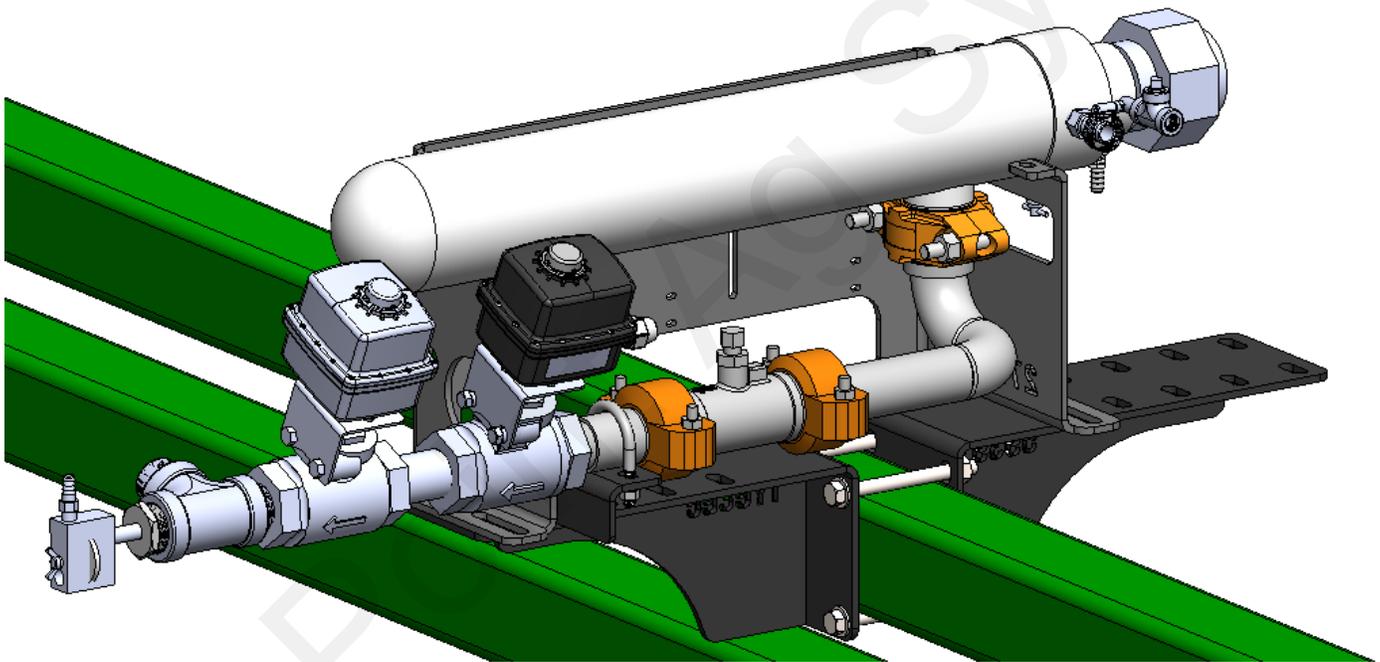




# 396-5992Y1

## *NH3 Installation Instructions for JD 2430C– Torpedo, Nitrogen Stabilizer Tank, Spartan Injection Mounting, and Suggested Items*





# Safety

A

**TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.**



**THIS SYMBOL MEANS  
ATTENTION!  
BECOME ALERT!  
YOUR SAFETY IS INVOLVED!**

Note the use of the signal words DANGER, WARNING and CAUTION with the safety messages. The appropriate signal word for each has been selected using the following guidelines:



**DANGER:** Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.



**WARNING:** Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.



**CAUTION:** Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

**NOTICE** is used to address safety practices not related to personal safety.





**ATTENTION:** Please follow all of the instructions in this manual carefully and read the entire manual completely. Failure to do so may cause the product to function improperly or fail causing serious injury or death.



**ANHYDROUS AMMONIA IS AN INHALATION HAZARD AND WILL CAUSE SERIOUS INJURY OR DEATH. PLEASE USE EXTREME CAUTION WHEN HANDLING IT OR PERFORMING ANY MAINTENANCE ON EQUIPMENT USED FOR ANHYDROUS AMMONIA.**

**ATTENTION:** Before performing any installation, repair or maintenance please follow the instructions below.

1. You must be trained and certified to work with anhydrous ammonia. If you are not, please seek out the appropriate agricultural department to attend a class to obtain the proper training and certification.
2. Wear appropriate safety goggles, gloves and breathing apparatuses.
3. Always know which way the wind is blowing.
4. Drain all tanks, hoses and piping of anhydrous ammonia COMPLETELY before removing, installing, performing maintenance or repairing any equipment.
5. Always remove device from service before performing any maintenance or repair.
6. Have sufficient water nearby.
7. Obey all local, state and federal laws regarding the handling of anhydrous ammonia.



## Anhydrous Ammonia Safety

Anhydrous ammonia is an important source of nitrogen fertilizer for crops. The improper handling of anhydrous ammonia can have catastrophic results on both plants and farm workers. Common injuries are severe burns to eyes, skin and the respiratory tract.

- Personal protective equipment (PPE) should always be worn. Standard PPE should be non-vented goggles, rubber gloves with thermal lining, face shield or an approved respirator. Wear a lightweight rubber suit, or (at the very least) a long sleeve shirt and coveralls.
- Make sure anhydrous ammonia tanks are not filled beyond the recommended capacity.
- Use care when handling the hose end valve so that it does not open accidentally. Do not move the hose by handling valve handle.
- Be sure to bleed the hose coupling before disconnecting. Use care when cleaning plugged knives as anhydrous ammonia could be built up behind the plug.
- Use emergency water supply for at least 15 minutes if exposed to anhydrous ammonia and then seek emergency medical attention.
- Always have a small squeeze bottle of fresh water at all times.
- Never assume NH<sub>3</sub> lines are empty, including the lines connected to the Torpedo.
- Make sure the system is completely drained of NH<sub>3</sub>. It can hide in low areas of the system. Look for frost on the hose or equipment. That usually means there is NH<sub>3</sub> there.
- Always use high pressure hose when ammonia can be trapped in that segment, such as between the tank and the Torpedo.
- Any place that has a high pressure hose should also have a hydrostatic relief valve and a bleed valve.
- Always handle valves by the body and not by the wheel or latch.
- Always make sure you are upwind of potential NH<sub>3</sub> release points.
- When you park, position NH<sub>3</sub> equipment downwind from dwellings, people, and livestock.
- Close the valve on the tank when you stop.
- The first treatment for anhydrous ammonia exposure is WATER.

***NH<sub>3</sub> is a very dangerous product. It can kill you or blind you or worse. If you have not taken an approved NH<sub>3</sub> Safety class, do not work around NH<sub>3</sub>. If you have had the course, follow ALL safety precautions ALL the time.***

# BE CAREFUL !

# NOTICE

## ***Before you start applying NH<sub>3</sub>—***

- Know the wind direction.
- Are the hoses in good condition?
- Has the expiration date been passed on any hose or other dated component?
- Are all fittings clean and free from rust?
- Do low-pressure tubes have any leaks?
- Are any knives plugged?
- Is the tank secure with a locking hitch pin?
- Is the pressure relief valve operating correctly?
- Does the tank have five gallons of fresh water?
- Is PPE available and being worn (goggles, gloves, long-sleeve shirt) ?

