Spindle Capper Operation Manual

V1.5

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1.1 SAFETY

1.2 GENERAL SAFETY

Apex Filling Systems, LLC (APEX) manufactures and designs all of its products so they can be operated safely. However, the primary responsibility for safety rests with those who use and maintain these products. The following safety precautions are offered as a guide that if conscientiously followed, will minimize the possibility of accidents throughout the useful life of this equipment. The safety of personnel, equipment and plant facilities should be considered during equipment operation and with each changeover of product, or any machine modifications.

Only those who have been trained and delegated to do so and have read and understood this operator's manual should operate the equipment. Failure to follow the instructions, procedures and safety precautions in this manual can result in accidents and injuries.

DO NOT modify the equipment except with written factory approval. Unauthorized equipment modifications will void the warranty.

Each day walk around the equipment and inspect for leaks, loose parts, missing or damaged components, and parts out of adjustment. Perform all recommended maintenance noted in this manual.

EQUIPMENT SHOULD ALWAYS BE DE-ENERGIZED (POWER AND AIR) BEFORE MAKING MECHANICAL ADJUSTMENTS.

1.3 ELECTRICAL SHOCK

- To avoid electrical shock hazard, make sure this equipment is properly grounded.
- Dangerous voltages are present within the electrical enclosures. DO NOT operate this equipment with electrical covers open or removed.
- Keep all parts of the body, hand held tools, or other conductive objects away from exposed live-parts of the electrical system. Maintain dry footing and stand on insulating surfaces. DO NOT contact any portion of the equipment when adjusting or making repair to exposed live parts of electrical system.
- Attempt repairs only in a clean, dry, well-lighted, and ventilated area.

1.4 CONTACT MATERIALS COMPATIBILITY

APEX endeavors to make all contact parts compatible with buyer's products, if known. Because of the wide variety of possible products, Apex Filling Systems, LLC cannot be responsible or liable for ensuring compatibility of contact material with the products. Evaluate material compatibility prior to machine use. Failure to follow this procedure can result in machine damage, fire, operator injury or death.

1.5 SAFETY COMPLIANCE LIABILITY

APEX endeavors to make machinery as safe to operate as possible. National, state and local laws related to safety in the workplace apply primarily to the responsibilities of the employer, and not the equipment manufacturer. The seller agrees to cooperate with the buyer in finding feasible answers to compliance problems. However, because APEX has little control of the many factors which may significantly affect the environment in which this equipment is installed, the seller does not warrant this equipment to be in compliance with OSHA or any like state or local laws or regulations. It is the buyer's responsibility to provide the modifications necessary to assure compliance with the laws and regulations at the point of installation. ***A complete inspection of product is necessary until the machinery is proven to produce acceptable results. This should also be performed after every changeover.***

1.6 CONVENTIONS

To ensure the safety of personnel which will install, adjust, maintain and operate this equipment, it is imperative that they understand the dangers, warnings and caution notices. It is important to understand the **signal words** that may be used throughout this manual.

	Alerts to immediate hazard, which will result in death or severe personal injury, if not avoided
	Alerts to a hazard which will result in serious injury, or death in some cases, if not avoided.
	Alerts to a potential hazard that may result in a serious personal injury, if not avoided. It also alerts against an unsafe practice that will permanently damage equipment or property.
IMPORTANT	Indicates a suggestion as to how to use or adjust the equipment for best product results.
NOTE	Points out a proper use that will avoid damage to the equipment, or will extend the life of the parts.

2.1 MACHINE FEATURES & SPECIFICATIONS

2.2 INTRODUCTION:

APEX spindle cappers are designed to be easy to setup and maintain, capable of providing years of reliable service. Versatile by design, APEX cappers can accommodate a wide variety of cap and bottle configurations, often without the need for change parts. Modular design allows for fully automatic systems, semi-automatic cap tighteners or used as a re-torqueing device typically used downstream from an induction sealer. Tool-less adjustments are standard, and allow for easy and quick changeover for various bottle and cap combinations. Operator controls are easily accessed via the front panel of the unit.

2.3 FEATURES & BENEFITS

- **Easy Changeover**
  Simple mechanical adjustment for different bottle sizes. Quick to changeover, simple to use and easy to clean
- **Robust**
  Anodized aluminum and stainless steel shells, frames, legs and housings maximize the working life of your machine, and minimize maintenance costs and downtime
- **Customizable**
  Whatever the production need, APEX has a design to meet
- **Flexible**
  Versatility and Simplicity are intrinsic to the design. Many container sizes and shapes, and many products can be run on one machine

2.4 PERFORMANCE SPECIFICATIONS

Capping Speed: up to 200 cpm (varies per application)
Operating Temperature: 32 to 122 Degrees F (0 to 50 Degrees C) / 10% to 95% RH (non condensing)

2.5 MECHANICAL DIMENSIONS & LOADING

Standard Dimensions (ref): (42”L x 41”W x 68”H)

Approximate Shipping Weight: (1325 lb / 600 kg)
Weight can vary considerably with options.

2.6 ELECTRICAL SPECIFICATIONS & REQUIREMENTS

Electrical Requirements: Standard - 240VAC / 50/60Hz / 1Φ / 30A
Other voltages available per application

2.7 AIR SPECIFICATIONS & REQUIREMENTS

Compressed Air Consumption: Standard configurations require no compressed air, optional accessories may. Refer to machine specific documentation if applicable.

3.1 INSTALLATION & START-UP

3.2 INSTALLATION PROCEDURES

The capping unit should be placed on a solid, level foundation, centered over the container conveyor. The main capper head should be leveled using the threaded leveling pads which should be adjusted so that the machine's caster wheels are raised off of the floor for stability during operation. Electrical connections should be properly terminated into the main electrical enclosure by properly trained technicians, and appropriate supply voltage, proper phase and adequate supply amperage should be verified prior to powering up the equipment.

