

396-4495Y1 QuickDraw^{MAX} 3000 Master Wiring Overview

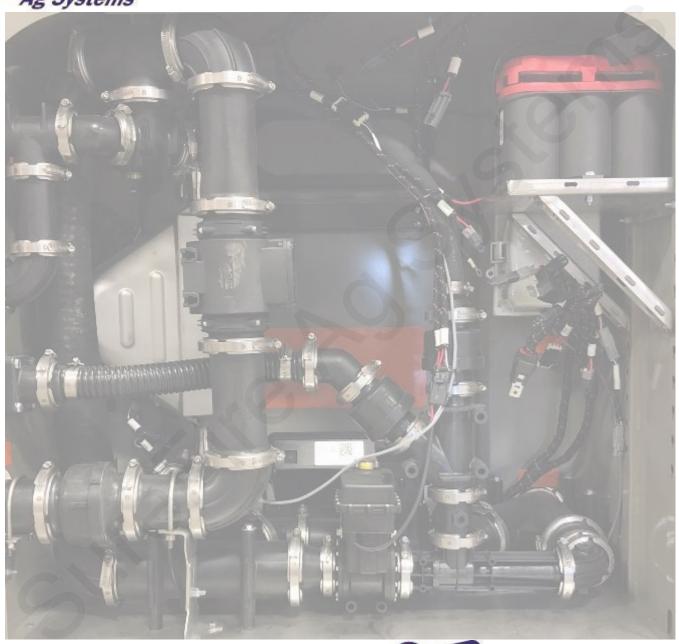






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QuickDraw Harnessing Table of Contents

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
- 208-05-4783Y1 QuickDraw iGX390 Honda Engine Control Final Harness
- 208-05-4784Y2 QuickDraw iGX Honda Engine Control Adapter Harness

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

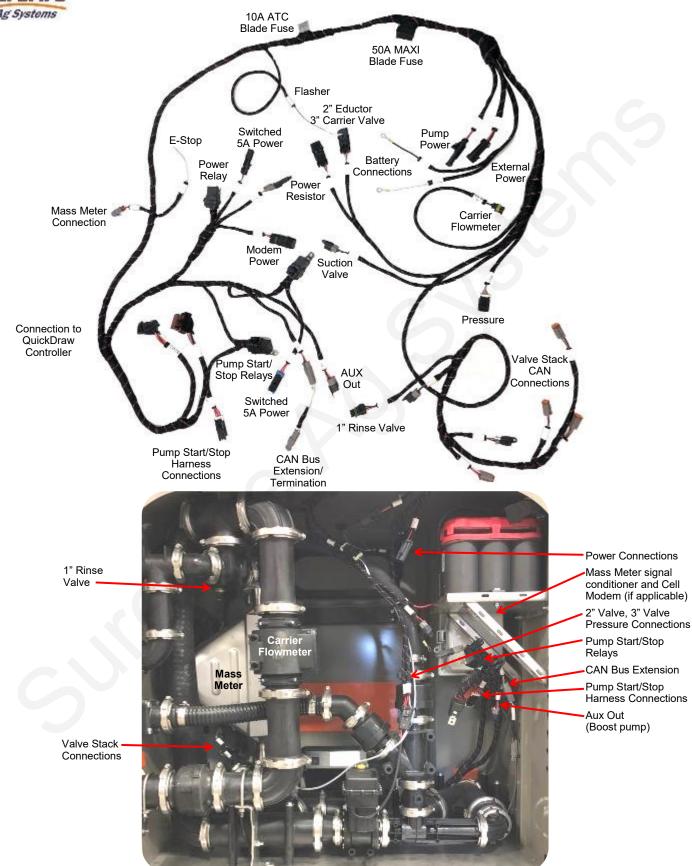
- Requires 208-NAPA7578 12 Volt Battery, BCI Group 78 (Or customer provided battery)
- 205-2213Y1 40 Amp 480MP Power Cable 20' 6AWG
- 201-4241Y1 40A 480MP Tower x 2 480MP Shroud Y Cable

