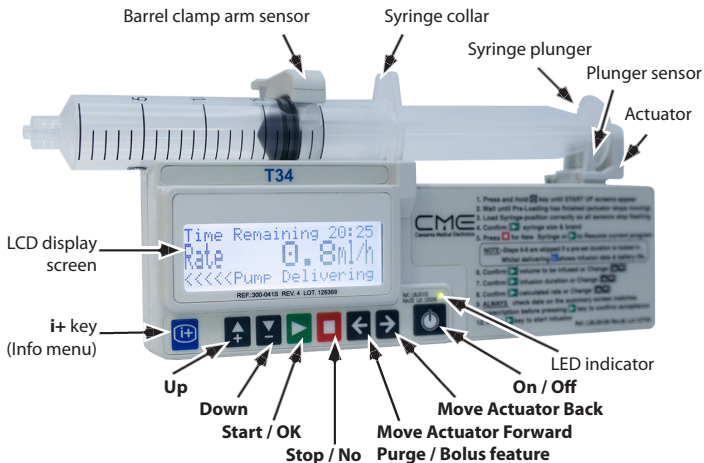


# T34™ Syringe Pump (3<sup>rd</sup> edition)

## LOCK ON DURATION (Prime and Load)

### Quick Reference Guide for Homecare



Note: Instructions on the pump label are for reference only and do not reflect all possible settings. Please, refer to the Directions For Use for full instructions.



- This guide is not intended to be comprehensive instructions for the set-up and operation of the infusion pump. For complete pump information, refer to the *T34™ Syringe Pump Directions For Use (3rd Edition)*.
- Some screens in this guide may vary depending on the way the pump is set up. They are for reference purposes only and may be different than the information displayed on your system.
- Before operating the pump, users should consult the full Directions For Use guide.
- If you need assistance with setting up or maintaining the equipment or to report unexpected operation or events, contact the manufacturer or manufacturer's representative.

# Loading Syringe

## STEP 1



### Manual adjustment of the actuator

- Ensure the barrel clamp arm is down.
- Place the prepared syringe above the pump to visually align the syringe collar to the collar sensor.
- Use the  /  keys (if required), to move the actuator to the correct position for placing the syringe collar and plunger into the matching pump sensor areas.

## STEP 2



### Syringe loading

- Lift the barrel clamp arm fully and turn the arm 90° (either way).
- Place the syringe collar vertically (long side) into the pump collar slot and the syringe plunger into the pump plunger slot. The syringe should click into position.
- Turn and lower the barrel clamp arm onto the syringe. If barrel clamp arm is not down, the display shows 'Check Syringe Loaded Correctly'.

If the syringe is not loaded correctly, the display will show 'Check Plunger Sensor' or 'Check Collar Sensor'.




**WARNING: Ensure the syringe loaded is appropriate, and that the correct syringe extension set has been selected.**

## STEP 3



### Syringe detection and confirmation

The pump identifies the syringe brand, size and volume by measuring the syringe dimensions from the three sensors.

Check that the syringe brand and size inserted into the pump matches the syringe brand and size displayed. Confirm the match by pressing the  key.



**WARNING: Ensure the appropriate syringe size and brand have been selected.**

# Starting a New Infusion

## Scenario

- Lock on, default duration 24 hours.
- Infusion required: deliver syringe contents over 24 hours.
- 20ml BD Plastipak syringe.
- Syringe volume after priming is 17.5ml.

### A. Prepare syringe

Manually prime the syringe extension set.

**Note:** In Duration mode we recommend using “Prime and Load” and not “Load and Prime”. Please be aware if using Load and Prime instead of Prime and Load sequence, the rate of delivery will be automatically adjusted to compensate for the lost priming volume while maintaining the preset duration. If you wish to maintain the rate, please work in Rate mode.


### B. Check the pump

Ensure that the pump is clean, visually intact, and appropriate for the intended use.

### C. Insert battery

Fit the battery correctly.

### D. Power on and observe Pre-Loading

With no syringe in place and barrel clamp arm down, press  key until the screen illuminates.


Observe Pre-Loading: automatic actuator movement and screen information.



**WARNING: keep fingers away from actuator moving parts.**

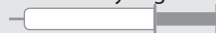
Wait until the **Load Syringe** prompt displays.

