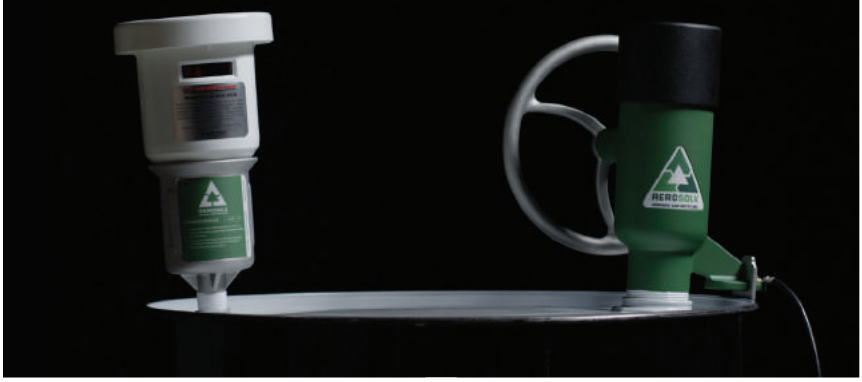
AEROSOLV®

AEROSOL CAN RECYCLING



AEROSOLV 360®

AEROSOL CAN RECYCLING

Made in the USA of US and imported parts

MODEL 360

TABLE OF CONTENTS
360 INSTRUCTION MANUAL

INTRODUCTION TO THE AEROSOLV 360®
AEROSOL CAN RECYCLING SYSTEM

The Aerosolv 360® Aerosol Can Recycling System simplifies aerosol can disposal, safely and efficiently. The new Aerosolv 360® is the benchmark product that has evolved from 21 years of designing; testing and manufacturing aerosol can recycling equipment, currently in use worldwide. The puncturing unit threads directly to the 2" bung of any 30-gallon or 55-gallon drum. Simply insert an inverted aerosol can into the Aerosolv 360® unit and close the hinged lid. By simply rotating the activation wheel, a specially designed hollow puncture pin pierces the can at the lowest possible point of puncture. The contents are dispersed down and directly into the receiving drum; the particulate laden propellant is coalesced in the first stage of the Aerosolv 360® filter providing propellant flow to the carbon cartridge. What's left is an aerosol can that is fully recyclable; eliminating an entire waste stream.

The result? Recyclable scrap steel.
After processing aerosol cans with the Aerosolv 360® system, you've got an empty steel can with a small, smooth-edged hole. No spills. No jagged edges. And, no compressed gas, so it's ready for recycling with other scrap steel.

SAFETY INSTRUCTIONS

1. Wear safety goggles while operating the Aerosolv 360® system.

2. DO NOT use Aerosolv 360® while smoking or near open flame.

3. Install anti-static wire to properly “ground” drum.

4. DO NOT use Aerosolv 360® on a drum with less than 30-gallon capacity.

5. Remove Aerosolv 360® to an empty drum once collection drum is 70% full (when contents reach within 10” of the top).

6. Always engage and secure the hinged lid to the rack before puncturing.

7. Always operate Aerosolv 360® System outdoors or in a well ventilated area. Propellant is heavier than air and may collect at point of generation.

