SWAN-MATIC

Bottle Capping Machines & Equipment

60PC Continuous Cycle Capper Manual

7050 West Ridge Road - Fairview, PA 16415 814-474-5561 www.swanmatic.com

WARNING

This Capper Does NOT have Oil in it. You Must Add the Two Quarts Provided with this Shipment. Failure to do so will Void the Warranty.

For Assitance, Call 814-474-5561

Contents

Benchtop Capper Setup & Operation

Carefully unpack the Capper and any other associated equipment which may be in the container and check for damage. Set the machine on a level surface and remove the red fill plug located on the top left rear of the capper head. Add the two quarts of Gear Oil (P/N C095 supplied) into the housing through the fill plug hole (Figure 1.1). **The capacity is two quarts Maximum.**

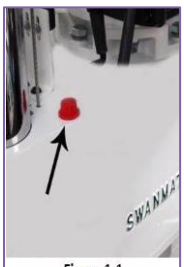


Figure 1.1


Figure 1.2

Attach the proper sized driver shell with a rubber insert on the lower end of the clutch and fasten it securely with the wrenches provided (Figure 1.2). Connect power to the electric motor after checking to make sure that the voltage marked on the nameplate is the same as the power supply to which the capper will be connected. Run the capper for several minutes at room temperature to thoroughly lubricate the mechanism. The capper should run free and easy with no effort. If it does not, inspect the capper for shipping damage.


Figure 1.4


Figure 1.3

Accurate alignment of the container cap to the insert and proper height and torque settings are critical for optimum capping results. Rotate the spindle until it reaches the bottom of its stroke. Place an already capped container under the insert, adjusting the capper height so that the container cap just contacts the insert. The height of the capper head is adjusted by loosening the column locking handle (Figure 1.3) and rotating the adjustment handle (Figure 1.4). With the capped container directly under the insert, slide the backstop assembly (Figure 1.5) up against the container and tighten. Rotate the spindle until you can remove the container. Readjust the capper height directly down 1/8 to 1/4 inch (depending on the dimensions of the cap and container) to allow for over travel. Securely tighten the column locking handle.


Figure 1.5

TORQUE ADJUSTMENT

Adjust the clutch to set the capper for the desired torque. Hold the clutch cap (the upper section), either by hand or by using the wrench supplied, and loosen the center lock ring several turns (Figure 1.2). To increase the torque, turn the lower clutch section **into** the clutch cap. To decrease the torque, back the lower section **away from** the clutch cap (Figure 3.2). When the proper torque setting has been obtained, tighten the center lock ring (C032) to retain the setting.

Important Note: The shell and clutch should always stop momentarily near the end of each stroke when contact is made with the cap. Excessive rotation after contact will cause premature insert wear and damage to the cap.

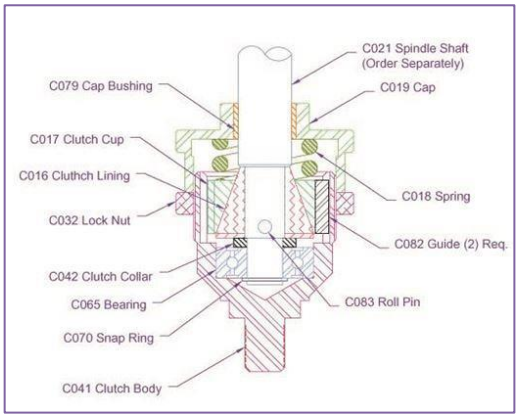
CONTACT INFO
Automation Devices
7050 West Ridge Rd
Fairview, PA. 16415
814-474-5561
www.swanmatic.com

MAINTENANCE OF YOUR SWAN-MATIC CAPPER

Periodic inspection of the oil level in the capper head housing is recommended to ensure that sufficient lubrication is present. The high oil level should be 2 3/8" from the top edge of the housing. We recommend E.P. SAE 80/90 weight gear oil (our P/N CO95) or equivalent. Approximately once every six months, it is recommended that the clutch be disassembled, cleaned, and a good grade of lithium grease be applied to the clutch lining to ensure long life and consistent torque. Excessive grease may seep out of the clutch during operation.

