EQ SD20 Digital Syringe Dispenser

IDH 2974792

Operating Manual



Table of Contents

1 Please Observe the Following 5

1.1 Emphasized Sections 5

1.2 For Your Safety 5

1.3 Unpacking and Inspection 6

1.4 Packing List 6

1.5 Features 7

1.6 Field of Application (Intended use) 7

2 Technical Data 7

3 Description 7

3.1 Theory of Operation 7

3.2 Overview 8

3.2.1 LCD Display 8

3.2.2 Operating Elements 9

4 Installation 9

4.1 Environmental and Operating Conditions 9

4.2 Placement 10

4.3 Connecting the unit 10

4.4 Setting Pressure and Vacuum Unit 10

4.5 Pressure and Vacuum Calibration 11

4.5.1 Pressure Calibration 11

4.5.2 Vacuum Calibration 12

4.6 Installing a Syringe into Syringe Adapter 12

4.7 Shutting down 13

5 Application Hints 13

5.1 Purging syringe 13

5.2 Selecting dispensing needle 14

5.3 Flow rate 14

5.4 Vacuum 14

5.5 Dispensing best practices 14
6 Operation 15
6.1 Continuous Mode 15
6.2 Timer Mode 15
6.2.1 Teaching – Timer Mode 15
6.3 Cycle Mode 16
6.3.1 Teaching – Cycle Mode 16
6.4 Program Mode 17
7 Troubleshooting 17
8 Care and Maintenance 19
8.1 Care 19
8.2 Cleaning 19
8.3 Maintenance 19
9 Accessories and Spare Parts 20
10 Diagrams 21
11 Warranty 21
12 Declaration of Conformity 23

1 Please Observe the Following

1.1 Emphasized Sections

⚠ **Warning!**

Refers to safety regulations and requires safety measures that protect the operator or other persons from injury or danger to life.

! Caution!

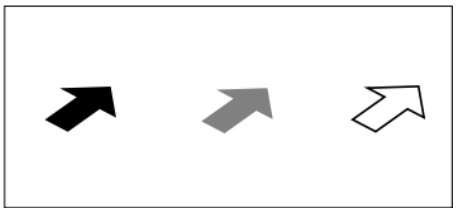
Emphasizes what must be done or avoided so that the unit or other property is not damaged.

☞ **Notice:**

A notice gives recommendations for better handling of the unit during operation or adjustment as well as for service activities.

Instruction steps in the illustrations are indicated with arrows.
When several instruction steps are indicated in an illustration, the shading of the arrow has the following meaning:

Black Arrow = 1st step
Grey Arrow = 2nd step
White Arrow = 3rd step



1.2 For Your Safety

Follow all safety and warning instructions unconditionally during operation. The manufacturer cannot be held responsible if the instructions are not being followed. If you experience any malfunctions, problems, or damage to the unit, contact your local Henkel equipment service immediately.

Please refer to the relevant Technical Data Sheet for the Loctite® product to be processed at https://www.henkel-adhesives.com or request the Technical Data Sheet and the Safety Data Sheet (in accordance with REACH Regulation (EC) No. 1907/2006) from your Henkel Technical Service.

⚠ For safe and successful operation of the unit, read these instructions completely. If the instructions are not observed, the manufacturer can assume no responsibility.

⚠ Do not expose the connecting cable to heat, oil, or sharp edges.

⚠ Make sure the Unit stands stable and secure.

⚠ Use only original equipment replacement parts.

⚠ Always disconnect the power supply before servicing the unit.

⚠ Damage to the power cord or the housing can result in contact with live electrical parts. Check the power cord and the unit before each use. If the power cord or the unit is damaged, do not operate!

⚠ Observe general safety regulations for the handling of chemicals such as Loctite® adhesives and sealants. Observe the manufacturer's instructions as stated in the Safety Data Sheet.

☞ **Notice:**

While under warranty, the unit may be repaired only by an authorized Loctite service representative.

1.3 Unpacking and Inspection

Carefully unpack the Loctite® EQ SD20 Digital Syringe Dispenser and examine the items contained in the carton. Inspect the unit for any damage that might have occurred in transit. If such damage has occurred, notify the carrier immediately. Claims for damage must be made by the consignee to the carrier and should be reported to the manufacturer.

1.4 Packing List

- EQ SD20 Digital Syringe Dispenser x 1 (Order# 2974792)
- EQ SD20 Digital Syringe Dispenser Operating Manual x1
- Universal Power AC Adapter x1
- 30/55ml Syringe Air Line Adapter x1
- Foot switch x1
- Syringe Holder x1
- Needle Sample Kit x1

☞ **Notice:**

As a result of technical development, the illustrations and descriptions in this operating manual can deviate from the actual unit delivered.