3.3 START-UP & COMMISSIONING

This manual should be read completely before powering-up the machine. Commissioning of the machine should be performed by a trained technician only after complete understanding of the machine, and with products that match samples indicated to Apex Filling Systems, LLC if supplied. After the machine is adjusted for the bottle and cap combination, the machine can be put into operation with the following steps.

- Check the machine to see that guards are in place.
- Check the mechanical system for loose or missing parts.

1. Ensure the E-STOP button is depressed, and the unit is clear of personnel.

Figure 3-1
Emergency Stop

2. Remove any lock-out/tag-out devices and rotate the main power disconnect clockwise to ON

Figure 3-2
Main Disconnect

3. Rotate E-STOP button clockwise

4. Press the green RESET POWER button to power the gripper belt, spindle and (optional) conveyor drive motors

Figure 3-3
Power Reset

5. Turn on the power to the conveyor and gripper belts.
Verify that they are moving at the same speed. Adjust as necessary.

Figure 3-4
Gripper Belt Controls

Figure 3-5
Conveyor Controls

6. Verify that a sufficient number of caps are available in the cap chute (if installed) and feed one container into the machine.

7. Verify that the cap is properly placed (automatic) and properly completed (auto and semi-auto units)

8. If adjustment is needed, see following section (Sec 4.1) for mechanical adjustments

4.1 MECHANICAL ADJUSTMENTS

4.2 THEORY OF OPERATION

APEX spindle cap completion units can be paired with various cap sorting units to automatically sort and apply screw caps onto a wide variety of containers, or utilized as a cap tightener, providing consistent torque to caps that are placed on containers prior to the cap completion unit. Motor driven gripper belts guide containers securely through the cap completion unit while opposing sets of polyurethane discs rotate the caps into place. Consistent torque is achieved using mechanically clutched spindle sets for the final set.

There are two primary sections to note regarding its function:

- Cap Completion Unit Adjustments
- Cap Chute Adjustments

4.3 CAP COMPLETION UNIT ADJUSTMENTS

- **CAPPING UNIT HEIGHT ADJUSTMENT**

The capper is equipped with a power height actuator for ease of adjusting the height of the capping head. The unit should be adjusted so that containers can pass underneath the unit, and the polyurethane spindles contact the cap to rotate it downward onto the container neck.

Figure 4-1
Power Height Controls

- **SPINDLE WHEEL ADJUSTMENT (FIRST SET, DIRECT DRIVE)**

Capping units typically provide separate controls for the first set of spindles, and their rotation can be reversed. This is helpful to properly seat caps that tend to cross-thread with standard rotation, allowing the remaining sets to complete the cap.

Figure 4-2
Spindle One Controls

All of the spindles can be adjusted in and out via the knobs on the front panel. First, unlock the toggle clamp holding the shaft in place, and rotate the knobs clockwise to move them toward the cap, counter-clockwise to move them away from the cap. Lock the spindles with the toggle clamp once the spindle depth is set.

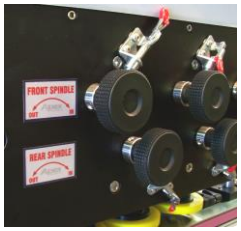

Figure 4-3
Spindle Width Adjustment

If the height of individual spindles needs to be adjusted relative to each other, loosen the lock collar at the top of the individual shafts and slide up or down as needed.

Figure 4-4
Individual Spindle Height Adjustment

- **SPINDLE WHEEL ADJUSTMENT (SECOND, THIRD AND CLUTCHED SET)**

A typical capping unit provides separate speed and directional controls for the second set of spindles through the final set. These spindles are non-reversible except in very specialized applications. They are manually adjusted in and out exactly like the first set (shown in ***fig. 4-3***). The final set of spindles utilizes mechanical clutches (shown in ***fig. 4-5***) allowing the operator to set final torque, eliminating cap scuffing by allowing the spindles to stall if the cap has already met its required torque. Rotate the ring on the top of the clutch clockwise (looking from top-down) to increase the application torque, and rotate counter-clockwise to decrease the application torque.

Figure 4-5
Clutched
Spindle

- **CAP STABILIZER (OPTIONAL) ADJUSTMENT**

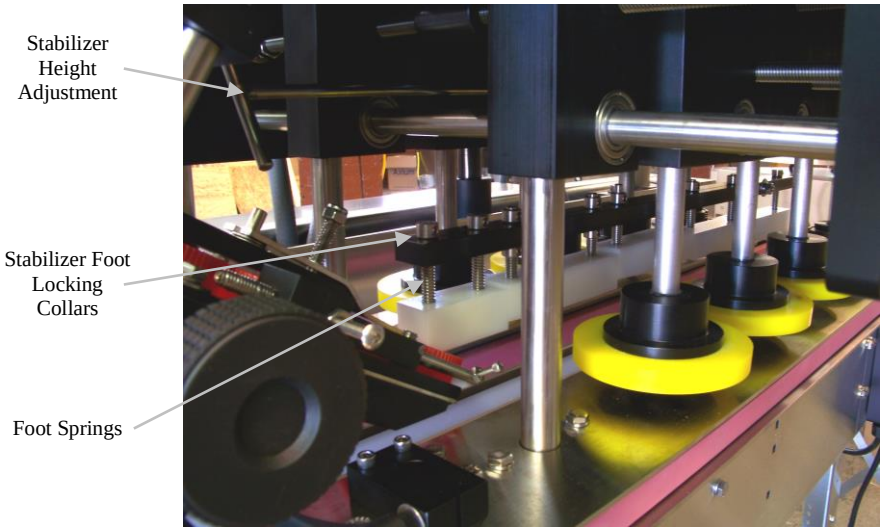

Figure 4-6
Cap Stabilizer

As shown in ***fig. 4-6*** a stabilizer assembly is mounted in a 4-station capper to assist placing caps from a cap chute. The entire stabilizer assembly height can be adjusted by loosening the Height Adjustment T-knob and sliding up or down as needed. Individual Stabilizer feet (four individual feet shown in ***fig. 4-6***) can each be raised or lowered by loosening the Locking Collars shown, and sliding up or down as needed to properly control the cap as it is threaded onto the container. Stabilizer feet are typically assisted by spring tension, allowing variation in cap placement, while providing consistent downward pressure.