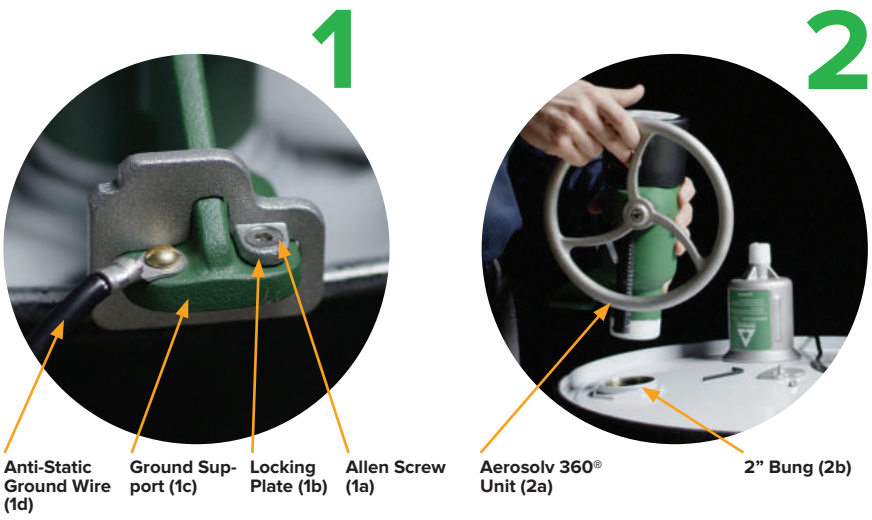
8. When venting operation is complete, secure “tamper proof” screw on rack and pinion to lock system out from unauthorized use.

9. Do not use the Aerosolv 360® unit for pesticides, herbicides, adhesives, or corrosive materials with pHs less than 2.0 or greater than 12.5 (i.e., Easy-Off®, corrosive acidic, and alkaline products). Comingling incompatible can contents can be hazardous. Operator must develop a segregation scheme to ensure safe operation and liquid collection. (See pages 11–15 for recommendations.)

10. Process like aerosol cans to the same collection drum for recycling (e.g., paints with paints, cleaners & degreasers with same).

AEROSOLV 360® UNIT INSTALLATION

Obtain a 30 or 55-gallon liquid collection drum, poly or steel, possessing two standard bungholes: one large 2” bung; and one small 3/4” bung. Select a receptacle that is compatible with the aerosol product to be captured and inspect the receptacle for deterioration or signs of breached integrity. Ensure the bung caps for each hole are in place. Remove the bung caps and store them in a safe place so that they may be used later.



1. Remove the tamper-proof allen screw(1a) from the ground support(1c) and slide off the locking plate(1b). See **Figure 1.**

2. Thread the Aerosolv 360® unit(2a) into the 2” bung(2b) as illustrated. Rotate clockwise until ground support plate firmly engages drum rim.
See **Figure 2**.

3. Slide locking plate(1b) back over ground support(1c) securing in place with the tamper-proof allen screw. See **Figure 1.**

4. Attach the anti-static ground wire[1d] to the ground support[1c] and secure alligator clip to any nearby confirmed ground source. See **Figure 1.** Electrical grounding must comply with the applicable state and federal regulations.

5. Thread the aluminum filter base with the attached activated carbon filter into the 3/4” bung of the liquid collection drum. Your system setup is now complete.

AEROSOL CAN PUNCTURING
USING THE AEROSOLV® TECHNOLOGY

1

Rotate activation wheel clockwise (forward) to raise top. Firmly lift lid and to the right. See **Figure 1**.

2

Insert aerosol can, **NOZZLE END DOWN**, into the Aerosolv 360® lower housing. Be sure to remove cap and nozzles from aerosol can prior to insertion. See **Figure 2**.

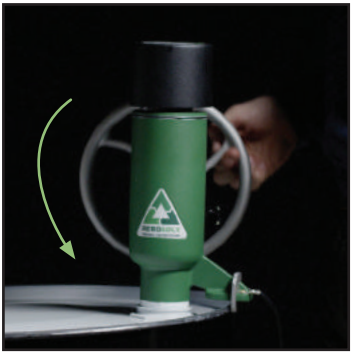
• If the can is taller than 10” remove magnetic height adapter by unscrewing it from the hinged lid. Keep the adapter close to the unit by magnetically attaching it to your drum.

3

Rotate the activation wheel, back toward operator, to lower lid over the o-ring seal depressing the aerosol can onto the two-way vent pin. Expelling propellant gas and liquid elements. **Hold activation wheel in place until aerosol can is fully depleted.** See **Figures 3 & 4**.

• The processing of cans 25% or less in original volume will take approximately 10 seconds.

