PC 8/13/15
#7

Charlene Tim <charlene.tim@edcgov.us>

(86 pages)

Fwd: PC Meeting Agenda Item: Kniesel's Auto Collision SUP Revision

Aaron Mount <aaron.mount@edcgov.us> Wed, Aug 12, 2015 at 4:09 PM
To: Charlene Tim <charlene.tim@edcgov.us>

Char,

Please provide AQMD's comments to the rest of the Commission.

Aaron Mount
Associate Planner

County of El Dorado
Community Development Agency
Planning Services
2850 Fairlane Court
Placerville, CA 95667
(530) 621-5355 / FAX (530) 642-0508
aaron.mount@edcgov.us

-------- Forwarded message --------
From: **Lisa Petersen** <lisa.petersen@edcgov.us>
Date: Wed, Aug 12, 2015 at 3:42 PM
Subject: Re: PC Meeting Agenda Item: Kniesel's Auto Collision SUP Revision
To: Rich Stewart <rich.stewart@edcgov.us>, Aaron Mount <aaron.mount@edcgov.us>
Cc: Adam Baughman <adam.baughman@edcgov.us>, Dave Johnston <dave.johnston@edcgov.us>

Commissioner Stewart and Aaron:

Condition #16 of the original SUP under the heading "El Dorado County Environmental Management" states:

A hazard materials business plan and an air quality plan shall be subject to review and approval of the district prior to initiation of the use.

Senior Air Quality Specialist Dennis Otani's May 21, 2007 AQMD comment letter (attached as 2007 letter DO) did not include a condition requiring an "air quality plan." The AQMD does not require air quality plans other than a dust plan during construction. The AQMD did require the submittal of an Authority to Construct (AC) application for all emissions units (such as a paint spray booth) prior to construction. These files are attached as Booth 1 and Booth 2 Apps, Heater Paint Booth 1 and Heater Paint Booth 2.

The AQMD uses the information in the AC application to prepare an Engineering Evaluation. The project's potential criteria and (if applicable) toxic pollutant emissions are calculated in the evaluation. All AQMD Rules, and state and federal regulations applicable to the emissions and/or proposed processes are evaluated. Emissions limits and permit conditions are established for inclusion in the Permit to Operate which is renewed annually. Facilities are inspected annually at a a minimum and more often if complaints are made.

If the project has the potential to emit toxic emissions, and/or where the public is concerned about the health risks of a project, a Health Risk Screening or Health Risk Assessment is performed. In 2009 a Health Risk Screening was performed by Rimpo and Associates, Inc. The resulting Cancer Risk, and Acute and Chronic Health Indices were all less than 1, thereby showing insignificant health risk to nearby receptors. This report is attached - Kniesel AQ Analysis Report, Rimpo - Sep 2009 and Kniesel dispersion model data - HRA...

During the Engineering Evaluation for the second booth I calculated Prioritization Scores (a first level screening) *based on the combined Potential to Emit of both booths.* This is a very conservative screening and

assumes that all the emitted toxics land at the nearest receptor - the Parlin Residence. The potential toxic air contaminant emissions were based on Material Safety Data Sheets submitted by Kniesel's paint provider, and the maximum emissions allowed in the Authority to Construct and (future) Permit to Operate. Again all risk/health indices were below 1. The spreadsheet is attached - Kniesel's 2015 Prioritization.

Air toxic screening calculations are done according to state law. (AB2588 Air Toxics "Hot Spots" Information and Assessment Act of 1987 and Guidelines included by reference)

Lisa Petersen
Air Quality Engineer
EDC Air Quality Management District
330 Fair Lane
Placerville, CA 95667
530.621.7574

On Wed, Aug 12, 2015 at 8:39 AM, Adam Baughman <adam.baughman@edcgov.us> wrote:

> Lisa,
>
> In your research of the Kniesel file, did you run across an "air quality plan"? Original Condition #16 of the special use permit required them to develop one.
>
> Adam Baughman
> Air Quality Engineer
> El Dorado County Air Quality Mgmt District
> 330 Fair Lane
> Placerville, CA, 95667
> (530) 621-7571
>
> ---------- Forwarded message ----------
> From: **Aaron Mount** <aaron.mount@edcgov.us>
> Date: Wed, Aug 12, 2015 at 7:49 AM
> Subject: Fwd: PC Meeting Agenda Item: Kniesel's Auto Collision SUP Revision
> To: Adam Baughman <adam.baughman@edcgov.us>
> Cc: Lillian Macleod <lillian.macleod@edcgov.us>
>
> Adam,
>
> Can you please provide the requested documents for Commissioner Stewart? The hearing is tomorrow so could you please make it a priority request? I will call you also.
>
> Thanks for your time.
>
> **Aaron Mount**
> Associate Planner
>
> **County of El Dorado**
> Community Development Agency
> Planning Services
> 2850 Fairlane Court
> Placerville, CA 95667
> (530) 621-5355 / FAX (530) 642-0508
> aaron.mount@edcgov.us
>
> ---------- Forwarded message ----------
> From: **Rich Stewart** <rich.stewart@edcgov.us>
> Date: Tue, Aug 11, 2015 at 7:18 PM
> Subject: PC Meeting Agenda Item: Kniesel's Auto Collision SUP Revision
> To: Aaron Mount <aaron.mount@edcgov.us>

Aaron: Would you please send me a copy of the "hazard materials business plan and air quality plan" that satisfied Condition 16 of the subject SUP (I'm assuming that it was crossed out because the condition was satisfied). I'd like to see it before Thursday's meeting. Sorry for the late request, but I've spent all day reviewing material for Thursday's meeting and am just getting to that item. Thanks. Rich

7 attachments

2007 letter DO.pdf
438K

Booth 1 and Booth 2 Apps.pdf
3270K

Heater Paint Booth 1.pdf
1883K

Heater Paint Booth 2.pdf
1421K

Kniesel dispersion model data - HRA, Rimpo - Sep 2009.PDF
198K

Kniesel AQ Analysis Report, Rimpo - Sep 2009.PDF
492K

Kniesel's 2015 Prioritization.xlsx
54K

County of El Dorado
Air Quality Management District

330 Fair Lane, Placerville Ca 95667
Tel. 530.621.7501 Fax 530.295.2774
www.edcgov.us/AirQualityManagement

Dave Johnston
Air Pollution Control Officer

May 21, 2007

Aaron Mount, Project Planner
El Dorado County Planning Services
2850 Fairlane Court
Placerville, CA 95667

SUBJECT: S 07-0011/PD 95-0016 R(1) – Kniesel's Auto Collision Center (Richard Kniesel/Robert Laurie/Carlton Engineering/APN 070-280-64

Dear Mr. Mount:

The El Dorado County Air Quality Management District (District) has been requested to express comments which identify our concerns regarding the proposed project under Application: **S 07-0011/PD 95-0016 R(1) – Kniesel's Auto Collision Center (Richard Kniesel/Robert Laurie/Carlton Engineering/APN 070-280-64**. The project is a request for a special use permit and a revision to an approved planned development to convert an existing sports facility to an auto collision repair center. Proposed hours of operation are 8 a.m. to 5 p.m., Monday – Friday. The facility may employ a maximum of 25 to 30 persons. Parking or storage of all vehicles that are being serviced will be inside the facility. Equipment in the building is likely to include frame measurement machines, alignment racks and paint booths. The property, identified by Assessor's Parcel Number 070-280-64, consists of 3.0 acres, and is located on the north side of Wild Chaparral Drive 0.25 mile west of the intersection with Ponderosa Road, in the Shingle Springs area.

The District has reviewed the proposed project **S 07-0011/PD 95-0016 R(1) – Kniesel's Auto Collision Center (Richard Kniesel/Robert Laurie/Carlton Engineering/APN 070-280-64**. The District has determined this project will not cause a significant impact on the air quality of the district. Though there is no significant impact on air quality, the following summary of issues **SHALL** be addressed:

1. Prior to construction/installation of any new point source emission units **or non-permitted emission units** (i.e. gasoline dispensing facility, boilers internal combustion engines, emergency generators, **spray paint booths,** dust collection systems, etc.), authority to construct applications shall be submitted to the District. Submittal of applications shall include facility diagram(s) equipment

specifications, list of paint products used, quantity of paint products used, emission factors, etc.

2. The project construction will involve the application of architectural coating, which shall adhere to District **Rule 215 Architectural Coatings.**

3. The project construction will involve the application of wood products coatings, which shall adhere to District **Rule 237 Wood Products Coatings.**

If you have any questions regarding this comment, please do not hesitate to telephone our office at (530) 621-6662.

Respectfully,

Dennis Otani, Senior Air Quality Specialist
Air Quality Management District

DMO:do

File: S 07-0011/PD 95-0016 R(1) – Kniesel's Auto Collision Center (Richard Kniesel/Robert Laurie/Carlton Engineering/APN 070-280-64

h:\apcd\landuse\2007Planning\Special Use\052107AaronMountS07-0011PD95-0016R1KnieselAutoCollisionCenterSS

Application for: Authority to Construct Permit to Operate Support Request

County of El Dorado Air Quality Management District
330 Fair Lane, Placerville, CA 95667
Phone: (530) 621-7501
Fax: (530) 295-2774
www.edcgov.us/AirQualityManagement

RESPONSIBLE COMPANY or OPERATOR

Company/Operator (Please Print or Type): Kniesels Collision Centers, Inc.	Contact: Rob Champe
Mailing Address: 4031 Wild Chaparral Rd	Title: CEO
City, State &ZIP Code: Shingle Springs, CA. 95682	Phone: 916-342-3173
Federal ID Number or SS Number: 20-8102039	E-Mail Address: robc@kniesels.com

FACILITY LOCATION

Name of Facility: Shingle Springs	Facility Contact: Dave Anderson
Street Address: Same	Title: Manager
City:	Phone: (530) 676-1888

Send bill(s), permits and correspondences to: ☐ Responsible Company/Operator ☒ Facility Location

Type of Application (Check appropriate boxes)
- ☐ New Facility
- ☒ Modification of Existing Facility or Equipment
- ☐ Change of Ownership
  Existing Permit # _____
- ☐ Emission Reduction Credit
- ☐ AQMD Support Request
- ☒ Miscellaneous (explain below)
  Installation of second spray paint booth

Is the facility location within 1000 feet from the boundary of a K-12 school? ☐ YES ☒ NO

Equipment Schedule of Operation: Hours/day: 7-6/M-F; Days/week: 5; Weeks/year: 52

Estimated Construction Start Date: 1/8/15; Estimated Completion Date: 1/20/15; Estimated Start-up Date: 1/20/15

Description of Project/Request (Attach supplemental forms and/or detailed equipment/emission information):

Installation of second GFS spray paint booth and heater.

Information submitted to obtain an Authority to Construct/Permit to Operate is public information unless specifically marked as trade secret or confidential by the applicant. Emission data is subject to disclosure regardless of any claim of trade secret or confidentiality.

Signature of Responsible Official/Person:
The Responsible Official/Person is the individual with the authority to certify this source will comply with all District requirements and conditions set forth in the permit and the Rules and Regulations of El Dorado County. I certify all information contained herein and submitted with this application is true, accurate and complete.

Signature: RP Date: 1/8/15

Printed Name: Robert Champe Title: CEO

DATE STAMP
RECEIVED
JAN 08 2015
AQMD

FOR EL DORADO COUNTY AQMD USE ONLY

AC No.: _____

PO No.: 12-1588

APPLICATION APPROVED: 1-20-15 (DATE) LP (ENGINEER'S INITIALS)

APPLICATION DENIED: _____ (DATE) _____ (ENGINEER'S INITIALS)

15-0936 Public Comment
PC Rcvd 08-13-15

El Dorado County
Air Quality Management District
Paint Spray Booth Supplemental Questionnaire

Business Name: Kriesel Collision of Shingle Springs **Date:** 1/8/15

Prepared by: Robert Champa **Booth No.** 2

Booth Information	
Manufacturer:	Global Finishing Solutions
Model:	Performer XP1 Downdraft Cabin
Serial:	Unknown at this time
Dimensions (l x w x h) in feet:	27' x 14' x 9'
Filter Material:	(see attached)
Number of Filters:	(see attached)
Size of each Filter:	(see attached)
Spray Guns Used (make and type):	
Number of Guns used at once:	

Exhaust Fan Information	
Manufacturer:	Global Finishing Solutions
Model:	GUL2000
Serial:	(not applicable)
Air Flow Rate (cfm):	12,000
Rated Capacity (hp):	10 HP

Compressor Information	
Manufacturer:	
Model:	
Serial:	
Rated Capacity (hp):	
Powered by:	
Capacity (No of nozzles at once):	

Air Heater Information	
Make:	Midco
Model:	HMA-2
Serial:	unknown at this time
Rated Capacity (Btu/hr):	1.2 Million
Fuel:	~~Natural Gas~~ LPG

El Dorado County
Air Quality Management District
Automotive Refinishing Coating Supplemental Questionnaire

Business Name: Kinsick Collision Center of Shingle Springs **Spray Booth No.** 2 **Date:** 1/8/15
Prepared By: Robert Chiapa
Brand(s) of Coatings Normally Used: PPG Envirobase

Coating Type	VOC Content in lb/gal [a]	Maximum Coating Usage (gallons					
		Daily [1]	1st Qtr [1]	2nd Qtr [1]	3rd Qtr [1]	4th Qtr [1]	Annual [2]
Pretreatment Wash Primer	5.5	0.01	0.3	0.3	0.3	0.3	1.2
Precoat	2.1	0.01	0.25	0.25	0.25	0.25	1.0
Primer/Primer Surfacer	2.1	0.15	6.5	6.5	6.5	6.5	26
Primer Sealer	2.1	0.25	15	15	15	15	60
Solid Color Topcoat Underbody	3.08	0.01	0.6	0.6	0.6	0.6	2.4
Metallic Topcoat [3] Underbody	3.08	0.01	0.6	0.6	0.6	0.6	2.4
Multi-Stage topcoat System [4]	3.5	1.4	84	84	84	84	336
Specialty Coating	7.0	0.03	2.2	2.2	2.2	2.2	8.8
Temporary Protective Coating							
Surface Prep. Solvent (For Metals)	0.17	0.12	7.5	7.5	7.5	7.5	30
Surface Prep. Solvent (For Plastics)	6.5	0.05	3	3	3	3	12

[a] Typical volatile organic compound (VOC) content RTS (ready to spray), in pounds per gallon.

Notes
1. Quarterly usage estimates should consider the maximum possible business in each quarter.
2. The maximum annual usage will be equal to or less than the sum of the four quarterly maximum usages.
3. Metallic topcoat usage for single stage (i.e., enamel) applications only. Multi-stage applications (i.e., metallic basecoat with a clear coat) should be included under multi-stage topcoat system usage.
4. Multi-stage topcoat system usage should include groundcoats, midcoats, and clearcoats.

El Dorado County

Air Quality Management District

Surface Coating Supplemental Material Usage Form

Business Name: Kniesel Collision of Shingle Springs Spray Booth: 2 Date: 1/8/15

Types of Surfaces and Materials Being Coated: Automotive, steel, Aluminum, Plastic

Coating Materials Suppliers or Brands Normally Used: PPG Envirobase

Type of Coating, Stain, Adhesive	* VOC Content	Application Method	Type of Spray Gun	Applied in Spray Booth?	Maximum Coating Usage, Gallons					
					Daily	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
Primer	2.1	Spray	HVLP	Yes	0.38	22	22	22	22	88
Basecoat	3.5	Spray	HVLP	Yes	0.75	46	46	46	46	184
Clearcoat	2.1	Spray	HVLP	Yes	0.62	37	37	37	37	148
Underbody	3.08	Spray	HVLP	Yes	0.02	1.2	1.2	1.2	1.2	4.8
Specialty	7.0	Spray	HVLP	Yes	0.03	2.2	2.2	2.2	2.2	8.8

- Typical Volatile Organic Compound, VOC content, ready to apply, in pounds per gallon or in grams liter
- Spray, brush, wipe, etc. If more than one method of application for a material, use separate lines for each
- Quarterly usage estimates should consider the maximum possible business in each quarter
- The maximum annual usage will be equal to or less than the sum of the four quarterly maximum usage

El Dorado County
Air Quality Management District
Automotive Refinishing Coating Supplemental Questionnaire

Business Name: Kinsch Collision Center of Town & Spring Spray Booth No. 2 Date: 1/8/15
Prepared By: Rubert Chrisp
Brand(s) of Coatings Normally Used: PPG

Coating Type	VOC Content in lb/gal *	Maximum Coating Usage (gallons					
		Daily	1st Qtr[1]	2nd Qtr[1]	3rd Qtr[1]	4th Qtr[1]	Annual[2]
Pretreatment Wash Primer	5.5	0.01	0.2	0.2	0.2	0.2	0.8
Precoat	2.1	0.01	0.2	0.2	0.2	0.2	0.8
Primer/Primer Surfacer	2.1	0.12	5.2	5.2	5.2	5.2	20.8
Primer Sealer	2.1	0.2	12	12	12	12	48
Solid Color Topcoat	3.08	0.01	0.5	0.5	0.5	0.5	2.0
Metallic Topcoat[3]	3.08	0.01	0.5	0.5	0.5	0.5	2.0
Multi-Stage topcoat System[4]	3.5	1.12	67	67	67	67	268
Specialty Coating	7.0	0.02	1.7	1.7	1.7	1.7	6.8
Temporary Protective Coating							
Surface Prep. Solvent (For Metals)	0.17	0.1	6	6	6	6	24
Surface Prep. Solvent (For Plastics)	6.5	0.04	2.4	2.4	2.4	2.4	9.6

*Typical volatile organic compound (VOC) content RTS (ready to spray), in pounds per gallon.

Notes
1. Quarterly usage estimates should consider the maximum possible business in each quarter.
2. The maximum annual usage will be equal to or less than the sum of the four quarterly maximum usages.
3. Metallic topcoat usage for single stage (i.e., enamel) applications only. Multi-stage applications (i.e., metallic basecoat with a clear coat) should be included under multi-stage topcoat system usage.
4. Multi-stage topcoat system usage should include groundcoats, midcoats, and clearcoats.

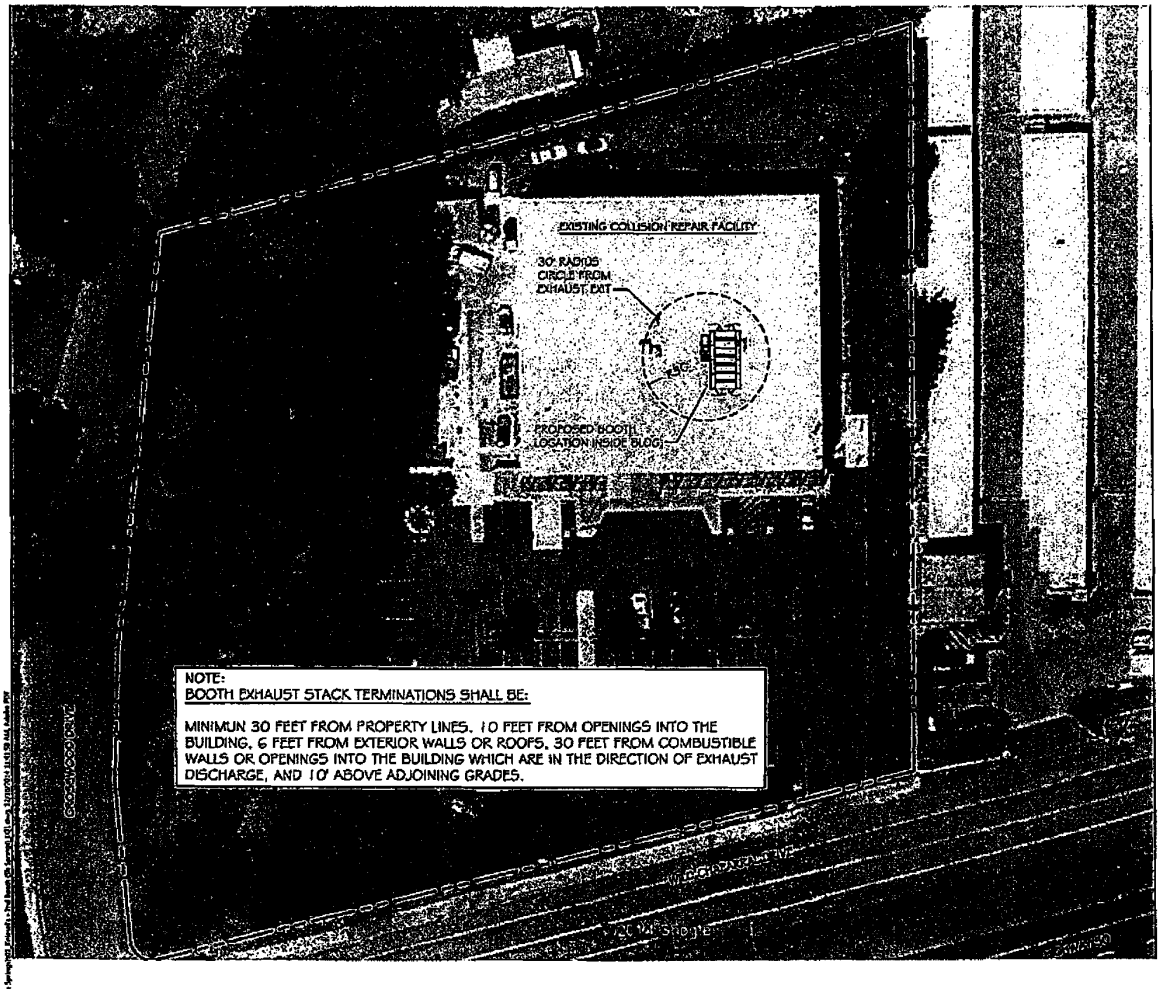
Revision Submitted @ 1-20-15 meeting

EQUIPMENT INSTALLATION PLANS FOR:

KNIESEL'S AUTOBODY

SHINGLE SPRINGS, CALIFORNIA

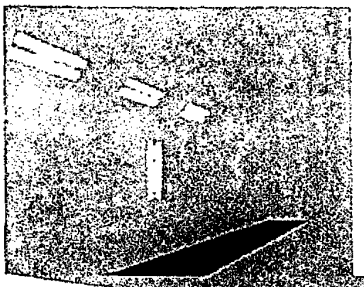
IMPORTANT NOTE: THESE PLANS ARE <u>ONLY</u> FOR THE PURPOSE OF OBTAINING REQUIRED PERMITS FOR THE PLACEMENT OF (1) PRE-ENGINEERED, PRE-MANUFACTURED, ETL LISTED AUTOMOTIVE SPRAY BOOTH AT AN EXISTING COLLISION REPAIR FACILITY.