## ***Before performing maintenance on the toolbar or equipment—***

- Put on gloves and goggles
- Make sure you have emergency water
- Check wind direction and stay upwind
- Park away from buildings, livestock, and people
- Before servicing, close the valve on the NH<sub>3</sub> tank and continue application to bleed the system.
- Be sure the tank valve is closed. Turn the Master valve on and leave it on during bleeding.
- Disconnect the nurse tank supply hoses.
- Open all bleeder valves on cooler and rest of system.
- Check any hoses that have a low loop in them
- Even after bleeding the system, slowly and cautiously loosen any fittings to be sure there is no ammonia trapped inside.

## Regular Maintenance—

- Check unit regularly for leaks and wear
- Clean the unit and, if possible, store inside out of the weather
- If the unit is leaking from a weld seam, remove from service and send in for repair
- If leaking from a threaded connection, try tightening the connection with a wrench
- If leaking from the dump knives when not applying, install a repair kit on the Torpedo to replace the internal O-rings. Also, may need to install a repair kit on the Master shutoff valve (O-rings and seals).

## Torpedo Maintenance

- Close the valve on the nurse tank
- Open all valves to drain the system of ammonia
- Open all bleeder valves and drain flush valve on the Torpedo



# Things to Know About Anhydrous Ammonia (NH<sub>3</sub>)

Anhydrous ammonia is a colorless non-flammable liquefied gas. Its vapor is lighter than air and has the same pungent odor as household ammonia. Although ammonia vapor is lighter than air, the vapors from a leak may hug the ground appearing as a white cloud. Chemically, ammonia is 82% nitrogen (N) and 18% hydrogen (H) and has the chemical formula NH<sub>3</sub>. Ammonia by weight is 14 parts nitrogen to 3 parts hydrogen, or approximately *82% nitrogen and 18% hydrogen*.

The definition of *anhydrous* is *without water*. Whereas household ammonia is 95% water, anhydrous ammonia has no water. Ammonia is so hydroscopic (water loving) that one cubic foot of water will dissolve 1300 cubic feet of ammonia vapor making water the primary weapon for first responders.

Ammonia weighs 5.15 pounds per gallon in contrast to water which weighs 8.33 pounds per gallon. Since ammonia is so soluble in water there will be no layering effect when liquid ammonia is spilled into a surface water body. Booms, pads, sweeps and pillows that are usually used to contain and recover petroleum are ineffective on spills of ammonia into surface water.

Ammonia is a non-flammable gas but will ignite at a temperature of 1204°F within vapor concentration limits between 15% and 28%. (Paper ignites at 450°F, coal at 750°F.) Outside conditions that would support these vapor concentrations are very rare.

Ammonia will corrode galvanized metals, cast iron, copper, brass, or copper alloys. All ammonia piping, valves, tanks and fittings are constructed of steel.

Liquid ammonia boils at any temperature greater than -28°F and will expand to 850 times its liquid volume. One gallon of liquid will expand to 850 gallons or 113 cubic feet of gas.

## Ammonia Fast Facts

### NH<sub>3</sub> Vapor

Ammonia appears in nature as a natural substance that results from decomposition.

Ammonia vapor is a colorless gas with a pungent odor.

Ammonia exists as a vapor at atmospheric conditions.

Ammonia vapor is lighter than air and tends to rise when released to atmosphere.

### NH<sub>3</sub> Liquid

Liquid ammonia released to atmosphere forms a white smoke by freezing the moisture in the air.

Liquid ammonia has a very high coefficient of expansion with temperature.

One gallon of liquid ammonia weighs approximately 5.15 lbs.; however the weight varies with temperature.

When liquid ammonia reaches a temperature between its melting and critical points, it exerts a vapor pressure that increases with temperature.

*A closed container of liquid ammonia is in equilibrium with ammonia vapor and the container pressure bears a definite relationship to the temperature.*

### Physical Data

Boiling point is -28°F.

Ignition point is 1,204°F.

## Storage and Handling

Ammonia is stored and transported as a liquid under pressure.

*The pressure on the tank is the liquid pressure and remains the same whether the tank is 10% full or 80% full. This pressure is dependent on the temperature of the NH<sub>3</sub>.*

The maximum filling level of an anhydrous ammonia tank is 85%.

## Flammability

Anhydrous ammonia is classified by the DOT as a non-flammable gas.

Ammonia vapor is flammable over a narrow range of 15% to 28% by volume in air and a strong ignition source must be present.

## Anhydrous Ammonia Application

Precision application of anhydrous ammonia starts with a proper metering system. It is crucial to be sure the metering and control system is applying what is required.

Accurate metering of anhydrous ammonia is difficult to achieve with a conventional variable orifice meter. Anhydrous ammonia is stored and transported as a liquid. To maintain NH<sub>3</sub> as a liquid it must be kept below  $-28^{\circ}\text{F}$  or maintained under pressure. If the temperature of the NH<sub>3</sub> increases above  $-28^{\circ}\text{F}$  some of the liquid changes to a gas as the NH<sub>3</sub> begins to boil. Application equipment typically uses tank pressure to deliver NH<sub>3</sub> to the soil. An increase in tank pressure would tend to force more NH<sub>3</sub> through the distribution lines. The actual pounds of NH<sub>3</sub> being applied decreases or increases as tank pressure fluctuates unless continuous adjustments are made to the meter.

If NH<sub>3</sub> is released into the atmosphere it will expand rapidly to occupy a volume 850 times greater than the original liquid. NH<sub>3</sub> readily changes from liquid to gas in the nurse tank and distribution system. Consequently the ratio of NH<sub>3</sub> gas to liquid continually changes as it passes through the distribution lines. About 1% of the liquid will vaporize during the ammonia flow from the tank dip tube to the metering point. 1% liquid when expanded to vapor at 100 lb tank pressure will occupy approximately 25% to 30% of the delivery chamber. At 50 lb tank pressure this increases to over 60% of the delivery chamber occupied by vapor. This makes metering and distributing NH<sub>3</sub> very difficult to do consistently and accurately.

