# Installation & Operation Manual

For ENERGENICS

Airwasher “Wet Type” Lint Filters

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Description of Lint Filter Operation

The dyers are vented to inlets (arranged per your order) on the upper half of the AIRWASHER. Immediately below each inlet is a “target spray outlet”. Recirculated water is pumped through a manifold under pressure to the spray pipes, each a full ¼" fully open. The water discharged from each pipe shoots at a “target” which disperses –splatters- the water up into the air stream of the dryer exhaust. The dryer exhaust passes through the water spray twice, as the water is splattered up, and as the water splashes down again, resulting in higher efficiency lint removal.

Immediately opposite the inlets is a curved baffle. This baffle turns the exhaust air, now full of wet lint, down into the conical bottom half.

The conical bottom is dimensioned to provide space to slow the exhaust below the velocity at which wet lint transported, so the wet lint tends to fall out of the air stream.

A tubular exhaust fan located on top of the AIRWASHER draws the exhaust up, out of the conical bottom through a space where the velocity is slowed still further. The AIRWASHER exhaust fan is sized to overcome the resistance to the airflow through the AIRWASHER; the dyer fans are responsible for overcoming the resistance in the dryer exhaust ducts.

The wet lint, being heavier than the air it displaces, tends to fall. The wet lint then impinges on the baffle and on the interior surfaces of the AIRWASHER. Water from the “target sprays” floods the entire interior and is washed down and out the bottom drain.

In the sump there are separation screens, which remove most of the lint from the water, so the water can be recirculated. There is a float assembly connected to your water supply to replace that quantity of water entrained in the air stream leaving the AIRWASHER.

The AIRWASHER may optionally include one barometric damper, to stabilize the negative pressure at the collector inlets regardless of the number of dryers operating. The barometric damper works like a one-way air valve between the atmosphere and inside the AIRWASHER, allowing air to rush into the AIRWASHER from atmosphere when dryers turn off, thereby preventing excessive vacuum on the dryers that remain operating. The barometric damper swings passively on a single hinge, and is maintenance free.
Receiving and Erection Requirements

RECEIVING

A. Inspect unit(s) inside and out for damage. Report any damages immediately to the delivering carrier. **THIS IS YOUR RESPONSIBILITY AND YOU MUST FILE ALL CLAIMS.** Please be certain you receive all the items on the Bill of Lading. Please send a copy of the Receiving Report.

B. The filter is fully assembled and shipped on its own pallet with the Target Spray Assembly and leg extensions.

C. The Reservoir Assembly and pump are shipped on one pallet.

D. The Fan is shipped units own pallet.

ERECTION

A. Determine the location with reference to minimum duct work to the tumbler, ease of access, and inspection. Minimize the requirement for the horizontal duct.

B. If Filter is located outdoors, allow for the possibility of freezing. If in a freezing environment, at the end of operation turn water pump off to allow water to drain into the reservoir which should be located inside.

C. Install fan on top of Airwasher with motor toward the outlet (rear) end to balance the entire Airwasher weight over the 4 legs (or, if optional horizontal outlet is ordered, install fan with motor hanging down and run a thick bead of rubberized caulk along the flanges to provide a watertight seal). Dryer ducts must have 5% downward slope into the filter per drawing #4005.1.

D. Raise unit onto leg extensions, level unit to within ½’ over the length of the unit, and bolt the feet to the base constructed by others.

E. If a Lint Bag is to be attached directly to the Filter, be sure the clearance Below is adequate for easy removal. If Lint Bag is to be downstairs from the Airwasher, connect 8’ PVC using a transition to 12’ lint outlet/drain.
Sheet Metal Requirements

SHEET METAL

A. Duct design is properly done by licensed professional engineers. Energenics accepts no responsibility or liability for duct design or installation.

B. For indoor installation all exhaust ducting must be properly sealed from the inside of unit (watertight).

C. The Airwasher inlet can accommodate up to 4-30' diameter ducts (inlet flanges and openings can be factory installed if requested). Duct each dryer duct must be sloped downward at a 5 degree minimum slope individually to Airwasher inlet to allow water to drain into the Airwasher. If you’re cutting your own inlet(s) into the Airwasher, place them as high as possible in the fiberglass inlet to have best filtering possible and properly seal each duct from the inside of the unit.

