

Customer: _____

Model Number: APD - _____ Serial Number: _____

Field Start-Up Sheet

Direct Fired Gas - Air Process Dryers

Please Print

INITIAL INSPECTION

I. Miscellaneous Items

1. Visible Physical Damage? _____ No If Yes, Specify _____
2. Hardware Tight & Secure _____

Comments: _____

II. Fan & Motor

1. _____ Fan Secured Tightly to Motor Shaft 2. _____ Bushing Bolts Secure

Comments: _____

III. Burner Inspection

1. _____ Spark Igniter Secured Properly 3. _____ Flame Rod Secured Properly
2. _____ Unions Tight and Secure 4. _____ Ignition Wire Attached at Both Ends

Comments: _____

IV. Manifold & Vent Piping

1. _____ Manifold Securely Mounted 2. _____ Manifold Components Tight and Secure

Comments: _____

VI. Electric Service

1. Electrical Service Provided to Unit: _____ Volts _____ Phase _____ Hertz _____ Amps
2. Unit Nameplate Electrical Requirement: _____ Volts _____ Phase _____ Hertz _____ Amps
3. Terminal Strip Wires Tight: Main Panel _____ Yes Remote Panel _____ Yes
4. Componentry and Relays Mounted Securely in Place _____ Yes
5. Main Fusing Size: _____ Volts _____ Amps 6. Overload Heater Size _____
6. The Unit has been grounded by the installer at the main unit panel _____ Yes

Comments: _____

VII. Gas Service (See maximum and minimum gas pressure requirements on unit rating plate)

1. _____ Natural Gas _____ LP Gas Service Pressure _____ " W.C. -or- _____ Lbs

VIII. Installer Responsibilities

1. Remote Panel Installed Location: _____ Inside Wall _____ Outside Wall _____ Feet From Unit (approx.)
2. Installation secure _____ Yes _____ No

VERIFICATION OF OPERATION

NOTE: Refer to the Sequence of Operation & Wiring Diagram in the Owners Manual for specific data on this unit.

I. Fan Operation

1. Fan Rotation is in the same direction as the rotation arrow ____ Yes
2. Check the following:

	<u>Unit Off</u>	<u>Unit Running</u>	
Phase 1:	____ Volts	____ Volts ____ Amps	Verify the motor running amps does not
Phase 2:	____ Volts	____ Volts ____ Amps	exceed the motor nameplate FLA
Phase 3:	____ Volts	____ Volts ____ Amps	

II. Burner Operation

1. The Burner Suction Static Pressure is ____ " W.C. (Measured at the manifold pressure tap with unit fan on and gas off)
2. The Burner Operating Pressure is ____ "W.C. (Measured as above, but with fan and gas on, and unit in forced high fire)

*Note: Burner Operating Pressure plus Suction Pressure = Manifold Pressure (Example: $-0.5 + 3.0 = 3.5$...ignore signs)
Refer to the unit rating plate for correct high fire manifold pressure*

3. The High Temperature Limit Switch is pre-set to 100°F
4. The Fan Airflow Switch is field set at ____ " W.C. (Adjust as needed - Factory set at 0.35" WC)
5. Check to ensure the flame signal is over 0.7 microamps at the FC- and FC+ terminals on the ignition module.

VI. Miscellaneous Operational Checks:

1. With the fan and burner operating, all of the circuit check lights are illuminated (except the burner lock-out light) ____ Yes
2. The electrical drawing and sequence of operation is taped to the enclosure door. ____ Yes
3. The owners manual was reviewed by me with the owner, and placed back inside the unit enclosure ____ Yes
4. The owner was instructed by me on the operation of the following controls and options (check those that apply):

____ Fan Blade Maintenance	____ Burner Maintenance
____ Flame Rod Maintenance	____ Spark Igniter Maintenance
____ Motor Lubrication	____ _____

Comments:

THE ABOVE START-UP WAS PERFORMED BY

Company Name: _____ Date: _____
Phone Number: (____) - _____ Fax Number: (____) - _____
My Name (Service Tech) _____

After Completion, Return this start-up sheet to the Owners Manual...

AbsolutAire, Inc.

5496 North Riverview Drive

Kalamazoo, MI 49004

Phone: (800) 804-4000 Fax: (269) 382-5291

(STUPAPD)

ABSOLUTAIRE, INC.

