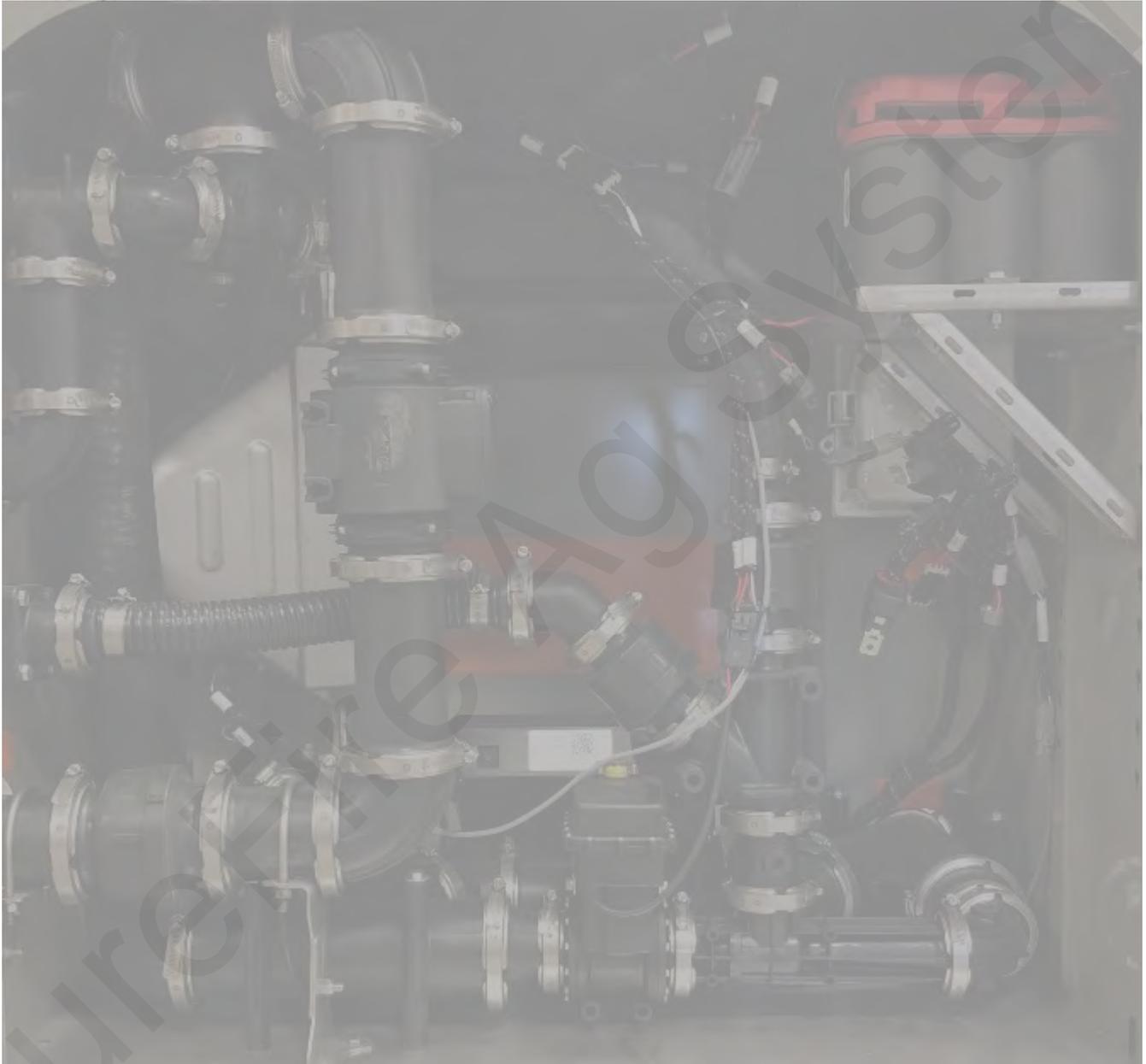




# 396-4495Y1 QuickDraw<sup>MAX</sup> 3000 Master Wiring Overview





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**QuickDraw Power Wiring**  
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**Electric Motor Wiring**  
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**Hydraulic Motor Wiring**  
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**Remote Connectivity**  
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**Electric Carrier Fill Valve**  
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# QuickDraw Harnessing Table of Contents

## QuickDraw Harnesses

- QuickDraw Main Harness
  - 208-05-4312Y1 - 12" Controller Leg (Standard)
  - 606-05-400100 - QuickDraw Extended Harness Kit - 10' Controller/E-Stop Extension
  - 606-05-400200 - QuickDraw Extended Harness Kit - 25' Controller/E-Stop Extension

## Power Connections

- Requires 208-NAPA7578 - 12 Volt Battery, BCI Group 78 (Or customer provided battery)
- 205-2213Y1 - 40 Amp 480MP Power Cable - 20' 6AWG
- 208-02-2191Y1 - Power Supply - 25Amp, 110VAC to 12VDC with 480 MP Tower Connector
- 206-02-220\_Y1 - 2 Pin - 480MP Extension Cables
  - 5 Foot: 206-02-2206Y1 (10 AWG)
  - 10 Foot: 206-02-2207Y1 (8 AWG)
  - 20 Foot: 206-02-2208Y1 (8 AWG)
  - 30 Foot: 206-02-2209Y1 (6 AWG)
  - 40 Foot: 206-02-2210Y1 (6 AWG)
  - 60 Foot: 206-02-2211Y1 (6 AWG)
- 201-4241Y1 - 40A Y Cable: 480MP Tower to (2) 480MP Shroud

## Gas Engine Pumps

- 208-05-2414Y1 - QuickDraw Pump Stop Harness Set (See Manual 396-2944Y1)
  - 208-05-2802Y1 - QuickDraw Pump Stop Harness
  - 208-05-2633Y1 - QuickDraw Pump Stop Harness (Grounded Coil)
- 208-05-2430Y1 - QuickDraw Electric Pump Start Gas Engine 12V Supply Harness
- 208-05-3944Y1 - QuickDraw Gas Engine Push Button Start

## Electric Pumps

- 208-05-3955Y1 - QuickDraw Electric Pump Start-Stop Harness (See Manual 396-3684Y1)
  - Stop/Start Starter Panel with QuickDraw Start and Stop Harnesses Installed
  - On/Off Motor Starter with QuickDraw Start and Stop Harnesses Installed

## Hydraulic Pumps

- 208-05-3774Y1 - Hydraulic Booster Pump Harness
- 208-05-4240Y1 - Hydraulic Transfer Pump Solenoid Start Harness

## Remote Connectivity (Cloud Based Connections)

- 606-05-300150 - QuickDraw Remote Connectivity Kit

## Multiple Carrier Valve Wiring

- 208-05-3363Y2 - QuickDraw CAN Valve Expansion Harness
- 206-04-291\_Y1 - 4-Pin Deutsch Extension Cable
  - 5 ft - 206-04-2913Y1
  - 10 ft - 206-04-2914Y1
  - 20 ft - 206-04-2915Y1