1.5 Features

- Precise air pressure regulator.
- Vacuum regulator.
- Keypad with LCD display.
- Teaching function.
- Four working modes: Timer, Continuous, Cycle and Program.
- Pressure and Vacuum digital display.
- Stores up to 40 dispensing programs.

1.6 Field of Application (Intended use)

The Loctite® EQ SD20 Digital Syringe Dispenser is a semi-automatic dispensing system designed to dispense Loctite® adhesives and fluids packaged in 30ml and 55ml syringes. The unit has digital timing control with centesimal settings to 0.01 seconds for increased precision over typical pressure-time systems. An adjustable precision pressure regulator with digital display controls a pulse of air, and when used in conjunction with an airline adapter attached to an adhesive syringe barrel, will provide a controlled dispensed amount of adhesive. The system can be operated in continuous, timer, cycle and program modes to dispense dots or beads. Suck-Back feature with digital vacuum display ensures no dripping.

2 Technical Data

Dimensions (W x H x D):	130x207x295 mm
Total weight: Kg (lbs.)	4.7 (10.4)
Power Supply:	110~240 VAC 50/60Hz
Internal control voltages:	24VDC
Power consumption:	Approx. 10 Watts
Pneumatic Supply:	Clean, dry air not to exceed 7bar (100psi) and filtered with a maximum of 50 µm.
Operating Temperature:	+10°C to +40°C (+50°F to +104°F)
Storage Temperature:	- 10°C to +60°C (+14°F to +140°F)

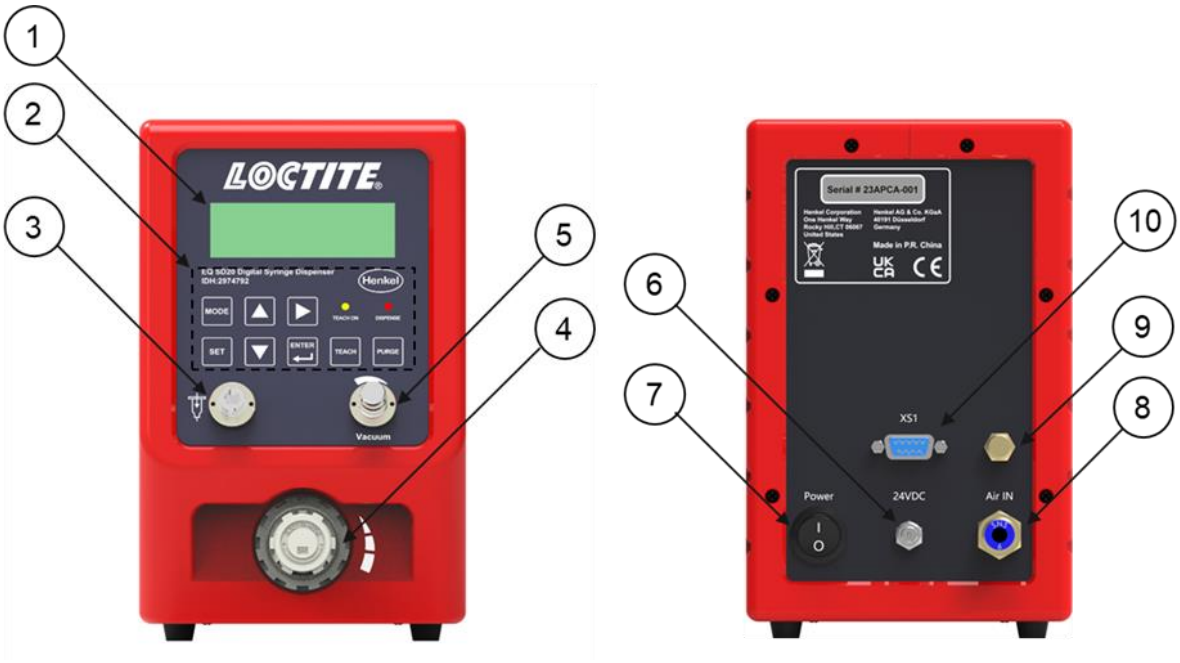
3 Description

3.1 Theory of Operation

The Loctite® EQ SD20 Digital Syringe Dispenser is connected to an external pneumatic supply. The control unit of the EQ SD20 Digital Syringe Dispenser

