

# DARAY<sup>®</sup>

## HEALTHCARE PRODUCTS



# N102

## MICRO-INFUSION SYRINGE PUMP INSTALLATION AND OPERATING MANUAL



# **DARAY<sup>®</sup>**

## **HEALTHCARE PRODUCTS**

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## 1 Description

Daray's N102 Syringe Driver is a highly cost-effective device for use in most types of intravenous/arterial infusion. It automatically senses the size of syringe fitted to it and accurately controls infusion time.

The Driver operates from an in-built battery which charges when the unit is connected to the electrical mains and powers the unit in the event of mains failure.

N102 has extensive alarms and simple and clear display and controls protected by a waterproof membrane.

The following accessories should be delivered with the Driver:

Mains plug to IEC power cable
20 x giving sets
A stand and clamp are available separately.

## 2 Precautions


Use only an IEC 3-core power cable to connect mains electricity to the unit.

Do not use in close proximity to strong magnetic fields such as can be produced by large electric motors.

Do not use syringes that are less than 20% full

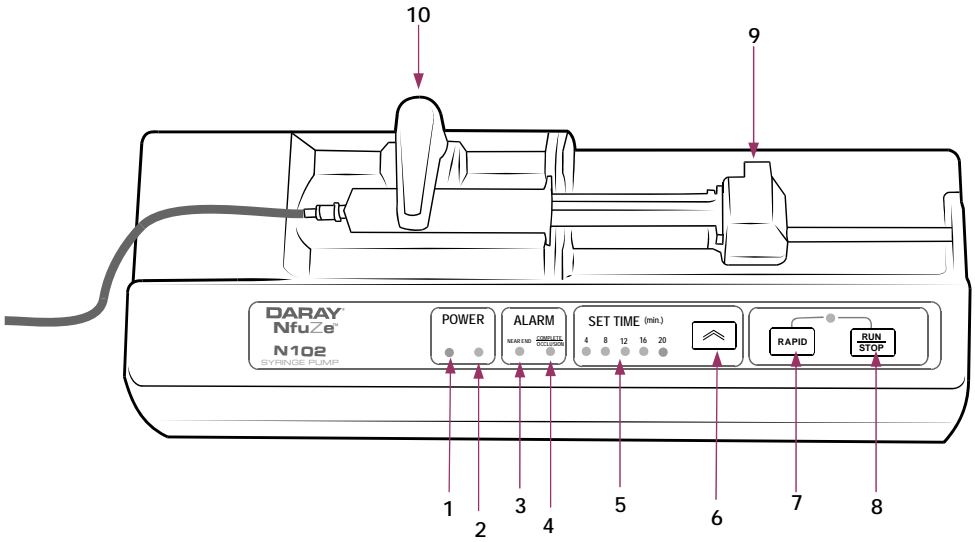
Ensure the battery is charged at least every 3 months.

### 3 Specifications


Protection Against Electric Shock	 Type BF
Mode of Operation	Continuous
Degree of Protection Against Ingress of Fluids	Drip-Proof IPX1
Acceptable syringe sizes	20ml, 50ml, 100ml
Pre-set infusion times	4, 8, 12, 16 and 20 minutes, +/- 20 seconds
Battery operation at a flow rate of 50 ml/hr, assuming fully charged battery: 4 hours	

Operating Temperature	5 - 40°C
Relative Humidity	80%, max
Power Requirements	220VAC 50Hz 6VA
Dimensions	335×115×120 mm
Weight	2 kg



## 4 Controls



1	AC power indicator
2	Built-in battery indicator
3	Near end alarm
4	COMPLETE/OCCLUSION alarm
5	SET TIME indicator
6	SET TIME button
7	RAPID (PURGE)
8	RUN/HOLD
9	Syringe driver head
10	Syringe securing bar

	<p>SET TIME - activated only in HOLD mode. When pressed, sets the desired infusion time. 'SET TIME' indicator should illuminate</p>
<p><b>RAPID</b></p>	<p>RAPID - Only functions in HOLD mode. When pressed, starts purging giving set</p>
<p><b>RUN</b> <b>STOP</b></p>	<p>RUN/STOP - Press to start or stop driver. 'MODE' indicator should illuminate.</p>

