

Continuous Oil Applicator P/N SM1097

User's Guide



PPM contact information:

AMERICAS

PPM TECHNOLOGIES
 500 E. Illinois St.
 Newberg, OR 97132 | USA
 (503) 538-3141
 (800) 523-8123 toll free in the US
 (503) 538-8575 fax

EUROPE | MIDDLE EAST | AFRICA

PPM TECHNOLOGIES EMEA Ltd.
 Axis 40 Oxford Road
 Stokenchurch
 Buckinghamshire HP14 3SX
 +44 1494 682800
 +44 1494 682801 fax

Webpage: www.ppmtech.com
 Email: Parts.na@ppmtech.com

Printed in the USA

Manual Revision Log

REV #	DATE	CHANGE DESCRIPTION	PG # MODIFIED	BY
1.0	3/15/02	Rewritten version, derived from original Allen book	ALL	
1.1	7/01/02	Rev. B: Made corrections and changes.	ALL	
2	2/29/08	Switched to numeric revision control of manual. Revision control was previously done by versions. Updated manual to PPM Technologies format.	ALL	SR

PPM Technologies reserves the right to alter at any time, without notice and without liability or other obligations on its part, materials, equipment specifications, and models. PPM Technologies also reserves the right to discontinue the manufacture of models, parts, and components thereof.

CONTENTS

1 Introduction

About This Book	6
What is the Continuous Oil Applicator?	6
Which parts are which?	8
Manual Printing and Revision History	2
List of Illustrations	6
Safety Instructions	7

2 Using the Continuous Oil Applicator

Setting Up the Continuous Oil Applicator	9
Setting the Pump Speed	10
Running Product	10
Cleaning the System	11
Shutdown	11
Using Combined Controls	11

3 Maintaining the Continuous Oil Applicator

Maintaining the Gear Box	13
Maintaining the Pump	13
Maintaining the Blower	13
Maintaining the VFD	13
Maintaining the Motor Controls	13
Maintaining the Spray Bar	13

4 Troubleshooting

Common Problems and Cures	14
Where to Find More Information	14

A Information about Third-Party Equipment

Introduction	16
Browning CbN Series 2000 Gearmotors and Reducers	16
Shertech Stainless Steel Rotary Gear Pumps	16
Ametek Rotron Regenerative Blowers	16
AC Tech SCF Series Variable Speed AC Motor Drives	16
Minarek MM300 Series SCR Drives for DC Brush Motors	16

FIGURES

Figure 1-1 Continuous Oil Applicator.....8

TABLES

Table 4-1 Common Problems.....14

1

INTRODUCTION

This book shows you how to calibrate, use, clean and maintain the Continuous Oil Applicator equipment. It contains these chapters:

- [Introduction](#) (this chapter), which describes the manual and introduces you to the Continuous Oil Applicator
- [Using the Continuous Oil Applicator](#), which describes daily use and cleaning of the equipment
- [Maintaining the Equipment](#), which describes the routine maintenance procedures for the equipment
- [Troubleshooting](#), which provides troubleshooting information

Also included with the Continuous Oil Applicator is a book called the Continuous Oil Applicator Installation Guide. It contains the information needed for site preparation and installation.

The Continuous Oil Applicator is one of several pieces of equipment that can make up an applicator system. Each separate piece has its own book. Your system may include one or more of these manuals as well:

- Rotating Drum Installation and User's Guide if you purchased a rotating drum.
- Seasoner Applicator Installation Guide and Seasoner Applicator User's Guide if you purchased a hopper and seasoner applicator bar
- Documents from third-party manufacturers who supply things such as motors, blowers, and pumps.

WHAT IS THE CONTINUOUS OIL APPLICATOR?

The Continuous Oil Applicator equipment delivers exact spray patterns of oil, oil and water solutions, or other light to medium weight liquids onto base food product. The equipment is easy to use and sprays the same pattern in the same way each time, so the end product is consistent.

SAFETY FIRST

WARNING



Improper use or maintenance of the Continuous Oil Applicator equipment is a safety hazard. Operators, maintenance workers, and all other nearby persons must carefully observe all precautions marked on the equipment or mentioned in this book. Failure to

observe the proper safety precautions can result in serious personal injury, electric shock, or death.

