



# MKT V-5E<sub>sc</sub> INSTALLATION GUIDE WITH POWER UNIT

Please read through the instructions thoroughly before performing any of the steps.

# MKT V-5Esc OPERATING, MAINTENANCE AND SERVICE MANUAL



Prior to the use of this equipment everyone that will be or will assist in the operation of this equipment must read and understand the MKT V-5Esc Operating, Maintenance and Service Manual. Failure to read and understand the MKT V-5Esc Operating, Maintenance and Service Manual will result in property damage, severe injury or death.

# SAFETY INSTRUCTIONS

The following signal words will be found in this guide and may also be found in the MKT V-5Esc Operation, Maintenance and Service Manual. These words are intended to alert the operator(s) to a hazard and the degree of severity of the hazard.



Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in serious injury.



Indicates a hazardous situation which, if not avoided, could result in minor injury or moderate injury.

**NOTICE**

Indicates a property damage message.



# EXCAVATOR STICK PREPARATION

The bucket will need to be removed prior to vibratory hammer installation.

Maximum Stick Width 16.5 inches

Minimum Pin Diameter 80mm

Maximum Pin Diameter 100mm

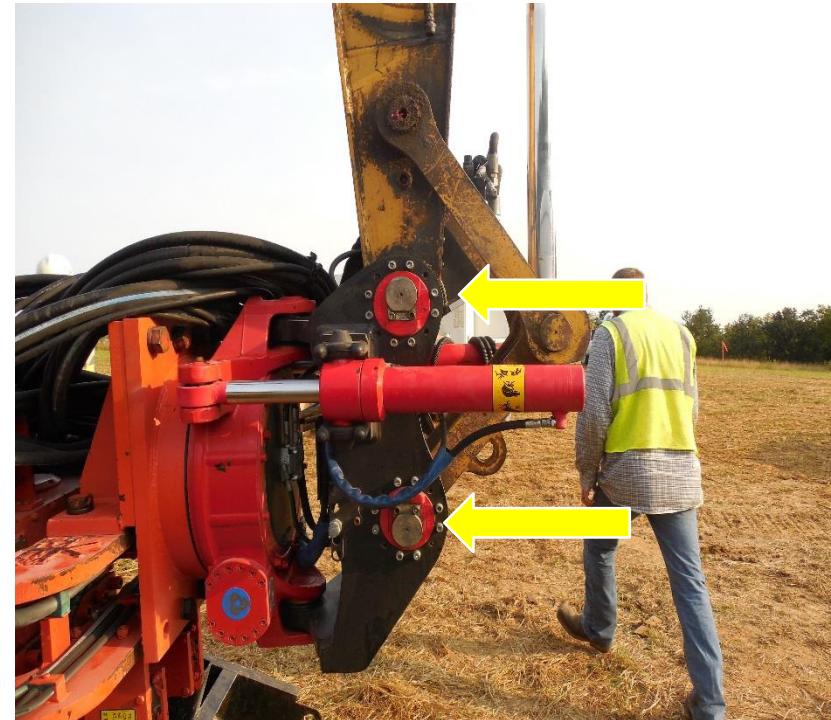


# HAMMER TO STICK ALIGNMENT

Place hammer with the manifold on the right of the stick facing the machine.

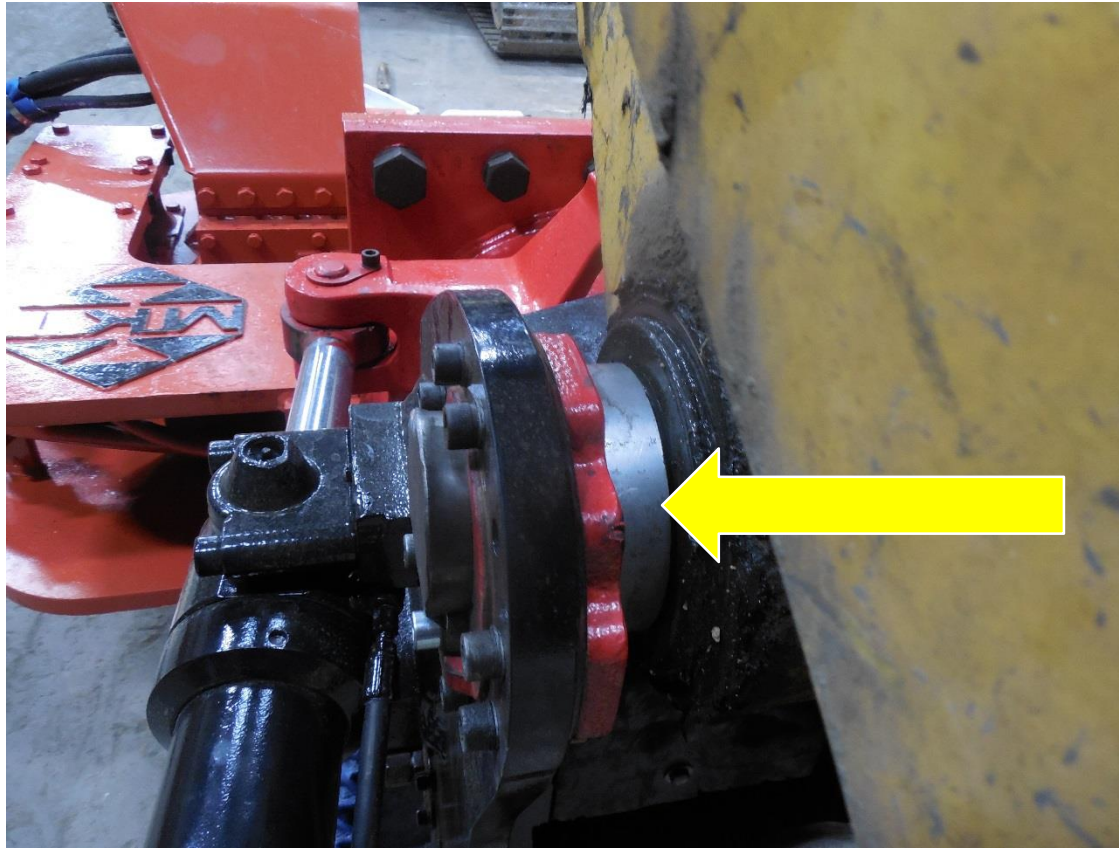


The stick pin will go to the top and the H-link pin will go to the bottom





ADD SPACERS TO THE PINS AS  
NEEDED



## PLACE ELECTRICAL STAND ON THE EXCAVATOR

The electrical stand comes with magnetic feet. You will need to place the stand on a flat metal surface.



# RUN THE ELECTRICAL CORD DOWN THE BOOM

The only cord that goes down the boom is the Boom cable with the Ten pin connector





# POWER SUPPLY

Red cable is for 24v supply. White is positive, black is negative and needs to be connected to a 24v power supply

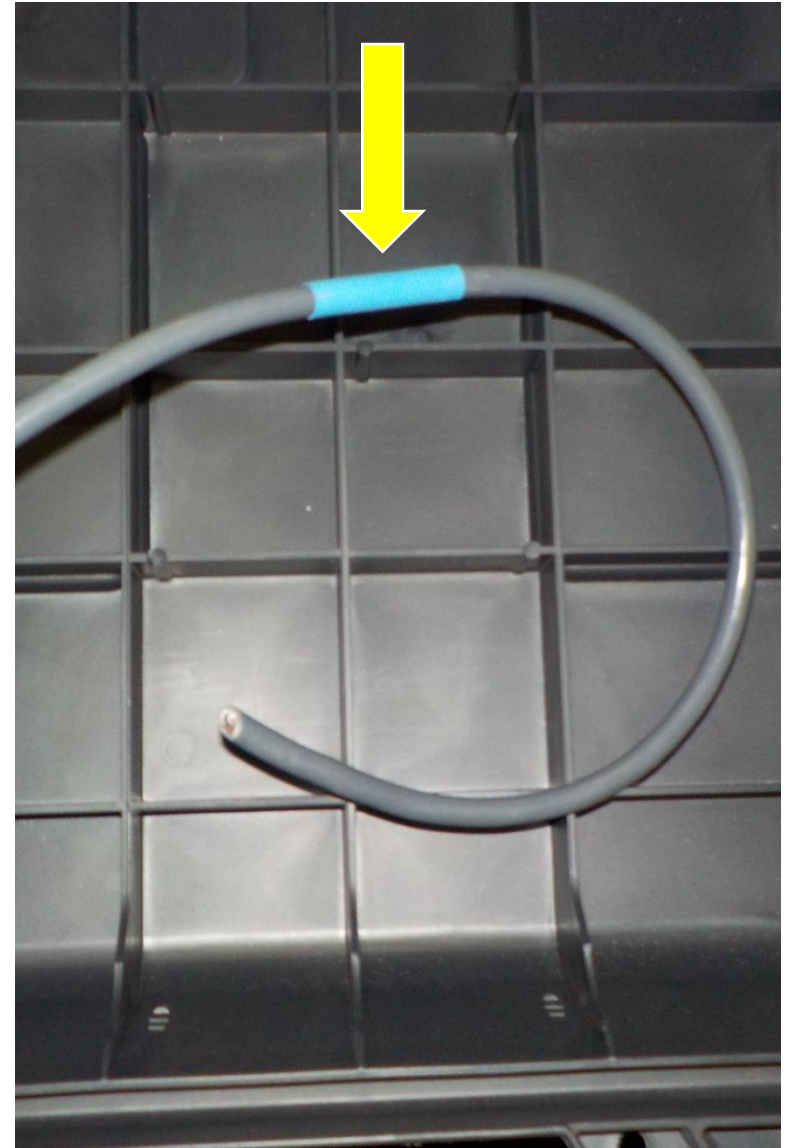


## AUXILIARY CONTROL CIRCUIT

The Blue cable is to be used to control the auxiliary circuit on the excavator. Due to the wide range of excavator controls, please contact your local excavator dealer for your brand of excavator. This is a 24v signal and white is positive and black is negative. If your system is negatively switched, you will need a relay in-line for our auxiliary control to control your system. Please refer to the next slide for an example of this connection.