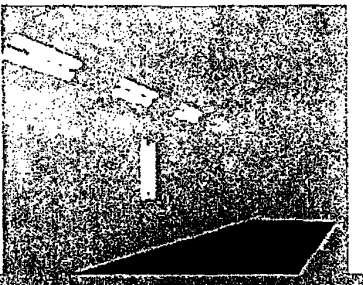
15-0936 Public Comment
PC Rcvd 08-13-15

EXHAUST PIT DESIGNS

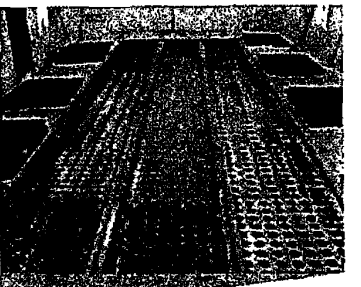
Single-row pit



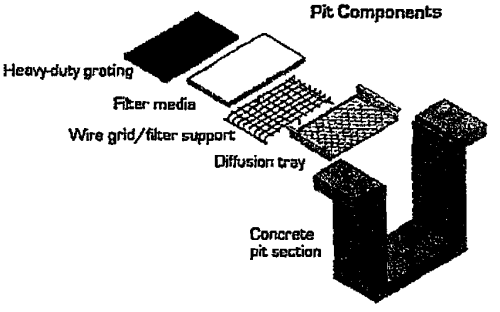
Two-row pit

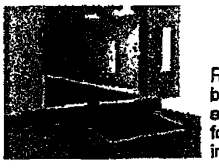


Three-row pit



Pit Components



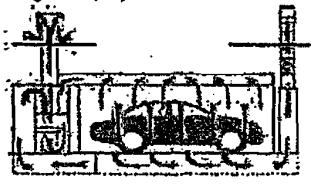


Raised basements are available for no-pit installations.

AIRFLOW OPTIONS

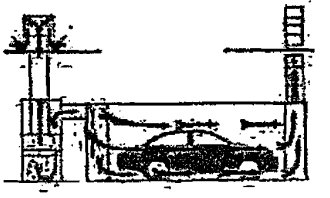
Downdraft
High-Performance Paint Booth

Generally accepted as the best airflow style, downdraft spray booths do an excellent job of controlling overspray and contamination. Air flows vertically from the ceiling intake plenum at the top of the booth, over the vehicle, and into the filtered exhaust pit in the floor.



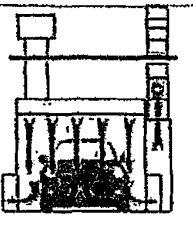
Semi-Downdraft
Economical Paint Environment

The semi-downdraft booth is a "hybrid", combining features of both crossdraft and downdraft booths. Air is introduced to the booth through the ceiling in the first 25-30% of the booth. Then it's pulled across the working chamber, over the vehicle and into the filtered exhaust chamber at the booth rear.



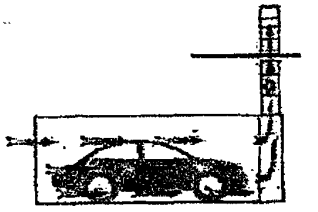
Side Downdraft
Downdraft airflow with no pit!

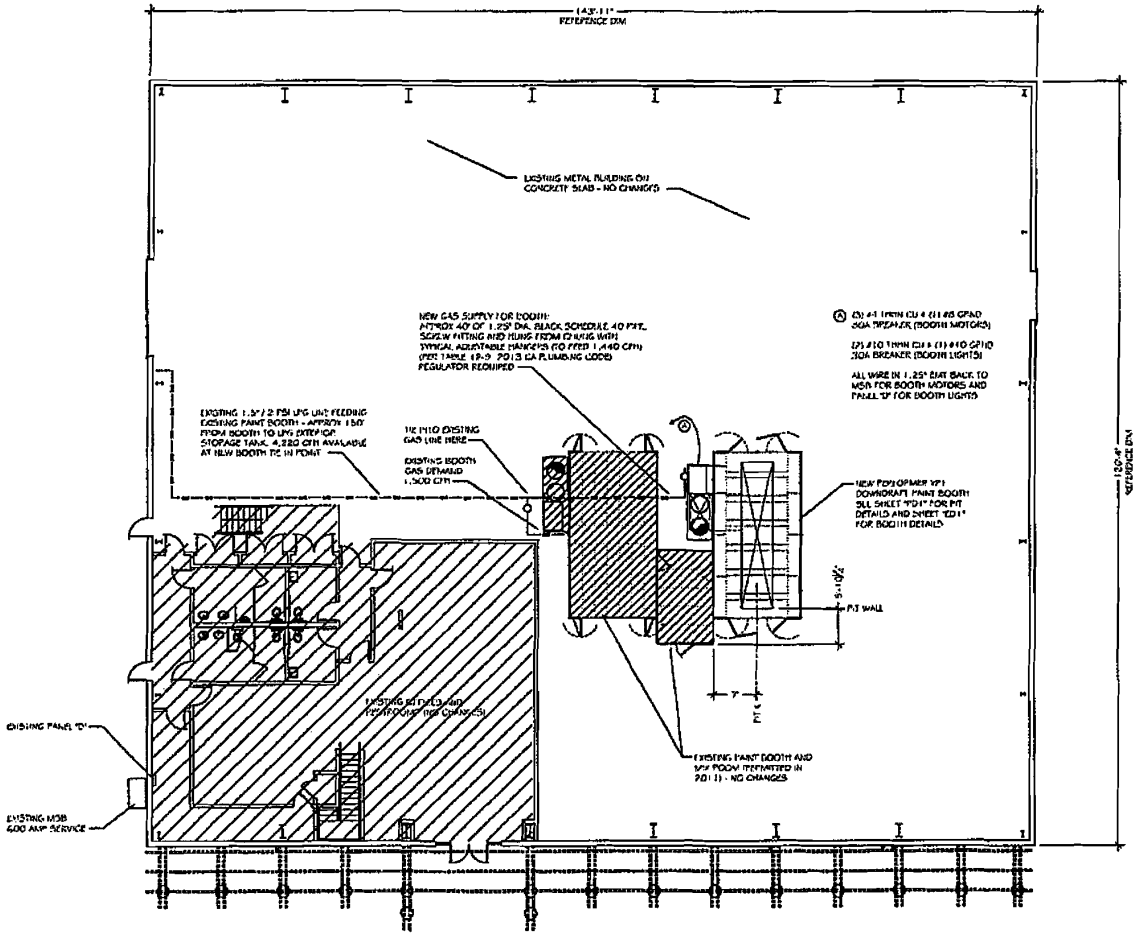
Side downdraft booths are an economical solution for shops that can't afford or aren't able to install a pit. Air enters the booth through a full-length ceiling plenum, and flows downward over the vehicle. When air reaches the floor, it is pulled into floor-level filtered exhaust plenums on each side of the booth.



Crossdraft
Proven airflow design

The simplest configuration, crossdraft booths use an exhaust fan to pull air in at one end of the booth. Air may pass through a filtered door, enter the working chamber unfiltered, or be pushed in through a pressurized input plenum. Air flows parallel to the floor, across the vehicle and into a filter bank at the booth rear.





PROPOSED SPRAY BOOTH ADDITION

1/8" = 1'-0"

0 2' 5' 10' 20'

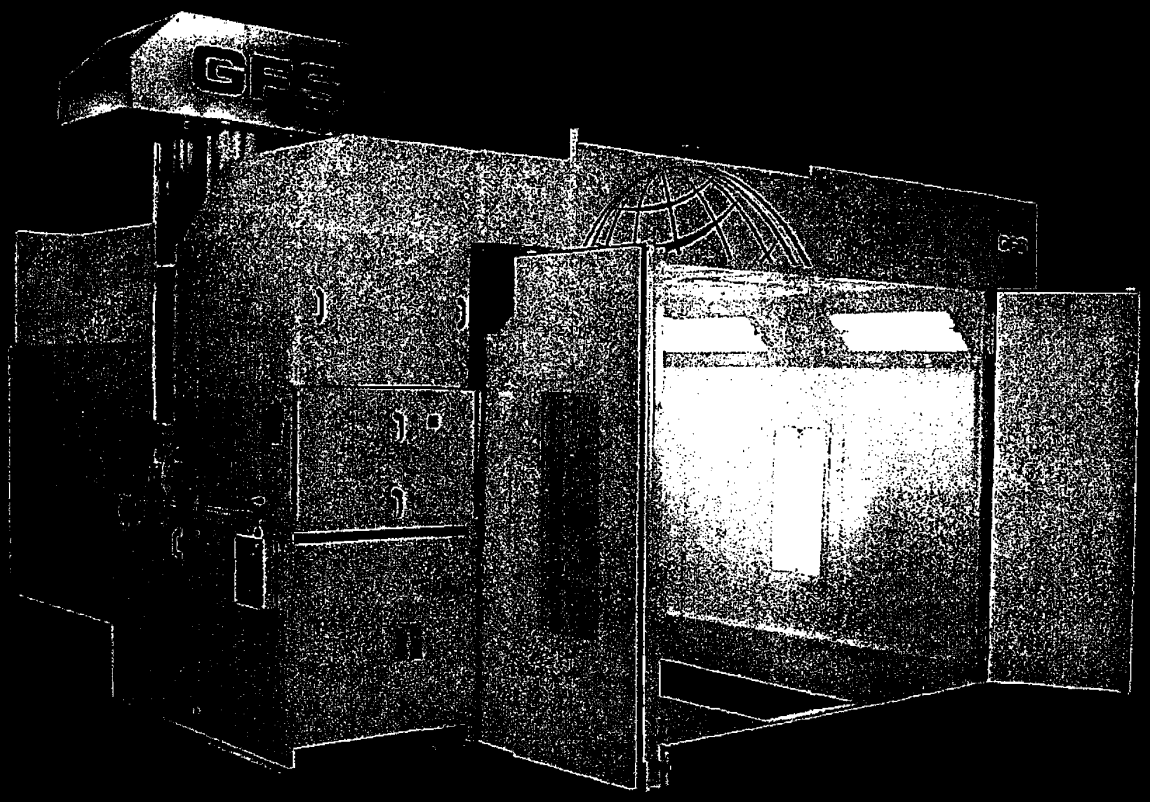
KNIESEL'S AUTO BODY
4031 MEADOWVIEW DRIVE
SHINGLE SPRINGS, CA 95682

PROPOSED 2ND BOOTH

EQ2

15-0936 Public Comment
PC Rcvd 08-13-15

PERFORMER



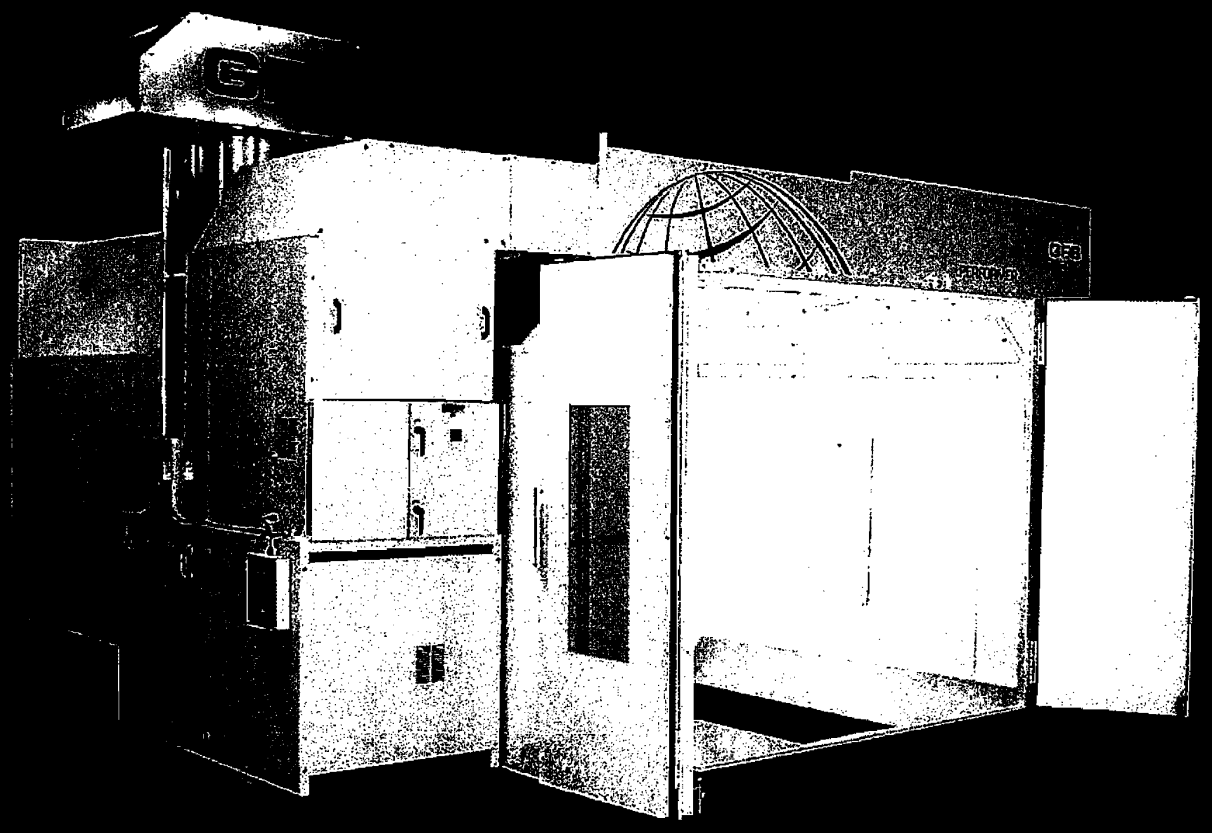
> Dual-skin construction
> Easy-to-use AXIOM controls
> High-efficiency 1.2M BTU heater
> Energy-efficient color-correct lights
> GFS quality & performance

PERFORMER

Downdraft or Semi-Downdraft Paint Booth

Fully-loaded and ready for action, the GFS Performer is everything you need for an economical paint booth solution for your shop.

PERFORMER®



> Dual-skin construction
> Easy-to-use AXIOM controls
> High-efficiency 1.2M BTU heater
> Energy-efficient color-correct lights
> GFS quality & performance

PERFORMER

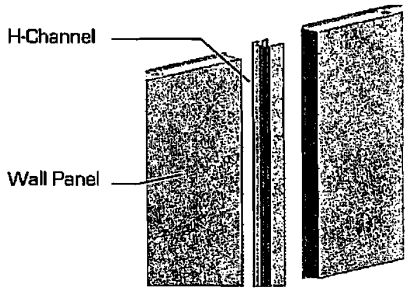
Downdraft or Semi-Downdraft Paint Booth

Fully-loaded and ready for action, the GFS Performer is everything you need for an economical paint booth solution for your shop.

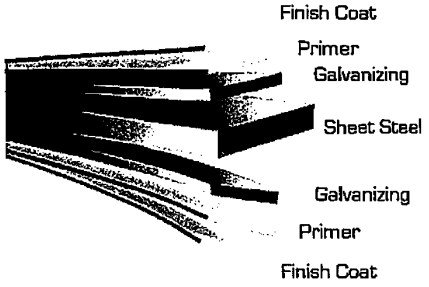
PERFORMER

Vertical Wall Panels
Vertical panels are used to reduce the total number of joints and seams in the booth, thus creating a stronger and longer lasting cabin. Fewer seams also means smoother walls, which are less likely to collect dirt and are easier to clean.

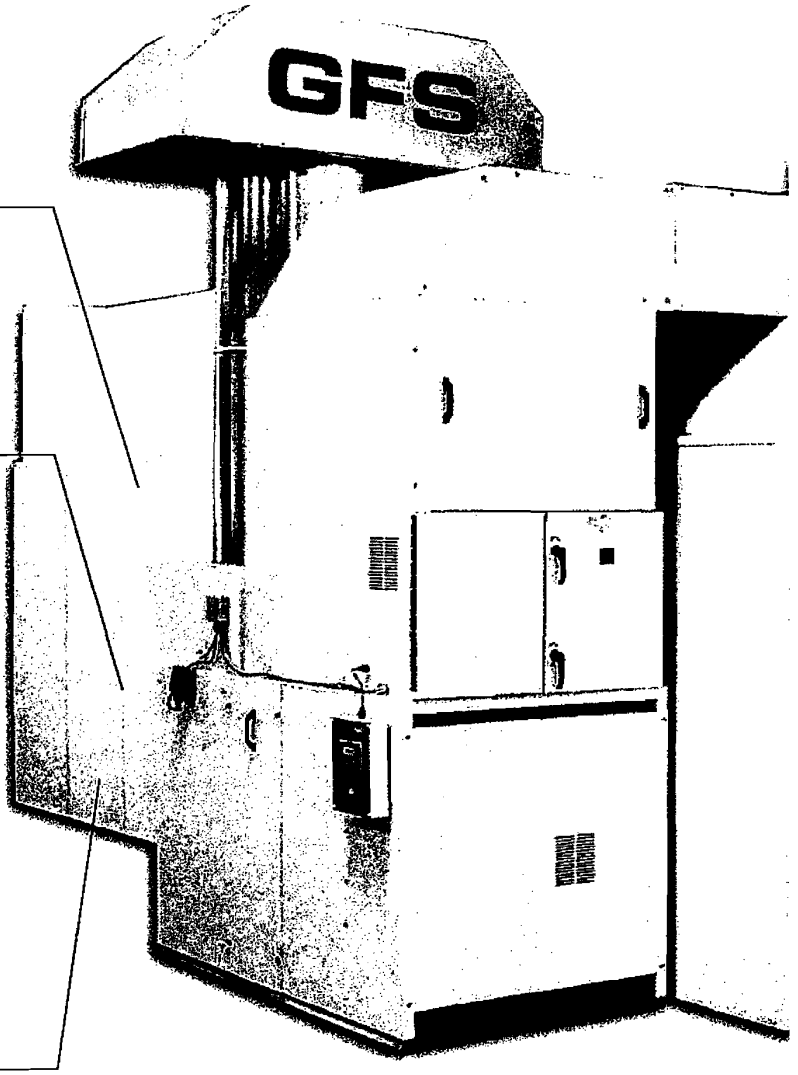
H-Channel Construction
Another GFS-exclusive design, H-channel wall construction allows the panels to fit together without nuts and bolts, creating a virtually airtight fit. This reduces the total amount of caulk needed during installation.



Insulated Panels & Zero-Weld
The PERFORMER cabin features a 'Zero-Weld' design that helps eliminate the common rust-prone areas typically found in a paint booth. Dual-skin insulated panels reduce noise in the booth and surrounding shop, and helps control the ambient temperature outside the booth.



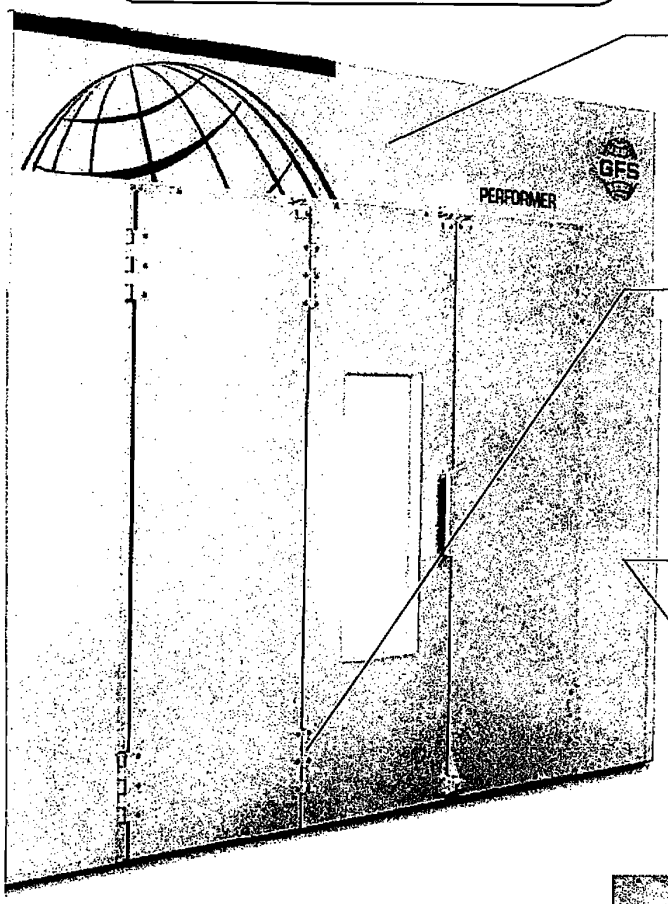
White Pre-Coated Steel
PERFORMER is constructed from white pre-coated galvanized steel. This pre-coating consists of dual layers of galvanizing, primer and a final layer of baked-on Polymer top coat.



GFS' PERFORMER Downdraft or Semi-Downdraft Paint Booth

Fully-loaded and ready for action, the GFS Performer is everything you need for an economical paint booth solution for your shop.

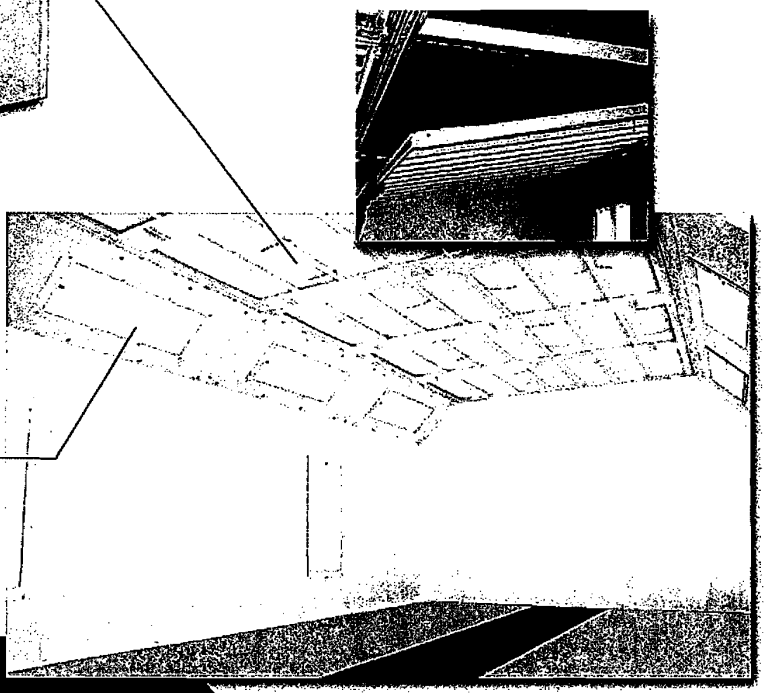
Downdraft & Semi-downdraft Models:
Internal: 14' w x 9' h x 27' l
External: 14'5" w x 11' h x 27'5" l (Downdraft)
30'5" l (Semi Downdraft)
Door Opening: 9'8" w x 8' 8 3/4" h



2-Foot Plenum & Diffuser
A key factor in the performance of GFS booths, the large plenum height provides the space necessary to create evenly-distributed airflow (plenum to pit) across the ceiling filters. The diffuser helps distribute the air from the heat unit evenly throughout the plenum.

Door Design & Hardware
GFS uses a 3-slab insulated door design with fully-adjustable hinges with replaceable brass bushings for a precise fit. Heavy-duty latches and handles ensure years of reliable service and ease of use.

Ceiling Filter Racks
Providing full front-to-back filtration, PERFORMER's filter racks provide superior contamination control through our own proprietary filter media. Easy access to the racks provide fast and simple filter changeout.

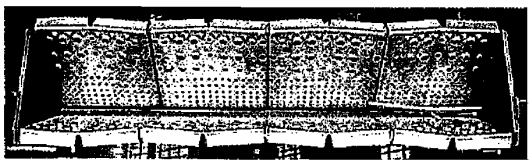


Lighting Design
GFS combines ceiling hip lights with vertical wall lights to create a virtually shadow-free environment, perfect for color matching and precise application of paint. All light fixtures use high-efficiency T-8 color-corrected tubes with electronic ballasts.

