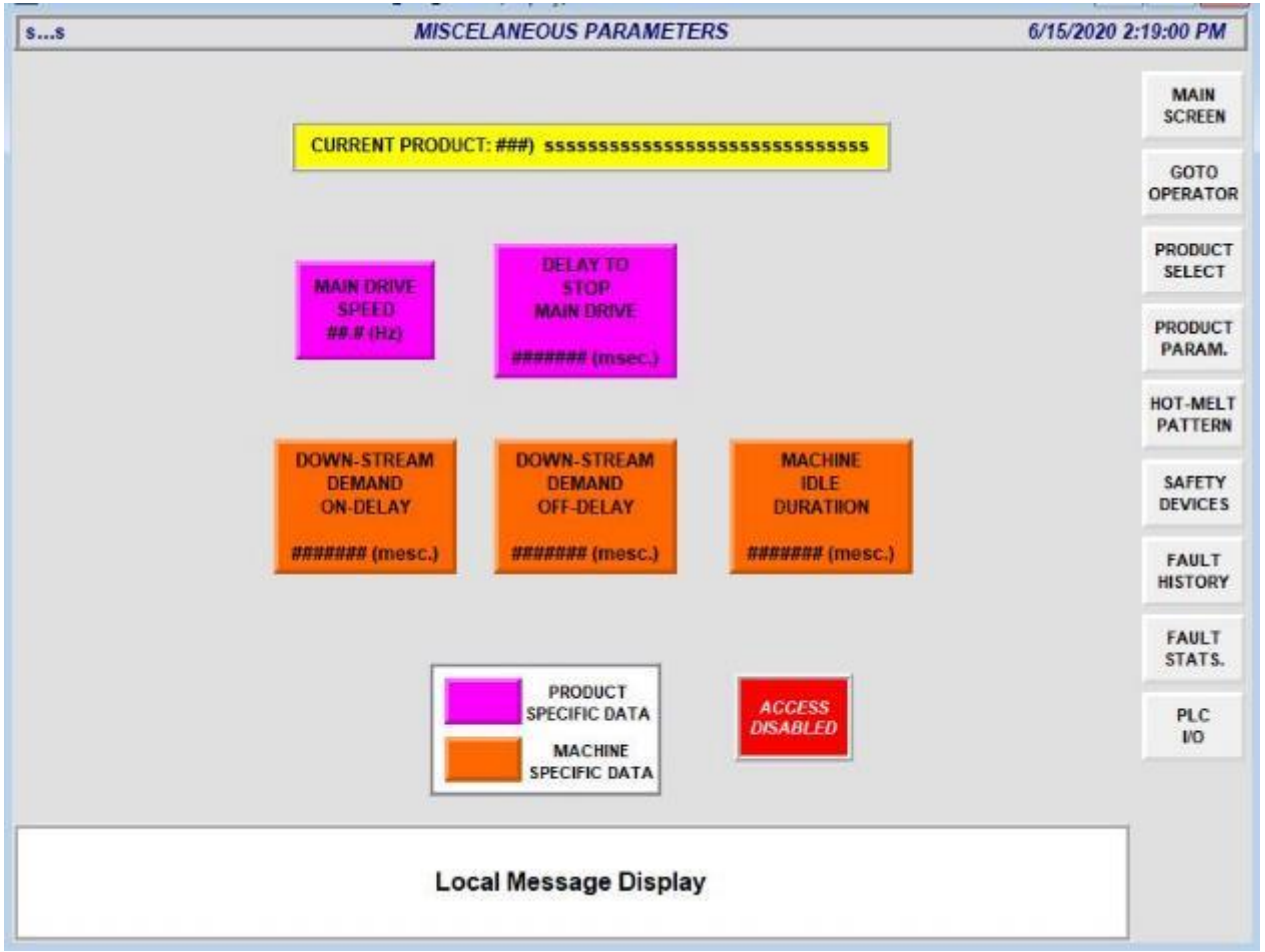
NOTE As this value is changed, all of the timers for setup must be adjusted in order to time the actions correctly for the new cycle rate.

Erecting Arm Position and Flap Fold timing if wrong, can cause a major interference, damaging the erecting arm and folders.

Delay to Stop Main Drive: This times off of the magazine sequence prox switch (i:1/13). It should be set to stop the Pick arm at the magazine.

Down-Stream Demand On-Delay: When the Down-Stream photo-eye is blocked, this timer runs. If it completes, it triggers the pick idle mode, not picking any more cases until the eye clears.

Down-Stream Demand Off-Delay: When the Down-Stream photo-eye clears, this timer runs. If it completes before blocked again, it allows the machine to pick cases, and will start up the machine if at rest from an automatic stop.



Machine Idle Duration: While the machine is stopped for remote signal or down-stream idle, this timer runs. If it completes, the machine will automatically cycle stop, but remains armed to restart should the signals clear. If down-stream photo eye clears, or remote signal allows cycling, the machine will automatically start back up and begin picking cases again.

HOT MELT PATTERN SCREEN

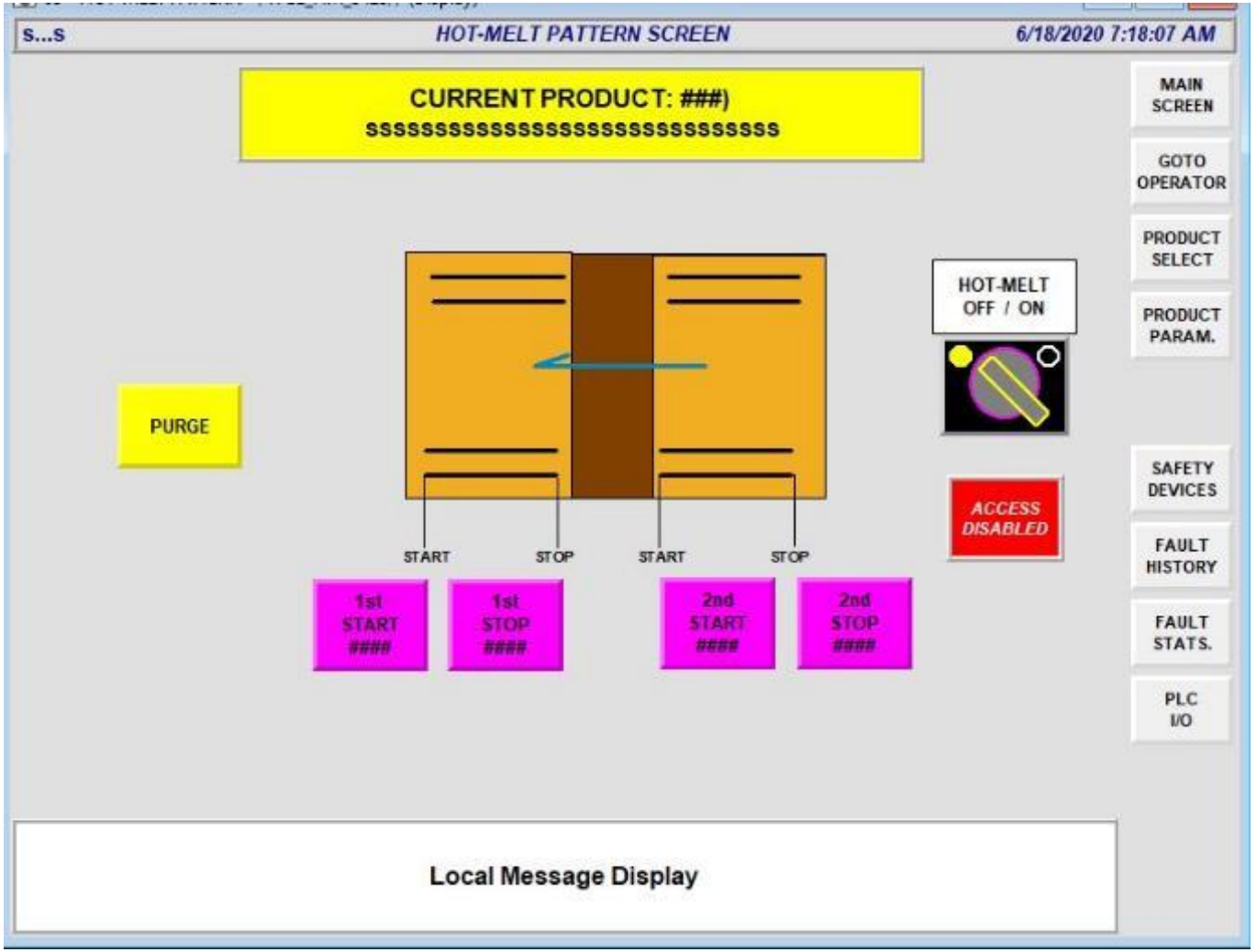
1st Start: When the photo-eye for first glue stripe turns on, a timer begins counting. When it reaches this value the glue output is triggered ON

1st Stop: When the timer reaches this value, the glue output will turn off

2nd Start: When the photo-eye for second glue stripe turns on, a separate timer begins counting. When it reaches this value the glue output is again triggered ON

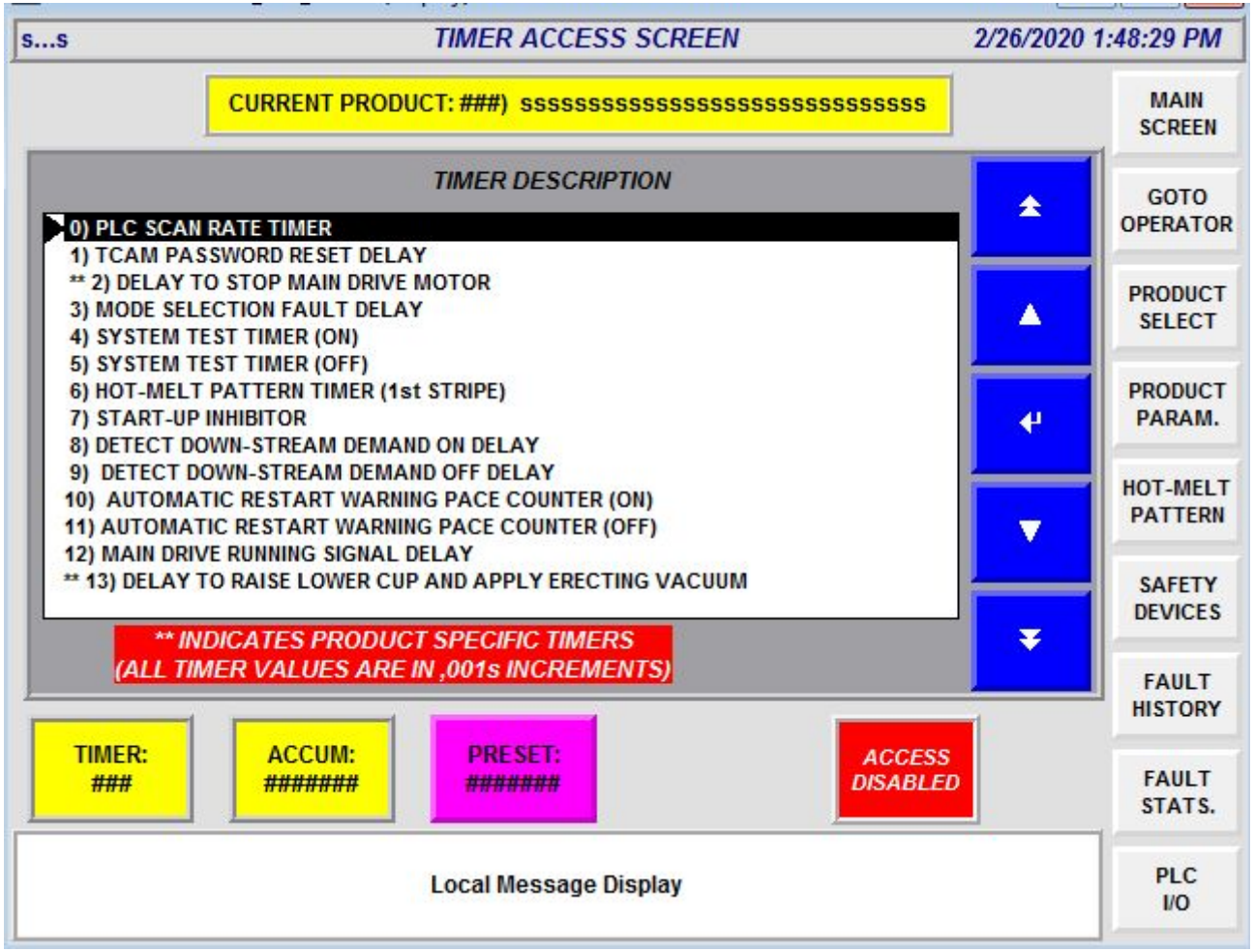
2nd Stop: When the second timer reaches this value, the glue output will turn off again.

These values should be set to place an adequate glue stripe on the leading and trailing minor flaps.

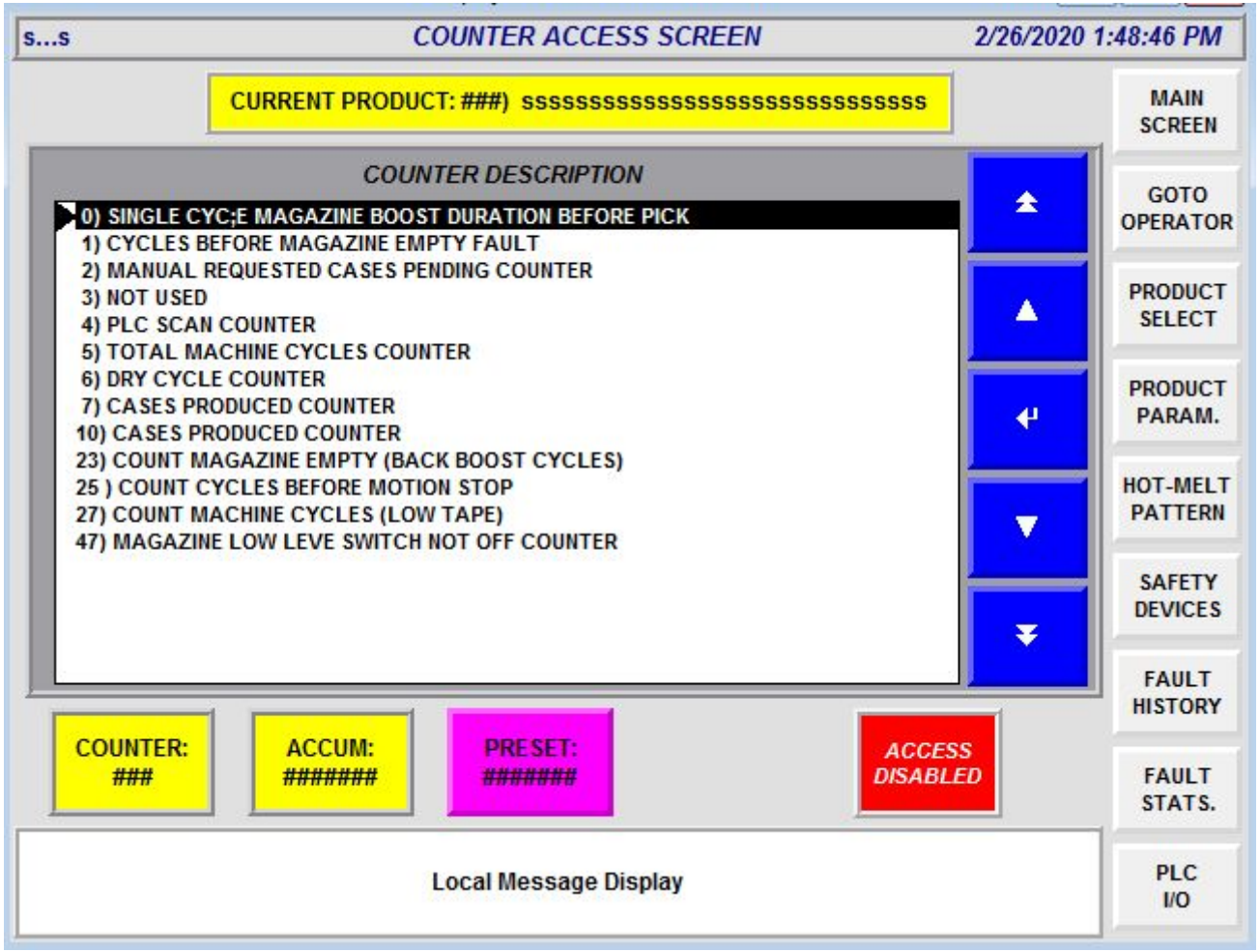


If glue sprays off the front of the case, check that the 1st glue stripe photo-eye is positioned so it only turns on when the case moves towards compression by the pushers, not when the case is fully opened. Only the Detect Case Erected (Top) Photo-eye should turn on initially.
If glue still sprays off the front, make the 1st start value larger. If glue sprays off of the first flap, make 1st Stop smaller. Same thing, if glue sprays before the 2nd flap, make 2nd start larger, if it sprays off the back of box, make 2nd stop smaller

TIMER ACCESS SCREEN



COUNTER ACCESS SCREEN



PANELVIEW DISPLAY MESSAGES

MESSAGE NUMBER	MESSAGE TEXT
2	RUNNING IN LOCAL/NORMAL MODE
3	LOCAL NORMAL MODE SELECTED,\nPRESS CYCLE START
5	RUNNING IN REMOTE/NORMAL MODE
6	REMOTE NORMAL MODE SELECTED,\nPRESS CYCLE START
8	STOPPED BY REMOTE SIGNAL
9	STOPPED BY DOWN-STREAM DEMAND
10	REMOTE SIGNAL REQUIRED\nTO START CYCLE
11	DOWN-STREAM DEMAND BLOCKED,\nWAIT UNTIL CLEAR
19	MACHINE RESTARTING,\nKEEP CLEAR
21	RUNNING IN DRY MODE
22	DRY MODE SELECTED,\nPRESS CYCLE START
25	CYCLE STOP IN PROGRESS
40	MACHINE RESET REQUIRED
41	MACHINE RESET IN MOTION
50	JOG MODE ACTIVE,\nPRESS CYCLE START TO JOG
51	MACHINE JOGGING
89	MODE SELECTION ERROR
95	START-UP INHIBITOR,\nPLEASE WAIT
96	HOT-MELT LOW LEVEL\nWARNING
97	LOW TAPE WARNING (RESERVED)
98	RESET MASTER CONTROL RELAY
99	EMERGENCY STOP DOWN (MAIN)
101	DETECT SAFETY DOOR #1 OPEN
102	DETECT SAFETY DOOR #2 OPEN
103	DETECT SAFETY DOOR #3 OPEN
104	EMERGENCY STOP DOWN (OPPOSITE)

PANELVIEW DISPLAY MESSAGES (Cont'd)

105	DETECT SAFETY DOOR #4 OPEN
110	MAIN DRIVE VFD SAFETY CONTACTOR (SR1)\nNOT ON IN TIME FAULT
111	MAIN DRIVE VFD FAULT,\nSEE VFD FAULT REGISTER d07
112	CASE NOT ERECTED FAULT\n(TOP, I:1/2)
113	MACHINE NOT IN MOTION FAULT
115	COMPRESSION NOT RETRACTED\nIN TIME FAULT
116	COMPRESSION NOT OFF\nRETRACTED PROX IN TIME FAULT
120	MAGAZINE LOW LEVEL SWITCH ON OR OFF TO LONG
122	LOW TAPE LEVEL FAULT (RESERVED)
125	HOT-MELT SYSTEM NOT READY
126	HOT-MELT SYSTEM FAULTED
130	TAPE NOT CUT FAULT
131	OPEN FLAP DETECTED
132	MAIN DRIVE VFD SAFETY CONTACTOR (SR1)\nNOT OFF IN TIME FAULT
133	INVALID HOT-MELT DATA\n(1St STRIPE)
134	HOT-MELT SAFETY CUT-OFF
135	CASE NOT DELIVERED\nTO ERECTING FAULT
136	CASE DID NOT EXIT\nERECTING STATION FAULT
137	INVALID HOT-MELT DATA\n(2nd STRIPE)
150	MASTER CONTROL RELAY\nNOT ON IN TIME FAULT
151	MASTER CONTROL RELAY\nNOT OFF IN TIME FAULT
155	CASE NOT ERECTED FAULT\n(BOTTOMI: 1/11)
156	CASE JAM AT COMPRESSION
	Error

TIMER LIST

TIMER	PRESET	DESCRIPTION
T4:0	1000	PLC SCAN TIMER (1 sec)
T4:1	60000	TCAM PASSWORD RESET DELAY
** T4:2	50	DELAY TO STOP MAIN DRIVE MOTOR
T4:3	1000	MODE SELECTION FAULT DELAY
T4:4	1000	SYSTEM TEST TIMER (ON)
T4:5	1000	SYSTEM TEST TIMER (OFF)
T4:6	1000	HOT-MELT PATTERN TIMER (1st STRIPE)
T4:7	1600	START-UP INHIBITOR
T4:8	2000	DETECT DOWN-STREAM DEMAND ON DELAY
T4:9	2000	DETECT DOWN-STREAM DEMAND OFF DELAY
T4:10	250	AUTOMATIC RESTART WARNING PACE COUNTER (ON)
T4:11	250	AUTOMATIC RESTART WARNING PACE COUNTER (OFF)
T4:12	1300	MAIN DRIVE RUNNING SIGNAL DELAY
** T4:13	350	DELAY TO RAISE LOWER CUP AND APPLY ERECTING VACUUM
** T4:14	650	DELAY TO END ERECTING VACUUM
** T4:15	380	DELAY TO RELEASE MAGAZINE VACUUM AT ERECTING STATION (RUN MODE)
** T4:16	200	DELAY TO APPLY MAGAZINE PICK VACUUM
** T4:17	300	DELAY TO BOOST MAGAZINE
T4:18	810	DELAY TO BOOST MAGAZINE BEFORE FIRST PICK
** T4:19	1000	MAGAZINE BOOST DURATION (FRONT CHAIN)
T4:20	410	MAGAZINE UN-BOOST DURATION (FRONT CHAIN)
T4:21	410	MAGAZINE LOW LEVEL ON DELAY
T4:22	100	MAGAZINE LOW LEVEL OFF DELAY
T4:23	500	MAGAZINE BOOST DURATION (BACK CHAIN)
T4:24	670	MAGAZINE UN-BOOST DURATION (BACK CHAIN)

