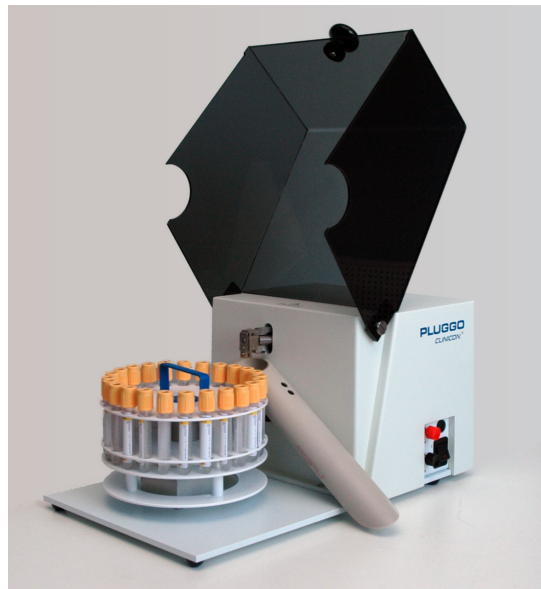


# PLUGGO

## User's Handbook

*PLEASE READ THIS MANUAL CAREFULLY  
BEFORE ATTEMPTING  
TO USE THE INSTRUMENT*

This manual describes the automated de-capper PLUGGO.



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# 1. General Information – Read this first

## 1. Type of equipment and intended use:

Pluggo is used for safe removal of original caps from vacuum collection tubes. It is intended for use in laboratory environment under normal in-house conditions.

Clinicon AB cannot accept any responsibility for any loss or damage, however caused, arising from a faulty or incorrect use of the instrument.

## 2. Tube Handling

Pluggo is capable of handling 5ml, 7ml, 7ml long and 10ml Vacuum tubes of the same brand.

**Note:** Each tube size has to be loaded in its corresponding carousel size with different colour marks.

**Note:** Never load de-capped tubes in carousel. Pluggo will damage tubes without caps!

**Note:** Never change brand without consulting Pluggo technical support.

## 3. Carousels

Different tube sizes are handled by use of different carousels with corresponding colour marks.

Carousel colour	Tube size	Volume
Blue	13 x 75 mm	5 ml
Red	13 x 100 mm	7 ml long
Grey	16 x 75 mm	7 ml short
Yellow	16 x 100 mm	10 ml

**Note:** All tubes placed in a carousel must be of the same type and size. Otherwise, damaged tubes may result.

Each carousel is capable of loading up to 24 tubes.

#### 4. Waste of biohazard material

When Pluggo is in operation, the de-capped plugs have to be collected and handled as biohazard waste. The chute mounted on Pluggo will guide the plugs to the right side of the equipment. As an option, a special chute for left hand mounting could be ordered. In this case however, the installation of Pluggo must not disable easy access to the control panel and the Red emergency stop.

#### 5. Cleaning and disinfecting of equipment

Use clinic disinfectant solution only. Use cleaning cloth. Do not use spray solution on Pluggo unit.

**Note:** Do not use Bleach on Pluggo unit.

Further instructions is found under Cleaning/Service instructions.

#### 6. Emergency stop

If any unexpected happens during operation, press the Red stop button. After removing the carousel from the driving disk, press stop button once again to reset and if necessary press Start button to let Pluggo go to the normal “home position”.

#### 7. Unpacking and inspections

At arrival of delivery, please check for any transportation damage prior to installation. It is recommended to save the transportation package for later service or repair shipment.

#### 8. Supply voltage

**Note:** Please check that the supply voltage indicated on Pluggo sign at the bottom of the unit corresponds to your local supply voltage.

