

# ProcessMate™ 100

## Vacuum Pick-Up System

# User's Guide



To order the ProcessMate 100 vacuum pick-up system, refer to part number 7012330

Electronic pdf files of EFD manuals are also available at [www.efd-inc.com/manuals.html](http://www.efd-inc.com/manuals.html)

# Introduction

You have selected a reliable, high quality ProcessMate 100 vacuum pick-up system from EFD, the world leader in fluid dispensing. The ProcessMate 100 vacuum pick-up system was designed specifically for industrial dispensing, and will provide you with years of trouble-free, productive service.

This User's Guide will help you maximize the usefulness of your ProcessMate 100 vacuum pick-up system.

Please spend a few minutes to become familiar with the controls and features. Follow our recommended testing procedures. Review the helpful information we have included, which is based on more than 30 years of industrial dispensing experience.

Most questions you will have are answered in this guide. However, if you need assistance, please do not hesitate to contact EFD or your authorized EFD distributor.

In the USA, call 800-556-3484 between 8:30 a.m. and 5:30 p.m. Eastern time.

In Europe, call +44 (0) 1582 666334.

In Asia, call +86 (21) 3866 9006.

In all other areas, call your authorized EFD distributor or +1-401-431-7000.

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## The EFD Pledge

Thank You!

You have just purchased the world's finest dispensing equipment.

I want you to know that all of us at EFD value your business and will do everything in our power to make you a satisfied customer.

If at any time you are not fully satisfied with our equipment or the support provided by your EFD Product Application Specialist, please contact me personally at 800-556-3484 (US), 401-431-7000 (outside US), or [plambert@efd-inc.com](mailto:plambert@efd-inc.com).

I guarantee that we will resolve any problems to your satisfaction.

Thanks again for choosing EFD.



Peter Lambert, President

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# EFD Product Safety Statement

This statement provides personal and equipment safety notices for EFD dispensing products excluding the TT dispensing robot. For the safety statement on the TT dispensing robot, please see the TT user's guide.

## WARNING

The safety message that follows has a **WARNING** level hazard.  
Failure to comply could result in death or serious injury.



### **ELECTRIC SHOCK**

Risk of electric shock. Disconnect power before removing cover and/or disconnect, lock out, and tag switches before servicing electrical equipment. If you receive even a slight electrical shock, shut down all equipment immediately. Do not restart the equipment until the problem has been identified and corrected.

## CAUTION

The safety messages that follow have **CAUTION** level hazards.  
Failure to comply may result in minor or moderate injury.



### **READ MANUAL**

Read manual for proper use of this equipment. Follow all safety instructions. Task- and equipment-specific warnings, cautions and instructions are included in equipment documentation where appropriate. Make sure these instructions and all other equipment documents are accessible to persons operating or servicing equipment.



### **MAXIMUM AIR PRESSURE**

Maximum air input pressure 6.9 bar (100 psi). Excessive air input pressure may damage the equipment.



### **BURST PRESSURE**

Maximum air input pressure 6.9 bar (100 psi). Burst pressure 20.7 bar (300 psi). Excessive air input pressure may damage the equipment.



### **RELEASE PRESSURE**

Release pressure before opening. Maximum pressure 2.0 bar (30 psi). Release hydraulic and pneumatic pressure before adjusting or servicing pressurized systems or components.

# Halogenated Hydrocarbon Solvent Hazards

Do not use halogenated hydrocarbon solvents in a pressurized system that contains aluminum components. Under pressure, these solvents can react with aluminum and explode, causing injury, death, or property damage. Halogenated hydrocarbon solvents contain one or more of the following elements:

Element	Symbol	Prefix
Fluorine	F	“Fluoro-”
Chlorine	Cl	“Chloro-”
Bromine	Br	“Bromo-”
Iodine	I	“Iodo-”

Check your material MSDS or contact your material supplier for more information. If you must use halogenated hydrocarbon solvents, contact your EFD representative for compatible EFD components.

