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Portable Aerosol System

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2019

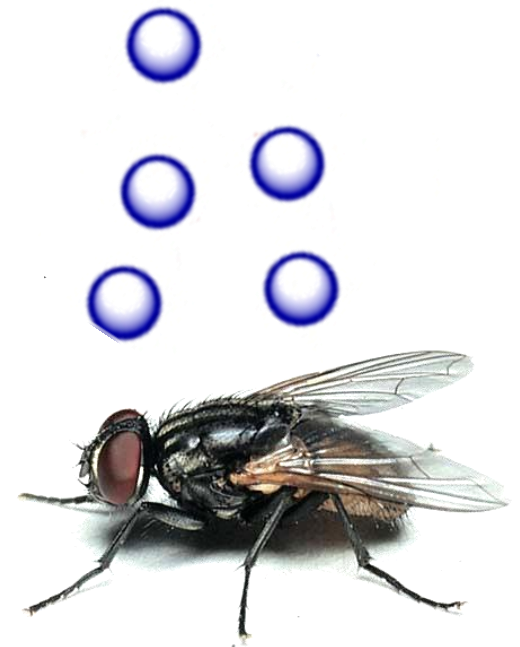
Portable Aerosol System



- Portable delivery system for applying a range of droplet sizes...and uses

Aerosol Droplets

- Consider **three** things when using aerosol application equipment:
- **Droplet size**
- **Droplet spray pattern**
- **Lethal dose**



Droplet Size



Thermal

Thermal foggers
produce droplets
10 μm or less

Aerosol

Cold foggers



Aerosol sprayers
produce droplets
50 μm or less

Droplet Spray Pattern



PAS aerosol spray pattern has a range
of small and large droplets

Droplet Size / Lethal Dose

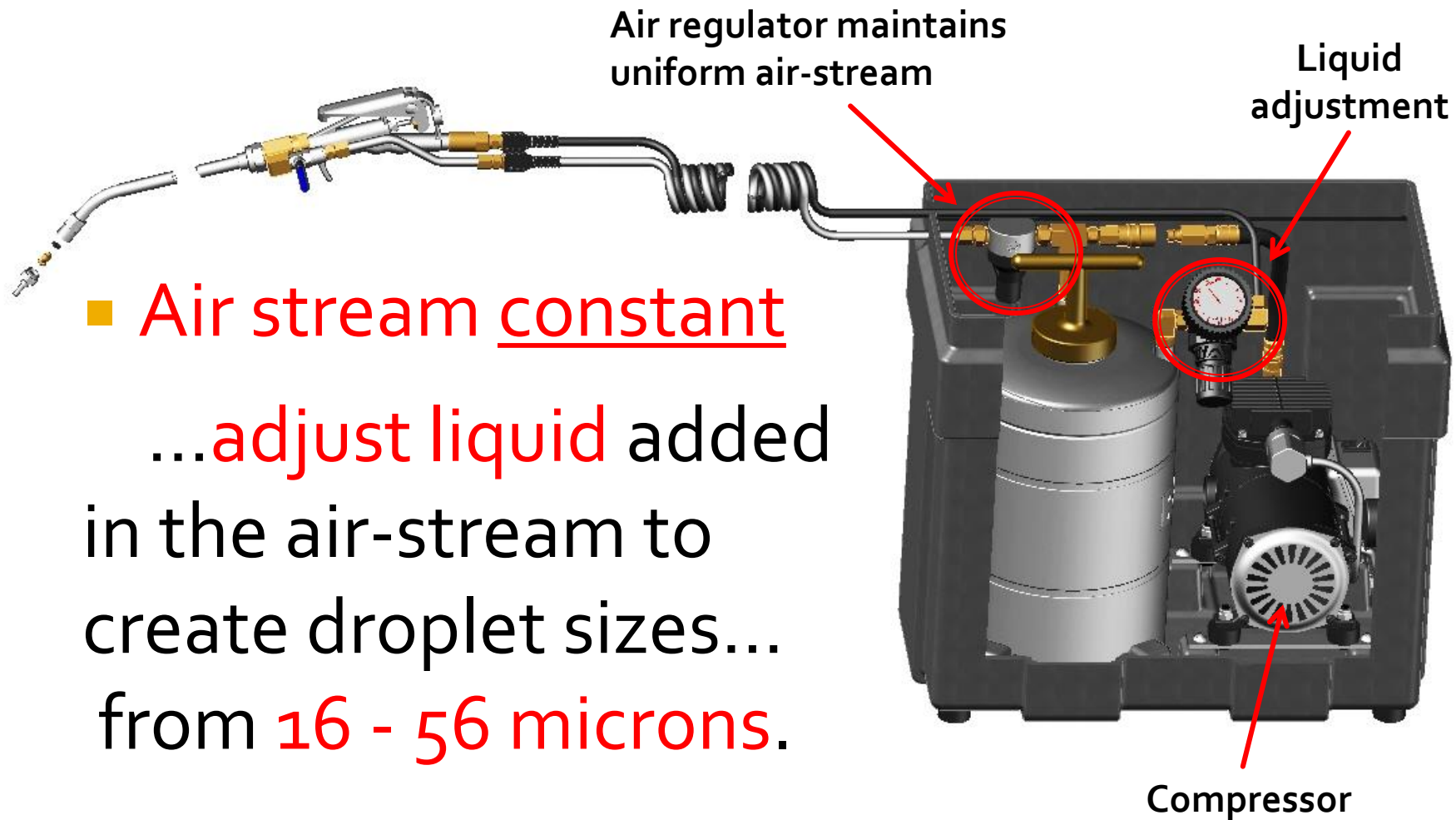
- **Lethal dose:** amount of insecticide in a single droplet that kills the target pest
- Lethal dose for a mosquito is less than for a house fly