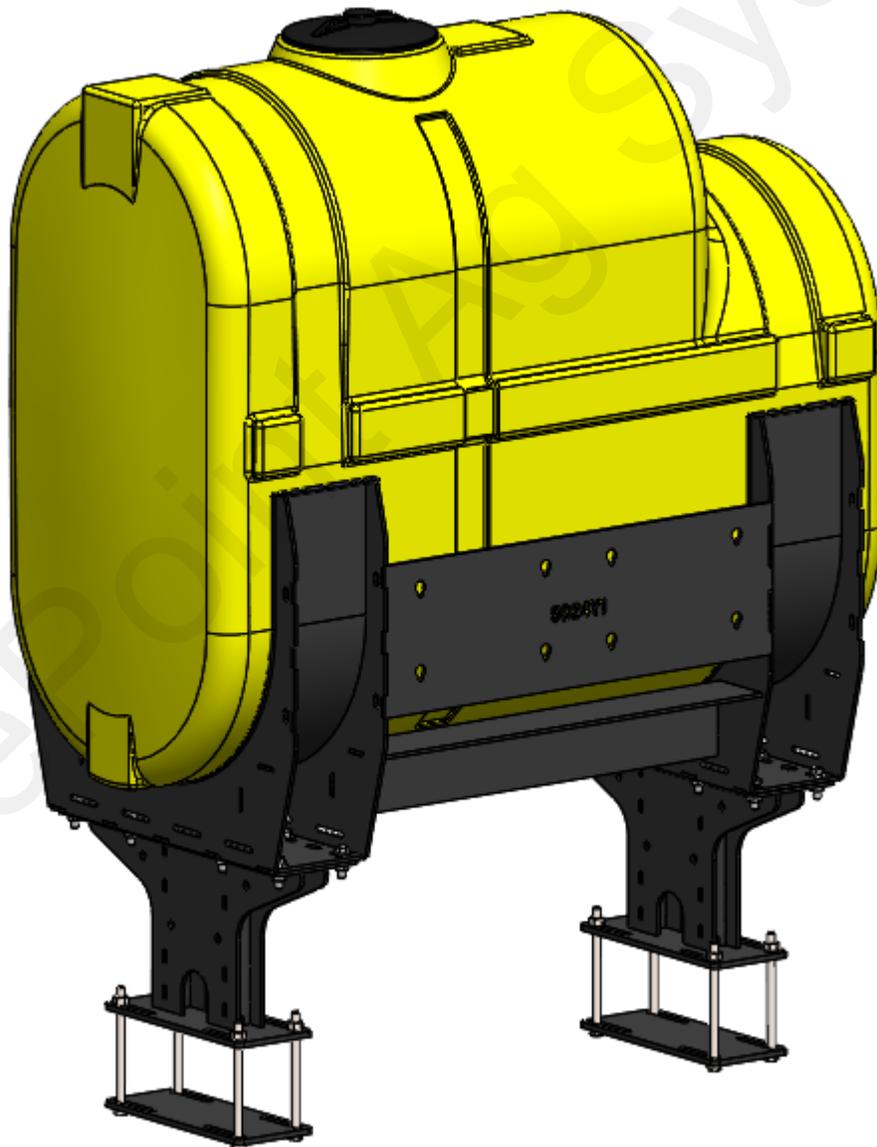


# 396-5992Y1

## *NH3 Torpedo Installation Instructions for JD 2430C*

**Kit Number: 528-01-800100**

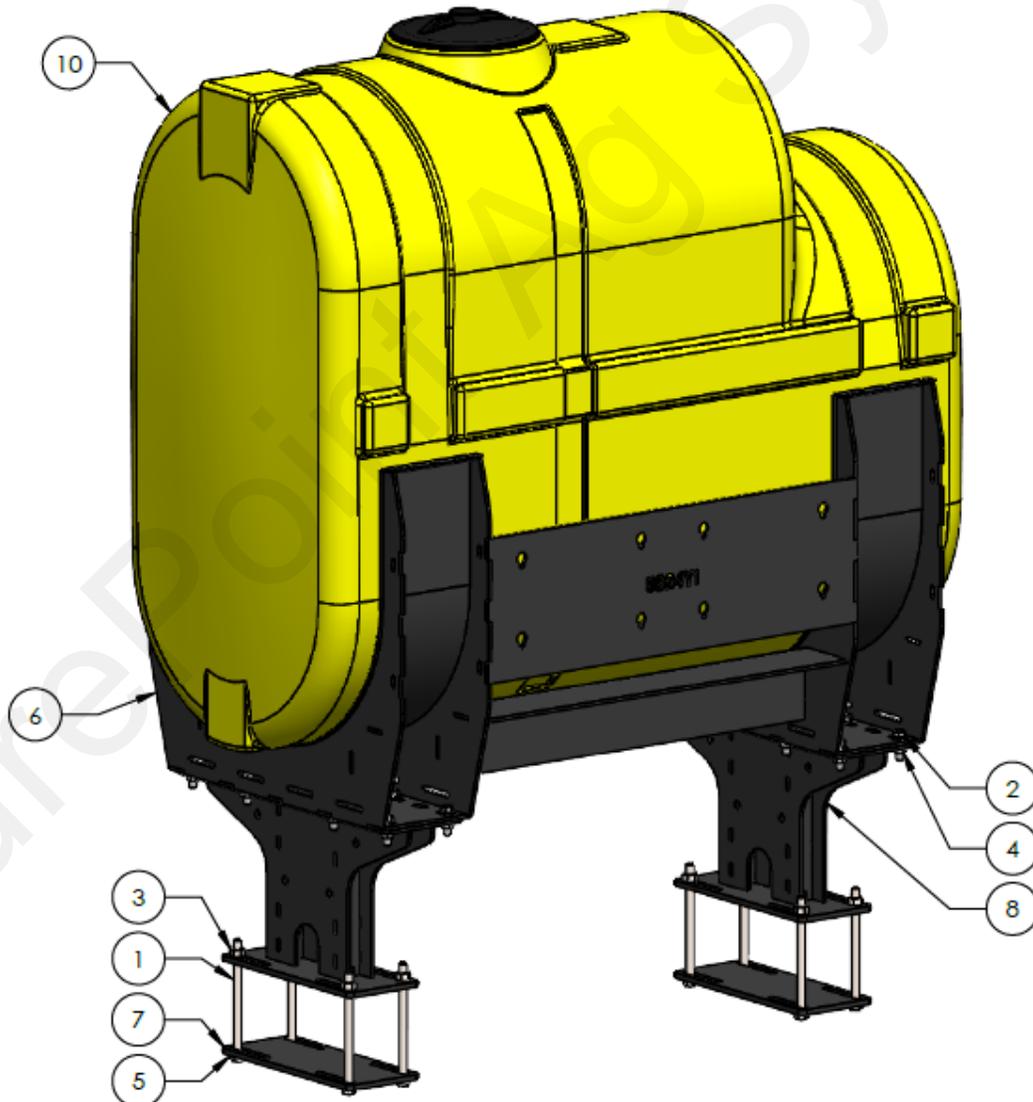
**Kit Description: John Deere 2430C Hitch Mounted Tank - 200 Gal  
Cutaway Hitch Mount Tank Kit**





