



VIVAX
METROTECH

vCamMX-2 Training

vCamMX-2 All-in-one Mini Inspection Camera



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Introduction

This training presentation covers the vCamMX-2 Control Module, Type-MX Mini Reel, and the MX Series Camera Heads.

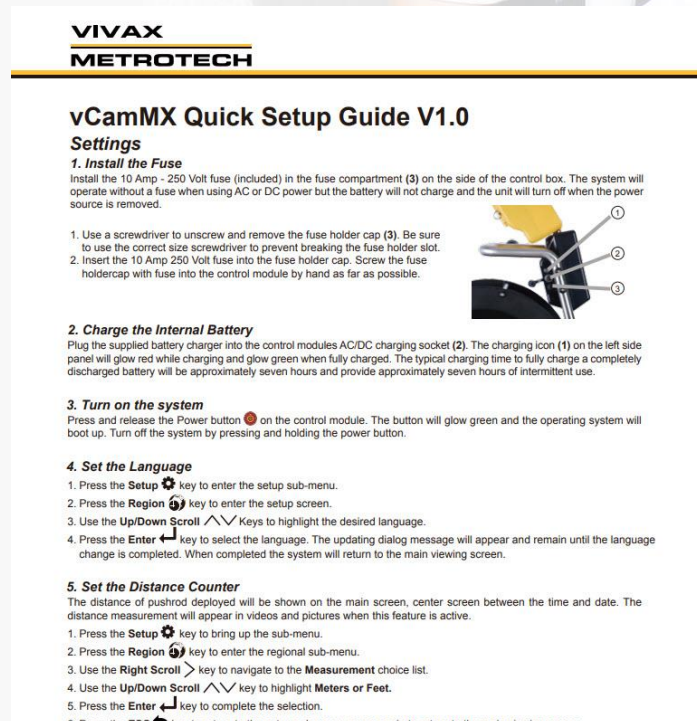


**vCamMX-2 control module
mounted on the Type-MX reel**



Download the *vCamMX Quick Setup Guide* from our website. This quick guide will walk you through the basic setup options of language, regional settings, date and time and other settings.

Visit our [knowledge Center](#) and do a search for *vcammx quick setup guide*




VIVAX METROTECH

vCamMX Quick Setup Guide V1.0

Settings

1. Install the Fuse
Install the 10 Amp - 250 Volt fuse (included) in the fuse compartment (3) on the side of the control box. The system will operate without a fuse when using AC or DC power but the battery will not charge and the unit will turn off when the power source is removed.

1. Use a screwdriver to unscrew and remove the fuse holder cap (3). Be sure to use the correct size screwdriver to prevent breaking the fuse holder slot.
2. Insert the 10 Amp 250 Volt fuse into the fuse holder cap. Screw the fuse holdercap with fuse into the control module by hand as far as possible.



2. Charge the Internal Battery
Plug the supplied battery charger into the control modules AC/DC charging socket (2). The charging icon (1) on the left side panel will glow red while charging and glow green when fully charged. The typical charging time to fully charge a completely discharged battery will be approximately seven hours and provide approximately seven hours of intermittent use.

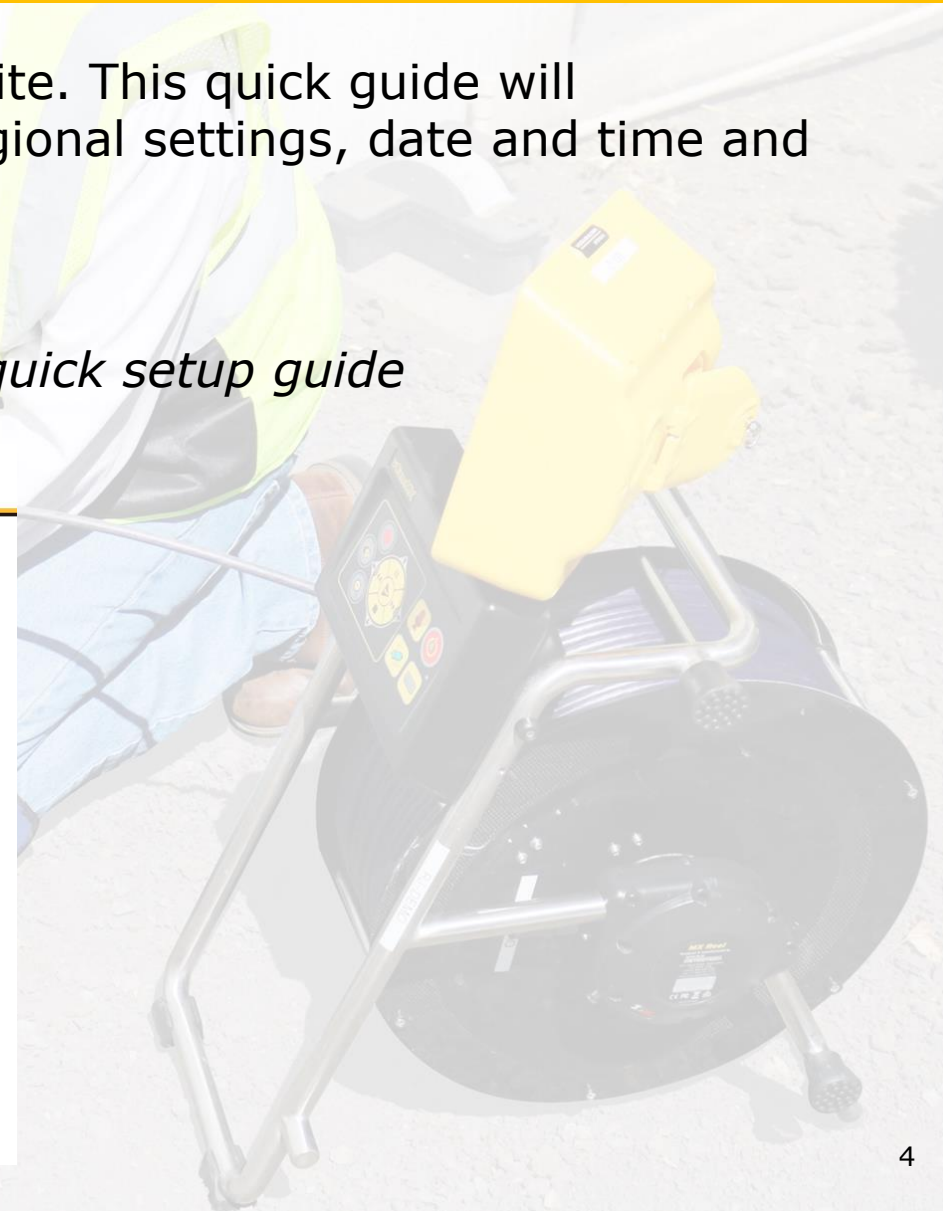
3. Turn on the system
Press and release the Power button (1) on the control module. The button will glow green and the operating system will boot up. Turn off the system by pressing and holding the power button.

4. Set the Language

1. Press the Setup key to enter the setup sub-menu.
2. Press the Region key to enter the setup screen.
3. Use the Up/Down Scroll Keys to highlight the desired language.
4. Press the Enter key to select the language. The updating dialog message will appear and remain until the language change is completed. When completed the system will return to the main viewing screen.

5. Set the Distance Counter
The distance of pushrod deployed will be shown on the main screen, center screen between the time and date. The distance measurement will appear in videos and pictures when this feature is active.

1. Press the Setup key to bring up the sub-menu.
2. Press the Region key to enter the regional sub-menu.
3. Use the Right Scroll key to navigate to the Measurement choice list.
4. Use the Up/Down Scroll key to highlight Meters or Feet.
5. Press the Enter key to complete the selection.
6. Press the ESC key to return to the setup sub-menu. Press again to return to the main viewing screen.



vCamMX-2 Control Module

vCamMX-2 Control Module

The MX-2 Control Module consist of two sections



1 - The top section with LCD and 7 button keypad

2 - The bottom black Control Box

vCamMX-2 Control Module

The main menu and keypad



vCamMX Main menu

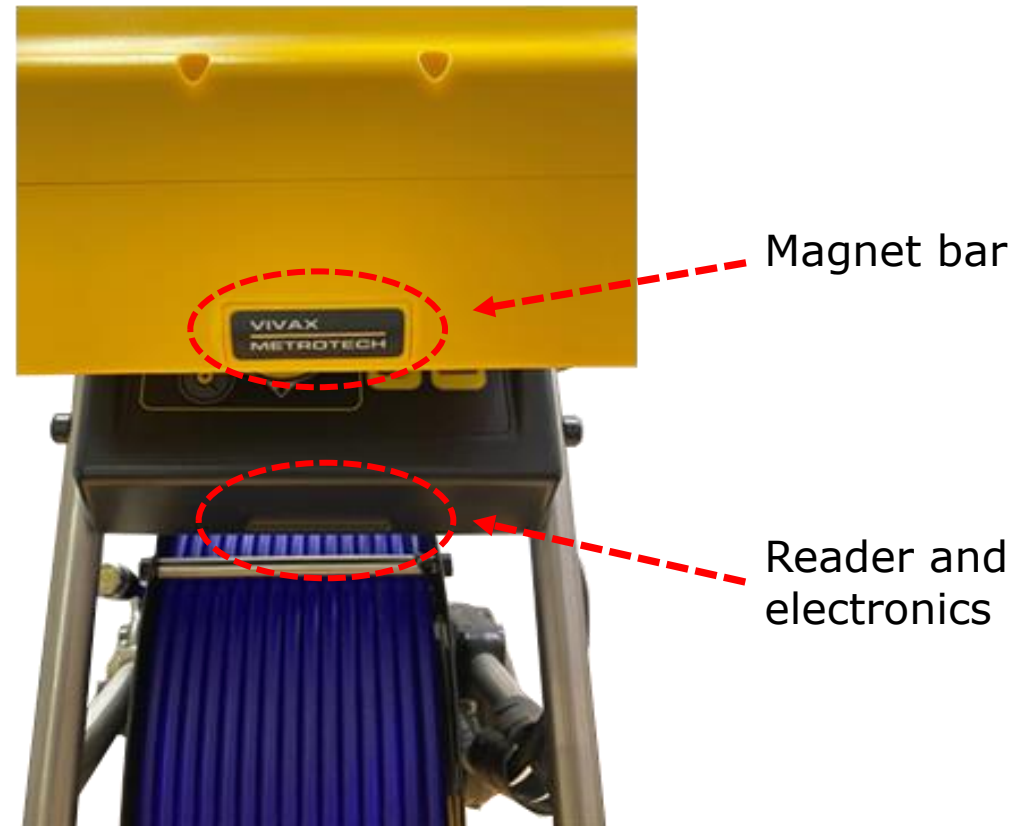
Selection (karat)  keys

Enter key

ESC/Step back key

Magnetic Latch

The magnetic latch holds the LCD to the control box.
It also acts as a power saver and shuts off the LCD when the system is running and the lid is closed.



Magnet bar

Reader and electronics

vCamMX-2 - Control Module Adjustments



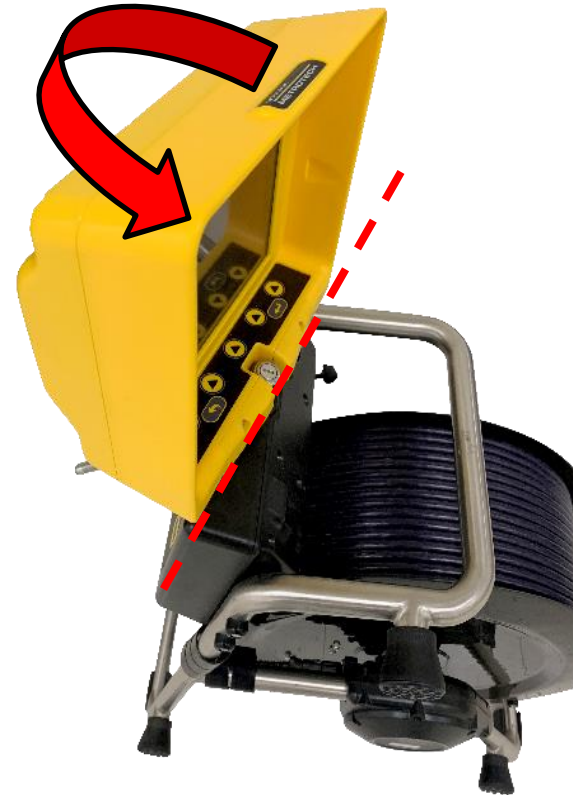
Warning

Do not rotate the LCD compartment further than 60-degrees left or right from the starting point.