3.5 x the volume

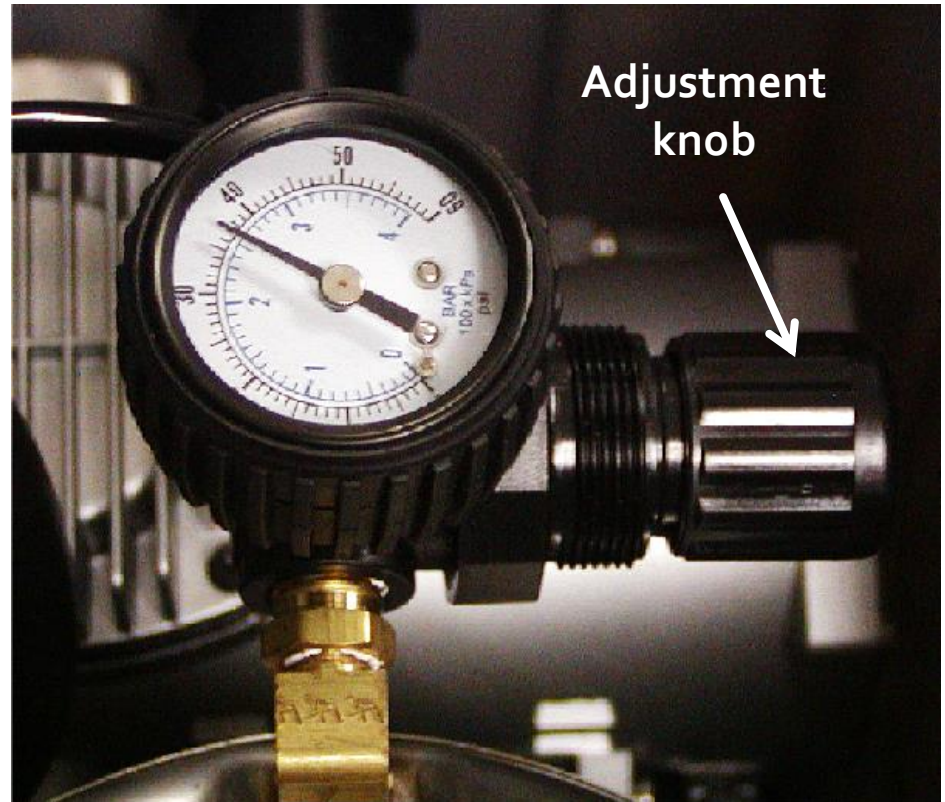


How It Works

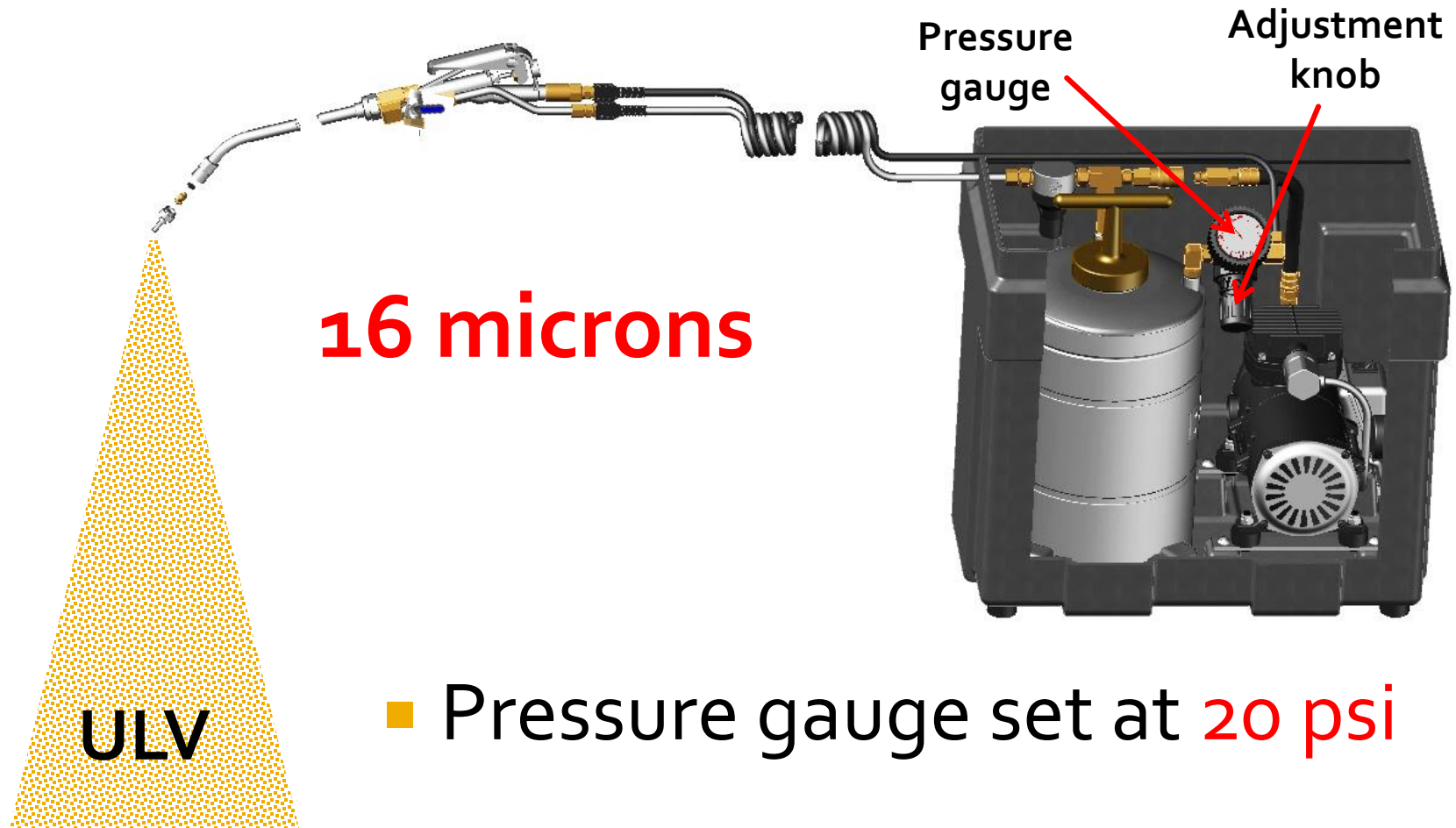


How It Works

- Flow rate and droplet size can be changed with the **adjustment knob**



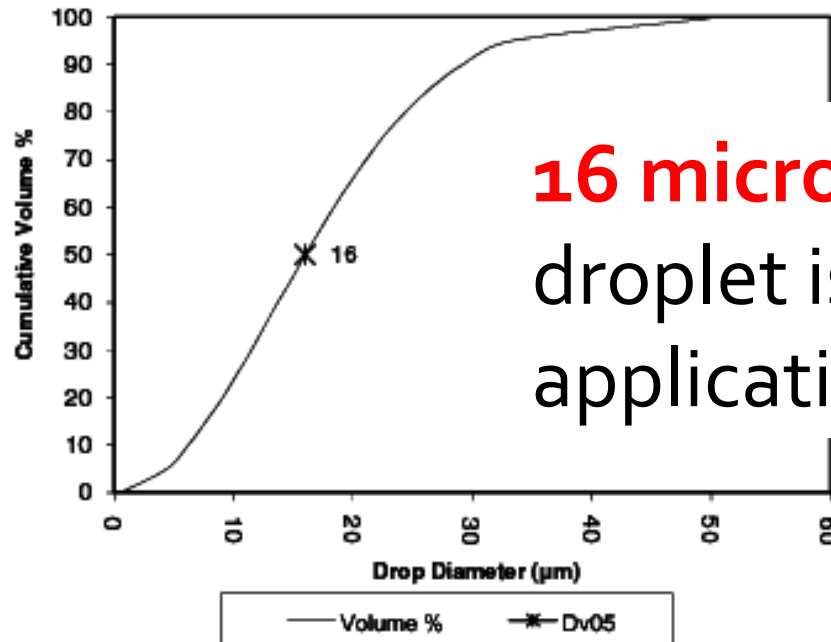
ULV Application: **16 μm**



Drop Size Distribution

Nozzle ID: 1/4J-SU11 Air Atomizing Nozzle	Liquid	Pressure: 20 psi
Spray angle: 45°	Gas	Pressure: 30 psi
Analyzer: PDPA System 100 (3750 µm max)		
Sampling Method: Flux (temporal) spatially corrected		
Note: All values computed utilizing the procedures for determining spray characteristics as outlined by ASTM (standard E799)		

Diameter (µm)	Volume (%)	Number (%)
1	0.10	0.00
4	5.00	83.77
6	10.00	89.73
8	15.00	92.32
9	20.00	93.81
10	25.00	94.80
12	30.00	95.53
13	35.00	96.08
14	40.00	96.52
15	45.00	96.87
16	50.00	97.17
17	55.00	97.43
18	60.00	97.65
20	65.00	97.85
21	70.00	98.04
23	75.00	98.22
24	80.00	98.39
27	85.00	98.57
29	90.00	98.78
33	95.00	99.06
51	99.90	100.16

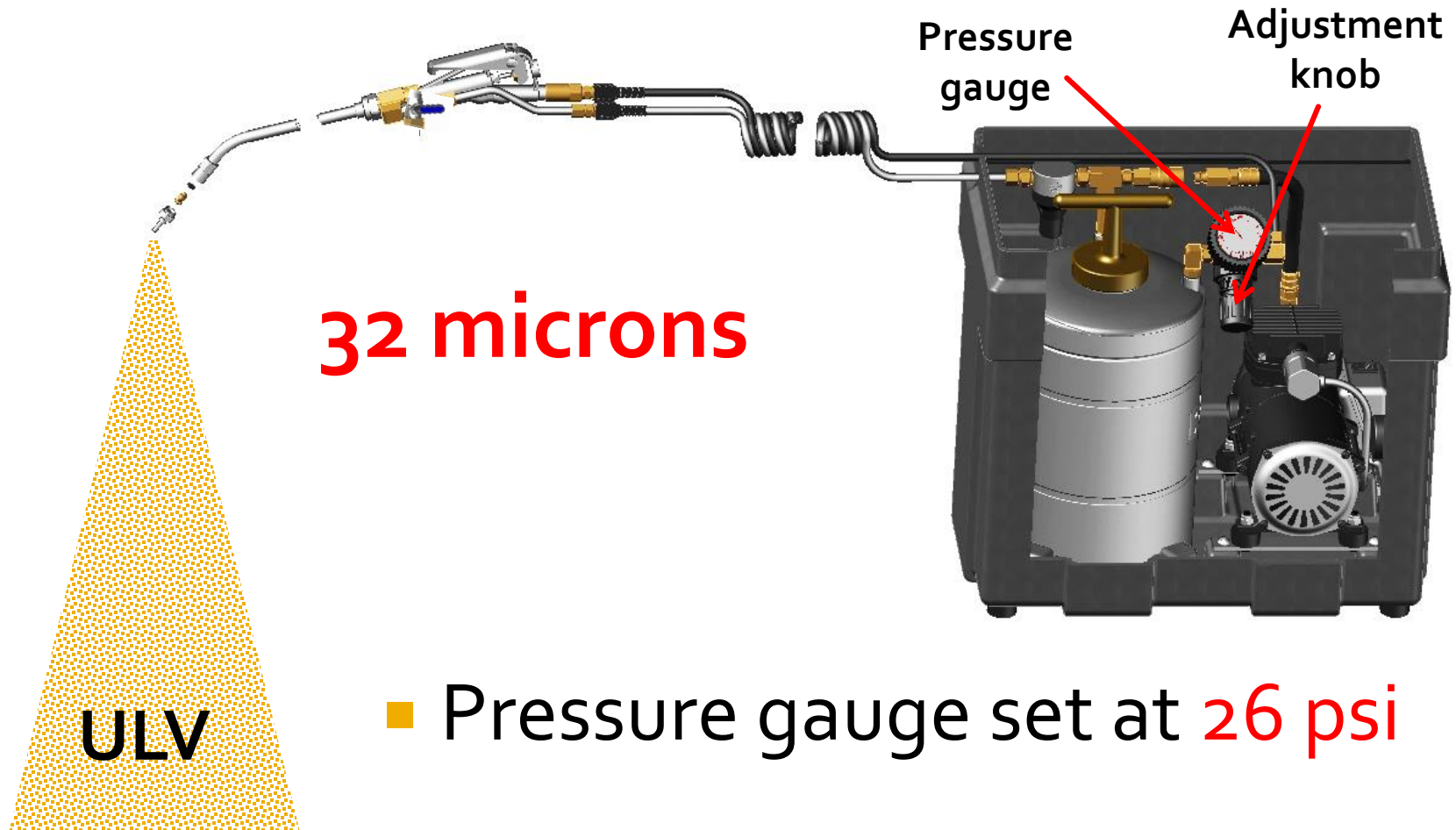


Mean diameters and distribution parameters

Arithmetic mean (D_{10}):	3 µm	Volume median diameter ($D_{V0.5}$):	16 µm
Surface mean (D_{20}):	4 µm	Number median diameter ($D_{N0.5}$):	2 µm
Volume mean (D_{30}):	6 µm	$D_{V0.1}$:	6 µm
Surface-diameter mean (D_{21}):	6 µm	$D_{V0.9}$:	29 µm
Evaporative mean (D_{31}):	8 µm		
Sauter mean (D_{32}):	11 µm	Relative span factor (RSF):	1.43
Herdan mean (D_{43}):	17 µm	Coefficient of variance (CV):	8.6