## 2. Installation

1. Place the unit on a counter with the right side at the edge of the counter.
2. Open the plexiglass cover.
3. Hold the chute with the clip attached to it directed downwards. Clip the chute onto the round white plastic cylinder directly under the de-capper arm. The chute should now be extending to the right of the unit, on the same side as the power switch and controls are located. See figure 4.
4. Make sure that there is no space between the chute and the back surface of the unit. If there is, press chute against the back wall to eliminate any space present.
5. Close the plexiglass cover to make sure that the chute does not interfere with the closure of the cover. Please keep the cover closed.
6. The used caps will be disposed through the chute. Please place a receptacle with the appropriate biohazard lining to catch the falling used caps.
7. Plug the power cord into a supply connector with protective ground. Press the rectangular power switch on the right side of the unit. Check that the light on the power switch is now lit. See figure 2.
8. Without any carousels placed on the unit, and the cover closed, press the “Black” start switch and allow the unit to go through one complete cycle until it stops. If nothing happens when you press the black start switch, please press the “Red” stop switch once and if necessary the black start switch again.
9. Open the plexiglass cover and inspect the de-capper arm. Its position should be as indicated in the figure 1:

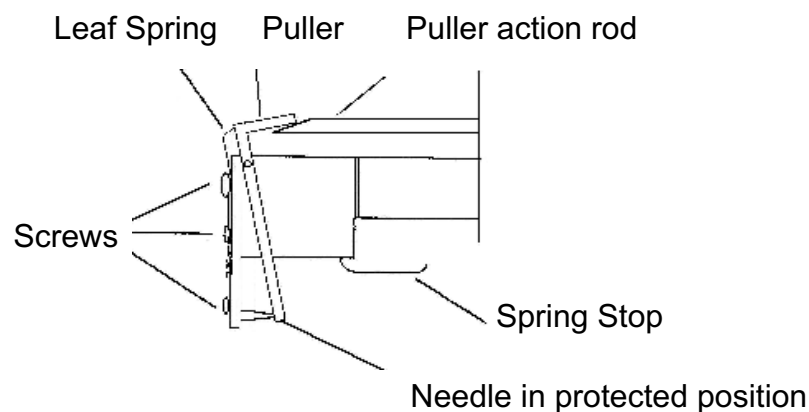


Figure 1: De-capper arm in home position

10. Locate the black “home position pin” on the drive disk. It should always be pointing directly towards the black pad and in line with the de-capper head.
11. Pluggo is now ready for operation. Please proceed to “operation instructions” for further information before operation starts.

