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TECHNICAL INFORMATION

- Reaction Force of Machine: 2500 lbs/1134 kg
NOTE: Please ensure anchor points are designed to handle load of machine.
- Lifting Capacity of Machine: 300 lbs/136 kg (Do not exceed)
- This machine is designed to operate up to 400 Cans per minute (Do not exceed)
- This machine is designed for the sole purpose of lifting pallets of empty cans.
NOTE: Any other use is prohibited.
- Machine weighs 1500 lbs/680 kg.
- Lift Machine with a forklift from the top frame using appropriate straps and a sufficient height forklift (Always secure the load)- SEE PAGE 3 FOR DIAGRAM
- Warning labels:



Mandatory Action



High Voltage



Stop



Warning



Prohibited

- Safety Gate (when applicable) will remain locked until carriage is in the down position and power is applied to the machine.
- The sound pressure level measured at the operator station < 70 db (A).

SKA FABRICATING			
545 Turner Dr Ste A Durango CO 81303 970-403-8562 skafabricating.com			
Model:	CE Can-I-Bus Depalletizer	IN	NI
		OUT	WO
Serial Number:	2337-002		
Voltage:	220v-240v 1Ø		
F.L.A. :	20a	HZ:	50/60hz
		SCCR:	10 kva
Lifting Capacity:	300 lbs or 136 kg		
Manufactured In:	CE		
	MADE IN THE USA		

Machine Nameplate- **DO NOT REMOVE**

TECHNICAL SPECIFICATIONS

Dimensions:

Length:	66.5" (1689 mm)
Width:	51" (1295 mm)
Height:	134" (3658 mm)

Speed:

Lift carriage:	6.8 m/min maximum
Sweep carriage:	6 m/min maximum

Rate:

10 to 400 cans/minute

Lifting capacity:

300 lbs (136 kg)

Electric power:

Power circuits:

- 230 VAC, 30 Amps, single phase + neutral, 50Hz (Europe)
- 208 VAC, 30 Amps, 3 phase or single phase, 60 Hz (USA)
- Optional 480 VAC, 20 Amps, Three Phase, 60Hz

Control circuits:

- 24 VDC

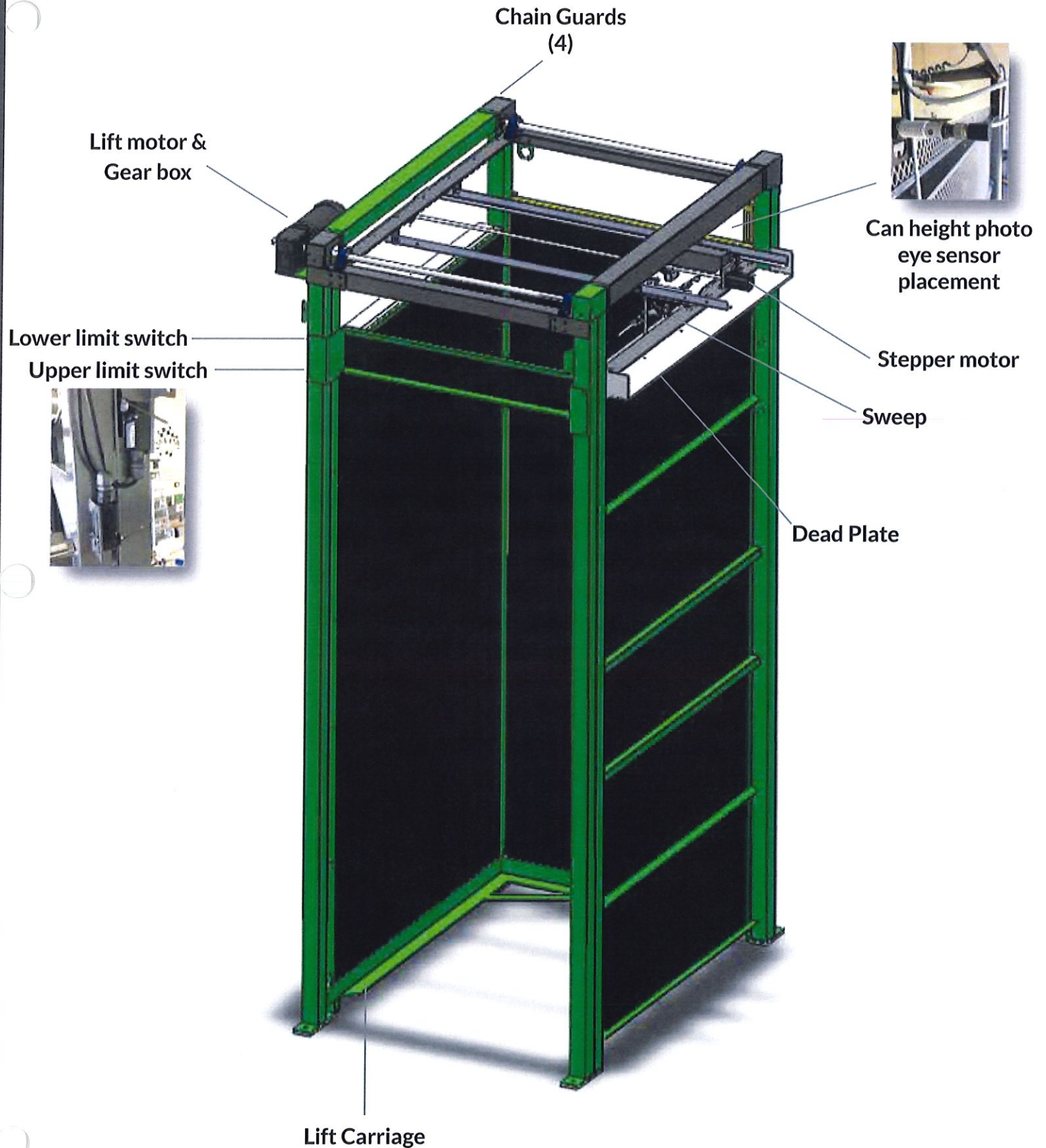
Pneumatic power:

- 5.5 bars (80 PSI), set up at 1.4 bar (20 PSI)

Safety Equipment:

Manually opened Safety gate with IDEM safety switch with Solenoid Interlock, power to unlock, IP67 rated- When applicable

CAN-I-BUS EQUIPMENT DETAIL- FRONT



CAN-I-BUS EQUIPMENT DETAIL- BACK



Remote HMI*

*can be relocated wherever
is most convenient

Control Box

**Included air
regulator placement**

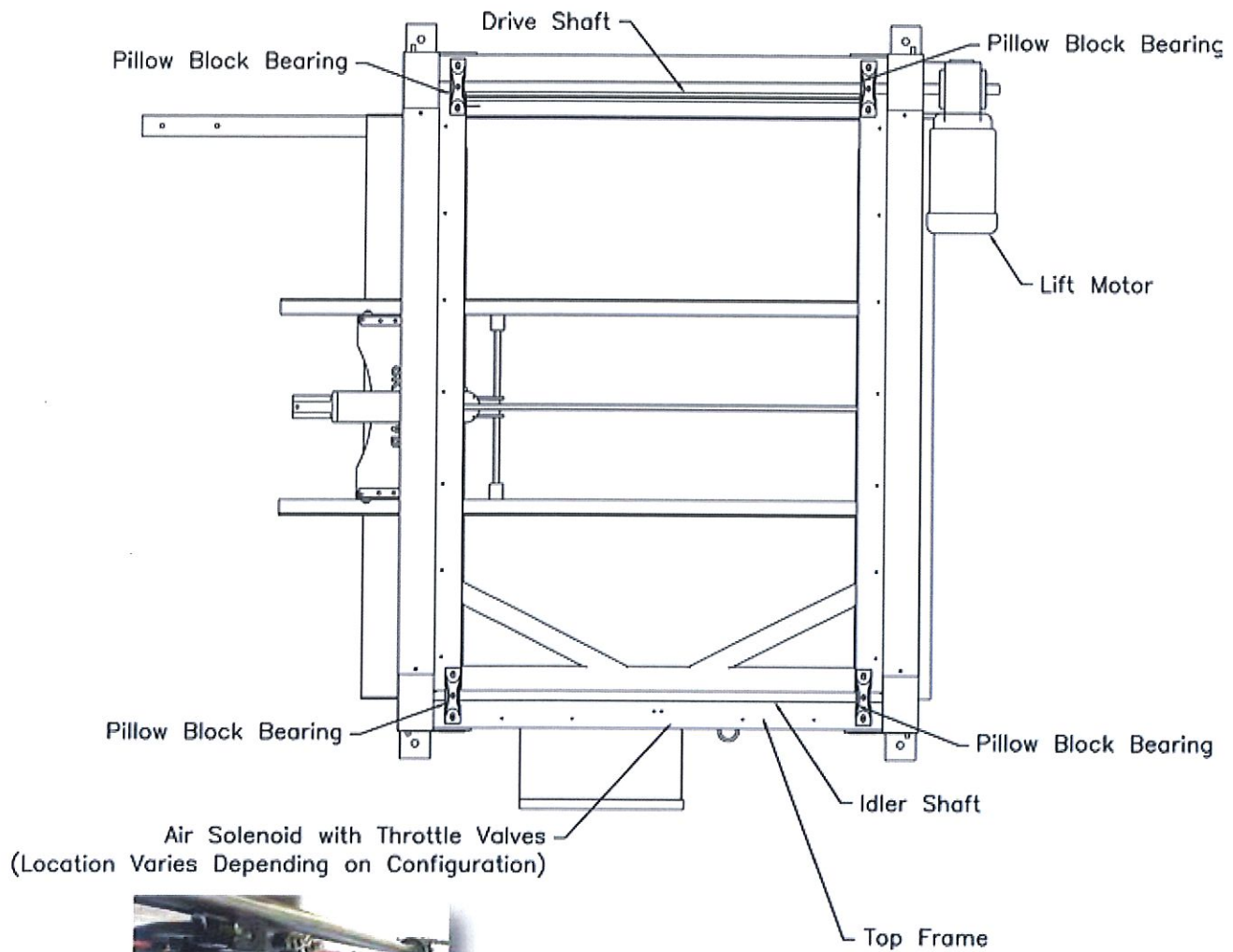


**Chains, turnbuckles
& counter weights
in columns
(4)**

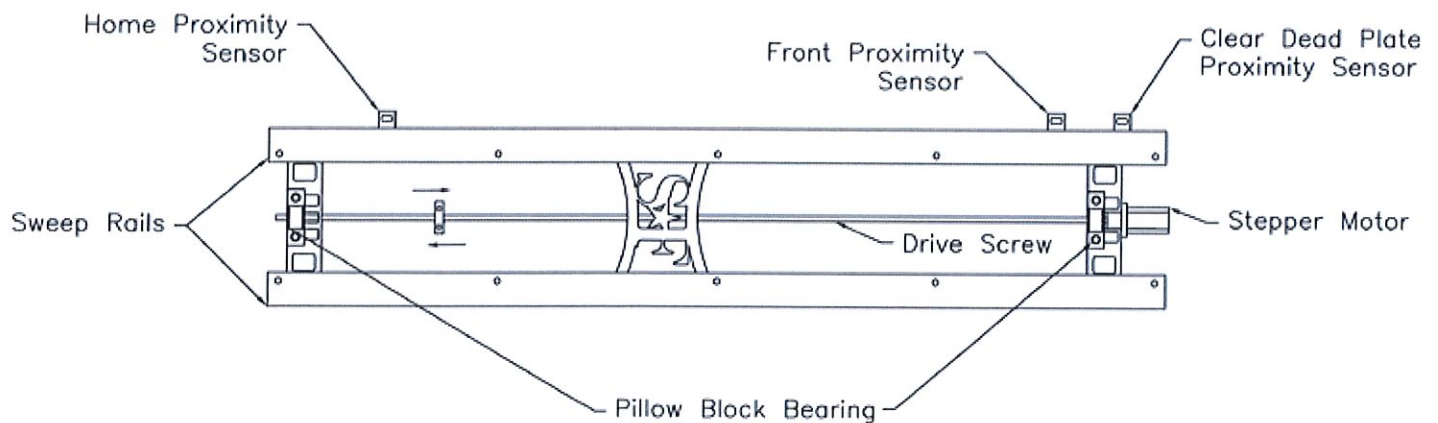
**UHMW
feet/shims
all 4 corners**

**Anchor points
all 4 corners**

CAN-I-BUS EQUIPMENT DETAIL- TOP & SWEEP



AIR SOLENOID



SWEEP CARRIAGE & RINSE CAGE DETAIL

Aluminum Sweep
Pushers

Dumpster Block
Assembly

Tier Sheet
Piston

Tier Sheet
Arm

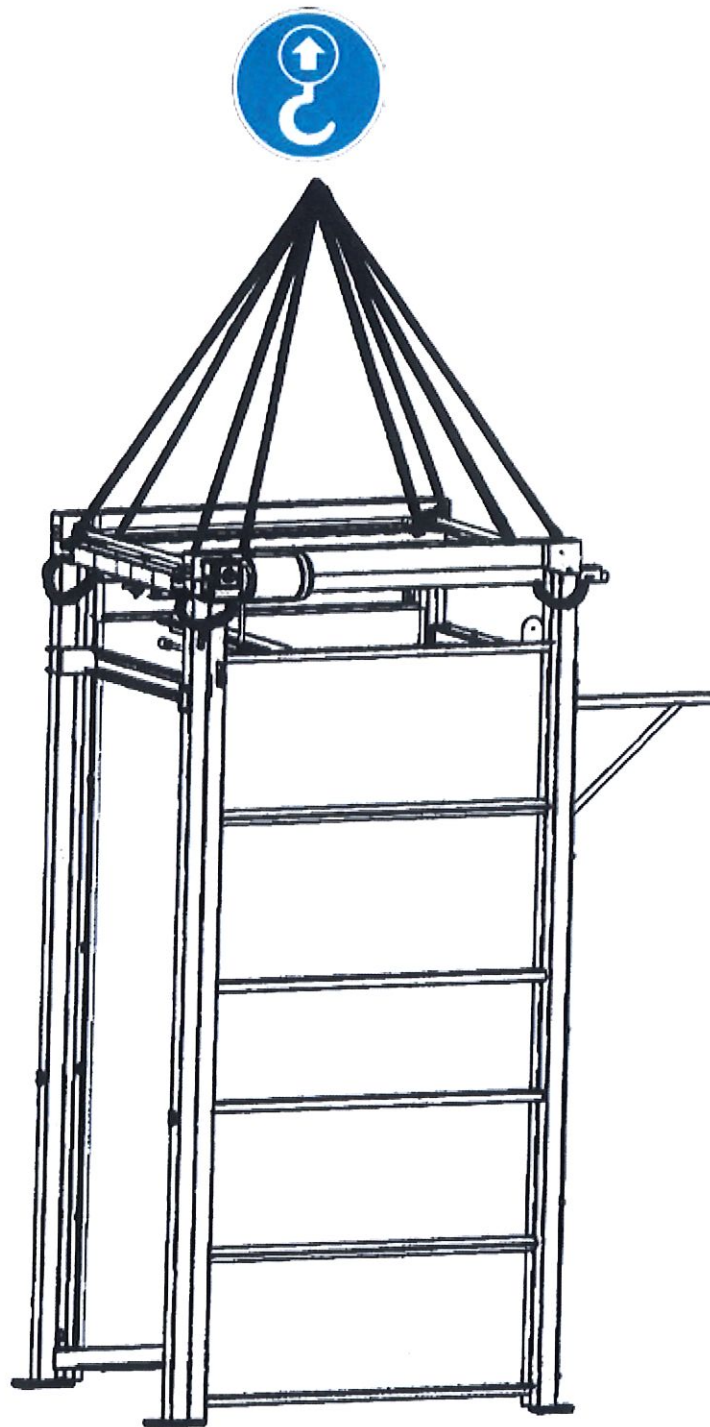
Sweep
Bearings

Depalletizer
Discharge
Conveyor

Rinse Tunnel

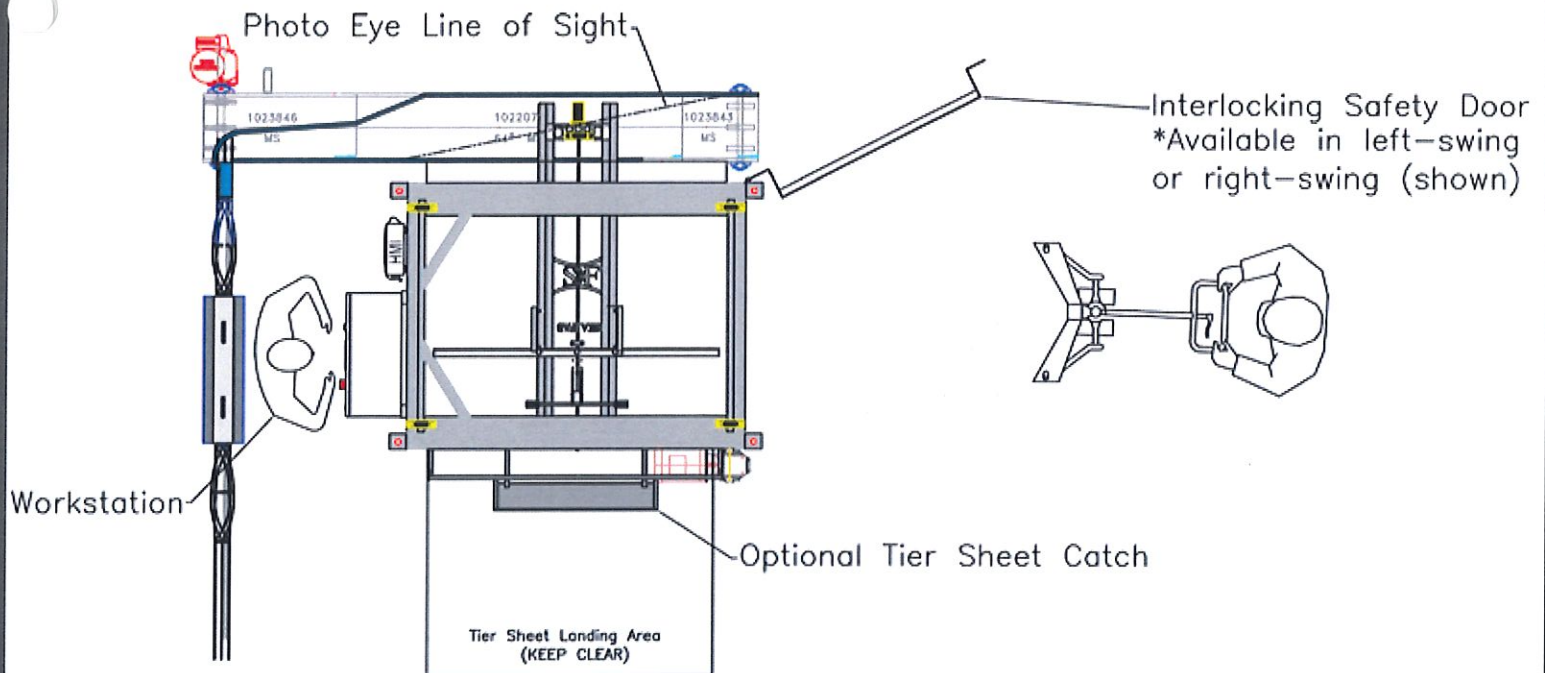
1/4" Stainless
Rod Guide Rails

CAN-I-BUS LIFT PLAN



1. Ensure lifting straps are clear of guards, motors, shafts, etc.
2. Secure base when lifting.
3. Use certified lifting straps rated for unit weight.
4. Weight: 1500 lbs or 680 kg approximately.

OPERATION DETAIL



