enovate

M E D I C A L

Medication Cart

The Enovate Medical Computer Cart was designed to set a new standard in quality. Enovate Medical's goal is to provide a cart that is built right, ready for years of use, and backed by a commitment of exemplary service and support.

Thank you for purchasing the Enovate Medication Cart

Distributed by:
Enovate Medical
US Headquarters
1152 Park Avenue
Murfreesboro, TN 37129
Suppor t@enovatemedical.com
Toll free 888.909.8930

For laptop compatibility please check with your local
Enovate Medical Representative or call us toll-free (888) 909-8930

Congratulations on your purchase of the Enovate Medical medication cart. Please do not use your medication cart until you have read this manual in its entirety as it contains important safety and use information. The Enovate Medical medication cart should only be used as outlined in this manual. Be sure to keep the manual in a safe place for future reference. If at any time you have questions or concerns about the contents of this manual or the use of your Enovate Medical medication cart, please contact Enovate Medical Customer Service toll free at 888.909.8930

This manual and the accompanying product labels and safety labeling materials of the Enovate Medical medication cart frequently employ the use of symbols with or without accompanying text. Health products regulatory agencies require the use of symbols, often in place of textual statements, to enhance the legibility of labeling and thus improve the conspicuousness of required information such as important safety information. Your attention to the presence and content of symbols used in this manual will help to ensure the safe use of your Enovate Medical medication cart. The following chart depicts the symbols used and provides a definition for each symbol found in this manual and in the labels and labeling materials of the Enovate Medical medication cart.

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The term "symbols" refers to the use of graphical symbols without equivalent accompanying text. Symbols are used by medical device manufacturers to create uniform labels and labeling for the United States, European Union, and any other countries that may permit their use in medical products. By using symbols in place of some textual statements, manufacturers may enhance the legibility of labeling and thus improve the conspicuousness of required information; especially where information is contained upon product labels that are restricted in their space available.

The use of symbols on the product labels are intended to conform to international consensus standards. The following chart depicts the symbols used and provides a definition for each symbol found in the labels.

⚠	CAUTION, CONSULT ACCOMPANYING DOCUMENTS
📖	CONSULT INSTRUCTIONS FOR USE
⚡	ELECTRIC SHOCK WARNING SYMBOL
▰	MANUFACTURER
SN	SERIAL NUMBER
REF	CATALOG NUMBER
🧍	TYPE B APPLIED PART
EC REP	AUTHORIZED REPRESENTATIVE IN THE EUROPEAN COMMUNITY
CE	The CE mark on this product indicates it has been tested to and conforms with the provisions noted within the
	93/42/EEC Medical Device Directive
ETL Intertek	Accredited testing laboratory has evaluated a sample of the product and determined that it complies with applicable national standards, <enter , as applicable, Canadian and US>.

Warnings

⚠ Important Warnings	⚡ Electrical Shock Warning

The above symbols represent safety warnings that require significant attention when seen on the EMC cart or in the user manual. Failure to do so could result in minor injury, major injury, or even death.

Do not use in the presence of a anesthetic mixture with air or with oxygen or nitrous oxide.

SERVICE AND REPLACEMENT
Do not attempt to service or replace any part of the Enovate Medication Cart unless directed to do so through Enovate Medical approved documentation (i.e., this User Manual or other instructions). Only Enovate Medical or an Enovate-certified entity may service or replace the cart components. If any component on the cart is missing or damaged, the cart must not be used. Contact Enovate Medical immediately to request service.

Maintenance
During preventive maintenance cart should be turned off

SAFE WORKING LOADS
Safe working loads labels must be abided by for all parts of EMC

MAXIMUM WEIGHTS
- Standard Monitor 16lbs.
- Dual Monitors 8lbs. on each VESA
- Fixed monitor 16lbs.
- Laptop tray 7lbs.
- Keyboard tray 1lbs.
- Drawer(s) 5lbs.

GROUNDING
Connect the Enovate Medication Cart to an equivalent receptacle marked "Hospital Only" or "Hospital Grade" to ensure ground.

DANGEROUS VOLTAGE
Do not remove battery drawer—there may be live parts inside, even when the Enovate Medication Cart is turned off.

DO NOT OPEN THE BATTERY AND POWER SYSTEM COMPARTMENT
Unauthorized personnel opening the power system compartment may cause injury and/or death. If the unit is not working properly, please contact Enovate.

DO NOT USE THE UNIT IN OR NEAR WATER OR OTHER LIQUIDS
If the unit becomes wet, unplug it immediately, wipe away any excess liquid and allow it to dry before use.

DO NOT OPEN MORE THEN ONE DRAWER AT A TIME

Cart worksurface and monitor must be in lowered position and all drawers must be closed during transport.

DO NOT TRANSPORT THE CART UP OR DOWN STAIRS

Multiple Portable socket-Outlets (MPSO) shall not be placed on the floor.

Additional MPSO or extension cord shall not be connected to the system.

MPSO provided with the system shall only be used for powering equipment which forms part of the system.

DO NOT connect non-medical equipment, which has been supplied as part of the system, directly to a wall outlet.

DO NOT connect electrical equipment which, has not been supplied as a part of the system, to the MPSO

The leakage current could increase when connected to other equipment.

The operator should take precautions to avoid touching the rear panel input and output circuitry and the patient at the same time.

To isolate the system from the mains supply remove the mains plug from the wall socket.

NOTE: The power outlet provided in the system is powered from an isolation transformer. The maximum output rating of this outlet is 300 Watts.
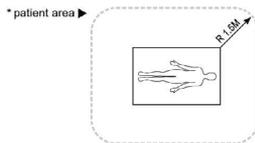
The medical system device as supplied by Enovate Medical is suitable for use within a patient environment.

CAUTION: Non-medical equipment which may have been supplied as part of the system should only be connected to the cart MPSO which is powered from an isolation transformer. Connection of non-medical equipment to other outlets may lead to an increase of leakage current.

STATEMENT OF USE:

The Enovate Medical Computer Cart was designed to set a new standard in quality, ease of use, and customer satisfaction. Our goal is to provide a product that is built to exacting standards and is ready for years of durable service in a healthcare environment. This product is designed to be safely used within general patient areas and is meant to aid in the entering or retrieving of clinical data, and it complies with UL 60601-1 electromagnetic leakage and safety requirements if used in accordance with the boundaries and suggestions of this manual.