Doing so can cause internal damage to the swivel assembly and internal wiring.



Open brake and rod deployment side



The closed backside of the reel

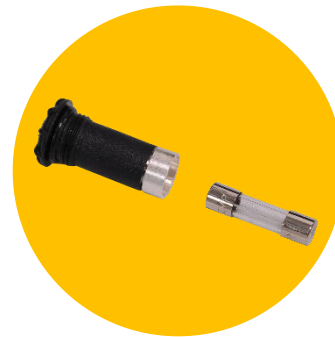
Fuse Installation

Install the 10-amp fuse that was provided with the control module. This fuse is necessary for the internal Li-ion battery to charge.

The fuse compartment is located on the left side of the control box.



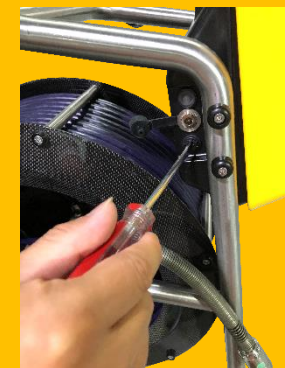
**Fuse cap and
10 Amp fuse**



1. Remove fuse cap



2. Install fuse



3. Replace cover



Power – On/off



The battery status icon will appear on the screen in upper right corner.

Press the power button and the control module will begin its startup.

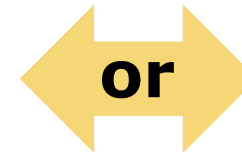
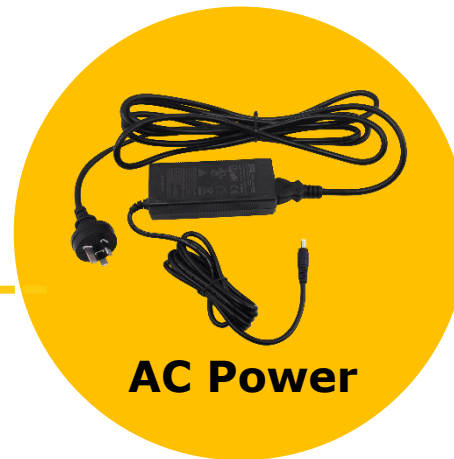


The on/off button will glow green while the control module is turned on.

Press and hold the power button for five seconds to turn off.

Power and Charging

The control module can be used while charging via AC or DC current.

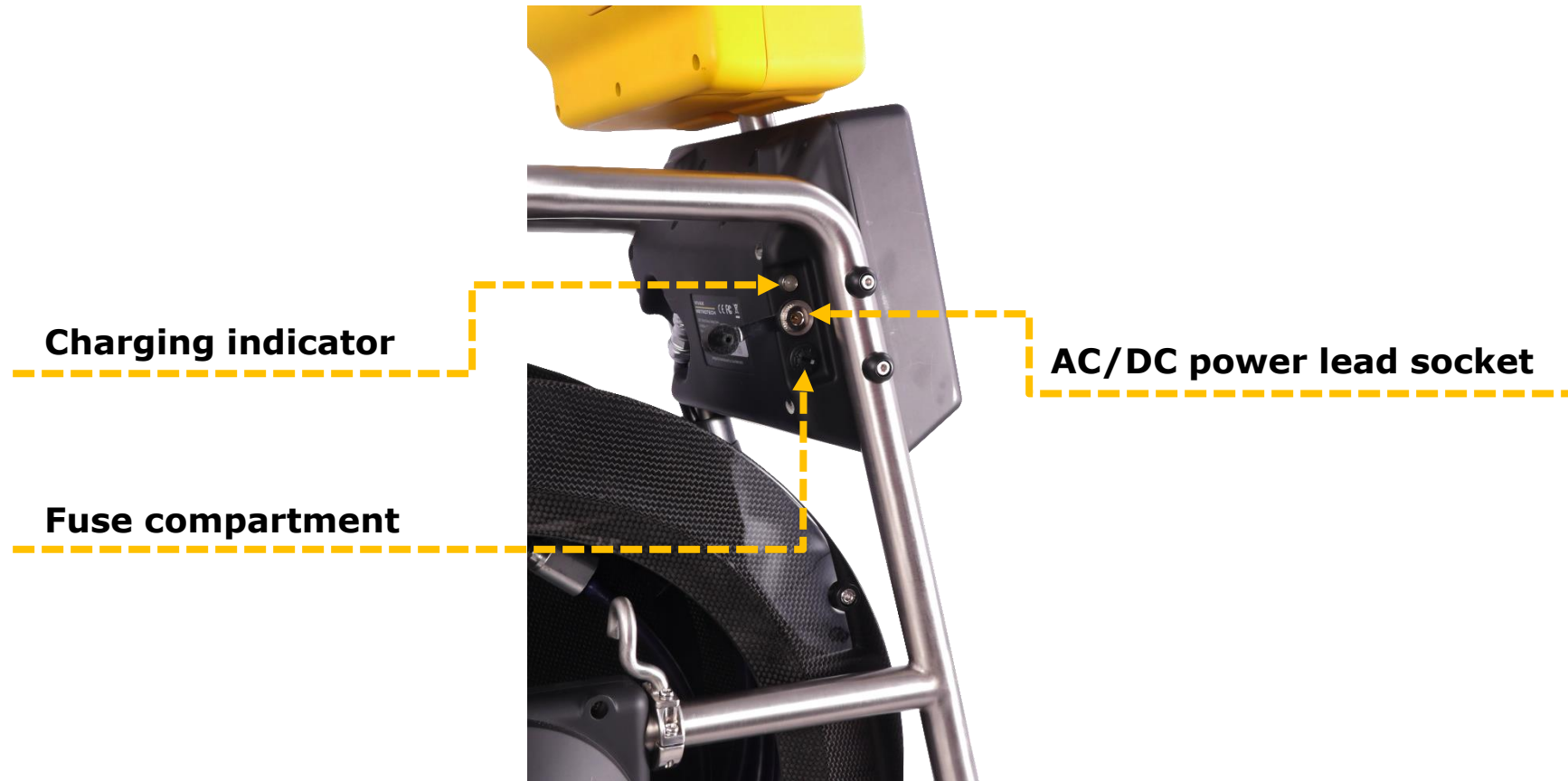


Tip

Only activate the sonde and wi-fi features when needed as they will affect the battery life.






Power and Charging

- When charging the charging indicator will glow Red. When fully charged, it will change to green.
- A six-hour charge will supply approximately six hours of battery life.



vCamMX-2 – Other Features - Front Panel

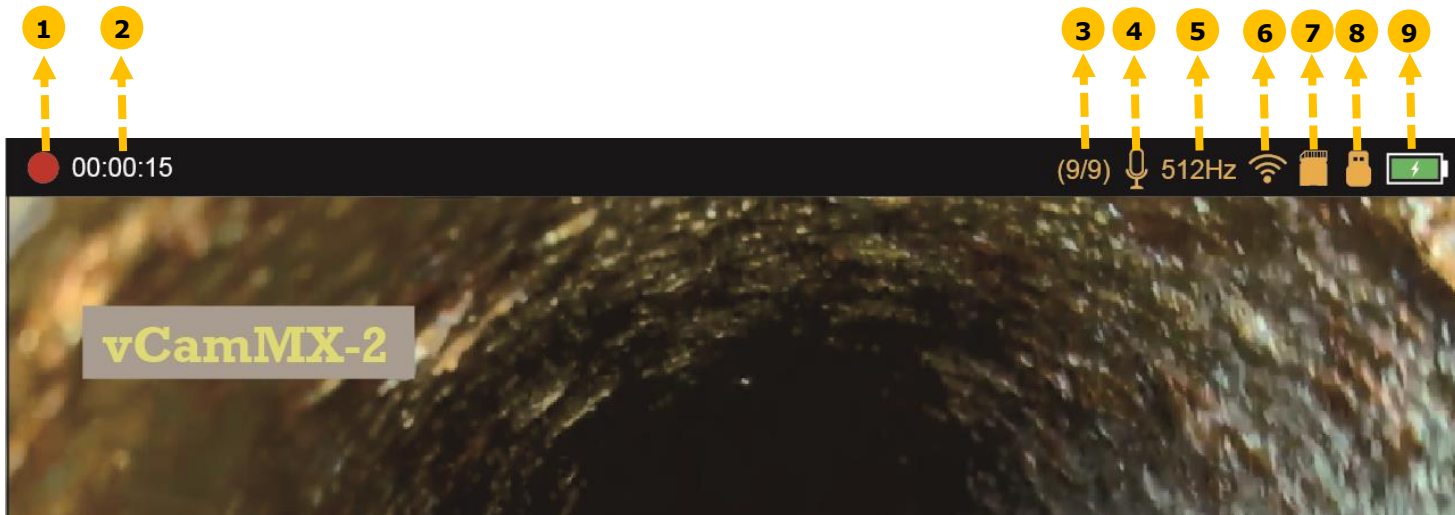
The vCamMX-2 Control Module has other features available.
The features located on the front panel are:

	<p>Camera LED Dimmer Press the ← and → keys to lower or raise the camera LED brightness.</p>
	<p>Distance Counter Reset Press the reset button to reset the distance shown on the screen to "0".</p>
	<p>Sonde Press the Sonde button to activate it. The button will glow green and the sonde icon will appear on the status bar. Press again to switch sonde frequencies, press again to turn off.</p>
	<p>Microphone Press the Microphone button to activate the microphone. The button will glow red and an icon will appear on the status bar. The unit has a built-in microphone  Press the microphone button again to turn it off.</p>



The Status Bar

The status bar at the top of the screen shows any active options



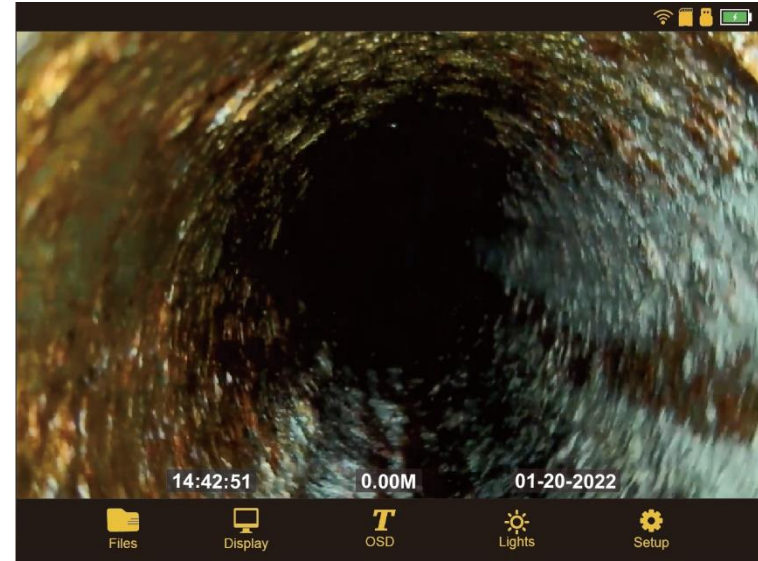
1. Recording in progress
2. Elapsed recording time
3. Text page/number of pages
4. Active microphone
5. Active 512Hz Sonde
6. Active wi-fi
7. SD Card inserted
8. USB drive inserted
9. Battery status

Menu Bar – Show and Hide

The menu bar can be hidden providing a larger viewing area.