REPLACING SPINDLE OIL SEAL

Always exercise extreme caution when removing the shaft seal to ensure the shaft itself is not permanently marked or scored.



Unscrew and remove the lower section (C041) of the clutch from the clutch cap (C019) (upper section). This will expose a bearing (C065) on the lower end of the spindle shaft. This bearing is held in place with a snap ring on the underside. Remove the snap ring and press the bearing downward to remove the bearing from the spindle.The fiber clutch cone (C016) is held in place with a 3/16" diameter roll pin (C083). In removing the roll pin, be sure to use a punch of the proper diameter. Be careful to support the spindle shaft (C021) to assure that it is not damaged or bent. After the roll pin is removed, the fiber cone and the remaining clutch parts can be removed from the spindle. The factory recommends draining the oil before removing the seal to prevent oil loss. The shaft seal (C059D seen in Figure 2.1) can be removed by puncturing the *metal section* on the lower side of the seal and then prying the seal out of its seat. The seal can also be removed by drilling several small holes in the metal section of the seal, inserting sheet metal screws part way in, and then prying the seal out.


Figure 2.1

After removing the seal from its seat, thoroughly clean the seat and shaft to remove all oil and foreign material. Inspect the shaft for score marks which could cause premature seal failure. If any marks cannot be removed by polishing the spindle, replacement will be required. If this is the case, contact the factory for parts and the proper procedure at 814-474-5561.


Figure 2.2

Before installing the new shaft seal, it is recommended that the lower end of the spindle shaft be covered with *a thin coating of oil*. This will allow the shaft seal to slide along the shaft without damaging the seal. The seal should be installed with the open side up. Before seating the seal, apply a layer of gasket sealer (i.e., Permatex or equivalent - our P/N C111) to the seat. Gently tap the shaft seal into place with a hammer and a block of wood or use Swan-Matic tool C059T (Figure 2.2). Make sure that the shaft seal is not misaligned and bound in the casting before attempting to seat it. Replace the clutch in a reverse manner from how it was removed. Lubricate the clutch face with a good grade of bearing grease (such as Lubriplate or equivalent).

SWAN-MATIC CLUTCH ADJUSTMENT TO REDUCE DRIVER INSERT WEAR

One of the main contributing factors to insert wear is improper clutch adjustment. Each Swan-Matic capper has an adjustable clutch above the driver shell. Proper clutch torque adjustment is essential for an insert's proper wear time. Another contributing factor that shortens insert life is dirt, oil or any liquids. Wipe out the insert occasionally with isopropyl alcohol and a clean cloth. Many solvents in the products will attack the rubber insert also, causing it to swell and then break off when used for tightening. In some cases, this can be overcome with the use of a metallic serrated driver shell instead of rubber inserts. For a quotation, send 12 sample caps and two bottles to the Swan-Matic Division at our Fairview address.

TO ADJUST THE CLUTCH:

1. Loosen the clutch lock nut (C032) two turns.
2. Standing in front of the machine with a wrench in each hand. Place your right hand wrench on the wrench flat at the top of C019 and left right hand wrench on the wrench flats at the bottom on of C041. Bring the two wrenches together to decrease torque and push them apart to increase torque on your cap. (See fig. 3.2)
3. To increase the applied torque, tighten either wrench. To decrease the torque, loosen each wrench. (Clutch cap, body and lock nut have right-hand threads.)
4. After each adjustment, hand tighten the clutch lock nut.
5. To adjust the height of the capping head to allow for different sized containers, stop the spindle at its lowest point and lower the machine head until the insert touches a hand-tightened cap.
6. Tighten the column clamp (Page 1 Fig. 1.3) to hold the head in position.
7. Raise the spindle (C021) and the insert by turning on the machine, and then remove the container and cap.
8. Lower the machine head about 1/8 inch and retighten it.
9. Cycle the capper to tighten a cap onto a container. The shell and insert will stop rotating when the cap is tight.
10. If the clutch does not stop rotating at the bottom of the stroke and the cap is tight, the insert will wear rapidly. If this happens, loosen the clutch slightly. If you cannot see the shell stop, draw vertical lines on it with a marker to help you see when the shell stops turning.