THIS PRODUCT IS CLASSIFIED AS:
- Class I internally powered UPS type B
- This product is designed for continuous operation
- IPX0 for water ingress

TESTED TO COMPLY WITH:
- UL60601-1: Issued: 2003/04/25 Ed:1 Rev: 2006/04/26 UL Standard for Safety Medical Equipment, Part 1: General Requirements for Safety

RECOMMENDED SHIPPING AND OPERATIONG CONDITIONS:
- Temperature Range   25°F- 120°F
- Humidity Range   10% - 80%

TERMS OF USE:

Removing or damaging the serial number and barcode label will void all cart warranties.

For laptop compatibility please check with your local Enovate Representative or call us toll-free (877) 890-6131.
Unauthorized personnel opening the battery may cause injury and/or death.
If the unit is not working properly, please contact Enovate Customer Service toll free at 877.258.8030

Contact Us
Customer Service
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Cart Features

Actuator Cart
Height Adjustment

6" Height
Adjustment

Gas Spring Cart
Height Adjustment

12" Height
Adjustment

8" Pull-Out Adjustment
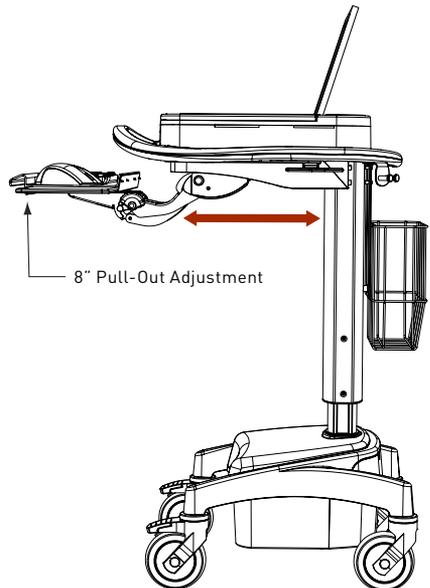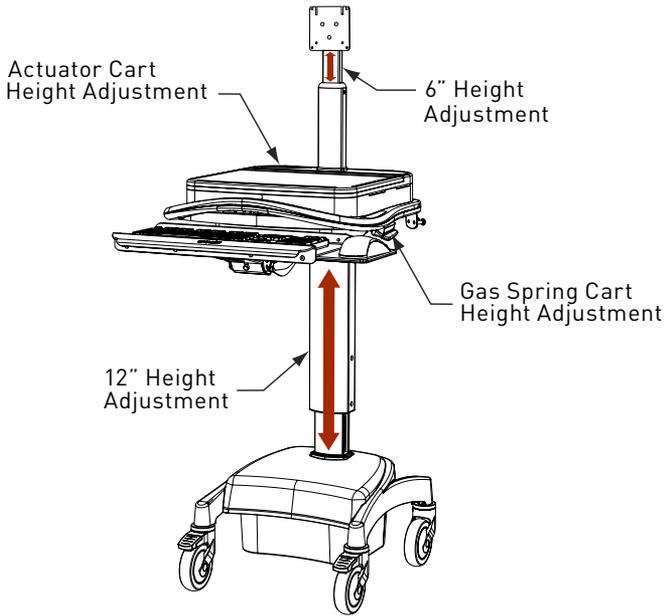
Technical Data

60601 COMPLIANT POWER SYSTEMS

350 AC POWER SYSTEM
105 - 120 VAC, 50-60Hz Input 300w maximum output
105 - 120 VAC, 60Hz combined 300w maximum output
The powered EMC includes a hospital grade 3-input 5-15 NEMA AC power cord set.

150 AC POWER SYSTEM
105 - 120 VAC, 50-60Hz Input
105 - 120 VAC, 60Hz combined 150w maximum output
The powered EMC includes a hospital grade 3-input 5-15 NEMA AC power cord set.

OTHER POWER SYSTEMS

120 DC POWER SYSTEM
105 - 120 VAC, 50-60Hz Input
1 Fixed 12vDC, 1 Variable 12VDC-19VDC, Maximum 120w output

150 INTERNATIONAL
230 vac 50-60Hz input
230 vac 50-60Hz combined 150w Maximum output

BATTERIES
40 Amp hour Sealed Lead Acid (SLA)
40 Amp hour Lithium Iron Phosphate

Lead Battery Must be Recycled
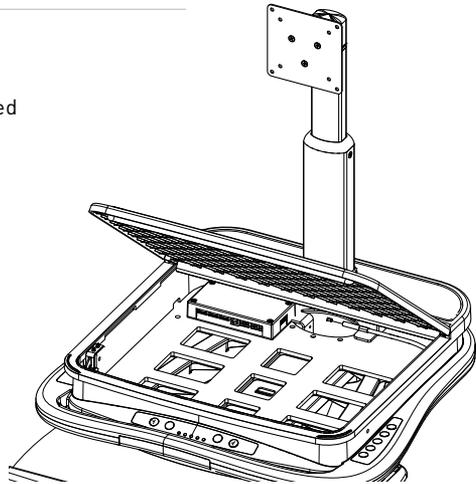
LAPTOP DIMENSIONS
Standard EMC tray has a 12" D x 14.6" W x 2.5"H
interior usable dimensions for laptop or CPU storage.
or
optional large EMC tray has 13"D x 16.5"W x 3"H
interior usable dimensions for laptop or CPU storage.

FLAT PANEL DISPLAY DIMENSIONS
The EMC accommodates most 15" to 21" Flat Panel Displays

Integration

INTEGRATION KIT

Rubber bumpers for keyboard retention

18″ USB A to USB B Cable

8″ zip ties

Pair of keys

Cable management cover (for LCD units only)

Powered Control Board (See Below)

FRONT

BACK
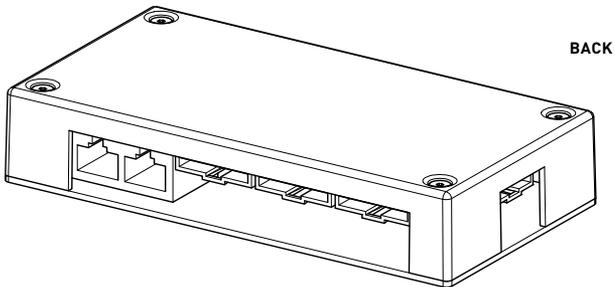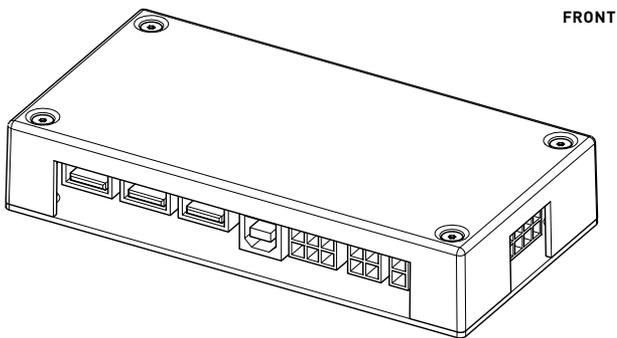
Powered Control Board and USB Hub – Each powered cart includes a 3 input USB adapter. In laptop versions this USB hub also functions as risers to adjust the height of the screen.