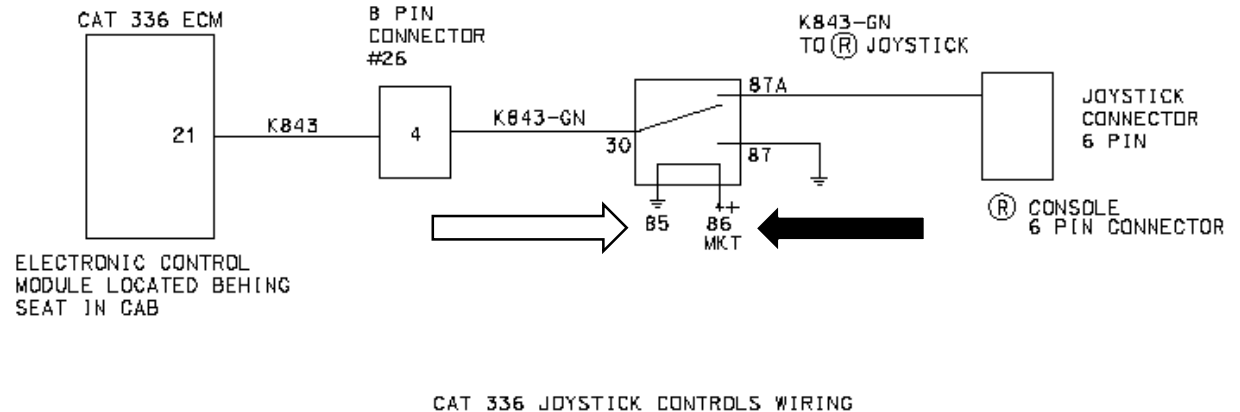
### **NOTICE**

If you have any questions please contact your local MKT representative.



# THIS IS AN EXAMPLE OF HOW TO PUT A RELAY IN LINE TO CONTROL A NEGATIVELY SWITCHED CIRCUIT ON A CATERPILLAR 336F

The Blue Auxiliary control cord from the MKT junction box is connected to the relay with black wire to the negative terminal #85 and the white wire to the positive terminal #86