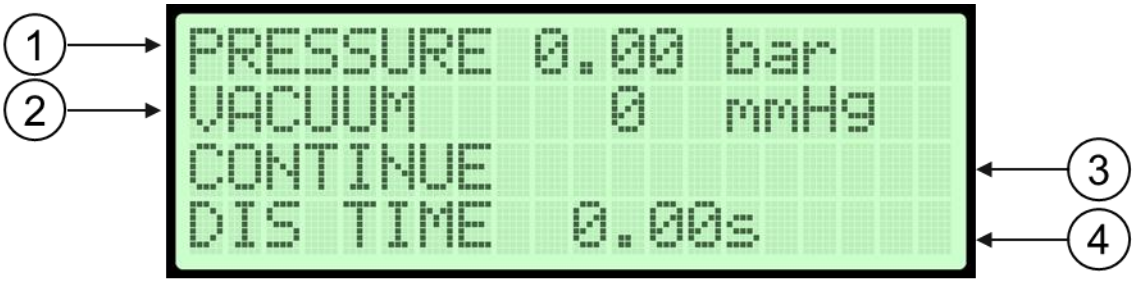
regulates the dispensing pressure and time to dispense a repeatable volume of product. The built-in vacuum regulator prevents dripping of the product during pauses in dispensing.

3.2 Overview



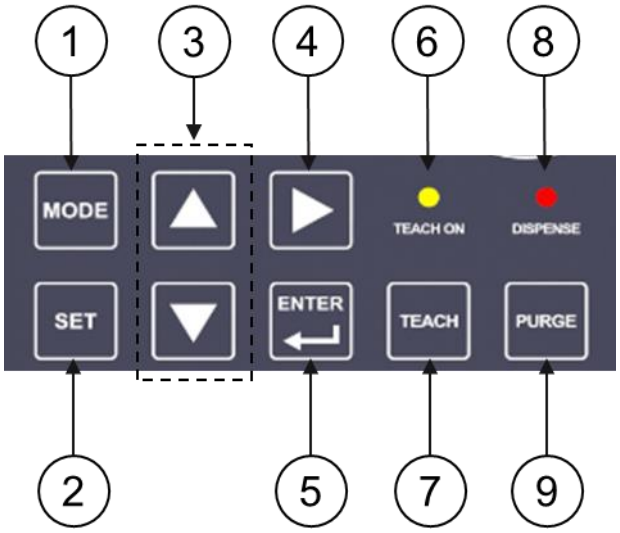
1 – LCD Display
2 – Operating Elements
3 – Syringe Adaptor Connector
4 – Pressure Regulator
5 – Vacuum Regulator
6 – Power In
7 – Power Switch
8 – Main Pneumatic Air Supply
9 – Silencer
10 – XS1 Start (Foot switch)

3.2.1 LCD Display



1 – Pressure output and Pressure Unit
2 – Vacuum output and Vacuum Unit
3 – Working Mode
4 – Working Mode's Parameters

3.2.2 Operating Elements



1 – Browse working modes

2 – Enables edit parameter/ change cursor to next editable field

3 – Increase/decrease value

4 – Change cursor position (when set function is enabled)

5 – Save value

6 – “Teaching” mode status (LED lights up when Teach mode is activated)

7 – Enables “Teach” mode

8 – Indicates equipment status (LED lights up when dispensing)

9 – Dispenses adhesive while depressed

4 Installation

! Caution!

Before using the equipment for the first time, check it carefully for signs of external damage. If any shipping damage is found do not use it and contact your dealer.

4.1 Environmental and Operating Conditions

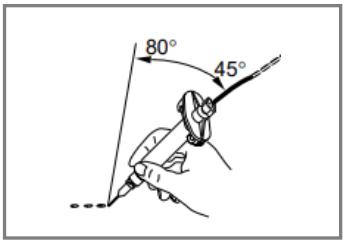
- No direct sunlight; no UV light.
- No condensing humidity.
- No splashing waters.
- No high magnetic and intense electric field.
- Avoid kinking of air hoses.

4.2 Placement

Caution!

When the syringe piston is missing and the syringe is handled in an improper manner, the product can enter and contaminate the dispenser. Please, follow the instructions below to avoid contamination.

Place the control unit in an elevated position above the syringe.
Do not hold the syringe in an elevated position above the dispenser or with the tip pointing upward!
In work pauses, switch main air supply off and place the syringe on the syringe holder.



Hold the syringe correctly for uniform application of the product.
When setting the vacuum, start with “0” then increase vacuum slowly to ensure product is not sucked back into the unit.

4.3 Connecting the unit



Syringe Adapter | **Starting signal (e.g. Foot switch)** | **Power Supply** | **Main Pneumatic Air supply**

4.4 Setting Pressure and Vacuum Unit

Pressure units available: bar, psi and kPa.
Vacuum units available: psi, kPa and mmHg.

1 – Press ▲ and ▼ together, it leads to Pressure and Vacuum selecting unit screen.

2 – Press SET to enable changing Pressure unit.

3 – Use ▲ or ▼ to select Pressure unit.

4 – Press SET to switch to Vacuum unit selector.

5 – Use ▲ or ▼ to change Vacuum unit.

6 – Press ENTER to save.