Unpacking

Promptly unpack your products to check for completeness and damage caused by shipping. Immediately after receiving your carts, ALL batteries must be fully charged to ensure the duration of their warranty.
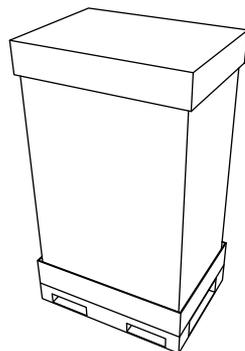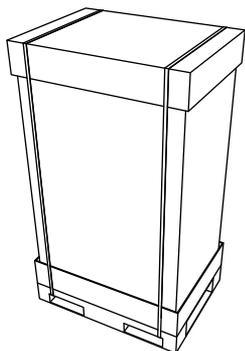
1 Before removing the EMC from a shipping container check over the packaging and pallet to prevent accepting an item with shipping damage.

2 Use scissors or a utility knife to cut and remove the two outer straps.
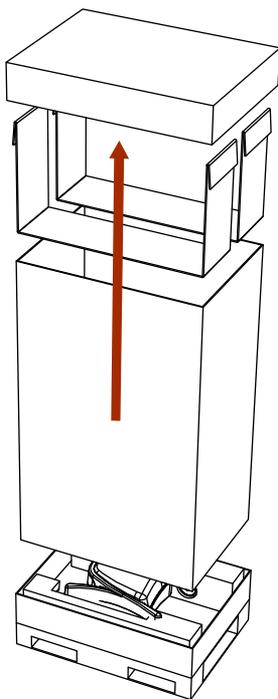
3 Remove cardboard lid and cardboard spacers.
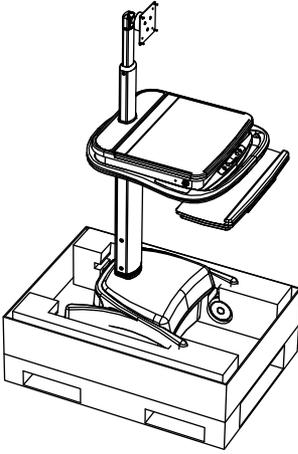
4   Remove cardboard walls and plastic bag. NOTE: This step requires two people. Lift cart (with foam castor braces still attached) out of the cardboard base.
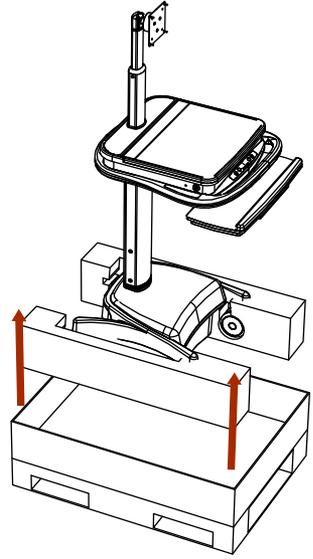
5   Remove foam castor braces.
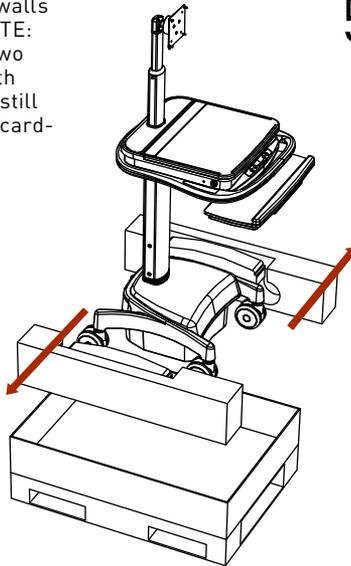
6   Open tray and check for integration kit and locate all optional accessories.

Initial Setup
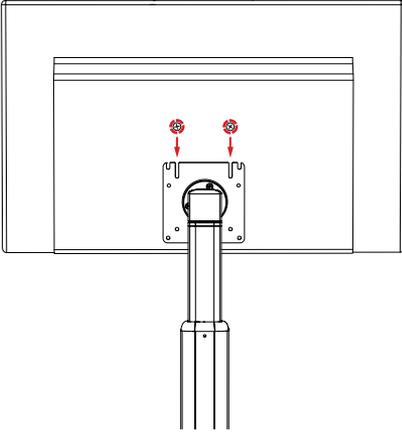
STEP 1
Loosly insert two screws into the top two holes of the VESA pattern on the back of the monitor

STEP 2
Align screws with the quick mount slots in the monitor pole VESA plate. Slide the monitor into place and tighten the screws.

STEP 3
Insert screws into bottom two holes of the monitor pole VESA plate to properly secure the monitor.
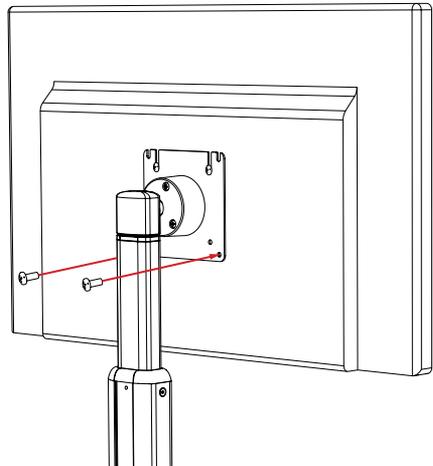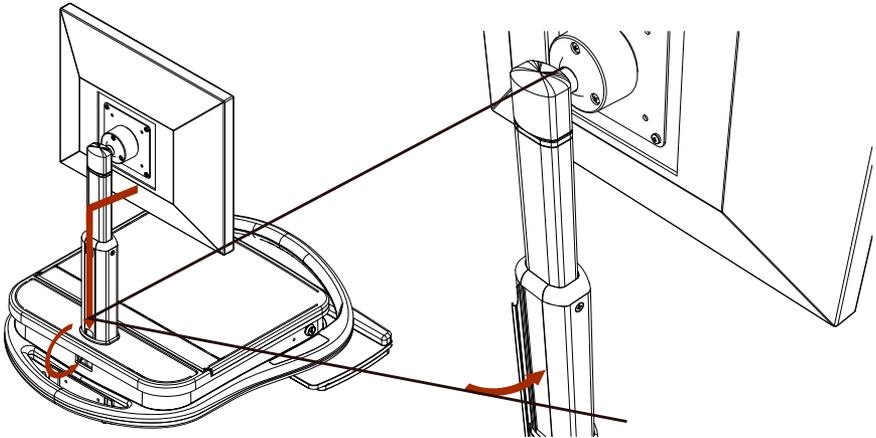
STEP 4
Connect the monitor's power cable and video cable (DVI, VGA). Route the cable through the channel on the back of the monitor pole. Slide the cable management cover into place over the wires. Leave enough slack above the cable management strip to allow the monitor to extend fully upward