T34  
Version T34.xxxxx  
ID: (Syringe Pump)

Pre-Loading  
Use  to Interrupt

Occlusion    xxx mmHg  
Max rate    5ml/h  
Program lock    ON  
Battery status    99%

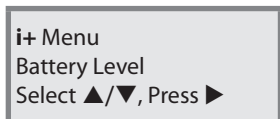
Load Syringe



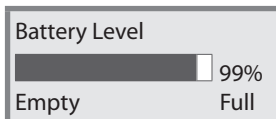
# Starting a New Infusion

## E. Check battery level

Press  key:








Press  key:



## F. Load and confirm syringe after the syringe extension set is connected and primed

Align the syringe to pump syringe fitting sensors.



- Use the  /  keys to move the actuator as necessary.
- Fit the syringe into the sensors.

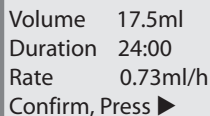
If the syringe size / brand displayed matches the one used, press  key. (If they do not match, use  /  keys to select the correct option.)



20ml BD Plastipak  
Select ▲/▼, Press ►


## G. Program the pump

- If prime / purge is required, press  key and follow screen prompts.
- Review the program summary. If correct, press  key.



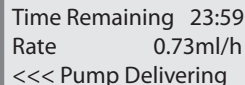
Volume 17.5ml  
Duration 24:00  
Rate 0.73ml/h  
Confirm, Press ►

## H. Start infusion

- To start the infusion, press  key.
- When the infusion is in progress, this screen displays:



Start infusion?



Time Remaining 23:59  
Rate 0.73ml/h  
<<< Pump Delivering

# Monitoring During Infusion

Regular monitoring includes the following checks:

- All connections between the syringe and the syringe extension set are secure.
- There are no kinks in the syringe extension set.
- There are no signs of physical damage to the pump or lockbox.
- The keypad lock is on.
- Infusion is in progress.
- Volume history and battery status are as expected.

## To activate or deactivate the keypad lock:

Press and hold the  button for approximately 5 seconds.

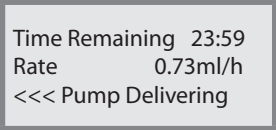
## When infusion is in progress:

- The pump LED light flashes green.
- The LCD screen displays three lines of information:

Line 1 – infusion time remaining


Line 2 – ml/h infusion rate

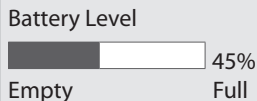
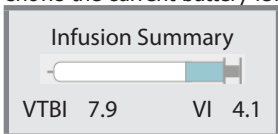
Line 3 – alternates between **Pump Delivering** and the syringe size and brand that have been selected.




Time Remaining 23:59  
Rate 0.73ml/h  
<<< Pump Delivering

## To check volume history and battery level:

Press the  key once and then again. The first press shows the current VTBI (volume to be infused) and the VI (volume infused) and the second press shows the current battery level:






Battery Level



45%





Empty Full

## I. Powering off

- Unlock the keypad if needed by pressing and holding the  key for approximately 5 seconds until the pump unlocks.
- If an infusion is running, stop it running by pressing the  key.
- Press and hold the  key until a beep is heard and the pump switches off.

**Note:** When an alarm activates, infusion stops and the LED indicator turns red. The alarm sounds continuously until the problem is rectified. Always note the alarm condition before stopping the pump.

# Alerts, Alarms and Troubleshooting

| Display Prompt   | Result / Cause  |
|--|---|
| Keypad Locked  | Only the  ,  and  keys are accessible. |
| Pump Stopped,<br>Press  to Resume | The infusion has been stopped.  |
| Program Nearly Complete  | Alert: Program is about to end / syringe is almost empty.   |
| Low Battery  | Alert: Remaining battery life less than 30 minutes.   |
| Pump Paused<br>Too Long  | Alarm: The pump has been stopped / paused for more than two minutes without any key presses.  |
| Syringe Empty,<br>Remove Syringe   | Alarm: Current infusion program has completed / syringe is empty.   |
| End Battery  | Alarm: Battery will fail imminently.  |
| Syringe Displaced,<br>Check Syringe  | Alarm: One or more of the syringe detection sensors is not detecting.   |
| Occlusion / Empty Syringe,<br>Check Line   | Alarm: Clamped line, occluded or kinked. Actuator has reached the minimum travel position.  |
| System Error. Press & Hold<br>i+ for Details. If problem<br>persists send pump for<br>service.                     | Alarm: An internal system error has occurred. Two examples of system failure screen messages are shown here.  |
| ERROR Startup Motov Fail. If<br>problem persists send pump<br>for service  |   |