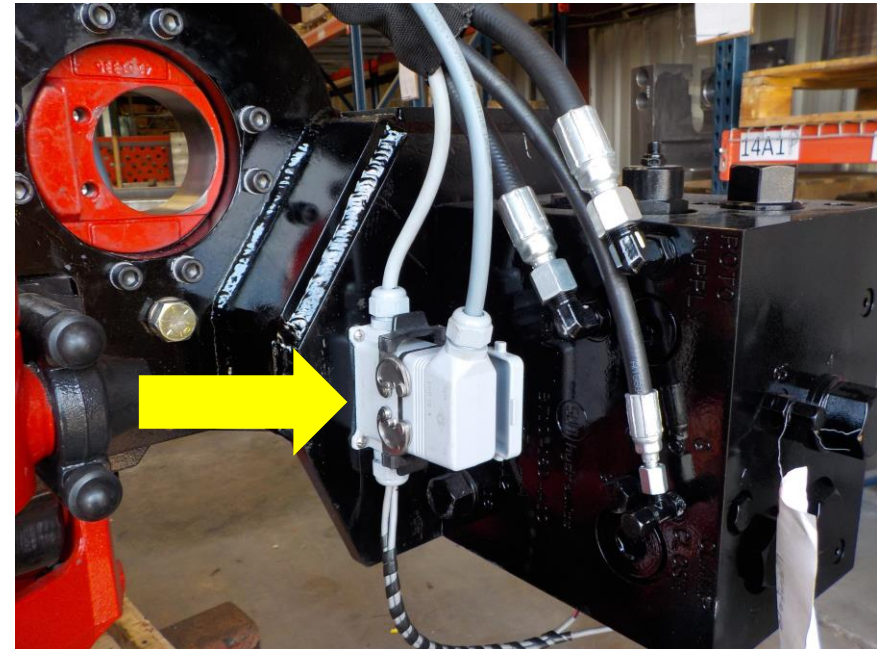


# ROTOTILT BOOM CABLE

10 Pin Boom Cable

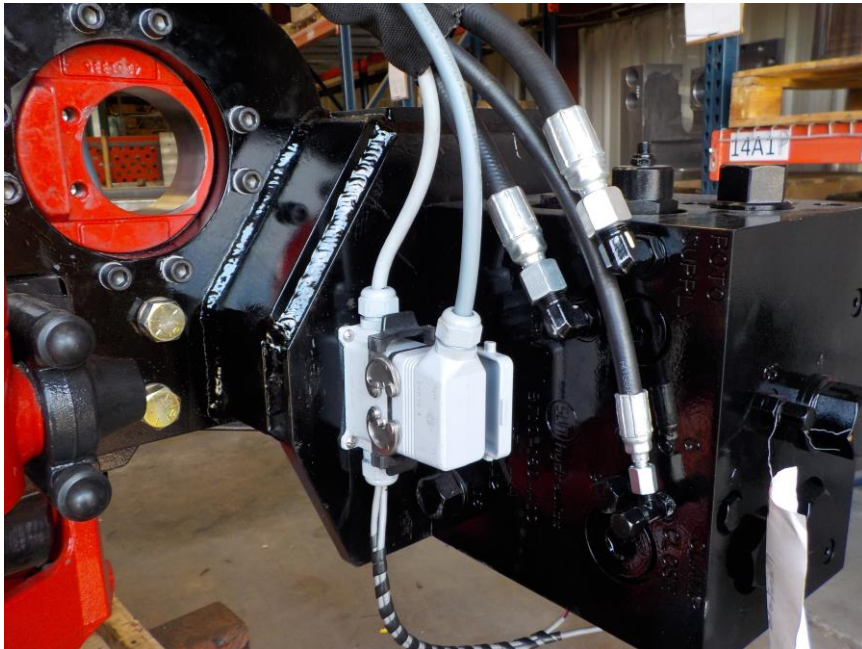


Connect Boom Cable to Rototilt Spider Cable

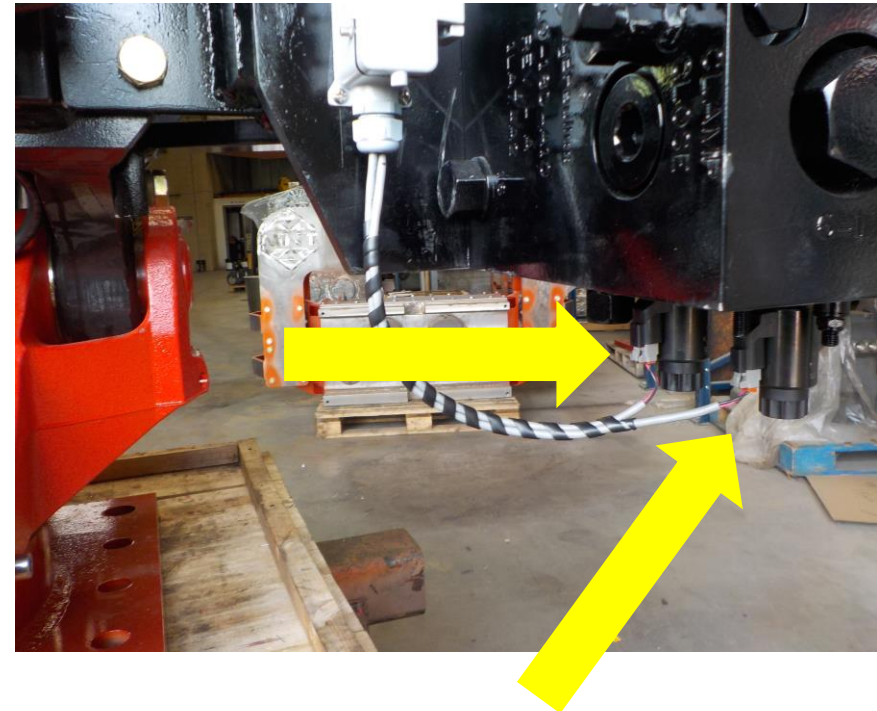


# #11/12 AND #13 SOLENOIDS

The two solenoids #11/12 and #13 Stay connected at all times



These are Deutsch plugs





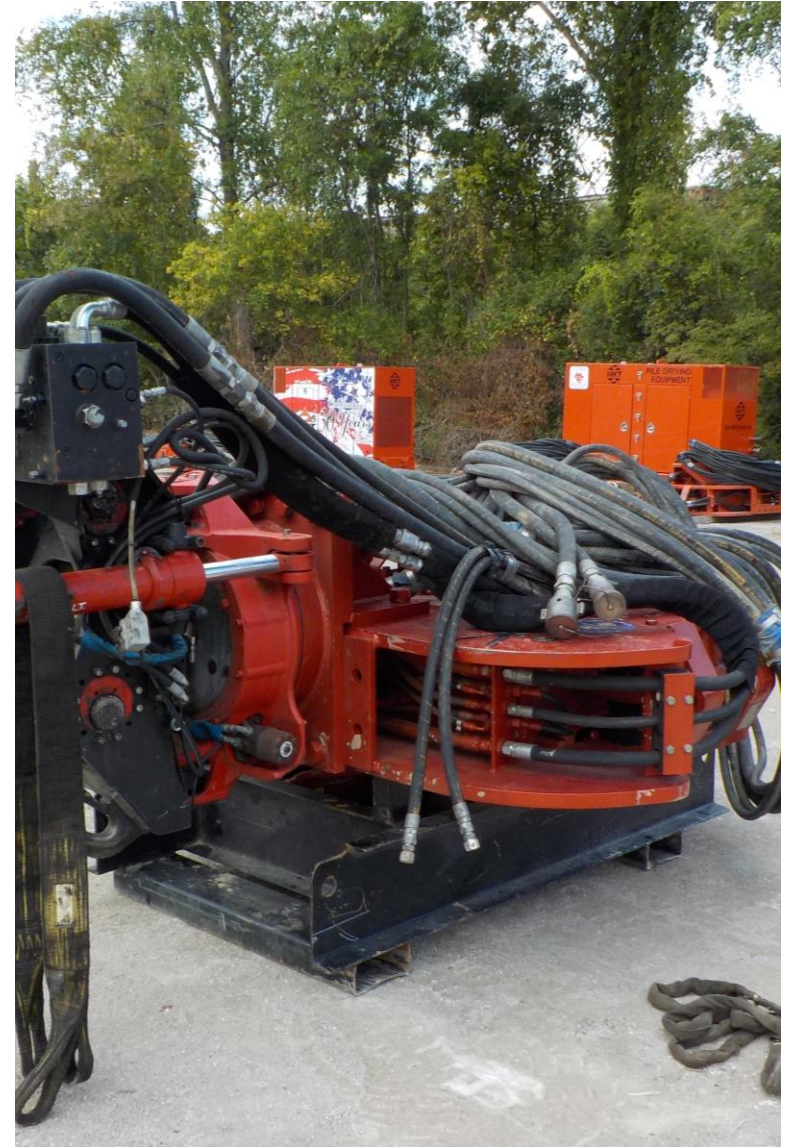
# UNROLLING THE HOSE BUNDLE

The V-5esc comes with a 100 ft. hydraulic hose bundle for use with the MKT HP-185t3 Power Unit. When unrolling the hose bundle make sure you use a strap rated for the hose bundle's rated capacity full of oil (830 LBS.).

While you are unrolling the hose bundle and laying it out flat across the ground take care not to kink the hoses or allow loops to form in the hose bundle. The large 1 ¼ inch hose has a bend radius of 16 1/2 inches

## **NOTICE**

Do not use chains or wire rope to handle the hose bundle. Chains or wire rope can and will damage the hose bundle.





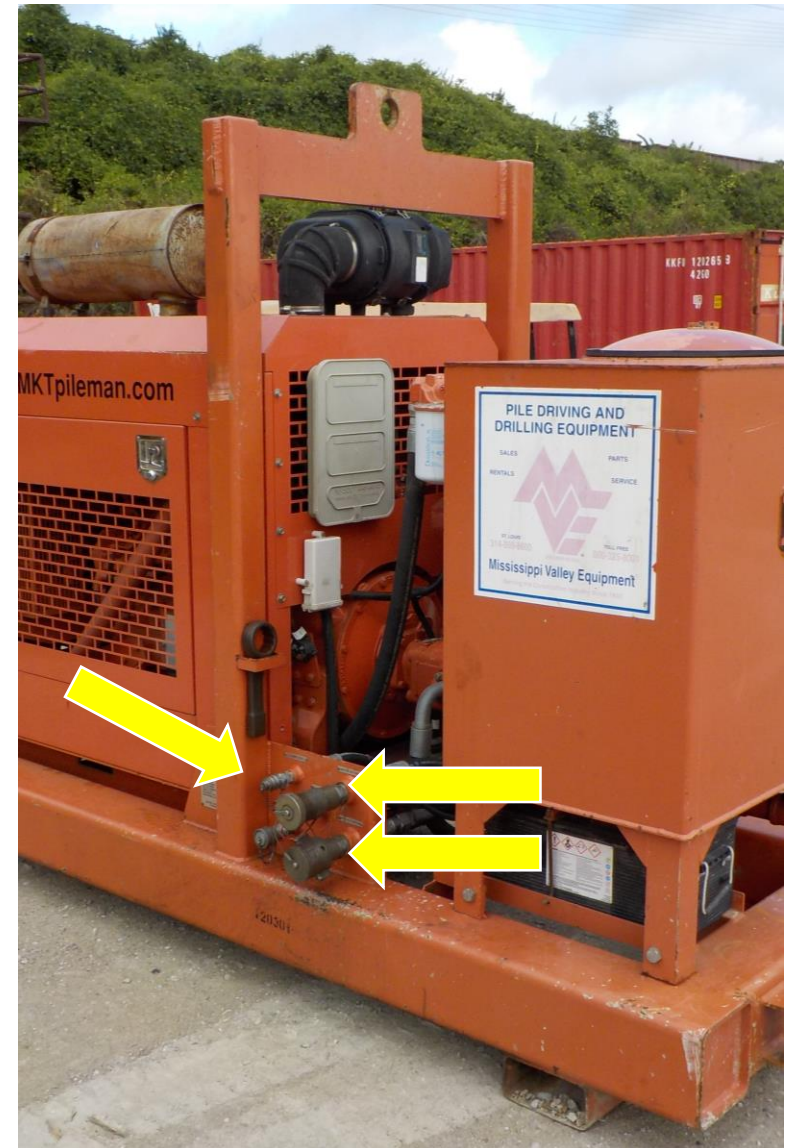
# HYDRAULIC CONNECTIONS

Once the hose bundle has been unrolled you can proceed with making the hydraulic connections as follows.

- Connect the Pressure to motor Quick Disconnect on the power unit to the corresponding Quick Disconnect on the hose bundle.
- Connect the Motor Return Quick Disconnect on the power unit to the corresponding Quick Disconnect on the hose bundle.
- Connect the Case drain line Quick Disconnect on the power unit to the corresponding Quick Disconnect on the hose bundle.

## **NOTICE**

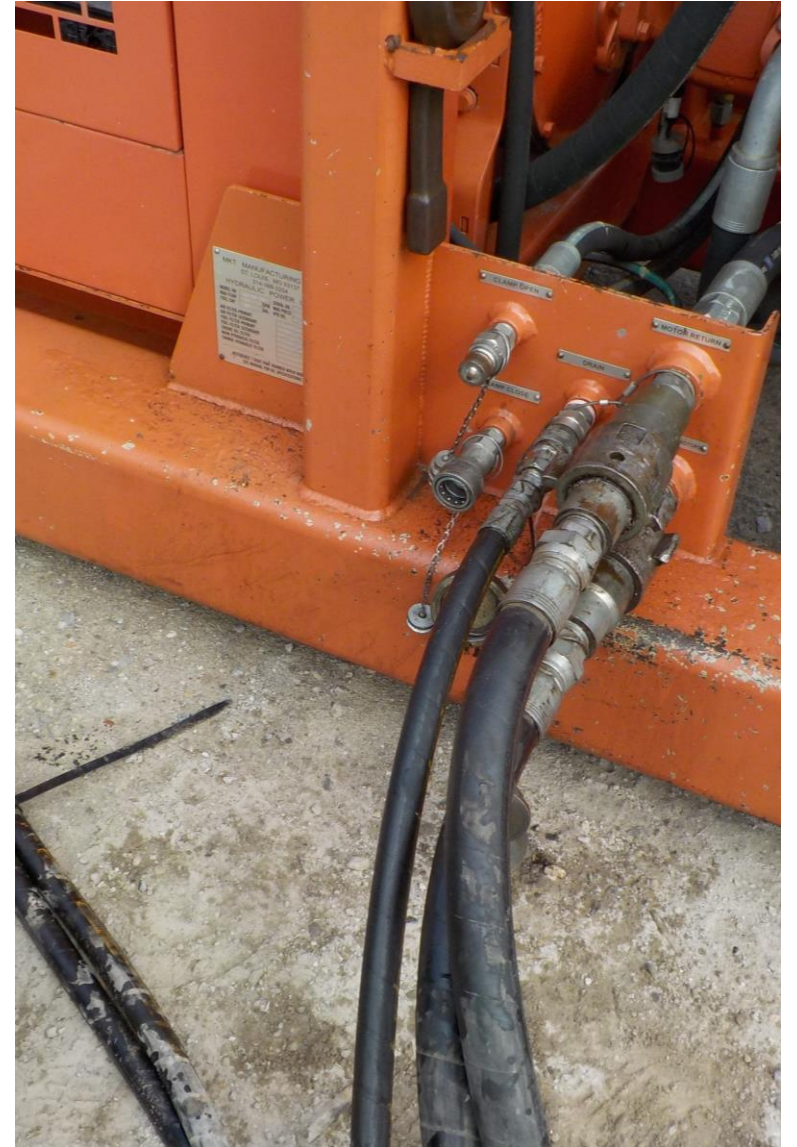
The two clamp circuit hoses on the hose bundle are not used in this application.



# HYDRAULIC CONNECTIONS

Your hydraulic connections should look like the picture to the right.

- **NOTICE** Failure to connect the Drain line to the hydraulic reservoir will cause damage to the internal components of the manifold and cause the vibratory motor to have a seal failure.





# HOSE BUNDLE ROUTING

When routing the hose bundle you will need to use rigging with a rated capacity sufficient enough to support the hose bundle.

Leave a loop in the hoses to allow the hammer to be curled under or curled out.

## **NOTICE**

Without enough slack in the hose bundle loop damage can and will occur to the Manifold Block or the hose bundle.





