Fluid Management

# ASX500 SERVICE AND SUPPORT


SERVICE MANUAL - 01

## OVERVIEW

Body of Text (Normal)

## REVISION HISTORY

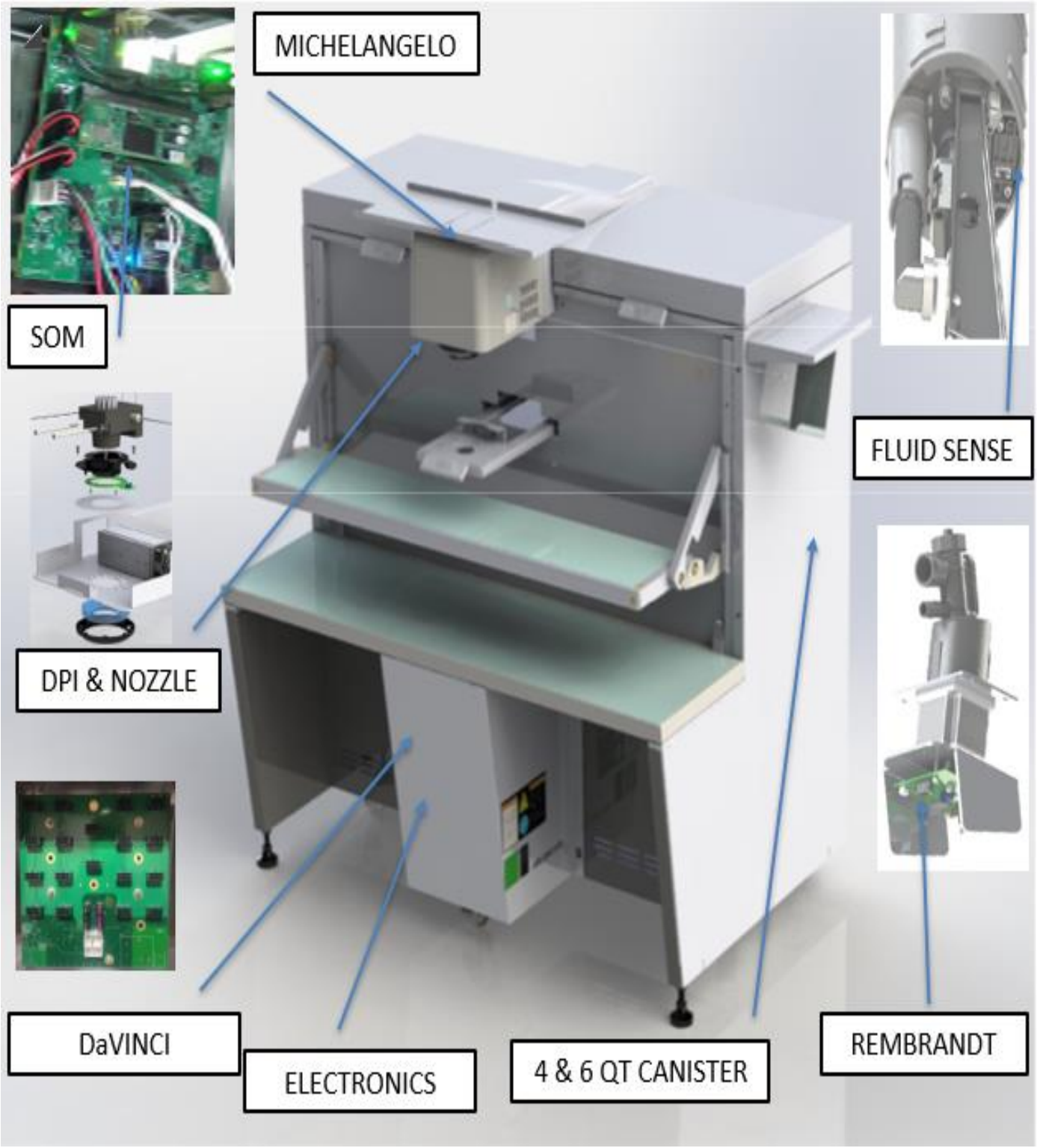
- July 2nd, 2019 Created
- May 11th, 2020 Amended

# CONTENTS

# TOOLS

- Small and medium Phillips screwdrivers, standard screwdriver, utility knife, etc.
- 5.5mm nut driver.
- Paper towels or rags for cleanup.
- Dispense cups (16-32 oz.)
- Gallon bucket or container that can be purchased.
- Electronic scale.
- 1oz calibration cups.
- Nitrile or latex gloves.

# OVERVIEW

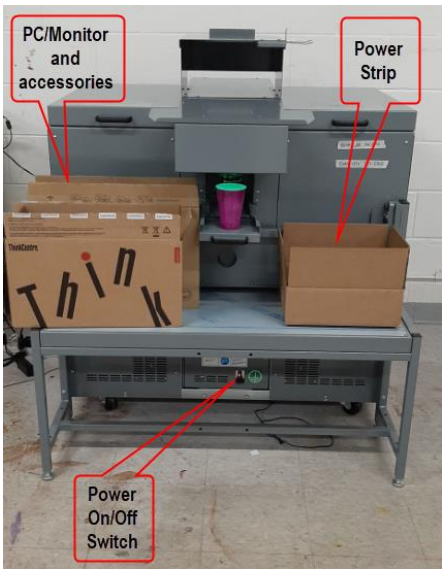

MICHELANGELO
SOM
FLUID SENSE
DPI & NOZZLE
DaVINCI
ELECTRONICS
4 & 6 QT CANISTER
REMBRANDT

# INSTALLATION ASX500

**NOTE**: Pictures referenced are from AS9500. The AS7500 appearance will be similar in profile.

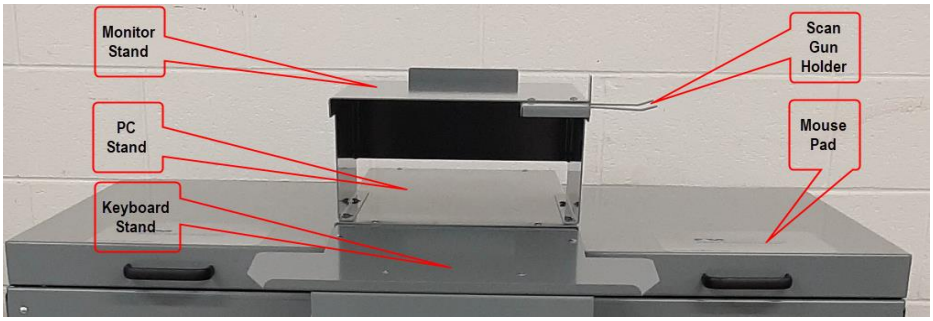
- Unpackage the ASX500 series Dispenser and all accessories.
- Find the ASX500 power cord in the accessories box and connect one end to the receptacle in the back of the machine and the other end to the power strip. The dispenser should power up.

  **Note**: If the machine does not power up, turn it on by flipping the switch on the front panel of the machine.



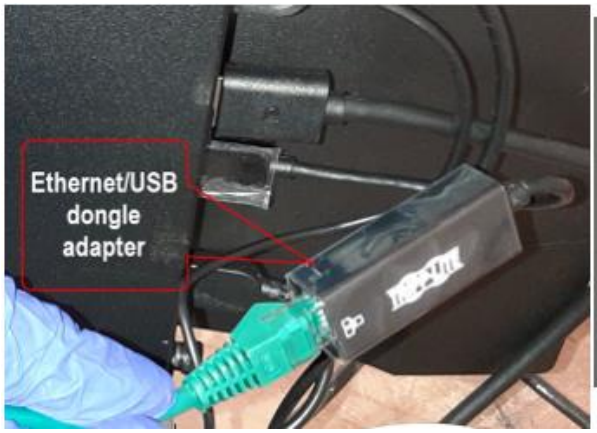


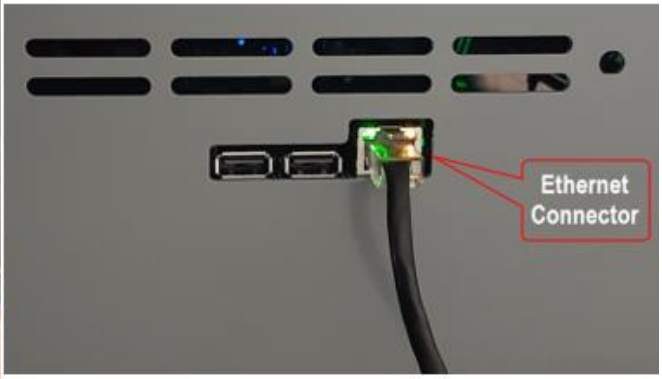
- AS9500 setup the monitor and computer on the monitor/computer stand.



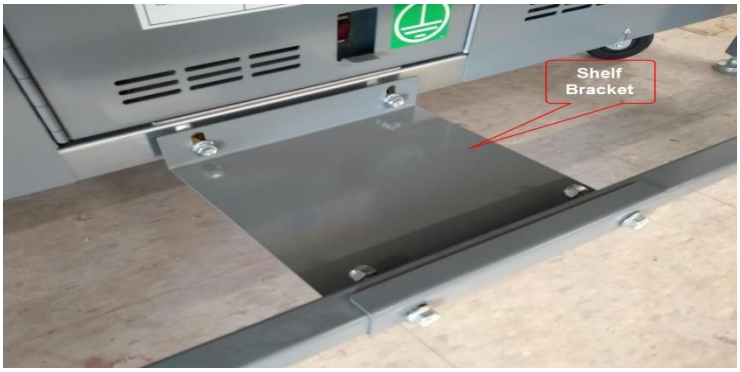

- AS7500 install computer/monitor arm onto the AS7500.
- Connect the WIFI antenna to the computer.
- Route the monitor and computer power cables to the back of the machine. Connect the display port to the monitor and computer and power cords to power strip.
- Place the keyboard on the keyboard tray and mouse on top of the either lid cover.
- AS9500 place the barcode scanner and printer on the monitor / computer stand.

- AS7500 barcode scanner and printer shelf can be installed on right or left side.
- AS7500 setup tiny computer/monitor onto computer/monitor arm.
- Route the keyboard / mouse cables and connect cables to the computer.
- AS7500 route the monitor cables behind the computer monitor arm and secure with clips to keep in place.
- Route the cables and connect USB cables to computer and printer power cord to the power strip.
- Power up computer and monitor.
- Connect the ethernet connector to the Michelangelo PCB (Connector located on the back of the machine) and dongle adapter USB connector to the computer.
  **Note**: The Ethernet cable and dongle adapter are in the PC accessories box. (Reference ASX500 Ethernet/Dongle Adapter Connection Setup in following section within manual)




- Place the ASX500 in its final location.
- With reference to the AS9500 place and secure the 1 gallon and 5-gallon shelf assembly to the AS9500.
  **Note**: The shelf bracket and hardware will be in the same box as the power strip.

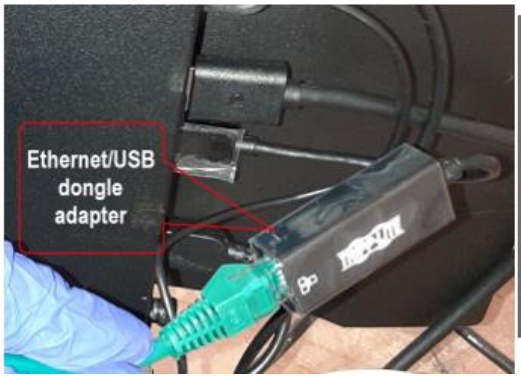


- Test and verify all operational within the software being used to operate the ASX500.
- Installation is complete.

# ASX500 ETHERNET/DONGLE ADAPTER CONNECTION SETUP

The following set of instructions will show how to setup Ethernet/Dongle Adapter connection setup for the ASX500 Series Dispensers.

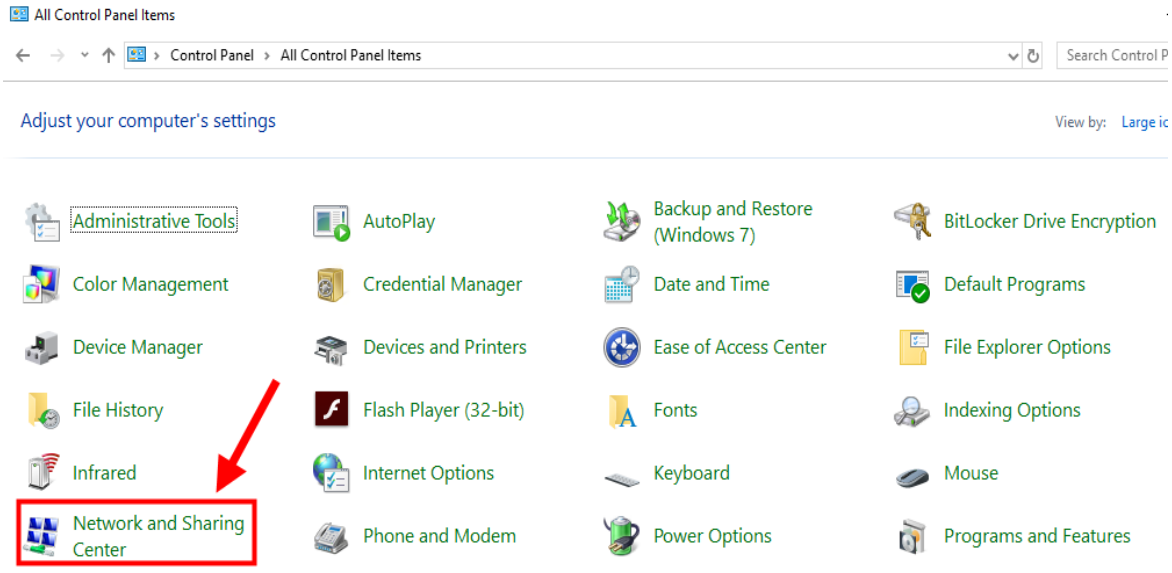
- Set up ethernet connection for the ASX500 Series, connect the Ethernet cable from the ASX500 dispenser to the computer.
  **Note**: The Ethernet cable can be connected to the Ethernet connector on the computer without the Dongle Adapter in some cases.



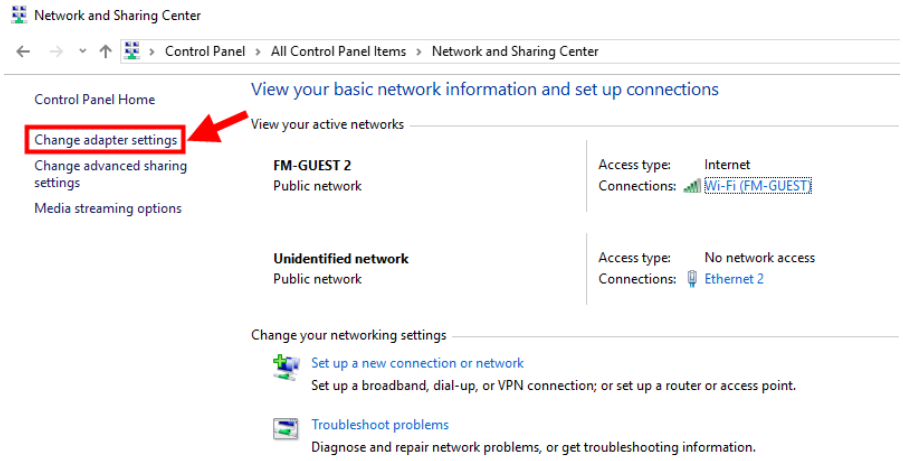


- In Windows, go to Control Panel.

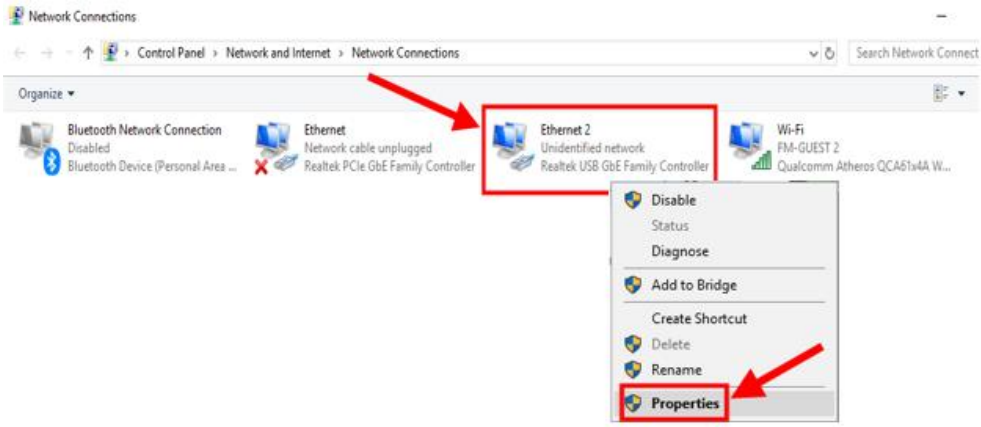
- Click on Network and Sharing Center.



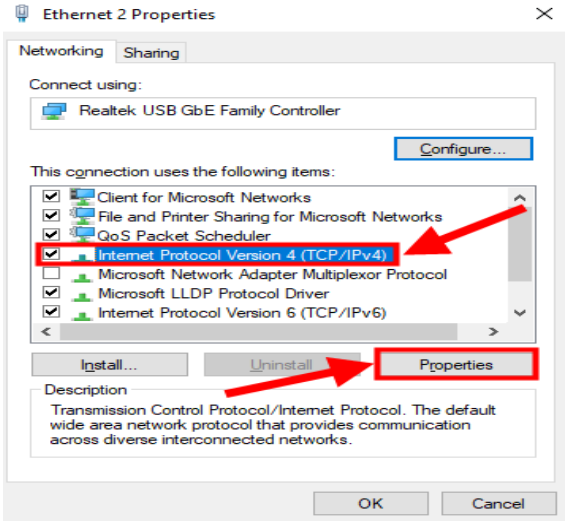

- Click on Change Adapter Settings.



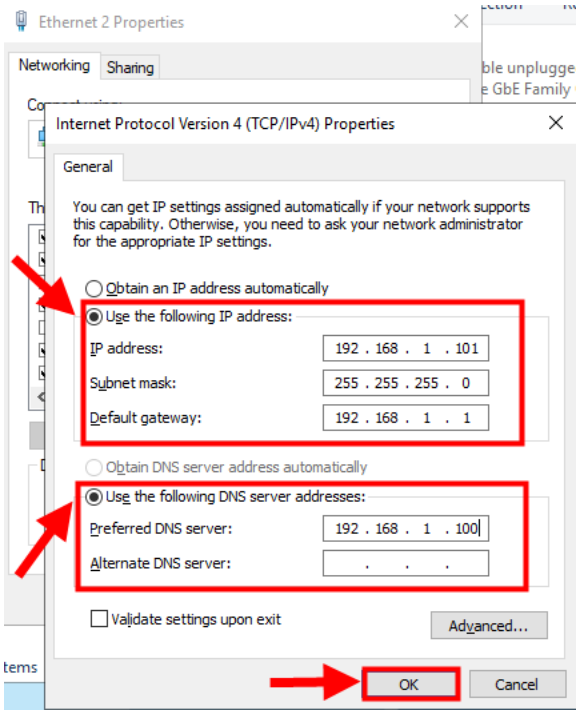

- Right-click on the device (this could be an existing ethernet port or USB/ethernet adapter) and select Properties.
  **Note**: Make sure you select the correct one that is connected to the dispenser.




- Select “Internet Protocol Version 4 (TCP/IPv4)” and click Properties button.




- Select “Use the following IP address:”.
- For IP address: enter 192.168.1.101.
- For Subnet mask: enter 255.255.255.0.
- For Default gateway: enter 192.168.1.1.
- Select “Use the following DNS server address”.
- Enter 192.168.1.100
- Click OK.




- Ethernet/Dongle Adapter connections is complete.

# ASX500 CALIBRATION PROCEDURE

The following procedure will provide the steps on how to calibrate using the Field Dispenser Calibration Tool for ASX500. This is the new process to calibrate the pumps. New tool can be used in automatic mode with a serial enabled weighing scale or without in a manual mode. The tool calculates the required VPR (Volume Per Revolution) parameter and updates the dispenser, then verifies that the calibration was successfully completed. The VPR parameter will automatically get stored in the machine configuration.

## Auto Calibration

- Open the Field Dispenser Calibration Tool.exe by double clicking on the icon.
- Select Automatic Calibration tab.
- For **Automatic Calibration**, setup your scale and select the correct **Scale Connection Port** and click on **Connect** button in the section **Scale Connection**.
- Set your scale under the nozzles.
- Select the colorant to calibrate under **Dispenser Canisters** section and under **Enter Density** section enter the WPG of that colorant.
- Click on **Start** under the **Calibrate** section.
- The calibration will automatically start and when complete it will prompt you it is finished.
- Repeat steps 4,5, and 6 if doing multiple colorants.
- Close Field Dispenser Calibration Tool.
- Dispense Calibration Complete.

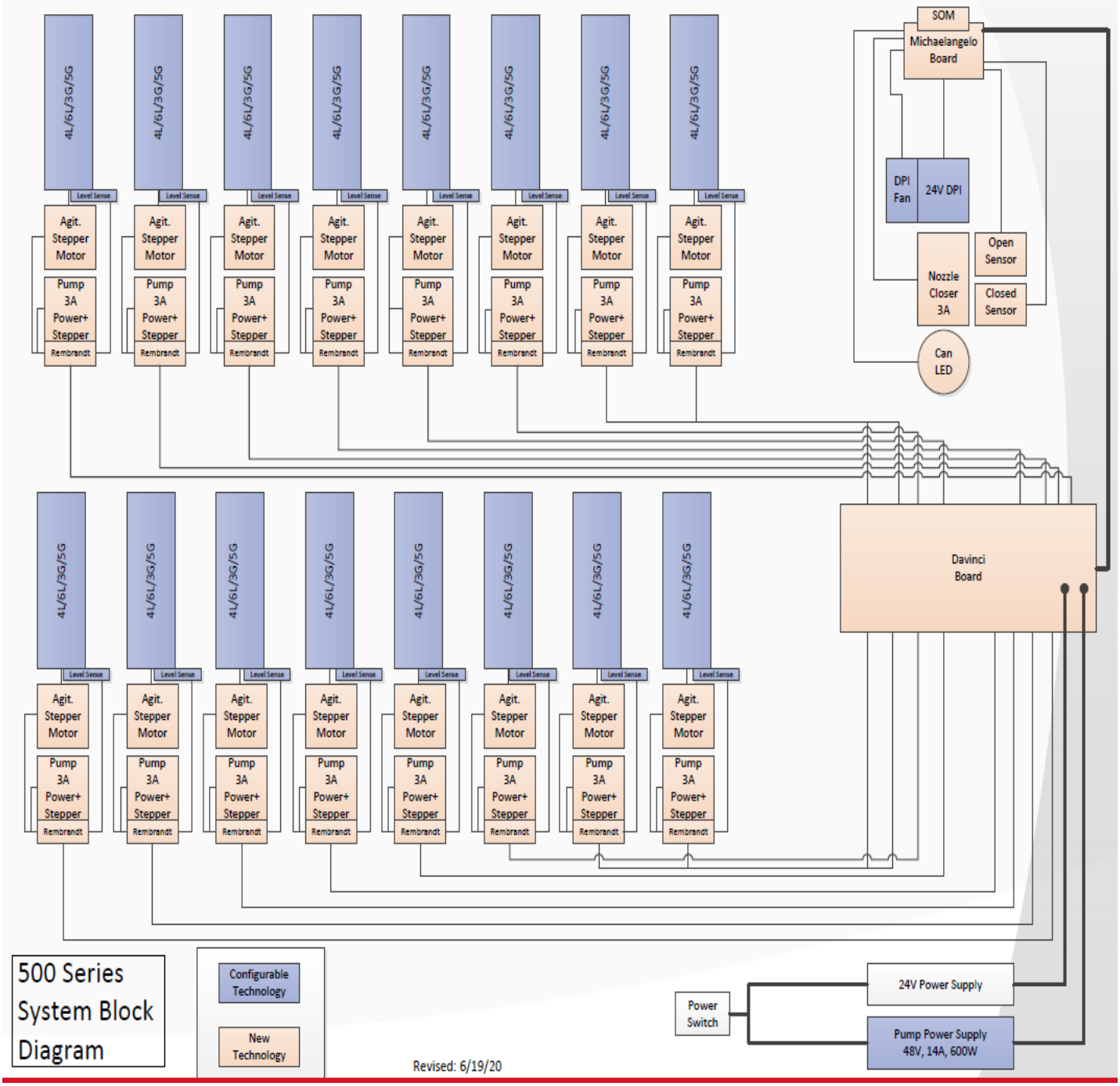
## Manual Calibration

- Open the Field Dispenser Calibration Tool.exe by double clicking on the icon.
- Select Manual Calibration tab.
- For **Manual Calibration**, just setup your scale under the nozzles.
- Select the colorant to calibrate under **Dispenser Canisters** section and under **Enter Density** section enter the WPG of that colorant.
- Click on **Start**, to commence the manual calibration. It will prompt you to tare the scale go ahead and tare the scale.
- Click on **Dispense** Button to start the first dispense
- The Field Dispenser Calibration Tool will prompt you to enter the weighted amount dispensed on the scale into **Calibration Tests** section.
- **Note**: You will be prompted when to Dispense and tare the scale on the screen just follow the prompts.
- Repeat steps 4,5, 6 and 7 if doing multiple colorants.
- Close Field Dispenser Calibration Tool.
- Dispense Calibration Complete.