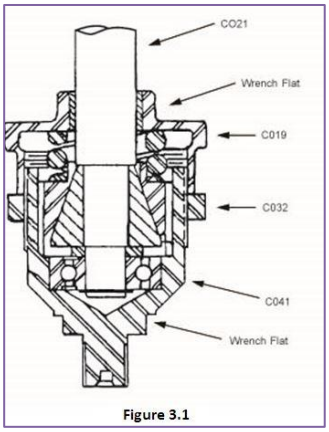


Figure 3.1

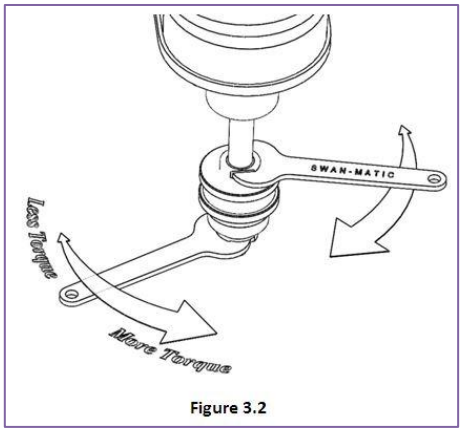


Figure 3.2

Swan-Matic Capper Upgrade Options

Precision Magnetic Hysteresis Clutch

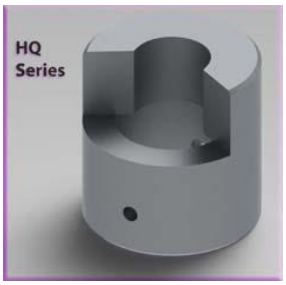
The C390 magnetic hysteresis clutch was developed to provide precise torque for capping applications. It features dial torque setting that provide repeatable cap torque accuracy to +/- 0.1 in-lbs. The Model C390 clutch is adjustable from 0.5 inch-pounds to 12 inch-pounds. The Model C392 is adjustable from 4 inch-pound to 40 inch-pound. Maximum shaft speed on the Model C300 Swan-Matic capper for intermittent applications at maximum torque is 500 RPM.

Spindle Safety Guards

Spindle guards provides an added safety element for Swan-Matic users by minimizing contact with the spindles. Spindle guards can easily be placed over spindles and simply tighten for use.

Bottle and Vial Holders

HQ Series Quick Load Bottle Holder

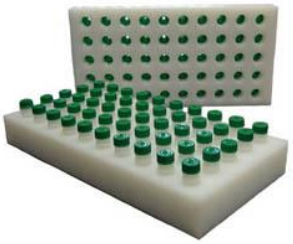


HQ series bottle holders are made designed for fast loading and unloading of smaller bottles. The open front design of the HQ series makes it the most efficient quick loading holder of its kind. The HQ series works on all Swan-Matic continuous cycle variable speed cappers. The HQ series comes with a replaceable vinyl insert which prevents the bottle from spinning. The C190 base plate is required for the HQ series bottle holders. To receive an accurate quote, send in 12 caps and 2 empty bottles.

HQS Series Quick Load Bottle Holder for C316E Switch

HQS series bottle holders are designed for fast loading and unloading of smaller bottles. In addition to the standard features of the HQ series, the HQS Series incorporates the C316E bottle switch that is used on the C300 Swan-Matic cappers. The HQS series quick load bottle holder can either be purchased with or without a C316E switch. Having the C316E pre-installed allows for quick change overs (one plug) from the "V" block bottle switch to the HQS bottle holder. (If the HQS bottle holder is purchased without the switch, the C316E on a currently owned C300 capper can be used by removing the C316E from the "V" block and screwed into the HQS bottle holder.) The C190 base plate is required for the HQS series bottle holders. To receive an accurate quote, send in 12 caps and 2 empty bottles. . (Only fits C300 Models)

Vial Holders



Swan-Matic Bottle Capping Machines and Equipment designs and manufactures bottle holders for any style and size bottle. Whether it's 1 or 100, we can make bottle holders for every application. To receive an accurate quote, send in 12 caps and 2 empty bottles to: Swan-Matic Test Lab, 7050 West Ridge Road, Fairview, PA 16415.