TIMER LIST

** T4:25	1000	DELAY TO RETRACT FLAP FOLDERS (UN-FOLD)
T4:26	150	RETRACT FLAP FOLDERS OUT DWELL
** T4:27	400	DELAY TO EXTEND FLAP FOLDERS (FOLD)
** T4:28	100	DELAY TO EXTEND TOP FLAP POKER
** T4:29	700	DELAY TO RETRACT TOP FLAP POKER
** T4:30	400	DELAY TO EXTEND COMPRESSION
** T4:31	600	COMPRESSION DWELL (RUN MODE)
T4:32		
T4:33		
T4:34	150	DELAY TO TEST FOR CASE NOT DELIVERED TO ERECTING FAULT
T4:35	1750	MACHINE IN MOTION WATCHDOG (1st CYCLE)
T4:36	1750	MACHINE IN MOTION WATCH DOG COUNTER
T4:37	250	MASTER CONTROL RELAY NOT ON IN TIME FAULT DELAY
T4:38	1500	COMPRESSION NOT RETRACTED IN TIME FAULT DELAY
T4:39	500	COMPRESSION NOT OFF RETRACTED PROX IN TIME FAULT DELAY
T4:40	1250	TAPE NOT CUT FAULT DELAY
T4:41	2500	HOT-MELT SAFETY CUTT-OFF DELAY
T4:42	30000	MACHINE CYCLE RATE TIMER
T4:43	1000	DEAD-MAN START WARNING
T4:44	1250	MASTER CONTROL RELAY NOT OFF IN TIME FAULT DELAY
T4:45	150	PICK VACUUM BLOW-OFF DWELL
T4:46	1000	HOT-MELT PATTERN TIMER (2nd STRIPE)
T4:47	1000	MUTE HORN AT MCR RESET DWELL
T4:48	2000	MAIN DRIVE VFD FAULT RESET DWELL

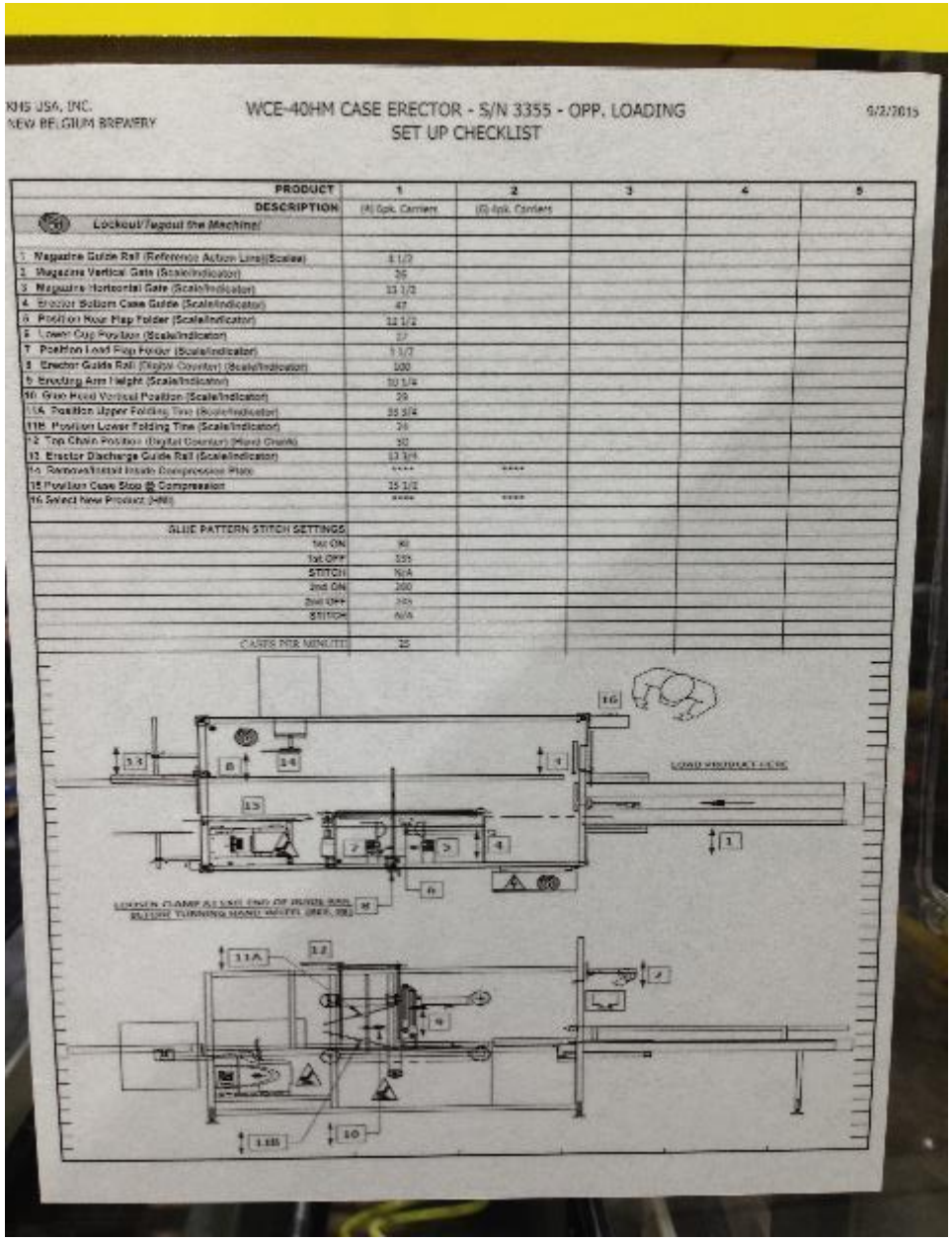
TIMER LIST

** T4:49	100	DELAY TO EXTEND CASE STOP
** T4:50	500	DELAY TO RETRACT CASE STOP
T4:51	20	JAM AT COMPRESSION FAULT DELAY
T4:52	2000	HOT-MELT PURGE TIMER
** T4:53	300	DELAY TO APPLY MAGAZINE BLOW-OFF (CYCLE STOPPING)
T4:54	30000	IDLE MODE DURATION
T4:55	500	DELAY TO DISABLE MAIN DRIVE VFD
T4:56	1000	LOSS OF LINE COMMS FAULT DELAY
T4:57	250	VFD-1 (MAIN DRIVE) DELAY TO START AFTER STOP IS OFF
T4:60	100	FIRST FLAP GLUE ON STITCH TIMER
T4:61		FIRST FLAP GLUE OFF STITCH TIMER
T4:62	100	SECOND FLAP GLUE ON STITCH TIMER
T4:63		SECOND FLAP GLUE OFF STITCH TIMER
T4:64	500	VFD-2 (CASSSE CONVEYOR) DELAY TO START AFTER ENABLE ON
T4:65	500	VFD-1 (MAIN DRIVE) DELAY TO START AFTER ENABLE ON
T4:66	200	VFD-2 (CASE CONVEYOR) DELAY TO START AFTER STOP IS OFF
T4:67	500	VFD-1 (MAION DRIVE) COMMS FAULT DELAY
T4:68	500	VFD-2 (CASSE CONVEYOR) COMMS FAULT DELAY
T4:90	200	COMPRESSION DWELL (DRY)
T4:91	3000	DELAY TO RELEASE VACUUM AT ERECTING (JOG)
T4:99	1500	RUN-OUT COMPLETE SIGNAL DURATION
		SPEED BIT (1 = HIGH, 2 = LOW)
		ALL TIMERS ARE IN .001 SEC. INCREMENTS
		** DENOTES PRODUCT SPECIFIC TIMERS

Counter List

C5:0	2	SINGLE CYCLE MAGAZINE BOOST DURATION BEFORE PICK
C5:4	32000	PLC SCAN COUNTER
C5:8	3	AUTOMATIC RESTART ALAM COUNTER
C5:10		CASES PRODUCED COUNTER
C5:23	6	COUNT MAGAZINE EMPTY (BACK BOOST CYCLES)
C5:25	3	COUNT CYCLES BEFORE MOTION STOP
C5:27	300	COUNT MACHINE CYCLES (LOW TAPE)
C5:47	15	MAGAZINE LOW LEVE SWITCH NOT OFF COUNTER
		VFD PARAMETER 410 --> HIGH SPEED
		VFD PARAMETER 411 --> LOW SPEED
		ACCELERATION PARAMETER --> 109
		DECELERATION PARAMETER --> 110

MACHINE SETUP PROCEDURES



KHS USA, INC.
NEW BELGIUM BREWERY

WCE-40HM CASE ERECTOR - S/N 3355 - OPP. LOADING
SET UP CHECKLIST

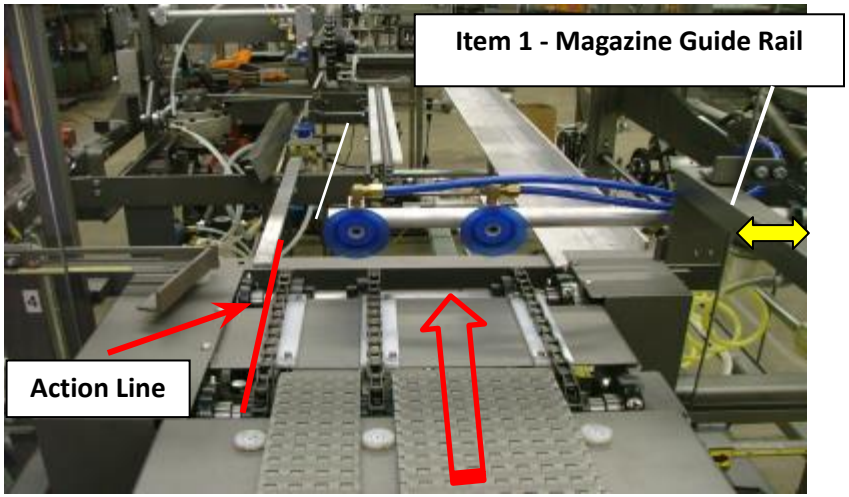
9/2/2015

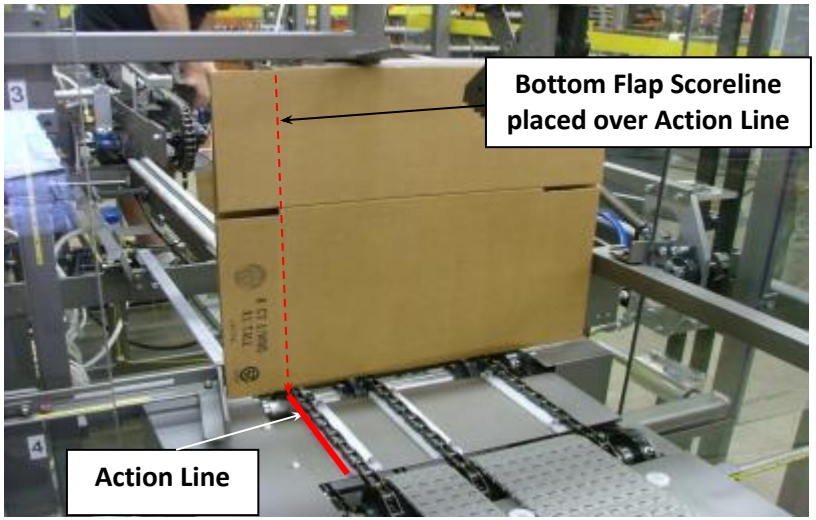
PRODUCT	1	2	3	4	5
DESCRIPTION	(4) 6pk. Carriers	(6) 6pk. Carriers			
Lockout/Tagout the Machine!					
1. Magazine Guide Rail (Reference Action Line)(Scales)	8 1/2				
2. Magazine Vertical Gate (Scale/Indicator)	26				
3. Magazine Horizontal Gate (Scale/Indicator)	13 1/2				
4. Erector Bottom Case Guide (Scale/Indicator)	47				
5. Position Rear Flap Folder (Scale/Indicator)	12 1/2				
6. Lower Cup Position (Scale/Indicator)	17				
7. Position Lead Flap Folder (Scale/Indicator)	13/7				
8. Erector Guide Rail (Digital Counter) (Scale/Indicator)	100				
9. Bending Arm Height (Scale/Indicator)	10 1/4				
10. Glue Head Vertical Position (Scale/Indicator)	29				
11A. Position Upper Folding Tine (Scale/Indicator)	35 3/4				
11B. Position Lower Folding Tine (Scale/Indicator)	24				
12. Top Chain Position (Digital Counter) (Hand Crank)	30				
13. Erector Discharge Guide Rail (Scale/Indicator)	13 3/4				
14. Remove/Install Infeed Compression Plate	****	****			
15. Position Case Stop @ Compression	25 1/2				
16. Select New Product (-Nil)	****	****			
GLUE PATTERN STITCH SETTINGS					
1st ON	90				
1st OFF	335				
STITCH	N/A				
2nd ON	200				
2nd OFF	265				
STITCH	N/A				
CASES PER MINUTE	35				

The Set Up Checklist located on the machine and in the Documentation CD will guide you through the items on the machine to ensure that you can correctly set the parameters for your respective products. The following slides will visually identify the items to be set.

CASE POSITION IN THE MAGAZINE

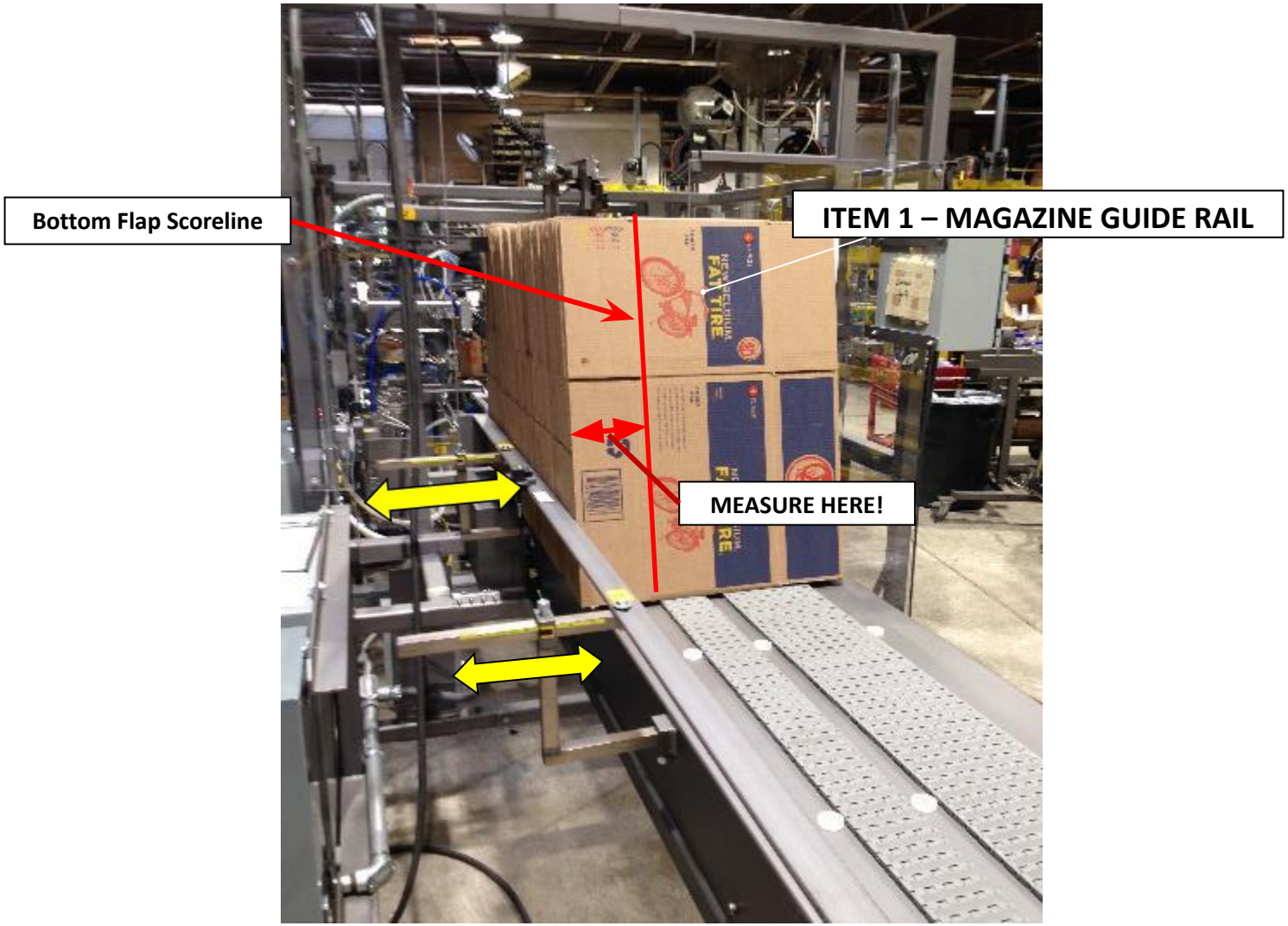
A red-painted scribe line is etched into the deck at the front of the Magazine. This indicator is identified as the "Action Line" of the machine. This line corresponds to the point at which all flap manipulation occurs, throughout the remainder of the machine. These snapshots all illustrate the “Action Line” of the Case Erector. The views below are from the rear of the Magazine, without and with cases present.





CASE POSITION IN THE MAGAZINE

Place a carton as shown previously, aligning the bottom flap Scoreline with the "action" Scribe Line. Adjust the Magazine Guide Rail at two (2) locations, until it contacts the top flaps of the carton.

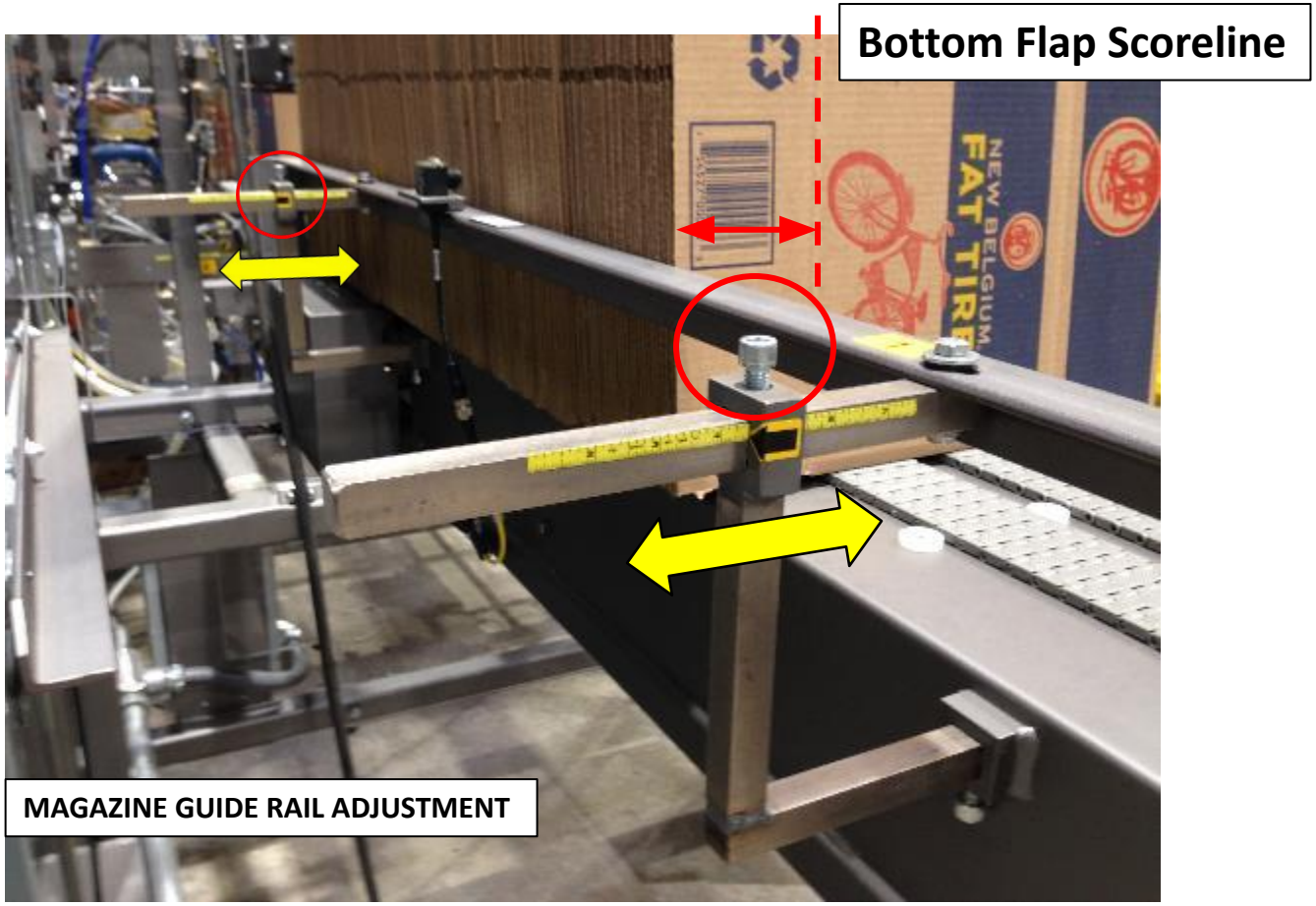


Item 1: Magazine Guide Rail

The rail is manually adjusted at two (2) locations, pictured below. Quick-release clamp handles lock the rail in position. Scales/indicators are provided for position reference. Loosen the clamps.

Place a bundle of cartons, vertically on the deck of the Magazine. Align the bottom flap Scoreline of the carton with the action line. (See snapshot, proceeding page) Measure the case, from the bottom flap Scoreline to outmost edge. Apply the measured dimension to the scales and indicators.

Move the Magazine Guide Rail to contact the top edge of the carton. Observe that the rail is straight and "true" over the length of the Magazine. Retighten the quick-release fasteners.