General safety precautions include:

- Turn off or disconnect all electrical power before opening guards, access doors, or covers. Failure to do so can result in an electrical shock hazard.
- All electrical work must be performed by a licensed, qualified electrician and comply with all applicable electrical codes.
- Turn off the compressed air supply before working on or near it. Failure to do so exposes you and others to the risk of injury from hoses and other pressurized or moving parts.
- Turn off any electrical or air-operated accessories and other devices near the applicator equipment. Such devices are often triggered by automatic sensors. If left powered, they might activate unexpectedly, causing injury.
- Keep all covers and guards in place while the equipment is running. Remove the covers or guards only for maintenance and testing. Running without its covers or guards can expose moving parts such as fan blades, coils, and springs that can cut, pinch, or otherwise injure you or other nearby persons.
- Always wear protective eye wear when installing, adjusting, or operating the Continuous Oil Applicator equipment.

CAUTION

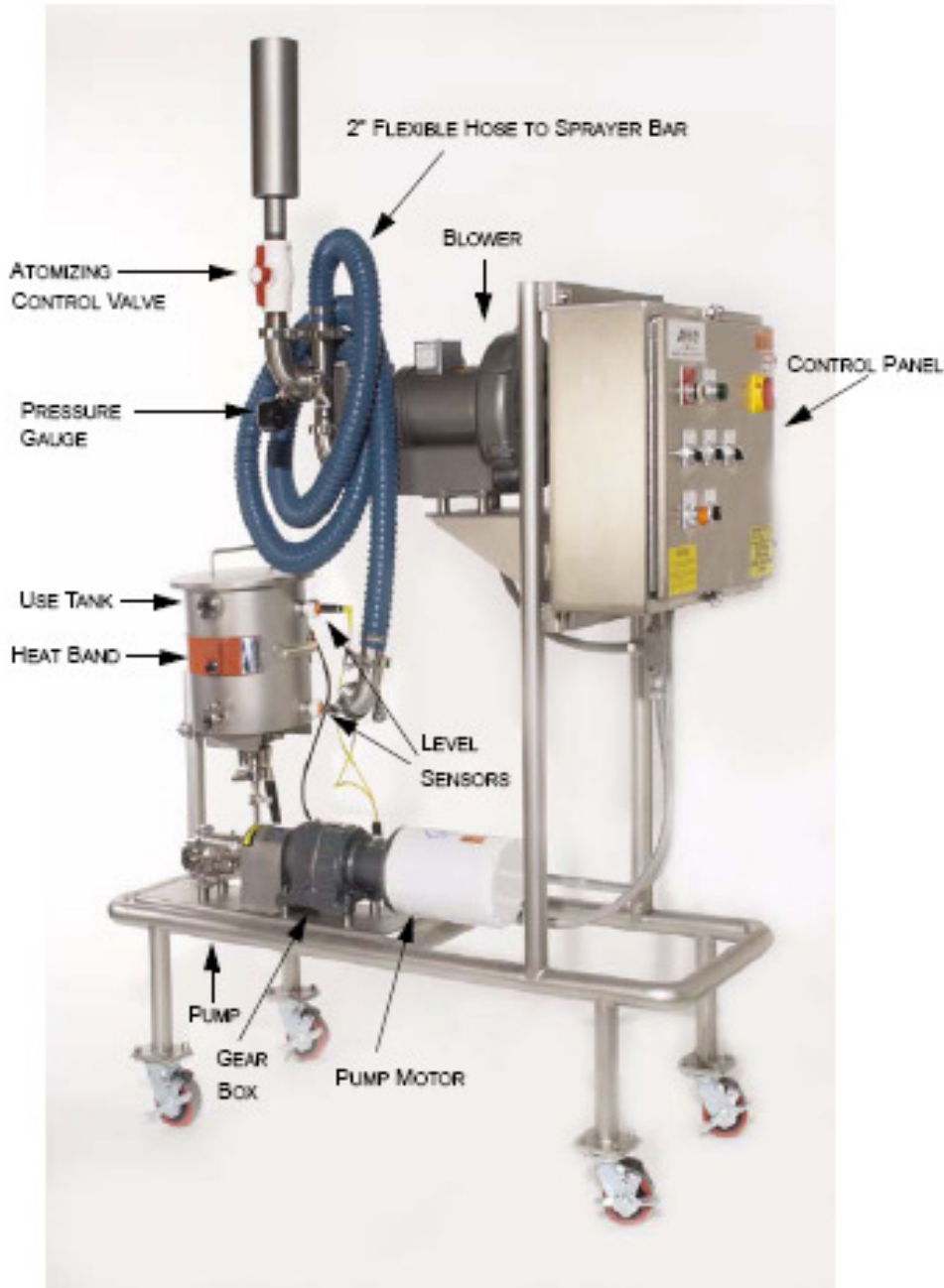


You must be able to safely lift at least 100 pounds to install the Continuous Oil Applicator equipment.

WHICH PARTS ARE WHICH?

The photograph in Figure 1-1, [Continuous Oil Applicator](#) points out the major parts of the Continuous Oil Applicator. In addition, your equipment came with customized AutoCAD drawings that identify every part of the equipment. You can also use these drawings to identify parts of the applicator.

Figure 1-1 Continuous Oil Applicator



2 USING THE CONTINUOUS OIL APPLICATOR

You use the Continuous Oil Applicator to spray a liquid (usually oil, or an oil and water mixture) onto the food product on the line. Before you are ready to run product, you must make sure the Continuous Oil Applicator is set up and that the correct amount of liquid sprays.

If you are not sure what the different parts of the Continuous Oil Applicator are, then go back to chapter 1 and look at [Figure 1-1](#) before starting these tasks.

STARTING UP THE CONTINUOUS OIL APPLICATOR

Before you can run product through the Continuous Oil Applicator and drum, you must first start up the equipment, figure out the correct spray volume and set the spray volume.

Some Continuous Oil Applicators and drums have separate control panels and some have a panel that controls both pieces of equipment. If your Continuous Oil Applicator has its own control panel, follow the instructions below.

To start up the Continuous Oil Applicator:

1. Fill the use tank with the liquid to be sprayed.
