

**ACTISOL<sup>®</sup>**

**Commercial Unit (110 vac)  
B290400-18QD**

**OPERATING MANUAL**

# **ACTISOL<sup>®</sup> COMMERCIAL UNIT OPERATING MANUAL**

Thank you and Congratulations on your choice of the Actisol<sup>®</sup> Commercial Unit, a revolutionary insecticide delivery system that uniquely combines the technology of foggers, misters, refillable sprayers and prepackaged aerosols.

This refillable unit eliminates the need for costly prepackaged aerosols by mechanically generating the most optimum-sized, uniform insecticide particles. Its unique design allows you to treat more area per ounce than with pre-packaged aerosol products.

It's mobile, practical, and durable design makes it a valuable tool for all commercial accounts. In addition, it gives you the flexibility of using a variety of insecticides that are EPA approved for use in this type of equipment.

Best of all, the Actisol<sup>®</sup> Commercial Unit provides deep harborage insect control, something you won't get from pre-packaged aerosol products or conventional delivery systems. This system combines the right amount of insecticide with a high volume of moderately pressurized air to improve penetration through cracks and crevices to reach target insects deep within ceiling and wall voids. The Actisol<sup>®</sup> Commercial Unit eliminates insects in places other delivery systems can't even reach.

**Manufactured in the USA By:**

**Environmental Delivery Systems, Inc.  
314 Morningside Drive  
Friendswood, TX 77546**

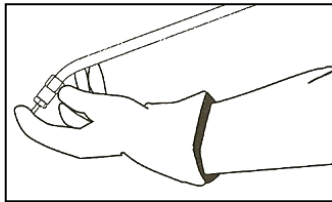
# OPERATING INSTRUCTIONS

## **Handle with care.**

Do not place the unit where vibration and surface conditions would allow it to fall. Keep the unit on the ground when in use.

## **Always wear personal protective equipment.**

When filling these units always wear protective eyewear and protective gloves. When operating these units, always wear protective clothing, eyewear, chemical resistant rubber gloves, and a respirator. Refer to the insecticide label for specific instructions and other precautions.



## **1. Prepare area to be treated.**

Refer to insecticide label for directions on proper preparation for area to be treated before operating this equipment. General preparation includes:

- A. Remove all people and pets from the area to be treated.
- B. Remove all food, dishes, silverware, utensils or similar items that could come into contact with the insecticide.
- C. Make sure all ventilation systems are turned off and windows are closed.
- D. Identify all areas where fire could result such as pilot lights or open flames.
- E. Make sure all aquarium filters and pumps are turned off and the tanks or ponds covered to prevent contamination.

## **2. Filter insecticide and fill tank.**

Turning counter clockwise remove fill cap (Item #75) from tank. Filter insecticide by pouring slowly into fill neck and through the 50 mesh drop-in tank filter (Item #74) to remove any debris that may clog or damage the Commercial Unit. **DO NOT OVERFILL. If tank is too full it will overflow when the system is back flushed, as recommended. For best results fill tank about 80% full.**

## **3. Replace fill cap.**

Turning the cap clockwise, hand-tighten until firmly secured.

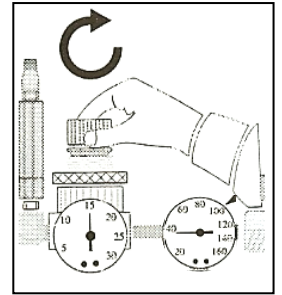
#### 4. Plug in / turn on power.

- A. Plug the Commercial Unit into a three-prong grounded, 110/115-volt electrical source. Use an additional three-prong grounded heavy-duty extension cord when operating this unit (Additional Cord Not Included).
- B. Remove red tip protector cap (Item #34 - not shown in diagram) from the tip of the wand.
- C. Switch the unit to the ON position using the ON/OFF switch (Item #79) located in the back of the unit on the right hand side.