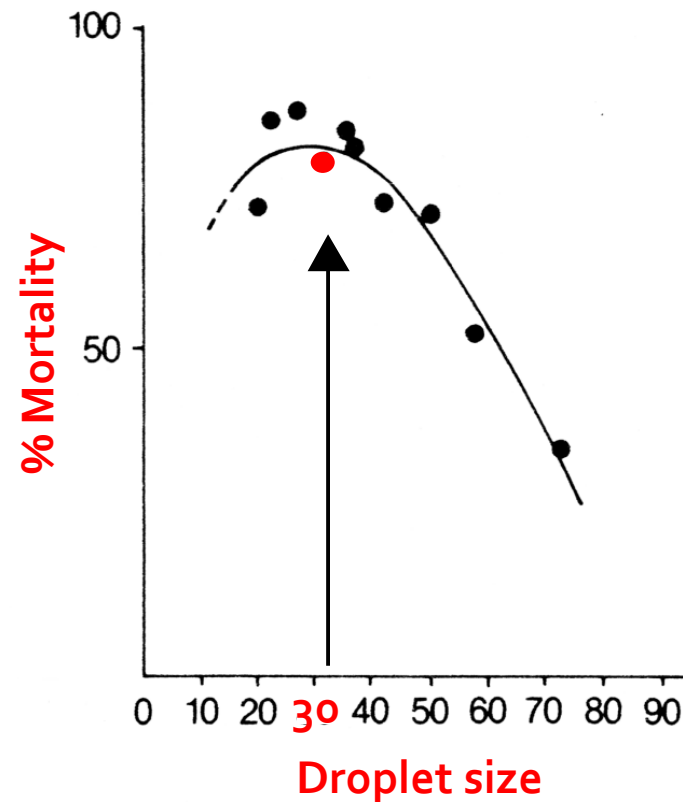
This information is based on spraying water at room temperature under laboratory conditions and should only be considered as an approximation

ULV Application: 32 μm



Adult House Fly Control

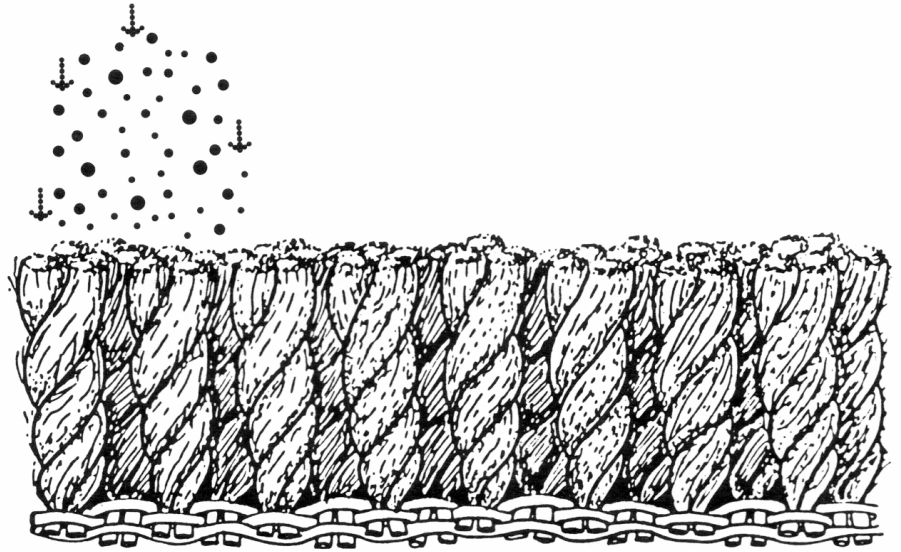
30 to 35 micron
droplets provide
best contact and kill
of adult house flies



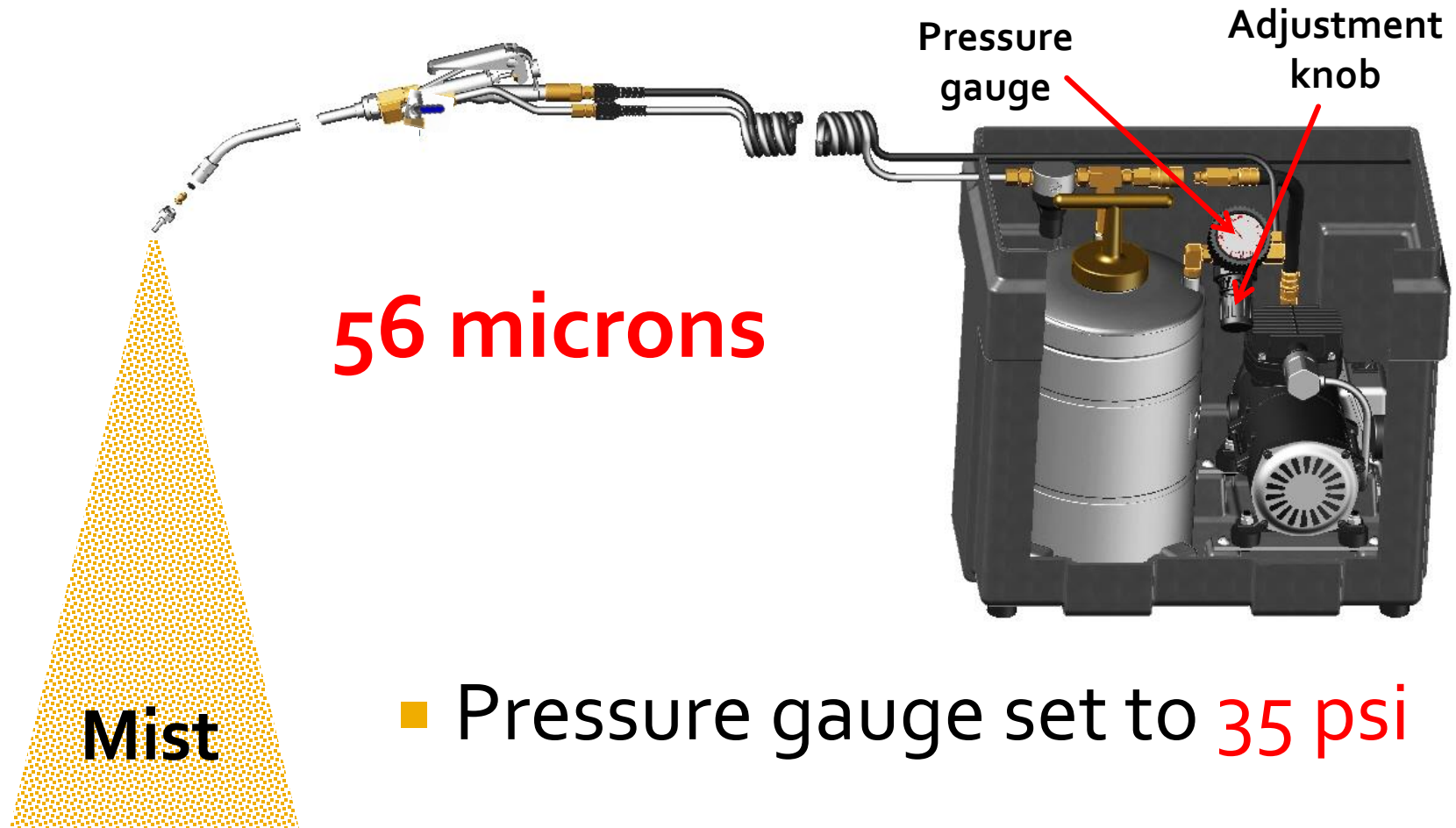
Takebayashi, Y. 1998. SP World No. 26: 3-7.

Flea Control in Carpet

30 to 35 micron
droplets provide
best penetration
into carpet to
control flea larvae



