

Electronic Crimping Tools

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| REF | 735511 |
| | 735520 |
| | 735611 |
| | 735620 |

Operation Guide

Notices

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Declaration of Conformity

These instruments conform to the following directives:

- 2006/95/EC – Low-Voltage Directive
- 2004/108/EC - EMV Directive
- 2006/42/EC - Machinery Directive

Recycling



Disposal in accordance with EU Directive 2002/96/CE. In compliance with local and national legal regulations (EU Directive 2002/96/CE), the MACHEREY-NAGEL company disposes old instruments free of charge

Note: With effect from August 2005, disposal using public waste disposal facilities is no longer permitted. In the case of disposal, please contact your MACHEREY-NAGEL representative.

Safety Notices

CAUTION

A **CAUTION** notice warns of a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a **CAUTION** notice until the indicated conditions are fully understood and met.

WARNING

A **WARNING** notice warns of a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a **WARNING** notice until the indicated conditions are fully understood and met.

Sound Pressure

Sound pressure $L_{pA} = 70.1 \text{ dB(A)}$

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This operation manual applies to the following products:

| | REF |
|---------------------------|--------|
| 11 mm Electronic Crimper | 735511 |
| 20 mm Electronic Crimper | 735520 |
| 11 mm Electronic Decapper | 735611 |
| 20 mm Electronic Decapper | 735620 |

| Related Parts | REF |
|------------------------------|--------|
| 6.4 Volt Lithium Ion Battery | 735500 |

WARNING



Warnings

Wear safety glasses when crimping or decapping!

The crimper or decapper jaws can pinch severely.



Never insert fingers into the crimper or decapper.

Use only the 7.5 volt DC Power Supply supplied with the crimper for battery charging.

Use only the specified 6.4 volt replacement battery pack, part number 735500.

Use of other batteries may cause fire during charging or use.



Special Battery Warnings:

Risk of burns; battery may explode or catch fire if mishandled.

Do not disassemble or dispose of in fire.

Use only the manufacturer-supplied 7.5 volt DC power supply and charge the battery only in the crimping tool.

Do not heat above 60°C or short circuit.

Do not crush or modify.

Disposal of Battery

Do not throw battery away. Recycle in accordance with local regulations.

Intended Use

Electronic Crimpers and Decappers are intended for use in a laboratory environment.

Prohibited Use

All other uses are prohibited.

Limits

Temperature 15°C to 35°C

Humidity not more than 75%

Pressure 0.75 to 1 bar

Description

The Electronic Crimping Tools can be used to crimp and decap standard crimp caps on laboratory sample vials. A variety of jaw sets are offered to accommodate the most popular sizes.

Crimping Tool Setup

Please read through this entire manual to familiarize yourself with the operation of the instrument before proceeding. Use the same degree of care as you would with any precision instrument.

Remove the instrument, power supply and cable from the shipping container. Inspect the crimper or decapper. If there is any visible damage, contact your supplier immediately.

Operation

Charging the Battery

The battery must be charged before the crimper or decapper can be used.

The 7.5 volt DC power supply comes with a set of clips to fit power outlets for most countries. Slide the correct clip into the back of the power supply, and plug the supply into the power main.

Plug the power jack from the DC supply into the crimping tool. After a pause the Battery LED on the front of the tool will begin blinking green, showing that the charging has started. After 1 to 2 hours the LED will display a steady green light, indicating that the charge is complete.

Disconnect the crimper from the charging supply.



Selecting Compatible Vials, Caps and Seals

MACHEREY-NAGEL electronic crimping and decapping tools may not be used with all-steel caps (magnetic caps) nor with 20 mm 2-part crimp caps with steel tops (bimetal crimp caps). For these extremely stiff crimp caps we recommend our Electronic High Power Crimping Tool 735700, which has a fixed power supply. Aluminium caps and seals of standard size and thickness are appropriate for the battery-powered tool.