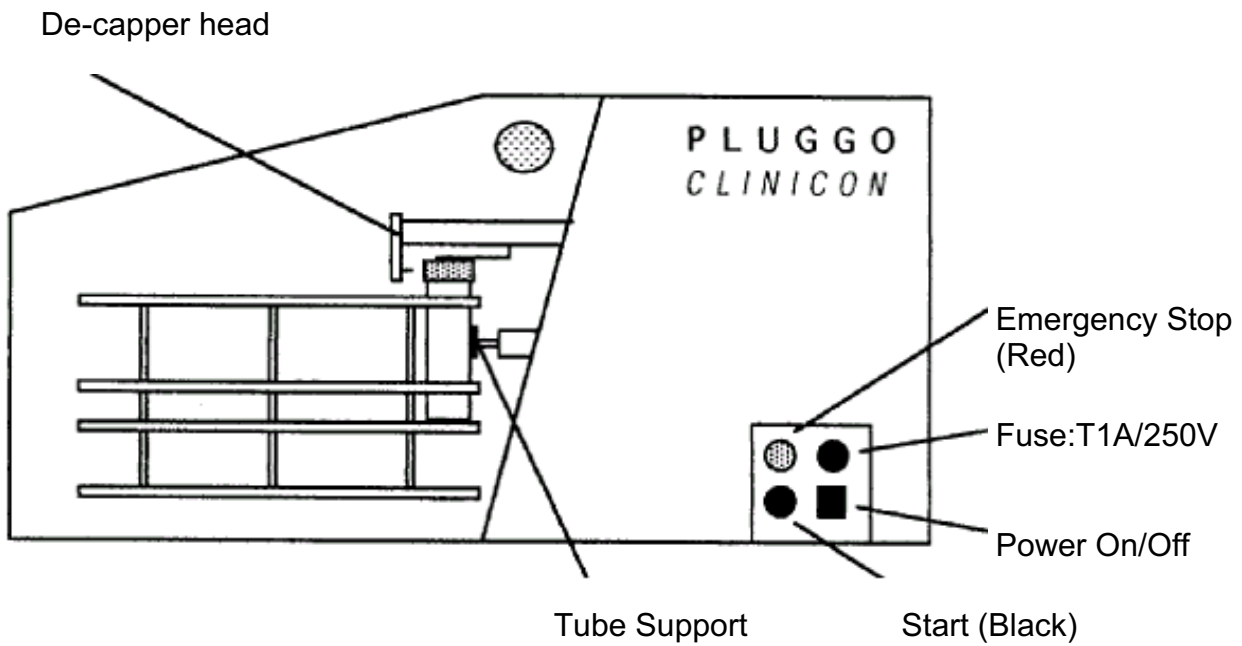


Figure 2: Right side view with control panel

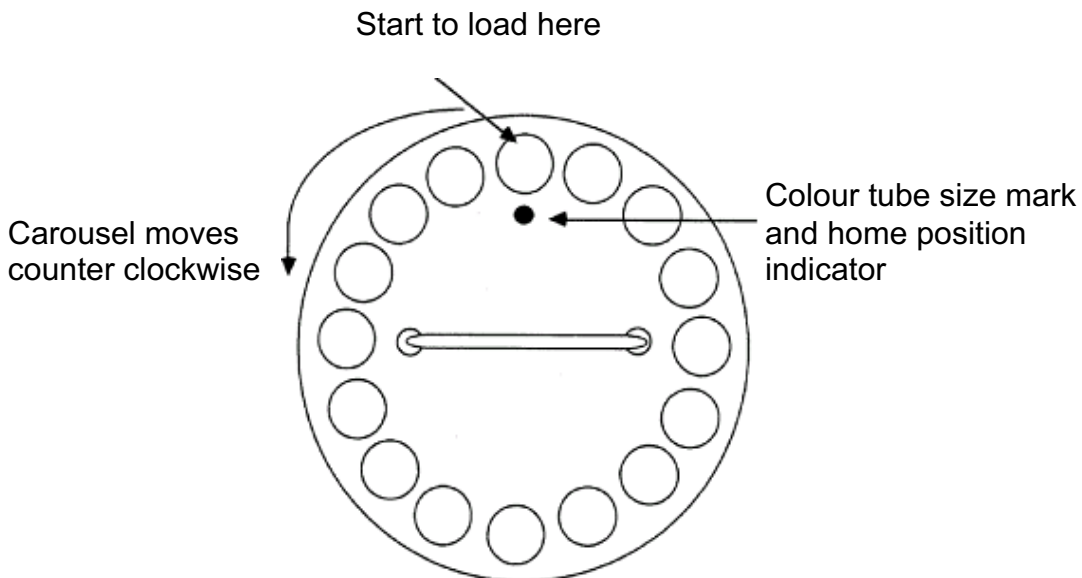


Figure 3: Carousel with coloured tube size mark

## 3. Operation Instructions

### 3.1 First time Operation and Training:

We do recommend that you run PLUGGO for a few cycles without it's sample carousel in order to familiarise yourself with it's general mode of operation.

1. Connect PLUGGO to a supply source with protective ground.
2. Switch on using rocker switch on panel at right hand side.  
The red neon should now be on.
3. Black button on same panel is for starting carousel movement.  
(Carousel drive disk will move counter clockwise.)
4. Red button on same panel is an emergency stop for carousel.
5. Carousel drive disk can be moved manually but only in a counter clockwise direction.

Now load an empty carousel. See figure 3. Locate the colour mark on the carousel to be in line with the "home position pin" on the carousel drive disk. In this case, the pin will fit into the hole in base of carousel. Be sure not to rotate the carousel when placing on the drive disk. With the carousel installed correctly you will see that it stops automatically when reaching the "home position" which is marked.

If the drive disk is unintentionally rotated when handling the carousel, the drive disk will be out of the correct position and cause malfunction. In this case, lift of carousel and press start to let Pluggo go to automatic stop.

As an alternative, the drive disk could be turned counter clockwise manually until it reaches the home position. Make sure not to rotate beyond the home snap location!

