

LOCTITE®

EQUIPMENT Operation Manual



Loctite® LV Hand-Held Applicator

Part Number 97130

Henkel Technologies

Contents

| | Page No. |
|--|-----------------|
| 1 Please Observe the Following | 1-2 |
| 1.1 Emphasized Sections | 1 |
| 1.2 Items Supplied | 1 |
| 1.3 For Your Safety | 2 |
| 1.4 Field of Application (Intended Usage) | 2 |
| 1.5 General Instructions when Dispensing Cyanoacrylate | 2 |
| 2 Description | 3-4 |
| 2.1 Theory of Operation | 3 |
| 2.2 Operating Elements and Connections | 4 |
| 3 Technical Data | 5 |
| 4 Installation | 6-9 |
| 4.1 Mounting the Feed Line | 6 |
| 4.2 Connecting to the Product Reservoir | 7 |
| 4.3 Connecting to the Controller | 8 |
| 4.4 Selection of the Required Dispensing Needle | 9 |
| 5 Dispensing | 10-11 |
| 5.1 First Operation | 10 |
| 5.1.1 Priming the LV Hand-Held Applicator | 10 |
| 5.1.2 Adjusting the Dispensing Quantity | 10 |
| 5.2 Shutdown | 11 |
| 5.3 Returning to Operation | 11 |
| 6 Troubleshooting | 12 |
| 7 Annex | 13-16 |
| 7.1 Accessories and Spare Parts | 13 |
| 7.2 Connector Finger Switch | 14 |
| 7.3 Manufacturer's Declaration | 15 |
| 7.4 Warranty | 16 |

1. Please Observe the Following

1.1 Emphasized Sections



Warning!

Refers to safety regulations and required 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:

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

The numbers printed in bold in the text refer to the corresponding position numbers in the illustration on page 4.

- The point emphasizes an instruction step.

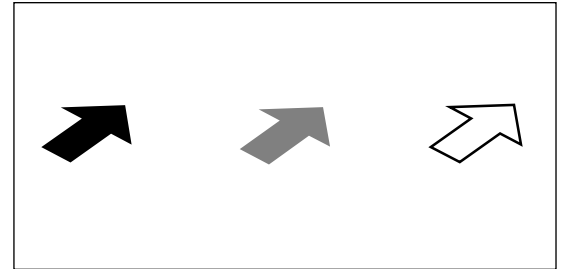
Instruction steps in the illustrations are indicated with arrows.

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 Items supplied

- LV Hand-Held Applicator Dispensing Valve 97130
- Needle Variety Kit 97262
- Silicone Grease
- 2 m Product Feed Line 97972, PTFE lined, OD 1/4"
- 2 m Pneumatic Tubing
- Operation Manual

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

1. Please Observe the Following (continued)

1.3 For Your Safety



For safe and successful operation of the unit, read these instructions completely. If the instructions are not observed, the manufacturer can assume no responsibility. Be sure to retain this manual for future reference.

When working with pressurized air, wear protective glasses!

Observe general safety regulations and manufacturer's instructions for the handling of chemicals! If chemical products are not properly handled, damage to health can result! Request a safety data sheet for the Loctite® product used! Cyanoacrylate bonds skin and eyes in seconds!

1.4 Field of Application (Intended Usage)

The LV Hand-Held Applicator 97130 is suitable for dispensing Loctite® products in a manual or semiautomatic process. It can be used especially for CA and other low pressure applications up to 2 bar (30 psi).

This valve is not recommended for UV curing products. This ergonomically designed applicator provides hand comfort and application control to eliminate hand fatigue and improve dispensing accuracy.

The applicator can be used in a hand-held fashion or mounted in a stationary manner that allows for easy production line integration.

Henkel Loctite provides a selection of product reservoirs and controllers that can be used with the LV Hand-Held Applicators.

1.5 General Instructions when Dispensing Cyanoacrylate

Use only clean, dry, compressed air. Compressed air is the prime source of moisture. We highly recommend that you install Loctite® filter regulator 97120 to absorb moisture before it contacts the cyanoacrylate. As an option, use nitrogen to pressurize the product reservoir. Nitrogen is an excellent alternative because it is inherently free of moisture. When nitrogen is used as the pressure source for the reservoir, compressed air is used to operate the dispensing valve.

2. Description

2.1 Theory of Operation

The LV Hand-Held Applicator is a normally closed, fail-safe dispensing valve with adjustable opening.