## Hose Reel

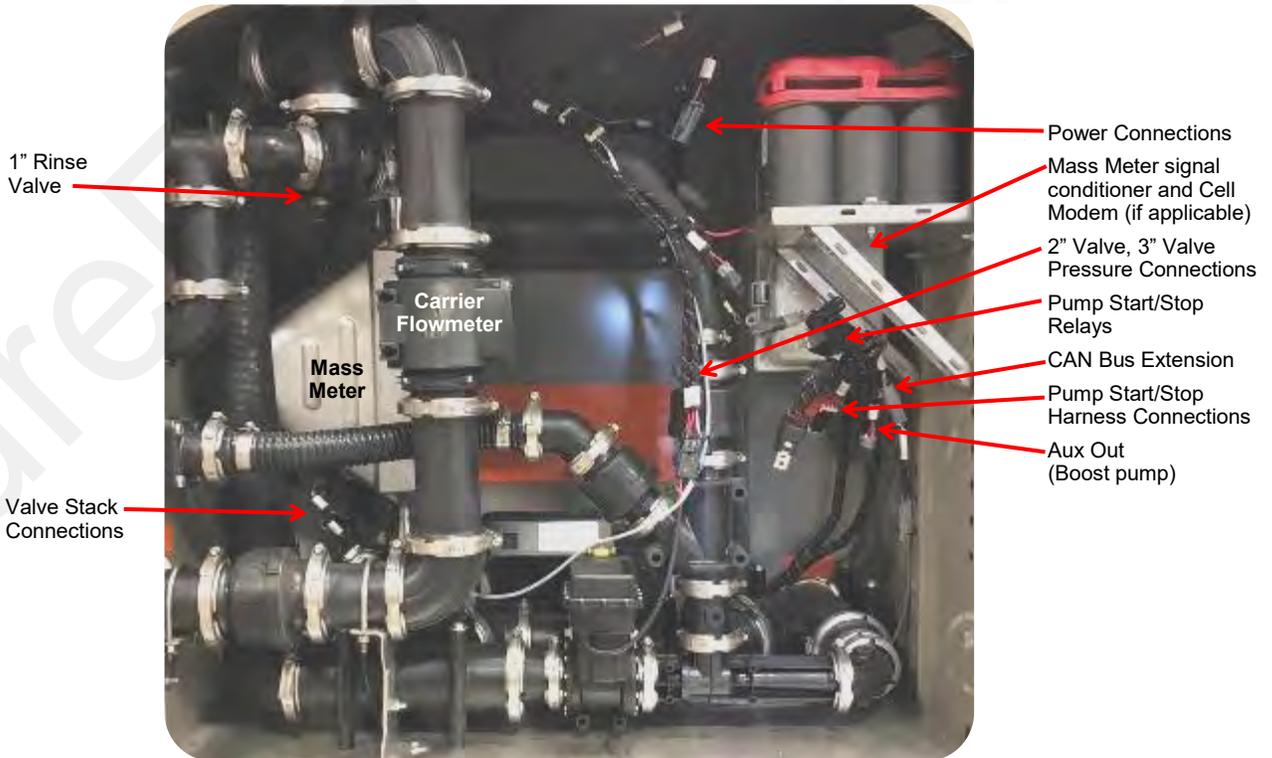
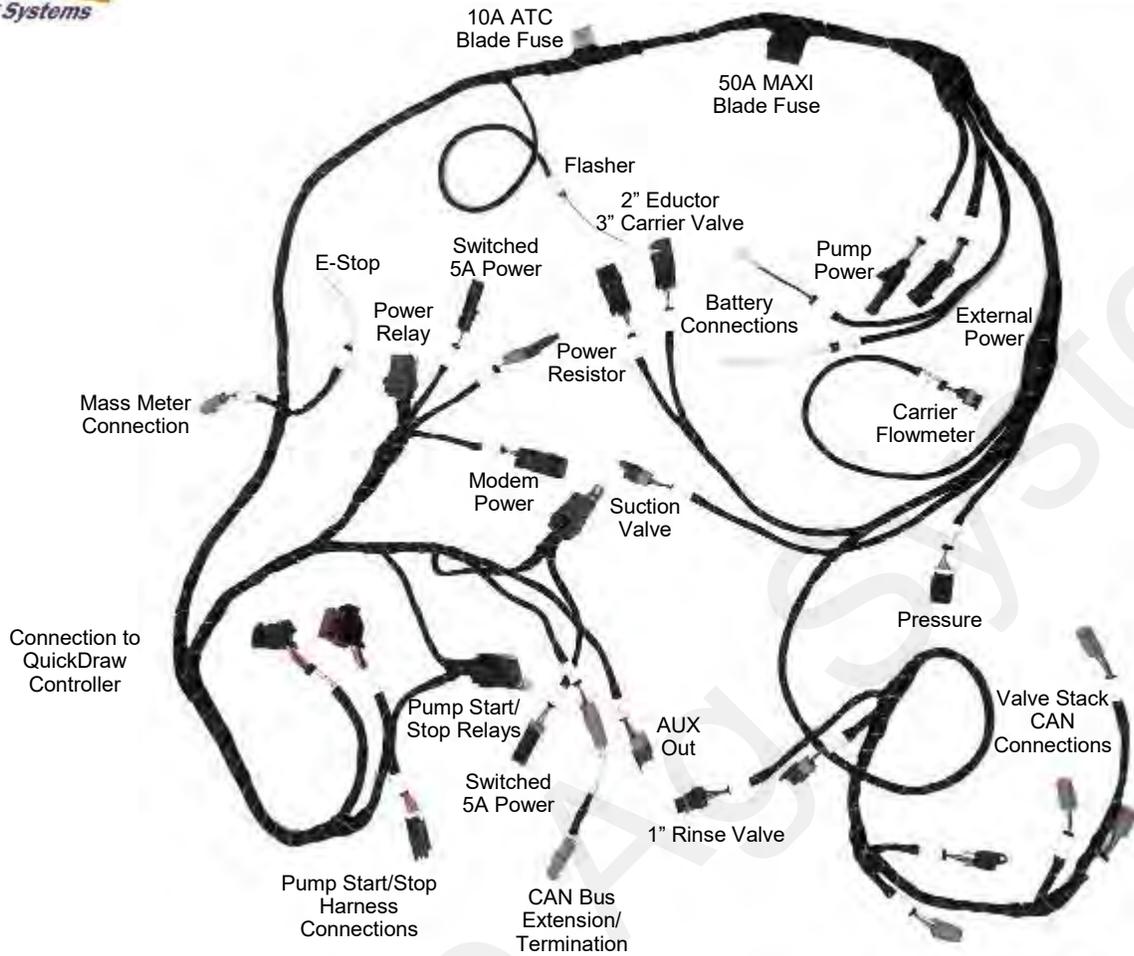
- Requires 208-NAPA7578 - 12 Volt Battery, BCI Group 78 (Or customer provided battery)
- 205-2213Y1 - 40 Amp 480MP Power Cable - 20' 6AWG
- 201-4241Y1 - 40A 480MP Tower x 2 480MP Shroud Y Cable

