DewPoint 6110 Start-Up Checklist

DewPoint Machine Preparation

Install Optional/Custom Equipment

- Install custom Wire Harnesses
    - Gazeeka, accumulator, preservative applicator, etc.
- Install custom Hydraulic Lines
- Install any other custom equipment

Prep/Check Boiler System

- REMOVE Tie-down Straps from Flue Flapper Rain Caps and check for free operation
- INSTALL Pressure Relief Valve (if not performing “New Boiler Clean-out”)
    - CHECK valve for free operation by lifting the hand lever
- INSTALL any Boiler Hand Hole Plugs that are not in place
- CLOSE all 5 Pigtail Steam Siphon Tube Drain Valves at the top front end of the Boiler
    - FAILURE TO CLOSE ALL 5 OF THESE VALVES WILL CAUSE THE PRESSURE SAFETY SYSTEMS TO MALFUNCTION AND WILL PREVENT THE DEWPOINT MACHINE FROM OPERATING CORRECTLY
- RE-INSTALL the two “-15 to 30psi” Pressure Transducers (Steam Pressure Sensors) at the top front end of the Boiler
- RE-INSTALL “0-100 in”. Pressure Transducer (Water Level Sensor) underneath front right water tank
- Inside Rear Door
    - CONNECT Feed Water Valve union to Feed Water System pipe
    - INSTALL Drain Plugs in Circulation Pump and Feed Water Pump
    - INSTALL Supply Water line Strainer
    - OPEN Supply Water Feed Valve
    - OPEN Boiler Water Circulation Valves
        - Circulation Pump Inlet Valve
        - Circulation Pump Discharge Valve
    - INSTALL Boiler Drain Assembly

        - ORIENT the Drain Hose so the boiler water is discharged forward, (away from the person who will open the Boiler Drain Valve)
    - CLOSE Feed Water Drain Valve at the rear end of the right hand Circulation Pipe near the lower rear right side of the Boiler
    - CLOSE Supply Water Load Valve to the right of the Rear Door
- Inside Front Hood
    - CLOSE Feed Water Drain Valve at the front of the right hand (if facing forward) Circulation Pipe located at the lower right corner of the Boiler
    - CLOSE Feed Water Circulation "Y" Strainer Flush Valve at the front left side of Boiler above Burner Moto

Install Cameras on DewPoint Machine

- ATTACH 2 magnetic base Cameras just below the hole to the inside each Tail/Work Light Assembly on each side of the DewPoint Machine
- CONNECT the short Camera Cable to each Camera and route each cable through the grommets mounted in each fender and in the inner fender walls.
- FOLLOW the routing of the wire harnesses that run to the Tail/Work Light Assemblies so the end of each cable is inside the Pump Enclosure area inside the Rear Door of the machine
- CONNECT the end of each Camera Cable to the Camera Extension Cables which are just inside and below the Rear Door.
- Use Cable Zip Ties to secure all camera cables to the wire harnesses that run to the Tail/Work Light Assemblies

Prep/Check Engine

- With Front Hood Open
    - OPEN Main Fuel Valve located under the deck of the machine below the Burner
    - CHECK Engine Radiator Coolant
    - Check Engine Oil
    - OPEN Fuel Valve on the Water Separator mounted on the side of the engine
    - ATTACH Battery Cables

Prep/Check Generator/Electrical

- With Front Hood Open
    - OPEN Generator Control Circuit Breaker Panel Door
        - CHECK to see that the Main Circuit Breaker is turned ON
        - CLOSE Circuit Breaker Panel Door
    - PRESS the green AUTO Button on the Generator Control

Prep/Check Burner

- With Front Hood Opened
    - CHECK all Fuel, Air and Propane (if equipped) hoses:
        - CHECK to be sure hoses are securely fastened to fittings
    - CHECK Propane Pilot Tanks
        - CHECK to be sure hose is securely fastened to the Right tank
        - CHECK to be sure regulator on hose is in a vertical orientation
        - OPEN Propane Tank Valve
        - CHECK around Propane Tanks and Burner Area to ensure that there are no Propane leaks.
    - OPEN the two Control Panel Doors on the Burner
        - REMOVE all documentation and/or other loose items from both panel boxes
    - In left hand panel Box
        - CHECK to be sure all Relays are securely plugged in
        - CHECK to see that all Circuit Breakers are turned ON
        - CHECK to see that “RUN-TEST” switch on Honeywell Control is in the “RUN” mode
    - In right hand panel Box
        - CHECK to be sure all Relays are securely plugged in
        - CHECK to see that all Circuit Breakers are turned ON
        - CHECK to see that all Fuse Blocks are Closed
        - CHECK to be sure the small Toggle Switch on the PLC is in the “RUN” position