2. In the control panel power, turn the main breaker ON.
3. Turn on plant air, if you are using compressed air.
4. Pull the E-Stop button out.
5. Push the Start button.

SETTING THE PUMP SPEED

Set the pump speed correctly for the liquid you are spraying. You determine the pump speed for each liquid by calibrating the system.

If you need to calibrate the system for a new liquid, refer to the instructions in [Step 9. Calibrating the System](#) on page 2-8 of the Continuous Oil

After you calibrate the system for the liquid you want to run, you are ready to run product. During the next set of procedures you will set the Variable Frequency Dial (VFD) for the correct pump speed.

RUNNING PRODUCT

After you set the VFD for the right pump speed, you are ready to run product.

NOTE: To run product, you first start product moving through the drum, then start the Continuous Oil Applicator.

To run product with the Continuous Oil Applicator:

1. Turn on the drum.
2. Make sure product is feeding into the intake side and rotating correctly. See The Rotating Drum Installation and User's Guide for more information if you don't know how to do this.
3. Start up the Continuous Oil Applicator.

NOTE: Do not spray in an empty drum. Be sure there is product in the drum before starting up the Continuous Oil Applicator.

To start up the Continuous Oil Applicator:

1. Turn the Continuous Oil Applicator's blower on.
2. Turn to the control panel.
 - A. If you have a manually-controlled feed system, move the Spray 3-position switch to ON
 - B. If you have an automatically-controlled feed system like a photo eye, then move the Spray 3-position switch to AUTO.
3. Open the valve on the underside of the use tank.
4. Set the VFD to the starting percentage flow.

At this point, liquid should spray out the nozzles and coat product coming out of the outfeed. If this is not happening, see [Chapter 4](#).

User's Guide Using the Continuous Oil Applicator Continuous Oil Applicator July 1, 2002 2 – 3

CLEANING THE SYSTEM

When you are done running product, you must clean and sanitize the system before its next use.

NOTE: Remember to drain or pump any remaining liquid from the tank before you start to clean the system.

To clean and sanitize:

1. Fill the use tank with hot (180 degrees) water and sanitizing solution.
2. Pump through the nozzles for at least 5 minutes or as directed by your standard plant procedures for sanitizing.
3. Drain the tank and refill with hot water and pump through to rinse thoroughly. Pump for at least 5 minutes or until nothing but clear water comes out.
4. Dry by blowing air through or allow to air dry overnight.