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# HP-185T3 POWER UNIT

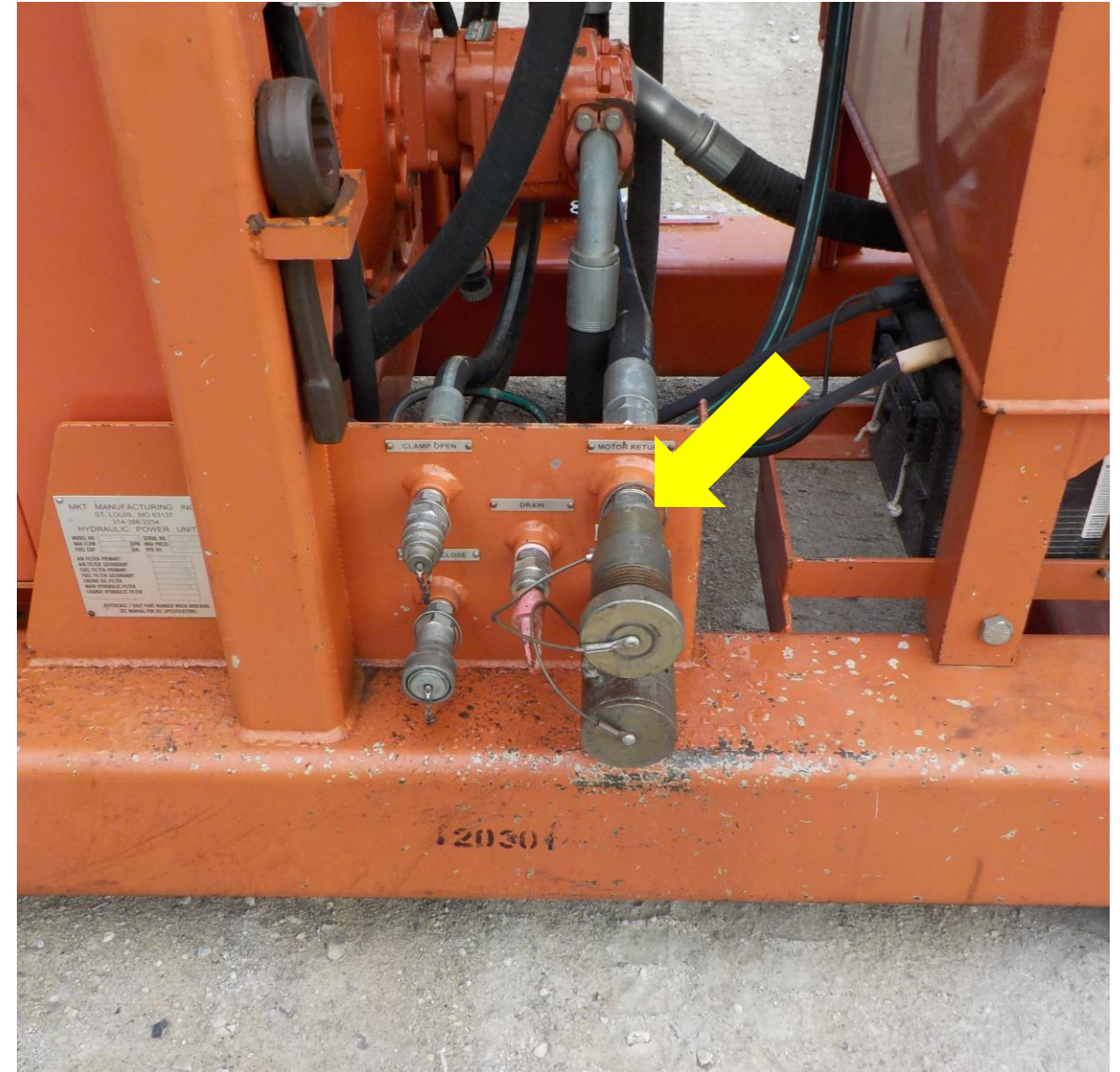
Place the power unit on flat level ground. Make sure that the MKT V-5Esc Vibratory hammer will reach where the pile is being driven with 100 ft. of hose bundle.





# DOOR KEYS

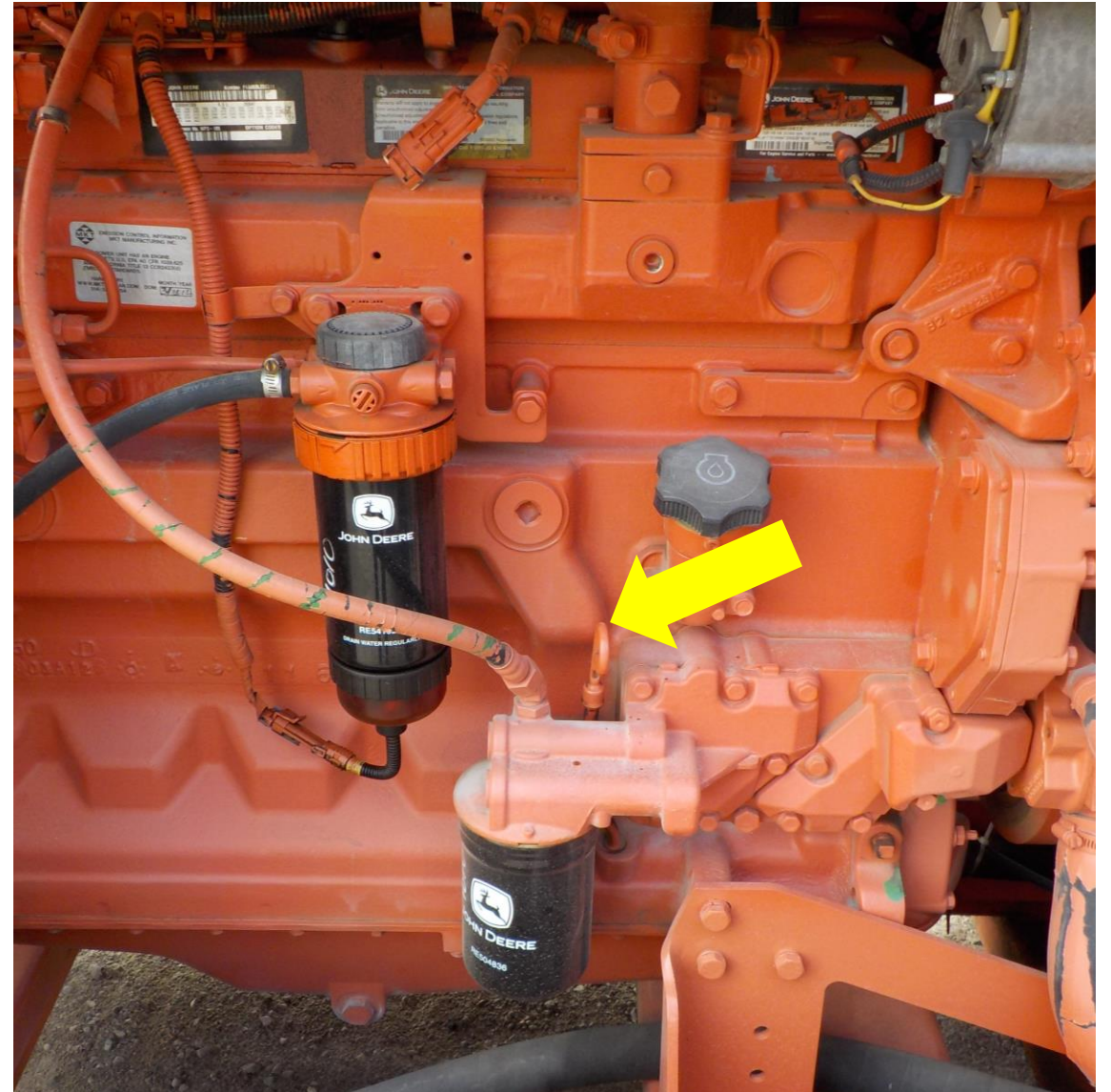
All power units are locked before transport. Keys to unlock the doors can be found wired to the Quick Disconnects.





# START UP PROCEDURES

- Check all fluid levels in the engine
- If the engine oil is low, fill with Shell Rotella T triple Protection 15w-40



# START UP PROCEDURES

- Check all fluid levels in the engine
- Make sure to check the Engine coolant to ensure the mixture is correct for your location.
- If the engine Coolant is low, fill with John Deere Cool-Gard II Engine Coolant/Antifreeze.