STEP 5
Put the CPU side of the power and video cables through the hole in the center rear of the tray. Pull any extra cable length into the tray.

STEP 6
Set the CPU into the tray. Two pieces of Dual Lock (Velcro) are provided to secure the CPU to the tray. NOTE: Take care in CPU placement; consider orientation based on direction of cable inputs and sizes INCLUDING monitor input, power input, mouse, keyboard and any peripherals. Make cable connections within the tray.

LAPTOP CART INTEGRATION

Powered Laptop Riser

Non-Powered Laptop Riser
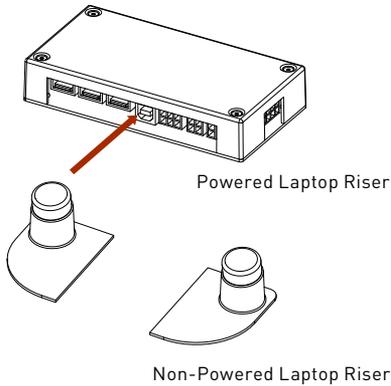
STEP 1 (For Non-powered cart skip to step 3)
Open tray by lifting lid. Plug in Laptop power brick to power source and plug into the Laptop.

STEP 2
Using the provided USB A to USB B connects the Laptop ("A" connector) to the USB hub ("B" connector).

STEP 3
Estimate location of USB hub/Laptop riser. Moving the riser towards the front of the tray will lift the Laptop screen higher while moving the riser towards the back of the tray will drop the laptop screen lower.

STEP 4
Slide the Laptop screen through the tray top (as shown). Set the laptop into place upon the riser and close the lid.
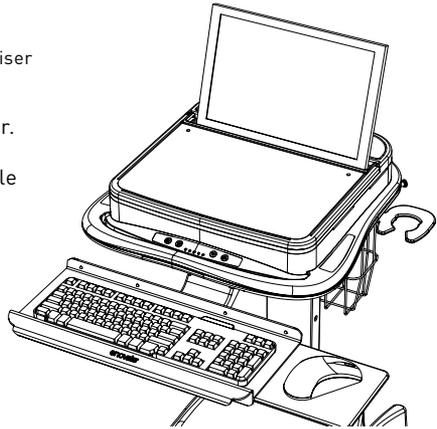
KEYBOARD INSTALLATION

STEP 1
Apply silicone bumpers to rear corners of the key board tray for retention (when negative tilt).

STEP 2
Pull the keyboard tray forward to full extension. This will simulate the full length requirement of Keyboard cable length.

STEP 3
Set the Keyboard upon the Keyboard tray

STEP 4
Route the cable under and through the tray, plug into appropriate location on CPU/Laptop and zip tie into place

MOUSE INSTALLATION

STEP 1
Pull the keyboard tray forward to full extension. This will simulate the full length requirement of Mouse cable length.

STEP 2
Route the cable under and through the tray, plug into appropriate location on CPU/Laptop and zip tie into place.

STEP 3
Stow mouse in mouse holder.

Power Systems

INITIAL POWER-UP
Before the initial power up and use the EMC cart must be charged for 24 continuous hours to insure maximum battery life. Equipment may be connected during this time.

EMC FUEL GAUGE

Low Battery Alarm Mute ───

Computer Reboot ───

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M E D I C A L

POWER

Cart Power ON/OFF

Cart On/Off Indicator

Work Light ON/OFF

Battery Fuel Gauge

Battery Charge Indicator
(fuel gauge) 1/4 1/2 3/4 Full
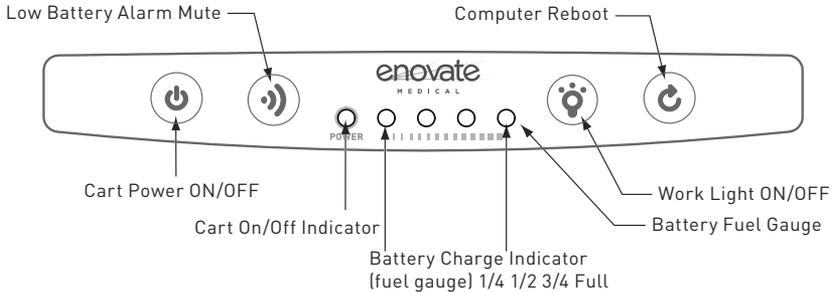
Important Do not use sharp objects such as pens or pencils to depress/ actuate the cart's buttons.

- **Cart Power Button** – press and hold for 2-3 seconds to turn cart power ON or OFF. The Cart On/Off indicator LED will light green, when cart power is ON. On a cold startup (all LEDs dark), all four battery charge LEDs will light green for about 10 seconds. When startup is complete, the Cart On/Off indicator LED will remain Green, and the battery charge indicators will reflect the battery charge level. (See above image)

- **Low Battery Alarm Mute Button** A beeper will sound on low battery or severe (red) fault alarms. The mute button silences the beeper. (Note, the power system can also be configured for silent operation, through MPM Techview software.)

- **Battery Fuel Gauge -** The first LED displays power on/ power off. LEDs two through five indicate charge level. All four LEDs green -- battery is full. One LED flashing Green means battery is charging. When LED 2 flashes yellow or red, battery charge is low, cart should be connected to AC power. (NOTE: If LEDs 2 & 3 flash yellow or red at the same time, there is a fault in the power system. If both flash Yellow -- service soon. If both flash Red -- service now; turn off computer, turn cart power off)

- **Work Light Button** - On/Off toggle for LED work light. If left on, the light will auto-shutoff after five minutes.

