

# **NIECE**

***Updated operational manual***



***General articulated 2.0***

**NIECE**

# **NIECE**

## **Operation Manual**

**Tank number:** \_\_\_\_\_

**DO NOT** allow anyone to operate the equipment without first reading this document.

### **CONTACT INFORMATION**

620-223-0340  
Office

800-252-6618 Toll Free

[WWW.NIECEEQUIPMENT.COM](http://WWW.NIECEEQUIPMENT.COM)

# NIECE

**DO NOT** mount or dismount the unit while unit is moving.

**DO NOT** overfill tank.

**DO NOT** point turret nozzle at cab or side mirrors of truck.

**DO NOT** inspect, adjust, or repair a drive line while the truck is running.

**ALWAYS** wear appropriate PPE (personal protective equipment) while operating and servicing truck or tank.

**ALWAYS** follow the recommended service intervals.

**ALWAYS** follow the truck manufacturers Recommended maintenance procedures.

**ALWAYS** keep unneeded personnel away from equipment.

**ALWAYS** check for hydraulic leaks using a piece of cardboard or other like material.

Do not allow turret to be full of water when shut down,  
Turret may freeze and cause damage upon movement.

**ALWAYS** check components for pressure before servicing. Contents under pressure can cause severe personal injury or death.

**ALWAYS** allow for movement of articulation when routing hoses, lines, and wires.

**ALWAYS** park the unit on safe and level ground before servicing the unit.

**ALWAYS** make sure the access system is free from anything that may cause a slipping hazard.

**ALWAYS** properly support overhead objects when servicing truck, tank, and tank components.

**DO NOT** use hydraulic hoses as handles to mount the machine.

**DO NOT** spray while in reverse.

**DO NOT** touch hot or moving parts when attempting to service the tank or truck.

**DO NOT** inspect, adjust, or repair a PTO while the truck is running or system is engaged.

**ALWAYS** be familiar of the vehicle dimensions with tank and any accessories added.

**ALWAYS** mount and dismount the tank while facing toward the tank.

**ALWAYS** use genuine Niece replacement parts when servicing tank and tank components.

**ALWAYS** check the components of the tank daily.

**ALWAYS** use proper lifting equipment of required rating to perform operation.

**ALWAYS disconnect truck battery terminals before welding/servicing.**

**ALWAYS** collect fluids into appropriate containers and dispose of in an environmentally safe way.

**ALWAYS** ensure the oil bearing bracket is filled to proper specifications of the correct oil (10w-30 non synthetic).

**ALWAYS** chock wheels before servicing the unit.

**ALWAYS** follow the cold weather procedures, drain all valves, piping and pump. Antifreeze may need to be added under some conditions

**ALWAYS** have at least one spray valve open or hose reel nozzle open BEFORE turning the pump ON or OFF. VFD is NOT a spray valve.

## Safety

**Safety is your responsibility at all times.**


It is YOUR responsibility to read, understand, and follow all directions.


Please be aware that this manual cannot cover all possible hazards relating to the operation, service, or lack of service of the tank and tank components.

This manual has been prepared using the latest information at the time of publication. If changes to the unit have been made since then, differences may exist between the content of this manual and the actual unit.

**Graphics, pictures, line drawings, and other visual representations in this manual are used to show basic operating and service procedures. These may not represent the actual unit exactly in detail.**

Niece reserves the right to change the information contained in this manual at any time and without notice.

 **WARNING!** Designates a possible hazard that can cause severe personal injury or death and property damage.

 **CAUTION!** Designates a possible hazard that can cause personal injury and property damage.

Note: Designates an action that makes service easier.

## **DO NOT attempt to adjust truck hydraulic settings!**

**DO NOT** allow anyone to operate the equipment without first reading this document.

**DO NOT** use truck, tank, or tank components for uses other than its intended design.

**DO NOT** use tank to transport water intended for human or animal consumption. Tank is for **NON POTABLE** water only.

**DO NOT** modify the tank without prior consent from Niece.

**DO NOT** allow anyone to operate the equipment without the proper training and experience necessary to safely perform the tasks needed.

**DO NOT** operate the unit until all unneeded personnel are away from the unit.

**DO NOT** operate spray heads or turret until all personnel are a safe distance away from truck.

**DO NOT** allow unauthorized personnel to operate the equipment.



## Operation and Maintenance Schedule

Item	Interval		
	Daily	Weekly	3 Months
Check hoses for leaks, wear, crimps, damage.	X		
Check bearing bracket.	X		
Check bimba cylinders for leaks.	X		
Check nuts and bolts for loosening, tighten if needed.	X		
Check brake lights and turn signals.	X		
Check hydraulic fluid on truck. Keep oil level in acceptable range.	X		
Check oil level in bearing bracket (10w-30 conventional motor oil, 1 quart capacity). <b>⚠ CAUTION! DO NOT use synthetic or synthetic blend oil.</b>		X	
Change oil.			X
Grease turret (1-2 shots per fitting). Lubriplate 1200-2 lithium grease.		X	

## Lubrication Specifications

System	Lubricants
Water Pump Bearing Bracket	1 quart 10w-30 (NON Synthetic)
Turret	Lubriplate 1200-2 lithium grease

Do not use pneumatic or electric grease gun on turret. Hand grease pump only

Failure to follow direction can result in damage/ locking of the swivel and motor damage



# Cab control basic Operations:

Standard and upgraded cab controls  
included-



# NIECE

## Startup spray after filling: STANDARD CONTROL

- Pump bypass switch: **OFF**
- Master switch: **ON**
- Turret control switch: **ON**
- Turret spray switch: **ON**
- Truck at **idle**
- Truck hoist switch: **ON**

With turret open and truck hydraulics on, any air in the system will be pushed out of the turret and prime the pump. Open a spray valve and close turret.

**Tank is ready for normal operations.**

**⚠ WARNING!** Keep turret nozzle pointed safely away from cab when in use.

## Normal operation:

- Make sure pump bypass switch is OFF.



- Start truck engine.
- Keep truck at **idle**.
- Turn **master** control switch ON.

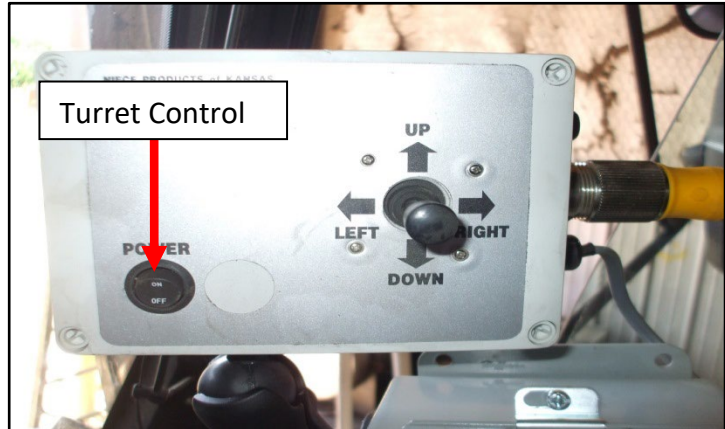


# NIECE

## STANDARD CONTROL

- Turn **turret control switch ON**.

**⚠ WARNING!** Keep turret nozzle pointed safely away from cab when in use.



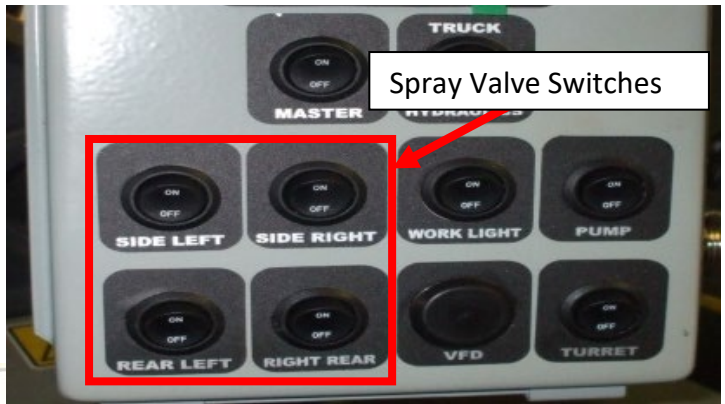
- Turn at least one spray valve switch ON.

Spray valves include:

Rear sprays (2-4)

Side sprays (2)

Front sprays (opt.)



- Turn truck **hoist switch ON**.

**⚠ CAUTION!** **DO NOT** turn truck hoist switch on without at least one spray valve switch ON (VFD is not a spray valve).

- Put truck in gear.
- Start spray operations.





# NIECE

## STANDARD CONTROL

- To "spot spray," or to stop spraying with the hydraulic pump engaged, use the pump bypass switch momentarily.

**Note:** Make sure at least **one spray valve is open** when using the pump **bypass switch**.

Pump bypass switch **ON** - stops water spraying.

Pump bypass switch **OFF** (normal position) - **water sprays**.



### To Stop Spray Operations:

- Stop truck.
- Bring truck engine to **idle**.
- Turn truck hoist switch **OFF**.

**⚠ CAUTION! DO NOT** operate pump without at least one spray valve switch ON (VFD is not a spray valve).

- Turn spray valve switches **OFF**.
- Turn turret valve switch **OFF**.
- Turn power switches **OFF**.



Spray Valve Switches

N8000

# NIECE

## Startup after filling: **UPGRADED CAB CONTROL**

- System power: **ON**
- Pump bypass: **OFF**  
(Turret away from cab)
- Turret spray switch: **ON**
- Truck at **idle**
- Truck hydraulic switch: **ON**

With turret open and truck hydraulics on, any air in the system will be pushed out of the turret and prime the pump. Open a spray valve and close turret.

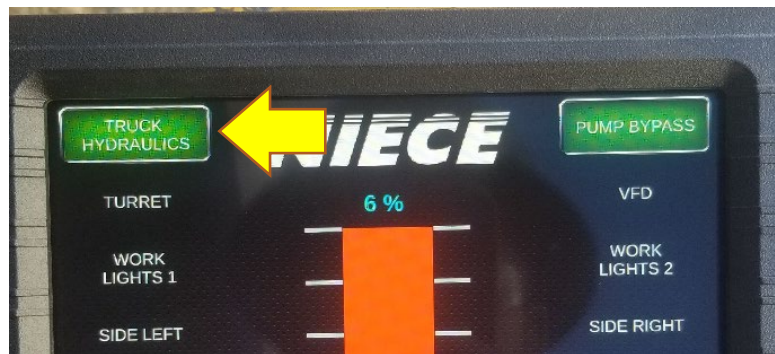
**Tank is ready for normal operations.**

**⚠ WARNING!** Keep turret nozzle pointed safely away from cab when in use.

## Normal operation:

### System power (**ON**)

- Make sure pump bypass switch is (**OFF**)
- **Start** truck engine.
- Keep truck at **idle**.



### Note:

When you empty the water tank and then fill it back up, you will trap air in the internal piping. This will act like you lost and cannot pick up prime.

If you open the turret and activate your truck hydraulics, the water will push the air out of the system and prime the system.

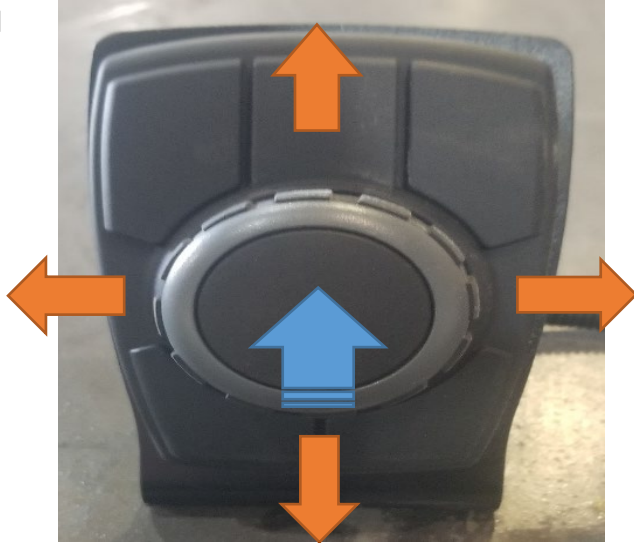
Open a spray head and wait for the water to begin spraying


Close the turret and begin normal spraying operations.


# NIECE

- Turn **turret** control switch **ON**.

**⚠ WARNING!** Keep turret nozzle pointed safely away from cab when in use.



 To activate turret simply push the center button

 Turret movement, move joystick up, down, left & right

## UPGRADED CONTROLS

A spray head **must** be turned on **prior** to turning the truck hydraulics on.

(A reminder will appear, truck hydraulics will not activate until spray is on)

Spray heads are:

Turret (ON/OPEN)

Any side spray (2)

Any rear spray (2-6)

Any front spray (2 opt.)

As shown-

Side right has turned green indicating

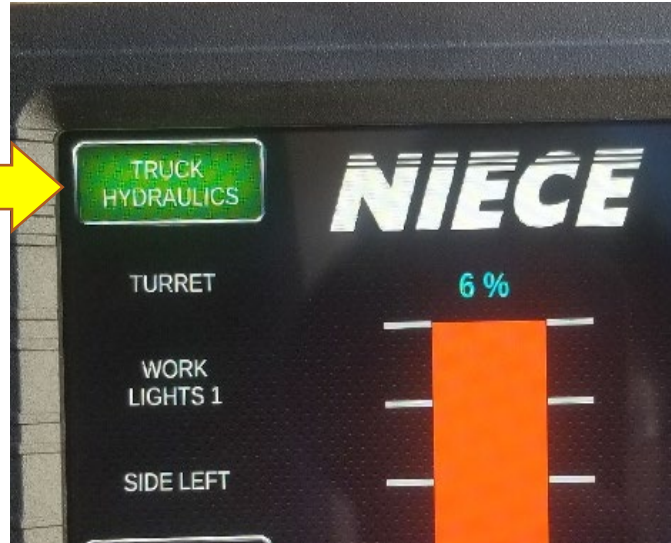
Side right spray is activated.





