

**Procedure for insertion of Saf-T-Intima Cannula for subcutaneous use.**



<https://youtu.be/li47l4861gY>

We use this for both breakthroughs and for syringe drivers.

**Procedure:**

- Explain procedure to patient and gain informed consent.
- Wash your hands
- Select your site – suitable sites: anterior chest wall, anterior aspects of upper arms and thighs, anterior abdominal wall and scapula region.
- Avoid sites: bony prominences, previously irradiated skin, lymphoedematous sites, near a joint, excessive hair, abdomen (if they have ascites or enlarged liver), areas that a bedbound patient might be lying on.
- Prepare your equipment.
- Disinfect skin and allow to dry a minimum of 30 seconds.
- Put on non sterile gloves
- Remove and dispose of the white clamp on the BD Saf-T-Intimia cannula. This is to avoid accidental occlusion.

**(A) If you are using the set for breakthroughs:**

- Prime the set via the side arm and replace the cap

**(B) If you are using the set for a syringe driver:**

- Attach the giving set and syringe (which has already been primed) to the side port and prime the cannulae. (it only needs less than a ml)

Then for both:

- Rotate white safety barrel 360 degrees in order to loosen the needle.
- Pinch the yellow wings together firmly (textured side down) with your thumb and index finger.
- Remove the needle sheath from the needle. Check that the bevel of the needle is up and the catheter does not extend over the needle tip.
- Gently pinch the skin into a fold between the thumb and forefinger
- Insert the needle 30-45 degree angle, to the full length of the needle
- Hold wings flat onto the skin (textured bubbles onto the skin)
- Hold firmly with your fingers the wings with one hand. Pull back on the white safety shield (to remove the needle). Pull in one straight and continuous motion.
- Cover the insertion site and wings with a transparent dressing.
- Place a cap if it is being used for a syringe driver or an injectable bung if it is being used for breakthroughs.
- Dispose of sharps directly into a sharps bin.
- Remove gloves and wash hands

Things to note:

Have a separate cannula for breakthrough administration, do not administer via the second port if it is connected to a syringe driver.

Advise family to check the site for pain, erythema or swelling.

Cannula can be left in for 5-7 days

## **Subcutaneous Injection without a cannula**

- Wash hands
- Draw up medication (Green needle)
- Change needle to orange
- Put on gloves
- Clean site
- Pinch the skin – approx. double the length of the needle
- Insert needle at a 90 degrees angle using a darting motion
- Continue to grasp the skin, press the plunger and inject medicine smoothly and slowly
- Await 5-10 secs, remove needle and release the skin
- Activate the safety device on the needle and dispose of the needle and syringe.

## **Procedure for setting up a syringe driver**

<https://youtu.be/Safi7imeEdQ>

A good short video going through the procedure to set up.

### **Choice of Syringes**

The McKinley T34 syringe drivers can use different brands and sizes of syringes including 2, 5, 10, 20, 30, 35 and 50ml. The 20ml Luer Lock syringe is the recommended minimum volume syringe. See box below for suggested fill volumes.

<b>Size of BD Plastipak syringe</b>	<b>Maximum fill volume advised at St Catherine's Hospice</b>
20ml	17ml
30ml	22ml
50ml (exceptional circumstances)	34ml

### **Equipment**

1. Syringe driver
2. Battery (PP3 size, 9 V alkaline)
3. Cannula/ giving set
4. Luer-lok syringe of suitable size (20ml BD Plastipak is the minimum size recommended at St Catherine's Hospice)
5. Transparent IV adhesive dressing
6. Drugs and diluents
7. Needle (blue, 23G) to draw up drug
8. Drug additive label
9. Patient's prescription

### **STEP 1**

#### **Filling the Syringe**

1. Regardless of the brand or size of syringe the same procedure should be followed.
2. Calculate the volume of the drug that needs to be drawn up.
3. Choose the appropriate size of syringe and check that it will fit the pump.
4. Draw up the required solution, including diluent, in the syringe, ensure there is no air in syringe/line.

### **Priming the Infusion Set If Starting a New Infusion**

Attach and prime the infusion set. For the McKinley extension set, the line will take about 0.2-0.4ml to prime and will require some force to open the anti-syphon valve that is present.

### **Labelling**

1. All syringes containing drug additives must be labelled.
2. If there is any doubt about the contents of the syringe, it should be discarded, particularly if the patient is transferred from one care setting to another.
3. Complete the label details in ink. The label must state:
  - The name of the patient for whom it is intended
  - The patient identification number
  - The date and time of preparation
  - The initials of the person preparing the contents.
  - The name and dose of all drugs e.g: morphine 15mg, haloperidol 5mg.
  - The name of the diluents.
4. Attach the label to the syringe, ensuring that it does not interfere with the mechanism of the infusion device, i.e. where there is contact with the barrel clamp arm. Place the label at the tip end of the syringe, leaving the scale visible so that it can still be read.

