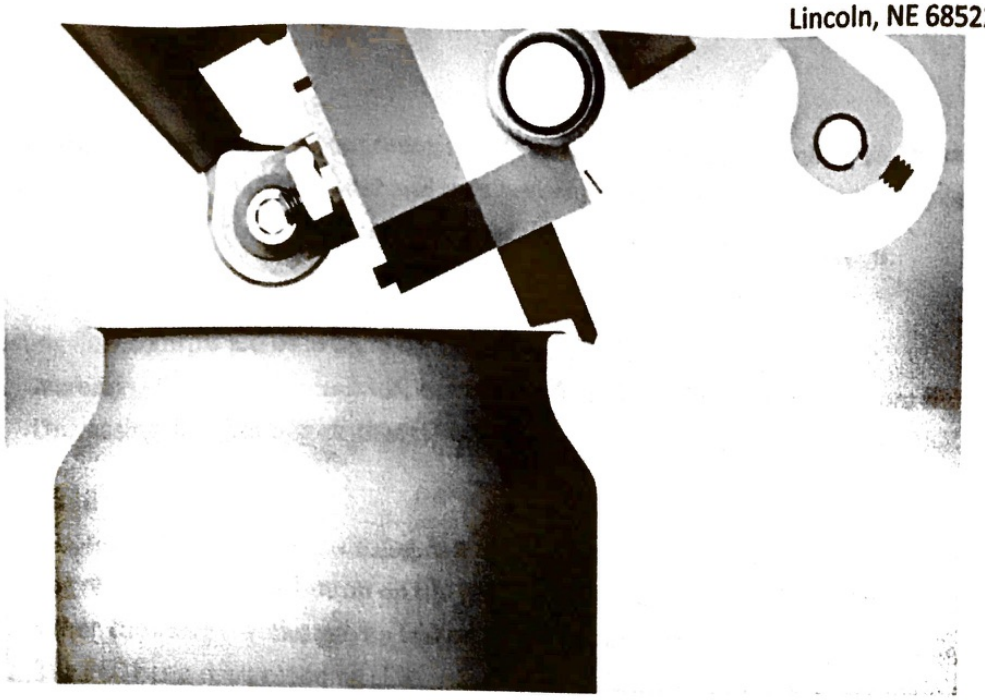


Figure 13. Proper Can and Lid Alignment

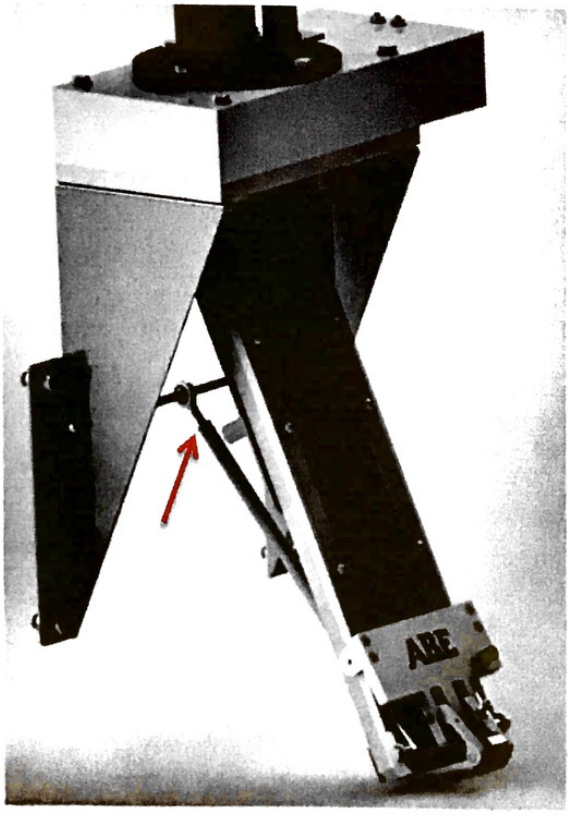


Figure 14. Lid-Escapement Adjustment

d) Lid-Tap

If the cylinder touches the lid during your manual testing, but not during a canning run, make sure your flow controls are not slowing down the cylinder and thus preventing it from quickly tapping the can. However, if you open them up too much, you may dent the lid or alter the can's top edge.

e) Other

a. Exahusting flow controls are used on many cylinders.
    a. Increasing flow (turning counterclockwise) will increase the flow exiting from the cylinder port.
    b. Decreasing flow (turning clockwise) will decrease the amount of flow exiting the cylinder.

e). Parker Manifold Videos

b. Troubleshooting a valve can be confusing, but made easier by knowing:
    a. Depressing the yellow button on the valve will manually activate the valve.
    b. When the valve is activated, an LED on the valve, will also light up
    c. The PLC has a corresponding LED
        i. When the valve is activated, the LED on the PLC will also actuate.
c. Here is a link for replacing valves from Parker:
   http://divapps.parker.com/divapps/pdn/static/moduflexVideo.html

f). E-Stop

a. If nothing turns on or "works", please check the E-Stop button has not been depressed. Go to the motor setup screen and clear any errors if present. The E-Stop must be reset by twisting it out of its depressed state many times.

9. Height Changeover

Your machine already comes with the ability to change from 12 oz cans to 16 oz cans and vice-versa. The main changes required include adjusting the height of the:

1. probe cylinder height
2. lid-escapement height
3. lid-tap height
4. lid-skimmer height
5. seamer (s)
6. post-rinse.

All of these changes are height based as long as the can diameter, 202/211, remains the same. If you change to a larger or smaller diameter, other changes may be required. Your machine can also fill and seam 24 oz cans. Several other modifications may be required. Please contact ABE for more information.

a. Probe Cylinder

The probe cylinder height must be adjusted so the probes are approximately 1/8" above the empty can (Figure 16). This is accomplished by move the set-collars on the cylinder rods ("Y" in Figure 17).