Electric Carrier Fill Valve Kit

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



QuickDraw Main Harness



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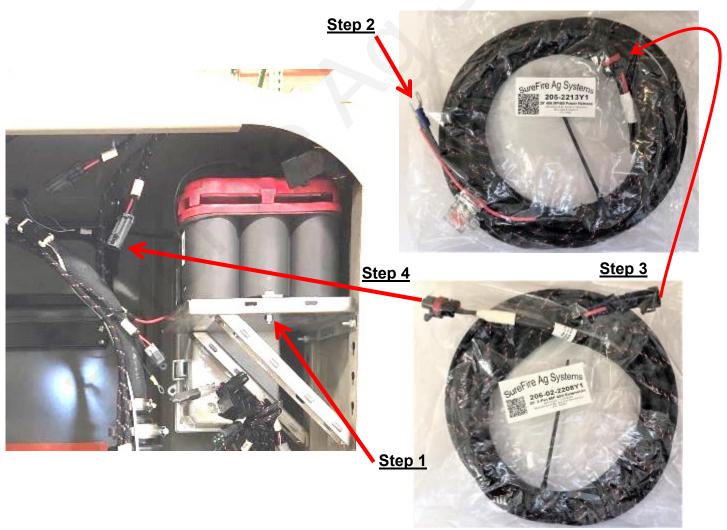
Power Connections

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) 30 Ft: 206-02-2209Y1 (6 AWG)
 - 10 Ft: 206-02-2207Y1 (8 AWG)
 40 Ft: 206-02-2210Y1 (6 AWG)
 - 20 Ft: 206-02-2208Y1 (8 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

Generic 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

QuickDraw Honda iGx390 Pump Wiring

- 208-05-4784Y2 QuickDraw iGX Honda Engine Control Adapter Harness (Page 9)
- 208-05-4783Y1 QuickDraw iGX390 Honda Engine Control Final Harness (Page 10)







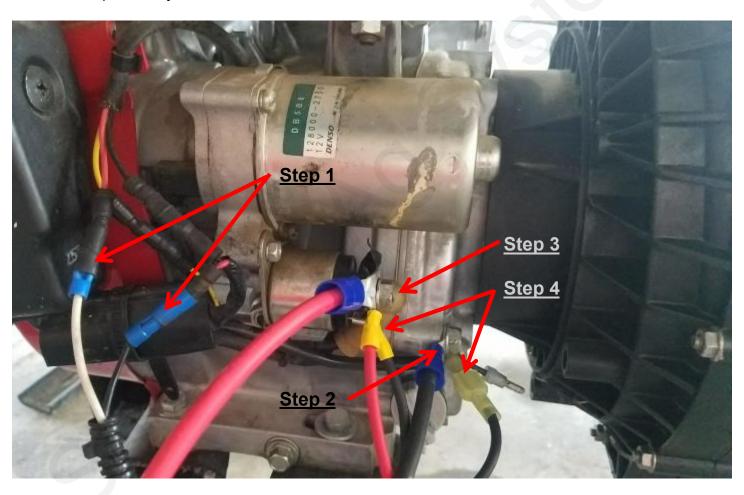
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Gas Engine Pump Start/Stop and Power Wiring

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.