GENERAL INSTALLATION & OPERATING INSTRUCTIONS

DIRECT GAS FIRED AIR PROCESS DRYERS

MODEL NO.: APD90 – ETL listed to meet UL 795 requirements.

The following recommendations are not intended to replace or void any requirements of federal, state or local codes having jurisdiction. All local authorities having jurisdiction should be consulted before installation is made. The heater should be installed and piped in accordance with the requirements of the National Fuel Gas Code, NFPA 54, and all wiring must be in accordance with the National Electrical Code, NFPA 70 current edition.

FOR YOUR SAFETY: IF YOU SMELL GAS...

1. Open Windows
2. Don't touch electrical switches
3. Extinguish any open flames
4. Evacuate the structure
5. Call your gas supplier

**Read all instructions before installing or operating this appliance.
Failure to do so may void your warranty, and may result in unsafe
operation, property damage, personal injury, or death.**

Inspect the unit for visible damage. The unit was thoroughly inspected before leaving the factory, and the carrier has accepted and signed for it. Any damage or irregularities should be noted at the time of delivery and immediately reported to the delivery carrier. Request a written inspection report from the Claims Inspector to substantiate any necessary claim. File the claim with the delivery carrier, not with AbsolutAire, Inc.

Further inspect the unit as follows:

- A) Unlatch and open electrical & gas box doors. Inspect for internal damage.
- B) Remove and inspect all loose-shipped items, make certain all items are undamaged.

If questions should arise regarding the application or installation of the AbsolutAire APD90 System, that cannot be solved by using these instructions, please feel free to contact us at (269) 382-1875.

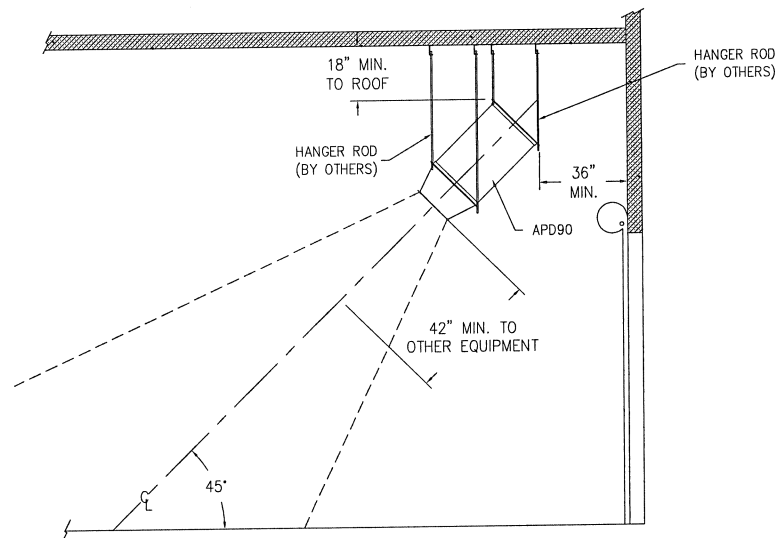
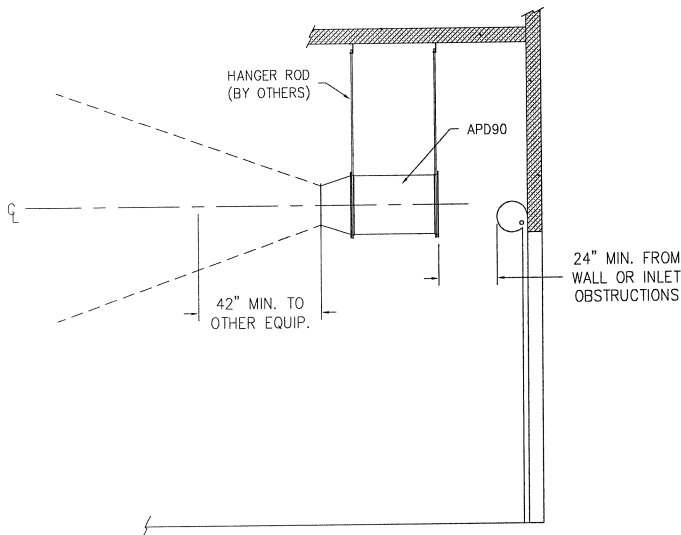
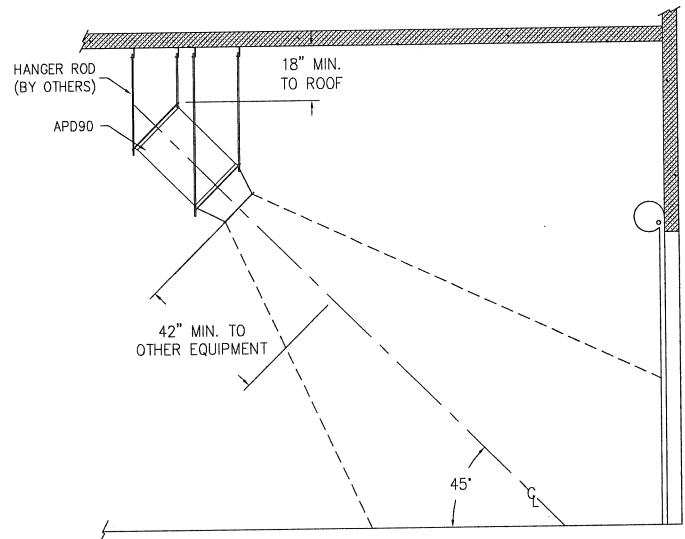
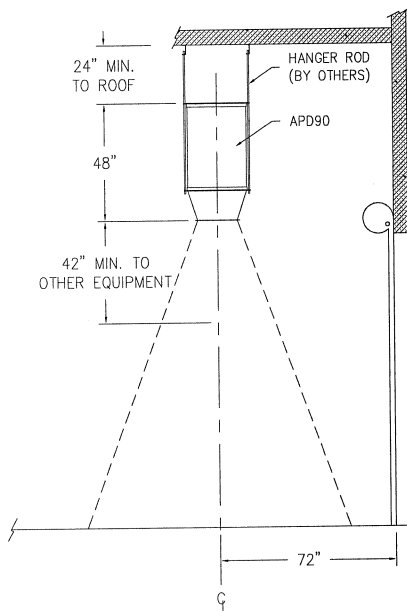
It is the responsibility of the installing contractor to see that the unit is installed within the manufacturers design parameters, as stated on the rating plate, and that the start-up procedure specified by the manufacturer is followed.