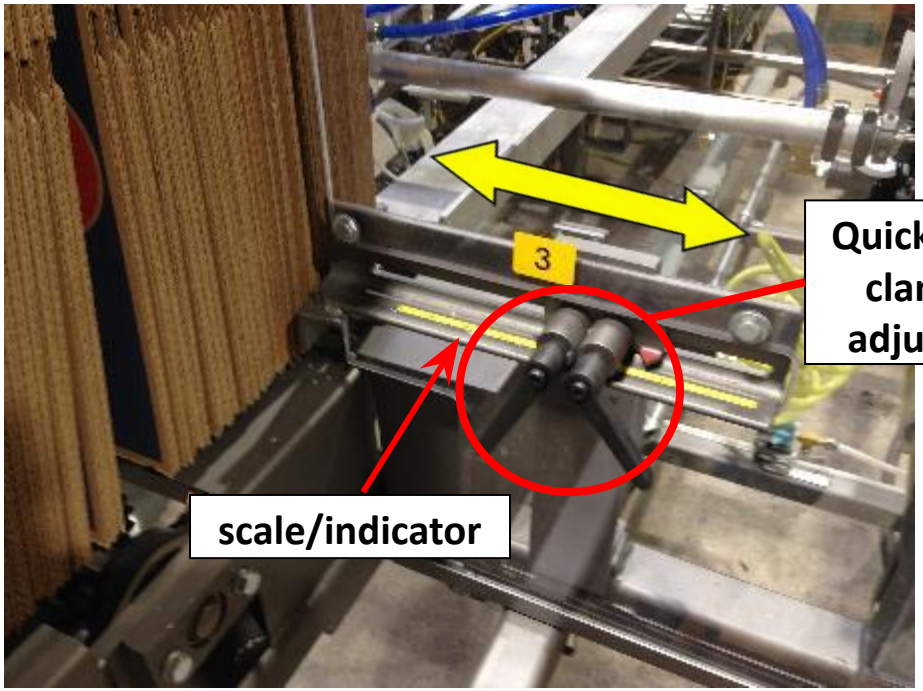
Item 2: Magazine Vertical Gate

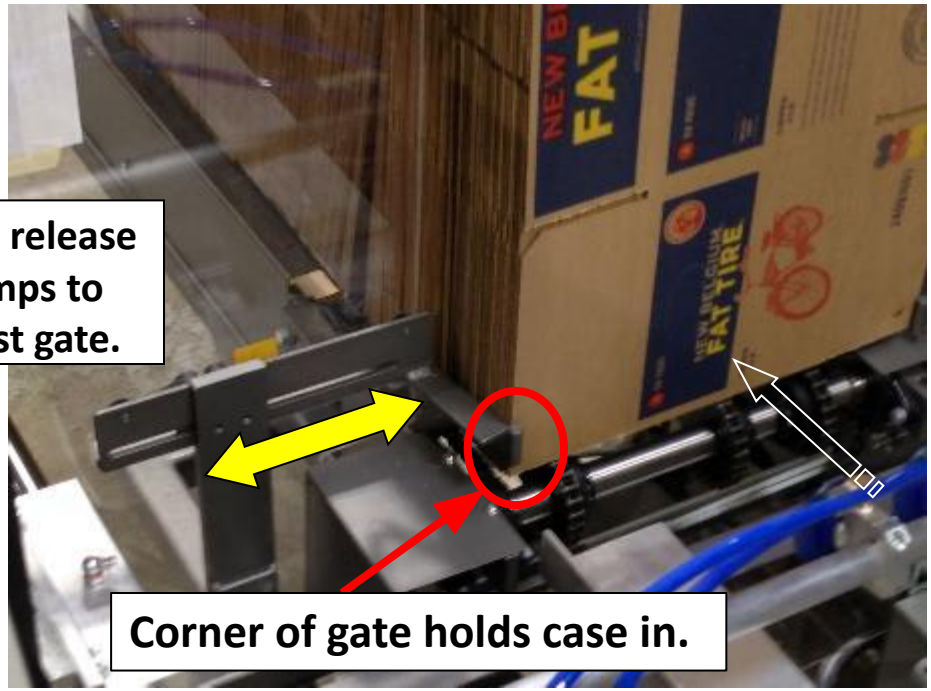
- A vertically adjustable, 1" dia. gate bar is clamped above the Magazine Deck. It is held in position by a two (2) quick release clamp/fasteners. With carton blanks held vertically at the front of the Magazine, lower the gate bar to a point that at least 3/4" of the rod diameter overlaps the top of the cartons.

- A scale/indicator is provided for quick position reference. The scale set position is equal to the over-all measured dimension of the selected carton kd. (knocked-down carton blank) Measure the case length, and apply the measured dimension to the position of the Static Gate.

Item 3: Magazine Horizontal Gate

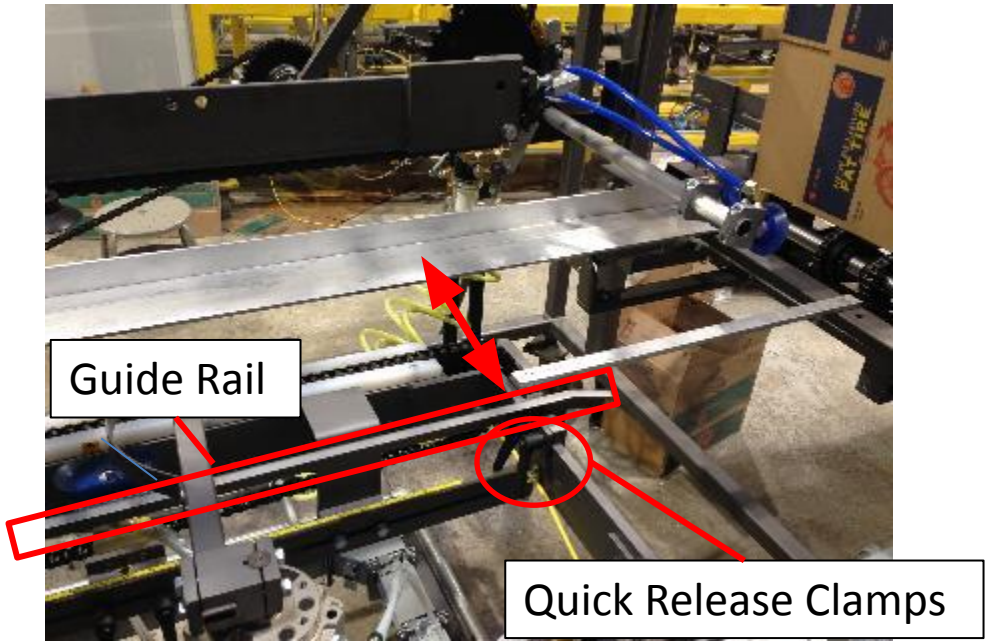
The side gate is horizontally adjustable. The other gate is attached to the previously adjusted Magazine Guide Rail. Two quick-release fastener is used for adjustment. A pointer and scale are used for position reference. The corner of the gate with a welded rod holds the edge of the case in.

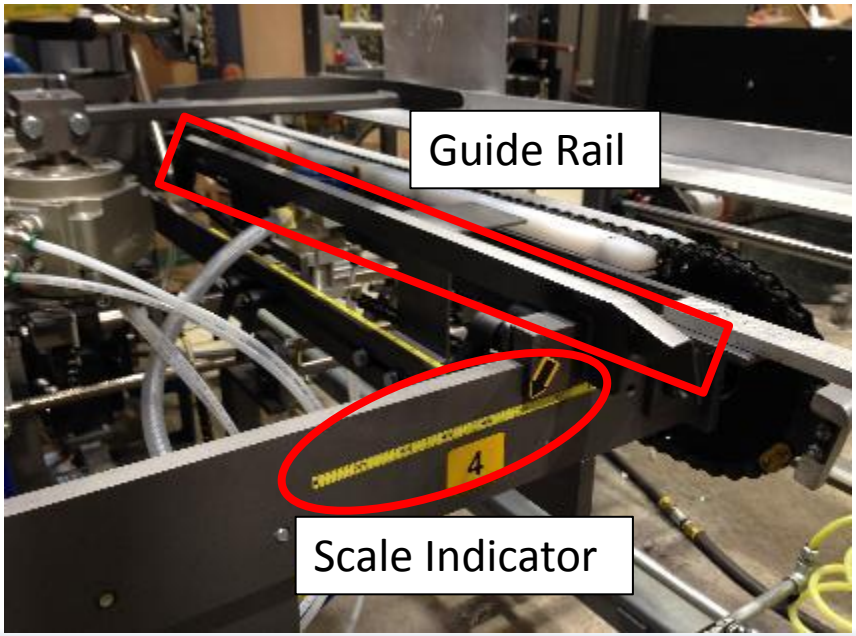




Item 4: Erector Bottom Case Guide

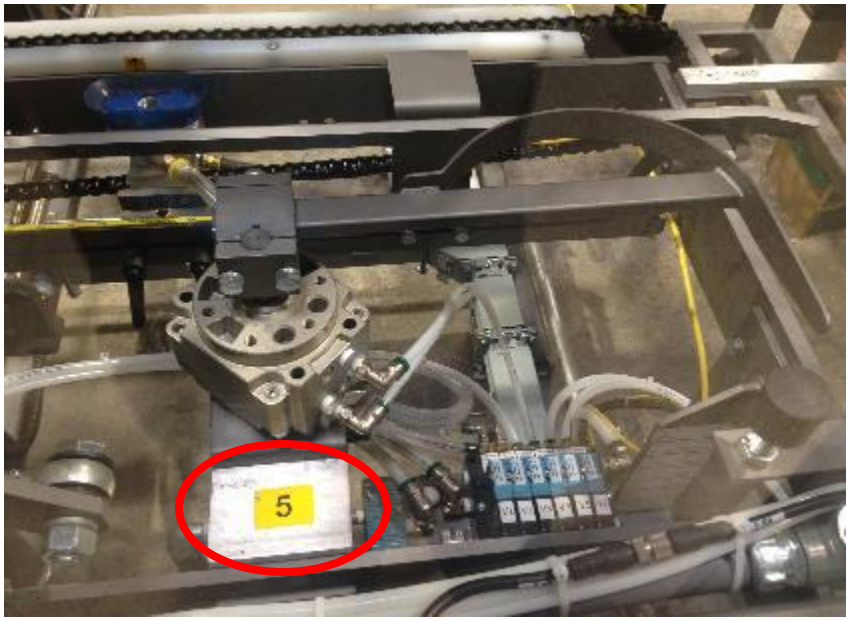
The two quick release clamps circled on the top picture adjusts the guide rail to fit the side the case going through. The scale indicator (circled on the bottom picture) indicates the appropriate position for the guide rail marked by the arrow.



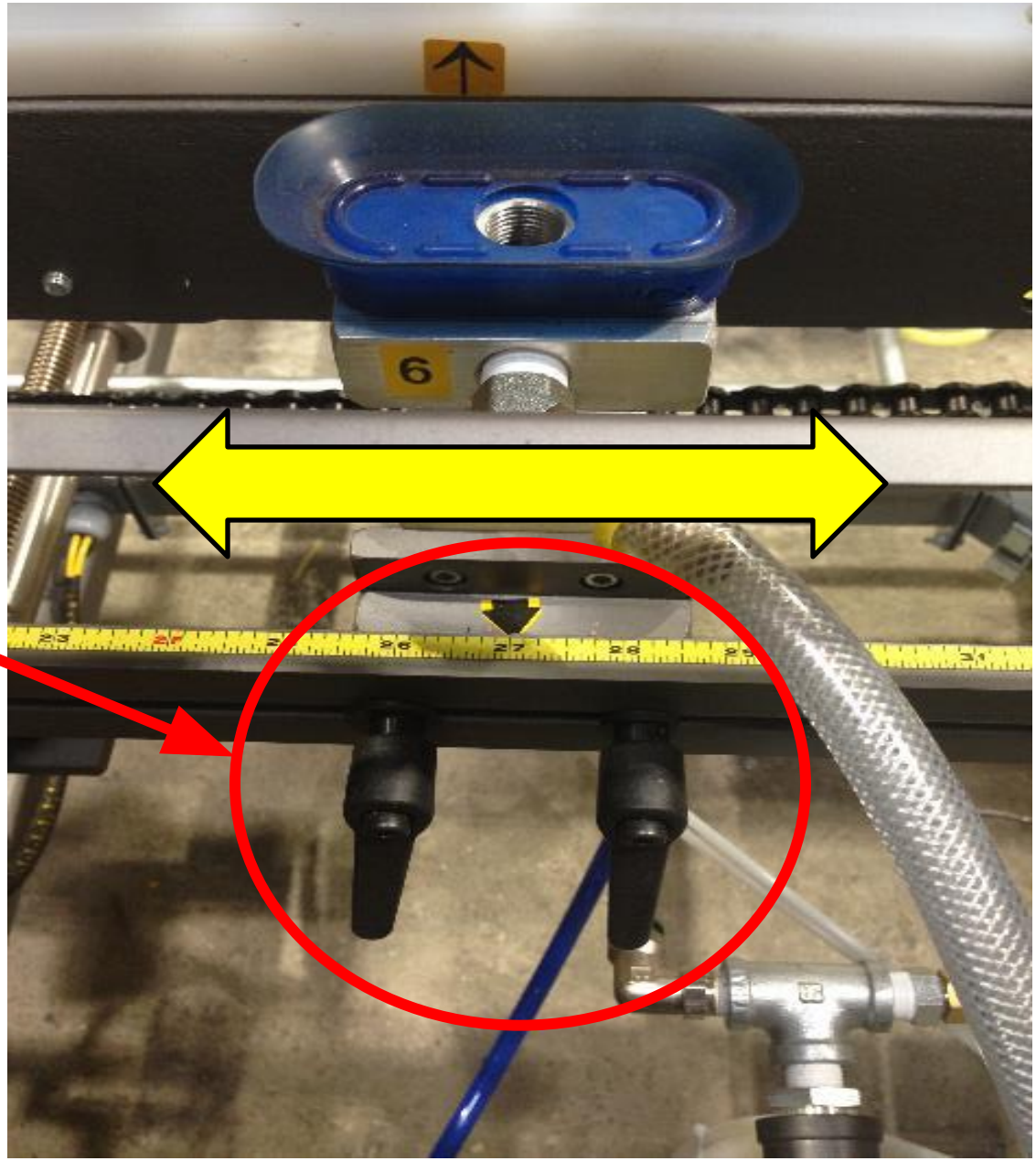


Item 5: Position Rear Flap Folder

The two quick release clamps pictured on the bottom adjusts the pneumatic rotary flap which is labeled as 5. The scale indicator allows the operator to dictate the position of the pneumatic rotary flap.



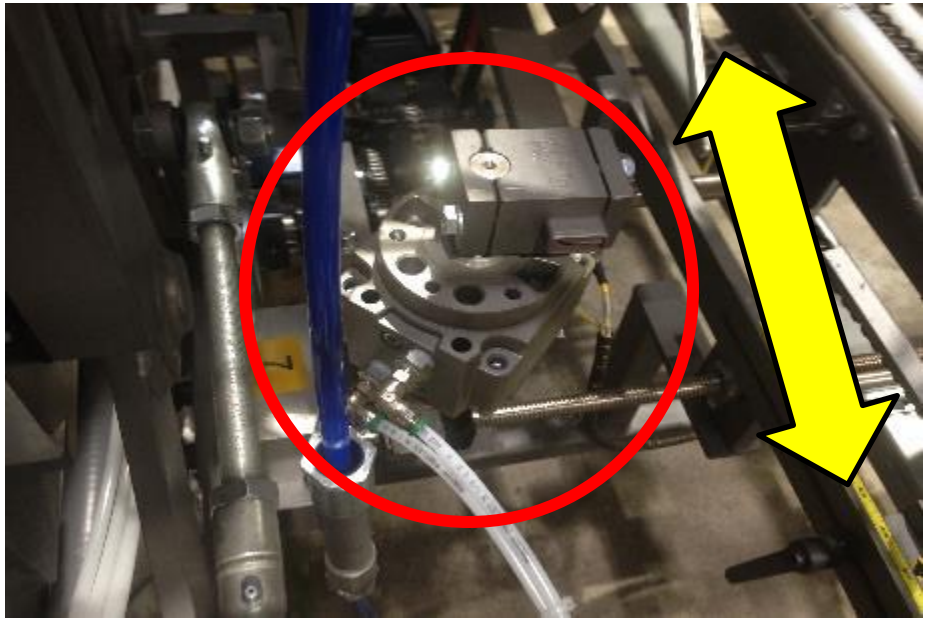
Item 6: Position Rear Flap Folder

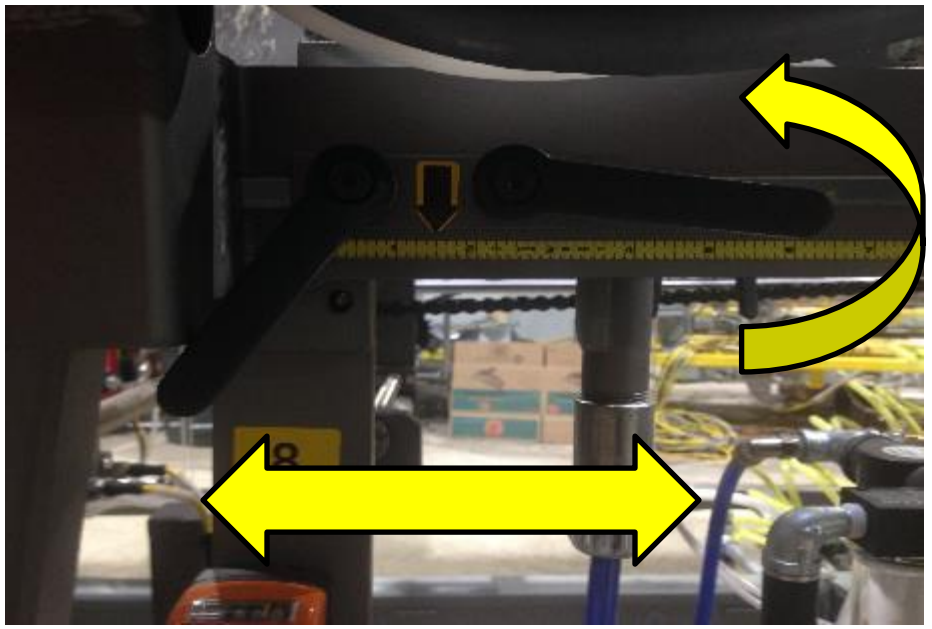


Loosening the clamps will allow you to adjust the suction cup.

Item 7: Position Lead Flap Folder

- The quick release clamps on bottom picture adjusts the rotatory flap folder horizontally. The scale indicator allows the operator to dictate the position of the pneumatic rotary flap. Counterclockwise loosens the clamps.

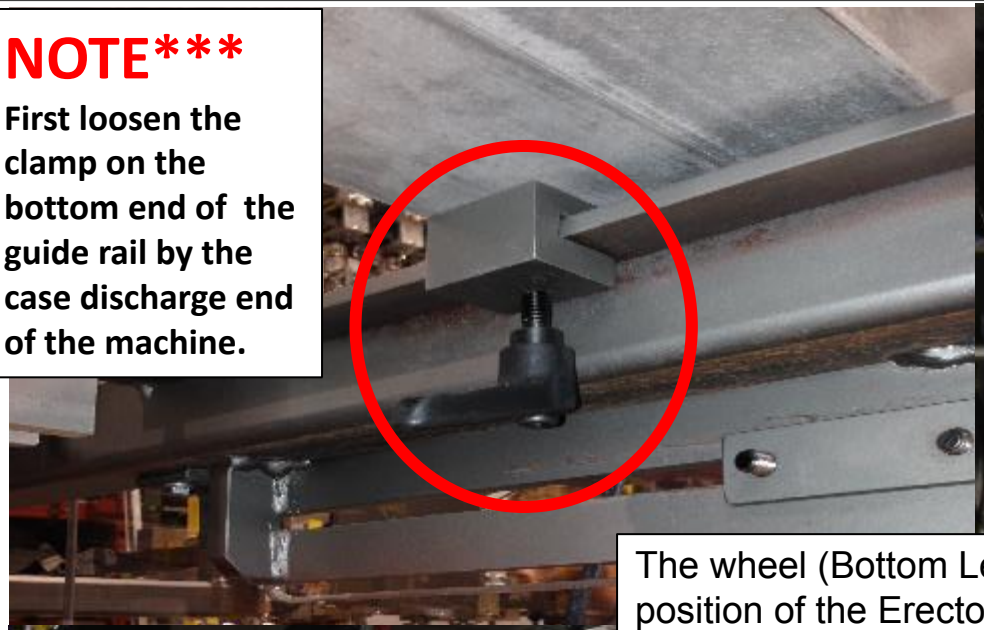




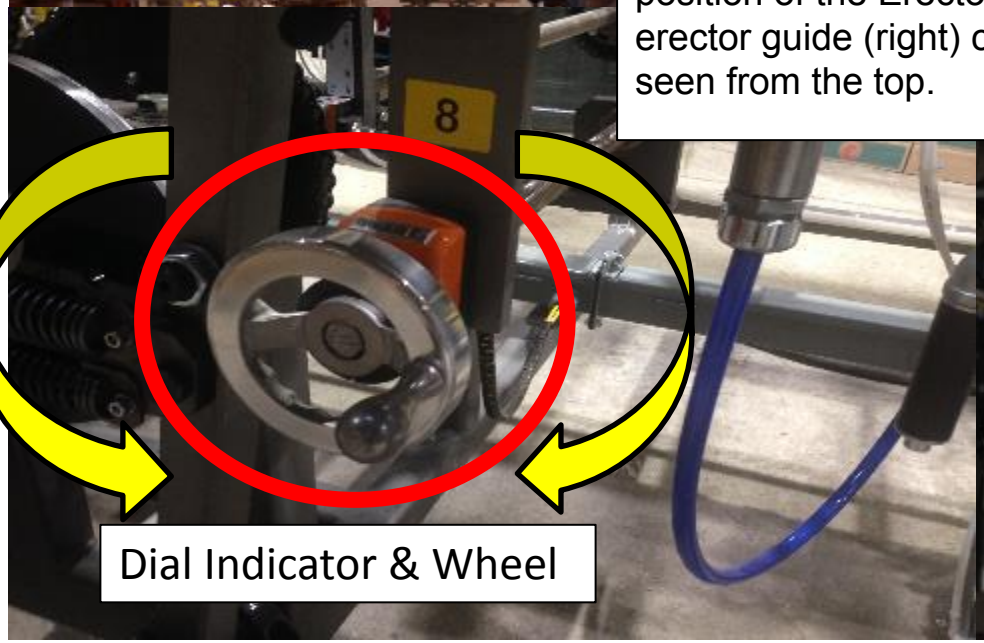
Item 8: Erector Guide

NOTE***

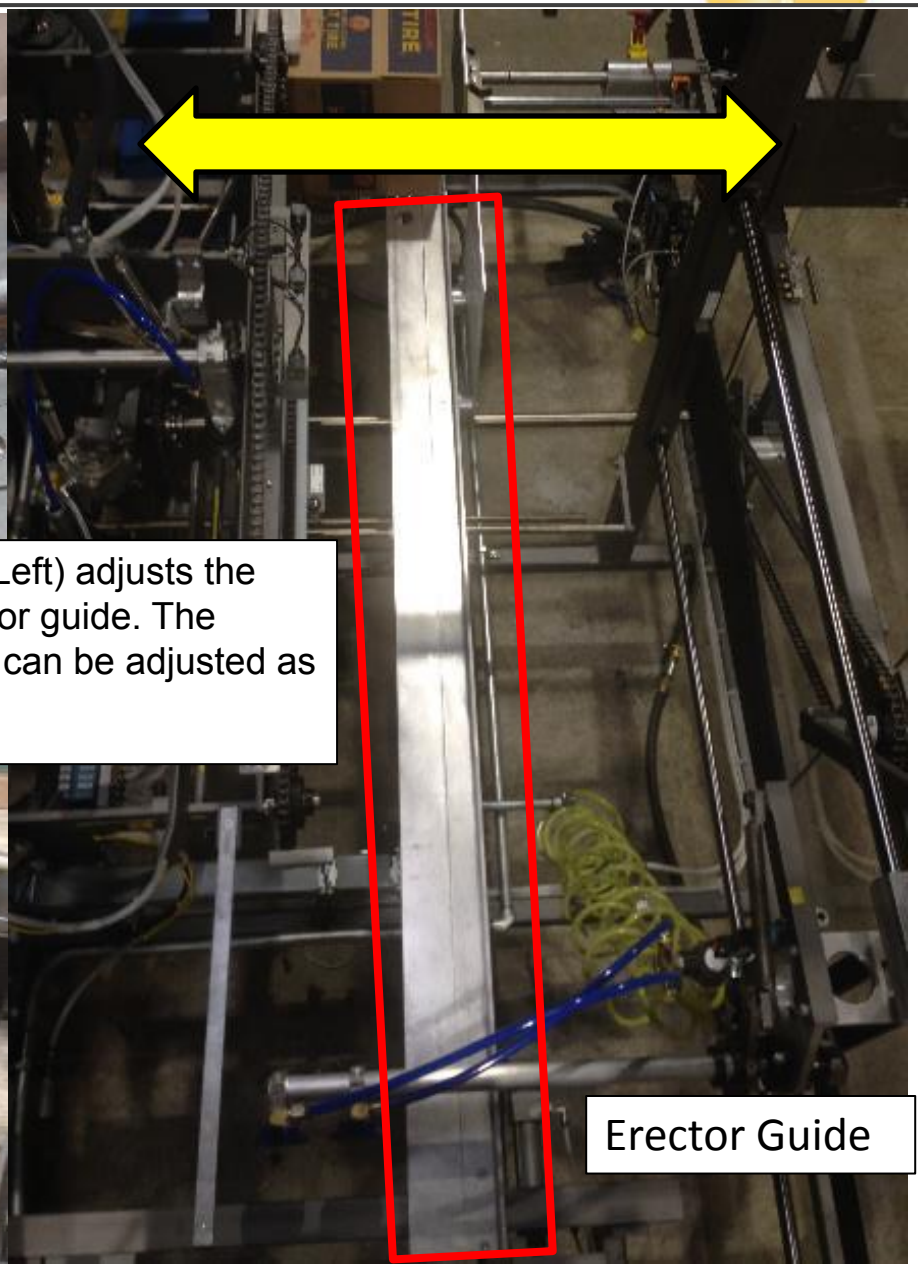
First loosen the clamp on the bottom end of the guide rail by the case discharge end of the machine.