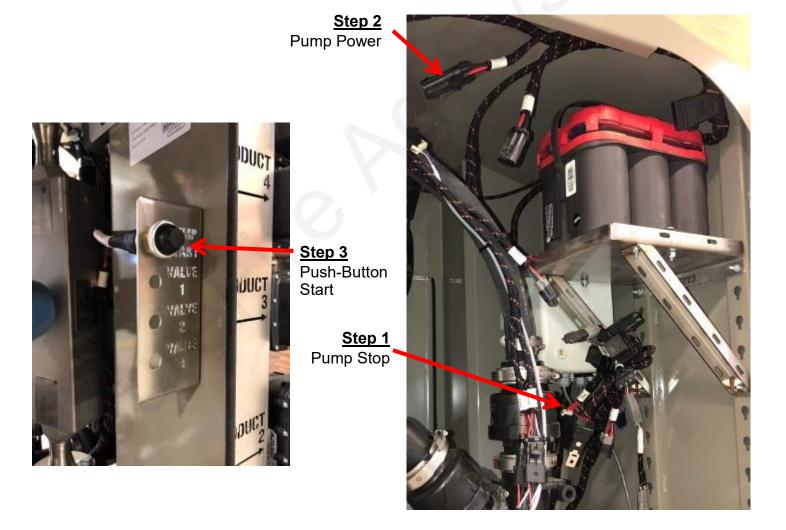




Gas Engine Pump QuickDraw Harness Connections

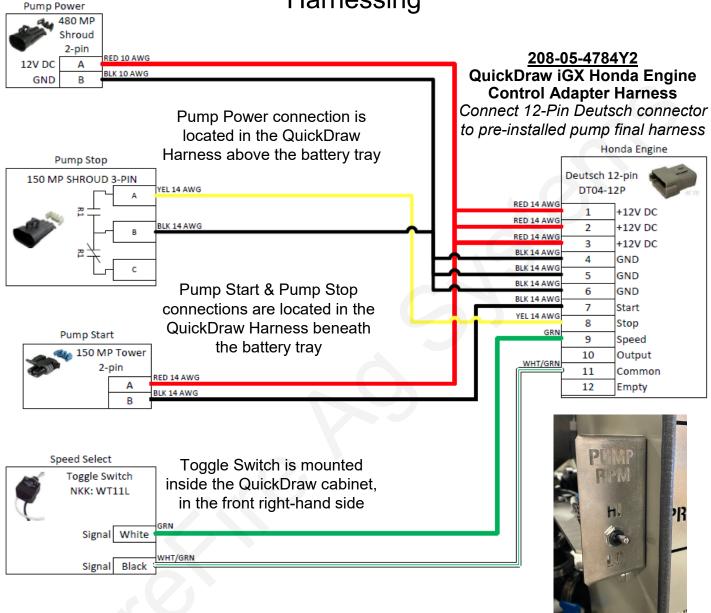
QuickDraw Connections:

- 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.



606-03-500100

Honda iGX390 AutoChoke Motor with QuickDraw Harnessing



Pump Start Operation (QuickDraw Operation):

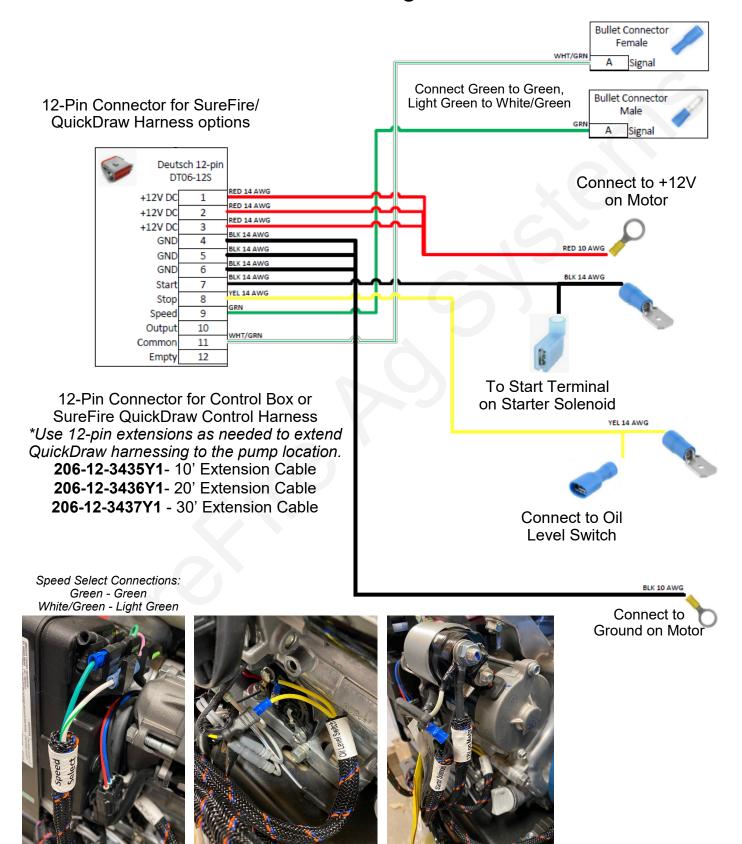
When starting and warming up the engine, you do not need to operate the choke lever unless the engine is hard to start using the normal operating procedure.