INSTALLATION

APD90 models are designed to be suspended within the building. Hanger rods and channel iron, adequate to support the weight of the unit, will be required. Attach the hanger rods to the building structure so they hang down and attach to the angle rings on the APD90. Make sure the rod locations don't interfere with gas train or electrical control panel access. If desired, provide one suspension type vibration isolator in each hanger rod. The minimum combined ratings of the vibration isolators and suspension materials should equal 150% of the total weight of the fully assembled unit.

Move the unit to its installation location. Fully assemble the unit with all included components. Raise the unit so that the hanger rods drop through hole(s) in the angle extensions. Attach two nuts to each hanger rod and jamb the two nuts together to prevent loosening.

APD90 TYPICAL (factory recommended) INSTALLATIONS



The unit is now ready for piping and wiring.

CAUTION

Be sure there are no obstructions of the unit inlet or outlet (see diagram on page 2). Most insurance requirements state that an open flame appliance such as this cannot be any closer than 20' from spray booths, dip tanks, or other sources of flammable vapor.

An APD90 cannot substitute for make-up air. If severe negative pressure exists because of exhaust loads, make-up air must be provided for the APD90 to operate properly.

PIPING

A female pipe connection has been provided on the upstream side of the first control on the unit for connection of the inlet gas pipe. This is the only gas connection required. Be sure the gas supply pipe is large enough to insure the proper gas volume and line pressure at the inlet of the unit. Gas pipe must be sized and installed in accordance with applicable codes and standards. After connection of the gas pipe, check for leaks and bleed the line. Incoming gas piping to the heater must be independently supported. A drip leg and ground joint union must be provided in the gas supply line.

NOTE: NFPA 54 National Fuel Gas Code requires that an approved manual gas valve be installed within six feet of the unit. We recommend use of a gas valve with a pressure tap on the inlet to measure gas supply pressure.

NOTE: An inlet gas pressure measurement must be taken to insure proper inlet gas pressure. Inlet pressure should be neither too low or too high. Check the nameplate for the minimum and maximum pressure requirements for the APD90. If the supply gas pressure exceeds the maximum inlet supply pressure as stated on the unit rating plate, an auxiliary high pressure regulator must be installed in the incoming gas line by the contractor. The gas supply pressure must meet or exceed the minimum inlet gas supply pressure, as stated on the unit rating plate, while the burner is under full fire.