Mist Application: **56 μm**

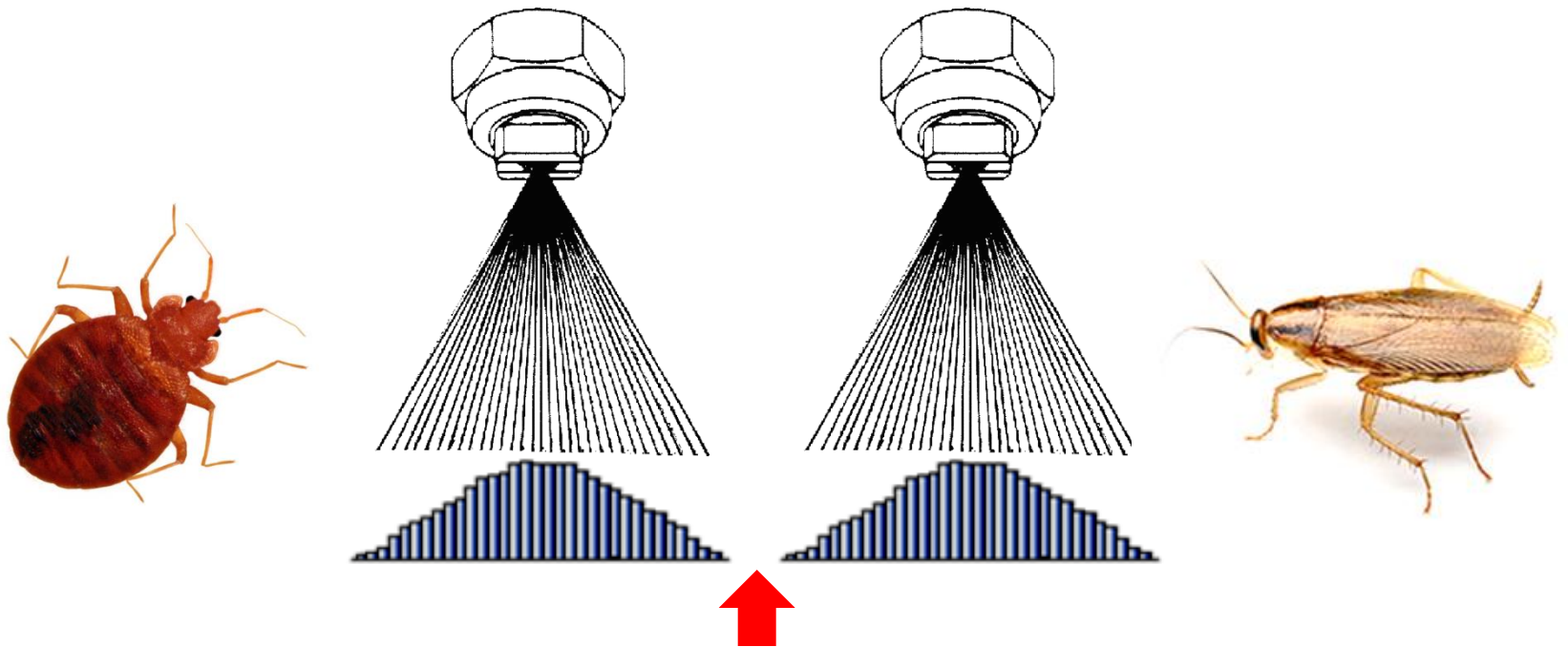


Surface Application

- Small droplets on a surface increases coverage and efficacy

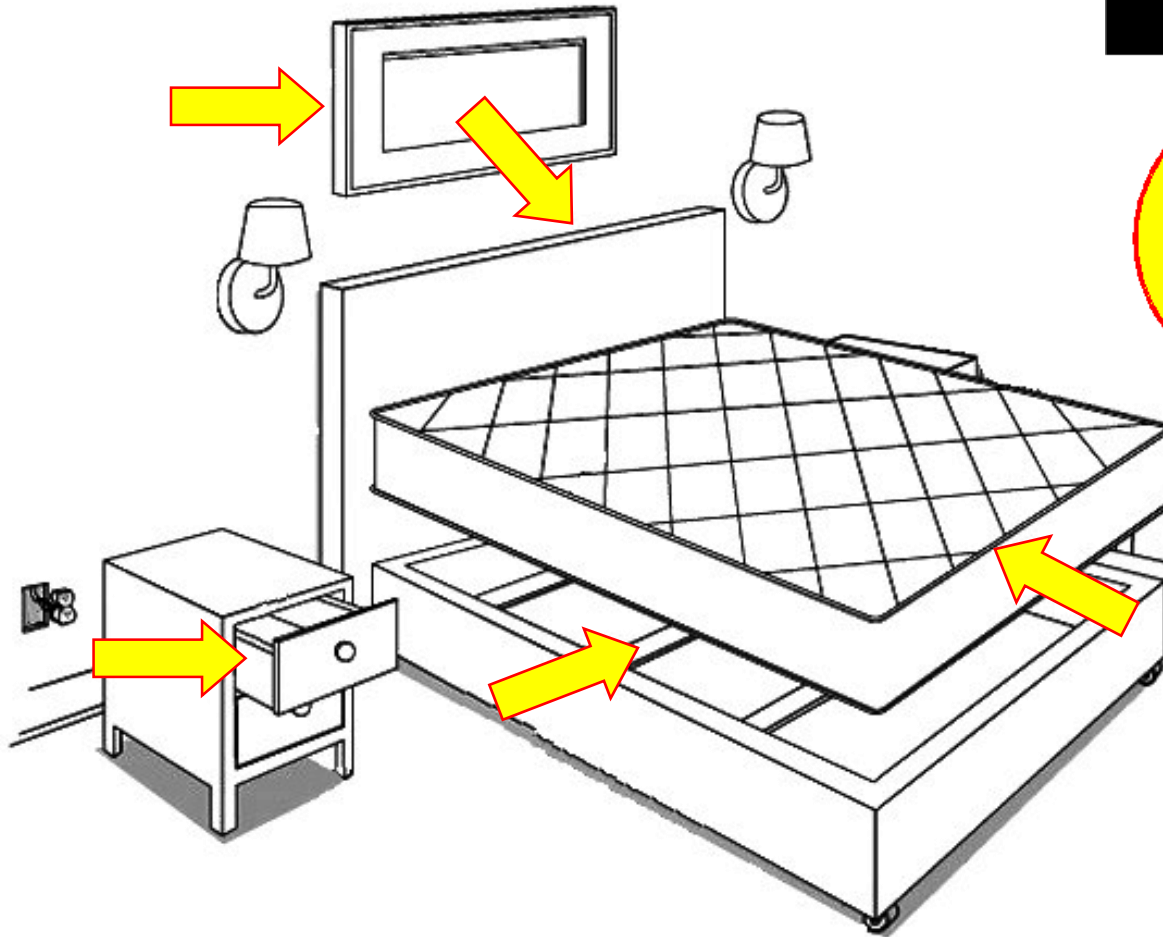


Spray Pattern Overlap

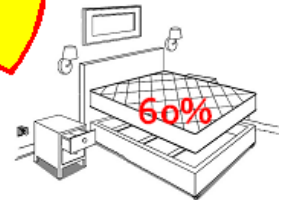
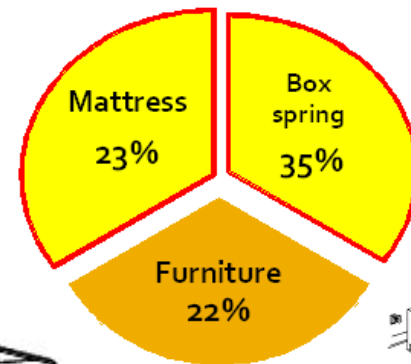