The wheel (Bottom Left) adjusts the position of the Erector guide. The erector guide (right) can be adjusted as seen from the top.



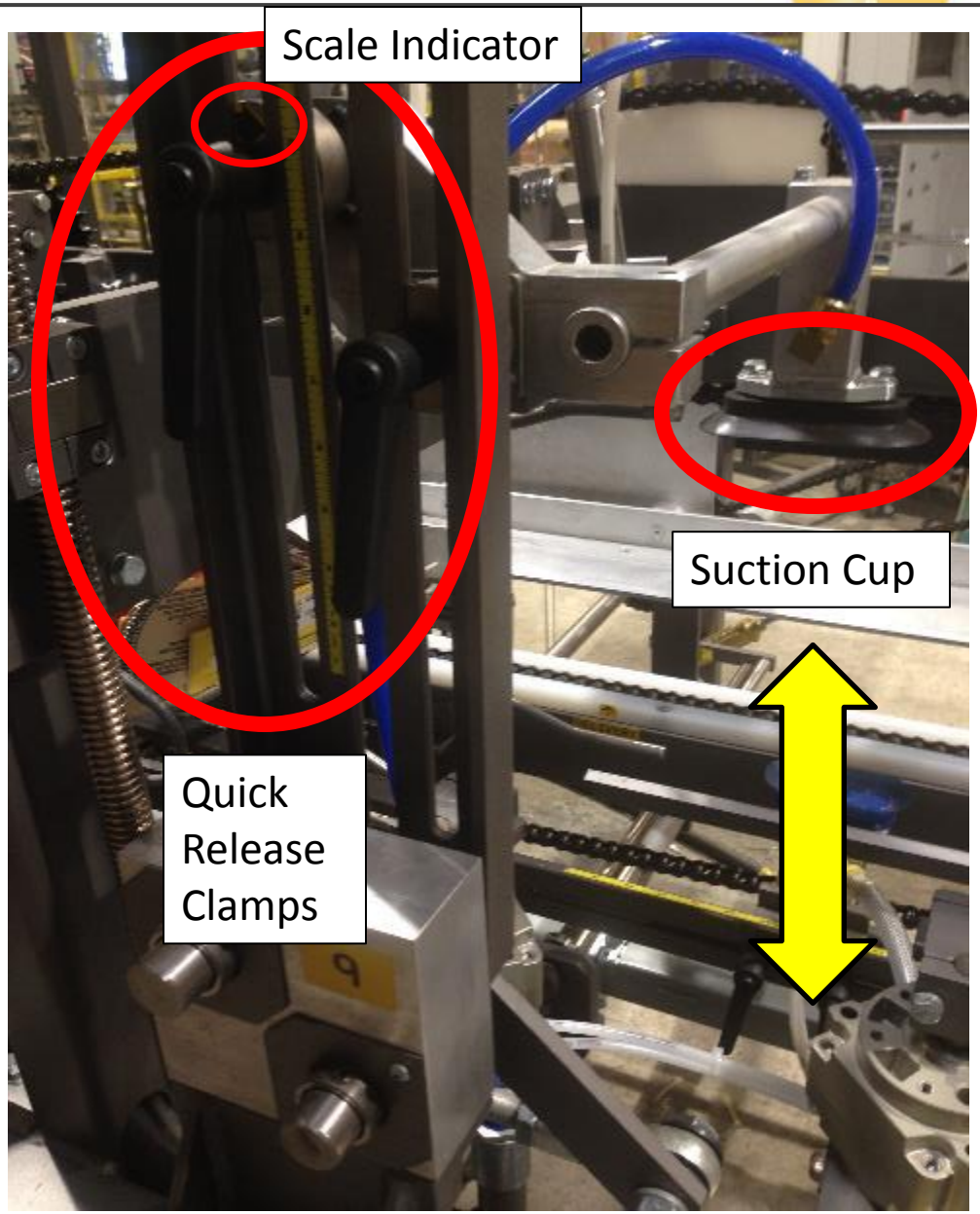
Dial Indicator & Wheel



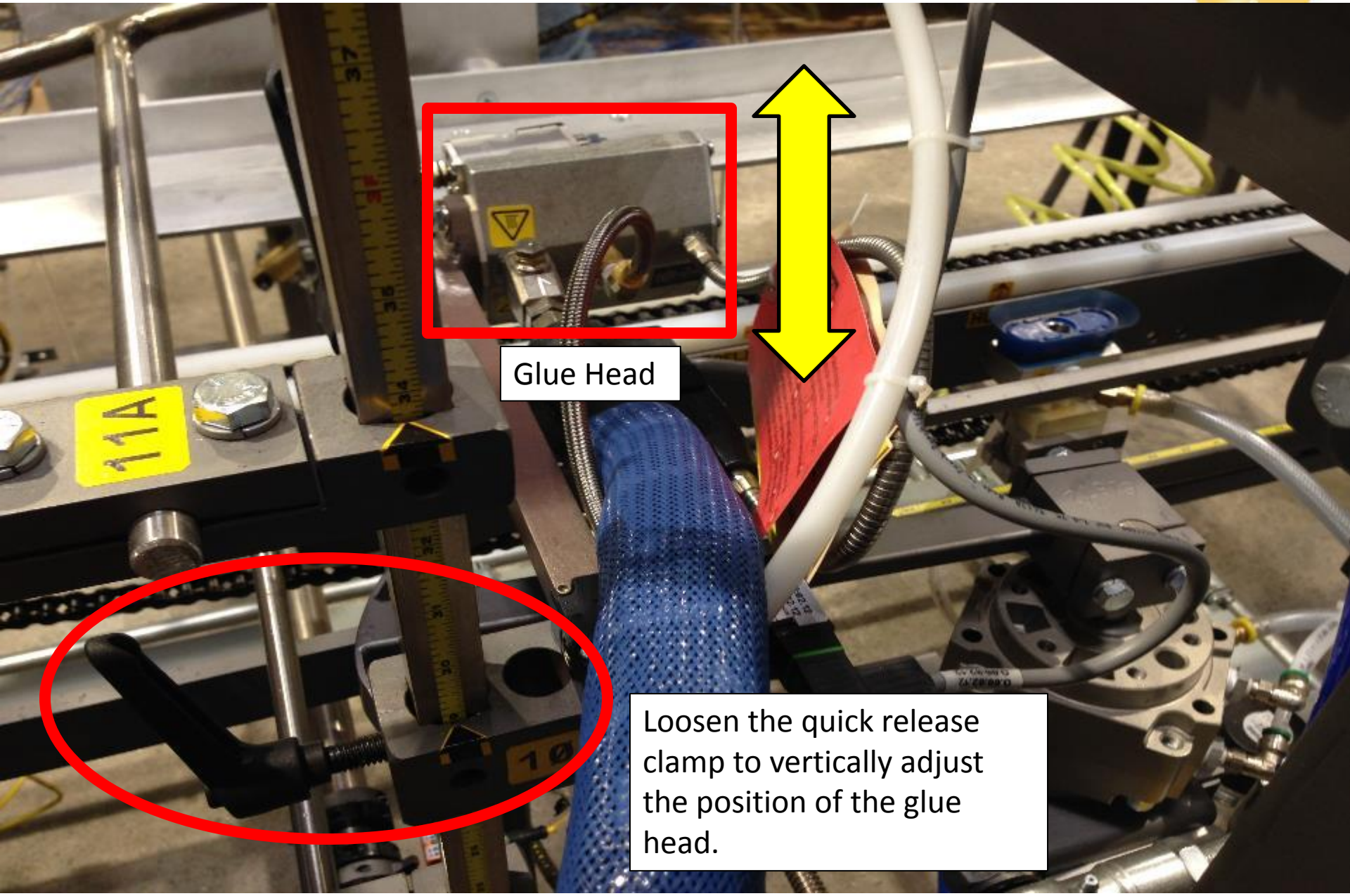
Erector Guide

Item 9: Erecting Arm Height

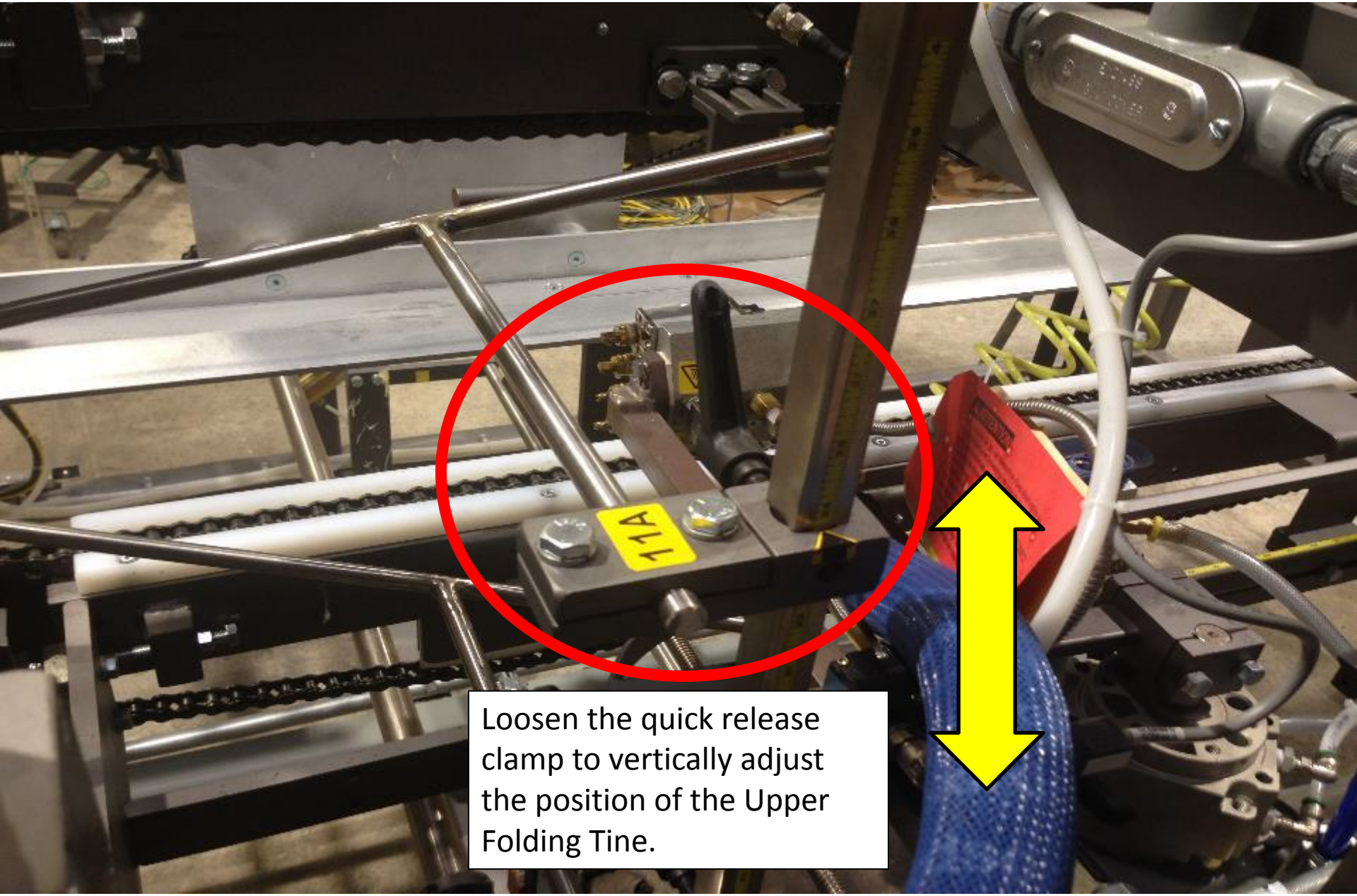
- The quick release clamps circled on the right picture adjusts the Erecting Arm with the suction cup up and down. The scale indicator allows the operator to dictate the position of the . Counterclockwise loosens the clamps.



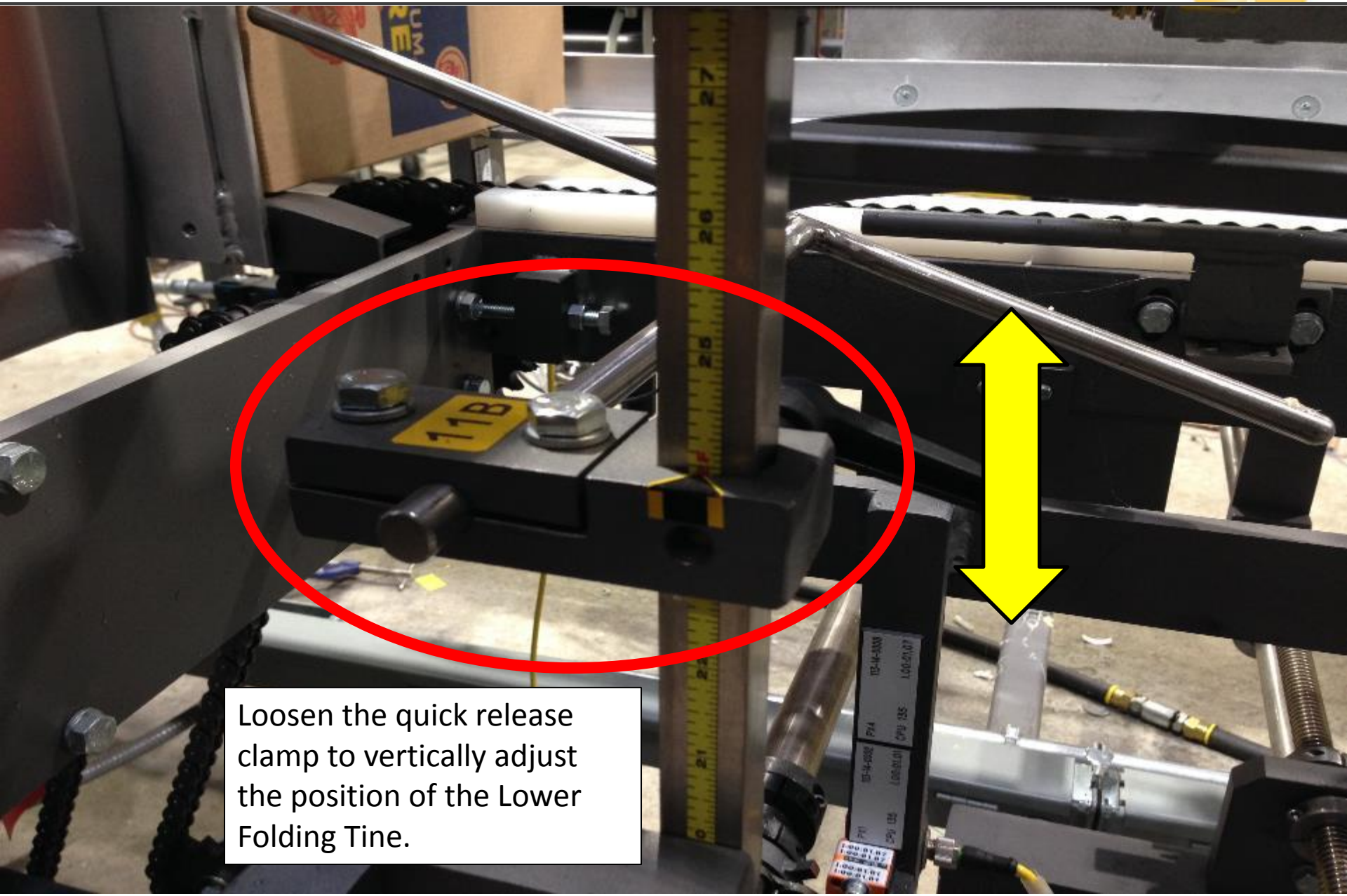
Item 10: Glue Head Vertical Position



Item 11A: Position Upper Folding Tine

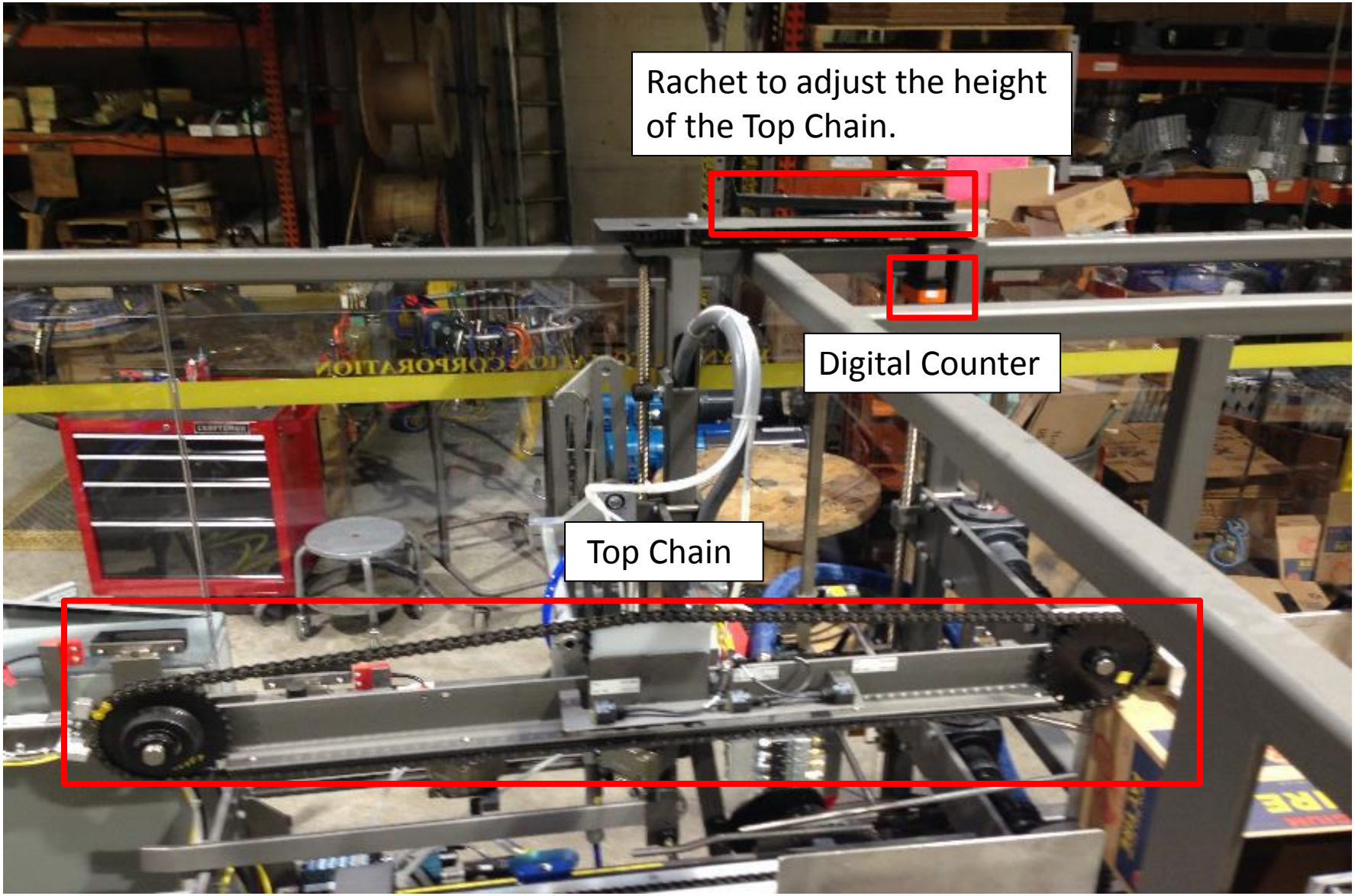


Item 11B: Position Lower Folding Tine

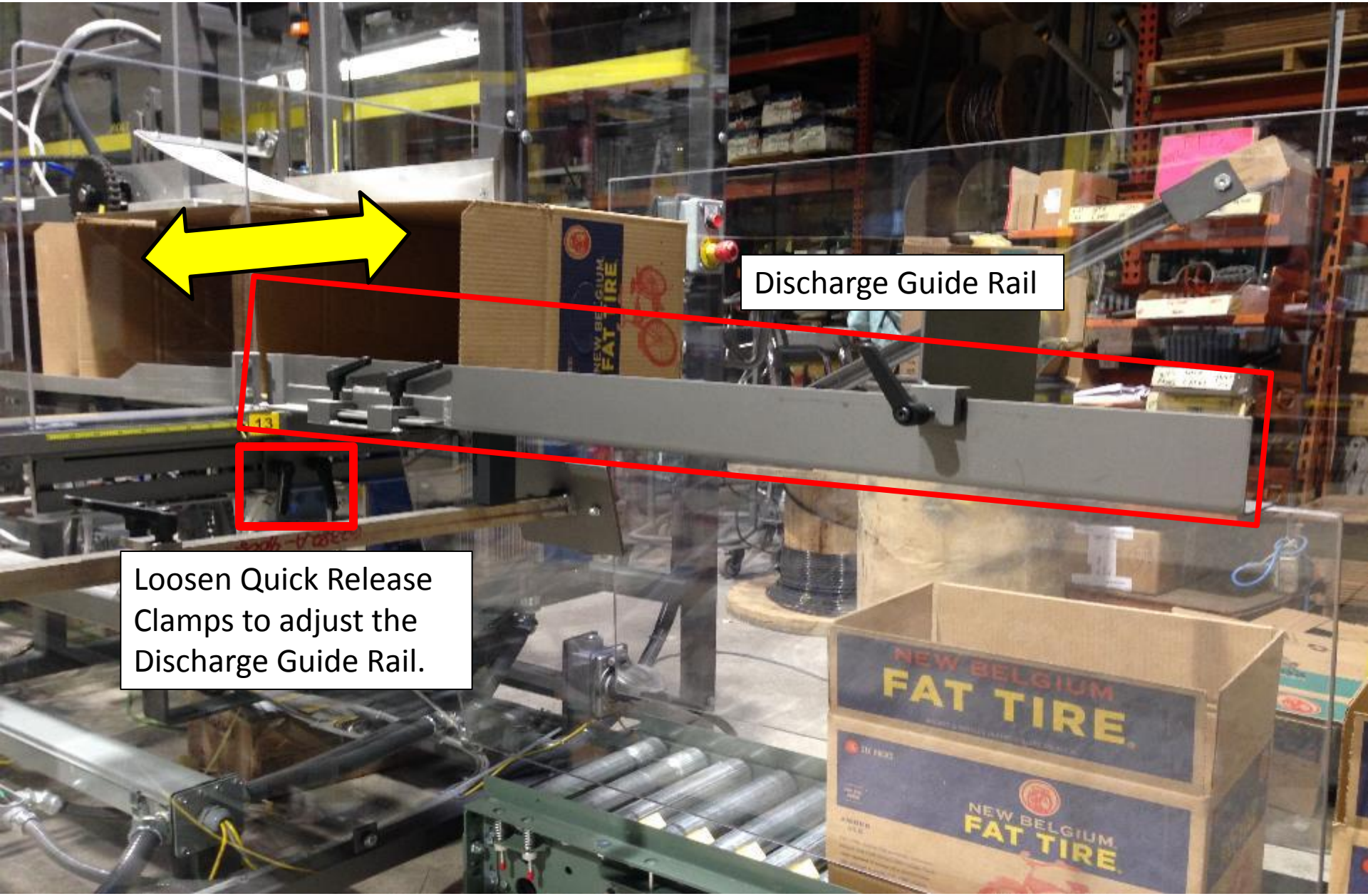


Loosen the quick release clamp to vertically adjust the position of the Lower Folding Tine.