The Loctite® product is transported through a product feed line to the LV Hand-Held Applicator, driven by the dispensing pressure in the product reservoir.

The opening of the valve takes place by pressurizing an internal single acting cylinder. The rod pulls open and permits the fluid to flow through the product chamber. Closing in idle position is achieved by spring force. It pushes the piston against a valve seat which seals the product bore in the valve.

Within the shut off valve assembly, PTFE material is used for the area in contact with the adhesive to prevent curing of adhesive in this part of the valve.

The opening of the LV Hand-Held Applicator 97130 is pneumatically controlled. The start is initiated by foot switch or finger switch.

The amount of product dispensed is controlled by:

- The amount of pressure in the reservoir.
- The length of time the shut off valve remains open.
- The stroke of the shut off piston in the actuator assembly.
- The dispensing needle.

The piston stroke of the LV Hand-Held Applicator can be limited by using the adjustment knob.

It can be useful in the following applications:

- To establish the same dispensing quantity, when dispensing out of one reservoir to two valves.
- When dispensing low viscosity product and small drop sizes, the adjustment knob allows for a very short stroke which is useful in setting the lowest, dependable reservoir pressure.

The lower the dispensing pressure, the lower the risk of air penetrating the product. Lower pressure is feasible by:

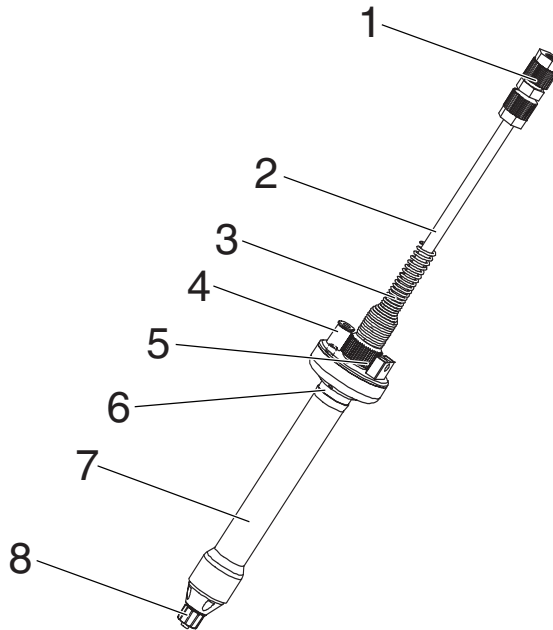
- short feed lines
- conical needles
- long dispensing times

Use silicone grease to avoid curing within threaded assemblies of the Luer-Lock adapter and the dispensing needles.

The LV Hand-Held Applicator is designed for a long life time. Disassembly is not recommended. Care, cleaning, and maintenance are not necessary.