Press the **Enter key** to hide or show the status bar.

The icons of currently running options will still appear in the top right of the screen.



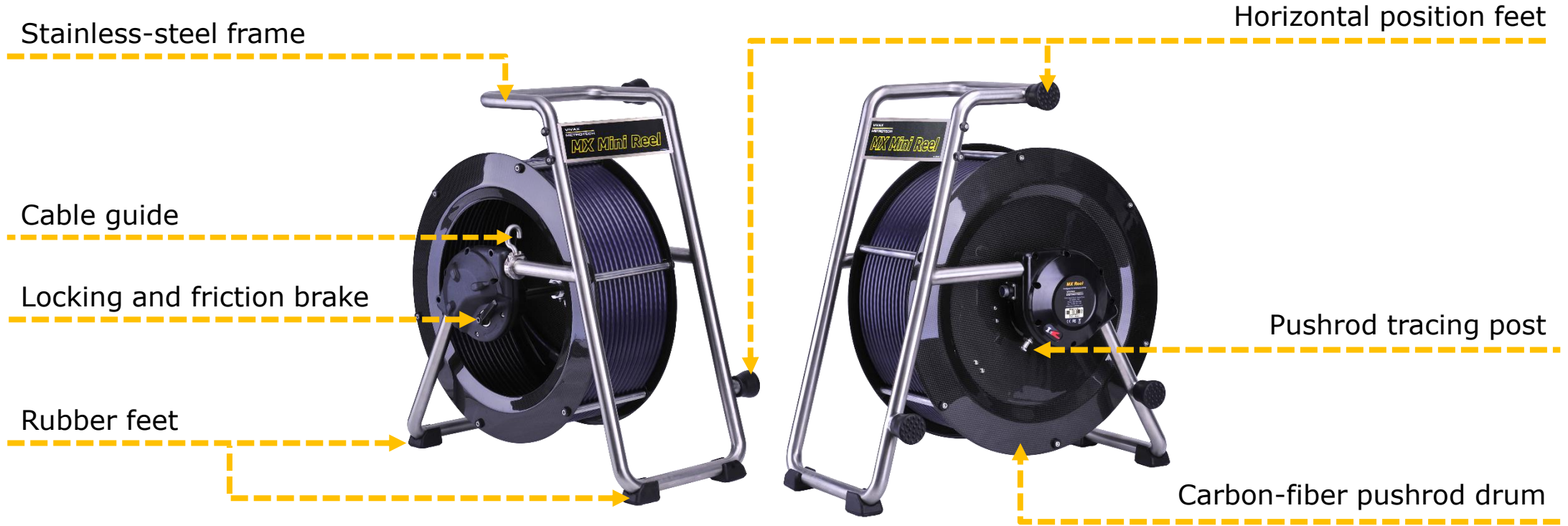
Show



Hide

Type-MX Mini Reel

The Type-MX Mini Reel



Camera Heads



D26-MX



D18-MX



**Pipe Insert Sleeve
is included with the
Type-MX reel**

Camera Specifications – Type-MX Reel Range



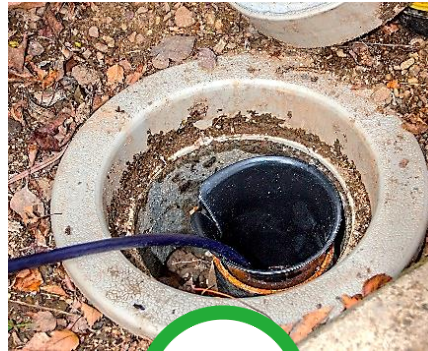
	D18-MX 	D26-MX 
Pipe size:	Up to 4"/101mm	Up to 4"/101mm
Dimensions:	0.70"/18mm D x 18.6/29mm L	1"/26mm D x 2"/50mm L
Resolution:	520 TVL	700 TVL
Active Pixels:	NTSC: 704X480 PAL: 704X576	NTSC: 704 X480 PAL: 704X576
Environmental:	11 BAR	10 BAR
Lighting:	17.53 Lumens	20.39 Lumens
Auto upright:	No	Yes
Construction:	Stainless steel housing with Sapphire glass lens	
Reel compatibility:	Type-Mx, Type-M2	Type-Mx, Type-M2

Using the Reel – Protecting the Pushrod



Tip

Use the provided Pipe Insert Sleeve  , Tiger Tail  or flexible hose to keep the pushrod from scraping against sharp edges at the pipe entrance.



Using the Type-MX Reel



For best results from the distance counter, follow these instructions starting with the control module **turned off**.

1. Turn the cage to approximately the 9-o'clock position using the sonde cup as the guide. Now use the brake to lock the cage.



2. Reach into the cage and grab the spring assembly and thread the pushrod through the cable guide.

3. Position the base of the sonde cup into the cable guide as shown below. The sonde cup **(a)** is now in the cable guide at a 12 o'clock position, and the pushrod section from the cage to the sonde cup is bent from the cage to the cable guide.



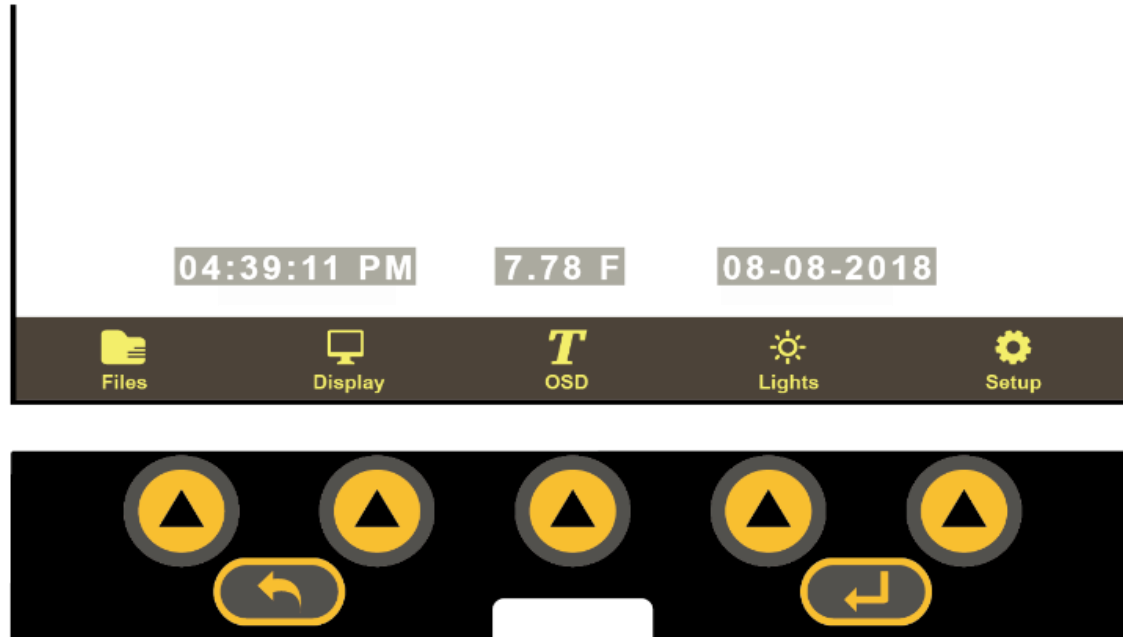
4. Power on the control module. When the control module starts it will see the position of the sonde cup as "zero."



The Menu System

vCamMX-2 Menu Structure

Use the Karat keys  to select the options of Files, Display, OSD, Lights or Setup.



Files – The file manager where you can view files on the USB and SD drives, watch videos, view JPEGs, and copy and delete files.

Display – Adjust the screen colors and backlight.

OSD – Control the position and color of the OSD as well as on-screen text. Access the on-screen keyboard to add and save the text.

Lights – Control the camera lights.

Setup – Enter the setup menu.



Tip – The camera lights can also be controlled by the circular keypad  on the control box.

Recording Videos & Taking Pictures

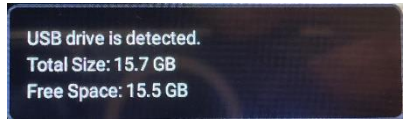
Storage Options

- By default, the system will record to the USB drive.
- If no USB drive is inserted, the system will record on the SD drive.
- If neither SD nor USB is present the system will not record.

USB Port – Supports up to 128 GB Removable USB Drives.

SD Card Slot – Supports up to 64GB Removable Class 10 SD Cards.

When a USB drive or SD card is inserted, a dialog box will appear on the screen showing the drive size and amount of free space.



USB drive is detected.
Total Size: 15.7 GB
Free Space: 15.5 GB

If this message is not seen the media inserted may be corrupt or not compatible.

Drive space can also be checked and media can be formatted by going to **Setup**  **then Storage.** 

Press the ESC key twice to return to the main menu screen.




USB with SD Backup Option



Tip

Using the **SD Card Backup** option will automatically copy the files recorded on the USB drive to the SD card. This allows you to have a backup of your files.

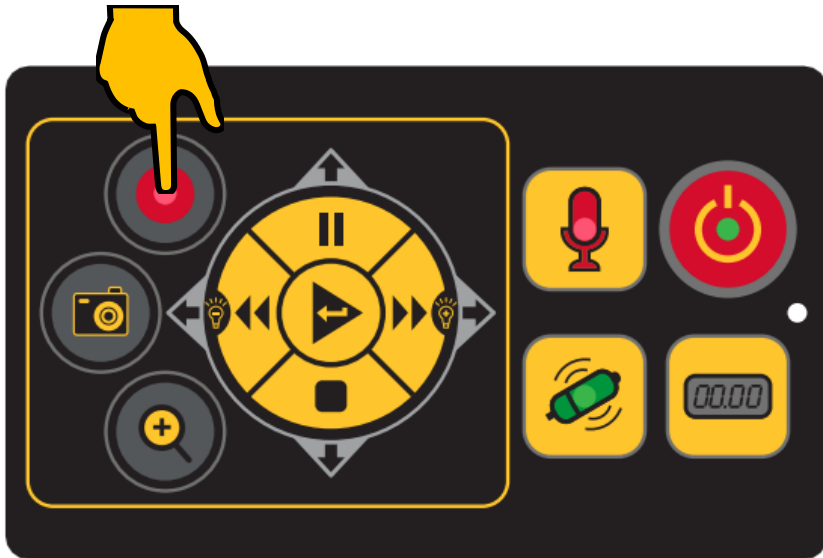
To activate this option go to:

Setup  and then Storage  and select the key for SD Card Backup. USB with SD backup 

The USB with SD backup onscreen switch will change from white (off) to yellow (on).

Press the ESC key twice to return to the main menu screen.


Video Recording – Create a new video



To start a video recording, press the **Record** button  on the control box.

A flashing recording icon  will appear in the status bar with elapsed recording time.



Press **Pause**  to pause the video, then press **Pause** again to **resume** the recording.

Press the **Record**  button again to stop the recording.

Rename Files

In the Setup menus the File Rename option can be turned on and off.

You can choose to rename videos, pictures or both.

Depending on how many pictures you plan on taking you can decide on what to rename or not to rename.

Go to: Setup  , Features,  Rename and make the selection.  

When the selection is made it will change the choice from white (off) to yellow (on).

Press the ESC/Step Back key twice to return to the main viewing screen when finished.

Rename Files – Keep the Default File Name

After the recording has ended the file “**Save As**” dialog box will appear.

The default file name consist of the systems month, day and time.