4



When the aerosol can's contents have been completely discharged rotate activation wheel forward, and lift the lid to the right to remove the aerosol can. Some residual fluid may be entrapped between the lip of the can and the hole created by the puncturing device. Tip the can to allow the residual to discharge into the unit. A rag may be used to remove any remaining residual from around the can. Remove the can from the housing, lower lid to seal the collection drum, and manage the empty can appropriately.

AEROSOLV 360® MAINTENANCE

• Periodic greasing of the exterior o-ring will enhance smooth operation and maintain seal integrity.

Aerosolv Lubricating Grease

• Periodic inspection and cleaning of the two way vent pin will ensure top performance and unrestricted relief of propellant gas when recycling aerosol cans.

• To clean or replace the two way vent pin remove the system from the drum. Turn upside down for easy access to the vent pin. Using a 1/2” socket remove the pin. Using mineral spirits or acetone, soak the pin to clear any buildup of material on the center passageway. The pin is Teflon® coated making cleaning very simple.

Vent Pin Located at the Base of the Unit

• To replace the exterior o-ring; either cut or slightly pull out and roll up to remove. Replace new o-ring lightly greased in reverse of removal rolling it downward into the groove.

AEROSOLV 360® FILTER

ADSORPTION INDICATOR

When venting an aerosol can the activated carbon will generate heat as the granular carbon adsorbs the hydrocarbons. Typically 20-25 degrees above ambient temperature. This will activate the liquid crystal indicator to signal adsorption of VOC’s and will light ‘RED’ during the adsorption process. Returning to black when the adsorption process is complete. (Aerosol cans with 25% or less content may not activate indicator.)

FILTER MAINTENANCE

• Replace the activated carbon filter insert (inside upper portion) and the coalesceing filter with pull tab (inside lower housing) every 1000 cans or when the adsorption indicator no longer appears ‘RED’ when venting aerosol cans. More frequent change-outs may be necessary based on use and volume of the cans processed.

• To replace simply order Part #3602 – Filter Replacement Kit, which includes 2 internal coalescers and 2 activated carbon filter inserts. See Mile Marker Chart on page 10 for maintenance schedule.

HOW TO CHANGE OUT YOUR FILTER COMPONENTS

1

Remove the weather cap and place on drum. There is no need to remove the upper filter housing from the lower filter housing during this process. See **Figure 1**.

2

Remove the activated carbon filter insert. See **Figure 2.** Set the used filter aside to be disposed of in accordance to local, state, and federal laws. Check with local authorities having jursidiction.

3

Remove the internal coalescer using the pull tab from the aluminum base. See **Figure 3.** Visually inspect the base for any standing liquids. If liquid has collected in the base drain the contents following the instructions provided on the green lower filter housing label.

4

Reassemble your filter starting with the internal coalescer making sure you get a snug fit in the aluminum base. See **Figure 4**. Insert a new activated carbon filter, make sure you remove it from the shrink wrap and align the sight window with the adsorption indictor. See **Figure 5**. Finally, twist your weather cap back into place. See **Figure 6.**

5

6

•To restock order Part #3602 – Filter Replacement Kit

• Periodically check and empty the collected liquid content in the filter base if needed. To empty, remove the carbon filter housing from the aluminum filter base.

• Unscrew the filter base from the drum and carefully drain the collected liquids through the AEROSOLV housing directly into the drum.

MILE MARKER CHART

CAN COUNT	ROUTINE MAINTENANCE & FILTER CHANGES
1000	Replace Activated Carbon Cartridge and internal coalescer
2000	Replace Activated Carbon Cartridge and internal coalescer - check aluminum filter base for collected liquids
3000	Replace Activated Carbon Cartridge and internal coalescer
4000	Replace Activated Carbon Cartridge and internal coalescer - check aluminum filter base for collected liquids
4500	At this point a 55 gallon drum should be 75-80% full and ready for handling. Reset the counter. Mount the Aerosolv 360® system and new combination filter onto an empty drum. Depending on wear, replace housing o-ring, clean out the system including the filter base, reapply PTFE tape to the threads, and lubricate the rack gear.