- Coverage eliminates **untreated gaps** from fan spray nozzle application

Aerosol: Bed Bug Control

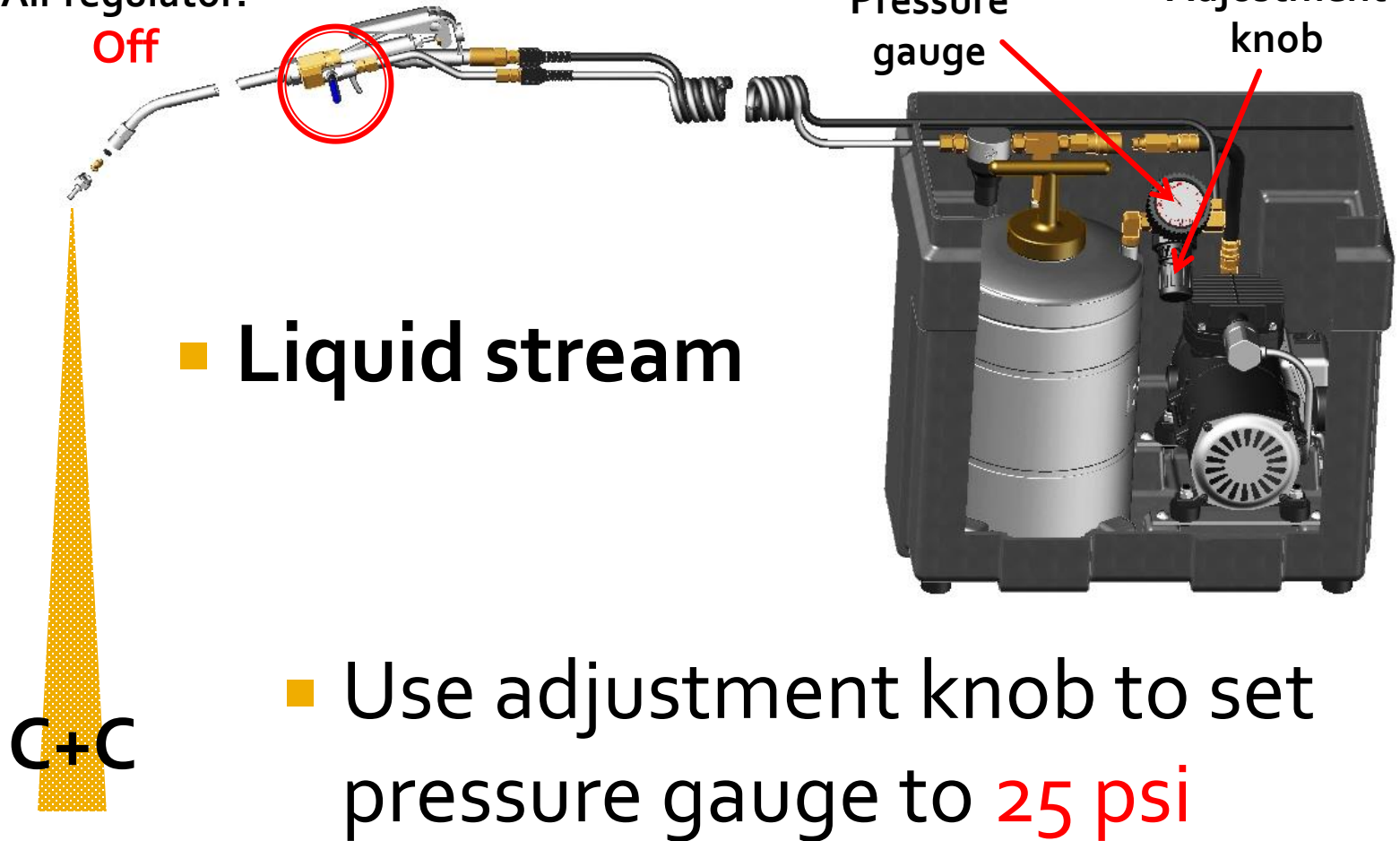


Infested Harborages



Crack + Crevice Application

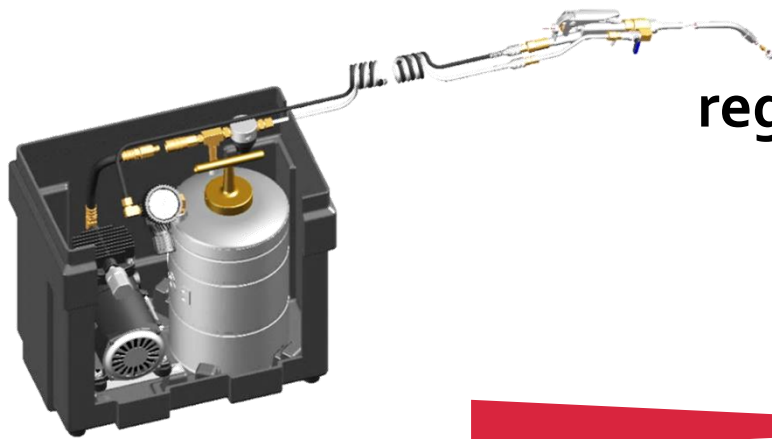
Air regulator:
Off



■ Liquid stream

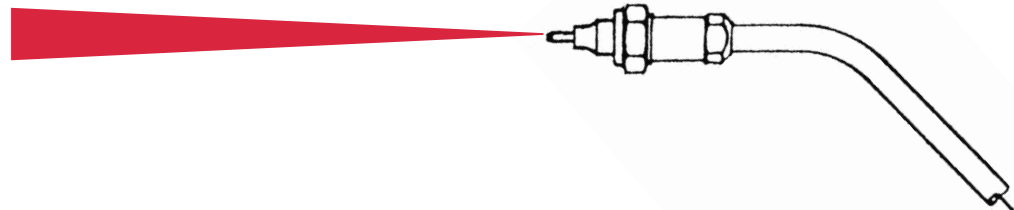
■ Use adjustment knob to set pressure gauge to **25 psi**

C+C Delivery Rate / min.