Example: **0120_9am2612.mp4**

01 = January

20 = Day, 20th of January

9am = Hour, time from the control module

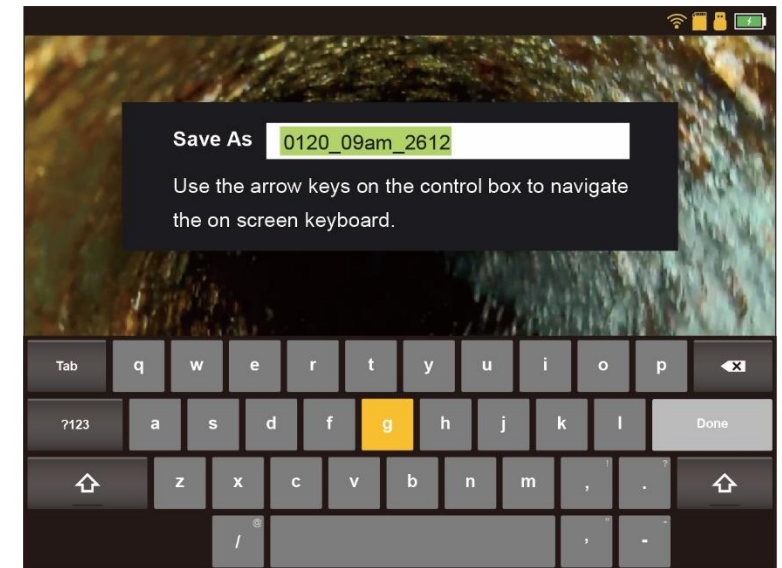
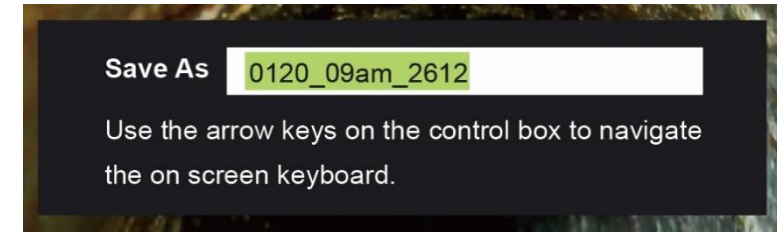
26 = Minutes, time from the control module

12 = Seconds, time from the control module

Press the **Enter** key on the LCD keypad to keep the default file name.

This is the only opportunity to rename a file in the control module.

After this point the file must be renamed in a computer.



Rename Files – Create New File Name

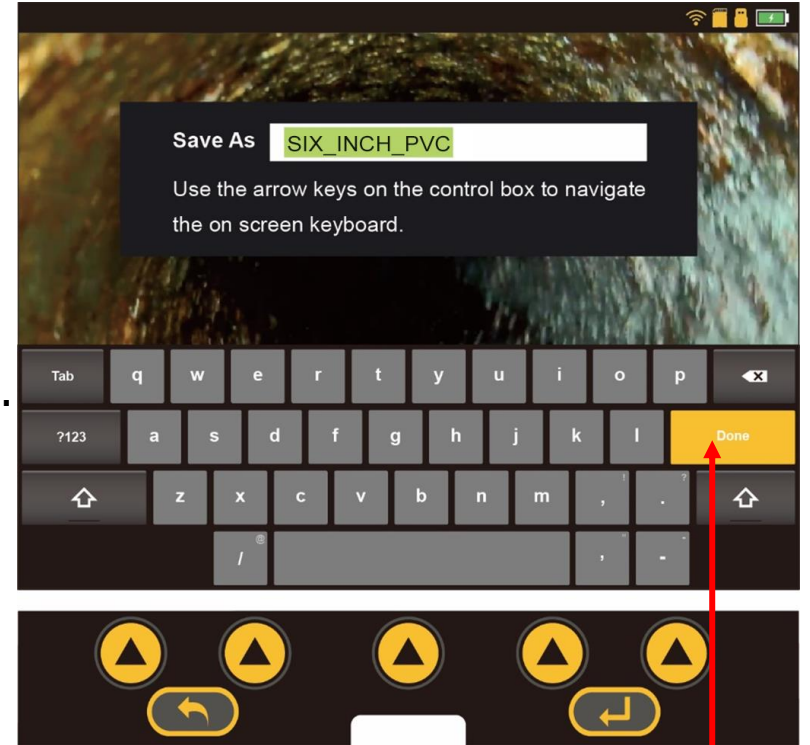
After the recording has ended, the file “**Save As**” dialog box will appear. To rename the file use the keys corresponding to the up/down/left/right arrows on the media keypad to navigate the on-screen keyboard.

Use the center **Enter/Play** key to select and add the keyboard characters.

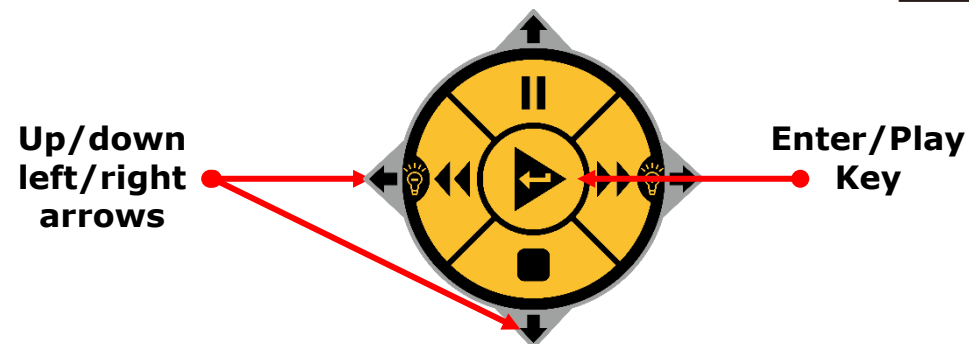
As you move through the keyboard the characters are highlighted in yellow.

When done entering the keyboard characters move to the **Done** keyboard key and press the Enter key.

A confirmation box appears confirming the filename was saved.

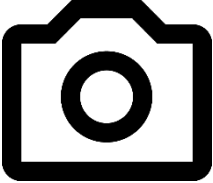


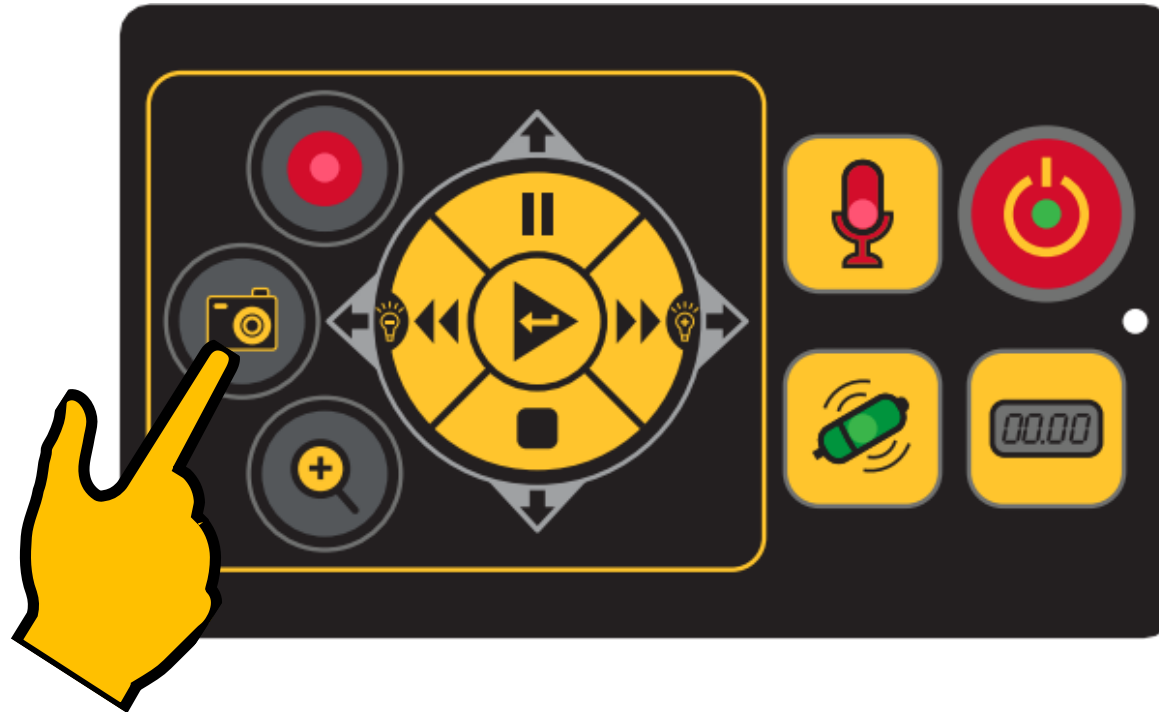
Done Key






JPEG Image Capture - Take a Picture

Press the **Camera** button on the control box.

A Camera icon  will flash center screen confirming the action.



Video Recording – About Recordings

- Recording videos can pause for one hour. 
- The maximum length for a video is one hour.
- After one hour the recording will automatically stop, be saved, and another recording will start.
- Pressing the record  key while the video is paused will stop the recording. Use the Pause key  to resume a paused recording.



Options Available while Recording

While recording a video the following features are available:

Text overlay



JPEG Image capture



Distance counter reset



Voice-over audio commenting



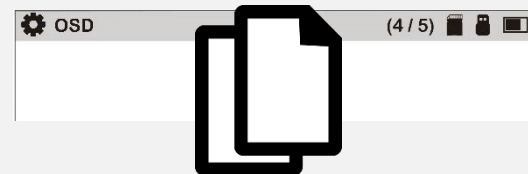
Pause and resume the recording



Sonde location and pushrod tracing



Save and recall pages of saved text



LACP features via mini-USB port



vCamMX-2 features – Voice Over

The **voice-over** feature will **add audio comments** to the recorded video.

The control module has an internal microphone located right above the display.



The microphone on/off button.



The hot microphone icon is shown on the status bar.

Press the **Microphone** button on the front panel of the control module. When the microphone is on the button will glow red and the microphone icon will be shown on the screen's status bar.

Speak clearly at a normal tone and volume toward the internal microphone located above the display.

Stay at a distance between one to two feet from the internal microphone while speaking.

Press the **Microphone** button again to turn the microphone off.

vCamMX-2 – Text Overlay Introduction

The Text Writer has unlimited pages with 14 lines and 30 characters per line per page to be saved and later recalled for use.

The content from the on-screen Text Writer is saved into memory, so if the unit is turned off the text will still be available when turned on again.



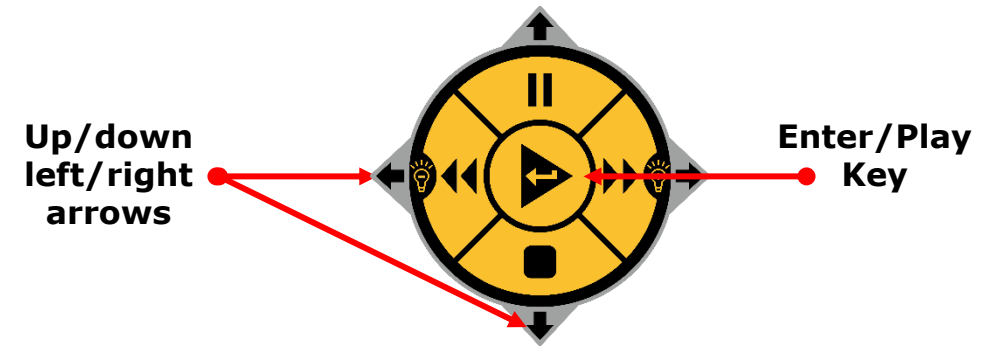
Alternatively, you can use the free **vCam Mobile Controller** App to add text to the screen with the mobile device's built-in keyboard.