#### 5. Adjust regulator.

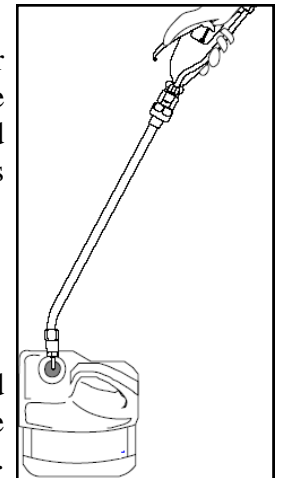
To adjust regulator (Item #43) start by unlocking the safety lock located on the adjustment knob by pulling up on the knob. If a red ring is present, lift up on the red ring to unlock. Turn the knob slowly clockwise until the 0-30 psi back mount gauge (Item #58) reads 17 - 20 psi.

**Note:** The higher the pressure on the 0-30 gauge, the larger the insecticide particles will be. A higher pressure will be required when working overhead (above 6-8 ft.) to compensate for the effects of gravity. Adjust in 1 or 2 lb. increments to achieve desired flow and particle size.



#### 6. Purge air bubbles.

Air pockets that develop may delay the shutoff of the aerosol after the trigger is released. To remove air pockets from the system turn the unit off, point the applicator tip into the original insecticide container, depress the trigger and wait until a pinstream flows from the tip. Hold for approximately 10 seconds to fully purge the system and allow for an uninterrupted pinstream.



#### 7. Turn the unit on to begin use.

At this point the air flows freely through the twin tubing to the wand and excess air is vented to atmosphere at the tip. Next, the air flows into the regulator which controls the pressure exerted on the liquid inside the tank. The liquid product then travels through the second line of the twin tubing to the wand.

#### 8. Apply insecticide.

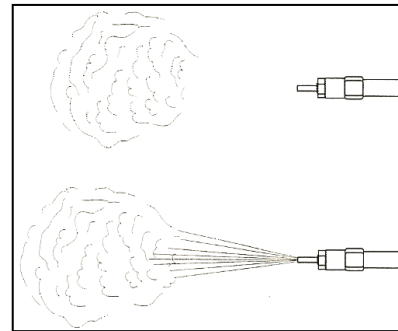
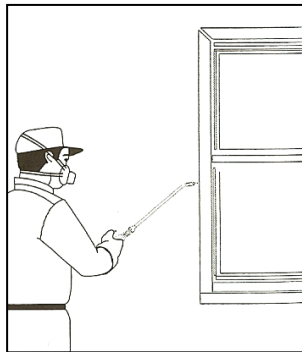
- A. Apply insecticide according to label instructions.
- B. Position the applicator tip on desired target.
- C. Depress the trigger to apply insecticide.

Always apply insecticide according to the label instructions. Position the applicator tip on the desired target and depress the trigger to apply insecticide. Releasing the trigger allows the unit's free airflow to push the already applied insecticide deeper into harborage areas.

The compressed air is environmentally safe and much more effective than chemical propellants. The free flowing air stream will also disturb target insects even without the use of liquid. The continuous free flowing air stream allows for deeper penetration of the target areas.

The comfortable precision wand is balanced, easy to use, and easy to maintain. This unique wand is based on a common industry design making it simple to repair with easy access to replacement parts.

**Note:** Releasing the trigger and holding the tip in place allows the unit's constant airflow to push the already applied insecticide into deep harborage areas. When performed properly this technique improves penetration and reaches target insects more effectively using less insecticide than required by other techniques.



**Helpful Hints:** Occasionally, when working overhead, the pressure exerted on the liquid tank by the regulator will not be sufficient to drive the liquid 8-10 feet above floor level. At this time, you need to increase the pressure on the liquid tank by adjusting the regulator clockwise to the point you receive the aerosol at the tip and at the height you desire to work.

When operating the Actisol® System particle size may vary with pressure, but not as much as you think. What actually occurs is a higher rate of flow. In other words, you are using more liquid than needed to produce aerosol. The aerosols that you've probably used in the past were driven by propellant. Therefore, you saw larger particles and most of the material that was visible was that of the propellant. The Actisol® System utilizes no propellant. All you are seeing is the pesticide that has been sheared into micron sized particles. 98% are in the 2.4 to 15 micron size range. By increasing the pressure on the liquid tank you only increase the flow rate. The result being, using more pesticide than is required to do the job.

