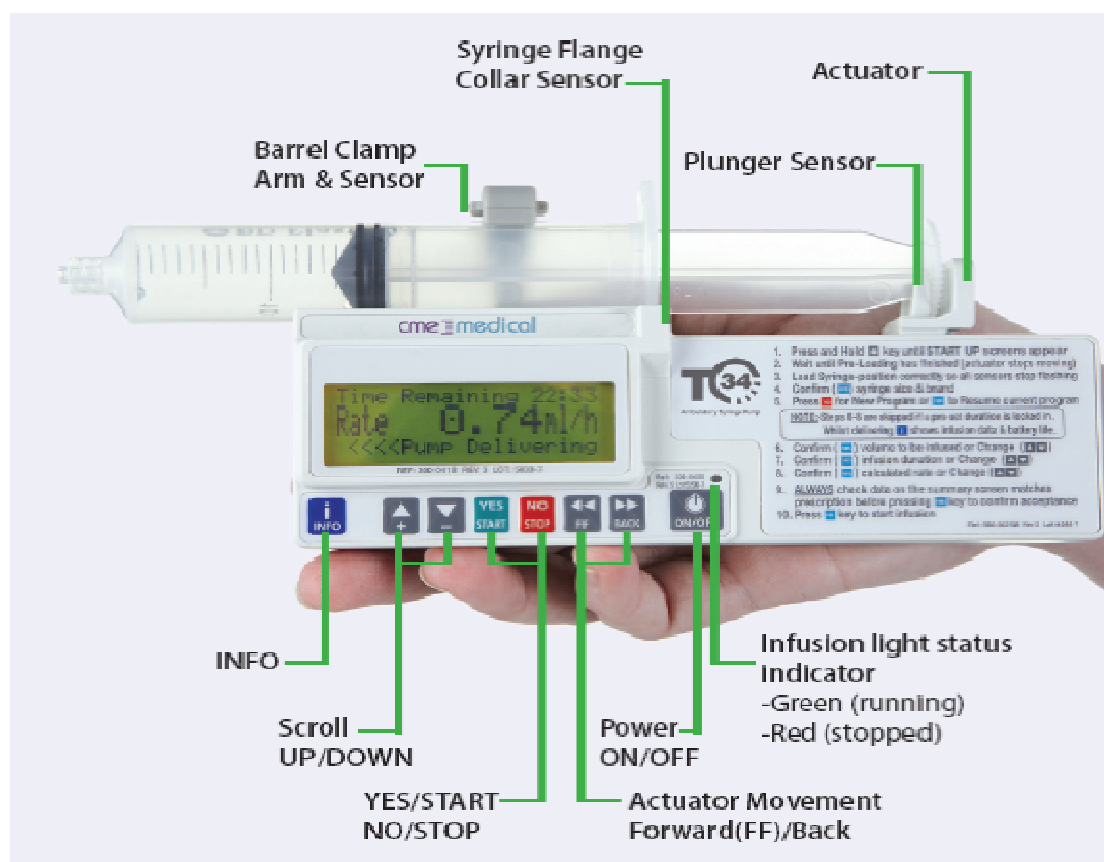


Setting up a CME medical T34 Syringe Driver

Equipment Required

- T34 syringe driver, lockbox and lockbox key
- 9 volt alkaline battery (procurement code WPA120)
- A variety of 1ml/2ml ordinary syringes to draw up drugs prescribed
- Subcutaneous cannula device as recommended by local policy
- Sani-cloth CHG 2%/ alternative OUH recommended wipe
- Infusion line set
- 30ml BD Plastipak luer lock syringe
- Sterile transparent film dressing (10cm x 12cm)
- Scissors, gauze swabs, tape
- Blank sticky label
- The prescribed drug(s) and drug prescription chart
- A suitable diluent. Water for injection is recommended as there is less chance of precipitation, unless otherwise indicated
- OUH T34 4 hourly syringe driver checklist

CME medical T34 Syringe driver



Ref: Continuous subcutaneous administration of medicines via T34 syringe driver for adult palliative care patients: a clinical protocol, June 2014. Appendix 2. Review June 2017.