App to add text to the

vCamMX-2 – Text Overlay

From the main menu press the **OSD T** key to enter the OSD sub-menu.
Press the **Keyboard** key to bring up the on-screen keyboard to the screen.
Use the Up/Down/Left/Right to navigate through the keyboard and use the Enter key (center) to select the text and numeric characters.



Press the **ESC**  key to close the keyboard and return to the sub-menu. Press again to return to the Main Menu.

The text from the on-screen keyboard is automatically saved as it is entered. If the text that is entered is intended for one-time use, press the **Erase** key before advancing to the next page of the text or turning the unit off.

vCamMX-2 – Text Overlay



The on-screen keyboard graphic will never appear in any videos or pictures.



Use the pause key to pause the video while entering text. When finished press pause in to resume recording.



Use the Stop key to hide and show the current page of the text.




Alternatively, you can use the free **vCam Mobile Controller** App to add text to the screen.

Text Overlay – Saving and Recalling Pages

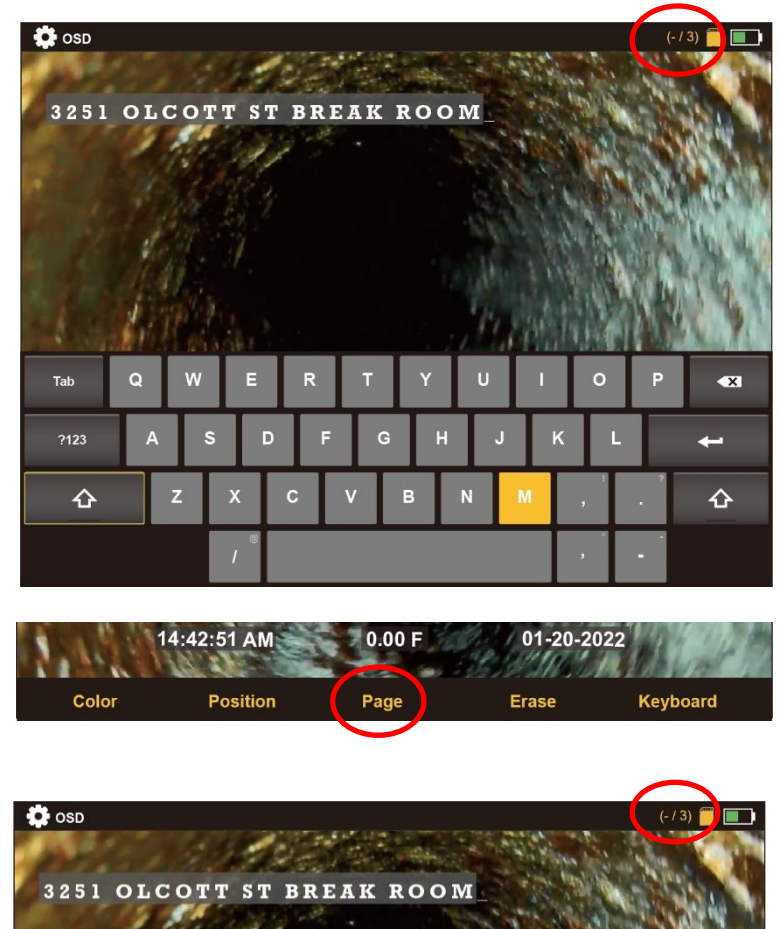
When adding text, the status bar shows the current page you are adding text on and the number of pages in memory. The example to the right shows (-/3), the dash (-) shows that you are editing the current page and the /3 shows that there are three saved pages in memory.

Pressing the **Page** key will save the current page into memory and advance the page number by one.

Press the **Page** key repeatedly to scroll through the saved pages in memory.

When finished entering the text on the screen press the **ESC** key  to close the on-screen keyboard.

To erase a page from memory, use the page key to recall that page. Now use the **Erase** key to erase the page from memory.

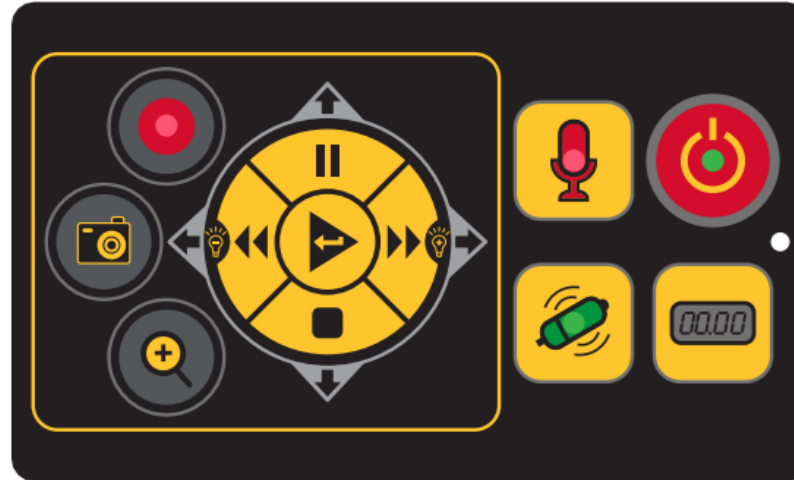


Reviewing Videos and Pictures on the MX Control Module



vCamMX-2 Options While Playing Videos

While playing a video use the controls on the **media keypad** to:



Take pictures from the playing video



Pause the playing of the video



Rewind or fast forward

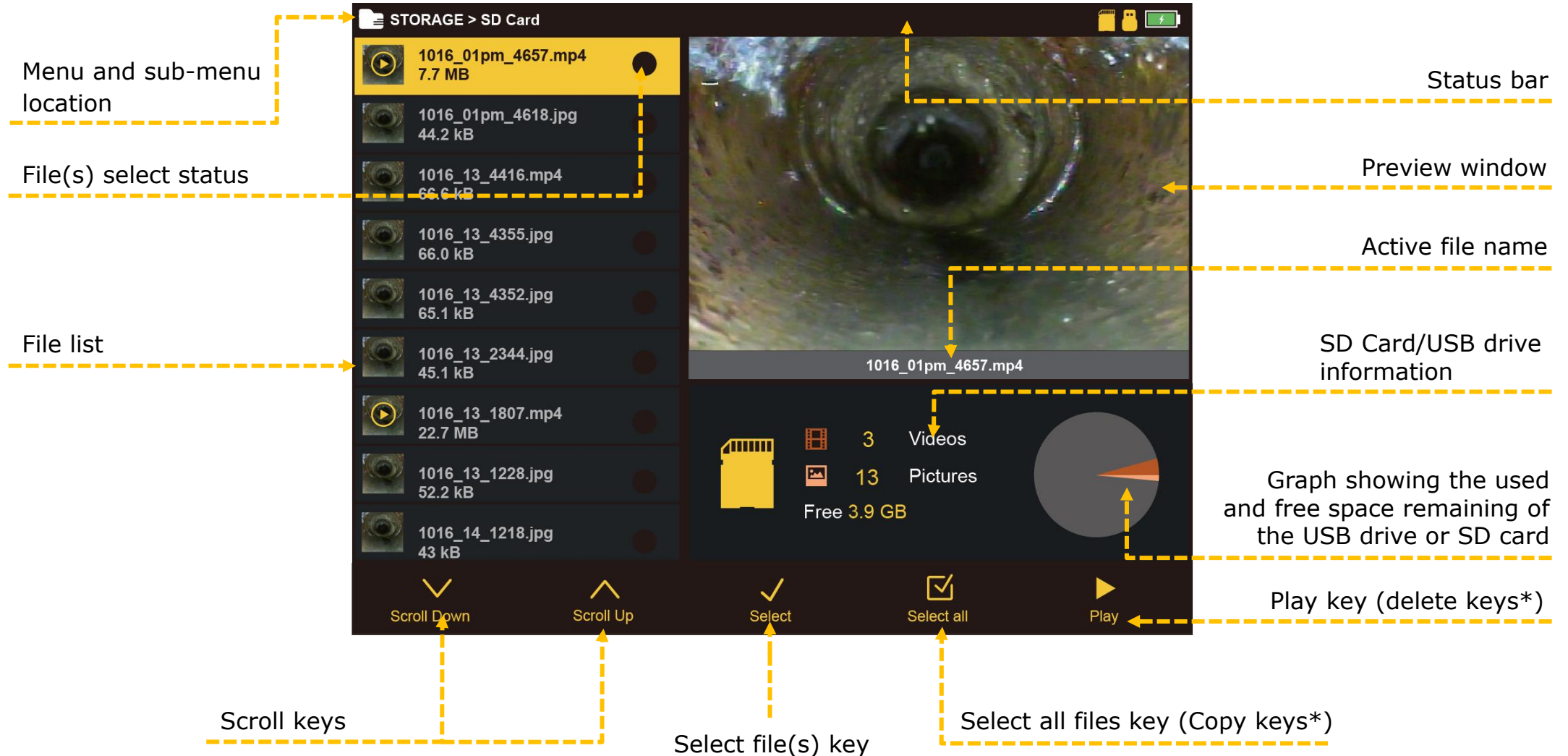


Stop the video



Zoom in on the playing video or picture

vCamMX-2 Menu Structure – File Manager



*When more than one file is selected the Select All and Play keys are replaced by Copy and Delete keys.

vCamMX-2 Menu Structure – File Manager

Playing, Copying and Deleting Files

The screenshot displays the 'STORAGE > SD Card' interface. On the left is a file list with columns for file icons, names, and sizes. The top file, '1016_01pm_4657.mp4' (7.7 MB), is highlighted in yellow, indicating it is selected. To the right is a video player showing a camera view of a tunnel. Below the player is a summary section showing '3 Videos' and '13 Pictures' with a 'Free 3.9 GB' indicator. At the bottom are five navigation keys: 'Scroll Down', 'Scroll Up', 'Select', 'Select all', and 'Play'. Annotations with dashed arrows identify these elements: 'File(s) select status' points to the yellow highlight; 'File list' points to the list of files; 'Scroll keys' points to the 'Scroll Down' and 'Scroll Up' keys; 'Select file(s) key' points to the 'Select' key; 'Select all files key (Copy keys*)' points to the 'Select all' key; and 'Play key (Delete keys*)' points to the 'Play' key.

*When more than one file is selected the Select All and Play keys are replaced by Copy and Delete keys.

File Manager

Viewing and playing contents of the USB drive or SD Card



Press the File Manager key to enter the file manager.