## 9. Turn off unit / release pressure from tank.

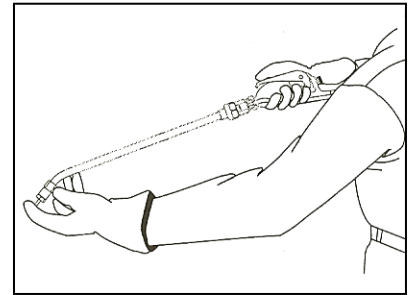
When necessary, switch the unit to the OFF position (Item # 79).

To relieve pressure in the tank, press down on the pressure relief valve (Item # 69) located on the top of the fill cap (Item # 75).

## 10. Back Flush System After Every Use to Remove Chemical From Wand and Hose.

**This procedure is highly recommended and is the most important maintenance you can do for your system.**

- A. Switch unit to the ON position (Item # 79).
- B. Turn regulator knob (Item # 43) counter clockwise until it stops.
- C. Relieve pressure in the tank by pressing down on the pressure relief valve (Item # 69).
- D. Unscrew fill cap (Item # 75) by turning counter clockwise and remove.
- E. Holding the wand over the tank, place gloved finger over integrated stainless crack & crevice tip (Item # 2) exit orifice, stopping the flow of air, then squeeze the application trigger (Item # 23) until liquid is purged from the wand and hose. You will hear a gurgling sound coming from the tank when the process is complete. This process should take about 10 seconds.
- F. Remove gloved finger from tip and release trigger.
- G. Switch unit to OFF position (Item # 79).
- H. Replace fill cap (Item # 75) and tighten.
- I. Position red tip protector cap (Item # 34) over tip of wand for transportation of unit.

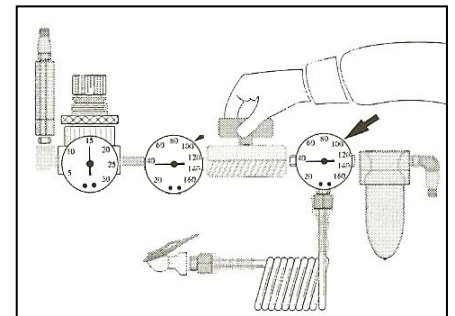


**Note: Back flush procedure should be performed after each use. This will help protect the polyurethane rubber hose in the wand (Item # 9) and the 50' red twin tubing (Item # 61) and prevents unwanted spillage during transportation.**

## 11. Using the air chuck.

The Commercial Unit is equipped with a 100 psi. capable air chuck (Item # 55) designed to pressurize a pneumatic duster, a compressed air sprayer fitted with an air valve (not included) and/or a tire of a service vehicle.

To use the air chuck the compressor (Item # 31) must be running. Turn the handle of the ball valve (Item # 59), located on the manifold (Item # 78), in the cross line position. The adjustable 100 psi relief valve (Item # 42) will relieve and produce a notable popping sound.



Fit the air chuck on the pneumatic pressure duster, compressed air sprayer (fitted with an air valve) and pressurize according to the equipment's operating instructions. You can watch

the pressure build on the 0-160 back mount gauge (Item # 56) and remove when desired pressure is reached.

**Note:** The pressure relief valve is adjustable and should be preset to desired maximum pressure prior to use. Factory setting is 80 psi.

## 12. Transporting the unit.

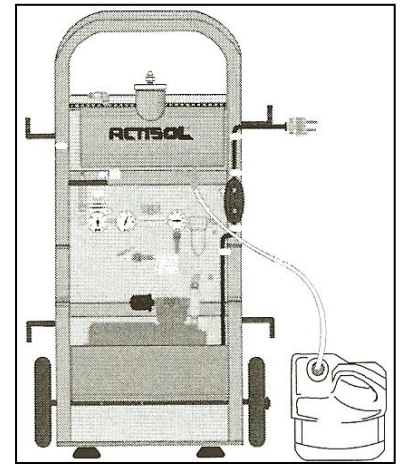
Wrap the red twin hose (Item # 61) around the units storage cleats located on each side of the cart. To prevent bending or kinking the hose, avoid wrapping the hose too tight. Transport the Commercial Unit in an upright position. Take care not to damage the integrated crack & crevice tip (Item # 2) by positioning the red tip protector cap (Item # 34) over tip of wand after every use.

