

AD-310

2 Auto Doors / 2-Way Tilt Operator's Manual

WARNING: For your safety the information in this manual must be followed to minimize the risk of fire or explosion or to prevent property damage, personal injury or loss of life.

Do not store or use gasoline or other flammable vapor and liquids in the vicinity of this or any other appliance.

WHAT DO YOU DO IF YOU SMELL GAS

- * Do not try to light any appliance.
- * Do not touch any electrical switch; do not use any phone in your building.
- * Clear the room, building or area of all occupants.
- * Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- * If you cannot reach your gas supplier, call the fire department.

Installation and service must be performed by a qualified installer, service agency or the gas supplier.



For replacement parts, contact the distributor from which the dryer was purchased or

American Dryer Corporation

88 Currant Road

Fall River MA 02720-4781

Telephone: (508) 678-9010 / Fax: (508) 678-9447

E-mail: service@amdry.com

Retain This Manual In A Safe Place For Future Reference

American Dryer Corporation products embody advanced concepts in engineering, design, and safety. If this product is properly maintained, it will provide many years of safe, efficient, and trouble-free operation.

ONLY properly licensed technicians should service this equipment.

OBSERVE ALL SAFETY PRECAUTIONS displayed on the equipment or specified in the installation/operator's manual included with the dryer.

WARNING: UNDER NO CIRCUMSTANCES should the door switch or the heat circuit devices ever be disabled.

WARNING: The dryer *must never* be operated with any of the back guards, outer tops, or service panels removed. PERSONAL INJURY or FIRE COULD RESULT.

We have tried to make this manual as complete as possible and hope you will find it useful. ADC reserves the right to make changes from time to time, without notice or obligation, in prices, specifications, colors, and material, and to change or discontinue models.

Important

For your convenience, log the following information:

DATE OF PURCHASE _____ MODEL NO. **AD-310**

DISTRIBUTORS NAME _____

Serial Number(s) _____

Replacement parts can be obtained from your distributor or the ADC factory. When ordering replacement parts from the factory, you can FAX your order to ADC at (508) 678-9447 or telephone your orders directly to the ADC Parts Department at (508) 678-9010. Please specify the dryer **model number** and **serial number** in addition to the **description** and **part number**, so that your order is processed accurately and promptly.

The illustrations on the following pages may not depict your particular dryer exactly. The illustrations are a composite of the various dryer models. Be sure to check the descriptions of the parts thoroughly before ordering.

INSTRUCTIONS TO BE FOLLOWED IN THE EVENT THE USER
SMELLS GAS MUST BE POSTED IN A PROMINENT LOCATION. THE
INSTRUCTIONS TO BE POSTED SHALL BE OBTAINED FROM THE
LOCAL GAS SUPPLIER.

IMPORTANT

YOU MUST DISCONNECT and LOCKOUT THE ELECTRIC SUPPLY and THE GAS SUPPLY or THE STEAM SUPPLY BEFORE ANY COVERS or GUARDS ARE REMOVED FROM THE MACHINE TO ALLOW ACCESS FOR CLEANING, ADJUSTING, INSTALLATION, or TESTING OF ANY EQUIPMENT per OSHA (Occupational Safety and Health Administration) STANDARDS.

WARNING

The dryer must not be operated with any of the front and/or rear control doors, side access doors, or service panels removed. PERSONAL INJURY COULD RESULT.

FOR YOUR SAFETY

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

DO NOT DRY MOP HEADS IN THE DRYER.

DO NOT USE DRYER IN THE PRESENCE OF DRY CLEANING FUMES.

CAUTION

DRYER(S) SHOULD NEVER BE LEFT UNATTENDED WHILE IN OPERATION.

IMPORTANT

Please observe all safety precautions displayed on the equipment and/or specified in the installation/operators manual included with the dryer.

Dryer(s) must not be installed or stored in an area where it will be exposed to water and/or weather.

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AD-310

2 Auto Doors, 2-Way Tilt with Heater Fault Indication

MACHINE OPERATION SUMMARY

This AD-310 incorporates two (2) emergency stop buttons located on the right front and rear of the machine. These two buttons are "TURN TO RELEASE," and **must be** in the released mode to power the machine. The Phase 5 microcomputer's display will light when both emergency stop buttons are released. To turn on the AD-310's control voltage, press the green "ON" button located on the right front control panel.

The AD-310 has two (2) electronic controllers:

- Phase 5 microcomputer...for material drying.
- Micro-1 PLC (Programmable Logic Controller) -- for loading, unloading, and burner status monitoring.