# NIECE

- Turn truck hydraulic switch **ON**.
  - ⚠️ **CAUTION! DO NOT** turn truck hydraulic switch on without at least one spray valve switch ON (VFD is not a spray valve).
  - ⚠️ Put truck in gear.
- Start spray operations.



## UPGRADED CONTROL

To "spot spray," or to stop spraying with the hydraulic pump engaged, use the pump bypass switch **momentarily**.

**Note:** Make sure at least **one spray valve is open** when using the pump **bypass switch**. 30-45 SEC. MAX

Pump bypass switch **ON** - **stops water spraying.**

Pump bypass switch **OFF** (normal Operation) - **water sprays.**

## Pump Bypass





# NIECE

## *Pump Bypass-*

If the operator is spraying water,  
(rear upper left shown above)

truck hydraulics activated

AND bypass ON

Bypass indicator will begin to flash  
green and spray function will turn  
black

The spray functions will no longer  
be in full operation

Once the pump bypass is  
deactivated the spray function will  
illuminate green to indicate back to  
full operation

**Only use Pump bypass momentarily**

**30-45 seconds max**

**If you need longer, bring truck to idle and shut**

**off truck hydraulics**

### **UPGRADED CONTROLS**

**To stop spray operations:**

- Stop or slow truck
- Bring truck engine to **idle**
- Turn truck hydraulic switch **OFF**



# NIECE

**⚠ CAUTION! DO NOT operate pump without at least one spray valve switch ON (VFD is not a spray valve).**



Turn spray valve switches **OFF**.

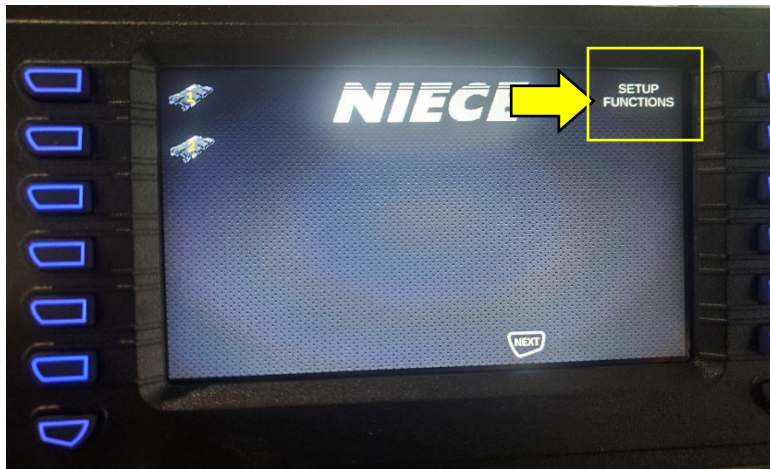
Turn turret valve switch **OFF**.





# NIECE

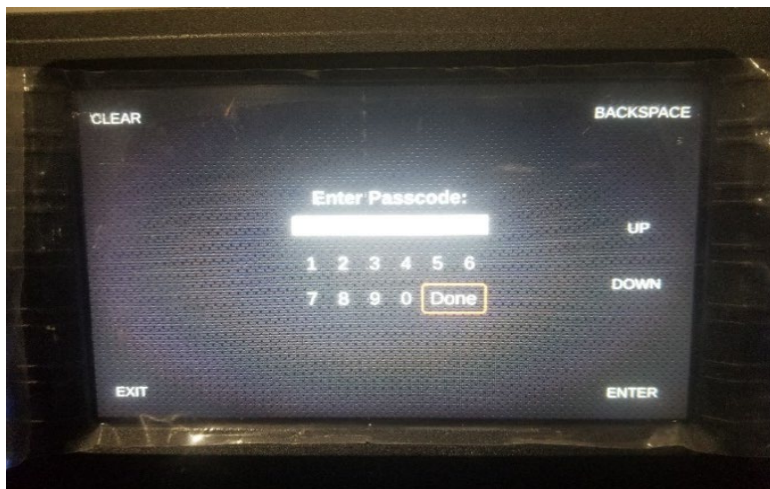
## Intermittent spray option: **Upgraded controls**



NIECE will ship your tank functions according to your original tank order.

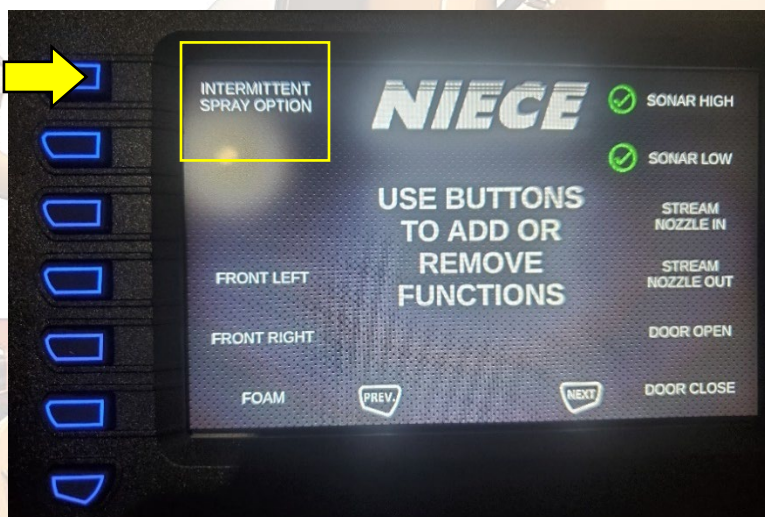
Intermittent spray option can come from factory or a later upgraded option

Navigate to the function setup page



To set up new intermittent spray option:

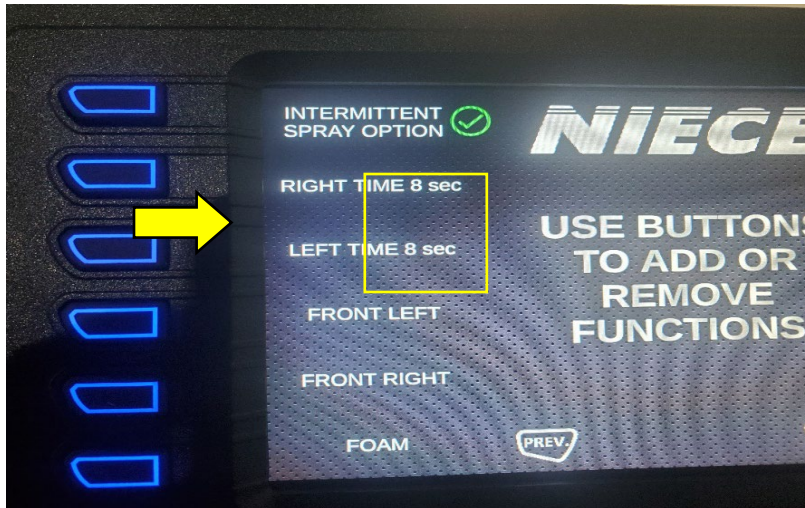
Obtain passcode through **NIECE Product of Kansas** sales department



Enable the intermittent spray option on function page



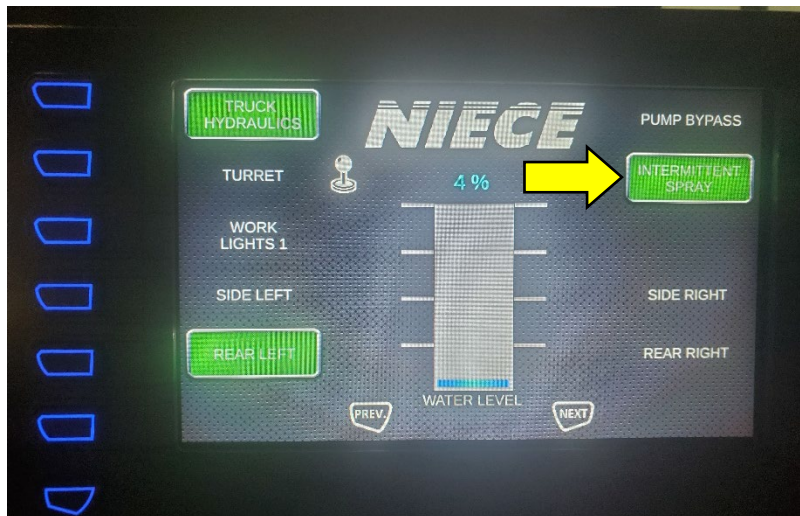
# NIECE



Once enabled, adjust the desired time rear right and left spray.

Times can be set independently 4-10 seconds with a 1 second overlap time

Once set, back out of functions page to home screen

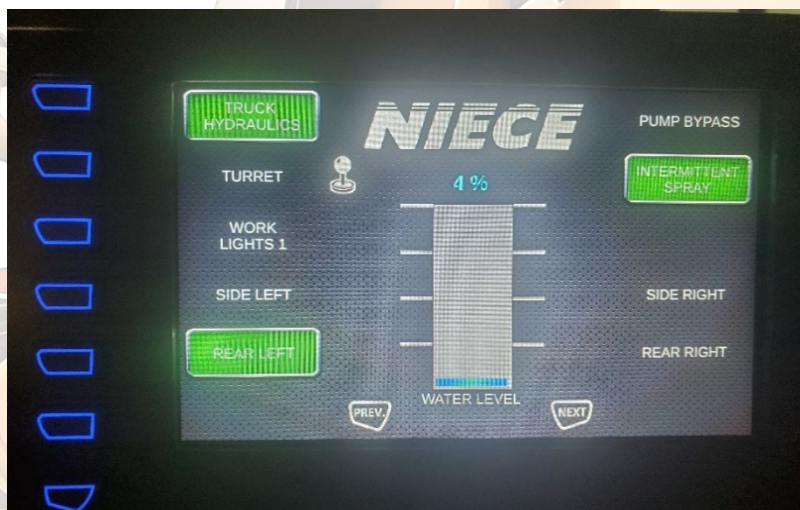


## Operations:

Have truck in gear at idle ready for water function-

Activate function

Truck will now begin spraying



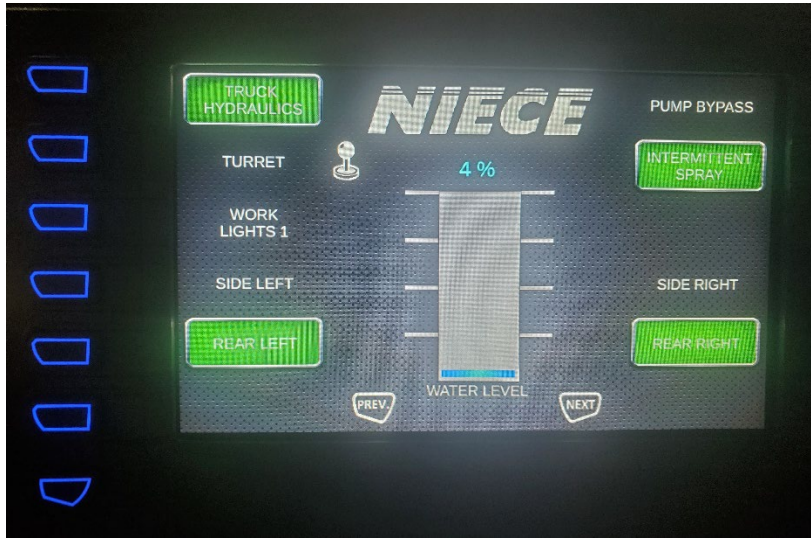
Attention: System will automatically activate truck hydraulics and begin cycling the rear sprays function

4-10 second spray (adjustable) (Rear left)

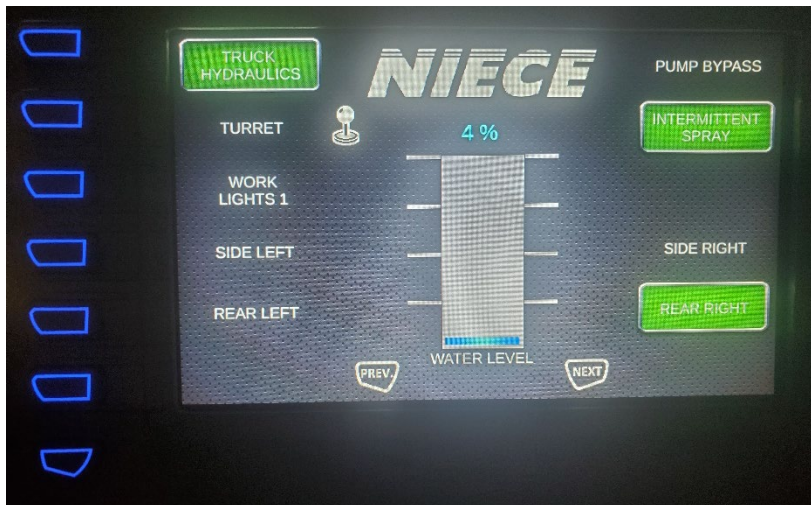
You can operate other functions (example: side right or side left) while intermittent function is activated



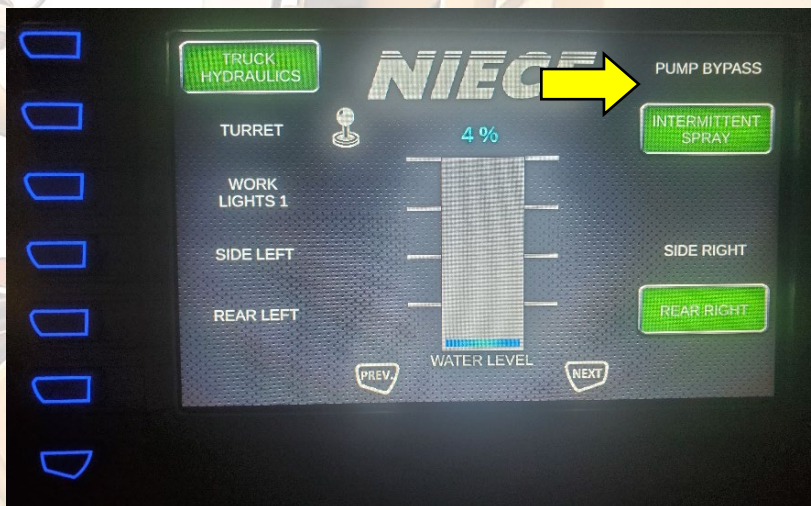
# NIECE



1 second overlap  
(Rear left and right)



4-10 second spray time  
(adjustable)  
(Rear right)



Once completed with operations  
Turn off intermittent spray  
Truck hydraulics will slow and turn off

# NIECE

## UPGRADED CONTROLS

- Start truck engine and let idle.