- **Computer Reboot Button (OPTIONAL)** Can function as a remote reboot button or a power toggle button. Extra hardware, found in OPTIONAL ACCESSORIES, and compatible hardware are required for function.

CHARGE LEVEL INDICATORS (DISCHARGING, CART UNPLUGGED FROM AC POWER)

Battery Charge LED Meter Display

Approximate Battery Module Charge Level					Low Battery Alarm*
75%-100%	Green	Green	Green	Green	OFF
50%-75%	Green	Green	Green	OFF	OFF
25%-50%	Green	Green	OFF	OFF	OFF
10%-25%	Green	OFF	OFF	OFF	OFF
5%-10%	Flashing Amber	OFF	OFF	OFF	ON Slow
<5%	Flashing red	OFF	OFF	OFF	ON Fast

* The four fuel gauge LEDs represent even 25% portions of the full charge capacity of the battery.
   During discharge from full charge, all 4 LEDs will light Green until the battery charge has dropped below 75% full.
   When the battery charge has dropped below 5% charge level, the bottom LED will flash red 1 time each second, and the beeper will sound 2 times each second. Shutdown is imminent,
   The user should connect the cart in to AC immediately, or save any open computer files , turn off the computer and power down the cart

CHARGE LEVEL INDICATORS (CHARGING, CART PLUGGED INTO AC POWER)

Battery Charge LED Meter Display

Approximate Battery Module Charge Level				
90%-100%	Green	Green	Green	Green
60%-89%	Green	Green	Flashing Green	OFF
31%-59%	Green	Flashing Green	OFF	OFF
<=30%	Flashing Green	OFF	OFF	OFF

* Tripp Lite recommends that the power supply be plugged into a wall outlet, charging the battery as often as possible. Charging the battery for brief intervals DOES NOT adversely affect battery performance. However, leaving the battery fully discharged for long periods of time DOES adversely affect battery performance.

Recharging status can be viewed on LED readout described above. The last (5th) LED will stop flashing when charge is complete.

While charging, the components of the cart may be used. The Power Supply of the EMC will simultaneously charge the batteries and run the connected components.

Recharge Time Required

• SLA   3-4 hours depends on battery size

• Lithium   2.5 Hours

FUSES

Two external fuses protect the EMC's power system from irregular or potentially dangerous power surges. The fuses are in a dangerous area and should be replaced by Enovate authorized personnel only.

FUSE SPECIFICATIONS:

- 10A Fast Acting Mini Fuse 5mm X 20mm
- 30A Fast Acting Fuse 10mm X 38mm

All power connections should be disconnected before any service

MOBILE POWER MANAGER SOFTWARE

Visit **connectivity.powervar.com/mpm** for the Mobile Power Manager Software full instructional manual, login and download

BATTERY CHARGE/DISCHARGE CYCLE

The following are general guidelines for fuel display. Variations may apply depending on the power system model. If you have any questions please contact customer support.
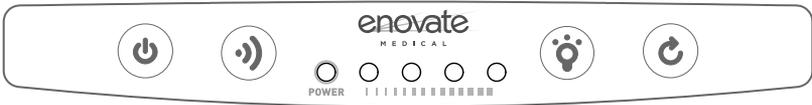
Cart is in the OFF/Standby mode.

When the power button is pressed, two LEDs will briefly illuminate, the 2nd LED red, and 5th LED green), then all 4 LED fuel gauge LED will light green for about 10 seconds.
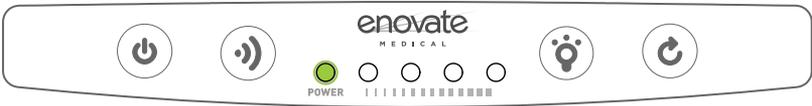
The first LED will illuminate green indicating the cart has been powered up; and the fuel gauge LEDs will illuminate to reflect the present level of charge in the battery.

BATTERY CHARGE/DISCHARGE CYCLE CONT.

Five illuminated green LEDs indicate battery output is ON and the battery us fully charged.

Four illuminated green LEDs indicate battery cart power is ON , the battery discharging and has between 50% and 75% charge remaining.

Three illuminated green LEDs indicate battery cart power is on, battery is discharging with between 25%-50% of the battery charge remaining.

Green power LED and a flashing amber LED indicates low battery power; a low battery warning alarm will sound to indicate the battery needs to be charged.

The amber LED will change to flashing red and the alarm will sound twice as fast when the battery has reached critical low power (less than 5% charge remaining). The alarm will sound every second until the battery fails to power the cart or the cart is plugged into AC wall power.

☀ Indicates Flashing

BATTERY CHARGE/DISCHARGE CYCLE CONT.

Battery is completely discharged. Cart will not power on or a combination of LEDs will momentarily illuminate when power button is pressed.

Once plugged into AC wall power, the position of the flashing LED indicates the level of recharge in process. If battery was fully discharged, the 2nd LED will flash red until at least 6% of the battery charge has been recovered. The first LED will be illuminated only when the cart is powered on.

Additional LEDs illuminate as the level of battery charge increases.

Three illuminated green LEDs indicate battery is more than 75% charged, but still charging the top 25%.

Four illuminated green LEDs indicate battery is 100% charged.

☀ Indicates Flashing

COMMON PHOSPHATE BATTERY TROUBLE ISSUES
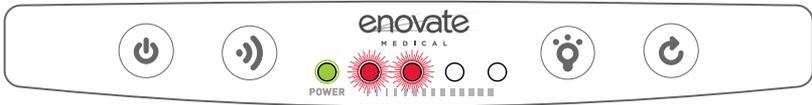
If the cart is plugged in to charge, and LED 2 & 3 continually flash red together, con-tinues flashing red, this indicates that the battery voltage is lower than the charging system will recognize. This may require some time for the power system to recover the battery on its own. If the battery has been on a in recovery mode for too long, and the cart still will not charge, the battery needs to be replaced.

Two amber LEDs on and then off without the cart powering up can be an indication of a few different conditions. A communication error between the battery and the charging system possibly due to a wrong battery firmware matchup. It can also mean the RJ45 connection between the battery and charging system is bad. Note: if it is found that the connection between the SL Phosphate battery and the power system is bad and has been restored; the yellow Anderson connection between the battery and the power system must be disconnected for 10 seconds to allow the charging system to reset! If you don't, the same problem may continue even after the RJ45 connection has been restored. This could also indicate the battery is too low to power up the cart. If you plug the cart into the wall to charge and no lights show up on the key pad to indicate charging and the cart won't power up, the problem is most likely the connection between the battery and the TRIPP•LITE, or wrong firmware for the battery in use.