2. Description (continued)

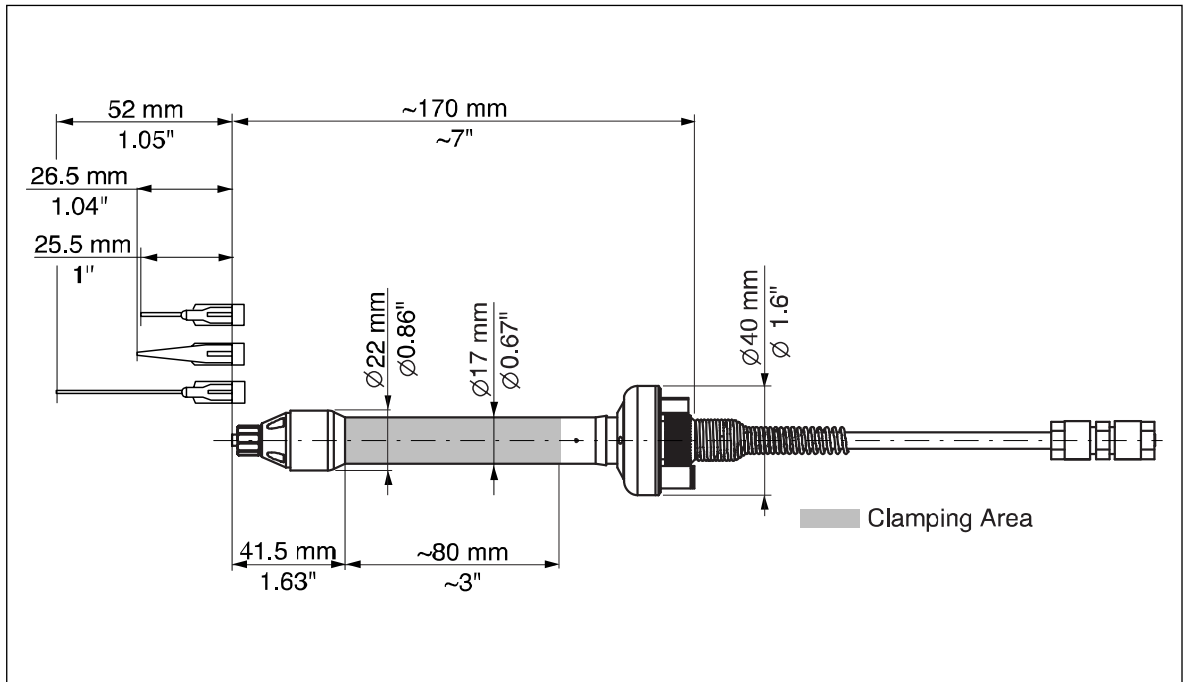
2.2 Operating Elements and Connections



1. **Feed Line Connector** to connect a feed line (OD 1/4" or 6 mm) to the reservoir.
2. **Integrated Feed Line**
3. **Spring Guard** in order to prevent kinking of the feed line.
4. **Compressed Air Connector** to connect pneumatic tube, OD see section 4.
5. **Stroke Adjustment Knob** to reduce stroke, see section 5.1.2.
6. **Groove** can be used to mount a tool hanger / balancer for better handling.
7. **Valve Body**
8. **Luer-Lock Adapter** to mount a dispensing needle.

3. Technical Data

| | |
|--|--|
| Pneumatic supply | min. 4 bar (60 psi), max. 7 bar (100 psi) |
| Quality If required quality is not achieved, install a Loctite® filter regulator | Filtered 10 µm, oil-free, non-condensing |
| Pneumatic hose size, control air connection | Accessory Order No. 97120 |
| Product Feed Line | External dia. 4 mm $^{+0.05}_{-0.10}$ Internal dia. 2.5 mm |
| Dispensing pressure range of the valve: | Standard: 1/4" OD, or 6 mm OD 0.25 bar (4 psi) – 2 bar (30 psi) |
| Weight | 140 g |

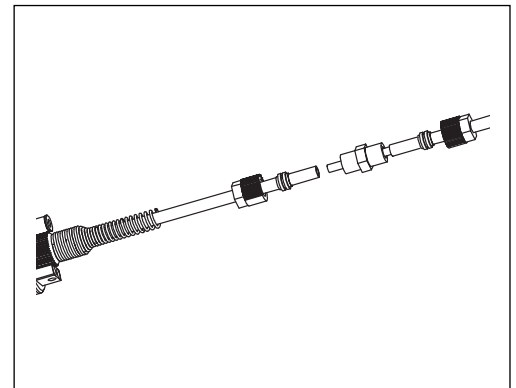
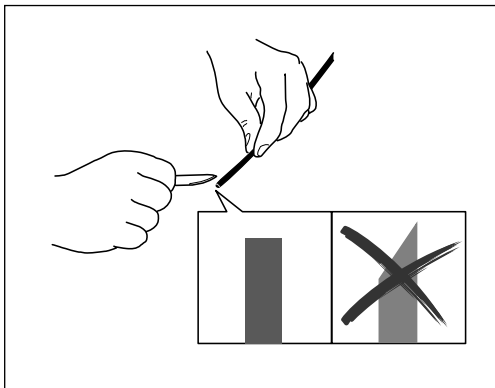


4. Installation

- Keep the pressure hose as short as possible. This insures the maximum cycle rate of the valve actuator.
- Keep the product feed lines as short as possible. The shorter the feed line, the smaller the specific resistance and the lower the dispensing pressure can be.
- Avoid kinking of the feed lines and the pressure hoses.
- Typically, the pressure hose and the product feed line should not be longer than 2 m.
- Do not use inflexible hoses and feed lines, so that unnecessary loads on the fittings will be avoided.
- Keep all fittings tight.
- No direct sunlight; no UV light!