DRUM CAPACITY DETERMINATION

The volume of liquid accumulating in the liquid collection drum should be noted prior to commencing operations. Procedures for determining when the collection receptacle is full are as follows:

1. Using the drum capacity tool provided with your system follow steps 2 through 6.
2. Remove the weather cap and place on drum. There is no need to remove the upper filter housing from the lower filter housing during this process.
3. Remove the activated carbon filter insert as well as the internal coalescer using the pull tab from the aluminum base.
4. Carefully drop the drum capacity tool into the filter hosing through the hole that is now visible allowing disc to rest on the filter housing.
5. Slowly raise the tool and inspect it to determine whether liquid has reach the end of the rod.
6. If the liquid level in the collection container actually reached the end of the rod when submerged, secure the container, wipe off the tool using the rag, and call for pick up. If the liquid level has not yet reached the ruler, continue to puncture aerosol cans in accordance with the Aerosolv 360® manufacturer's operation and maintenance instructions. Repeat steps 2 through 6 to check the liquid level every 500 cans.

TABLE 1-1
SAMPLE AEROSOL CAN SEGREGATION SCHEME

AEROSOL TYPES	COMMON EXAMPLES
1- Ignitable solvent product w/flammable propellant	Prestone® Starting Fluid, Keen Limited® Zeus® Butane, Malter® Dimethylsilicone Lubricant Compound, Liquid Wrench®, WD-407
2- Hydrocarbon product w/flammable propellant	OMC® Anticorrosion Spray, Sprayon® Gear Lube, Panef® Lubricant with Teflon®, Zep® Cutting Oil, Solid Film Lubricant, Penetrating Fluid
3- Halocarbon product w/flammable propellant	Freon 114, Degreaser
4- Halocarbon product w/nonflammable propellant	Dichlorotetrafluoroethane, Freon 113, Berryman® Brake Cleaner
5- Hydrocarbon product w/nonflammable propellant	Nut Buster® Penetrating Oil, Corrosion Preventative Compound, General Purpose Lubricating Oil
6- Toxic constituent containing product w/ flammable propellant	Enforcer® Wasp and Hornet Killer, D-trans Allethrin
7- Toxic constituent containing product w/ nonflammable propellant	PT 270 Dursban®, PT 515 Wasp Freeze®, PT-240 Perma Dust®, PT-279 Engage7
8- Corrosive product with flammable propellant: 8A: Acidic Product 8B: Alkaline Product	Easy Off® Oven Cleaner, Degreaser
9- Corrosive product with nonflammable propellant: 9A: Acidic Product 9B: Alkaline Product	Oven Cleaner, Degreaser
10- Non-toxic product with flammable propellant	Lemon Pledge®, Glade® Air Freshener, Pam® Coating
11- Listed product with flammable propellant	Block Cleaner, Hi-Tech Safety Solvent® 1,1,1-trichloroethane, Sprayon® 1,1,1- trichloroethane
12- Listed product with nonflammable propellant	Bulk Chemical® 1,1,1-trichloroethane technical, Plaze Inc.® 1,1,1-trichloroethane technical
13- Paints with flammable propellants	Krylon®, Pittsburgh®
14- Adhesives with flammable propellants	Super 7® Adhesive Spray®, 99MA High Tack Spray-AGasket 800657