## Draining the Tank & Back Flushing

### 1. Draining the tank.

*Drain the Commercial Unit's tank when changing insecticides or storing for an extended period of time.*

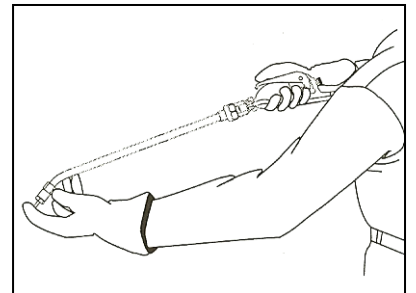
- A. Switch unit to the ON position (Item # 79).
- B. Turn regulator knob (Item # 43) clockwise until 0-30 psi back mount gauge (Item # 58) reads 10-15 psi.
- C. Place drain tube (Item # 38) extending from the drain valve, into original insecticide container.
- D. Turn handle on the tank drain valve assembly (Item # 64), it is located on the bottom right of the tank.
- E. Allow liquid to flow through tube into container until the tank is empty and air flows through the tube.
- F. Turn regulator knob (Item # 43) counter clockwise until it stops.



### 2. Back flushing the system will remove chemical from wand and hose.

*This procedure should be performed after each use. This will help protect the polyurethane rubber hose in the wand (Item # 9) and the 50' red twin tubing (Item # 61) and prevents spillage during transportation.*

- A. Place gloved finger over integrated crack & crevice tip (Item # 2) exit orifice, stopping the flow of air, then squeeze the application trigger (Item # 23) until liquid is purged from the wand and hose. You will hear a gurgling sound coming from the container and you will



see no more liquid traveling through the drain tube, only air will flow through drain tube when the process is complete. This process should take about 10 seconds.

- B. Remove gloved finger from tip and release trigger.
- C. Switch unit to OFF position (Item # 79).
- D. Replace fill cap (Item # 69) and tighten.
- E. Close the tank drain valve assembly (Item # 64).
- F. Position red tip protector cap (Item #34) over tip of wand for transportation of unit.

## **Diagnosis and Field Service**

### **1. The unit is running and air is flowing from the tip, but no chemical aerosol is being produced.**

- A. Make sure the tank contains insecticide.

Remove tank cap (Item # 75), inspect tank for liquid. If there is no liquid in the tank, fill at least 25%.

- B. Check 50' red twin tubing (Item # 61)) for kinks, crimps, twists, or other factors that would obstruct chemical flow to the wand.

Unwrap the hose to free from kinking, crimping or blockage.

- C. Check the 0-30 pressure gauge (Item # 58).

With the compressor running, it should read 17-20 psi.

- D. Be sure air pressure is reaching the wand tip.

You should be able to hear and feel air flowing from the tip of the wand.

- E. Check for liquid flow with no air flow.

Turn unit off, leave pressure in the tank, point the wand into the original insecticide container, and depress the trigger until a pinstream flows from the tip.

If a pinstream flows from the tip with the compressor off and the tank under pressure:

Remove integrated crack & crevice tip (Item # 2). Exit orifice should be maintained at .046" or use a drill bit #56. Drill exit orifice to resize.

*When used on abrasive surfaces the tip tends to close up reducing the amount of air that can escape resulting in excessive backpressure on the liquid.*



*Also, be sure that all orifices in the fluid cap (Item # 5) are free of debris. Replace tip assembly and follow operating instructions to generate aerosol.*

- F. If no liquid flow or pin stream, inspect fluid cap (Item # 5) by removing tip (Item # 2) and removing any debris from all orifices.

**2. The unit is running and the aerosol will not shut off at the tip when trigger is released.**

- A. Unit may have air pockets created by surfaces forcing air back into the tip during application.
  - a. To release air pockets depress trigger and hold while aerosol is released. You will see intermittent surges of aerosol, hold trigger until aerosol flows consistently without interruption.
  - b. Another method is to turn off the compressor and point tip into original insecticide container and squeeze trigger to produce a pin stream. Allow to flow until uninterrupted.
- B. Teflon seat (Item # 10) may be damaged or contain debris preventing positive shutoff.

First follow instructions for step number 10 of operating instructions to backflush liquid. Remove stainless airline (Item # 26) by removing compression nut at the elbow (Item # 32) to adapter body (Item # 8). Then remove adapter body (Item # 8) attached to valve body (Item # 12). Check exposed seat for debris, nicks, and scratches. Replace if necessary. Also inspect seat stem surface (Item # 24) for scratches or nicks. Replace if necessary.