SAFETY

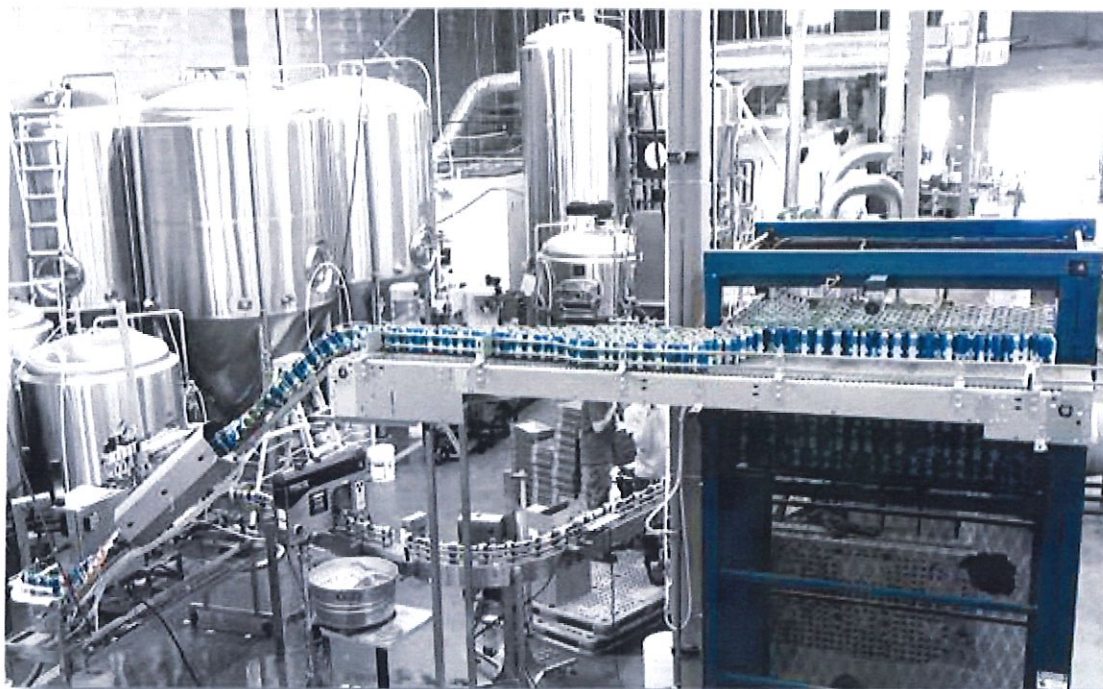
*****Perform the following procedures to ensure safe operation of your depalletizer*****

- 1) Perform an inspection before startup to ensure that nothing is obstructing movement of the lift carriage or sweep carriage.
- 2) Stay clear of all moving parts during operation. Make sure anyone in the vicinity is aware that the machine is in operation.
- 3) Watch out for falling tier sheets. Tier sheets are ejected on the side of the machine opposite the conveyor. Make sure everyone in the vicinity is aware of where the tier sheets will be ejected.
- 4) Safety door must be closed and locked for proper operation of machine.
- 5) If you experience any problems or malfunctions, you can always press the red Quick Stop button on the front of the control box or remote HMI to stop all operations. (The Quick Stop button is released by turning the button clockwise)
- 6) You must press RESET to start or resume operations upon turning the power on or using QUICK STOP button.
- 7) Prior to standard operation, test all functions on the Manual Operations screen for full functionality.

QUICK START GUIDE

THE FOLLOWING STEPS WILL GUIDE YOU IN GETTING YOUR DEPALLETIZER
RUNNING IN A TIMELY MANNER

*****Check proper operation of all sensors and level switches. Perform dry run in AUTO mode checking for proper function*****



- 1) Turn the power disconnect switch on the front of the control box to **ON**
- 2) Load your pallet of cans into the depalletizer:
 - Inspect pallet for damaged cans and/or tier sheets
 - Fix or remove damaged cans
 - Straighten/Trim any bent tier sheets
 - Ensure the lift carriage is in the down position
 - Open safety doors
 - Position the pallet in front of depalletizer and cut the bands that run perpendicular to the loading direction
 - **NOTE: Leave bands that run parallel to the loading direction**
 - Insert the pallet into the depalletizer using a pallet jack
 - Remove pallet jack and ensure the pallet is pushed all the way into the lift carriage
 - Cut the remaining bands and remove them
 - Gently push on the cans from the entrance to shore them up against the back of the machine
 - Close and lock safety doors