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Setting up a T34 Syringe Driver (LOCK ON Prime and Load)

When setting up a syringe driver or renewing the next 24 hour syringe, two qualified nurses should check the drugs, the rate and the identity of the patient

1) INITIAL SET UP: PREPARE THE SYRINGE AND INFUSION LINE

- a) Ensure you have all equipment required and that you have a suitable quiet environment to work in. As there are a number of beeps on initial set up, do so away from the patient's bedside.
- b) Wash and dry hands.
- c) Check and draw up the prescribed medication into a **30ml BD Plastipak luer lock syringe** making up to a total of **21ml** volume with water for injection using an aseptic non-touch technique.

Seek specialist palliative care advice if the total amount of medication is too much for the syringe driver to hold.
- d) Complete the medicine additive label including details on date and time of preparation, name and dose of all drugs in syringe, diluent type and total volume and sign. Position the label on the syringe so that none of the syringe calibrations are obscured.
- e) Attach the syringe to the infusion set using an aseptic non-touch technique and prime the tubing manually.
- f) Where more than one infusion is prescribed, the lines should be clearly labelled with the number of the infusion as per the prescription chart.
- g) Check the pump is clean and not damaged.
- h) Insert the Duracell 9v battery into the battery compartment.

2) POWER ON, PRE-LOADING and CHECKING THE BATTERY %

- a) Power on by pressing and holding down the **ON/OFF** button
- b) Barrel clamp arm should be down. Observe and **allow pre-loading** sequence where the actuator will move automatically. **Ensure fingers are out of the way.**
- c) When the actuator stops, the screen prompts you to load the syringe. **Don't load yet.**
- d) Check the battery level 1st by pressing the **INFO** button once. Click **YES/START** key to see battery status. If the battery is 15% or less, change immediately.

3) SYRINGE LOADING, DETECTION AND CONFIRMATION:

- a) Make sure the barrel clamp arm is down
- b) Place the syringe above the pump and align syringe with the collar sensor
- c) Align the syringe with the plunger sensor by moving the actuator with the FF/BACK buttons
- d) Once aligned, lift the barrel clamp arm and turn 90°. Place syringe collar and plunger into the sensor slots and click in place. Check syringe is aligned and central.
- e) Return the barrel clamp arm to the down position to secure the syringe.
- f) Once the syringe is correctly seated, the sensors will identify the make and size of syringe (should be 30 ml BD Plastipak) and ask you to confirm by pressing the YES button.
- g) The syringe brand and size displayed must match the one being used; if an incorrect syringe is placed on the pump, the screen should read "Syringe Not Recognised". Action would be to fit correct syringe.
- h) If no syringe brand and size displays, re-adjust the syringe in the sensors.

4) REVIEW AND CONFIRM INFUSION PROGRAMME:

- a) The screen will display the VOLUME, DURATION and RATE as calculated by the pump. Visually check the volume in the syringe, check duration is over 24 hours and that the rate displayed is the syringe volume confirmed divided by the duration.
- b) Press YES button to confirm.
- c) The screen will now be displaying START INFUSION? **Do not confirm YES yet: now go to the patient's bedside.**

5) INSERTION OF THE SUBCUTANEOUS CANNULA:

- a) Explain the procedure to the patient/family/carer: allowing them to ask any questions, express any anxieties, for you to reassure when appropriate and for the patient if able to give consent. Consider the individuals communication needs and any specific disability requirements (e.g. sensitivity to touch, impact of fear when patients may have cognitive impairment). It is important to recognise that having a syringe driver can be a frightening new experience for the patient and their family.
- b) Wash and dry hands.
- c) Choose an appropriate site for insertion: Patient preference, the disease process and common sense will influence the choice of site.

- d) Subcutaneous metal butterfly devices will need priming. If using a needle-less device such as the Saf-T-Intima cannula you do not need to prime as there is only 0.2ml dead space.
- e) Decontaminate skin using Sani-Cloth CHG 2%/alternative OUH recommended wipe prior to insertion. Allow skin to dry for 30 seconds.
- f) Grasp the skin firmly. Using an aseptic non-touch technique, insert the device into the skin at a 35-45° angle and release the grasped skin. Secure the device to the patient's skin by taping the wings and placing sterile transparent film on top. If using a needle-less device such as the Saf-T-Intima cannula, apply gentle pressure over the entry site and remove needle/guide wire by gentle, even pulling.