# ASX500 DAILY MAINTENANCE

- Clean nozzle sponge and ensure it contains a small amount of moisture.
- Purge only when software provides direction command to purge one or more colorants.
- Don’t overfill canisters and fill with full containers of colorant.  Do not use partial containers.
- Keep machine surface clean using a non-abrasive cleaner and wipe up any spills immediately.

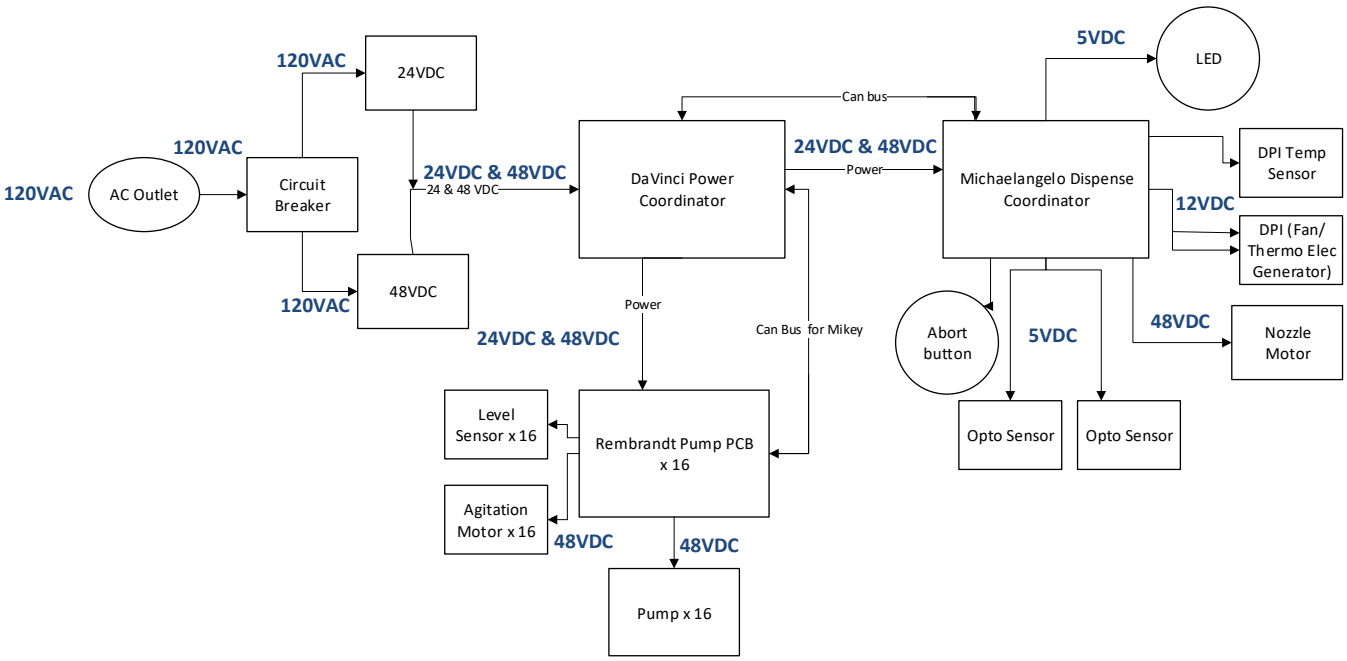
# ASX500 BLOCK DIAGRAM



# ASX500 HARDWARE

## Power and Control

The ASX500 SCHEMATIC OVERVIEW



# ASX500 REPLACEMENT PART GUIDELINE

Step by step guideline for part replacement for Fluid Management Authorized Service Technicians

## 24VDC Power Supplies

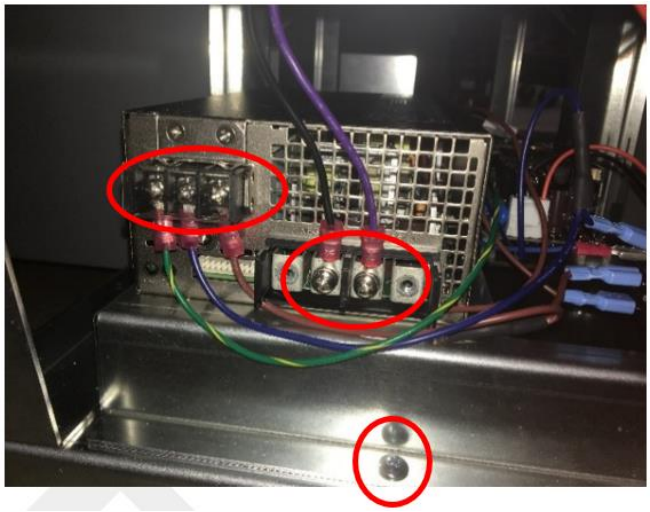
The following procedures cover the ASX500 24VDC power supply removal and replacement.

24 VDC Power Supply, Part Number 38164

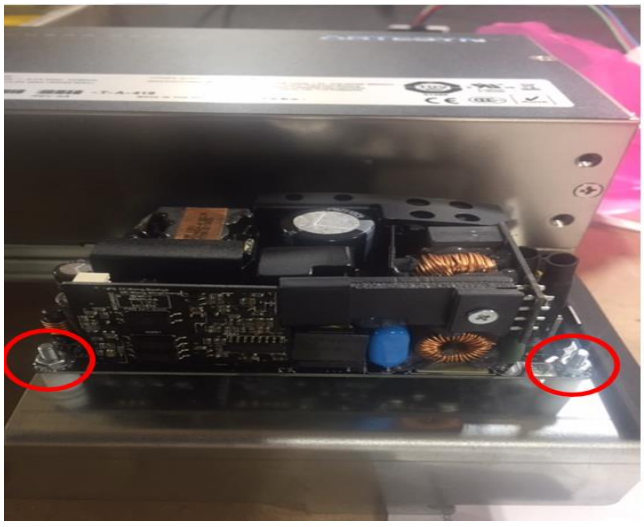
### 24VDC Power Supply Removal

- Disconect power and remove front and back panel.
- Locate 24VDC Power Supply.
- Remove the input 120VAC connector and the output 24VDC connector.

- Remove the input 120VAC connector and the output 48VDC connector.
- Use a Phillips driver to remove the screw located in the front of the power supply tray. Pull out the power supply tray and place the tray on a flat surface for ease of replacement.



- Use a 5.5mm nut driver to remove the four mounting nuts located on each corner.
- Remove power supply.

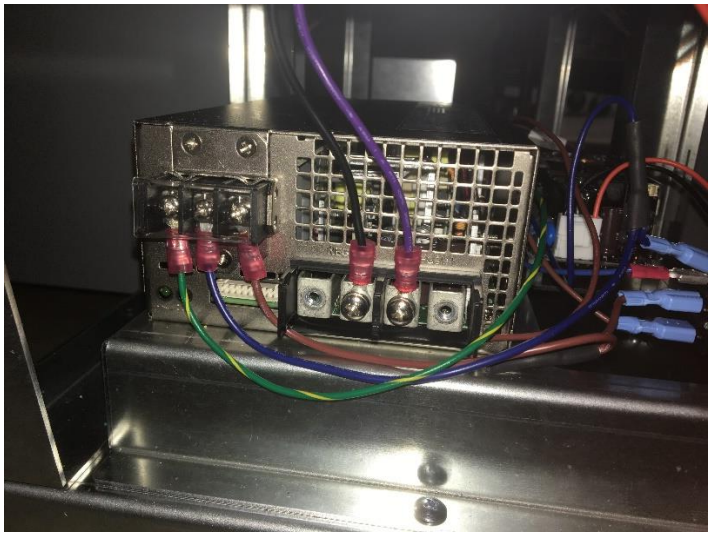


### 24VDC Power Supply Replacement

- Place new 24VDC power supply on the four mounting studs.
- Use a 5.5 mm. nut driver to install and tighten the four mounting nuts.
- Connect the output 24VDC connector on right and the input 120 VDC connector on left.
- Connect the output 48VDC connector on right and the input 120 VDC connector on left.
- Close the front and back panels.

# 48VDC POWER SUPPLIES

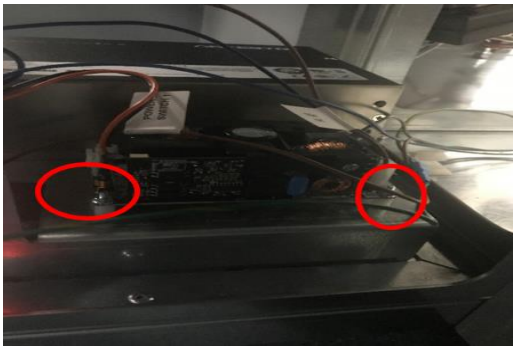
The following procedures cover the ASX500 48VDC power supply removal and replacement.



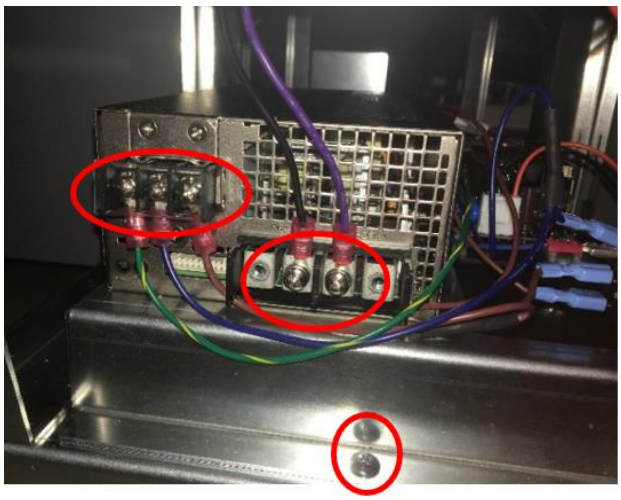
48 VDC Power Supply, Part Number 38673

### 48VDC Power Supply Removal

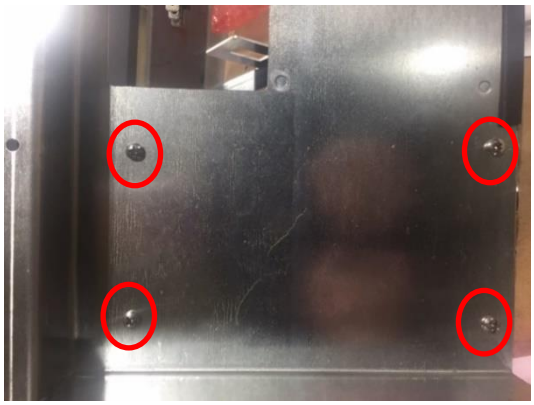
- Disconnect power and remove front and back panel.
- Remove the input 120VAC connector and the output 24VDC connector.



- Remove the input 120VAC connector and the output 48VDC connector.
- Use a Phillips driver to remove the screw located in the front of the power supply tray. Pull out the power supply tray and place the tray on a flat surface for ease of replacement.



- Flip the power supply tray upside down. Use a Phillips driver remove the four Phillips screws.
- Remove power supply.

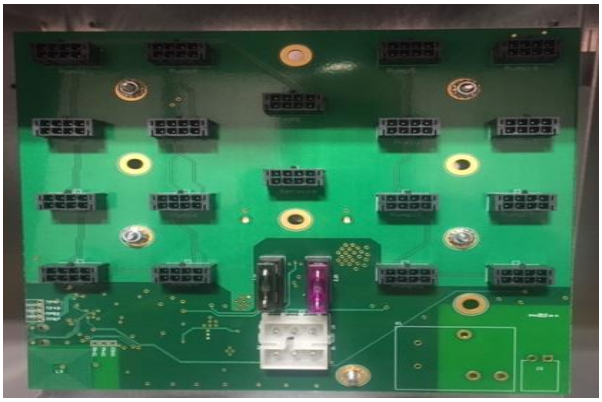


## 48VDC Power Supply Replacement

- Place new 48VDC power supply on the power supply tray.
- Use a Phillips driver to install and tighten the screw.
- Connect the output 24VDC connector on right and the input 120 VDC connector on left.
- Connect the output 48VDC connector on right and the input 120 VDC connector on left.
- Close the front and back panels.

# DaVINCI POWER BOARD REMOVAL AND REPLACEMENT

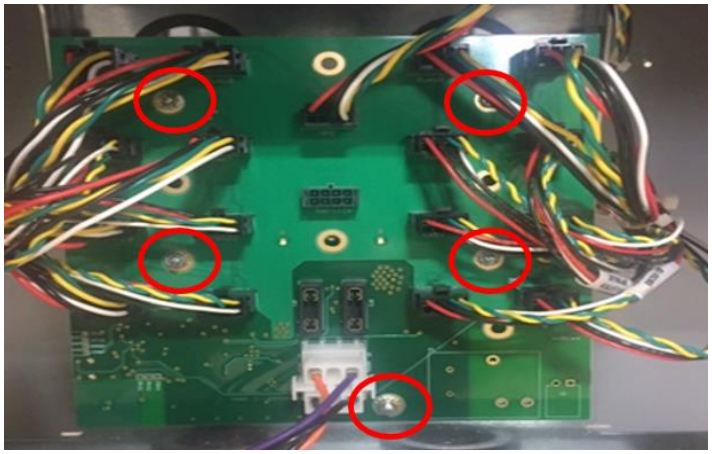
The following procedures cover the ASX500 DaVinci Power board removal and replacement.



DaVinci Power Board, Part Number 38575

## DaVinci Power Board Removal

- Disconnect power and remove front panel.
- Remove all harnesses attached to the board.
- Using a 5.5mm. nut driver remove the 5 nuts.
- Remove the board.

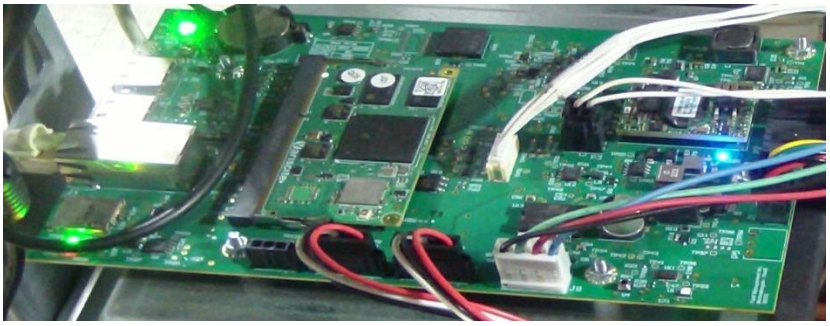


### DaVinci Power Board Replacement

- Place the new board on the 5 mounting studs.
- Use a 5.5mm nut driver to install and tighten the nuts.
- Connect all harnesses back onto the board (no specific order).
- Close the front panel. Plug in power back into dispenser
- Run pulse test to verify operation if functional.

# MICHELANGELO DISPENSE COORDINATOR BOARD REMOVAL AND REPLACEMENT

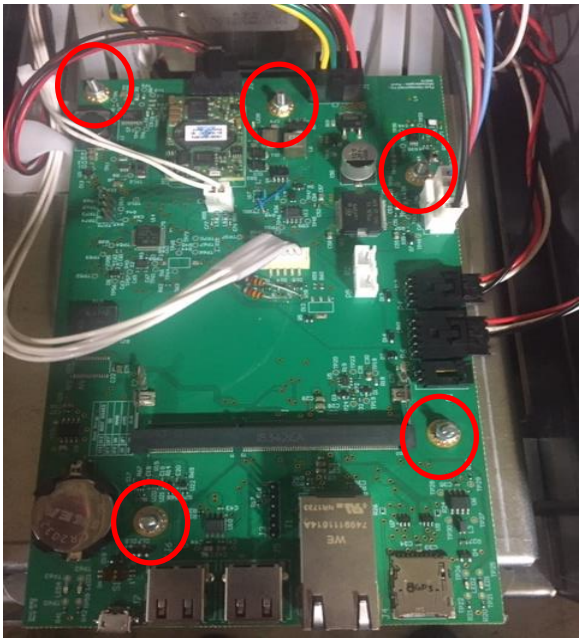
The following procedures cover the ASX500 Michael Angelo dispense coordinator board removal and replacement.



Michelangelo Dispense Coordinator Board, Part Number 38576

## Michelangelo Dispense Coordinator Board Removal

- Access IDEX Dispenser Service and verify the failure.
- Disconnect power to the dispenser.
- To access the Michelangelo PCB, remove the top plastic cover.
- Locate the Michelangelo dispense coordinator board.
- Disconnect all connectors.
- Use a 5.5mm. nut driver to remove the five mounting nuts and remove the board.
- Remove the faulty Michelangelo PCB.
- Remove the SD Card from the faulty Michelangelo and install into new Michelangelo PCB.
- Remove the SOM from the faulty Michelangelo and install on the new Michelangelo PCB.



## Michelangelo Dispense Coordinator Board Replacement

- To install new board, put new Michelangelo dispense coordinator board in place and replace and tighten the five M3 mounting nuts.
- Connect all harnesses to the new Michelangelo PCB.
- Place the top cover back on the dispenser.
- Connect power back to the dispenser.
- Set Can Node ID by using the following tool:
  FM CANOpen Service Tool (Set ID Command) or NFC Application (ST25 or Tomasz Application)

  **Note:** The Node ID for the Michelangelo PCB is always 3. Changing Node ID via NFC can be done prior to connecting to the dispenser.

- Power cycle the machine to load the new Node ID.
- Update the firmware to the newest version.
- Test the new Michelangelo PCB.

# MICHELANGELO SOM (SYSTEM ON MODULE) REPLACEMENT

- Access IDEX Dispenser Service and verify the failure.
- Turn off the machine or unplug the power cord from the machine.
- To access the SOM on Michelangelo PCB, remove the top center plastic cover.
- Disconnect and remove the Michelangelo SOM from the Michelangelo PCB.
- Install the new Michelangelo SOM on the Michelangelo PCB.
- Turn on the machine or plug in the power cord to the machine to power on.
- Install the DispenserConfig.json file on the SOM.

**Note:** If the dispenser is not using Fluid Sense feature, check and correct canister levels.

- Update the UIDD to the latest version.
- Test the new Michelangelo SOM.
- Place the top center plastic cover back on the machine.
- SOM Replacement is complete.

Michelangelo (SOM) -
Part Number 38810

# CANISTER ASSEMBLY

The following two procedures cover the removal and installation of ASX500 canister assembly.

4L Canister Kit – Part Number 39038 and 6L Canister Kit – Part Number 39037

## Canister Assembly Removal

- Access IDEX Dispenser Service and verify failure.
- Disconnect power to the machine.
- Remove the access panel closest to the affected canister assembly.
- Locate the canister and pump assembly to be replaced.
- Disconnect the wiring harness that is plugged into to the Rembrandt pump board. Press in the locking clip and pull out connector.

- Remove the quick-connect fitting (JG connector) from the DVX pump. To remove, compress the inner collet towards the fitting. While holding the collet inward, pull on the connector, and remove it from the pump.

- Drain the colorant from quick-connect fitting into a bucket.

- Open canister cover lid and remove the canister assembly. Push up on the base of the canister to remove canister.

- After canister removal, pour colorant into a clean bucket.
  **Note:** If the consistency of the colorant is not like a fresh can, do not re-use colorant.

### Canister Assembly Replacement

- Insert replacement canister assembly into the dispenser. FM Service will automatically recognize the pump and its position.
- Connect the quick-connect fitting (JG connector) to the DVX pump nipple or the tubing.
- Connect the power harness to the Rembrandt PCB.
- Pour reserved colorant back into canister.
- Turn on and re-initialize the dispenser.
- Go into IDEX Dispenser Service.
- Perform a 5 oz. manual dispense. Check tubing for leaks.
- Test and verify canisters agitate by executing an agitation command.
- Re-install panel.
- Perform a 1 oz. dispense to check calibration with a scale.

## FLUID SENSE CANISTER REPLACEMENT AND CALIBRATION

The following two procedures cover the removal and replacement of ASX500 faulty canister/fluid sense.

### Canister/Fluid Sense Removal

- Access IDEX Dispenser Service and verify the failure.
- Disconnect power to the Dispenser.
- Follow Canister Removal and Canister Assembly process.
- For Fluid Sense Calibration fill canister to top of highest blade on the agitation paddle
- Go into IDEX Dispenser Service
  **Note:** The Fluid Sense Calibration can only be completed with the dispenser uninitialized. **DO NOT INITIALZIE THE DISPENSER PRIOR TO THE FLUID SENSE CALIBRATION**.

- Click on the drop-down arrow next to the Canister on the left side of the screen to expand this section.
- Click on the drop-down arrow next to the colorant you replaced to the canister/fluid sense.
- Click on pump.
- On the right select Calibrate Fluid Sense and click Execute to calibrate the chosen Fluid Sense.

- Verify the level is correct by clicking on the colorant you calibrated on left side of the screen.

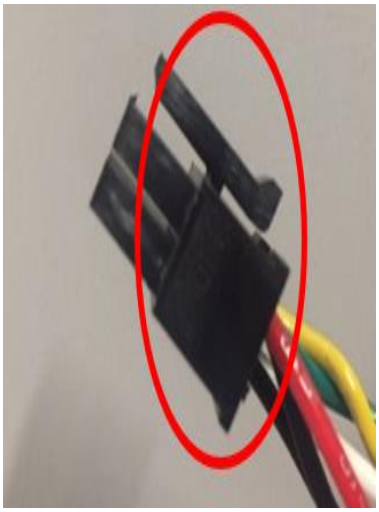
# AGITATION REMOVAL AND REPLACEMENT

The following two procedures cover the removal and replacement of ASX500 agitation motor assembly.