## High Pressure Fluids

High pressure fluids, unless they are safety contained, are extremely hazardous. Always release fluid pressure before adjusting or servicing high pressure equipment. A jet of high pressure fluid can cut like a knife and cause serious bodily injury, amputation, or death. Fluids penetrating the skin can also cause toxic poisoning.

**Warning:** Any injury caused by high pressure liquid can be serious. If you are injured or even suspect an injury:

- Go to an emergency room immediately.
- Tell the doctor that you suspect an injection injury.
- Show the doctor this note.
- Tell the doctor what kind of material you were dispensing.

## Medical Alert—Airless Spray Wounds: Note to Physician

Injection in the skin is a serious traumatic injury. It is important to treat the injury surgically as soon as possible. Do not delay treatment to research toxicity. Toxicity is a concern with some exotic coatings injected directly into the bloodstream.

## Qualified Personnel

Equipment owners are responsible for making sure that EFD equipment is installed, operated and serviced by qualified personnel. Qualified personnel are those employees or contractors who are trained to safely perform their assigned tasks. They are familiar with all relevant safety rules and regulations and are physically capable of performing their assigned tasks.

# EFD Product Safety Statement

## Intended Use

Use of EFD equipment in ways other than those described in the documentation supplied with the equipment may result in injury to persons or damage to property. Some examples of unintended use of equipment include:

- Using incompatible materials
- Making unauthorized modifications
- Removing or bypassing safety guards or interlocks
- Using incompatible or damaged parts
- Using unapproved auxiliary equipment
- Operating equipment in excess of maximum ratings
- Operating equipment in an explosive atmosphere

## Regulations and Approvals

Make sure all equipment is rated and approved for the environment in which it is used. Any approvals obtained for EFD equipment will be voided if instructions for installation, operation and service are not followed.

## Personal Safety

To prevent injury, follow these instructions:

- This equipment is for indoor use only.
- Do not operate or service equipment unless you are qualified.
- Do not operate equipment unless safety guards, doors or covers are intact and automatic interlocks are operating properly. Do not bypass or disarm any safety devices.
- Keep clear of moving equipment. Before adjusting or servicing moving equipment, shut off the power supply and wait until the equipment comes to a complete stop. Lock out power and secure the equipment to prevent unexpected movement.
- Make sure spray areas and other work areas are adequately ventilated.
- Know where emergency stop buttons, shutoff valves and fire extinguishers are located.
- Clean – Remove all electrical and mechanical connections to unit. Apply a small amount of light detergent onto a moist cloth and wipe surface of unit lightly, cleaning any stains or spilled adhesive.
- Maintain – Only use clean dry air and regulated power supply to unit. Equipment does not require any other regular maintenance.

- Test – Verify operation of features and performance of equipment using the 'Features and Controls' and 'Getting Started' sections within this user guide. If necessary, refer to the 'Troubleshooting Guide' elsewhere in this user guide. A faulty or defective unit should be returned to EFD or representative for refurbishment.
- Use only replacement parts that are designed for use with original equipment. Contact your EFD representative for information and advice.
- **Caution:** Use EFD filter/muffler (#7020356) or wear adequate ear protection when operating the vacuum in close proximity for a prolonged period of time.

## Action in the Event of a Malfunction

If a system or any equipment in a system malfunctions, shut off the system immediately and perform the following steps:

- Disconnect and lock out system electrical power. If using hydraulic and pneumatic shutoff valves, close and relieve pressure.
- Identify the reason for the malfunction and correct it before restarting the system.
- For air-powered dispensers, remove the syringe barrel from the adapter assembly. For electro-mechanical dispensers, slowly unscrew the barrel retainer and remove the barrel from the actuator.

## Disposal

Dispose of equipment and materials used in operation and servicing according to local codes.