- **GRIPPER BELT HEIGHT ADJUSTMENT**

Adjusting the gripper belt height relative to the capping head is as simple as rotating the wheel, located on the side of the housing clockwise to raise, and counter-clockwise to lower. Generally, gripper belts control containers best when adjusted to grip toward the top of the container, however, depending upon the design of the container, other places on the container may be more rigid, allowing the gripper belts to be set tighter, and therefore have better control of the container while the cap is applied.

Figure 4-7
Gripper Belts
Height
Adjustment

- **GRIPPER BELT WIDTH ADJUSTMENT**

  Adjusting the gripper belt tightness on the container is achieved by rotating the wheel on the front of the machine, clockwise to tighten, counter-clockwise to loosen. The container must be effectively controlled while capping, however, if the gripper belts are too tight, they may cause product to spill out, crushing the container in the process. This is why it is typically helpful to set the gripper belt height to contact the container at its most sturdy point, allowing the gripper belts to be as tight as possible, without crushing the container.

Figure 4-8
Gripper Belts Width Adjustment

- **DOUBLE GRIPPER BELT SPACING ADJUSTMENT (OPTIONAL)**

  Adjusting the distance between the upper and lower gripper belts is accomplished by loosening the knobs on the four lower gripper belt assembly mount blocks (two on the entry side and two on the exit) and sliding the lower assembly up or down as needed. Double gripper belts are extremely helpful to control tall containers or otherwise difficult to control containers.

Figure 4-9
Double Gripper Belts Height Adjustment

- **CAPPING UNIT MAINTENANCE PROCEDURES**

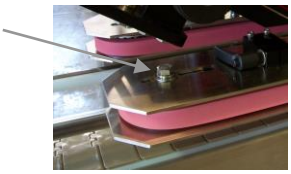

Figure 4-10
Idler Pulley Mount Bolt

  - **GRIPPER BELT REPLACEMENT**

    1. Power off the machine and utilize proper lock-out/tag-out procedures.
    2. Loosen the idler pulley mounting bolt as shown in ***Fig 4-10***
    3. Slide the idler pulley forward to provide slack in the belt
    4. Remove the belt, starting from the drive pulley side
    5. Reverse steps, replacing with new belt
    6. Belt should be adjusted taut, but not over-tightened.
       Generally speaking, with the unit powered down, an index finger should be able to fit snugly between the belt and the carryway without pinching tightly, and belt should have no sag between drive and idler pulleys.

  - **SPINDLE WHEEL REPLACEMENT**

    1. Power off the machine and utilize proper lock-out/tag-out procedures.
    2. Remove the screws on the underside of the spindle, allowing for the lower retaining plate to be removed
    3. Slide the existing disc off the hub and replace with new disc
    4. Replace retaining plate and tighten mount screws.

- **CAPPING UNIT MAINTENANCE PROCEDURES (CONT.)**

  - **DRIVE SHAFT & MOTOR REMOVAL/REPLACEMENT**

Figure 4-11
TorqLOC Shaft
Mount

1. Power off the machine and utilize proper lock-out/tag-out procedures.
2. Remove capper access panels
3. Remove 2 screws holding Shaft Mount Dust Cover as shown in ***Fig 4-11***
4. Using a 4mm allen wrench, remove the 6 screws which clamp the Shrink Disc to the Counter Bushing
5. Using 3 of the screws removed in step #4, thread into remaining tapped thru holes, tightening in a clockwise pattern to evenly press out and loosen the outer Shrink Disc from the Counter Bushing
6. When the Counter Bushing is sufficiently loose from the shaft, remove gearmotor and/or shaft for replacement
7. Reverse above steps to reinstall gearmotor and shaft assembly
8. Replace the Shrink Disc and Counter Bushing, using a rubber mallet to seat
9. Tighten 6 screws in a clockwise manner to 3 ft/lb / 36in/lb
10. Replace Dust Cover mount screws
11. Replace capper access panels.