## 5 Alarms and Indicator Lights

<p><b>NEAR END</b></p>	<p>NEAR END - When there is approximately one minute of infusion time remaining, this indicator flashes and the alarm buzzer sounds. To silence the alarm, press the 'RUN/STOP' button.</p>
<p><b>COMPLETE OCCLUSION</b></p>	<p>COMPLETE/OCCLUSION - When infusion is complete, the indicator is illuminated in red and the alarm buzzer sounds. When the device senses an occlusion by not being able to drive with a force of 6.5kg +/- 1kg, the indicator is illuminated in red and the alarm buzzer sounds. To silence the alarm, press the 'RUN/STOP' button.</p>
	<p>The battery indicator light (orange) indicates the driver is using built-in battery power.</p>
	<p>AC power light (green) indicates the driver is connected to mains AC power and is charging the battery.</p>

## 6 Operation

**Note:** The battery must be charged for at least 10 hours before use.

The syringe driver can be operated either fixed to a drip-stand using the optional clamp or stood on any suitable horizontal surface.

Plug the IEC socket of the mains lead into the driver, and the mains plug into a standard 13A socket. The driver may be operated from its built-in battery. The battery is automatically charged when the unit is connected to the mains.

Load syringe with medication. Lift up the syringe securing bar and rotate clockwise 90°.

Place the syringe into the bed. Be sure to insert the nozzle into the syringe slot. Then press and hold the secure button on the driver head so that the syringe plunger can be placed into the slot in the head.

Rotate the securing bar anticlockwise by 90° to secure the syringe.

**CAUTION:** Failure to seat the syringe properly may cause inaccurate infusion.

Turn the power switch on.

Press and hold "RAPID" button to purge the syringe and the giving set.

Press the 'SET TIME' button to set the required infusion time.

Press the 'RUN/STOP' button to start infusion.

During the infusion, the 'SET TIME' and 'RAPID' buttons are locked. If the infusion time needs to be changed during an infusion, press the 'RUN/STOP' button followed by the 'SET TIME' button. Press the 'RUN/STOP' button to restart the infusion.

If the 'RUN/STOP' button is pressed during an infusion, the driver stops and enters a 'hold' mode until the 'RUN/STOP' button is pressed again.

If the driver senses an occlusion, the device stops and an alarm sounds

To remove the syringe, lift up the syringe retaining bar and rotate it clockwise 90 degrees.

To clean the pump, use a damp (NOT wet) cloth or sponge. Do not immerse pump or power cable into water or other cleaning solution.

## 7 Storage

This product should be stored in an environment with an ambient temperature range of -10 to +55°C, relative humidity below 93%, and air pressure 500 - 1060 hPa.

Do not store in close proximity to corrosive vapour or harmful substances.

## Returns Policy

### IMPORTANT!

Before returning your item, you must call us on 0870 199 4299

We want you to be completely satisfied with your purchase. If you need to return goods purchased from DARAY Ltd, please read the following information carefully.

The DARAY Ltd returns policy provides guidance on when you can return goods we have supplied, and what you can expect from us once you do. To see our detailed returns policy and procedure visit [www.daray.co.uk/returns](http://www.daray.co.uk/returns)

TYPE OF RETURN	REMEDY
<b>DAMAGED GOODS OR DOA*</b> Goods which are physically damaged on delivery, or which do not function.	We must be notified within 24 hours of receipt.
<b>GOODS DEVELOPING A FAULT</b> Goods which have developed a fault within the warranty period.	Within 14 days of delivery we will replace the item as DOA*. If the fault develops after 14 days, but within the warranty period, we will initiate the returns procedure.
<b>NON WARRANTY</b> Goods which have developed a fault outside the warranty period.	If a fault develops outside the warranty period, we will initiate the returns procedure.
<b>OTHER</b> Any situation which is not covered by the above.	We will try to help, but we cannot normally offer a refund.

\*DOA - dead on arrival

For additional clarification, please refer to our terms and conditions at [www.daray.co.uk/terms](http://www.daray.co.uk/terms).

In a small number of cases, we may determine that a replacement would not work any better than the original product we supplied. In such cases we will only offer a refund rather than a replacement for qualifying returns.

Replacement bulbs are not eligible for returns, unless they are faulty or damaged.

Spare parts ordered on our website or from supplied part codes are not be eligible for credit. We will accept returns and exchange for the correct item.