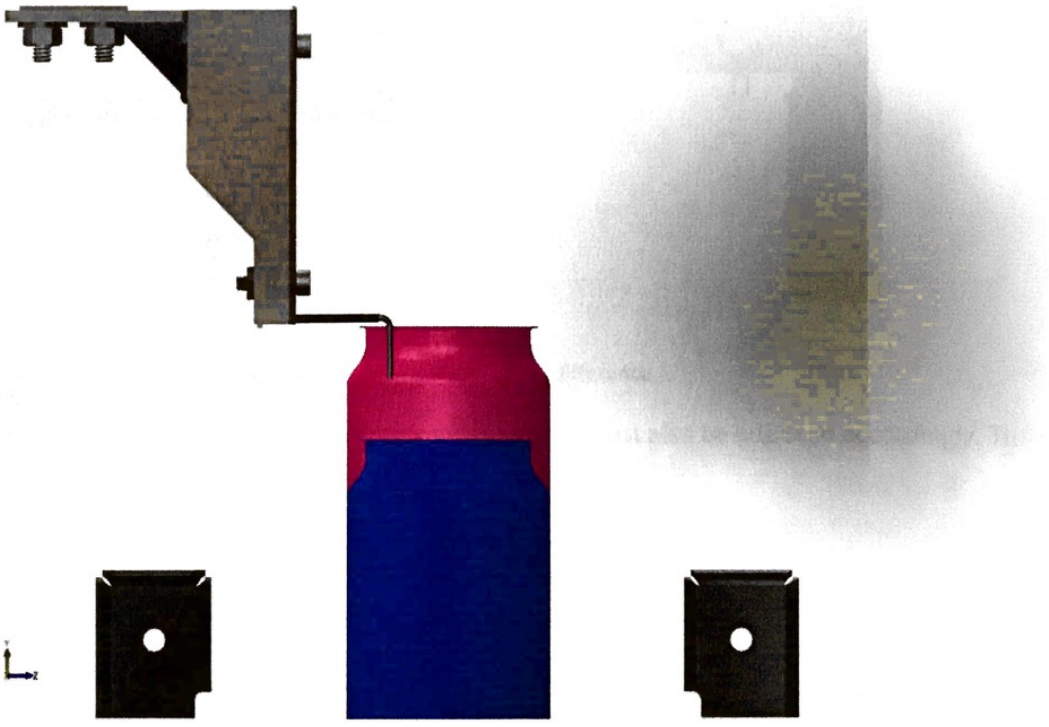


Figure 16. Probe height relative to can height.

Set collars are adjusted by loosening the set-screws in the collars, sliding the collars up or down the shaft, and then re-tightening.

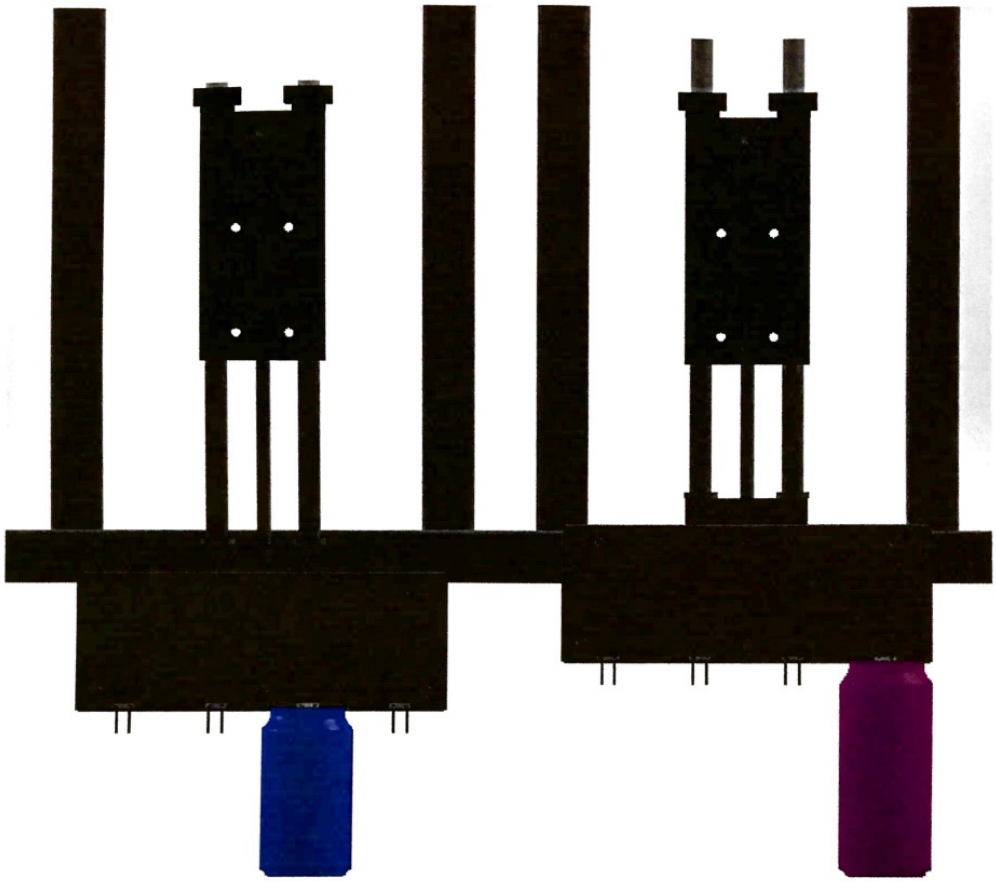


Figure 17 Probe assembly height difference

Lastly, if the probe cylinder height is adjusted, the corresponding sensor must also be adjusted accordingly. The sensor has a red LED that lights up when the cylinder's piston is near it.

There is a sensor at the top of the cylinder's stroke, as well as the bottom. When adjusting for different height cans, typically only the bottom sensor is adjusted. Therefore, the bottom sensor needs to light up at the end of the cylinder's stroke. The sensor uses an allen head to loosen and fasten in the cylinder's translating slot. The sensors are shown below.

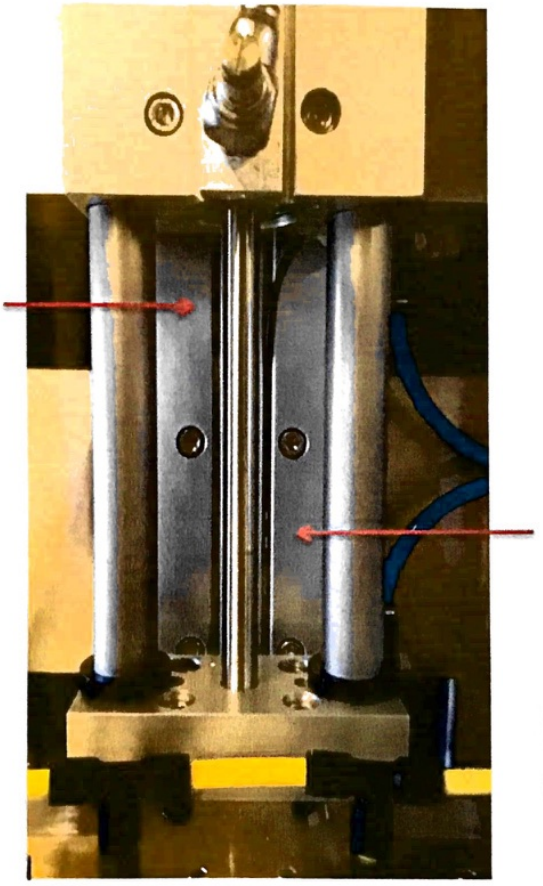


Figure 18 Probe sensors on probe cylinder

b. Lid-Escapement Height

Four bolts adjust the height of the lid escapement. Fine tuning of the height can be done with the swedge-rod in Figure 14. The swedge must be adjusted so the can fits perfectly in the pocket of the lid as shown. The swedge makes the adjustment process very convenient. Just loosen the jam nut at the top, twist the swedge, then tighten back down the nut. If the lids are too low, the cans will likely run into the lids and too many lids will fall out at a time. If the lid-chute is too high, no lids will be picks.