**⚠ CAUTION! DO NOT** raise engine speed above idle when using hose reel.

Using the navigation buttons

Locate screen showing suction load/hose reel button



Activate button, once ON button will turn green

Truck hydraulics will automatically activate



- Pull hose to desired length.

- Twist nozzle to desired spray pattern.

- Perform spray operation.



Do not "Deadhead" pump for longer than 30-45 seconds

May need two people for safe operation

Watch for regeneration of truck, it will increase truck RPM and increase pump speed and psi

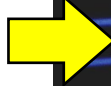


# NIECE

## UPGRADED CONTROLS

To stop using the hose reel:

- Turn suction load/ hose reel BUTTON OFF.
- **DO NOT CLOSE VALVE On HOSE REEL BEFORE TURNING SYSTEM OFF**



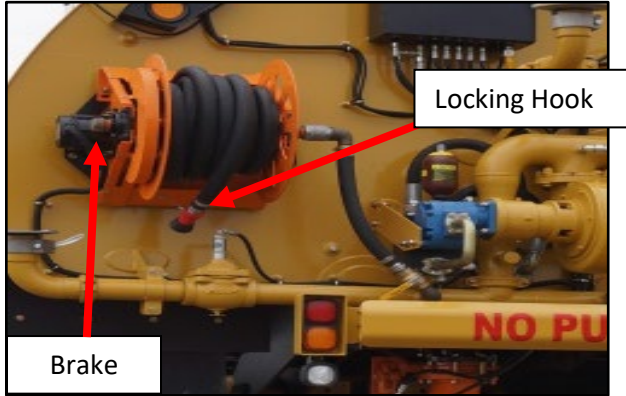
- Twist nozzle to CLOSED position.



## STANDARD CONTROL / UPGRADED CONTROLS

### How to Use Electric Hose Reel (If Equipped)

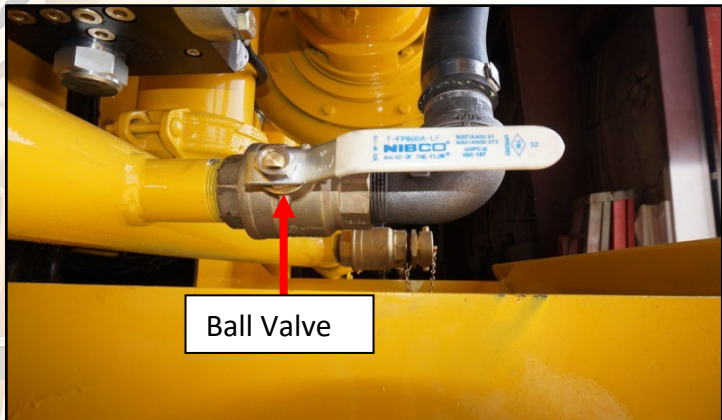
- Remove the hose reel locking hook.
- Release brake (if tightened)
- Pull hose and nozzle to desired length.



- Open hose reel nozzle.



- Open hose reel ball valve.



**STANDARD CONTROL**



# NIECE

- Start truck engine and let idle.

**⚠ CAUTION! DO NOT** raise engine speed above idle when using hose reel.

- Turn master control switch **ON**.



- Turn truck hydraulic switch **ON**.



- Pull hose to desired length.
- Twist nozzle to desired spray pattern.
- Perform spray operation.



# NIECE

## STANDARD CONTROL

To stop using the hose reel:

- Turn truck hydraulic switch **OFF**.



- Turn master control switch **OFF**.
- Turn off truck engine.



- Twist nozzle to CLOSED position.



## STANDARD CONTROL /

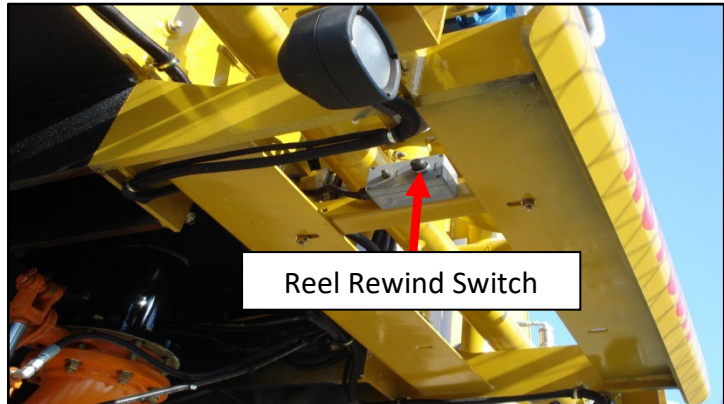


# NIECE

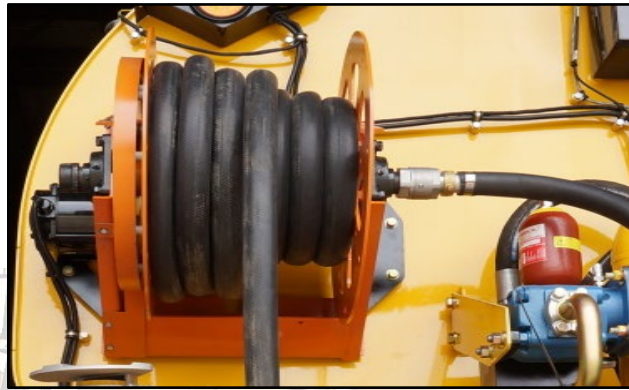
## UPGRADED CONTROLS

- Bring nozzle back to truck.
- Press and hold reel rewind switch.

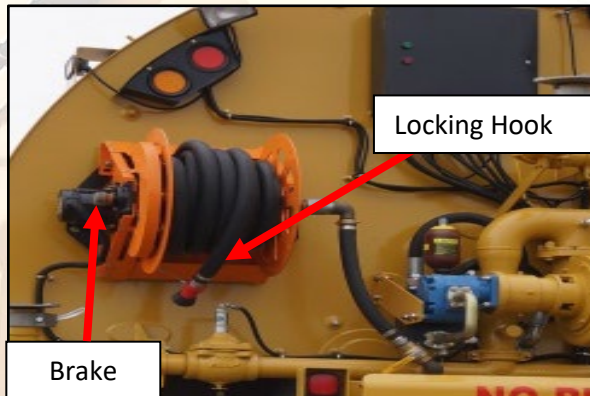
Note: Switch location may vary.



- Guide hose evenly onto reel.
- Release reel rewind switch when complete.

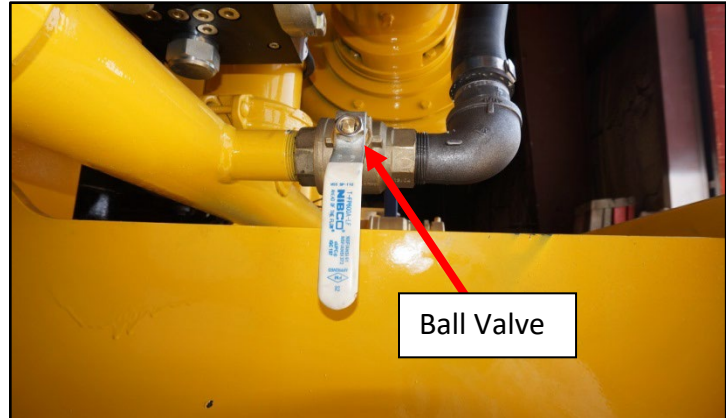


- Attach hose reel locking hook.
- Tighten brake



# NIECE

- Close hose reel ball valve.



Do not "Deadhead" pump for longer than 30-45 seconds

May need two people for safe operation

Watch for regeneration of truck, It will increase the trucks RPM and increase pump speed and output

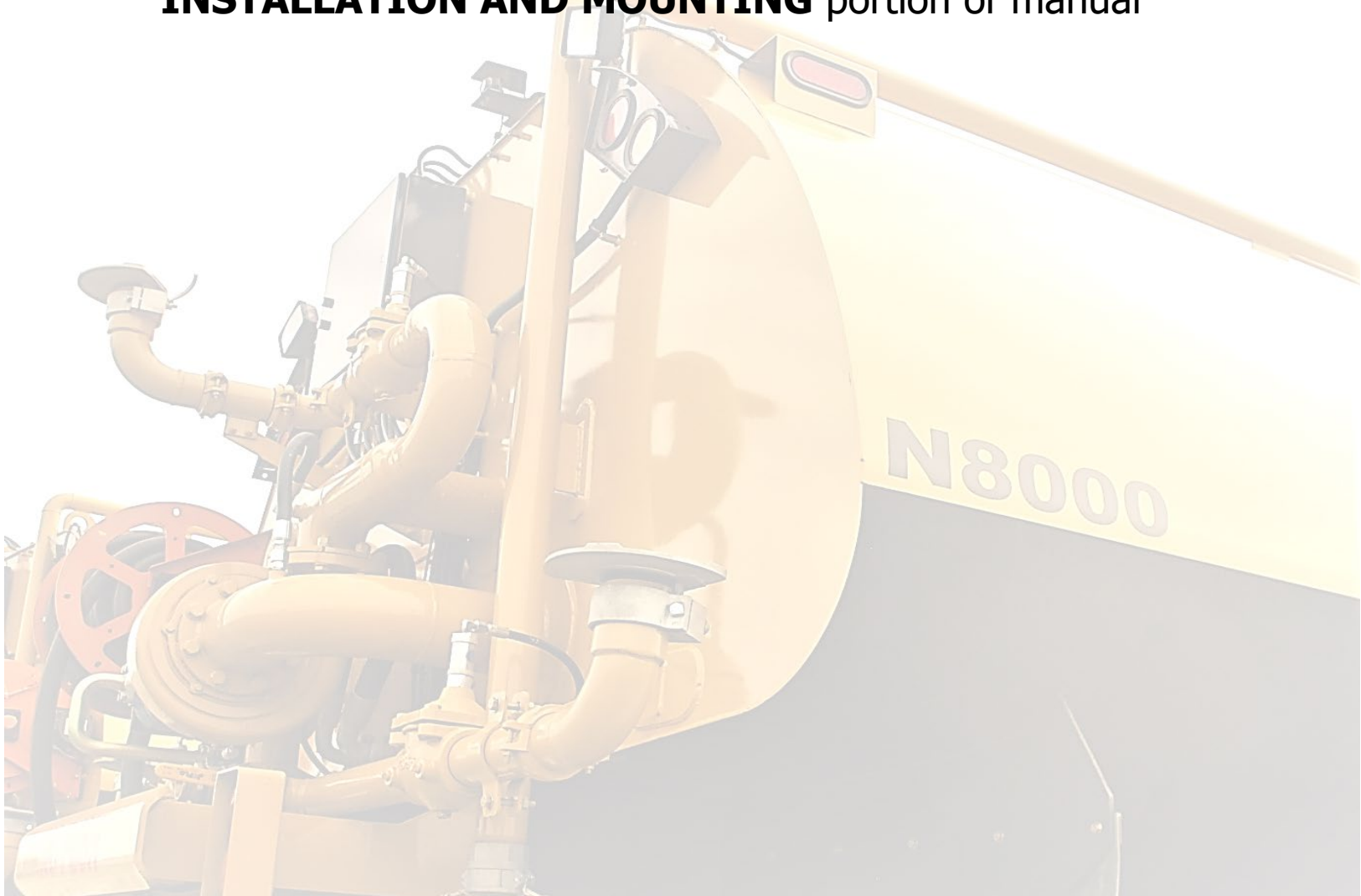




# **NIECE**

## **UPGRADED TANK CONTROL INSTALLATION:**

For initial installation of tank move to: **TANK  
INSTALLATION AND MOUNTING** portion of manual



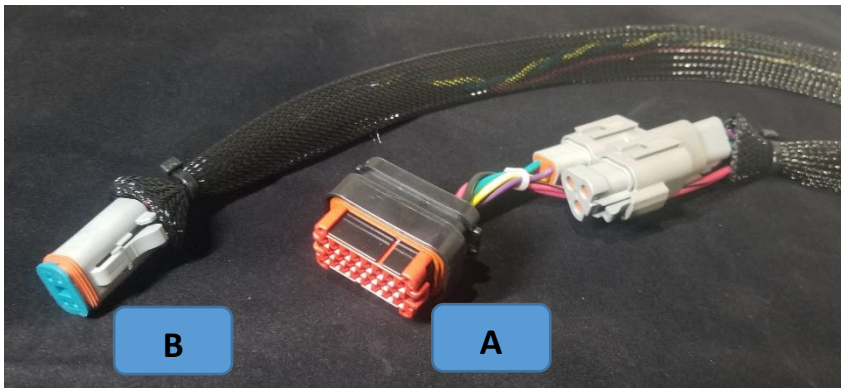
# NIECE



Mount the **NIECE** cab screen and palm joystick in a safe and convenient location.

Make sure not to obstruct the operators view.