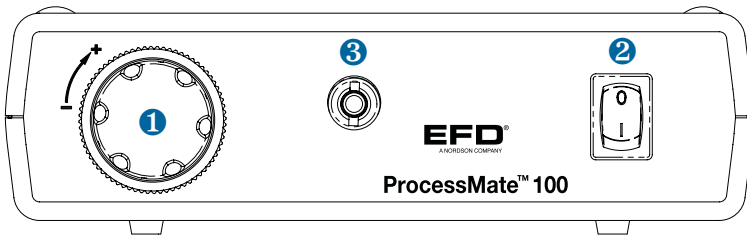
## RoHS标准相关声明 (China RoHS Hazardous Material Declaration)

产品名称 Part Name	有害物质及元素 Toxic or Hazardous Substances and Elements					
	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr6)	多溴联苯 Polybrominated Biphenyls (PBB)	多溴联苯醚 Polybrominated Diphenyl Ethers (PBDE)
金属转接头 All Brass Fittings	<b>X</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<p><b>0:</b> 表示该产品所含有的危险成分或有害物质含量依照EIP-A, EIP-B, EIP-C的标准低于SJ/T11363-2006 限定要求。 Indicates that this toxic or hazardous substance contained in all the homogeneous materials for this part, according to EIP-A, EIP-B, EIP-C is below the limit requirement in SJ/T11363-2006.</p> <p><b>X:</b> 表示该产品所含有的危险成分或有害物质含量依照EIP-A, EIP-B, EIP-C的标准高于SJ/T11363-2006 限定要求。 Indicates that this toxic or hazardous substance contained in all the homogeneous materials for this part, according to EIP-A, EIP-B, EIP-C is above the limit requirement in SJ/T11363-2006.</p>						

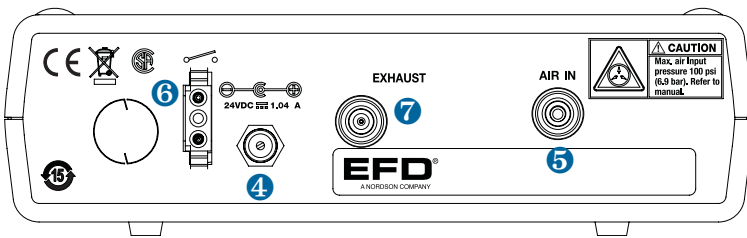
# Specifications

<b>Cabinet Dimensions:</b>	183 mm x 86 mm x 51 mm (7.22" W x 3.38" D x 2" H)
<b>Weight:</b>	1 Kg (2.2 Lbs)
<b>Input AC (to power supply):</b>	100-240 VAC (+/-10%) ~ 50/60 Hz, 0.6A
<b>Output DC (from power supply):</b>	24VDC $\equiv$ – 0.83 Amp maximum
<b>Power Requirements:</b>	24VDC $\equiv$ – 0.83 Amp maximum
<b>Internal Voltage:</b>	24VDC
<b>Footswitch:</b>	
<b>Voltage:</b>	24VDC
<b>Current:</b>	20mA
<b>Cycle Initiate:</b>	Foot Pedal, Finger Switch
<b>Maximum Cycle Rate:</b>	600 cycles per minute
<b>Air Input Requirements:</b>	7 bar (100 psi) maximum
<b>Vacuum Output:</b>	0-210 inch H <sub>2</sub> O dependent on user setting
<b>Ambient Operating Conditions:</b>	
<b>Temperature:</b>	5°C to 45°C (41°F-113°F)
<b>Humidity:</b>	85% RH at 30°C non-condensing
<b>Height above sea level:</b>	2000 meters maximum (6562 feet)
<b>RoHS, WEEE &amp; China RoHS Compliant:</b>	Yes
<b>Approvals:</b>	CE, CSA
<b>Approvals:</b>	CE, CSA
<b>Product Class:</b>	Installation category II Pollution degree 2

# Features and Controls



1. Vacuum Air Regulator Adjustment Knob – Controls vacuum level.
2. Power Switch – Main DC power control switch
3. Output Quick Connector – Vacuum pick-up pen/wand connection