QUICK START GUIDE

- 3) From the home screen on the HMI touchscreen, select **MANUAL OPERATIONS**. Push and hold the up arrow button to raise the lift carriage until the plastic top frame on the pallet is just below the aluminum sweep pushers on the sweep carriage. Slide the plastic top frame off of the top of the pallet and remove the tier sheet that is directly underneath it.
- 4) Press green **CONVEYOR** button to toggle the conveyor on
- 5) From the home screen, press the green **START** button. Start rinse cage water before the cans reach the rinse cage
- 6) At this point, the depalletizer is completely automated until the pallet is empty. When you are on the last layer of your run, press **CLEAR DEAD PLATE** and **LAST LAYER** at any time during the layer

NOTE: The lift carriage will automatically return to the bottom of the machine with an empty pallet if it reaches the upper limit switch

- 7) When you are done with the run, turn the conveyor off and turn the power disconnect switch to **OFF**



RECOMMENDED ACCESSORIES

THE FOLLOWING ACCESSORIES WILL HELP YOU RUN YOUR DEPALLETIZER WITH EASE

1) **Low profile pallet jack**

We strongly recommend loading pallets into the depalletizer with a pallet jack. Uline offers an affordable low profile pallet jack that works well with pallets of cans.

We do not recommend loading pallets with a fork lift as you could damage the depalletizer (and it is more difficult)

- For *Narrow Loading Depalletizers*:
Low Profile Fork Uline Pallet Truck - 48 x 27" (Model # H-1365)
- For *Wide Loading Depalletizers*:
Low Profile/4 Way Fork Uline Pallet Truck - 48 x 33" (Model # H-1781)



2) **Banding tool**

You should have a banding tool to secure partial pallets at the end of your runs. Do not wrap partial pallets in plastic as it will bend the tier sheets and make your life harder.

- Uline Industrial Poly Strapping Tensioner (Model # H-540)
- Uline Buckles for Poly Strapping (Model #S-108)



ROUTINE MAINTENANCE

SIMPLE STEPS TO KEEP YOUR DEPALLETIZER IN GOOD CONDITION AND OPERATING SMOOTHLY FOR MANY YEARS TO COME



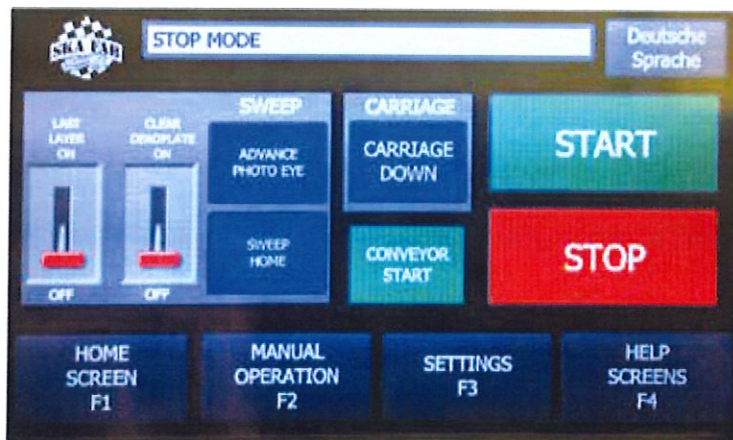
- 1) **Lubricate drive screw:** Apply food grade grease to the sweep carriage drive screw approximately once every month (more often for heavy use or humid/coastal locations).
- 2) **Lubricate chains, sprockets, turnbuckles, and columns:** Apply oil to the chains and the inside of the four corner columns every three months.
- 3) **Hardware:** Inspect all hardware on the depalletizer, conveyor, and rinse cage every three months and tighten or replace if necessary.
- 4) **Lubricate pillow block bearings:** Apply food grade grease to the pillow block bearings on the drive shaft, idler shaft, and drive screw once every year.
- 5) **Air Line:** Disconnect the air line from exit side of the air regulator and apply two drops of air tool oil once every year.
- 6) **Sweep Bearings:** Inspect the bearings on the sweep carriage for wear once every year and replace if necessary.
- 7) **Rinse Cage:** Rinse every use.
- 8) **Conveyor:** Refer to the manual that came with your conveyor for conveyor maintenance.

HMI TOUCHSCREEN CONTROLS

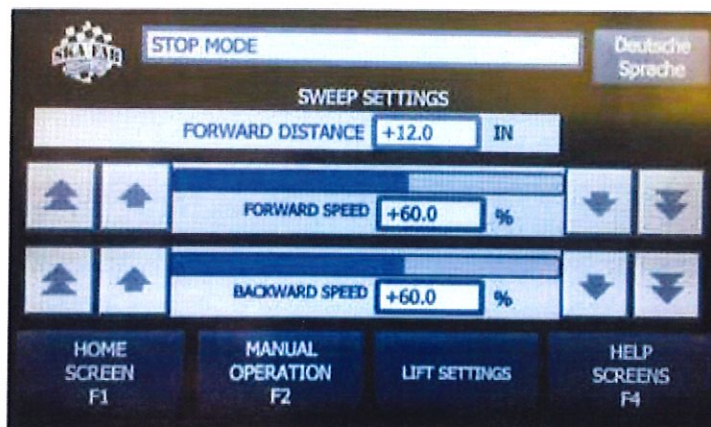
SIMPLE STEPS TO KEEP YOUR DEPALLETIZER IN GOOD CONDITION AND OPERATING SMOOTHLY FOR MANY YEARS TO COME

1) HOME screen

- **START** puts the depal into auto mode.
- **STOP** takes the depal out of auto mode.
- **SWEEP HOME** sends the sweep carriage to the HOME position at the back of the sweep rails.
- **CARRIAGE DOWN** sends the lift carriage down to the bottom of the depalletizer.
- **ADVANCE PHOTO EYE** triggers the CAN ADVANCE photo eye, which prompts the sweep carriage to move forward in auto mode.
- **SETTINGS** takes you to the SETTINGS screen.
- **MANUAL OPERATIONS** takes you to the MANUAL OPERATIONS screen.
- **CONVEYOR** toggles the conveyor on and off.
- **HELP** takes you to the HELP screen where you will find basic troubleshooting information.