Adjusting Electronic Crimpers for Use

WARNING



The electronic crimpers must be adjusted for the vials, caps and seals that will be used. The \oplus and \ominus adjustment buttons on the top of the crimping tool set a stop position for the motor that drives the tool.

The adjustment of the crimping tool is effectively a height adjustment. The setting determines the amount of compression of the cap and is very accurate. There may be some drifting over time due to stretching or wearing-in of components of the new crimper, but generally the reproducibility of the crimp is as good as the consistency of the vials and seals.

Select 5 or so vials, caps, and seals for the purpose of setting the crimp. Place the seal and cap on the vial and rest the crimper on top of the cap.

Squeeze the trigger switch lightly to engage the motor. **This switch must be held down until the crimp is complete.** If the switch is released early, the crimper will retract.

If the Status LED blinks amber after the cycle is complete, a fault was detected. Two yellow blinks mean that the trigger button was released early. Three yellow blinks mean that the crimper stalled – it was not able to deliver enough power to reach the position requested in the setting.

Check the crimped vial for satisfactory form and tightness. If the cap spins easily, press the \oplus button two or three times. Try the new setting with a new vial and cap.



Crimping the same vial two times will not generally give the same results and sometimes will result in vial breakage. See the section on “Troubleshooting” for more information.

Adjusting Electronic Decappers for Use

WARNING



The adjustment is not very important when decapping. As shipped from the factory the decapper should remove a cap satisfactorily.

The 11 mm and 13 mm decappers work by closing the jaws around the neck of the vial and stripping the cap off. For the 11 mm decapper to work the glass vial must be strong enough to resist the force applied by the decapper. In the case of inferior or soft glass or if a vial is reused the lip of the vial may break during decapping.



To adjust the 11 mm decapper make sure that the stroke is long enough to remove the cap.

The 20 mm decapper works by pinching the sides of the cap with the decapper jaws and pushing out the glass. The pinching action starts to pull the cap off, and the force of the decapper does the rest of the work.

To adjust the 20 mm decapper, just make sure that the stroke is long enough to remove the cap.

When to Recharge the Battery

The 6.4 volt battery pack for the electronic crimper uses lithium ion cells. After receiving a full battery charge the electronic crimper or decapper will normally crimp several hundred vials, depending on the age of the battery and the requirements of the seal and cap chosen.

Unless the crimper is used for a large number of vials each day it is not necessary to recharge the battery every night. The lithium ion pack will retain its charge for many weeks without losing its charge.

The Battery LED will blink amber during the crimp stroke, if the battery needs charging.

The lithium ion battery pack is expected to last at least 1500 charges. The pack should not be removed from the crimping tool unless it is due for replacement.

See the instructions on page 5, "Charging the Battery" for further instructions.



← Battery Status LED

Reset

To press the reset button use the end of a small tool to access the recessed button.

Single Reset: Pressing the reset button one time causes the position sensor to be set to zero and resets the processor.

Factory Reset: This requires pressing the reset button while both the \oplus and \ominus buttons are also down. The green LED will blink one time and the crimping tool is returned to the factory setting. This is useful to find a consistent starting point for adjusting the crimping tool, if it is far out of adjustment.



Storage and Shipping

Place protective cap over the jaws to prevent accidental cycling when storing or shipping the tool.

Fault Conditions

Major and minor faults are identified by LED signals, normally after a crimp cycle.

| LED | Fault Code | Possible Cause | Recommendation |
|---------|--|---|--|
| Status | 3 amber blinks after crimp | Stall Condition – Crimp Setting is too high. | Adjust crimper to a lower crimp setting. |
| | | Stall Condition – Battery does not have sufficient charge. | Recharge battery. |
| Status | 2 amber blinks after tool cycles | Early trigger release – the tool retracted before completing cycle. | Try again, making sure to hold the button down until the tool is returning to the home position. |
| Status | 3 amber blinks – but tool does not cycle. | Motor drive failure | See Maintenance / Repair section for contact information for warranty and repair service. |
| Battery | Continuous amber blink when charger is plugged in | Charge Circuit Failure | See Maintenance / Repair section for contact information for warranty and repair service. |
| Battery | Amber blink during crimp cycle | Battery needs to be charged. | Charge battery |
| Battery | One blink after Go button is pressed (no cycle occurs) | Battery is too low for crimper cycle. | Charge battery |