⊛ Indicates Flashing

STORAGE

CAUTION! Even after the Power Supply Module is unplugged, its outlets may still deliver current, until it is disconnected from the Battery Module and completely turned OFF (deactivated). Before storing your Power Supply Module, make sure the Battery Module is fully charged. Next, turn the Power Supply Module completely OFF by following these steps:

• Unplug the Power Supply Module from the wall outlet (all LEDs and outlets should be OFF);

• Disconnect the battery module from the system. If the cart has a medication cabinet, disconnect the battery in the medication cabinet as well.Press and hold the "Power" button for at least one second to dissipate any hazardous electrical charges that might remain inside the Power Supply Module (the Power Supply Module will click and the alarm may beep briefly).

• If you store the Power Supply Module and Battery Module for an extended period of time, recharge the Battery Module once per month. If the cart has a medication cabinet, **the cart must be left on while charging, and must be charged for at least 12 hours.** This ensures the backup battery gets a full charge.

• Follow the connection and recharge procedure in the "Connection / Start-Up" section. If you leave the Battery Module discharged for an extended period of time, it will suffer a permanent loss of capacity.

No AC output power available at outlets.	**Turn Unit On:** Turn the Power Supply Module ON using the "Power" button.
	Check Connections: Check to make sure the Power Supply Module and Battery Module are properly connected. Also, make sure the RUI is connected to the Power Supply Module. The Power Supply Module will not supply AC power without these connections. The user may need to turn on the Power Supply Module manually (using the RUI's "Power" button) after reconnection.
	Recharge Battery Module: if the Battery Module is fully discharged, the Power Supply Module will be unable to supply output power through its AC Outlets. Allow the battery fully charge.
Battery Module not recharging even with AC utility power present.	**Check Connection:** Check to make sure the Power Supply Module and Battery Module are properly connected. Also, make sure the Power Supply Module's power cord is plugged into a live AC wall outlet.
	Replace Battery Module: The Battery Module will reliably supply backup power for several years with the Lithium Ion and several months for the SLA. When the battery module reaches then of its service life it will supply progressively diminishing capacity. Contact Enovate Medical for additional information.
Low battery alarm sounding.	**Check Battery Charge Level LED Meter:** Silence the alarm, if desired, with the "Alarm Mute" button. Check LED meter to determine the percentage of charge remaining. When the charge level falls below 10%, the Battery Module is nearly depleted and Power Supply Module shutdown is imminent. The user should save open files and safely shutdown connected equipment immediately. If the cart is unattended and PowerAlert Software is loaded on a computer connected to the Power Supply Module, PowerAlert will automatically save open files prior to automatic shutdown.

FREQUENTLY ASKED QUESTIONS

What is the LED Fuel Gauge
The LED Fuel Gauge has 5 LEDs: One On/Off LED on the far left and four battery level LEDs, position 1 – 4 from left to right and indicating low to high from left to right.

What is the status of the unit when the unit is plugged in, AC LED is on and 4 Battery lights (solid green) are on?
With the LEDs in this configuration and the unit plugged in, it is indicated that the unit is on and that the battery is fully charged (98 – 100%). The unit will pass power to the connected equipment using utility power. Your unit is functioning properly.

What is the status of the unit when it is plugged in, AC LED is off and 4 Battery lights (solid green) are on?
With the LEDs in this configuration and the unit unplugged it is indicated that the unit is off and that the battery is fully charged (98 – 100%). The unit will **not** pass power to the connected equipment using battery power. Your unit is functioning properly.

What is the status of the unit when it is plugged in, AC LED is on, 3 Battery lights (solid green – position 1, 2 and 3) and the 4th position Battery light flashing?
With the LEDs in this configuration and the unit plugged in, it is indicated that the unit is on and that the battery is 75% – 98% charged. The unit is currently charging and will pass power to the connected equipment using utility power. Your unit is functioning properly.

What is the status of the unit when it is plugged in, AC LED is off and 3 Battery lights (solid green – position 1, 2 and 3) and the 4th position Battery light flashing?
With the LEDs in this configuration and the unit unplugged it, is indicated that the unit is off and that the battery is 75% – 98% charged. The unit will **not** pass power to the connected equipment using battery power. Your unit is functioning properly.

What is the status of the unit when the unit is plugged in, the AC LED is off, 2 Battery lights (solid green – position 1 and 2) are on and the 3rd position Battery light flashing?
With the LEDs in this configuration and the unit unplugged indicates that the unit is off and that the battery is 50% – 75% charged. The unit will **not** pass power to the connected equipment using battery power. Your unit is functioning properly.

What is the status of the unit when the unit is plugged in, the AC LED off, 1 Battery light (solid green – position 1) is on and the 2nd position Battery light is flashing?
With the LEDs in this configuration the unit is charging but will **not** pass power to the connected equipment using battery power. To pass power to the connected equipment the unit must be turned on (Online mode). Your unit is functioning properly.

Keypad Operation

LED INDICATOR

KEYPAD LOCK
For demo purposes
the combination to
unlock all drawers:

5 - 4 - 3 - 2 - 1
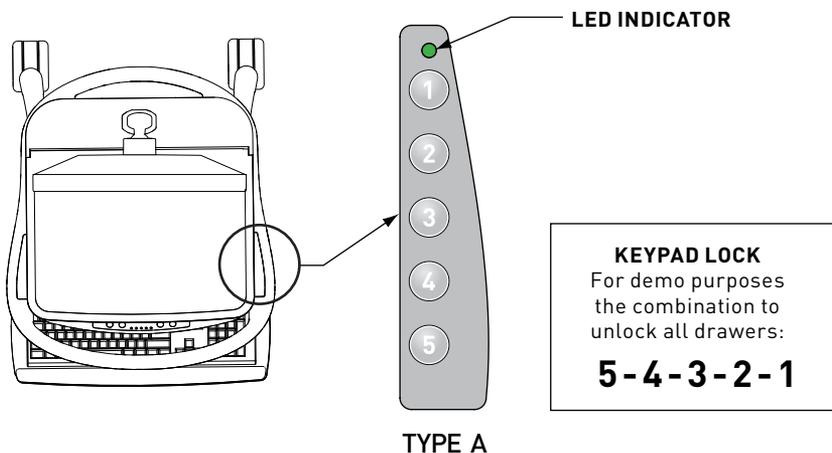
TYPE A

KEYPAD - TYPE A
There are five keys that are used to enter 5-digit PIN codes.