# Parts List and Exploded View

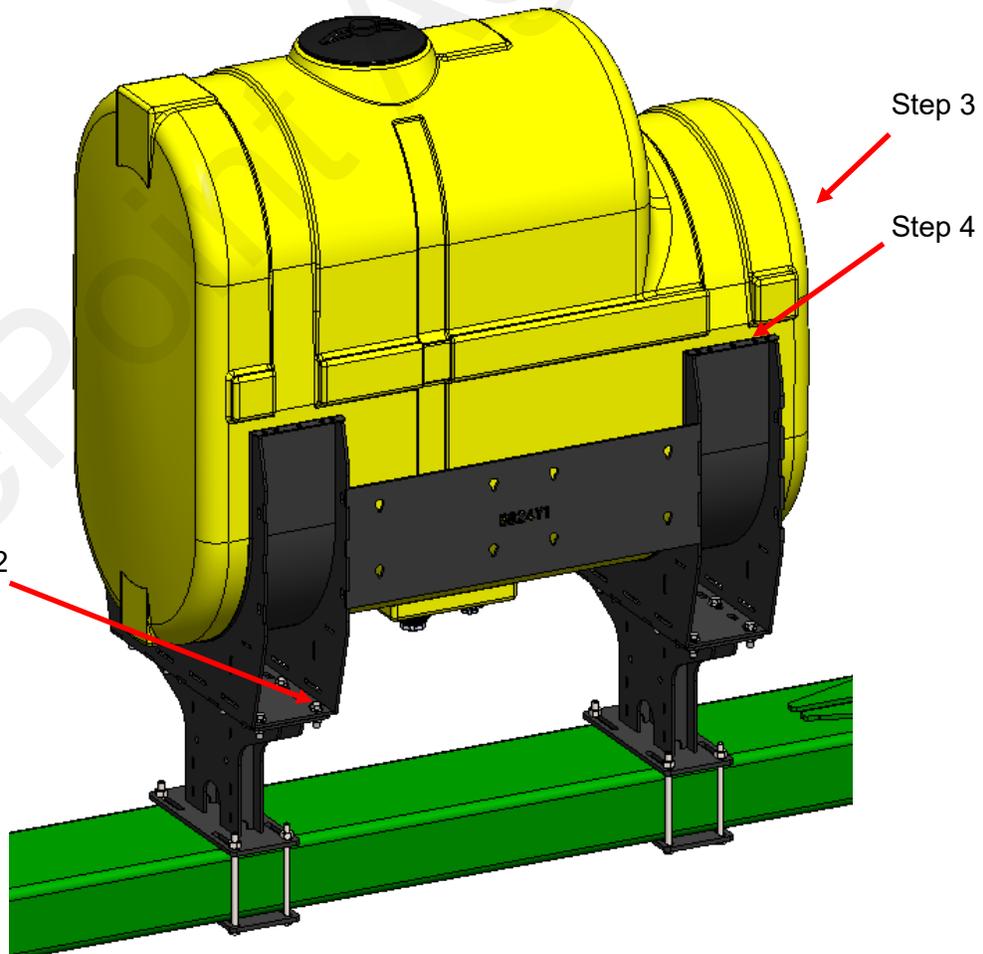
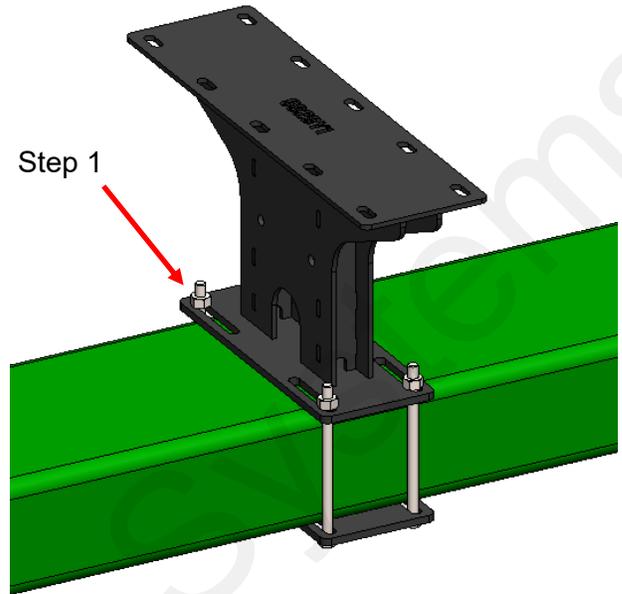
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	300-080800-5	1/2" x 8" Hex Head Bolt - G5	8
2	307-080108-5	Flange Head Bolt, 1/2" x 1-1/2" - G5	16
3	323-08	1/2" Flange Nut	8
4	325-08	Top Lock Flange Nut, 1/2"-13 - G5	16
5	330-08	1/2" Flat Washer	8
6	400-5924Y1	Hitch Mounted 200 Gal Cutaway Tank Cradle	1
7	400-5928Y1	3/8" Backer Plate (6" - 12" Hitch)	2
8	400-5929Y1	200 Gal Cutaway Tank Pedestal	2
9	525-2055	2" Strap Kit for Tanks 300 Gal & Under	2
10	727-08-CAW0200-24-Y	Sidemount Cutaway Tank - 200 Gal Yellow	1





# Step by Step Instructions

1. Mount pedestal to hitch using four (4) 1/2" x 8" hex head bolts, washers and flange nuts. Repeat for second pedestal.
2. Loosely mount cutaway tank cradle onto pedestals using flange bolts and top lock nuts.
3. Set tank in cradle and align with tank strap hole pattern. Check for any clearance issues and tighten all bolts.
4. Install tank strap kits and tighten. Tank straps should be tightened again after the tank is filled.





# Sight Gauge Kit

## 520-00-400750 - 200 / 250 Gallon Cutaway Tank

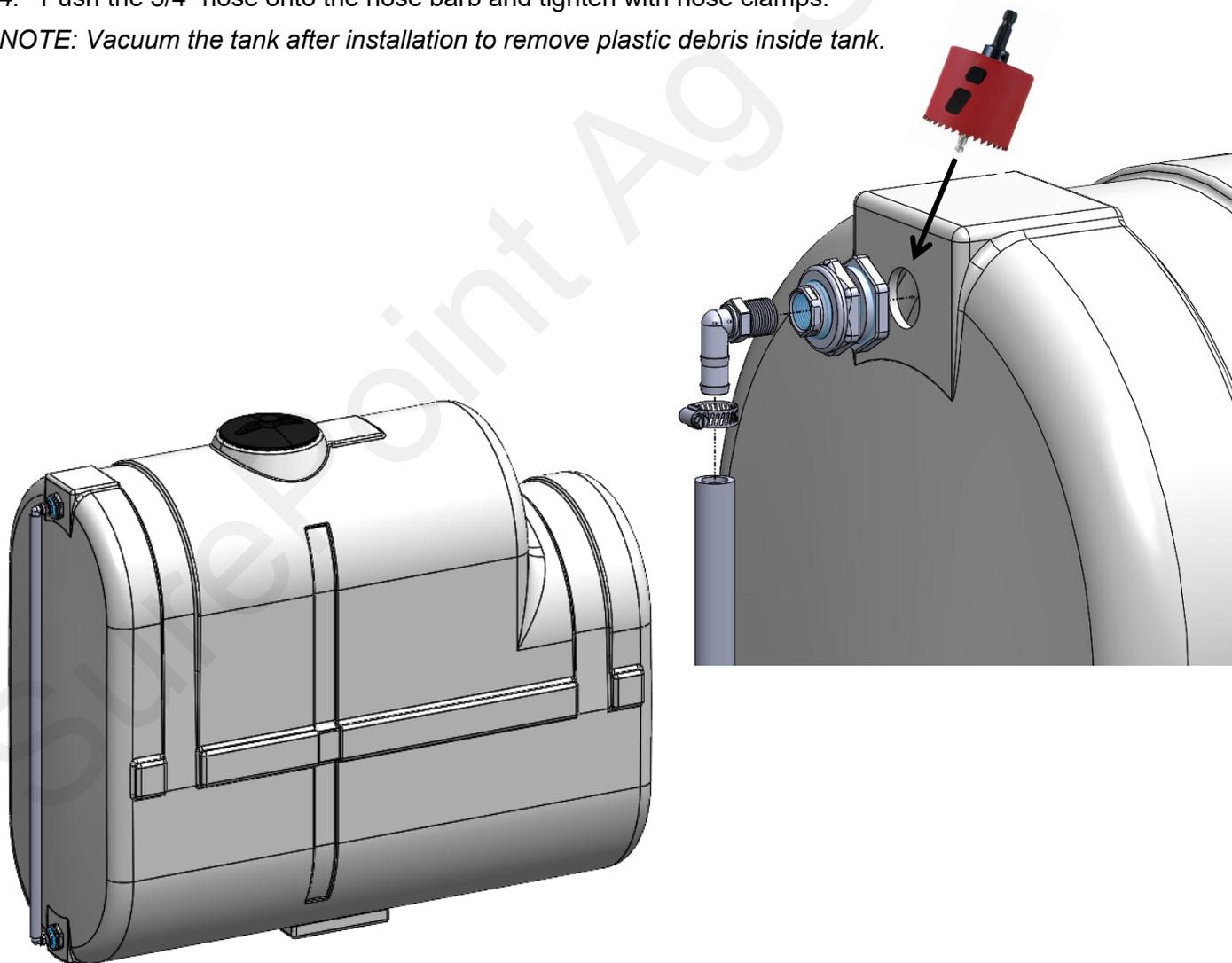
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	101-075075-90	3/4" MPT x 3/4" HB - 90 Degree	2
2	108-TF075	3/4" Tank Bung	2
3	283-075-15007008	Bulk 3/4" EVA Clear Tube	5'
4	350-1208	SS Hose Clamp - Size 12 - 1-1/4" Diameter (fits 3/4" AG200)	2

1. Use a hole saw to drill a hole in the tank towards the top and bottom for bung installation in the desired location.

*NOTE: A 3/4" bung requires a 1-3/4" hole saw.*

2. Tighten the reverse threads on the tank bung with the nut on the inside as shown.
3. Use pipe thread sealant and thread the 3/4" MPT x 3/4" Hose Barb - 90 Degree fitting into the tank bung.
4. Push the 3/4" hose onto the hose barb and tighten with hose clamps.

