

# THERMAL/FLAME SPRAY

The Gold Series cartridge dust and fume collector combines enhanced performance with ease of service while cleaning the work environment of irritating dust and fumes.



Flame Spray

“Over the years, we tried several types of dust collection equipment on EAW spraying. However, all previous attempts at extended filter life (more than six months) failed until we installed a high efficiency "Gold Series®" cartridge collection system manufactured by Farr, Arkansas. At the time of this writing, the **Gold Series** collector is still performing exceptionally well without a filter change after about a year and a half.”

— David Drozd, Pamarco

## Benefits of the Gold Series Collector

- High entry cross flow, inlet eliminates upward can velocities that can hold fine light plasma smoke up in the filters reducing re-entrainment of the fine smoke particles.
- Vertically arranged filters shed all the metal particulate - vs. horizontal filters which allow the metal to build on top of the filter.
- High efficiency filters stop 99.99% at 0.5µ of the dust!
- Special treated filter media repels the fine particles for lower pressure drop and long filter life.
- Gold Cone provides 25% more media for long service life.

## Types of Thermal Sprays:

- **Electric Arc Wire (EAW) Spraying**
- **Powder Spraying**
- **Electric Arc Spraying**
- **HVOF**
- **Plasma Spraying**

Because of the various types of thermal spray applications and their effects on the operation of dust collectors, it is important to identify your specific thermal spray operation. Each process involves different shaped and sized particulate along with varying loads. Additionally, strict safety procedures need to be addressed as almost all thermal spray operations can be explosive and/or flammable.

**Safety Considerations** – The potential for fire and explosion is very real when dealing with Thermal Spray and dust collectors. It is imperative that Farr APC be contacted for proper explosion venting and other safety concerns. Explosion vents, sprinkler kits, flame retardant cartridges and possibly spark traps all need to be addressed during the proposal phase of the sale.



**FARR**  
Air Pollution Control



Farr APC is a proud member of the Camfil Farr family.

<a href="http://www.farrapc.com">www.farrapc.com</a>	Application Focus
<b>THERMAL/FLAME SPRAY</b>	
SAFE AIR FOR A SAFE WORK ENVIRONMENT	



Thermal/Flame Spray Before Gold Series turned on



Thermal/Flame Spray After Gold Series turned on

## Sizing Recommendations cont.

The Gold Series is usually sized at 0.5:1 to 1:1 A/C for EAW spray. At times you will be faced with collecting both types of dust. The more conservative A/C ratio is recommended and will provide the cartridge longevity that is required in the industry. In general, when collecting aluminum off-spray a conservative A/C is also commended, usually around 0.50:1. It is imperative that we understand not only the type of material being sprayed but also the type of spraying be conducted. A dust collector can not be properly size for Thermal Spray applications without this information. Because of the combined challenge of the different spray processes themselves along with the generally fine particulate that is involved, dust collectors are rarely sized above 1.5:1 for any Thermal Spray applications with the majority being between 0.50:1 and 1.2:1 A/C ratio.

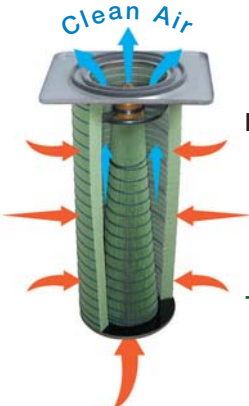
Additionally, staggered channel baffles in the Gold Series inlet plenum should always be used for Thermal Spray applications. The baffles protect the cartridges from direct impingement and effectively directs the material into the hopper area for discharge.

It is also important to note that certain hazardous powders and metals (such as beryllium and chrome) will require safety after-filters whether returning the air back into the work facility or discharging to atmosphere. Please work with Farr APC application engineers to insure the correct information is understood and proper sizing is accomplished.

## Sizing Recommendations

With Thermal Spray applications, proper information gathering of the specific application is crucial since there are many different types of processes and material coatings, most all of which will react differently inside the dust collector. Although there are different powders used in plasma spray for example, the process results in generally spherical shaped particulate and consistent in size at around three microns making it fairly easy to capture.

With the Farr APC Gold Series Vertical Cartridge Collector, plasma spray and powder applications are generally sized around 1:1 air-to-cloth ratio (A/C) with Hemipleat Fire Retardant cartridges. Electric Arc Wire (EAW) Spray on the other hand has proven to be a real challenge. This dust is very fine (mostly sub-micron) and is inconsistent in shape. This seems to be true of the process itself no matter what type of wire is being used.



### Key benefits:

- High filtration efficiency
- Excellent energy performance
- Long element life

### Gold Cone Cartridge

Camfil Farr **Gold Series** cartridges have an expanded capacity due to the patented inner Gold Cone. This inner cone increases media area and provides uniform dispersion of back-pulsed air. It also opens up more useable space for air flow in the filter.



GS 120 on Thermal Spray

## THERMAL/FLAME SPRAY APPLICATION FOCUS USERS

Hardface Alloys  
Parker Hannifin  
Praxair  
Pamarco  
Flame Spray Inc.

Wall Colmonoy Corp.  
Solar  
Bender Machine  
Plasma Coating Corp.  
CDF Coating Services

## REFERENCES

Hardface Alloys • Darren Gansert & Dr. Robert Gansert • 562-463-8133  
Pamarco • Dave Drozd • Plant Manager • 404-691-1700 Ext. 12

**Gold Series-** Looks like a safe because it's built like a safe.



**FARR**  
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