## Electric Carrier Fill Valve Kit

- 208-05-4193Y1 - Electric Carrier Fill Valve Control Harness



# QuickDraw Main Harness





# Power Connections

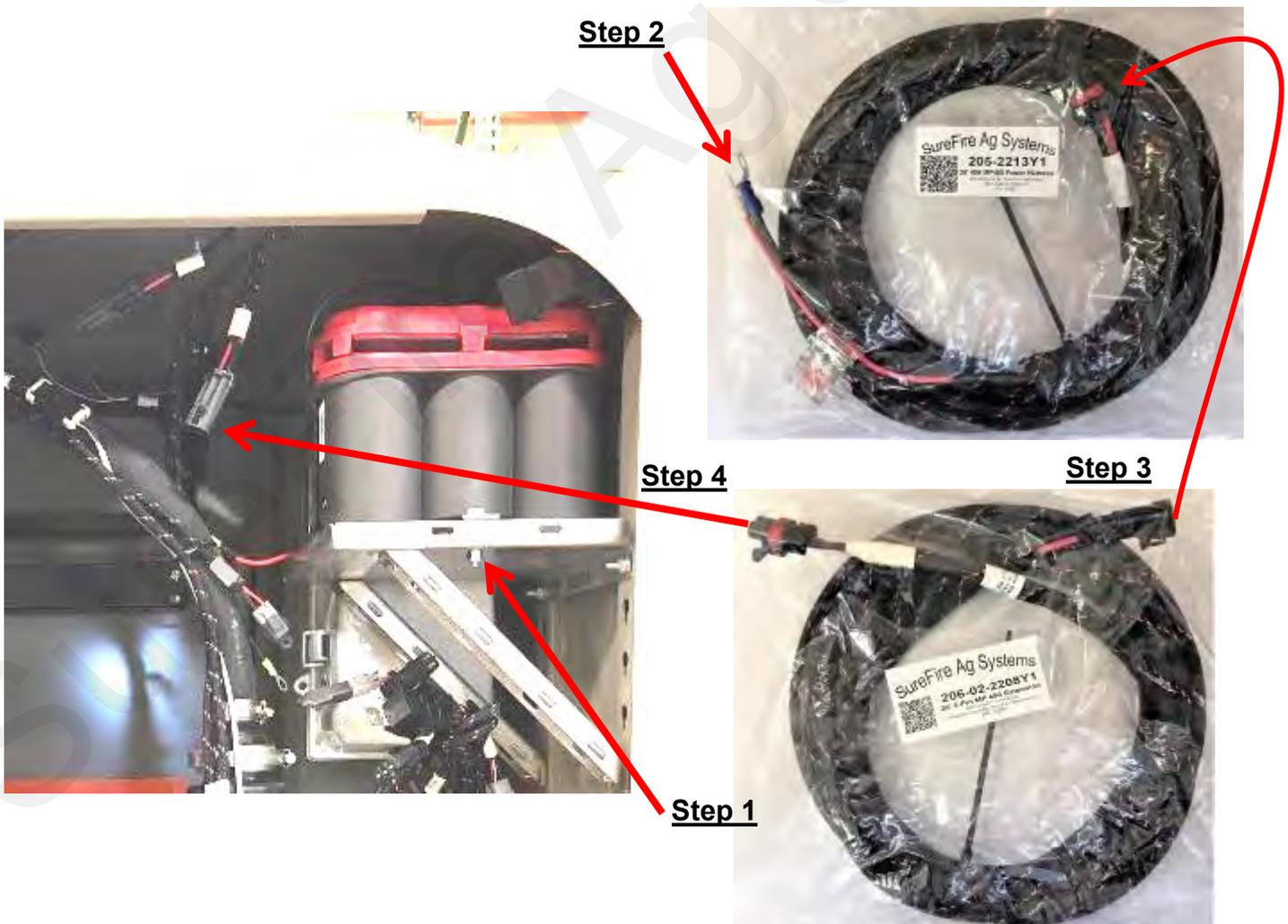
## Power Essentials

- 208-NAPA7578 - 12 Volt Battery, BCI Group 78
- 205-2213Y1 - 40 Amp 480MP Power Cable - 20' 6AWG
- 206-02-220\_Y1 - 2 Pin - 480MP Extension Cable
  - 5 Ft: 206-02-2206Y1 (10 AWG)
  - 10 Ft: 206-02-2207Y1 (8 AWG)
  - 20 Ft: 206-02-2208Y1 (8 AWG)
  - 30 Ft: 206-02-2209Y1 (6 AWG)
  - 40 Ft: 206-02-2210Y1 (6 AWG)
  - 60 Ft: 206-02-2211Y1 (6 AWG)

## QuickDraw Power Connections:

1. Install battery and tighten battery hold downs. *Note: Battery is not always provided by SureFire due to shipping constraints.*
2. Connect the ring terminals of the 205-2213Y1 harness to the truck/tractor battery and route to the trailer hitch or disconnection point.
3. Use the appropriate length or combination of 2-pin 480MP extension cables to route from the hitch to inside the QuickDraw. 20 ft is most commonly used.
4. Connect the extension harness to the connector inside the QuickDraw labeled **External Power**.

\* In lieu of a battery and harnessing in stationary/plant applications a 110V to 12V power supply is used. SureFire P/N: 208-02-2191Y1 - Power Supply - 25Amp, 110VAC to 12VDC

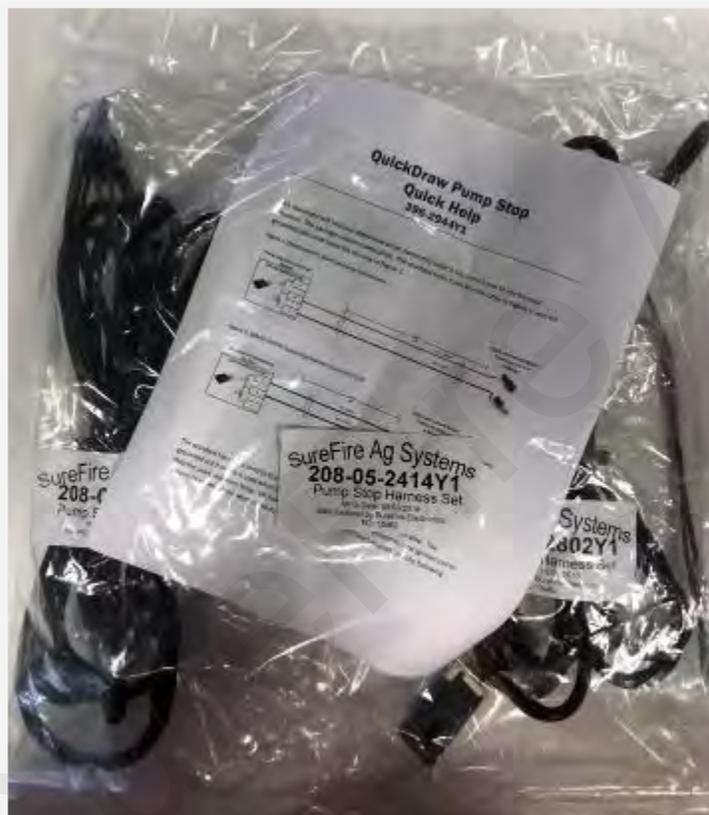




# Gas Engine Pump Start/Stop and Power

## Pump Wiring Essentials

- 208-05-2414Y1 - QuickDraw Pump Stop Harness Set (See Manual 396-2944Y1)
  - 208-05-2802Y1 - QuickDraw Pump Stop Harness
  - 208-05-2633Y1 - QuickDraw Pump Stop Harness (Grounded Coil)
- 208-05-2430Y1 - QuickDraw Electric Pump Start Gas Engine 12V Supply Harness
- 208-05-3944Y1 - QuickDraw Gas Engine Push Button Start

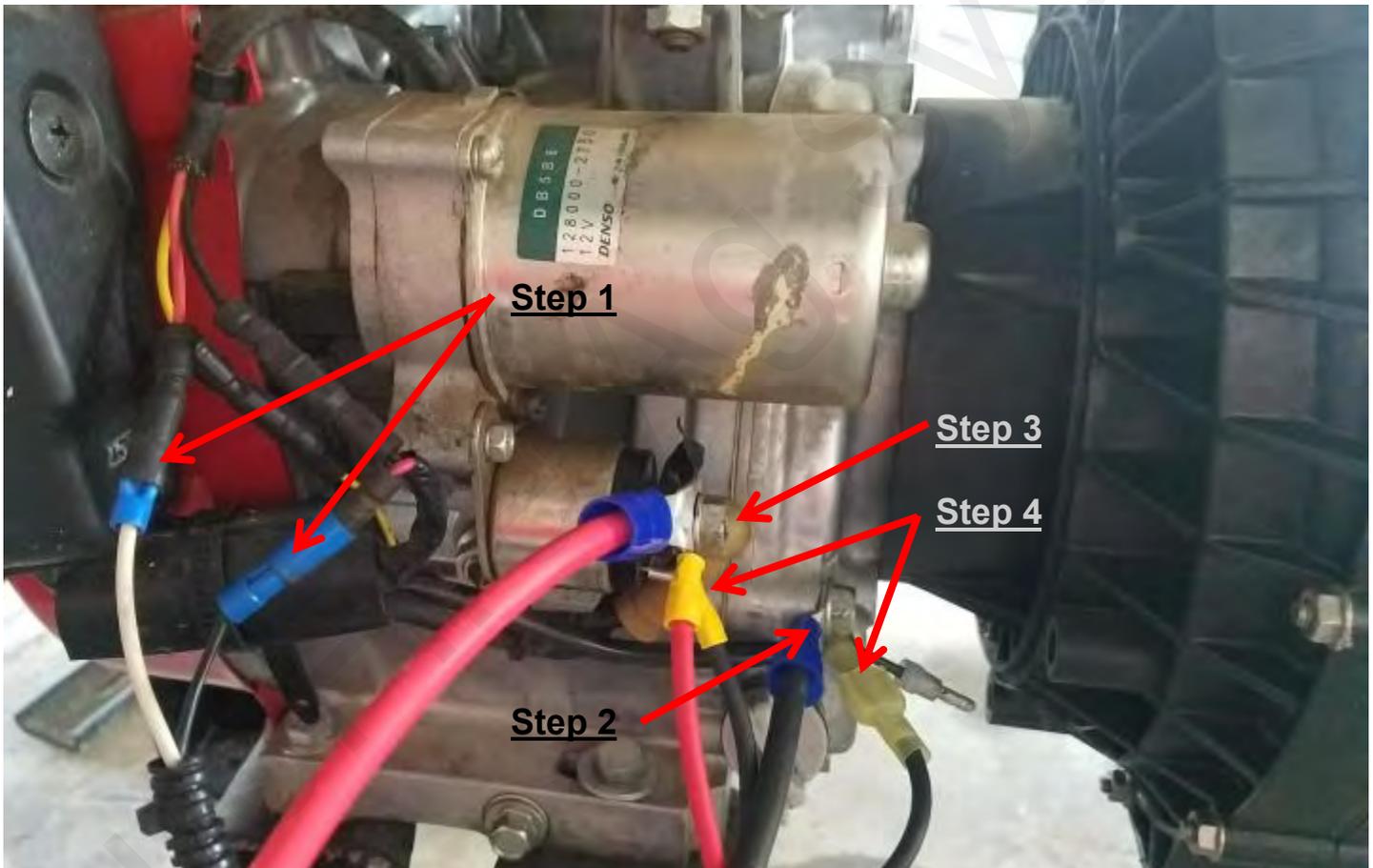




# Gas Engine Pump Start/Stop and Power Wiring

## Pump Connections:

1. First, follow the steps on 396-2944Y1 - QuickDraw Pump Stop Quick Help guide (located inside the 208-05-2414Y1 harness bag) to determine whether to use the standard or grounded pump stop harness. Use those instructions to connect the bullet connectors properly for your motor.
2. Connect the ground wire from the 208-05-2430Y1 harness, and pump stop grounded ring terminal if applicable, to motor ground.
3. Connect 12V power from 208-05-2430Y1 12V supply harness and 208-05-3944Y1 Push button start power cable (Red Ring Terminal) to the motor coil as shown.
4. Remove the spade connector with black boot from the coil and connect the female spade connector of the 208-05-3944Y1 Push Button Start harness to the coil and the male connector to the boot previously removed.