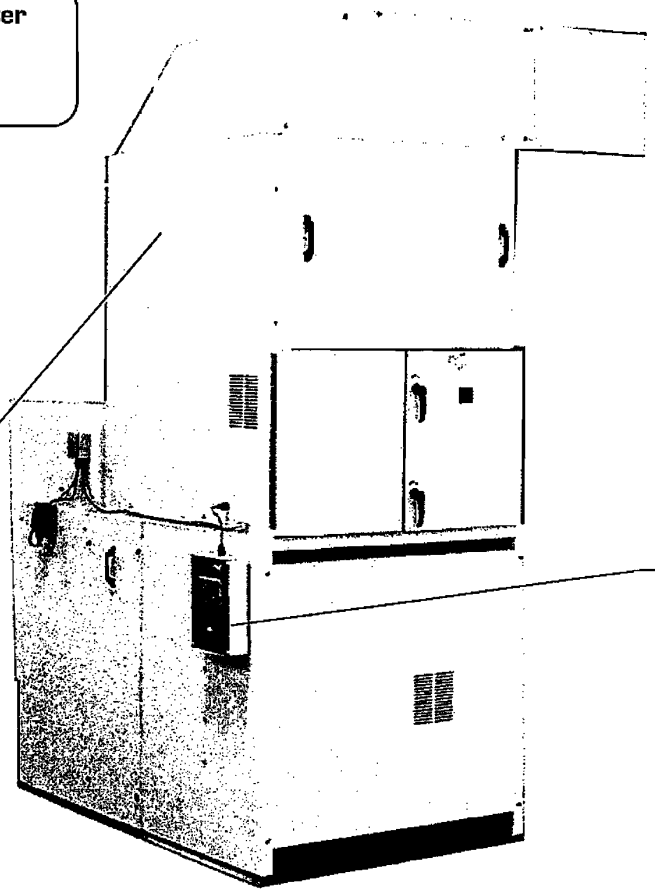
BT HEATER

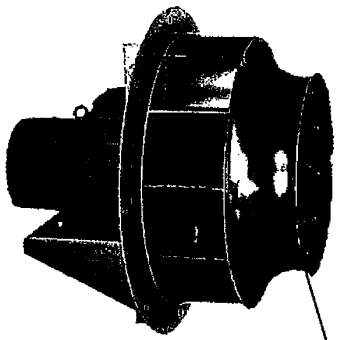
GFS' BT Heater is a high-efficiency direct-fired recirculating heater designed for maximum energy savings & superior air movement.

ETL-Listed Industrial Air Heater
- 12,000 CFM, 1.2 Million BTU
- 10hp intake fan, 5hp exhaust fan
- Exhaust-mounted VFD

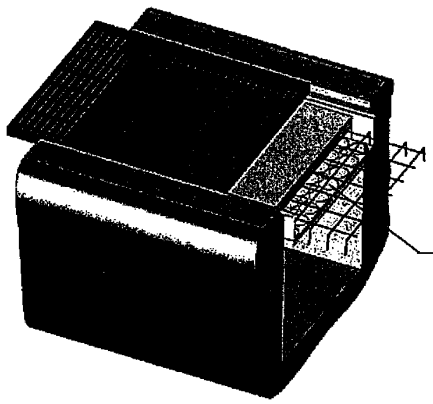


Aluminum Burner
Most manufacturers use cast iron burners which will rust over time and require replacement. GFS uses aluminum burners to reduce corrosion that occurs over the life of the burner, resulting in reduced annual maintenance and downtime.





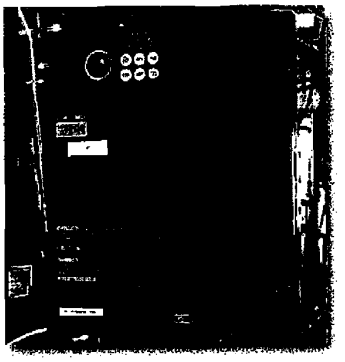
Intake Turbofan
By utilizing a backward-inclined turbofan on the intake, the BT Heater provides superior airflow through the heat unit and through the plenum of the cabin. More powerful airflow translates directly into better performance.



Pit Design
GFS' exclusive 4-layer pit design consists of heavy-duty steel grating, GFS WAVE filter media, filter support grids and pit diffuser pans.

CONTROLS

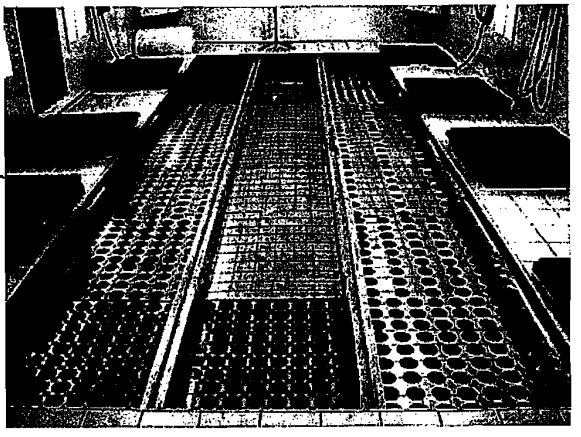
SPRAY BOOTH AXIOM CONTROLS



Control Panel Functions
AXIOM controls feature everything you need to control the operation of the booth in one simple, easy-to-use interface. Cabin lights, booth temperature, cycle time and service diagnostics can all be accessed from the AXIOM interface panel.

Variable Frequency Drives
VFDs control the speed of the electric motors, eliminating the need for mechanical dampers. PERFORMER comes with one VFD on the exhaust motor, and can be upgraded to a dual-VFD system to greatly increase energy savings with Economy Mode functions.

Balanced Airflow
GFS engineered the perfect solution for balancing airflow in the booth through interchangeable pit diffuser pans. These pans allow more air to flow through the exhaust pit at certain points based on the location of the heater unit. By customizing the way the air moves in the cabin, GFS maximizes filter life and provides a more effective envelope of downdraft airflow around the vehicle for superior performance during the spray, flash and bake processes.

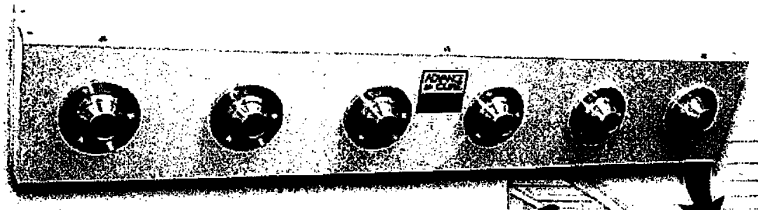


Optional 3-row exhaust pit shown here, grates and filters removed

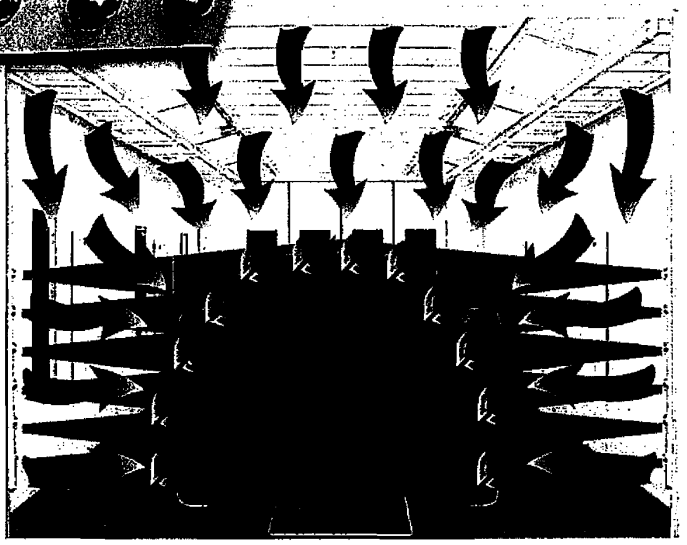
OPTIONS

ADVANCE CURE®
Accelerated Airflow System
by
Global Finishing Solutions

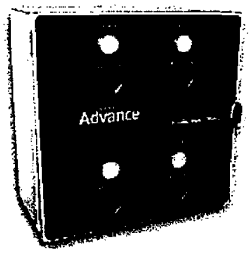
Waterborne Drying
PERFORMER booths can be upgraded with GFS' AdvanceCure system for improved performance with waterborne paints. AdvanceCure's turbulent airflow greatly reduces the drying times of waterborne paints. By creating turbulent airflow on the surface of the vehicle during the flash and bake cycles, AdvanceCure drastically accelerates the evaporation process of the water contained in the paint, which results in significantly shorter production times for your body shop and better quality finishes..



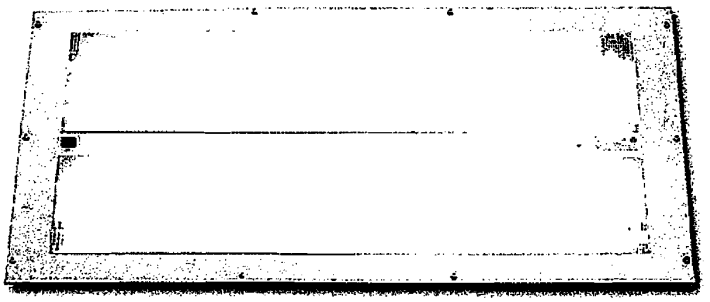
AdvanceCure Horizontal Module



AdvanceCure 4-module Controls



6-tube Lighting
PERFORMER's standard 4-tube light fixtures can be upgraded to 6-tube lights in order to provide even greater illumination inside the paint booth. All fixtures come with energy-efficient T-8 fluorescent tubes and electronic ballasts.



PERFORMER

Downdraft & Semi-Downdraft Models:

Internal: 14' w x 9' h x 27' l
External: 14'5" w x 11' h x 27'5" l (Downdraft)
30'5" l (Semi Downdraft)

Full downdraft or semi-downdraft airflow during spray and curing cycles through the ceiling with integrated angled hip-style light fixtures

Dual skin insulated panel construction
- White pre-coated galvanized steel
- Weld-free construction prevents rusting and improves spray booth strength

Single row pit exhaust system or raised platform
- Pre-engineered pit design properly balances airflow

Heavy-duty 3-wing entrance door with observation window

Side access door with observation window, can be moved to accommodate different spray booth layouts

Eight 4-tube ceiling light fixtures, four 4-tube sidewall light fixtures with energy efficient electronic ballasts

Spray booth is designed to accept fire suppression system, required but not included.

Available Cabin Options:

- Drive-thru configurations
- Raised platform exhaust basement
- Three-row pit, 21' long
- Two-row pit, 24' long
- AdvanceCure Accelerated Airflow System
- 6-tube light fixtures
- Also available as a SpaceSaver model

BT Heater Specifications:

High-efficiency direct fired system with recirculating cure mode
- Increases productivity by using a 'cure' cycle to provide faster and better finishes than air drying
- Pressurizes the paint booth to reduce dust entry from the outside environment

Direct-drive intake motor
- No belts or pulleys to maintain
- More efficient performance

Modular exhaust and intake unit

Fueled by natural gas or propane

Multi-stage filtration system extends paint booth filter life
- Fresh air is filtered before heating
- Recirculated air is filtered before re-entering the spray booth

Password-protected control panel to prevent unauthorized access

ETL Listed Industrial Air Heater

- 12,000 CFM, 1.2 Million BTU
- Direct Fired Industrial Air Heater
- Supply fan powered by 10 HP motor
- Exhaust fan powered by 5 HP motor
- Exhaust-mounted Variable Frequency Drive

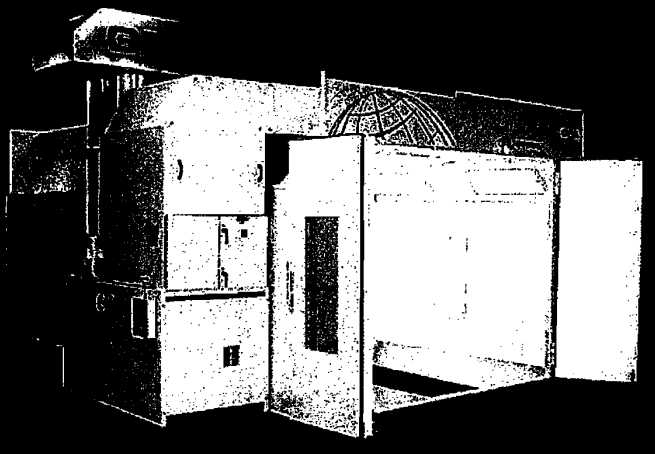
Code Compliance

• NFPA-33 Standard for spray application using flammable and combustible materials • NFPA-86 Standard for ovens and furnaces • NFPA-91 Standard for exhaust systems for a conveying of materials • NFPA-101 Life Safety Code • NFPA-70 National Electric Code • OSHA Safety and Health Standards (29CFR 1910, 1910.107) • BOCA National fire prevention code • ICBO Uniform Fire Code Article 45 • SBCCI Standard Fire Prevention Code • ICC International Building Code • ICC International Fire Code Chapter 15. This booth has been reviewed and approved by: • ETL Equipment Testing Laboratory approved cabins • All light fixtures are ETL approved for hazardous locations. All light fixtures are accessible from the interior of the spray booth and conform to the provisions of N.F.P.A. 33. Electrical components, such as motors, motor starters, disconnect switches and push buttons, are listed or approved for the Class and Division in which they are located. Motors UL recognized PRGYZ, Marathon Electric file E49747 (or equal). Glass used in the spray booth is tempered and meets and exceeds ANSI Z-97.1 standard. Conformance to all these requirements is dependent upon the manner in which the equipment is installed. The contractor will make certain that all of the electrical wiring and conduit, piping, gas supply, roof penetrations, automatic fire protection systems, and the location of the equipment within the building also conforms to the cited codes and other references. Fire suppression system is NOT included with the standard booth but is required by NFPA-33.

Consult your Global Finishing Solutions sales representative for details of required installation, concrete pit, electrical wiring, conduit, air piping, roof penetrations and automatic fire suppression. The equipment installation location should be reviewed and approved by the local authorities having jurisdiction. All equipment designs, specifications and components are subject to change at the manufacturer's sole discretion at any time without notice. Data published herein is informational in nature and shall not be construed to warrant suitability of the unit for any particular purpose as performance may vary with the conditions encountered.

The World Leaders in Paint Booth Technology

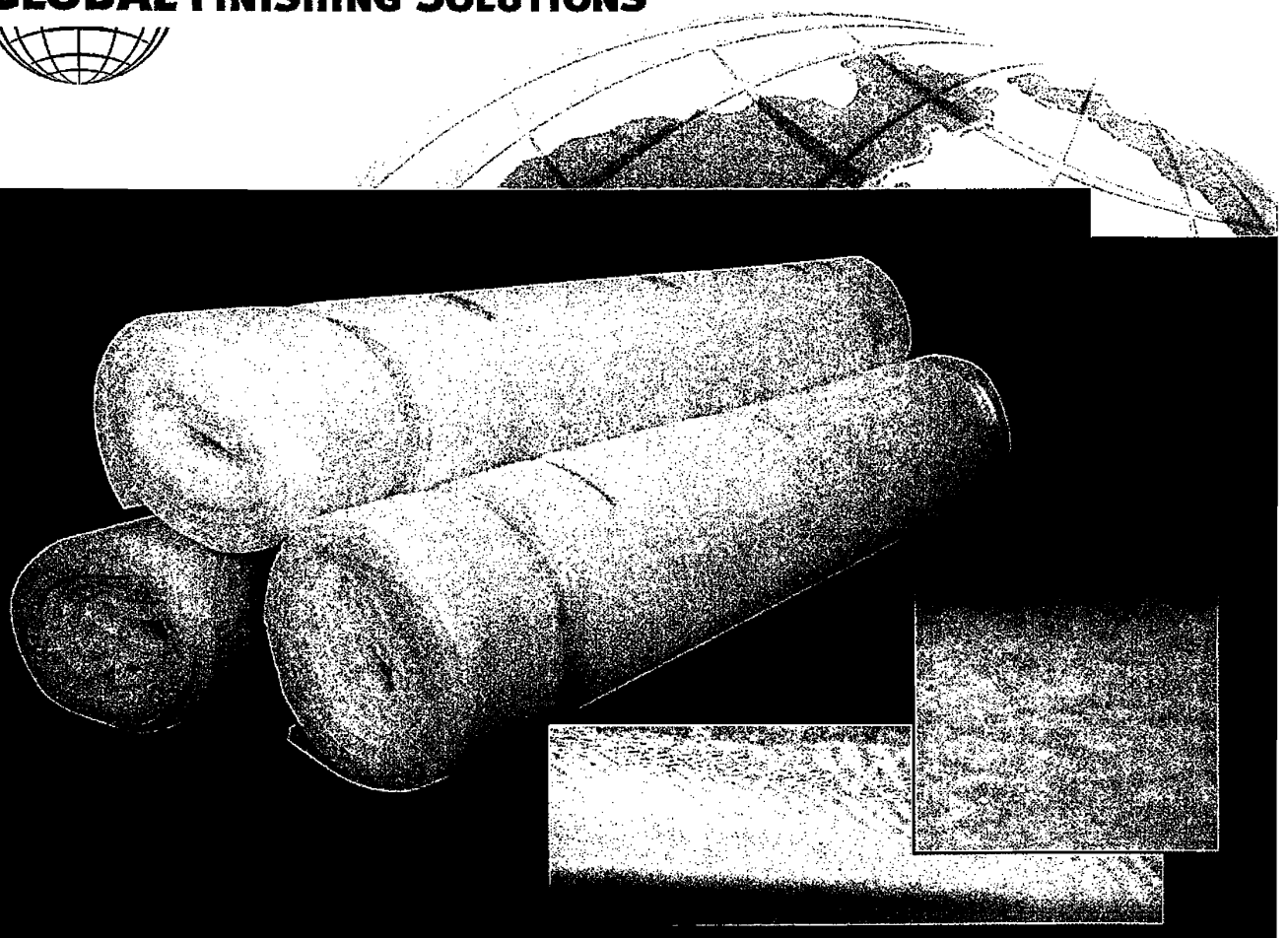
Use your Smart Phone to scan this QR Code for more information



Global Finishing Solutions • 877-658-7900 • autorefinishsales@globalfinishing.com

WWW.GLOBALFINISHING.COM

GLOBAL FINISHING SOLUTIONS™



Micro-Clean

High temperature Compatible Downdraft Ceiling Media

- High Temperature Integrity
- Designed for High Temperature Accelerated Curing Cycle
- Long Lasting - Fewer Filter Changes
- Manufactured with a Dustlok® Adhesive
- Low Operating Cost
- Competitively Priced

The world's first paint booth filter designed for waterborne!

WAVE AQUA FILTERS only from **GFS**

- Waterborne paints cause traditional paint booth filters to load much faster than when using solvent-based paints. GFS has engineered the new WAVE Aqua filters to provide the absolute best performance with modern waterborne coatings!

WAVE Aqua filters feature:

- > Lowest initial resistance of any polyester or paper/poly or poly/fiberglass paint arrestor
- > Durable fiber mat won't tear or shed
- > High removal efficiency – 99.7%*
- > High-capacity design for longer in-service use**
- * Exceeds EPA OH requirements
- ** Tests show auto refinish booths average more than 200 hours in-service and 495 grams loaded!

Available in
- Pack
- Roll

Scan this QR code with your Smartphone for more information on the GFS website!

http://www.facebook.com/globalfinishing

http://www.twitter.com/globalfinishing

Call today to order!
800-848-8738 opt.4
email: filters@globalfinishing.com

www.waveaquafilters.com

15-0936 Public Comment
PC Rcvd 08-13-15

GLOBAL FINISHING SOLUTIONS™

5 POCKET FRAMED FILTER

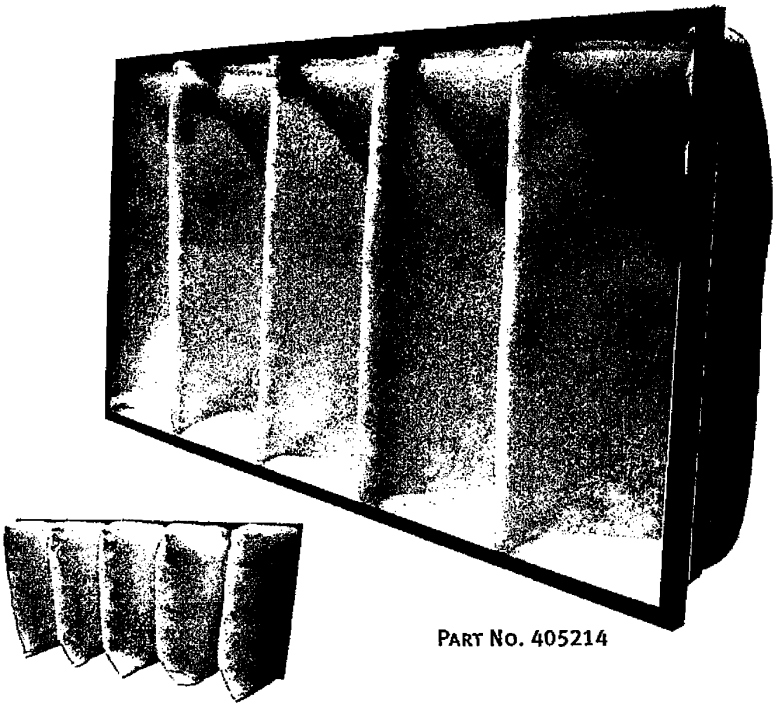
Supply and Exhaust Collection System

Average Efficiency 90.4%

MERV 4 Rating

Temperature limit of 400° F

* Test results based on High Solid Paint



PART NO. 405214

The 5 Pocket Framed Filter is designed with a unique "V" pocket design for longer service life. This versatile bag can be used as the supply side and exhaust part of your filtration system. The 5 Pocket Framed Filter can also be used as a secondary filter in our multi-stage system.

HIGH QUALITY - COST EFFECTIVE

LMS TECHNOLOGIES, INC.
6423 Cecilia Circle
Bloomington, MN 55439
(952) 918-9060, Fax: (952) 918-9061

Report #: 993
Test Date: 8/2/05

Test Report-ASHRAE Test Standard 52.2

Requested By:	Global Finishing Solutions
Manufacturer:	A. J. Dralle Company
Product Name:	5 Pocket Framed Filter
Model Number:	405214
Dimensions:	20 x 20 x 12
Number of Pockets:	Five
Filter Description:	White highloft poly bag filter
How Filter is Obtained:	Provided by Manufacturer

Test Results

Test Air Flow Rate(CFM)/Velocity (FPM)	1367 cfm/492 fpm
Initial Resistance (in. WG)	0.175
Final Resistance (in. WG)	1.0
Minimum Efficiency Rating Value (MERV)	MERV 4 @ 1367 cfm
Average Arrestance, %, by standard 52.1 method	90.4%
Minimum Average Efficiency 3.0 to 10 Microns (E3)	<20%
Dust Fed to Final Resistance(grams)	385 Grams (348 HC)

Test Description

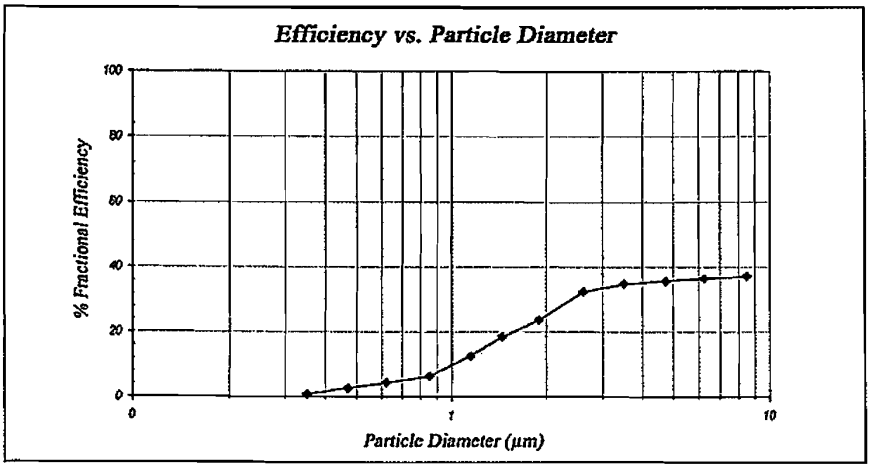
Temp & Humidity:	70 @ 45%
Particle Analysis:	Hiac/Royco FE-80
Test Dust:	ASHRAE 52.1 Dust
Test Aerosol:	KCL Neutralized
Test TEngineer:	Mick Flom/Tom Atef/Emile Tadros, Kian Imani
Approved By:	K. C. Kwok, Ph.D.