**3. Airflow is low and aerosol is too heavy at normal 17 – 20 psi operating pressure.**

- A. Fluid cap (Item # 5) may be damaged.

Remove integrated crack & crevice tip (Item # 2). Inspect fluid cap (Item # 5) for cracks and debris around the air holes. The wheel should be stationary. It should not wiggle, spin or be crooked or smashed.

- B. Unit may be losing pressure due to a leak.

With pressure in the tank, turn unit off and inspect for leaks at the pressure relief valve (Item # 69) and the tank cap o-ring (Item # 70). With the unit running inspect the 50' red twin tubing (Item # 61) and entire wand in areas where air could escape, such as welds or fittings. Inspect for air leakage at the air chuck (Item # 55).

**4. While working with wand over-head air is flowing from the tip, but no chemical aerosol is being produced.**

- A. A higher liquid pressure is necessary when wand is higher than 6' from unit. To compensate simply adjust regulator (Item # 43) clockwise in one or two psi increments until desired flow is reached.

**Note:** When returning to ground level operations reduce pressure by turning regulator (Item # 43) counter clockwise and releasing pressure from the tank by pushing the button on the pressure relief valve (Item # 69) until reaching 17 - 20 psi on gauge.

***If none of these solutions corrects your problem, there may be something more serious wrong with the unit. For additional technical assistance please contact Environmental Delivery Systems, Inc. Technical Services Department.***

## **Insecticides**

### **1. Observe label directions.**

Do not operate the Actisol<sup>®</sup> Commercial Unit with insecticides not labeled for aerosol, fog or mist applications. Read the insecticide label to determine if the insecticide is EPA- approved for use in this type of equipment. Contact your chosen distributor for Information on insecticides currently labeled for use in equipment such as Actisol<sup>®</sup> Delivery Systems.



## **Parts**

Parts for the Actisol<sup>®</sup> Commercial Unit can be ordered through your chosen distributor. When ordering spare or replacement parts refer to the exploded diagram and the product codes on the parts list in this manual.

## **Service**

If the Actisol<sup>®</sup> Commercial Unit requires factory service be sure to drain the tank, back flush the wand and hose, and pack the unit in its original carton and packing material for shipping. If the original carton is not available, pack the unit a durable box and protect the unit as best you can. If using foam packing materials be sure to place the unit in a plastic bag before adding materials to carton.

Ship the unit with a description of the problem, a contact name and phone number, and a return shipping address to:

***Environmental Delivery Systems, Inc.***

314 Morningside Drive  
Friendswood, TX 77546

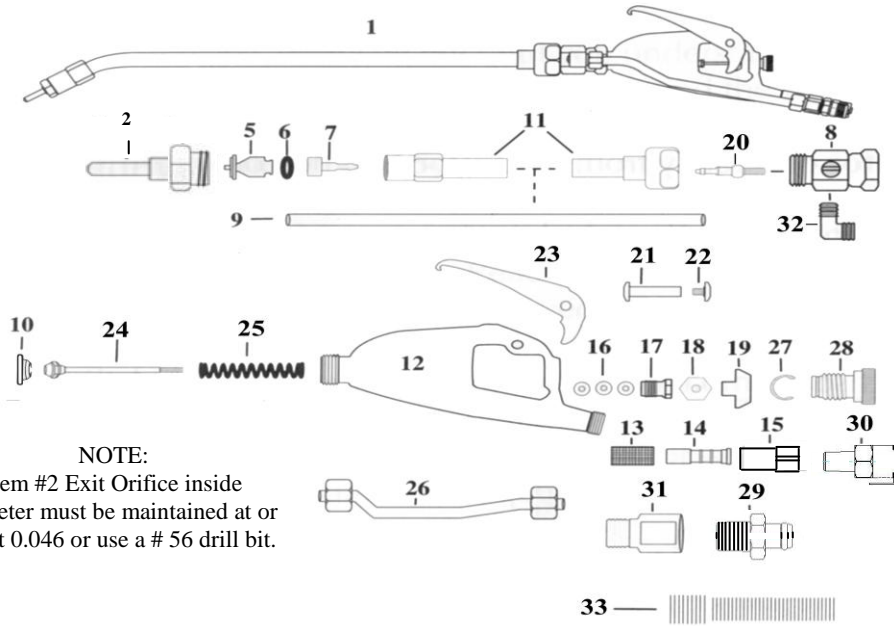
281-993-0019 – Phone

281-993-1112 – Fax

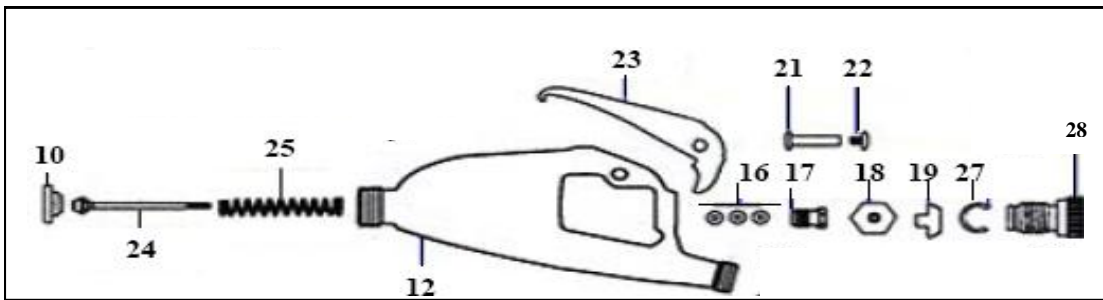
[www.actisol.com](http://www.actisol.com)

**Note:** Post warranty service will be billed for parts, labor, packaging (if needed), and freight.

# ACTISOL<sup>®</sup> WAND—18" Q.D.



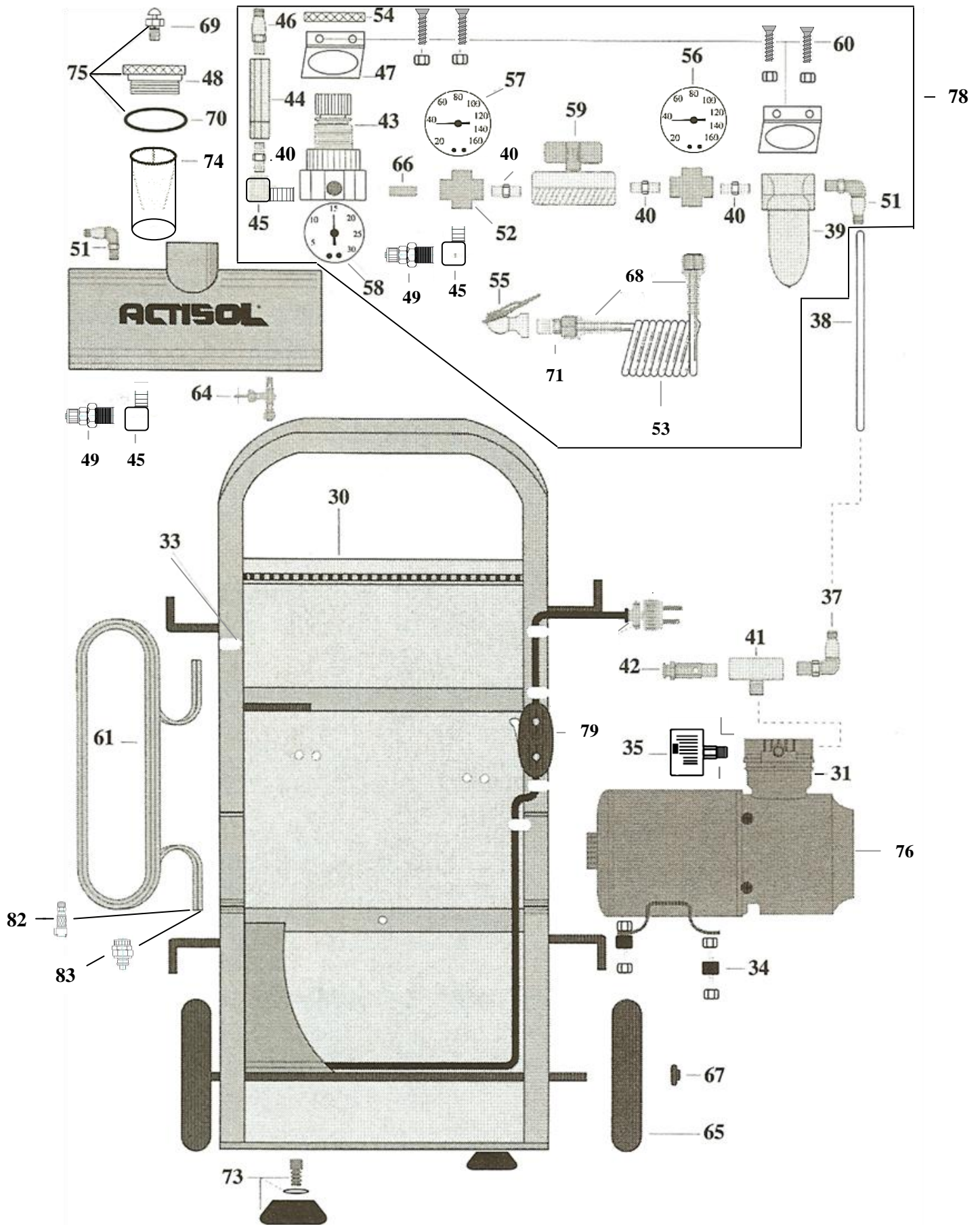
NOTE:  
 Item #2 Exit Orifice inside  
 diameter must be maintained at or  
 about 0.046 or use a # 56 drill bit.