The Phase 5 microcomputer responds to keypad commands only when the AD-310's tumbler section is level with **ALL** doors closed. The Micro-1 PLC (Programmable Logic Controller) controls loading and unloading only when the AD-310 is not drying material.

"FRONT LOAD/UNLOAD" and "REAR UNLOAD" selector switches, located on the right front and rear control doors respectively, (refer to the illustrations on **page 3**) are provided for loading and unloading of the AD-310. These selector switches will not operate while the AD-310 is in a drying cycle.

The front selector switch has three (3) positions:
"LOAD - DRY - UNLOAD."

This switch works in conjunction with the "TILT OFF/ON" selector where the customer can select whether to "LOAD/UNLOAD" the dryer in the level or the tilted position.

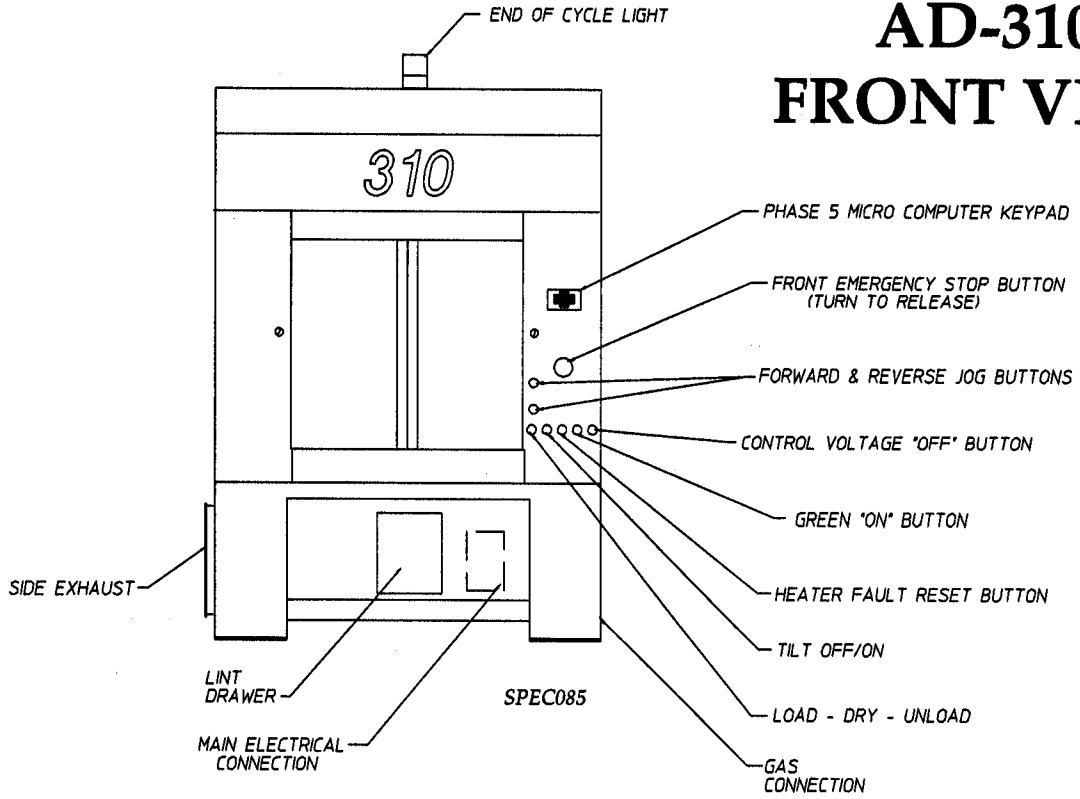
The rear unload selector switch has three (3) positions:
"LEVEL - OFF - TILTED."

This switch will allow the customer to unload from the rear of the dryer, either in the level or tilted positions.