# Gas Engine Pump QuickDraw Harness Connections

## QuickDraw Connections:

1. Route Pump Stop harness (P/N 208-05-2802Y1 or 208-05-2633Y1) inside the QuickDraw cabinet and connect 150MP Shroud to male connector labeled **Pump Stop**. *Note: The connector may have a dust cap that needs to be removed.*
2. Route 12V Pump Power Harness (P/N 208-05-2430Y1) inside the QuickDraw cabinet near the battery mount and connect to **Pump Power** on the main QuickDraw Harness. *Note: The connector may have a dust cap that needs to be removed.*
3. Route 208-05-3944Y1 QuickDraw Push-Button Start Harness to inside the QuickDraw cabinet (or other desired start location). Install 475-4266Y1-SS - QuickDraw Aux Switch mounting bracket by removing 1/4" bolt for Product Valve label, then re-use bolt and install mounting bracket. Mount pump start button in the mounting bracket.
4. In the QuickDraw controller system settings, change the **Pump Start Mode** to MAINTAINED START.



**Step 2**  
Pump Power

**Step 3**  
Push-Button  
Start

**Step 1**  
Pump Stop





# Electric Pump Start/Stop Wiring Overview



## Pump Start and Pump Stop Connections

1. 208-05-2431Y1 - QuickDraw Electric Motor Drive Pump Start Harness (Connect to **Pump Start**)
2. 208-05-2802Y1 - QuickDraw Pump Stop Harness (Connect to **Pump Stop**)
3. See the following pages for Motor Control Panel Wiring.
4. In the QuickDraw controller system settings, change the **Pump Start Mode** to either **Momentary** or **Maintained**, depending on motor control panel wiring. See Page 15.

### **WARNING!**

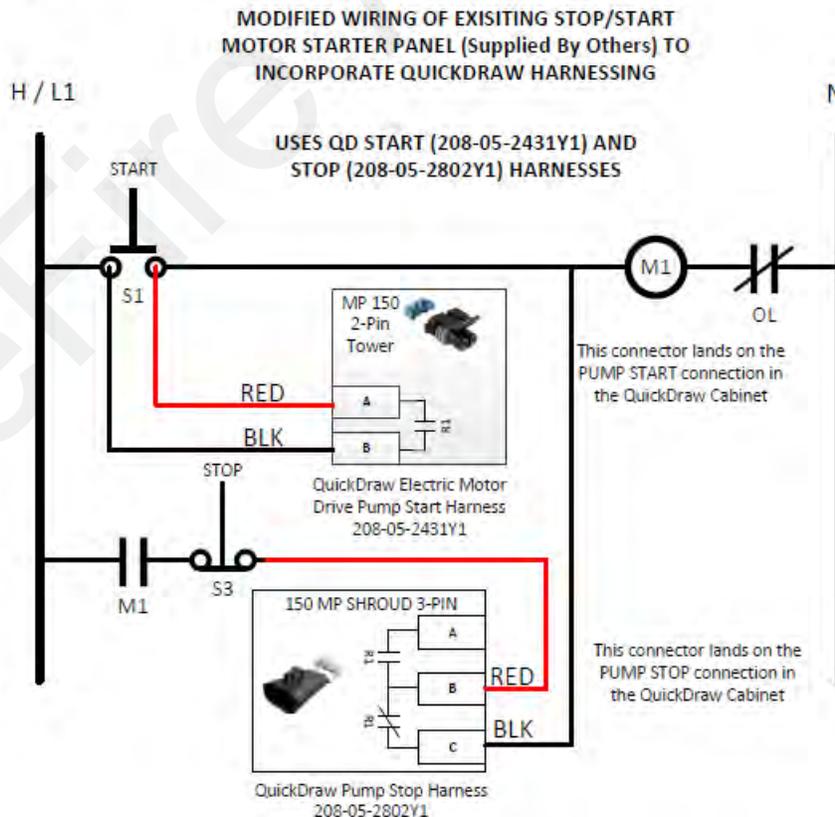
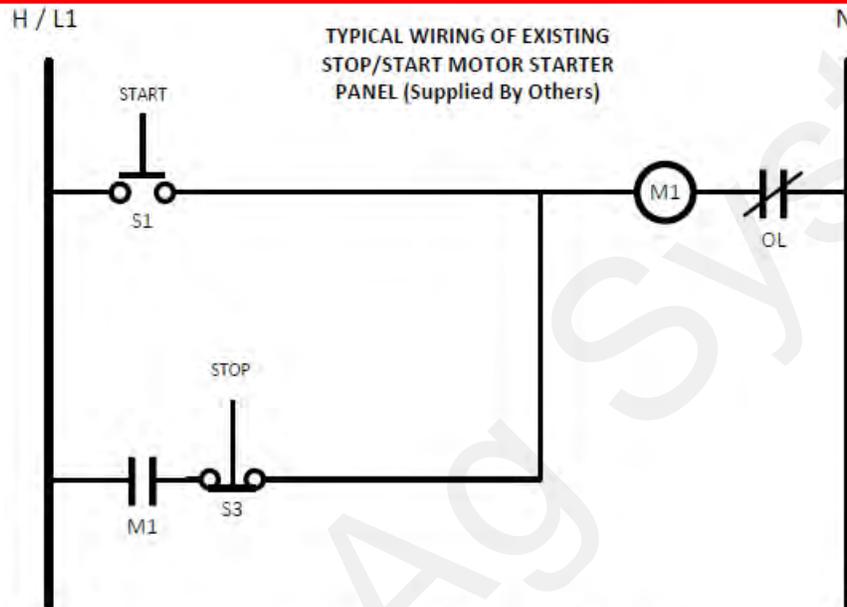
**WIRING AN ELECTRIC MOTOR TO A CUSTOMER SUPPLIED MOTOR CONTROL PANEL AND THE QUICKDRAW MUST BE PERFORMED BY AN ELECTRICIAN. TYPICAL MOTOR CONTROL PANEL WIRING SCHEMATICS ARE SUPPLIED, BUT THE CUSTOMER IS RESPONSIBLE FOR PROVIDING THEIR OWN MOTOR CONTROL PANEL AND WIRING. SUREFIRE AG SYSTEMS DOES NOT SUPPLY THIS EQUIPMENT.**



# Electric Pump Stop/Start Starter Panel Wiring Diagram

## **WARNING!**

**WIRING AN ELECTRIC MOTOR TO A CUSTOMER SUPPLIED MOTOR CONTROL PANEL AND THE QUICKDRAW MUST BE PERFORMED BY AN ELECTRICIAN. TYPICAL MOTOR CONTROL PANEL WIRING SCHEMATICS ARE SUPPLIED, BUT THE CUSTOMER IS RESPONSIBLE FOR PROVIDING THEIR OWN MOTOR CONTROL PANEL AND WIRING. SUREFIRE AG SYSTEMS DOES NOT SUPPLY THIS EQUIPMENT.**