Check operation of Valve Actuators and Burner Air Louver Actuator

- CHECK valve and louver actuator function
    - From the “Home Screen” select “Menu” >> “Operations” >> “Manual Mode”
    - Turn “Manual Mode ON” and cycle each actuator one by one
    - If you cannot hear an actuator cycle, check the position indicator on top of the actuator to make sure it is turning

Check Wheels and Tires

- CHECK that all lug nuts are tight
- CHECK tire inflation
    - BKT Bias Ply 52 PSI,
    - Alliance Radial 36 PSI

1st Start-up of NEW DewPoint Machines

NEW BOILER CLEANOUT: If the DewPoint Machine is new it will be necessary to perform a "New Boiler Cleanout" to strip mill scale from the interior of the Boiler in preparation for field operation.

THE NEW BOILER CLEANOUT MUST BE DONE OUTSIDE IN OPEN AIR
DO NOT RUN THE DewPoint Machine INSIDE A BUILDING OF ANY KIND OR IN ANY LOCATION WHERE EXHAUST COULD BE A FIRE OR AIR QUALITY HAZARD!!!

Note: DO NOT perform "New Boiler Cleanout" until you will be able to refill Boiler with treated water mixed with Boiler Water Operating Treatment Chemical within two days of performing "New Boiler Cleanout." The New Boiler Cleanout chemical will leave the Boiler prone to rust if not immediately refilled with water containing Boiler Water Operating Treatment Chemical to recoat the steel with protective chemicals.

After completing all of the steps to prepare the Machine for start-up, follow these steps to complete the "New Boiler Cleanout"

FILL DewPoint Machine

- FILL DewPoint Machine Fuel Tanks with #2 Diesel Fuel
- FILL DewPoint Machine Supply Water Tanks completely full of Water (Softened or RO water from your normal Supply Water source is best if available)
    - Do not use Boiler Water Operating Treatment Chemical when performing the "New Boiler Cleanout"

FILL Boiler with Water

- CHECK all valves in the Feed Water and Boiler water circulation system to be sure they are in the operating position.
    - See: "DewPoint Machine Preparation" section
        - "Prep/Check Boiler" section
- SWITCH the lighted rocker switch on Touch Screen enclosure to "ON"
- PRESS "Continue" button
- PRESS "Start Fill" button On the Touch Screen and "Confirm" start-up
- This will start all systems except the Burner
- CONFIRM that Feed Water Pump is running by visually checking the right hand pump inside the rear door
- CONFIRM that the Feed Water Pump is pumping water into the Boiler by opening the Boiler Drain Valve for a second or two and confirming that water flows out of the valve
- SHUT DOWN machine when Boiler water is at normal operating level,
- SWITCH lighted rocker switch on Touch Screen enclosure to "OFF"

ADD "Boiler Cleaner"

- REMOVE the Boiler Safety Pressure Relief Valve from the top, rear end of the Boiler (if it has been installed)
- Using a funnel, POUR 2.5 gallons of "Boiler Cleaner" into the fitting from which the Boiler Safety Pressure Relief Valve was removed
- Re-INSTALL 15 PSI Safety Pressure Relief Valve

START Burner in "Keep Hot" mode

- SWITCH lighted rocker switch on Touch Screen enclosure to "ON"
- After Initiation of the Touch Screen
    - PRESS the "Continue" button
    - PRESS the "Keep Hot" button on the Left side of the Screen
        - Burner will start automatically
        - Boiler/Burner will function automatically to keep the Boiler hot

Tune Burner

- Tune Burner only if it is smoking on start-up
- You will fine tune the Burner later in preparation for Field Work

Leave machine in "Keep Hot" mode for 24 hrs.