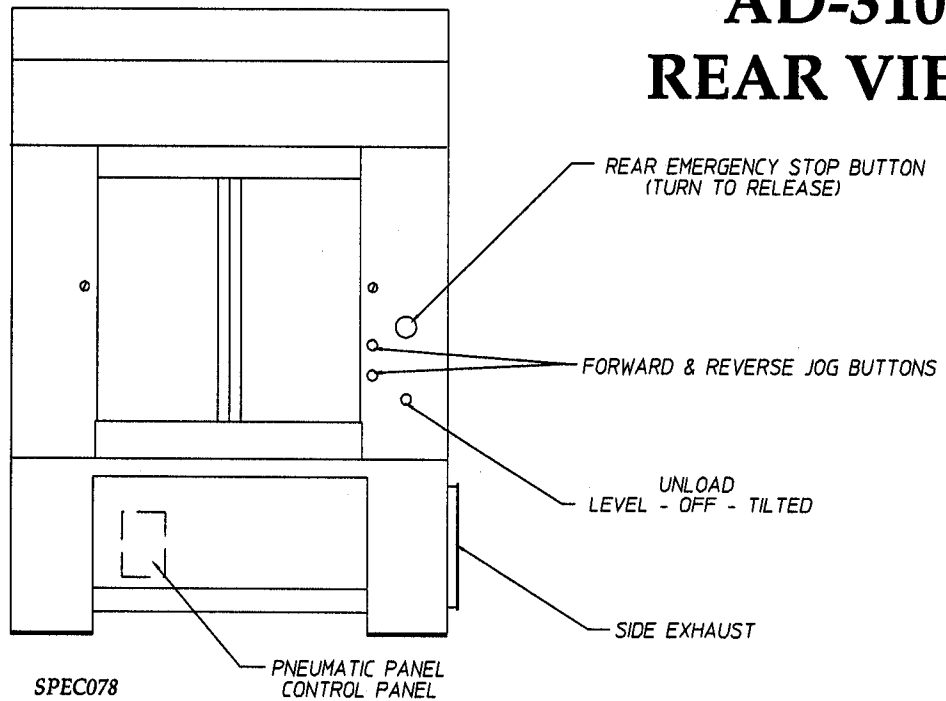
Only one selector switch can be operated at any one time.

For Example: For the front selector switch to operate, the rear selector **must be** in the "OFF" position. Likewise, for the rear selector switch to operate, the front selector **must be** in the "DRY" position.

AD-310 FRONT VIEW



AD-310 REAR VIEW



The "TILT OFF/ON" selector, located on the right front control panel (refer to the top illustration on page 3), is for enabling or disabling the front "LOAD/UNLOAD" functions;

i.e., "LOAD LEVEL" - "UNLOAD LEVEL"
"LOAD TILTED" - "UNLOAD TILTED"

In the "OFF" position the doors will open, however the machine *will not tilt*. Likewise, in the "ON" position, loading and unloading will occur in their respective tilt positions.

The AD-310'S Tilt / Auto Doors operate in the following manner:

- Associated doors **must be** open prior to tilting forwards or backwards.
- Associated doors **must be** closed prior to leveling the tumbler section.

IMPORTANT: The lint drawer **must be** closed prior to any tilting commands. Failure to close the lint drawer completely (to engage the lint drawer closed switch) will prevent any tilting command.

AD-310 DETAIL OPERATION INFORMATION

DRY ROUTINE

To dry material, the "LOAD-DRY-UNLOAD" selector switch **must be** in the Dry Position, and the Rear "UNLOAD" selector switch **must be** in the "OFF" position, the front and rear auto doors **must be** closed, and tumbler section level.

Once **ALL** these conditions are satisfied the Phase 5 microcomputer's keypad will respond to keystroke inputs and drying cycles can be selected.

Anytime the airjet signal is asserted the "END OF CYCLE" light will begin to flash once a second and remain on until either a "LOAD" or "UNLOAD" selection is made.

HEATER FAULT ROUTINE (Gas Models ONLY)

During a drying cycle the PLC monitors the status of the Phase 5's heat on/off signal, and the signals of the front and rear burner controllers to their respective gas valve.

Heater Fault Test Routine

- At the start of any "HEAT ON" signal of the Phase 5 computer, the PLC monitors the time between the "HEAT ON" and "GAS VALVE ON" signals. If the time between these two (2) signals is greater than 15 seconds a "HEATER FAULT" will occur.
- After the initial 15 second time difference monitoring routine, the PLC will then continue to monitor the "HEAT ON"/"GAS VALVE STATUS" for any malfunction of either the front or rear burners. If the heat signal is asserted and either or both gas valves are not engaged for more than three (3) seconds a "HEATER FAULT" will occur.

During a "HEATER FAULT" the following will occur:

- The "END OF CYCLE" light will begin to flash.
- The "HEATER FAULT RESET BUTTON" will begin to flash.
- The drying cycle will halt, and the Phase 5 computer keypad will not respond to any keyboard entries.
- Both "LOAD" and "UNLOAD" functions will not operate.
- The PLC will control the fan and tumbler causing the dryer to run a "COOL DOWN CYCLE" for two (2) minutes.
- The "HEATER FAULT RESET BUTTON" will not respond during "COOL DOWN CYCLE."

NOTE: If the lint drawer is opened during a "HEATER FAULT COOL DOWN CYCLE" the following will occur:

- The two (2) minute "COOL DOWN CYCLE" will stop.
- The "HEATER FAULT" flashing lights will reset.
- The Phase 5 keyboard and selector switches will be enabled.