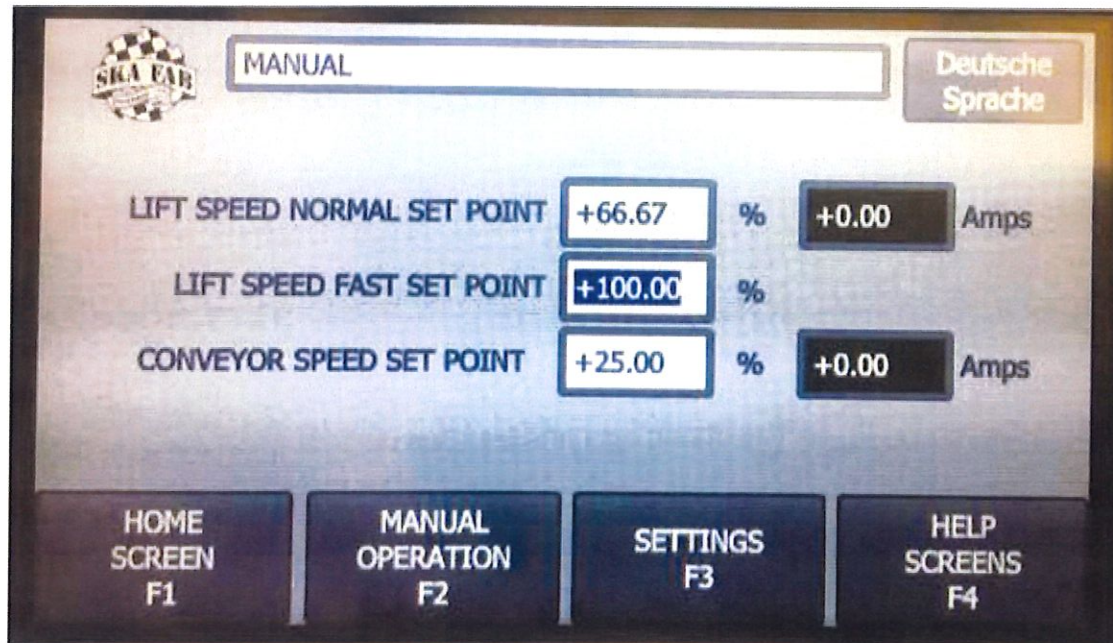


- 2) **SWEEP SETTINGS**- Most users will want to set the FORWARD SPEED and BACKWARD SPEED to 60%. Most users will also want to set the FORWARD DISTANCE to slightly less than the width of their conveyor
(i.e. set the FORWARD DISTANCE to 9 inches if you have a 12 inch conveyor)

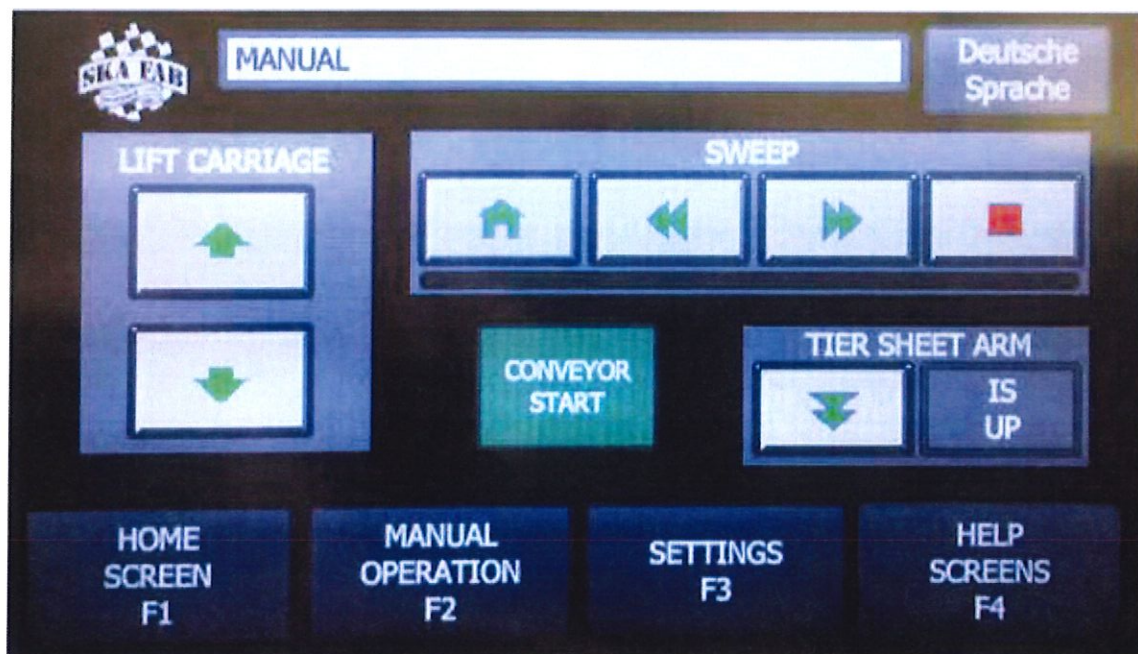


HMI TOUCHSCREEN CONTROLS CONT.

- 3) **LIFT SETTINGS-** LIFT SPEED FAST SET POINT controls the speed of the lift carriage when it automatically lowers to the bottom of the depal. Otherwise, the speed of the lift carriage is controlled by NORMAL SET POINT. Use the CONVEYOR SPEED SET POINT to control the depal conveyor.



- 3) **MANUAL OPERATIONS-** The MANUAL OPERATIONS screen is used to operate the depalletizer manually. The TIER SHEET PISTON toggles the tier sheet T-arm up and down. All other buttons on the screen are self-explanatory



ADJUSTMENTS AND FINE TUNING

GUIDELINES FOR PROPER SET-UP

1) Proximity (prox) Sensors

The prox sensors have an orange wire attached to them and can be adjusted with two adjustable wrenches. All prox sensor heights should be adjusted to leave a space of about 2-3mm between the bottom of the prox sensor and the top of the flag bolt on the sweep carriage.