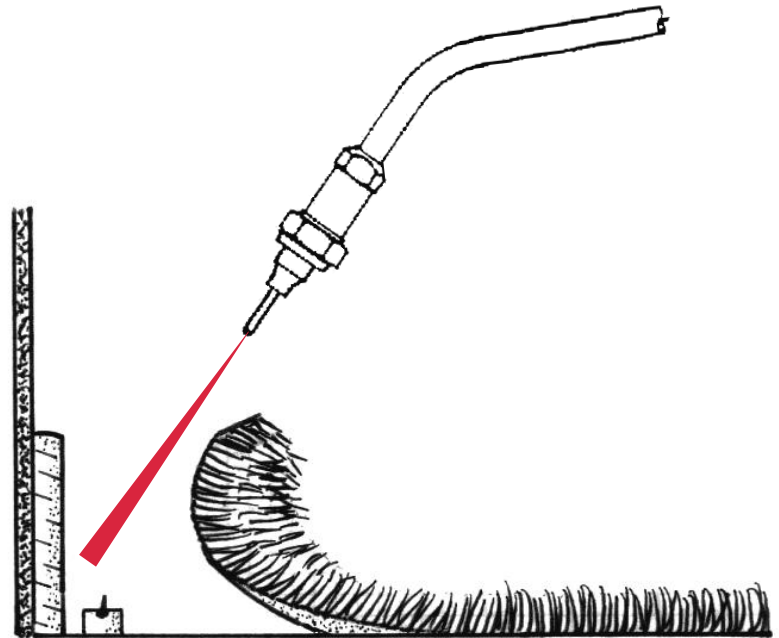
Air
regulator:
Off

C+C delivery
without using air
stream



30 psi = 6.6 ounces

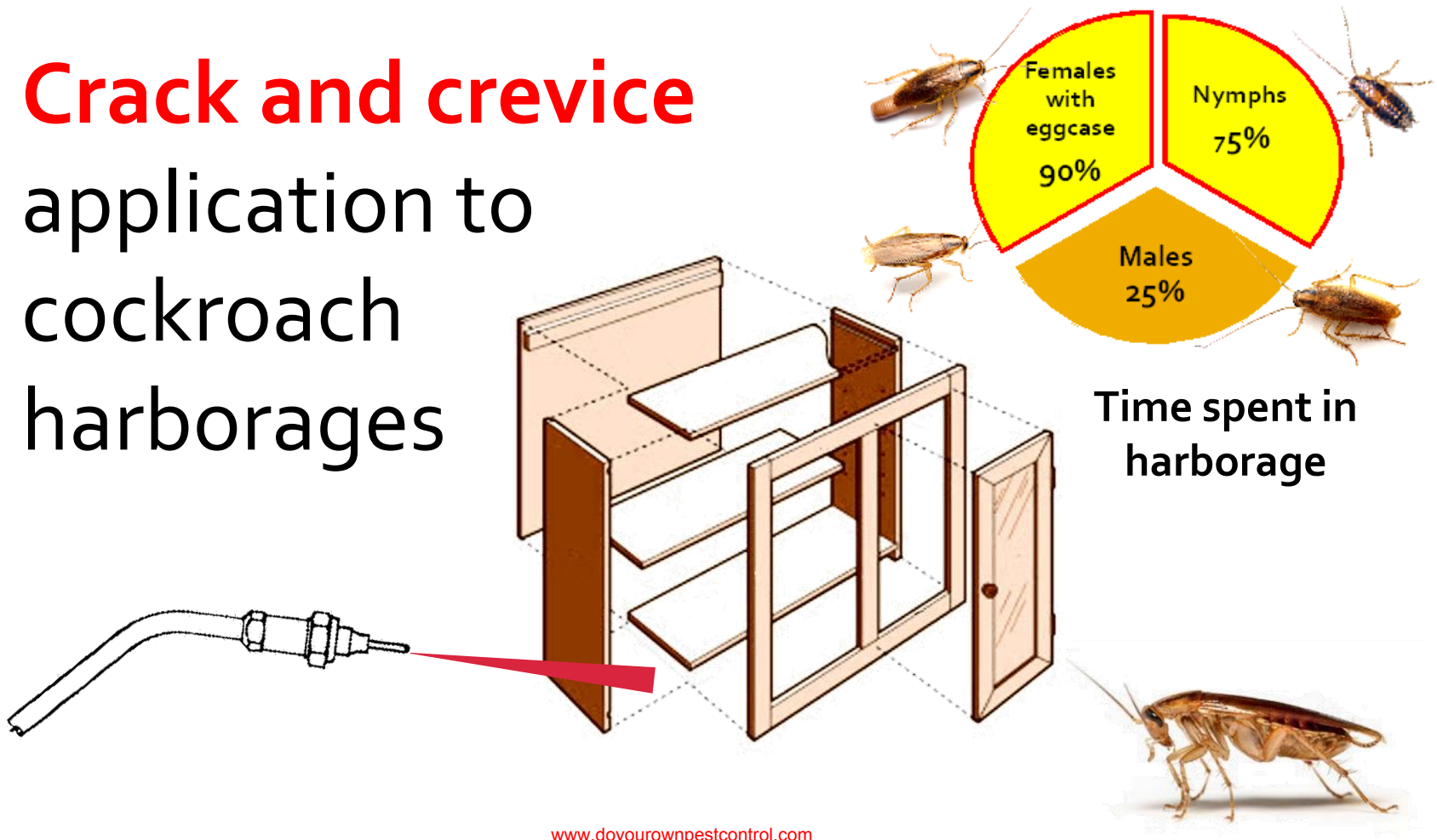
C+C: Edge of Carpet



- Treat along carpet edges...between the wall and the tacking strip

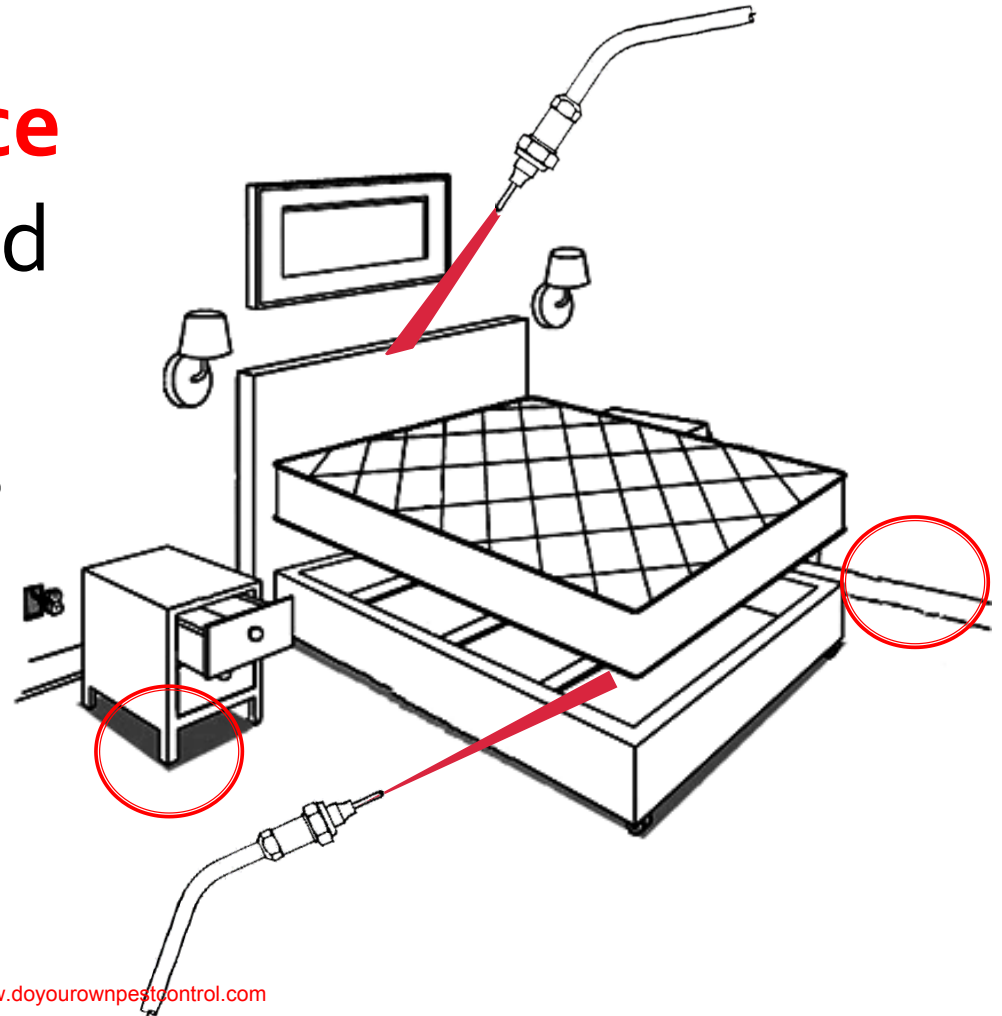
C+C: Cockroach Control

- **Crack and crevice** application to cockroach harborage



C+C: Bed Bug Control

- **Crack and Crevice**
application to bed
bug harborages
and travel routes



PAS vs. Aerosol Cans



17 ounces liquid
8 ½ minutes
spraying



5
Queen-size
beds

VS.



½ gallon liquid
32 minutes
spraying



19
Queen-size
beds

Long Hose

- **PAS Long-Hose Model** has 50 foot hose and an 18 inch extension



Order #: 16310015

Commercial Unit

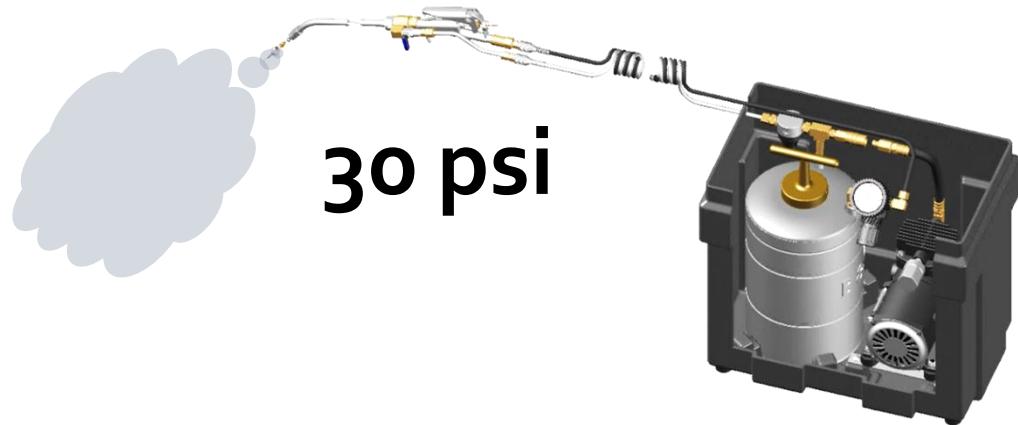
- **PAS Commercial Unit**
has a fan that runs
continuously so the lid
can remain closed



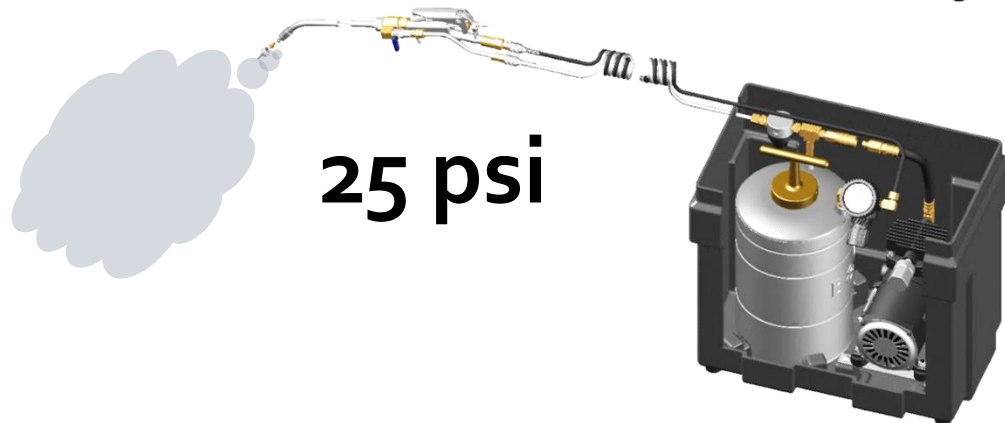
Order #: 16270000 – 9 in. Extension
16400000 – 18 in. Extension

