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## **SAFETY**

Operator safety is something we build into our products from the design concept forward.

1. The disconnection, disassembly or non-use of any of the guards, warning signs and other safety devices provided with or which are part of Dillin Capping Systems equipment constitutes a substantial change in the equipment.
2. Purchaser shall indemnify and hold harmless Dillin Capping Systems from all claims for damage and injuries advanced by any and all parties injured through use of such substantially changed Dillin Capping Equipment.

Read through the following specific warnings before beginning installation or operating equipment. This information is repeated in the manual where appropriate.

**NEVER PERFORM MAINTENANCE TASKS WHILE THE POWER IS ON.**

Always make sure that the power is off and use standard lockout procedures.

Instruct all personnel in the safe and proper manner to conduct themselves around machinery.

No one is allowed to step, stand or walk on machinery at any time for any reason.

Component machinery is only stable and self-supporting when properly leveled. Always keep lifting devices attached until the unit is stabilized and level.

Never crawl on or work under system component machinery while in operating phase.

Although safety guarding is in place, caution must always be used when working near machinery in operating phase.

Never perform the following while the power is on:

- A. Clearing product jams
- B. Adjusting equipment
- C. Maintenance tasks

Always make sure the power is off and use lockout procedures.

## **UNLOADING AND HANDLING**

Only highly qualified personnel should unload or move heavy machinery. It is stable only when properly leveled on a solid surface. Improper handling could cause loss of control, which could result in serious injury or death.

Be sure there is adequate room between the loading dock and the installation area to bring in the equipment. Check door openings in particular.

## **INSPECTION, ACCEPTANCE AND INVENTORY**

### **UNCRATING**

After the equipment is transported to the installation site or designated area, remove the packing material, crating, wire strapping, etc. Remove all packing material to avoid misplacing loose parts. However, all loose parts should remain in the shipping boxes until needed.

If damage or a shortage is detected, notify Dillin Capping Systems immediately after contacting the carrier. Dillin Capping Systems reserves the right to inspect all damaged equipment before any repairs are attempted.

## **INTRODUCTION**

The Dillin Capping Systems Model 76-100 Straight Line Steam Vacuum Capping machine is designed for applying lug or sideseal caps to glass containers. Steam is used to create a vacuum in the headspace of the container during sealing.

It is one of a family of steam vacuum cappers developed by Dillin to serve customer's specialized needs. It is a sturdily built machine constructed of corrosion resistant materials.

The Model 76-100 capper is designed to run a wide range of cap and container sizes and requires a minimum amount of time to change from one size to another.

## **GENERAL DESCRIPTION**

The Model 76-100 capper consists of an elongated chamber with integral conveyor that encloses the cap applying and tightening mechanisms. Steam is piped into the chamber so that sealing is accomplished in an atmosphere of dry steam.

Filled containers are conveyed into the chamber on the conveyor. Moving continuously the containers, gripped by the side belts, then pick up a lug cap from the lower cap chute. The cap is oriented to the container thread, then tightened by the pressure belt assembly.

An inclined chute receives the cap from the cap sorter and directs it to the cap pickup station by gravity. Steam is provided in the cap chute to preheat the cap and purge it of air.

A variable speed drive mounted inside the machine base through a suitable reducer drives (A) cap tightening means, (B) jar gripping belts and when necessary, (C) accessory equipment, such as transfer discs and conveyor extensions.

A standard machine will include:

- A. Motor
- B. Variable speed drive
- C. Electrical controls for motor, etc.
- D. Steam controls
- E. Adjustable cap feed chute
- F. Conveyor 8 ft. long

## MACHINE SPECIFICATIONS

Overall Height	69" Max. (To Top Of Control Box)
Overall Width	26-34" (Excluding Transfer Disc)
Overall Length	8' 6" (End To End Of Conveyor)
Floor Space Required	26 ¾" x 35" (Exclusive of Conveyor)
Conveyor Height	35" Min.
Power Required	220/440V, 3PH, 60 Cycle, 2HP
Max. Speed	300 JPM (Varies With Size & Shape Of Jar & Cap Diameter & Jar Spacing)
Min. & Max. Diameter Container	1 7/8" Min. – 5" Max.
Min. & Max. Height Container	2 ¾" Min. – 10" Max.
Min. & Max. Cap Diameter	38mm – 89mm
Steam Pressure Required	100 PSI Dry Steam Line 30 PSI – To machine
Water Pressure Required	Normal Line Pressure – ¼" Pipe

## **INSTALLATION PROCEDURE**

Uncrate the machine and place it in operating position. When in place, install leveling screws and adjust until the machine is level and at desired height.

Install and attach any auxiliary equipment supplied with the capper.

Provide steam water and electrical connections as shown on drawing # 76-041. Insure that the steam provided is of ample pressure (100PSI) and as dry as possible.

Turn the machine over manually to be sure there is no mechanical interference. Then jog to be sure the machine has the proper rotation.