7 – Press ▲ and ▼ together to exit Pressure and Vacuum selecting unit screen.

4.5 Pressure and Vacuum Calibration

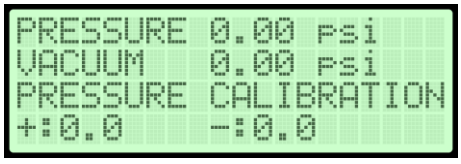
Loctite® EQ SD20 Digital Syringe Dispenser is already calibrated during the manufacturing process. Loctite® EQ SD20 Digital Syringe Dispenser is only required to be calibrated if the set pressure/vacuum differs from the measured pressure/vacuum. To be sure the displayed value of the unit is exact, calibration must be accomplished accurately.

Pressure and Vacuum Calibration must be done in **psi**.

☞ Notice:

To calibrate, an external calibrated digital Pressure and/or Vacuum gauge is needed (not supplied with Loctite® EQ SD20 Digital Syringe Dispenser).

4.5.1 Pressure Calibration



1 – Press ▲ and ▶ together, it leads to Pressure Calibration screen.

2 – Connect your external calibrated Pressure gauge to Syringe Adapter connector.

3 – Set vacuum regulator to 0.

4 – Using the pressure regulator, set the pressure to 58 psi.

5 – Press PURGE and verify value on external digital gauge.

6 – If value differs, press SET to enable editing.

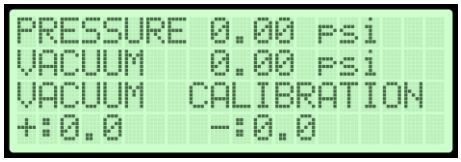
7 – Use ▲ or ▼ to give the offset needed.

8 – Press SET to switch between “+” and “-“ offset fields.

9 – Press ENTER to save.

10 – Press ▲ and ▶ together to exit Pressure Calibration screen.

4.5.2 Vacuum Calibration



1 – Press ▼ and ▶ together, it leads to Vacuum Calibration screen.

2 – Connect your external calibrated Vacuum gauge to Syringe Adapter connector.

3 – Set pressure regulator to 0.

4 – Using the Vacuum regulator, set the vacuum to 3 psi.

5 – Verify value on external digital gauge.

6 – If value differs, press SET to enable editing.

7 – Use ▲ or ▼ to give the offset needed.

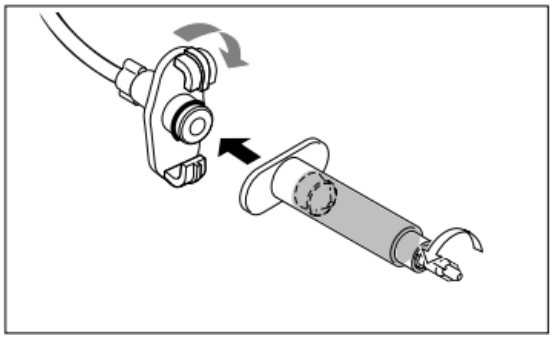
8 – Press SET to switch between “+” and “-“ offset fields.

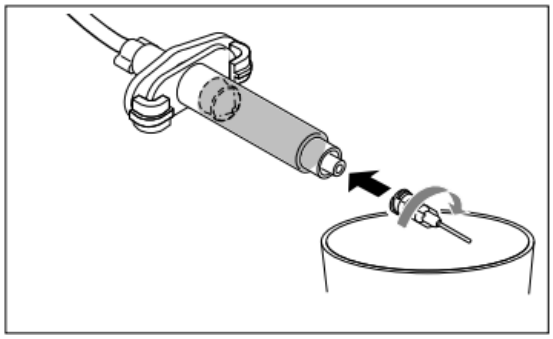
9 – Press ENTER to save.

10 – Press ▼ and ▶ together to exit Pressure Calibration screen.

4.6 Installing a Syringe into Syringe Adapter

With a purged syringe, follow the instructions below:





4.7 Shutting down

For periods of non-use, it is recommended to shut down the unit. Please, follow the instructions below:

1 – Switch the unit off.

2 – Switch main pneumatic air supply off.

3 – Disconnect Syringe from Syringe Adapter.

4 – Remove dispensing needle and dispose it in a proper manner.

5 – Install a Luer-Lock tip cap and store the syringe in a proper manner.