## McKinley T34 Syringe Driver

### T34 Feature Recognition Keypad



1. INFO Key- access event log/Set Up (code protected)/battery status
2. UP/DOWN arrow keys- increase/decrease parameters/scroll options
3. YES/START key- confirms selection/starts infusion.
4. NO/STOP- step back a screen/stops infusion.
5. FF (forward)-moves actuator forward/purge facility
6. BACK-moves actuator back
7. ON/OFF

Designed by p & i associates Ltd.



### T34- Feature Recognition Syringe Loading



1. Barrel clamp arm- (detects syringe size/width of barrel, secures)
2. Syringe ear/collar sensor (detects secure loading of syringe collar)
3. Plunger sensor (detects secure loading of syringe plunger)

Designed by p & i associates Ltd.



### **STEP 1: Pre-Loading & Syringe Placement**

- Install a **fully charged disposable battery**
- Before placing the syringe into the driver ensure the barrel clamp arm is down then press and hold the **“ON/OFF”** key
- The LCD display will show **“PRE-LOADING”** and the actuator will start to move. Wait until it stops moving and the syringe sensor detection screen (Screen graphic) appears.



**NOTE:** During Pre-Loading the actuator always returns to the start position of the last infusion programmed.

- **Check the battery**

Press “INFO” key until the battery level appears on the screen and then press “YES” to confirm.

Verify the battery is fully charged (Above 90%). If less than 30% charge available, replace with fully charged battery. The average battery life, starting at 100%, is 3-4 days. If in the community setting, discard the battery if there is less than 40% power remaining.

### **STEP 2: Fitting the Syringe to the syringe driver and connecting the infusion to the patient.**

**PRACTICE POINT:** For safety reasons, the syringe must be attached to the driver **BEFORE** connecting to the patient to avoid an inadvertent bolus dose, even when replenishing.

1. Check the patients name and wristband if used against the prescription.
2. Connect the Mc Kinley extension line securely to the syringe
3. If the actuator is not in the correct place to accommodate the syringe, leave the barrel arm clamp down and use the “FF” and “BACK” buttons on the keypad to move the actuator. Forward movement of the actuator is limited, for safety reasons; therefore repeated presses of the “FF” button may be required when moving the actuator forward. Backwards movement is not restricted.
4. Lift and turn the barrel clamp arm.
5. Seat the filled syringe collar/ear and plunger so the back of the collar/ear sits in the central rest (ensure correct placement). The syringe collar/ear should be vertical. Ensure that the scale on the syringe barrel is facing forward so that it can easily be read.
6. Lower the barrel clamp arm. Note that the syringe graphic on the screen ceases to flash when the syringe is correctly seated at all three points.



7. The syringe size and brand will then be displayed. Confirm that the syringe size and brand match the screen message. Press “YES” to confirm.





Connect the extension line to the cannula (which has already been inserted into the patient – see below for further instructions)

**Practice Point:**

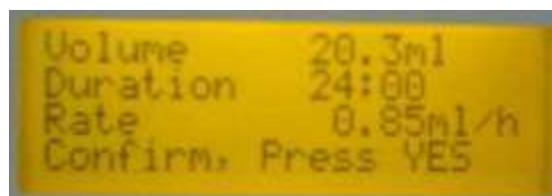
If the patient has unrelieved symptoms when the syringe driver is set up, a breakthrough dose of medication should be administered.

**STEP 3: Inserting Infusion Line (if required)**

1. Select appropriate site, avoiding areas where there is oedema or wounds.
2. Insert cannula, bevel down
3. Loop infusion tubing to prevent accidental traction
4. Fix with a transparent adhesive dressing

**STEP 4: Starting the Infusion (New Syringe)**

After the “Syringe Confirmation”, the pump calculates and displays the deliverable volume, duration of infusion (24 hours) and rate of infusion (mls per hour). (An example is below). Press “YES” to confirm or “ON/OFF” switch to return to the syringe options.



Note: **Volume discrepancy.** CME McKinley allows a 2% accuracy with the T34. With a 20ml syringe in place **this equates to +/- 0.5mls.** **If the discrepancy is > +/- 0.5ml this is considered unacceptable.** The following steps should be followed:

- Remove the syringe
- Restart the pump
- Observe the “PRELOAD” and start again
- Ensure that you have selected the corrected syringe brand

#### **PRACTICE POINT:**

The driver is programmed for 24 hours. Despite this if a previous programme is resumed in error the duration may be different. Confirmation of the correct information is vital.

If there is no volume discrepancy, start infusion:

1. Driver screen prompts ‘START INFUSION’.



Check the line is connected to the driver and press ‘YES’ to start the infusion.

2. When the pump is running, the screen will display “Time remaining”, “Rate” e.g 0.66ml per hour and “Pump delivering”. (**This is an example rate**)



3. The green LED indicator flashes every 32 seconds.

### **PRACTICE POINT**

If the infusion has not been started and a button has not been pressed for more than two minutes, an alarm will sound and the message “Driver Paused Too Long Confirm, Press YES” will show on the LCD display.