If you have incorrectly ordered a product and it is unopened and in perfect condition, within seven days of the original order you may order the correct product and receive a full credit for the returned item. In all other cases, items returned for credit are subject to a 25% restocking fee.

If you send us goods that do not qualify for return, you will invalidate your claim to any refund, and you will be obliged to compensate DARAY Ltd for the cost of return postage and any other reasonable costs incurred processing the goods.

Your statutory rights are not affected.

## 8 Warranty

### TERMS AND CONDITIONS OF WARRANTY

1. To qualify for this warranty you must register on [www.daray.co.uk](http://www.daray.co.uk) or return to Daray Ltd (Daray) the duly completed warranty-registration form accompanying the product.
2. Daray warrants this product (excluding lamp) against faulty material and workmanship during the period of the warranty. The period of warranty is the period stated on your warranty card and commences on the date of purchase of the product. In the event that the product is not in good working order Daray will provide, during the warranty period, a free repair service within the United Kingdom. The warranty is subject to proof of purchase being provided; therefore, you should retain your original receipt.
  - 2.1 The repair service consists of the provision of spare parts and/or replacement products (at Daray's discretion) which will be provided on an exchange basis and will either be new, equivalent to new or reconditioned. All replaced spare parts and products shall become the property of Daray.
  - 2.2 Daray's only obligation under this warranty is the provision of the service as set out above.
  - 2.3 All products are returned to Daray at the customer's cost and risk. Products to be returned should be adequately packed. For the address to send returns to please visit [www.daray.co.uk](http://www.daray.co.uk)
3. Daray's arrangements for providing service provided under this warranty may include the use of sub-contractors.
4. This warranty does not cover damage or defects in the Product caused by or resulting from:
  - Wilful neglect or negligence by anyone other than Daray;
  - Improper use, storage or handling of the product;
  - Use of non-Daray approved parts (such as replacement lamps) not compatible with the Product;
  - Fire, accident or disaster;
  - Use of non-Daray modifications other than in accordance with Daray's instructions;Attachment of fittings and accessories not approved by Daray;  
Repairs, modifications carried out by service personnel not approved by Daray;
  - Damage caused by chemical corrosion from cleaning agents not approved by Daray.
  - Failure to use or install the product in accordance with the manufacturer's instructions.
5. Nothing in this warranty shall have the effect of restricting or excluding the liability of Daray in respect of:
  - a) Death and personal injury caused by the negligence of Daray, or for fraud;
  - b) Under the *Consumer Protection Act 1987* to a person who has suffered damage caused by a defective product or to a dependant or relative of such a person;
  - c) Direct damage to your property caused by the proven negligence of Daray.
6. This agreement does not give any rights other than those expressly set out above and in particular, Daray will not be responsible for any loss of income, profits or contracts or any direct or indirect consequential loss, damage caused to or suffered by the purchaser as a direct result of this agreement.
7. This warranty is offered (subject to these terms and conditions) in addition to, and does not affect your statutory rights.
8. Daray may disclose your details and other personal information to companies within the Daray group including any subsidiary company or sub contractor of Daray for the purposes of performing our obligations hereunder.
9. You must not resell outside the UK any products supplied by Daray and covered by the *Export of Goods (Control) Order 1992* (or any law that replaces it) with out obtaining all necessary licences. You also agree not to sell the product in the UK if you know or think that the person buying the product intends to export it without getting the necessary licences. You agree to impose similar conditions to these on anyone you sell the product to.
10. These conditions shall in all respect be governed and construed in accordance with English law and the exclusive jurisdiction of the English courts.

# DARAY<sup>®</sup> HEALTHCARE PRODUCTS

WARRANTY REGISTRATION  
TO VALIDATE YOUR WARRANTY  
PLEASE COMPLETE IN BLOCK CAPITALS  
AND RETURN IN A WINDOWED DL ENVELOPE  
TO OUR FREEPOST ADDRESS

**ALTERNATIVELY REGISTER ONLINE AT [WWW.DARAY.COM](http://WWW.DARAY.COM)**



## 1 YEAR WARRANTY

NAME:
COMPANY:
EMAIL:
PHONE:
FAX:

ADDRESS:

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PURCHASED FROM:

--

DATE OF PURCHASE:

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Freepost Plus RRAS-YGXE-SLBC  
Daray Ltd  
Marquis Drive  
SWADLINCOTE  
DE12 6EJ

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SERIAL No:









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