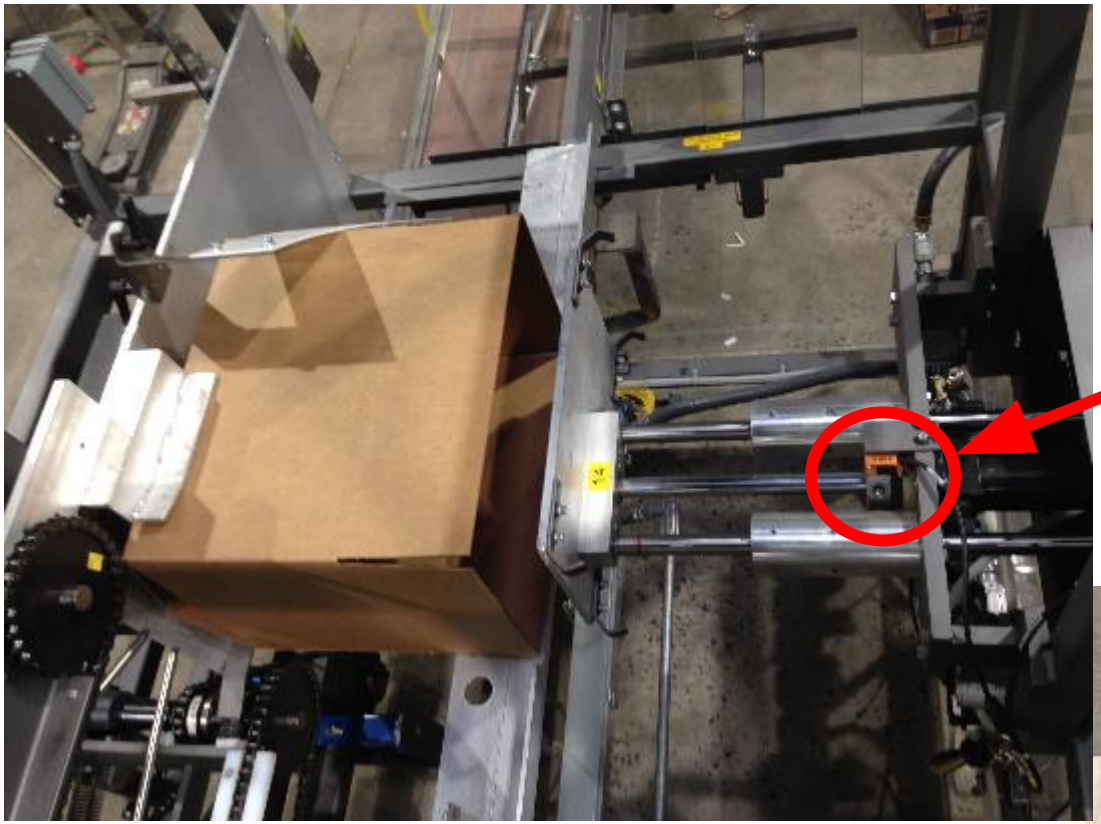
Item 12: Top Chain Position



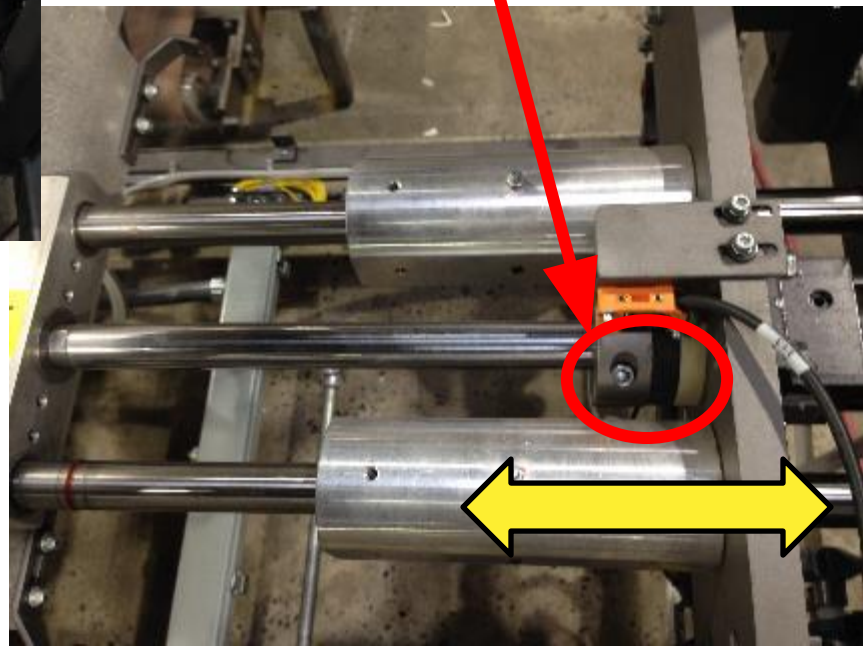
Item 13: Erector Discharge Guide Rail



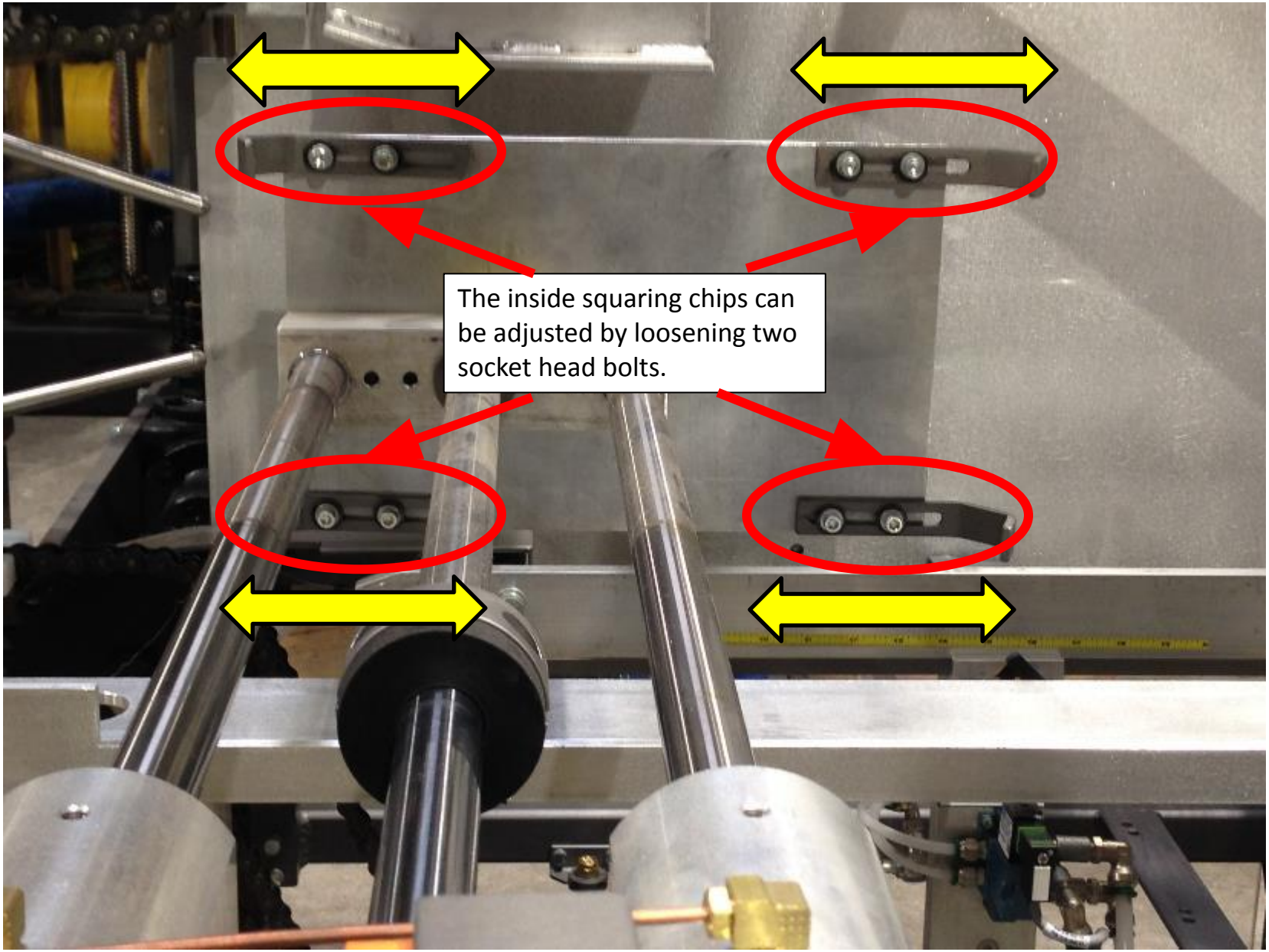
Item 14: Inside Compression Plate



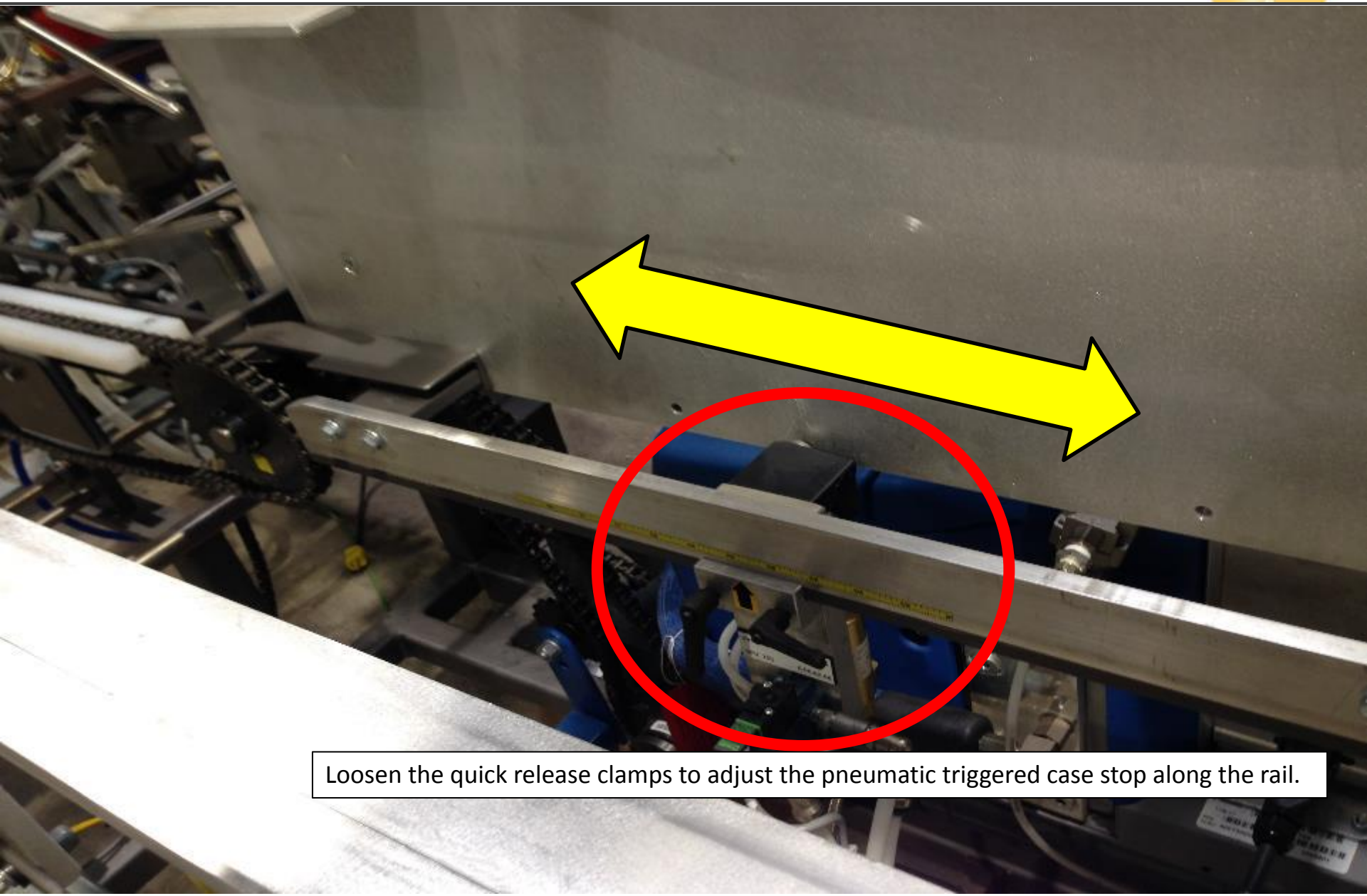
The stroke of the case compression plate can be adjusted by loosing the double bolted collar and shifting it anywhere along the shaft. The orange sensor detects the collar to stop the plate from continuing to retract.



Item 14: Inside Compression Plate (Cont'd)

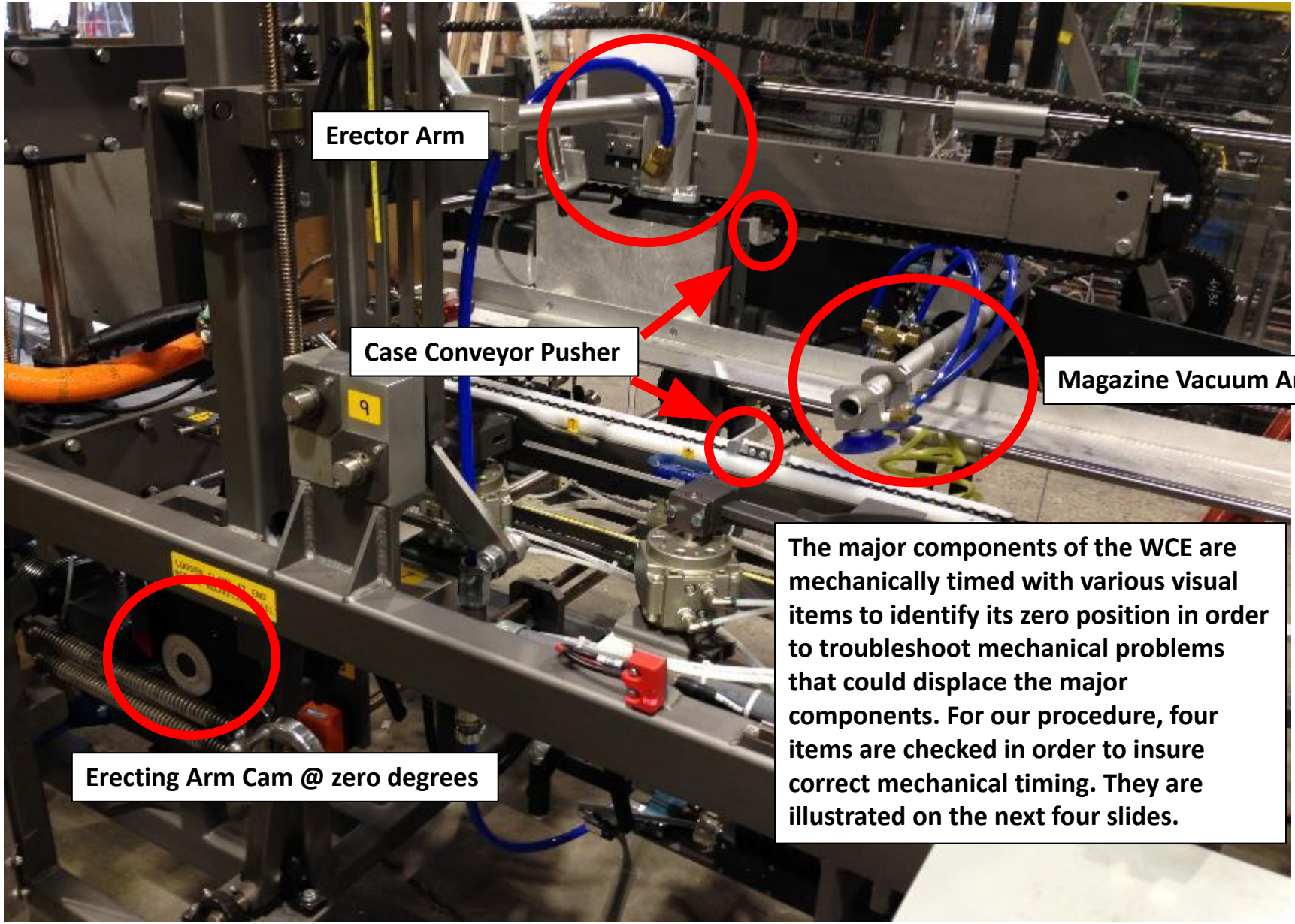


Item 15: Position Case Stop @ Compression



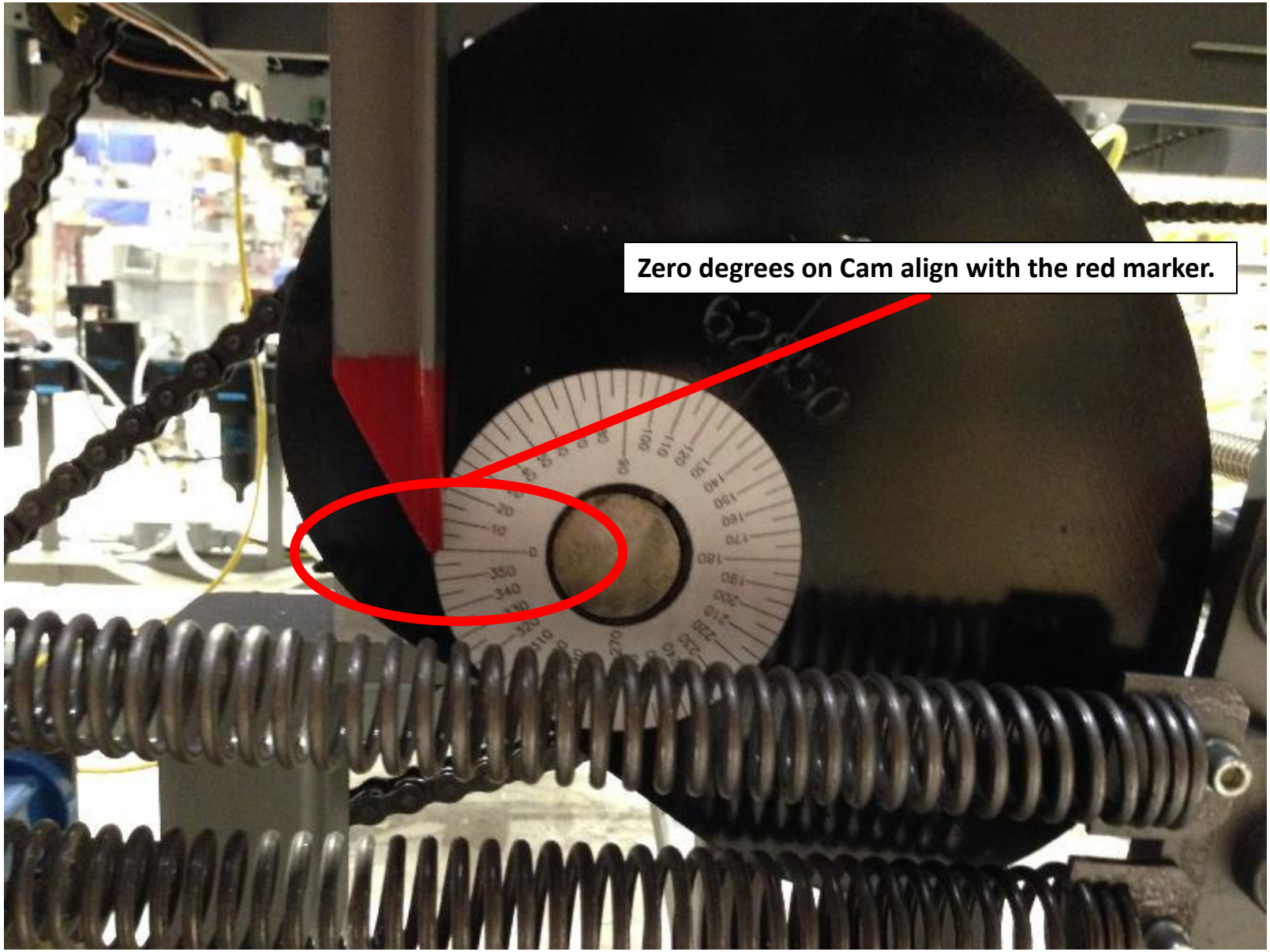
Loosen the quick release clamps to adjust the pneumatic triggered case stop along the rail.