INITIAL 52.2 TEST REPORT

August 8, 2005

LMS Technologies, Inc.
P. O. Box 24185
Edina, Minnesota 55424 U.S.A.
Tel.: (952)-918-9060
Fax: (952) 918-9061

Test Type :	Fractional Efficiency	Test Requested By:	Global Finishing Solutions
Test Number:	T080205A		
Flow Rate/Velocity:	500 fpm	Filter Mfgr:	A. J. dralle
Test Aerosol:	KCL, Neutralized	Filter Identifiction:	5 Pocket Framed Filter
ΔP ("H2O):	0.175	Filter/Media Size:	20 x 20 x12

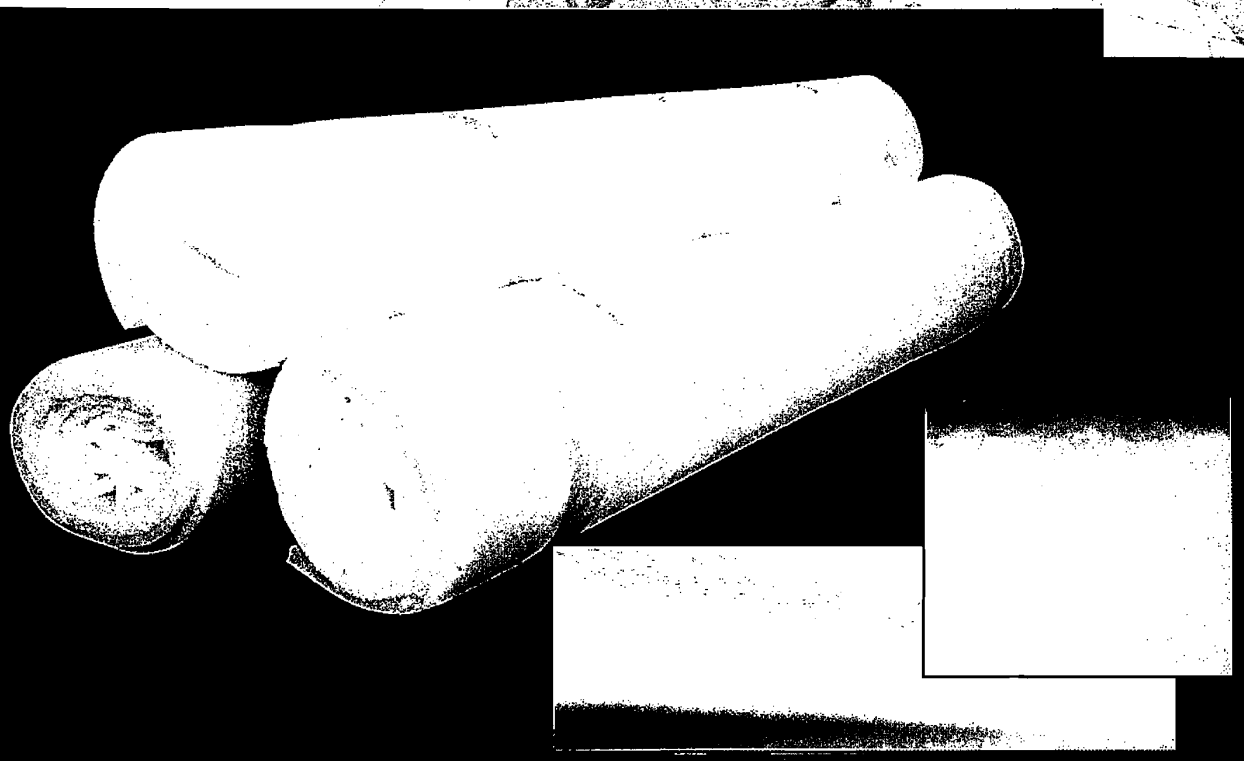


Size Rang (mm)	Initial Fractional Efficiency (%)
0.3-0.4	0.7
0.4-0.55	2.5
0.55-0.7	4.4
0.7-1.0	6.4
1.0-1.3	12.4
1.3-1.6	18.6
1.6-2.2	23.6
2.2-3.0	32.4
3.0-4.0	34.9
4.0-5.5	35.8
5.5-7.0	36.5
7.0-10.0	37.2

Test Supervisor: Mick Flom *Engineering Approval: K.C. Kwok, PH.D*

405214

GLOBAL FINISHING SOLUTIONS™



Micro-Clean

High temperature Compatible Downdraft Ceiling Media

- High Temperature Integrity
- Designed for High Temperature Accelerated Curing Cycle
- Long Lasting - Fewer Filter Changes
- Manufactured with a Dustlok® Adhesive
- Low Operating Cost
- Competitively Priced

15-0936 Public Comment
PC Rcvd 08-13-15

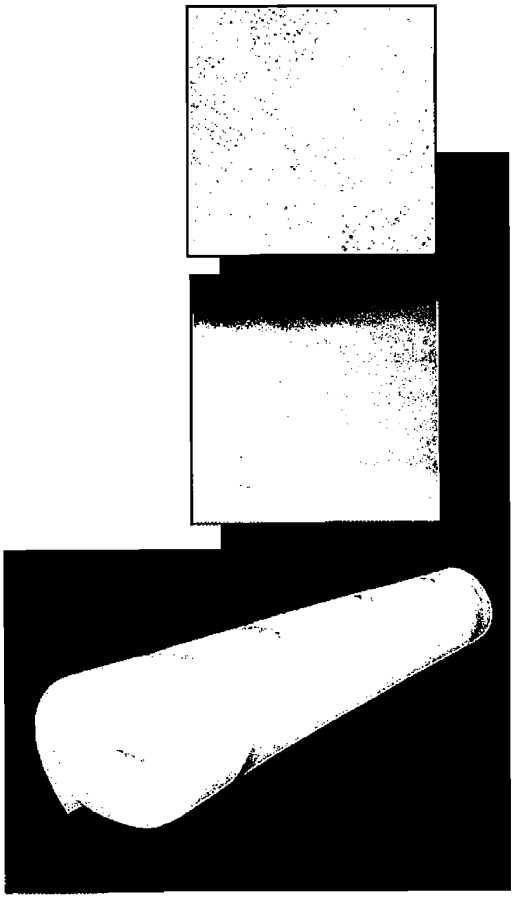
Micro-Clean Downdraft Ceiling Media

Receive expert factory training and assistance at the Global Finishing Solutions Tech center, the industry's leading downdraft spray booth research and development facility.

This filter media is designed for spraybooths with high temperature accelerated curing cycle.

Global Finishing Solutions' exclusive Micro-Clean ceiling filters are made of white media comprised of a precise blend of 100% polyester fibers bonded with a flame retardant binder. The fibers are uniformly coated with a non-drying, non-migrating, adhesive attracting and trapping all visible particulate.
The air leaving side has a polyester mesh scrim providing extra support and a final barrier to prevent fiber shedding. In addition to its fine filtering capability, this media doubles as a diffuser to distribute air evenly as it enters the spray booth or workstation.

Global Finishing Solutions' Micro-Clean ceiling media, or diffusion media, are among the finest available around the world. Their ability to trap and retain dirt particulate, the barely visible pieces of dirt that can ruin finishes, is unparalleled. Micro-Clean ceiling filters can remove 99.97% of the particles larger than 8 microns.



Increase Your Performance - Increase Your Profits

Our Micro-Clean Filters will perform to your satisfaction

- **Higher efficiency:**
  All visible micron-sized particles are removed, eliminating rework caused by surface contamination.
- **Higher capacity:**
  Long-lasting filters require fewer changes, reducing downtime and therefore increasing productivity as well as reducing overall operating costs.
- **High temperature integrity:**
  This media can withstand temperatures of over 200° F with no adverse effects to its performance. Premature changes are avoided.
- **Dustlok® adhesive:** (a patented formulation)
  Manufactured with a non-migrating adhesive, dirt is trapped and stays trapped. **Dustlok®** actually bonds the dirt to the filter.

  All of which means the highest quality finishes possible will be achieved while keeping total costs to a minimum, an unbeatable combination.

Micro-Clean Ceiling Media Lab Test Results:

Particle Size (microns)	8.37
Average Composite Minimum Efficiency	99.97%
Filter thickness:	3/4" (19 mm)
U.L. Standard 900 Class 2	

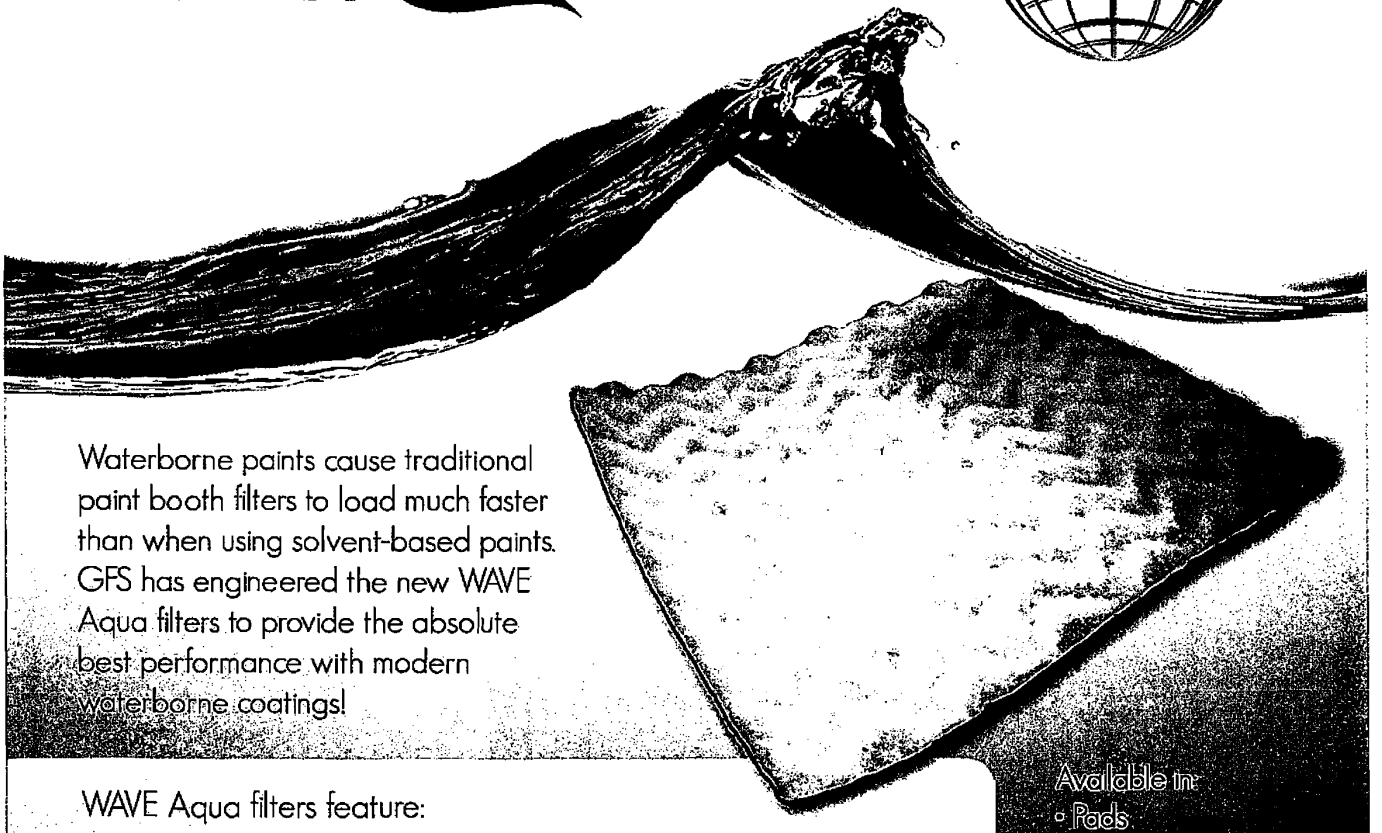
GLOBAL FINISHING SOLUTIONS™

Dallas, TX • Barrie, ON • Osseo, WI • Mexico
800 300-1546 • www.globalfinishing.com
e-mail: auto@globalfinishing.com

Printed in Canada
Micro-08-03-1

The world's first paint booth filter designed for waterborne!

WAVE AQUA FILTERS only from **GFS®**



Waterborne paints cause traditional paint booth filters to load much faster than when using solvent-based paints. GFS has engineered the new WAVE Aqua filters to provide the absolute best performance with modern waterborne coatings!

WAVE Aqua filters feature:

- > Lowest initial resistance of any polyester, or paper/poly, or poly/fiberglass paint arrestors
- > Durable fiber mat won't tear or shed
- > High removal efficiency - 99.73% *
- > High-capacity design for longer in-service use**
- > Exceeds EPA 6H requirements

*Field trials in auto refinish booths average more than 200 hours in service and 475 panels coated

Available in:

- Pads
- Rolls
- All standard sizes
- Custom sizes

Scan this QR code with your Smartphone for more information on the GFS website!

http://www.facebook.com/globalfinishing

http://www.twitter.com/globalfinishing

Call today to order!

800-848-8738 opt.4

email: filters@globalfinishing.com

www.waveaquafilters.com

WAVE AQUA FILTERS only from GFS®

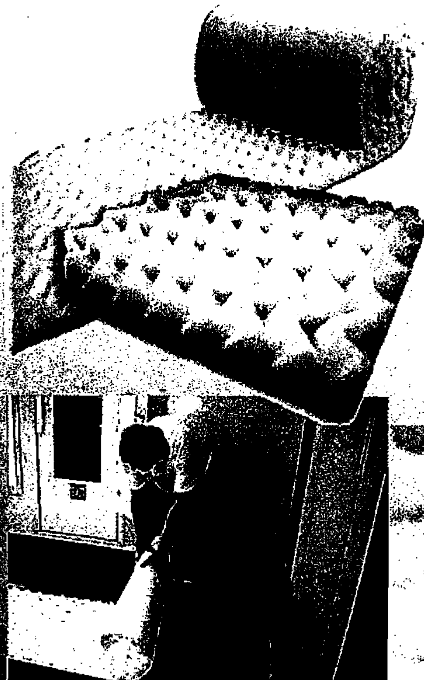
Converting to waterborne is a process with several steps. To achieve the absolute highest level of contamination control, one of those steps is changing to an exhaust filter specifically designed to handle waterborne coatings.

GFS introduces the new WAVE Aqua paint booth filter! The WAVE Aqua filter is engineered for maximum performance in shops spraying waterborne paints. Available for automotive paint spray booths & industrial paint spray booths, GFS WAVE Aqua filters provide the highest level of removal efficiency with waterborne paints.

WAVE Aqua Pads:
- 20" x 20"
- 20" x 25"

WAVE Aqua Rolls:
- 80" x 20'
- 60" x 30'
- 54" x 30'
- 48" x 30'
- 45" x 48'
- 45" x 30'
- 40" x 30'
- 36" x 30'
- 30" x 50'
- 30" x 30'
- 30" x 24'
- 24" x 30'
- 20" x 30'

Custom sizes available.



GFS [illegible] classic "WAVE" filter pattern design, [illegible] a new poly filter density that [illegible] to the characteristics of [illegible] new WAVE Aqua paint [illegible]

- Extremely high 99.73% removal efficiency
- Meets & exceeds all requirements for EPA 6H Rule testing & efficiency
- [illegible]
- [illegible]

www.globalfinishing.com

15-0936 Public Comment
PC Rcvd 08-13-15

Application for: Authority to Construct Permit to Operate Support Request

El Dorado County Air Quality Management District
2850 Fairlane Court, Building "C", Placerville, CA 95667
Phone: (530) 621-6662
Fax: (530) 295-2774
www.co.el-dorado.ca.us/emd

RESPONSIBLE COMPANY OR OPERATOR

Company/Operator (Please Print or Type)	Contact
Knieselt Auto Collision Center, Inc.	Robert Champe
Mailing Address	**Title**
4680 Pacific Street	CFO
City, State &ZIP Code	**Phone**
Rocklin, CA 95677	(916) 342-3173
Federal ID Number or SS Number	**E-Mail Address**
20-8102039	robc@knieselts.com

FACILITY LOCATION

Name of Facility	Facility Contact
Knieselt Collision Center - Shingle Springs	Robert Champe
Street Address	**Title**
4031 Wild Chaparral Dr	CFO
City	**Phone**
Shingle Springs	916 342-3173

Send bill(s), permits and correspondences to? ☒ Responsible Company/Operator ☐ Facility Location

Type of Application (Check appropriate boxes)

- ☒ New Facility
- ☐ Modification of Existing Facility or Equipment
- ☐ Change of Ownership — Existing Permit # _____
- ☐ Emission Reduction Credit
- ☐ AQMD Support Request
- ☐ Miscellaneous (explain below)

Is the facility location within 1000 feet from the boundary of a K-12 school? ☐ YES ☒ NO

Equipment Schedule of Operation	Hours/day:	Days/week:	Weeks/year:
	8	5	52

Estimated Construction Start Date:	Estimated Completion Date:	Estimated Start-up Date:

Description of Project/Request (Attach supplemental forms and/or detailed equipment/emission information):

Paint Booth (see attached)

Information submitted to obtain an Authority to Construct/Permit to Operate is public information unless specifically marked as trade secret or confidential by the applicant. Emission data is subject to disclosure regardless of any claim of trade secret or confidentiality.

Signature of Responsible Official/Person:

The Responsible Official/Person is the individual with the authority to certify this source will comply with all District requirements and conditions set forth in the permit and the Rules and Regulations of El Dorado County. I certify all information contained herein and submitted with this application is true, accurate and complete.

Signature: _____ Date: 5/24/10

Printed Name: Robert Champe Title: CFO

DATE STAMP
RECEIVED
JUN 02 2010
AQMD

FOR EL DORADO COUNTY AQMD USE ONLY

AC No.: 10-009

PO No.: 12-1588

APPLICATION APPROVED — DATE: 7/25/11 — ENGINEER'S INITIALS: AB

APPLICATION DENIED — DATE: _____ — ENGINEER'S INITIALS: _____

El Dorado County
Air Quality Management District
Automotive Refinishing Coating Supplemental Questionnaire

Business Name: _____ **Spray Booth No.** _____ **Date:** _____
Prepared By: _____
Brand(s) of Coatings Normally Used: PPG OMNI 3M

Coating Type	VOC Content in lb/gal *	Maximum Coating Usage (gallons					
		Daily	1st Qtr[1]	2nd Qtr[1]	3rd Qtr[1]	4th Qtr[1]	Annual[2]
Pretreatment Wash Primer	6.1	.007	.5	.5	.5	.5	2.0
Precoat	NA	—					
Primer/Primer Surfacer	2.1	.14	9	9	9	9	36
Primer Sealer	2.8	.23	15	15	15	15	60
Solid Color Topcoat	—						
Metallic Topcoat[3]	—						
Multi-Stage topcoat System[4]	4.5	1.38	90	90	90	90	360
Specialty Coating	7.0	.02	1.5	1.5	1.5	1.5	6
Temporary Protective Coating	—						
Surface Prep. Solvent (For Metals)	.6	.12	8	8	8	8	32
Surface Prep. Solvent (For Plastics)	6.5	.09	6	6	6	6	24

*Typical volatile organic compound (VOC) content RTS (ready to spray), in pounds per gallon.

Notes
1. Quarterly usage estimates should consider the maximum possible business in each quarter.
2. The maximum annual usage will be equal to or less than the sum of the four quarterly maximum usages.
3. Metallic topcoat usage for single stage (i.e., enamel) applications only. Multi-stage applications (i.e., metallic basecoat with a clear coat) should be included under multi-stage topcoat system usage.
4. Multi-stage topcoat system usage should include groundcoats, midcoats, and clearcoats.

GLOBAL FINISHING SOLUTIONS™

Ultra

Recirculating Style Heat Unit
(H.E. High Efficiency)

Direct Fire Group
Bake Cycle

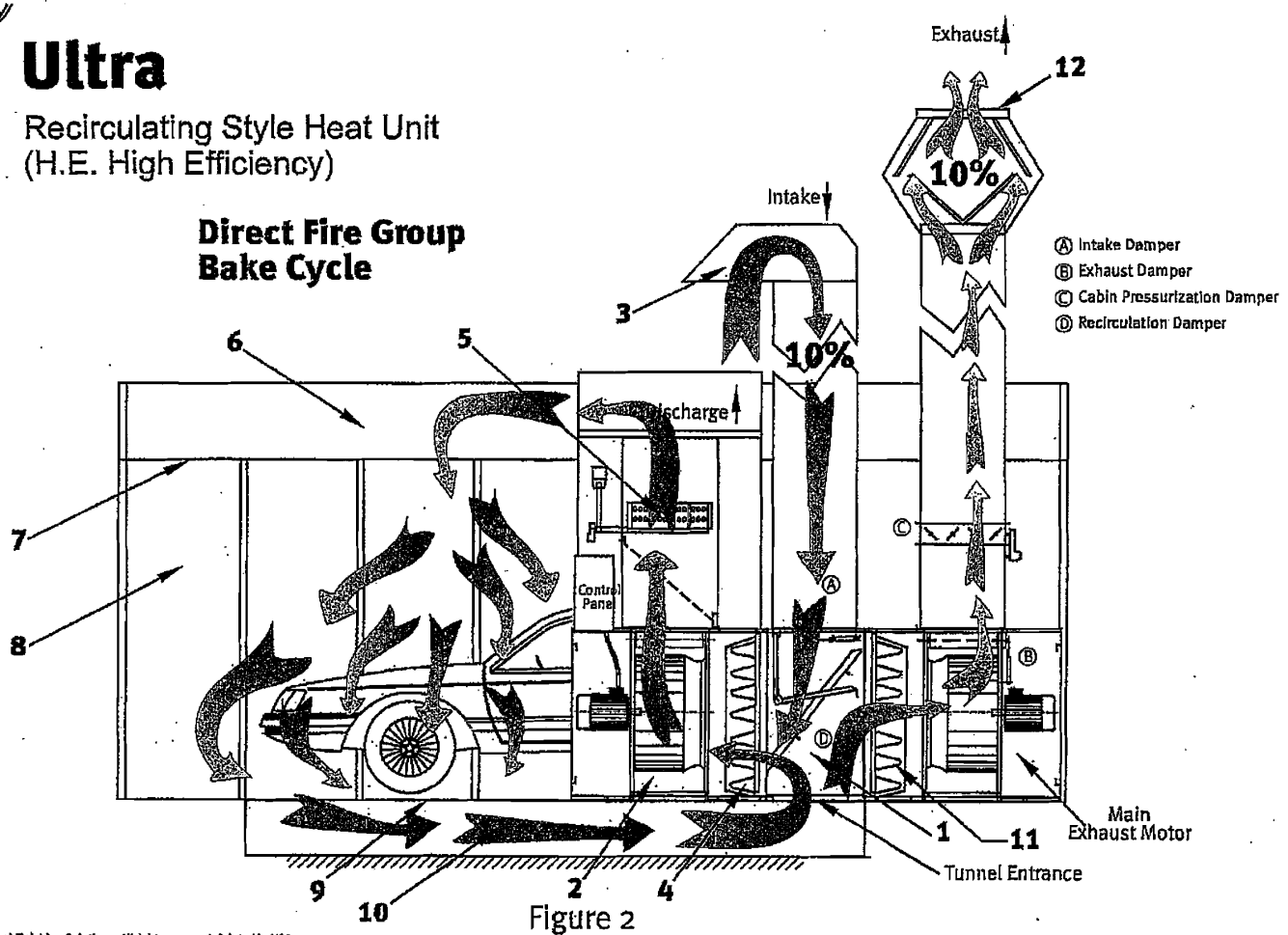


Figure 2

How a Heater Typically Works

A curing paint booth provides basically two successive operating cycles:

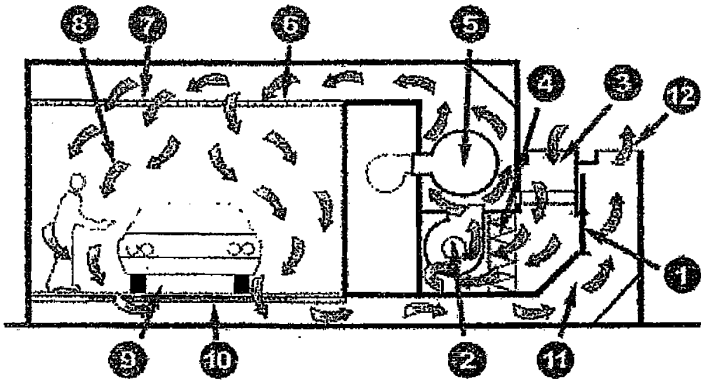
- 1st Phase - Spray Mode and Flash-Off
- 2nd Phase - Bake Mode and Cool Down

PHASE 1 - SPRAY MODE

The Spray Mode is the period of time during which the paint material is being sprayed onto the vehicle.