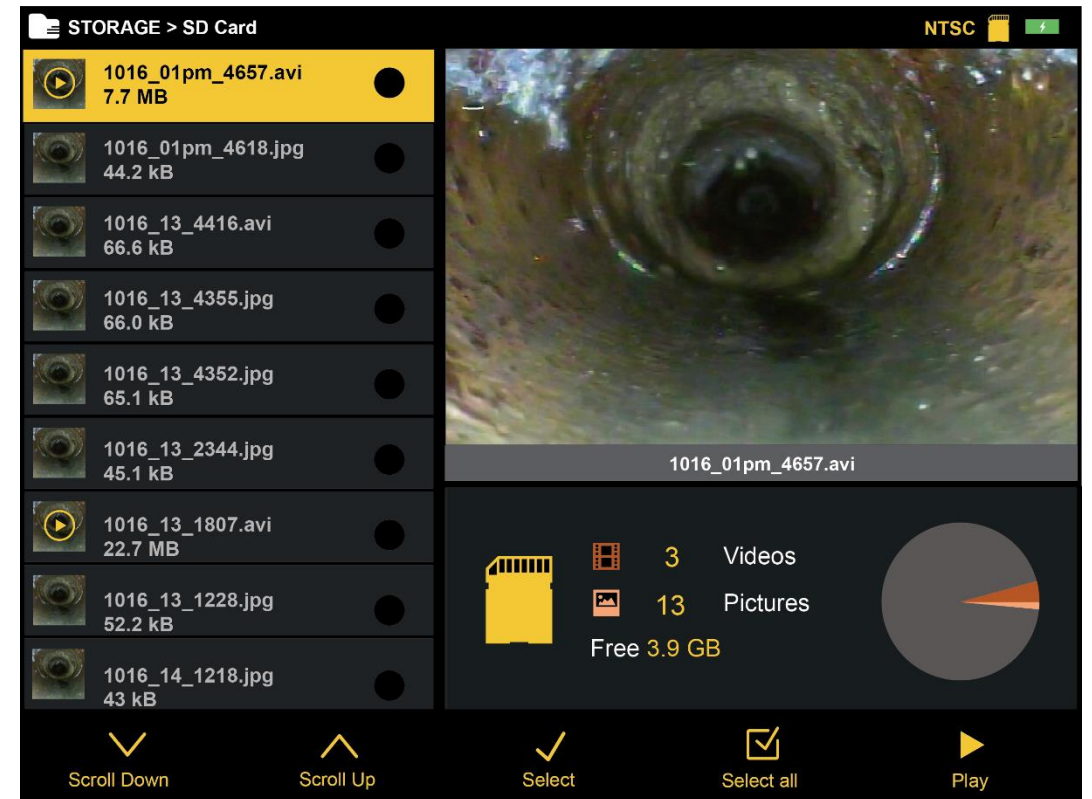
Choose the drive where the files are located, SD, or USB.



Use the Up/Down Scroll keys to highlight the desired file.



Play - Press the Play key to play the file.



File Manager

Copying Files



Press the Files key to enter the file manager.




Choose the drive where the files are located, SD, or USB.



Use the Up/Down Scroll keys to highlight the desired file(s).



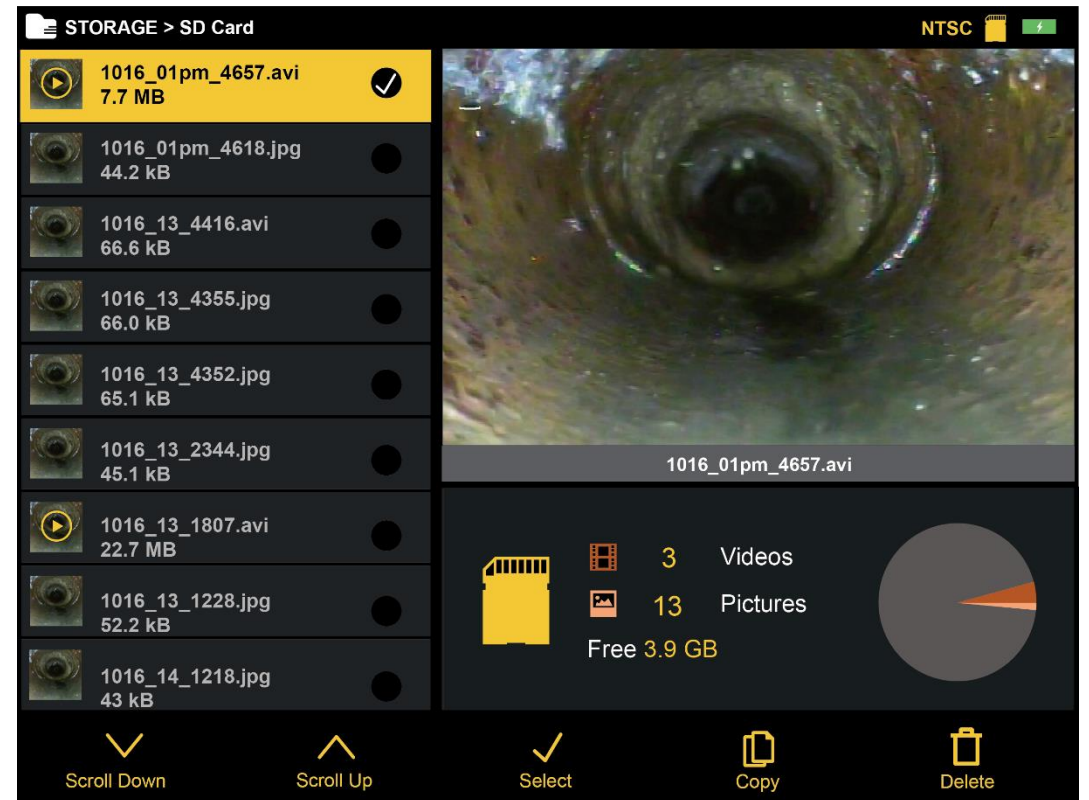
Press the Select key to choose individual files or press the Select All  key to select all the files.



Select Copy to copy the selected file(s).



Select the copy destination, SD, or USB.



Tip

Use the SD Card Backup option as a hard drive to create a backup of your files.

File Manager

Deleting Files



Press the Files key to enter the file manager.



Choose the drive where the files are located, SD, or USB.



Use the Up/Down Scroll keys to highlight the desired file(s).



Press the Select key to choose individual files or press the Select All  key to select all of the files.



Select Delete to delete the file(s).

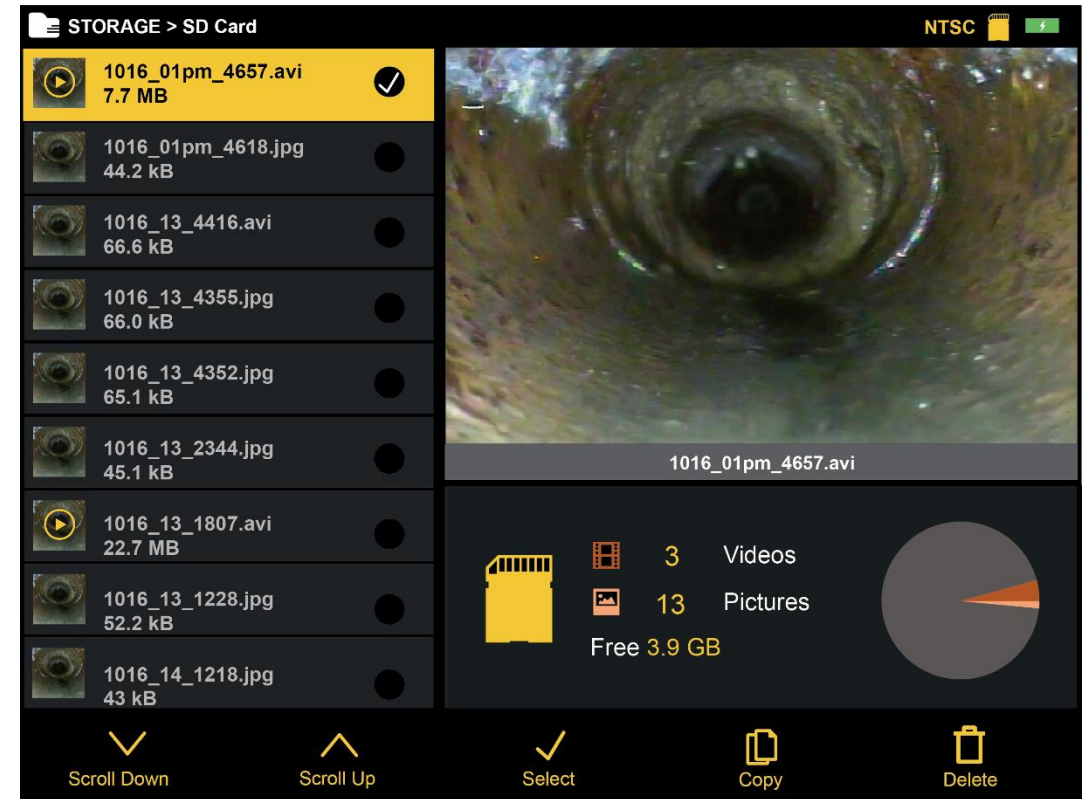


Deleted files cannot be recovered !



Tip

Press the **Select All key** to select all files.

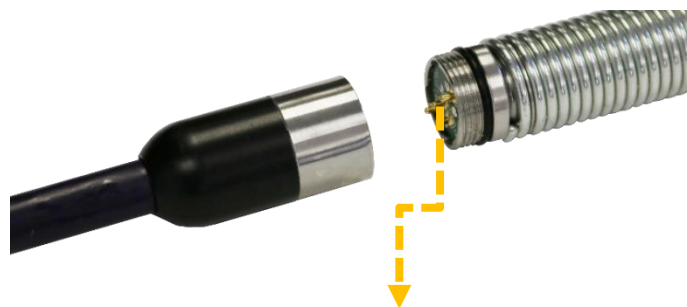
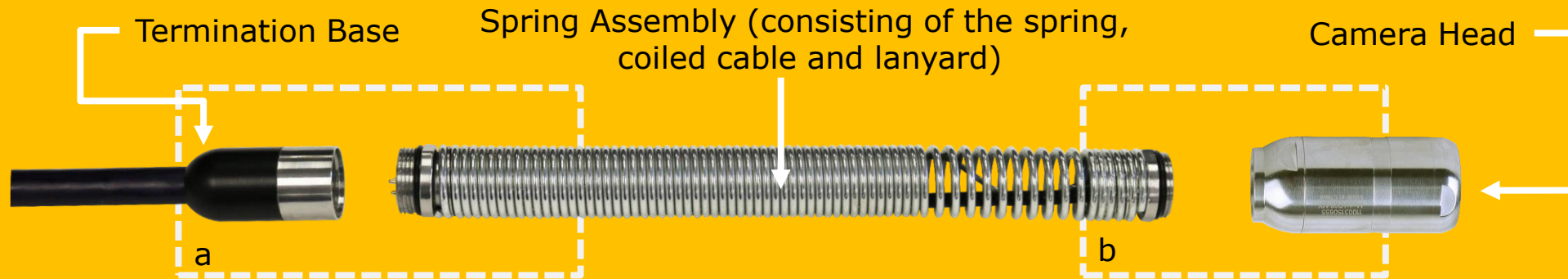


Changing Camera Heads and Spring Assemblies



The Type-MX Spring Assembly

The spring assembly of the Type-MX Reel can be removed and changed by the user. No tools are needed when installing. Hand tighten only.