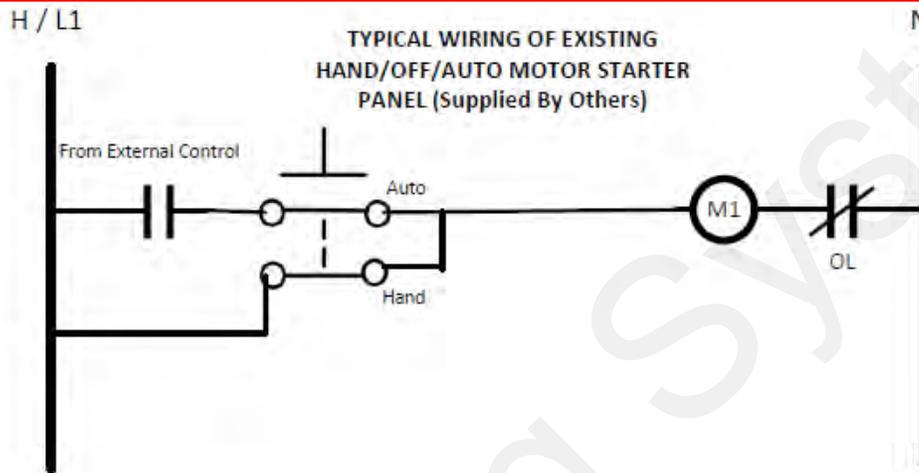




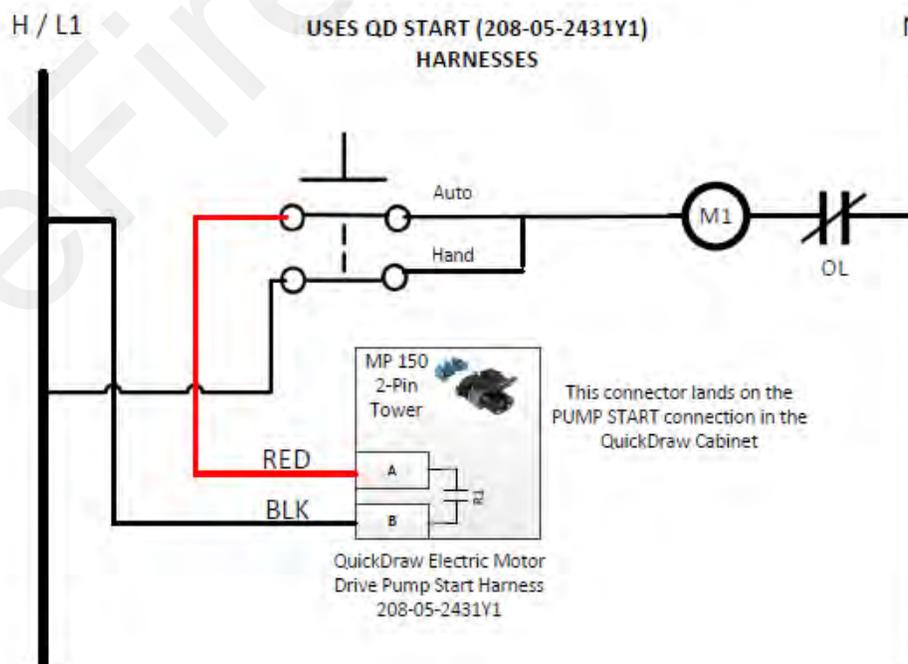
# Electric Pump Hand/Off/Auto Motor Starter Panel Wiring

## **WARNING!**

**WIRING AN ELECTRIC MOTOR TO A CUSTOMER SUPPLIED MOTOR CONTROL PANEL AND THE QUICKDRAW MUST BE PERFORMED BY AN ELECTRICIAN. TYPICAL MOTOR CONTROL PANEL WIRING SCHEMATICS ARE SUPPLIED, BUT THE CUSTOMER IS RESPONSIBLE FOR PROVIDING THEIR OWN MOTOR CONTROL PANEL AND WIRING. SUREFIRE AG SYSTEMS DOES NOT SUPPLY THIS EQUIPMENT.**



**MODIFIED WIRING OF EXISTING HAND/OFF/AUTO  
MOTOR STARTER PANEL (Supplied By Others) TO  
INCORPORATE QUICKDRAW HARNESSING**





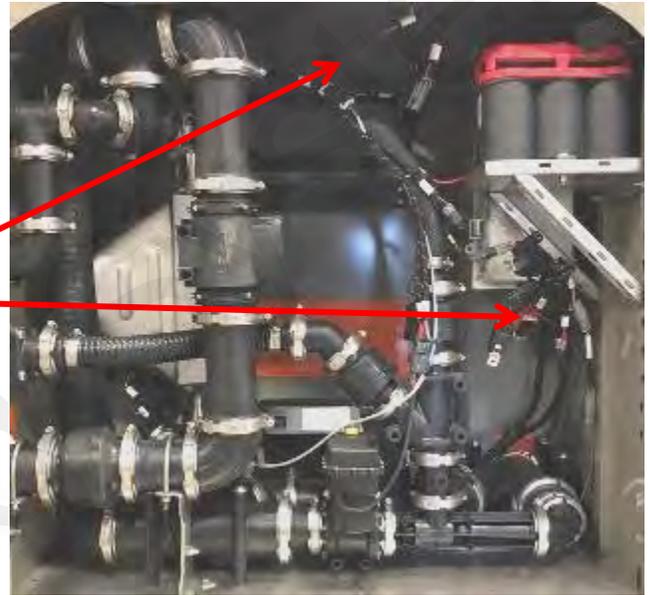
# Hydraulic Pump Transfer Pump Harnessing

## Hydraulic Pumps

- 208-05-3775Y1 - Hydraulic Transfer Pump & Agitation Harness
- 208-05-4240Y1 - Hydraulic Transfer Pump Hydraulic Solenoid Start Harness

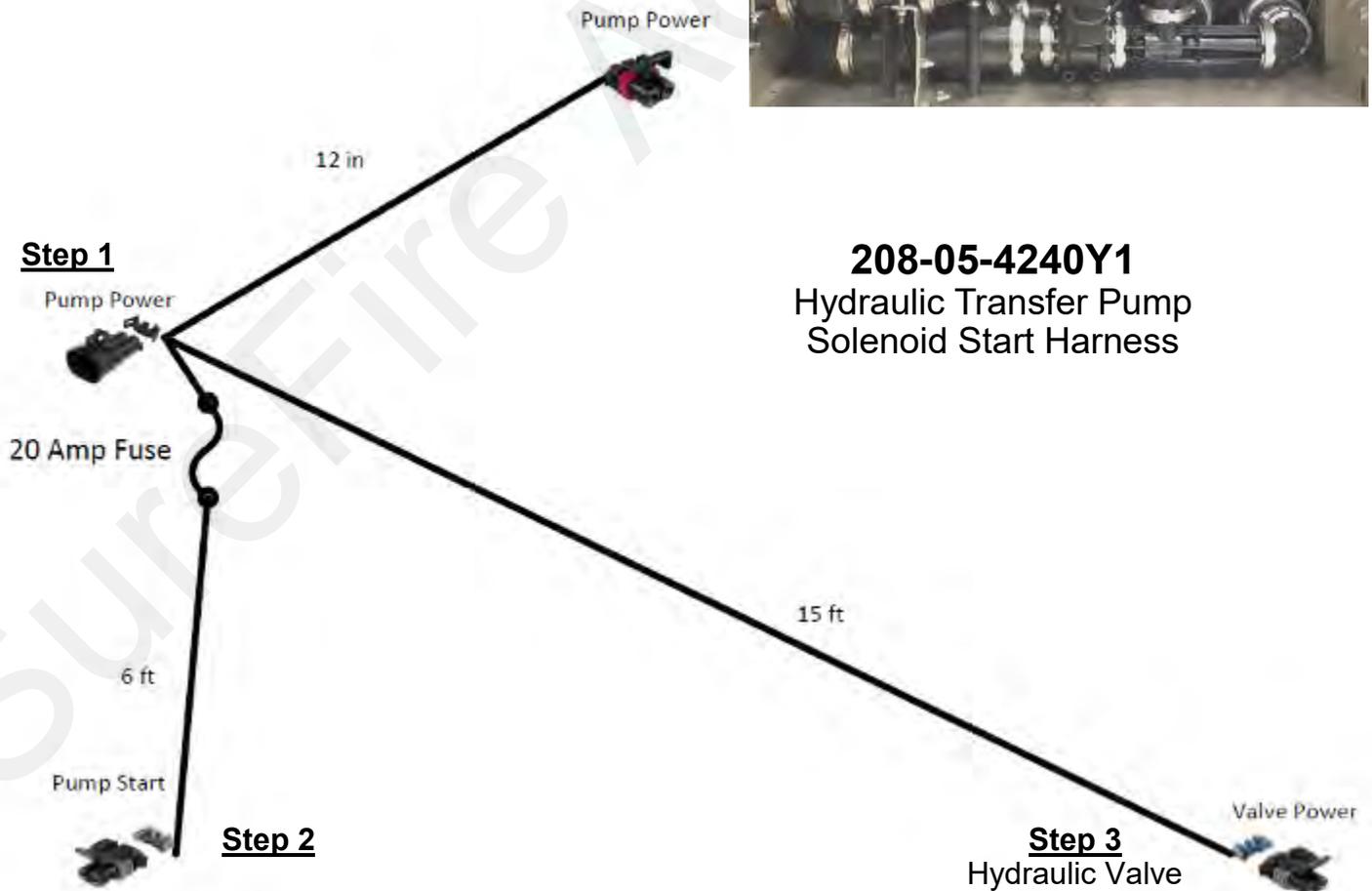
## Installation Instructions:

1. Use the 208-05-4240Y1 harness and plug into the **Pump Power** connector in the QuickDraw.
2. Next, plug the Pump Start connection into the **Pump Start** connector in the QuickDraw.
3. Plug the 2-pin connector into the 150MP connection on the solenoid coil. See next page for typical solenoid installation.
4. In the QuickDraw controller system settings, change the **Pump Start Mode** to MAINTAINED START. See Page 15.