- Machine will automatically start and stop as needed to maintain Boiler pressure
- Touch Screen will go dark at certain stages of operation but can be reactivated at any time by touching the Screen
- LEAVE the machine in "Keep Hot" for 24 hrs.
- Machine may be left unattended while in "Keep Hot" mode (outdoors only)

Depressurize Boiler

- After 24 hours, TOUCH the Screen to reactivate it
    - PRESS Keep Hot "On" button to "Off" in information box to exit the Keep Hot mode
    - PRESS "Menu" → "Operations" → "Manual Mode"
    - PRESS "Manual Mode" button to "ON"
        - OPEN the four (4) Steam Valves to 100% to depressurize Boiler
            - CAUTION: DO NOT OPEN BLOW DOWN VALVE as there is a risk of BURN INJURY or PROPERTY DAMAGE
        - WAIT for all pressure to be relieved from Boiler
    - PRESS "Manual Mode" button to "OFF"

Drain Boiler 1st Time

- OBSERVE regulations relating to disposal of waste water in your area
- OPEN the “Boiler Drain Valve” inside the rear door to drain water from the Boiler
    - CAUTION: Boiler water will be hot. Drain in an area that will not cause property damage or personal injury
- COOL DOWN Boiler:
    - ALLOW Boiler to cool for 6 hours

Refill to Rinse Boiler 2nd Time

- From the “Home Screen” PRESS “Start Fill”
    - Boiler will fill within 8-10 min.
- Once boiler is filled PRESS “Menu” → “Operations” → “Home” → “Wet Layup”
    - Boiler will fill completely and water will begin coming out of the Safety Pressure Relief Valve
- When water comes out of the Safety Pressure Relief Valve follow instructions on the Touch Screen to “Shut Down” the DewPoint machine
- OPEN the “Boiler Drain Valve” inside the rear door to drain water from the Boiler

Fill, Rinse & Drain Boiler a 3rd time

- Repeat the fill & Drain procedure above for final rinse

After Cleaning the Boiler

- DO NOT leave freshly cleaned Boiler empty for any extended time at this point as steel is prone to rust after boiler cleaning
    - FILL DewPoint machine Supply Water Tanks with Softened or RO water from your normal Supply Water source MIXED with Boiler Water Operating Treatment Chemical at normal suggested rate for field operation
    - REFILL Boiler for Field Operation, or for “Wet Lay Up” if the DewPoint machine will not be used immediately
    - If you are ready to proceed to Field Work please proceed with “Start DewPoint Machine for Field Work” section below
    - If you will not be using the DewPoint machine immediately put the machine in “Wet Lay Up” mode
        - Once Boiler is filled PRESS “Menu” → “Operations” → “Home” → “Wet Layup” and follow instructions

Start DewPoint Machine for Field Work

Fill the DewPoint Machine

- FILL DewPoint machine with Diesel Fuel and Water

Start DewPoint Machine

- Start DewPoint Machine
    - SWITCH DewPoint Touch Screen “ON” with lighted rocker switch on the lower right side of the Touchscreen enclosure
    - When the computer has initialized
        - Follow maintenance instructions
        - PRESS “Continue” button
    - PRESS “Start All” button when it appears to fill and heat up boiler
    - PRESS “Confirm” button on pop up window to start all systems

Tune Burner (See next page)

Tune DewPoint 6110 Burner

- With Burner running on Low Fire
  - Check/Set Initial Fuel Pump pressure
    - Set to 300 psi for 19.0 or 19.5 nozzle
    - Set to 280 psi for 20.0 or 21.5 nozzle
      - Read Fuel Pump pressure on the LOWER gauge next to the Fuel Pump or on the Touch Screen
    - Fuel Pump Pressure is set by turning Pressure Regulating Screw in the Fuel Pump
      - Clockwise to raise pressure
      - Counter-clockwise to lower pressure
  - Set Low Fire Fuel Nozzle Pressure
    - Set to 80-90 psi
      - READ Fuel Nozzle pressure on the UPPER gauge next to the Burner Sight Glass or on the Touch Screen
    - Fuel Nozzle Pressure is set by turning Pressure Regulating Screw in the Low Fire Pressure Regulator as follows:
      - REMOVE Cap
        - Use a back-up wrench to support the regulator to prevent damage to the lines attached to the Regulator
      - REMOVE plastic washer
      - LOOSEN thin Locknut
        - Use a back-up wrench to support the regulator to prevent damage to the lines attached to the Regulator
      - TURN slotted screw to adjust pressure to 80-90 psi
        - Clockwise to raise pressure
        - Counter-clockwise to lower pressure
      - TIGHTEN thin Locknut
        - Use a back-up wrench to support the regulator to prevent damage to the lines attached to the Regulator
      - REPLACE plastic washer
      - REPLACE Cap
        - Use a back-up wrench to support the regulator to prevent damage to the lines attached to the Regulator
  - Adjust Air Louver “Low Fire” Setting
    - With Burner Running on Low Fire
      - LOOSEN Locknut on Low Fire Air Louver Adjustment Screw above the upper Air Louver
      - ADJUST this Adjustment Screw toward the “CLOSED” position until some dark smoke appears from the Flue
      - ADJUST this Adjustment Screw toward the “OPEN” position <u>just</u> until dark smoke from the Flue disappears
      - ADJUST this Adjustment Screw toward the “OPEN” position one additional turn after smoke disappears

