



SD-200

Digital Syringe Dispenser
User Guide





About Dymax

Light-curable adhesives. Systems for light curing, fluid dispensing, and fluid packaging.

Dymax manufactures industrial adhesives, light-curable adhesives, epoxy resins, cyanoacrylates, and activator-cured adhesives. We also manufacture a complete line of manual fluid dispensing systems, automatic dispensing systems, and light-curing systems. Light-curing systems include LED light sources, spot, flood, and conveyor systems designed for compatibility and high performance with Dymax adhesives. Dymax adhesives and light-curing systems optimize the speed of automated assembly, allow for 100% in-line inspection, and increase throughput. System designs enable stand-alone configuration or integration into your existing assembly line.

Please note that most dispensing and curing system applications are unique. Dymax does not warrant the fitness of the product for the intended application. Any warranty applicable to the product, its application, and use is strictly limited to that contained in the Dymax standard Conditions of Sale. Dymax recommends that any intended application be evaluated and tested by the user to ensure that desired performance criteria are satisfied. Dymax is willing to assist users in their performance testing and evaluation. Data sheets are available for valve controllers or pressure pots upon request.

Contents

| | |
|--|-----------|
| Introduction | 4 |
| Where to Get Help..... | 4 |
| Safety | 5 |
| General Safety Considerations | 5 |
| Specific Safety Considerations..... | 5 |
| Product Overview | 6 |
| Description of the SD-200 Syringe Dispenser | 6 |
| Special Features and Benefits of the SD-200..... | 6 |
| Front Control Panel | 8 |
| Rear Panel | 9 |
| Unpacking | 11 |
| Unpacking and Inspecting Your Shipment..... | 11 |
| Parts Included in the SD-200 Syringe Dispenser | 11 |
| System Interconnect | 12 |
| Operation | 13 |
| External Controls | 13 |
| Manual Mode | 14 |
| Timer Mode | 14 |
| External Machine Actuation | 15 |
| Troubleshooting | 16 |
| Spare Parts and Accessories | 17 |
| Specifications | 18 |
| Declaration of Conformity | 19 |
| Warranty | 20 |
| Index | 21 |

Introduction

This guide describes how to assemble, use, and maintain the Dymax SD-200 syringe dispensing system safely and efficiently.

Intended Audience

This user guide was prepared for experienced process engineers, maintenance technicians, and manufacturing personnel. If you are new to pneumatically operated fluid dispensing equipment and do not understand the instructions, contact Dymax Application Engineering to answer your questions before using the equipment.

Where to Get Help

Dymax Customer Support and Application Engineering teams are available in the United States, Monday through Friday, from 8:00 a.m. to 5:30 p.m. Eastern Standard Time. You can also email Dymax at info@dymax.com. Contact information for additional Dymax locations can be found on the back cover of this user guide.

Additional resources are available to ensure a trouble-free experience with our products:

- Detailed product information on www.dymax.com
- Dymax adhesive Product Data Sheets (PDS) on our website
- Safety Data Sheets (SDS) provided with shipments of Dymax adhesives

Safety



WARNING! *If you use this fluid dispensing equipment without first reading and understanding the information in this guide, personal injury can result from the uncontrolled release of high-pressure gas, injection, or exposure to chemicals. To reduce the risk of injury, read and understand this guide before assembling and using Dymax fluid dispensing equipment.*

General Safety Considerations

All users of Dymax fluid dispensing equipment should read and understand this user guide before assembling and using the equipment.

To learn about the safe handling and use of dispensing fluids, obtain and read the SDS for each fluid before using it. Dymax includes a SDS with each adhesive sold. SDS for Dymax products can be requested through the Dymax website.

Specific Safety Considerations

Using Safe Operating Pressures

Pressurizing the components in the dispensing system beyond the maximum recommended pressure can result in the rupturing of components and serious personal injury. To minimize the risk of rupturing components and injury, do not exceed the maximum operating pressure of the components in your fluid dispensing system (see system specifications on page 18).

Preventing Injection Injury

Discharging fluids or compressed air with a dispensing tip against your skin can cause very serious injection injury. To minimize the risk of injection injury, do not place the dispensing tip in contact with your skin.

Product Overview

Description of the SD-200 Syringe Dispenser

The SD-200 digital liquid dispenser, with its versatile design, is perfectly suited for a wide variety of dispensing applications from microdot deposits to large potting and filling. Suitable for all types of fluids, it includes a suck-back feature to ensure low viscosity liquids do not drip from the dispense tip.

The SD-200 provides a micro-controlled timer programmable from 0.01 to 99.99 seconds.