Step 1

Step 2



**208-05-4240Y1**  
Hydraulic Transfer Pump  
Solenoid Start Harness



# Hydraulic Pump Booster Pump Harnessing

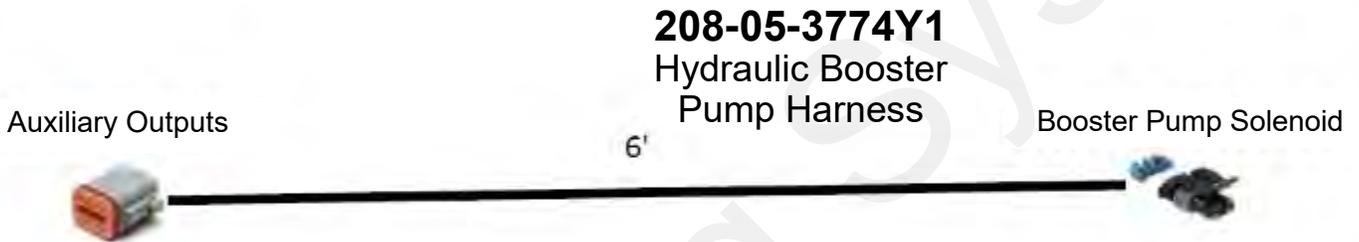
This section is used for bulk products requiring more flow than is achievable by venturi suction.

## Hydraulic Booster Pump Harnesses:

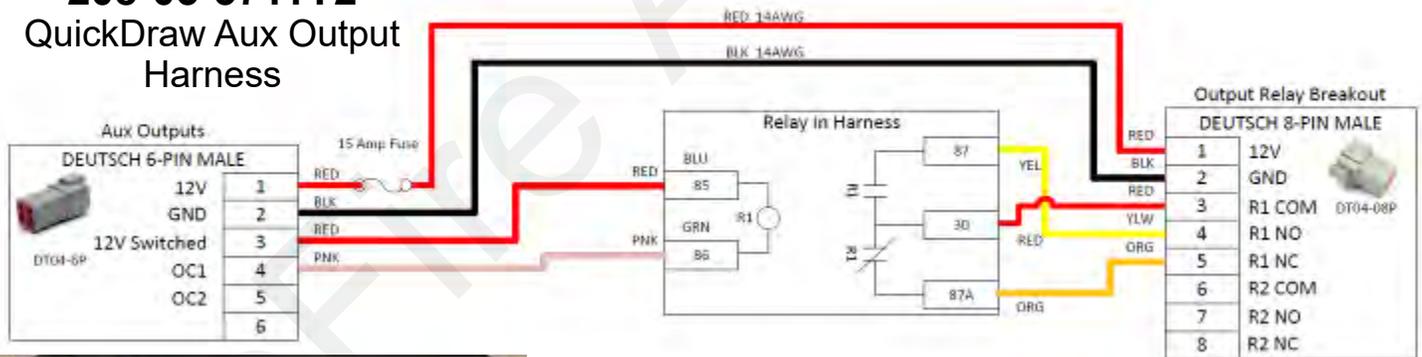
- 208-05-3774Y1 - Hydraulic Booster Pump Harness
- 208-05-3711Y2 - QuickDraw Aux Output Harness

## Installation Instructions:

1. Plug 208-05-3711Y2 Aux Output Harness into the QuickDraw **Aux Outputs** connector.
2. Plug 208-05-3774Y1 Hydraulic Booster Pump Harness into the **Auxiliary Outputs** connector in the 208-05-3711Y2 harness
3. Plug the 2-pin connector into the 150MP connection on the solenoid coil. See next page for typical solenoid installation.
4. Setup QuickDraw controller for Boost pump operation and select which product valve the boost pump is connected to. See Page 15.



## 208-05-3711Y2 QuickDraw Aux Output Harness



AUX Out Connector

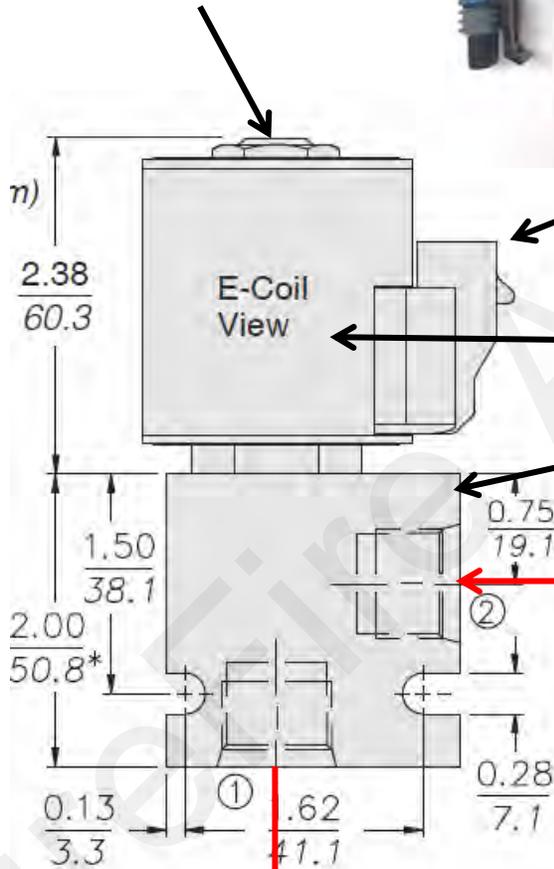


# Hydraulic Pump Typical Hydraulic Solenoid Valve Detail



P/N: **206-02-13200**  
2-pin 150MP - 5'  
Extension Cable  
(Qty 2 for Agitation and  
Boost Pump Hydraulic  
Solenoids)

P/N: **166-SV10-20M-0-N-00**  
On / Off Solenoid Cartridge  
Valve - Normally closed



2-Pin 150 MP connection for 12V operation  
of Hydraulic Solenoid on/off valve from  
QuickDraw.

P/N: **166-4303512**  
Coil, 12 Volt DC EY Coil

P/N: **166-7024280**  
Hydraulic Valve Housing, Basic  
2 Port Line Body

**IN**  
(Hydraulic Pressure)

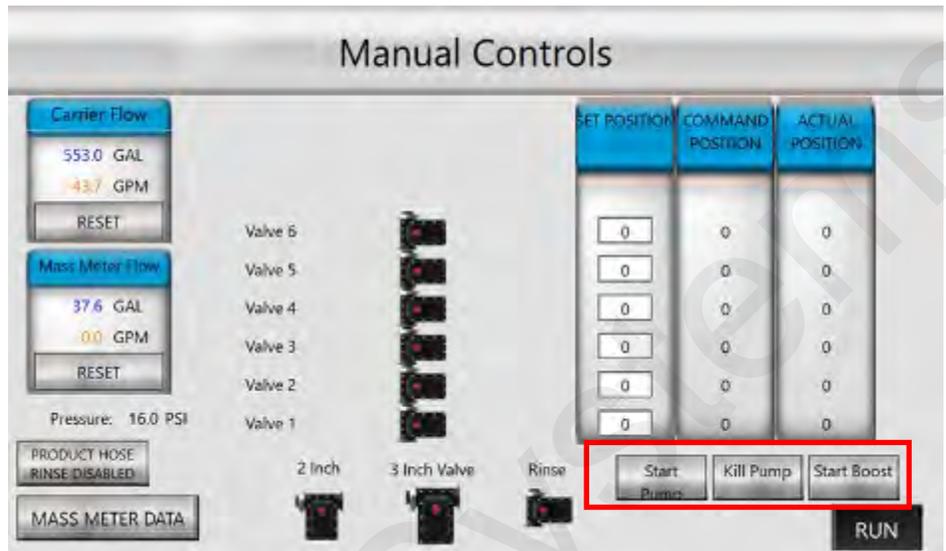
**OUT**  
(To Hydraulic Motor)



# Controller Setup for Pumps

## Manual Pump Start/Stop:

The Manual Controls Screen allows the user to start/kill the transfer pump or start/kill the boost pump when outside of running a batch.