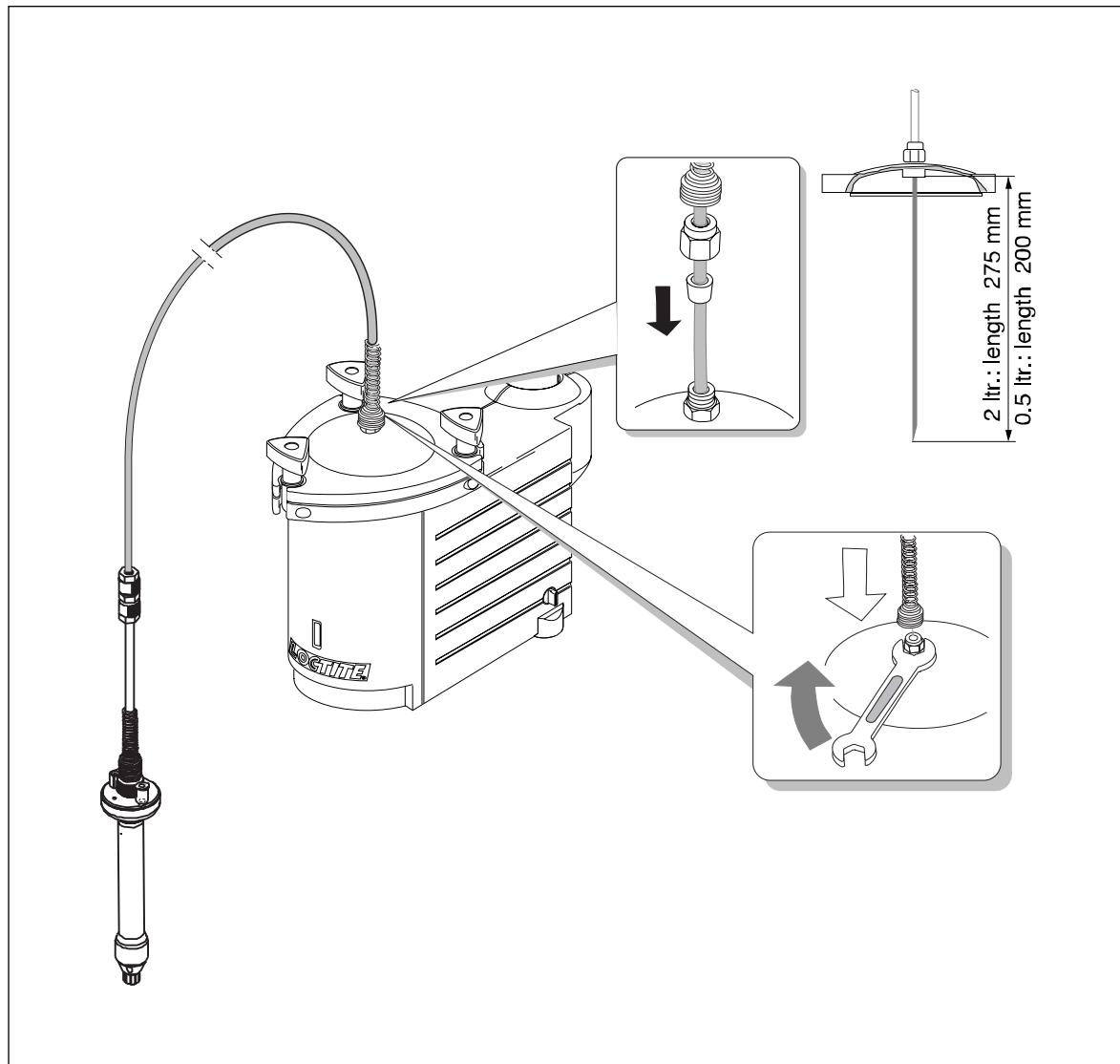
4.1 Mounting the Feed Line

- ! When mounting the feed line adapter, the product feed line must be cut off straight. The contact of anaerobic products with the metal of a knife or other objects can cause curing and lead to malfunction of the dispensing valve.
 - Unscrew the nuts of the connector.
 - Firmly insert the feed lines on both sides into the connector until it stops.
 - Hand-screw the nuts to the connector.