Aerosol Delivery Rate

1 minute
2.0 ounces

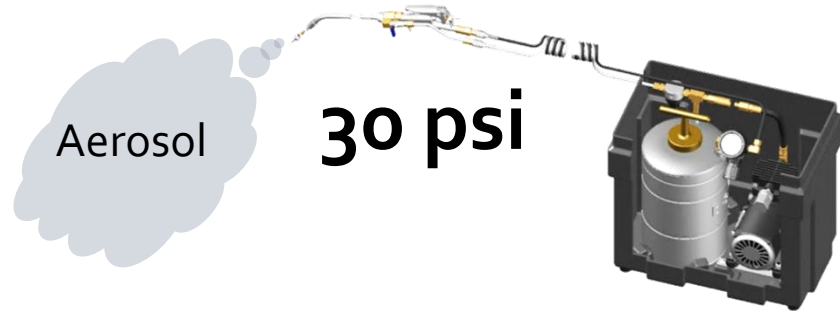


1 minute
1.5 ounces

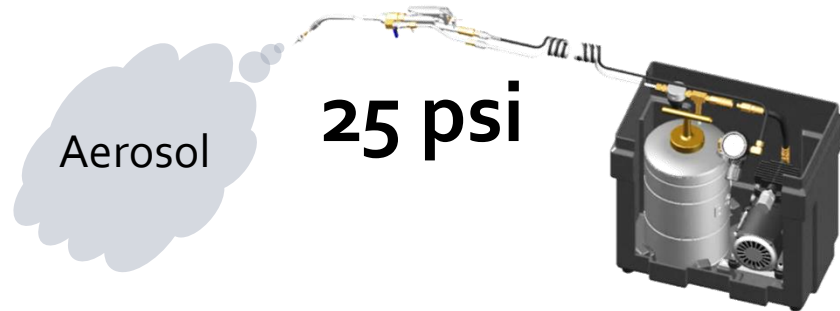


1/2 gallon Delivery Rate

32 minutes



43 minutes



60 minutes



Hose Repair Kit



- Damaged hoses can be repaired

#16400130
Hose Repair Kit

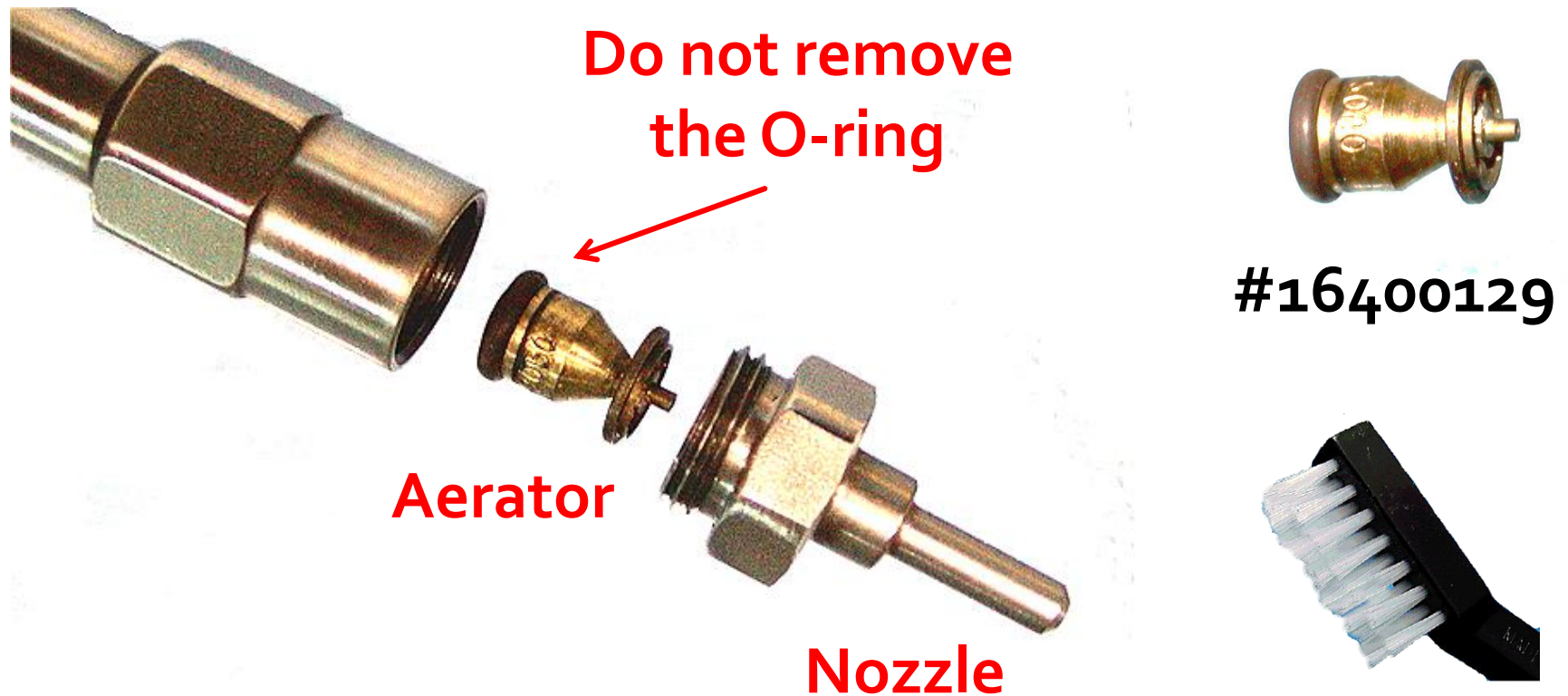
Hose Replacement

#16401643 Hose Replacement



- Damaged hoses
can be replaced

Nozzle Cleaning



- Clean with a nylon brush, do not remove O-ring from aerator

Problem: Liquid / No Air



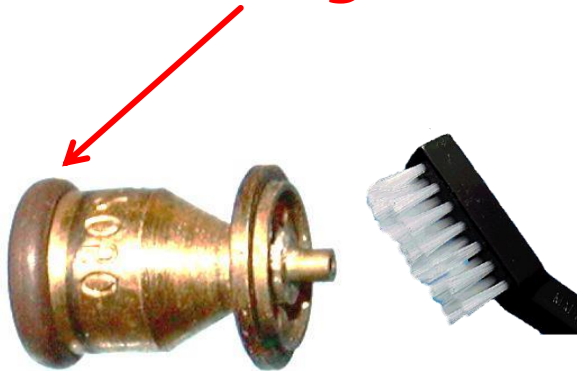
- **Aerator clogged**

Remove nozzle / tip
to access the aerator

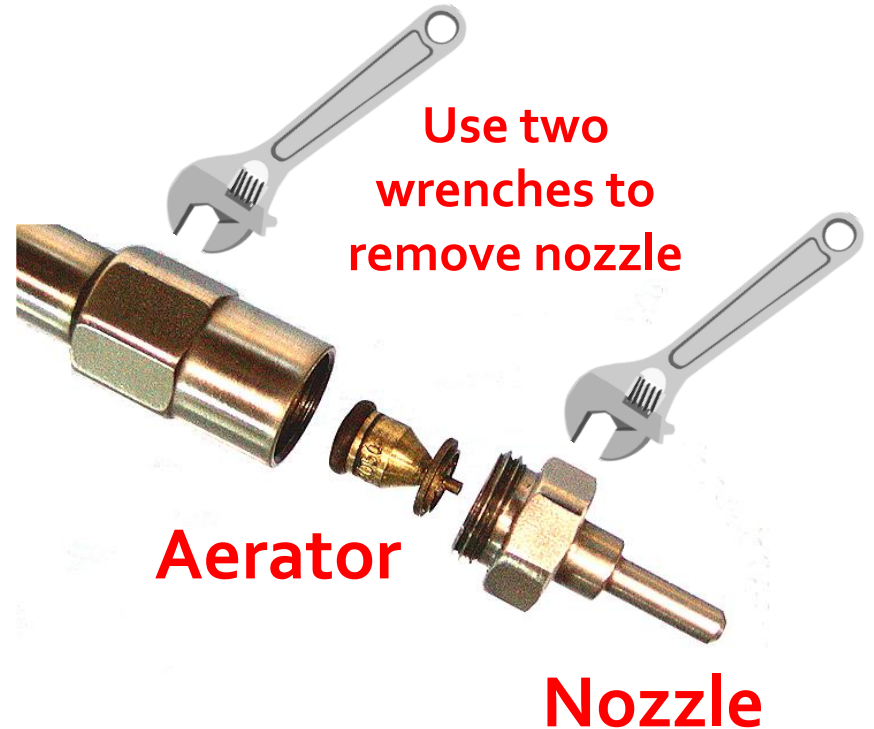


Aerator Cleaning

Do not remove
the O-ring



#16400129



- Clean tip with a nylon brush, do not remove O-ring from aerator

Problem: Liquid / No Air

- Air regulator has failed

Remove and replace
air regulator

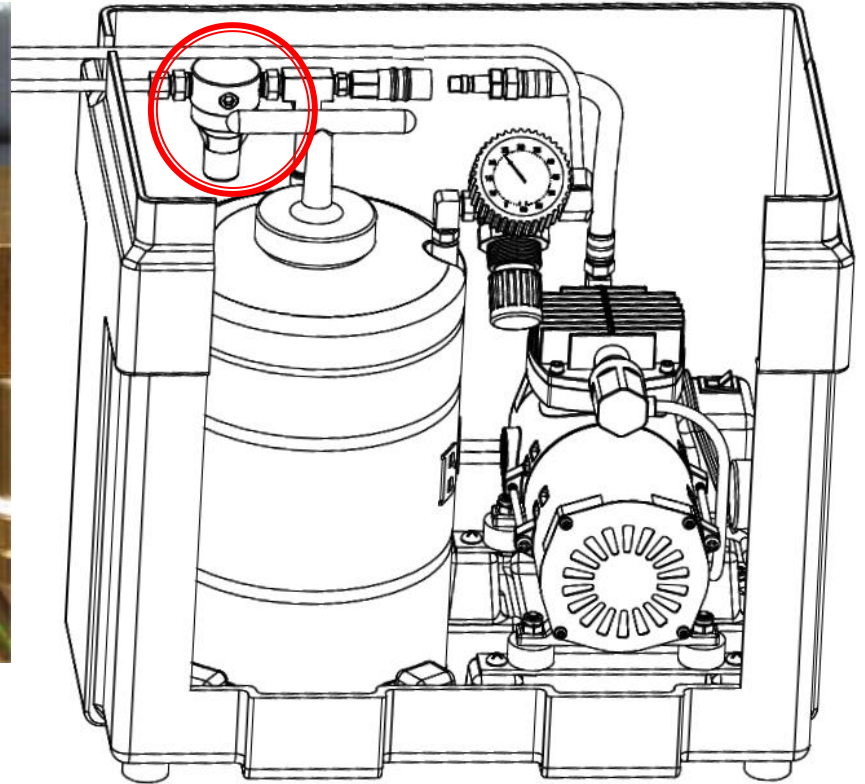


Air Regulator Replacement



#95127013

Disconnect air hose
then inlet port



Problem: Liquid / No Air

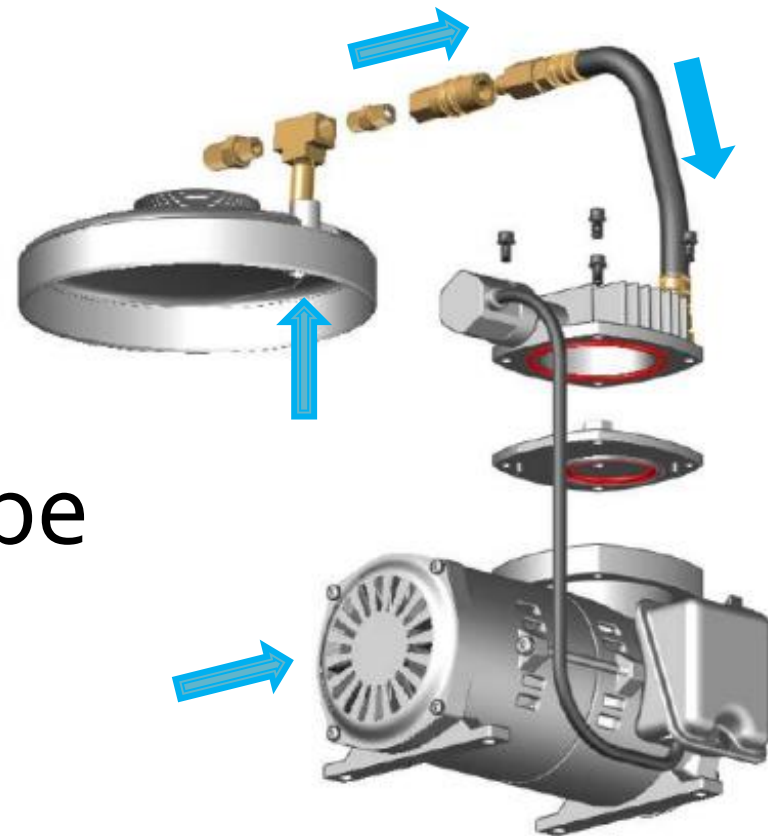
- Air compressor has failed

Remove and replace
compressor



Damage to Compressor

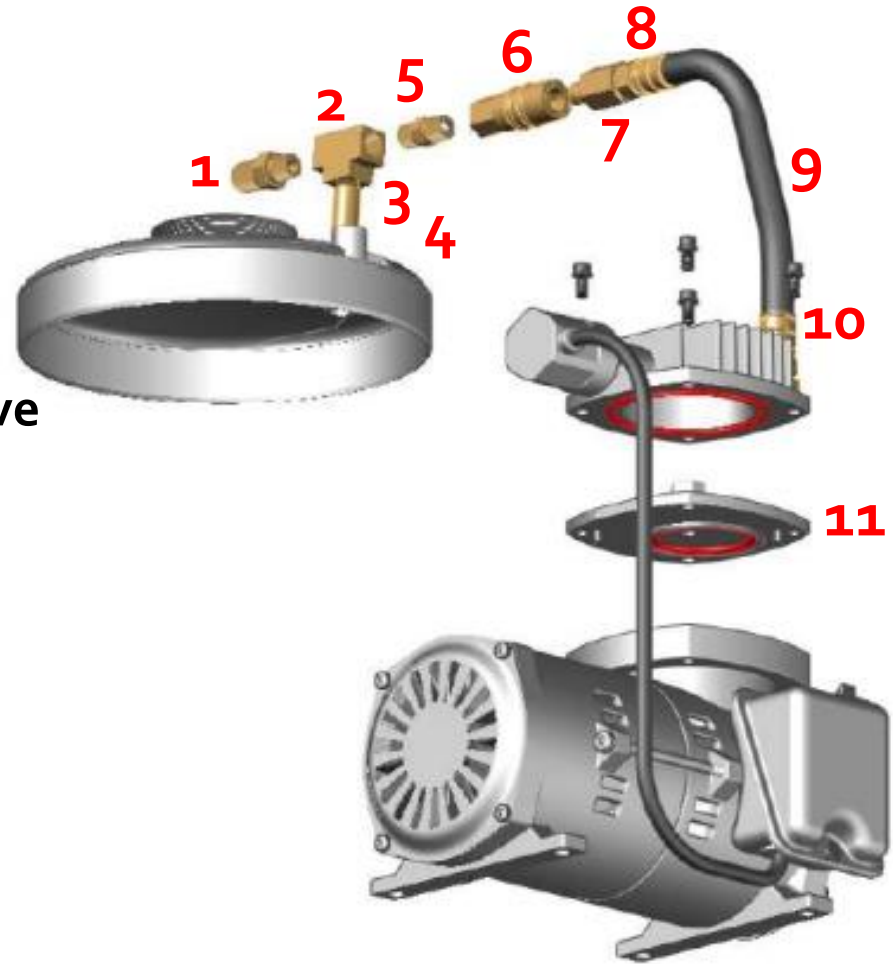
- **Diaphragm** damaged by water that worked back from siphon tube



...often caused when the sprayer is turned over in service vehicles...