Included hoses, fittings, and dispense tips make the unit ready to use right out of the box.

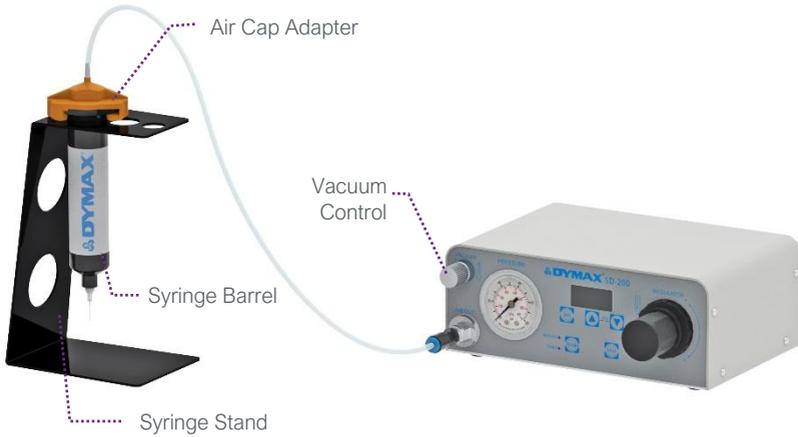
Special Features and Benefits of the SD-200

| Feature | Benefit |
|--|--|
| Adjustable vacuum suck-back | Clean, drip-free cycle shut-off |
| Digital timer with a range of 0.01 to 99.99 seconds | Precision control over fluid dispense |
| Delivers micro-shots, beads, or fills | Timed or manual mode with adjustable time and pressure settings; includes the ability to save a set time in memory |
| Activation by foot pedal (footswitch), shot button, or external signal | Manual or system-integrated operation |
| Adjustable air pressure fluid regulator | Adjust and set the proper air pressure setting for very thin fluids to very thick fluids |

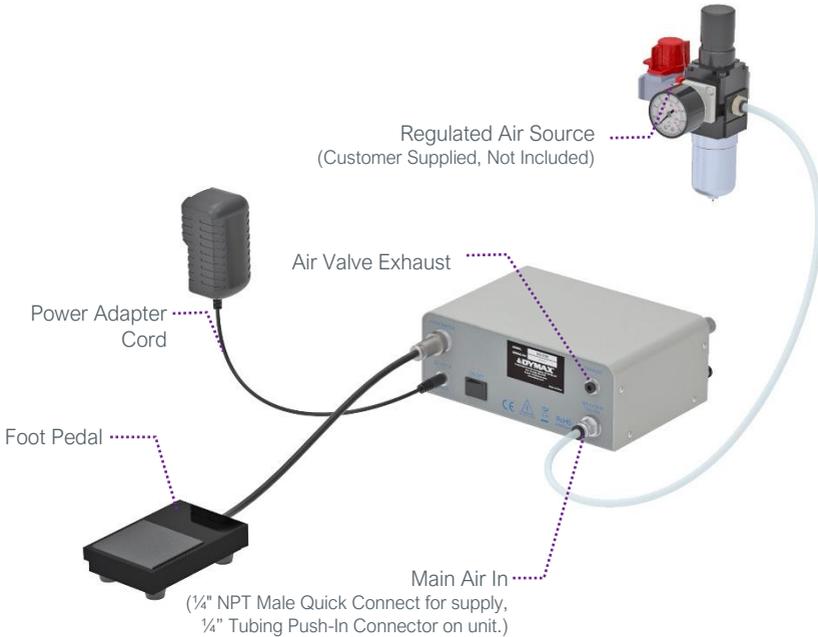


Figure 1.
Main Components of the SD-200 Syringe Dispenser

FRONT



REAR



Front Control Panel

The front control panel of the SD-200 (Figure 2) includes:

Vacuum Control — Adjusts the negative air pressure in the syringe when not dispensing, often referred to as suck-back. This will help if material is leaking from the syringe when not in use.

Pressure Gauge — Shows the amount of pressure being applied to the syringe, via the air cap, to dispense.

Air Pressure Regulator Control — Adjusts the amount of pressure being used to dispense as shown on the Pressure Gauge. In order to reach a desired pressure level, first pull the knob out to unlock it so it will rotate. Turn the knob counterclockwise to a point below the desired pressure, and then turn the dial clockwise to reach the desired pressure.

Air Out — Air fitting to receive the air cap tubing to be attached to syringes.

Digital Display — Displays information pertaining to the programming and use of the unit.

SET – Select digits on Digital Display

▼/▲ arrows – Adjust digits on Digital Display

SHOT – Start a dispense cycle (Manual or Timed).