4. Power Input Jack – DC power input
5. Air Input Push-in Fitting – Main filtered air supply input
6. Foot Pedal/Finger Switch Connector – Connection for dispenser actuating device
7. Vacuum Exhaust Port – vacuum air exit

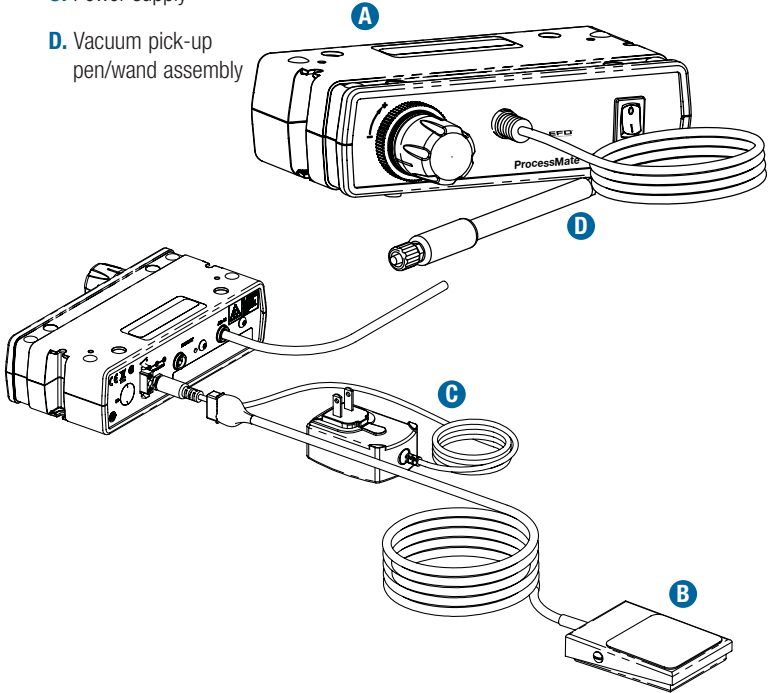
# Getting Started

## Unpack Unit/Warranty

# 1

Unpack the contents of the package and lay them out on a clean work bench. The following items should be included with your ProcessMate 100 vacuum pick-up system:

- A. Vacuum unit
- B. Foot pedal assembly
- C. Power supply
- D. Vacuum pick-up pen/wand assembly



Now is a good time to activate your EFD ProcessMate 100 vacuum pick-up system One Year Warranty. Register online at [www.efd-inc.com/warranty/1year](http://www.efd-inc.com/warranty/1year).

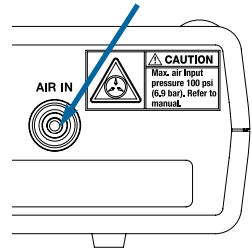
## Connect Air Supply

# 2

**Note:** Clean, dry filtered factory air is required to meet warranty. If your air supply is not filtered, order the EFD five micron filter regulator (#7016547).

Turn the air regulator adjustment knob to zero before connecting the main air input to the ProcessMate 100.

- Push one end of the 6mm air input hose into the input fitting on the back of the ProcessMate 100.
- Connect the other end of the hose to your plant air supply.
- Set plant air supply at minimum 5.5 to 6.9 bar (80 to 100 psi).

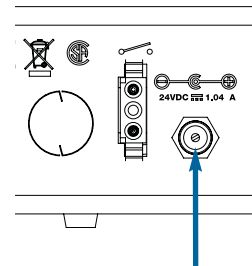


## Connect Power

# 3

- Locate the DC input connection on the back of your ProcessMate 100 vacuum pick-up system.
- Insert the DC Plug securely into the input connection.
- Select the proper adapter from the power supply plug kit and then connect the power supply to a grounded power source.

