

# Enclosed Spray Gun Washers Using Alternative Cleaners

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## Outline

- Traditional Spray Gun Cleaning
- Enclosed Gun Cleaner Technology
- Alternative Cleaner Technology
- Case Study
- Resources for More Information



# Traditional Gun Cleaning

- Between types and/or colors of coatings
  - Auto body – 3 or more per job!
- Solvent run through gun and sprayed in air
- Spray into a bucket – still common
  - Then take apart and clean gun in bucket
- Gun cleaning station – more sophisticated
  - Lid closed when not in use
  - Filter and reuse solvent
  - Still clean gun by hand



## Enclosed Gun Cleaners

- Fully-enclosed – 1, 2, or 4 guns
- Sprays cleaner under pressure into and onto gun
- Air emissions controlled
- Solvent recycled – filter and/or distillation



## Enclosed Gun Cleaners - Benefits

- Increased productivity
- Reduced operating costs
- Reduced materials purchase costs
- Reduced air emissions exposures



## Enclosed Gun Cleaners - Concerns

- Traditional solvents
  - spent solvent/filter disposal costs
  - health and safety concerns
- Alternative cleaners
  - compatibility with equipment
- Maintenance
  - clean basin, change filters, etc...
- Scale of Operation
  - direct relationship – more cleaning = more saving



# Alternative Cleaners

- Biodegradable
- Non-flammable
- Low VOC content
- Two categories:
  - corn and soybean-derived
    - usually with d-limonene citrus
    - most effective on solvent-based polyurethanes, enamels, epoxies, and UV-curable coatings
  - N-Methyl-2-Pyrrolidone (NMP)
    - aqueous blends of organic solvents, esters and surfactants
    - most effective on waterborne and solvent-borne (including 2-part)



## Alternative Cleaners - Benefits

- Air emission reductions/elimination
- Reduced/eliminated regulatory burden and liability
- Reduced material use
  - remain effective up to 10 times longer than traditional solvents
  - lower purchase and disposal costs
- Easy cleanup - water





# Alternative Cleaners - Concerns

- Coating type
  - spent material and filters could still be hazardous waste
- Increased requirements for gun drying
  - Do not evaporate quickly (low VOCs!) – some equipment compensates
- Incompatibility with plastics
  - Can dissolve PVC and PET – use butyl rubber
- Incompatibility with equipment
  - Need stainless steel or polypropylene
- Cost per gallon
  - 2-3 times more than solvents – but last longer!



## Case Study – Amato’s Auto Body

- Paint thinner in bucket to Bonny Marlin System
- 75% reduction thinner use
- 50% reduction in paint waste disposal
- Saving \$3,900 per year
- Maintenance costs \$900 per year
- Capital cost - \$7,100
- Payback ~ 2 ½ years



## Resources for More Information

- NEWMOA's P2 Profile at:  
[www.newmoa.org/prevention/p2tech](http://www.newmoa.org/prevention/p2tech)
- Bonny Marlin: [www.bonnymarlin.com](http://www.bonnymarlin.com)
  - mainly auto body shops
- Inland Technologies: [www.inland.com](http://www.inland.com)
  - mainly military applications



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