WIRING

All electrical wiring must be in accordance with applicable codes and standards. See the electrical diagram on the unit door or in the service manual before attempting any wiring. Refer to the unit rating plate for required incoming voltage and phase. Check for concurrence with voltage and phase shown on the wiring diagram.

The manual reset high temperature limit (HTL) switch is located in the electrical box. The HTL bulb is in the side of the housing.

PROCESS INTERLOCK

This unit cannot be operated without being interlocked to the process system. The unit shall energize and de-energize as a part of the process.

WARNING!!!

Spark testing or shorting of control wires by any means will render the control transformer inoperative. DO NOT allow this to happen as it IS NOT covered under the warranty.

We recommend that the wires for the control circuit be routed through the conduit provided with the main electrical service to the equipment. This procedure is provided for in Chapter 3, Article 300-3(a) of the NFPA 70 1984 National Electrical Code. It reads as follows: "Conductors of 600 volts or less shall be permitted to occupy the same equipment wiring enclosure, cable or raceway, without regard to whether the individual circuits are alternating current or direct current, where all conductors are insulated for the maximum voltage of any conductor within the enclosure, cable or raceway."

An electric disconnect switch having adequate ampacity shall be installed in accordance with Article 430 of the National Electric Code (N.E.C.), ANSI/NFPA 70. If not factory installed, please refer to the unit rating plate for voltage and ampacity requirements. Open cover on disconnect box, connect line voltage wiring to terminal block provided.

Feed the control wiring through the conduit to the master panel. Connect color coded and/or numbered control wires to the terminal strip per the wiring diagram.

Energize the system and check for unusual noises or vibrations, etc. Check the fan for proper rotation. THIS MUST BE A VISUAL CHECK as fans will move air even if they are running backward, but the system will not perform properly. Check the amp draw to all motors to insure it does not exceed the rated maximum current rating of the motor.

Recirculation of room air may be hazardous in the presence of:

- *Flammable liquids, solids and gases**
- *Explosive dusts or powders**
- *Substances which become toxic when exposed to heat**

In order to reduce the chance of interior condensation, recirculation is not recommended in non-insulated buildings where outdoor temperatures fall below 32°F (0°C).

MAINTENANCE

Monthly - check the operation of the following:

- Flame Safeguard
- Air flow switch
- High temperature limit
- Clean fan blades

Annually - check the operation of the following:

- Clean burner ports and mixing plates
- Check gas manifold pressure
- Replace spark igniter
- Check ignition wire for deterioration
- Clean fan blades
- Check motor and burner tightness
- Check unit installation and supports
- Check for gas leaks with a soap solution
- Lubricate motor

Initial Start-up After Installation

1. Check all gas piping for leaks with a soap solution.
2. Check that the fan is rotating in the proper direction
3. Manually reset the flame relay and the high temperature limit switch.
4. Open main gas cock and turn unit on. Check and adjust gas pressure as needed.
5. Cycle the unit on and off several times to ensure proper operation.

In damp or wet environments, it may be necessary to run the unit with the fan only for several minutes upon initial morning start-up to dry off the spark igniter.