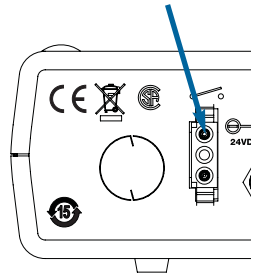
**Note:** The power supply is multi-voltage, therefore no external adjustments are required.



## Connect Foot Pedal

# 4

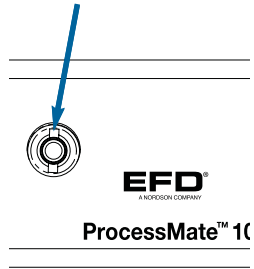
- The ProcessMate 100 comes equipped with a foot pedal cycle actuation device.
- Connect the foot pedal to the back of the ProcessMate 100.
- If you prefer, you can also operate the ProcessMate 100 with an optional finger switch (#7016718).



## Attach Vacuum Pick-Up Pen/Wand Assembly

# 5

- Locate the air output quick connector located on the front face of the ProcessMate 100.
- Attach the male quick connector on the vacuum pick-up pen/wand assembly to the output quick connector by pushing and twisting.

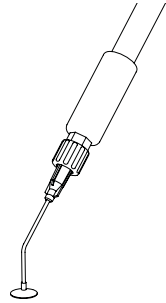


# 6

## Attach Tip & Suitable Vacuum Cup

- Twist on appropriate pick-up tip and select cup to fit application need.

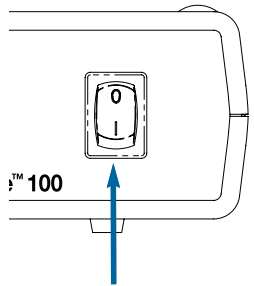
**Note:** a selection of pick-up tips and cups was included in the system package for your convenience. Please contact an EFD Application Specialist should you need assistance in selecting a special tip/cup to suit your application needs.



# 7

## Turn on Power to Unit

- Locate the power switch on the front display panel of the ProcessMate 100.
- To power the unit, simply switch the rocker switch to the “red” position.
- Your ProcessMate 100 is now powered and ready to be activated.



# System Operations

## Setting up system:

The ProcessMate 100 vacuum pick-up system was designed for applications requiring the picking and placing of small, intricate items. The vacuum effect for each application is strictly dependent on the combination of all the following items:

- Regulator pressure – vacuum pressure
- Dispensing tip size
- Pick-up cup size

1. Make sure power is on and air supply to unit is turned on.
2. Place vacuum pick-up cup over item to be picked up.
3. Turn regulator counterclockwise until it stops.
4. Depress foot pedal and gradually and slowly increase vacuum by turning the air regulator clockwise while trying to lift item.

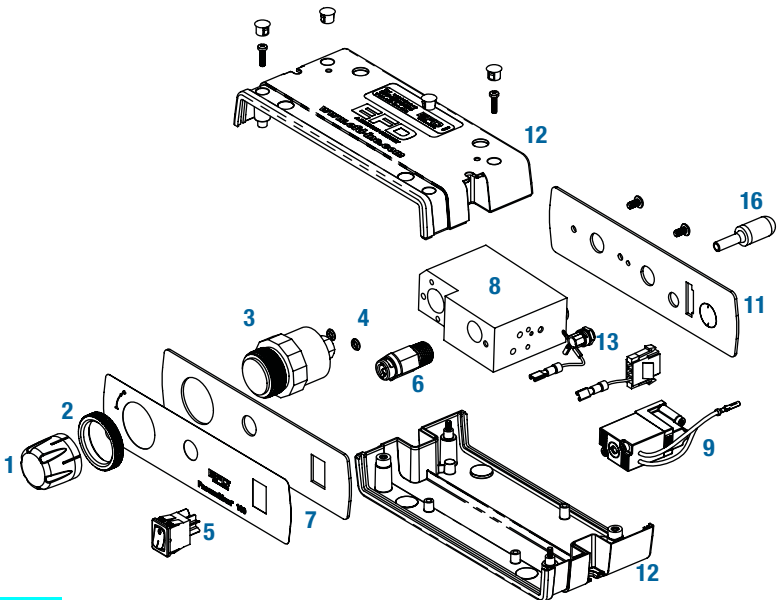
**Note:** Foot pedal must be depressed during the entire duration of pick and place.