5 Application Hints

☞ **Notice:**

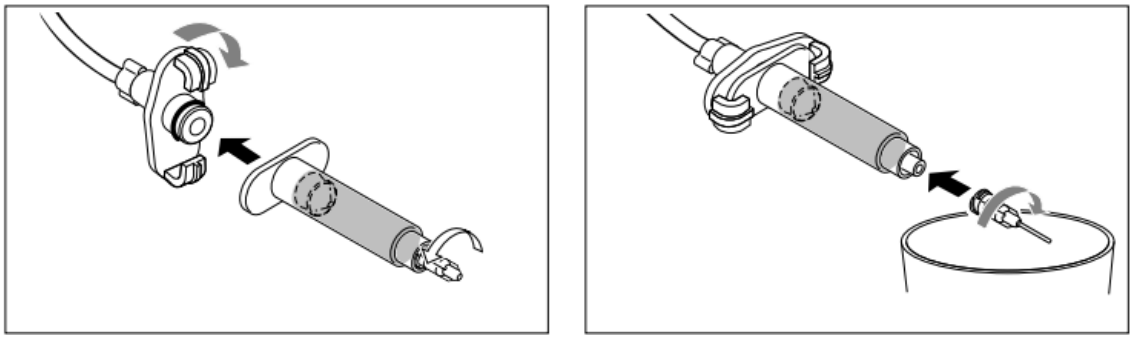
As with all adhesives, performance depends on conditions of use. Suggestions or recommendations contained herein are for guidance only since actual conditions of use are outside the supplier's control.

5.1 Purging syringe

To prevent air from impacting dispensing consistency, the syringe must be purged of air.

For low to medium viscosity products, hold the syringe with the tip end facing upwards and tap the syringe, or place the syringe upwards and let it stand still for a period of time. Air bubbles will rise to the top. Next, remove the tip cap, install a dispensing needle and push the piston slowly upward to remove large bubbles.

For medium to high viscosity products, using a centrifuge to remove air prior to dispensing if product contain entrapped air.



Attach the purged syringe to the air adapter as shown in the above figure.

Hold the syringe over a container since product will flow out.

Set appropriate pressure based on adhesive viscosity.

Press Purge button until no air bubbles are coming out from syringe.

☞ **Notice:**

If the product drips out of the dispense needle. Slowly increase the vacuum value until the dripping stops. (**section 5.3**)

5.2 Selecting dispensing needle

Straight Stainless-Steel needles are recommended for Low to Medium viscosity products.

Conical needles are recommended for Medium to High viscosity products.

5.3 Flow rate

On “Continuous” mode, set the pressure to “0”. When using a foot switch, depress the foot switch and slowly increase the pressure until achieve desired dispensing flow rate.

5.4 Vacuum

Slowly increase the vacuum regulator to achieve no dripping, do not go beyond this point.

! Caution!

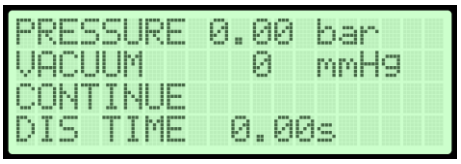
Do not continue increasing the vacuum after dripping has stopped. When air is sucked in, the syringe must again be purged of air and curing of the product can occur!

5.5 Dispensing best practices

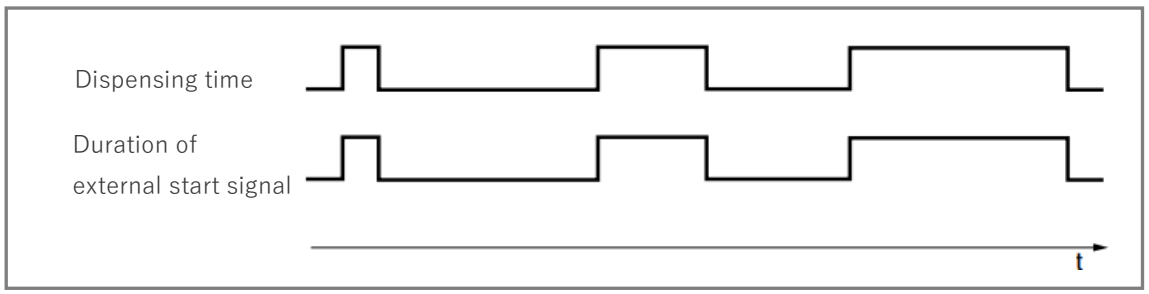
The best accuracy is achieved with low pressure and long dispensing time. It is known that due to productivity, you may not always keep the dispensing time long, find a compromise between pressure and time which suits your needs as best as possible.

6 Operation

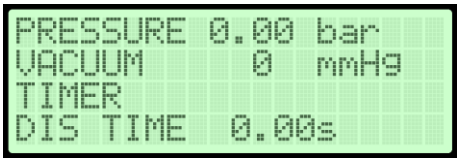
6.1 Continuous Mode



This mode of operation is used for the application of beads. The dispensing time is controlled by the duration of the external start signal.