During this phase, the operating cycle ensures the correct air pressure and temperature for the painter, as well as excellent air filtration for proper results of the paint application.

The operator turns on the power and sets the appropriate switch on the control panel to "spray".



The spray cycle is as follows: The damper (1) positions itself automatically to allow the intake blower assembly (2) to only draw in outside fresh air (3).

All the air then passes through the pre-filter (4) then through the burner or around the heat exchanger (5). The outside air is heated to the preset temperature on the control panel and enters into the plenum (6) of the booth. Here, the air passes through the ceiling filters (7), enters the booth (8) and is evenly distributed throughout the booth cabin. The air is then exhausted beneath the floor (9) through the paint arrestor filters (10), where most of the overspray is removed. Then it enters the exhaust side of the mechanical unit (11) where it is expelled through the duct exhaust to the outside (12).

PHASE 1 - FLASH-OFF

The flash-off phase is the period of time between two applications of paint or between the last application and the bake cycle. This time is necessary to allow the paint to flow out and release solvents.

This is an extremely variable phase, which may or may not be necessary, depending upon the type of paint and application method used. The time setting will be determined in each case by the painter and paint supplier.

The flash-off phase is identical to the spray mode, except for the possible change in air temperature supplied to the booth, therefore:

DURING THE SPRAYING AND FLASH-OFF PHASES, THE BOOTH SHOULD ALWAYS BE OPERATING IN THE SPRAY MODE, WITH 100% FRESH AIR. DO NOT TURN OFF BOOTH. THIS IS TO AVOID ANY POSSIBLE BUILD-UP OF SOLVENTS IN THE BOOTH, WHICH COULD REACH LEVELS OF FLAMMABILITY AND/OR EXPLOSION.

PHASE 2 - BAKE MODE

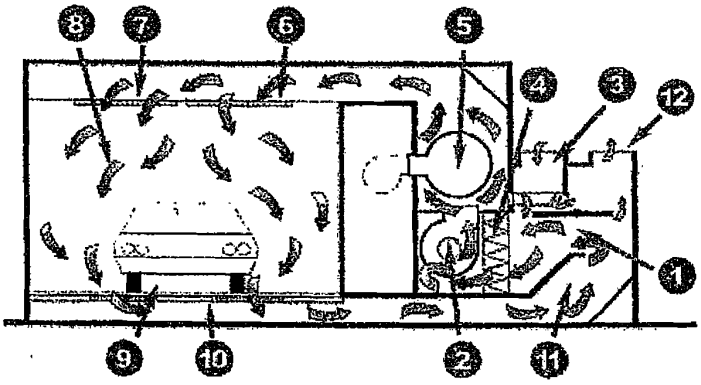
The bake mode is the period of time required for the curing of the paint applied to the vehicle.

During this phase, the control unit maintains the operator's pre-selected temperature (up to 176 degrees F) and excellent filtration for proper results.

NO ONE SHOULD ENTER THE BOOTH DURING THE BAKE MODE.

The operator sets the switch on the control console to "bake." This automatically activates the bake timer which should have been set in advance with the correct cure time. The bake time counter will start as soon as the booth reaches the preset temperature for this phase.

The operating cycle is as follows: The damper (1) automatically positions itself to permit the intake blower assembly (2) to draw a portion (10 - 15%) of the air from the outside (3) and re-circulate the remaining (85-90%). All the air then passes through the pre-filter (4) and around the burner or heat exchanger (5). It is heated to the preset temperature on the control panel and enters into the plenum (6) of the booth. Here the air passes through the ceiling filters (7), and then enters the booth (8) and is evenly distributed throughout the booth cabin.



The air is then exhausted beneath the floor (9) through the paint arrestor filters (10), then it enters the exhaust chamber (11) where 10-15% of the air is expelled outside (12) and the remaining 85-90% is re-circulated.

PHASE 2 - COOLING

The cooling phase is the period of time required to cool down the heating unit and the vehicle.

This phase starts automatically upon completion of the bake period. The length of this phase is preset and controllable via a thermostat. A sensor is located above the burner or heat exchanger and close to the connecting duct between the spray booth and the monoblock. If the thermostat temperature setting is too low, making it impossible for the outside air to cool it to the preset temperature, a preset timer will interrupt the cooling even though the preset temperature has not been reached.

The operating cycle is similar to the spray mode, in that the dampers automatically position themselves itself to draw 100% fresh air from the outside, like in the paint cycle.

NEVER TURN OFF THE POWER TO THE BOOTH WHEN IT IS OPERATING IN THE COOLING CYCLE. DOING SO WILL STOP THE BLOWER ASSEMBLY, THUS PREVENTING THE PROPER COOLING OF THE COMBUSTION CHAMBER, WHICH COULD THEN OVERHEAT AND BE DAMAGED.

THE RED EMERGENCY BUTTON IS NOT OPERATIONAL DURING THIS PHASE.

POWER TO THE UNIT SHOULD BE TURNED OFF ONLY WHEN THE BLOWER ASSEMBLY IS NOT IN OPERATION OR WHEN ABSOLUTELY NECESSARY.

IF IT IS ABSOLUTELY NECESSARY TO INTERRUPT THE COOLING CYCLE, DUE TO AN EMERGENCY, TURN OFF THE MAIN POWER SWITCH.

GAS TRAIN

BTU / HR	Max. Gas Req'd (CFH) Natural	Propane	Gas Press. (inWC) Natural	Propane	Temp. Rise	Gas Train Inlet Pipe Size
1,200,000	1200	510	10" - 14	11	90°F	1" N.P.T.
1,500,000	1500	638	10" - 14	11	90°F	1" N.P.T.

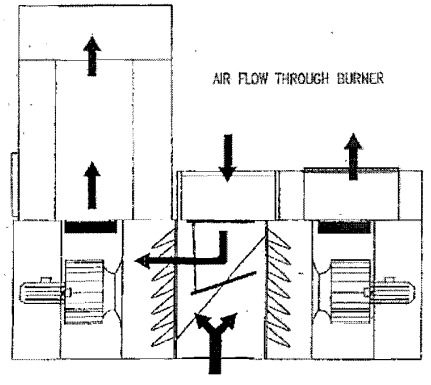
* Contact Global Finishing if minimum gas pressure in not available in your area.

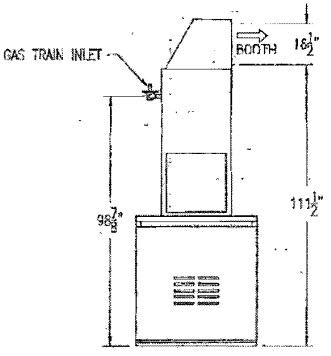
FANS

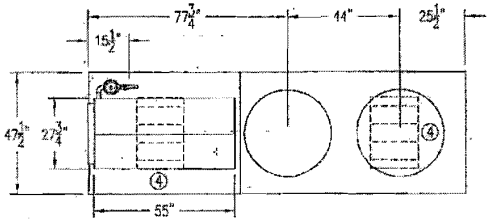
Description	1 PH 230V	Full Load Amp Draw, 3PH, 60Hz 200V	230V	460V	575V
10hp (15hp upgrade) T.E.F.C. intake motor with direct drive, centrifugal fan produces, 12000cfm (15000cfm).	50	30 (45)	30 (40)	15 (20)	12 (17.5)
10hp (15hp upgrade) T.E.F.C. exhaust motor with direct drive, centrifugal fan produces, 12000cfm (15000cfm).	50	30 (45)	30 (40)	15 (20)	12 (17.5)
Minimum circuit capacity	125	80 (110)	80 (100)	40 (50)	30 (50)

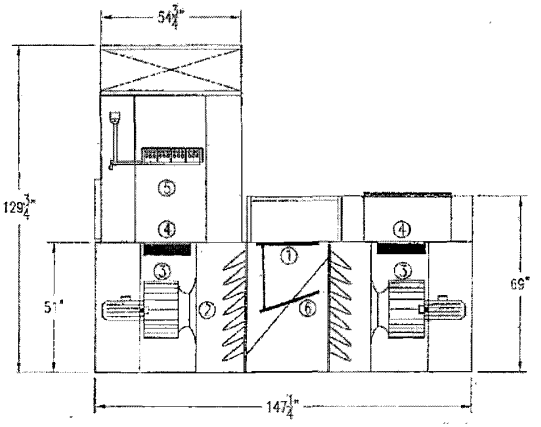
FILTERS

Position	Efficiency	Description
Intake / Exhaust	95% avg. arrestance	Pocket style synthetic media with a metal frame.

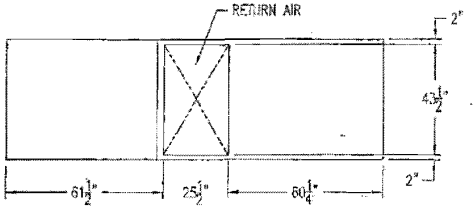








NO.	DESCRIPTION	DIMENSIONS
1.	INTAKE DAMPER (8043102)	24-1/4" x 42-1/2"
2.	INLET CONE OPENING	17-1/2" DIA
3.	FAN DISCHARGE OPENING	18-1/4" x 27-5/8"
4.	FAN DISCHARGE DAMPER (DMR-18275)	18-1/8" x 27-5/8"
5.	BURNER DUCT OPENING	26-1/4" x 28-1/8"
6.	RECIRC DAMPER (8043248)	23-1/2" x 27-1/2"



GLOBAL FINISHING SOLUTIONS

REV	DATE	PM	DRAWN BY
REV	DATE	PM	DRAWN BY
REV	DATE	PM	DRAWN BY

DATE 28/01/04 PM - DRAWN BY WILL McFADDEN CHKD BY -

NAME OF PROJECT: GUL2000

DRAWING DESCRIPTION: GENERAL ARRANGEMENT, INDUSTRIAL AIR HEATER 2000, RECIRCULATING

DRAWING NUMBER: GA-GUL2000 SHEET NUMBER 2 / 2

GAS TRAIN

BTU / HR	Max. Gas Req'd (CFH) Natural	Propane	Gas Press. (inWC) Natural	Propane	Temp. Rise	Gas Train Inlet Pipe Size
1,200,000	1200	510	10" - 14	11	90°F	1" N.P.T.
1,500,000	1500	638	10" - 14	11	90°F	1" N.P.T.

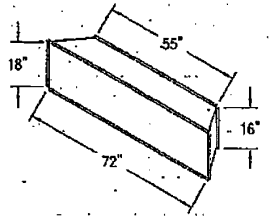
* Contact Global Finishing if minimum gas pressure in not available in your area.

FANS

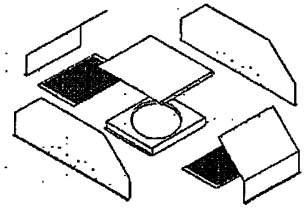
Description	1 PH 230V	Full Load Amp Draw, 3PH, 60Hz 200V	230V	460V	575V
10hp (15hp upgrade) T.E.F.C. intake motor with direct drive, centrifugal fan produces, 12000cfm (15000cfm).	60	30 (45)	30 (40)	15 (20)	12 (17.5)
10hp (15hp upgrade) T.E.F.C. exhaust motor with direct drive, centrifugal fan produces, 12000cfm (15000cfm).	50	30 (45)	30 (40)	15 (20)	12 (17.5)
Minimum circuit capacity	125	80 (110)	80 (100)	40 (50)	30 (50)

FILTERS

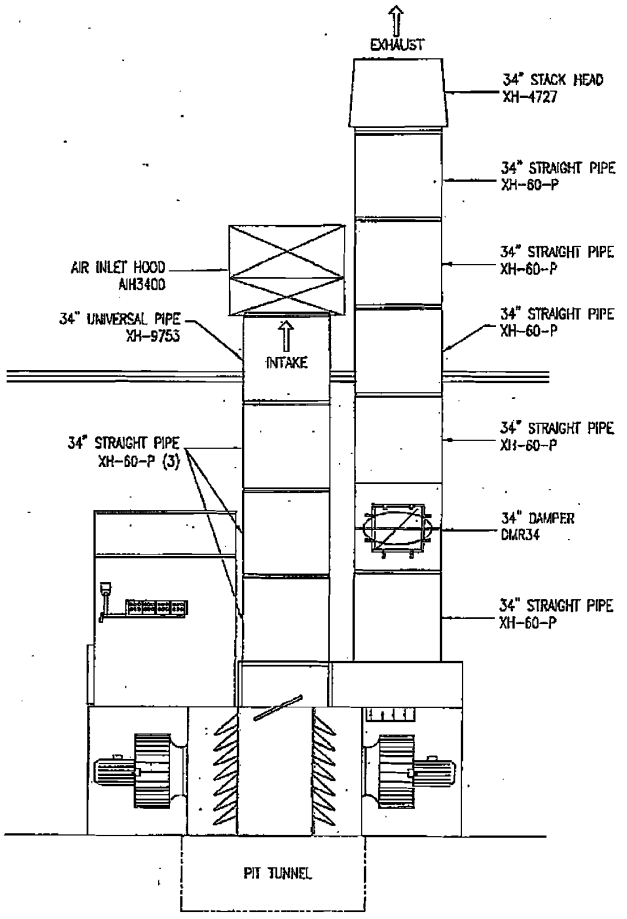
Position	Efficiency	Description
Intake / Exhaust	95% avg. arrestance	Pocket style synthetic media with a metal frame.



ASA18721655
Burner discharge adapter



AIH3400
Air Inlet Hood



GLOBAL FINISHING SOLUTIONS

c ETL US

REV	DATE	BY	DRAWN BY
REV.	DATE	BY	DRAWN BY
REV	DATE	BY	DRAWN BY
DATE 28/01/04	BY	DRAWN BY WILL McFADDEN	CHKD BY

NAME OF PROJECT: GUL2000
DRAWING DESCRIPTION: GENERAL ARRANGEMENT, INDUSTRIAL AIR HEATER 2000, RECIRCULATING
DRAWING NUMBER: GA-GUL2000
SHEET NUMBER 1 / 2

Ultra Plus 1 – Specifications

Standard Dimensions:
- Internal – 14' wide x 9' high x 27' long
- External – 14'5" wide x 11' high x 27'5" long
- Length extensions available to 30' or longer

Construction:
- Downdraft airflow during spray and cure cycles
- Single-row pit (24' long)
- White pre-coated galvanized steel
- Dual-skin insulated panels with self-sealing construction
- Controlled Air Flow ceiling with integrated angled light fixtures
- Floor track leveling feature (up to 1 5/8")

Doors:
- 4-wing entrance door – 10'8" wide x 8'8¾" high opening
- Solid design with observation windows
- 1 Personnel access door, 32" wide x 7'7" high, with observation window

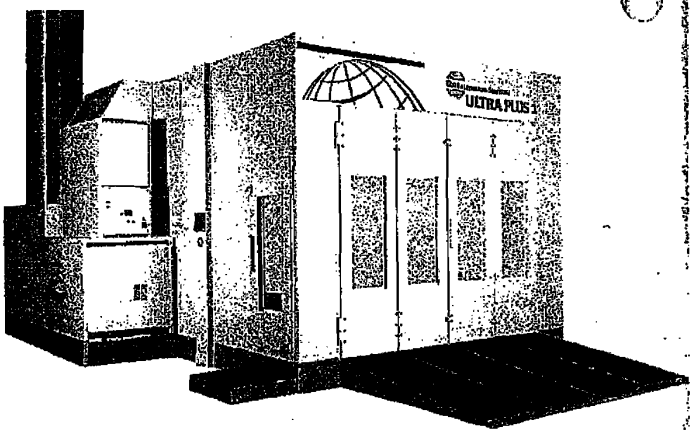
Lighting:
- ETL Listed inside-accessible light fixtures 120/277v
- Eight 6-tube ceiling light fixtures
- Four 6-tube wall light fixtures
- Four 6-tube corner light fixtures
- Energy-efficient electronic ballasts
- T-8 Color-corrected fluorescent tubes
- Light wiring harnesses for ease of installation

Ultra Recirculating Heat System:
- 1.5 million BTU direct-fired heat unit
- SBC Plus 1 remote control panel
- Programmed with SmartCure technology
- Integrated AdvanceCure system controls
- 2 x 15hp High-efficiency Direct-Drive motors (Intake and Exhaust)
- Variable Frequency Drives on intake and exhaust motors
- Automatic pressure controls
- Backward-inclined intake and exhaust fans
- Booth pressure monitoring gauge
- Fueled by natural gas or propane (Oil fuel version optional)

AdvanceCure System:
- 4 x AdvanceCure towers with 9 adjustable air nozzles each
- High-efficiency fans

Four-Stage Filtration:
- Real-time electronic filter monitoring with dual digital display
- High-efficiency, high-temperature compatible, 8-micron downdraft filter media in Controlled Air Flow ceiling
- Multi-stage heat system filtration on Intake and Exhaust
- High-holding capacity filter media in pit/basement

Optional Equipment:
- Drive-Thru configuration
- Working length extensions
- Raised platform (for installations where pit extraction not possible)
- Three-row pit, 21' long
- Fire suppression system



Dimensions	Length	Width	Height
Cabin Internal	27'	14'	9'
Cabin External	27'5"	14'5"	11'
4 Wing Frontal		10'8"	8' 8¾"

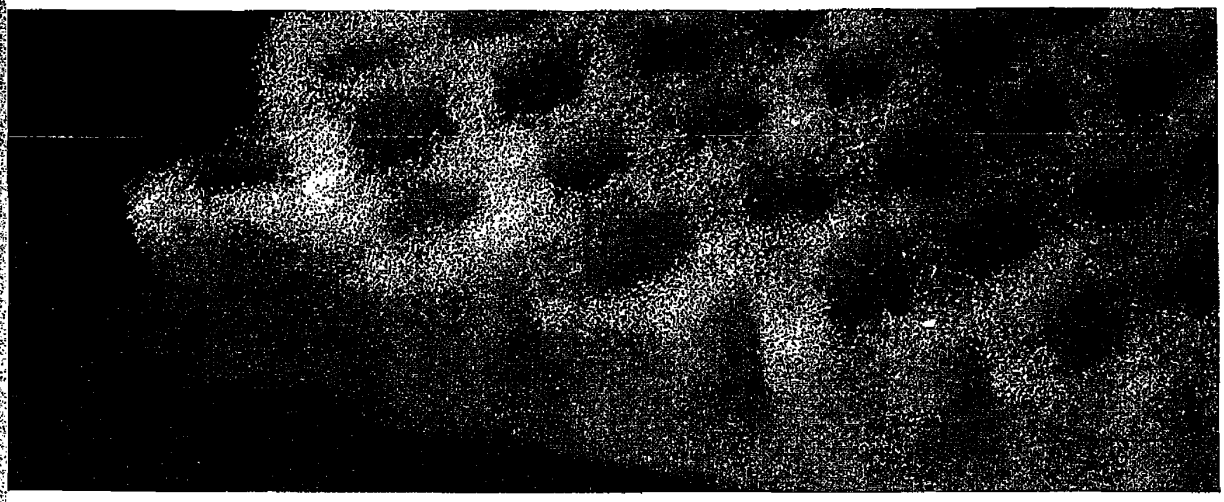
Code Compliance:
The Ultra Plus 1 Spray Booth system conforms to the requirements of:
- NFPA-33 Standard for Spray Application using Flammable or Combustible Materials
- NFPA-86 Standard for Ovens and Furnaces
- NFPA-91 Standard for Exhaust Systems for Air Conveying of Materials
- NFPA-101 Life Safety Code
- NFPA-70 National Electric Code
- OSHA Safety and Health Standards (29 CFR 1910, 1910.107)
- IFC International Fire Code
- IBC International Building Code
- IMC International Mechanical Code
- BOCA National Fire Prevention Code; National Building Code; National Mechanical Code
- UFC Uniform Fire Code
- UBC Uniform Building Code
- UMC Uniform Mechanical Code
- SBCCI Standard Fire Prevention Code; Standard Building Code; Standard Mechanical Code

Distributed by:
Precision For Collision
Tikaerb, Inc.
(800) 922-5501

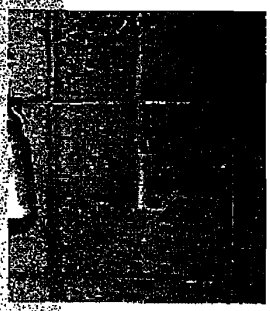
E-mail : auto@globalfinishing.com
call 1 800-GO-ULTRA
www.globalfinishing.com

Dallas, TX • Barrie, ON • Osseo, WI • Monterrey, MX

Cut Operating Costs while Improving Performance!



Paint Pockets®- Best Spray Booth Overspray Arrestor!



Paint Pockets® is the best performing, single-stage overspray arrestor, bar none. Paint Pockets excels in arresting both liquid and powder coating overspray generated in industrial, automotive and aerospace applications. Paint Pockets knocks down and retains more overspray than any other arrestor. It keeps overspray out of your exhaust stack and off the booth floor. Paint Pockets is your best value for production spray booths.

Its unique design holds up to five times more overspray than other filters, enabling you to cut your filter changes by up to 80%. The three-dimensional Diamond Pockets™ embedded in the front face of Paint Pockets more than double its surface area, allowing the arrestor to capture and hold very large quantities of overspray. Paint Pockets arrestors have superior wet tensile strength. Arrestors loaded with wet overspray do get heavy, but they won't tear or sag.

Paint Pockets arrestors slash disposal costs. Fewer filter changes means less waste. Your savings are significant, particularly if you use hazardous waste processors.