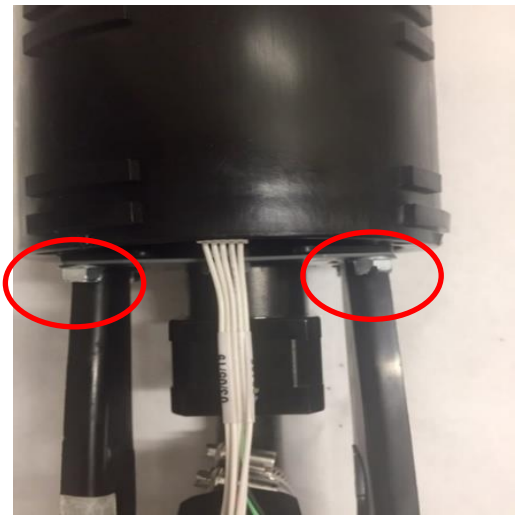
Agitation Motor, Part Number 39054

## Agitation Motor Removal

- Access IDEX Dispenser Service and verify the failure.
- Locate the canister and pump assembly to be replaced.
- Follow canister removal process.
- Disconnect the wiring harness that is plugged into to the Rembrandt pump board.



- Remove the 4 screws holding the agitation bracket.
- Remove old agitation motor.



## Agitation Motor Replacement

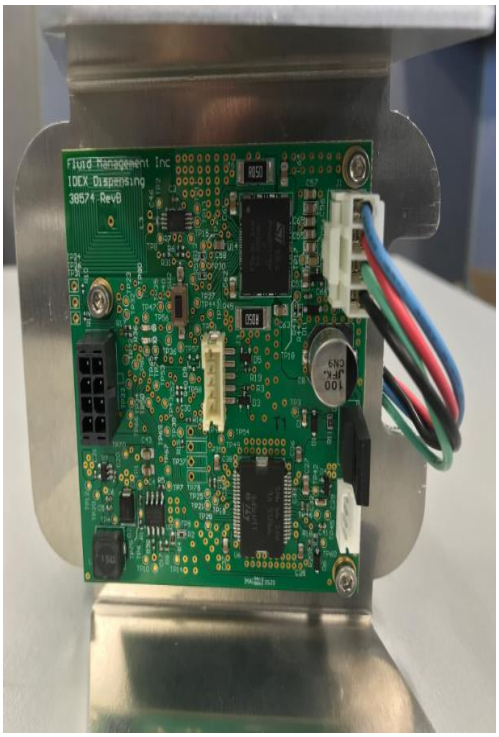
- Take to old agitation roll pin and shaft and align the roll pin and shaft on the new agitation motor.
- Insert the new agitation pin and shaft into the canister
- Install the 4 mounting screws and tighten the agitation bracket to the canister.
- Insert canister assembly into the dispenser.
- Connect the quick-connect fitting (JG connector) to the DVX pump nipple or the tubing.
- Connect the power harness to the Rembrandt PCB.
- Pour reserved colorant back into canister.
- Turn on and re-initialize the dispenser.
- Go into IDEX Dispenser Service.
- Perform a 5 oz. manual dispense. Check tubing for leaks.
- Test and verify canisters agitate by executing an agitation command.
- Re-install panel.

# PUMP ASSEMBLY REMOVAL AND REPLACEMENT

The following two procedures cover the removal and replacement of ASX500 pump assembly.

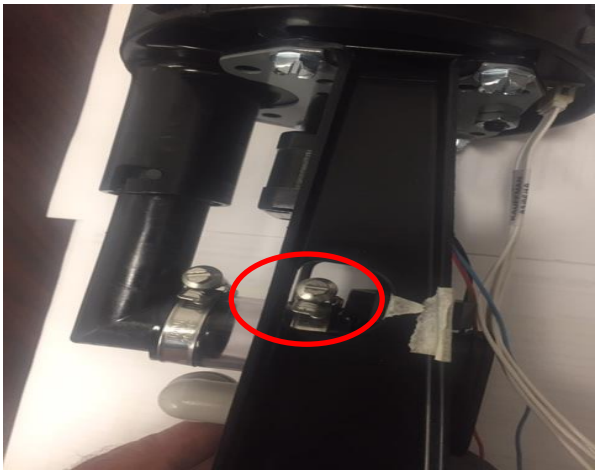
Pump SF Part Number – 38710

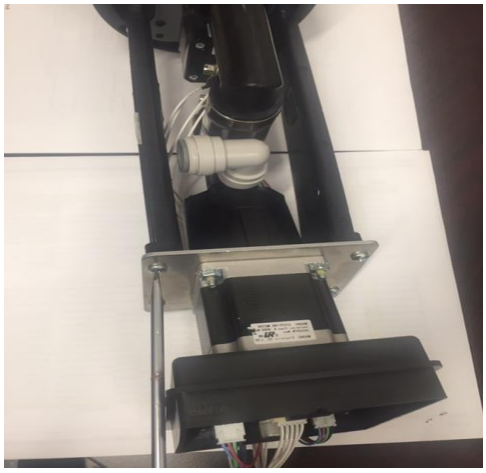
Pump HS Part Number - 38690




## Pump Assembly Removal

- Access IDEX Dispenser Service and verify the pump failure.
- Determine the Node ID of the failed pump and make note of it.
- Disconnect power to the Dispenser.
- Remove the panel nearest to the pump failure.
- Locate the faulty pump.
- Remove the canister assembly following the canister assembly replacement steps.
- Disconnect the agitation motor harness from the Rembrandt PCB.
- Disconnect the Fluid Sense harness from the Rembrandt PCB.
- Remove the pump assembly from the canister pump bracket by removing the four screws holding the pump in place and loosening the hose clamp.





## Pump Assembly Replacement

- Install the new pump assembly to the canister pump bracket with the four removed screws.
- Tighten the hose clamp on the pump inlet.
- Connect the agitation harness to the new Rembrandt PCB.
- Connect the Fluid Sense harness to the new Rembrandt PCB.
- Insert the canister back into the Dispenser.
- Connect the quick-connect fitting (JG connector) to the DVX pump.
- Connect the power harness to the Rembrandt PCB.
- Turn on and re-initialize the dispenser.
- Pour reserved colorant back into canister.
- Go into IDEX Dispenser Service.
- Set Can Node ID by using the following tool:
  FM CANOpen Service Tool (Set ID Command) or NFC Application (ST25 or Tomasz Application)

  **Note:** If using the NFC Application, you can assign the Node ID when the canister is out of the dispenser. It does not need to be connected to the power source.

- Disconnect the FM CANOpen Service Tool or NFC Application.
- Power cycle the machine to load the new Node ID.
- Perform a 5 oz. manual dispense to check for leaking and to remove air from lines.
- Attach access panel to unit.
- Perform a 1 oz. dispense to check calibration.
  **Note:** If calibration is not within threshold upper and lower limit or want to calibrate new pump please refer to Dispense Calibration Replacement Instructions.

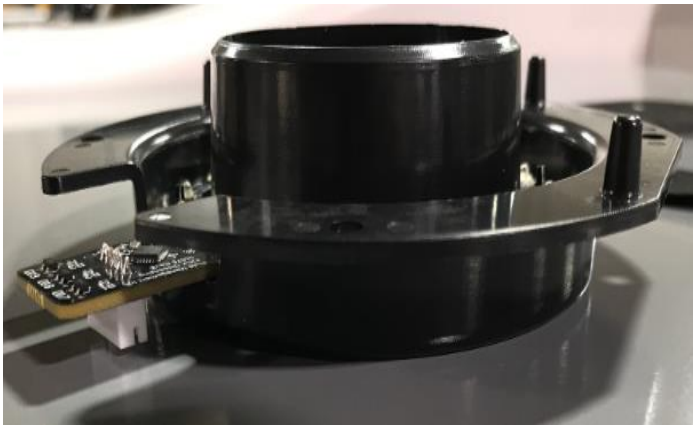
# REMBRANDT PUMP BOARD

ASX500 Rembrandt board is part of the pump assembly and ***NOT*** a replaceable part.

# LED CAN LOCATOR PCB KIT

The following two procedures cover the removal and replacement of the ASX500 LED PCB KIT.

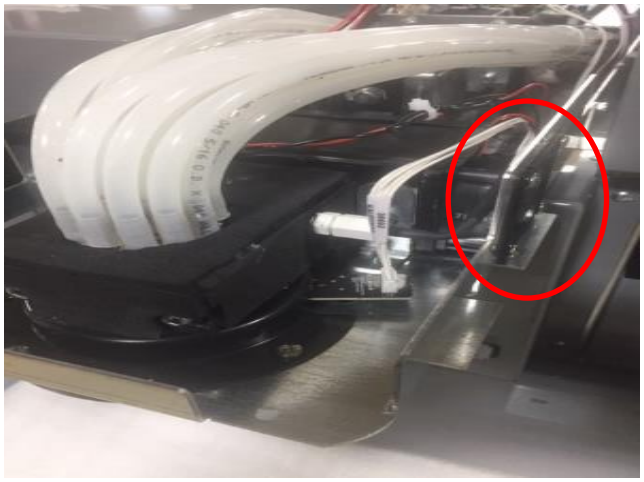
## LED Can Locator PCB Removal



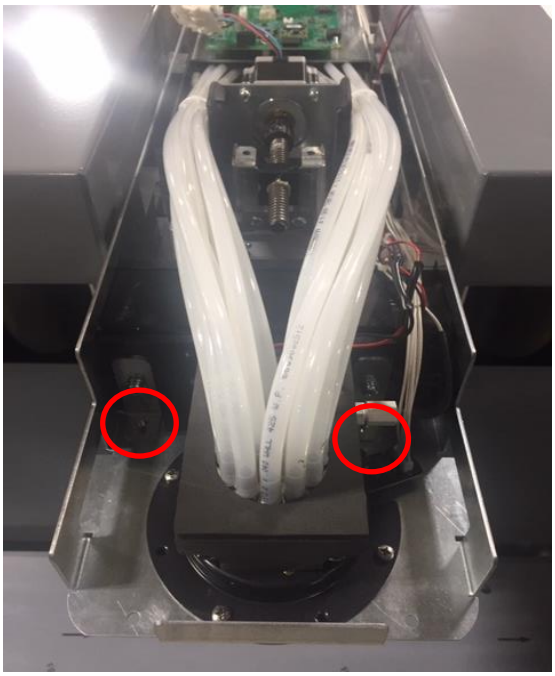
LED Can locator PCB KIT – Part Number 39035

- Access IDEX Dispenser Service and verify failure.
- Disconnect power.
- To access the Locator LED PCB assembly, remove the front and back nozzle covers.
- Remove the LED harness.

- Remove the 4 screws holding to DPI fan.

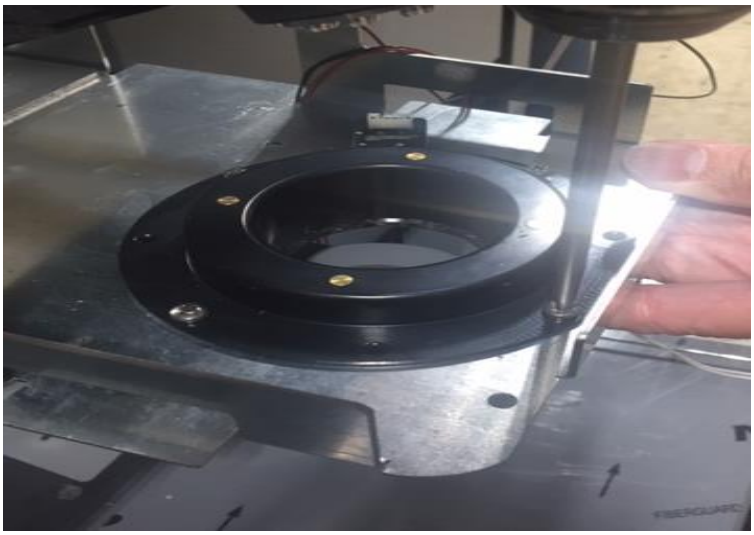


- Remove the bottom screws holding the DPI to the nozzle weldment.



- Lift up on nozzle block to gain access to the LED assembly.
  Note: The colorants might drip or leak from the tubing while lifting the nozzle assembly

- Remove the first 3 screws holding the top LED shroud. While removing the last screw hold the bottom where the LED lens is located.



- Remove the LED lens and gasket.

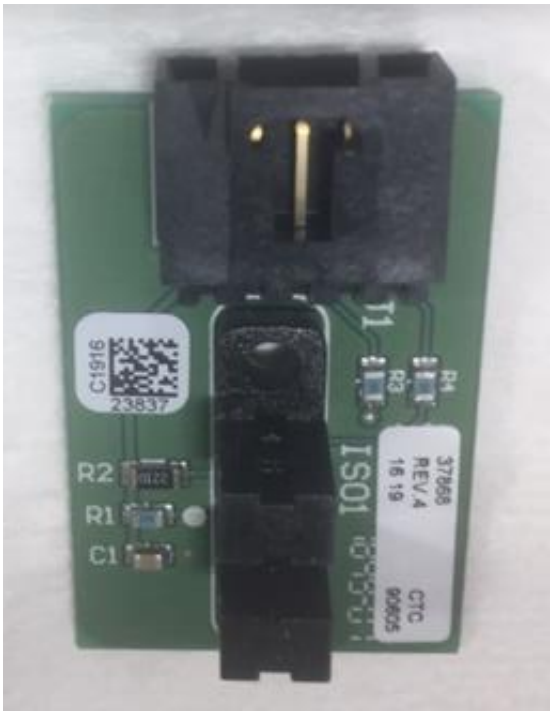
- Remove and discard the faulty LED Can Locator PCB.

### LED Can Locator PCB Kit Replacement

- Install new LED Can Locator PCB
- Use a screwdriver to install LED shroud to nozzle weldment and tighten the screws.
- Reinstall DPI and nozzle block assembly and tighten the screws.
- Position fan and tightens the screws.
- Connect the LED harness to LED PCB.
- Connect power and verify that the LED PCB is functional.
- Install front and back nozzle covers.

# NOZZLE CLOSER OPTO SENSOR

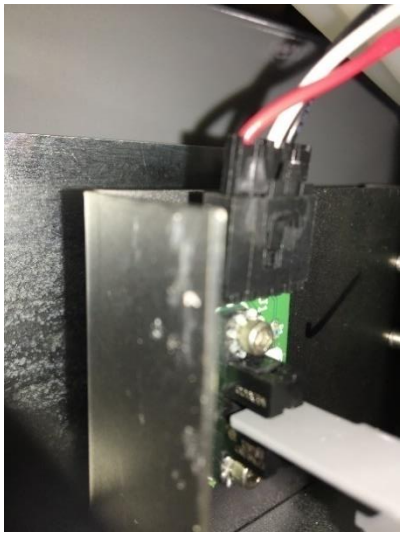
The following two procedures cover the removal and replacement of the ASX500 Nozzle closer OPTO sensor.

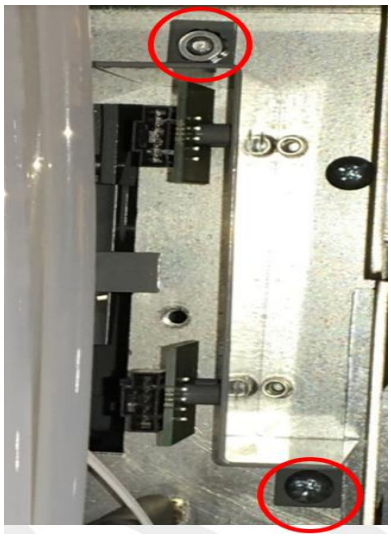



OPTO Sensor PCB Board – Part Number 38091

## OPTO Sensor(s) PCB Removal

- Access IDEX Dispenser Service and verify failure.
- Disconnect power.
- Remove the front and back nozzle covers.
- Remove the Opto sensor harnesses.
- Remove screw and nut holding the Opto sensor mounting bracket.

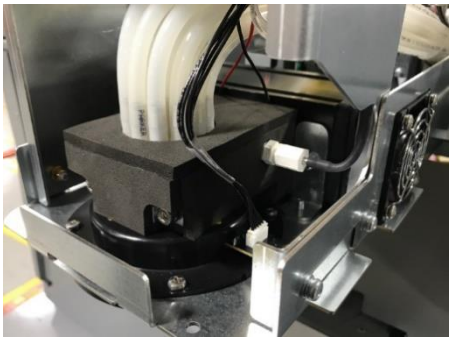
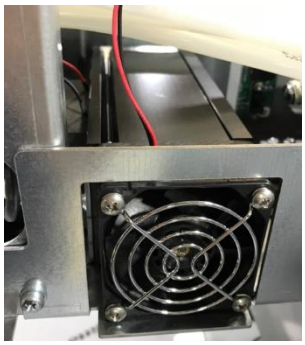




## Opto Sensor(s) PCB Replacement

- Insert new Opto sensors, if one sensor is bad you must replace both sensors.
- Use a 2.5 Allen key to install and tighten the screws.
- Use a screwdriver to install Opto sensor brackets to nozzle weldment and tighten the screws.
- Connect the Opto sensor harnesses to Opto sensors.
- Connect power and verify that the Opto sensor PCBs are functional by opening and closing the nozzle closer.
- Install front and back nozzle covers.

# DPI REPLACEMENT

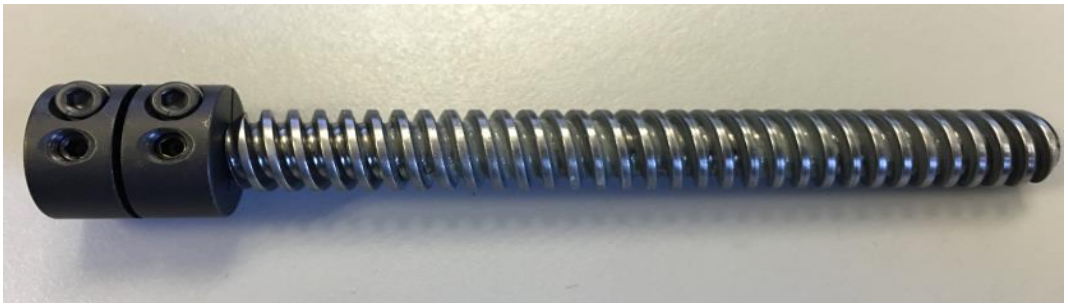

DPI Kit – Part Number AS7500 – 39020 & AS9500 - 39049

- Access IDEX Dispenser Service and verify the failure.
- Disconnect power to the dispenser.
- To access the DPI Assembly, remove top plastic cover.
- Disconnect DPI harness from the Michelangelo PCB.
- Disconnect the fan harness from the Michelangelo PCB.
- Disconnect the DPI Probe harness from the Michelangelo PCB.
- Remove the fan from the weldment bracket by removing the 4 screws.
- Remove the DPI assembly from the weldment bracket by removing the screws.
- To access the John Guest fittings, remove the bracket the Michelangelo PCB sits on and set it to the side.
- Disconnect the John Guest fittings coming from the pump tubing to the nozzle block formed tubing.
- **Note**: Place a cover under the John Guest fittings prior to disconnecting to prevent colorant drippage on machine.
- Remove the faulty DPI assembly by lifting it up and out of the weldment bracket.
- Install new DPI assembly, connect all John Guest fittings from the pump tubing to the new nozzle block formed tubing.
- Place the Michelangelo PCB bracket back on and secure it back on the weldment.
- Secure the DPI assembly to the weldment bracket with the screws.
- Secure the fan back on the weldment bracket with the 4 screws.
- **Note**: Make sure to insert the fan spacer in the right place before securing onto the weldment bracket.
- Connect the DPI Probe harness to the Michelangelo PCB.
- Connect the fan harness to the Michelangelo PCB.
- Connect the DPI harness to the Michelangelo PCB.
- Turn on the machine or plug in the power cord to the machine to power on.
- Test and verify the DPI assembly is working properly in IDEX Dispenser Service.
- Place the top center plastic cover back on.

- DPI assembly replacement is complete.

# NOZZLE CLOSER LEAD SCREW AND COUPLER

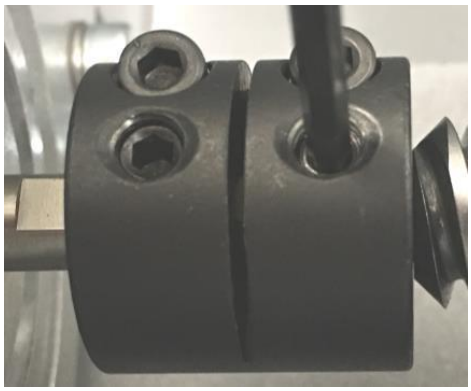
The following two procedures cover the removal and replacement of the ASX500 nozzle closer lead screw and coupler.



Lead screw and coupler, part# 37077

## Lead screw and coupler Removal

- Remove the front and back nozzle covers.
- Loosen the all four coupler screws by using a 3/32nd Allen key.

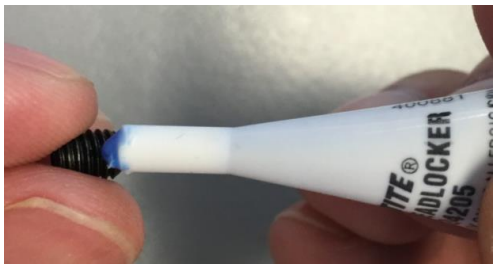


- Remove lead screw and coupler from the upper slide guide.

## Lead screw and coupler Replacement

- Insert new lead screw and coupler into the upper slide guide.

- Add a drop of Loctite to the two middle set screws.




- Use a 3/32nd allen key to install and tighten the screws. Tightens the screws in the following order shown below.


- Verify that the lead screw and coupler is functional by opening and closing the nozzle closer.
- Install front and back nozzle covers.