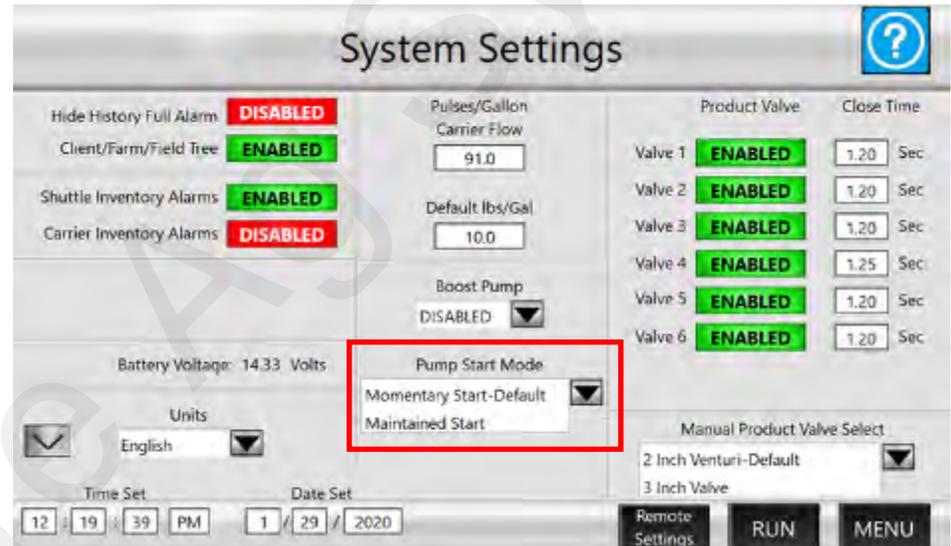


## Pump Start Mode:

**Momentary** - The output is enabled for 3 seconds when the batch start is pressed

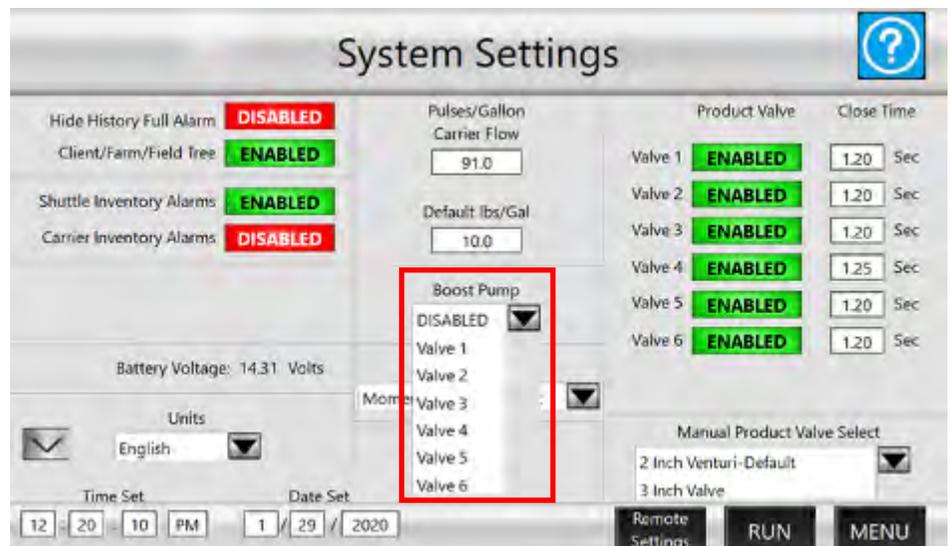
**Maintained** - The output is constant for the duration of the batch

For Hydraulic pumps, the pump start mode should be set to **Maintained Start**. For electric motors, depending on the electrical wiring and customer provided motor control center, either option may be selected. When using a start-stop push-button setup, **Momentary Start** should be selected.



## Boost Pump:

Choose **DISABLED** if no boost pump is present, or select the product valve the boost pump is connected to. Typically the 2" full ported Valve 1 is best for boost pump applications.





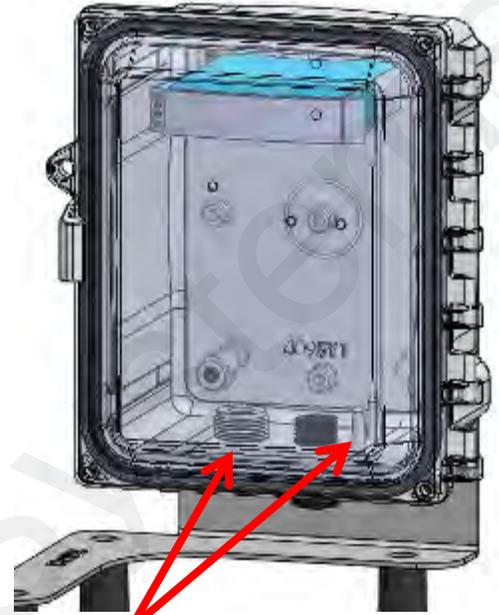
# Remote Connectivity

Typically, Remote Connectivity is installed at the time of order by SureFire Ag Systems. However, in some cases it may need to be installed in the field.

## 606-05-300150 - QuickDraw Remote Connectivity Kit

### Installation Instructions:

1. Remove 3/4" pipe plug and gray PVC hole plugs. The existing Power Conditioner will need to be temporarily removed and relocated.
2. Install 3/4" cable gland and (2) SMA coax cable bulkheads (P/N: 217-3353Y1) into the pre-drilled and plugged holes.
3. Remove the existing 5" DIN rail and install the 4095Y1 mounting plate with (4) screws. Use 2" DIN rail and DIN rail stop to relocate the Mass Meter Power conditioner.
4. Install the QuickDraw modem using (2) Size 10 - 32 thread machine screws into the tapped mounting holes as shown.
5. Push the ethernet and power cable through the 3/4" cable gland and plug in.
6. Connect the ethernet cable to the bottom right M12 ethernet port on the QuickDraw controller.
7. Route the power cable to the **Modem Power** connector (under the battery tray) for 12VDC.
8. Remove the plug and install the GPS/Modem in the hole in the top of the cabinet. Connect the cable labeled GPS to the GPS SMA cable and one of the LTE (yellow label) antenn cables to the SMA cable. Make sure these correspond to the right connector inside the plastic enclosure.



**Step 1**



**Step 3**

**Step 4**

**Step 5**

**Step 2**



**Step 6**



**Step 8**



# Multiple Carrier Valve Wiring

QuickDraw 3000 has the functionality for up to 4 carrier products. During a batch the QuickDraw can switch between the different carriers by opening and closing CAN controlled valves.

## Multiple Carrier Connection

- 103-3366Y1 - 3" CAN Valve or 103-2102Y1 - 2" CAN Valve
- 208-05-3363Y2 - CAN Valve Expansion Harness
- 208-05-3390Y1 - CAN Y Adapter
- 206-04-29\_\_Y1 - 4-Pin Deutsch Extension Cable
  - 5 ft - 206-04-2913Y1
  - 10 ft - 206-04-2914Y1
  - 20 ft - 206-04-2915Y1
  - 30 ft - 206-04-2996Y1
  - 40 ft - 206-04-2997Y1
  - 50 ft - 206-04-2998Y1

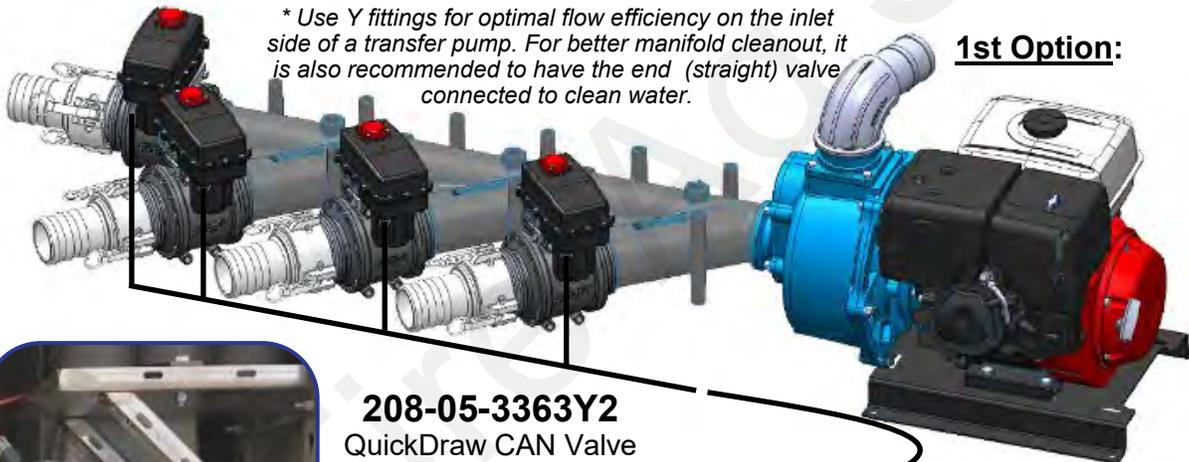
## Installation Instructions:

Before plugging in any valves, you'll need to enable Multiple Carrier in the QuickDraw controller. See the next page for setup and addressing the valves.