MODE – Used to toggle between dispensing modes.

The SD-200 has the following operation modes:

MANUAL – In this mode the unit will dispense as long as the foot pedal or SHOT button is pressed. The timer will count up from Zero.

TIMED – The unit will dispense for the set amount of time on the Digital Display regardless of how long the foot pedal or shot button is pressed.

Figure 2.
SD-200 Front Panel



Rear Panel

The rear panel of the SD-200 (Figure 3) includes:

Power Adapter Jack — Connection point for the power adapter. The adapter is provided with AC plug adapters for various supply outlets type worldwide.

Power Switch

Foot Pedal Jack — Connection point for the foot pedal. Pressing the foot pedal starts a dispense cycle. In timed operation, pressing and releasing the foot pedal dispenses fluid for the length of time displayed on the digital display. In manual operation, pressing and holding the foot pedal dispenses fluid until the pedal is released.

Air Valve Exhaust — Waste air pressure relief port

Air Inlet Port— Connection point for air in. Push-in style connector

Figure 3.
SD-200 Rear Panel



Unpacking

Unpacking and Inspecting Your Shipment

When your SD-200 syringe dispensing system arrives, inspect the box for damage and notify the shipper of box damage immediately.

Open the box and check for equipment damage. If parts are damaged, notify the shipper and submit a claim for the damaged parts. Contact Dymax so that new parts can be shipped to you immediately.

Check that the parts included in your order match those listed below. If parts are missing, contact your local Dymax representative or Dymax Customer Support to resolve the problem.

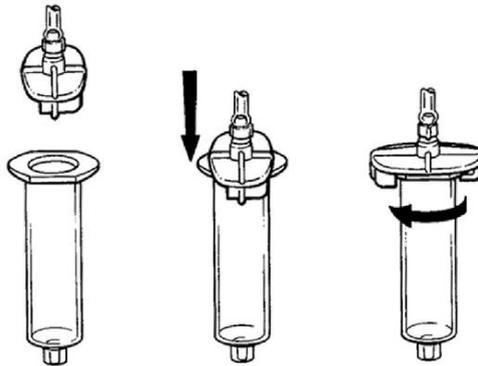
Parts Included in the SD-200 Syringe Dispenser

- SD-200 Digital Syringe Dispense Controller
- Adapter Assemblies: 3, 5, 10, and 30/55 CC
- Push to Connect Tube Fitting 1/4" Stem OD x 5/32" Tube OD with Tubing
- Foot Pedal
- Power Adapter with Attachments
- Syringe Stand
- Tip Kits: High and Low Viscosity
- User Manual

System Interconnect

1. Connect air hose to filtered compressed air 70 - 100 psi (5-7 bar), a ¼" NPT adapter and tubing is provided. Connect the provided ¼" tubing to the Air Inlet Port on the rear of the dispenser and the air source.
2. Insert the foot pedal plug and lock in place with the knurled ring.
3. Insert the power adapter plug into the DC power port on the rear of the unit and plug the adapter to an appropriate AC power source.
4. Insert the syringe adapter assembly into the Air Out port on the front of the unit
5. Twist-Lock the syringe barrel, filled with material to be dispensed and tip cap on the syringe barrel to the air cap assembly as shown in Figure 4.

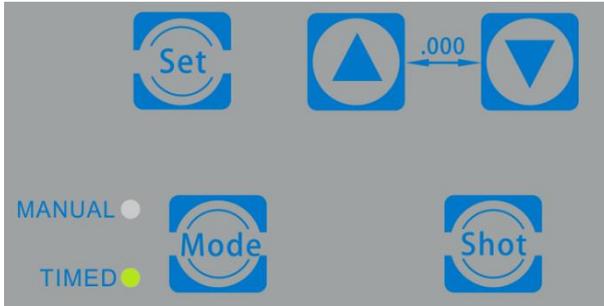
Figure 4.
Barrel and Air Cap Assembly Lock Procedure



Operation

External Controls

Figure 5.
Front Panel Control Buttons



Mode
Switch

Pressing the MODE button toggles between the manual and timed modes. A green LED will indicate which mode is active.



Set
Dispense
Time

Pressing the SET button moves the active digit on the timer display to be able to set an accurate time on the unit.



Digit
Adjust

Pressing the UP/DOWN buttons will change the digit value on the timer display.



Shot
Dispense

Press the SHOT button to actuate the cycle for either manual or timed modes.

Manual Mode



Manual mode allows the user to dispense for an unlimited amount of time by either pressing down on the supplied foot pedal or pushing the SHOT button on the front of the SD-200 unit. The material will continue to dispense for as long as the user is pushing down on the foot pedal or pressing the SHOT button. As soon as either of these are released, the dispensing will stop.