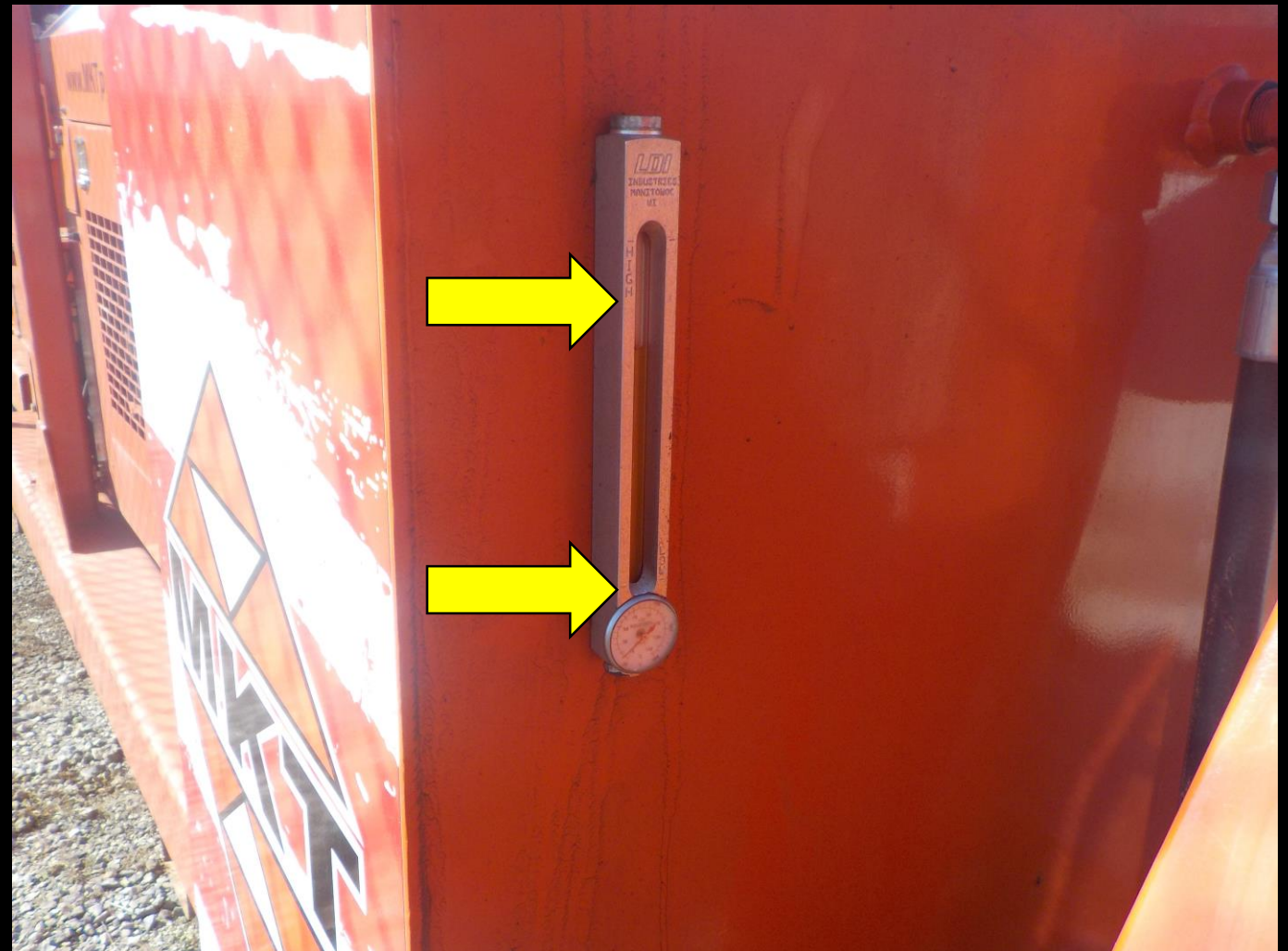


# STARTUP PROCEDURES

- Check the level of the Hydraulic fluid on the gauge on the side of the tank.
- If the hydraulic fluid is low, fill the tank with Phillips 66 Ecoterra ISO 32.

## **NOTICE**

If the hydraulic oil is below the site glass do not start the diesel engine. Fill hydraulic tank with recommended hydraulic fluid before start up of diesel engine. Severe damage to the main hydraulic pump, and contamination of the entire hydraulic system could occur.





# STARTUP PROCEDURES

- Once you have the hose bundle laid out on the ground you can begin to make the connection to the power unit.
- Clean all Quick Disconnects with diesel fuel and wipe clean before making each connection.

## **NOTICE**

Do not use any type of harsh chemical to clean Quick Disconnect. An example is brake cleaner or paint thinner, these types of cleaner will damage the o'ring in the Quick Disconnect that creates the seal and prevents it from leaking.



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 **DANGER** CLEAR THE AREA

Verify all personnel are clear of the vibratory hammer before proceeding to the next step.





**DANGER**

WHEN STARTING THE  
DIESEL ENGINE DO NOT USE  
ETHER.

The engine is equipped with an electric heater starting aid and the use of ether may cause severe injury.

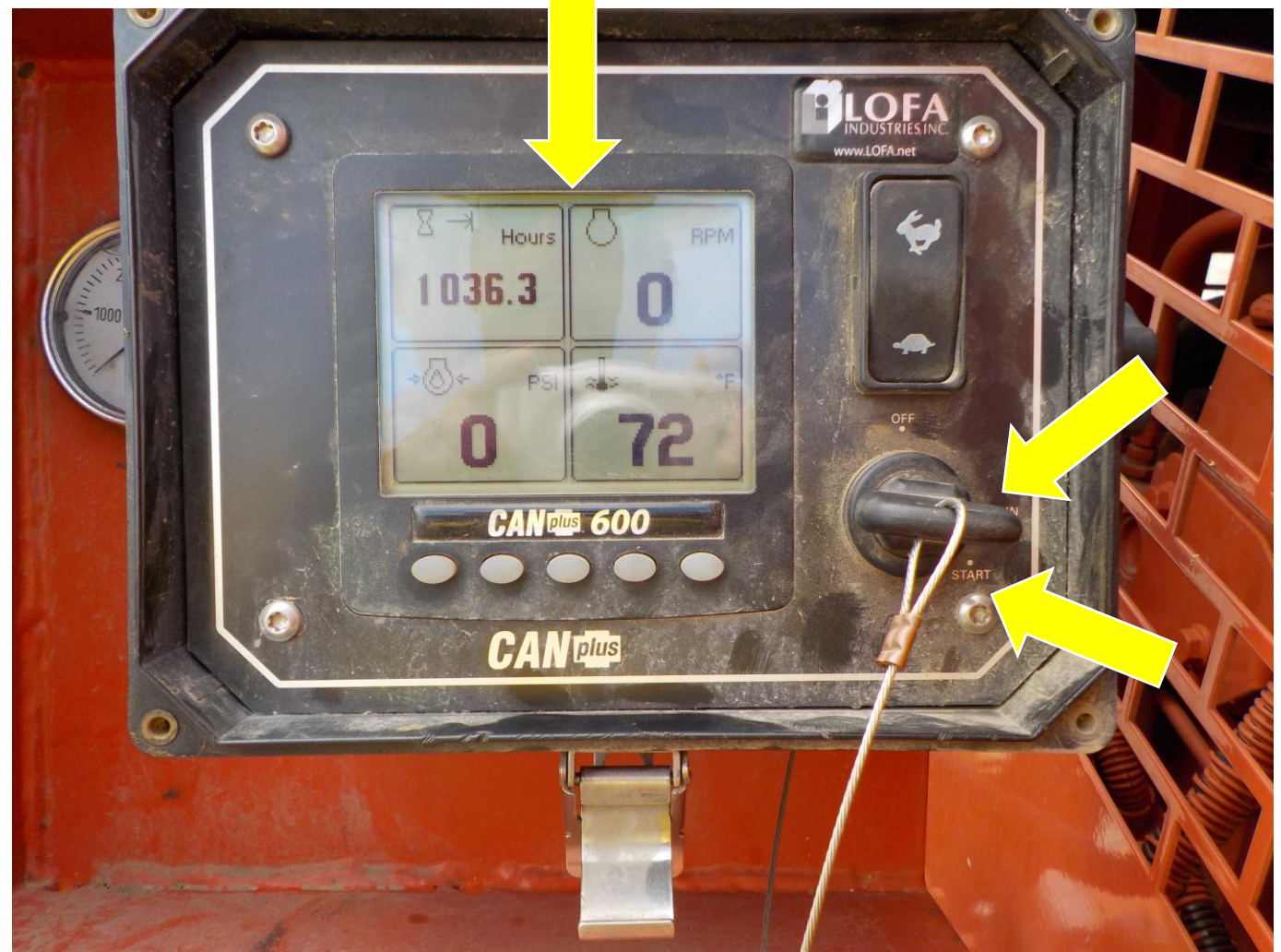


# STARTUP PROCEDURES

- To start the diesel engine turn the key to the on position.
- Wait until the operating screen is displayed before starting the engine.
- Once the operating screen is displayed turn the key to the start position and hold until the engine starts.

## **NOTICE**

If engine fails to start in 10 seconds turn the Key to the off position and repeat the above steps.

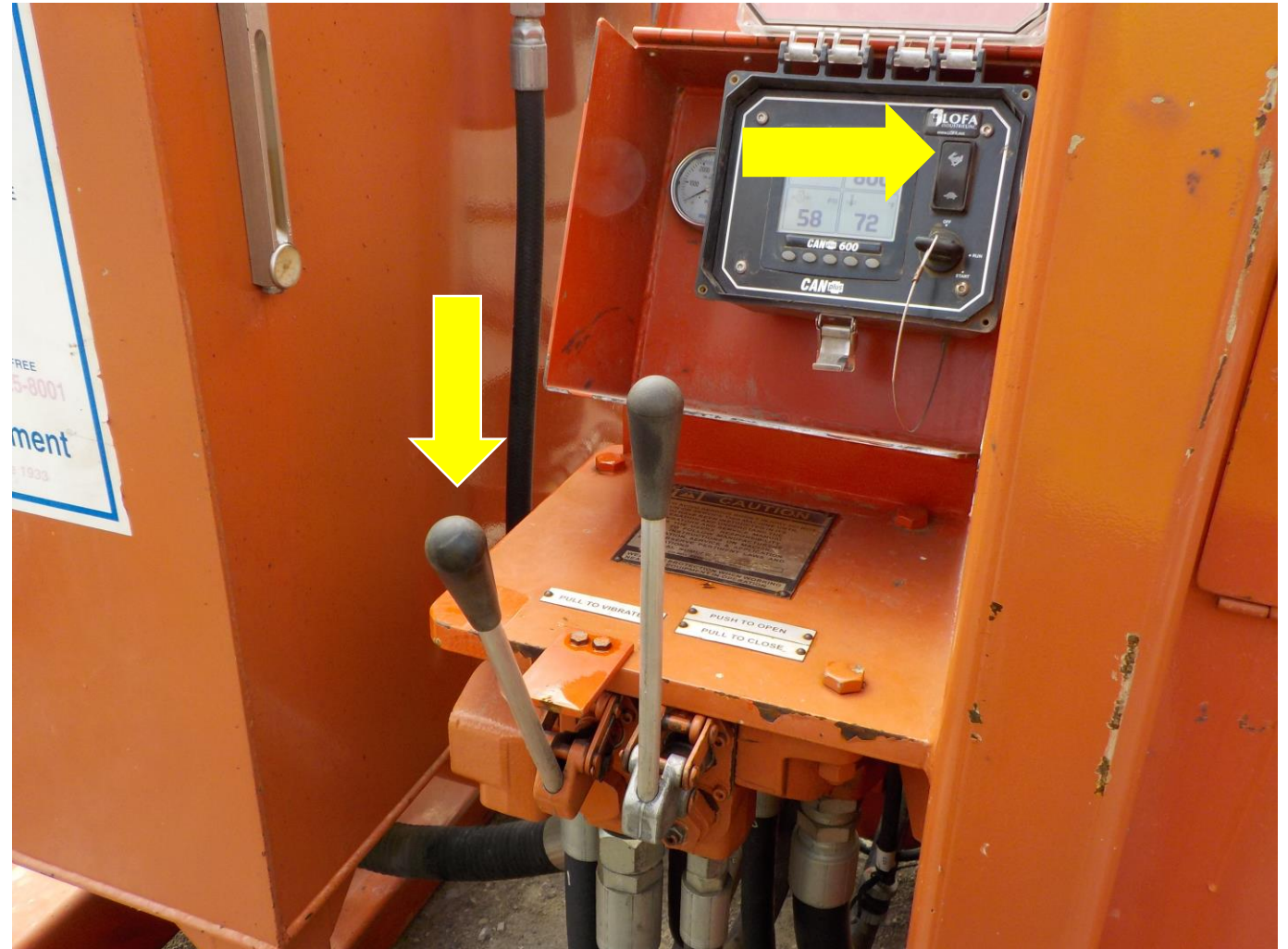


# STARTUP PROCEDURES

- With the engine running, pull the Vibrate lever all the way back to the detent position .
- You now have hydraulic oil flowing out to the manifold on the hammer.
- Make sure you have the engine at maximum RPM by pushing the throttle button to the rabbit.