MACHINE MECHANICAL TIMING

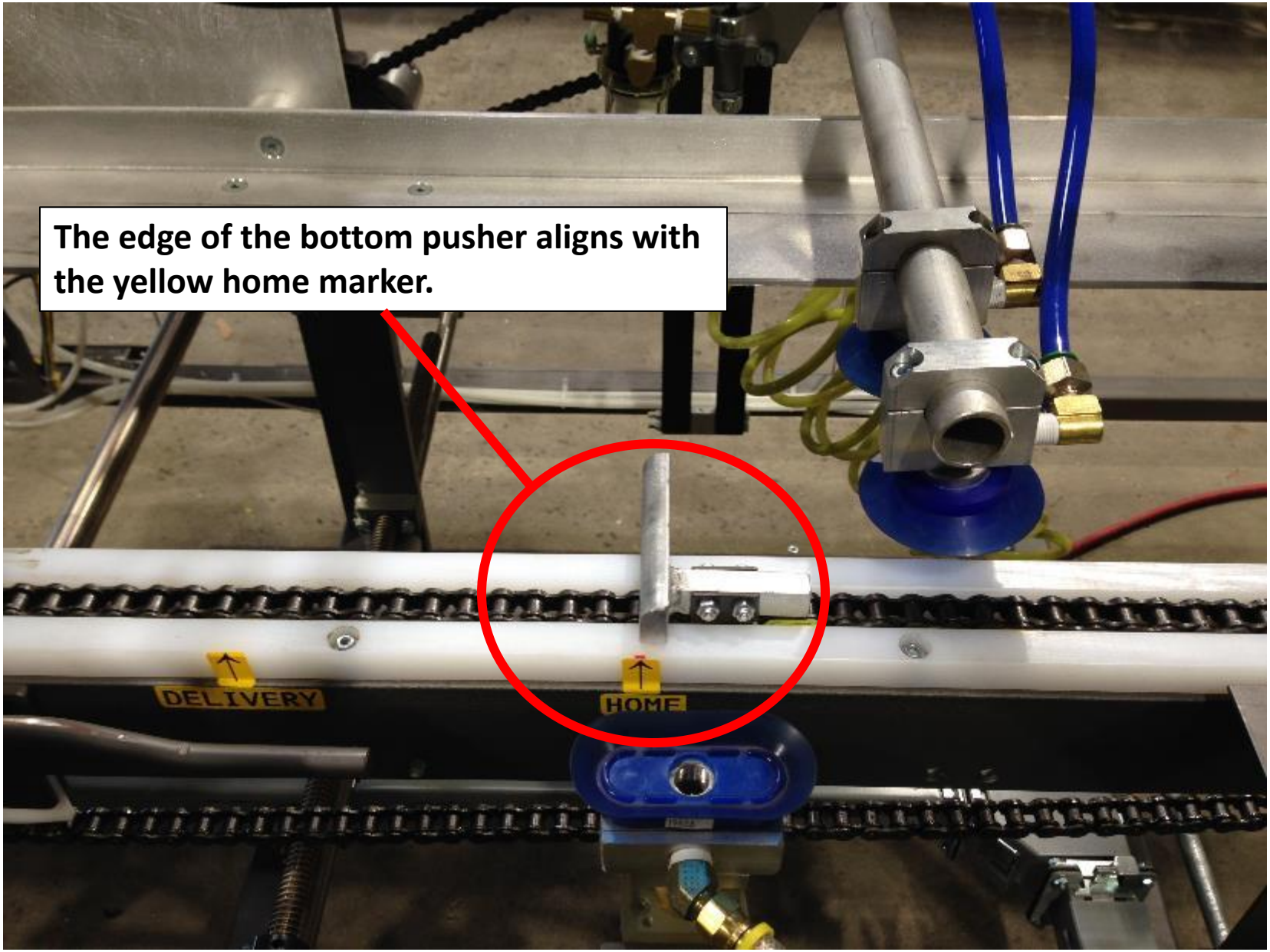


The major components of the WCE are mechanically timed with various visual items to identify its zero position in order to troubleshoot mechanical problems that could displace the major components. For our procedure, four items are checked in order to insure correct mechanical timing. They are illustrated on the next four slides.

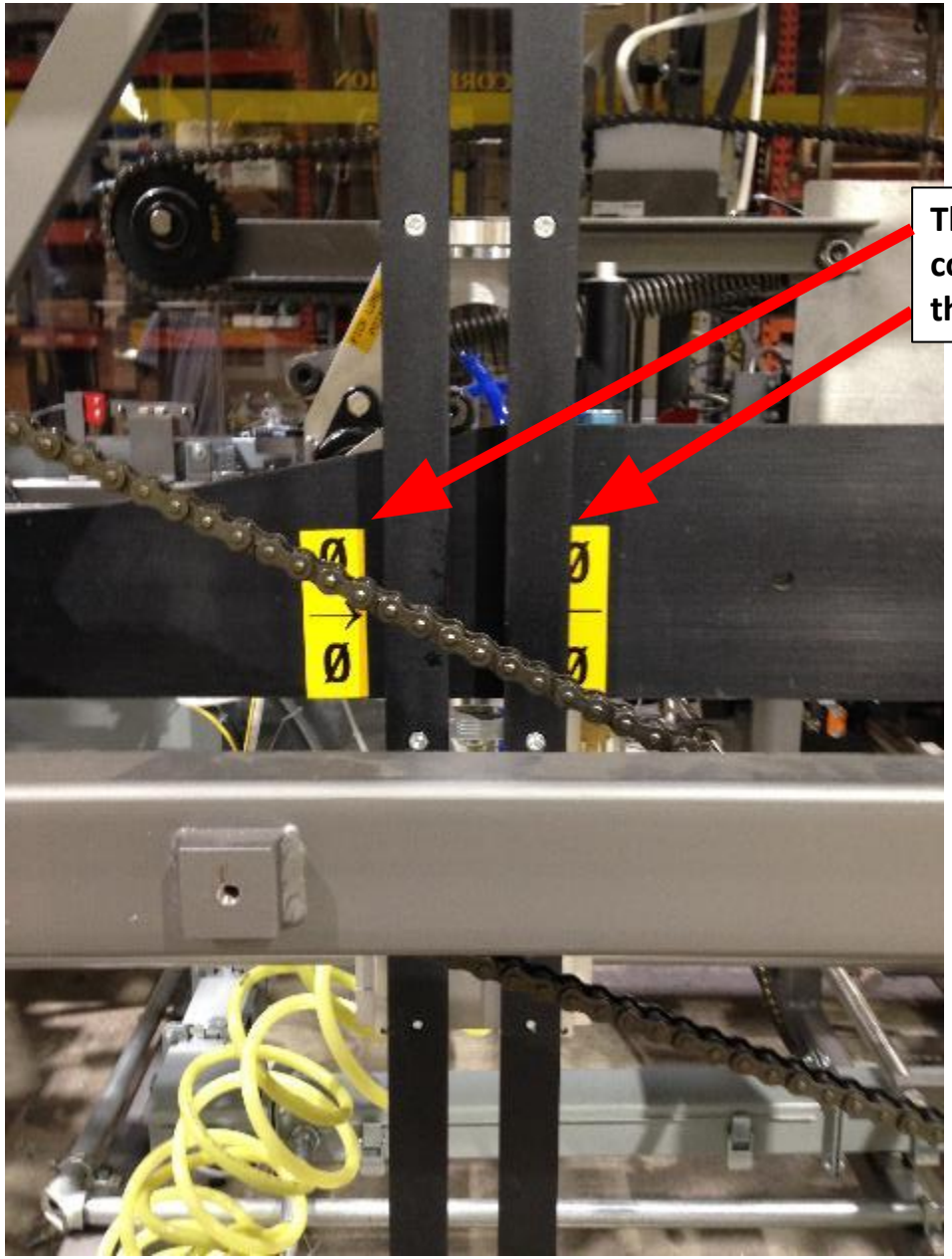
MACHINE MECHANICAL TIMING (Cont'd)



MACHINE MECHANICAL TIMING (Cont'd)



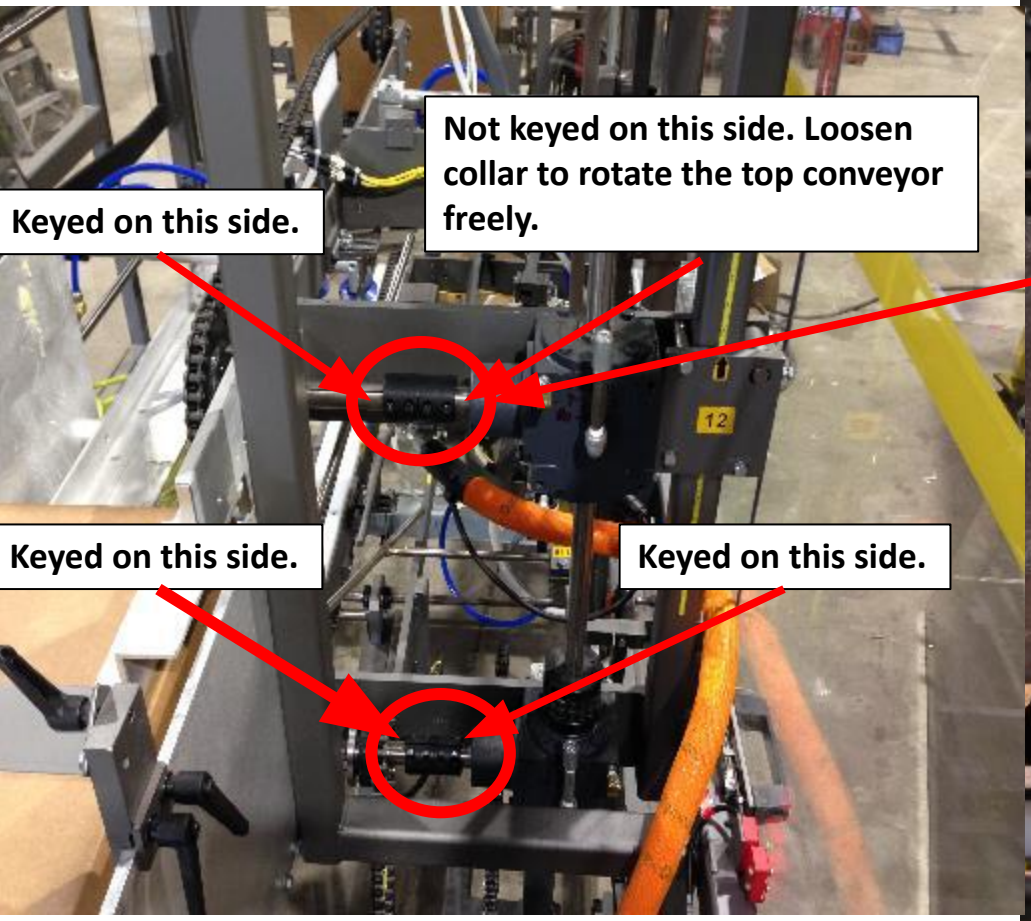
MACHINE MECHANICAL TIMING (Cont'd)

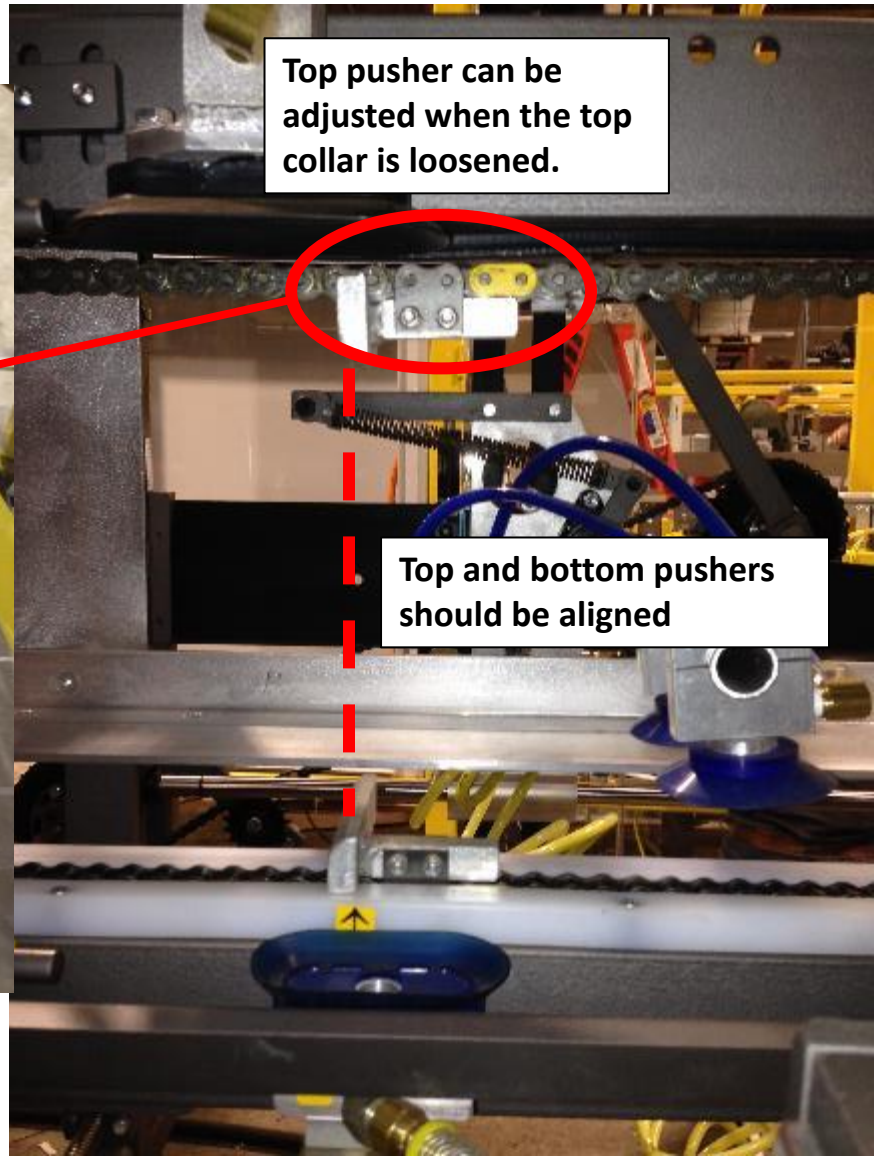


The edge of the guide component lines up with the yellow zero markers.

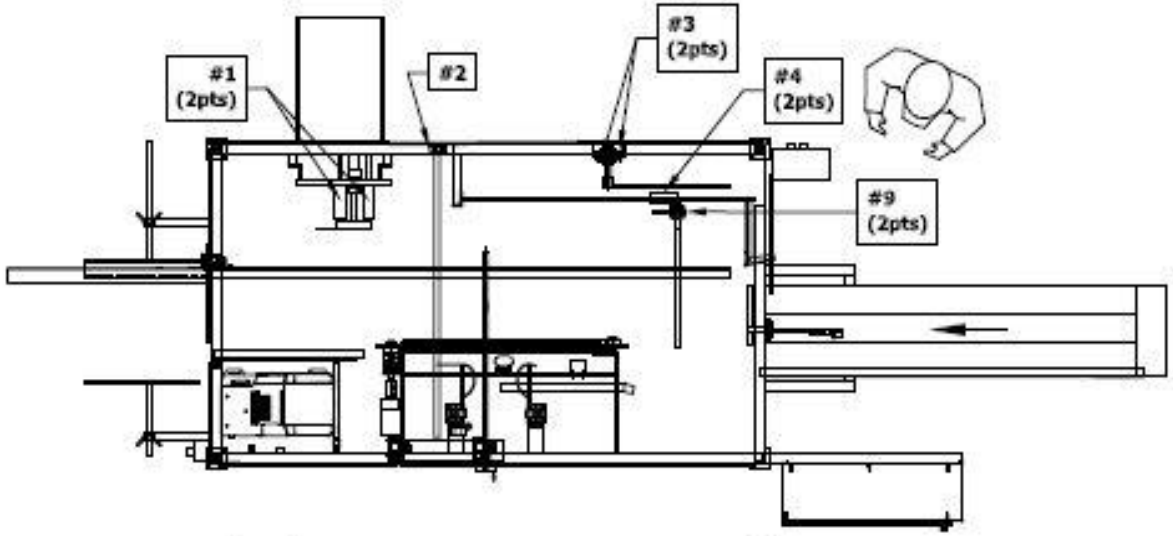
MACHINE MECHANICAL TIMING (Cont'd)

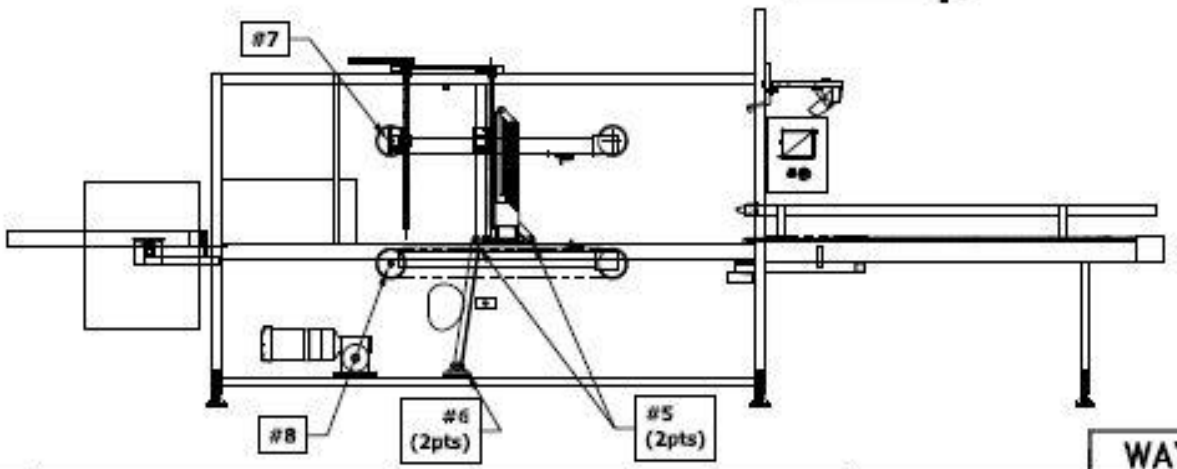
The shaft collars connects the top and bottom conveyor drives to their respective gear boxes.





MANUAL POINT GREASE MAP





ITEM	QTY	DESCRIPTION
1	2	COMPRESSION BEARING HOUSINGS
2	1	MAIN DRIVE SHAFT BEARING
3	2	PICK DRIVE SHAFT BEARINGS
4	2	PICK THOMSON SLIDE BEARINGS
5	2	ERECTING ARM LINKAGE ROD ENDS
6	2	ERECTING ARM DRIVE SHAFT BEARINGS
7	1	UPPER CONVEYOR HEADSHAFT BEARING
8	1	LOWER CONVEYOR HEADSHAFT BEARING
9	2	PICK FLANGE BEARINGS

USE ONLY:
TERMALENE EP RED NLGI #0 GREASE
WAYNE #P-47546

DATE	REVISIONS

DO NOT SCALE DWG.