## Program protection and **Resume:**



- Pre-Loading and syringe empty alarm clears a program from the pump memory.
- If the option is available to resume a program, a screen prompt displays.

20ml BD Plastipak  
Select , , Press 

If the syringe size / brand displayed matches the one used, press  key.

## Possible Actions

If further access is needed, press and hold the  button to unlock the keypad.

Press  key to Resume the infusion or press  key to continue stopped state.

Prepare to change syringe or discontinue pump use.

Prepare to change battery.


Press  key to resume the infusion. Press  key to continue pause for another two minutes, or power off.

Prepare to change syringe or discontinue pump use.



Change battery.

Check the syringe and re-seat as necessary. Check screen messages for assistance.

Release the clamp, flush / replace the access device or clear the occlusion.

Refer to the pump service manual for a full list of error codes. The user may be prompted to power off and restart, which may rectify the error. If the error recurs, take pump out of use. Press  key to obtain error message, record error code and summary of fault and return pump to designated service centre.

Press  to Resume,  
 for New Syringe

Press  key to retain the current program (ml/h rate is protected). Press  key to delete the current program which allows a new infusion to be programmed.

# Cleaning and Maintenance



## IMPORTANT!

- The Manufacturer Recommended Cleaning (MRC) protocol is **NOT intended to replace** local Infection Prevention and Control Policy. The decision about the level of decontamination required depends not only on how the device is used, but also on the risk of the device transmitting infection or acting as a source of infection.
- Best prevention practices against HAI (Hospital Acquired Infections) recommend a 2 steps process: Step 1. Removing unwanted soils from all surfaces with a cleaning agent (pathogens can use soils for harborage limiting accessibility to disinfectant agents). Step 2. Disinfecting the freshly cleaned surfaces.

## MRC PROTOCOL

### INTENT:

- To preserve pump performance.
- To remove soil, particles and chemical residue that could accumulate over time on pump surface. Soil, particles and chemical residue result from normal use and from the “disinfection protocol” developed by users at point of use.

### INSTRUCTIONS




- To clean the pump, wipe the external pump surface using a disposable alcohol wipe impregnated with isopropyl alcohol (IPA) 70%, to minimize pump exposure to excessive quantities of liquids.
- Isopropyl alcohol (IPA) is volatile and leaves no residue upon evaporation, therefore surfaces are left dry quickly after wiping.

### FREQUENCY:

- It is recommended to apply the MRC protocol to the pump after each disinfection sequence as a preventive measure to maintain pump performance and longevity (removal of chemical residue).
- Note: Preventive maintenance also helps to maintain pump performance over time. This should be performed as recommended in the Periodic Maintenance section.



# Cleaning and Maintenance

- 
-  • Turn off the pump before cleaning.
  -  • When fluid ingress is suspected, stop using the pump and request pump verification through maintenance to identify potential need of corrections.
- 
-  • Immersing the pump into liquid could cause damage to components. Do not soak or immerse any part of the pump or the pump charger into any type of liquid.
    - If other chemical cleaning agents are used for the “disinfection protocol / regime”, ensure to follow the manufacturer recommended cleaning to preserve pump performance, after completing the “disinfection protocol / regime”.
    - Do not spray or rinse cleaning solutions directly on pump surfaces or in potential liquid retention areas or open ports such as electrical connections.
    - Avoid using chemicals that can damage the surfaces of the instrument (for example, chlorinated solvents).
    - When using cleaning solutions containing chemicals (such as corrosive agents), do not use concentrated solutions and do not expose surfaces above the recommended dwell time. After application, rinse surfaces with IPA disposable wipes to eliminate chemical residue.
    - Do not steam, autoclave, EO (ethylene oxide) sterilize, immerse the pump or pump charger in any type of fluids, or allow fluids to enter the pump case.
- 

Periodic maintenance is recommended every 12 months. Periodic maintenance is designed to help ensure the pump’s accuracy and detect and repair any potential inconsistencies prior to their occurrence in the field. Refer to Direction for Use manual about periodic maintenance.