**Note:** If the drive disk is slightly out of the home snap position, Pluggo will fail in de-capping the tubes.

PLUGGO's red emergency stop button (see Fig 1) works like a normal switch i.e. after use, it has to be pressed again to reset and if necessary press the start button again. It is recommended to test this function at this time.

PLUGGO will automatically adjust itself to accept smaller differences up to 4 mm difference in tube height. It does this by moving its "de-capper head" out and across and adjusting for the caps. ***It is therefore important not to run PLUGGO with tubes whose caps have already been removed since this could result in tubes being broken.***

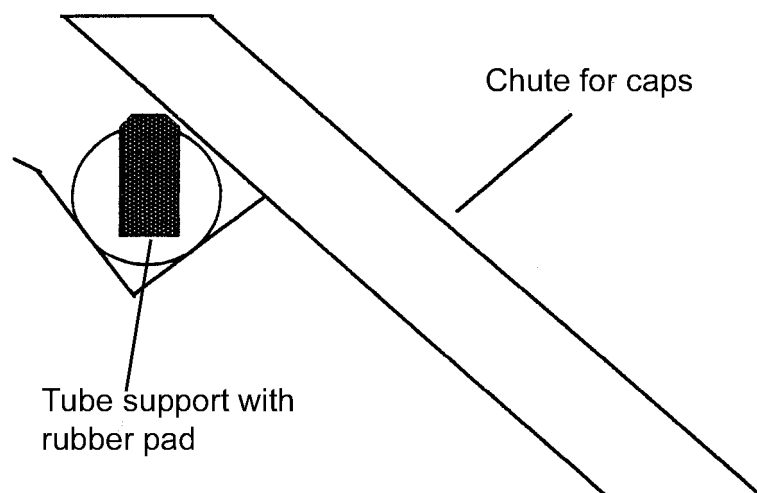
Four different types of carousels can be used in the standard version off PLUGGO.

Carousel colour	Tube size	Volume
Blue	13 x 75 mm	5 ml
Red	13 x 100 mm	7 ml long
Grey	16 x 75 mm	7 ml short
Yellow	16 x 100 mm	10 ml

## 3.2 Normal Operation

After initial training and under normal conditions the following procedure should apply:

1. Open the Plexiglass cover
2. Check that the chute is mounted and that the proper collecting device of de-capped plugs is in order.
3. Place a loaded carousel with the colour mark in line with the home position pin on the drive disk. Check that the first tube is located correctly in line with the de-capper head.
4. Close the cover
5. After power on, press the start button.
6. After automatic stop, open cover and replace the carousel for continuous operation.
7. Close cover and press start.
8. After finishing operation, close cover and power off the unit.
9. On daily basis, remove the chute and de-capper head for cleaning according the



Cleaning/Service instructions.

Figure 4: Chute attached on Pluggo (standard on right-side)

To remove the chute: Lift and pull it straight out from side of Pluggo

## 4. Cleaning Instructions

Due to the handling of tubes with blood samples, it is important to clean all potential infectious parts on a daily basis. Use clinic/laboratory approved disinfectant solution. Never use Bleach!

**Note:** Always use protective gloves when cleaning equipment.

1. Remove chute from the unit for cleaning procedure using disinfectant solution or in auto-clave equipment.
2. To remove the de-capper head:
  - Remove any carousel
  - Press Start to let de-capper head move outwards.
  - Press Stop button. This will let de-capper arm to stop in out position
  - Push de-capper head and turn left (90 degree counter clockwise). Se figure 5.
  - Pull out the head gently from arm.

The de-capper head is cleaned with disinfectant solution or in auto-clave.

**Warning:** The sharp needle will be exposed during removal. It presents a potential hazard from possible contact with infected blood samples. Take all necessary precaution when handling de-capper head or chute.