May need to remove and disable trucks stock hoist lever



Front **NIECE** cab/can harness shown:

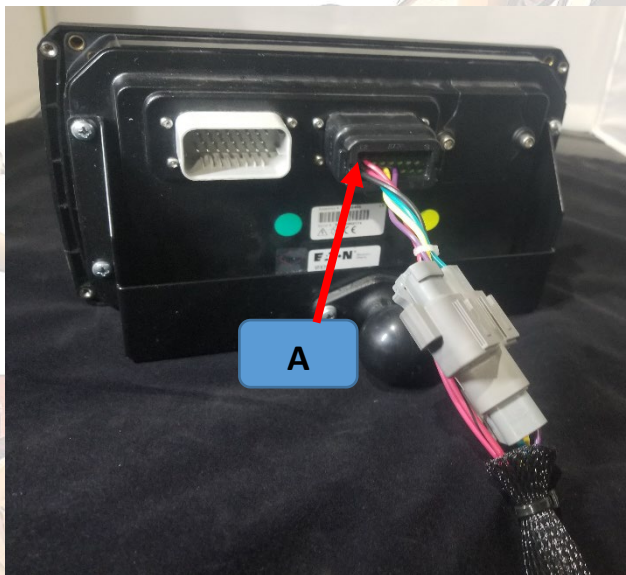
Display plug - A

Joystick plug - B

Cab/can and power/ground wires included IN A & B

NOTE:

Rear tank will have a mating CAN harness to be joined later to front harness (Img 5)



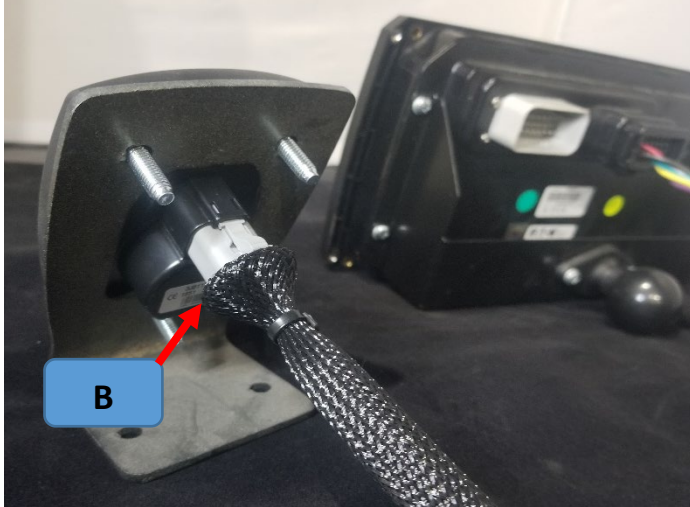
Mate the front **NIECE** Cab/can harness to the display

Note:

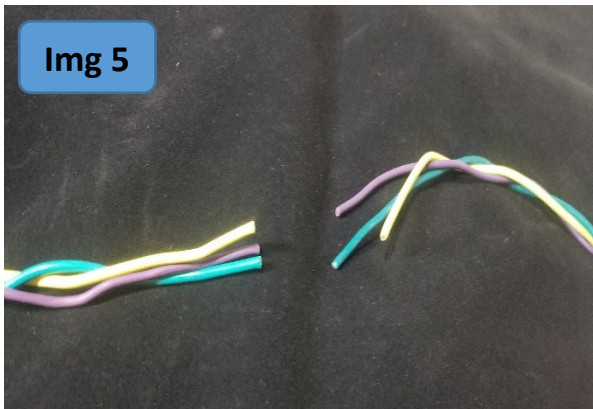
Grey plug used for programming only



# NIECE



Mate the Joystick **NIECE** CAB-(can) harness to Turret Joystick



The two **NIECE** CAN harnesses (front & rear) will need to be joined together inside the cab Extra length can/may need to be shortened

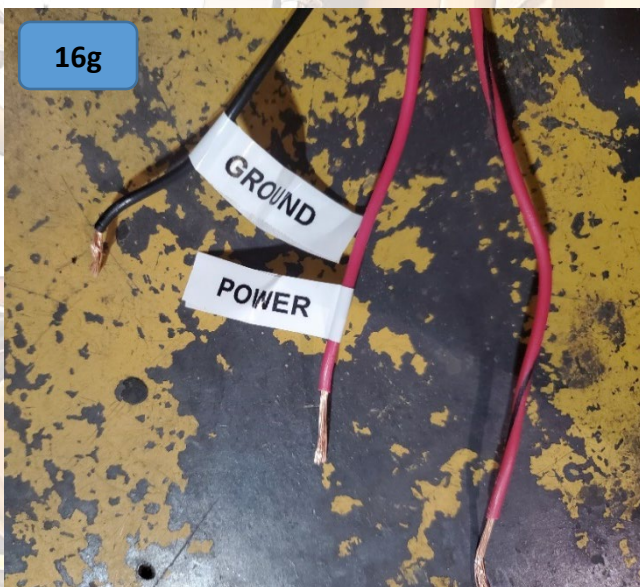
Green to Green (CAN HIGH)

Yellow to Yellow (CAN LOW)

Purple to purple (SONAR SIGNAL)

INSURE A GOOD, WATERTIGHT CONNECTION

## Screen power harness



16awg **BLACK (GROUND)**

**MUST BE CHASSIS GROUND**

16awg **RED (SCREEN POWER)**

**FUSED WITH 10awg red TANK BOX POWER (30A)**

**At Battery OR disconnect (If needed)**

16awg **RED/BLK (IGNITION POWER)**

**Controls screen on/off with ignition**



# NIECE

## TANK BOX POWER



**10awg RED (POWER) FUSED (30A)**

**MUST BE BATTERY POWER at Battery OR Disconnect**

**10awg BLACK (CHASSIS GROUND)**

**MUST BE CONNECTED TO CHASSIS**

NOTE: Even with the cab screen off (ignition off red/blk) the rear functions in the tank box will be powered **UNTIL** trucks master disconnect is turned off

**This system utilizes the trucks stock master battery disconnect to turn TANK BOX POWER OFF STROBE WILL STAY ON INDICATING POWER IS STILL ON UNTIL TRUCKS MASTER GROUND HAS BEEN DISCONNECTED (OFF)**

\*\*\***Note:** DEPENDING ON CHASSIS, USE OF A POWER DISCONNECT MAY BE NEEDED\*\*\*



**Truck Hydraulics (hoist coil)**

**BROWN – POWER (pin1)**

**WHITE – GROUND (pin2)**

*NIECE* harness can and may need to be shortened to stock or *NIECE* provided coil

**\*\*\*ATTENTION\*\*\***

Use of Dielectric grease (silicone-base grease) is recommended on all Deutsch connections make sure **GOOD WATERTIGHT** connection on all joints/connections

Avoid any heat, pinch or moving parts





# NIECE

## Upgraded cab control product function page:

For option/function change **ONLY**

Locate the setup page

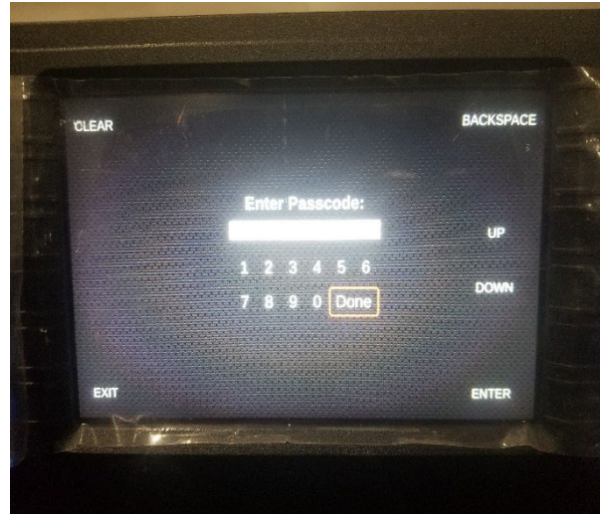
To obtain passcode

Contact **NIECE PRODUCTS OF KANSAS**  
@

1-(620) 223-0340 (Fort Scott KS, 66701) or

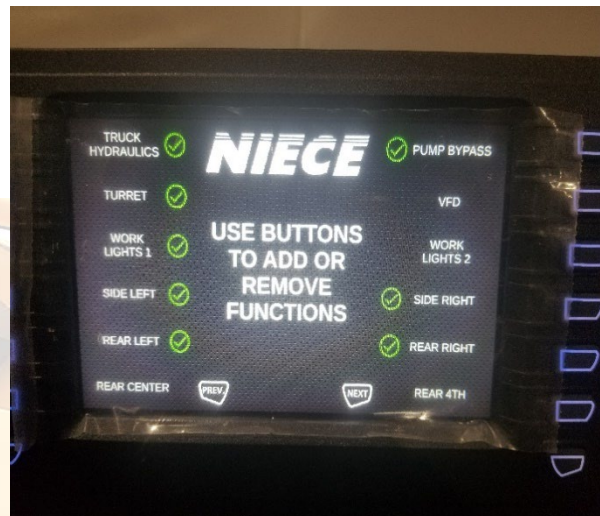
1-800-252-6618

Have your tank identification number and information to obtain code



### Enter passcode

Select or check all options for your tank



### To obtain passcode:

When purchasing a new function/part that requires function change through **NIECE PRODUCTS**

OR

A One-time fee for passcode without the purchase of new function or part



# NIECE

Once options are selected on all pages,

## Exit functions screen

Power cycle system and continue normal operations

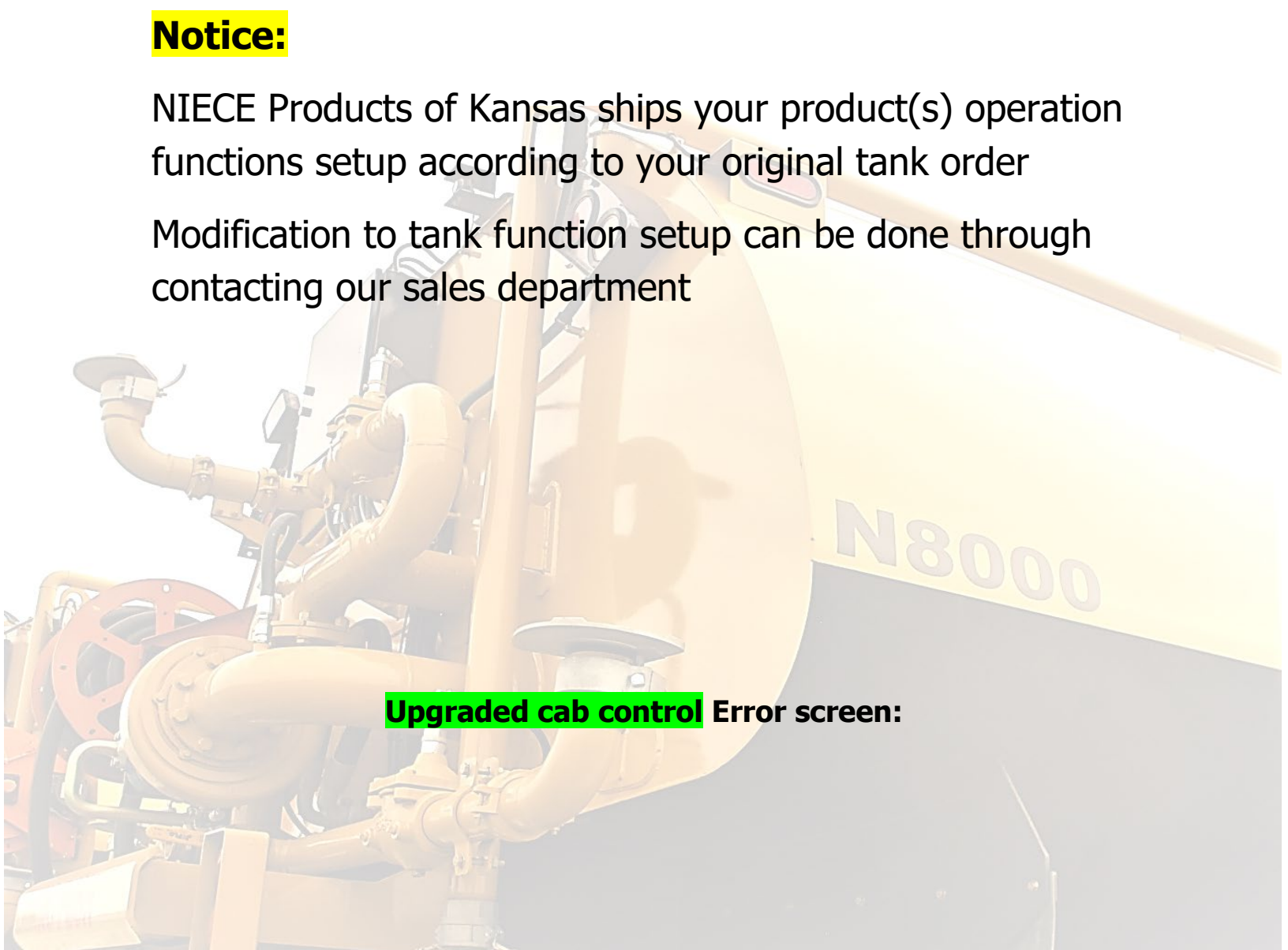


## Notice:

NIECE Products of Kansas ships your product(s) operation functions setup according to your original tank order

Modification to tank function setup can be done through contacting our sales department

**Upgraded cab control** Error screen:



# NIECE

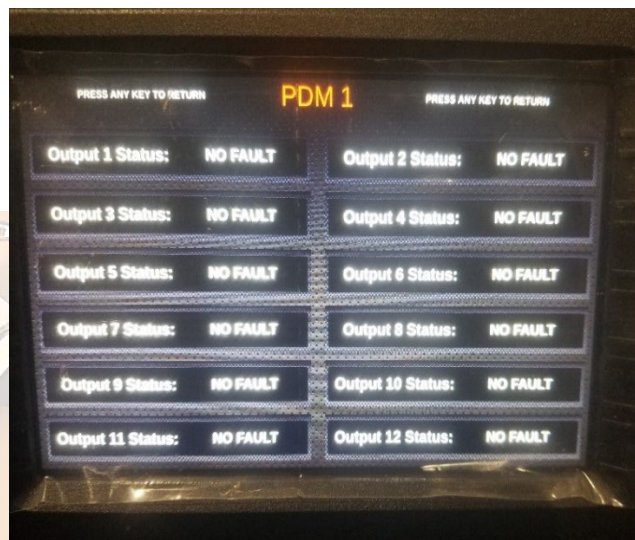
If an error indicator shows on the main *NIECE* screen, it will prompt you to move to the screen as shown.

If there is an error, an explanation point will show on one of the PDM'S.