UNLESS OTHERWISE SPECIFIED REMOVE BURRS AND SHARP EDGES.
DIMENSIONS ARE IN INCHES.
TOLERANCES ARE IN INCHES
DECIMAL± .005"
FRACTIONAL± 1/64"
ANGULAR±

WAYNE AUTOMATION CORPORATION

WCE-40 POINT BY POINT LUBRICATION MAP

WCE-40 HOT MELT

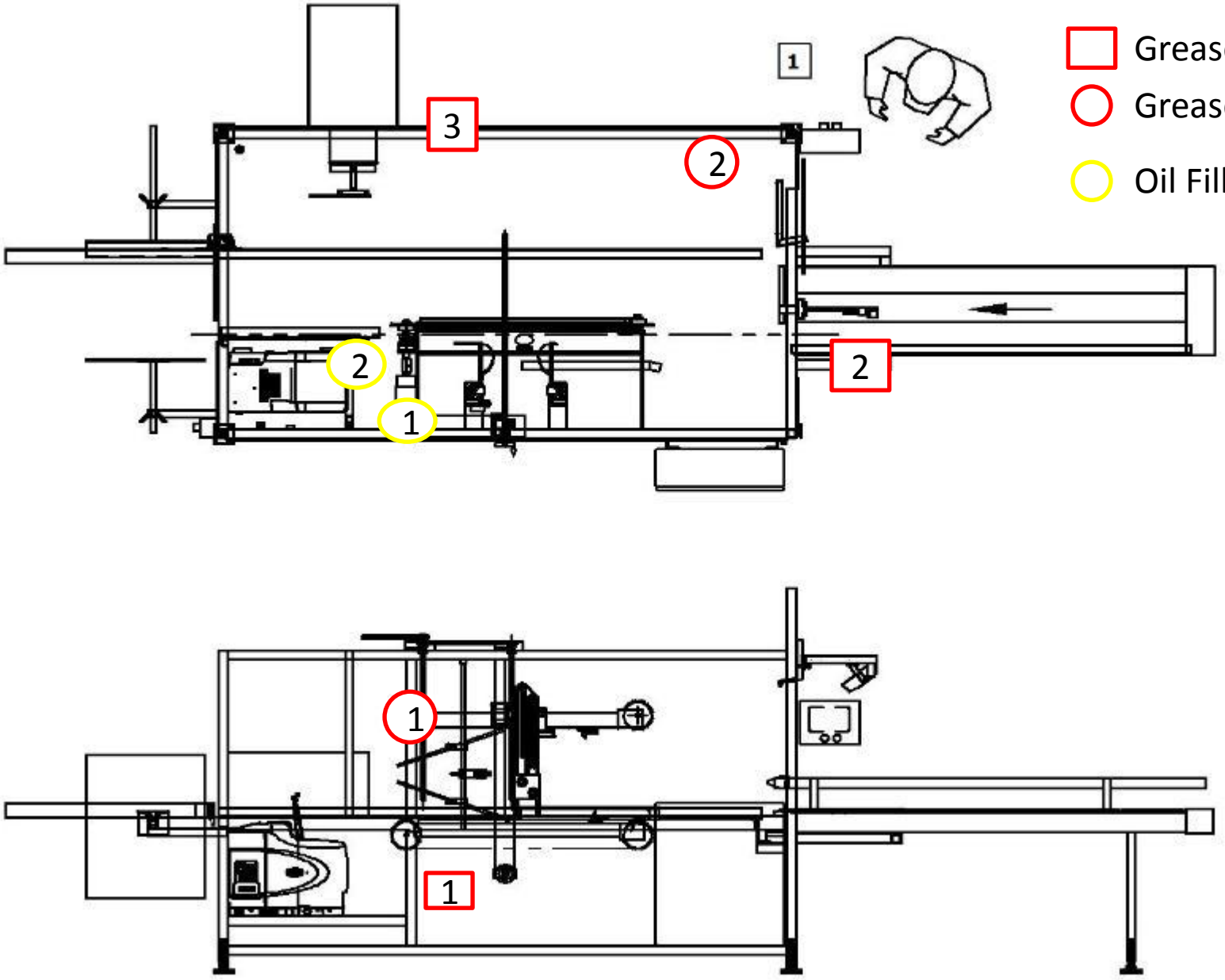
DATE RELEASED FOR FABRICATION: May 28, 2020

JOB NUMBER FOR FABRICATION:

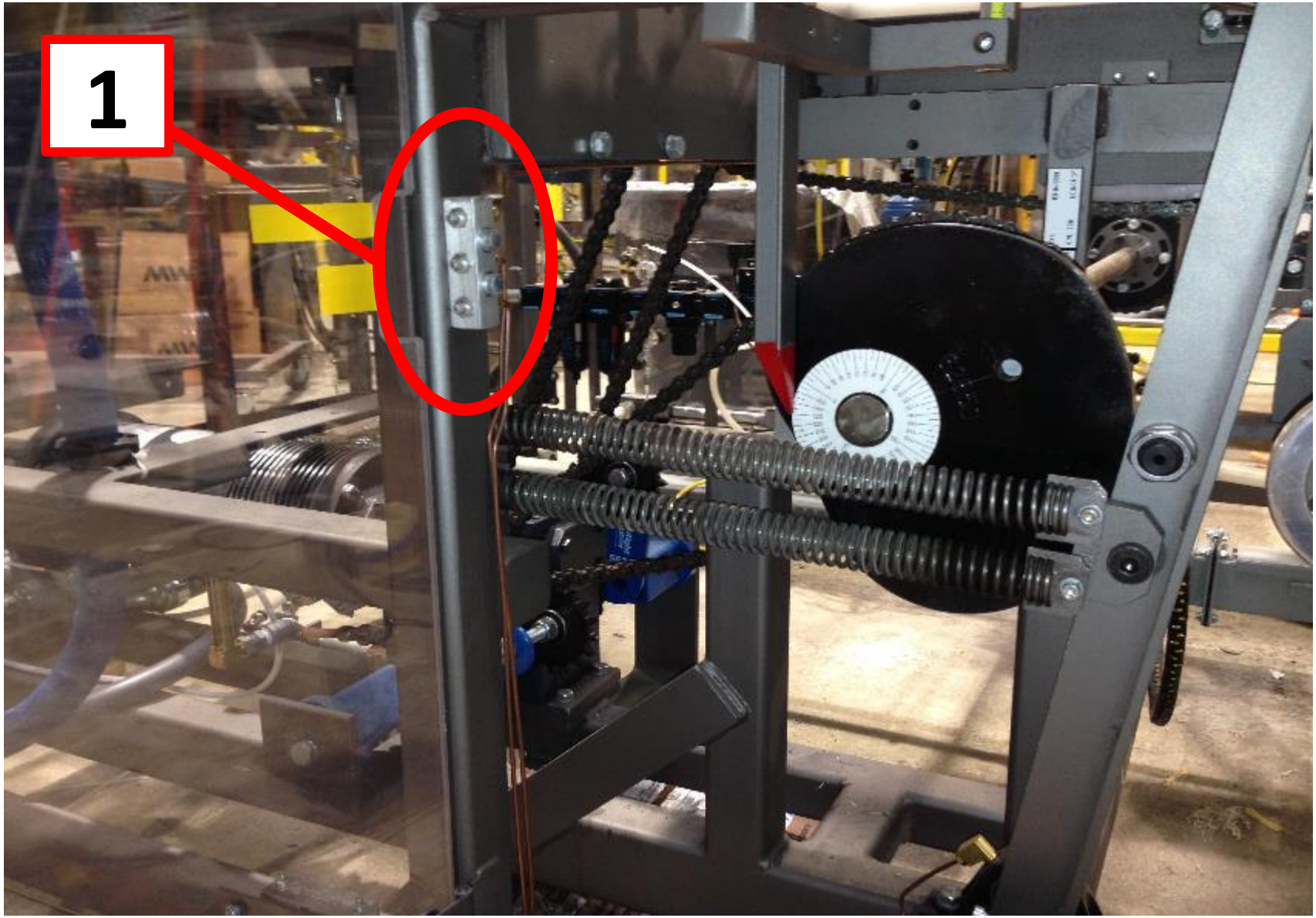
SCALE 1:24 | DRAWN BY JLA | DRAWING NO. LUBE_MAP_3425

DATE 5/28/20 | JOB NO.

CLUSTER BLOCK LUBRICATION MAP (IF EQUIPPED)