- Adjust Air Louver “Low Fire” Setting (continued)
  - Turn Burner OFF and re-fire the Burner to be sure it lights off smoothly
    - If the Burner lights off smoothly when the Fuel Nozzle pressure jumps up to operating pressure, you are ready to proceed to next step
    - If the Burner hesitates to light off for a second or two or fails to light off when the Fuel Nozzle pressure jumps up to operating pressure the air fuel ratio is likely too lean
      - Adjust the Low Fire Air Louver Adjustment Screw slightly toward the “Closed” position and re-fire the burner.
        - Repeat this procedure until a smooth light off is achieved and the fire is burning clean
  - Allow Burner to run through the warm-up process until it goes to “High Fire”
- Check/Adjust “High Fire” Air/Fuel Ratio

  <u>This adjustment must be done while the Burner is in “High Fire”. If the Boiler builds steam pressure up to the operating level and you are not using steam it will switch to “Low Fire” and you will need to relieve some steam pressure by opening one or more of the Steam Valves to the Baler to get the Burner back to the “High Fire” state to finish tuning “High Fire”</u>

  - When Burner advances to “High Fire” (It is normal to see a puff of dark smoke)
    - CHECK to be sure the Air Louvers are fully open
    - CHECK to be sure there is no dark smoke from the Flue
      - If there **<u>IS</u>** dark smoke:
        - ADJUST the Fuel Pump Pressure downward just until dark smoke disappears
        - ADJUST the Fuel Pump Pressure downward an additional 5 psi
      - If there **<u>IS NOT</u>** dark smoke:
        - ADJUST Fuel Pump Pressure Upward until dark smoke appears (do not exceed 300 psi)
        - ADJUST Fuel Pump Pressure Downward until dark smoke disappears
        - ADJUST Fuel Pump Pressure Downward an additional 5 psi
- Re-fire the Burner to confirm that it has a smooth light-off and is burning clean at both “Low Fire” and “High Fire”
  - It is normal to see a puff of dark smoke when the Burner switches from “Low Fire” to “High Fire”

Complete the Boiler Warm-up Process

- Allow Burner to run until it builds steam pressure to operating level
    - When Boiler reaches operating steam pressure the Steam Purge Valve will open for 30 seconds to discharge any oxygen in the steam. This will also signal the operator that the machine is ready for Field Operation.
- The screen will automatically change to the "Disclaimer and Agreement" screen.
    - PRESS "I Agree" button to accept the terms of operation
- Screen will change to Field Work screen and the machine will be in the "Hold" mode

Water Quality Settings on the DewPoint Machine

It is critical that Water Quality Settings in the DewPoint control system are set up correctly. Failure to do so may result in poor water quality conditions in the Boiler. Poor Boiler water quality can cause water carry-over into hay during the baling process which will damage the hay and create a risk of stack fires.

- OBTAIN Water Test and Recommendations Report for your operation.
    - Your water samples should have been processed and the report should be available from your Dealer
- ENTER Water Quality settings based on Water Test and Recommendations Report
    - SWITCH DewPoint Touch Screen "ON" with lighted Rocker Switch on the lower right side of the Touchscreen Enclosure
    - When the computer has initialized follow on-screen instructions and PRESS "Continue" button
    - Select "Menu" → "Settings" → "Water Quality"
    - Enter Location Name and Water PPM for each tested water source
- SELECT the water source you will be using for the next operation
    - Whenever a different water supply source is used please select that water source from the "Water Quality" screen

Machine is now ready for Field Operation

See "DewPoint 6110, 6210 Implementation and Operation Guide" for complete Set-up, Start-up and Field Operation instructions