Hit the button corresponding to faulted PDM

This will bring you to the next screen showing you that an issue has been found on an output.

1-3 Fuse indicators will be shown on this screen



Screen showing the location of error

That has occurred on the water operation system.

Once fixed, exit back to main screen and

resume operation or continue with the trouble shooting process.

# **NIECE**

## **STANDARD CONTROL INSTALLATION:**

For initial installation of tank move to: **TANK  
INSTALLATION AND MOUNTING** portion of manual





# NIECE

## Standard controls

- Install control box and mounting hardware.
- In some trucks Removal of stock hoist lever will be needed.
- Uninstall of the hoist system by trained personnel if applicable.



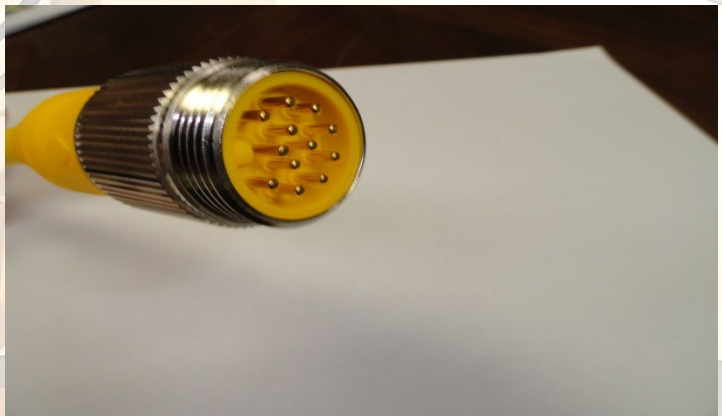
CAT and KOMATSU systems can be programmed for water applications.

Other models will need to be "worked around"

Mount the **NIECE** control box and turret box in a safe and convenient location. Make sure not to obstruct operators view.

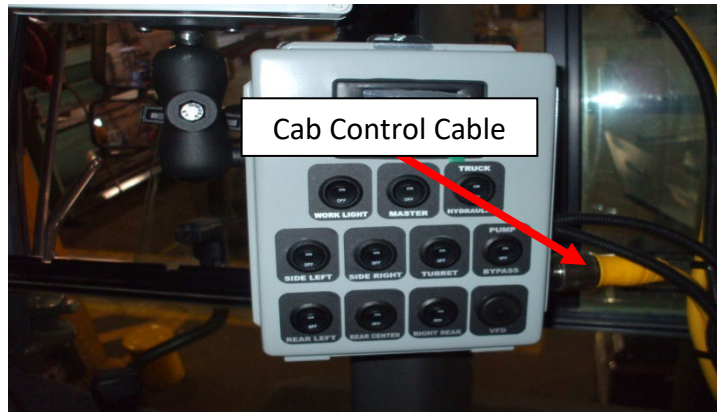
Must route yellow cables, power and hoist wires in or out of cab. Avoid hot spots and pinch points. (routing into cab is to owners discretion)

- Yellow cab control cable end (male).

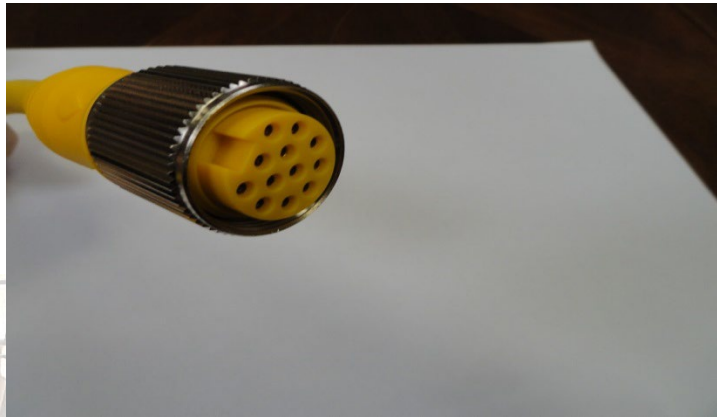


# NIECE

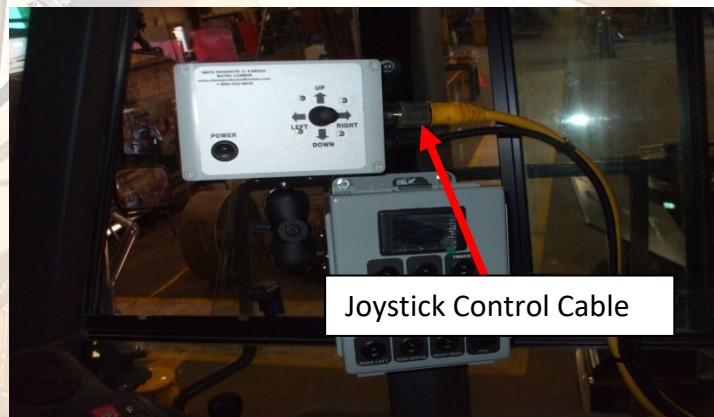
- Connect the yellow cab control cable (male end) to the cab control box.



- Yellow joystick control cable end (female).



- Connect the joystick control cable to the joystick control box.





# NIECE

- Take the loose ends of grey insulated wire from the joystick control box and the cab control box power wires (black (+) and white (-) and strip the ends of white and black wires for butt connections.



- Butt connect the black (+) power wires from the cab control box and joystick control box to the supplied 10 gauge wire (black) with the butt connector.

Power needs to be fused (30 amp) from battery or battery junction point



- Butt connect the white ground wires from the cab control box and the joystick control box to the white 10 gauge wire (supplied) with the butt connector.
- Ground 10awg to chassis ground

The Single Red 16awg wire from control box is an IGNITION wire

The Red wire needs to see a keyed ignition power source

Use of a fuse tap may be necessary for ignition wire





# NIECE

- Install wire looming.
- Identify the grey two wire cable from the cab control box labeled "hoist/pump."
- Strip ¼" insulation from each of the wires.
- Route the wires down through the cab.



- Remove hoist joystick if required.
- Dead stick hoist control (do not allow the function of hoist with stock lever by uninstallation, removal of lever or removal of coils)



Note: Truck may need to be reprogrammed for proper operation. Contact truck dealer for more information.

- Schematics of chassis hydraulics and operations advised/needed (not provided by NIECE)
- Route the two wires marked (hoist or pump) from under cab to the hoist coil location. (see next few pages)

**Attention:** May need to program chassis to - water wagon, sprinkler mode or uninstall programming for use of a water truck depending on your model of chassis

# NIECE

## NIECE SUPPLIED CONTINUOUS DUTY COIL (20 Ohm)



Connect black (+) (standard or brown (+) (upgraded to pin 1 and white (-) to pin 2.

### Location change between models, known locations include:

Under cab, under dash, outside driver side frame, behind cab and behind hydraulic tank

(known locations shown in next few pages)

### Notes:

- The removal of two coils may be needed. Example: (float coils 1&2, and or hoist down)
- Activation of 1 or 2 coils may be needed (hoist up, return passage or separate pump coil (stroke)
- Some models require a secondary **NIECE** supplied hydraulic valve block and coil- sv10-34
- some models require the activation of the stock coil and the **NIECE** coil as a "dummy"
- Wire tie stock coil out of the way securely from heat and pinch points.
- *DO NOT leave stock coil harness disconnected or truck will throw error code.*
  - Will need to address bed level sensor, will need to be set in the bed down position.

Identify coil(s) need to activate hoist up function to run water displacement operations

Remove stock HOIST coil with wires still attached (may need to reuse stock coil and "dummy" off stock harness depending on model)

Install new continuous duty coil(s) (supplied and model allows).

Dead stick hoist control (do not allow the function of hoist up or down with stock lever by uninstallation, removal of lever or removal of coils)

### Known hoist coils:

**⚠ CAUTION!** The internal parts of the hydraulic cartridge valve stem can separate at the coil. Be careful not to loosen the stem when the coil is removed.



# NIECE

CAT 725, 730, 745 Driver side frame



**John Deere** (behind or under cab)

- (y24) hoist (UP) energized
- (y23) hoist (down) removed

Others:

- Energized y24 and y75
- Removed coils - y78 & y79)
- Energized Y 83 & y 87



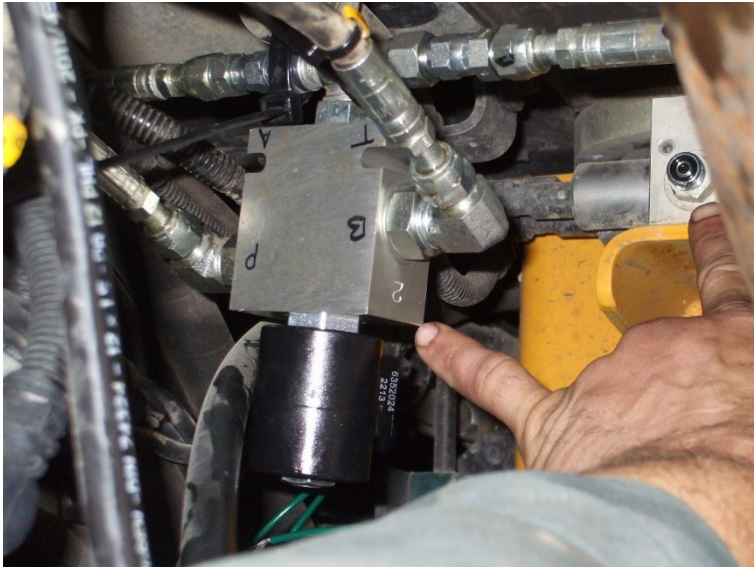
CAT740 (Under driver side cab)



N8000

# NIECE

**Volvo a 25, 30 & 40 F**



Under passenger side cab or dash

Using the provided valve block, install stock hoist shuttle lines to the new block and coil.

Lines are marked as shown below

(Sv10-34 stem)

Port 1= line A & D

Port 2= line C

Port 3= line B

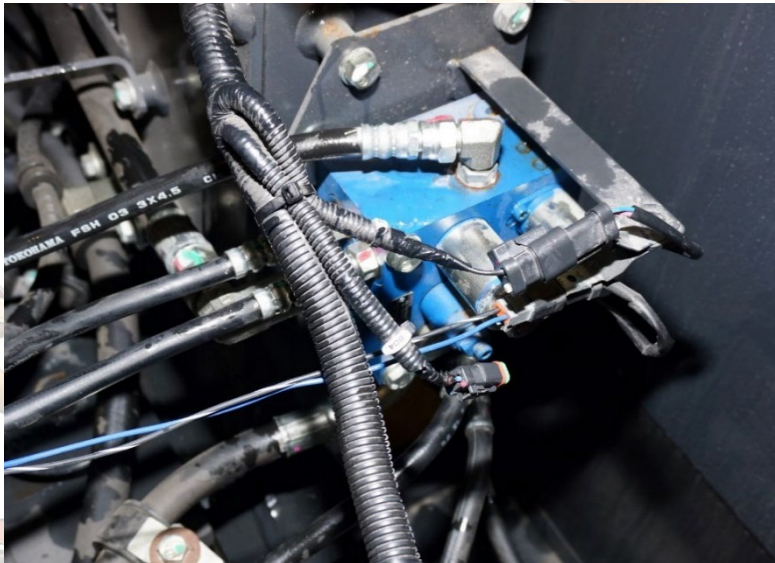
OR

Port 1= line A & T

Port 2= line B

Port 3= line P

**Komatsu** (most models) under cab, behind hydraulic tank and/or along frame



B04, B09

HEPC & SCS

N8000



**NIECE**

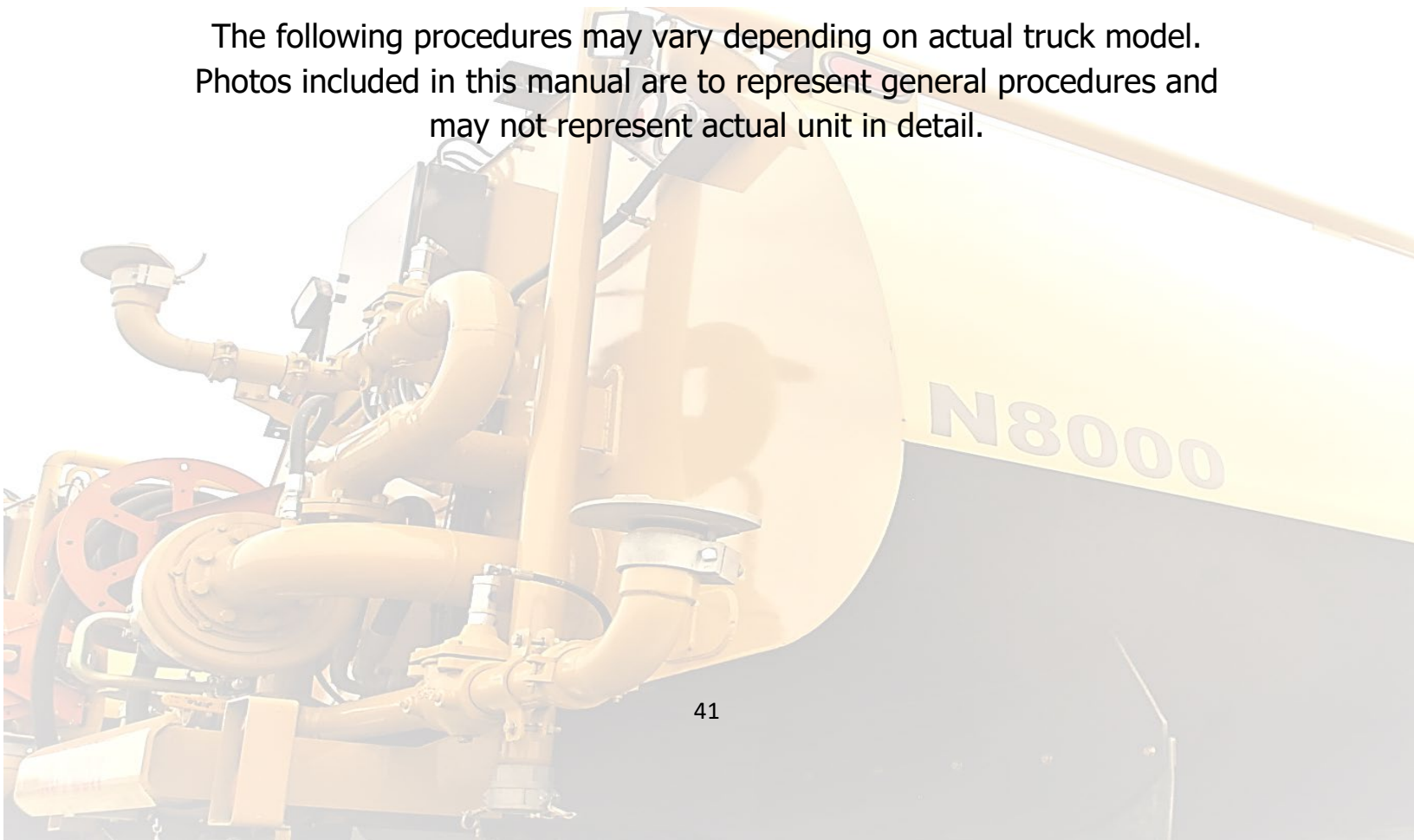
Notes:



## TANK INSTALLATION AND MOUNTING:

Removal of bed, lights, alarms, pads, grease lines, camera, safety locks etc. needed prior to tank installation

The following procedures may vary depending on actual truck model. Photos included in this manual are to represent general procedures and may not represent actual unit in detail.