4. Installation (continued)

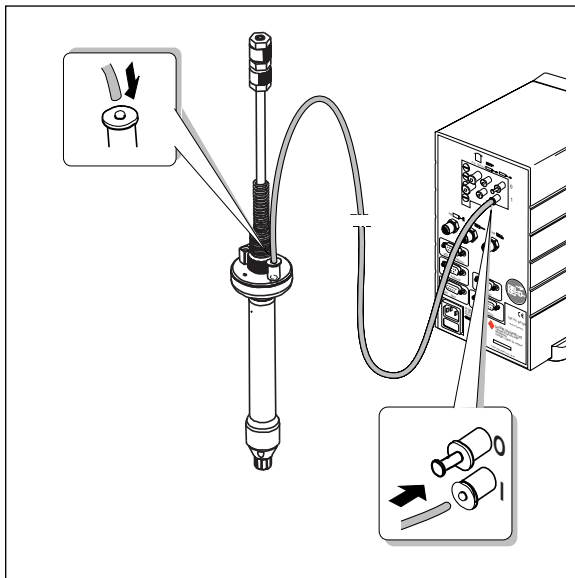
4.2 Connecting to the Product Reservoir



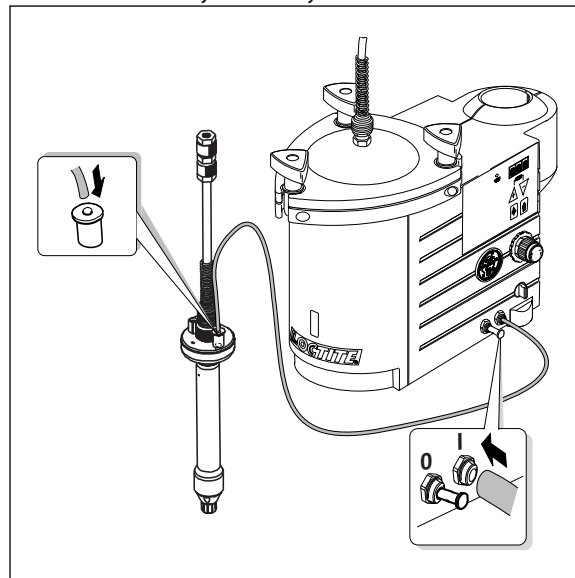
4. Installation (continued)

4.3 Connecting to the Controller

97123



97007-97010, 97017, 97020





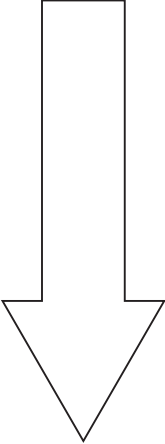
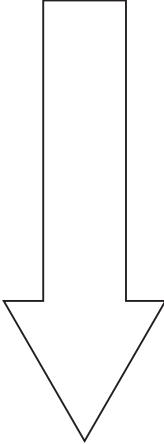
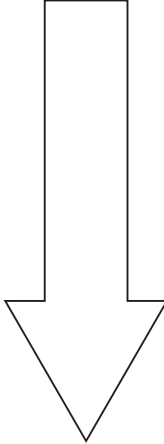

4. Installation (continued)

4.4 Selection of the Required Dispensing Needle

For each product and corresponding application of the valve, various dispensing needle types and sizes are available:

- Conical polyethylene dispensing needles for viscous products and large dispensed quantities.
- Stainless steel needles for thin fluids and UV curing products (especially suitable for spot applications).
- Flexible polypropylene dispensing needles for dispensing on damageable surfaces.
- PTFE-lined stainless steel needles (especially for fast curing products).
- Rigid dispensing needle PPS (especially suitable for spot applications; not suitable for UV products; only size 20 GA available).

When the dispensing quantity remains the same, there will be certain correlations that will determine the selection of the type of needle.

| Dispensing Needle | Reservoir Pressure | Pressure Loss along the Needle | Risk of Dripping |
|--|--|--|--|
| Conical dispensing needles PE 97221-97224  | low pressure possible | small | small |
| Rigid dispensing needles PPS 97290  |  |  |  |
| Flexible dispensing needles PP 97229-97232  | higher pressure necessary | high | high |

5. Dispensing

5.1 First Operation

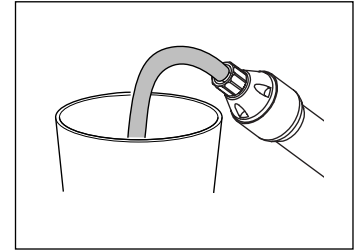
5.1.1 Priming the LV Hand-Held Applicator

To avoid air bubbles during dispensing, the product feed line and the LV Hand-Held Applicator must be filled and then purged of air.



Place a container under the valve, product will flow out!

- Set the stroke to maximum by turning adjustment knob clockwise until it stops.
- To fill the feed line and the valve, hold it slanted upwards so that no air will be trapped inside the valve chamber.
- Slide the silicone tubing provided over the dispensing needle.
- Perform the filling of the product feed line by pressing the prime button of the controller.