"HEATER FAULT" indicates that there is a problem with one or both burners not igniting properly.

"HEATER FAULT" errors are caused by:

- Exhaust hi-limit switch open.
- Front or rear burner hi-limit switch open.
- Front or rear burner air flow switch open.
- Either no front or rear flame being sensed by their respective flame probes, caused by either no spark, faulty flame probe, faulty Direct Spark Ignition (DSI) module, or bad gas valve.

"HEATER FAULT RESET"

IMPORTANT: During a "HEATER FAULT" the fan and tumbler run a "COOL DOWN CYCLE" for two (2) minutes, the "HEATER FAULT RESET BUTTON" will not respond during the "COOL DOWN CYCLE."

- The "END OF CYCLE" and "HEATER FAULT" lights will stop flashing.
- The Phase 5 keyboard will respond to keystroke inputs, providing the machine is in the level position and doors are closed.
- The "LOAD" and "UNLOAD" functions will operate.

NOTE: If "HEATER FAULTS" continue to occur, troubleshooting of the heater section will be required. Refer to the system ladder diagram and related wiring diagrams for heater signal information.

FRONT "LOAD/UNLOAD" and REAR "UNLOAD" SELECTOR SWITCHES

IMPORTANT: Only one (1) selector switch can be operated at any one time.

For Example: For the front selector to operate, the rear selector switch **must be** in the "OFF" position. Likewise, for the rear selector switch to operate, the front selector switch **must be** in the "DRY" position.

FRONT LOAD/UNLOAD

"LOAD/UNLOAD" LEVEL

The "LOAD" or "UNLOAD" level selection will cause the following to occur:

- The "END OF CYCLE" light will stop flashing.
- The Phase 5 keyboard will become inactive.
- The front doors will open.

NOTE: The jog feature does not operate in the level position.

"LOAD TILTED"

The **"LOAD TILTED"** selection will cause the following to occur:

- The **"END OF CYCLE"** light will stop flashing.
- The Phase 5 keyboard will become inactive.
- The front doors will open.
- The tumbler section will tilt to the rear (front up).
- Once the tumbler tilts, the front jog functions will be enabled. The jog function allows one to jog the tumbler forward or reverse to load material into the tumbler.

"UNLOAD TILTED"

The **"UNLOAD TILTED"** selection will cause the following to occur:

- The **"END OF CYCLE"** light will stop flashing.
- The Phase 5 keyboard will become inactive.
- The front doors will open.
- The tumbler section will tilt to the front (rear up).
- Once the tumbler tilts, the front jog functions will be enabled. The jog function allows one to jog the tumbler forward or reverse to unload material from the tumbler.

"DRY"

If the machine is in the level position, the **"DRY"** selection will:

- Close the front doors.
- Enable the Phase 5 keyboard to respond to keypad inputs.

If the machine is in the tilted position, the **"DRY"** selection will:

- Close the front doors.
- Disable the front jog buttons.
- Level the tumbler section.
- Enable the Phase 5 keyboard to respond to keypad inputs.

REAR UNLOAD

"UNLOAD LEVEL"

The "UNLOAD LEVEL" selection will cause the following to occur:

- The "END OF CYCLE" light will stop flashing.
- The Phase 5 keyboard will become inactive.
- The rear doors will open.

| **NOTE:** The jog feature does not operate in the level position.

"UNLOAD TILTED"

The "UNLOAD TILTED" selection will cause the following to occur:

- The "END OF CYCLE" light will stop flashing.
- The Phase 5 keyboard will become inactive.
- The rear doors will open.
- The tumbler section will tilt to the rear (front up).
- Once the tumbler tilts, the rear jog functions will be enabled. The jog function allows one to jog the tumbler forward or reverse to unload material from the tumbler.

"OFF"

If the machine is in the level position, the "OFF" selection will:

- Close the rear doors.
- Enable the Phase 5 keyboard to respond to keypad inputs.

If the machine is in the tilted position, the "OFF" selection will:

- Close the rear doors.
- Disable the rear jog buttons.
- Level the tumbler section.
- Enable the Phase 5 keyboard to respond to keypad inputs.

OPTIONAL "END OF CYCLE ALARM TONE"

The *optional* "END OF CYCLE ALARM TONE" feature provides an audible signal that a drying cycle has ended, and that the material is ready for attention.

The *optional* "END OF CYCLE ALARM TONE" is a slow pulse alarm that starts at the end of a drying cycle and remains on for 30 seconds (or less), unless a "LOAD or UNLOAD" selection is made.

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