# NIECE

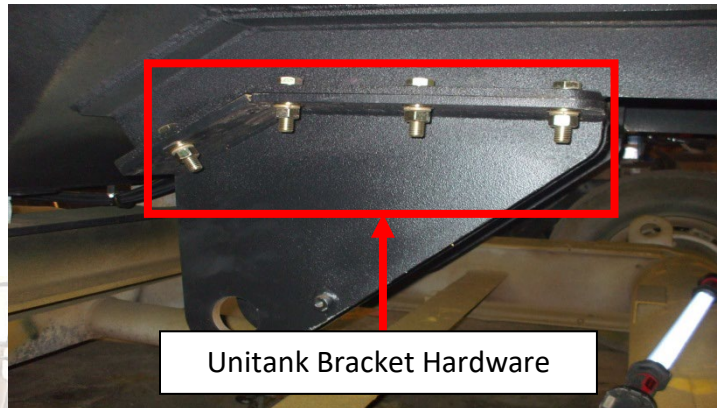
- Install bed pads to bottom of tank pad mounts (4).
- 6 pad mount locations, four locations used at a time. Two front, two middle and two rear.
- Movement of two rear mounts may be necessary, middle to rear. Front will not move.

Pad mount or shims may be needed adjusted after tank is on chassis.

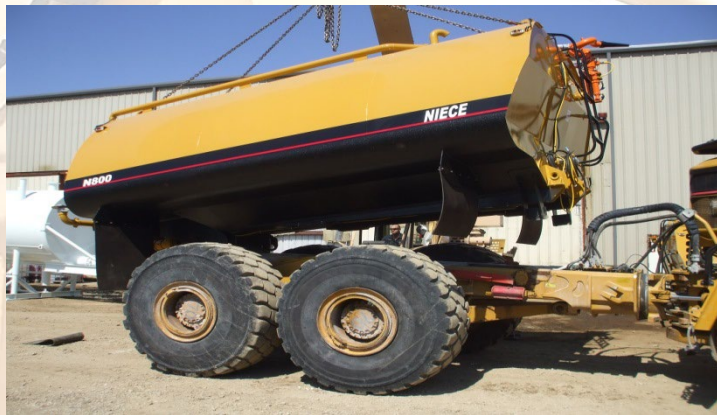


On unitank models, install pin mount brackets using supplied hardware and tighten to 350 lbft.

Know weight of tank and use approved and rated lifting equipment only.

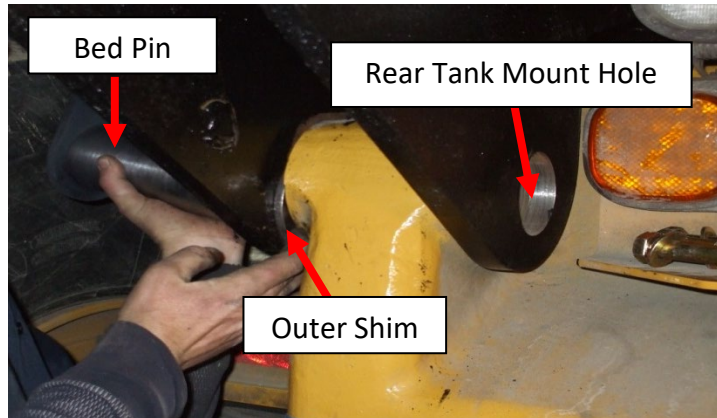


- Lift the tank up with ample clearance for truck. Choke tank where the rear is around 6-8" lower than front.
- Back truck under tank.
- Slowly set the tank down with the rear of tank lower than front.
- Always check for pinch points while lowering tank.

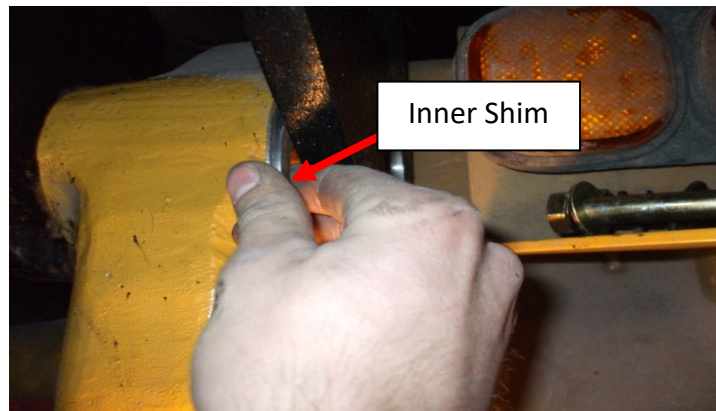


# NIECE

- Align the rear tank mounting holes with the truck frame pin mount.
- Shim tank pins between pin mount and chassis as needed.
- Install outer tank pin shim(s) as required. Use matching thicknesses of shims for both sides.



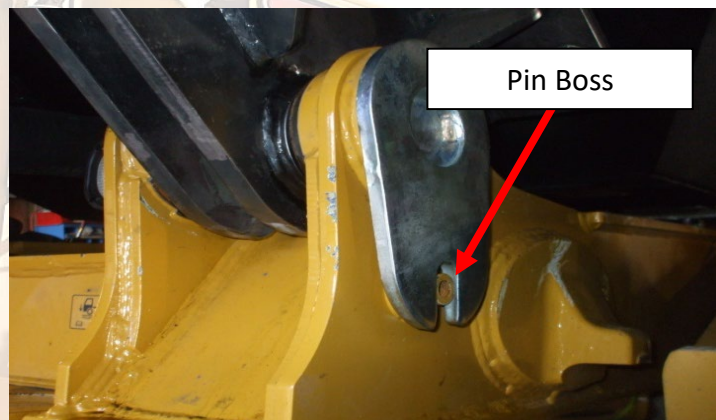
- Slide the tank pins through the truck frame pin mount hole.
- Install inner tank pin shim(s) as required. Use matching thicknesses of shims for both sides.



Note: Some models may not require pin shims.

- Fully insert the tank pins.
- Make sure the tank is sitting in the center of the pin mounts (not shifted to one side or the other).

*Note: Make sure the pin boss(s) is aligned with the tank pin to lock into place.*

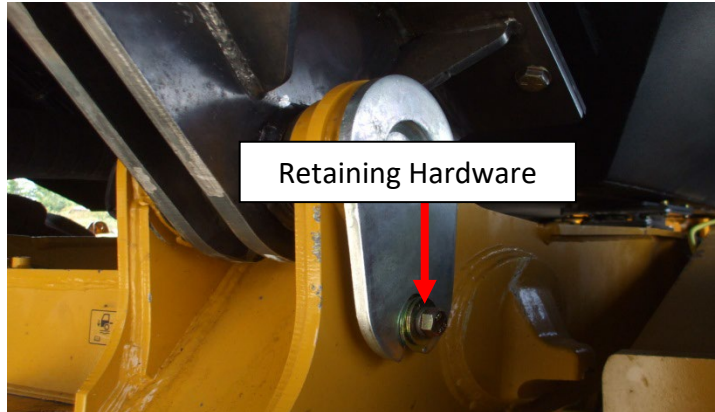




# NIECE

- Install bed pin retaining hardware.
- Tighten bolts to 75 lb ft.

***Note: Bed level sensor may need to be reprogrammed, adjusted, or modified for system to work properly. Bed level sensor should remain in down position.***



- Slowly lower the front of tank down onto frame of truck.

Checking all clearance as the tank is lowered.



- Adjustment to shims maybe required to have all points of contact.



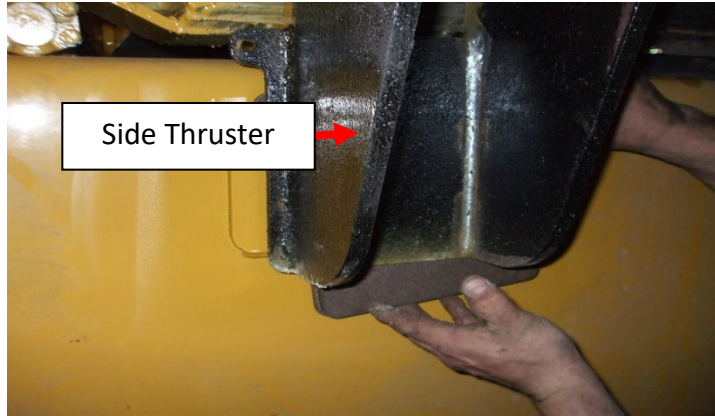
Note: Shims, mounts, mount location and adapters vary from chassis to chassis.



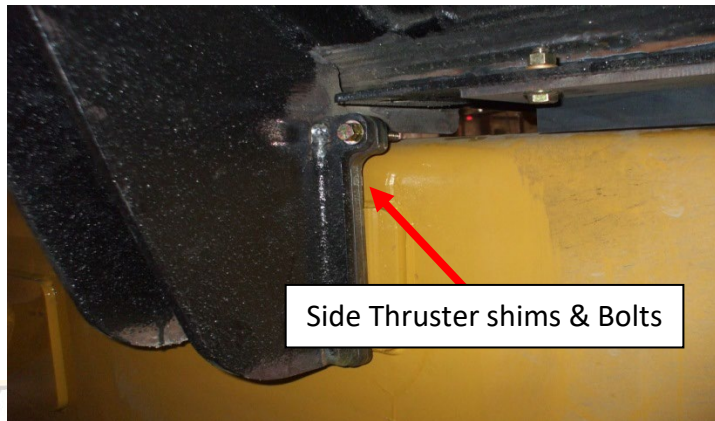
# NIECE

- Install side thruster to tank or chassis depending on model
- Install shims to side thruster plates as needed.

*Note: Make sure tank is level and square before continuing installation.*



- Install bolts, washers, lock washers, and nuts to side thruster plate mounting bracket.
- Tighten bolts to 40 lb ft.

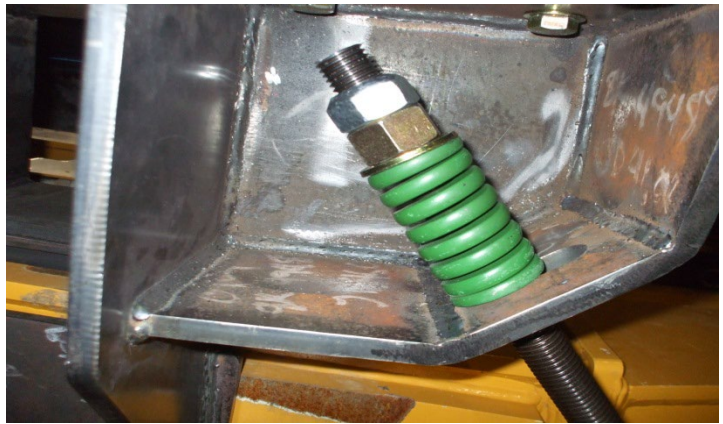


- Route the two yellow wires from the tank through the hose loom over the articulating joint.
- Route the wires avoiding hot or moving parts.
- Disconnect positive battery cable.
- Install looming to wires.

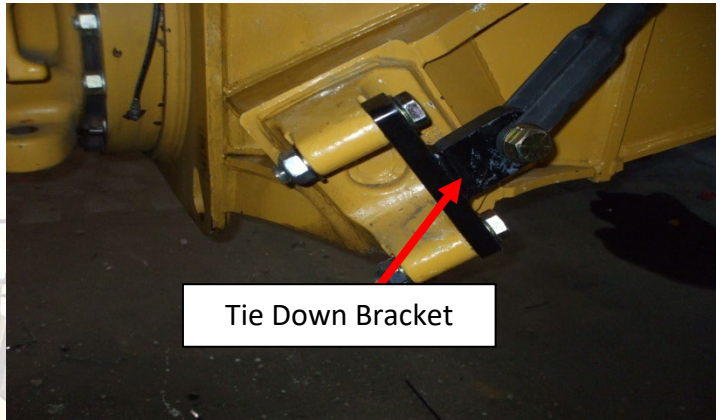


# NIECE

- Install the upper end of tie downs as shown.
- Hand tighten nuts.