HM Series Vial Holder

Swan-Matic also makes multiple position vial holders. This allows an operator to load the vial holder with 4 or 8 vials and push the holder into the cappers "V" block switch. After each cycle of the capper, the operator rotates the holder and pushes it back into the switch block. This assures the cap is consistently and safely torqued down each time. To receive an accurate

quote, send in 12 caps and 2 empty bottles.

Insert Sizing Cart and Cap Toque Spec Guide

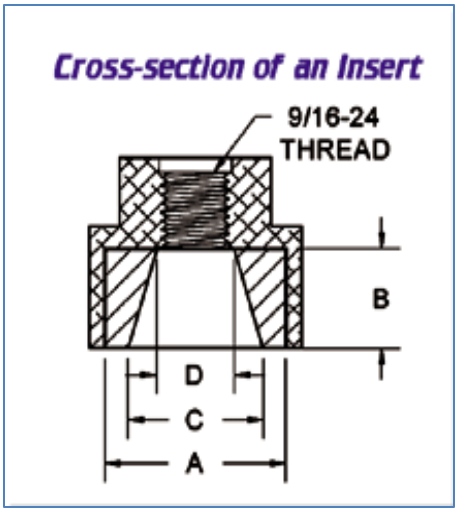
Our inserts are in stock and ready to ship

Measure the diameter of the cap and select an insert that has a range that includes that diameter.

Insert Number	Cap Range (Millimeters)
2	6-12
3.5	8-14
5	10-14
10	8-17
20	12-24
25	18-28
30	22-33
40	25-41
50	32-50
60	40-56
70	50-68
75	60-84
80	70-88
90	78-100
95	85-110
100	104-130
110	120-145

Insert Dimensions (Inches)				
Insert Dimensions	A	B	C	D
2	0.625	0.460	0.562	0.320
3.5	0.729	0.875	0.578	0.000
5	0.729	0.656	0.656	0.125
10	0.945	0.688	0.875	0.000
20	1.285	0.750	1.094	0.138
25	1.490	0.875	1.297	0.182
30	1.676	1.000	1.484	0.442
40	1.995	0.938	1.797	0.358
50	2.350	0.938	2.172	0.598
60	2.685	1.000	2.438	1.161
70	3.115	1.250	2.844	1.251
75	3.780	1.250	3.531	1.780
80	3.810	1.125	3.688	2.389
90	4.295	1.125	4.109	2.809
95	5.565	1.250	4.625	3.049
100	5.565	1.250	5.313	3.562
110	6.160	1.250	5.906	4.155

	Phenolic / Urea Cap on Glass		Phenolic / Urea Cap on Plastic		PP / PE Cap on Glass		PP / PE Cap on Plastic	
Cap Size (mm)	Application Torque	Removal Torque	Application Torque	Removal Torque	Application Torque	Removal Torque	Application Torque	Removal Torque
15	8	4	6	3	12	7	8	4
18	9	5	7	4	13	8	9	5
20	10	5	8	4	15	9	10	5
22	11	6	9	5	17	10	11	6
24	12	6	10	5	18	11	12	6
28	14	7	12	6	21	12	14	7
33	18	9	15	7	24	14	17	8
38	20	10	17	7	29	17	19	9
43	22	11	18	9	33	20	22	11
48	24	14	20	10	36	22	24	12
58	28	14	24	12	44	26	29	14
70	35	18	28	14	52	32	35	17
89	45	22	36	18	65	38	45	22
100	50	25	40	20	75	40	50	25



PRODUCTION NOTES

Although they may last longer, harder inserts are not always better. Harder inserts do not grip as well as lower durometer (softer) inserts. The friction caused by the harder material can damage; even burn, the edges of plastic caps.