TABLE 1-2
RECOMMENDED AEROSOL PRODUCT CONSOLIDATION SCHEME

CONSOLIDATION FAMILY	AEROSOL TYPES INCLUDED IN FAMILY	RATIONALE FOR CONSOLIDATING TYPES
1- POL: Petroleum, Oil, and Lubricants	(2) Hydrocarbon product/ flammable propellant (15) Hydrocarbon product/ nonflammable propellant	Recovered POL can be recycled and used for fuel blending. Propellants captured from POL aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as non-regulated refuse.
2- Paints	(13) Compatible paints	Paints are recovered and stored in appropriate containers. Recovered paints are managed as hazardous wastes and either recycled or transferred to an appropriate treatment facility. Propellants captured from paint aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as non-regulated refuse.
3- Adhesives	(14) Compatible adhesives	Adhesives are recovered and stored in compliant containers. Recovered adhesives are managed as hazardous waste and either recycled or transferred to an appropriate treatment facility. Propellants captured from adhesive aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as non-regulated refuse.
4- Compatible Alkaline Cleaners	(8B) Corrosive product/ flammable propellant (9B) Corrosive product/ nonflammable propellant	If compatible, aqueous alkaline products from aerosol cans are recovered and consolidated with similar products. These materials can be transferred to an appropriate treatment facility. Propellants captured from these aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as nonregulated refuse.
5- Compatible Acidic Cleaners	(8A) Corrosive product/ flammable propellant (9A) Corrosive product/ nonflammable propellant	If compatible, aqueous acidic products from aerosol cans are recovered and consolidated with similar products. These materials can be transferred to an appropriate treatment facility. Propellants captured from these aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as nonregulated refuse.

TABLE 1-2 (CONT'D)
RECOMMENDED AEROSOL PRODUCT CONSOLIDATION SCHEME

CONSOLIDATION FAMILY	AEROSOL TYPES INCLUDED IN FAMILY	RATIONALE FOR CONSOLIDATING TYPES
6- Halocarbon Solvent	(3) Halocarbon product/ flammable propellant (4) Halocarbon product/ nonflammablepropellant	Recovered halocarbon solvents may be distilled and reutilized or transferred to an appropriate treatment facility. Propellants captured from halocarbon aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges areproperly disposed of as non-regulated refuse.
7- Ignitable Solvents	(1) Ignitable solventproduct/ flammablepropellant	Recovered ignitable solvents may be distilled and reutilized, recycled as fuel, or transferred to an appropriate treatment facility. Propellants captured from these aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as non-regulated refuse.
8- Listed Products	11) Listed product/ flammablepropellant (12) Listed product/ nonflammable propellant	Listed products may be distilled and reutilized, recycled, or collected in isolatedvessels and managed as listed hazardous wastes. Propellants captured from these aerosol cans are adsorbed on the activatedcarbon filter. Saturated activated carboncartridges are properly disposed of as non-regulated refuse.
9- Toxic Products	(6) Toxic product/ flammablepropellant (7) Toxic product/ nonflammable propellant	Toxic products are either recycled or managed as hazardous waste and transferred to an appropriate treatment facility. Propellants captured from these aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as non-regulated refuse.
10- Non-Toxic Products	(10) Non-toxic product/ flammable propellant	Non-toxic products are managed appropriately. Propellants captured from these aerosol cans are adsorbed on the activated carbon filter. Saturated activated carbon cartridges are properly disposed of as non-regulated refuse.

TABLE 1-3
AEROSOL CONSOLIDATION CLASSES

CONSOLIDATION FAMILY	AEROSOL TYPES INCLUDED IN FAMILY	RATIONALE FOR CONSOLIDATING TYPES
1- Petroleum Hydrocarbons (non-halogenated)	(1) POL (2) Paints1 (7) Ignitable Solvents (8) Listed Products[2] (9) Toxic Products[3] (10) Non-Toxic Products[3]	See Footnotes 1, 2, and 3
2- Resinous Materials	(3) Adhesives	Adhesives and other resinous coagulating materials tend to diminish the quality of otherwise recyclable solvent products. Further, these products accelerate the deterioration of process equipment.
3- Aqueous Liquids	(4) Alkaline Cleaners[4] (5) Acidic Products[4] (9) Toxic Products[5] (10) Non-Toxic Products[5]	See Footnotes 4 and 5
4- Halocarbon Solvents	(6) Halocarbon Solvents	Many petroleum products cannot be recycled when contaminated with halocarbons. Though, halocarbon solvents are compatible with and can typically be commingled with other petroleum products and solvents.
5- Alkaline Products	(4) Corrosive	Alkaline Products Alkaline products potentially present a threat of heat generation through acid-base or oxidation-reduction reactions.