*NOTE: Vacuum the tank after installation to remove plastic debris inside tank.*

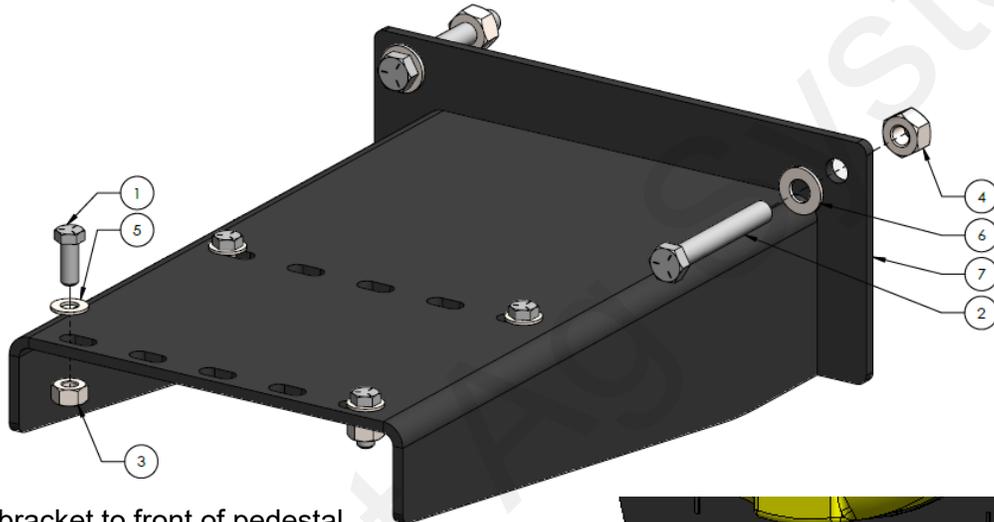




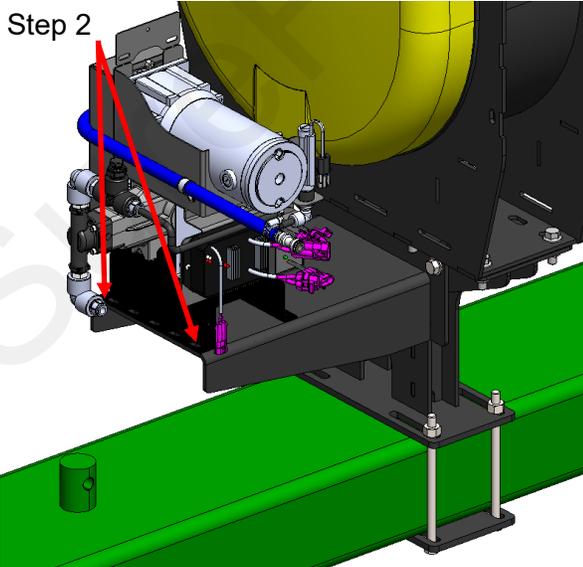
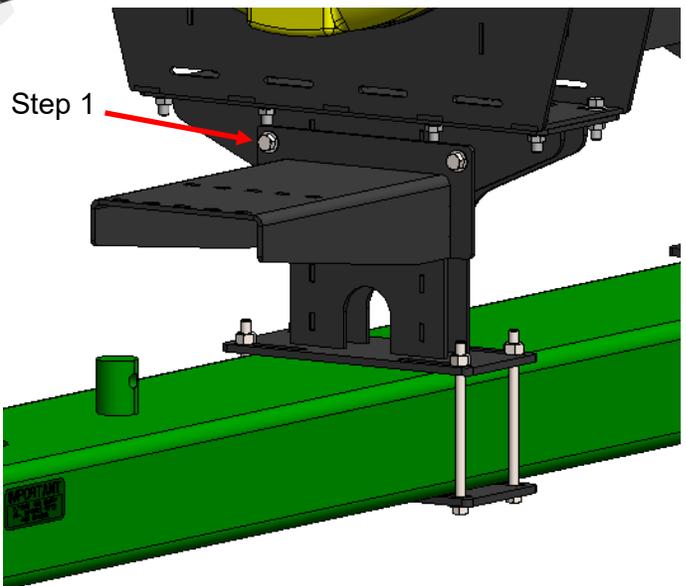
# Pump Mounting

## 508-04-100100 - Spartan Pump Mounting Bracket

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	300-060100-5	3/8" x 1" Hex Head Bolt - G5	4
2	300-080308-5	1/2" x 3-1/2" Hex Head Bolt - G5	4
3	323-06	3/8" Flange Nut	4
4	323-08	1/2" Flange Nut	4
5	330-06	3/8" Flat Washer	4
6	330-08	1/2" Flat Washer	4
7	400-5935Y1	2430C Spartan Mounting Bracket	1



1. Mount bracket to front of pedestal using four (4) 1/2" x 3-1/2" hex head bolts, washers, and flange nuts.
2. Mount Spartan Pump using four (4) 3/8" x 1" hex head bolts, washers, and flange nuts.