Inserts and Driver Shells

Driver shells

Aluminum driver shells thread onto all Cap-Master Capping Machines and accept replaceable urethane, vinyl, and rubber inserts. A complete range of driver shells and renewable driver inserts are kept IN-STOCK. From 6mm to 145mm size caps, Swan-Matic will have what you need in stock.

Polyurethane

Exhibits excellent wear properties and leaves little to no residue or particulates ensuring an unmarked closure. Thru special order, durometers up to 80-85 are available on request.

Durometer 45-55

Vinyl Insert

Offers grip on caps where polyurethane may slip. Generally suggested for caps that feature smooth contact surfaces. These may be deliveried in light or dark green.

Durometer 45-55

White Rubber

Often matched to applications with white closures or caps to avoid marking. Suggested for smooth contact surfaces or minor serrations.

Durometer 50-60

Black Rubber

A slightly higher durometer helps extend life while offering the same level of grip as white. The color makes it ideal for dark colored caps.

Durometer 60-70

Tan Rubber

This is the hardest of the rubber inserts and is suggested for metal caps with serrations or very abrasive applications.

Durometer 70-80

Serrated Driver Shells.

Serrated driver shells are a long-term replacement for inserts and driver shells. They give you a positive grip on your caps which results in very consistent torques throughout your production runs. Custom designed for each different cap, they can be made from aluminum, steel or stainless steel.

Custom Bored Rubber and Vinyl Inserts

Custom bored inserts can be made in one day to fit your application without going through the expense of mold charges. These inserts are typically used on dropper caps and pump sprayer bottles.

Pump Sprayer Production Insert

Available in 6 Sizes

	ID
PS01	.840"
PS02	.840"
PS03	.880"
PS04	.940"
PS05	.970"
PS06	.500"

Frequently Asked Questions

Who do I call for technical support?

Call during normal hours. 814-474-5561. Monday thru Friday 8am to 4pm.

Where can I get my benchtop capper rebuilt?

Make sure the oil is drained from the capper. Capper must be shipped upright on a skid by Freight only. Include contact information and return shipping address.

Send capper to: **Swan-Matic (rebuild)**
7050 West Ridge Rd
Fairview, PA 16415

Where can I get my handheld capper rebuilt?

Pack capper in a box and ship to below address. Include contact information and return shipping address label. Allow 2-3 weeks for repair.

Send capper to: **Swan-Matic (rebuild)**
7050 West Ridge Rd
Fairview, PA 16415

How fast can a handheld capper cap?

A handheld capper can do 1 bottle a second. The actual rate is determined by the operator.

How fast can a benchtop capper cap?

A benchtop capper can do 55 bottles a minute. The actual rate is determined by the operator.

What is the life expectancy of an insert?

The life of an insert is determined by several factors. Torque specs, work conditions, cap texture, insert material and clutch settings. The number one killer of inserts is improper clutch settings. The general rules is the insert should never slip on the cap. The clutch should disengage before the insert slips on the cap. To help get the maximum life out of your inserts, send 12 caps and 2 containers to Swan-Matic testing labs for a free evaluation of your application.

Send caps to: **Swan-Matic Test Lab**
7050 West Ridge Rd
Fairview, PA 16415

How do I measure cap torque?

Swan-Matic offers a variety of torque testers. Contact Swan-Matic to find the one best for you.

Does Swan-Matic have cappers that remove caps?

Yes. Several cappers in the Swan-Matic line up have a reversing (de-capping) feature.

Does Swan-Matic have corrosion resistant cappers?

Yes. Any Swan-Matic benchtop capper can be Nickel Coated to make it resistant to chemical wash downs.

Does Swan-Matic have explosion proof cappers?

Yes. The C500 and C400 series capper have multiple hazardous ratings.

How do I set the height of my capper correctly to the bottle?

With the spindle in the lowest position, lower the head of the capper until the insert touches the closure lid. Then lower the head 1/8 of an inch more. Tighten locking handle on column.

How can I pay for my capper?

Swan-Matic accepts All major credit cards.