## **MACHINE SETUP**

1. Before installing the lower cap chute assembly #76-0548 on the machine, adjust it or the cap to be run, setting should be such that the cap will fall freely down the spring loaded cap stops and revolves freely in the discharge end of the chute (Approximately .005 to .015 over cap diameter and .010 to .020 over height of cap).
2. Install the lower cap chute assembly in the machine. Adjust the upper housing assembly height so that there is approximately 9/16" clearance between the Sealing surface of the container and the lower plate of the upper cap chute assembly at the entrance to the machine. Jog container to the cap pickup position and check distance between bottom of cap support and the sealing surface of the container. (Approximately 1/8", See # 76-031)
3. Remove the lower cap chute assembly. Adjust the side belts to the jar firmly. This adjustment should be made with the container placed in the cap pickup area. The side belts should be set to grip the container as high as possible, consistent with limit shown on # 76-031.
4. With a cap applied finger tight, jog container to a point directly under the left "C" bracket height so that the pressure belts just contact the cap. Similarly adjust the right "C" bracket support.
5. Again jog a container with a finger tight cap to point directly under the left "C" bracket and adjust the height to provide zero overtravel. Jog the container directly under the right "C" bracket support and adjust the height to provide 1/16" overtravel.

6. Replace the lower cap chute assembly. Jog a container filled with water and without a cap into the machine and stop it under the cap leveler assembly. Adjust the cap leveler height so that it firmly rests on top of the jar sealing surface and lock in this position.
7. Jog containers out of machine and fill the cap chute with caps. Jog water filled containers into cap pickup point. Jog container past the cap leveler and orienter while observing closely. These parts are designed to orient the cap on the container to a finger tight position. The pressure of the leveler assembly on the cap, as controlled by the adjustable torsion spring, must be sufficient only to properly orient all caps. Excessive pressure will only abuse the cap and cap leveler and is not desirable.
8. Run a container filled with water through the machine and observe cap pickup, orientation, and application. Also observe container to be certain it does not tip at the cap pickup point and does not rotate while under the top pressure area.
9. Turn on the steam supply and regulate to 25 PSI. Set steam pressure to the pressure belt assembly at 8-12 PSI. Also adjust the steam pressure to the upper cap chute assembly to 2-4 ounces on the gauge at the entrance of machine.
10. Open water supply valve, then by means of the petcock provided inside the upper housing, regulate flow to pressure belts to minimum required to provide slight overflow from channels provided.
11. Then run a container of cold water properly headspaced to test cap application and vacuum.
12. Run product filled containers from one revolution of the filler and measure lug position, security and vacuum.
13. With cap chute filled and normal line pressure on the caps, adjust cap stop spring tension (see drawing # 76-031) just tight enough to hold back cap supply.



## **OPERATION**

Before startup or at change of shift:

1. Examine rubber cap stop, orienting rubber, pressure belts and side belts for cuts, abuse, wear, etc.
2. Be certain steam and water are on.
3. Test 3 or 4 containers for vacuum. Also check lug position and/or security (As specified by quality control) on 3 or 4 containers.
4. Repeat step # 3 every ½ hour as specified by quality control.
5. When breaks occur, flush out chamber and conveyor thoroughly.

## **MAINTENANCE**

1. Grease and oil all designated points once each shift. See drawing # 76-045 for instructions.
2. Replace pressure belts, rubber cap stops, cap orienting rubbers, or side belts when necessary.
3. Inspect main drive belt in base weekly.
4. Examine roller chains twice a week and adjust takeup, if necessary. Replace if worn to the limit of the takeup.
5. Examine pressure belts idlers every shift for freedom of rotation and excessive wear.
6. Conveyor and conveyor bearings should be examined for wear at least weekly.

## **PROBLEM CORRECTION**

### **1. COCKED CAPS OR CRUSHED LUGS**

- A. Defective or missing rubber cap stop or broken cap stop spring
- B. Defective or missing orienting rubber or improperly adjusted
- C. Accumulated cap wax or grease on orienting rubber
- D. Misadjustment of lower cap chute
- E. Improper pickup height
- F. Side belt assembly not aligned with lower cap chute or not holding bottles properly
- G. Pressure belt assembly set too low, thus allowing containers to tilt
- H. Excessive top pressure from pressure belt assembly
- I. Caps or glass out of specifications

### **2. LOOSE CAPS**

- A. See A, B, C, D, E, and F above
- B. Worn pressure belts or pressure belt assembly
- C. No overtravel on pressure belt assembly
- D. Side belts not holding container properly

### **3. STRIPPED LUGS OR HIGH REMOVAL TORQUE**

- A. Excessive top pressure or excessive overtravel
- B. Cap or glass out of specifications
- C. Water for pressure belt lubrication not turned on

4. GLASS BREAKAGE

- A. Misalignment of lower cap chute or side belts
- B. Side belts too tight or too loose
- C. Jars previously abused or cracked
- D. Glass out of specifications

## **PARTS AND SERVICE**

Parts should be ordered directly from Dillin Capping Systems  
8030 Broadstone Rd. Perrysburg, OH 43551.

Tel: 419-666-6789

Fax: 419-666-4020

When ordering, use the number stamped on the part, or as shown in drawings or parts list.

Order should cover the following:

1. Number of part
2. Name of part
3. Quantity
4. How to ship
5. Where to ship
6. Model and serial number of machine
7. Addressee and phone number