PROCEED WITH THE FIELD START-UP CHECK LIST

TROUBLESHOOTING

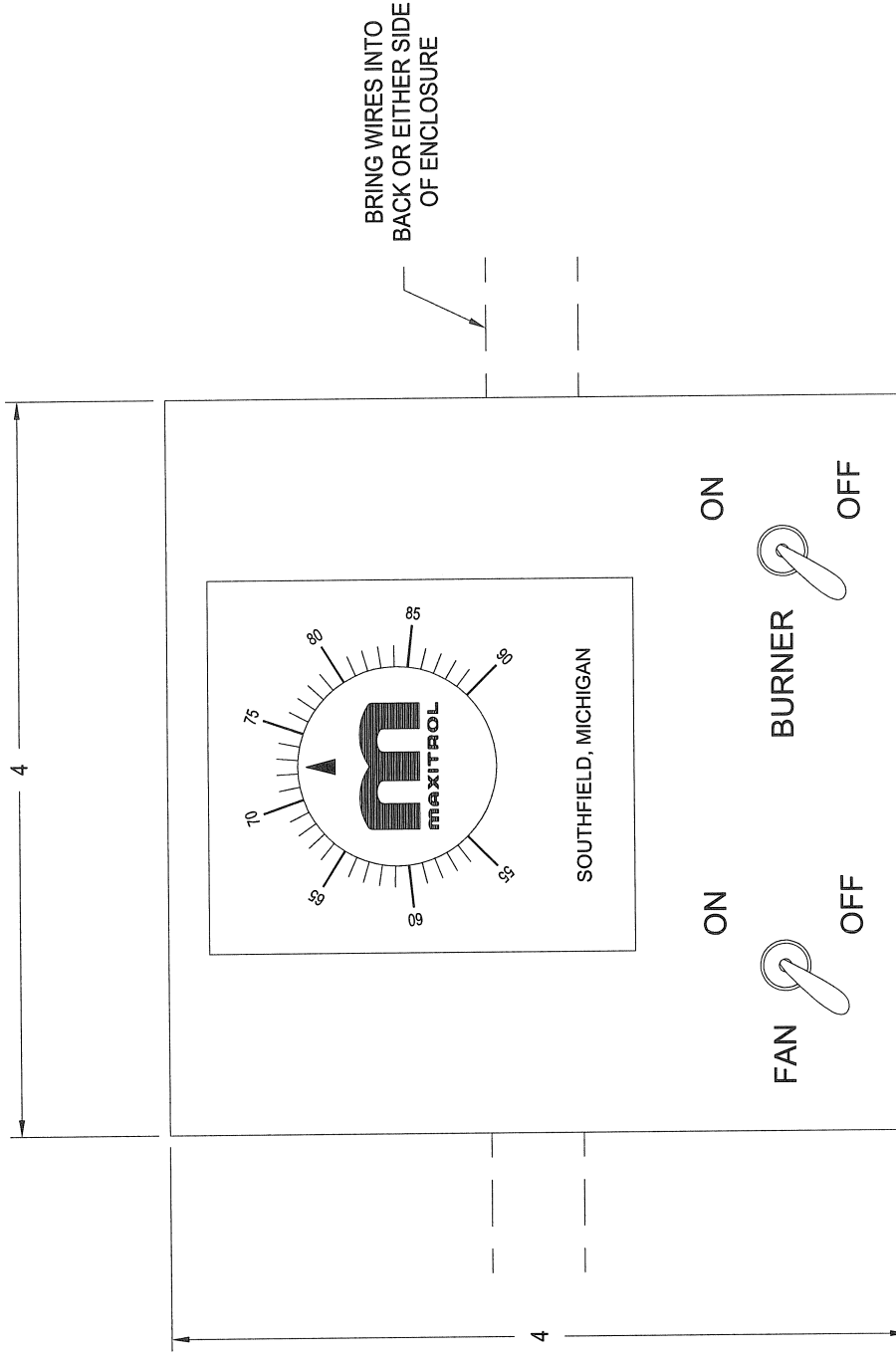
1. **Fan Will Not Operate.**
 - A. Make sure disconnect switch is closed.
 - B. Be sure that the fan on-off switch, at remote station, is in the on position.
 - C. Make sure process interlock is connected and enabled.
 - D. Check motor starter overloads, reset if necessary.
 - E. Check transformer fuses.
2. **Fan Runs - Burner Doesn't Light.**
 - A. Make sure the main gas cock is open.
 - B. Be sure that the heat on-off switch, at remote station, is in the on position.
 - C. Check the air flow switch to be sure steady contact is being made.
 - D. Reset the flame relay if tripped.
 - E. Check the high limit switch and reset if necessary.
 - F. Check gas pressure at burner.
 - G. Check flame rod for cracks, dirt, etc.
 - H. Check spark igniter for cracks, dirt, etc.
 - I. Check solenoid valve for proper voltages.

NOTE: Only use factory replacement parts, unless authorized to do otherwise.

ABSOLUTAIRE, INC.
5496 North Riverview Drive
Kalamazoo, MI 49004-1595
Telephone: (269) 382-1875
Facsimile: (269) 382-5291

MC-163APD 5/06

PROPRIETARY



LAST REVISION:		REV.	ECO#	DATE	CK BY	NET QTY	MATERIAL	MATERIAL SIZE
NOTES:								
ALL O-LINES (OR O,0) WILL ALWAYS BE IN THE LOWER LEFT-HAND CORNER OF THE PART								
DRAWING FILE LOCATION:		AAI PART #:				DESC.	APD90 - REMOTE STATION	
						SCALE	DRAWN BY: AMB	FILE NO.:
						PLOT RATIO: 1=1	DATE: 5-16-06	REV.
							WO#	APD90-R

Absolut Air, Inc.
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