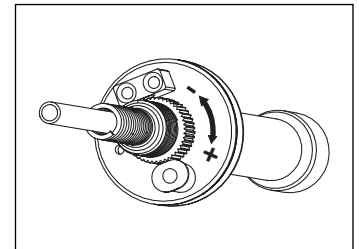
5.1.2 Adjusting the Dispensing Quantity

The dispensing quantity is adjusted by setting:

- the stroke of the shut off piston of the dispensing valve
- the reservoir pressure
- the dispensing time
- the size of the dispensing needle

By changing the piston stroke, the dispensing quantity is also changed for the same dispensing pressure, time, and needle.

- Adjust the dispensing quantity according to the operating manual of the used controller starting with the maximum stroke.
- Turn the stroke adjustment knob **5** clockwise to increase the dispensing quantity.
- To decrease the quantity, turn the stroke adjustment knob **5** counter-clockwise.



5. Dispensing (continued)

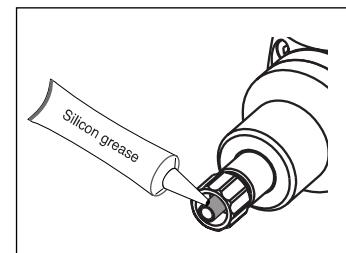
5.2 Shutdown

For short idle periods, 24 hours or less, the system can be left idle without any special preparations. It is best to let the adhesive dry on the end of the dispensing needle to form a natural seal against moisture.

When dispensing **Cyanoacrylates**, replace the needle with a Luer-lock tip cap **immediately** to seal out moisture.

For periods 2 weeks or longer, remove the adhesive from the reservoir and purge the system with fresh acetone to clear feed line, valve and fittings of adhesive and moisture.

- Apply a small amount of silicone grease to the Luer-Lock adapter **8** to prevent needle and tip cap bonding.



5.3 Returning to Operation

- Insert product bottle into the reservoir.
- Replace the Luer-Lock tip cap or the closed needle with a new dispensing needle.
- Purge the LV Hand-Held Applicator until product escapes bubble free out of it, see section 5.1.1.


Check the adjustment of the dispensing quantity according to the operating manual of the controller used.

6. Troubleshooting

| Type of Malfunction | Possible Causes | Correction |
|---|--|---|
| No liquid flow or too little flow. | <ul style="list-style-type: none"> • Product feed line and/or pneumatic hose not connected correctly or kinked. • Control pressure not adequate. Control pressure must be between 4 and 7 bar. • Curing in the product feed line or in the dispensing needle. • Curing in the LV Hand-Held Applicator. • Controller incorrectly adjusted. • Product reservoir not switched on, depressurized or pressure is too low. • Piston stroke set too small or set to O. | <ul style="list-style-type: none"> • Connect the product feed line correctly. If kinked, replace it. • Check and adjust the control pressure. • Replace the product feed line and/or the dispensing needle. • Call Loctite Service. • Check the controller setting (see operating manual for the controller). • Check the reservoir (see operating manual for the product reservoir). • Turn the stroke adjustment knob 5 clockwise (+ direction). |
| Product drips after the valve is closed, eventually stopping. | <ul style="list-style-type: none"> • Air is trapped in the dispensing valve and/or in the product feed line and/or in the dispensing needle. | <ul style="list-style-type: none"> • Purge the product feed line, dispensing valve, and dispensing needle of air (section 5.1.1). |
| LV Hand-Held Applicator does not open. | <ul style="list-style-type: none"> • Actuator of the valve is contaminated with product. | <ul style="list-style-type: none"> • Call Loctite Service. |
| Air bubbles in the product being dispensed. | <ul style="list-style-type: none"> • Compressed air is being dissolved into the product. | <ul style="list-style-type: none"> • Purge the product feed line, dispensing valve, and dispensing needle of air (Section 5.1.1). If possible, reduce the product pressure and increase dispensing needle size/dispensing time accordingly. |