- **CAPPING UNIT MAINTENANCE PROCEDURES (CONT.)**

  - **SPINDLE AND GRIPPER BELT GEARBOX AND BEARING REPLACEMENT**

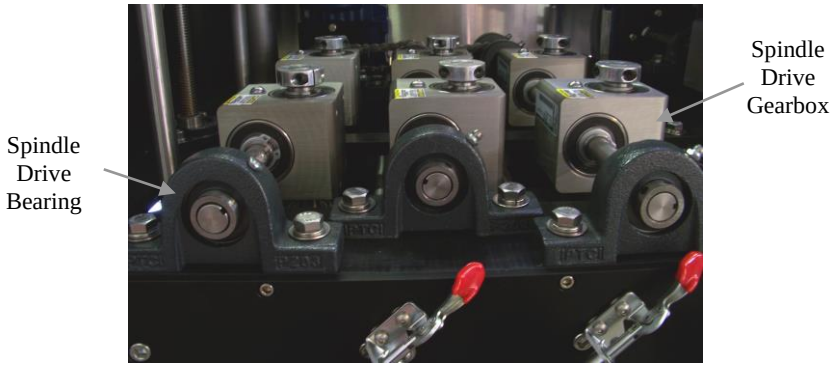

Figure 4-12
Spindle Bearings
& Gearboxes

1. Power off the machine and utilize proper lock-out/tag-out procedures.
2. Remove capper access panels.
3. To replace bearings, first support/block-up the horizontal shafts
4. Remove the two bolts securing the bearing to the housing
5. Remove and replace bearing assembly and re-tighten bearing mount bolts
6. To replace spindle gearboxes, first, remove vertical spindle shafts by removing lock collars on the top of the shafts, and slide spindle shaft assemblies down and out of the gearbox(note may need to Fully remove spindle hub, rear gripper and or raise the capper head)
7. Support/block-up horizontal shafts
8. Remove bearings by removing the two bolts securing the bearing assembly to the capper housing
9. Slide existing gearbox out and replace.
   Verify proper gearbox orientation prior to reassembly (left or right hand)
10. Replace bearing assembly and bolt down securely
11. Slide vertical spindle shafts back through gearbox and replace lock collars, verify lock collars are at the proper height for the spindles
12. Replace capper access panels.

4.4 CAP CHUTE ADJUSTMENTS

- **CHUTE HEIGHT ADJUSTMENT**

The cap chute can be adjusted up and down by rotating the knob attached to the threaded rod on the chute mount assembly. This makes for simple fine-tune adjustments to the depth of the cap pickoff.

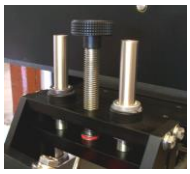

Figure 4-13
Chute Height Adjustment

- **CHUTE WIDTH ADJUSTMENT**

The cap chute's width can be adjusted in and out by rotating the knob on the front side of the chute. The width should be adjusted for the outer diameter of the cap such that the caps can easily slide down the chute, but not so loosely that they are able to pile side by side or "shingle"

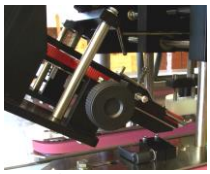

Figure 4-14
Chute Width Adjustment

- **CAP HOLD DOWN RAIL ADJUSTMENT**

The top of the cap is guided by an anodized aluminum rail, adjusted by a threaded rod mount. Two knobs adjust the rail up and down, and lock it into place. As with the chute width, caps should be allowed to move smoothly and easily down the chute. The top rail should not be adjusted too high that caps are allowed to climb on each other as they travel down to the pickoff point.

Figure 4-15
Cap Hold Down Rail

- **CHUTE ANGLE ADJUSTMENT**

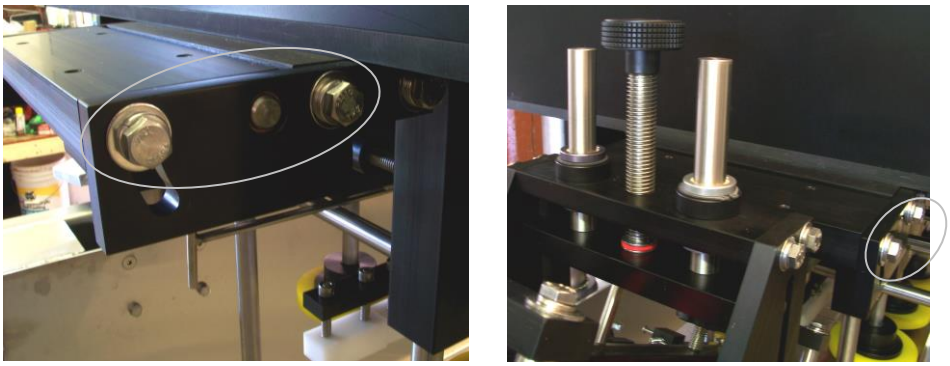

Figure 4-16
Chute Angle Adjustment

Adjusting the angle of the chute for cap pick-off is accomplished by loosening one or both of the two bolts shown in ***Fig. 4-16*** and raising or lowering as needed.

- **CHUTE END / TONGUE & FINGER ADJUSTMENTS**

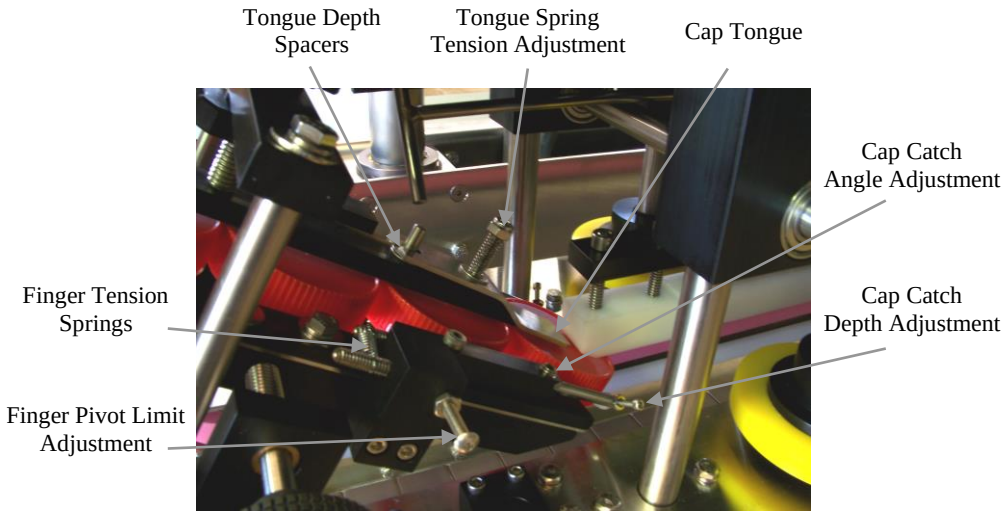

Figure 4-17
Chute End
(Tongue & Fingers)

Proper adjustment of the chute end (cap pick-off) is crucial to proper operation of a capping unit's efficiency. Caps must be repeatedly presented to the container's neck uniformly and consistently to minimize cross-threading, spills, and missed caps. In many ways, properly setting up a chute end for a particular cap and container is as much an art as a skill.