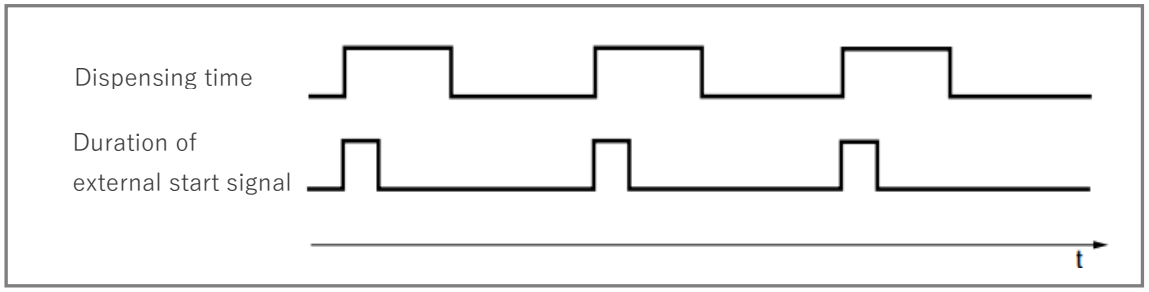


6.2 Timer Mode



This mode of operation is used for dot or drop dispensing. Operator can setup the internal timer from 0 to 99.99s.

Use “Operating elements” described on **section 3.2.2** to change and save desired parameters.



6.2.1 Teaching – Timer Mode

1 – Press TEACH to activate Teaching mode.

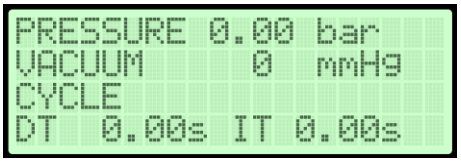
2 – LED “Teach” will light up indicating Teaching mode is activated.

3 – Send external start signal via XS1. (e.g. using a foot switch connected to XS1, keep the foot switch depressed)

4 – Stop external start signal as soon as desired amount of adhesive is achieved. (e.g. using a foot switch connected to XS1, release the foot switch after amount of adhesive is reached)

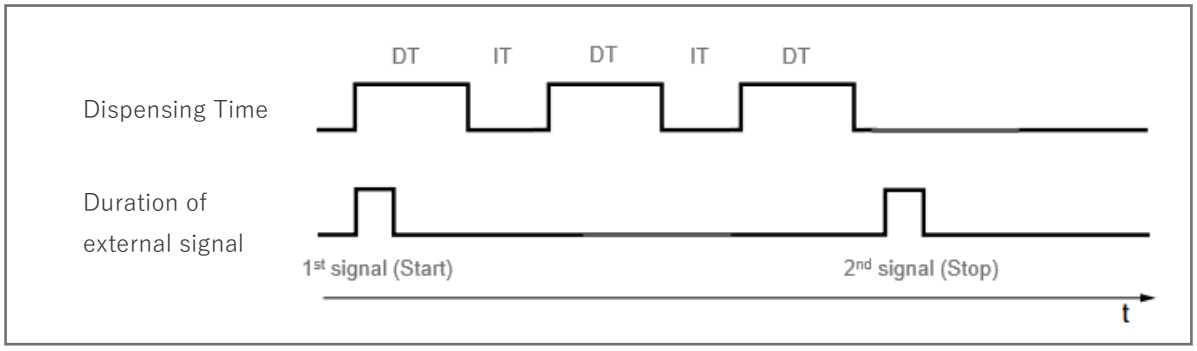
5 – Press ENTER to save the value and exit “Teach mode”.

6.3 Cycle Mode



This mode of operation is used for repeatable dispensing. In Cycle mode, the operator needs to setup interval and dispensing time. Dispenser will run repeating cycles of Dispensing Time (DT) and then Interval time (IT).

Use “Operating elements” described on **section 3.2.2** to change and save desired parameters.



6.3.1 Teaching – Cycle Mode

1 – Press TEACH to activate Teaching mode.

2 – LED “Teach” will light up indicating Teaching mode is activated.

3 – Dispensing Time (DT) is the first parameter to be set.

4 – Send external start signal via XS1. (e.g. using a foot switch connected to XS1, keep the foot switch depressed)

5 – Stop external start signal as soon as desired amount of adhesive is achieved. (e.g. using a foot switch connected to XS1, release the foot switch after amount of adhesive is reached)

6 – Press SET to switch to Interval Time (IT)

7 – Send external start signal via XS1. (e.g. using a foot switch connected to XS1, keep the foot switch depressed)

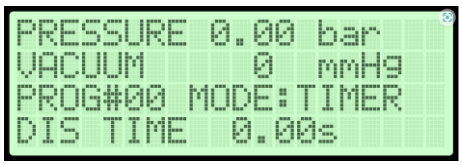
8 – Stop external start signal as soon as you reach the desired Interval Time (IT). (e.g. using a foot switch connected to XS1, release the foot switch after reaching desired Interval Time)

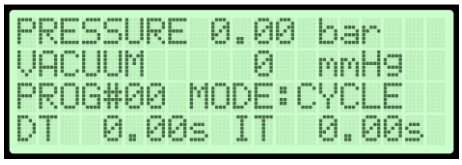
5 – Press 

to save the value and exit “Teach mode”.