# ERROR CODES

| Error Code | Description | Customer Impact | Service Resolution | Error Text |
|---|---|---|---|---|
| 9100 | Coordinator failed to load list of faults from resource file. | Fault text will not be available. | Reinstall dispenser firmware. | Failed to load faults from *File Name*: *Exception Message* |
| 9101 | Coordinator failed to parse list of faults from resource file. | Fault text will not be available. | Reinstall dispenser firmware. | Failed to parse faults from *File Name*: *Exception Message* |
| 9102 | Coordinator failed to map list of faults from resource file to internal data structures. | Fault text will not be available. | Reinstall dispenser firmware. | Failed to map faults from *File Name*: *Exception Message* |
| 9103 | Unexpected event for the state of the Coordinator. | No action will be taken. | None. | Invalid event *Event ID* in state *State ID* from node id *CANOpen Node ID* |
| 9104 | Unexpected agitation stop while in a suspended state. | Agitation will be stopped. | None. | Agitation stop event in SUSPENDED state for Canister *Canister ID* |
| 9105 | Unexpected agitation start when in a stopped state. | Agitation will be stopped. | None. | Agitation start event in STOPPED state for Canister *Canister ID* |
| 9106 | Unexpected agitation start while in a suspended state. | Agitation will be stopped. | None. | Agitation start event in SUSPENDED state for Canister *Canister ID* |
| 9107 | Unexpected agitation start | None. | None. | Agitation start without request for Canister *Canister ID* |
| 9108 | Unknown device responding to coordinator | None. | Verify dispenser configuration corresponds to the number of physically installed devices. Fix and reboot. | Unconfigured device id *CANOpen Node ID* notifying of event *Event ID* |
| 9110 | Unexpected initialization response from device | None. | None. | Unexpected initialization response from node id *CANOpen Node ID* |

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|---|---|---|---|---|
| 9111 | Low ingredient level. | No impact on the job, future jobs may fail when level drops below minimum. | Add ingredient to the specified canister. | Ingredient level dropped below a warning level in canister with id: *Reason* |
| 9112 | Command in progress cleared due to device reset | | | Command in progress *Command Name* cleared due to device reset (Node Id = *CANOpen Node ID*) |
| 9113 | Command waiting for response cleared due to device reset | | | Command waiting for response *Command Name* cleared due to device reset (Node Id = *CANOpen Node ID*) |
| 9500 | In a CAN Open command, the specified command is unknown | Command not executed | N/A | In a CAN Open command, the specified command is unknown - *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 9501 | Specified Node ID id invalid | Node ID was not changed | N/A | Specified Node ID id invalid - for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 9502 | In a CAN Open command, the device argument is missing or the specified device is unknown . | Command not executed | N/A | The device is missing or specified device is unknown - for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 9503 | Cannot change the ID of a node with a valid ID | Node ID not changed | N/A | Cannot change the ID of a node with a valid ID - for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 9504 | The Pump must be initialized before it can be used for dispensing. | | N/A | The Pump in *Device Type Device ID* (NodeID *CANOpen Node ID*) has not been initialized |

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|---|---|---|---|---|
| 9505 | The pump is busy executing a command. | | 1. Wait for the pump to complete the current command.<br><br>OR<br><br>2. Abort the current command and retry the new command. | The pump in *Device Type Device ID* (NodeID *CANOpen Node ID*) is busy |
| 9506 | The pump is blocked by another task. | | 1. Wait for the other task to complete it's command.<br><br>OR<br><br>2. Abort the other task job. | The pump in *Device Type Device ID* (NodeID *CANOpen Node ID*) is blocked by another task |
| 9507 | The Nozzle Closer has not been initialized | | N/A | Nozzle Not Initialized for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 9508 | The specified diagnostic is not supported | | N/A | The specified diagnostic is not supported for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 9509 | The Nozzle Closer Diagnostic was aborted | | N/A | The Diagnostic was aborted for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 9510 | The Nozzle-Closer is Busy with another job for %s %s (NodeID %s) | | N/A | ***Error Not enough % for parameters *** |

| | | | | |
|---|---|---|---|---|
| 9511 | The specified device is not unlocked for protected commands | | N/A | The specified device *Device Type* is not unlocked for protected commands (for NodeID *Device ID****Error Not enough % for parameters *** |
| 9512 | The specified device has been unlocked for protected commands | | N/A | The specified device *Device Type* has been unlocked for protected commands (for NodeID *Device ID****Error Not enough % for parameters *** |
| 9700 | The Agitator must be initialized before it can be used. | | N/A | The Agitator in *Device Type Device ID* (NodeID *CANOpen Node ID*) has not been initialized |
| 9701 | The Agitator has run longer than allowed. | | N/A | The Agitator in *Device Type Device ID* (NodeID *CANOpen Node ID*) has run longer than allowed |
| 9800 | The pump Zero position has been cleared. Turn off the Rembrandt now. | | Turn off the Rembrandt now | The pump Zero position has been cleared. Turn off *Device Type Device ID* (NodeID *CANOpen Node ID*) now. |
| 9850 | The DPI Operation has been shut off by the Master | LD_DPI may operate correctly. DPI Function may fail. | N/A | The DPI Operation has been shut off by the Master on *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 9851 | The DPI Operation has been shut off by the LD_DPI Task | LD_DPI may operate correctly. DPI Function may fail. | N/A | The DPI Operation has been shut off by the LD_DPI Task on *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 1009 | Configured device is unresponsive | Depends on which device does not respond | Check the device and its connections and reboot | Configured device *Device Type Device ID* is unresponsive |

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|---|---|---|---|---|
| 1010 | Invalid fluid sense conversion factor | Level sense does not work properly for the specified canister and will render the canister out of order | Check level sensor for the specified canister or disable level sense | Canister *Canister ID* has an invalid fluid sense conversion factor *Pressure Conversion Factor Value* |
| 1011 | Dispenser initialization failed because all nozzles failed to initialize | Dispenser main functionality disabled. | Check for other error conditions to find the root cause. | Dispenser initialization failed because all nozzles failed to initialize |
| 1012 | Dispenser initialization failed because all canisters failed to initialize | Dispenser main functionality disabled. | Check for other error conditions to find the root cause. | Dispenser initialization failed because all canisters failed to initialize |
| 1013 | Requested operation was rejected because the dispenser is busy on a different operation | The attempted command fails. | Retry the command when the dispenser is not busy. If the dispenser is stuck in a busy state, reset. | Event *Event ID* caused by requested command is invalid in state *State ID* (busy) |
| 1014 | Invalid pressure value | Level sense does not work properly for the specified canister and will render the canister out of order | Check level sensor for the specified canister or disable level sense | Pressure sensor reading for *Device Type Device ID* is not a numeric value: *Raw Pressure Value* |
| 1015 | Invalid canister id found in agitation start request | The attempted command fails. | User needs to fix the request and try again. | Invalid canister id in *Command Name* command: *Canister ID* |
| 1016 | Command requested by the user is not supported by this dispenser model | The attempted | User needs to fix the | Unsupported command: *Command Name* |

| | | | | |
|---|---|---|---|---|
| | | command fails. | request and try again. | |
| 1017 | Coordinator failed to load its configuration file. | Dispenser is not operational. | Update dispenser configuration . | Failed to load configuration from *File Name*: *Exception Message* |
| 1018 | Coordinator failed to parse list of faults from resource file. | Dispenser is not operational. | Update dispenser configuration . | Failed to parse configuration from *File Name*: *Exception Message* |
| 1019 | Coordinator failed to map configuration from resource file to internal data structures. | Dispenser is not operational. | Update dispenser configuration . | Failed to map configuration from *File Name*: *Exception Message* |
| 1020 | Key element "dispenser" is missing from the configuration file. | Dispenser is not operational. | Update dispenser configuration . | Key element "dispenser" is missing from the configuration file *File Name* |
| 1021 | Key element "canisters" is missing from the configuration file. | Dispenser is not operational. | Update dispenser configuration . | Key element "canisters" is missing from the configuration file *File Name* |
| 1022 | Unknown device parameter. | The attempted command fails. | Check device node id and parameter name. | Unknown parameter *Parameter Name* on device with device id *Device ID* during *Function Name* |
| 1023 | Canister pressure is below atmospheric pressure | Level sense does not work properly for the specified canister or for entire dispenser. This will render the canister or entire dispenser out of order. | Check both level sensor for the specified canister and for atmospheric pressure or disable level sense | Canister *Canister ID* has pressure of *Canister Pressure Value* which is below atmospheric pressure of *Atmospheric Pressure Value* |

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|---|---|---|---|---|
| 1024 | Missing ingredient during dispense. | The attempted command fails. | Check the dispense job and levels of ingredients in canisters. | Missing ingredient during dispense: *Reason* |
| 1025 | Insufficient ingredient during dispense or purge. | The attempted command fails. | Check the dispense job, configured purge amount, and levels of ingredients in canisters. | Insufficient ingredient during dispense or purge: *Reason* |
| 1026 | Unknown canister to purge. | The attempted command is not performed. | Check the purge job. | Purge requested for an unknown canister id: *Reason* |
| 1027 | Canister specified for purge is disabled. | The attempted command is not performed. | Check the purge job and the disabled canister. | Purge requested for a disabled canister id: *Reason* |
| 1028 | Unrecognized device | The attempted command fails | Check device id and retry | Unrecognized device with id *Device ID* |
| 1029 | Invalid atmospheric pressure reading | Level sense does not work properly and will have to be disabled until fixed | Check atmospheric pressure sensor or disable level sense | Invalid atmospheric pressure reading: *Atmospheric Pressure Value* |
| 1039 | Coordinator failed to load UIDDS configuration file. | FM Service not operational. | Update dispenser configuration . | Failed to load UIDDS objects from *File Name*: *Exception Message* |
| 1040 | Coordinator failed to parse UIDDS configuration file. | FM Service not operational. | Update dispenser configuration . | Failed to parse UIDDS objects from *File Name*: *Exception Message* |

| | | | | |
|---|---|---|---|---|
| 1041 | Coordinator failed to map configuration from UIDDS configuration file to internal data structures. | FM Service not operational. | Update dispenser configuration . | Failed to map UIDDS objects from *File Name*: *Exception Message* |
| 1042 | Coordinator failed to load its canister levels file. | Dispenser is not operational. | Update dispenser configuration . | Failed to load levels from *File Name*: *Exception Message* |
| 1043 | Coordinator failed to parse canister levels from resource file. | Dispenser is not operational. | Update dispenser configuration . | Failed to parse canister levels from *File Name*: *Exception Message* |
| 1044 | Coordinator failed to map configuration from canister levels file to internal data structures. | Dispenser is not operational. | Update dispenser configuration . | Failed to map canister levels from *File Name*: *Exception Message* |
| 1045 | Canisters weren't loaded from the configuration file. | Dispenser is not operational. | Update dispenser configuration . | ***Error Not enough % for parameters *** |
| 1050 | Disabled device | The attempted command fails | Enable the device and retry | Disabled device with id *Device ID* |
| 1079 | Invalid canister pressure reading | Level sense does not work properly and will have to be disabled until fixed | Check canister pressure sensor or disable level sense | Invalid pressure reading for canister *Canister ID*: *Pressure Value* |
| 3000 | The SPI bus cannot communicate with the stepper chips | Board cannot drive the stepper motors | N/A | The SPI bus cannot communicate with the stepper chips for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3001 | The Discrete I/O HW logic on the Nozzle-Closer board returned an error | | N/A | Discrete I/O HW returned an error for *Device Type Device ID* (NodeID *CANOpen Node ID*) |

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|---|---|---|---|---|
| 3002 | One or more devices has failed the SELFTEST | | N/A | One or more devices has failed the SELFTEST for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3003 | The Pressure subsystem cannot use the I2C bus | | N/A | The Pressure subsystem cannot use the I2C bus for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3004 | I2C Port did not become ready to read/write or BUS is busy | | N/A | I2C Port did not become ready to read/write or BUS is busy for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3005 | I2C is missing a slave device or slave not ACKing | | N/A | I2C is missing a slave device or slave not ACKing for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3006 | I2C BUS appears to be unstable or possible I2C device electrical problems | | N/A | I2C BUS appears to be unstable or possible I2C device electrical problems for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3007 | An internal failure has occurred on I2C operation | | N/A | An internal failure has occurred on I2C operation for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3008 | An Executive Service initialization returned a failure code | | N/A | An Executive Service initialization returned a failure code for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3009 | An Executive Task initialization returned a failure code | | N/A | An Executive Task initialization returned a failure code for *Device Type Device ID* (NodeID *CANOpen Node ID*) |

| | | | | |
|---|---|---|---|---|
| 3010 | An Executive Task Start function returned a failure code | | N/A | An Executive Task Start function returned a failure code for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3011 | FM_SER_TIMER could not start the MPU timer | | N/A | FM_SER_TIMER could not start the MPU timer for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3012 | FM_SER_FILE FAT SWPART not supported | | N/A | FM_SER_FILE FAT SWPART not supported for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3013 | FM_SER_FILE Max number of files exceeded | | N/A | FM_SER_FILE Max number of files exceeded for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3014 | FM_SER_FILE failed device read (I2C) | | N/A | FM_SER_FILE failed device read (I2C) for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3015 | FM_SER_FILE FAT version not supported | | N/A | FM_SER_FILE FAT version not supported for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3016 | FM_SER_FILE driver creation failed | | N/A | FM_SER_FILE driver creation failed for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3017 | FM_HAL_PRESSURE pressure chip unavailable | | N/A | FM_HAL_PRESSURE pressure chip unavailable for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3018 | FM_HAL_PRESSURE failed device read (I2C) | | N/A | FM_HAL_PRESSURE failed device read (I2C) for *Device Type Device ID* (NodeID *CANOpen Node ID*) |

| | | | | |
|---|---|---|---|---|
| 3019 | Subscriptions_file_unavailabl e | | N/A | Subscriptions_file_unavailabl e for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3020 | The fetching of RED BUTTON status failed | | N/A | The fetching of RED BUTTON status failed for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3021 | An invalid command from LD_NOZZLE has been received | | N/A | An invalid command from LD_NOZZLE has been received for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3022 | A fault has been detected during SELT-TEST | | N/A | A fault has been detected during SELT-TEST for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3023 | An internal error has occurred (EXE_MESSAGE Failure) | | N/A | An internal error has occurred (EXE_MESSAGE Failure) for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3024 | An Invalid Handle has been encountered | | N/A | An Invalid Handle has been encountered for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3025 | Internal Error. Could NOT start the LD_BOARD Timer | LD_BOARD may operate incorrectly. LD_BOARD Function may fail. | N/A | Error: Could NOT start the LD_BOARD Timer for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3026 | LD_BOARD Error: A Problem with the file system has been encountered | LD_BOARD may operate incorrectly. LD_BOARD Function may fail. | N/A | LD_BOARD Error: A Problem with the file system has been encountered for *Device Type Device ID* (NodeID *CANOpen Node ID*) |

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|---|---|---|---|---|
| 3501 | A stall was detected by the AGITATOR | Colorant may solidify | N/A | Agitation stalled for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3503 | The Agitator did not startup correctly, is in an Error state and cannot run. | | N/A | The Agitator has a problem with the File Subsystem, is in an Error state and cannot run for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3504 | The Agitator is in an unrecoverable error state and cannot be run. | | 1. Re-initialize the pump.<br><br>OR<br><br>2. Call service to re-allign the board to the pump. | The Agitator in *Device Type Device ID* (NodeID *CANOpen Node ID*) is in an unrecoverable error state and cannot be run |
| 3505 | The Agitator stepper has no drive voltage. | | N/A | The Agitator stepper has no drive voltage for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3506 | The Agitator stepper has returned a General Stepper Alarm. | | N/A | General Stepper Alarm for Agitator for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 3507 | The Agitator has exceeded the number of consecutive failures allowed | This canister will not attempt to agitate until the problem is isolated and fixed. | N/A | The Agitator has exceeded the number of consecutive failures allowed for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4000 | LD_NOZZLE Message allocation or posting error | n/a | N/A | LD_NOZZLE Message allocation or posting error for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4001 | The nozzle sensor reading is NOT correct, which means the operation was NOT successful | | N/A | The nozzle Open Sensor is not Blocked for *Device Type Device ID* (NodeID *CANOpen Node ID*) |

| | | | | |
|---|---|---|---|---|
| 4002 | The Nozzle Closer failed movement or a stall was detected. | | N/A | Failure on Movement of Nozzle Closer or Stall Detected for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4003 | A DAC Failure was encountered in Nozzle Closer's STEPPER. | | N/A | A DAC Error was encountered in Nozzle Closer's STEPPER for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4004 | A Nozzle-Closer Internal Error occurred; Invalid Handle | n/a | N/A | Nozzle-Closer Internal Error for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4005 | Nozzle Closer Internal Error Occurred | | N/A | Nozzle Closer Internal Error Occurred for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4006 | Nozzle is having a problem with HAL_STEPPER | | N/A | Nozzle Closer Nozzle is having a problem with HAL_STEPPER for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4007 | Nozzle is having a problem with HAL_STEPPER | | N/A | Nozzle Closer Nozzle is having a problem with HAL_STEPPER for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4008 | The Discrete I/O subsystem returned an error. | n/a | N/A | Nozzle Closer Nozzle is having a problem with the Discrete I/O subsystem for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4009 | The SER_FILE subsystem returned an error. | n/a | N/A | Nozzle Closer is having a problem with the SER_FILE subsystem for *Device Type Device ID* (NodeID *CANOpen Node ID*) |

| | | | | |
|---|---|---|---|---|
| 4010 | Nozzle Closer failed to close (did not cover the 'Close' sensor) | n/a | N/A | Nozzle Closer failed to close (did not cover the 'Close' sensor) for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4011 | The specified diagnostic is not supported for Nozzle Closer | n/a | N/A | The specified diagnostic is not supported for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4012 | Nozzle Closer'Open' and 'Closed' sensors are blocked at the same time | n/a | N/A | Nozzle Closer'Open' and 'Closed' sensors are blocked at the same time for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4013 | Nozzle stalled at 'Closed' position (try cleaning and manually free the nozzle) | n/a | N/A | Nozzle stalled at 'Closed' position (try cleaning and manually free the nozzle) for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4015 | The SER_TIMER subsystem returned an error. | n/a | N/A | Nozzle Closer is having a problem with the SER_TIMER subsystem for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4016 | The Nozzle Closer stepper has no drive voltage. | | N/A | The Nozzle Closer stepper has no drive voltage for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4017 | A Finding Edge Action Failed to find the Sensor Edge | | N/A | A Finding Edge Action Failed to find the Sensor Edge for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4018 | An error encountered on the SPI BUS during STEPPER communications | | N/A | An error encountered on the SPI BUS during STEPPER communications for *Device Type Device ID* (NodeID *CANOpen Node ID*) |

| | | | | |
|---|---|---|---|---|
| 4501 | A stall was detected by the PUMP | | N/A | A stall was detected by the PUMP in *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4502 | Pump movement does not match steps performed | | N/A | Pump movement does not match steps performed in *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4503 | The Pump has a problem with the File Subsystem. | | N/A | The Pump in *Device Type Device ID* (NodeID *CANOpen Node ID*) has a problem with the File Subsystem, is in an Error state and cannot run. |
| 4504 | The Position sensor is out of alignment and could not be read. The pump is in an error state and cannot be run. | | 1. Re-initialize the pump.<br><br>OR<br><br>2. Call service to re-allign the board to the pump. | The Pump Position sensor is out of alignment for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4505 | The position sensor does not have a valid zero position value and therefore cannot be read. The pump is in an error state and cannot be run. | | 1. Service - Re-position (re-align) the board to the motor shaft and re-power the board. | The Pump in *Device Type Device ID* (NodeID *CANOpen Node ID*) has an invalid or uninitialized zero position value |
| 4506 | The pump is in an unrecoverable error state and cannot be run. | | 1. Re-initialize the pump.<br><br>OR<br><br>2. Call service to re-allign the board to the pump. | The pump in *Device Type Device ID* (NodeID *CANOpen Node ID*) is in an unrecoverable error state and cannot be run |

| | | | | |
|---|---|---|---|---|
| 4509 | The pump stepper has returned a General Stepper Alarm. | | N/A | General Stepper Alarm for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4510 | The pump stepper has no drive voltage. | | N/A | The pump stepper has no drive voltage for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4511 | The pump stepper stalled because of an Overcurrent event. | | N/A | Stepper Overcurrent stall for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4512 | The pump stepper stalled because of undervoltage lockout. | | N/A | Stepper undervoltage lockout stall for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4513 | The pump stepper stalled because of a high temperature event. | | N/A | Stepper high temperature event (stall) for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4514 | The pump was not at the expected position at the end of a dispense. | | N/A | The pump was not at the expected position at the end of a dispense for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 4515 | The pump cannot dispense zero mL. | | N/A | The pump cannot dispense zero mL for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 5001 | LD_DPI encountered an internal error ("Invalid Handle") | LD_DPI may operate incorrectly or not at all. DPI Function may fail. | N/A | LD_DPI encountered an internal error ("Invalid Handle") for *Device Type Device ID* (NodeID *CANOpen Node ID*) |

| | | | | |
|---|---|---|---|---|
| 5002 | LD_DPI encountered an error in its attempted Discrete I/O Operation. | LD_DPI may operate incorrectly or not at all. DPI Function may fail. | N/A | LD_DPI encountered an error in its attempted Discrete I/O Operation for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 5003 | LD_DPI encountered an internal error; Unexpected NULL pointer | LD_DPI may operate incorrectly or not at all. DPI Function may fail. | N/A | LD_DPI encountered an internal error; Unexpected NULL pointer for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 5004 | The specified DPI property is not supported | LD_DPI may operate incorrectly. DPI Function may fail. | N/A | The specified DPI property is not supported for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 5005 | LD_DPI's attempted fetch of the Temperature and Relative Humidity readings failed | LD_DPI may operate incorrectly. DPI Function may fail. | N/A | LD_DPI's attempted fetch of the Temperature and Relative Humidity readings failed for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 5006 | LD_DPI's attempted fetch of the Ambient Temperature failed | LD_DPI may operate incorrectly. DPI Function may fail. | N/A | LD_DPI's attempted fetch of the Ambient Temperature failed for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 5007 | LD_DPI's attempted fetch of the readings from the Temperature Probe failed | LD_DPI may operate incorrectly. DPI Function may fail. | N/A | LD_DPI's attempted fetch of the readings from the Temperature Probe failed for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 5008 | LD_DPI's attempted fetch of the Relative Humidity failed | LD_DPI may operate incorrectly. DPI Function may fail. | N/A | LD_DPI's attempted fetch of the Relative Humidity failed for *Device Type Device ID* (NodeID *CANOpen Node ID*) |

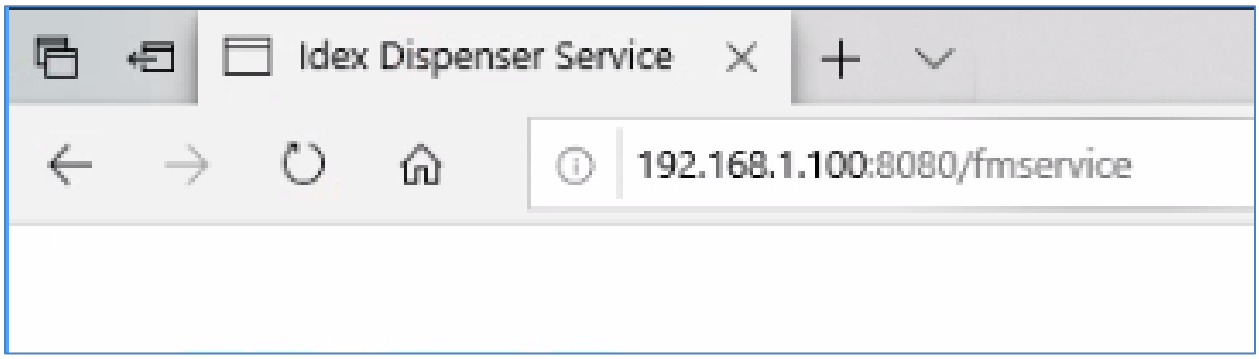
| | | | | |
|---|---|---|---|---|
| 5009 | The LD_DPI has detected a failure in operation of the DPI FAN, DPI is shutting down | There is risk to the health of the TEC Cooling Module. Module may run too hot. | N/A | For DPI, the TEC's FAN has malfuctioned or performance is degraded. FAN may need to be replaced for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 5010 | For DPI, the CRC returned upon fetch of the Temperature and Relative Humidity failed its check | LD_DPI may operate incorrectly. DPI Function may fail. | N/A | For DPI, the CRC returned upon fetch of the Temperature and Relative Humidity failed its check for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 5011 | LD_DPI Internal Error: Could NOT send an Executive Message | LD_DPI may operate incorrectly. DPI Function may fail. | N/A | LD_DPI Internal Error: Could NOT send an Executive Message for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 5012 | LD_DPI Internal Error: Could NOT start the DPI Timer | LD_DPI may operate incorrectly. DPI Function may fail. | N/A | LD_DPI Error: Could NOT start the DPI Timer for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 5013 | LD_DPI Internal Error: I2C BUS In USE or unavailable | LD_DPI may operate incorrectly. DPI Function may fail. | N/A | LD_DPI Internal Error: I2C BUS In USE or unavailable for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 5014 | LD_DPI Internal Error: Invalid State Encountered | LD_DPI may operate correctly. DPI Function may fail. | N/A | LD_DPI Internal Error: Invalid State Encountered for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 5015 | LD_DPI Error: A Problem with the file system has been encountered | LD_DPI may operate correctly. DPI Function may fail. | N/A | LD_DPI Error: A Problem with the file system has been encountered for *Device Type Device ID* (NodeID *CANOpen Node ID*) |

| | | | | |
|---|---|---|---|---|
| 5016 | LD_DPI Error: A Problem with the I2C_BUS has been encountered | LD_DPI may operate incorrectly. DPI Function may fail. | N/A | LD_DPI Error: A Problem with the I2C_BUS has been encountered for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 5017 | LD_DPI Error: An Internal Error Occurred | LD_DPI may operate incorrectly. DPI Function may fail. | N/A | LD_DPI Error: An Internal Error Occurred for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 5018 | The DPI could not reach the target temperature at startup or after enabled | LD_DPI cooling of the Nozzle block and colorant may not be ideal. | N/A | DPI could not reach the target temperature at startup or after enabled for *Device Type Device ID* (NodeID *CANOpen Node ID*) |
| 5019 | The DPI could not recover to the target temperature after falling outside tolerance | LD_DPI cooling of the Nozzle block and colorant may not be ideal. | N/A | The DPI could not recover to the target temperature after falling outside tolerance for *Device Type Device ID* (NodeID *CANOpen Node ID*) |