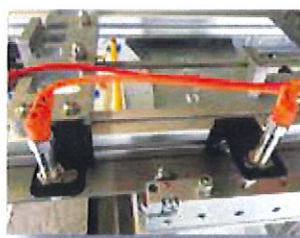
HOME prox sensor stops the sweep carriage at the back of the rails in the HOME position.

FRONT prox sensor stops the sweep carriage at the beginning of the white plastic dead plate in auto mode.

CLEAR DEAD PLATE prox sensor stops the sweep carriage at the end of the white plastic dead plate.



HOME PROX SENSOR



CLEAR DEAD PLATE & FRONT PROX SENSOR



CAN HEIGHT PHOTO EYE SENSOR

2) Photo Eye Sensors

The photo eye sensors have a gray wire attached to them and can be adjusted by hand. Each photo eye sensor needs to be adjusted so that it can “see” its corresponding reflector when there is nothing in between the sensor and the reflector (the yellow light on the sensor will be illuminated when the sensor “sees” the reflector).

CAN HEIGHT photo eye sensor is used to stop the lift carriage at the correct height for sweeping cans across the white plastic dead plate and onto the conveyor. Its height should be adjusted such that the tier sheet underneath the layer that is being swept is just below the top surface of the white plastic dead plate (the cans will have to rise slightly over the beveled front edge of the dead plate).

CAN ADVANCE photo eye sensor is used to stop the sweep carriage when cans have accumulated on the conveyor and to sweep more cans as soon as there is room for them.

3) Limit switches

The UPPER and LOWER limit switches are located high on a column of the depalletizer, generally under the lift motor. The UPPER limit switch is located lower on the machine than the LOWER limit switch. Both switches are used to stop the lift carriage at the limits of its range of motion. When the UPPER limit switch is triggered in auto mode, the lift carriage will automatically return to the bottom of the machine where it will trigger the LOWER limit switch and stop.

4) Lift chains

The lift chains can be easily adjusted with a 9/16" wrench. In the MANUAL OPERATIONS screen, lift the empty lift carriage until it hits the upper limit switch. Loosen the nut that is located at the top of the turnbuckle that connects the chain to the lift carriage and turn the turnbuckle to adjust height. Be sure to level the lift carriage with the plastic dead plate and then check all four corners for level with the top frame of the depalletizer.

NOTE: Adjusting the lift frame so the side opposite of the dead plate is 1/4" lower provides more clearance between the sweep pushers and the tier sheet below

5) Lift motor

The speed of the lift motor can be adjusted using the HMI touchscreen. Most users will leave the speed setting at about 67% of maximum.

6) Conveyor motor

The speed of the depal conveyor can be adjusted using the HMI touchscreen. Most users will want to leave the speed setting at about 25% of the maximum.

7) Sweep Motor

The speed of the sweep carriage can be adjusted using the HMI touchscreen. Most users will want to leave the sweep speeds at about 60% of the maximum.

8) Sweep pushers

The sweep pushers should be adjusted so that the gap between the bottom of the sweep pushers and the top of the plastic dead plate is about 1/8"-1/4" when the sweep carriage is all the way forward.



LIMIT SWITCHES



LIFT CHAIN



LIFT CHAIN IN COLUMN

TIPS AND TRICKS

TO MAKE YOUR DAY GO SMOOTHER

- 1) Make sure all cans and tier sheets are in good condition prior to loading. Damaged tier sheets cause a variety of problems with operation of the depalletizer.
- 2) Load pallets into the depalletizer with a low profile pallet jack.
- 3) Make a mark near the bottom of the machine on the same side as the control panel so you can raise a full pallet to the correct height for removing the plastic top frame without leaving the control panel.
- 4) Never wrap a pallet of cans with plastic. Secure partial pallets by putting the plastic top frame (with tier sheet underneath) on top of the pallet and re-banding.
- 5) If you experience a problem in auto mode while the sweep carriage is not in the HOME position and you need to return the sweep carriage to the HOME position, make sure the Tier sheet arm is up (press TIER SHEET PISTON button to toggle the T-arm up and down) and then press SWEEP BACK to return the sweep to HOME. Do not use the SWEEP HOME button in this situation as it will automatically lower the T-arm which will crush cans in the next layer down.



TROUBLE SHOOTING

YOUR GO-TO GUIDE IF PROBLEMS OCCUR

- 1) **Safety doors will not open** - Ensure can carriage is in the lowest position and the lower limit switch is triggered
- 2) **The lift carriage won't go up**
 - a. Check the CAN HEIGHT photo eye sensor for blockage or misalignment.
 - b. Check the lift motor speed setting, making sure that it is not set to zero.
 - c. Check limit switches for proper operation.
 - d. Ensure that safety gate is closed and latched.
- 3) **The sweep carriage won't advance or seems to bind**
 - a. Check the CAN ADVANCE photo eye sensor for blockage or misalignment.
 - b. Check your sweep settings to ensure they are properly set on older depals that do not have Siemens components in the control box. Sweep Back wards speed should always be set faster than sweep forward speed. Adjust speeds and retry.
 - c. Check the drive screw for damage (nicks, burrs, etc.) and make sure it is lubricated.
- 4) **There is a problem that seems related to electronics or software**
 - a. Turn the power disconnect switch on the front of the control box to OFF and leave it there for at least 60 seconds. Then turn the machine back on.
- 5) **Tier sheet grabbers are not working**
 - a. Make sure that the rubber cylinders are not spinning on the T-Arm. If they are spinning, you will need to remove them and use an adhesive to secure them to the T-Arm again.
 - b. Clean the rubber cylinders to restore their grip.
 - c. Ensure that the arm is properly adjusted and there is sufficient pressure being put on the tier sheet to grab it. Adjust the height by loosening and adjusting the jam nuts on the middle threaded rod on the aluminum sweep pushers.