LED
A single multi-color LED on the keypad provides feedback to the user as key sequences are pressed. The LED can appear as green or red.

LED COLOR		FLASH ONCE	FLASH TWICE
Green		Each key press	Sucessful operation
Red		N/A	Failed operation or timeout

MASTER CODE
There is one, 5-digit Master PIN Code for use by the system administrator. The Master Code is used to assign User PIN Codes and for other maintenance functions.
The factory default Master Code is 12345.

USER PIN CODES
Up to 100, 5-digit PIN Codes can be assigned for use by hospital personnel to access the drawers. When a user enters their valid PIN code, the drawer unlocks to allow access. The drawer relocks after a configurable time interval.
The factory default User PIN Code is 54321.

RESERVED PIN CODES

The following PIN codes are reserved for administrative usage. These codes cannot be assigned as either the Master Code or as a User PIN Code.

PIN	Code Description
13344	Add a user PIN code.
13341	Delete a user PIN code.
13342	Delete all user PIN codes and restore default user PIN code 54321.
13321	Turn on USB. Keypad behaves like a keyboard for the PC.
13322	Turn off USB.
13333	Report configuration over USB (to a text editor).
13343	Set the drawer unlock time.
13351	Enter the bootloader to upgrade the embedded firmware.
13331	Reserved for future use.
13332	Reserved for future use.
13352	Reserved for future use.
13354	Reserved for future use.
13343	Reserved for future use.

FACTORY DEFAULTS SUMMARY

All units are shipped from the factory with the following default values:

Item	Default Value
Master Code	12345
User PIN Code	54321
Unlock Time	15 seconds
USB Interface	Off

LED INDICATOR

KEYPAD LOCK
For demo purposes
the combination to
unlock all drawers:

9 - 7 - 5 - 3 - 1
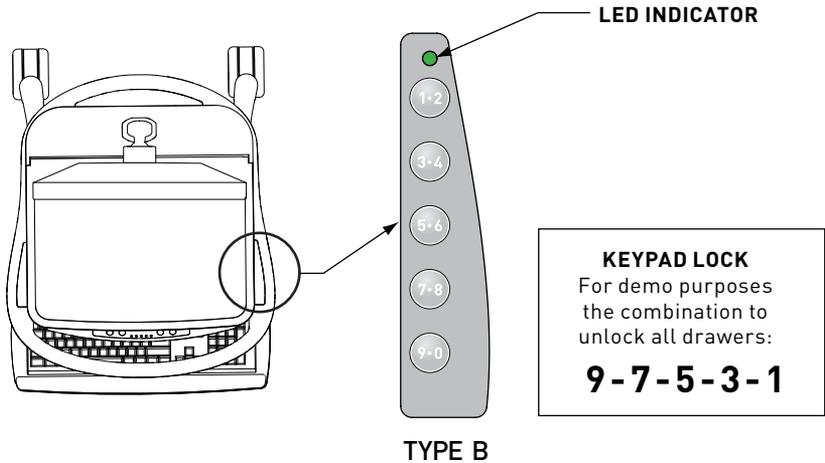
TYPE B

KEYPAD - TYPE B
There are five keys that are used to enter 5-digit PIN codes. All PIN codes are stored, processed and reported as odd numbers

LED
A single multi-color LED on the keypad provides feedback to the user as key sequences are pressed. The LED can appear as green or red.

LED COLOR		FLASH ONCE	FLASH TWICE
Green		Each key press	Sucessful operation
Red		N/A	Failed operation or timeout

MASTER CODE
There is one, 5-digit Master PIN Code for use by the system administrator. The Master Code is used to assign User PIN Codes and for other maintenance functions.
The factory default Master Code is 13579.

USER PIN CODES
Up to 100, 5-digit PIN Codes can be assigned for use by hospital personnel to access the drawers. When a user enters their valid PIN code, the drawer unlocks to allow access. The drawer relocks after a configurable time interval.
The factory default User PIN Code is 97531.

RESERVED PIN CODES

The following PIN codes are reserved for administrative usage. These codes cannot be assigned as either the Master Code or as a User PIN Code.

PIN	Code Description
15577	Add a user PIN code.
15571	Delete a user PIN code.
15573	Delete all user PIN codes and restore default user PIN code 97531.
15531	Turn on USB. Keypad behaves like a keyboard for the PC.
15533	Turn off USB.
15555	Report configuration over USB (to a text editor).
15575	Set the drawer unlock time.
15591	Enter the bootloader to upgrade the embedded firmware.
15551	Reserved for future use.
15553	Reserved for future use.
15593	Reserved for future use.
15597	Reserved for future use.
15575	Reserved for future use.

FACTORY DEFAULTS SUMMARY

All units are shipped from the factory with the following default values:

Item	Default Value
Master Code	13579
User PIN Code	97531
Unlock Time	15 seconds
USB Interface	Off

Administrative Functions

All code entries require five key presses. Too few or too many key presses will result in a failed operation.

NOTE: In all of the following examples it is advised to have all key strokes written down for the desired operation. **If there is a pause of 2 seconds or longer between any two keys the red LED will flash twice to indicate a failure.** To cantcel an operation, stop pressing keys and let the operation fail due to a timeout. When an operation completes successfully there will be two green flashes.

CHANGING THE MASTER CODE
1. Enter the current Master Code.
2. Enter the current Master Code again.
3. Enter the new Master Code.
4. Pause for 2 seconds.
5. The green LED flashes twice for success. The new Master Code has been saved and activated.

IMPORTANT: RECORD YOUR MASTER CODE AND SAVE IT IN A SAFE PLACE.

ADDING A USER PIN CODE
1. Enter the Master Code.
2. Enter 13344 (TYPE A) or 15577 (TYPE B).
3. Enter the PIN Code to add.
4. Pause for 2 seconds.
5. The green LED flashes twice for success. The PIN Code has been saved and activated.

DELETING A USER PIN CODE
1. Enter the Master Code.
2. Enter 13341(TYPE A) or 15571 (TYPE B) .
3. Enter the PIN Code to delete.
4. Pause for 2 seconds.
5. The green LED flashes twice for success. The PIN Code has been deleted.