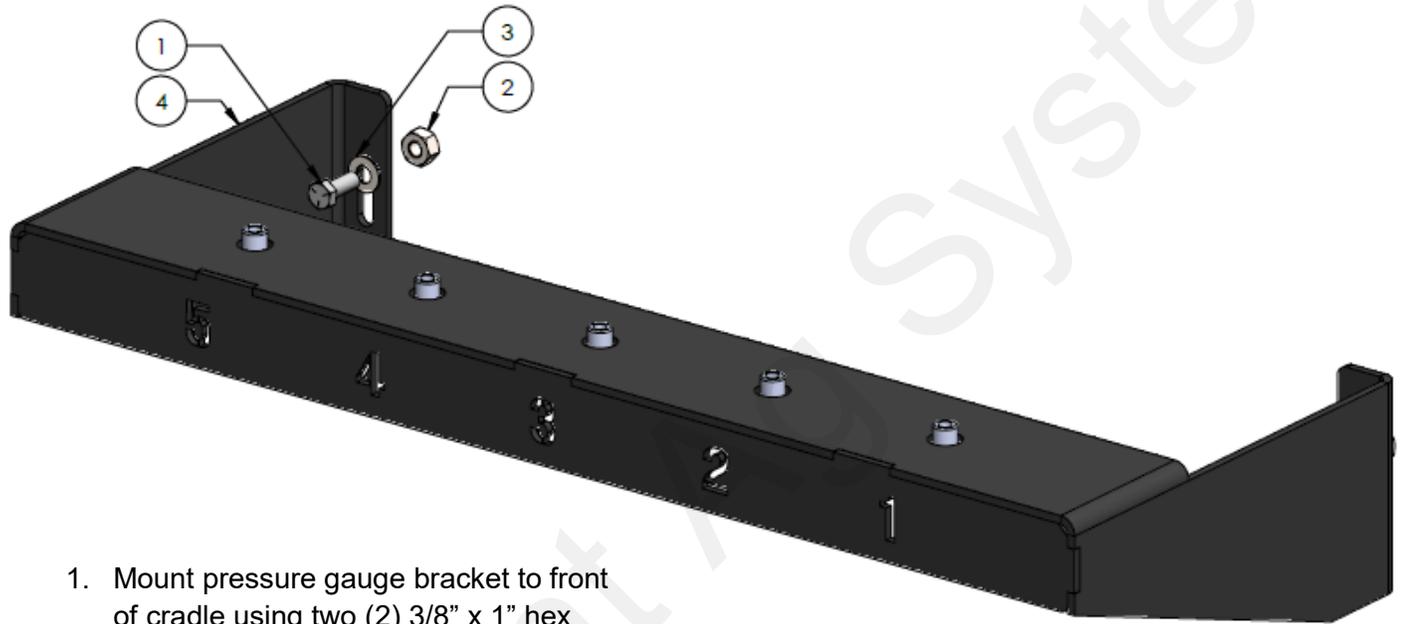




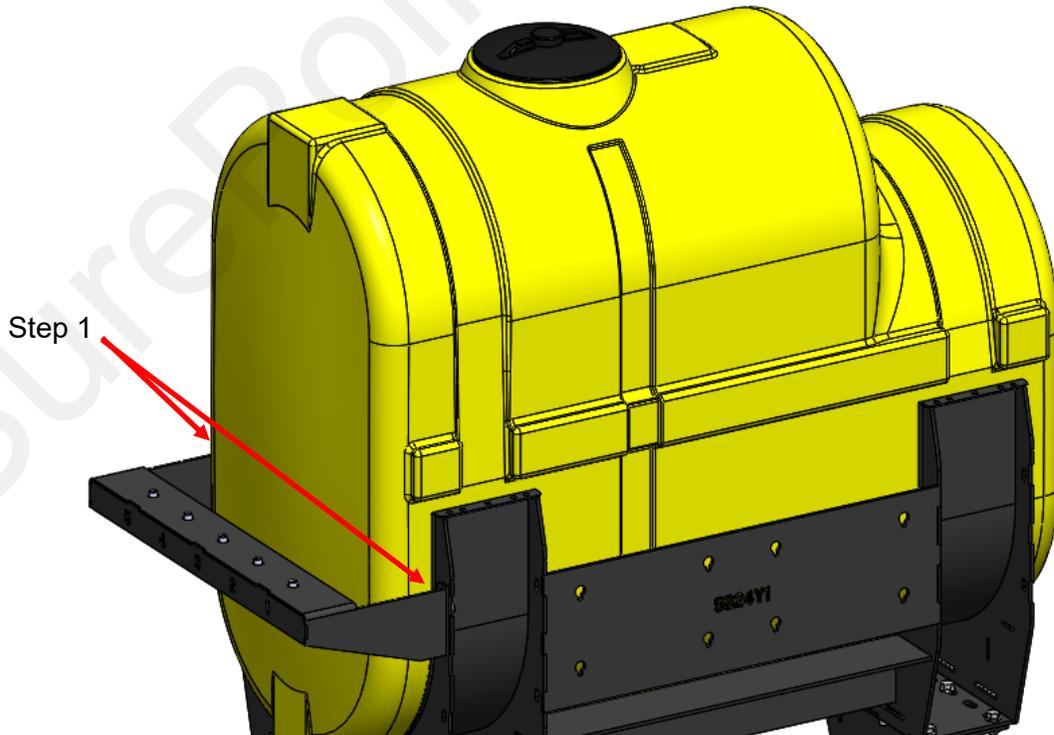
# Pressure Gauge Mounting

## 159-11-500550 - Pressure Gauge Mounting Bracket

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	300-060100-5	3/8" x 1" Hex Head Bolt - G5	2
2	323-06	3/8" Flange Nut	2
3	330-06	3/8" Flat Washer	2
4	400-5932Y1	John Deere 2430C Pressure Gauge Mounting Bracket	1



1. Mount pressure gauge bracket to front of cradle using two (2) 3/8" x 1" hex head bolts, washers, and flange nuts.

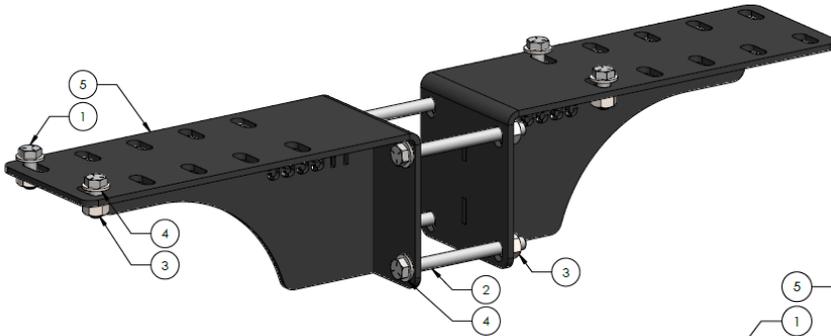




# SurePoint Torpedo Mounting

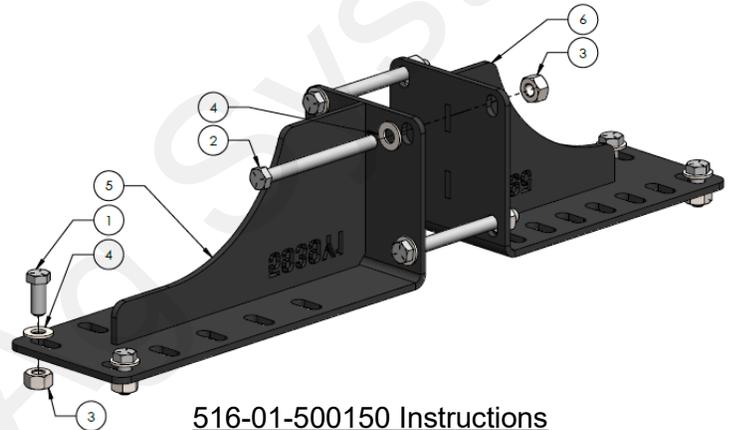
516-01-500100 / 516-01-500150

ITEM NO.	PART NUMBER	DESCRIPTION	500100	500150
1	300-080104-5	1/2" x 1-1/4" Hex Head Bolt - G5	6	6
2	300-080508-5	1/2" x 5-1/2" Hex Head Bolt - G5	4	4
3	323-08	1/2" Flange Nut	10	10
4	330-08	1/2" Flat Washer	10	10
5	400-5939Y1	JD 2430C Torpedo Mounting Bracket	2	1
6	400-5942Y1	JD 2430C Pumped Torpedo Mounting Bracket	-	1



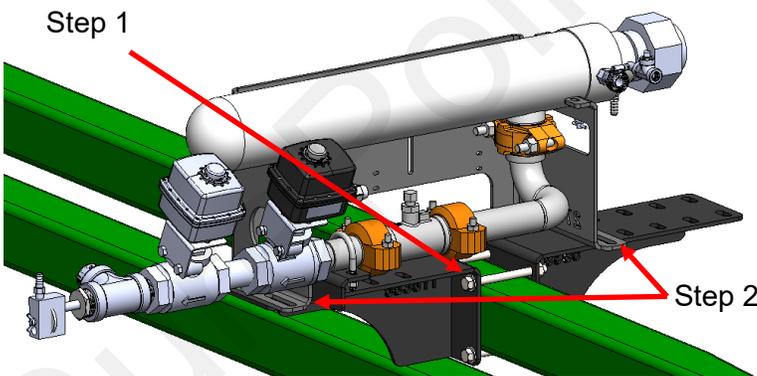
## 516-01-500100 Instructions

1. Loosely mount both 5939Y1 brackets to top toolbar as shown below using four (4) 1/2" x 5-1/2" hex head bolts, washers, and flange nuts.
2. After positioning bracket where desired, tighten everything down and Mount Torpedo as shown below.