Troubleshooting, Maintenance, and Repair

General Maintenance

The electronic crimping tools do not contain user serviceable parts except for the battery pack. ***When cleaning or replacing the battery make sure to keep fingers away from the jaws!***

Cleaning

The crimping tool may not be immersed in water or solvent. The outside of the case may be cleaned with an ordinary detergent and wiped off with a damp rag. Care should be taken not to get the electronics, the battery, or the battery connections wet.

Avoid permitting metal parts of the crimping tool come into contact with corrosive material during use. If they do, try to wipe them clean with a suitable mild neutralizing solution.

Battery Replacement

Use only the specified 6.4 volt replacement battery pack, part number 735500. Use of other batteries may cause fire during charging or use.

WARNING



- 1) Remove screw holding the battery cover in place.



- 2) Remove battery cover



- 3) Pull battery out of case, leaving wire connected.



- 4) Push down on connector latch and pull battery loose from the board.



- 5) Connect new battery to board, making sure the latch is secure. Push battery into case, bending the wires if necessary.

- 6) Slide the cover back into the case and replace the retaining screw.

Troubleshooting

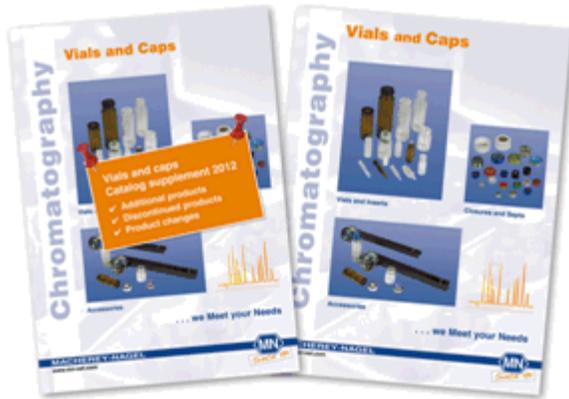
| Condition | Possible Cause | Recommendation |
|---|--|---|
| Side of cap is indented. Seal is deformed in hole. | Crimp setting is too high. The crimp is too tight. | Adjust crimper to a lower crimp setting by pressing the  button. |
| Cap spins easily. | Crimp setting is too low. The crimp is too loose. | Adjust crimper to a higher setting by pressing the  button. |
| Cannot find a good crimp setting. | The crimper is far out of adjustment. | Return crimper to factory setting. See “Reset” on Page 8. |
| Crimping is inconsistent. Some vials are good and some are not. | Vials, caps or seals are inconsistent. | Check crimper by using some standard, approved vials, caps and seals. |
| | Electronic failure in crimper. | Visit www.mn-net.com for support information. |
| 11 mm or 13 mm decapper leaves caps hanging on vials | Decapper adjustment is too low. | Adjust the decapper to a higher setting by pressing the  button. |
| | Jaws are worn or broken. | The decapper will have to be replaced or repaired. Visit www.mn-net.com for support information. |
| Motor does not come on or moves in one direction only. | Drive circuit failure. | Visit www.mn-net.com for support information. |
| Battery Charging is too short; battery does not get a full charge | Early termination by charging circuit. | Leave crimping tool on charger overnight. Allow trickle current to bring battery to full charge. |
| | Battery is worn out. | Replace battery. Battery is rated to deliver 60% of capacity after 1500 charges. |

Support and Repair

If the crimping tool is still in the warranty period, contact your dealer for support. If the warranty period has expired, please visit www.mn-net.com for information about the crimper repair service.

Further Information

For further information on autosampler vials and caps, please visit our website on www.mn-net.com/vials or check our specialized brochure.



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