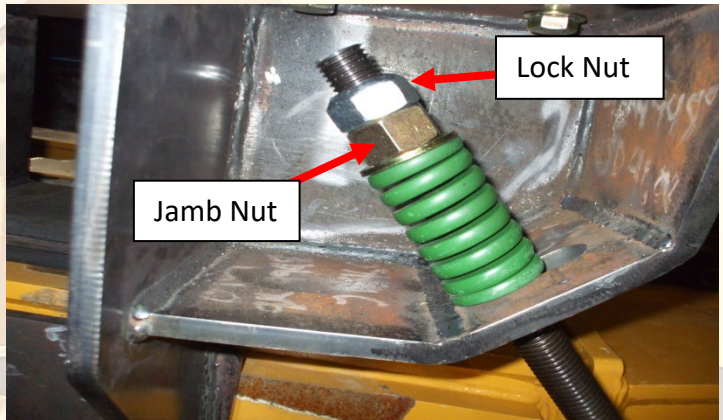
- Install lower ends of tie downs to truck as shown. Tie downs vary from chassis to chassis
- Install retaining hardware to lower end of tie down.
- Tighten retaining hardware to 100 lb ft.



- Tighten lower nuts snug.

**⚠ CAUTION! DO NOT** fully compress spring when tightening lower nut or lock nut.

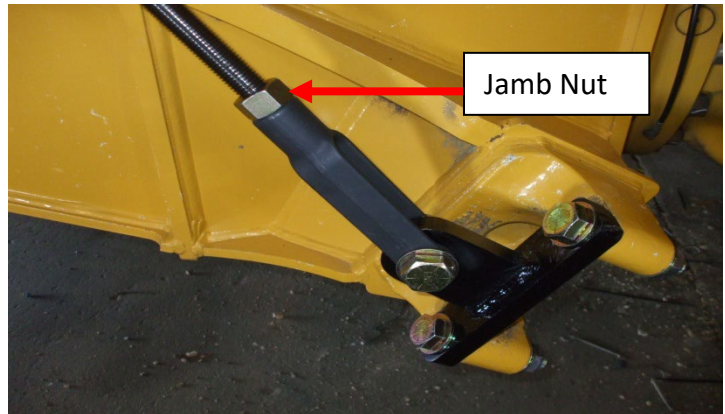
- Tighten lock nuts to 1/2 inch compression.



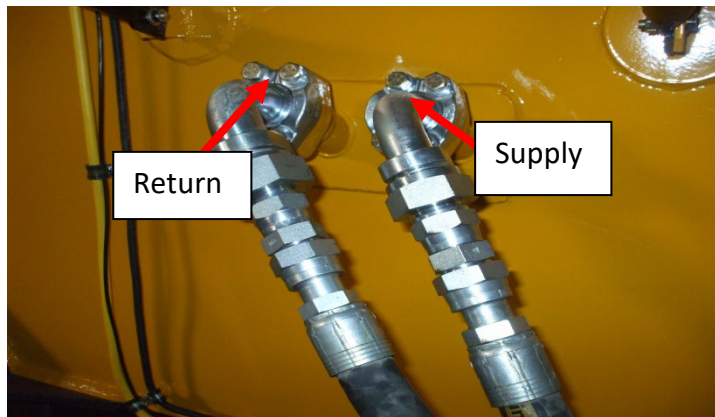


# NIECE

- Tighten jamb nut snug.

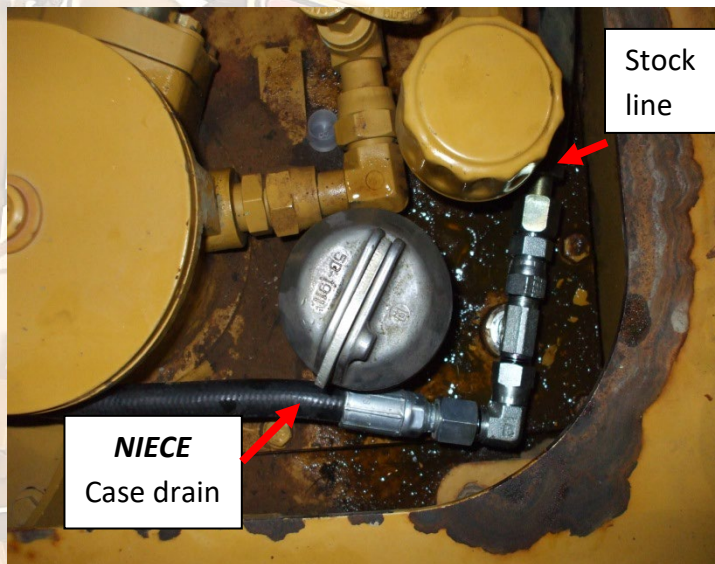


- Install all necessary hydraulic hoses/lines.
- Return on tank 24 or 1 1/2 (passenger)
- Supply on tank 20 or 1 1/4 (driver)



- Route and install 1/2 case drain hose and fitting to truck hydraulic tank. Case needs a free flowing path to the tank.

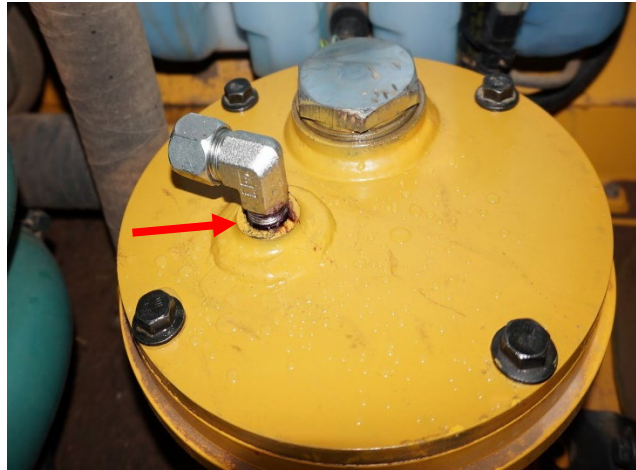
*Note: Additional fittings and or modification to stock hydraulic line may be needed.*





# NIECE

On some models/ chassis modification to hydraulic lid or covers may be needed for a free flowing case drain.



Be sure to use any safety locks and correct lock out/tag out before working in or under cab.

- Loosen and remove cab mounting hardware.
- Lift cab.
- Use any safety device or safety stop while under the cab.
- Route wires underneath or into cab.
- Secure wires with wire ties.

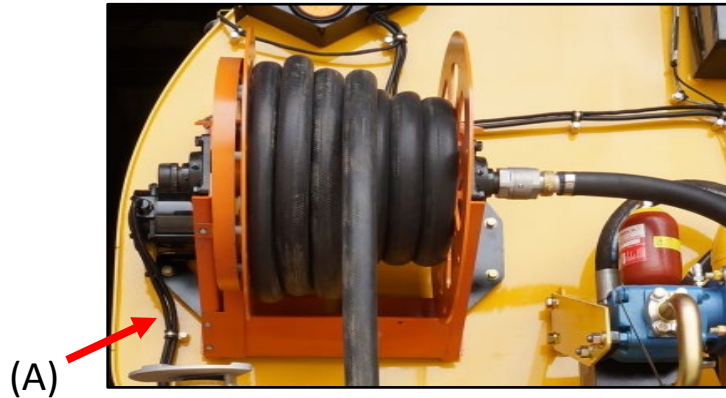
Note: Keep the wires away from pinch points and hot surfaces (exhaust and radiator).



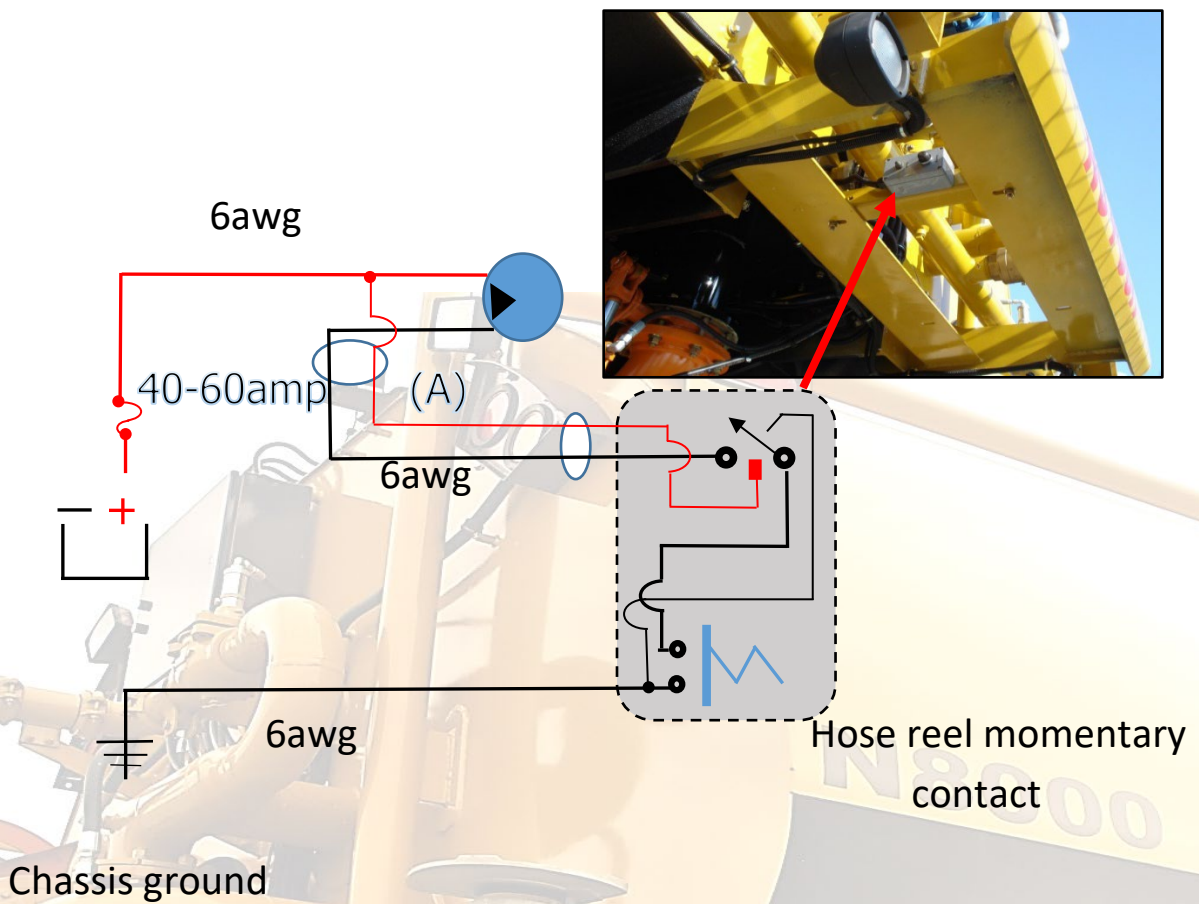
Continue to standard or upgraded control installation:

# NIECE

## Hose reel wiring



- 6awg Black chassis ground at rear of tank
- 6awg Red 40-60 Amp fused at battery power source





# NIECE



## VFD OPTION:

VFD is located under the rear of tank

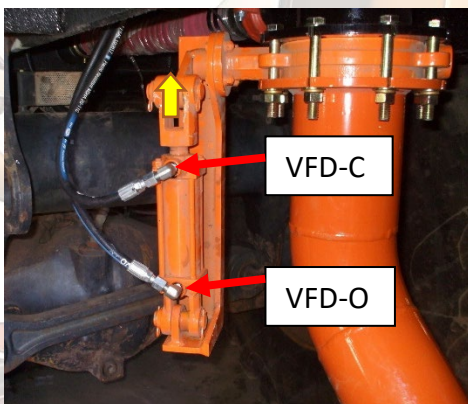
VFD is an easy way to evacuate water without the truck hydraulics and pump running after VFD is opened

Remove the VFD blocker plate and disregard bolts, seal and plate



The butterfly and tube can be orientated at your discretion,  
Make sure proper clearance for cylinder travel

- Install VFD tube loose with two NEW bolts in opposite flange holes
- Slide in butterfly (make sure to have room for cylinder travel)
- Make sure to center butterfly to flanges for proper seal
- Install remaining bolts/hardware and tighten evenly