1. Layout plumbing system and install CAN valve(s).\*
2. Remove the CAN Bus terminator (P/N 208-06-2912Y1) from the end of the QuickDraw harness connection labeled **Bus Extension/Termination**. This part may need to be re-used.
3. **1st Option:** If the CAN Valves are located close to each other, use the appropriate length extension harness and plug into the **Bus Extension/Termination** connector in the QuickDraw, then plug the 208-05-3363Y2 QuickDraw CAN Valve Expansion Harness to the end of the extension.

\* Use Y fittings for optimal flow efficiency on the inlet side of a transfer pump. For better manifold cleanout, it is also recommended to have the end (straight) valve connected to clean water.

### 1st Option:



**208-05-3363Y2**  
QuickDraw CAN Valve Expansion Harness

**206-04-29\_\_Y1**  
4-Pin Deutsch Extension Cable



### Step 2

### 2nd Option:

CAN Valve Connection

**208-06-2912Y1**  
CAN Bus Terminator

Connect to Extension Cable

**208-05-3390Y1**  
CAN Y Adapter



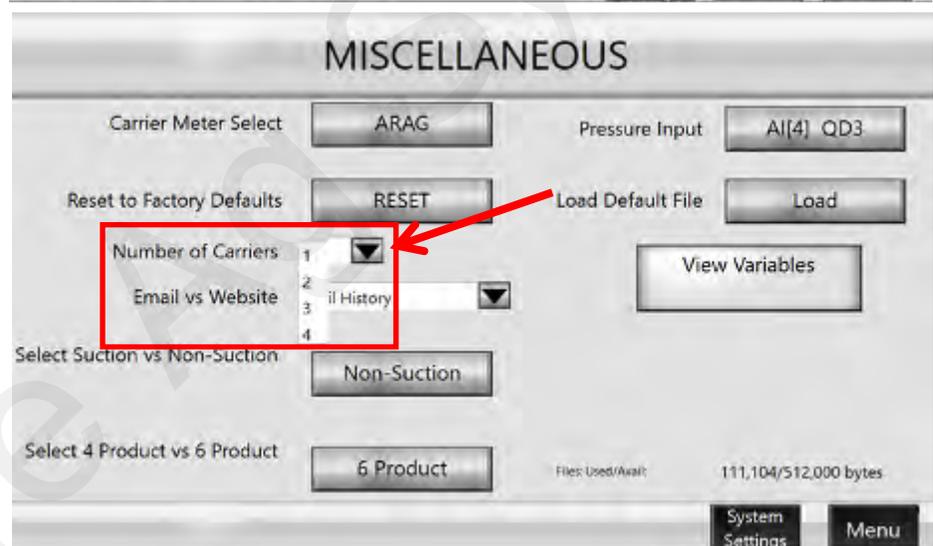
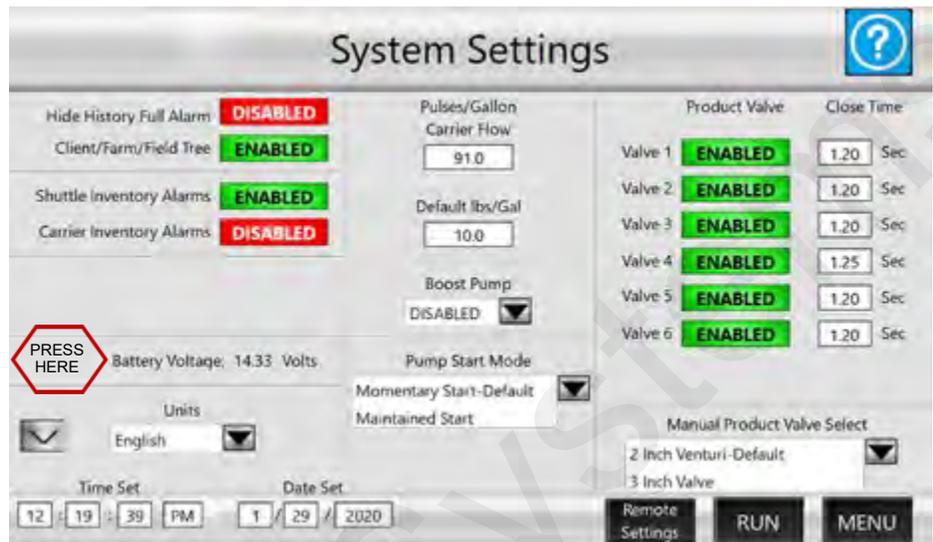
3. **2nd Option:** If CAN Valves are not in close proximity, use the appropriate length extension harness to route from the **Bus Extension/Termination** connector in the QuickDraw to the closest CAN Valve. Use CAN Y Adapter (208-05-3390Y1) to connect to the valve and extension cable to the next valve. Repeat until all valves are connected, re-use CAN bus terminator harness (208-06-2912Y1) at the final Y adapter.
4. Plug in the CAN valves in desired order, one at a time, so they are properly addressed within the QuickDraw controller. Valve order can also be reset, see next page.



# Multiple Carrier Initial Setup

## Setup Instructions:

1. Go to the menu, select Settings.
2. Press the area just left of the Battery Voltage. Hit Enter on the keyboard that pops up.
3. Select the appropriate number of Carriers (1-4). Press Menu. This will flash a CAN Bus error because the valves are not addressed.
4. Plug in the 3" CAN valves in desired order, one at a time, so they are properly addressed within the QuickDraw controller.
5. If the numerical order of the valves needs to be changed, use the Reset Address Carrier buttons on the Maintenance screen to readdress the valves to the desired order.





# Hose Reel Power Connection & Wiring

## Hose Reel Harnesses

- 208-NAPA7578 - 12 Volt Battery, BCI Group 78 (Or customer provided)
- 205-2201Y1 - 40 Amp Y Cable (480 MP shroud x 2 480 MP tower's)
- 205-2213Y1 - 40 Amp 480MP Power Cable - 20' 6AWG

## QuickDraw Power Connections (From Power Connection Section on page 5):

- Connect the ring terminals of the 205-2213Y1 harness to the truck/tractor battery and route to the hitch or disconnection point. (May have already been completed)
- Use the appropriate length or combination of 2-pin 480MP extension cables to route from the trailer hitch to inside the QuickDraw.
- Connect the extension harness to the connector labeled **External Power**.

## Hose Reel Power Connections:

1. Provide battery cover and securely mount 12V dedicated hose reel battery. Connect the ring terminals of the 205-2213Y1 harness to the battery and route harness inside the QuickDraw Cabinet.
2. Connect 201-4241Y1 (40A 480MP Tower x 2 480MP Shroud Y Cable) to the connector labeled **External Power** inside the QuickDraw.
3. From the 201-4241Y1 (40A 480MP Tower x 2 480MP Shroud Y Cable), connect 206-02-220\_Y1 (extension cable, length varies) from truck/tractor battery power supply harness and 205-2213Y1 (Fused Power Cable) from hose reel terminals.



**Step 1**





# Electric Carrier Fill Valve Control Trailer Layout and Wiring

## Custom Trailer Harness

- 606-04-100400 - QuickDraw Trailer 3" Electric Valve Upgrade - 2 Carrier Tanks
  - 208-05-4193Y1 - Electric Carrier Fill Valve Control Harness
  - (2) 103-2417Y1 - 3" Manifold Electric Valve
- 606-04-100500 - QuickDraw Trailer 3" Electric Valve Upgrade - Single Carrier Tank
  - 208-05-4193Y1 - Electric Carrier Fill Valve Control Harness
  - (2) 103-2417Y1 - 3" Manifold Electric Valve

## Installation Instructions:

1. Route harness on trailer as shown and plug 3-pin connectors into the 3" valves. *Note: For single carrier tank installations, the rear valve won't be used.*
2. Connect the 2-Pin 480MP tower connector to **Pump Power** in the QuickDraw. *Note: The harness is designed to extend the pump power connector for wiring the pump start/stop.*
3. Remove 1/4" bolt for Product Valve label and install 475-4266Y1-SS - QuickDraw Aux Switch mounting bracket. Mount valve switches in the mounting bracket.