- **CAP TONGUE**
  This is generally a short piece of stainless steel which is used to accurately position the cap just prior to pick-off
- **TONGUE DEPTH SPACERS**
  Adding or removing spacers (typically flat washers are used) will raise or lower the front of the tongue, to provide tighter or looser control, as needed for the particular cap
- **TONGUE SPRING TENSION ADJUSTMENT**
  The tension on top of the cap at pick-off can be increased or decreased by adjusting the locknut on top of the tongue's spring
- **CAP CATCH DEPTH ADJUSTMENT**
  Adjusting the cap catch screws will change the amount of distance the presented cap will extend from the chute bottom, allowing for a deeper cap presentment to the container neck. The thread design will dictate whether the pick-off should be shallow or deep.
- **CAP CATCH ANGLE ADJUSTMENT**
  Rotating the Cap Catch Rod will change the position of the Depth Adjustment screw, and will affect the angle of rotation the cap will make at the time of pick-off. Weighted caps, such as child-proof caps will likely require a different angle than a tamper-evident milk jug style cap, for instance.
- **FINGER TENSION SPRINGS**
  While medium strength tension springs are appropriate for most caps, some cap designs require lighter or heavier springs be used for proper cap control for presentment at pick-off. Heavier caps, for instance, may erratically push further through the cap catch point when lighter weight springs are used, causing improper pick-off.
- **FINGER PIVOT LIMIT ADJUSTMENT**
  Adjusting this screw limits the angle which the fingers are allowed to pivot, setting the desired pick-off depth.

5.1 ELECTRICAL

5.2 MAIN CONTROL BOX

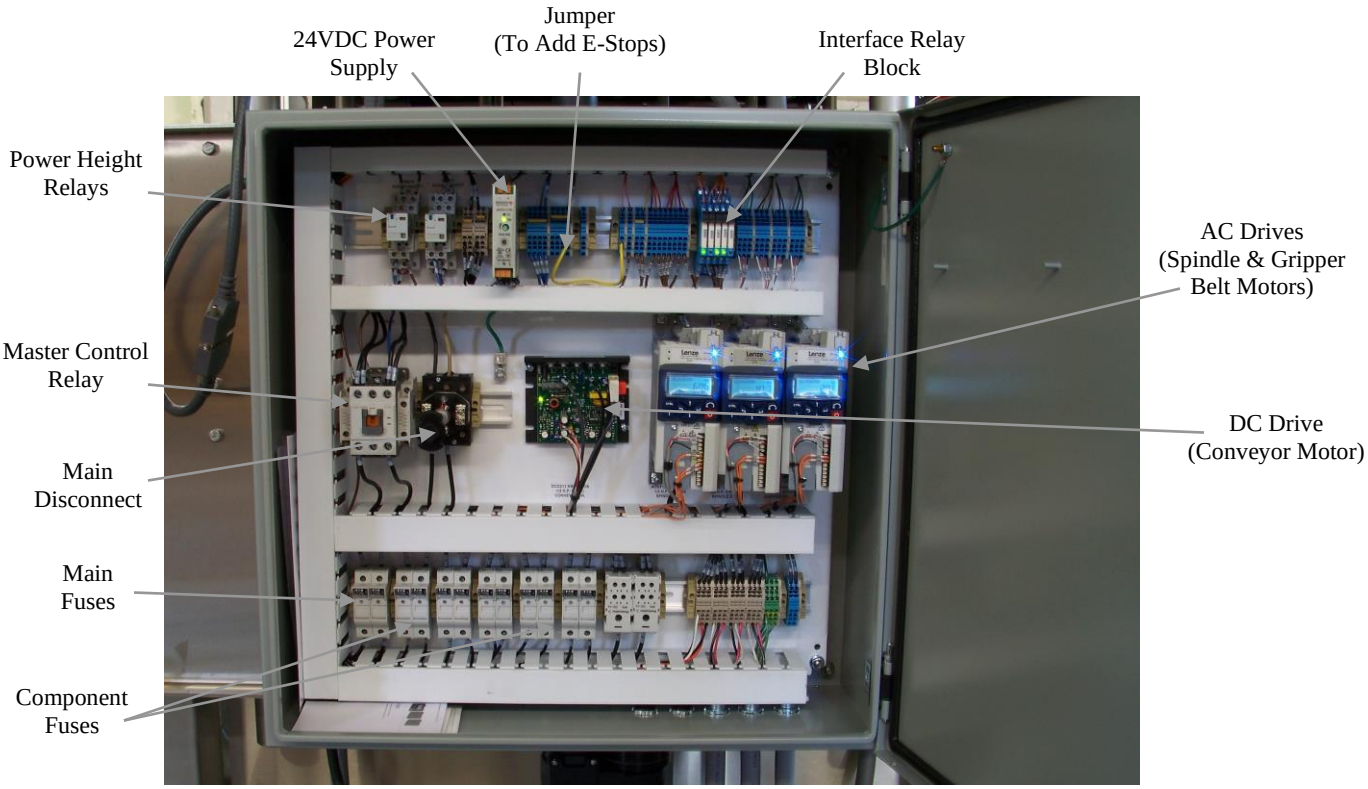

Figure 5-1
Main Control Box

Shown in ***Fig. 5-1*** is a typical main control box. Primary components are illustrated for reference only.
Refer to your machine specific documentation for schematics and components used.