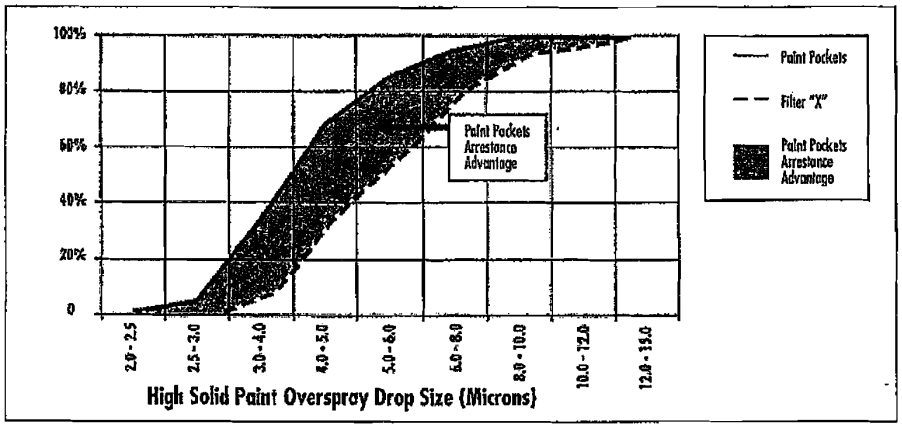
Arrests Virtually All Overspray!

Independent laboratory test reports confirm Paint Pockets excels at capturing the very small 2.5 to 10 micron particles that typify overspray produced in most spray finishing operations. The arrestor effectively captures and retains these particles, preventing them from contaminating downstream equipment. Paint Pockets removes far more particles from the booth exhaust than any other high performance, single-stage overspray arrestor.

Its 99.84% arrestance efficiency means only 0.16% of the overspray actually penetrates the arrestor. At first glance, Filter X, a competitive arrestor, with a 99.5% overall arrestance efficiency might seem comparable. In reality though, three times as much overspray penetrates Filter X.

More importantly, Paint Pockets captures more of the smaller particulates than any other single-stage arrestor. The Fractional Arrestance Efficiency chart shows Paint Pockets arrests smaller overspray particulates that penetrate other arrestors.

Fractional Arrestance Efficiency



Paint Pockets

Application for: Authority to Construct Permit to Operate Support Request

County of El Dorado Air Quality Management District
330 Fair Lane, Placerville, CA 95667
Phone: (530) 621-7501
Fax: (530) 295-2774
www.edcgov.us/AirQualityManagement

RESPONSIBLE COMPANY OR OPERATOR

Company/Operator (Please Print or Type)	Contact
Kniesels Auto Collision Center Inc	Robert Champe
Mailing Address	**Title**
8780 Auburn-Folsom Rd. #200	CEO
City, State &ZIP Code	**Phone**
Granite Bay CA 95746	916 342-3173
Federal ID Number or SS Number	**E-Mail Address**
20-8102039	rdc@Kniesels.com

FACILITY LOCATION

Name of Facility	Facility Contact
Kniesels Collision Center - Shingle Springs	Robert Champe
Street Address	**Title**
4031 Wild Chaparral Dr.	CEO
City	**Phone**
Shingle Springs	916 342-3173

Send bill(s), permits and correspondences to: ☐ Responsible Company/Operator ☒ Facility Location

Type of Application (Check appropriate boxes)

- ☐ New Facility
- ☐ Modification of Existing Facility or Equipment
- ☐ Change of Ownership
  Existing Permit # _____
- ☐ Emission Reduction Credit
- ☐ AQMD Support Request
- ☐ Miscellaneous (explain below)

Is the facility location within 1000 feet from the boundary of a K-12 school? ☐ YES ☒ NO

Equipment Schedule of Operation	Hours/day: 8	Days/week: 5	Weeks/year: 52
Estimated Construction Start Date:	Estimated Completion Date:	Estimated Start-up Date:	

Description of Project/Request (Attach supplemental forms and/or detailed equipment/emission information):
Paint Booth Heater (see attached)

Information submitted to obtain an Authority to Construct/Permit to Operate is public information unless specifically marked as trade secret or confidential by the applicant. Emission data is subject to disclosure regardless of any claim of trade secret or confidentiality.

Signature of Responsible Official/Person:
The Responsible Official/Person is the individual with the authority to certify this source will comply with all District requirements and conditions set forth in the permit and the Rules and Regulations of El Dorado County. I certify all information contained herein and submitted with this application is true, accurate and complete.

Signature: _____ Date: 5/7/13

Printed Name: Robert Champe Title: CEO

DATE STAMP
RECEIVED
MAY 24 2013
AQMD

FOR EL DORADO COUNTY AQMD USE ONLY

AC No.: _____

PO No.: 06-1705

APPLICATION APPROVED
5-24-13 LP
DATE ENGINEER'S INITIALS

APPLICATION DENIED
_____ _____
DATE ENGINEER'S INITIALS

15-0936 Public Comment
PC Rcvd 08-13-15

El Dorado County
Air Quality Management District
Boiler Supplemental Information Questionnaire

Business Name and Address: Kniesels Collision Center of Shingle Springs

Prepared by: Robert Champe **Date:** 5/7/13

Boiler Location or Area	Paint Shop	Emission Control Device	Pocket Style Synthetic Media
Used For Hot Water?	No	Heat Input Rating (Btu/hour)	1.5 million
Used For Steam?	No	Meter for Fuel Used?	Yes
Make	Global Finishing Solutions	Non-resettable Hour Meter?	Yes
Model	Ultra Plus 1 GUL 2000	(If available, please attach a copy of manufacturer's specifications including emissions test results)	
Serial Number	U184186-A		
Installation Date	March 2012	PRIMARY FUEL	BACKUP FUEL
Type of Fuel		Propane	
Annual fuel usage in the per cubic feet only please			
Maximum hours operated per day*		8	
Maximum hours operated per 1st quarter*		520	
Maximum hours operated per 2nd quarter*		520	
Maximum hours operated per 3rd quarter*		520	
Maximum hours operated per 4th quarter*		520	
Maximum hours operated per year*		2080	

* Hours include routine operations plus testing and maintenance operation.

Print

15-0936 Public Comment
PC Rcvd 08-13-15

GLOBAL FINISHING SOLUTIONS™

Ultra

Recirculating Style Heat Unit
(H.E. High Efficiency)

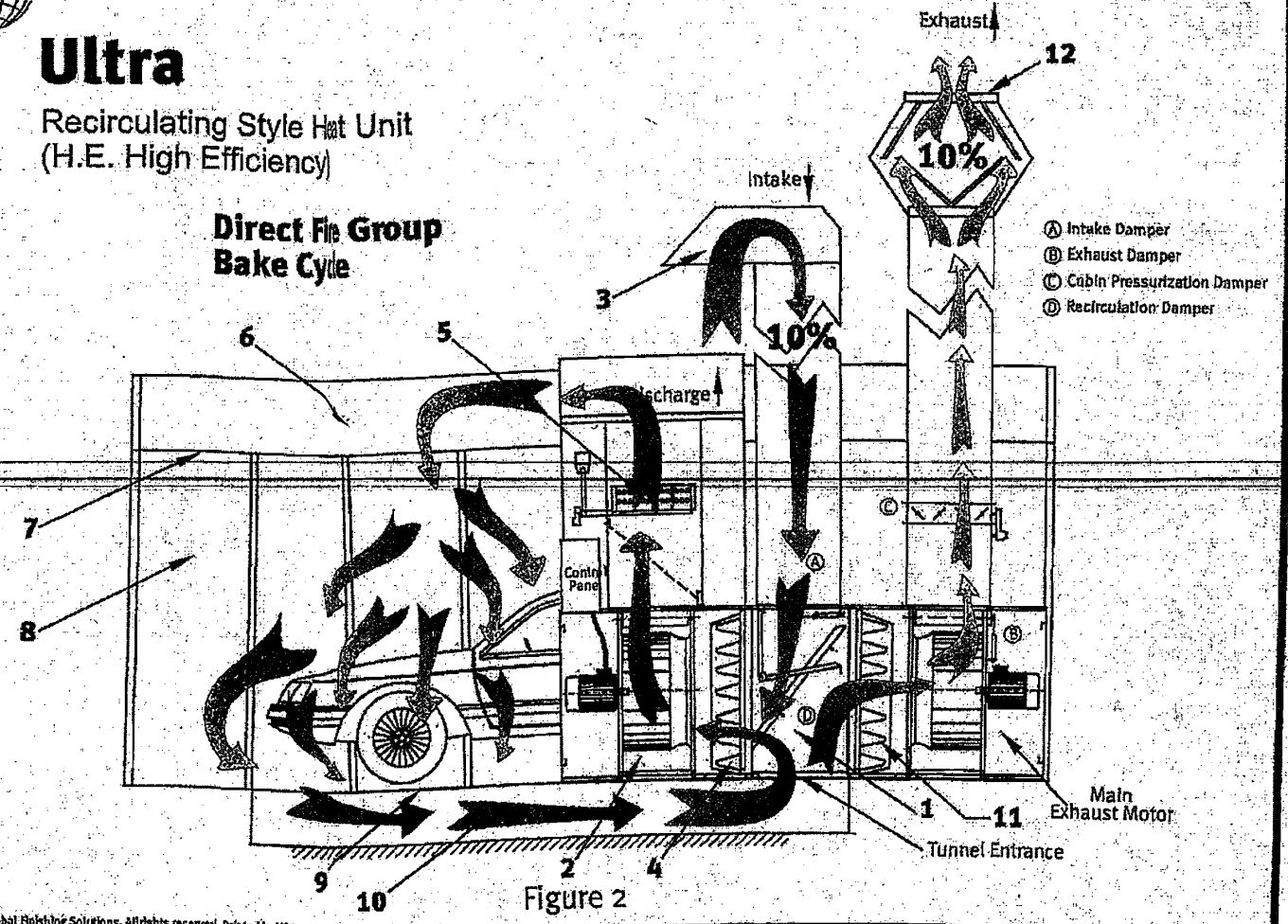


Figure 2

How a Heater Typically Works

A curing paint booth provides basically two successive operating cycles:

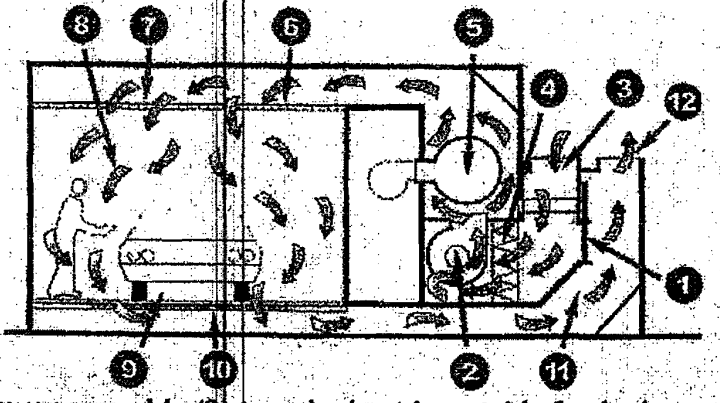
- 1st Phase - Spray Mode and Flash-Off
- 2nd Phase - Bake Mode and Cool Down

PHASE 1 - SPRAY MODE

The Spray Mode is the period of time during which the paint material is being sprayed onto the vehicle.

During this phase, the operating cycle ensures the correct air pressure and temperature for the painter, as well as excellent air filtration for proper results of the paint application.

The operator turns on the power and sets the appropriate switch on the control panel to "spray".



The spray cycle is as follows: The damper (1) positions itself automatically to allow the intake blower assembly (2) to only draw in outside fresh air (3).

All the air then passes through the pre-filter (4) then through the burner or around the heat exchanger (5). The outside air is heated to the preset temperature on the control panel and enters into the plenum (6) of the booth. Here, the air passes through the ceiling filters (7), enters the booth (8) and is evenly distributed throughout the booth cabin. The air is then exhausted beneath the floor (9) through the paint arrestor filters (10), where most of the overspray is removed. Then it enters the exhaust side of the mechanical unit (11) where it is expelled through the duct exhaust to the outside (12).

PHASE 1 - FLASH-OFF

The flash-off phase is the period of time between two applications of paint or between the last application and the bake cycle. This time is necessary to allow the paint to flow out and release solvents.

This is an extremely variable phase, which may or may not be necessary, depending upon the type of paint and application method used. The time setting will be determined in each case by the painter and paint supplier.

The flash-off phase is identical to the spray mode, except for the possible change in air temperature supplied to the booth, therefore:

DURING THE SPRAYING AND FLASH-OFF PHASES, THE BOOTH SHOULD ALWAYS BE OPERATING IN THE SPRAY MODE, WITH 100% FRESH AIR. DO NOT TURN OFF BOOTH. THIS IS TO AVOID ANY POSSIBLE BUILD-UP OF SOLVENTS IN THE BOOTH, WHICH COULD REACH LEVELS OF FLAMMABILITY AND/OR EXPLOSION.

PHASE 2 - BAKE MODE

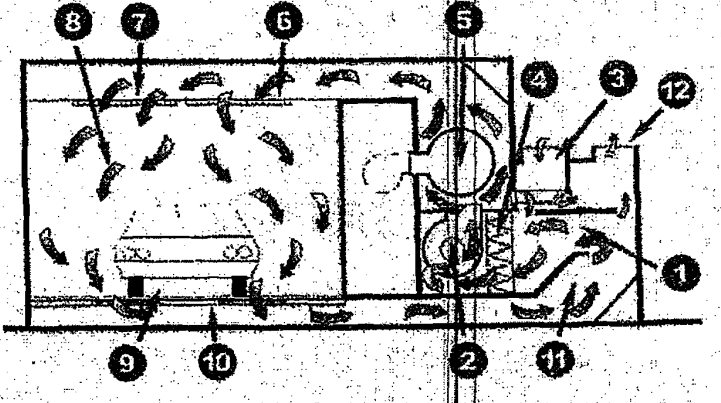
The bake mode is the period of time required for the curing of the paint applied to the vehicle.

During this phase, the control unit maintains the operator's pre-selected temperature (up to 176 degrees F) and excellent filtration for proper results.

NO ONE SHOULD ENTER THE BOOTH DURING THE BAKE MODE.

The operator sets the switch on the control console to "bake." This automatically activates the bake timer which should have been set in advance with the correct cure time. The bake time counter will start as soon as the booth reaches the preset temperature for this phase.

The operating cycle is as follows: The damper (1) automatically positions itself to permit the intake blower assembly (2) to draw a portion (10 - 15%) of the air from the outside (3) and re-circulate the remaining (85-90%). All the air then passes through the pre-filter (4) and around the burner or heat exchanger (5). It is heated to the preset temperature on the control panel and enters into the plenum (6) of the booth. Here the air passes through the ceiling filters (7), and then enters the booth (8) and is evenly distributed throughout the booth cabin.



The air is then exhausted beneath the floor (9) through the paint arrestor filters (10), then it enters the exhaust chamber (11) where 10-15% of the air is expelled outside (12) and the remaining 85-90% is re-circulated.

PHASE 2 - COOLING

The cooling phase is the period of time required to cool down the heating unit and the vehicle.

This phase starts automatically upon completion of the bake period. The length of this phase is preset and controllable via a thermostat. A sensor is located above the burner or heat exchanger and close to the connecting duct between the spray booth and the monoblock. If the thermostat temperature setting is too low, making it impossible for the outside air to cool it to the preset temperature, a preset timer will interrupt the cooling even though the preset temperature has not been reached.

The operating cycle is similar to the spray mode, in that the dampers automatically position themselves itself to draw 100% fresh air from the outside, like in the paint cycle.

NEVER TURN OFF THE POWER TO THE BOOTH WHEN IT IS OPERATING IN THE COOLING CYCLE. DOING SO WILL STOP THE BLOWER ASSEMBLY, THUS PREVENTING THE PROPER COOLING OF THE COMBUSTION CHAMBER, WHICH COULD THEN OVERHEAT AND BE DAMAGED.

THE RED EMERGENCY BUTTON IS NOT OPERATIONAL DURING THIS PHASE.

POWER TO THE UNIT SHOULD BE TURNED OFF ONLY WHEN THE BLOWER ASSEMBLY IS NOT IN OPERATION OR WHEN ABSOLUTELY NECESSARY.

IF IT IS ABSOLUTELY NECESSARY TO INTERRUPT THE COOLING CYCLE, DUE TO AN EMERGENCY, TURN OFF THE MAIN POWER SWITCH.

GAS TRAIN

BTU / HR	Max. Gas Req'd (CFH) Natural	Max. Gas Req'd (CFH) Propane	Gas Press. (inWC) Natural	Gas Press. (inWC) Propane	Temp. Rise	Gas Train Inlet Pipe Size
1,200,000	1200	510	10" - 14	11	90° F	1" N.P.T.
1,500,000	1500	638	10" - 14	11	90° F	1" N.P.T.

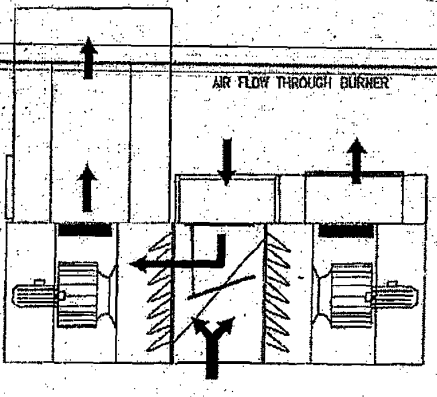
* Contact Global Finishing if minimum gas pressure in not available in your area.

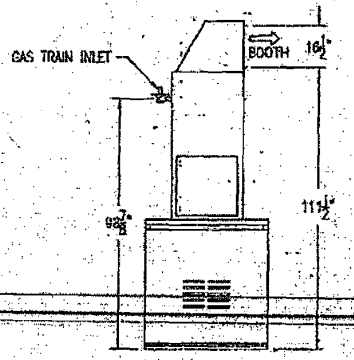
FANS

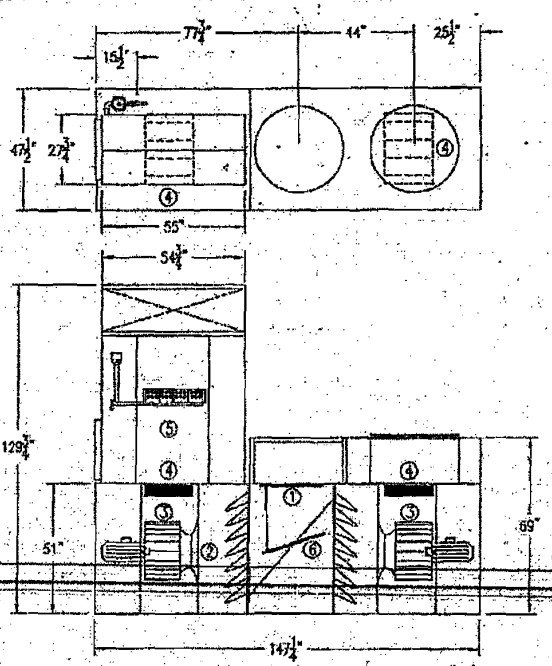
Description	1 PH 230V.	Full Load Amp Draw, 3PH, 60Hz 200V	230V	460V	575V
10hp (15hp upgrade) T.E.F.C. intake motor with direct drive, centrifugal fan produces, 12000cfm (15000cfm).	50	30 (45)	30 (40)	15 (20)	12 (17.5)
10hp (15hp upgrade) T.E.F.C. exhaust motor with direct drive, centrifugal fan produces, 12000cfm (15000cfm).	50	30 (45)	30 (40)	15 (20)	12 (17.5)
Minimum circuit capacity	125	80 (110)	80 (100)	40 (50)	30 (50)

FILTERS

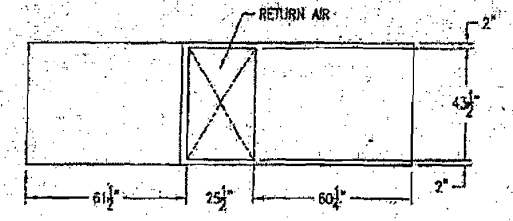
Position	Efficiency	Description
Intake / Exhaust	95% avg. arrestance	Pocket style synthetic media with a metal frame.







NO.	DESCRIPTION	DIMENSIONS
1.	INTAKE DAMPER (9043102)	24-1/4" x 42-1/2"
2.	INLET CONE OPENING	17-1/2" DIA
3.	FAN DISCHARGE OPENING	18-1/4" x 27-5/8"
4.	FAN DISCHARGE DAMPER (DMR-18275)	18-1/8" x 27-5/8"
5.	BURNER DUCT OPENING	26-1/4" x 20-1/8"
6.	RECIRC DAMPER (9043248)	23-1/2" x 27-1/2"



GLOBAL FINISHING SOLUTIONS

REV	DATE	BY	DESCRIPTION	NAME OF PROJECT	GUL2000
REV	DATE	BY	DESCRIPTION	DRAWING DESCRIPTION	GENERAL ARRANGEMENT, INDUSTRIAL AIR HEATER 2000, RECIRCULATING
REV	DATE	BY	DESCRIPTION	DRAWING NUMBER	GA-GUL2000
DATE 28/01/04	DRAWN BY WILL McFADDEN	CHKD BY		SHEET NUMBER	2/2

GAS TRAIN

BTU / HR	Max. Gas Req'd (CFH) Natural	Max. Gas Req'd (CFH) Propane	Gas Press. (InWC) Natural	Gas Press. (InWC) Propane	Temp. Rise	Gas Train Inlet Pipe Size
1,200,000	1200	510	10" - 14	11	90° F	1" N.P.T.
1,500,000	1500	638	10" - 14	11	90° F	1" N.P.T.

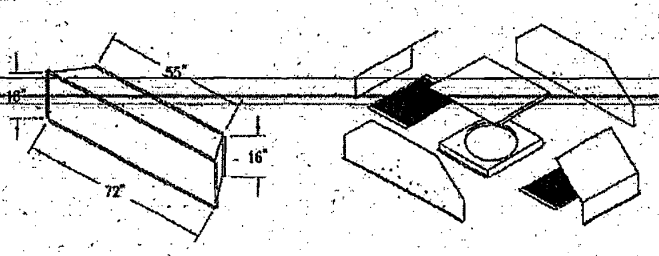
* Contact Global Finishing if minimum gas pressure in not available in your area.