## **NOTICE**

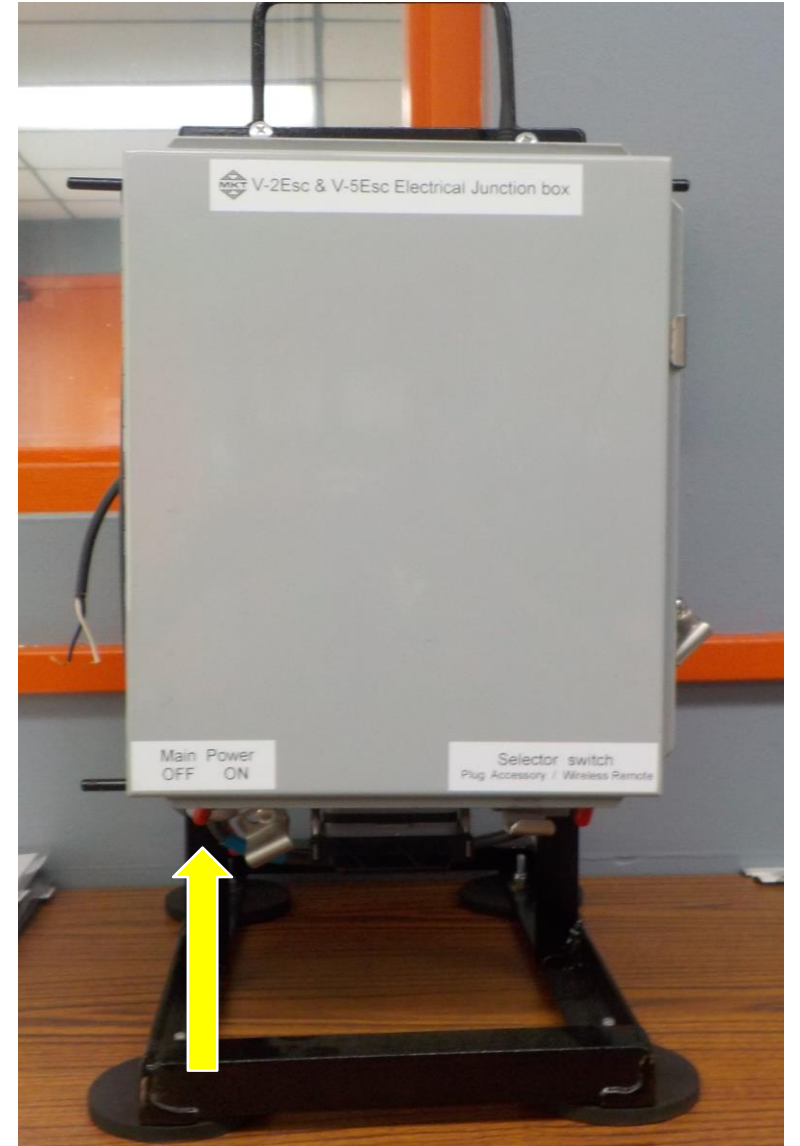
If engine is not at maximum RPM damage could occur to the Vibratory hammer on start up.





## POWERING UP THE CONTROLS

With the excavator running turn the power switch on the junction box to the ON position.

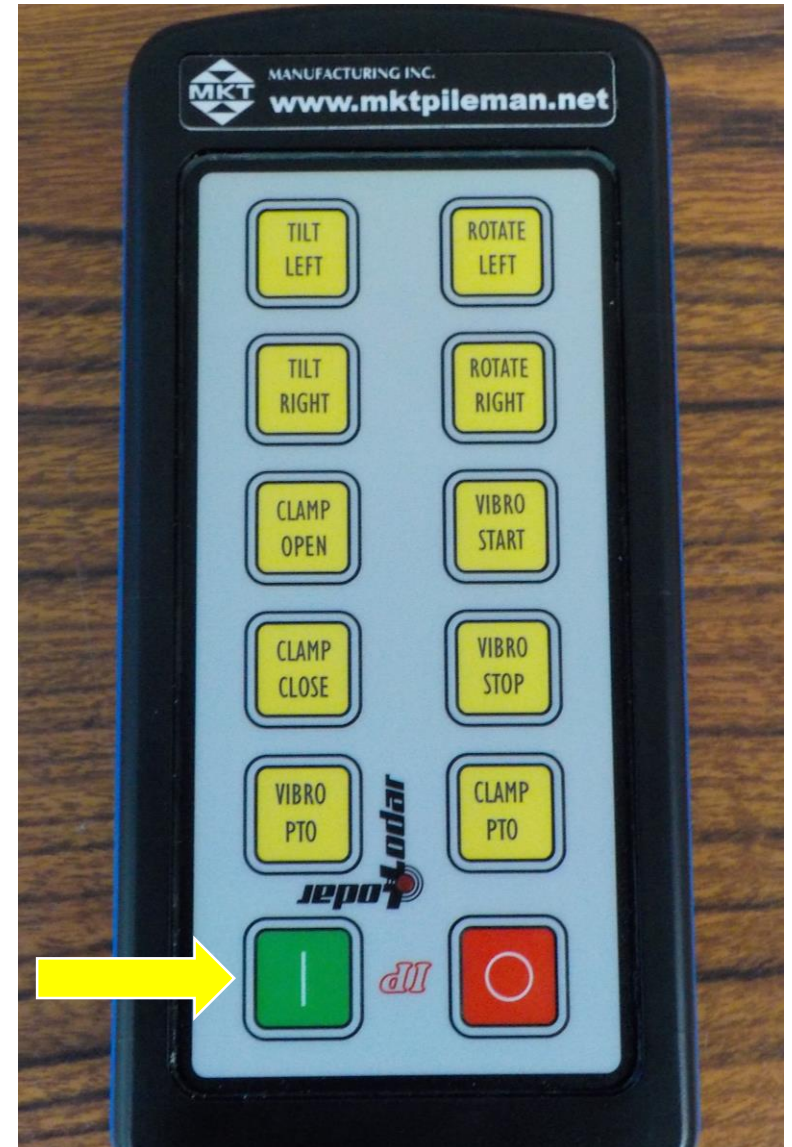


# POWERING UP THE REMOTE

Once you have the junction box powered up you can push the on button (Green) to the remote.

The power to the junction box has to be turned on before you can turn on the remote. *If you turn the remote on first the system will not recognize the remote.*

Both the transmitter and the receiver will “time out” after 30 minutes of inactivity. *If this happens you will need to go through the power up sequence again.*



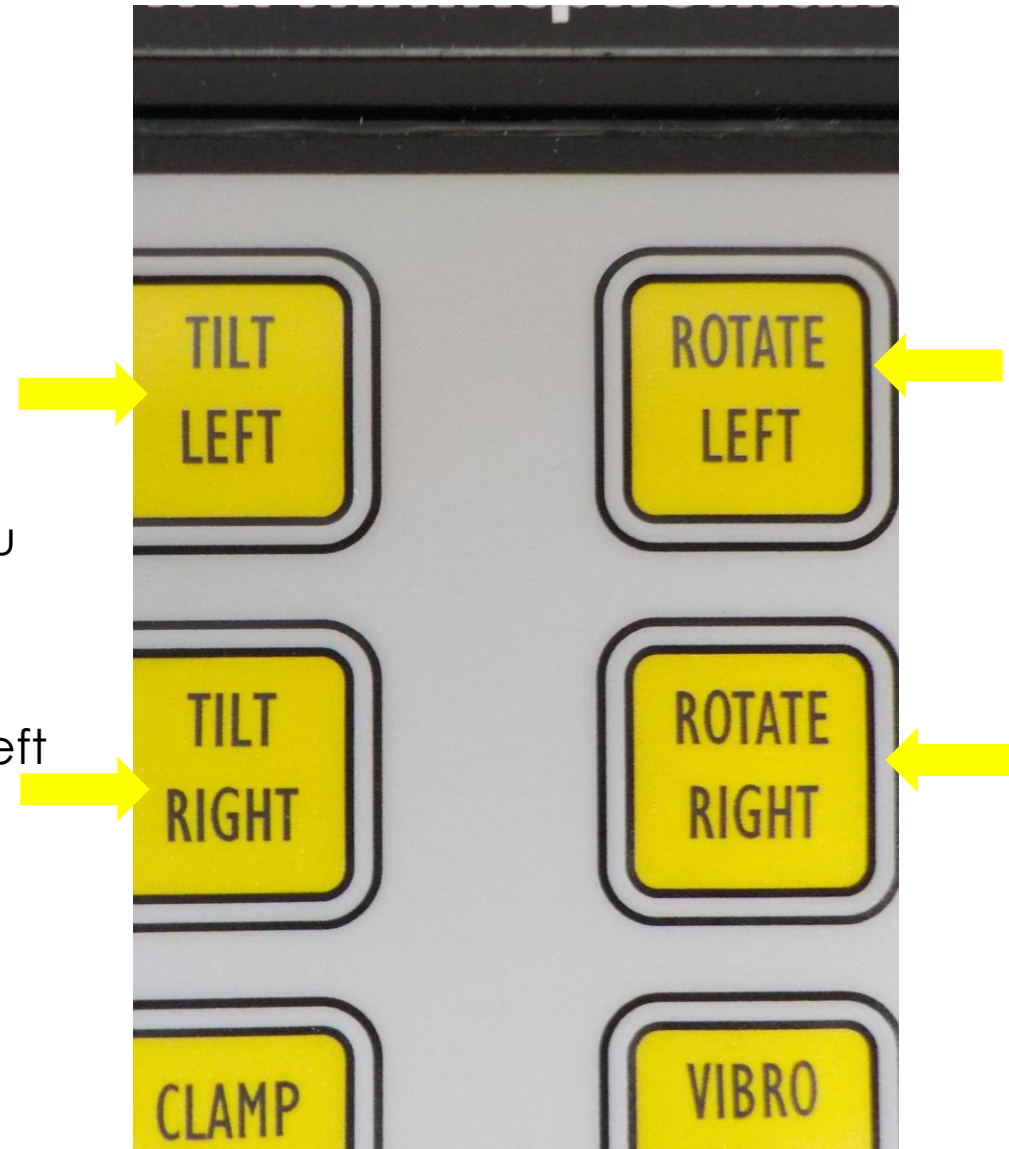


# OPERATION OF UNIT

Once you have followed the proper power up process you are now ready to start controlling the unit.