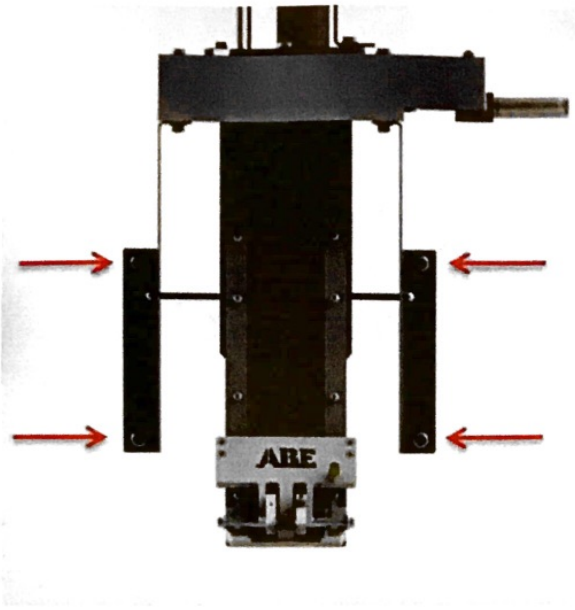


Figure 19 Lid-Escapement showing 4 bolts for adjustment

c. Lid-Tap Height

The lid tap cylinder can be adjusted by loosening two sets of bolts on either side of the cylinder. Loosen, move up or down, and then tighten back down. Loctite is suggested to be used.

Ideally, when the cylinder is fully extended, it will just barely touch the lid top when there is a lid on an empty can.

Tip: Extend the cylinder (Inputs/Outputs screen). Drop the cylinder onto the lid. Remove the can. Drop the cylinder about an 1/8" further down. Tighten the screws.

Tip 2: If the cylinder touches the lid during your manual testing, but not during a canning run, make sure your flow controls are not slowing down the cylinder and thus preventing it from quickly tapping the can. However, if you open them up too much, you may dent the lid or alter the can's top edge.

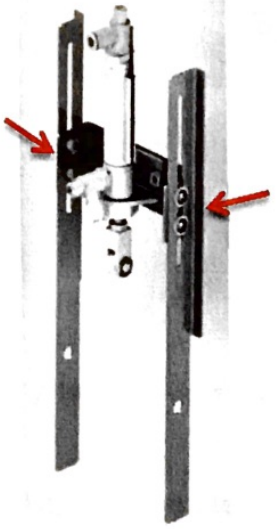


Figure 20 Lid Tap Assembly

d. Lid-Skimmer Height

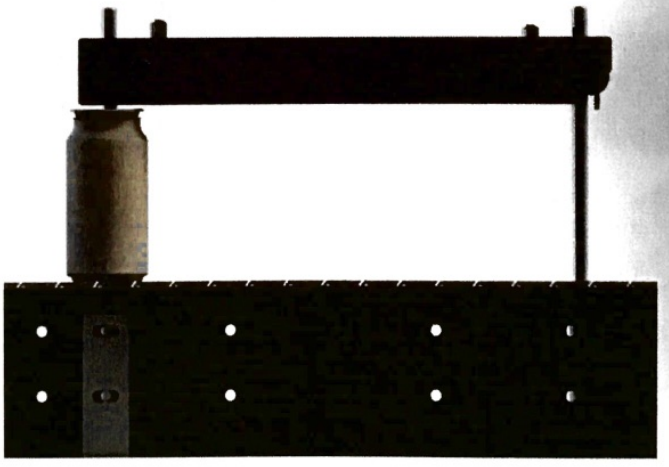


Figure 21 Lid Skimmer Assembly

The lid skimmer needs to sit just above the height of a full can. If foam is present, the front of the skimmer needs to just sit above the foamy lid.

The end of the skimmer should remain lower than the front of the skimmer. The end translates up and down while the front of the skimmer pivots. The end should be slightly lower than the height of a seamed can.

Adjustments for the height can be made using the adjustment knobs behind the black UHMW skimmer (Figure 22).

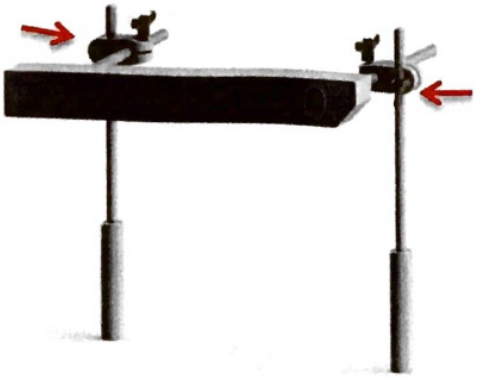


Figure 22 Skimmer adjustment knobs

e. Seamer (s)

Seamer height adjustment is done by inserting, or taking out an adapter, machined to the correct difference between the can sizes (Figure 23).

After the heights are changed, you must ensure, using your specific double seam guide, the cans are in spec. Refer to Double Seam Setup Procedures for more information.