1 Paints may either be consolidated separately or consolidated with other petroleum and petroleum-based products. If the resulting waste is going to be incinerated or fuel blended (provided the paint solids do not compromise the quality of the mixture), the paints may be consolidated with other products. If the resulting waste is to be recycled or otherwise utilized, the paint should be managed independently.

2 Listed petroleum and petroleum-based wastes may be commingled with other petroleum products if the resulting mixture is characterized in accordance with the Mixture and Derived from Rules (40 CFR, '261.3), and if the mixture will be either incinerated or fuel blended. Listed wastes may not be commingled with other wastes if the resulting mixture is not characterized and managed as a listed hazardous waste.

3 Toxic and non-toxic petroleum products may be commingled with other petroleum products unless the resulting mixture is intended for specific recycling or reuse efforts and the addition of these products significantly diminishes the quality of the final product. Non-petroleum products may not be commingled with petroleum products.

4 Aqueous acidic and alkaline products whose pH remains between 4.0 and 10.0 may be commingled as long as the constituents that comprise the solutions are compatible. Products exhibiting pHs significantly greater than 10.0 or less than 4.0 should not be commingled. Additionally, non-aqueous solutions should not be commingled with aqueous solutions.

5 Aqueous toxic and non-toxic products may be commingled with other aqueous wastes provided the constituents that comprise the products are compatible with each other. The characterization of the resulting mixture must be similar to that of the products prior to introduction.

TABLE 1-4
AEROSOL CLASS COMPATIBILITY CHART

	petroleum hydrocarbons	resinous materials	aqueous liquids	halocarbon solvents	alkaline products	acidic product
petroleum hydrocarbons	yes	yes[6]	yes[7]	yes[6]	no[8]	no[8]
resinous materials	yes[6]	yes	no[9]	yes	no	no
aqueous liquids	yes[7]	no[9]	yes	yes[10]	yes	yes
halocarbon solvents	yes[6]	yes	yes[10]	yes	no[11]	no[11]
alkaline products	no[8]	no	yes	no[11]	yes	no
acidic product	no[8]	no	yes	no[11]	no	yes

TABLE 1-5
AEROSOL CLASS CONSOLIDATION CHART

	petroleum hydrocarbons	resinous materials	aqueous liquids	halocarbon solvents	alkaline products	acidic product
petroleum hydrocarbons	yes	no	no	no	no	no
resinous materials	no	yes	no	no	no	no
aqueous liquids	no	no	yes	no	no	no
halocarbon solvents	no	no	no	yes	no	no
alkaline products	no	no	no	no	yes	no
acidic product	no	no	no	no	no	yes

6 Refer to recommended consolidation chart.

7 Petroleum hydrocarbons are compatible with but not typically soluble in aqueous liquids. Refer to recommended consolidation chart.

8 Petroleum hydrocarbons and corrosive materials are typically compatible. However, some corrosive matrials are incompatible with petroleum hydrocarbons. As such, for purposes of simplicity, this chart recommends not commingling the two.

9 Some resinous materials react adversely with water. This chart reflects conservative management.

10 Halocarbons are compatible with but not typically soluble in aqueous liquids. Refer to recommended consolidation chart.

11 Halocarbon solvents and corrosive materials are typically compatible. However, some corrosive materials are incompatible with halocarbons. As such, for purposes of simplicity, this chart recommends not commingling the two.

MAINTENANCE LOG

DATE	NAME	MAINTENANCE PERFORMED

NOTES

AEROSOLV® AEROSOL CAN RECYCLING

888-818-7114

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