7. Annex

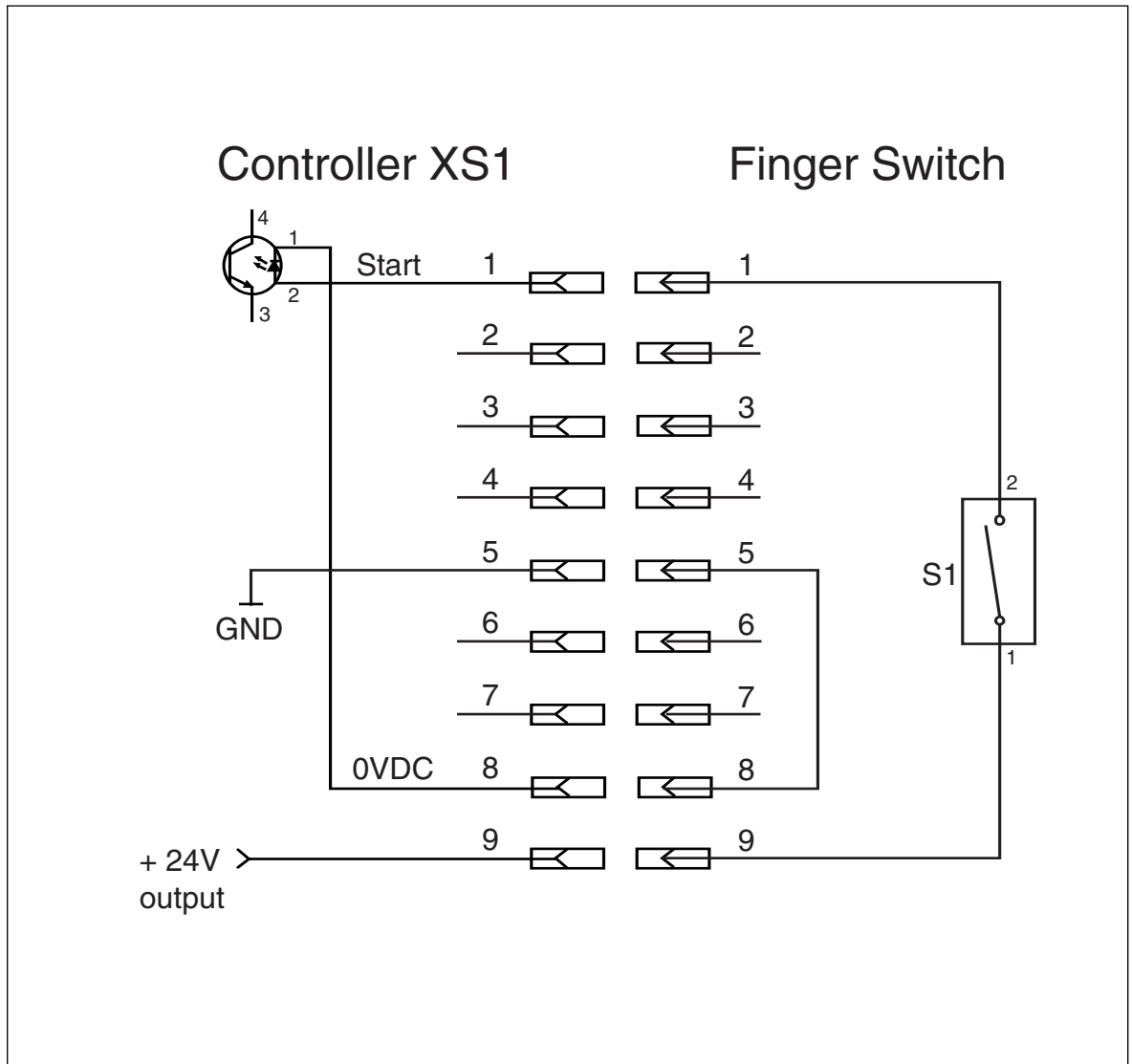
7.1 Accessories and Spare Parts

 Also see the illustration on page 9.

| Pos. No. | Description | Loctite Order No. |
|----------|---|----------------------------------|
| | Repair Kit | 97902 |
| | Finger Switch for LV Hand-Held Applicator | 97293 |
| | Reservoir Fitting 1/4" * 1/8" | 8900064 |
| | Tubing, PTFE-lined, OD 1/4", length 10 m | 97972 |
| | Dispense Needle, Polyethylene Tapered, especially for viscous products and large dispensing quantities: Dispense Needle 16GA (50 pcs/box), grey Dispense Needle 18GA (50 pcs/box), green Dispense Needle 20GA (50 pcs/box), pink Dispense Needle 22GA (50 pcs/box), blue | 97221 97222 97223 97224 |
| | Dispense Needle, Stainless Steel Straight, especially for low viscosity and UV curing products: Dispense Needle 15GA (50 pcs/box), amber Dispense Needle 18GA (50 pcs/box), green Dispense Needle 20GA (50 pcs/box), pink Dispense Needle 25GA (50 pcs/box), red | 97225 97226 97227 97228 |
| | Dispense Needle, Polypropylene – Flexible, especially for fast curing products: Dispense Needle 15GA (50 pcs/box), grey Dispense Needle 18GA (50 pcs/box), pink Dispense Needle 20GA (50 pcs/box), yellow Dispense Needle 25GA (50 pcs/box), red | 97229 97230 97231 97232 |
| | Dispense Needle, Stainless Steel – PTFE-lined, especially for fast curing products: Dispense Needle 25GA (50 pcs/box), pink | 97238 |
| | Dispense Needle, Appryl (PPS), especially for spot applications, not suitable for UV adhesives: Dispense Needle PPS20GA (50 pcs/box), ID Size 0.6 mm, natural | 97290 |
| | Luer-Lock Tip Caps | 97248 |
| 6 | Luer-Lock-Adapter Kit | 97233 |