FANS

Description	1 PH 230V	Full Load Amp Draw, 3PH, 60Hz 200V	230V	460V	575V
10hp (15hp upgrade) T.E.F.C. intake motor with direct drive, centrifugal fan produces, 12000cfm (15000cfm).	50	30 (45)	30 (40)	15 (20)	12 (17.5)
10hp (15hp upgrade) T.E.F.C. exhaust motor with direct drive, centrifugal fan produces, 12000cfm (15000cfm).	50	30 (45)	30 (40)	15 (20)	12 (17.5)
Minimum circuit capacity	125	80 (110)	80 (100)	40 (50)	30 (50)

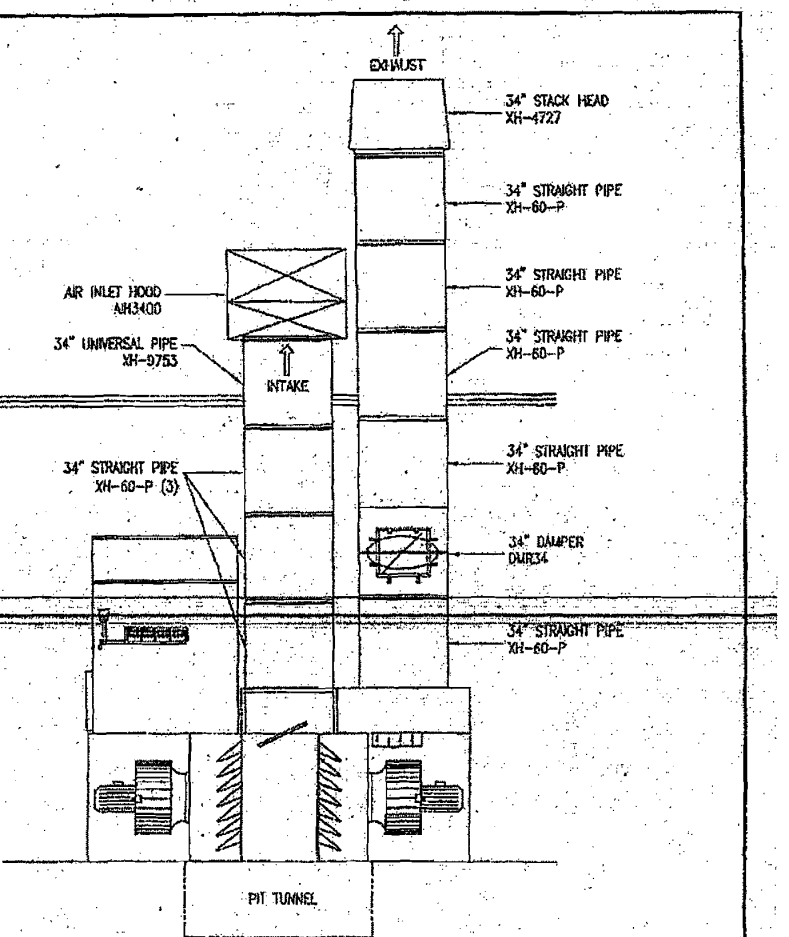
FILTERS

Position	Efficiency	Description
Intake / Exhaust	95% avg. arrestance	Pocket style synthetic media with a metal frame.



ASA18721855
Burner discharge adapter

AH3400
Air Inlet Hood

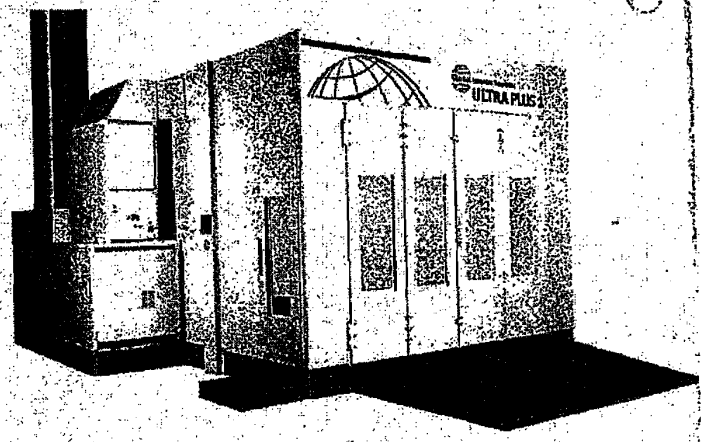


GLOBAL FINISHING SOLUTIONS

REV.	DATE	BY	DRAWN BY	SCALE OF PRINTED	GUL2000
REV.	DATE	BY	DRAWN BY	DRAWING DESCRIPTION	GENERAL ARRANGEMENT, INDUSTRIAL AIR HEATER 2000, RECIRCULATING
REV.	DATE	BY	DRAWN BY		
DATE	20/01/04	BY	DRAWN BY WILL McFADDEN	CHKD BY	DRAWING NUMBER GA-GUL2000 SHEET NUMBER 1/2

GLOBAL FINISHING SOLUTIONS

Ultra Plus 1 – Specifications



Standard Dimensions:
- Internal – 14' wide x 9' high x 27' long
- External – 14'5" wide x 11' high x 27'5" long
- Length extensions available to 30' or longer

Construction:
- Downdraft airflow during spray and cure cycles
- Single-row pit (24' long)
- White pre-coated galvanized steel
- Dual-skin insulated panels with self-sealing construction
- Controlled Air Flow ceiling with integrated angled light fixtures
- Floor track leveling feature (up to 1 5/8")

Doors:
- 4-wing entrance door – 10'8" wide x 8'8¾" high opening
- Solid design with observation windows
- 1 Personnel access door, 32" wide x 7'7" high, with observation window

Lighting:
- ETL Listed inside-accessible light fixtures 120/277V
- Eight 6-tube ceiling light fixtures
- Four 6-tube wall light fixtures
- Four 6-tube corner light fixtures
- Energy-efficient electronic ballasts
- T-8 Color-corrected fluorescent tubes
- Light wiring harnesses for ease of installation

Ultra Recirculating Heat System:
- 1.5 million BTU direct-fired heat unit
- SBC Plus 1 remote control panel
- Programmed with SmartCure technology
- Integrated AdvanceCure system controls
- 2 x 15hp High-efficiency Direct-Drive motors (Intake and Exhaust)
- Variable Frequency Drives on intake and exhaust motors
- Automatic pressure controls
- Backward-inclined intake and exhaust fans
- Booth pressure monitoring gauge
- Fueled by natural gas or propane (Oil fuel version optional)

AdvanceCure System:
- 4 x AdvanceCure towers with 9 adjustable air nozzles each
- High-efficiency fans

Four-Stage Filtration:
- Real-time electronic filter monitoring with dual digital display
- High-efficiency, high-temperature compatible, 8-micron downdraft filter media in Controlled Air Flow ceiling
- Multi-stage heat system filtration on Intake and Exhaust
- High-holding capacity filter media in pit/basement

Optional Equipment:
- Drive-Thru configuration
- Working length extensions
- Raised platform (for installations where pit extraction not possible)
- Three-row pit, 21' long
- Fire suppression system

Dimensions

	Length	Width	Height
Cabin Internal	27'	14'	9'
Cabin External	27'5"	14'5"	11'
4 Wing Frontal		10'8"	8' 8¾"

Code Compliance:
The Ultra Plus 1 Spray Booth system conforms to the requirements of:
- NFPA-33 Standard for Spray Application using Flammable or Combustible Materials
- NFPA-86 Standard for Ovens and Furnaces
- NFPA-91 Standard for Exhaust Systems for Air Conveying of Materials
- NFPA-101 Life Safety Code
- NFPA-70 National Electric Code
- OSHA Safety and Health Standards (29 CFR 1910, 1910.107)
- IFC International Fire Code
- IBC International Building Code
- IMC International Mechanical Code
- BOCA National Fire Prevention Code; National Building Code; National Mechanical Code
- UFC Uniform Fire Code
- UBC Uniform Building Code
- UMC Uniform Mechanical Code
- SBCCI Standard Fire Prevention Code; Standard Building Code; Standard Mechanical Code

GFS

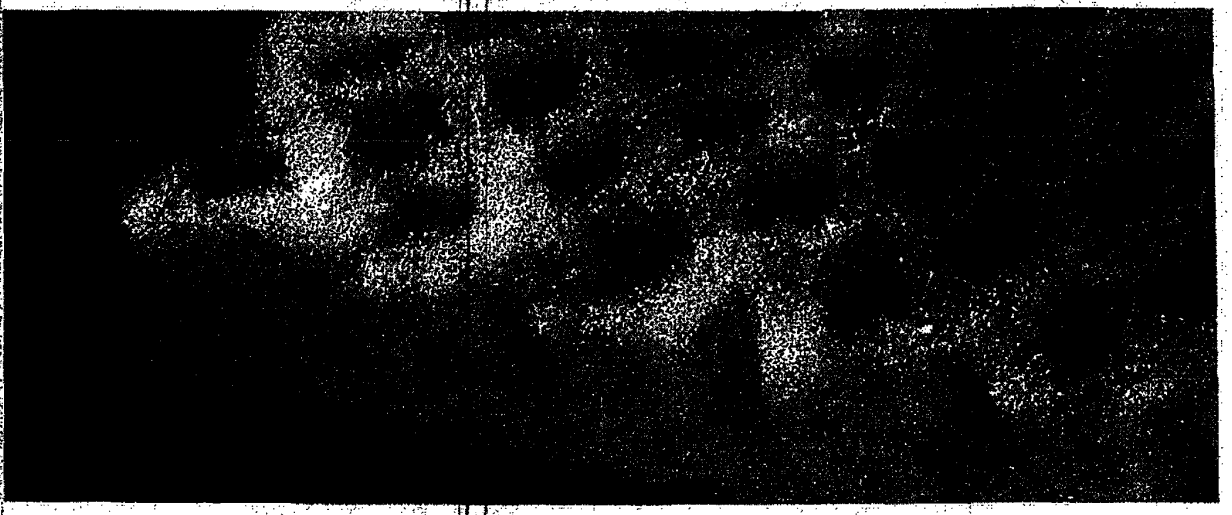
Distributed by:
Precision For Collision
Tikaerb, Inc.
(800) 922-5501

E-mail : auto@globalfinishing.com
call 1 800-GO-ULTRA
www.globalfinishing.com

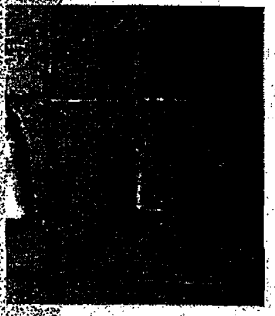
Dallas, TX • Barrie, ON • Osseo, WI • Monterrey, MX

Printed in USA
Ultra Plus 2-10-05-2

Cut Operating Costs while Improving Performance!



Paint Pockets®- Best Spray Booth Overspray Arrestor!



Paint Pockets® is the best performing, single-stage overspray arrestor, bar none. Paint Pockets excels in arresting both liquid and powder coating overspray generated in industrial, automotive and aerospace applications. Paint Pockets knocks down and retains more overspray than any other arrestor. It keeps overspray out of your exhaust stack and off the booth floor. Paint Pockets is your best value for production spray booths.

Its unique design holds up to five times more overspray than other filters, enabling you to cut your filter changes by up to 80%. The three-dimensional Diamond Pockets™ embedded in the front face of Paint Pockets more than double its surface area, allowing the arrestor to capture and hold very large quantities of overspray. Paint Pockets arrestors have superior wet tensile strength. Arrestors loaded with wet overspray do get heavy, but they won't tear or sag.

Paint Pockets arrestors slash disposal costs. Fewer filter changes means less waste. Your savings are significant, particularly if you use hazardous waste processors.

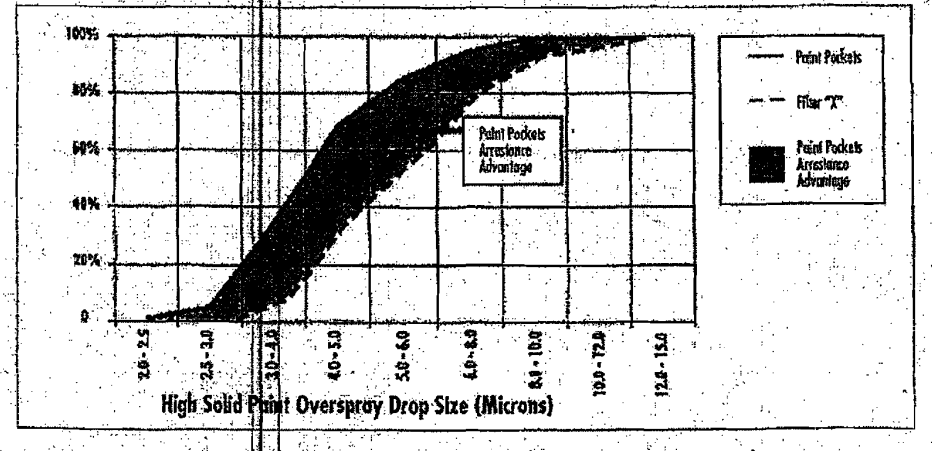
Arrests Virtually All Overspray!

Independent laboratory test reports confirm Paint Pockets excels at capturing the very small 2.5 to 10 micron particles that typify overspray produced in most spray finishing operations. The arrestor effectively captures and retains those particles, preventing them from contaminating downstream equipment. Paint Pockets removes far more particles from the booth exhaust than any other high performance, single-stage overspray arrestor.

Its 99.84% arrestance efficiency means only 0.16% of the overspray actually penetrates the arrestor. At first glance, Filter X, a competitive arrestor, with a 99.5% overall arrestance efficiency might seem comparable. In reality though, three times as much overspray penetrates Filter X.

More importantly, Paint Pockets captures more of the smaller particulates than any other single-stage arrestor. The Fractional Arrestance Efficiency chart shows Paint Pockets arrests smaller overspray particulates that penetrate other arrestors.

Fractional Arrestance Efficiency



Paint Pockets

Application for: Authority to Construct Permit to Operate Support Request

County of El Dorado Air Quality Management District
330 Fair Lane, Placerville, CA 95667
Phone: (530) 621-7501
Fax: (530) 295-2774
www.edcgov.us/AirQualityManagement

RESPONSIBLE COMPANY or OPERATOR

Company/Operator (Please Print or Type): Kniesel Collision Centers, Inc.	Contact: Rob Champe
Mailing Address: 4031 Wild Chaparral Rd	Title: CEO
City, State &ZIP Code: Shingle Springs, CA. 95682	Phone: 916-342-3173
Federal ID Number or SS Number: 20-8102039	E-Mail Address: robc@kniesels.com

FACILITY LOCATION

Name of Facility: Shingle Springs	Facility Contact: Dave Anderson
Street Address: Same	Title: Manager
City:	Phone: (530) 676-1888

Send bill(s), permits and correspondences to: ☐ Responsible Company/Operator ☒ Facility Location

Type of Application (Check appropriate boxes)

- ☐ New Facility
- ☒ Modification of Existing Facility or Equipment
- ☐ Change of Ownership
  Existing Permit # _____
- ☐ Emission Reduction Credit
- ☐ AQMD Support Request
- ☒ Miscellaneous (explain below)
  Installation of second spray paint booth

Is the facility location within 1000 feet from the boundary of a K-12 school? ☐ YES ☒ NO

Equipment Schedule of Operation	Hours/day: 7-6/M-F	Days/week: 5	Weeks/year: 52
Estimated Construction Start Date: 1/8/15	Estimated Completion Date: 1/20/15	Estimated Start-up Date: 1/20/15	

Description of Project/Request (Attach supplemental forms and/or detailed equipment/emission information):

Installation of second GFS spray paint booth and heater

Information submitted to obtain an Authority to Construct/Permit to Operate is public information unless specifically marked as trade secret or confidential by the applicant. Emission data is subject to disclosure regardless of any claim of trade secret or confidentiality.

Signature of Responsible Official/Person:
The Responsible Official/Person is the individual with the authority to certify this source will comply with all District requirements and conditions set forth in the permit and the Rules and Regulations of El Dorado County. I certify all information contained herein and submitted with this application is true, accurate and complete.

Signature: _____ Date: 1/8/15

Printed Name: Robert Champe Title: CEO

RECEIVED
JAN 08 2015
AQMD

FOR EL DORADO COUNTY AQMD USE ONLY

AC No.: _____

PO No.: 06-1790

APPLICATION APPROVED: Jan 9, 2015 (DATE) LP (ENGINEER'S INITIALS)

APPLICATION DENIED: _____ (DATE) _____ (ENGINEER'S INITIALS)

15-0936 Public Comment
PC Rcvd 08-13-15

El Dorado County
Air Quality Management District
Paint Spray Booth Supplemental Questionnaire

Business Name: Kneels Collision of Shingle Springs **Date** 1/8/15

Prepared by: Robert Champa **Booth No.** 2

Booth Information	
Manufacturer:	Global Finishing Solutions
Model:	Performer XP1 Downdraft Cabin
Serial:	Unknown at this time
Dimensions (l x w x h) in feet:	27' x 14' x 9'
Filter Material:	(see attached)
Number of Filters:	(see attached)
Size of each Filter:	(see attached)
Spray Guns Used (make and type):	
Number of Guns used at once:	

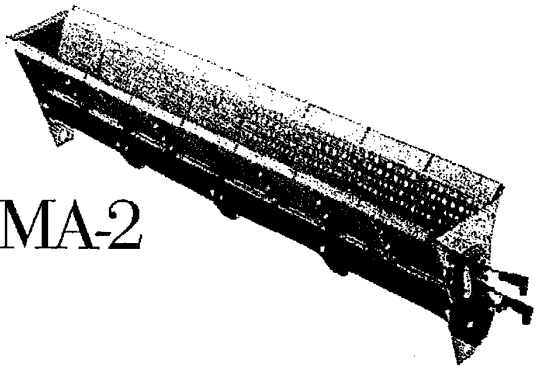
Exhaust Fan Information	
Manufacturer:	Global Finishing Solutions
Model:	GUL2000
Serial:	(not applicable)
Air Flow Rate (cfm):	12,000
Rated Capacity (hp):	10 HP

Compressor Information	
Manufacturer:	
Model:	
Serial:	
Rated Capacity (hp):	
Powered by:	
Capacity (No of nozzles at once):	

Air Heater Information	
Make:	Midco
Model:	HMA-2
Serial:	unknown at this time
Rated Capacity (Btu/hr):	1.2 Million
Fuel:	~~Natural Gas~~ LPG

Make-Up Air Engineering Manual

Midco® INTERNATIONAL



HMA-2

Patent Pending
#10/306,199

The Blue Flame Series

DIRECT FIRED MAKE-UP AIR BURNERS are used in industrial and commercial applications to maintain the desired environmental temperatures required by critical processes i.e. health purposes, production systems, quality control, comfort and loss prevention where it is necessary or required to exhaust large amounts of conditioned air.

Make-up Air Systems used as stand alone heating systems or operating in combination with central heating plants systems can be cost effective in three ways: 1) reducing the initial expenditures, 2) tempering incoming air which may extend the life of expensive central heating plants and 3) reducing excessive equipment cycling or premature component failures due to increased heating demands.

New Technology in Direct-Fired Gas Burners

Our innovative two stage combustion burner is not just a modification or improvement of the old, but a completely new approach to direct-fired combustion. The two-stage combustion improves control of the flame process, meets or exceeds the new ANSI Standards while outperforming the competition. By incorporating two separate flames within the burner combustion zone, the flame is more stable, shorter and cleaner, permitting the reduction of emissions levels and allowing for higher temperature rise and higher tolerance to varying conditions when placed in the profile opening.

Features and Benefits

- **Reduced NO_2 and CO Emissions:** Lower emissions levels that easily pass the new ANSI Z83.4 and Z83.18 standards.
- **Higher Temperature Rise:** The two stage combustion process lowers NO_2 emissions which is the limiting factor in temperature rise. (See page 3)
- **Increased Capacity:** Up to 750,000 BTU'S per foot. (Higher BTU levels can be achieved if ANSI Z83 Standards for CO and NO_2 emissions are not of a concern. Process heaters can fire up to 1,000,000 BTU'S a foot or more.)
- **Increased Differential Pressure Drop and Higher Velocities:** HMA-2 burners can operate between 0.05" to 1.4" W.C. differential pressure range or in air velocity between 800 fpm to 4000 fpm.
- **Flame Stability:** Two stage combustion provides better flame stability and emission control, allowing for a shorter flame and easier profile configuration.
- **Reduced Inventory Costs:** Single burner casting can be fired with natural, propane or butane gas[1], reducing burner inventory.
- **Reduced Shipping Costs:** A smaller, lighter casting than the competition's, can cut your freight costs up to 50%.
- **Turndown:** 30-1 turndown can easily be achieved with proper modulating controls and valves. (Higher turndown possible depending on equipment design.)

[1]Consult Midco for applications using butane fuels.

Midco International Inc. *Quality Designed for Proven Performance*
4140 West Victoria Street Chicago, Illinois 60646
tel 773.604.8700 fax 773.604.4070
web www.midco-intl.com e-mail sales@midco-intl.com

105
8471 34
Printed in USA

Specifications

*Firing Rate	Up to 750,000 Btu/hr/ft 750,000 + Contact Midco
Burner Manifold Pressure	
Natural Gas	4.2 to 8 inch W.C.
Propane Gas	1.6 to 3 inch W.C.
Pilot Capacity	12,000 Btu/hr
Pilot Manifold Gas Pressure	
Natural Gas	3.5 inch W.C.
Propane Gas	2.0 inch W.C. **
Pressure Drop Across the Burner	0.05 to 1.4 inch W.C.
Air Velocity Across the Burner	800 to 4,000 FPM
Burner Turn-down Ratio	30 to 1
Flame Length	10 inches at a full firing rate

* Firing rate is dependent on the pressure across the burner. Please see the included charts for recommended burner sizing.
** Using a natural gas pilot on propane.

*Burner Configurations		Part #
6 inch Straight Section	(15.24cm)	1050700
6 inch Straight Section with Back Inlet	(15.24cm)	1230700
12 inch Straight Section	(30.48cm)	1010700
12 inch Straight Section with Back Inlet	(30.48cm)	1060700
Elbow Section		1070700
Tee Section		1080700

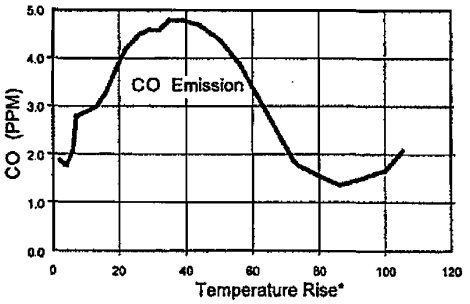
*Pilot Configurations	Part #
Spark rod and flame rod	1190800
Spark rod and UV	1200300
Remote flame rod	1220800
Remote UV	1240800
Pilot with spark rod only	1210800
Flame rod	1360-03
Spark rod	1342-00

Table 1 - Burner and Pilot Configurations

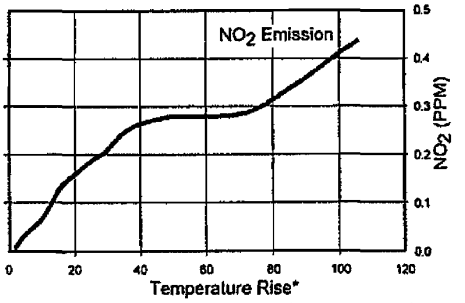
* See Page 15, Figure 1b for configuration reference.

Midco International Inc. reserves the right to change the construction or configuration of its products at any time.

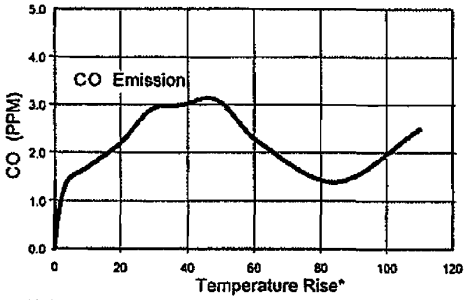
All information is based on laboratory testing. Different unit size and/or configurations may affect data.