D. Provide clean outs in all horizontal ductwork. The booster blower in the Airwasher is designed to overcome the resistance inside the Airwasher itself and will not necessarily prevent lint fallout in horizontal ducts.

E. The length and size of the dryer exhaust ductwork should be per dryer manufacture’s recommendations. Use round duct for minimum pressure drop, minimum lint build-up and maximum strength. Do not use turning vanes in exhaust ductwork because of lint build up and consequent fire hazard. Use elbows with a radius of not less than 1.5 times the diameter of the duct.

F. Add at least 3 ft. of round exhaust duct to booster fan outlet to act as a guard.
**Plumbing & Electrical Requirements**

**PLUMBING**

A. Set reservoir in a position convenient for easy removal of lint bag.

B. Install Target Spray Manifold Assembly through the holes in the front of the fiberglass body of caulk around gaps between nozzle tips and fiberglass.

C. Use 1’ PVC pipe to connect pump pressure connection to Target Spray Manifold. Plastic shockproof flexible connectors have been provided on pump suction and pressure connections to protect the pump housing form stress or torque shock.

D. Connect ¾’ cold water to the float assembly coupling on the reservoir. Water fill should shut off at a level of 1’ below the overflow.

E. Connect ¾’ overflow to the 1 ½’ drain after the manual cock drain valve (valve by others).

F. Pump instructions were shipped with the pump.

**ELECTRICAL**

A. Consult the fan motor and pump nameplates for voltage and power requirements.

B. Provide circuit breakers and motor starters in a location convenient for daily on/off operation. Motor Starters are available from Energenics as an option.
AIR WASHER 6
Capacity: 7,500 CFM
Fan Diam: 27" OD
Fan Ht: 18"
Ship Wt: 630 LBS.

* per application

.specifications are subject to change without notice. fan specifications may vary with each application. contact energenics for certified specifications for specific jobs.
AIRWASHER 10/20

INSTALLATION REQUIREMENTS

DIMENSIONS AND ERECTION

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<th>AIRWASHER</th>
<th>WEIGHTS (LBS)</th>
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<tr>
<td></td>
<td>10,000</td>
<td>20,000</td>
</tr>
<tr>
<td>NOM CFM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAN DIA.</td>
<td>30&quot;</td>
<td>36&quot;</td>
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<tr>
<td>FAN HEIGHT</td>
<td>18&quot;</td>
<td>29&quot;</td>
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<td>OPT. FAN EXT.</td>
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SPAN (IN)

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<tr>
<th></th>
<th>AIRWASHER</th>
<th>SIZE 10 FAN</th>
<th>SIZE 20 FAN</th>
<th>RESERVOIR</th>
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<tr>
<td>SHIP OPER.</td>
<td>980</td>
<td>170</td>
<td>240</td>
<td>140</td>
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OPT. FAN EXT.

MOUNT UNIT
PLUMB & LEVEL

SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. FAN SPECIFICATIONS MAY VARY WITH EACH APPLICATION. CONTACT ENERGENICS FOR CERTIFIED SPECIFICATIONS FOR SPECIFIC JOBS.
SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. FAN SPECIFICATIONS MAY VARY WITH EACH APPLICATION. CONTACT ENERGENICS FOR CERTIFIED SPECIFICATIONS FOR SPECIFIC JOBS.
SLOPE EXHAUST DUCTS DOWN TOWARD AIR WASHER TO ALLOW BACKSPRAY TO DRAIN IN TO AIR WASHER. (SEAL DUCTS WATERTIGHT FOR AT LEAST 5' BEFORE INLETS).

*** FOR INDOOR INSTALLATION ALL EXHAUST DUCTING MUST BE PROPERLY SEALED FROM THE INSIDE OF UNIT. (WATER TIGHT)

1. TOTAL FRICTION LOSS OF EXHAUST DUCTS MUST NOT EXCEED LIMITS REQUIRED BY THE DRYER MANUFACTURER. THE AIR WASHER EXHAUST FAN IS DESIGNED TO OVERCOME THE INTERNAL RESISTANCE OF THE AIR WASHER.