TILT function is controlled by pushing the top button to tilt left and the bottom button to tilt right.

Rotate function is controlled by pushing the top button to rotate left and the bottom button to rotate right.

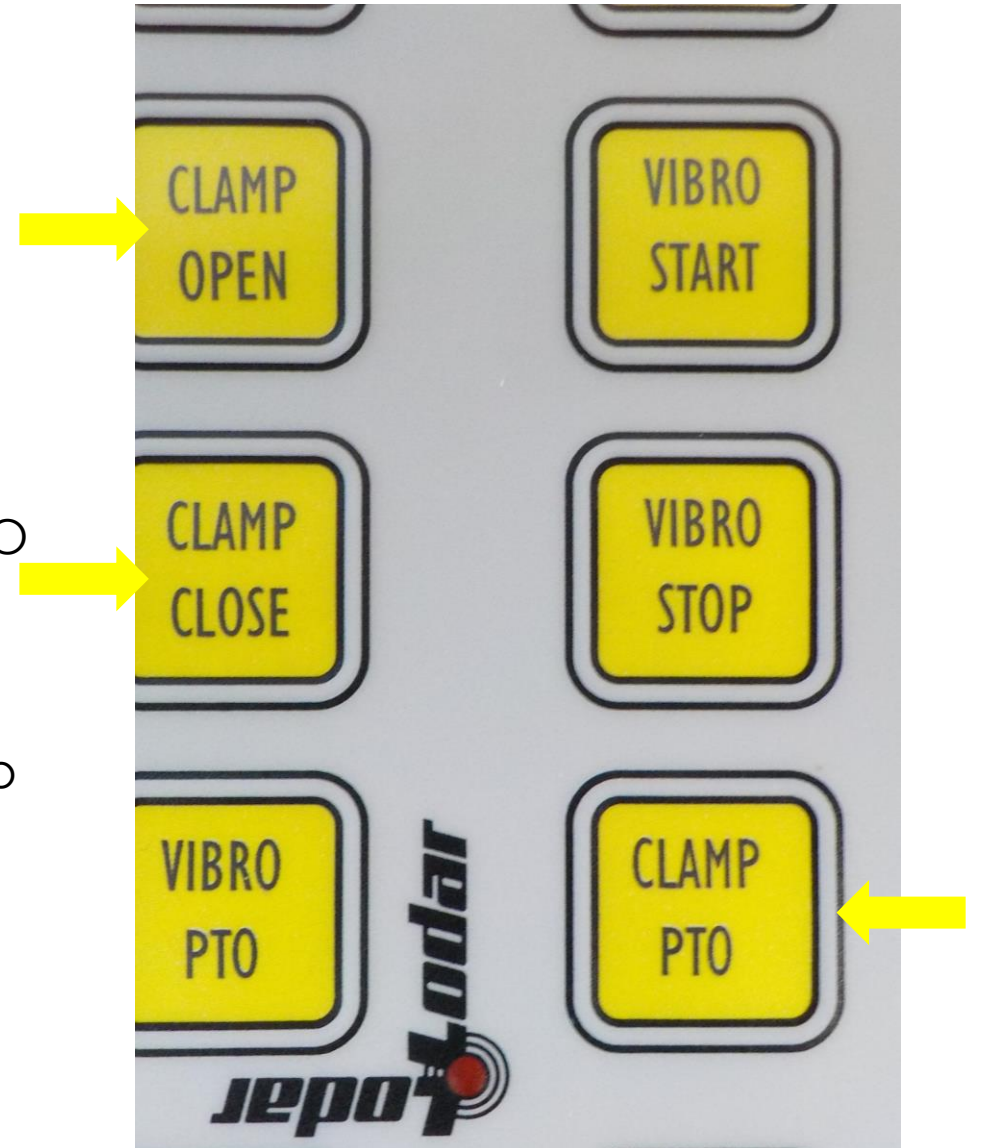


# OPERATION OF UNIT

Clamp function is controlled by first holding the Clamp PTO button down that is located to the bottom right of the clamp function switches.

Once you have the PTO switch held down you can now operate the clamp by pushing the clamp open function to open the clamps and the clamp close function button to close the clamp.

The Clamp PTO has to be held down to use either clamp button.



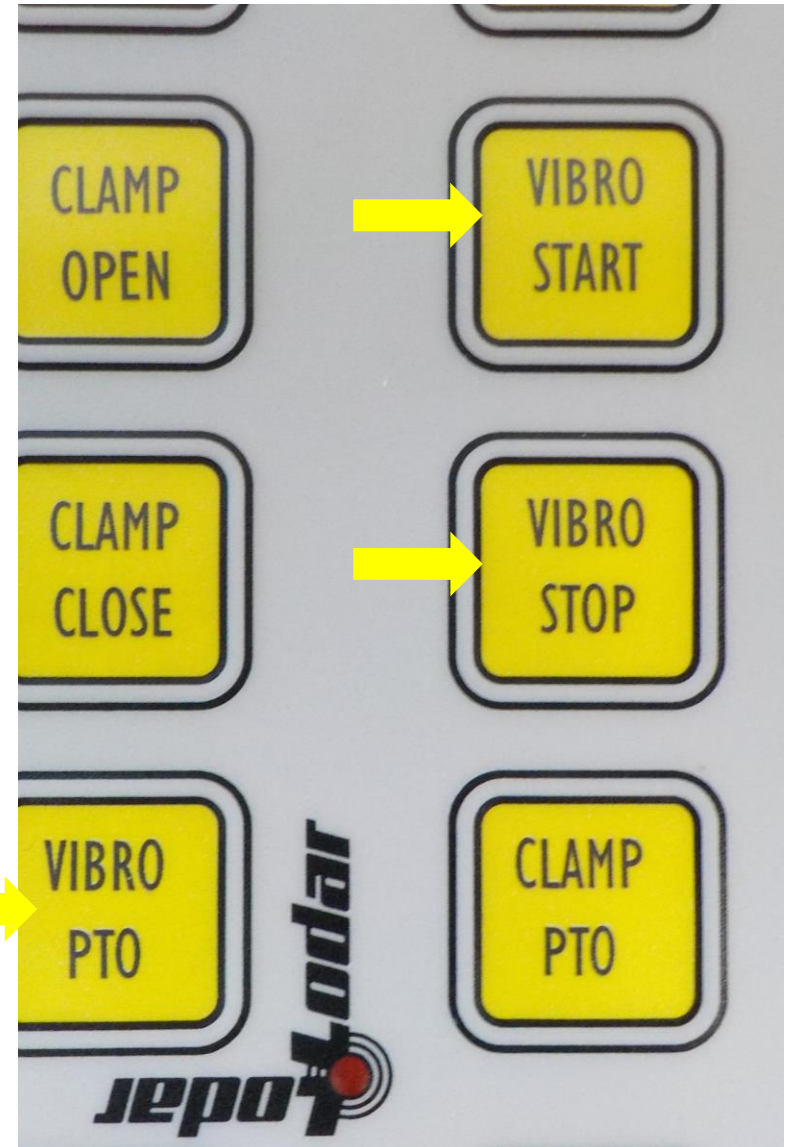


# OPERATION OF UNIT

The vibratory function is controlled by first holding the Vibro PTO button down that is located to the bottom left of the vibro function switches.

While you have the Vibro PTO held down you will need to push the Vibro Start switch to Start the vibration of the hammer. The vibratory will continue to vibrate with out holding the buttons until you push the Vibro Stop function button.

While turning the vibratory hammer off you will NOT need to push the PTO button



# BLEEDING THE CLAMP CIRCUIT

## NOTICE

When ever the hydraulic lines of the MKT V-5Esc system have been reconnected and or when hydraulic repairs have been made, the clamp cylinders must be bled of entrained air.

This procedure must be done with the hammer hanging vertical.

## ⚠ WARNING

Contents of hydraulic components may be under pressure extreme care should be taken when opening the components.

- Following the instructions in the previous slide to operate the clamp functions. Close the jaws and hold the clamp close function while you open the bleeder on the back of the bottom clamp . **Do not back vent screw all the way out!**
- Allow oil to vent approximately 30 seconds or until an air free stream of oil comes from each vent screw.