6) STARTING THE INFUSION:

- a) Connect infusion line to the cannula using an aseptic non-touch technique, check that syringe/line contents are clear and not crystallised. Start infusion? is displayed on the pump: press **YES** to start.
- b) Display will now show time remaining, infusion rate and pump delivering.
- c) Check LED light is intermittently flashing **green** (will do so every 32 seconds). NB: there will be no 'whirring' noise.
- d) Press and hold the **INFO** key to **put the Keypad lock on**: whilst pressing the **INFO** key, observe the bar on the screen moving left (OFF) to right (ON) and wait for the beep, which will indicate the lock is on. This will protect the settings.
- e) Place in lockbox to protect the pump, lock with key. Provide carry bag for more mobile patients.
- f) Place away from light e.g. under the bedclothes, in a pocket or in a material cover. Some drugs are light sensitive.

7) DOCUMENTATION and MONITORING

- a) Complete the prescription record chart for syringe driver.
- b) Complete the OUH T34 4 hourly checklist, including the patient's details, the pumps asset number, date and time infusion commenced, doses of drugs in syringe, site selected and site health, volume infused (VI), check syringe and line contents are clear and that the green LED light is flashing.
- c) Dispose of waste in line with local policies
- d) Press arrow up ☐ /down ☐ key to put display backlight on.
- e) Monitor every 4 hours as a minimum and record on OUH T34 syringe driver checklist:
 - check VTBI (Volume to be infused) and VI by pressing **INFO** key x 1
 - check battery level by pressing **INFO** key x 2

8) INFUSION END

- a) At end of every infusion, turn the pump off by pressing **NO/STOP** key, disable the keypad lock by pressing and holding down the **INFO** key and observe the bar on screen moving right to left until you hear a beep.
- b) Power OFF by pressing down on the ON/OFF button until you hear a beep.

9) PROCEDURE FOR DAILY RENEWAL OF MEDICATION:

- a) Wash hands. Check and draw up the medication to the prescribed volume using an aseptic non-touch technique.
- b) Complete the medicine additive label including details on date and time of preparation, name and dose of all drugs in syringe, diluent type and total volume and sign. Position the label on the syringe so that none of the syringe calibrations are obscured. Go to the patient.
- c) **Unlock the keypad** by depressing and holding down the **INFO** button until the bar empties and the pump beeps.
- d) **Stop the infusion** by pressing the **NO/STOP** button and switch the pump off by pressing and holding down the **ON/OFF** button until the bar empties and screen goes dark.
- e) Remove the empty syringe from the syringe driver. Place barrel clamp arm down. **Do not connect the new syringe yet in order to avoid accidental bolusing of drugs.**
- f) Switch the syringe pump on and **wait for the Pre-loading sequence to complete.** The actuator pad will return to the place where it started the previous infusion.
- g) Check that the battery has over 15% of power by pressing the **INFO** button.
- h) **Align the syringe above the collar and plunger sensors.**
- i) **If the volume of fluid is smaller or greater than the previous day**, leave the barrel clamp arm in place across the body of the pump and align the syringe with the plunger sensor by moving the actuator with the **FF/BACK** buttons into the correct place to accommodate the volume of fluid in the new syringe.
- j) **If your syringe holds the same volume of fluid as on the previous day, you will immediately be able to insert the syringe into the pump.**
- k) Lift the barrel clamp arm up and turn 90° away from the body of the pump.
- l) Place the new syringe onto the body of the pump and click the collar and plunger firmly into the appropriate gaps.
- m) Place the barrel clamp onto the syringe. Once the syringe is correctly seated, the sensors will

- identify the make and size of syringe (BD Plastipak 30ml). Press the **YES** button to confirm if correct.
- n) The screen will then display the VOLUME, DURATION and RATE as calculated by the pump and ask you to confirm by pressing the **YES** button
- o) Disconnect the empty syringe and connect the new syringe to the patient's infusion line.
- p) The screen will now be displaying Start infusion? Confirm by pressing the **YES** button. The screen will confirm that the pump is now infusing.
- q) Lock the keypad by pressing and holding the **INFO** button until the display bar fills and pump beeps.
- r) Insert the pump into the lockbox and lock with the key.
- s) Place away from light e.g. under the bedclothes, in a pocket or in a material cover as some drugs are light sensitive
- t) Complete the prescription record chart for syringe driver and document details as before on the OUH T34 syringe driver checklist.
- u) Monitor 4 hourly as a minimum and record details on the checklist.