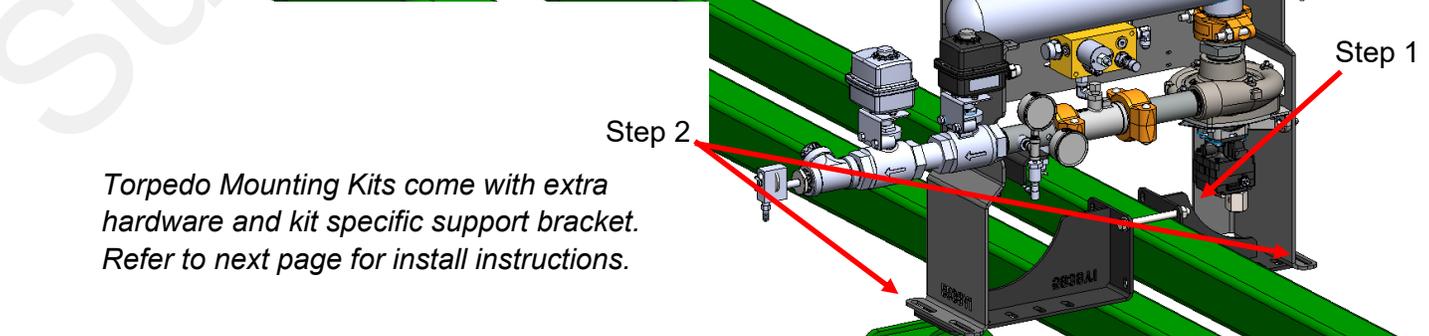


## 516-01-500150 Instructions

1. Loosely mount 5939Y1 bracket and 5942Y1 to top toolbar as shown below using four (4) 1/2" x 5-1/2" hex head bolts, washers, and flange nuts. *Make sure longer bracket (5939Y1) is mounted towards the front of implement.*
2. After positioning brackets where desired, mount Pumped Torpedo as shown below.



Step 2



Step 1

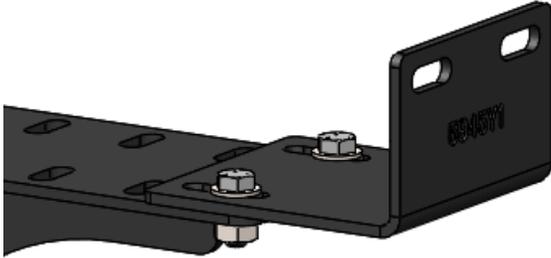
Step 2

*Torpedo Mounting Kits come with extra hardware and kit specific support bracket. Refer to next page for install instructions.*

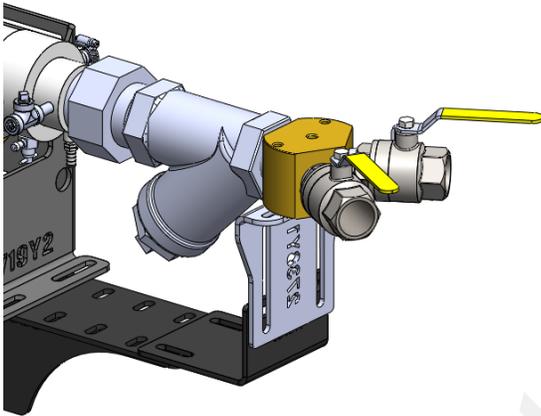


# Dual Inlet Support Mounting Install instructions

## Y-Fitting Support Bracket - 400-5945Y1



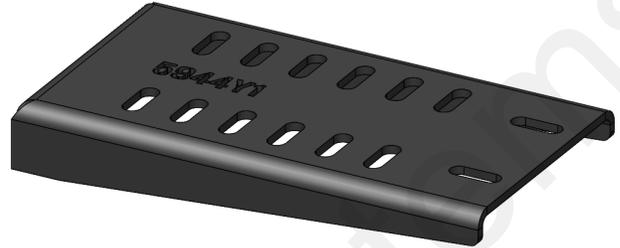
For use with Torpedo



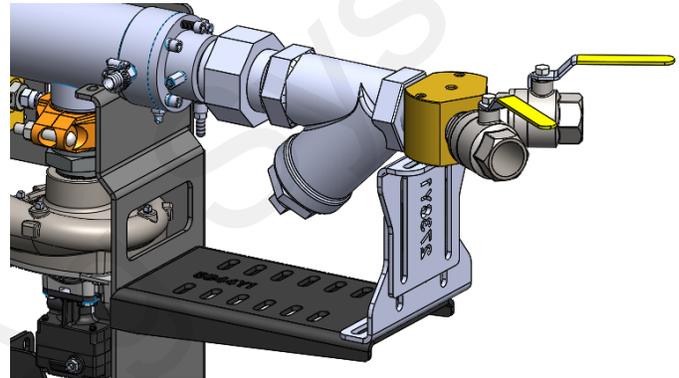
### 5945Y1 Mounting Instructions

1. Using two (2) 1/2" x 1-1/4" hex head bolts, loosely mount 5945Y1 to 5939Y1.
2. Pair with 202-2740Y1 (suggested item) and tighten down hardware.

## Y-Fitting Support Bracket - 400-5944Y1



For use with Pumped Torpedo



### 5944Y1 Mounting Instructions

1. Undo 3/8" bolts mounting pump to Torpedo Base and replace with two (2) 3/8" x 2" hex head bolts provided in kit 500150. Mount 5944Y1 to outside of Torpedo Base.
2. Pair with 202-2740Y1 (suggested item) and tighten down hardware.

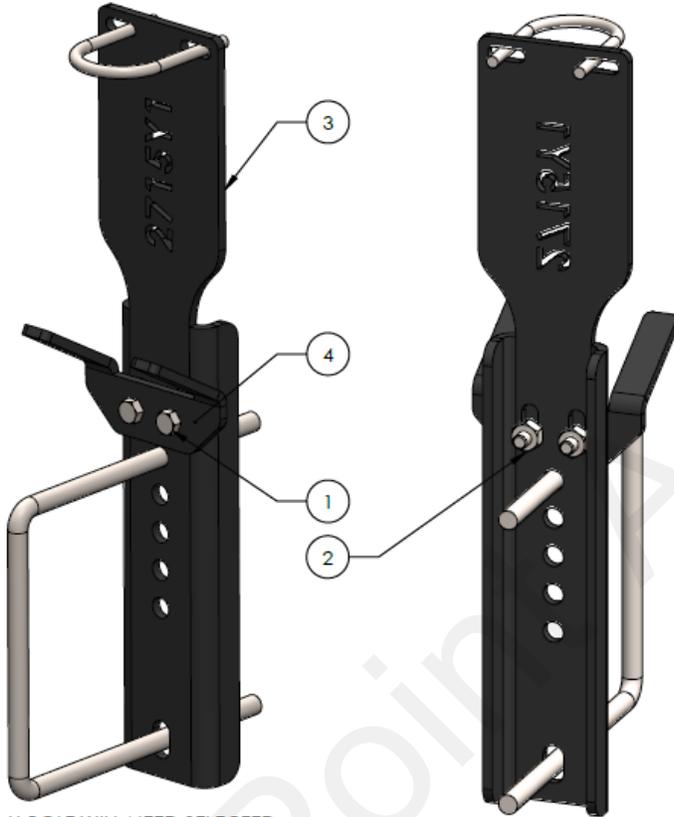


# NH3 Manifold Mounting

159-11-100500

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	300-060104-5	3/8" x 1-1/4" Hex Head Bolt - G5	2
2	323-06	3/8" Flange Nut	2
3	462-2715Y1	A-360 Manifold Bracket	1
4	462-2717Y1	Fork Bracket for use with 462-2715Y1	1