6.1 SERVICING

6.2 CLEANING PROCEDURE

It is important that the machine is kept clean of dirt, broken glass, sand, etc. as these will reduce the wear life of the belts, spindle wheels, etc. The machine should be cleaned with water or soap at regular intervals. Stronger detergents are often used in the food industry and can be corrosive on the machine components. Therefore, the machine should be washed down thoroughly immediately after cleaning with any harsh detergents.

WARNING: When using a high-pressure pistol with cold and hot water, as well as steam for cleaning, do not spray near any electrical enclosures.

6.3 RECOMMENDED MAINTENANCE & SCHEDULES

Itemized below are simple guidelines for maintenance. Several parts of the equipment should be inspected regularly to ensure the longest wear life possible. The following points should be controlled at the inspection:

COMPONENTS	DAILY	WEEKLY	QUARTERLY
Wipe down belts, discs, housing plates after each use	X		
Check gripper belts/pulleys for proper tightness	X		
Check capping discs for wear		X	
Wipe down base and housing		X	
Inspect and lubricate needle bearings		X	
Inspect and lubricate pillow block bearings			X
Visually inspect motor and check lubricant levels			X

6.4 MAINTENANCE LOG

COMPONENT	REPAIR DETAILS	REPLACEMENT DETAILS	DATE

6.5 SPARE PARTS LIST(S)

Spare Part list provided contains spare parts for non-customized capper. Due to the customizable aspect, spare part list may not contain exact spare part. Contact technical support to find appropriate spare part for customized capper parts or additional accessories.

PART DESCRIPTION	PART NUMBER
Spindle Wheels, Yellow, 60 Durometer	10510-00006
Gripper Belt, ¾" Wide, 3/8" Thick	10508-00001
Gearbox 1:1 RH, Spindle	10506-00005
Gearbox 1:1 RH, ¾" to 1" Gripper Belt	10506-00007
Gearbox 1:1 LH, ¾" to 1" Gripper Belt	10506-00008
Gearmotor, 5/8" Shaft, Spindle	10504-00001
Gearmotor, ¾" Shaft, Gripper Belt	10504-00002
Pillow Block, 5/8", Spindle	10501-00013
Pillow Block, ¾", Gripper Belt	10501-00014

6.6 FACTORY TECHNICAL SUPPORT

Apex Filling Systems, LLC
1001 Eastwood Road
Michigan City, Indiana 46360 USA
(219) 575-7493 www.apexfilling.com

Spare Parts
Direct: (219) 575-7493
Fax: (219) 575-7586
parts@apexfilling.com

7.1 TROUBLESHOOTING

7.2 TROUBLESHOOTING CAPPING UNIT

Problem	Solution
Machine does not power up	**1. Check main disconnect is rotated to on (*Fig. 3-2*)**
	2. Verify that the E-Stop reset button (*Fig. 3-1*) is not depressed
	3. Check reset switch has been pressed & lit green (*Fig. 3-3*)
	4. Check toggle switches for belts and spindles (*Figs. 3-4, 3-5 & 4-2*)
	5. Check main fuses (FU103)
	6. Confirm Input power
Bottle tips backward at cap pickoff	**1. Check that cap pickoff depth is at proper height, adjust as needed**
	2. Check that gripper belt width (*Fig. 8-6*) is appropriately tight
	3. Verify that gripper belt height is adjusted to contact the container at the most sturdy point
	4. Check that capper height (*Fig. 8-7*) is not too low for container/cap combination
	5. Check that first set of spindles are not too tight, or off-center
	6. Tall bottles may require a double gripper belt assembly to properly handle
Cap does not completely close	**1. Check for excessive wear on spindle discs, adjust or replace as needed**
	2. Check torque on Clutched Spindle set (*Fig. 4-5*) is set appropriately
	3. Spindle speed may need to be adjusted faster or slower, depending upon cap and bottle combination
	4. Successive spindle sets may need to be tightened further
	5. Different durometer spindle wheels may be needed for better grip on the cap
	6. Ensure cap pick-off is smooth, allowing the cap to properly seat. Chute may need adjustments (*Sec. 4-4*)
	7. Ensure cap stabilizer feet are adjusted to the proper height, controlling the cap

7.3 TROUBLESHOOTING RECORD

To better assist you in troubleshooting, please record the following information with the model number from the frame, the problem that is occurring, speed of application, product characteristics (i.e. Foamy Product, High Viscosity, or Special Variation).

Company Name: _____

Your Name: _____

Phone Number: _____

FAX Number: _____

Date: _____

CONTAINER	COLOR	SIZE	PROBLEM
EXAMPLE: LDPE	*Blue*	*16oz.*	*Product overflowing.*

8.1 CAPPER SETUP SHEETS

The following sheets are provided to assist operators with setup and changeover for various caps and containers.

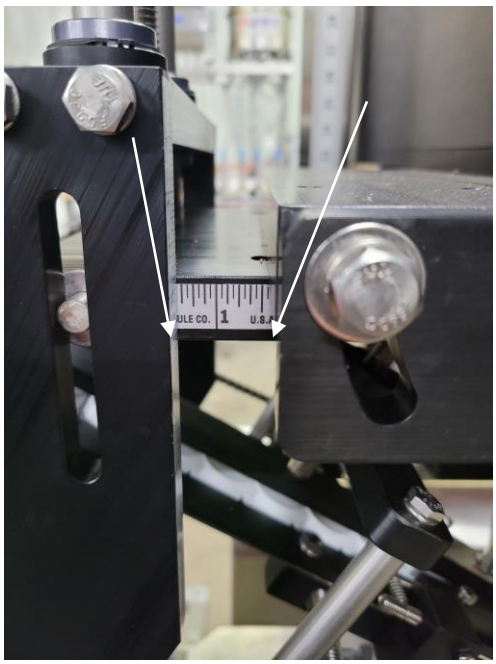

Figure 8-1
Chute Depth
The distance from the capper mount plate to the chute angle plate is measured in Figure 8-1.