Route 2 3/8 lines from rear head to VFD and secure into place

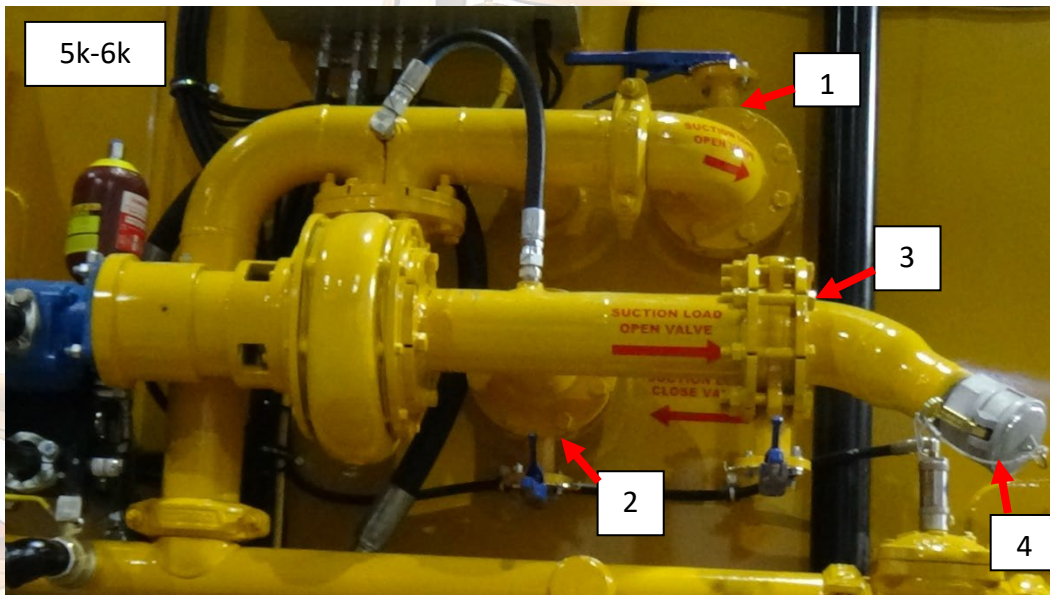
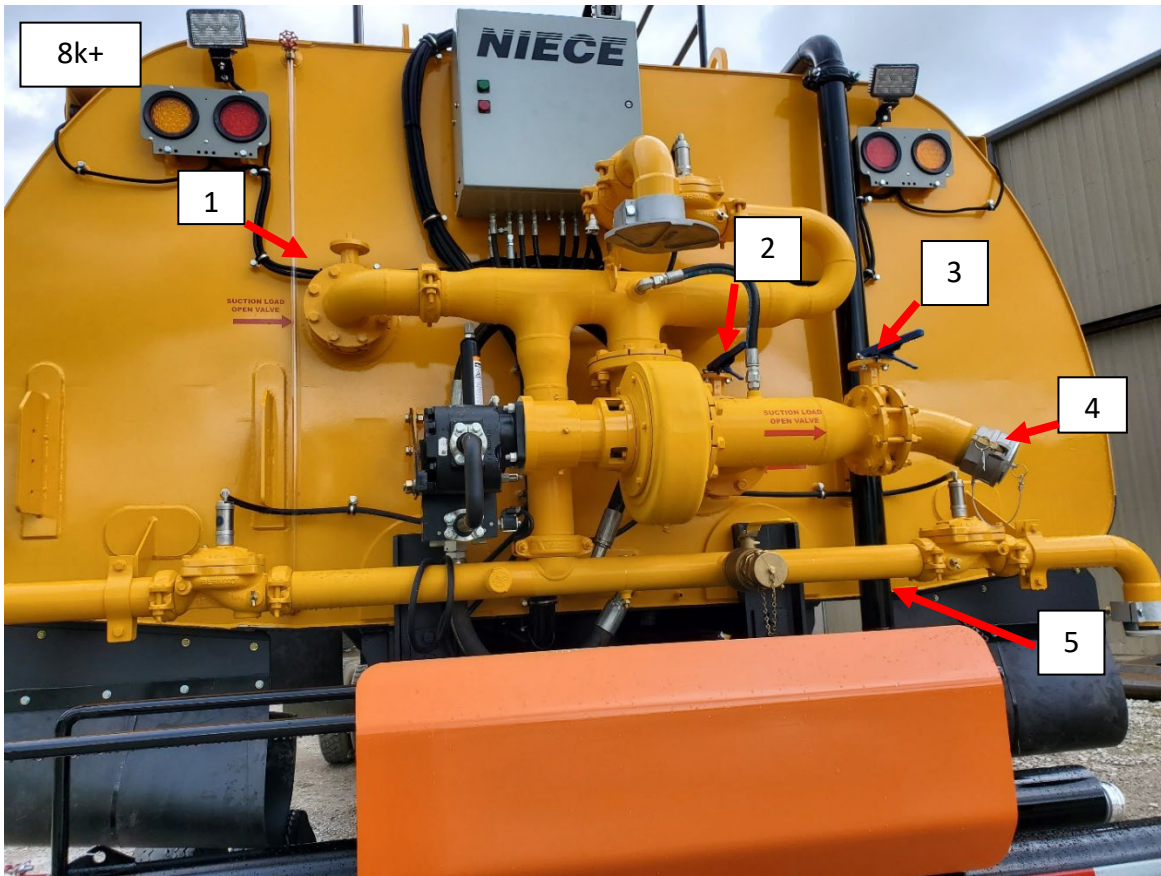
Install the VFD-O (piston end)

VFD-C (rod end) (shown above)

# NIECE

UPGRADED CONTROLS

Suction Load Option:



Rear plumbing can vary from size and style of tank

Continued on next page:



## To suction load

- #1-open
- #2-close
- #3-open
- #4-suction load inlet
- #5-normal operation ground fill inlet

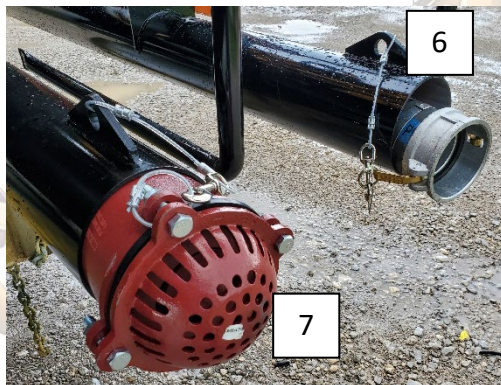
## Normal operation

- #1-Close
- #2-Open
- #3-Close
- #4-Suction load only
- #5-Ground fill inlet

#6-suction load extension hose (hooked to inlet 4)

#7-suction load foot valve (hooked to hose #6 and submerged in water source)

Note: If water is still present in the tank, you can open #3 and #2 to allow water to back flow the lines #6 & #7 to help with water pick-up



#6-Suction load extension hose

#7-Suction load foot valve line

To suction load **NIECE** tank- with **upgraded controls**

Continue on next page:

# NIECE

To suction load: **upgraded controls**

- #1-Open valve
- #2-close valve
- #3-open valve
- Hook up line #6 to SL inlet #4
- Hook up line #7 to line #6
- Submerge into water source

(Make sure line #6 & #7 are full of water to help pick-up and load water)



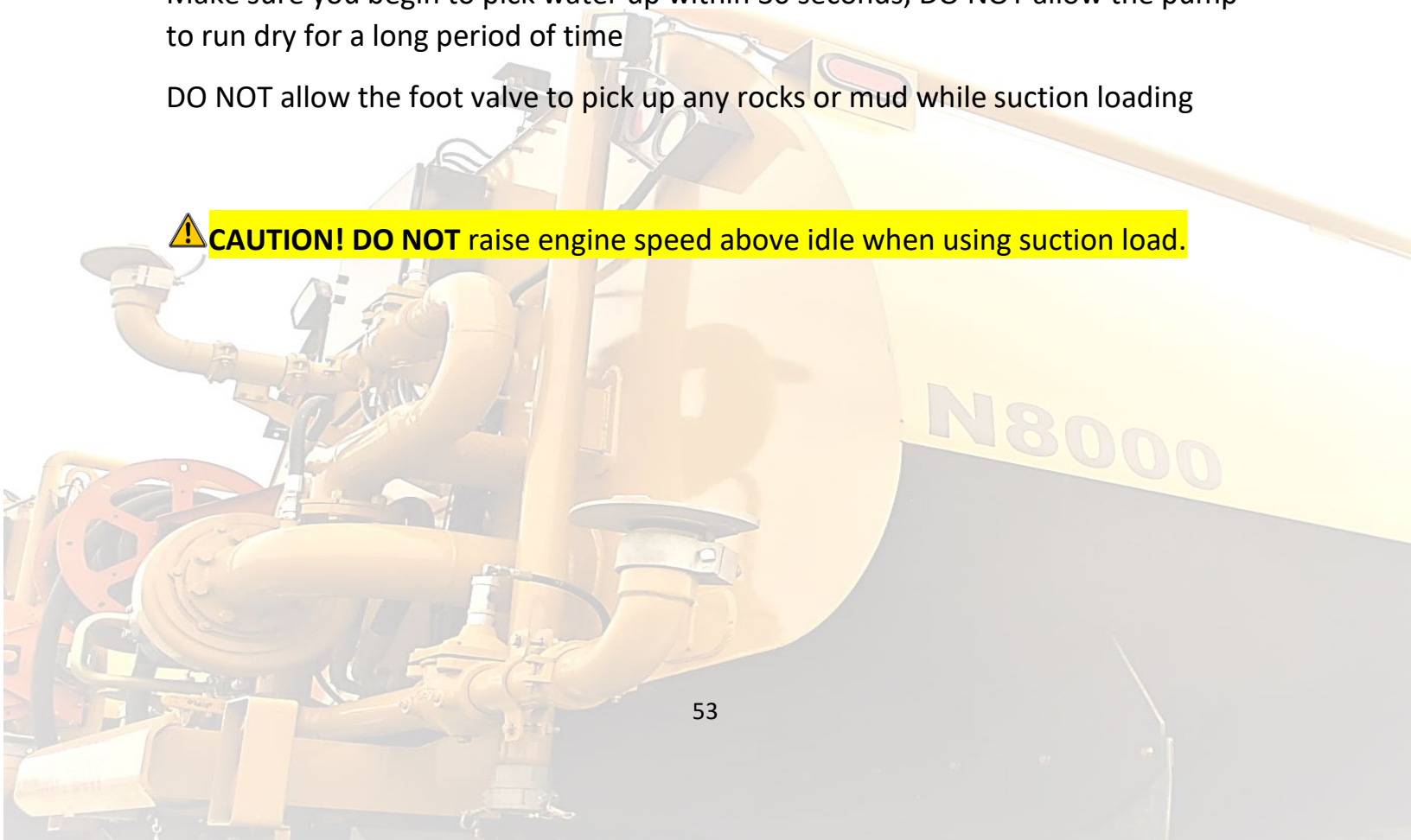
- Start truck engine and let idle.
- Using the navigation buttons (next & prev. buttons on lower screen)
- Locate screen showing suction load/hose reel button
- Activate button, once ON button will turn green

Truck hydraulics will automatically activate

Make sure you begin to pick water up within 30 seconds, DO NOT allow the pump to run dry for a long period of time

DO NOT allow the foot valve to pick up any rocks or mud while suction loading

**⚠ CAUTION! DO NOT raise engine speed above idle when using suction load.**



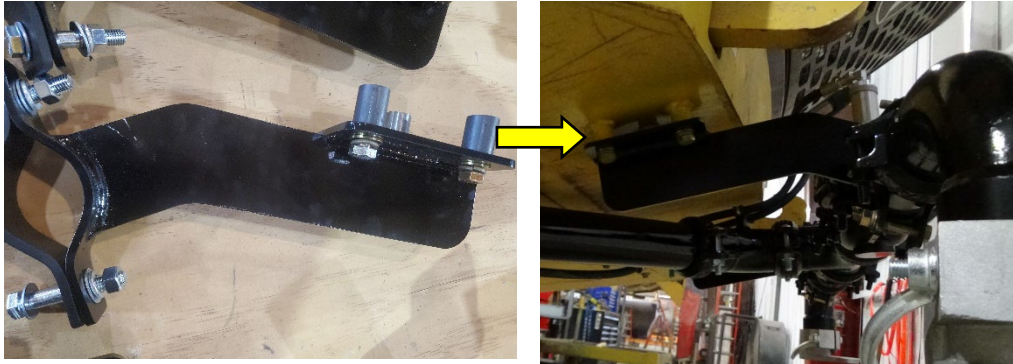


## Front spray option:

Be sure to unhook the batties before **ANY** welding is done on the chassis

Unhook sonar on the top of **NIECE** tank before **ANY** welding is done on the chassis

- Using the provided mounts and hardware, (weld or bolt) mount the spary bar to the underside of bumper
- Center and level spray bar with chassis



**Important-** Avoid any access covers and movement of hood or grill

- Center spary bar to the chassis with as much ground clearance as possible allowing room for supply hose, AV clamp and hardware
- Cylinders need to be orentated straight up
- Inlet can be rotated/angled back to match the slope of the belly pan



- **NIECE** Provides 2 (3/8) 2-piece lines to be routed from front head of the water tank to front spray bar

Lines are marked FL- front left, FR- front right

Continued on next page:

# NIECE

Front sections of hose can be modified to adjust for chassis length



Route the lines under the cab to the front spray bar, avoid heat and pinch points

Connect lines (FR-FL) to correct bimba cylinders (control your front spray bar valves)



- Use the 3" hose to connect points at front tank swivel to the inlet of the front spray bar (cut to length)

**NIECE** Tank kits are provided with general lengths, modifications may be needed on a chassis to chassis basis

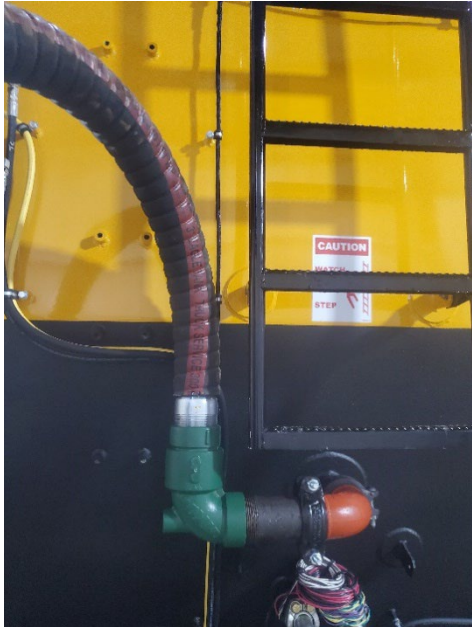
Customers can decide to use 3"sch 40 pipe and fittings for the routing and supply to front spray

Pipe and fittings NOT supplied by **NIECE** with standard tank kits

Continued on next page:



# NIECE



## Notes:

Hose routing can be challenging to insure correct hose/knuckle movement.

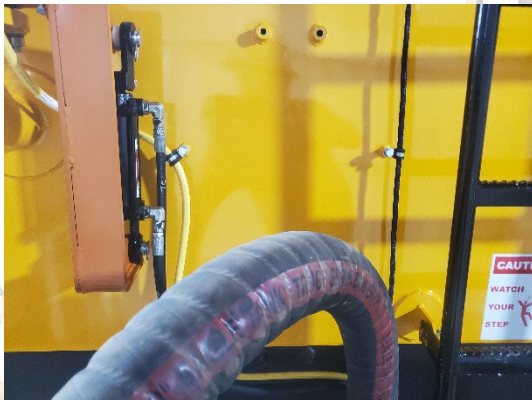
Orientation/routing at the front of tank/knuckle is at your discretion

Additional brackets/supports may be needed and not supplied depending on chassis

Insure proper hose movement with the knuckle when truck is turning side to side.

Hose needs to have an upward bend in the line to allow movement left/right and up/down

Avoid contact with turret, ladder, stairs/fender, exhaust and cylinders.



Avoid pinch points with chassis, tank and hose

- Route hose under passenger side chassis/fender
- Can go over or under the front differential
- Weld clamps to chassis to hold the hose with as much ground clearance and allowed movement in the knuckle
- Use 2 steel banding clamps per joint on the 3" hose

Be sure chassis batteries have been disconnected before any welding is done

**NIECE**