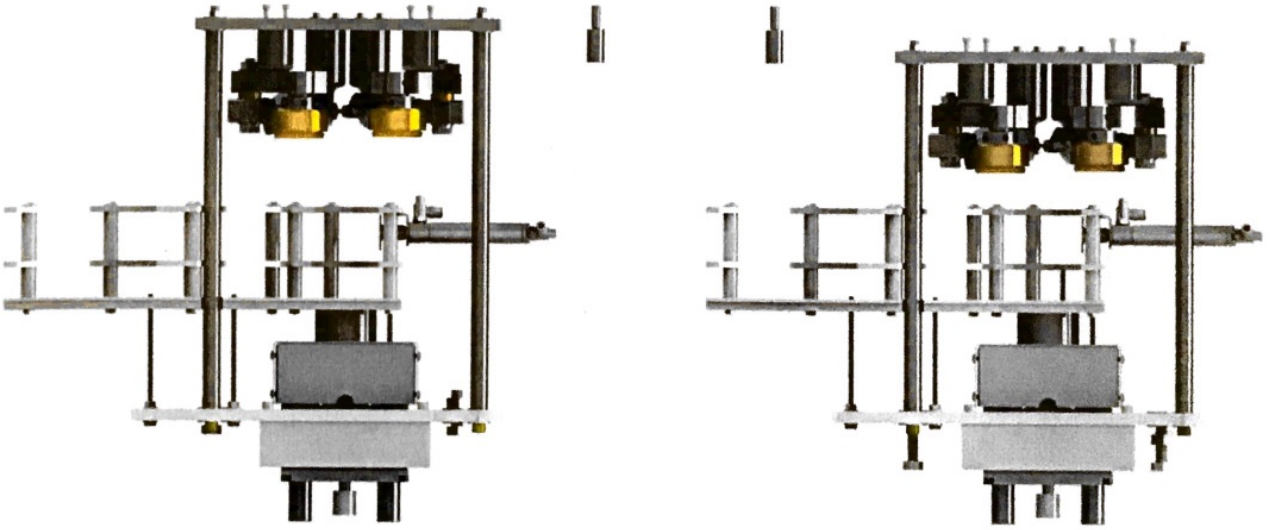


Figure 23 Seamer height difference between a 12 oz can (right) and 16 oz can (left) with the adapters shown in the middle.

f. Post-Rinse

The post rinse height is easily changed by loosening two allen head bolts and moving them up or down. Then, tighten the bolts. When the bolts are moved up or down, the corresponding air manifolds will also move accordingly above the cans (Figure 24).

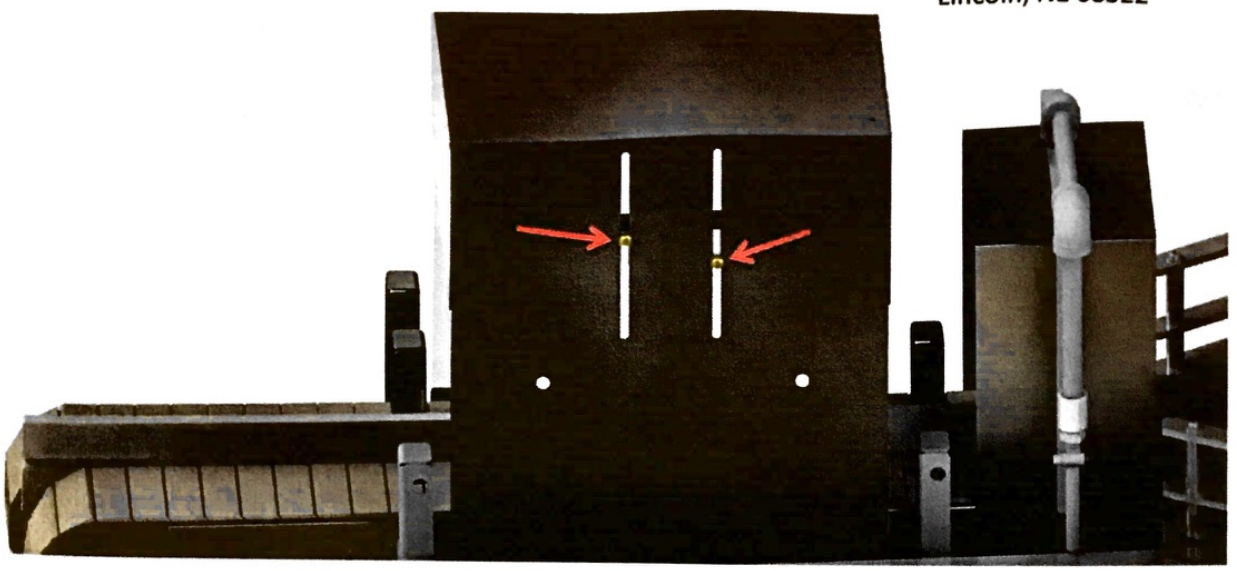


Figure 24 Post-Rinse height adjustment bolts

10. SAVED SETUP (RECIPES)

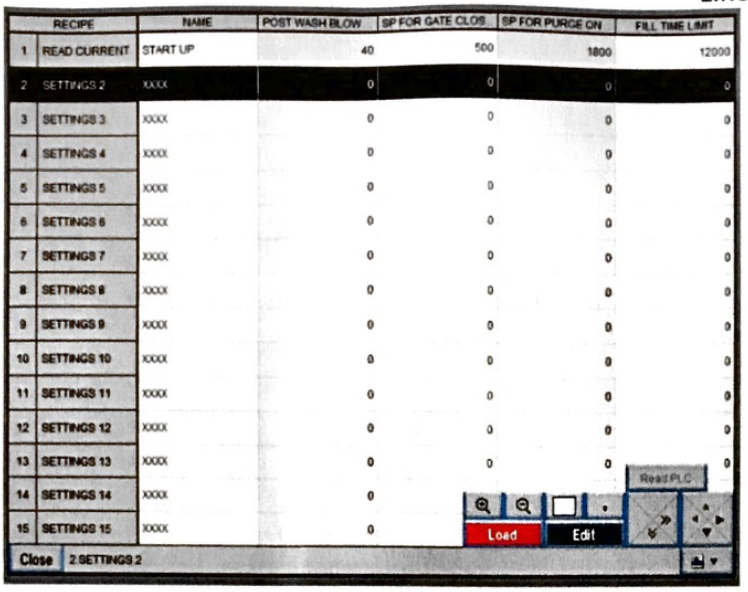
Different time setting profiles, or recipes, can be saved on the LinCan systems. This is valuable for different beers or can types. Once you like a specific profile, you can go back to it.