## ACTISOL<sup>®</sup> WAND – 18” Q.D.

NO.	ITEM	DESCRIPTION
1	B290801	18” Wand Complete w / Q.D.’s
2	300183	Integrated Stainless Extended C & C Tip
5	30005	Stainless Fluid Cap
6	30006	“O” Ring for Fluid Cap
7	30007	Exit Hose Shank
8	30008	Adapter Body
9	30009-18	Poly Tubing for Wand - 18”
10	8010009	Teflon Seat
11	300011-18	Stainless Extension - 18”
12	8010011	Valve Body for Wand
13	8010013	Monel Screen 50m
14	8010014	Screen Support
15	8010015	Strainer Housing
16	8010016	Teflon Packing
17	8010017	Packing Screw
18	8010018	Lock Nut
19	8010019	Brass Nut
20	500019	Inlet Hose Shank
21	8010020	Screw Housing
22	8010021	Screw
23	8010022	Steel Trigger
24	300023	Stem Sub Assembly
25	300024	Spring Type 302-2
26	300026	Stainless Airline for Wand
27	300027	Snap Ring
28	300028	Safety Lock Screw
29	500103	1/8” NPT X Insert
30	500101	1/4” NPT X 1/4” Coupling SO
31	8010055	1/8” FNPT 1/4” Compression
32	8010061	1/8” NPT X 1/4” Compression Elbow
33	300076	Spring Guard for Wand
34	300093	Red Tip Protector Cap (Not Shown)
35	8010012	Valve Body Complete
Not Shown	500094	O Ring for Quick Disconnect