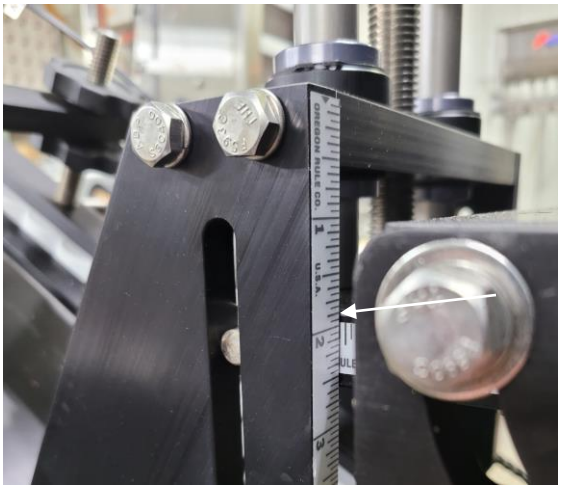

Figure 8-2
Chute Height
The chute height is measured from the chute mount plate to the top of the capper height adjustment rod as shown in Figure 8-2.

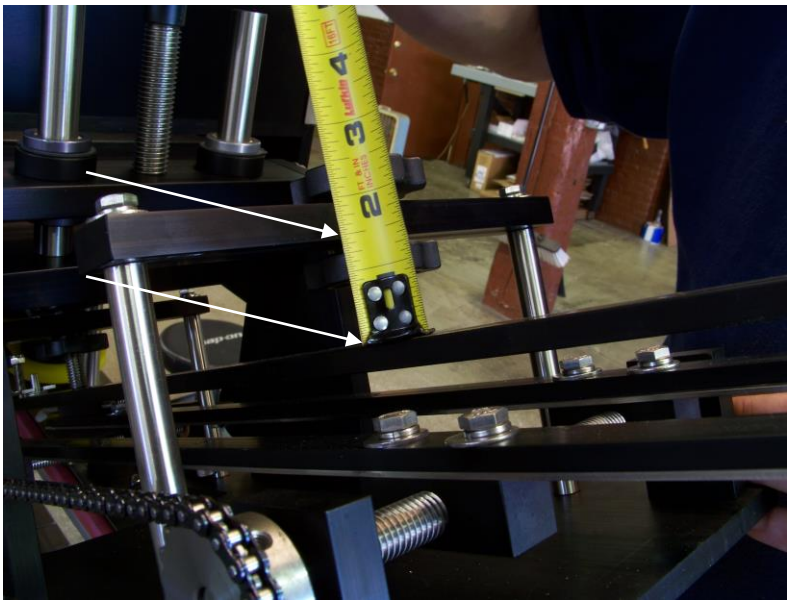

Figure 8-3
Chute Top Rail

The chute top rail height is measured from the top of the upper cap guide rail to the chute span plate as shown in Figure 8-3.

Figure 8-4
Chute Width

The chute width is measured from the outside of the cap guide rails as shown in Figure 8-4.

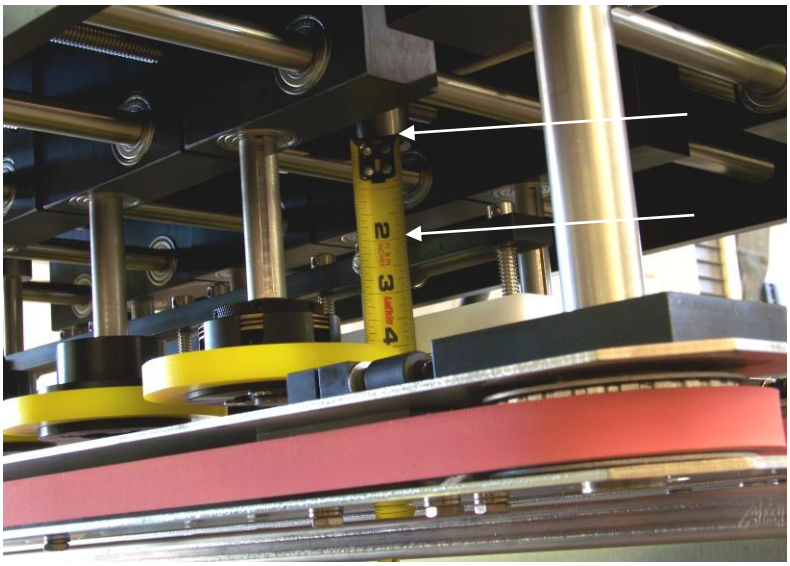

Figure 8-5
Cap Stabilizer Height

The cap stabilizer height is measured from the stabilizer mount plate to the bottom of the adjustment rod as shown in Figure 8-5.

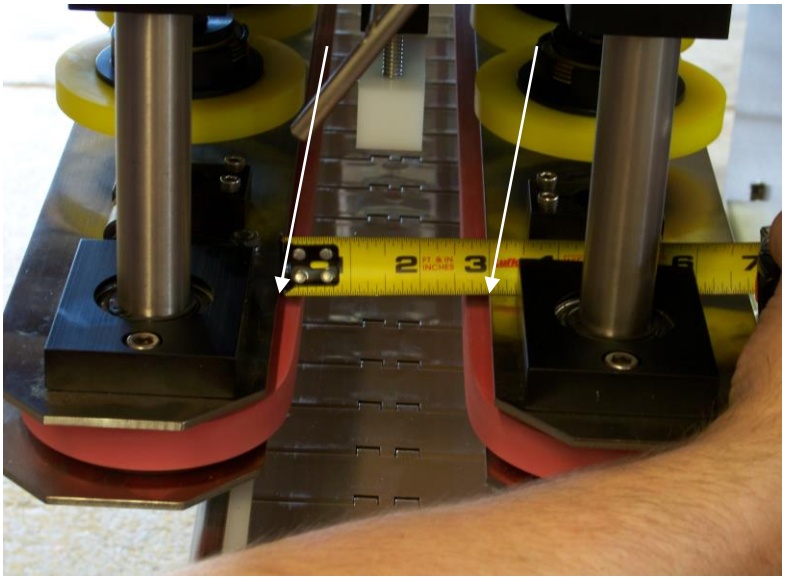

Figure 8-6
Gripper Belt Width

The gripper belt width is measured from the inside gripper belt housing plates as shown in Figure 8-6.