Figure 25 Saved Setup Screen

	RECIPE	NAME	POST WASH BLOW	SP FOR GATE CLOS	SP FOR PURGE ON	FILL TIME LIMIT
1	READ CURRENT	START UP	40	500	1800	12000
2	SETTINGS 2	XXXX	0	0	0	0
3	SETTINGS 3	XXXX	0	0	0	0
4	SETTINGS 4	XXXX	0	0	0	0
5	SETTINGS 5	XXXX	0	0	0	0
6	SETTINGS 6	XXXX	0	0	0	0
7	SETTINGS 7	XXXX	0	0	0	0
8	SETTINGS 8	XXXX	0	0	0	0
9	SETTINGS 9	XXXX	0	0	0	0
10	SETTINGS 10	XXXX	0	0	0	0
11	SETTINGS 11	XXXX	0	0	0	0
12	SETTINGS 12	XXXX	0	0	0	0
13	SETTINGS 13	XXXX	0	0	0	0
14	SETTINGS 14	XXXX	0	0	0	0
15	SETTINGS 15	XXXX	0	0	0	0

Close | START UP

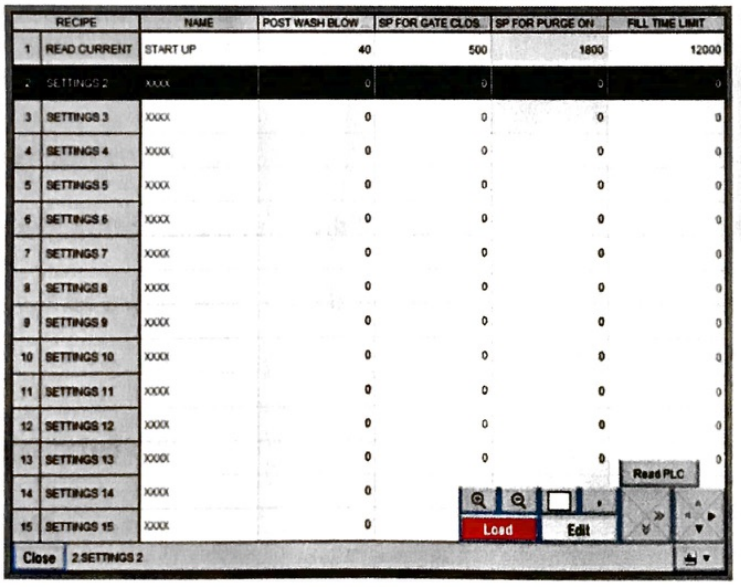
Figure 26 Main Timing Saves Screen



	RECIPE	NAME	POST WASH BLOW	SP FOR GATE CLOS	SP FOR PURGE ON	FILL TIME LIMIT
1	READ CURRENT	START UP	40	500	1800	12000
2	SETTINGS 2	XXXX	0	0	0	0
3	SETTINGS 3	XXXX	0	0	0	0
4	SETTINGS 4	XXXX	0	0	0	0
5	SETTINGS 5	XXXX	0	0	0	0
6	SETTINGS 6	XXXX	0	0	0	0
7	SETTINGS 7	XXXX	0	0	0	0
8	SETTINGS 8	XXXX	0	0	0	0
9	SETTINGS 9	XXXX	0	0	0	0
10	SETTINGS 10	XXXX	0	0	0	0
11	SETTINGS 11	XXXX	0	0	0	0
12	SETTINGS 12	XXXX	0	0	0	0
13	SETTINGS 13	XXXX	0	0	0	0
14	SETTINGS 14	XXXX	0			
15	SETTINGS 15	XXXX	0			

Read PLC
Load
Edit
Close
2:SETTINGS 2

Figure 27 Main Timing Saves Screen with Second Row Selected



	RECIPE	NAME	POST WASH BLOW	SP FOR GATE CLOS	SP FOR PURGE ON	FILL TIME LIMIT
1	READ CURRENT	START UP	40	500	1800	12000
2	SETTINGS 2	XXXX	0	0	0	0
3	SETTINGS 3	XXXX	0	0	0	0
4	SETTINGS 4	XXXX	0	0	0	0
5	SETTINGS 5	XXXX	0	0	0	0
6	SETTINGS 6	XXXX	0	0	0	0
7	SETTINGS 7	XXXX	0	0	0	0
8	SETTINGS 8	XXXX	0	0	0	0
9	SETTINGS 9	XXXX	0	0	0	0
10	SETTINGS 10	XXXX	0	0	0	0
11	SETTINGS 11	XXXX	0	0	0	0
12	SETTINGS 12	XXXX	0	0	0	0
13	SETTINGS 13	XXXX	0	0	0	0
14	SETTINGS 14	XXXX	0			
15	SETTINGS 15	XXXX	0			

Read PLC
Load
Edit
Close
2:SETTINGS 2

Figure 28 Main Timing Screen with Read PLC Button Live

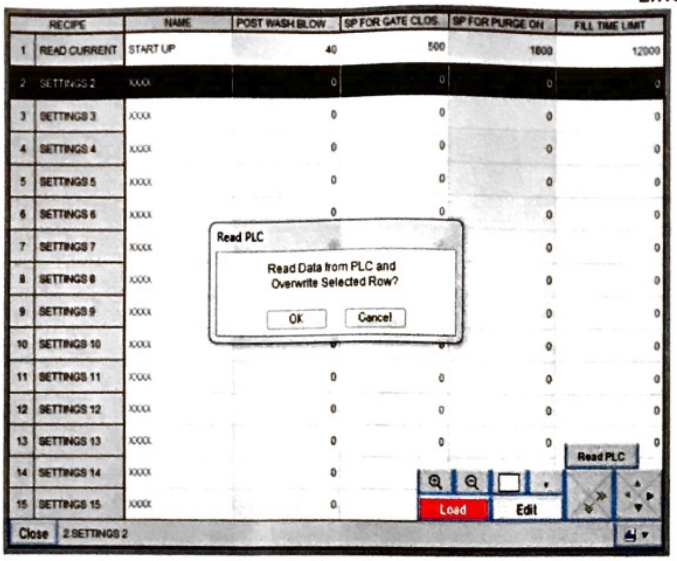


Figure 29 Main Time Saving Screen Asking to Read from PLC

New recipes can be saved by Saved setup screen

Pressing "Main Timing Saves" button brings up spreadsheet screen.

Select left column number to highlight entire row

Edit button will be black. Select edit button and it turns white and "read PLC" Button becomes live.

Select read PLC button and you will be asked "Read Data from PLC and Overwrite Selected Row?"

Choose "OK" to proceed.

All current data is sagved in the selected row.

On closing, you can choose to save.