# ACTISOL® COMMERCIAL UNIT w / Q.D.'s EXPOLDED



## **ACTISOL<sup>®</sup> COMMERCIAL UNIT w / Q.D.'s EXPOLDED**

<b>ITEM #</b>	<b>CODE</b>	<b>DESCRIPTION</b>
30	8020030	Aluminum cart (w / tank)
31	8020040	Compressor
33	8010033	Plastic Hose Clamp
34	8020034	Compressor Mount Isolator (w / hardware) (each)
35	300133	Compressor Intake Filter Complete
37	8020037	1/4" NPT X 1/4" Tubing Swivel 90° PTL
38	8010038	1/4" Plastic Tubing
39	8010039	1/8" NPT Moisture Filter
40	8010040	1/8" Hex Nipple
41	8020041	1/4" Male Branch Tee
42	8020042	100 PSI Pressure Relief Valve
43	8010043	1/8" NPT Regulator
44	8020044	1/8" NPT Viton Check Valve
45	8010045	1/8" Street Elbow
46	8020046	1/8" NPT Male X 1/4" Tubing PTL
47	8020047	Manifold Mount Bracket (w / hardware)
48	300048	Threaded and Ported Tank Cap (specify coarse or fine thread)
49	8010049	1/8" Ferrules Tube Fitting
51	8020051	1/8" NPT X 1/4" Tubing Swivel 90° PTL
52	8020052	1/8" NPT Female Cross
53	8020053	Coiled Hose for Air Chuck
54	8010054	Regulator Mount Nut
55	8020055	1/4" Clamp on Air Chuck
56	8020056	Back Mount 0-160 Gauge
57	8020056	Back Mount 0-160 Gauge
58	8020058	Back Mount 0-30 Gauge
59	8020059	1/8" NPT On/Off Ball Valve
60	8020060	Manifold Mounting Kit (includes 2 brackets & 4 bolts w/ locknuts)
61	8020061	50' Red Twin Tubing
62	8020062	Bungee Cord w / hooks (Not Shown)
64	8020064	Tank Drain Valve Assembly
65	8020065	8" Wheel
66	8020066	1 1/2" Long Nipple
67	8020067	Wheel Cap Lock
68	8020068	Spring Guard (For Coiled Hose)
69	300063	1/8" NPT Push Button Pressure Release Valve
70	300070	O Ring for Tank Cap
71	8020069	1/4" NPT X 1/4" Compression
72	8020061	1/8" NPT X 1/4" Compression Elbow (Not Shown)
73	8010056	Shock Absorber Foot (w / hardware)

74	300064	Drop In Tank Filter
75	300075	Tank Cap Complete
78	8020075	Manifold Complete
79	8020082	Feed-Thru On / Off Switch
80	8020080	Box with Inserts (Not Shown)
81	300098	1/8" NPT X 1/8" HB – 90
82	500105	1/8" FTF X Coupling
83	500081	1/8" FTF X Insert S.O.



## **PRODUCT LIMITED WARRANTY**

Environmental Delivery Systems, Inc. and its products are warranted to be defect free in materials and workmanship under normal use, for a period of (1) year from the date of manufacture or (1) year of use, with proof of purchase. This limited warranty will not exceed (2) years, in any event.

Environmental Delivery Systems, Inc. shall not be liable for freight damage incurred during shipping. Package returns carefully. If the original carton is not available, pack the unit in a durable box and protect the unit as best you can. If using foam packing materials, be sure to place the unit in a plastic bag before adding materials to carton.

Environmental Delivery Systems, Inc.'s obligation under this warranty policy is limited to the repair or replacement of the unit. All returns will be tested per Environmental Delivery Systems, Inc. factory criteria. Units found not defective, under the terms of this limited warranty, are subject to the charges paid by the returnee.

Warranty replacement will be shipped on a freight allowed basis. Environmental Delivery Systems, Inc. reserves the right to choose the method of transportation.

This limited warranty is in lieu of all other warranties, expressed or implied, and no other person is authorized to give any other warranty or assume obligation or liability on Environmental Delivery Systems, Inc.'s behalf. Environmental Delivery Systems, Inc. shall not be liable for any labor, damage or other expense, nor shall Environmental Delivery Systems, Inc. be liable for any indirect, incidental or consequential damages of any kind incurred by the reason of the use or sale of any defective product or part.

### **Return Policy**

All units must be flushed of any chemicals before shipping. Carriers, including U.S.P.S., airlines, UPS, ground freight, etc. require specific identification of any hazardous materials to be shipped. Failure to do so may result in a substantial fine and/or prison term. Check with your shipping company for specific instructions.

All Units must be flushed of any chemical (ref. OSHA Section 1910.1200 (d)(e)(f)(g)(h)) and **NO** hazardous chemicals will be accepted for service or warranty consideration. Environmental Delivery Systems, Inc. reserves the right to request a Material Safety Data Sheet from the returnee for any product it deems necessary. Environmental Delivery Systems, Inc. reserves the right to "disposition as scrap" any products returned which contain unknown fluids. Environmental Delivery Systems, Inc. reserves the right to charge the returnee for all costs incurred for chemical testing and proper disposal of components containing unknown fluids. Environmental Delivery Systems, Inc. requests this in order to protect the environment and personnel from the hazards of handling unknown fluids.