DELETING ALL USER PIN CODES AND RESTORING THE DEFAULT PIN CODE
1. Enter the Master Code.
2. Enter 13342 (TYPE A) or 15573 (TYPE B).
3. Pause for 2 seconds.
4. The green LED flashes twice for success. All User PIN Codes have been deleted and the factory default PIN code 11111 restored.

SETTING THE DRAWER UNLOCK TIME
1. Enter the Master Code.
2. Enter 13343 (TYPE A) or 15575 (TYPE B).
3. Enter the 5-digit time code for the required unlock time
4. Pause for 2 seconds.
5. The green LED flashes twice for success. The new Unlock Time has been saved and activated.

UNLOCK TIME CODES - TYPE A

Unlock Time (in seconds)	Time Code	Unlock Time (in seconds)	Time Code
5	11111	18	11134
10	11112	19	11135
15	11113	20	11141
20	11114	21	11142
25	11115	22	11143
30	11121	23	11144
35	11122	24	11145
40	11123	25	11151
45	11124	26	11152
50	11125	27	11153
55	11131	28	11154
60	11132	29	11155
65	11133	30	11211

UNLOCK TIME CODES - TYPE B

Unlock Time (in seconds)	Time Code	Unlock Time (in seconds)	Time Code
5	11111	18	11157
6	11113	19	11159
7	11115	20	11171
8	11117	21	11173
9	11119	22	11175
10	11131	23	11177
11	11133	24	11179
12	11135	25	11191
13	11137	26	11193
14	11139	27	11195
15	11151	28	11197
16	11153	29	11199
17	11155	30	11311

User Functions

UNLOCKING THE DRAWERS
1. Enter a valid User PIN Code
2. Pause 2 seconds
3. The green LED flashes twice for success and the drawers unlock.
4. After 15 seconds (default) or the user programmed unlock time, the drawers will be relocked.

ODD NUMBERS - TYPE B ONLY
Since all key strokes are recorded and processed as odd numbers it is important to know that duplicate numbers do exist and can cause faults.

Example – The number 24680 is the same as 13579.

If the administrator was to add the pin code 24780 to the system you will notice that it will be reported back in the "Current Configuration Report" as 13579. If you look closely at the keypad you will notice that the above two numbers are the same keystrokes according to the system.

It is perfectly OK for the user of the system to remember a number they are familiar with like 24680 but the administrator that tries to enter that pin may result in a fault if 13579 is already in use.

To avoid confusion, the administrator must require all users to use pin numbers that consist of odd numbers. This way the numbers selected and the numbers that are reported back in the report will always match.

Emergency Key Switch Overide

In the event of a cart power failure or non-functioning keypad, an emergency lock override has been provided. The key switch override is located on the underside of the drawer system between the webbing of the cart shelf.
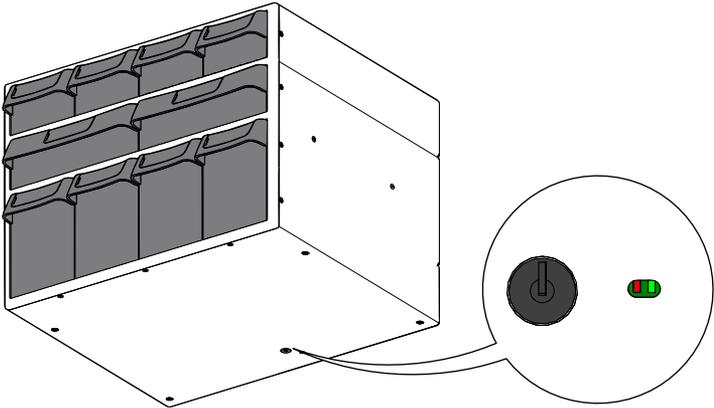
UNLOCKING THE DRAWERS WITH EMERGENCY KEY SWITCH OVERRIDE
1. Turn key clockwise and release to deactivate locks. Note: Key switch is momentary and should not be held in the unlocked position
2. All locks will remain open for 30 seconds
3. Once the locks have retracted, the keyswitch can be used again, the emergency override will activate the locks a maximum of 5 times.
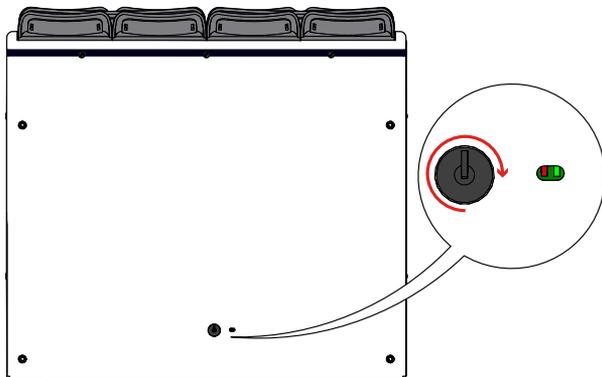
INDICATOR LEDS

Red and Green indicator LEDs are located on the underside of the drawer system, next to the keyswitch.

LED Color	LED STATUS	
GREEN	ON	Indicates that the AUX battery is being charged or is fully charged and is above the voltage level of 12.79V
GREEN/RED	OFF	Indicates that the voltage is below 12.79V. Battery voltage is in the usuable range and will still activate the locks when the key switch is used.
RED	OFF	Indicates normal operation
RED	ON	Indicates a fault and the auxilary battery has dropped below 10.59 volts. If the RED LED turns on after the key switch is used it will immediately turn off the locks. If the RED LED is already on before using the key switch, the key switch will not work.
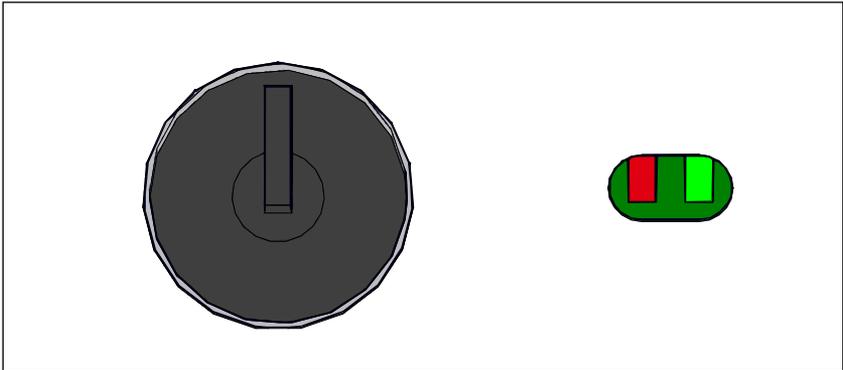
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