11. Appendix

a. Time Settings

Figure 30 Time Setup HMI Screen

i. CCS ON DELAY
    i. Conveyor Clearance Sensor Delay (for feedtable)
ii. WASH ON TIME
    i. Post-Rinse on-time
iii. FILL TIME LIMIT
    i. Maximum allowable fill time
iv. NOZZLE RISE DELAY
    i. How long until nozzles retract from their extended filling position
v. GATE CLOSE DELAY
    1. Timing before inlet gate closes on the last incoming can
vi. PURGE ON TIME
    1. Amount of time for CO2 on in the filler area
vii. LID TAP ON DELAY
    1. How long before the initial lid tap extends
    ii. LID TAP ON TIME

1. How long to have the lid tap cylinder extended

iii. LINE FULL DELAY
   1. How long the line full sensor, near seamers, must have a can in front of it before it stops the filler.

iv. STACKUP DELAY
   1. Allowed time for incoming cans into filler (on inlet conveyor)

v. LID DROP ON TIME
   1. Lid drop cylinder extended time

vi. LID DROP DELAY
   1. Time until lid drop cylinder is retracted

vii. LID TAP SEAMER 1 ON TIME
   1. How long to have the lid tap at seamer one extended
   2. CAN LIFT1 ON DELAY
   3. Time until can lift extends into rotating chuck

viii. S1 ROLLER 1 ON TIME
   1. Time roller one, seamer one, is extended into the spinning can

ix. S1 ROLLER 2 ON TIME
   1. Time roller two, seamer one, is extended into the spinning can

x. CAN LIFT 1 OFF DELAY
   1. Amount of time before can is dropped after roller two is released from the spinning can

xi. POST-SEAMER CAN PUSHER ON TIME
   1. Amount of time the can push cylinder, after being seamed, is extended

b. Main Connections

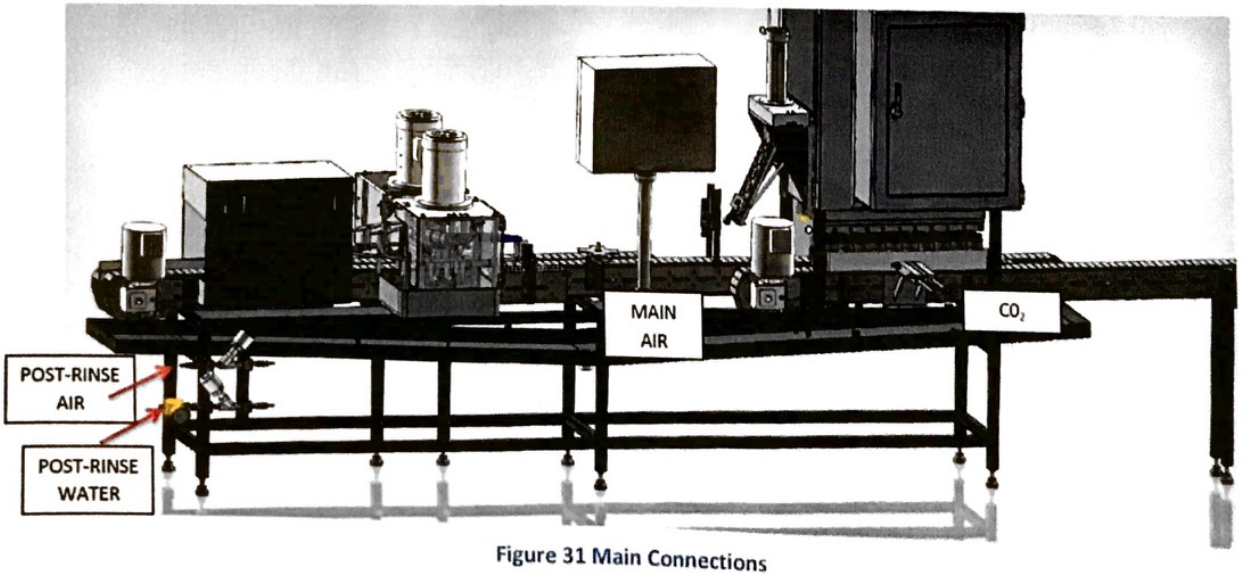


Figure 31 Main Connections

American Beer Equipment

2001 SW 6th St.
Lincoln, NE 68522

Production Start Up Sheet- American Beer Equipment			
Department		Date	
Product Being Produced		Raw Material #1	
Raw Material #2		Raw Material #3	
Can Component Number		Lid Component Number	
Case Component Number		Finished Product/SKU Number	
Total Number To Be Produced (cans, bottles, cases, etc.)		Verbal Description of Product Produced	
Process Leader's Name (please Print)		Lead Operator's Name (please print)	

Specific Start Up Check List			
Task Number	Leader Initials	Operator Initials	Pre-Run/Set-UpTask Description with Specific Detail Relative to Task, Measurements, Settings, outcomes critical to quality, safety, etc.
1			Ensure seamer cap screw for roller operation # 1 and roller operation #2 is tight - (Figure 6)
2			Ensure operation #1 and operation #2 seamer set screw, on canning line # 1 and canning line #2, is tight - (Spare Parts, Figure 1, #3)
3			Ensure seaming chuck set, including screw, is tight (Figure 6)
4			Ensure the complete seamer cylinder, and lower bearing assembly, bolts are tight (130 Nm). (Spare Parts, Part Number 100-121800)
5			Ensure lower seamer puck is not loose or wobbly (Figure 5)
6			Ensure flow control jam nuts are not loose across canning line.
7			Warm water wash any cylinder that has been exposed to beer. Special attention must be directed to the shuttle cylinder that moves cans into the seamers.
8			Lubricate (food grade lubricant) all cylinders following warm water wash.
9			Check for smooth cylinder operation (shuttle into steamer, filler nozzle, lid taps, seaming cylinders, etc.) and seaming rollers. If not traveling smoothly, repeated warm water wash and lubrication process.
10			Following warm water wash/lubrication, observe cylinder speed and adjust flow control. Travel rate of cylinder should be controlled and fast enough to achieve desired throughput rate, while also working to avoid erratic or overly aggressive rate that "throws" cans.

11			Ensure lid stack sleeve is full. (Spare Parts, Figure 6, # 24)
12			Ensure supply cans are ready to exit the de-palletizer or feed table and enter the canning line.
13			Perform Seam Check on three cans per seamer. Remove cans and conduct tear-down. Measure to ensure seam is in spec. Record data on can checklist (12. Double Seam Specs).
14			Ensure cans are present on the seamer pucks. (Spare Parts, Figure 2, #16)
15			Ensure beer lines and nozzles have properly been cleaned (Section 3)
16			Ensure lid picking area on end of lid chute contains no sticky beer and moves freely.

Task Number	
*	Detailed explanation/comments required for any task not completed or partially completed
	If a fastener is loose, the threads must be cleaned (with a cleaner/degreaser- Loctite Cleaner and Degreaser is recommended) and Blue Loctite (242,243, or similar) must be applied.