5. Upon successful pick-up, place item at intended location and release foot pedal. Vacuum will stop immediately and item will be released from vacuum cup.
6. Repeat procedure a few times to verify sufficient vacuum setting for application.

**Caution:** Excessive vacuum settings may cause damage to delicate components. Always use minimum required vacuum and verify that components are not damaged due to pick and place procedure.

# Replacement Parts

Item	Part Number	Description
1	7012274	Regulator Knob, Black
2	7012276	Regulator Bezel
3	7012277	Regulator Assembly 0-100 psi
4	7021335	Regulator Replacement O-rings
5	7012279	ON/OFF Rocker Switch Assembly
6	7016658	Quick Connector Assembly Kit
7	7012286	Overlay, Front, PM100
8	7016364	Manifold Assembly PM100
9	7012298	Valve, Solenoid Assembly Performus I, PM100
10	7012302	Panel, Rear, PM100
11	7022009	Case, Pack of 2 – top/bottom
12	7014681	Power Supply Plug Kit
13	7015199	Universal Power Supply
14	7016714	Foot Pedal Assembly
15	7020356	Muffler 6mm Push-In

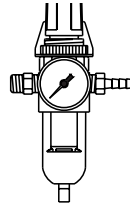


# System Accessories

## Five Micron Filter Regulator/Coalescing Filter Regulator

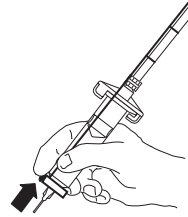
Required for production areas where clean, dry filtered factory air is not available, or to stabilize the plant air supply for more consistent deposits. #7016547

For dispensing cyanoacrylates, order the regulator with a coalescing filter that removes liquid aerosols from the air supply. #7016553



## Finger Switch

Replaces the foot pedal in applications where operators prefer to initiate the vacuum cycle by hand. #7016718.



# Accessories

Description	Quantity	Part #
<b>Vacuum pickup pen (complete)</b>		<b>7016878</b>
<b>Vacuum cups</b>		
.0938" diameter vacuum cups	10/box	7016888
.1250" diameter vacuum cups	10/box	7016882
.1875" diameter vacuum cups	10/box	7016886
.2500" diameter vacuum cups	10/box	7016880
.3750" diameter vacuum cups	10/box	7016890
<b>Vacuum pickup tips 45° angled tips</b>		
14 gauge tips (olive)	50/box	7016906
18 gauge tips (green)	50/box	7016908
21 gauge tips (purple)	50/box	7016910
<b>Straight tips</b>		
14 gauge tips (olive)	50/box	7018043
21 gauge tips (purple)	50/box	7018233
<b>Vacuum cup and tip kit</b>		<b>7016105</b>
(2) 14, (1) 18 and (2) 21 gauge pickup tips		
(1) each .0938", .1250", .1875", .2500" and .3750" dia. cups		

# Troubleshooting Guide

An EFD Customer Service or Technical Services representative is always available to assist you with any question you may have about your ProcessMate 100 System. Please feel free to call or email us at the addresses on the back cover of this User's Guide.

Trouble	Solution
<b>No power</b>	Check the power supply connection and DC power supply to the unit.
<b>No vacuum</b>	Check the main air supply and primary regulator.
	Check to make sure that the main air supply is connected to the back of the unit and has not come loose.
	Check to make sure that the regulator is not turned off (fully counterclockwise).
	Check the vacuum pick-up pen wand assembly for possible contamination or clogs.
	Check that the vacuum exhaust is not blocked or covered.
<b>Note:</b> for heavier and bigger items utilize larger tips and cups and increase vacuum.	