Figure 8-7
Capper Height

The overall capper height is measured from the bottom of the main capper housing as shown in Figure 8-7.

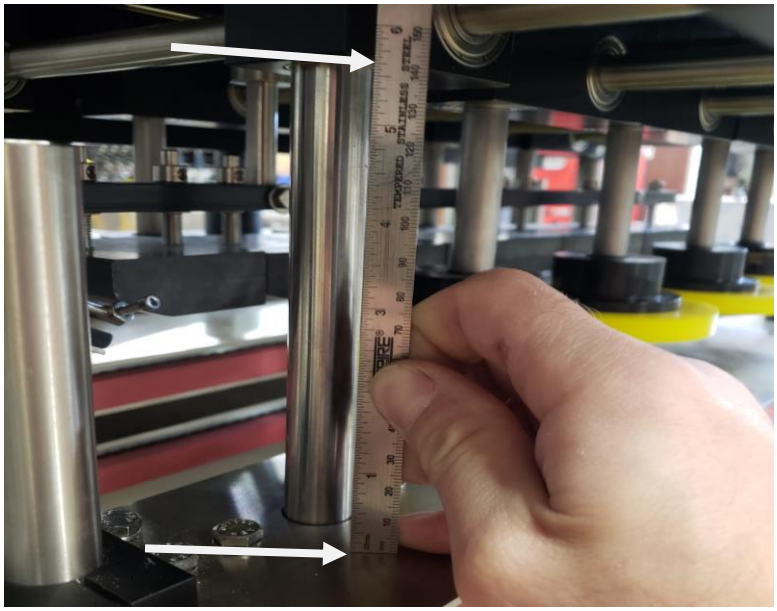

Figure 8-8
Gripper Height

The gripper height is measured from the top of the gripper belt to the bottom of its mounting block as shown in Figure 8-8.

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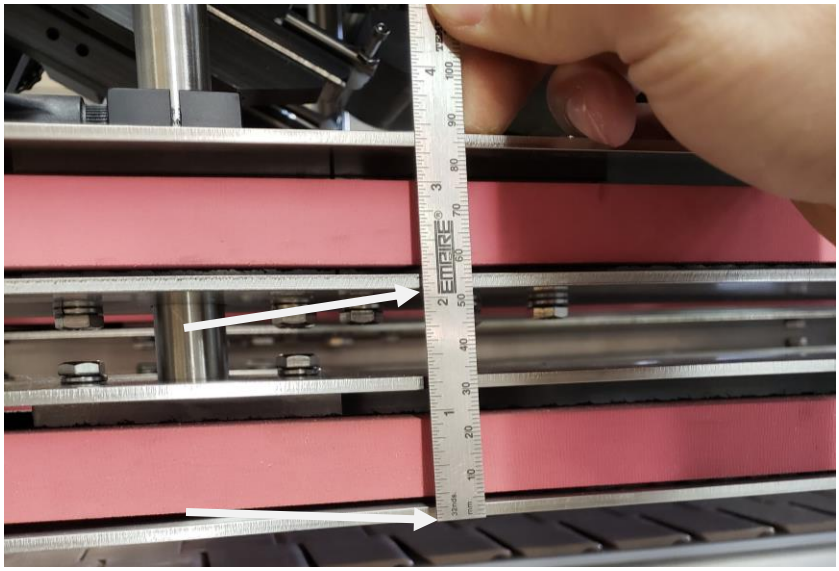

Figure 8-9
Gripper Spacing

Spindle Capper Setup Sheet

Container Information

Bottle description	
Bottle width	
Bottle length	
Bottle height	
Cap size	
Cap description	

Capper Setup Data

Description	**Reference Picture**	**Measurement**
Spindle #1 speed		
Spindle #2 speed		
Gripper belt speed		
Conveyor speed		
Capper height	Figure 8-7	
Gripper belt width	Figure 8-6	
Gripper belt height	Figure 8-8	
Gripper spacing	Figure 8-9	
Cap stabilizer height	Figure 8-5	
Chute width	Figure 8-4	
Chute height	Figure 8-2	
Chute depth	Figure 8-1	
Chute top rail	Figure 8-3	

NOTES

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RECOMMENDED SPARE PARTS LIST

CAPPER

Spindle Wheels, Yellow	#10510-00006
Gearmotor, Spindle Drive	#10504-00001
Gearmotor, Gripper Belt Drive	#10504-00002
Gripper Belt, ¾”	#10508-00001
Gearbox, Spindle Drive	#10506-00005
Gearbox, Gripper Drive (R)	#10506-00007
Gearbox, Gripper Drive (L)	#10506-00008
Full Chute Pause Sensor	#10103-00005
Pillow Block, ¾”	#10501-00014
Pillow Block, 5/8”	#10501-00013

CAP SORTING ELEVATOR

7.5” Sorter Elevator Belt Assembly	
Drive Motor	#10505-00003
Gearbox	#10506-00001
Drive Sprockets	#10303-00003
Idler Sprockets	#10303-00004

Call Apex Filling Systems for pricing. 219-575-7493