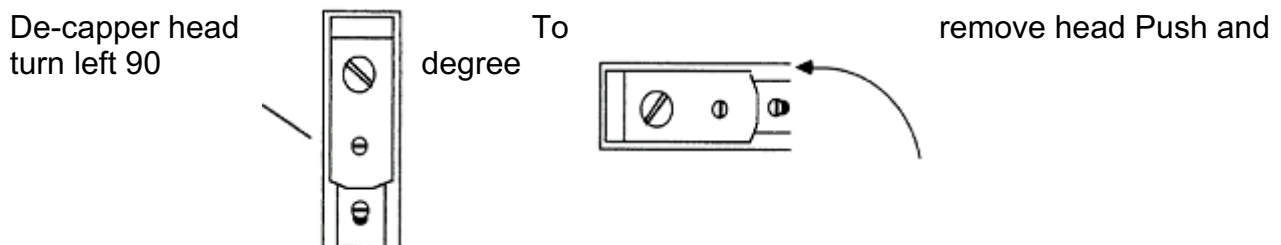


Figure 5: Removal of de-capper head

3. Clean unit and cover by using disinfectant solution on a cleaning cloth.



**Note:** Never use spray solution on Pluggo unit! It may affect the mechanical function.

4. Before mounting de-capper head:

- Check needle for any damage: The needle should be sharp and in straight condition.
- Check spring stop: The spring should be in parallel line with the de-capper head.

5. To mount the de-capper head:

- Check that de-capper arm is put in outward position. See above "To remove de-capper head".
- Hold the head in a 90 degree left position and push de-capper head onto the mounting arm. In pressed position, turn right (90 degree clockwise) and release. The head should now be in locked normal position.
- Press Red button once, then Start to let Pluggo go to automatic stop.

6. To mount chute: Hold chute with spring downwards and press onto holder.

7. Close cover and check no interfering with chute.

Pluggo is now ready for operation.

## 5. Service Instructions

### 5.1 Serviceable parts

With necessary tools and skills, the following parts are replaceable:

1. Rubber pad
2. Needle
3. Spring stop
4. Leaf spring

**Note:** Before service of any kind, All parts must be cleaned according to the cleaning instructions.

**Warning:** The sharp needle will be exposed during removal. It presents a potential hazard from possible contact with infected blood samples. Take all necessary precaution when handling de-capper head or chute.

#### 1. Replacement of Rubber Pad on Tube Support

When the Tube support no longer holds the Tubes in a steady grip at de-capping, the Rubber pad should be replaced.



Tube support  
without pad



Rubber pad with self-adhesive tejp



Figure 6: Tube support rubber pad

- Remove the old Rubber pad from the Tube support.
- Clean the Tube support with Acetone.
- Remove protective film from the rubber pad and put it onto the tube support.
- Press firmly on the rubber pad.

## 2. Replacement of Needle

If needle is no longer sharp or in straight condition, it should be replaced. Use a small screwdriver 3mm to remove the lower small screw, see figure 7. Replace the needle with a new according to the specified part in the spare part list below. When mounting the new needle, use some silicone grease on screw and needle to facilitate future replacement. Do not over-tighten the screw.

Replace the Spring Stop by removing this screw

Replace the Leaf Spring by removing this screw

Replace the Needle by removing this screw

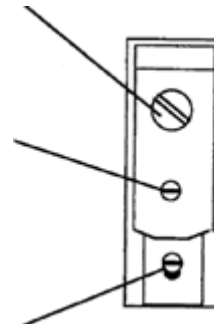


Figure 7: Replacement of de-capper head spare parts

## 3. Replacement of Spring stop

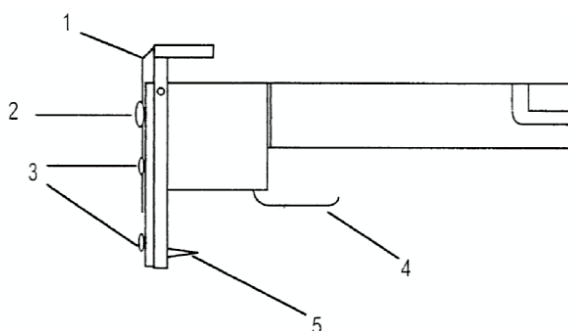
If the spring stop is damaged and no longer could be adjusted in line according to the figure 8, it should be replaced. Use a screwdriver 5mm to remove the upper screw, see figure 7. Replace the Spring Stop with a new according to the specified part in the spare part list below. Check correct mounting with figure 8.