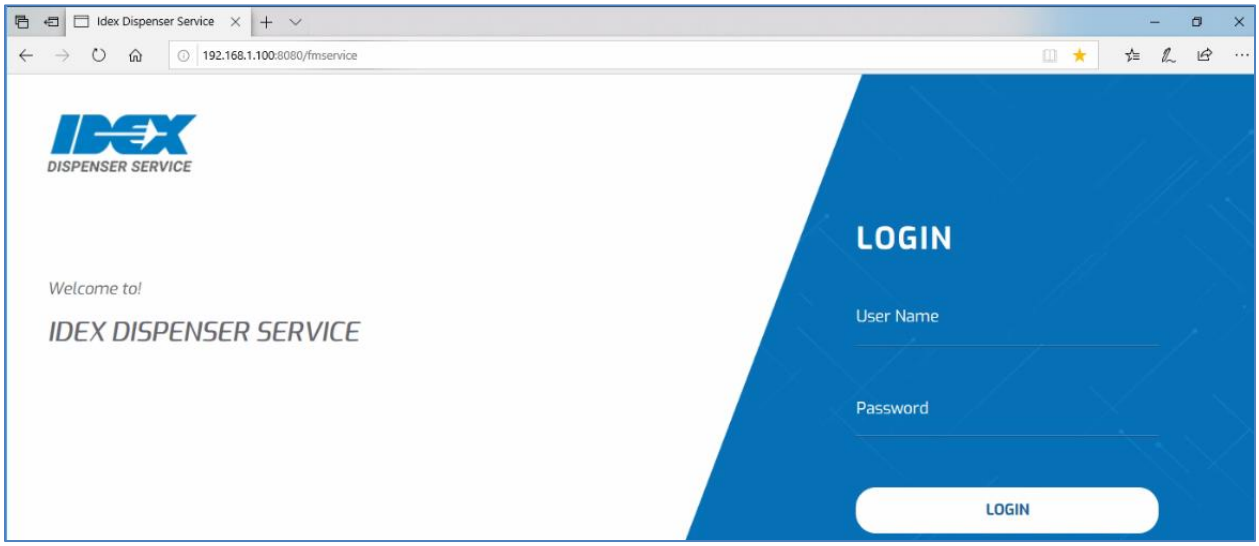
# ASX500 SOFTWARE

## Logging into IDEX Dispenser Service

IDEX Dispenser Service is Web App based system. The service program is stored in the SOM of the dispenser. The IP address of the dispenser is needed to access IDEX Dispenser Service

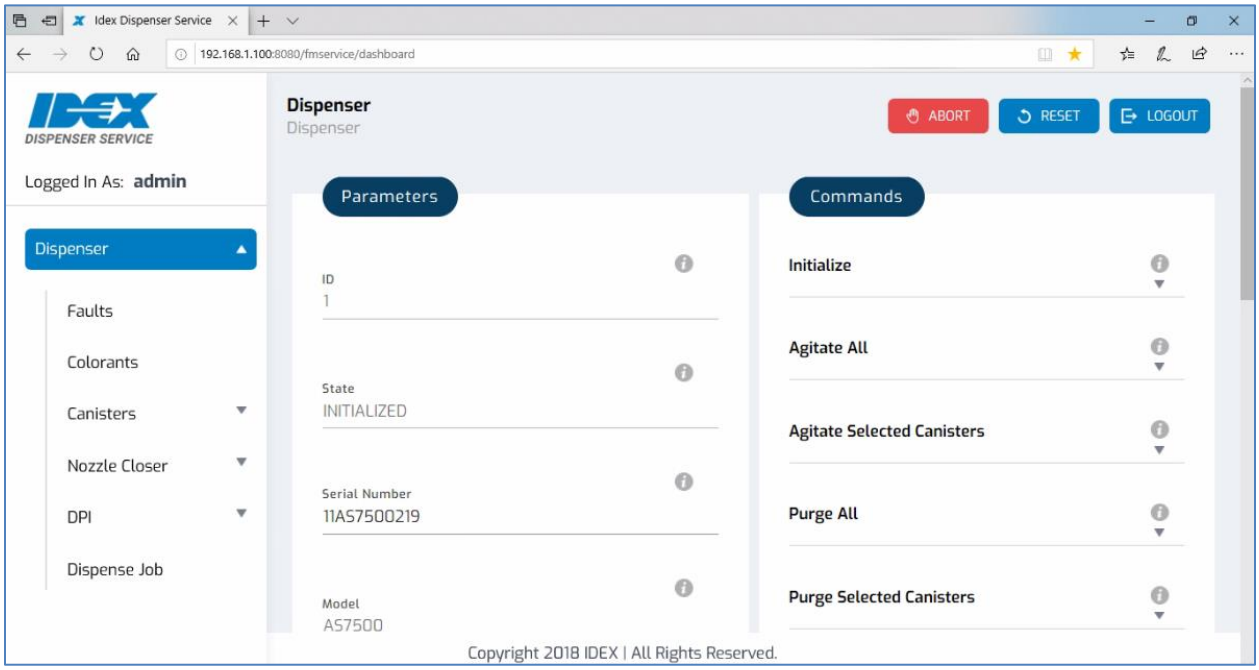



A username and password are required to access the program. This information is setup by the FMDA installing the dispenser.Example: Username: admin; Password: password123



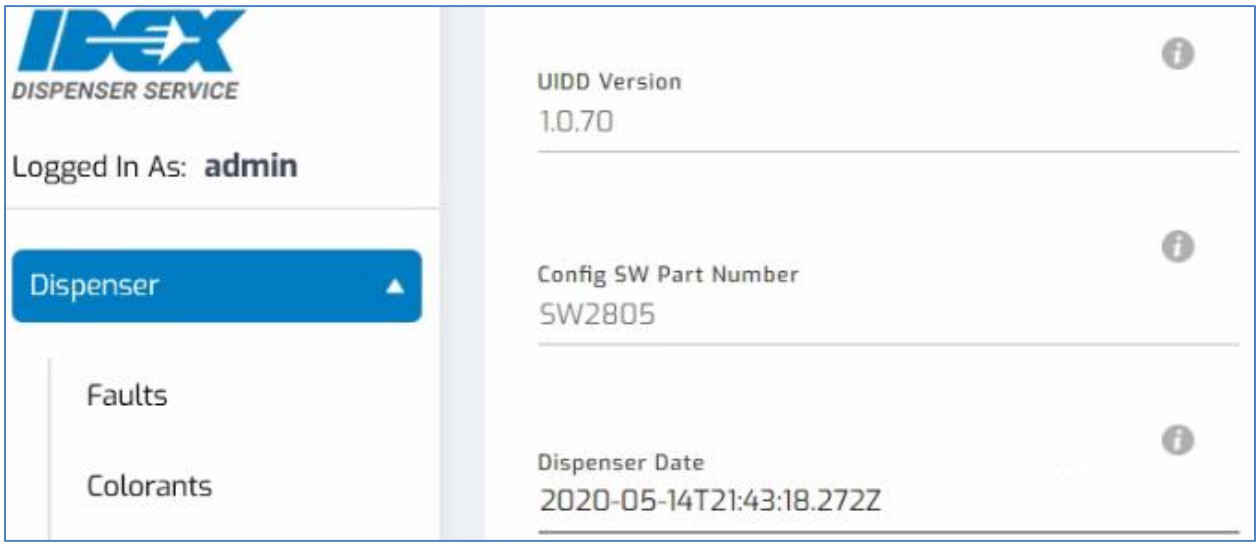

## Dispenser Parameters

Dispenser parameters are displayed on the left while the commands are displayed on the right



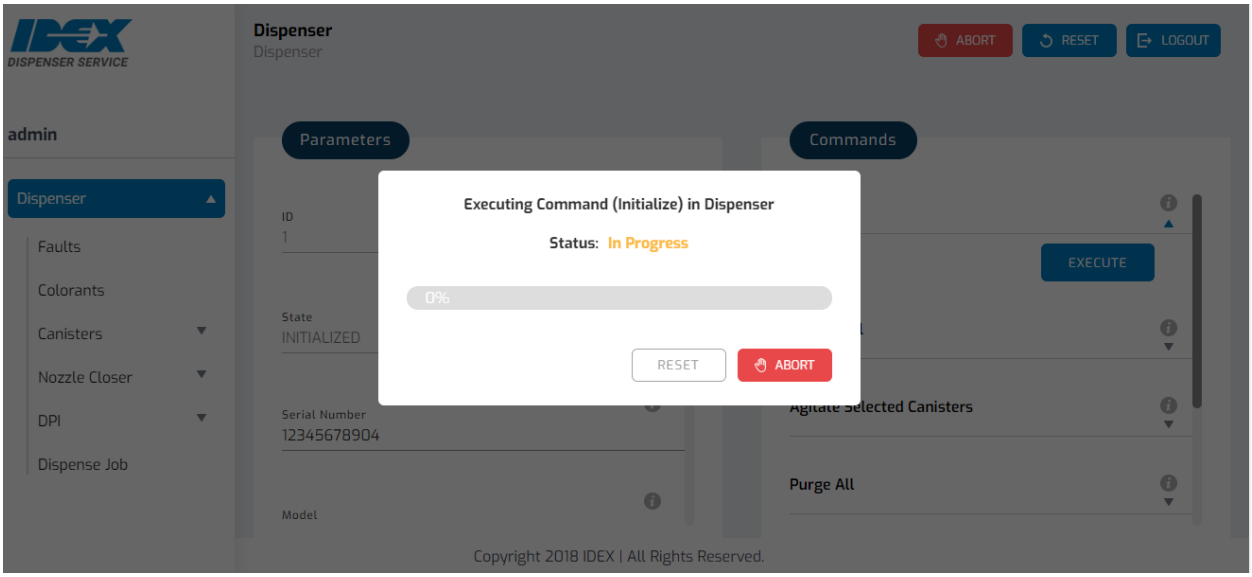

From the Dispenser node: Functions like the machine ID, Config SW Part Number, Max Concurrent Agitators and Max Simultaneous Dispenses can be set and updated.

Dispenser date and time is always set to UTC: Coordinated Universal Time

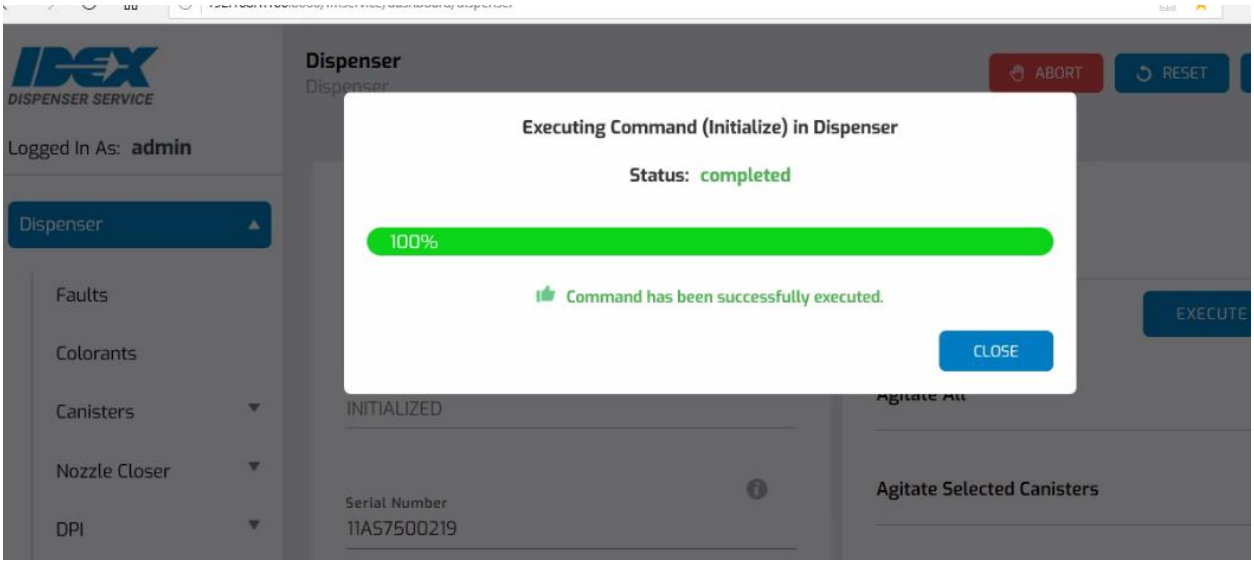


## Dispenser Commands

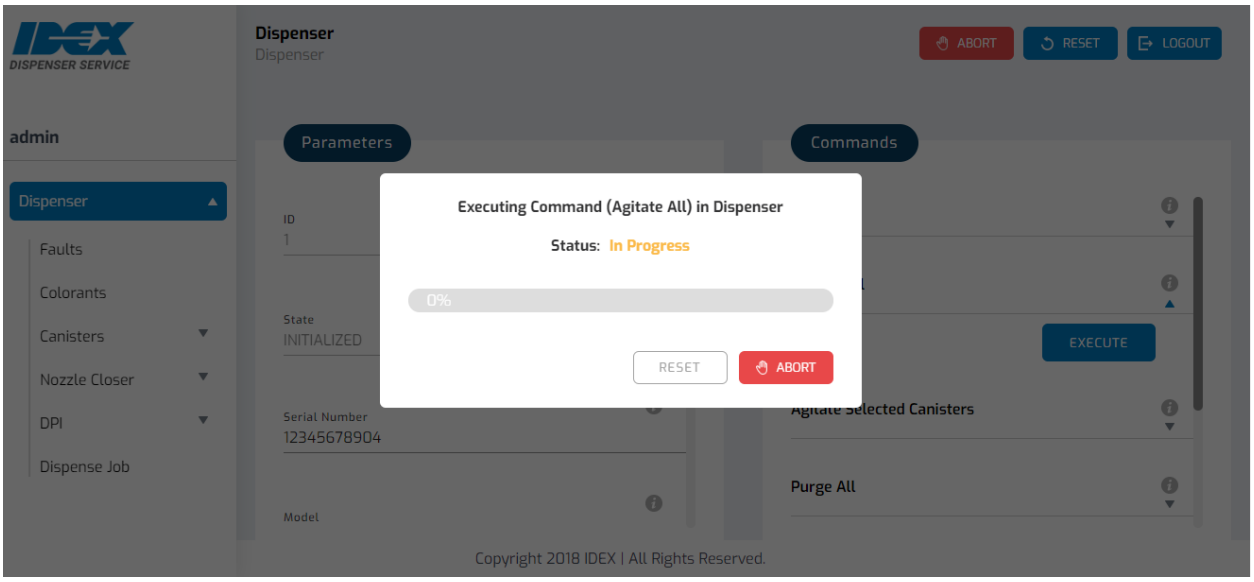
- Select Initialize from Command and EXECUTE to begin dispenser initialization. A status bar indicates the function selected in progress.



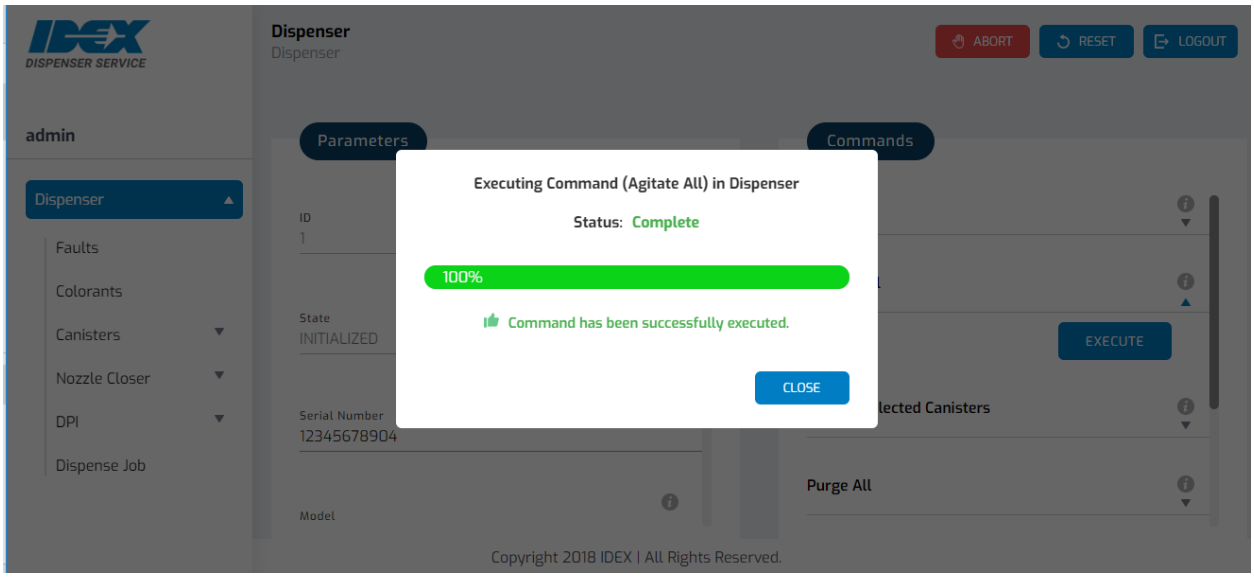

Once the dispenser is initialized all other commands become available



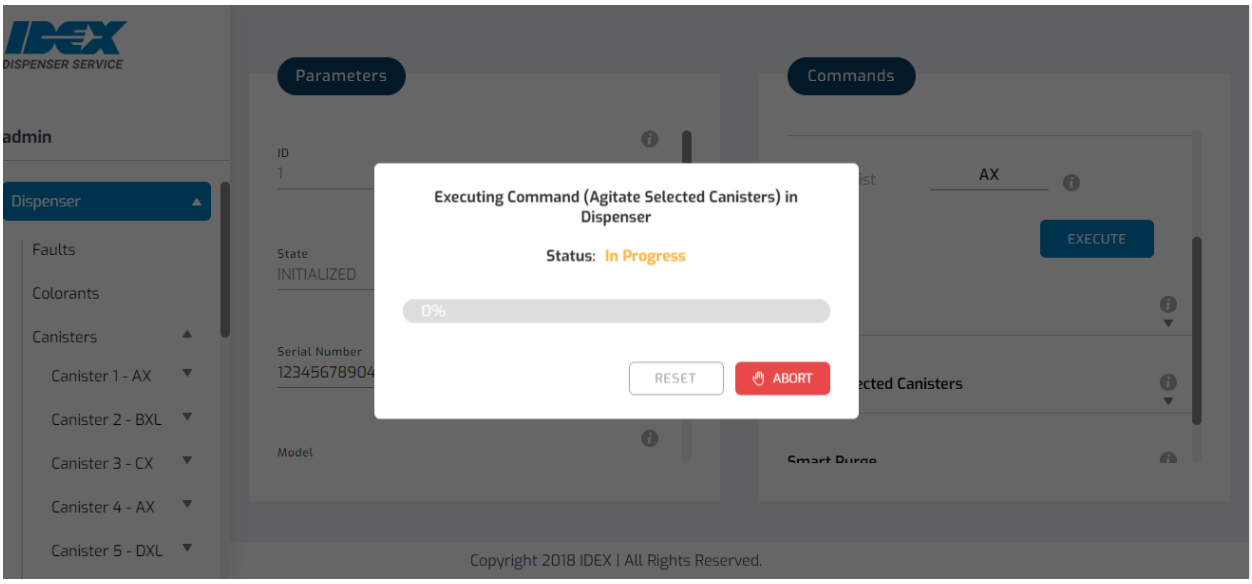

Agitation of all or individual canisters is available. To agitate all canisters, select Agitate ALL, then Execute.



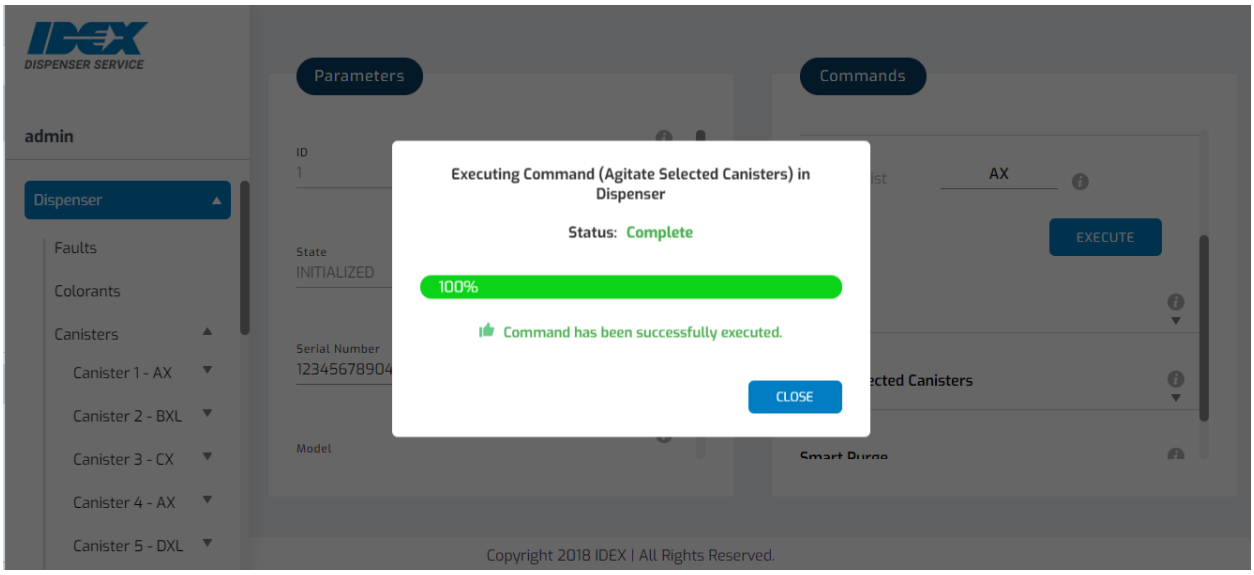

After completion of task complete status displayed



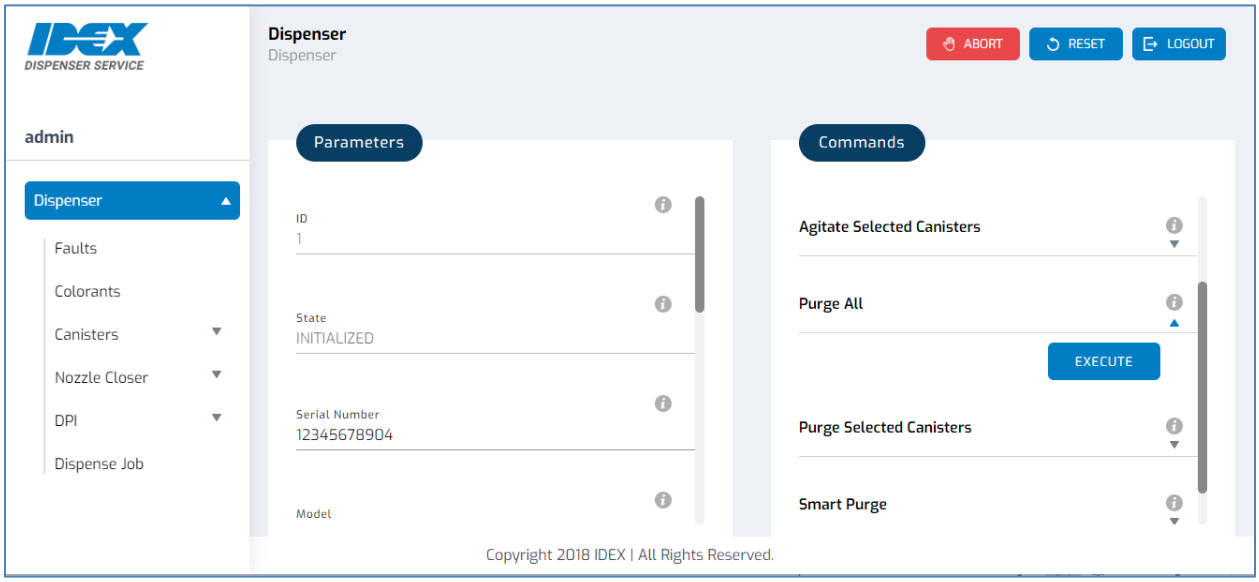

To agitate individual canisters, select the canister to be agitated and then Execute.