American Beer Equipment

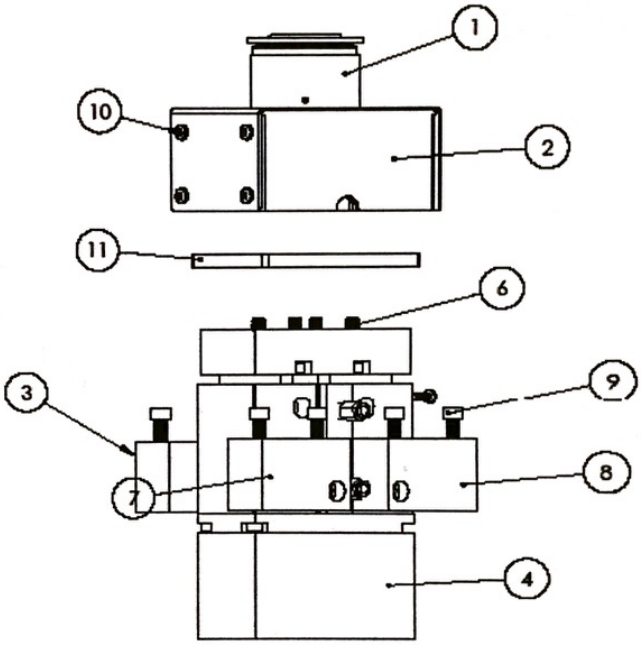
2001 SW 6th St.
Lincoln, NE 68522

Preventative Maintenance Worksheet

#	Task Description	Completed
1	Grease Seamer Rollers every 144 hours of use. Do not overgrease. Refer to Lincan Manual: Maintenance for more information. Changeout takes approximately 5 minutes plus seamer back into spec time.	
2	Check conveyor sprocket and teeth- Monthly. Inspection takes 10 minutes. Replacement takes 15 minutes or less.	
3	Check lower seamer bearings- (EXHIBIT 1, LINCAN, ABE: Figure 2, #13) Replace after 800,000 cans per seamer if needed. Approximatley 10 minutes or less to	
4	Check upper seamer bearings. Replace after 77.5 million cans per seamer if needed. Approximately 30 minutes to changeout.	
5	Check shuttle cylinder (EXHIBIT 1, LINCAN, ABE: Figure 4 ,#21). Replace after 2 million cans per seamer if needed. (4 million cans for two seamers). Change out	
6	Check seamer cylinder (EXHIBIT 1, LINCAN, ABE: Figure 1 ,#8). Replace after 20 million cans per seamer if needed (40 million cans per two seamers). Changeout	
7	Check 60 CPM filler cylinder (EXHIBIT 1, LINCAN, ABE: Figure 5 ,#24). Replace after 44 million cans if needed. Changeout takes approximately 30 minutes.	
8	Check lower seamer cylinder (EXHIBIT 1, LINCAN, ABE: Figure 2 ,#14). Replace after 10 million cans if needed. Changeout take approximately 45 minutes.	
9	Check Seamer cylinder "joints" near seamer arms to see if there is any play. Wear parts such as the bearings and washers (Spare Parts, Figure 1, #5)	
10	Fully scrub clean and sanitize fill head interior and exterior every year or 500,000 cans- whichever comes first.	
11	Replace 6mm beer tubing every three years or every 1,00,000 cans- whichever comes first. (Spare Parts, Figure 4, #23). Replace 6mm beer hose if any section has become kinked, deaply scrathed, or damaged.	

#	Detailed explanation/comments required for any PM task not completed or partially completed
1	
2	
3	

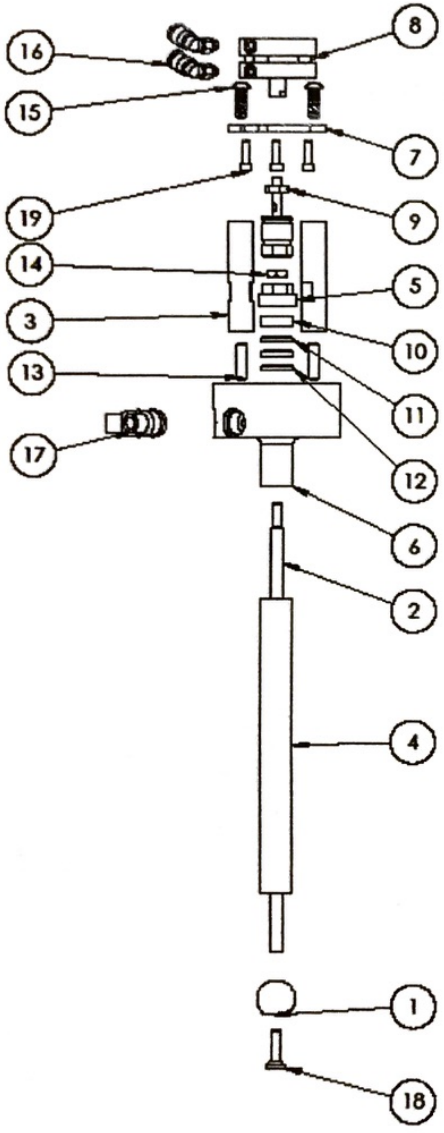
ITEM NO.	PART NUMBER	QTY.
1	100-121790 LOWER BEARING ASSEMBLY, SEAMER, ACF	1
2	SHROUD, LOWER BEARING, NEW STYLE, SEAMER, ACF	1
3	100-121615, BLOCK, MOUNTING, LOWER BEARING ASM, SEAMER, ACF	1
4	100-120355 CYLINDER, LOWER BEARING ASSEMBLY, SEAMER, STROKE ADJUSTMENT, PHD, ACF	1
5	STRAIGHT PUSH TO CONNECT	2
6	5/16-18 X 1-1/8" LONG SOCKET HEAD	4
7	100-121618, BLOCK, LEFT MOUNT, LOWER BEARING ASM, SEAMER, ACF	1
8	100-121619, BLOCK, RIGHT MOUNT, LOWER BEARING ASM, SEAMER, ACF	1
9	.3125-18 x 1.25 SS Socket Head Capscrew	6
10	FASSSPH0060 10-24 x .50 Pan Head Screw	8
11	100-121605 PLATE, MOUNTING, LOWER BEARING ASSEMBLY, SEAMER, ACF	1



NOTE:
NEW STYLE MOUNT WILL UTILIZE 100-121619 AND 100-121618. OLD STYLE WILL UTILIZE 100-121617 (NOT SHOWN)

DRAWN BY	MJH	NORLAND INTERNATIONAL
DRAWN DATE:	4/14/2014	2001 SW 6th St. - Lincoln, NE - 68522 - (402) 441-3737
REF#: 100-121800		ASSEMBLY
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: ±0.0625		ASSEMBLY, COMPLETE CYLINDER & LOWER BEARINGS, SEAMER, ACF
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF NORLAND INTL.	SIZE B	PART NO 100-121800 / ASSY REV.: A-00
3RD ANGLE	SCALE: 1:3	SHEET 1 OF 1
LAST SAVED BY:	LAST SAVED ON:	