## 4. Replacement of Leaf spring

If the leaf spring is no longer holding the puller in a tight position when head is removed, it should be replaced. Use a small screwdriver 3 mm to remove the middle screw, see figure 7. Replace the Leaf Spring with a new according to the specified part in the spare part list below.

## Spare parts list

Item	Part No	Description	Comment
	96 00 4496	De-capper head	assembly complete
1.	96 00 4470	Leaf Spring	
2.	95 27 0557	Screw	
3.	95 27 0558	Screw	
4.	96 00 4475	Spring stop std.	9600 4499 for 16x100mm Hemogard tubes.



5.	96 00 4472	Needle std.	9600 6172 for 16x100 mm Hemogard tubes.
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Figure 8: De-capper head assembly

96 00 4393	Carousel for 10 ml tubes	yellow marking
96 00 4394	Carousel for 7 ml short tubes	grey marking
96 00 4395	Carousel for 7 ml long tubes	red marking
96 00 4484	Carousel for 5 ml tubes	blue marking
96 00 4445	Pull spring	under the disk drive
96 00 4468	Rubber pad	
96 00 4397	Plexiglass cover	
96 00 44 61	Hinge screw	for the plexiglass cover
96 00 4509	Chute for caps right-hand side	standard
96 00 4490	Chute for caps left-hand side	optional
96 00 4463	Home position pin	black pin on the disk drive
95 83 00 26	Fuse, T1A/250V	slow blow

## 5.2 Repackaging instructions

When necessary to ship Pluggo unit for service or repair, please follow the instructions below to pack the instrument. Do not include the plexiglass cover, chute or carousels in the shipment.

1. Remove chute and any carousel from Pluggo.
2. Clean the unit and de-capper head according to the “Cleaning Instructions”.
3. Remove the two screws holding the plexiglass cover and lift off. Use tape to fix screws to the inside of the cover. Place the plexiglass cover at a safe place. It will not be sent.
4. Use the original box with packing material and lift out all material except for the bottom and side wall foam material.
5. Place Pluggo unit into box. Do not include the plexiglass cover.
6. Make sure the power cord is tucked to the side of the unit.
7. Place the cardboard on top of the Pluggo unit. Cut down the box in the corners to reduce the height down to the top level of the unit. This will ensure stability of the content during shipment. Do not include chute or carousels in box.
8. Include a written message with service request or description of technical problems. Do not forget to include Company name and complete address for return after service/repair.
9. Seal the box and label with appropriate shipping address.

## 6. Warranty and Technical Support

### WARRANTY

Clinicon AB warrants this product against any defect due to faulty material or workmanship for one year after the original date of purchase. This warranty does not include damage to the product resulting from accident or misuse. If the product should become defective within the warranty period, we will repair it or select to replace it free of charge. We will return your product, transportation prepaid, provided it is delivered prepaid to Clinicon AB. Manufacturer's liability under its warranties is limited to the repair or replacement of products returned prepaid to the factory, and does not include the cost of any loss or inconvenience, misuse, abuse, accident or damage from service by other than an authorised service centre.

Address to Clinicon AB or service centre:

Since product developments is a continuous process, Clinicon AB reserves the right to make changes in the specifications without notice.

## 7. Declaration of Conformity RoHS and EG insurance

Manufacturer: Clinicon AB  
Box 2  
S-161 26 Bromma  
Sweden

### **Hereby declares that the Product:**

Pluggo automated de-capper, as described by this manual

### **is in conformity with the provision of the following directives:**

- Machinery Directive 2006/42/EG
- Low Voltage Directive 2014/35/EG
- EMC directive 2014/30/EG
- RoHS 2011/65

### **and with reference to the following harmonised standards:**

#### Safety of machinery:

- EN 12100:2010

#### Electric safety:

- EN 61010
- EN 61010-2-081

#### EMC requirements:

- EN 60000-6-3
- EN 55022 Class B

This page also declares that previously named product complies with the battery directive 2006/66/EC

This product does not contain any latex or phthalates.

### **Responsible for compilation of technical documentation:**

Name: Oscar Degen  
Address: Box 2, S-161 26 Bromma

Signature:  
Date: 2018-10-02  
Location: Bromma, Sweden

Name: Lars Degen, VD