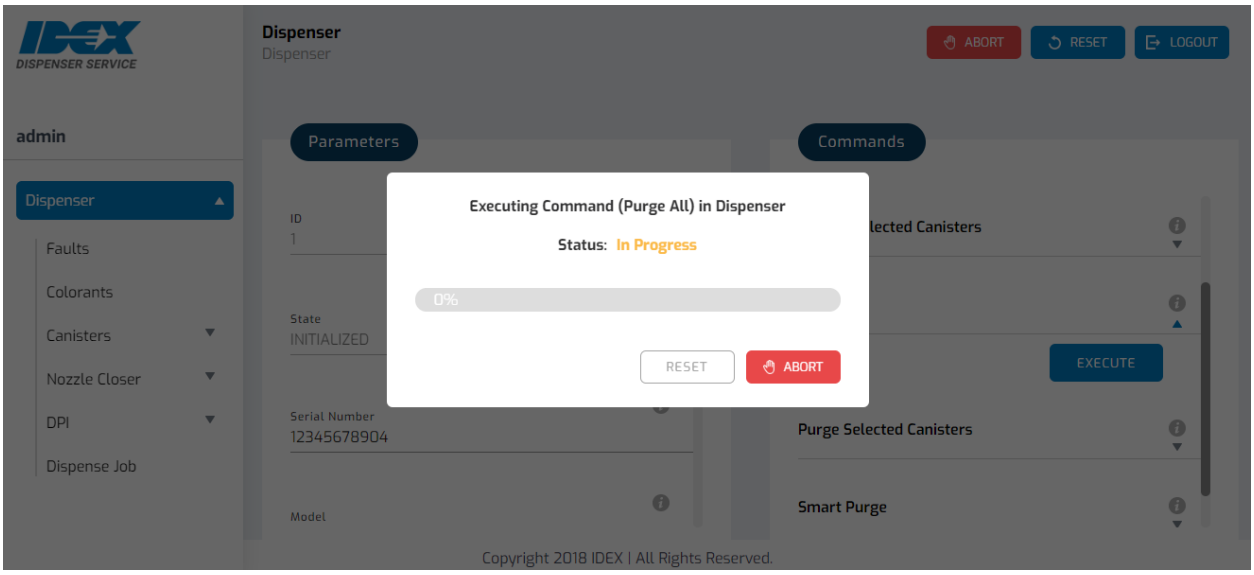

Click close once the agitation is complete



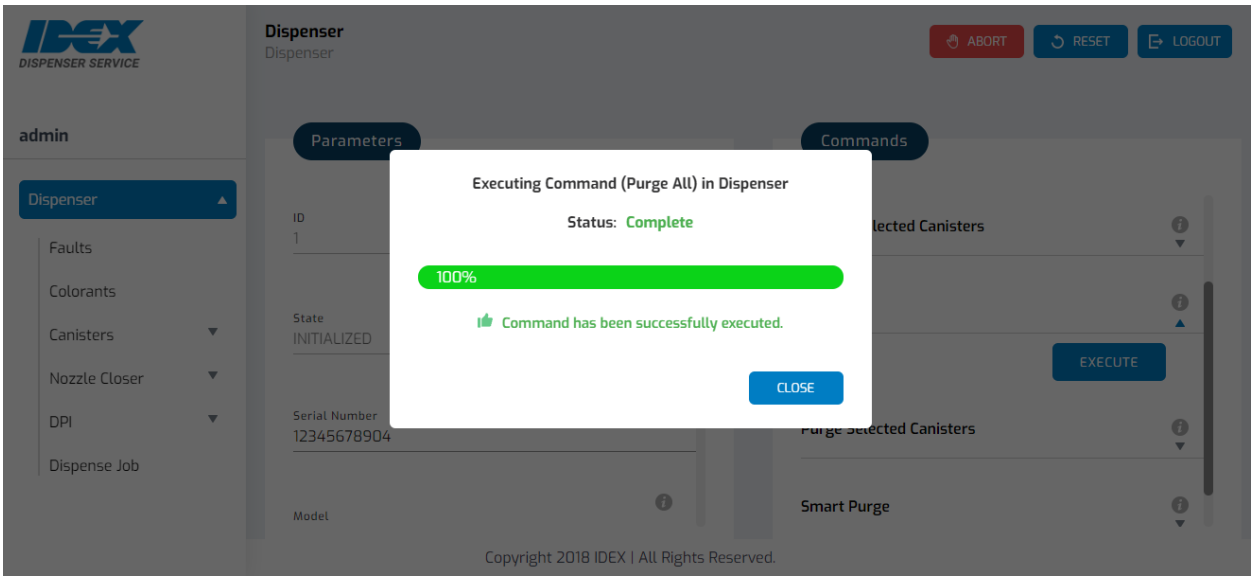

All canisters on individual canisters can be purged. Select Purge All or Select the individual canister to be purged and Execute to begin purging



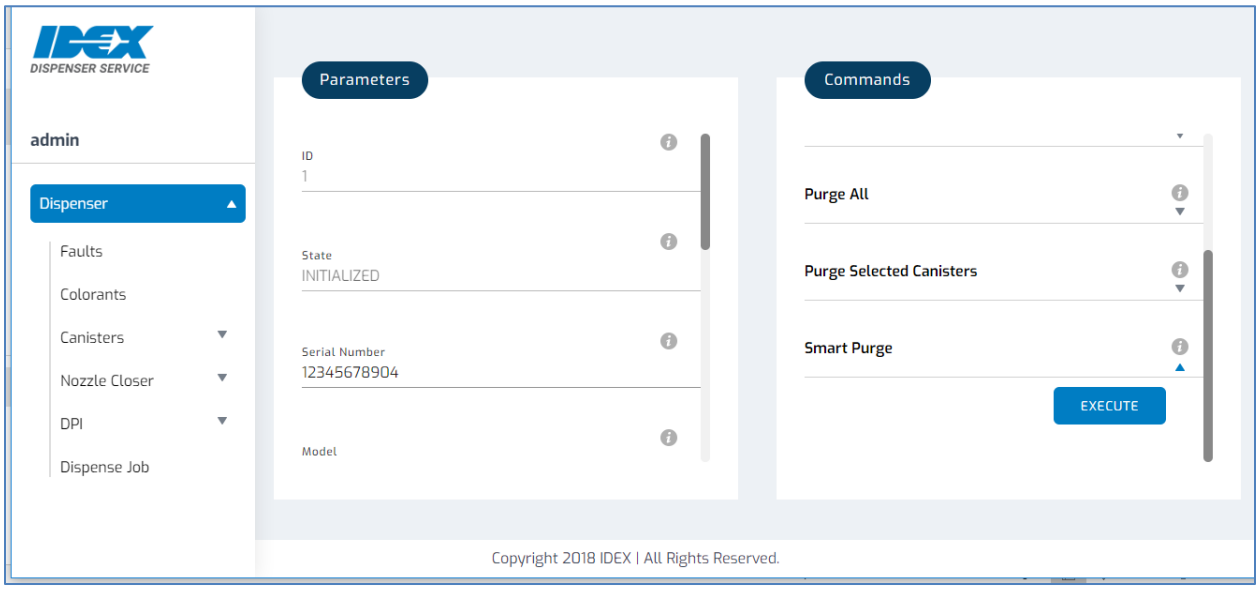

Progress status will appear during the purge of all colorants



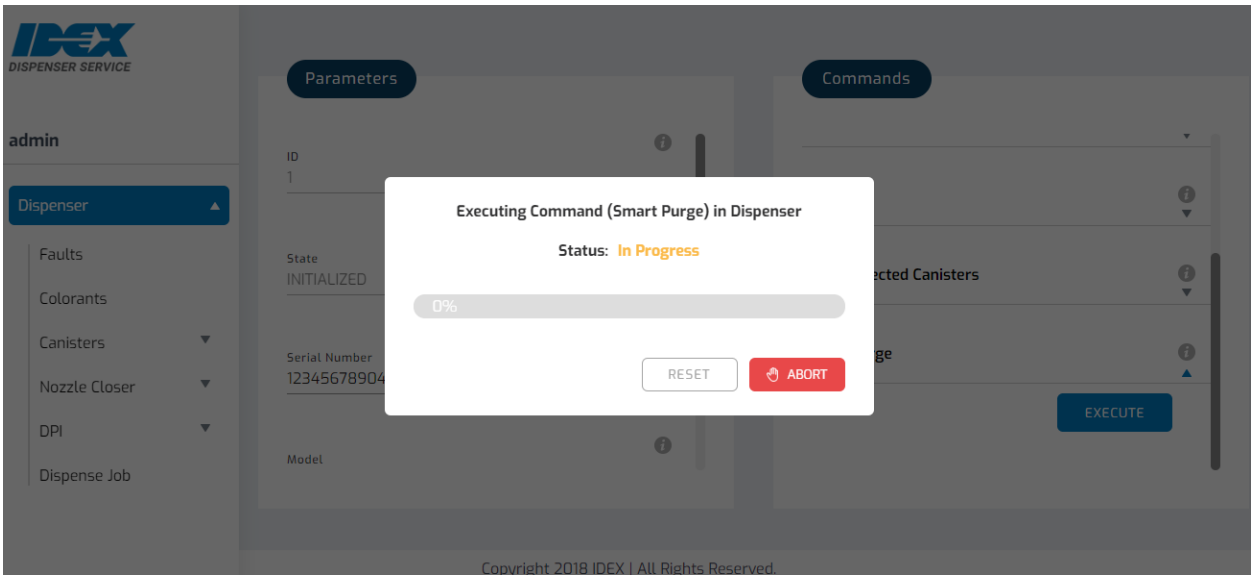

Completed status displayed upon completion of the purge command



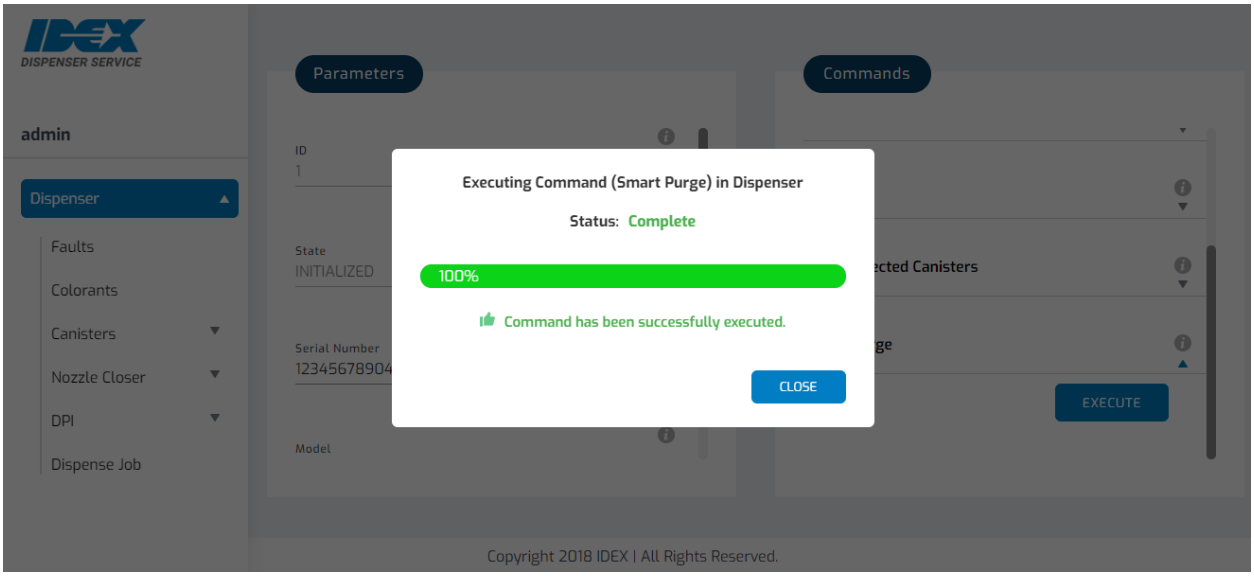

Smart Purge is used to purge only the specific canisters that have not been dispensed and need purging




Select Smart Purge then EXECUTE. Progress status will appear during the smart purge the colorants

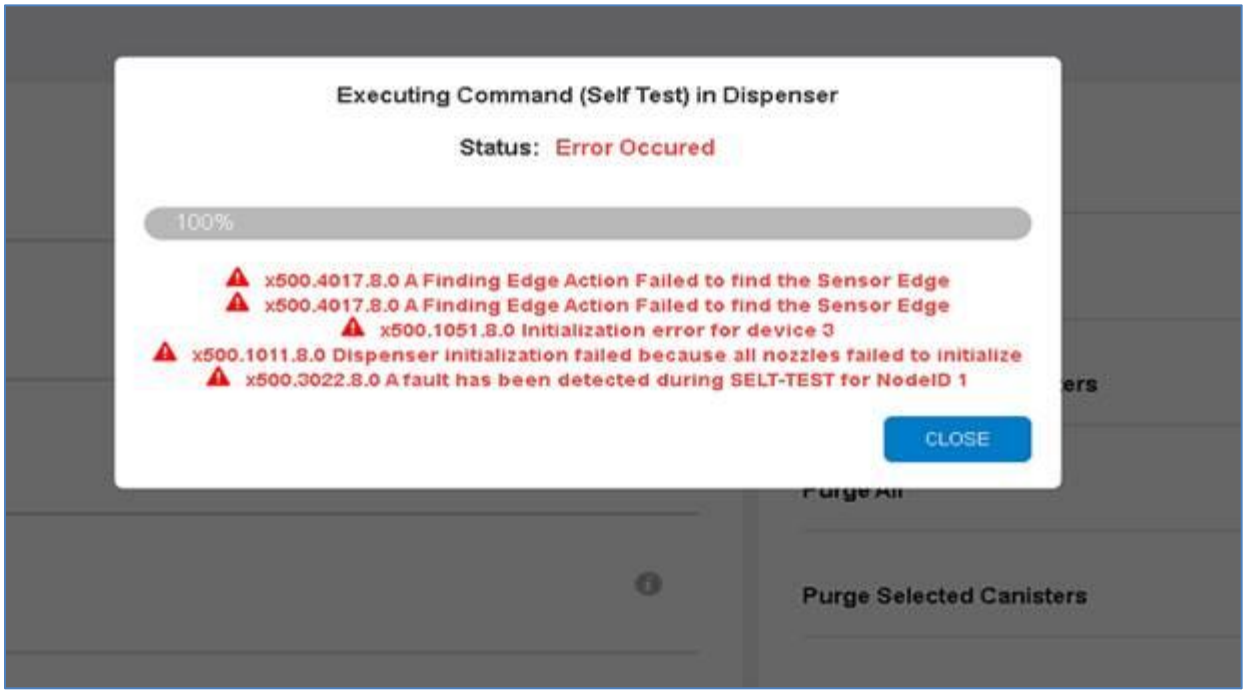



Completed status displayed upon completion of Smart Purge



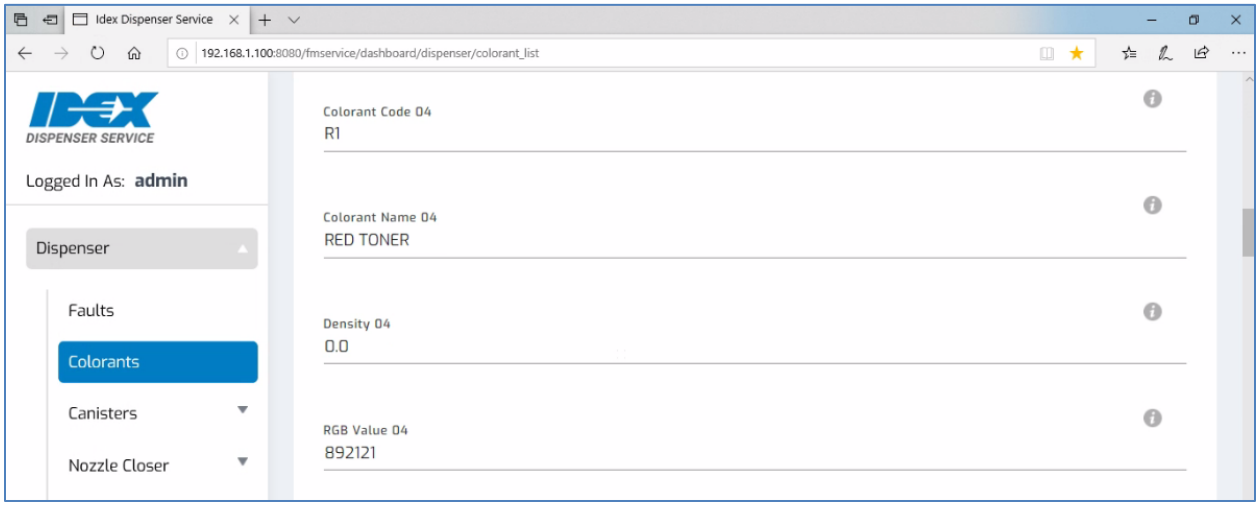

## Faults

Problems on unit will be displayed here. This is an example of a nozzle error




## Colorants Menu

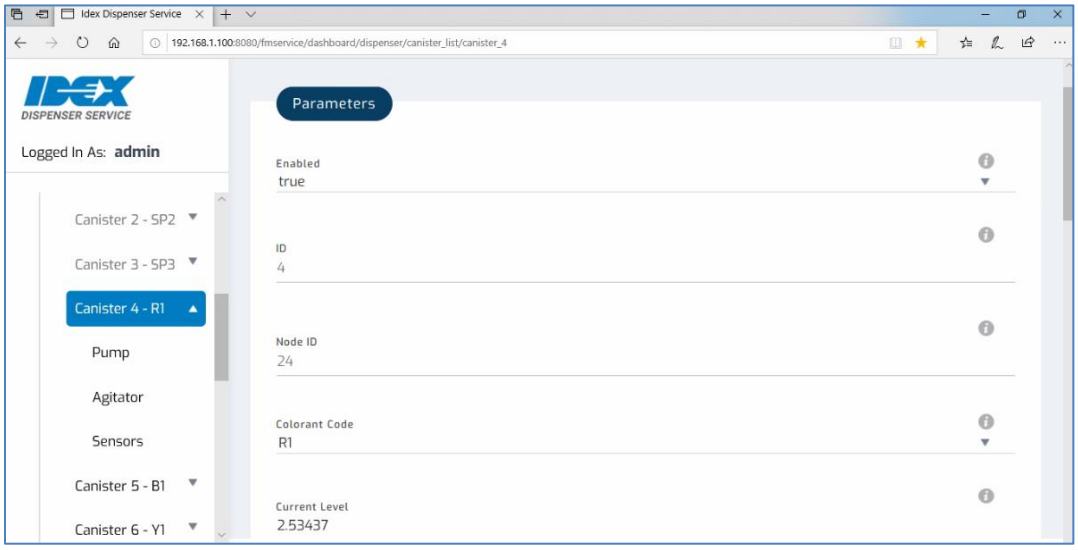
Colorant Name, Density, RGB values cane be set from this menu




## Canister Menu

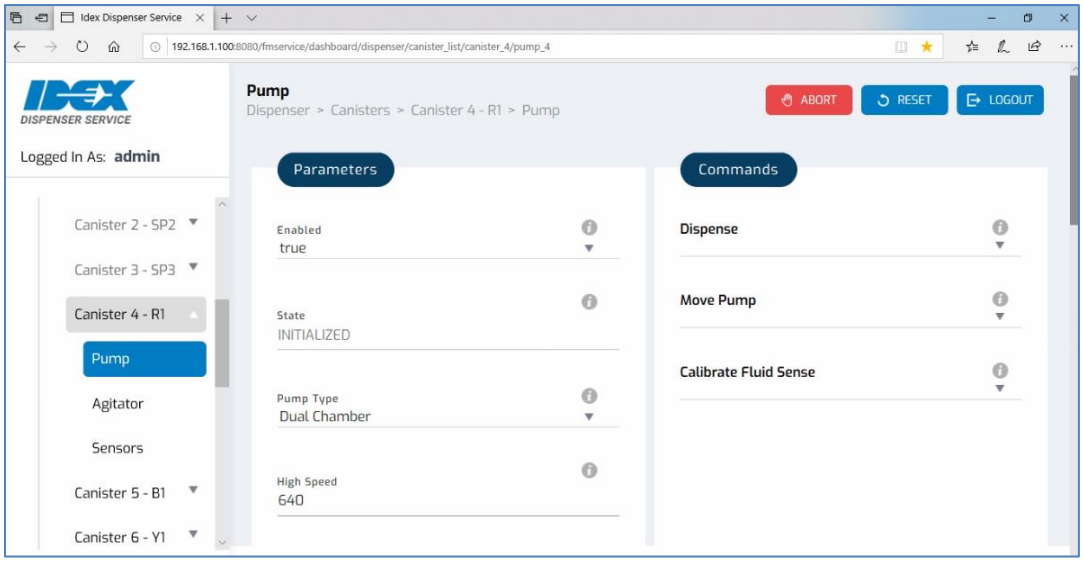
The Canister section provides the ID and node information of each colorant. Node ID's always begin in the 20 range, meaning that a canister with a Node ID of 21 is canister 1. The canister section also

provides colorant information like the Colorant Code (ingredient name) and current level ready by Fluid Sense.