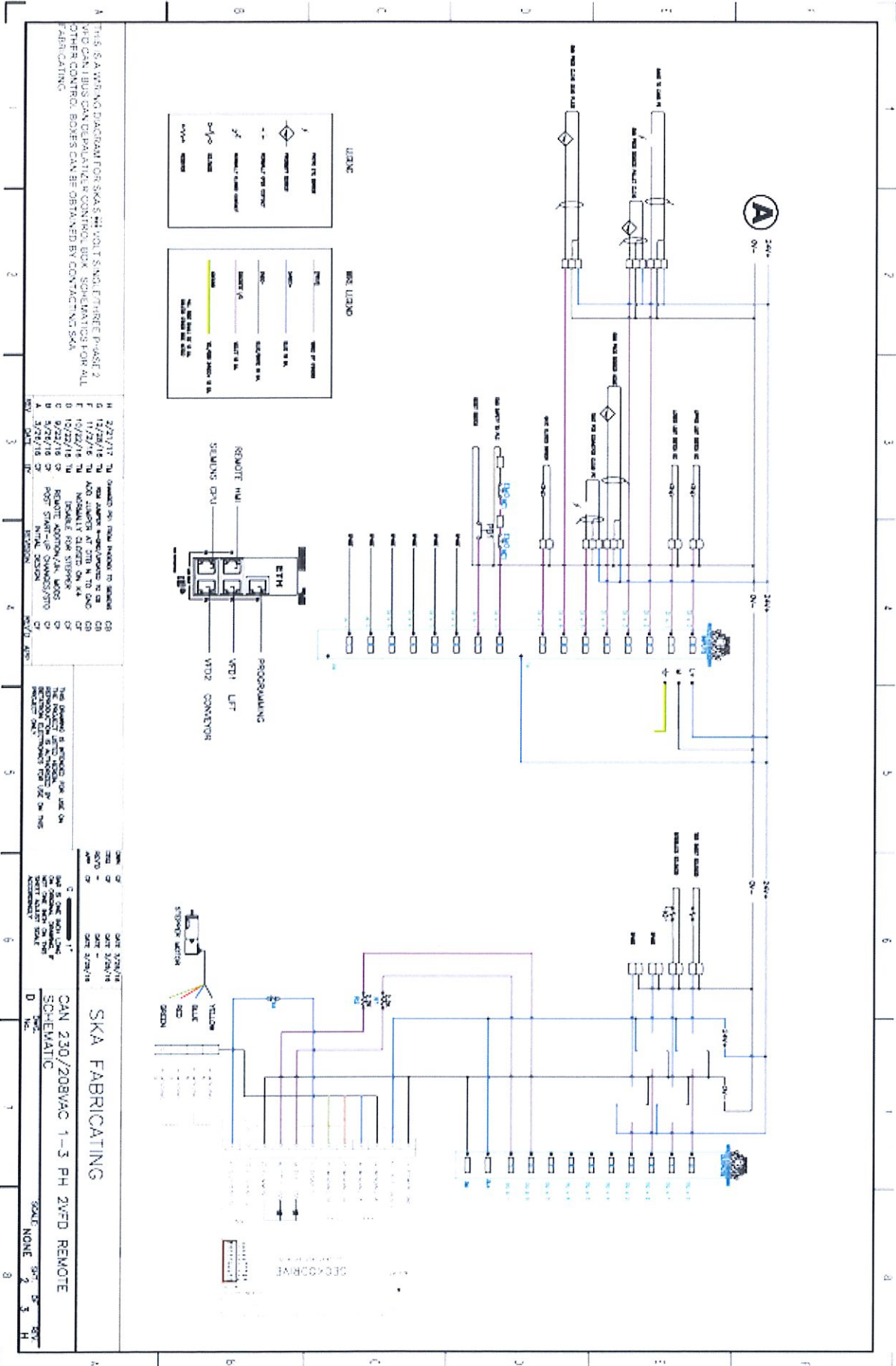
TROUBLE SHOOTING CONT.

- 6) **Cans are falling over as they are pushed onto the conveyor OR cans are being left on top of a tier sheet as it is being removed**
- a. Check to make sure CAN HEIGHT photo eye sensor is adjusted properly
 - i. In manual mode, raise a pallet of cans until the top of the top layer of cans is just below the top of the plastic dead plate.
 - ii. Now press and hold the button to raise the lift carriage until the lift carriage stops.
 - iii. If CAN HEIGHT photo eye is adjusted properly, the tier sheet directly underneath the top layer of cans should be slightly below the top of the plastic dead plate (to keep the tier sheet from sliding forward onto the dead plate).
- 7) **Sweep Carriage advances prematurely**
- a. Slightly adjust the frequency of the lift VFD. Very rarely the AC noise will affect the DC signal and cause the photo eye to falsely trigger when the pallet is rising.
 - b. Tune the can advance photo eye sensor
 - i. With the photo eye sensor mounted in place and pointing at its reflector press and hold the small button on the side of the sensor for at least five seconds.
- 9) **Lift Carriage lowers automatically before sweeping the last layer of cans**
- a. Loosen the two mounting bolts on the upper limit switch, move it up about 1/4" and re-tighten the mounting bolts.

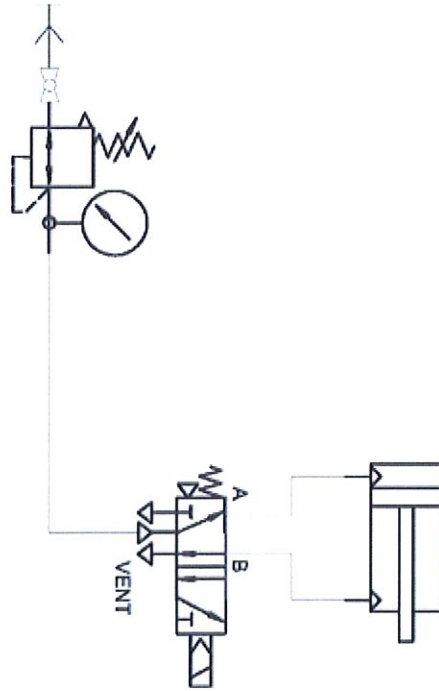
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21



PNEUMATIC DIAGRAM



NOTES: PNEUMATIC REQUIREMENTS - 3.5 bar (50 PSI) max. up to 1.4 bar (20 PSI)

THIS DRAWING AND ANY ATTACHMENTS TO THE DRAWING ARE EXCLUDED FROM THE PROJECT AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE PROJECT.



SFA FABRICATIONS
PNEUMATIC DIAGRAM

SB-SFA-XXX-07