- 1. Check the oil level. If it is below the upper limit, fill with the recommended oil to the upper limit.
- 2. Move the fuel valve lever to the **ON** position.
- 3. Turn the engine switch to the **ON** position.
- 4. The pump will start when the QuickDraw Batch is started., and stop when the batch is completed.
- 5. Flip the RPM toggle switch for High or Low



iGX390 Pre-Installed Wiring Harness Diagram 208-05-4783Y1

QuickDraw iGX390 Honda Engine Control Final Harness

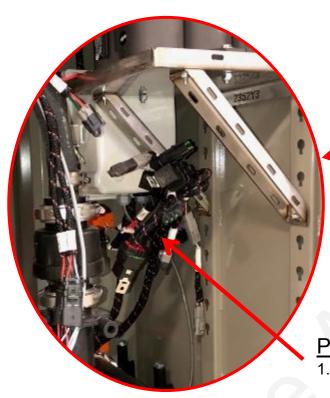


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Electric Pump Start/Stop Wiring Overview





Pump Start and Pump Stop Connections

- 208-05-2431Y1 QuickDraw Electric Motor Drive Pump Start Harness (Connect to *Pump Start*)
- 208-05-2802Y1 QuickDraw Pump Stop Harness (Connect to *Pump Stop*)
- 3. See the following pages for Motor Control Panel Wiring.
- 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.

Revised: 1/29/2022

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.

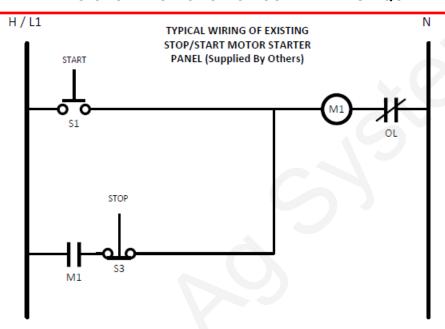


Electric Pump Stop/Start Starter Panel Wiring Diagram

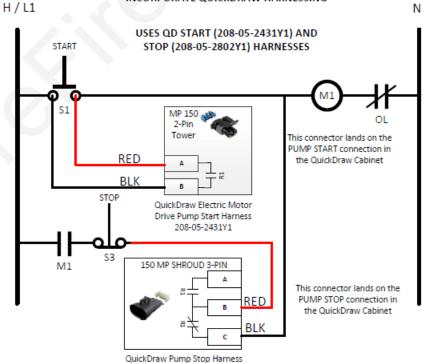
WARNING!

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.



MODIFIED WIRING OF EXISITING STOP/START MOTOR STARTER PANEL (Supplied By Others) TO INCORPORATE QUICKDRAW HARNESSING



208-05-2802Y1

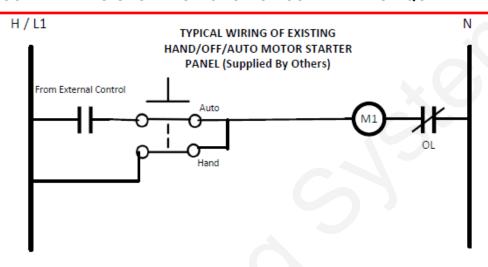


Electric Pump Hand/Off/Auto Motor Starter Panel Wiring

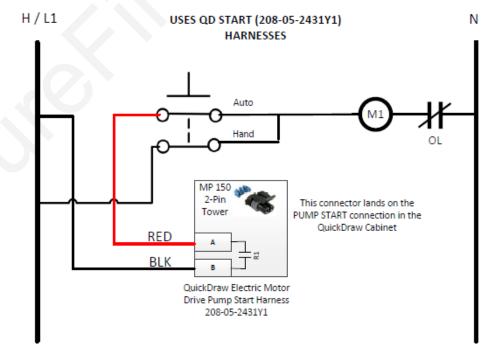
WARNING!

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 EXISITING HAND/OFF/AUTO MOTOR STARTER PANEL (Supplied By Others) TO INCORPORATE QUICKDRAW HARNESSING