10) STOPPING THE SYRINGE DRIVER:

The pump can be stopped at any time (whether or not the keypad lock is on) by pressing the **NO/STOP** key. No other instruction can be carried out unless the keypad is unlocked.

11) WHEN THE SITE NEEDS CHANGING:

If the site is red or inflamed, leaking, bleeding, swollen, hard or painful the subcutaneous cannula/needle should be removed and a new cannula inserted.

Check contents of infusion line and syringe: if clear and not crystallised:

- **STOP** the syringe driver, but do not power off
- Insert new subcutaneous cannula device using aseptic non-touch technique and secure
- Disconnect the line from the old cannula, connect to the new site
- Confirm **YES** to resume the infusion
- Gently remove the old cannula/needle from the patient and dispose of into sharps box.
- Document new cannula site on the OUH T34 syringe driver checklist.

If the line or syringe appear cloudy, crystallised or contaminated, the cannula, infusion set and device should be discarded and a new infusion commenced from the start.

12) RESUMING THE INFUSION

- a) Press and hold the “ON” button until a beep is heard. The screen will request confirmation of syringe size and syringe brand.
- b) Press “YES” to confirm.
- c) The screen will display “Press YES to Resume” or “NO for New Program”.
- d) Press “YES” to resume; the screen will display “Remaining volume, duration and rate of infusion”.
- e) Press “YES” to confirm. Screen will display “Start Infusion”. Press “YES” to confirm.

N.B. If you press “NO” the pump interprets this as a completely new 24hr period. In this case, you would be required to set up a completely new prescription from the start.

13) CHANGING THE BATTERY

You can change the battery without powering off

To change:

1. Leave keypad lock on (as will protect settings)
2. Do not turn the pump off
3. Open the battery compartment, remove the old battery and replace with new one
4. Press ON/OFF button to power on the pump
5. Display will ask ‘Resume syringe?’: press YES button
6. Check RATE and DURATION on the display screen, ensuring correct.
7. Check battery level % by pressing INFO button x 1
8. Check keypad lock on

14) WHAT TO DO IF THE PATIENT DIES WHILST THE T34 SYRINGE DRIVER IS RUNNING

- Stop the pump by pressing the NO/STOP key. Take the key pad lock off and power off.
- Visually check the syringe and record the date, time and amount of solution remaining. If there are no issues, discreetly remove the syringe from the pump, destroy the contents and record the signatures of the health care professionals destroying the remaining solution. Remove the battery, infusion device and set when possible.
- If there are any doubts about the circumstances of the patient’s death and the case is being referred to the coroner: remove the cannula, disconnect the line from the cannula, quarantine the device including syringe, line set and documentation and contact equipment library services manager.
- If there are controlled drugs in the quarantined syringe, these should be discarded as per local policy, document amount discarded. Quarantine the device.

Accessing specialist advice

The contact details for the **OUH palliative care teams** are summarised below:

Monday to Friday 9.00am – 5.00pm	
Patients in the JR	Hospital Palliative Care Team at the John Radcliffe Hospital: 01865 (2)21741
Patients in the Churchill/NOC	Hospital Palliative Care Team at the Churchill Hospital: 01865 (2)23585
Patients in the Horton General Hospital	Hospital Palliative Care Team at the Horton General Hospital : 01295 (2)24195
Overnight and at Weekends/Bank Holidays	
Sobell House	9.00am - 4.00pm: 01865 (8)57036 Outside of these hours: 01865 (2)25873
Katharine House Hospice	01295 811866

- **Pharmacists** can additionally be used as a resource for advice and are available on each site. Pharmacists are also available for out of hours support and are contactable through switchboard.
- **Medicines information** (Extension 21505) are available for advice 9-5 and are based at the John Radcliffe Hospital. Call the on-call pharmacist via switchboard for out of hours advice.
- **Equipment Library** (Ext 20039) and **Clinical Engineering Department** (Ext 21548)

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