

LASER AND PLASMA CUTTING

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.



“We are very happy with the **Farr Gold Series**. The GS36 was purchased for our CNC plasma cutter to replace a horizontal cartridge dust collector due to short filter life. The current filters have been in for over a year and still look great and are operating at less than 3” pressure drop. Also, the Farr people have been a pleasure to do business with.”

— Dan Schuler, Schuler Mfg.

Gold Series on Laser and Plasma Cutting

Plasma cutters are available in portable units much like an acetylene torch as well as CNC controlled plasma tables. The application that this paper addresses is for CNC Plasma tables and laser tables. The molten metal and smoke that is generated from laser and plasma tables is pulled down through the grate. The sparks and molten metal settle out in the area below the grate. The smoke is then removed through the duct work and filtered through the **Gold Series** Collector.



Safety Considerations

The **Gold Series** channel baffle inlet should be used to help deflect any sparks that make it to the collector. A spark drop out box should also be considered. A baffle arrangement in the table itself that creates a torturous path for the sparks being generated is also helpful in preventing the sparks reaching the collector. In extreme cases, spark detection and suppression should be considered.

Fire retardant cartridges should always be used in this application, as well as sprinkler heads in the collector itself.

Explosion vents should also be included when cutting aluminum. The collector should be located outside. It is best to have the customer check with his insurance carrier and follow all NFPA 654 Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids, 2000 edition.

Benefits of the Gold Series Collector

The cleaning mechanism on the **Gold Series** Collector was designed specifically for laser and plasma cutting applications. These applications can be one of the most difficult to maintain a stable differential pressure. The enhanced cleaning mechanism is standard on all **Gold Series** Collectors. The cleaning mechanisms along with the inlet design and Gold Cone cartridge have given our customers great performance and long media life. We are seeing over 4,000 hours in cartridge life on very difficult laser and plasma applications.



FARR
Air Pollution Control



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

www.farrapc.com	Application Focus
LASER AND PLASMA CUTTING	
SAFE AIR FOR A SAFE WORK ENVIRONMENT	



CNC Plasma Cutting with GS2 Dust Collector

Sizing Recommendations

Two of the most important factors in sizing the collector is the expected amount of smoke particulate being collected and the material being cut.

Several things affect the amount of particulate being collected or loading. First is the amperage of the plasma cutter itself. A 300 amp plasma will cut much faster and have a much higher loading than a 100 amp plasma. Also some tables may have two heads operating at the same time.

A zoned table will have a much higher loading due to the lower airflow for the amount of material being collected. It can be compared to source capture verses general ventilation on non zoned tables.

The air to cloth ratio for cutting carbon steel can be as high as 1.5:1 on light loadings and heavy loadings should be at no more than 1.0:1 on Hemipleat cartridges.

If aluminum is being cut, than the air to cloth ratio should also be lowered. The air to cloth should be no more than 1:1 on lighter loadings and as low as 0.5:1 on very heavy loadings.

The Gold Series Hemipleat Fire Retardant cartridges should be used in this application at the above referenced air to cloth ratios.



GS 4 on Plasma Cutting

—The **Gold Series** has proven itself to work very well on difficult Laser and Plasma Cutting applications. The Gold Series works on applications where most other dust collectors have failed.



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.

Laser Cutting

Laser tables use a different technology for cutting than do plasma tables, but the applications are very similar. The particulate from laser is much smaller and more spherical. Even though the loading is much lighter, the air to cloth ratio should be from 1:1 up to a maximum of 1.5:1 on Gold Series Hemipleat cartridges. Same precautions as above on aluminum cutting.

LASER AND PLASMA CUTTING APPLICATION FOCUS USERS

Amada America
Motoman
Motion Robotics
Moore Diversified Products
Raymond Corporation
Acosta Sheet Metal
Schuler Manufacturing

Tenant Company
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Diebold Incorporated
Mississippi Laser
VP Buildings
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Pro Productions
Lozier Corporation
Garco Building Systems
Multicam
United Sheet Metal
Bowlin Engineering
Trane

REFERENCES

Schuler Mfg • Dan Schuler • 712-774-2228
Linweld Industrial Products • 800 253 9461

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



FARR

Air Pollution Control

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

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