Hydraulic Pump Transfer Pump Harnessing

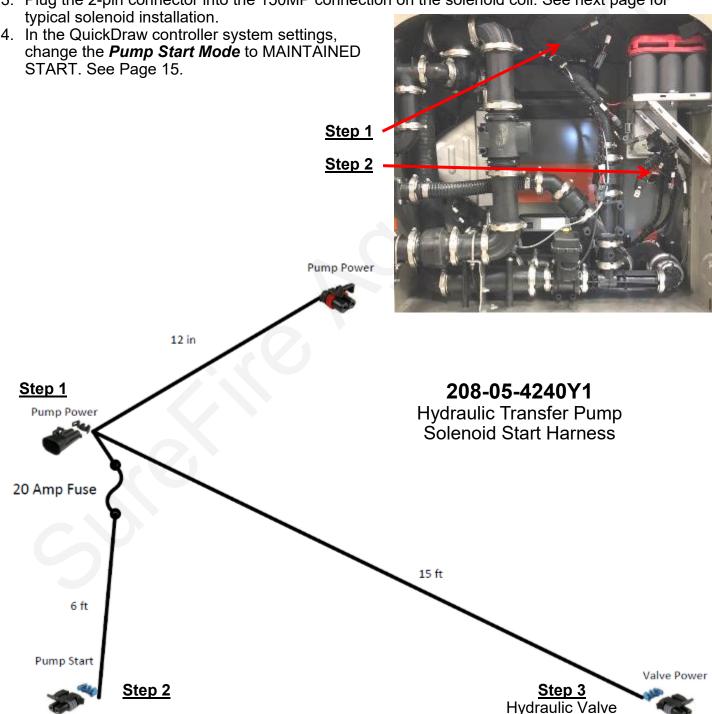
Hydraulic Pumps

- 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



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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:

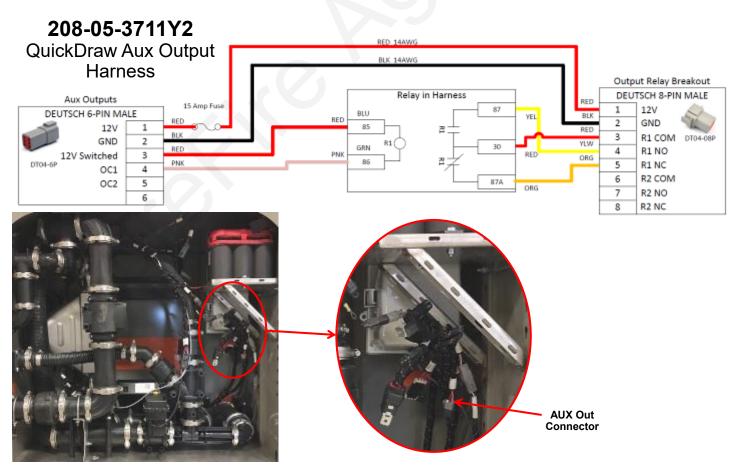
- 1. Plug 208-05-3711Y2 Aux Output Harness into the QuickDraw Aux Outputs connector.
- 2. Plug 208-05-3774Y1 Hydraulic Booster Pump Harness into the Auxiliary Outputs connector in the 208-05-3711Y2 harness
- 3. Plug the 2-pin connector into the 150MP connection on the solenoid coil. See next page for 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.



Auxiliary Outputs

Booster Pump Solenoid



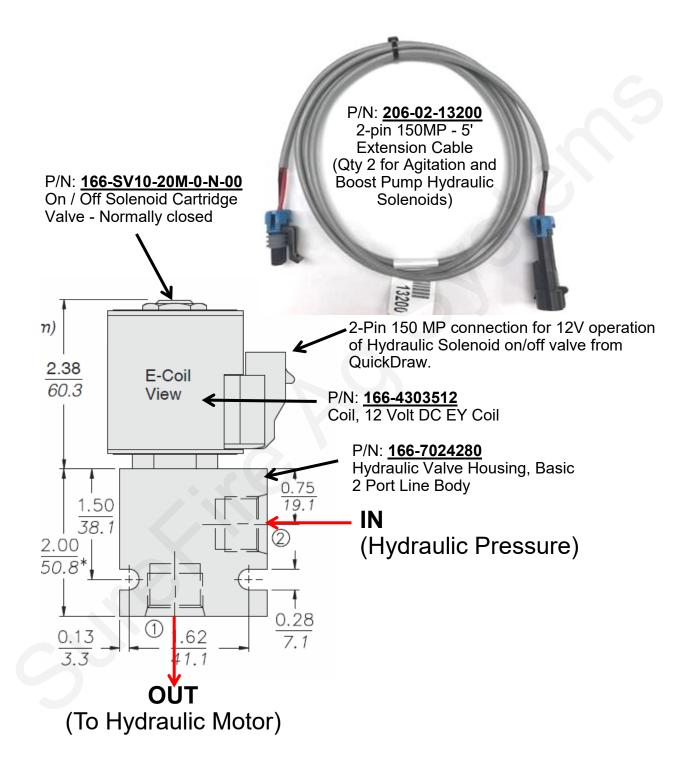


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Hydraulic Pump Typical Hydraulic Solenoid Valve Detail