To stop the alarm, press “YES” and continue programming the infusion.

### **STEP 5 - Keypad Lock**

The T34 allows all users to lock the operation of the keypad during infusion. This function should be routinely used to prevent tampering with the device.

1. Lock the keypad after starting the infusion, pressing and holding “INFO” key until a chart is displayed showing a progress bar moving from left to right. Hold the key until the bar has moved completely across the screen to confirm the lock has been activated.
2. Although the keypad lock is on the following buttons are still active: NO/STOP, YES/START, INFO.



3. To deactivate the Keypad Lock: (Driver must be infusing)

Repeat the above procedure. The bar will now move from right (lock) to left (unlock) and a beep will be heard.

### **Practice Point**

Always fully turn off the T34 by removing the keypad lock and turning off between inserting new syringes and between patients to ensure that the syringe driver recalibrates

## **STEP 6 - Lockboxes**

Lockboxes may be used when there is a risk that a patient or relative may tamper with the syringe driver and contents.

Please note: a 50ml luer-lok syringe will not fit into a lockbox.

## **STEP 7 - Documentation**

Record following details on the prescription sheet:

1. Date
2. Time
3. Volume registered on LCD
4. Rate in mls/hour
5. Signature
6. Site appearance
7. If new site, record and include reason
8. Prescription matches label

## **STEP 8: Checking**

Check infusion one hour after set-up and in accordance with your local policy. Check:

- Rate has not been altered.
- Volume remaining in the syringe. Calculate the volume infused to assess whether driver is delivering medication at approximately the desired rate.
- Solution in the syringe and the line for cloudiness, precipitation or colour change, and presence of large air bubbles (tiny ones not significant).
- Green LED light is flashing every 32 seconds and that the bottom line of the LCD display is alternating between “<<<<driver delivering” and make/size of syringe.
- Line is securely attached to syringe and cannula and not leaking, and line not kinked or trapped.
- Infusion site for redness, swelling, discomfort/pain, leakage of fluid.

## Action points after monitoring

Action must be taken, and documented, in the event of:

1. Discrepancies in the actual and expected infusion rate (CME McKinley,
2. Signs of incompatibility
3. Blockage of infusion line
4. Damage to syringe barrel or tip

## STEP 9: Pausing the infusion

This is not good practice and should only be used in exceptional circumstances, such as, in response the “occlusion alarm”. Please see Appendix on troubleshooting. However if you do need to temporarily stop the infusion follow the instructions below.

## How to stop the infusion temporarily

This is not good practice and should only be used in exceptional circumstances, such as, in response the “occlusion alarm”. Please see Appendix 2

## Temporary interruption of infusion e.g. bathing

1. Press “STOP”.
2. Press and hold “OFF” button until a beep is heard; the screen will go blank.
3. ***Do not remove syringe from driver.***
4. Disconnect the line from the cannula and follow infection control guidelines cap the end of the line and cannula with a universal bung.

## Resuming the Infusion

1. Check that the prescription, syringe label and patient details match, to ensure that this is the correct syringe for this patient.
2. Reconnect the line to the syringe on the driver.

3. Press and hold the “ON” button until a beep is heard. The screen will request confirmation of syringe size and syringe brand.
4. Press “YES” to confirm. If the syringe size and brand do not match, scroll with up and down arrows until the correct selection appears, then press “YES” to confirm.
5. The screen will display:



**Press “YES to Resume” the previous program**

6. The screen will display “*Remaining volume, duration and rate of infusion*”
7. Press “YES” to confirm. Screen will display “*Start Infusion*” Press “YES” to confirm.

**STEP 10 – Stopping the infusion and removing the syringe driver**

When the infusion is complete and the syringe is empty, it will stop automatically and the alarm will sound. If the syringe driver is no longer required for the patient, press “OFF” and then remove the battery from the syringe driver.

- If the infusion is to be stopped before the syringe is empty, it should also be disconnected at the syringe end from the patient for safety reasons before the syringe is taken off the driver. A syringe that is not empty must **never** be taken off the driver while connected to the patient.
- Wipe the machine casing with a sanitising wipe (e.g. Clinell) before issuing to another service user (do not immerse driver in water).
- Dry and replace in packaging if no longer required for use
- Dispose of any remaining medication as per local policies
- Dispose of syringe and tubing as single use items
- Document the following information in the patient notes:
  - Time/reason
  - Whether cannula has been removed

- Condition of the infusion site

**PRACTICE REMINDER: DO'S and DON'TS**

**DO** check the battery daily

**DON'T** drop the syringe driver

**DON'T** immerse in water

**DON'T** stick surgical adhesive tape to the syringe driver

**NB** If the syringe driver is accidentally dropped or immersed in water, send if for servicing. Failure to do so could put the patient at risk.