## *IP RATING*

The rating of the pump is IP22. This is the moisture protection rating and indicates the degree of particle and water ingress protection.

## Intended Use

The T34™ syringe pump is designed for infusion of medications or fluids requiring continuous or intermittent delivery at precisely controlled infusion rates through all clinically acceptable routes of administration including intravenous, subcutaneous, percutaneous, in close proximity to nerves, and into an intraoperative site (soft tissue / body cavity / surgical wound site). The system is intended for patients who require maintenance medications, analgesics, immunoglobulins, biosimilar, chemotherapeutic agents and general fluids therapy in hospital and homecare environments.

### *Contraindications*

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- Infusion of blood and blood products
- Infusion of insulin
- Infusion of critical medications whose stoppage or interruption could cause serious injury or death
- Use in ambulatory regimens by patients who do not possess the mental, physical or emotional capability to self-administer their therapy, or who are not under the care of a responsible individual

**Note:** Failure to use this equipment in the specified type of shielded location could result in degradation of performance, interference with other equipment or interference with radio services.

**Note:** No modification to this equipment is permitted.

### *Hazards*

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- Potential strangulation may occur if tubing is of excessive length.
  - Potential choking may occur if small parts are inhaled or swallowed.
  - Potential allergic reactions may occur due to materials used in the pump.
  - Children, pets, fireplaces, dust, lint and direct sunlight may all affect pump operation.
  - The use of single-use disposable components on more than one patient is a biological hazard. Do not re-use single-use disposable components.
  - Unsafe operation may result from using improper accessories. Use only accessories and options designed for this system and supplied or recommended by the T34™ Syringe Pump distributor.
  - Do not use this equipment with other infusion systems or accessories that are not approved to be used with this pump system.
-

# Operating and Transport Conditions

## System Accuracy

### *OPERATING AND TRANSPORT CONDITIONS*

There is no additional time required for the unit to equilibrate once removed from minimum to maximum storage temperatures.

Ensure to operate the pump within the specified operating range.

### *OPERATING CONDITIONS*

Ambient Temperature: +5°C to +40°C

Relative Humidity: 15% to 90%, non-condensing

Ambient Pressure: 70 kPa to 106 kPa

### *TRANSPORT AND STORAGE CONDITIONS*

Temperature: -25°C to +70°C

Relative Humidity: 0% to 90%

Air Pressure: 48 kPa to 110 kPa

### *SYSTEM ACCURACY*

System accuracy of  $\pm 5\%$  achieved under nominal conditions, defined as follows:

Flow rates: 1ml/h and 5ml/h.

Tested with syringe extension set model M100-172SB;

Needle: 18 gauge;

Solution Type: Distilled water;

Temperature:  $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$ ;

Back Pressure:  $0 \pm 10$  mmHg;

Syringe size and brand: BD Plastipak 20ml;

# Disposal and Battery

## *PROPER DISPOSAL*

When the time comes to dispose of the pump, accessories or packaging do so in the best way to minimise any negative impact on the environment. You may be able to use special recycling or disposal schemes. To find out about these contact your technical service department or local waste disposal service. Existing national or local regulations concerning waste disposal must take precedence over the above advice.

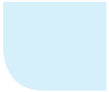
Used syringe extension sets should be considered bio-hazardous and treated (handled, disposed or processed) as potentially posing significant risks of infection transmission to humans or harming the environment. Please follow any applicable national and institutional guidelines for bio-hazardous materials treatment.

## *BATTERY*

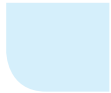
Always use a 9 volt alkaline disposable battery, type 6LR61.

## *BATTERY OPERATION FOR 9V BATTERY*

| Rate (ml/h) | Approximate battery life |
|-------------|--------------------------|
| 1 ml/h      | 25 hours                 |
| 5 ml/h      | 20 hours                 |







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