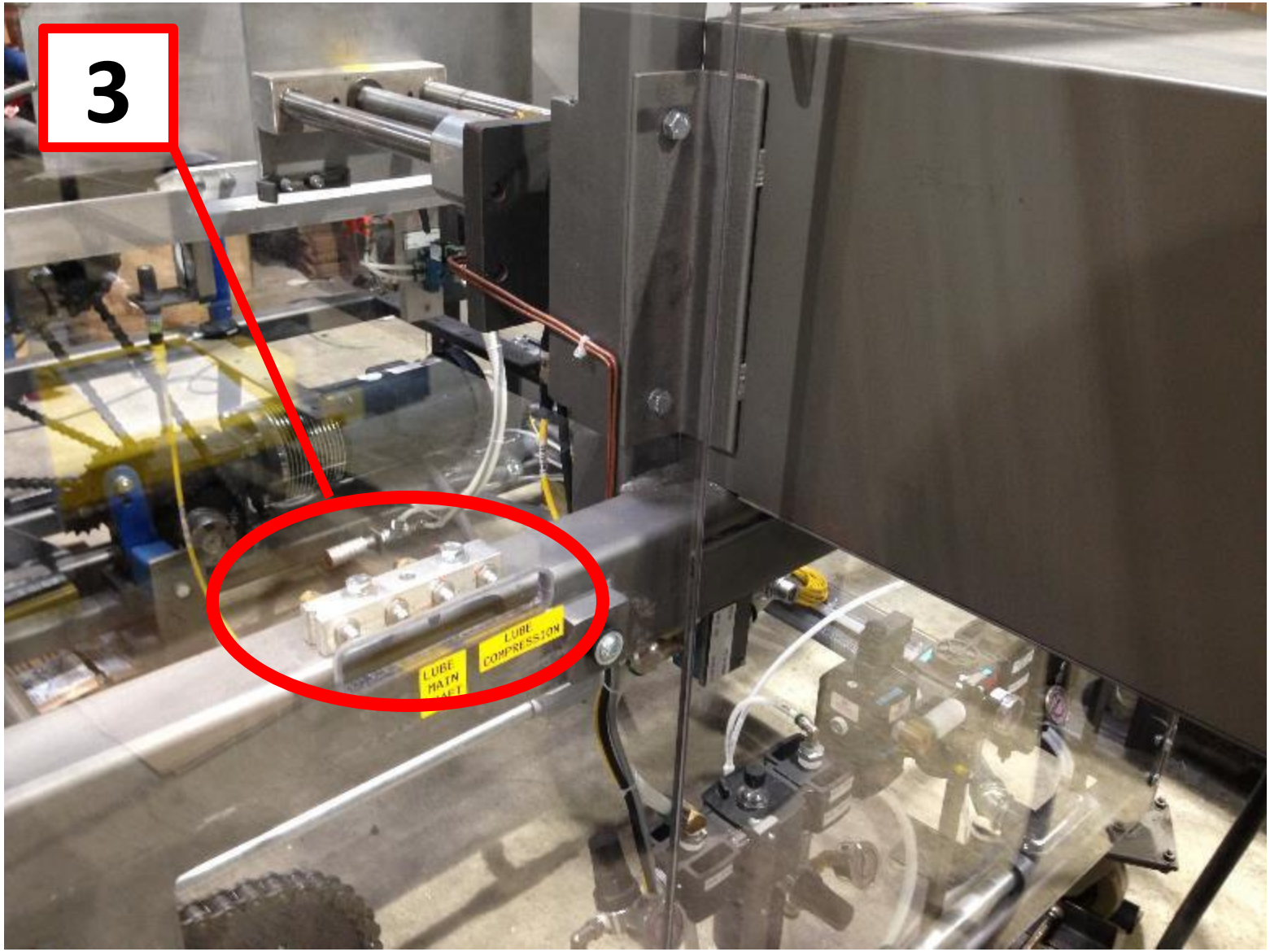


GREASE POINT ONE

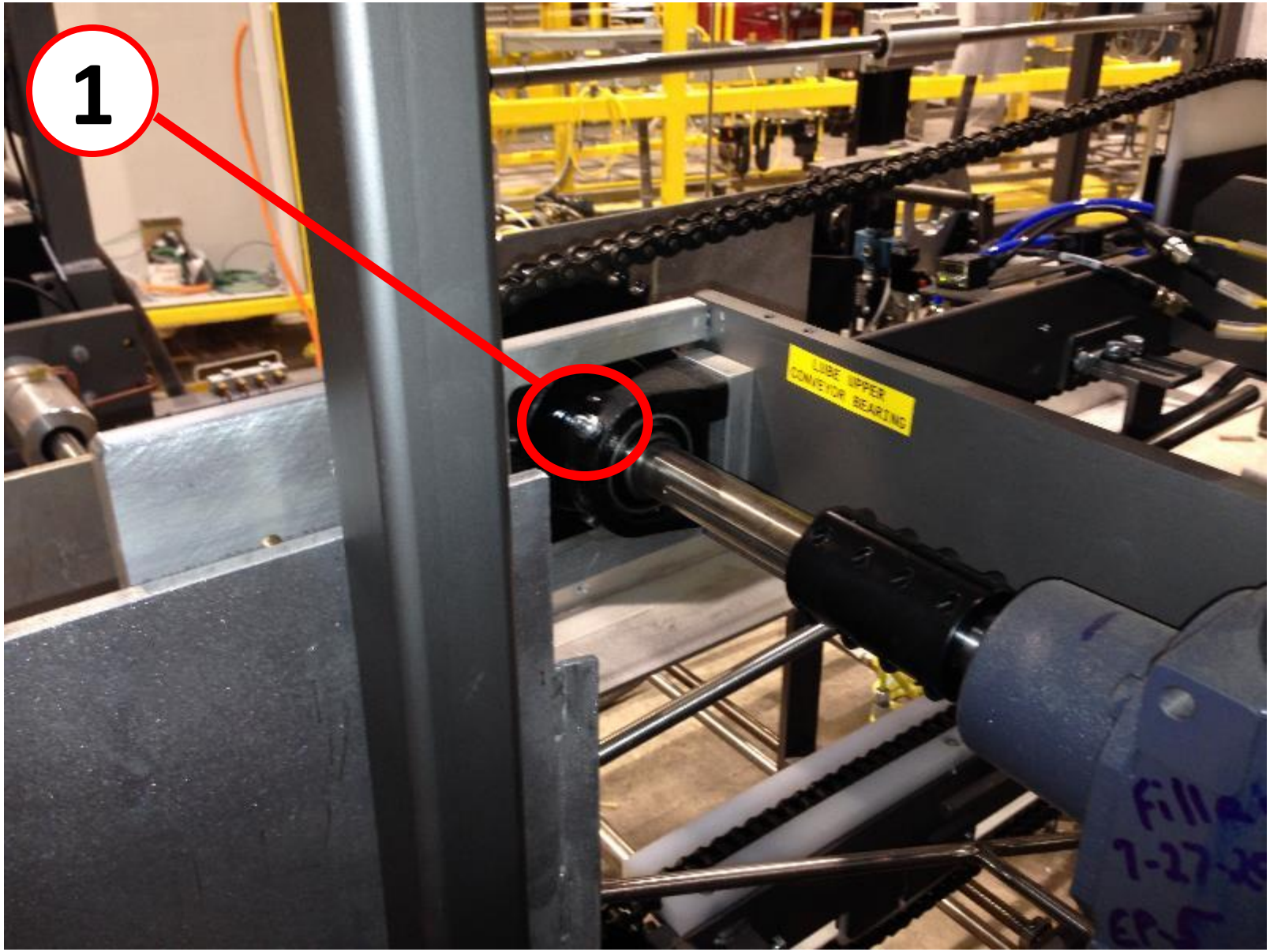


GREASE PORT TWO

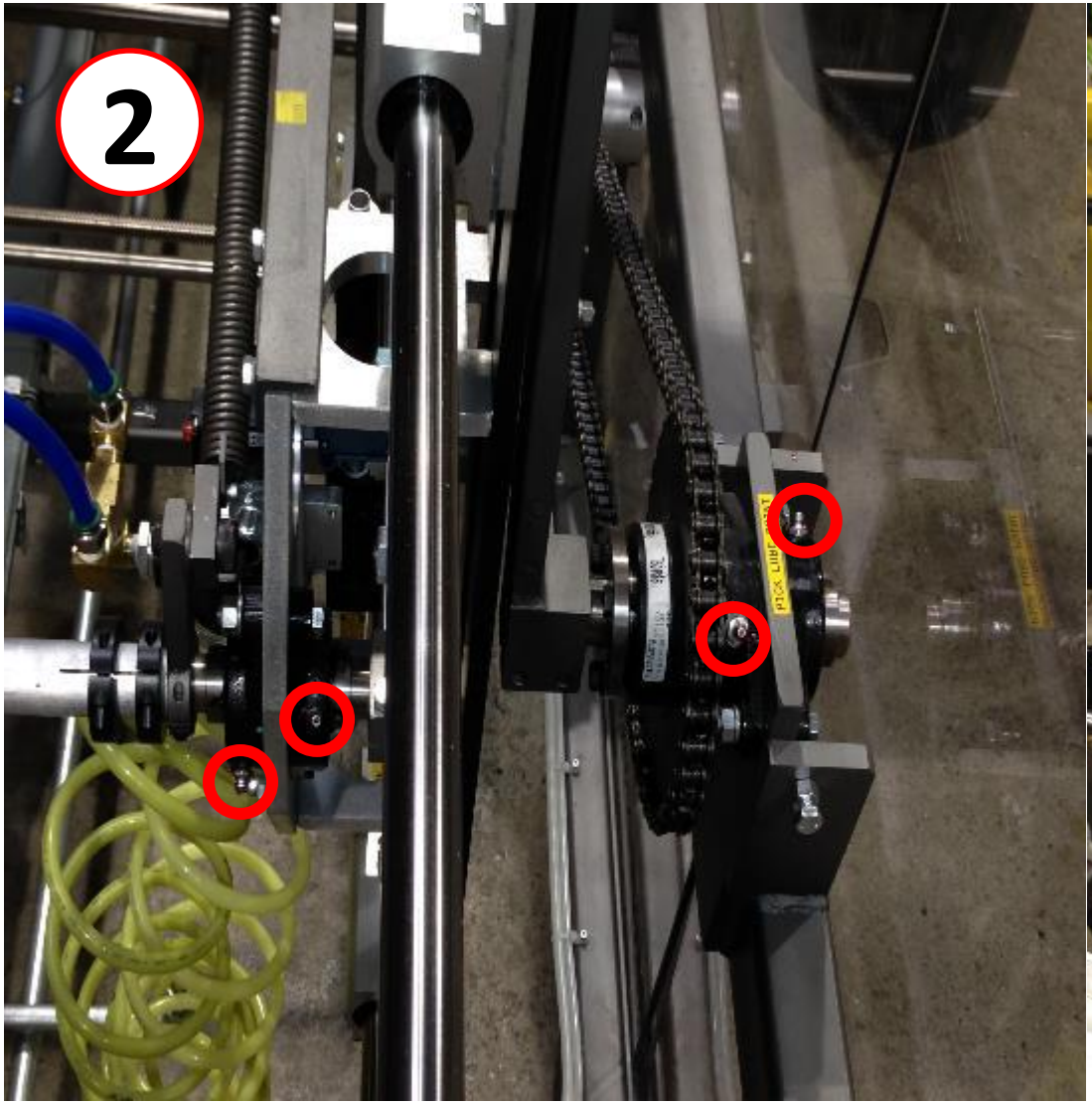
GREASE PORT THREE

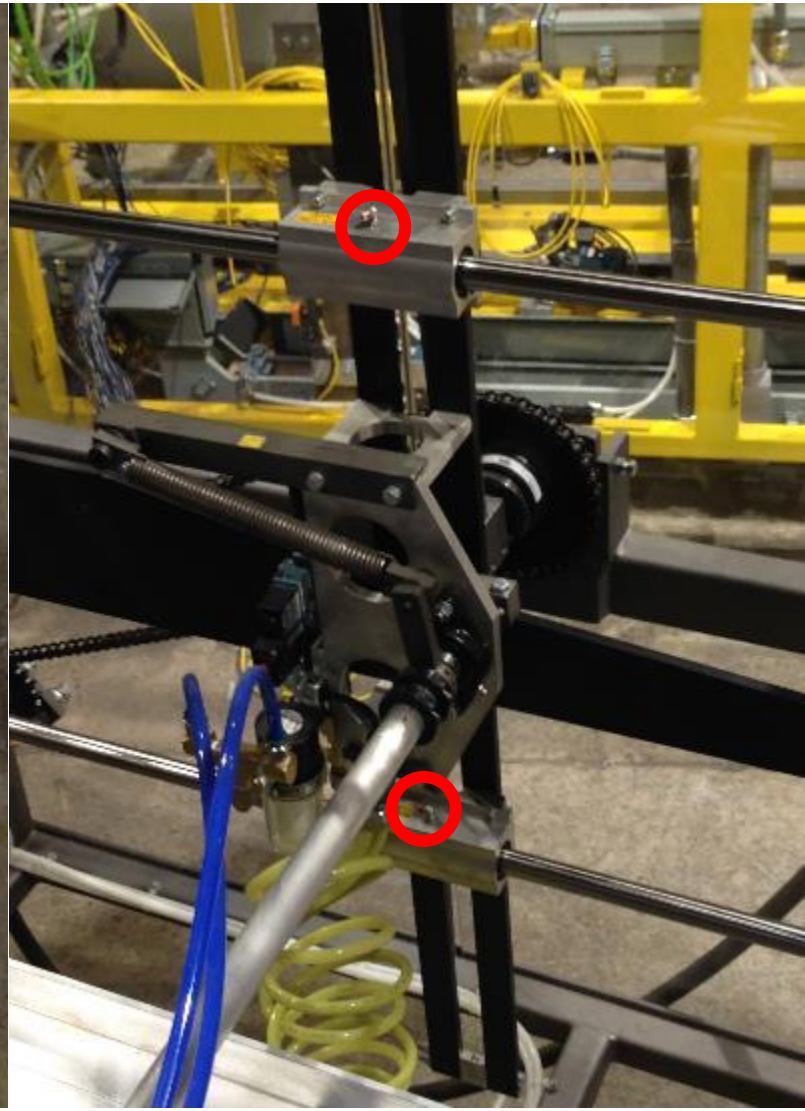


GREASE POINT ONE

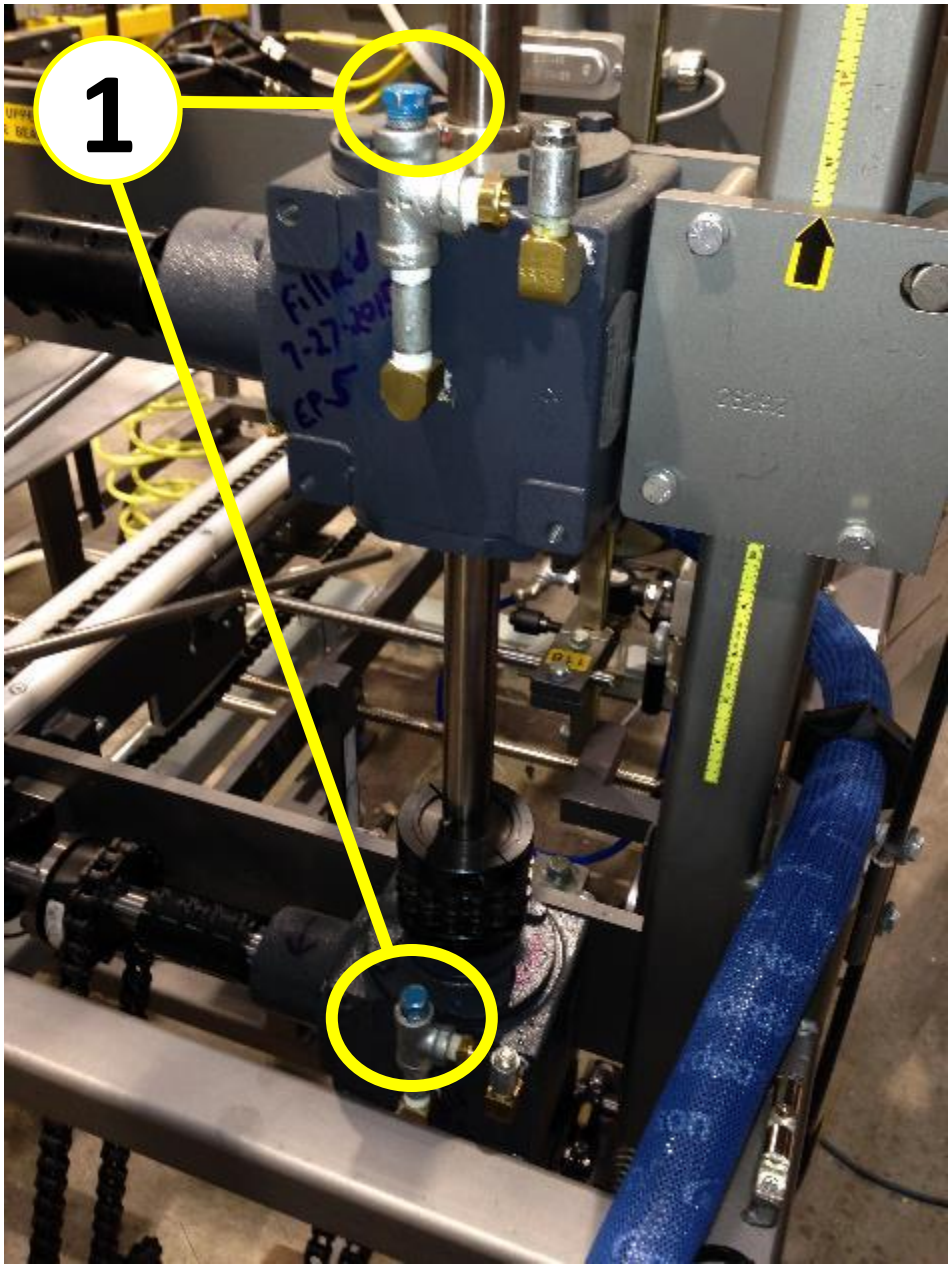


GREASE POINT TWO

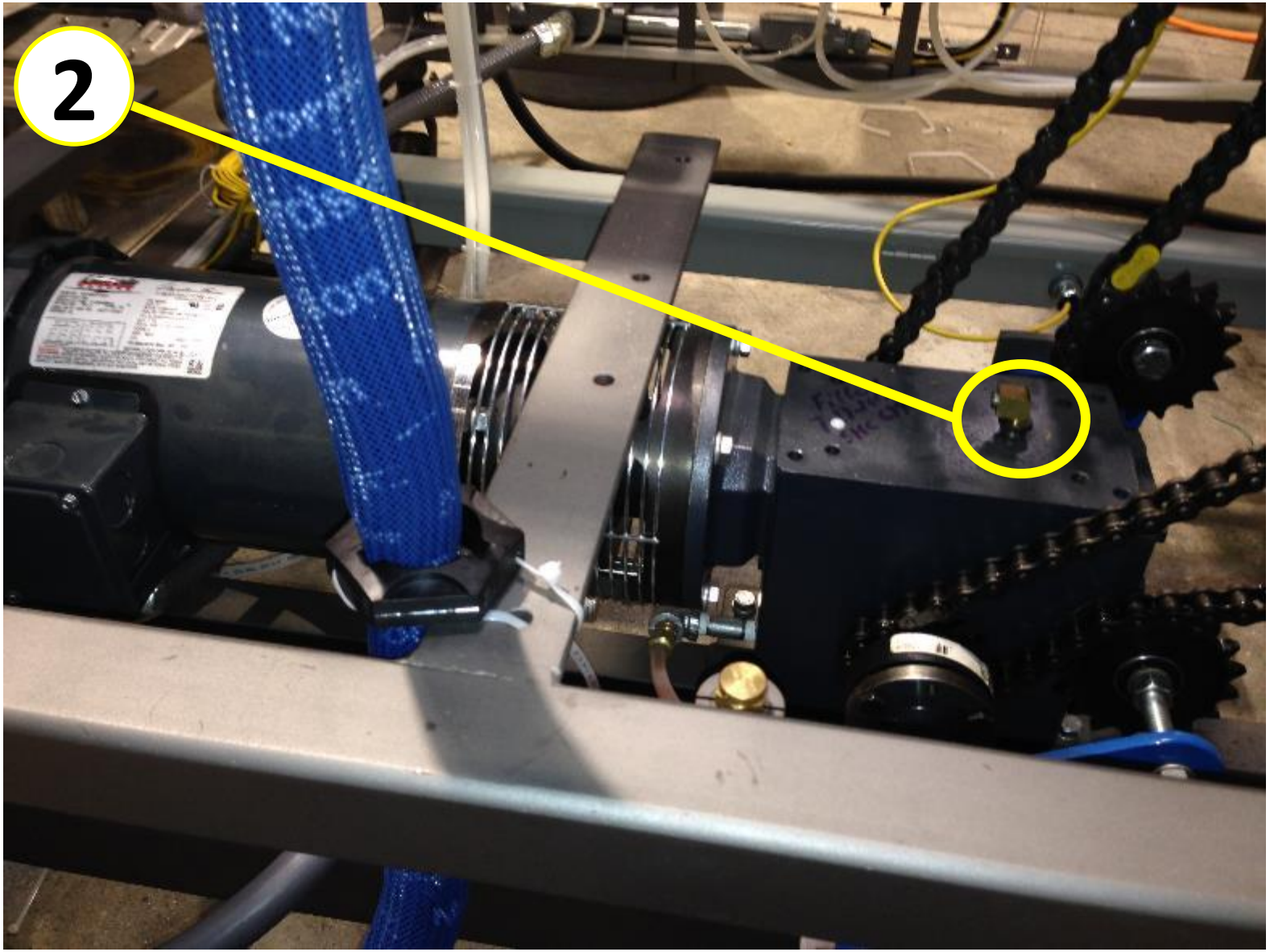




Oil Fill Point 1



Oil Fill Point 2



GREASE AND OIL PRODUCTS

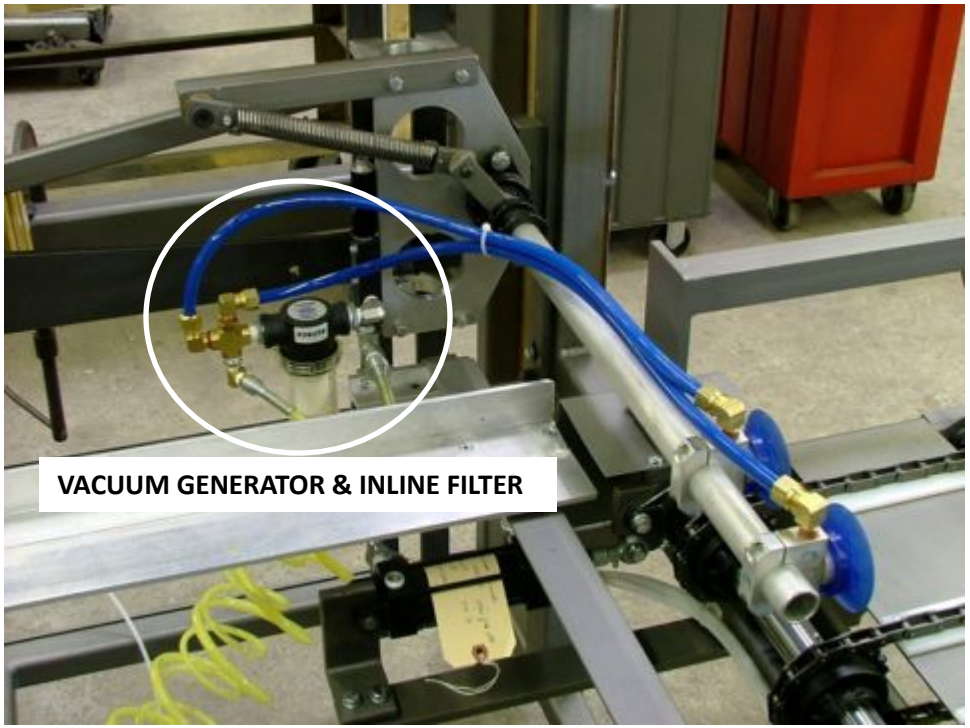
Use for Grease Points & Ports

Use for Oil Fill Point 1

Use for Oil Fill Point 2

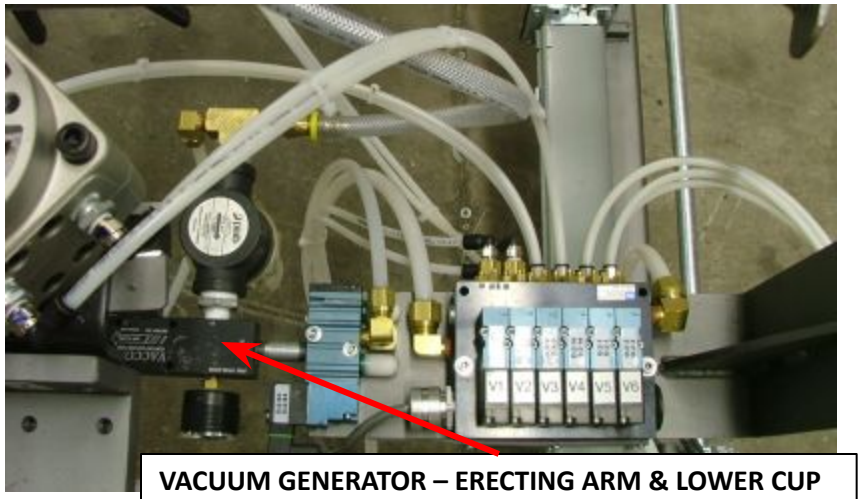
After the proximity switch, *Initiate Magazine Sequence* is operated ON a timer Delay to Apply Magazine Pick Vacuum operates. When the timer expires, vacuum is turned ON to the vacuum cups. Vacuum remains ON to the cups, the arm reverses its motion, picking a carton from the Magazine, placing it inside the Guide Rail, taking it to the "delivered" position. As the drive shaft continues rotating, proximity switch I: 1/4 is operated. This operation, in turn enables a brief delay timer, after which vacuum is released from the Pick Arm and "blow-off" commences. This position is coincident to the enable vacuum signal at the Lower Cup.

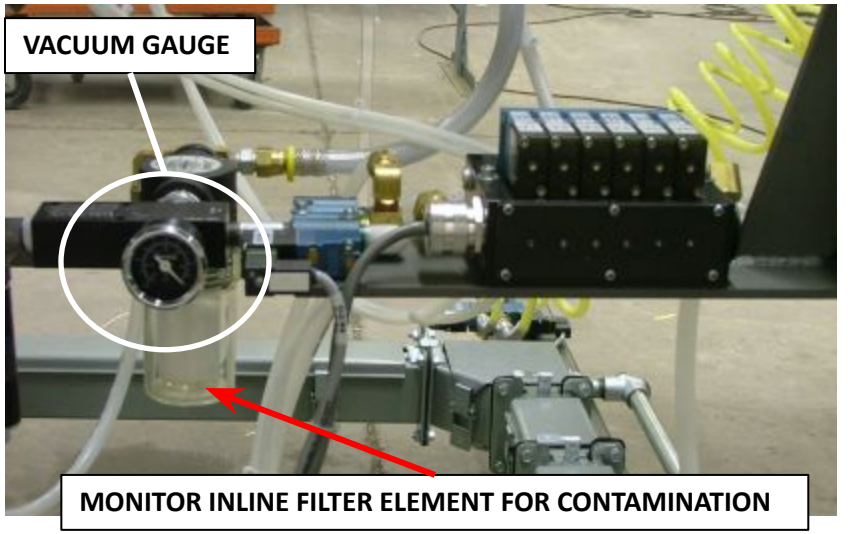
A Norgren Vacuum Pump generates or supplies approximately 12/15" Hg. Regulated air pressure setting is 70 psi. Adjacent to the generator is an inline vacuum filter. Monitor the filter element for contamination on a daily basis. Clean/replace as necessary.



VACUUM GENERATOR & INLINE FILTER

A Norgren Vacuum Pump generates or supplies approximately 15" Hg. (Inches, mercury, vacuum) to both the Erecting Arm and Lower Cup. Regulated air pressure setting is 70 psi. Adjacent to the generator is an inline vacuum filter. Monitor the filter element for contamination on a daily basis. Clean/replace as necessary.





QUICK REFERENCE CHECKLIST

Loosen two quick release handles, far side Magazine Guide Rail. Adjustment aligns case bottom flap score with “action line”. (Please refer to page 27)

á) Loosen quick release handle and raise/lower Upper Static Gate Bar. One-inch dia. bar should overlap top of carton by 3/4"to full overlap.

á) Loosen quick release handle and horizontally adjust bottom flap static gate. Half-inch dia. rod should completely overlap bottom flap of carton.

á) Adjust Operator Side Magazine Guide Rail. Quick Release Handles

Scale = measured width of bottom flap.

á) JOG the machine so that the Erecting Arm is Top Dead Center. (UP) Press an EMERGENCY STOP.

á) Using the hand-wheel, adjust the Erector Case Guide Rail.
First, loosen quick release handle at exit end of rail. Adjust rail, using scale at Exit End as setup reference.
Scale = measured width of case (KD); body plus top flap if applicable.

á) With provided ratchet, raise/lower Top Chain. Chain should rest lightly atop case.

á) Loosen two quick release handles; vertically adjust Erecting Arm Vacuum Cup.

Vacuum Cup should lightly contact carton, yet not be collapsed.

á) Place an erected carton in the Erecting Station. *Verify clearances of previous three items.*

á) Loosen quick release handles, Rear Minor Flap Folder. Adjust Flap Folder using scale/indicator for setup reference.
Scale = measured length panel of case.

á) If necessary, position Lower Cup Assembly.

á) JOG erected carton forward towards hot-melt applicator head.

á) Loosen quick release handle, center applicator head on erected carton.

á) Loosen quick release handles, position upper/lower static folding tines, 1/2"onboard major flaps of carton.

á) Choose and install appropriate compression plate for case size selected. 1/4" Allen wrench required.

á) Loosen quick-release handles, position Compression Case Stop cylinder.

á) Establish Compression RETRACTED Position.

á) Set glue pattern using Hot-melt Pattern Display.

PREVENTIVE MAINTENANCE SCHEDULE

The preventive maintenance schedule, when followed, will give optimum performance and prolonged life expectancy to your Wayne equipment. We have taken the liberty of recommending and listing various lubricants, where appropriate. In addition, we have listed some common parts numbers.

Always consult the Wayne specific manual or parts book when ordering parts!

PREVENTIVE MAINTENANCE SCHEDULE (Cont'd)

DAILY

TOOLS: Rags
Allen Wrench Pack
9/16" open end wrench
1/2" open end wrench

TIME REQUIRED: 30 minutes

PARTS: Synmist ISO-32 or equivalent for lubricators
VC-183 Vicas Vacuum Cup (2" x 5") (Erecting Arm)
VC-183 Vicas Vacuum Cup (2" x 4") (Lower Cup)
VC-245 Vicas Vacuum Cup (3-1/4" dia) (Magazine Pick)
Silicone sealant

FOLLOW APPROPRIATE LOCKOUT/TAGOUT PROCEDURES!

TASKS:

1) Blow off the machine with clean, dry, compressed air.
2) Inspect all vacuum cups for fracture or wear, replace if required.
3) Remove hot-melt overspray from all surfaces of the machine.
4) Clean and inspect hot melt applicators. Replace if damaged.
5) Shut main compressed air valve; bleed all compressed air from system. Fill lubricators to fill line with Synmist ISO-32 or equivalent.
6) Check vacuum inline filters, clean/replace as required.
7) Clean and verify correct operation of all photoeyes. Replace reflective tape when and where necessary.
8) Inspect and verify operation of all proximity switches.
9) Test all safety doors interlock switches. Replace if required.
10) Test all EMERGENCY STOP switches.
11) Restart machine, **verify proper operation**.

PREVENTIVE MAINTENANCE SCHEDULE (Cont'd)

WEEKLY

TOOLS: Rags
Allen Wrench Pack
10" Adjustable wrench
1-1/16" socket
1/2" ratchet
3/4□ open end wrench
Pipe wrench
Pyrometer

TIME REQUIRED: 20 minutes

PARTS: Loctite – 242
Loctite – 609

FOLLOW APPROPRIATE LOCKOUT/TAGOUT PROCEDURES!

TASKS:

1) Inspect air cylinder for leaks around seals or glands. Inspect for scoring of cylinder rods. Replace/repair as required.
2) Verify that all rod ends are secure on air cylinder rods. If loose, apply Loctite and retighten.
3) Verify operation of all gauges (vacuum and air pressure). Replace where necessary.
4) Inspect all flexible air line connections for leaks. Replace tubing or fittings as required.
5) Clean main air filter. Replace if required.
6) Restart machine, and **verify proper operation**.

PREVENTIVE MAINTENANCE SCHEDULE (Cont'd)

MONTHLY

TOOLS: Allen Wrench Pack
Lead Hammer
Chain Breaker
Channel Lock Pliers
Pin Punch
9/16" Open End Wrench
1/2" Open End Wrench
7/16" Open End Wrench
Pyrometer
Loctite-242

TIME REQUIRED: 40 minutes

PARTS: Drive Sprocket, 50 pitch, hardened (Verify Specific Machine)
Conveyor Sprocket, 50 pitch, hardened (Verify Specific Machine)
Drive Chain, RC50
Nevastane HT/AW2 or equivalent grease lubricant
Termalene EP – NLGI-0 grease lubricant (shaft bearings only)
Synmist ISO-32 or equivalent for lubricators

OW APPROPRIATE LOCKOUT/TAGOUT PROCEDURES!

TASKS:

1) Clean hot melt glue tank filter. Replace if necessary.
2) Using a pyrometer, verify operating temperatures of hot melt system. (Tank, hose, head)
3) Inspect Erector/Magazine Conveyor drive and driven sprockets. Replace if teeth are worn in excess of 50%. Replace chain if pins or rollers are worn. Lubricate chains with dry lubricant.
4) Inspect chain tensioner(s). Verify sufficient tension on drive chains.
5) Grease all fittings on machine exclusive of sealed roller bearings.
6) Restart machine, and verify proper operation.

PREVENTIVE MAINTENANCE SCHEDULE (Cont'd)

ANNUAL

TOOLS: Chain Breaker
Lead Hammer
Pin Punch
Needle Nose Pliers
6" Screwdriver
Allen Wrench Set
Channel Lock Pliers
Combination wrenches
Ammeter/Volt meter
1-1/16" Socket
1/2" Ratchet

TIME REQUIRED: 480 minutes (8 Hrs.)

PARTS: NiCad Battery, (part number specified by PLC manufacturer)
Flight Chain, verify Wayne specific parts manual
Conveyor Pushers, verify Wayne specific parts manual
Drydene EP5 Gear Oil

FOLLOW APPROPRIATE LOCKOUT/TAGOUT PROCEDURES!

TASKS:

1) Perform infrared inspection of electrical control enclosure; tighten termination as required.
2) Replace PLC NiCad battery.
3) Replace/repair all pneumatic valves with new or rebuilt units.
4) Replace all air cylinders with new or rebuilt units.
5) Replace rubber cushions on compression rods.
6) Replace flight chain and any damaged pushers.
7) Replace all bronze bushings on cylinder clevis assemblies. Replace clevis pins if worn.
8) Blow out all vacuum lines.
9) Check/verify conveyor motor current/voltage.
10) Verify proper fluid level in upper/lower conveyor drive gearboxes. Remove overflow and fill plugs, add Drydene EP5 Gear Oil until fluid reaches fill plug. Replace both plugs and wipe off excess.
11) Restart machine, **verify proper operation.**

PARTS ORDER PROCEDURE

The following pages contain a spare parts list applicable to your machine. Prices and delivery are available upon request from our parts department. Prices will be those in effect at the time your order is placed. When ordering parts, please be prepared with the serial number of your machine found inside the front cover of this manual and/or on the nameplate of the machine. If the above procedure is followed, it will greatly aid us in the more efficient handling of your parts orders.

RECOMMENDED SPARE PARTS LIST

The first items on this list are an accounting of the cylinders on the WCE-40HM Case Erector, as shipped. This list can be used as a reference when ordering replacement cylinders or rebuild kits.

M2M	MECHANISM	MAKE/MODEL	QUANTITY
28262	Magazine Boost (2)	SMC NCDA1X150-300N	1-1/2" x 3“
31562	Major Flap Poker	Bimba 043-DB	3/4"x 3“
28275	Lower Cup	Bimba FST-171.00 CE	1-1/2" x 1”
26539	Flap Fold Actuators (2)	SMC CRBILW80-90S-XN	80mm-90□
48119	Case Stop	Aurora HB2C16E6	1-1/8" x 2"
39632	Auto-tensioner	Aurora 15HB29C24D8PQT	1/2" x 3"
48300	Inside Compression	Penninsular #PW-191	2" x 28“

M2M	PART #	DESCRIPTION	QUANTITY
19400	FCP6	Bimba 3/8" Flow Control	1
22331	VP80-200	Vaccon Vacuum Generator	1
46749	PPX35RE	Piab Replacement Filter Element	4
19604	#114-B70 (5/8" ID)	Gallagher Fluid Seal O-rings)	8
19510	VC-183	Vicas Vacuum Cup (2" x 5")	12
19636	VC-183	Vicas Vacuum Cup (2" x 4")	12
22559	VC-245	Vicas Vacuum Cup (3-1/4" dia.)	12
39207	1007034B	Nordson In-line Filter (100 mesh)	1
48092	1015820	Nordson Nozzle Rt. Ang Dual 15□, .020” orifice	2
20035	CFH-1-SB	McGill Cam Follower (CFH-1-SB)	2
39356	H-40-LW (1-1/4" dia)	RBC Cam Follower (3/4" stud)	1
60633	#345 (1-1/8" dia)	Jones Extension Spring (modified)	1
28265	RC-162110	Torrington one-way Roller Clutch	2
28264	NCA1-P150	SMC Cylinder Eye Bracket	2
22249	AR-10N	Morse Rod End (5/8" x 5/8-18 R.H.)	2

RECOMMENDED SPARE PARTS LIST (Cont'd)

ELECTRICAL FIELD DEVICES:

M2M	PART #	DESCRIPTION	QUANTITY
41549	IN5327	Efector proximity switch	2
41548	IN8514	Efector proximity switch	2
41992	44RSP-2KBE3-F4	Allen Bradley photoeye	1
41984	440N-Z21WPH+889D-F8AB	Allen Bradley Safety Switch	1
40675	VM18-PNO-Q	Hyde Park ultrasonic	1
40682	HP-PB100	Hyde Park teach pendant	1

***Consult machine specific electrical drawings prior to ordering replacement components.**

SOLENOID VALVES:

411A-BOA-DM-DFFJ-1KJ	MAC Valve (Erecting Arm/Pick Vacuum)	1
52A-11-BOA-DM-DDAJ-KF	MAC Valve (Apply Hot-melt)	1
46A-L00-00-JDAP-1FK-9	MAC Valve (Multiple)	1
82A-AC-CAA-TM-DDAP-1DA	MAC Valve (Inside Compression)	1
45A-LAA-DDAJ-1KD	MAC Valve (Case Stop)	1

***Consult machine specific pneumatic drawing D-64003 prior to ordering replacement valves.**

WARRANTY POLICY

Wayne Automation conditionally warranties its machinery for one (1) year against all defects in workmanship and fabrication. The company's liability shall be limited to repairing or replacing all such defects. All commercial items carry the manufacturers' original warranty, as it exists, and it is extended to you by Wayne. Our stated policy on warrantee items is for the customer to write a purchase order against the replacement part(s). The defective item(s) is then returned to Wayne Automation and we will then forward it to the manufacturer. He will, after his inspection, issue us a credit, replace the item, or disallow the claim. Assuming, that credit is given, we will then issue the customer credit against his account. Under no circumstances, does the manufacturer accept liability for shipping costs. Therefore, all shipping costs incurred, to be borne by the customer.