2. PROVIDE CLEANOUTS IN ALL HORIZONTAL DUCTS.

3. BAROMETRIC DAMPERS CAN BE FACTORY INSTALLED IN THE AIR WASHER TO LIMIT THE SUCTION OF THE CONSTANT SPEED BOOSTER FAN ON THE DRYERS AS THEY TURN OFF.

NOTE: INLET MAY BE FLAT ACROSS ENTIRE FRONT - OR - END INLETS MAY BE ORDERED AT 45° ANGLE TO SIMPLIFY PIPING.

THE MAXIMUM SIZE COLLAR THAT CAN BE INSTALLED ON THE ANGLED SIDES ON A WASH 10/20 IS 24" DIAMETER.
UP TO 2 30" DIAMETER COLLARS CAN BE INSTALLED ON THE FRONT.
PLUMBING REQUIREMENTS

A. Set reservoir in a position convenient for easy removal of lint bag.
B. Install Target Spray Manifold Assembly through the holes in the front of the fiberglass body and caulk around gaps between nozzle tips and fiberglass using S.B.R.-100 caulk (furnished). Allow 24 hrs. to cure before use.
C. Use 1" PVC pipe to connect pump pressure connection to Target Spray Manifold.

D. Connect 3/4" cold water to the float assembly coupling on the reservoir. Water fill should shut off at a level 1" below the overflow.
E. Connect 3/4" overflow to the 1 1/2" drain after the manual cock drain valve (valve by others).
F. PUMP INSTRUCTIONS WERE SHIPPED WITH THE PUMP.
G. Pipe the 1 1/2" drain (8" on WASH - 10/20) directly to the sump. Avoid horizontal drain pipes, or slope them adequately.

Do not restrict Target Spray Assay. See pump outlet for pipe size.

* Items are to be supplied by installer.
INSTALL THE BAROMETERIC DAMPER WEIGHT. TO ADJUST THE WEIGHT ON THE BAROMETERIC DAMPER ACTIVATE ALL OF THE DRYERS AND BEGIN ADDING OR REMOVING THE WASHERS UNTIL THE DOOR BEGINS TO OPEN. AT THIS POINT THE WEIGHT IS PROPERLY ADJUSTED.

BAROMETERIC DAMPER

DAMPER WEIGHT

WASHERS

DRYER EXHAUST INLET

TARGET SPRAY MANIFOLD

SEAL THE TARGET SPRAY NOZZLES AND THE MANIFOLD MOUNTING BRACKET BOLTS WITH THE PROVIDED TUBE OF CAULK.
Options: Variable cfm fan
Barometric dampers to eliminate fan 'hunting'
Flow switch to prove pump prime
Automatic on/off control for both motors

Concrete pad dimensions = 6' x 11'
ENERGENICS AIRWASHER OPERATION AND MAINTENANCE INSTRUCTIONS

The Airwasher is designed and manufactured for the longest life of any water spray lint collector with the least maintenance required. This unique combination of longest life and least maintenance is achieved by:

1. Energenics Black Fiberglass body, seamless halves, and slick interior Surface.
2. Aluminum hardware except for 2’ x 3/16’ tubular steel frame.
3. No spray nozzles to become plugged.
4. Slow speed fan with DURPO® coated housing to prolong life in wet environment.

A. MANUAL OPERATION:
   1. Start the pump first (because it has lower power requirement).
   2. Start the fan next.
   3. At the end of operation, stop the fan first and then the pump.

B. MAINTENANCE- DAILY: Empty the linen bag.

C. MAINTENANCE- WEEKLY: Add ½ gallon bleach to reservoir to control algae and/or bacteria.

   **IMPORTANT!!!** REMOVE THE LINT BAG FROM THE RESERVOIR BEFORE ADDING BLEACH. FLUSH SYSTEM THROUGH WITH WATER BEFORE PUTTING LINT BAG IN RESERVOIR.

D. MAINTENANCE- MONTHLY:
   1. Check fan blade for Lint buildup and clean as necessary.
   2. Check interior for lint buildup and clean as necessary.

E. MAINTENANCE- QUARTERLY:
   1. Grease fan and pump bearings per manufacturer’s instructions.
   2. Clean out horizontal ductwork.