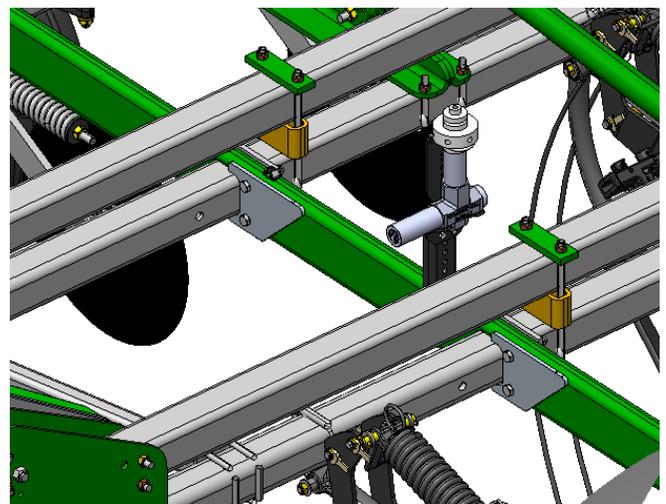
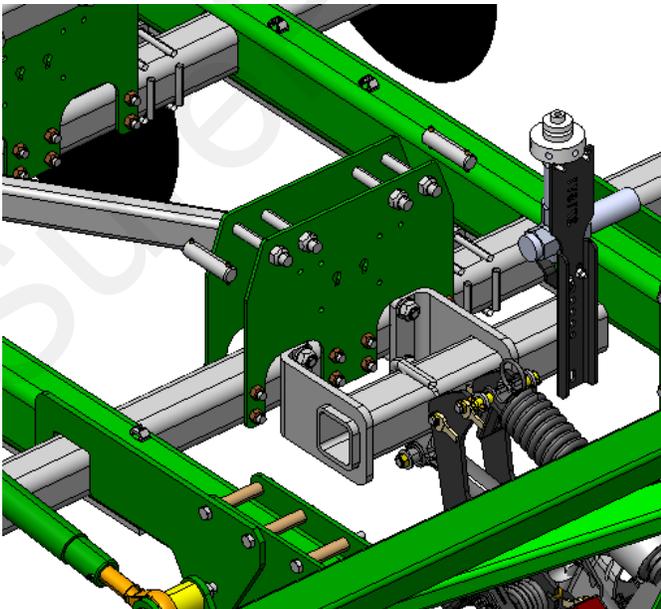
U-BOLT SUPPLIED WITH SPLITTER/MANIFOLD



1. Loosely mount 2717Y1 to 2715Y1 as shown using two (2) 3/8" x 1-1/4" hex head bolts and flange nuts.
2. Use provided round u-bolt to loosely mount splitter/manifold. Adjust fork bracket and tighten bolts down.
3. Mount complete assembly to implement toolbar using a square bend u-bolt. *The recommended amount of manifolds for 25R are 5. Suggested mounting location shown below.*

*Note: Keep hose lengths similar between manifolds and rows for best results.*

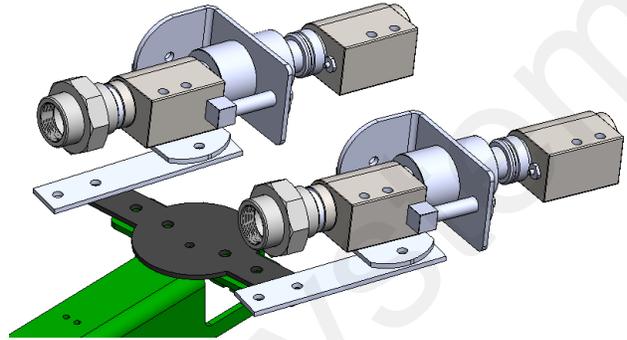
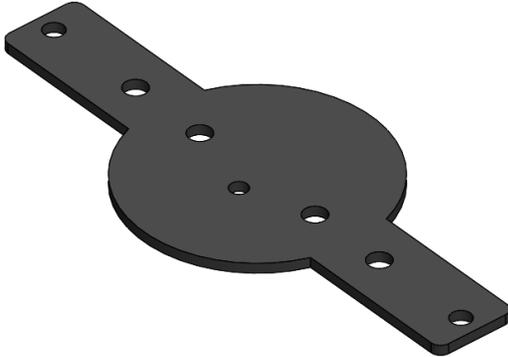
U-BOLT WILL NEED SELECTED



# Suggested Items

## Y-Fitting Support & Break-Away Mounting

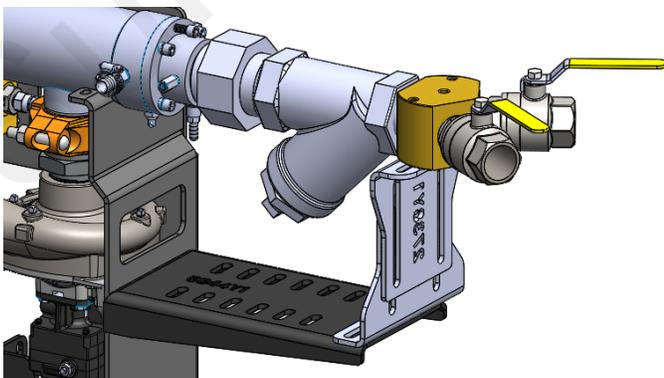
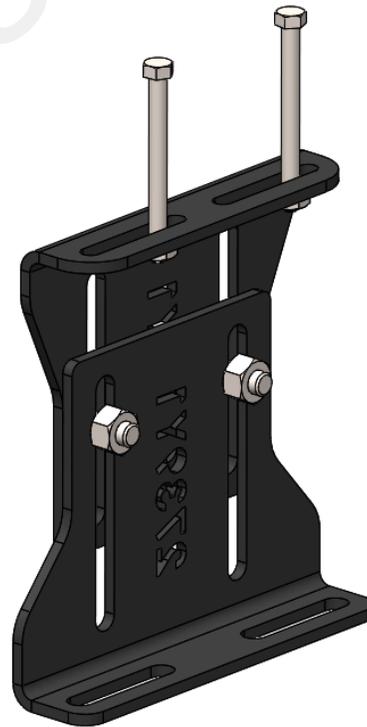
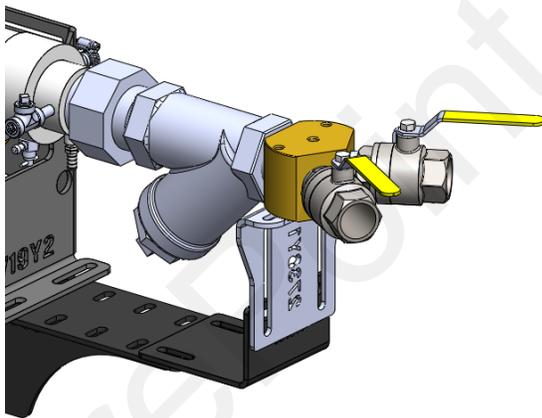
### Break-Away Mounting Bracket - 400-5943Y1



#### 5943Y1 Mounting Instructions

Use when mounting Break-Away valves on rear swing arm.

### NH3 Y-Splitter Support Assembly - 202-2740Y1



#### 202-2740Y1 Mounting Instructions

Will use complete assembly on Pumped Torpedo System & Top bracket for pumpless Torpedo System.