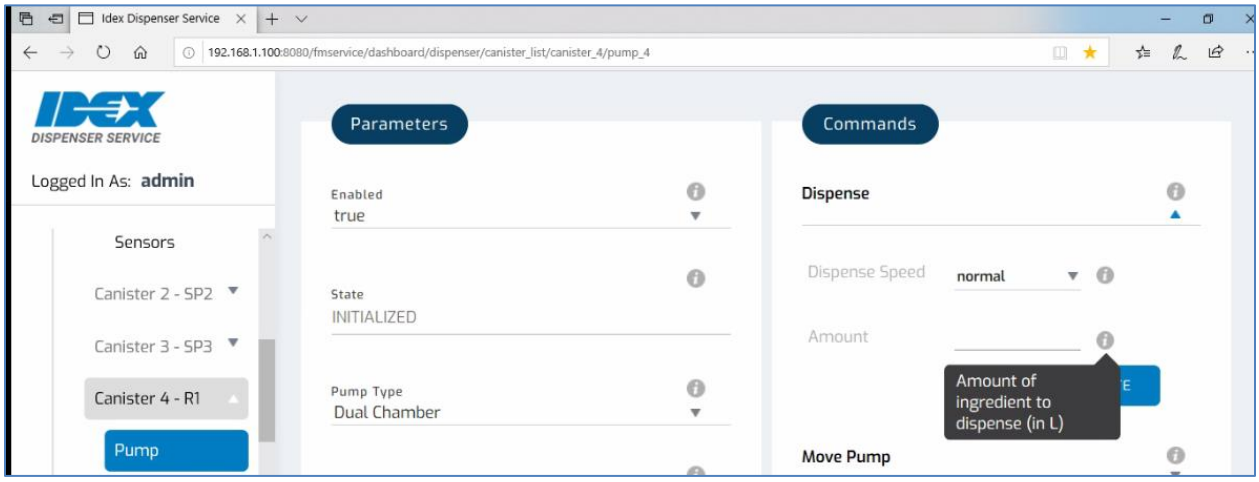



## Pump menu

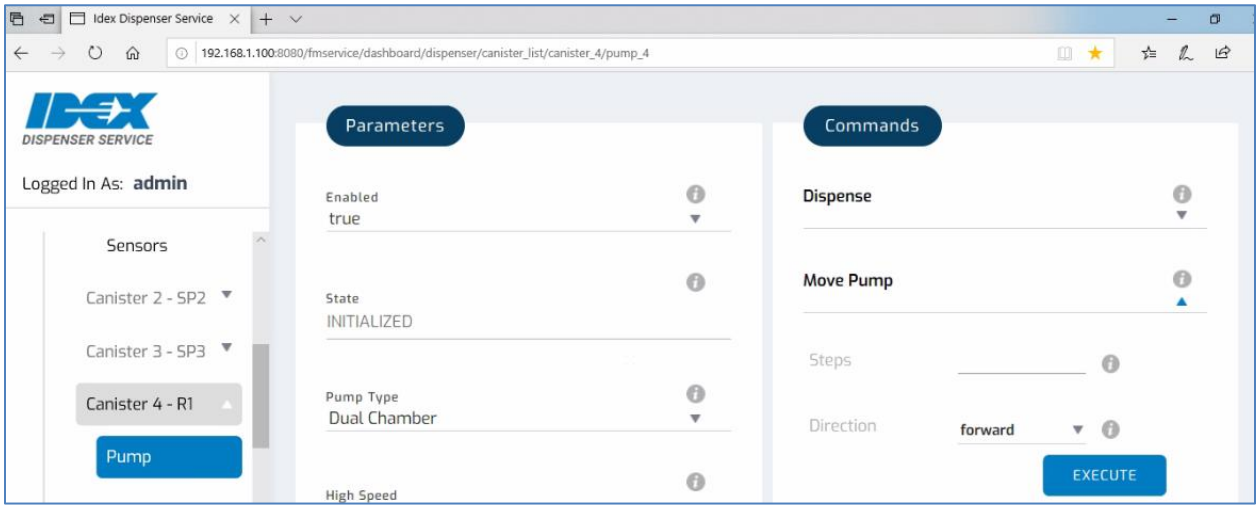
The Pump Parameters section contains information regarding the pump like pump type and speed values.



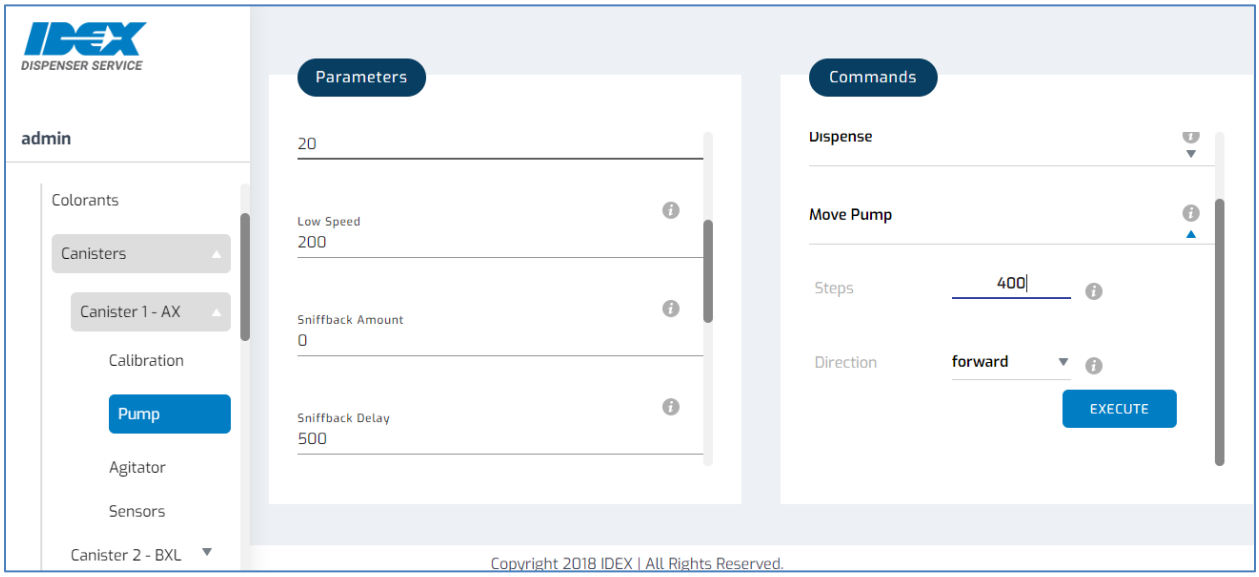

Pump Commands located on the right side of the screen allow the user to perform different functions. Manual dispenses can be done from the Dispense section; all dispense amounts are in Liters (L).



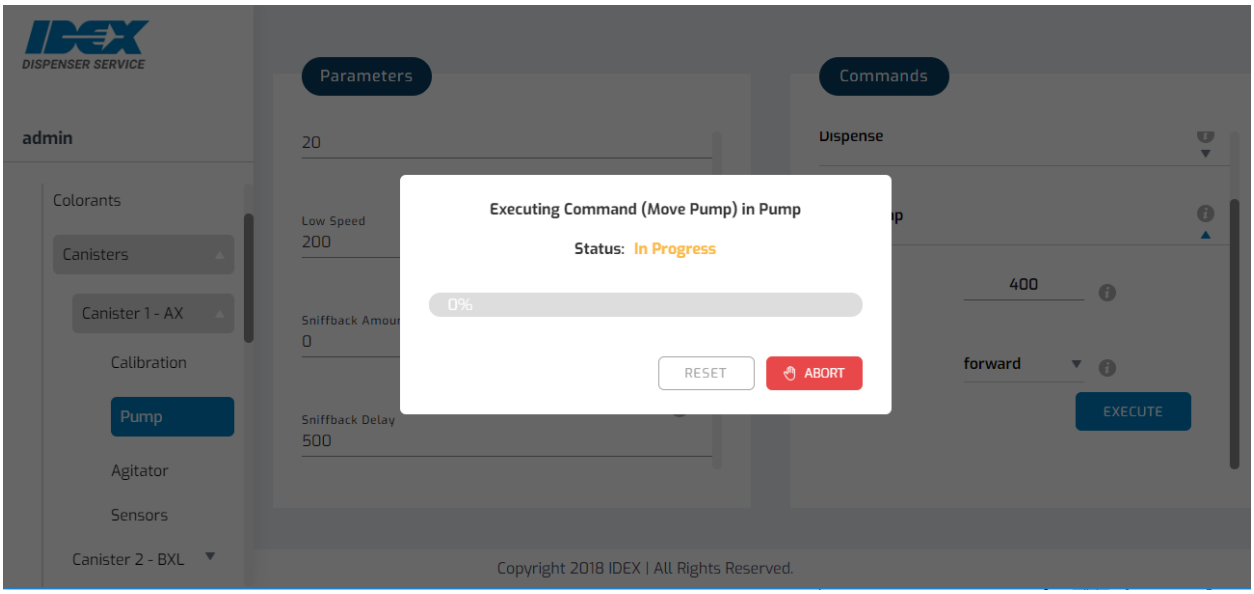

Pumps can be moved forward and backwards to test the stepper motors functionality.



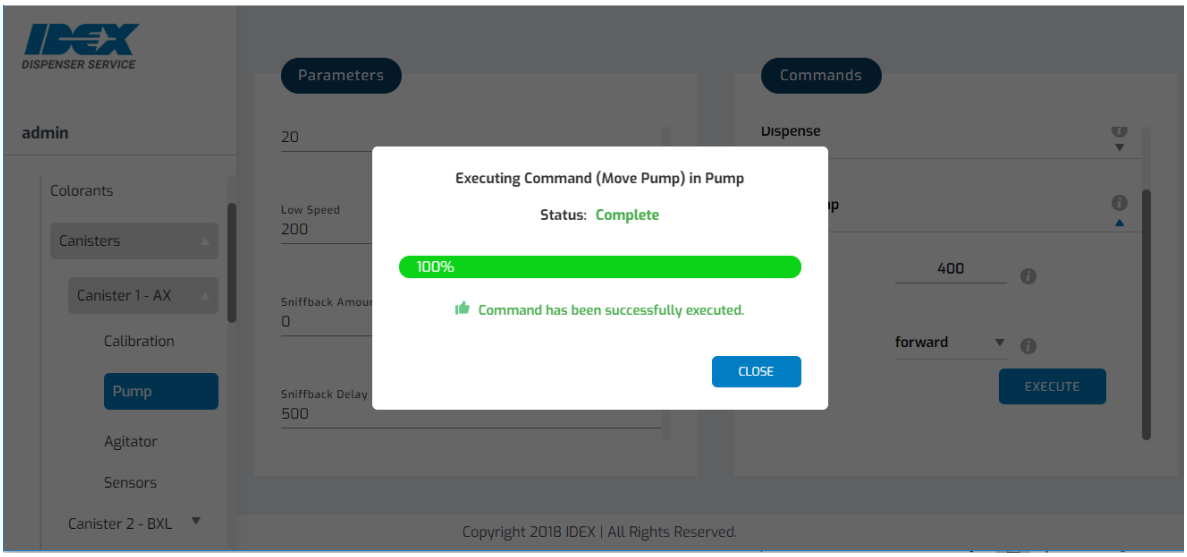

Steps can be set to any value and direction can be changed by selecting forward or backwards. Press execute to perform the action



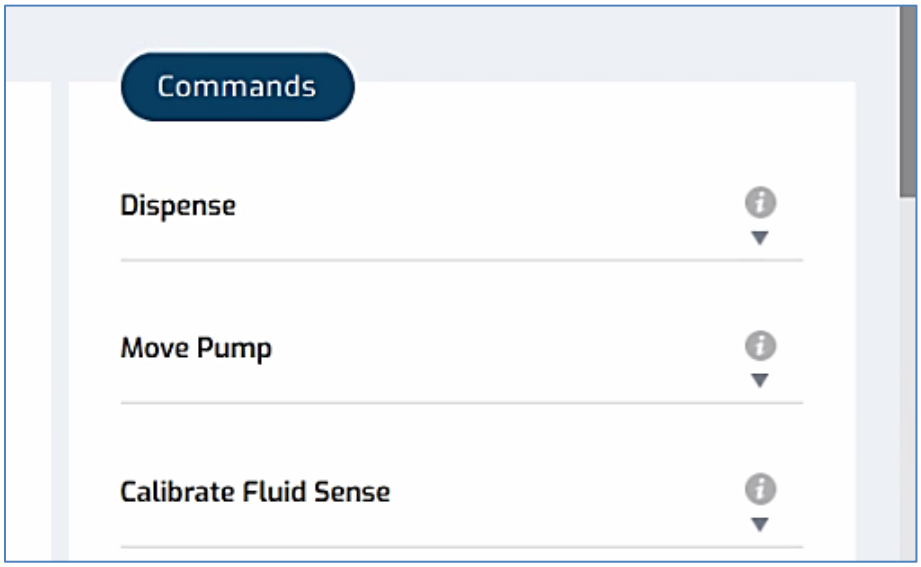

Progress status will appear during the pump move command.




Completed status displayed upon completion of Pump Move command

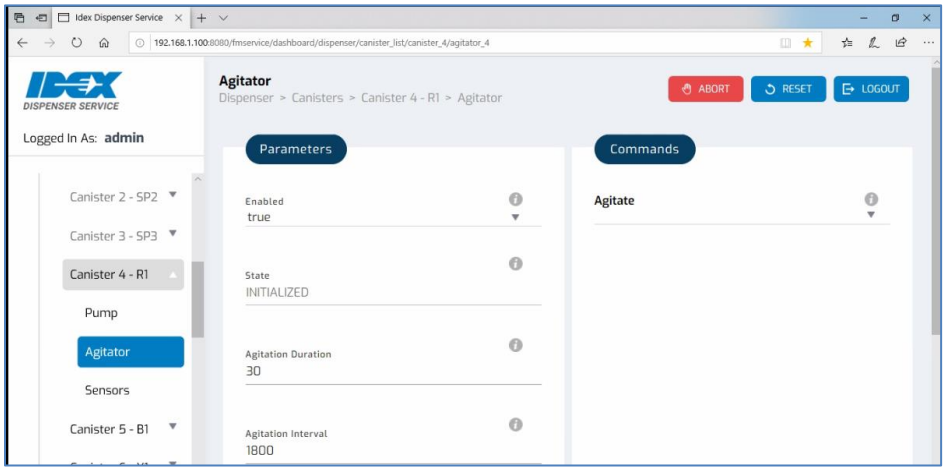



Calibration of Fluid Sense can be done on this menu. This is done when installing the machine for the first time or replacing a canister assy. Currently the canister must be full to accurately calibrate Fluid Sense.




## Agitator Menu

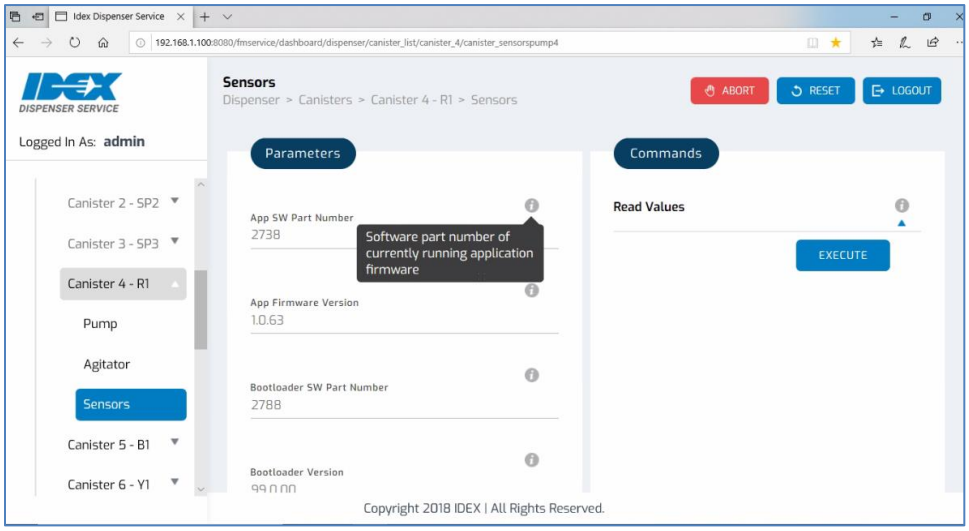
The Agitator parameters section allows the user to enable/disable agitation motors and contains the agitation duration and interval for the selected canister. The agitation duration and interval are pre-determined by the machine configuration. The command section allows the user to agitate only the canister that has been selected



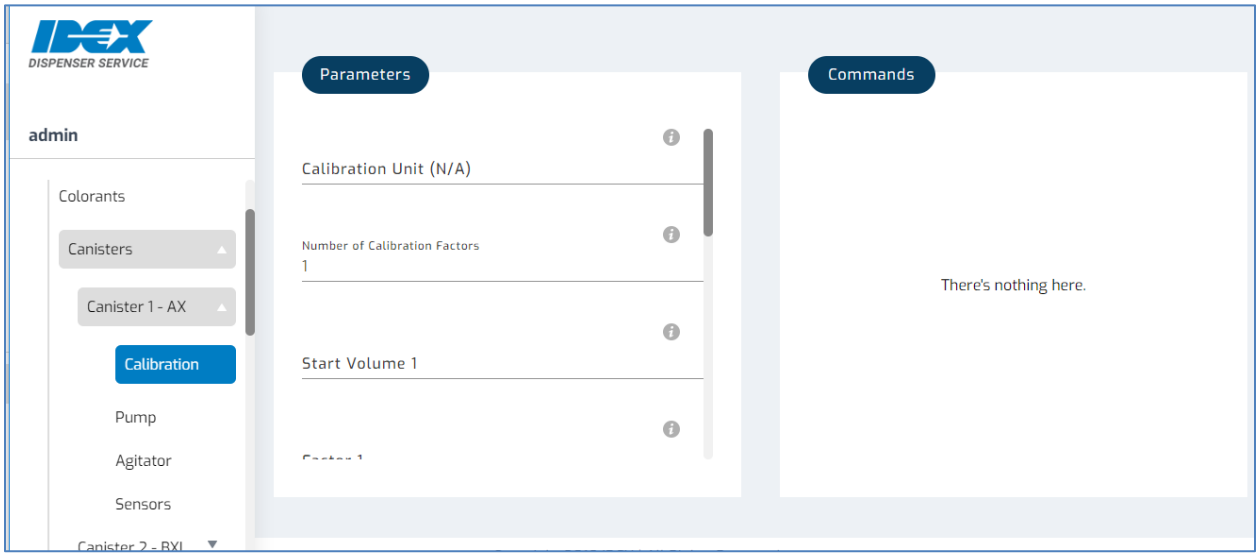

## Sensors Menu

The Sensor Parameters contains Rembrandt information regarding the firmware PN (App SW Part Number), firmware version (App Firmware Version), Bootloader PN (Bootloader SW Part Number), and Bootloader Version. This information cannot be modified, it is read-only information.

The command for Read Values will update information regarding Fluid Sense.

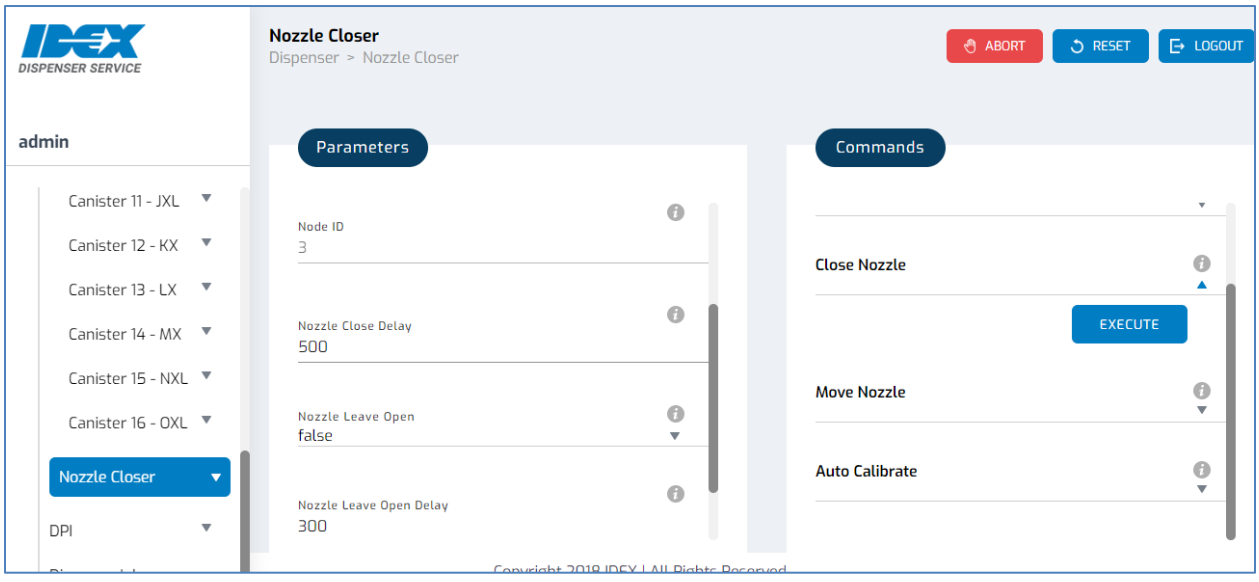



Calibration Feature not currently available



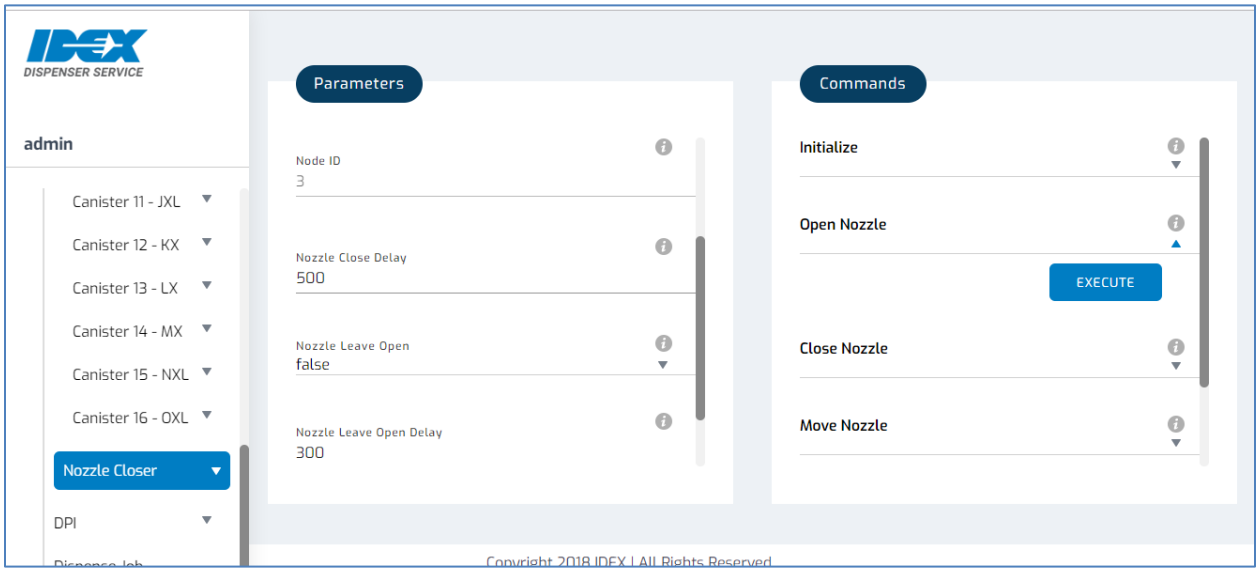

## Nozzle Closer

The Nozzle closer Parameters contains Information regarding the Node ID, timing delays, travel distances and speed

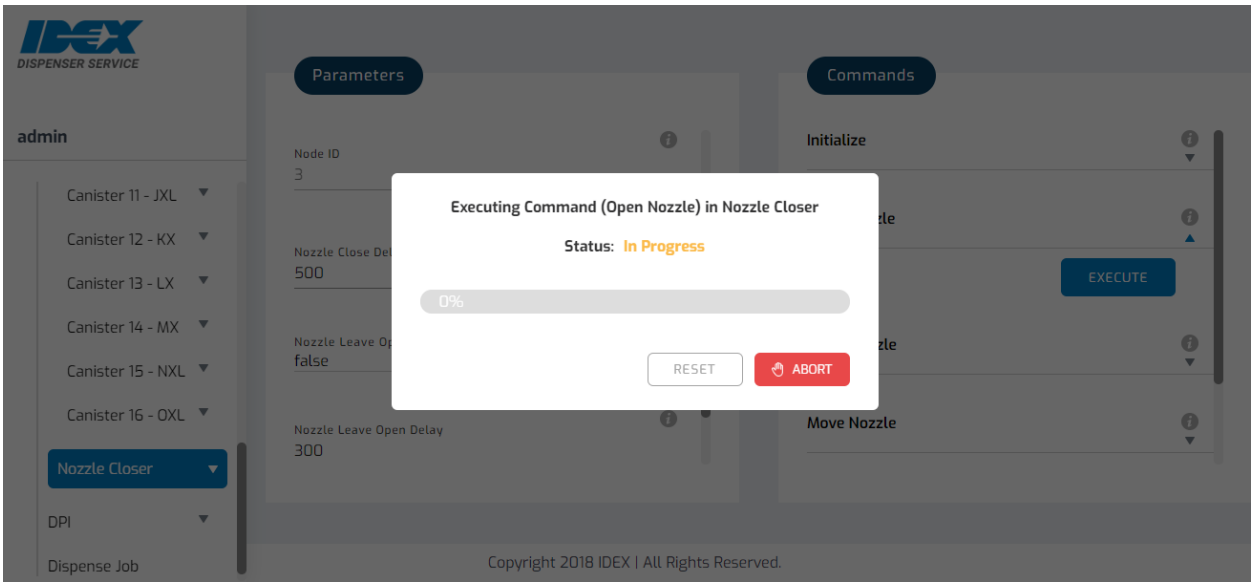



The Nozzle Commands located on the right side of the screen allow users to completely open and close the nozzle, move it to a specified step count and calibrate the nozzle so it makes a good seal when the DPI is not in the catch position and can reach both front and rear nozzle sensors.