6.4 Program Mode

It is possible to save up to 40 programs (00-39). Timer and Cycle are the modes possible to be set. Teach mode is not available on “Program” mode.





Use “Operating elements” described on **section 3.2.2** to change and save desired parameters (Program #, Working modes and Dispensing (DT) and Interval Time (IT)).

7 Troubleshooting

Malfunction	Possible Cause	Corrective
LCD display does not light up.	Power adapter is not connected.	Verify power adapter’s connections.
	Power adapter is defective.	Replace power adapter.
	Power switch is not switched on.	Switch on the power switch.
	Unit is defective.	Contact Henkel Equipment Service.
Not possible to set pressure or no pressure is shown.	Main pneumatic air supply is not connected or switched on.	Verify main pneumatic air supply and its connections.
	Pressure regulator set at minimum.	Increase the pressure turning pressure regulator’s knob clockwise.
	Pressure regulator defective.	Contact Henkel Equipment Service.

Not possible to set vacuum or no vacuum.	Main pneumatic supply is not connected or switched on.	Verify main pneumatic supply and its connections.
	Vacuum regulator set at minimum.	Increase the vacuum turning vacuum regulator's knob counterclockwise.
	Silencer is clogged.	Clean or replace silencer.
	Vacuum regulator defective.	Contact Henkel Equipment Service.
Not possible to dispense.	XS1 cable connection is not secure.	Switch the unit OFF. Tighten the screws of the plug. Switch ON.
	Foot switch/finger switch defective.	Replace the defective device.
	Syringe adapter is not connected or not well connected.	Verify Syringe Adapter connection to the unit and syringe.
No product, too little or too much product	Dispensing pressure not correctly set.	Use the pressure regulator to adjust dispensing pressure.
	Main pneumatic air supply is not connected or switched on.	Verify main pneumatic air supply and its connections.
	Syringe adapter is not connected or not well connected.	Verify Syringe Adapter connection to the unit and to the syringe.
	Dispensing needle clogged, too small or too large.	Replace dispensing needle.
	Control unit is defective.	Contact Henkel Equipment Service.
Product drips.	Vacuum regulator is set too low.	Turn the vacuum regulator counterclockwise until the dripping stops.
	Exhaust air silencer is clogged.	Clean or replace silencer.
Operating element does not response.	Operating element is defective.	Contact Henkel Equipment Service.

8 Care and Maintenance

8.1 Care

Occasionally the O-ring at the syringe adapter should be greased. This will prolong the life of the O-ring.

☞ Notice:

Clean your hands after application of grease to ensure no surface contamination.
Clean the adhesive residue from the syringe holder or replace it with a new one as required.

8.2 Cleaning

⚠ Warning!

If cleaning agents are not properly handled, damage to health can result!
Observe general safety regulations for the handling of chemicals!
Observe manufacturer's instructions! Request a safety data sheet for the product used!

Recommended cleaning agent: Isopropanol (IPA)

⚠ Warning!

Acetone will damage the plastic housing and paint of the equipment.

8.3 Maintenance

The unit requires no special maintenance.

☞ Notice:

If the required air quality is not achieved, install a Loctite® filter regulator. In the US order a 5 μm filter using Part Number 478603. In Europe or Asia, order a 10 μm filter using Part Number 88649. The unit requires no special care or maintenance.