7. Annex (continued)

7.2 Connector Finger Switch



7. Annex (continued)

7.3 Manufacturer's Declaration

The Manufacturer


Loctite Deutschland GmbH
Arabellastraße 17
D-81925 München

declares that the machine contained in this delivery is the machine designated below, is however incomplete and that its operation is prohibited until it can be determined that the machine is in accordance with the provisions of EC machine.

| | |
|---------------------------------|--|
| Designation of the unit | LV Hand-Held Applicator |
| Unit number | 97130 |
| Applicable EC Regulations | EC-Machine Regulations 98/37/EEC |
| Applicable harmonized standards | DIN EN 292 Part 1; DIN EN 292 Part 2 11.1991 |

Date/Manufacturer's signature
Information regarding the Signer

02/05/2002
General Manager


(F. Löhr)

For changes to the unit that were not approved by Henkel Loctite, this declaration loses its validity

7. Annex (continued)

7.4 Warranty (excluding Germany)

Henkel Loctite expressly warrants that all products referred to in this Operating Manual under LV Hand-Held Applicator 97130 (hereafter called "Products") shall be free from defects in materials and workmanship. Liability for Henkel Loctite shall be limited, at its option, to replacing those Products which are shown to be defective either in materials or workmanship or to credit to the purchaser the amount of the purchase price thereof (plus freight and insurance charges paid therefore by the user). The purchaser's sole and exclusive remedy for breach or 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 to Henkel Loctite 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 six months after the delivery of the Products to the purchaser. 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 or in the event of unauthorized modification or the Products [including, where products, parts, or attachments for use in connection with the Products are available from Henkel Loctite, the use of products, parts or attachments which are not manufactured by Henkel Loctite.]

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

EXCEPT FOR THE EXPRESS WARRANTY CONTAINED IN THIS SECTION, HENKEL LOCTITE 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 LOCTITE AND WAIVED BY THE PURCHASER.

THIS SECTION SETS FORTH EXCLUSIVELY ALL OF LIABILITY FOR HENKEL LOCTITE TO THE PURCHASER IN CONTRACT, IN PART OR OTHERWISE IN THE EVENT OF DEFECTIVE PRODUCTS.

WITHOUT LIMITATION OF THE FOREGOING, TO THE FULLEST EXTENT POSSIBLE UNDER APPLICABLE LAWS, HENKEL LOCTITE EXPRESSLY DISCLAIMS ANY LIABILITY WHATSOEVER FOR ANY DAMAGES INCURRED DIRECTLY OR INDIRECTLY IN CONNECTION WITH THE SALE OR USE OF, OR OTHERWISE IN CONNECTION WITH, THE PRODUCTS, INCLUDING, WITHOUT LIMITATION, LOSS OF PROFITS AND SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER CAUSED BY NEGLIGENCE OF HENKEL LOCTITE OR OTHERWISE.

Loctite Industrial

Henkel Loctite Corporation
1001 Trout Brook Crossing
Rocky Hill, CT 06067-3910

**Henkel Loctite Automotive
Technology Center**
2455 Featherstone Road
Auburn Hills, Michigan 48326

Henkel Loctite Canada Inc.
2225 Meadowpine Boulevard
Mississauga, Ontario L5N 7P2

Henkel Ltda. Brazil
Av. Prof. Vernon Kriebel, 91
06690-11-Itapevi
São Paulo-Brazil

Henkel Mexicana, S.A. de C.V.
Calzada de la Viga s/n, Fracc. Los Laureles
Loc. Tulpetlac, C.P. 55090
Ecatepec de Morelos, Edo. de México,
México

www.loctite.com