Compressor Repair Kit

- #1 – 22071266 - Reducer**
- #2 – 22026600 - Tee**
- #3 – 95127041 - Nipple**
- #4 – 95127043 - Coupling**
- #5 – 24040106 - Check valve**
- #6 – 22071829 - Coupler**
- #7 – 22070811 - Plug**
- #8 – 22030400 - Washer**
- #9 – 22030217 - Hose**
- #10 – 22070850 - Elbow**
- #11 – 95127047 - Cylinder**



#16400110
Repair Kit

Problem: Air / No Liquid

- Liquid regulator has failed



Remove and replace liquid
regulator / gauge assembly

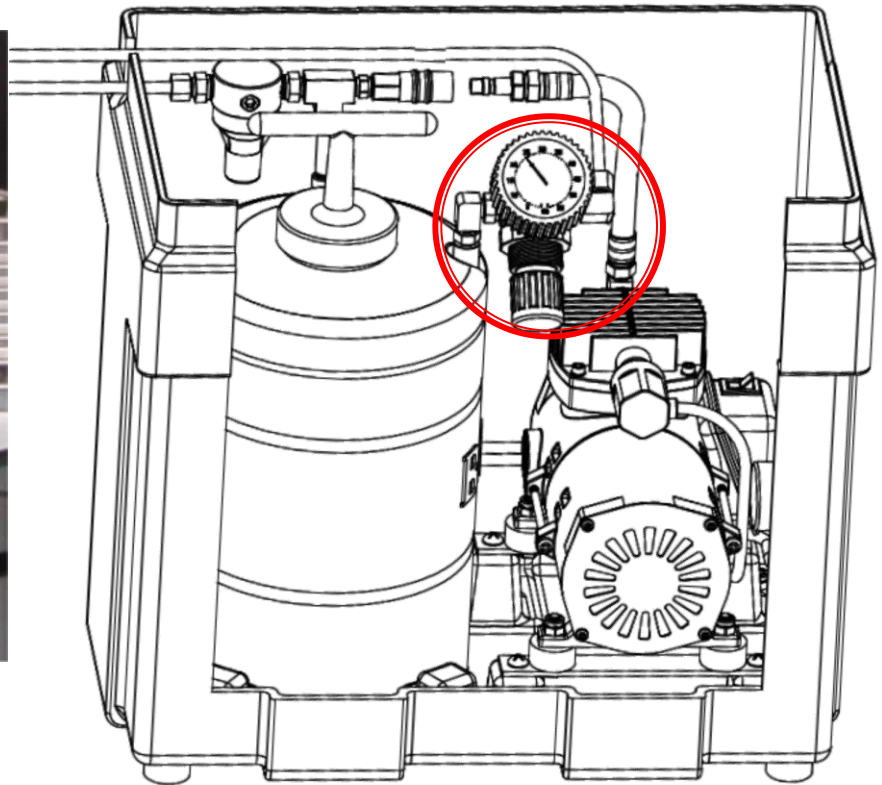


Liquid Regulator / Gauge Replacement

www.doyourownpestcontrol.com



#22026500



www.doyourownpestcontrol.com

Problem: Damaged Hose

Replace entire hose system



#16401643
Hose Replacement



- Hoses damaged or cut



Hose Repair Kit



- Damaged hoses can be repaired

#16400130
Hose Repair Kit

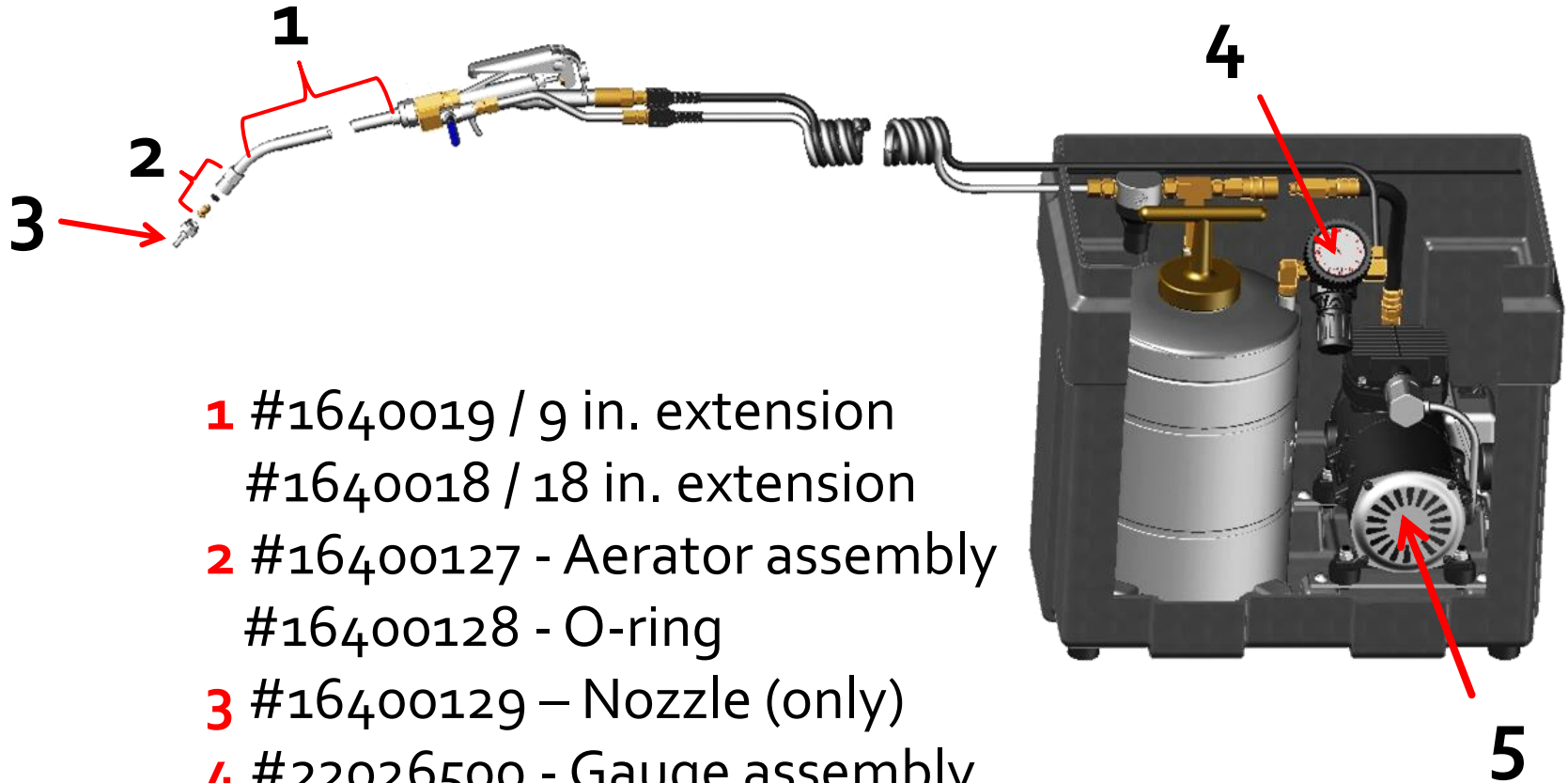
Problem: Tank Won't Hold Pressure

Inspect tank cap gasket

Use soapy water around fitting to find air leak



Replacement Parts



- 1** #1640019 / 9 in. extension
#1640018 / 18 in. extension
- 2** #16400127 - Aerator assembly
#16400128 - O-ring
- 3** #16400129 – Nozzle (only)
- 4** #22026500 - Gauge assembly
- 5** #16200007 - 110v compressor
#16289998 - 220v compressor



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Portable Aerosol System