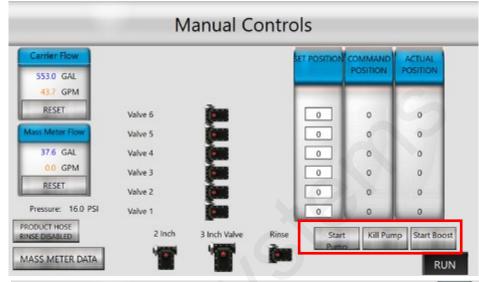




Controller Setup for Pumps

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:

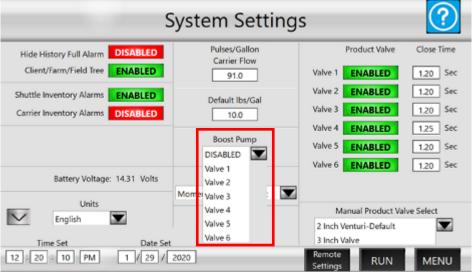
Momentary - The output is enabled for 3 seconds when the batch start is pressed Maintained - The output is constant for the duration of the batch

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 pushbutton 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.



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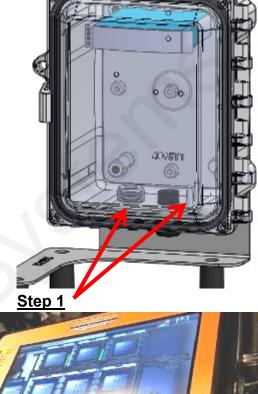


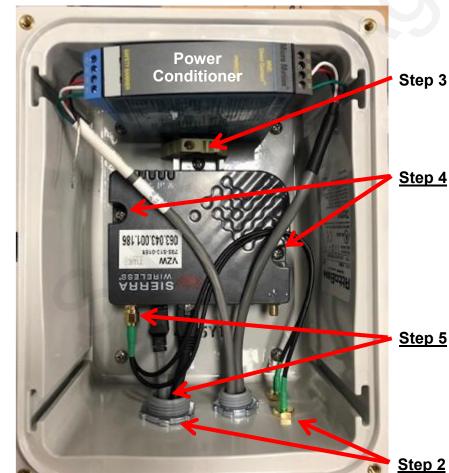
Remote Connectivity

SureFire 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:**

- Remove 3/4" pipe plug and gray PVC hole plugs. The existing Power Conditioner will need to be temporarily removed and
- 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 8

396-4495Y1 - QuickDraw 3000 Master Harness Overview

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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.

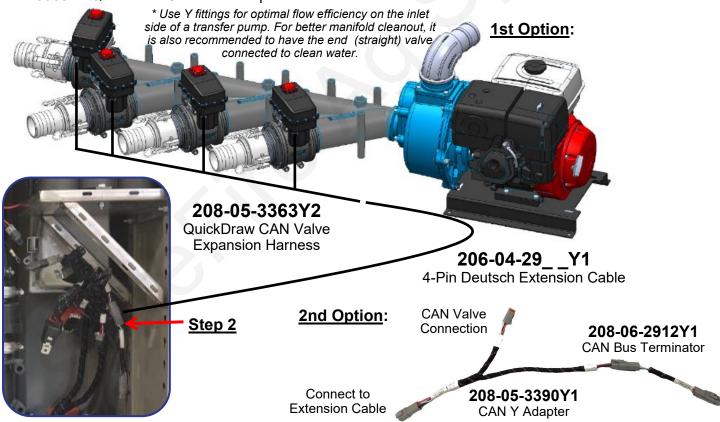
Multiple Carrier Connection

- 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
- 30 ft 206-04-2996Y1
- 10 ft 206-04-2914Y1
- 40 ft 206-04-2997Y1
- 20 ft 206-04-2915Y1
- 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.