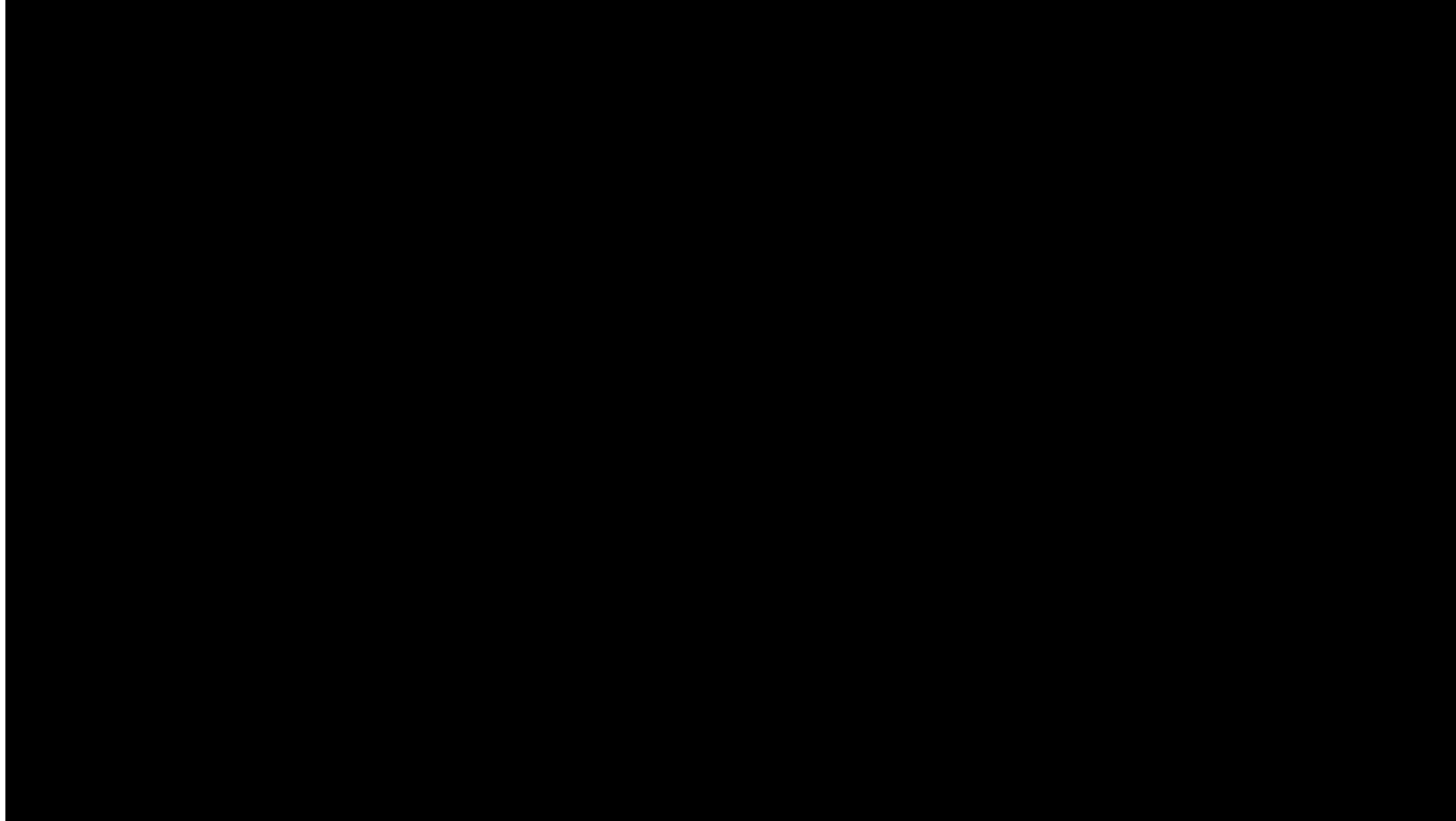


a Spring end with pins screws into the termination base

b Camera screws onto the end
With the flat circuit board



vCamMX-2 - Removing and Installing the Spring and Camera



This video is available on our [YouTube Channel](#)

Removing and Installing the MX Camera Head

Try not to touch the green circuit board or gold pins on the spring assembly or camera head with bare hands. Touching these can transfer oils from the fingers to these components which may lead to corrosion. Wear clean rubber gloves if possible.

Remove any excess dirt that might come into contact with the gold pins or green circuit board. Check that the O-ring is in good condition.

1

Grasp the termination spring close to the base of the camera head.

2



Present the camera head to the spring and turn the camera head clockwise until the O-Ring is no longer visible.

3

Hand tighten the camera head. Do not use any tools to tighten the camera head.

4



Keep a spare O-ring in your supply box. Ask your local distributor for the part number.

Removing and Installing the Type-MX spring assembly

Remove any excess dirt that might come into contact with the gold pins or green circuit board. Check that the O-rings are in good condition.

1

Grasp the termination base in one hand while unscrewing or screwing on the spring assembly.

2



Screw on the spring assembly (or camera head) until the O-Rings are no longer visible.

3



Hand tighten the camera head and spring assembly. Do not use any tools. Try not to touch the green circuit board or gold pins on the spring assembly or camera head with bare hands.

4

Removing and Installing the Type-MX spring assembly

1 Remove any excess dirt that might come into contact with the gold pins or green circuit board. Check that the O-rings are in good condition.

2 Grasp the termination base in one hand while unscrewing or screwing on the spring assembly.



3 Screw on the spring assembly or camera head until the O-Rings are no longer visible.



4 Hand tighten the camera head and spring assembly. Do not use any tools. Try not to touch the green circuit board or gold pins on the spring assembly or camera head with bare hands.



**Know what's below.
Call before you dig.**

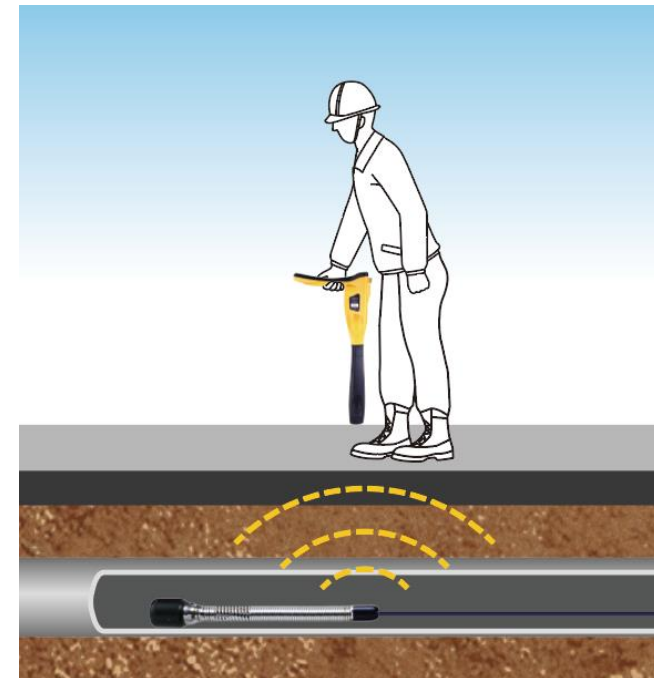
Sonde Locating and Pushrod Tracing

vCamMX-2 – Sonde Locating

All vCam series reels come with built-in locatable sondes.

Use the distance counter* as a reference to how far down the line the sonde is, and a locator to pinpoint the location and depth to the sonde.

* The distance shown on the LCD should be used for an estimate only. Always use a locator to pinpoint the camera sonde.



Pushrod Tracing

The entire length of deployed pushrod can be traced with the use of a utility locator's transmitter.

1



Attach the **red** "hot" lead to the trace post on the reel.

2



Attach the **black** "ground" lead to earth.

3

Power on the transmitter and use a frequency of 33kHz or higher.

4

The length of pushrod will now carry the locate signal and can be traced like a buried utility.