What can I do if my capper is leaking oil ?

You can send you capper into Swan-Matic for repair or follow the seal replacement instructions in this manual.

What is your warranty on cappers?

Refer to last page of this manual.

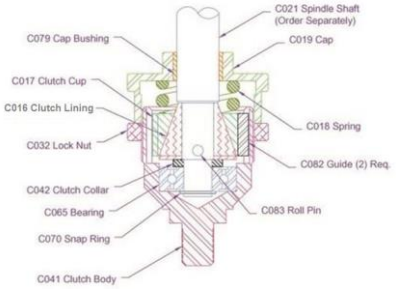
How do I check the oil level in my capper?

All benchtop Swan-Matic Cappers hold 2 quarts of 80W-90 gear oil. The oil level should never change as long as the capper is not leaking. Oil should be changed once year or every 1 million cycles. The full level is 2.375" from the top of the fill hole.

Why won't my caps tight anymore?

A broken main spring (C011) in the capper head.

This spring breaks when the capper head is set to low. That can be tested without taking the machine apart. Set the spindle shaft in the lowest position. Place your hands under the clutch housing and lift up. If it moves up and down easily (about 1 inch), then the C011 spring is most likely broken. Other broken components in the head assembly can give the same test results.



The clutch cone itself has gotten too much oil or grease on it. Wipe off the clutch cone (C016) and the interior of the clutch cup (C017) and reassemble. There should be grease on the Spring (C018), the pins (C082) and the bearing (C065).

The insert material is not matched to the cap.

Swan-Matic offers 5 different types of material that inserts are made from. Refer to the Inserts and Driver Shells page for an explanation of each type if insert. To get the best match, send in 12 caps, 2 containers and your contact information to: **Swan-Matic Test Lab**
7050 West Ridge Rd
Fairview, PA 16415

The insert has worn down.

As the insert wears, the pressure on the cap is reduced because the distance from the insert to the cap increases. To correct it, just move the head of the capper down slightly or install a new insert.

Capper head is set to low.

If the capper is pressing too hard on the container being capped, it can cause the threads of the container to bind with the cap threads.

The insert is slipping inside the driver shell.

Clean the driver shell out and replace the insert.

In A Pinch Trick

Using a standard Sharpie Marker. Place your thumb above the stop line, as shown in the picture below. Using your thumb as a stop, put the marker into the fill hole. The capper is full when oil appears on the tip of the marker.

In a Pinch Trick

SWAN-MATIC WARRANTY

Automation Devices, Inc. warrants the materials and goods supplied under the subject customer's purchase order to be as specified and of good quality. No specific time life shall be stated, since the results of good workmanship are of timeless age, and good quality, properly used, shall be self evident.

This warranty does ***not*** cover damage resulting from accident, transportation, normal wear of parts, negligent use or misuse of the product, incorrect electrical voltage or current, usage contrary to operating instructions, alterations or repairs by other than Automation Devices, Inc., factory personnel. In the case of transportation damage, please pursue recovery for damage through your freight carrier.

If the product should become defective, we will repair or replace it, at our option, free of charge. This service is available by returning the product to our factory, *freight prepaid*, and we will return your product to you, *freight collect*.

This warranty does ***not*** include cost of inconvenience, damage due to product failure, transportation damage, or the like. This warranty applies only to the physical repair or replacement of the defective goods and specifically excludes any incidental or consequential damages or additional liability thereof. Some states do not allow exclusion or limitation of incidental or consequential damages. This warranty also gives specific legal rights, although you may have other rights, which vary from state to state.

Figure 2.3

IMPORTANT NOTES

-**The capper is shipped without oil.** The two quarts supplied with the machine must be added to the machine before operating.

-An Allen head or square head drain plug is located behind the spindle on the underside of the housing (Figure 2.3).

-**If the capper is to be returned for repair, the oil must be drained**. The capper must be shipped in a upright position. Preferably on a skid and by freight courier,

CONTACT INFO
Automation Devices
7050 West Ridge Rd
Fairview, PA. 16415
814-474-5561
www.swanmatic.cCCom