2001 SW 6th St.
Lincoln, NE 68522



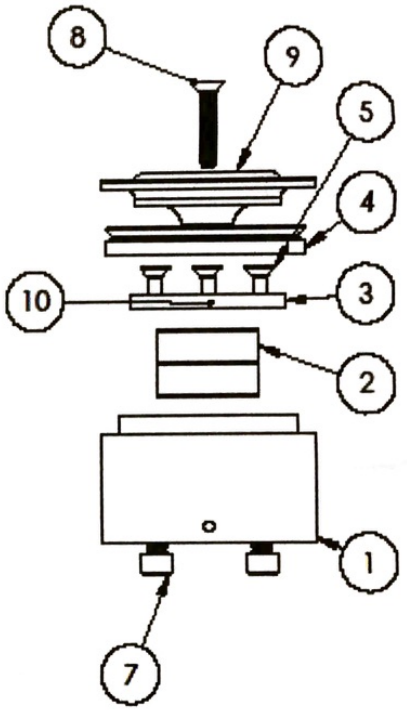
ITEM NO.	PART NUMBER	DESCRIPTION	Default/ QTY.
1	100-125000 PLUG, BALL, 0.625 OD INCHES, BEER FILLER NOZZLE, 9614K25 MCMA	PLUG, BALL, NOZZLE, FILLER, ACF	1
2	100-125016 VALVE STEM, BEER FILLER NOZZLE	VALVE STEM	1
3	100-125004 stand off, beer filler nozzle	STAND OFF, NOZZLE, FILLER,ACF	2
4	100-125010 NOZZLE TUBE	TUBE, NOZZLE, FILLER, ACF	1
5	100-125012 PLUG, PACKING, BEER NOZZLE FILLER	PLUG, PACKING, NOZZLE, FILLER, ACF	1
6	100-125013 nozzle body, beer filler nozzle	NOZZLE BODY, FILLER, ACF	1
7	100-125014 Plate, cylinder mount, beer filler nozzle	PLATE, CYLINDER MOUNT, NOZZLE, FILLER,ACF	1
8	100-125025 CYLINDER, FLAT, 0.75 IN BORE, 0.25 STROKE, SS FASTENERS, THREADED FRONT AND REAR MNTING HOLES, BIMBA FO_040_25_3S, ACF	Cylinder, 1/4" stroke, 3/4" Bore	1
9	100-125032 COUPLER, ALIGNMENT, 10-32, SS, BIMBA AC10_32_SS	ALIGNMENT COUPLER, 10-32, SS	1
10	100-125002 ADAPTER, V-RING, 0.25 X .625 INCH FEMALE ADAPTER, MCMA 9572K61	V-RING SEAL, 1/4" X 5/8", FEMALE ADAPTER	1
11	100-125003 V-RING, 0.25 X .625 INCH MALE ADAPTER, MCMA 9572K62	V-RING SEAL Ø1/4 X Ø5/8	2
12	100-125002 ADAPTER, V-RING, 0.25 X .625 INCH MALE ADAPTER, MCMA 9572K61	V-RING SEAL Ø1/4 X Ø5/8 MALE ADAPTER	1
13	10-32 X .75 SOCKET SET SCREW CUP POINT	10-32 X .75 SOCKET SET SCREW CUP POINT	2
14	FASNHEX0062 #10-32 SS Hex Nut	#10-32 SS Hex nut	1
15	10-32 x 0.625 button head cap screw	10-32 X 0.625 BUTTON HEAD CAP SCREW 92949A244	2
16	201-201132 369PLP-5_32-0 ELBOW 90 PTC 5_32ND X 10-32 201-201132	FITTING, 5/32 TUBING X 10-32 MALE 90° ELBOW PUSH TO CONNECT	2
17	100-125038 CARTRIDGE, FITTING, 6MM ID, SS, LEGRIS	CARTRIDGE, FITTING, 6MM ID, SS, LEGRIS 3800-06	2
18	10-32 X .75 LONG SS FLAT HEAD SCREW		1
19	6-32 x 0.5 SOCKET HEAD CAP	73415 FSKU	4

DRAWN BY	ARP	AMERICAN BEER EQUIPMENT	
DRAWN DATE:	3/4/15	2001 SW 6th St. - Lincoln, NE - 68522 - (402) 441-3737	
		ASSEMBLY Nozzle Assembly	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: ± 0.0625			
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF NORLAND INTL.		SIZE B	PART NO 100-125000	ASSY REV.: A-02
3RD ANGLE		SCALE: 2:5	SHEET 1 OF 1
LAST SAVED BY: Alp		LAST SAVED ON: 3/4/2015	

2001 SW 6th St.
Lincoln, NE 68522

ITEM NO.	PART NUMBER	QTY.
1	100-121600 HOUSING, LOWER BEARING ASSEMBLY, SEAMER, ACF	1
2	100-121660 BEARING, LOWER BEARING ASSEMBLY, SEAMER, ACF	2
3	100-121620 RETAINER, LOWER BEARING ASSEMBLY, SEAMER, ACF	1
4	100-121650 SEAL, LOWER BEARING ASSEMBLY, SEAMER, ACF	1
5	100-121680 8-32 X 0.5 FLAT HEAD	3
7	FASBSAH0035 .25-20 x .50 Long SS Socket Head Capscrew	4
8	10-24x1 FLAT HEAD	1
9	100-121630 PUCK, CROWN, LOWER BEARING ASSEMBLY, SEAMER, ACF	1
10	100-121610 SHAFT, LOWER BEARING ASSEMBLY, SEAMER, ACF	1

NOTE: CORRECT "PUCK" (#9) IS DETERMINED BY CAN
100-121630: 12 oz CROWN, 16 OZ BALL
100-121640: BALL/REXAM "OLD STYLE"
100-121641: REXAM "NEW STYLE"
100-121645: 24 OZ REXAM



DRAWN BY	MJH	AMERICAN BEER EQUIPMENT	
DRAWN DATE:	4/14/2015	2001 SW 6th St. - Lincoln, NE - 68522 - (402) 441-8737	
		ASSEMBLY	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: ± 0.0625		LOWER BEARING ASSEMBLY, SEAMER, ACF	
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF NORLAND INT'L.		SIZE A	PART NO 100-121790	ASSY REV.: A-00
3RD ANGLE		SCALE: 1:2	SHEET 1 OF 1	
LAST SAVED BY: MichaelH		LAST SAVED ON: Tuesday, April 21, 2015 3:40:22 PM	