Pushrod Trace Post



Utility locator Transmitter



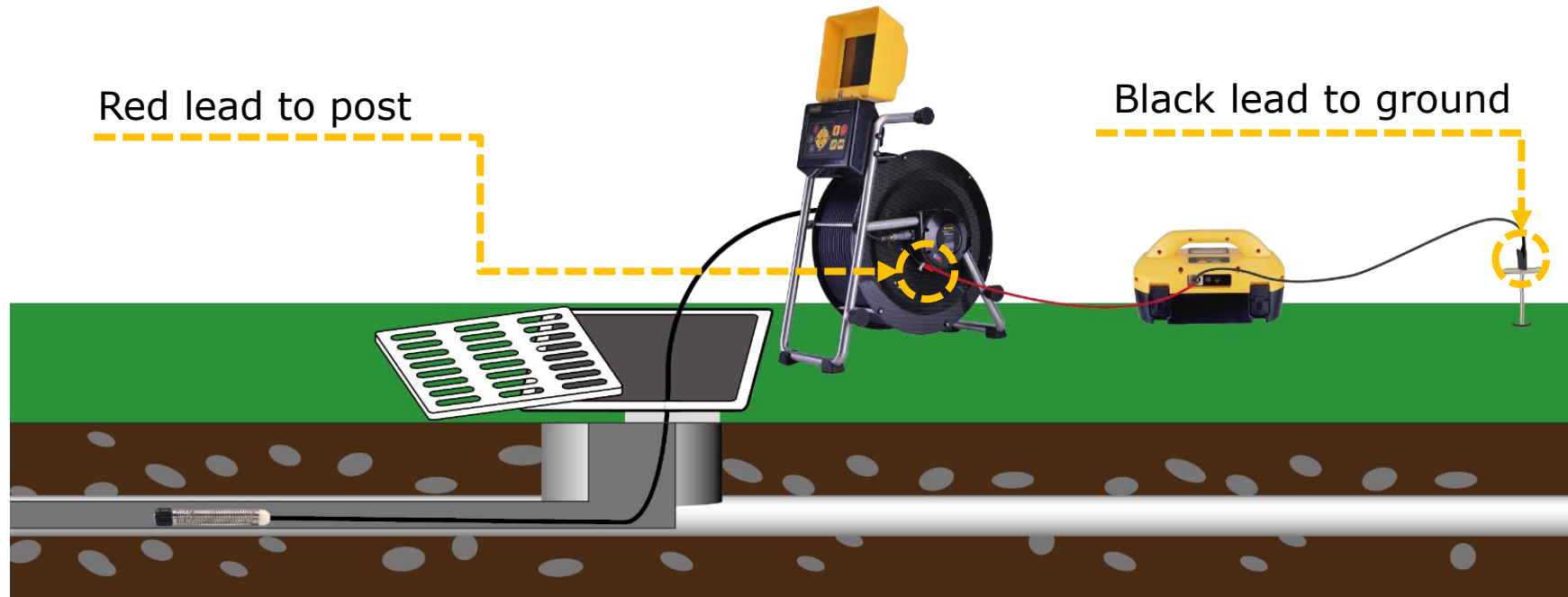
Connection Leads and Earth Stake



Locator

vCamMX-2 – Pushrod Tracing

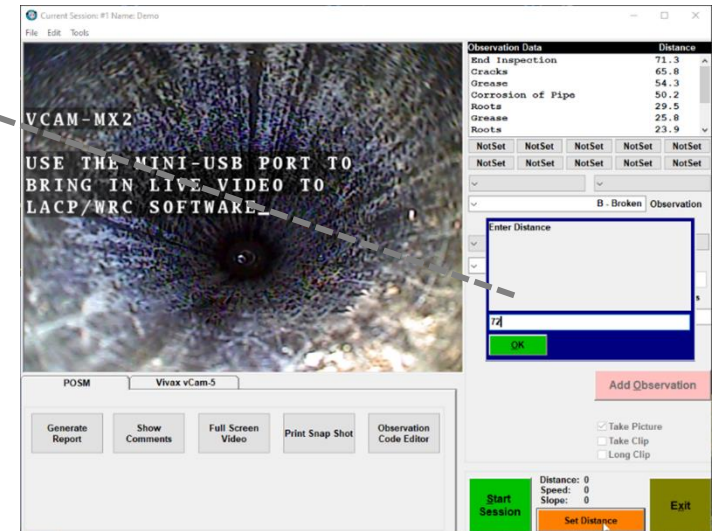
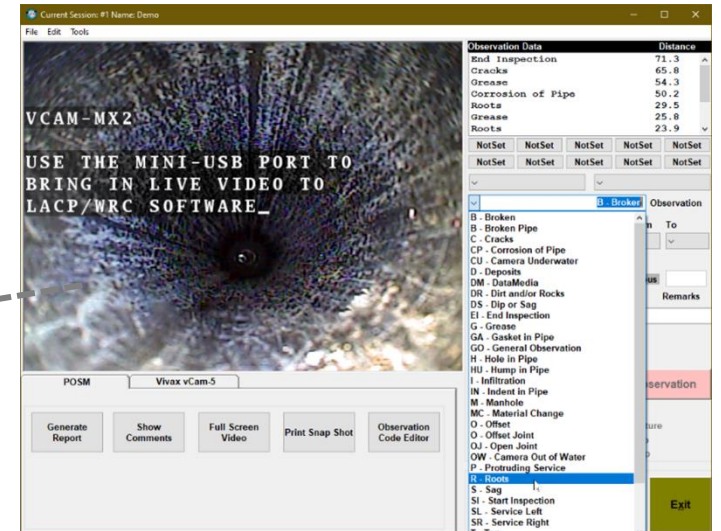
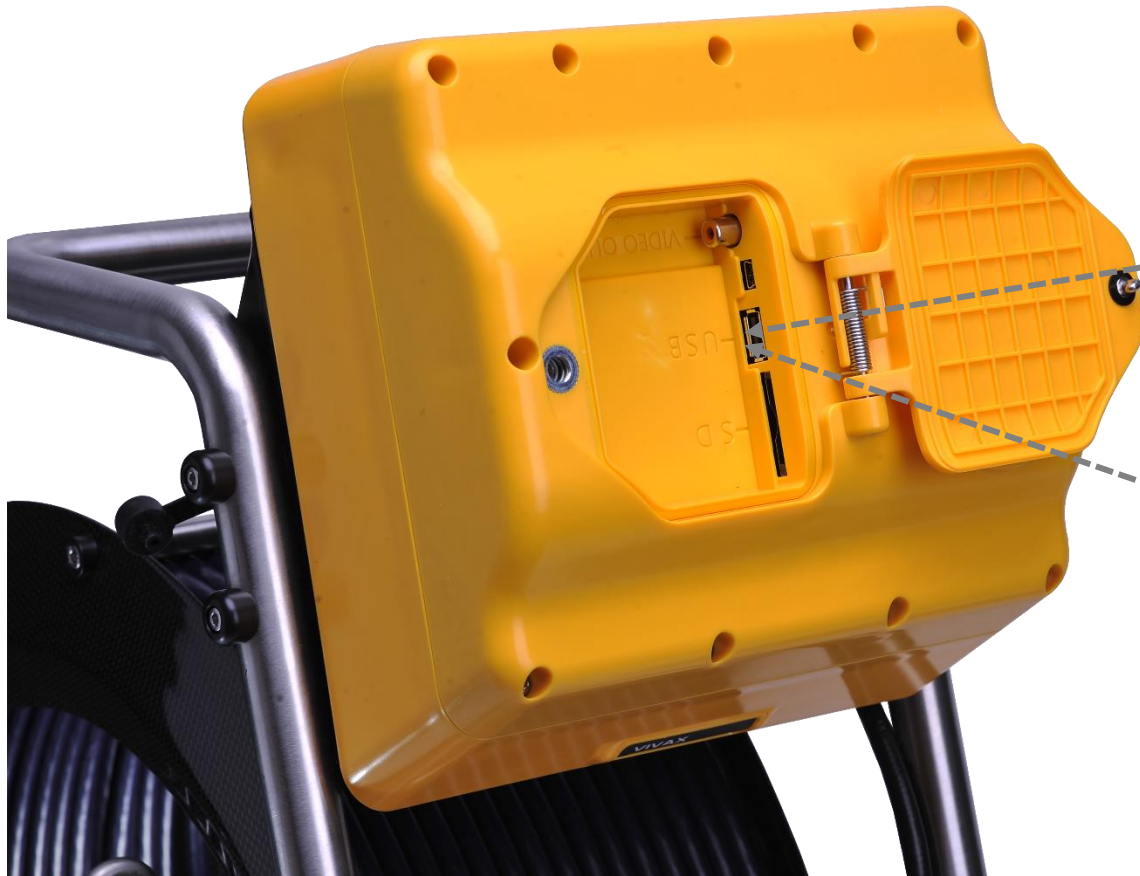
Transmitter Connection for MX Reel



Power on the transmitter and use a frequency of 33kHz or higher. The length of pushrod will now carry the locate signal and can be traced like a buried utility.

LACP/WRC Integration

- Use the USB Mini port to send raw video into the LACP/WRC software.





Items needed:

For distance counter interface: USB-A to USB Mini Cable



For live video interface: Sensoray model 2253-S Encoder



BNC male to RCA female adapter



RCA Video cable



USB 2.0 A-Male to B-Male USB cable



In the POSM software go to Settings
And select Vivax vCam-5



Items needed:

For distance counter interface: USB-A to USB-Mini Cable



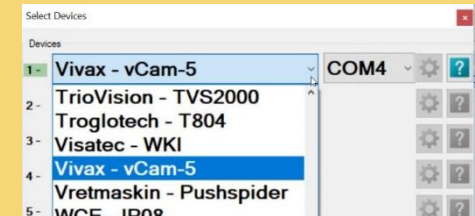
For live video interface: USB Dazzle Video Capture Device



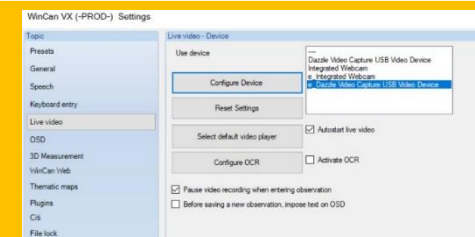
RCA Video cable



In the WinCan software go to Settings and select Vivax vCam-5





Then select eDazzle Video Capture Device



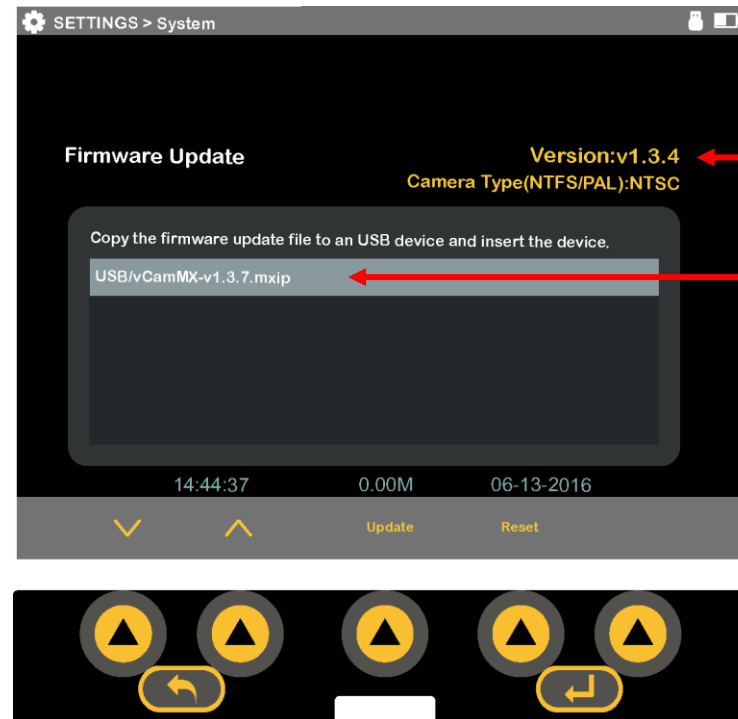


Software Updates

Updating the Software (firmware)

The current software version can be found on the “**System**” screen located in the **Setup sub-menu**. Go to Setup  then System  and the below screen will be displayed.

The vCamMX-2 series firmware updates come in the form of a “mxip” extension file. The firmware files and instructions can be downloaded from the firmware section of the vCamMX-2 webpage at <https://www.vivax-metrotech.com/vivax-product/vcammx-2/>.





Installed software version



Updated version on a USB thumb drive ready to install




Updating the Software (firmware)

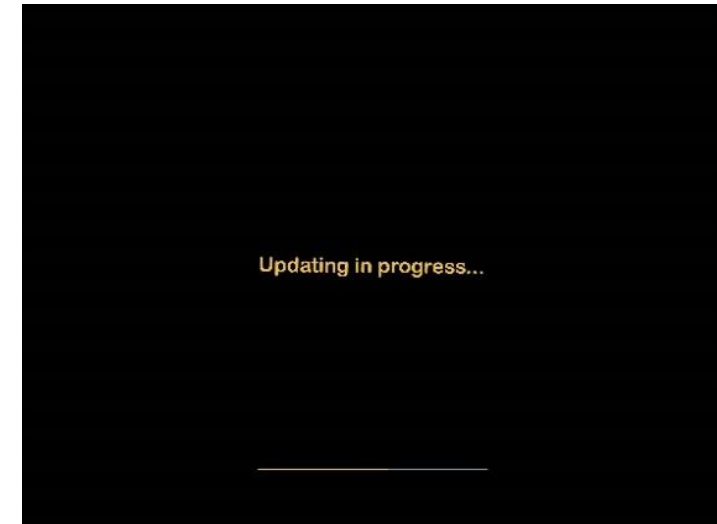
Insert the USB drive with the new software into the USB port on the back of the LCD portion of the control module.

Press the "Setup"  key to bring up the sub-menu.
Press the "System"  key to enter the system sub-menu.

Use the "Up/Down" scroll keys to   highlight the firmware update file.

Press the on-screen "Update" key to  start the firmware update.

Let the update run uninterrupted until finished.





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Call before you dig.

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Click on the logos for more information

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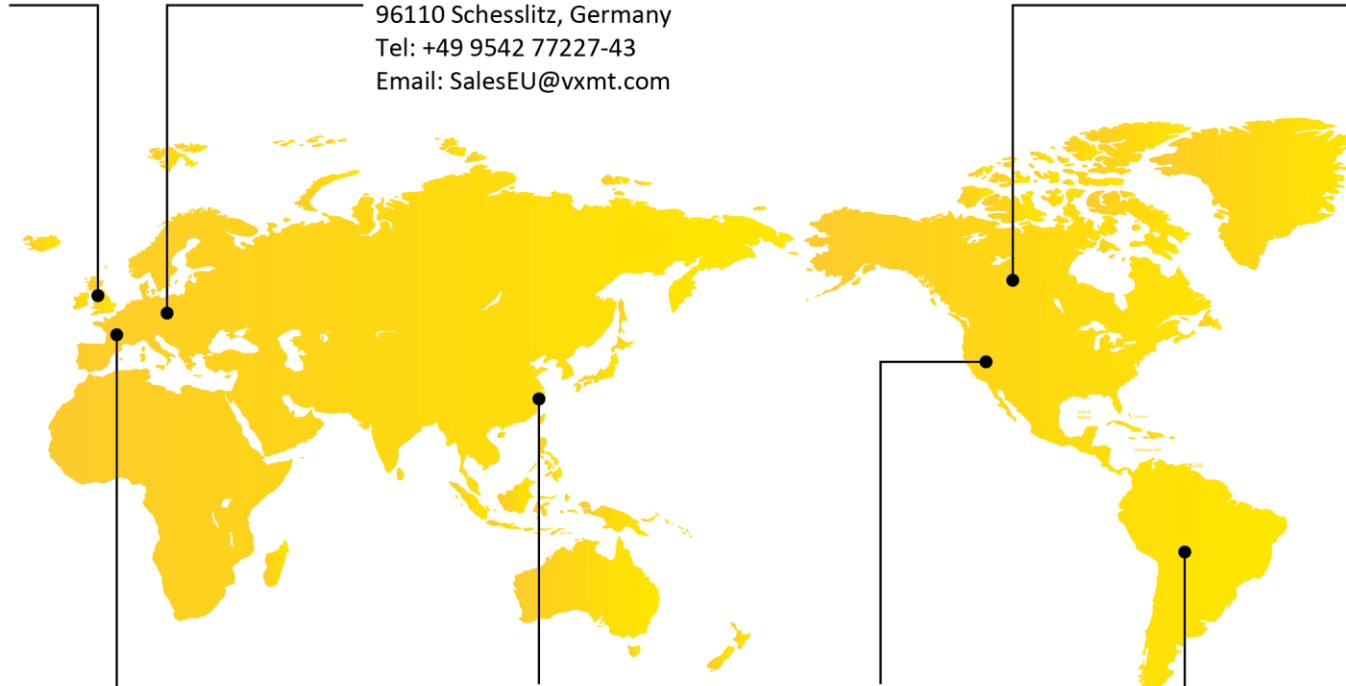
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The End



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