The unit will also count the amount of time you are dispensing during a cycle which may be helpful in determining a time to be used when programming the timer mode. The decimal point will adjust automatically if the time is below 10 seconds on the display.

1. Press the MODE button to cycle to manual mode.
2. Press the SHOT button or the Foot Pedal to start dispensing. Release either to stop dispensing.

Timed Mode



Timed mode allows the user to dispense for a set period of time despite how long the shot or foot pedal is pressed.

The timer will count up from zero to the set time for the cycle.

You can adjust the timer for durations between 0.010 to 99.99 seconds.

Timer Adjustment

1. Press the MODE button until the timed mode is selected.
2. Press the SET button. The first digit on the left side of the display will start blinking or if prior adjustments were made the previously active digit will blink.
3. If SET or the UP/DOWN buttons are not pressed in 2.5 seconds the digit will stop flashing and the display time will be saved.

Pressing the SET button will move the active digit one place to the right.

4. Adjust each digit with the UP/DOWN buttons.
5. Once the last digit is set release all buttons and the time will be set in 2.5 seconds into memory.

Timer Operation

To use timer mode, you can either press the SHOT button on the front panel of the SD-200 unit or press down on the foot pedal.

The digital display will start to count up from 0.000 seconds until it reaches the set time and dispensing will cease.

NOTE: The digital display will move the decimal place when adjustments are made to the timer below/above 10 seconds.

External Machine Actuation

The SD-200 may be triggered remotely using the foot pedal port on the back of the machine with a mating connector and discrete wiring.

By installing a dry contact switch mechanism (0 Volt) between Input pin #1 and Common Pin #2 the unit may be actuated in either timed or manual modes.

Pin #3 is the Ground Pin.

Figure 6.
Footswitch Pin Identification



WARNING: Do not apply a voltage between Pin 1 and Pin 2. Doing so will damage the control board and void all warranty condition.

Troubleshooting

If you are experiencing a problem with your SD-200 Syringe Dispenser, please look through the following troubleshooting section. If your unit is still not working properly after reviewing the troubleshooting recommendations, please contact Dymax Application Engineering for assistance.

IMPORTANT! *Before dispensing always check to make sure that tubing and connections are not damaged or loose. Always replace damaged parts immediately.*

Table 1.
Troubleshooting Chart for SD-200

| Problem | Possible Cause | Corrective Action |
|---|--|---|
| Unit will not dispense | Clogged dispensing tip | Replace the clogged tip with a new dispensing tip |
| | Unit is not properly connected to air or power | Check that all electrical and air utilities are operating and connected |
| | Air cap line is clamped shut | Make sure that the tubing clamp is not on the air cap line |
| | Syringe barrel is not full | Add material to the syringe barrel or replace it with a new filled barrel |
| | Foot pedal is not connected | Fully insert the foot pedal into connector on rear of system |
| Continued flow, bleeding, or dripping after the dispenser is shut off | Not enough vacuum | Increase the amount of vacuum you are using |
| Air or material is being pulled up into the tubing | Vacuum is too high | Decrease the amount of vacuum you are using |
| No flow | Not enough air pressure | Increase the air pressure or use a larger orifice dispense tip |

Spare Parts and Accessories

| Item | Part Number |
|-----------------------------|-------------|
| Air Cap Assemblies | |
| Adapter Assy, 3 CC | 60589 |
| Adapter Assy, 5 CC | 60592 |
| Adapter Assy, 10 CC | 60591 |
| Adapter Assy, 30/55 CC | 60590 |
| Foot Pedal | |
| Foot Pedal, SD-200 | 60742 |
| Power Cords | |
| Power Adaptor, SD-200 | 60743 |
| Stands | |
| Syringe Stand, SD-200 | 60756 |
| Tip Kits | |
| Tip Kit, High Viscosity | P3423 |
| Tip Kit, Low Viscosity | P3424 |
| Syringe Tip Cap | T11182-10 |
| Dispense Tip Kit (assorted) | T16972 |

Specifications

| Property | Specification |
|-------------------------------|--|
| Part Number | 60600 SD-200 Syringe Dispenser* |
| Power Requirements | Input Voltage: 100 - 240 VAC, 50 / 60 Hz Internal Voltage: 24 VDC |
| Air Requirements | Input: 100 psi [7 bar] max Output: 1 - 100 psi [0.07-7 bar] |
| Relative Humidity | 20-90% (No Condensation) |
| Operating Temperature | 50-104°F (10-40°C) |
| Dispense Time | 0.01- 99.99 seconds |
| Cycle Speed | Up to 600 cycles /minute |
| Dimensions (W x D x H) | 7.56" x 7.17" x 3.00" (192 mm x 182 mm x 76 mm) |
| Weight | 2.14 lbs (0.97 kg) |
| Unit Warranty | 1 year from purchase date |
| Certifications | CE, RoHs 2011/65/EU |

* For European customers, this unit is CE certified. The appropriate power cord is added before shipment.