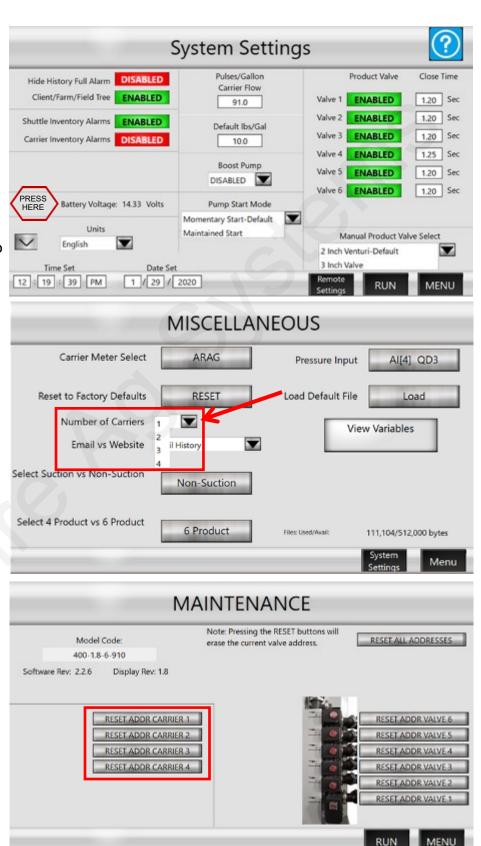
- 3. **2nd Option:** If CAN Valves are not in close proximity, use the appropriate length extension harness to route from the **Bus Extension/Termination** connector in the QuickDraw to the closest CAN Valve. Use CAN Y Adapter (208-05-3390Y1) to connect to the valve and extension cable to the next valve. 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.
- Press the area just left of the Battery Voltage. Hit Enter on the keyboard that pops up.
- Select the appropriate number of Carriers (1-4). Press Menu. This will flash a CAN Bus error because the valves are not addressed.
- Plug in the 3" CAN valves in desired order, one at a time, so they are properly addressed within the QuickDraw controller.
- 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:

- 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.
- 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





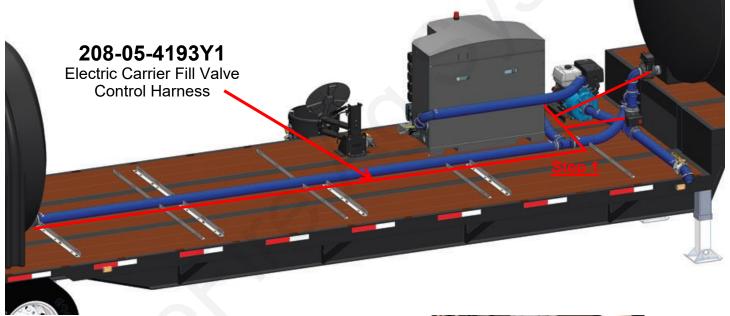
Electric Carrier Fill Valve Control Trailer Layout and Wiring

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.







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SureFire Ag Systems

Auxiliary Large Display

Auxiliary Large Display (606-05-200100)

- 208-05-3236Y1 280MP QD Display Power Cord
- 208-05-3237Y1 78" Ethernet RJ45 to M12 Adapter Cable
- 205-2213Y1 40 Amp 480MP Power Cable 20⁷ 6AWG
- 206-02-2205Y1 2 Pin 1' 480 MP Extension Cable-10 AWG

Installation Instructions:

- 1. Connect 208-05-3236Y1 to the 24V transformer in the display enclosure.
- 2. Route the 205-2213Y1 (40 Amp 480MP power cable in to the QuickDraw cabinet and connect the ring terminals to the battery.
- 3. Route the 208-05-3237Y1 Ethernet cable to the QuickDraw Controller.





Revised: 1/29/2022

Network Switch (For using both Auxiliary Large Display AND Remote Connectivity)

- 208-05-3997Y1 Network Switch Power Cable with M23 Connector
- 208-05-3998Y1 M12 to M12 Ethernet Cable
- 208-05-4000Y1 Network Switch with M12 ports
- 208-05-3237Y1 78" Ethernet RJ45 to M12 Adapter Cable

Because the QuickDraw controller only has 1 Ethernet port, a network switch is required when using BOTH Auxiliary Large Display AND Remote Connectivity modem. The network switch receives power input from the 208-05-3997Y1 harness that plugs into the 2" or 3" valve. Part 208-05-3998Y1 (M12 to M12 Ethernet Cable) connects from the QuickDraw controller to the network switch. Part 208-05-3237Y1 (78" Ethernet RJ45 to M12 Adapter Cable) plugs into the network switch from the Remote Connectivity kit. See 396-3999Y1 for detailed instructions and diagrams.