SHUTDOWN

NOTE: Before you shut down the system, make sure that you have emptied the use tank of any remaining liquid and cleaned and sanitized the system.

Shutdown Sequence

Shut down the system in this order:

1. Shut off the Continuous Oil Applicator.
2. Shut off the drum.

This assures that you do not spray in an empty drum.

To shut off the Continuous Oil Applicator if it has its own control panel:

1. Move the Spray switch to OFF.
2. Set the VFD to 0.0.
3. Close the valve on the bottom of the use tank.
4. Turn the blower off.
5. Turn off the plant air, if you are using compressed air.
6. Turn the main breaker off.

3

MAINTAINING THE EQUIPMENT

Each of the parts of the Continuous Oil Applicator need to be serviced and lubricated regularly. The parts are:

- The gear box
- The pump
- The blower
- The motor controls

Each of these parts are provided by third-party manufacturers. Information about the specific brand and model of equipment that is used in your system has been included with your system. See each manufacturer's instructions and recommendations for routine maintenance.

4

TROUBLESHOOTING

COMMON PROBLEMS AND CURES

Table 4-1 Common Problems

Problem	Cure
Motors do not run	1. Make sure the main power line from the plant's electrical system is properly connected to the main breaker in the control panel. 2. Make sure the main breaker in the control panel is ON.
Liquid sprays, but not from the spray bar	1. Double check all connections, making sure they are tight and gaskets are in place. 2. Double check that hoses are running to and from the correct locations.
There is no spray, even though there is liquid in the use tank and the motors are running.	1. Make sure the 3-way circulation valve is installed correctly. The port that is normally closed connects to the spray bar. The port that is normally open connects to the tank. 2. Make sure the Spray switch is set to ON. 3. If using an automatic stop/start device, make sure the Spray switch is set to AUTO and the stop/start device is connected correctly and operating correctly. 4. Make sure the 2-way hand valve on the use tank is open.

Table 4-1 Common Problems (continued)

Problem	Cure
<p>Liquid starts to spray, but stops.</p>	<p>There may be foreign material in one of several places.</p> <p>This can cause severe damage. Stop the equipment immediately.</p> <p>Never leave the cover off the tank.</p> <p>Here is what can happen if there is foreign material in any of these areas:</p> <ol style="list-style-type: none"> 1. In the tank. This can fracture the pump gears. 2. In the air filter on the blower. The blower can overheat if the fan stops. 3. In the suction side of the air blower. This can damage the impeller. 4. In one or more nozzles of the spray bar. <p>To cure the problem, determine first where the foreign material is. Then disassemble, clean and reassemble that piece of equipment.</p>

WHERE TO FIND MORE INFORMATION

If you cannot find your problem in the table above, contact PPM Technologies for more information. See the page 2 for various contact methods.

A

INFORMATION ABOUT THIRD-PARTY EQUIPMENT

Many parts of the Continuous Oil Applicator equipment come from other manufacturers. In particular, the blower, motor, pump, AC drive, reducer and electrical controls are third-party equipment.

In your packing crate, you should have received data sheets and other information pertaining to the specific equipment that is used on your system. We have included as much information as we have available for each of these components. Please contact the manufacturer directly if you need more information.

INDEX

B

Blower	8,10,13
Book Revision history	2

C

Calibration	8
Cleaning system	9
Common problems	12
Control panel	11,12

D

Documentation	
Revision history	2

E

Eye protection, required	6
--------------------------------	---

F

Fax number	2
Feed system	9

G

Gear box	13
----------------	----

H

Hearing protection, required	6
History, Revision	2

M

Mailing address	2
Maintenance	11
Manual Revision history	2
Motor controls	14

P

Phone number	2
Pump	13
Pump speed	8

S

Sanitization	11
Setting pump speed	8
Shutdown	10
Shutdown sequence	11
Sprayer bar	8
Start up	8

S	
Starting up.....	8
System, cleaning.....	9
T	
Third party equipment.....	14
U	
Use tank.....	8
V	
Variable Frequency Dial.....	8
Revision history.....	2
VFD.....	8
W	
www.ppmtech.com	2

NOTES