Declaration of Conformity



Declaration of Conformity

Manufacturer:
DYMEX Corporation
318 Industrial Lane
Torrington, CT 06790, USA

European Address:
DYMEX Europe GmbH
Kasteler Str.45
Geb.G359
Wiesbaden Germany 65203

UK Address:
Dymex
1b Hunts Grove Drive, Hardwick,
Gloucester, Gloucestershire, GL2 4BH
United Kingdom

Product description:
Model name(s):
Digital Syringe Dispenser
SD-200

This product complies with the following Directives, legal acts and standards:

European Union Compliance (CE)
Electromagnetic Compatibility Directive (2014/30/EU):
EN 55011:2009 + A1:2010
EN 61000-3-2:2014 Class A
EN 61000-3-3:2013
EN 61326-1:2013

Low Voltage Directive (2014/35/EU):
EN 61010-1:2010 (3rd Edition)

RoHS Directive EU (2015/863)

Declaration:
I declare that the above information in relation to the supply and manufacture of this product is in conformity with the above standards and directives.



3-10-2021

Name Date

Authorized Signatory:
Richard MacCutcheon
Engineering Manager
DYMEX Corporation
Torrington, CT., USA

Representative in Europe:
Dominik Stephan
Director, Equipment
DYMEX EUROPE GmbH
Wiesbaden, Germany

Representative in UK:
Kevin Westcott
Account Manager
DYMEX
Gloucester, United Kingdom

www.dymex.com

Americas
USA | +1 800 492 1010 | info@dymex.com

Europe
Germany | +49 31 1522 7001 | info_eu@dymex.com
Korea | +82 21 227 3018 | info_kr@dymex.com

Asia
Singapore | +65 67522867 | info_ap@dymex.com
Shanghai | +86 21 32765739 | dymexusa@dymex.com
Shenzhen | +86 755 83452359 | dymexchina@dymex.com
Hong Kong | +852 2493 7059 | dymexhk@dymex.com
Korea | +82 31 835 3434 | info_kr@dymex.com

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Warranty

From date of purchase, Dymax Corporation offers a one-year warranty against defects in material and workmanship on all system components (excluding consumables) with proof of purchase and purchase date. Unauthorized repair, modification, or improper use of equipment may void your warranty benefits. The use of aftermarket replacement parts not supplied or approved by Dymax Corporation will void any effective warranties and may result in damage to the equipment.

IMPORTANT NOTE: DYMAX CORPORATION RESERVES THE RIGHT TO INVALIDATE ANY WARRANTIES, EXPRESSED OR IMPLIED, DUE TO ANY REPAIRS PERFORMED OR ATTEMPTED ON DYMAX EQUIPMENT WITHOUT WRITTEN AUTHORIZATION FROM DYMAX. THOSE CORRECTIVE ACTIONS LISTED ABOVE ARE LIMITED TO THIS AUTHORIZATION.

Index

- Air Connections, 8, 14
- CE, *21*
- Components, 9
- Declaration of Conformity, *21*
- External Machine Actuation, 17
- Features and Benefits, 7
- Fluid Connections, 14
- Front Panel Controls, 10
- Operation, 15
 - External Controls, 15
- Operation Modes
 - Manual Mode, 16
 - Timer Mode, 16
- Optional Equipment, *19*
- Parts Included, 13
- Product Overview, 7
- Rear Panel Controls, 12
- Safety, 6
 - Preventing Injection Injury, 6
 - Using Safe Operating Pressures, 6
- Spare Parts and Accessories, *19*
- Specifications, 20
- Troubleshooting, *18*
- Unpacking, 13
- Warranty, 22



Americas

USA | +1.860.482.1010 | info@dymax.com

Europe

Germany | +49 611.962.7900 | info_de@dymax.com
Ireland | +353 21.237.3016 | info_ie@dymax.com

Asia

Singapore | +65.67522887 | info_ap@dymax.com
Shanghai | +86.21.37285759 | dymaxasia@dymax.com
Shenzhen | +86.755.83485759 | dymaxasia@dymax.com
Hong Kong | +852.2460.7038 | dymaxasia@dymax.com
Korea | +82.31.608.3434 | info_kr@dymax.com

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