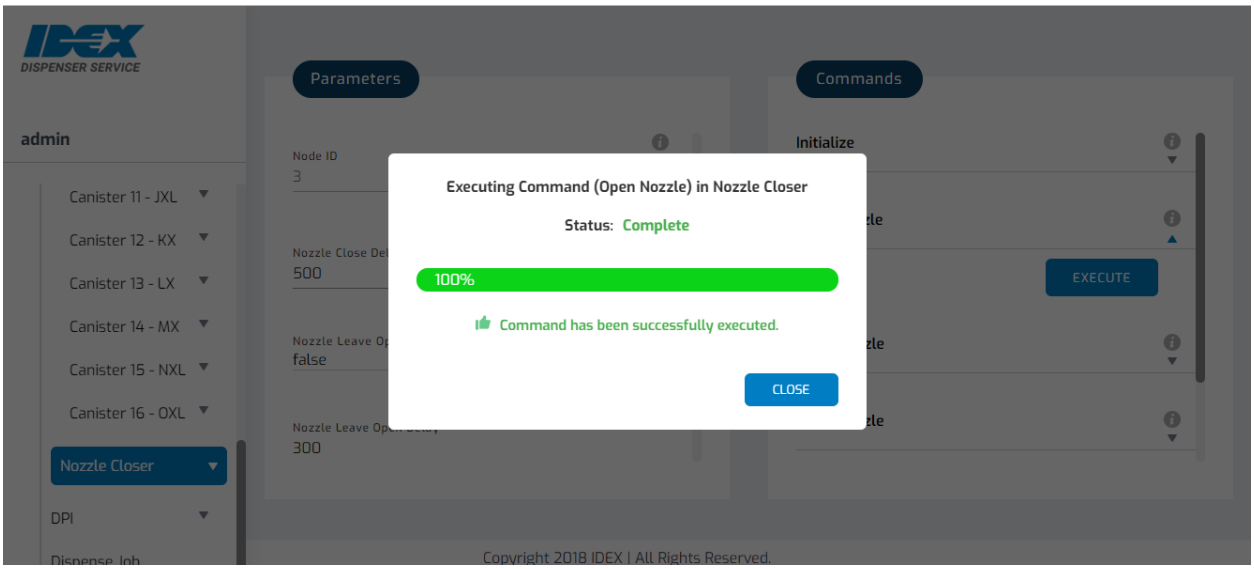
To open the nozzle, select the Open Nozzle command and press Execute.



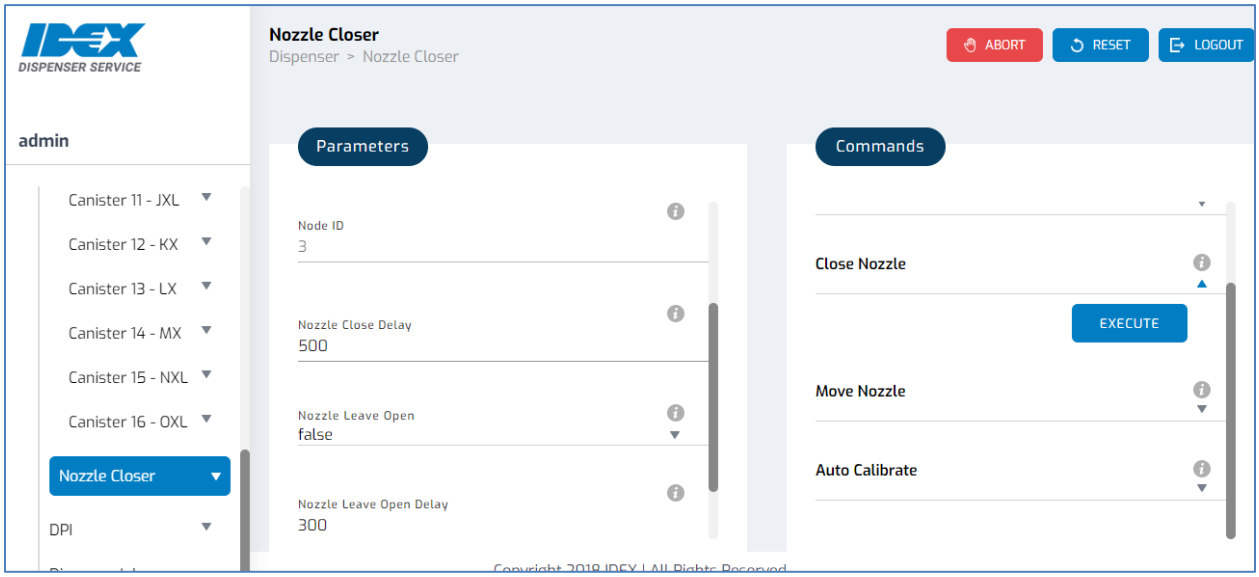

Progress status will appear while the nozzle opens



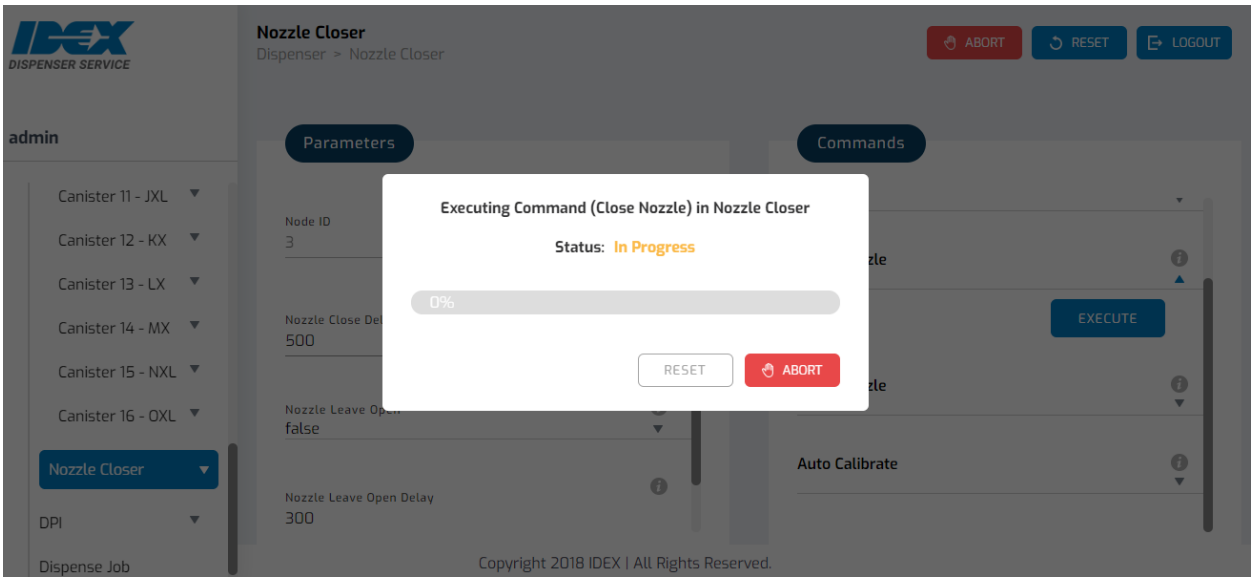

Completed status displayed upon completion of Nozzle Open command



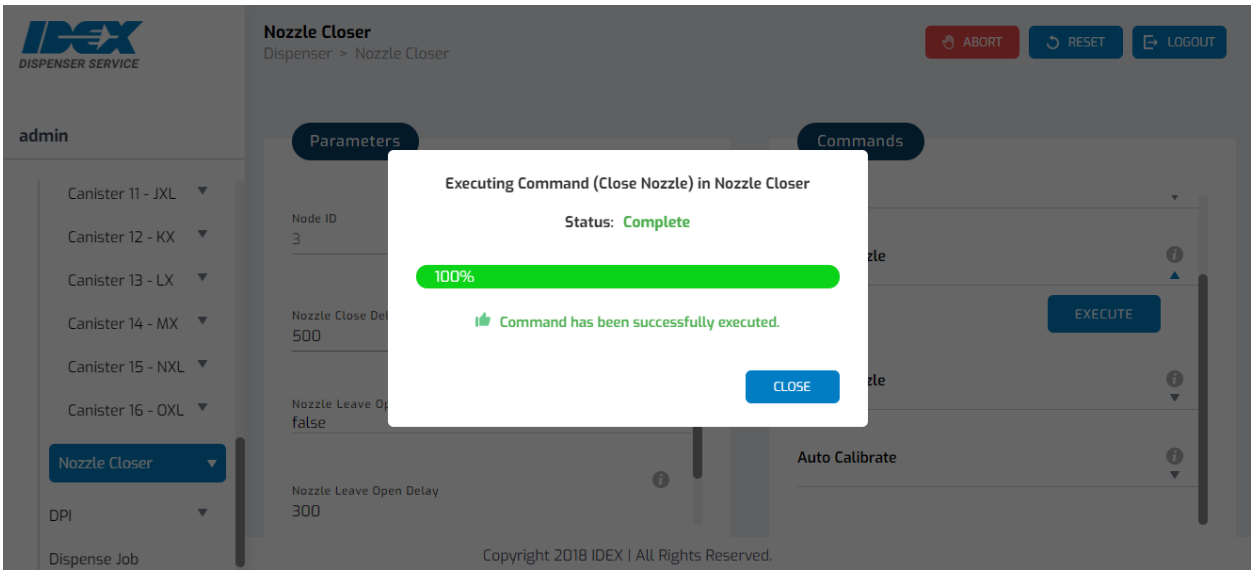

To close the nozzle, select the Close Nozzle command and press Execute



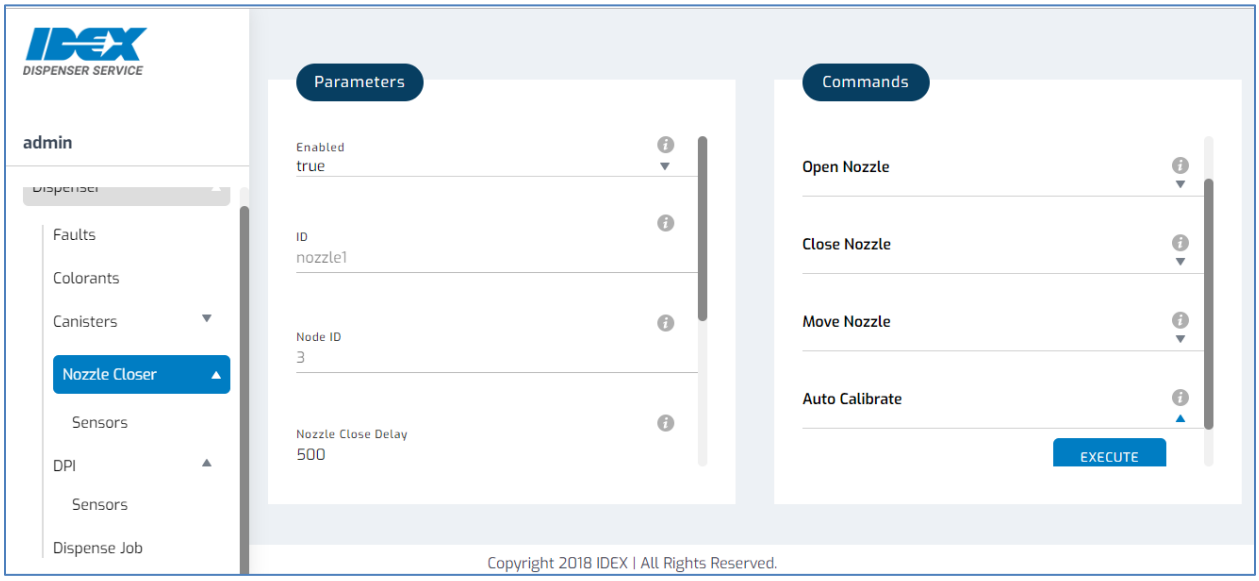

Progress status will appear while the nozzle closes




Completed status displayed upon completion of Nozzle Open command

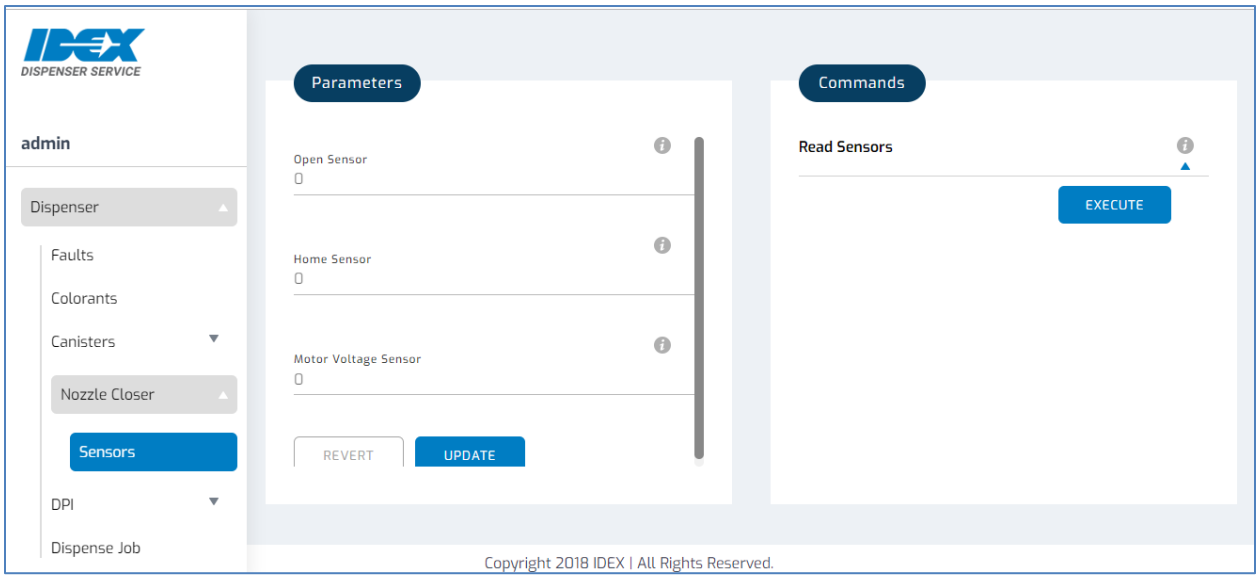



To calibrate the nozzle, select the Auto Calibrate command and press EXECUTE. This will need to be performed when first installing the dispenser

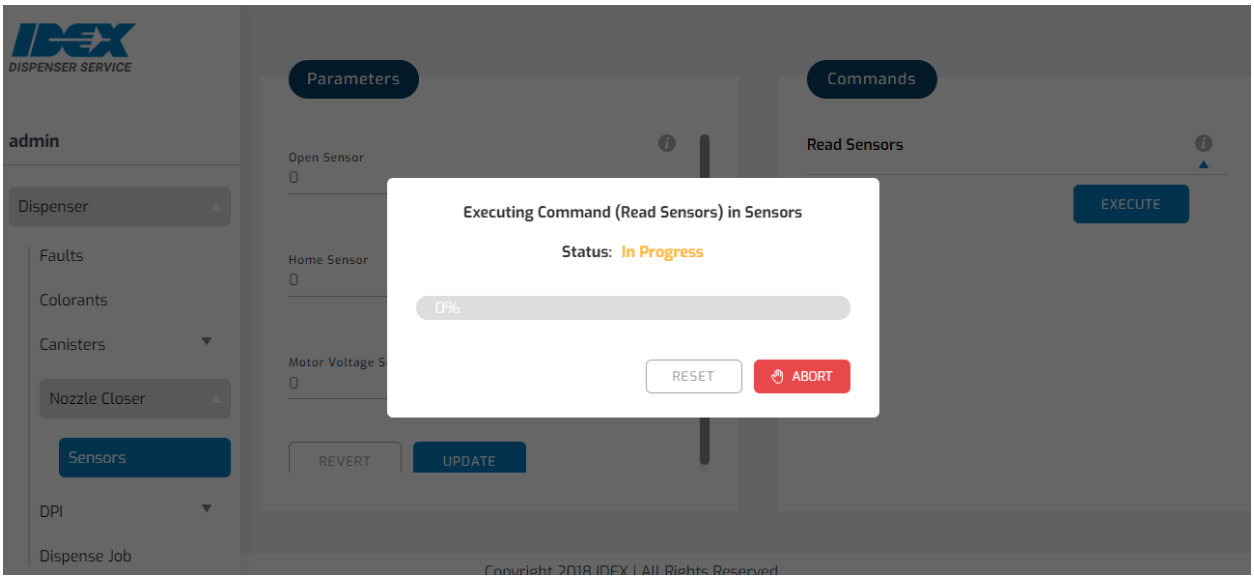



## Sensors Menu

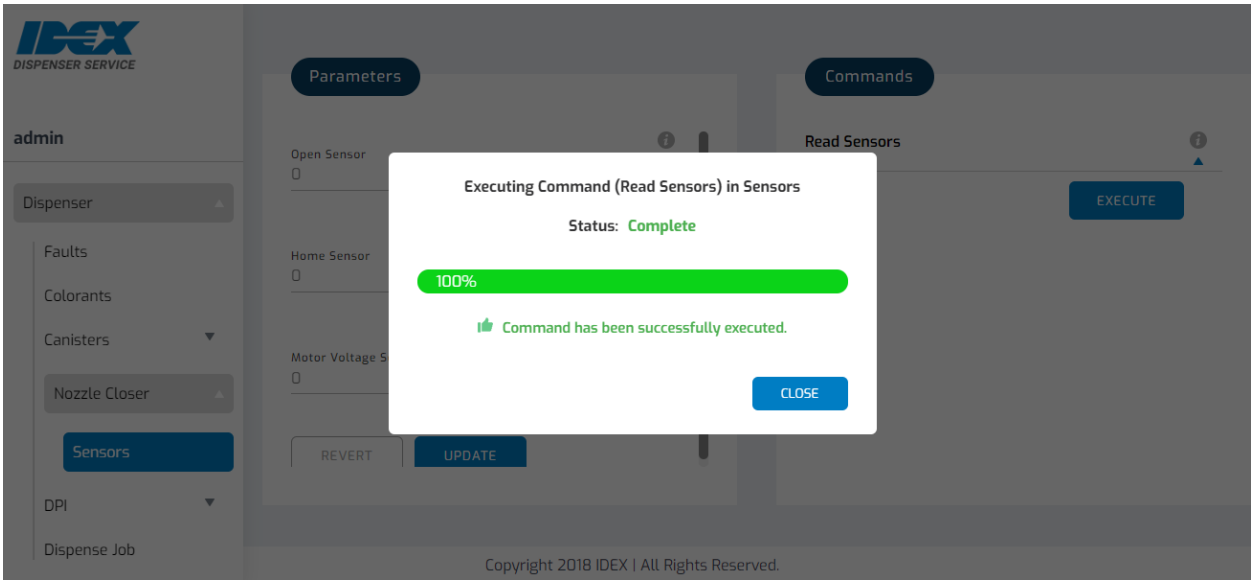
The Nozzle Sensors Commands located on the right side of the screen allow the user to read the current status of the sensor




Progress status will appear while the sensor is read

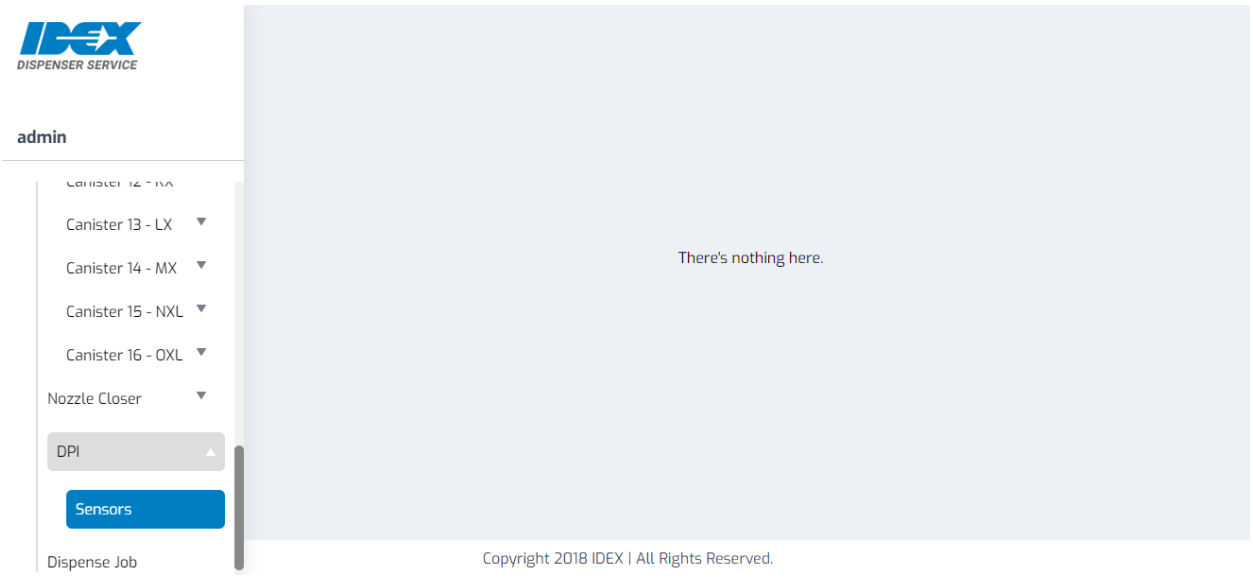



Completed status displayed upon completion of Sensor Read command




## DPI

The DPI menu will contain data regarding the dew point of the ambient air


DISPENSER SERVICE
admin
Canister 13 - LX
Canister 14 - MX
Canister 15 - NXL
Canister 16 - OXL
Nozzle Closer
DPI
Sensors
Dispense Job
There's nothing here.
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# ASX500 PARTS MANUAL

Please Refer to Spare Parts Manual / Catalog as a separate document.