# BLEEDING THE CLAMP CIRCUIT

## NOTICE

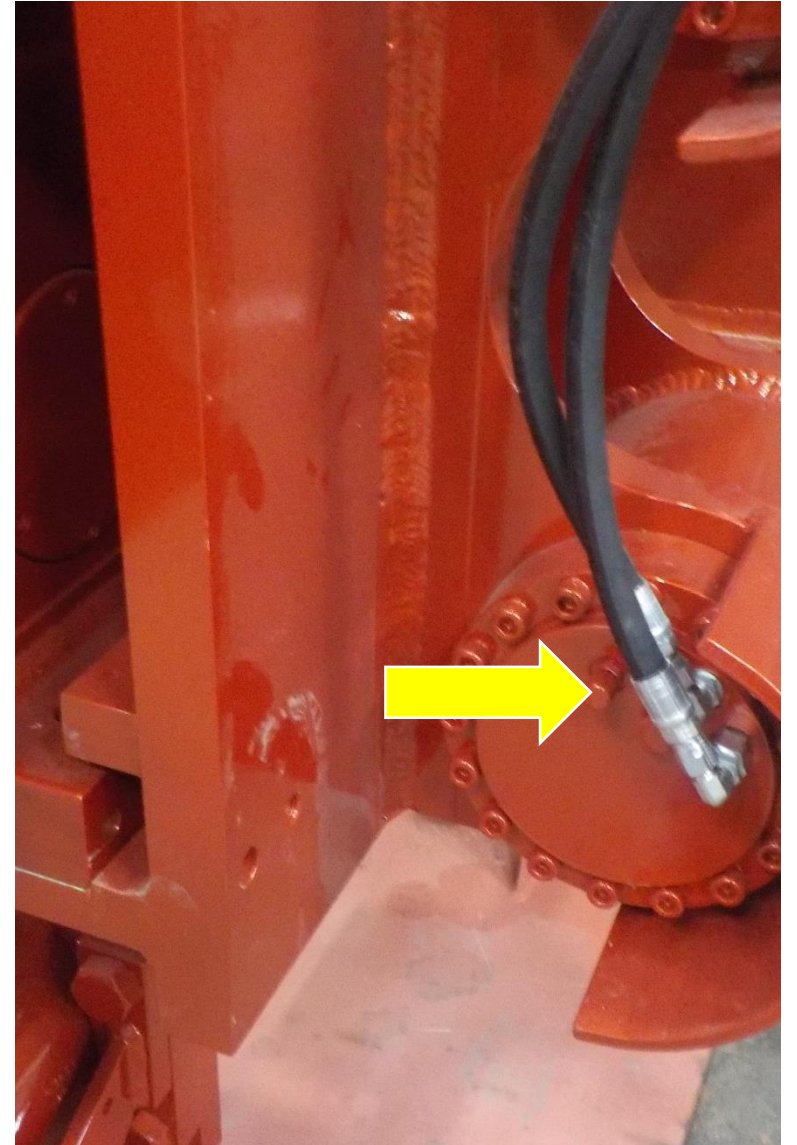
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- Allow oil to vent approximately 30 seconds or until an air free stream of oil comes from each vent screw.



# BLEEDING THE CLAMP CIRCUIT

## NOTICE

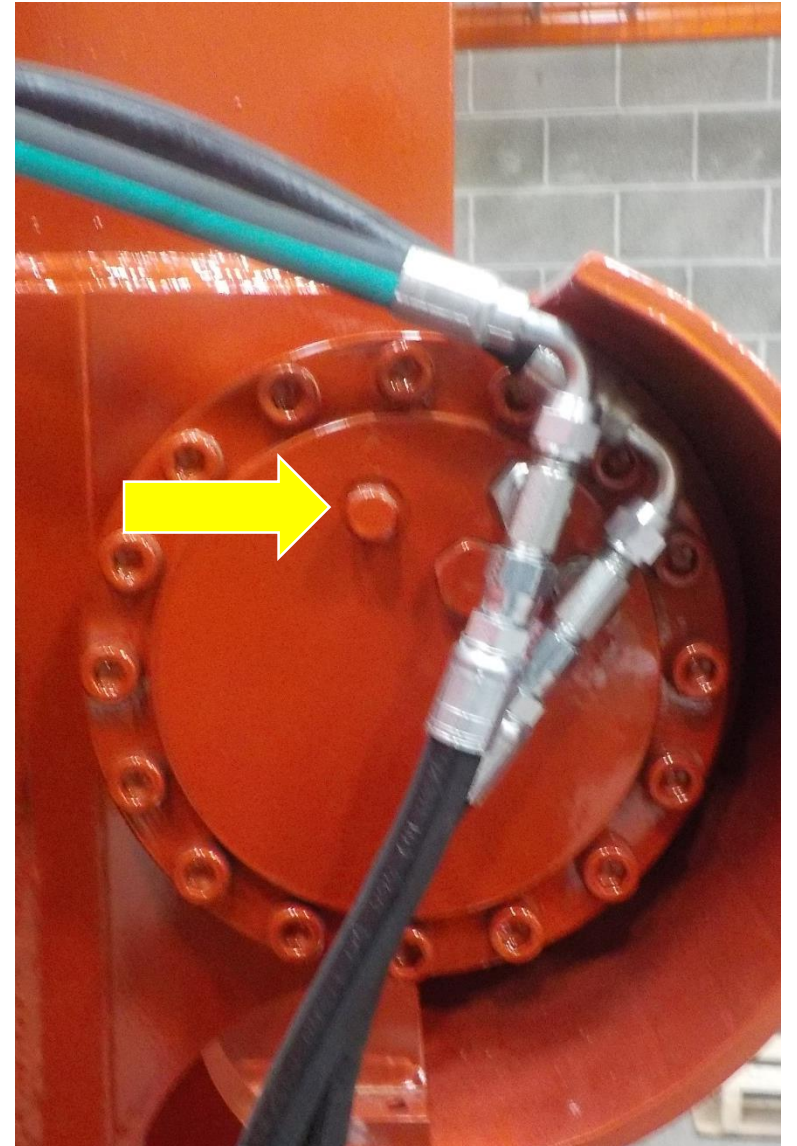
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## ⚠ WARNING

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- Following the instructions in the previous slide to operate the clamp functions. Close the jaws and hold the clamp close function while you open the bleeder on the back of the top side clamp . **Do not back vent cap all the way out!**
- Allow oil to vent approximately 30 seconds or until an air free stream of oil comes from each vent screw.





# SETTING THE CYCLES OF THE MKT V-5Esc VIBRATORY HAMMER

You will need a photo-tachometer like the one in the photo below



Hold the laser or light beam from the photo-Tachometer on the bottom edge of the exciter case while the vibratory hammer is vibrating



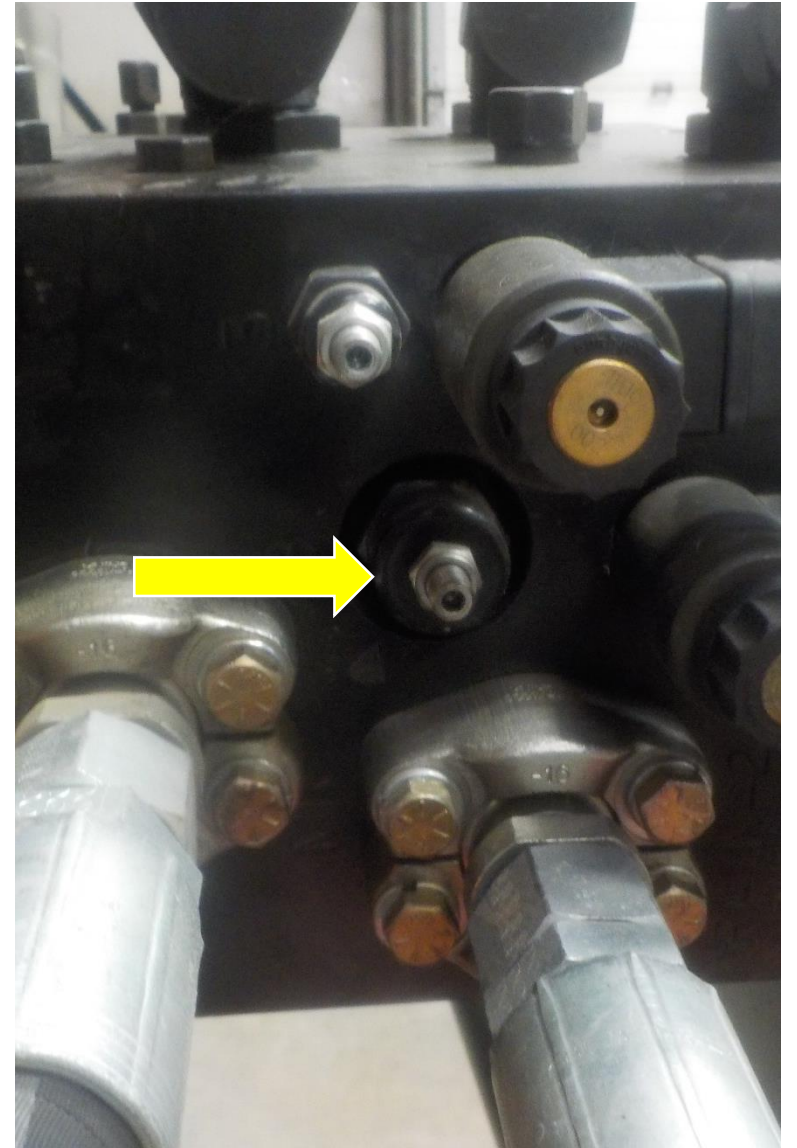
# ADJUSTING CYCLES



## WARNING

To make following adjustments safely you will need to adjust the flow control cartridge on the manifold labeled #8 with the MKT V-5Esc not vibrating.

- Turning the set screw in will slow down the vibratory hammer.
- Turning the set screw out will speed up the vibratory hammer.
- When you have made the necessary adjustments, start the vibratory hammer and check the cycles as explained in the previous slide.
- Repeat the above steps until you obtain a speed between 1625 to 1675 cycles.





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# INSTALLATION IS COMPLETE

You are now ready to put the MKT V-5Esc vibratory hammer to work. Please click the link to view an animation of the MKT V-8Esc in action <https://www.youtube.com/watch?v=nt2KZI4YErk>

. If you have any questions please click on [www.mktpileman.com](http://www.mktpileman.com) for your nearest MKT representative