9 Accessories and Spare Parts

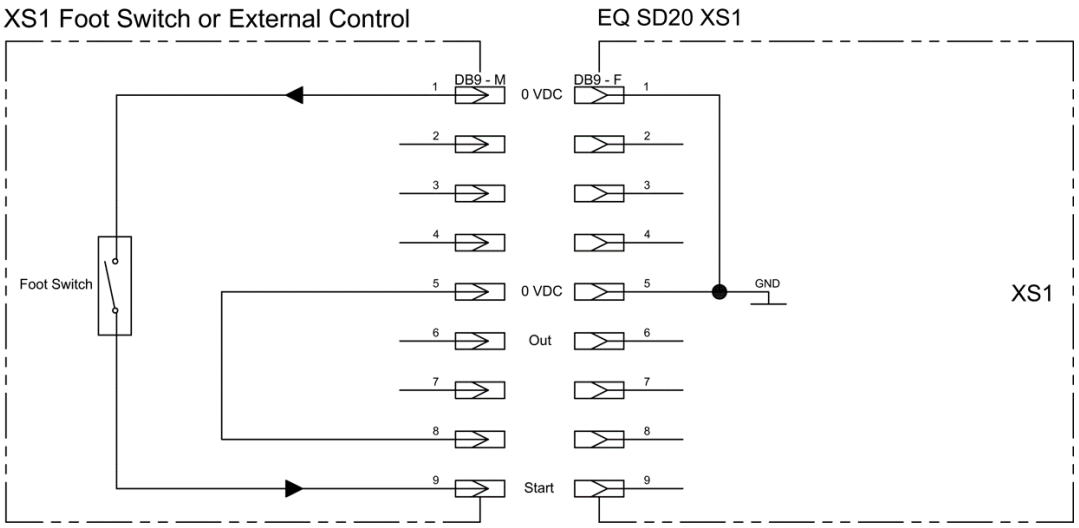
Description	Order#
10ml Air Line Adapter (2 pcs)	88657
10ml Clear Syringe barrel kit (40 pcs)	88656
10ml Black Syringe barrel kit (40 pcs)	218287
30ml Air Line Adapter (2 pcs)	88678
30ml Clear Syringe barrel kit (20 pcs)	88677
30ml Black Syringe barrel kit (20 pcs)	218286
Foot Switch	88653
Syringe holder	2974794
Finger switch	735225
Silicone Grease, 6 Gram Tube	88722
Luer-Lock tip cap	218275
Loctite Air Filter, Regulator, Gauge (Mechanical version) – US	478603
Loctite Air Filter, Regulator, Gauge (Mechanical version) – EU/Asia	88649

10 Diagrams

XS1 Start via Foot switch, or external control.

⚠ Warning!

Never connect external voltage on pin1 or pin9!



11 Warranty

Henkel expressly warrants that all products referred to in this Instruction Manual for Loctite® EQ SD20 Digital Syringe Dispenser (hereafter called “Products”) shall be free from defects in materials and workmanship. Liability for Henkel shall be limited, as its option, to replacing those Products which are shown to be defective in either materials or workmanship or to credit the purchaser the amount of the purchase price thereof (plus freight and insurance charges paid therefor by the user). The purchaser’s sole and exclusive remedy for breach of warranty shall be such replacement or credit.

A claim of defect in materials or workmanship in any Products shall be allowed only when it is submitted in writing within one month after discovery of the defect or after the time the defect should reasonably have been discovered and in any event, within (12) months after the delivery of the Products to the purchaser. This warranty does not apply to perishable items, such as fuses, filters, lights, etc.. No such claim shall be allowed in respect of products which have been neglected or improperly stored,

transported, handled, installed, connected, operated, used or maintained. In the event of unauthorized modification of the Products including, where products, parts or attachments for use in connection with the Products are available from Henkel, the use of products, parts or attachments which are not manufactured by Henkel, no claim shall be allowed.

No Products shall be returned to Henkel for any reason without prior written approval from Henkel. Products shall be returned freight prepaid, in accordance with instructions from Henkel.

NO WARRANTY IS EXTENDED TO ANY EQUIPMENT WHICH HAS BEEN ALTERED, MISUSED, NEGLECTED, OR DAMAGED BY ACCIDENT.

EXCEPT FOR THE EXPRESS WARRANTY CONTAINED IN THIS SECTION, HENKEL MAKES NO WARRANTY OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED, WITH RESPECT TO THE PRODUCTS.

ALL WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND OTHER WARRANTIES OF WHATEVER KIND (INCLUDING AGAINST PATENT OR TRADEMARK INFRINGEMENT) ARE HEREBY DISCLAIMED BY HENKEL AND WAIVED BY THE PURCHASER.

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12 Declaration of Conformity

CE	**EU Declaration of Conformity**
Designation of the unit:	EQ SD20 Digital Syringe Dispenser
Unit number:	Order no. (IDH): 2974792
Manufacturer:	Henkel AG & Co. KGaA Henkelstraße 67 40589 Düsseldorf Germany
This declaration of conformity is issued under the sole responsibility of the manufacturer. The object of the declaration described above is in conformity with the relevant Union harmonization legislation:	
Applicable EC regulations	Directive 2014/35/EU Low Voltage Directive 2014/30/EU Electromagnetic Compatibility Directive 2011/65/EU RoHS
Applicable harmonized standards	EN IEC 62368-1:2020+A11:2020 EN 55032:2015+A11:2020+A1:2020 EN IEC 61000-3-2:2019/A1:2021 EN 61000-3-3:2013/A1:2019/A2:2021 EN 55035:2017+A11:2020 EN IEC 63000:2018
Place and date of issue: Düsseldorf, **DATE**	Signed for and on behalf of Henkel AG & Co. KGaA: _____ Michael Brunner Business Development Manager Equipment

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