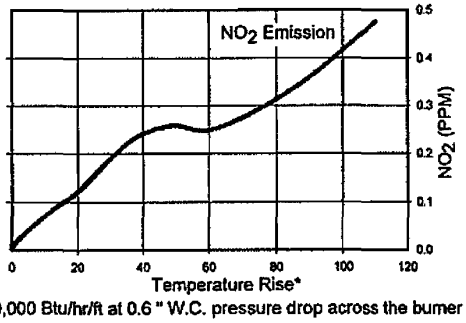
750,000 Btu/hr/ft at 1.4 " W.C. pressure drop across the burner



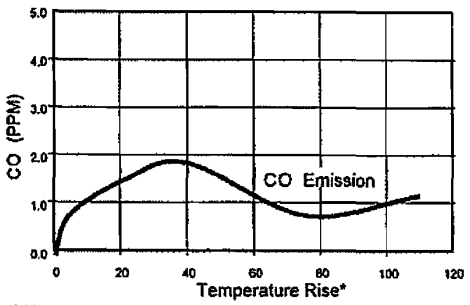
750,000 Btu/hr/ft at 1.4 " W.C. pressure drop across the burner



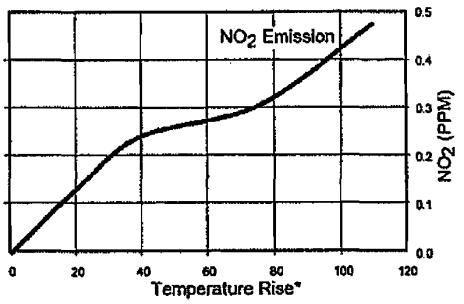
550,000 Btu/hr/ft at 0.6 " W.C. pressure drop across the burner



550,000 Btu/hr/ft at 0.6 " W.C. pressure drop across the burner



350,000 Btu/hr/ft at 0.2 " W.C. pressure drop across the burner



350,000 Btu/hr/ft at 0.2 " W.C. pressure drop across the burner

Chart 1 - CO and NO_2 Emissions Data

*For temperature rise up to 160°F that meets the ANSI Z83 standards contact Midco.

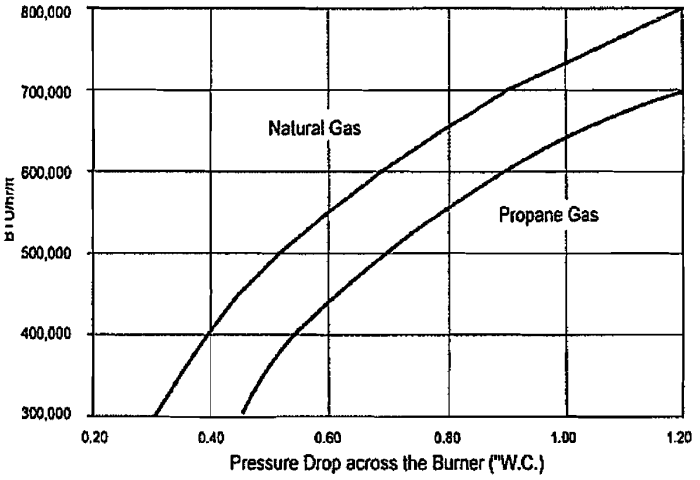


Chart 2 - BTU's verses Pressure Drop

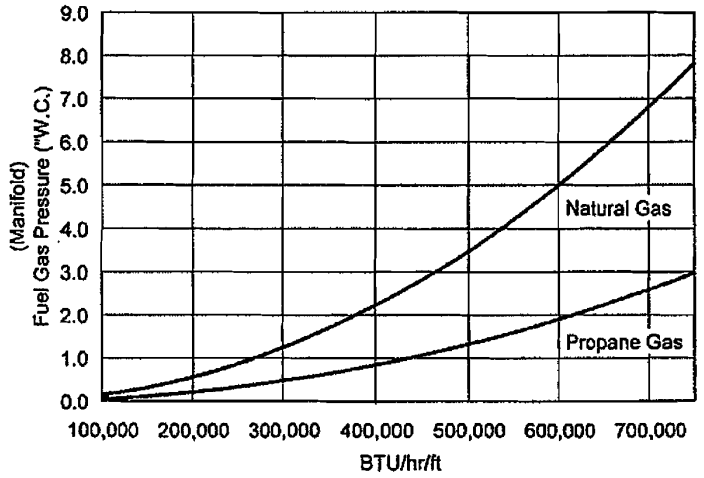


Chart 3 - BTU's verses Gas Pressure (" W.C.)

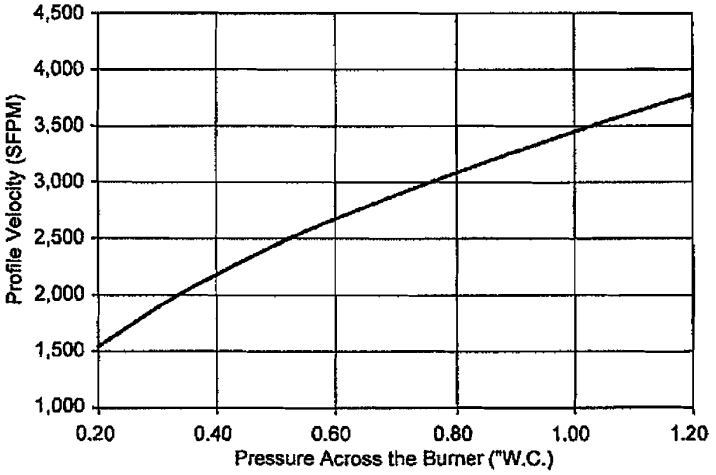


Chart 4 - Pressure Across the Burner verses Profile Velocity

Profile Setup

1. Required BTU:
   BTU/hr = Blower SCFM x Desired Temp. Rise x 1.08
2. Required Burner Length:
   Feet of burner = [Required BTU/hr]÷[Burner Firing Rate (BTU/hr/ft)]
   The Burner Firing Rate should correspond to the pressure drop across the burner shown in *Chart 2.*
3. Required Profile Area:
   Total Burner Area = Number of burner sections x burner area

(Burner Section)	Burner Area
6 inch	0.32 sq. ft.
12 inch	0.65 sq. ft.
T Section	0.77 sq. ft.
Ell Section)	0.65 sq. ft.

Net Profile Area = Rated Fan (SCFM) ÷ Profile Velocity (SFPM)
The Profile Velocity can be determined from the following:

$$\textit{Profile Velocity} = 945\sqrt{\frac{\Delta P}{0.075}}$$

ΔP is the pressure drop across the burner

Profile Area = Net Profile Area ÷ Total Burner Area

Profile Setup Example

Sizing the burner and the corresponding profile for a 5,000 SCFM and a 115 degrees temperature rise.

1. Required BTU:

   BTU/hr = Blower SCFM x Desired Temp. Rise x 1.08

   BTU/hr =5,000 (SCFM) x 115 (ΔT) x1.08 = 621,000 BTU/hr

2. Required Burner Length:

   Feet of burner = [Required BTU/hr]÷[Burner Firing Rate (BTU/hr/ft)]

   To determine the optimum burner length we can choose from a combination of 12 inch or 6 inch burner sections referring to *Table 1.* We can either fire the burner at a rate of 621,000 BTU/hr per ft, or we can fire the burner at 414,000 BTU/hr per ft (1.5 feet of burner). Refer to *Chart 3* for the fuel pressures requirements at different firing rates.

3. Required Profile Area:

   Total Burner Area = Number of burner sections x burner area

(Burner Section)	Burner Area
6 inch	0.32 sq. ft.
12 inch	0.65 sq. ft.
T Section	0.77 sq. ft.
Ell Section	0.65 sq. ft.

   Total Burner Area = 1.0 (ft) x 0.65 = 0.650 ft^2
   Or
   Total Burner Area = 1.5 (ft) x 0.65 = 0.975 ft^2

Profile Setup Example Continued

Net Profile Area = Rated Fan (SCFM) ÷ Profile Velocity (SFPM)

The Profile Velocity should be determined based on the burner firing rates. If we choose to fire the burner at 621,000 BTU/hr/ft then the profile opening should be sized for a pressure drop of 0.8 inch W.C. across the burner. If the firing rate is 414,000 BTU/hr/ft then the profile opening should be sized for a pressure drop of 0.4 inch W.C. across the burner. The corresponding profile velocity across the burner should be determined from *Chart 4* or use the following equation.

$$Profile\ Velocity = 945\sqrt{\frac{\Delta P}{0.075}}$$

For the 621,000 BTU/hr/ft

$$Profile\ Velocity = 945\sqrt{\frac{0.8}{0.075}} = 3086(SFPM)$$

Net Profile Area = 5000 (SCFM) ÷ 3086 (SFPM)=1.62ft²

For the 414,000 BTU/hr/ft

$$Profile\ Velocity = 945\sqrt{\frac{0.4}{0.075}} = 2182(SFPM)$$

Net Profile Area = 5000 (SCFM) ÷ 2182 (SFPM)=2.29ft²

To calculate the profile area needed for both cases:

Profile Area = Net Profile Area + Total Burner Area

For the 621,000 BTU/hr/ft
Profile Area = 1.62 + 0.650 = 2.27 ft²

For the 414,000 BTU/hr/ft
Profile Area = 2.29 + 0.975 = 3.265 ft²

To calculate the length of the profile opening add burner length to the desired clearance:

For the 621,000 BTU/hr/ft case
12 inch + 4 inch (2 inch on each side) = 16 inch (1.3ft)
For the 414,000 BTU/hr/ft case
18 inch + 4 inch (2 inch on each side) = 22 inch (1.83ft)

To calculate the height of the profile opening divide the profile area by the profile length:

For the 621,000 BTU/hr/ft case
2.27 ft² ÷ 1.3 ft = 1.75 ft (21 inch)
For the 414,000 BTU/hr/ft case
3.265 ft² ÷ 1.83 ft = 1.78ft (21.5 inch)

Burner Assembly

IMPORTANT: Furnace cement must be used to join and seal all burner casting sections, and end flanges only. **If this procedure is not performed, gas leakage will occur.** Use 10-24x3/8" stainless steel screws and nuts or stainless steel rivets. UNDER NO CIRCUMSTANCES SHOULD STANDARD GRADE HARDWARE OR ALUMINUM RIVETS BE USED.

When assembling Make-Up Air Burners, a few simple but important assembly procedures must be followed to insure Burner Performance. Care should be taken when removing, assembling and placing the burner into the heater.

1. Examine the baffles for structural integrity; only new undamaged components should be used.

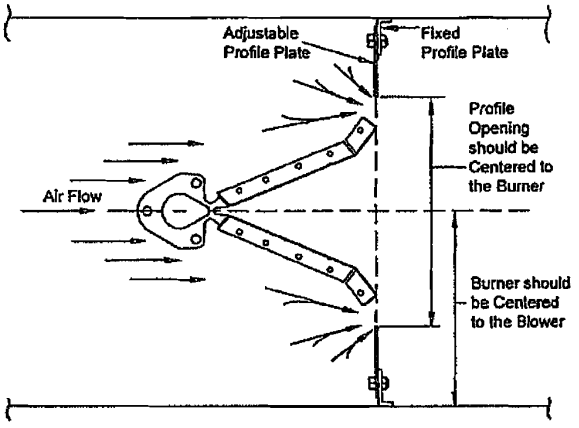
2. Assemble individual burner cast iron sections first.
3. When joining the baffle sections to the burner casting, place a gasket between the casting and the baffles, do not tighten the cast iron sections until the entire unit is assembled. Baffles can be riveted together with stainless steel rivets or joined with stainless steel screws.
4. Prepare a mixture of furnace cement thinned to the consistency of a heavy cream.
5. Apply furnace cement to both mating surfaces of the burner castings and end flanges only.
6. After sections are joined,wipe off excess furnace cement and make sure you do not clog any gas or air ports.
7. After all baffle plates are tight, secure all baffle plates to the burner casting. Make sure all bolts and rivets are tight.
8. After all sections are assembled, check for potential gas or air leaks. If necessary, close up any remaining gaps with furnace cement.
9. For high fire start systems, the first adjacent gas port hole (next to the pilot) should be plugged with furnace cement. See Figure 8 - *Pilot Configuration.*

Burner Placement in the Profile

The performance of the HMA-2 burner depends on the unit in which the burner is located. The burner can perform differently in different units and can obtain different end results. Maintaining a relative laminar flow around the burner and providing a sufficient space between the burner and the blower is a key factor in obtaining best burner performance. The unit should be free of any obstructions that can create turbulent effect on the air.

The burner performance is highly dependent on its application and installation in the heater. Factors such as airflow around the burner, burner positioning in the profile , as well as, the profile sizing have high influence on the final emissions levels . Midco does not guarantee combustion results prior to performing actual combustion tests.

The burner should be located in the center of the profile. The profile clearance from ends of the burner should be kept at approximately 1 to 4-inches. Typically setting the profile 2" from the end plates is recommended. Any reinforcements used on the edge of the profile opening should be on the downstream side of the profile. The burner can be mounted either vertically or horizontally. Since the airflow varies from unit to unit best results should be determined by actual testing.



Note: Any reinforcements around the profile plates should be down stream of the profile plate

Figure 1a - Burner Placement in the Profile

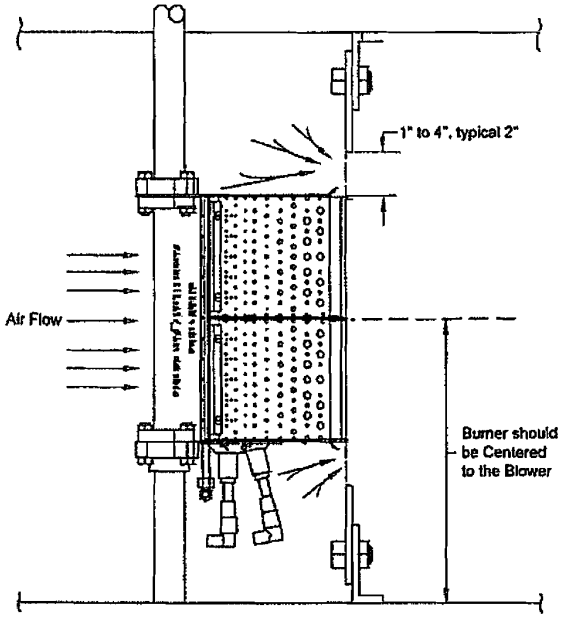


Figure 1b - Burner Placement in the Profile

Pull-Thru System

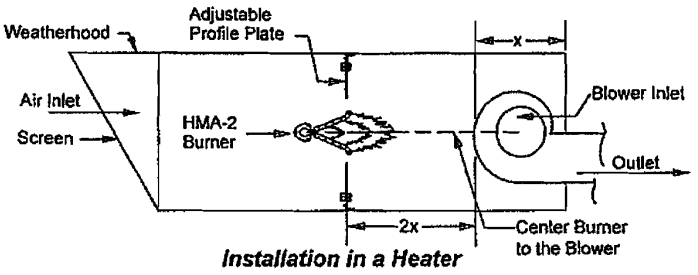


Figure 2a - Pull-Thru System

The HMA-2 Burner is designed to operate in a make-up air heater and in an air stream taken directly from outdoors. To avoid stratification of the heated air, the burners should be located on the intake side center to the blower. Such positioning will take advantage of the blower mixing effect and ensure minimum temperature stratification. It will also allow for a relatively uniform airflow across the burner resulting in a clean combustion.

The total pressure of the blower must include allowance for the resistance of the heater and pressure drop across the burner, together with pressure losses at the inlet screen, inlet louvers, filters, plus the external pressure rating of the heater, if any. Contact equipment manufacturer for proper information.

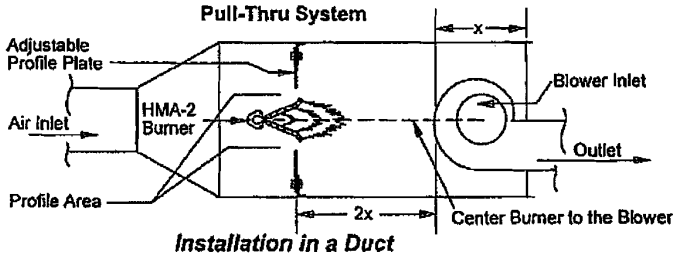


Figure 2b - Pull-Thru System

Push-Thru System

The HMA-2 Burner will operate satisfactorily when located downstream of the blower. A mixing plenum may be required at the heater discharge opening to insure minimum temperature stratification. Blower and motor selection must be made on the basis of corrections for the coldest anticipated inlet temperature. In the push-thru system the heater outlet CFM will vary due to the expansion of air.

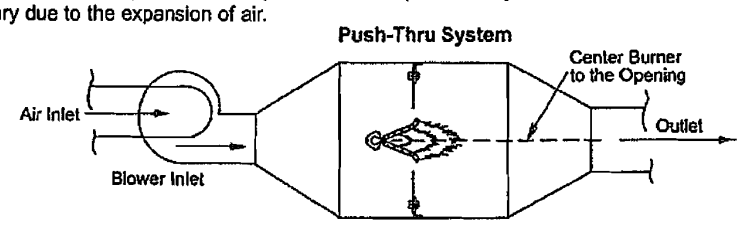


Figure 3 - Push-Thru System

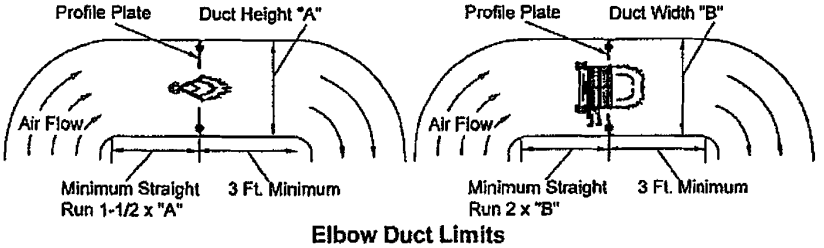


Figure 4 - Installation in a Duct

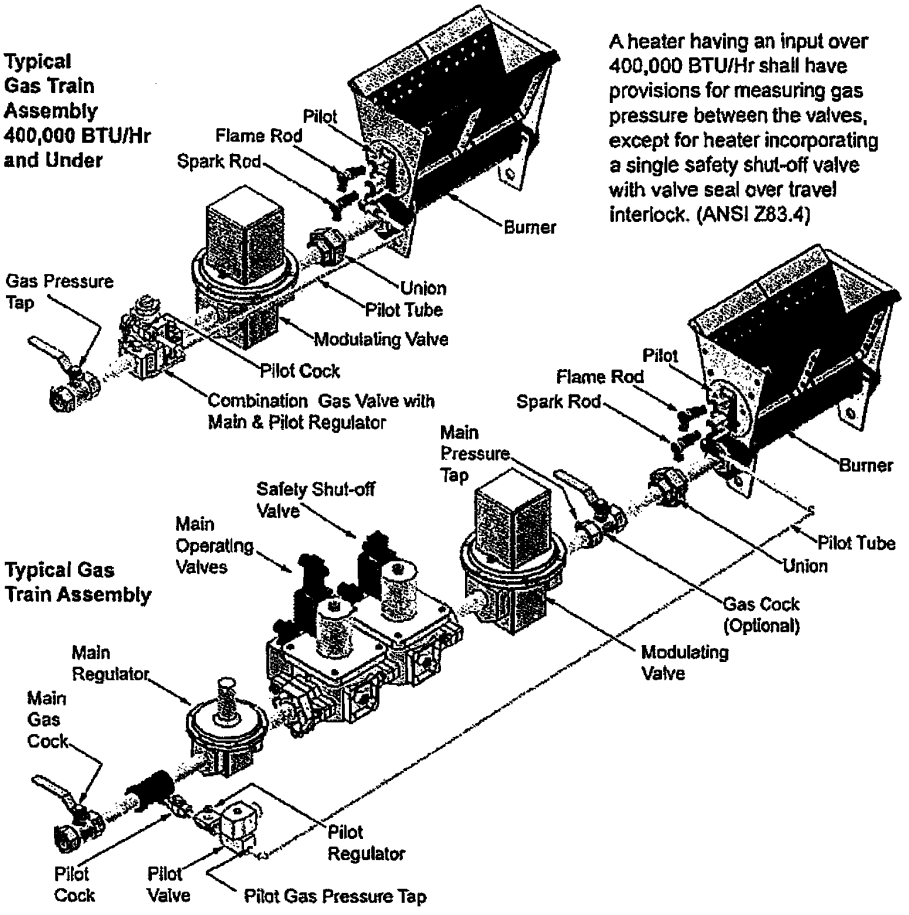


Figure 5a - Gas Train Assemblies

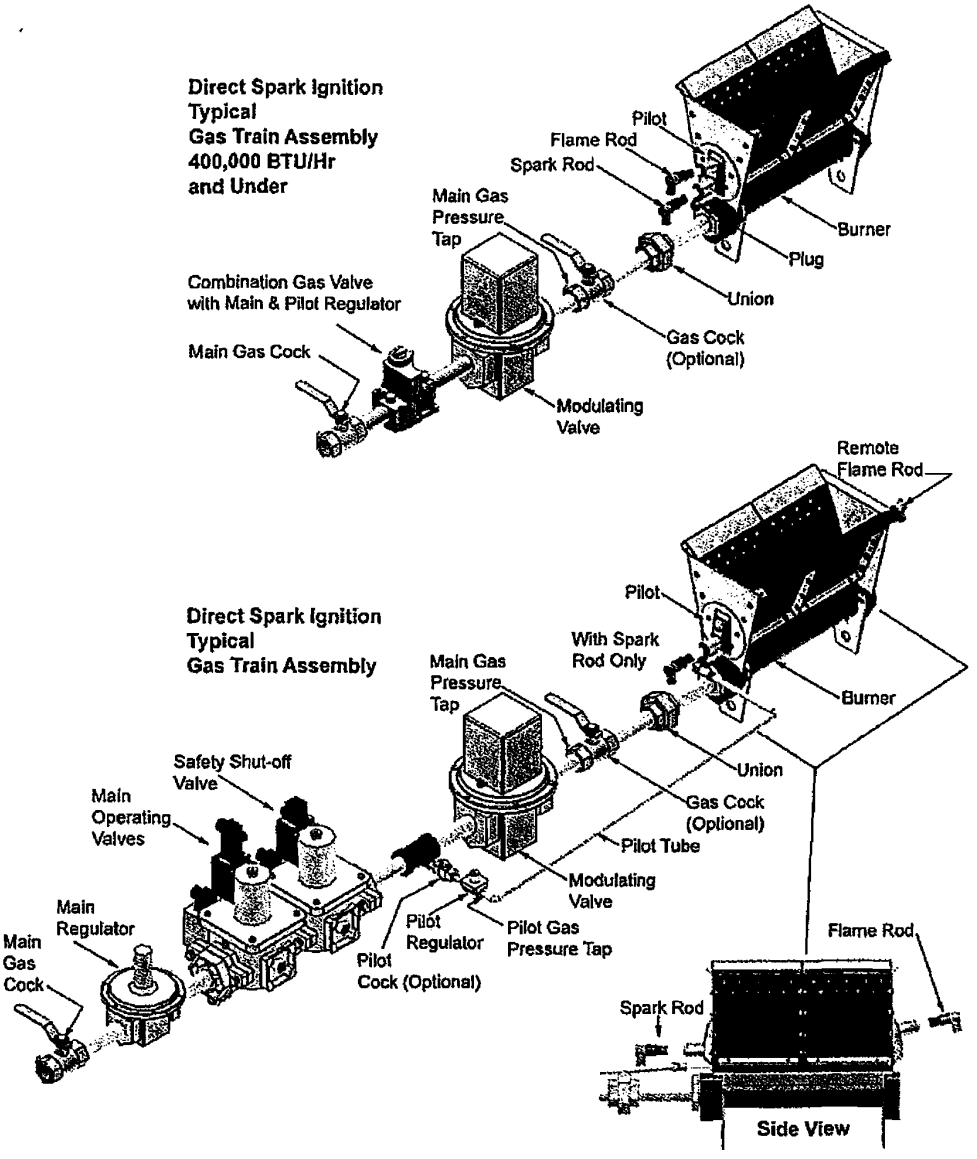


Figure 5b - Direct Spark Gas Train Assemblies

Gas Inlet Capacities

Inlet Size	Maximum Feet of Burner Natural	Propane	Mfd.
1.5 " NPT End Inlet	4'	5'	3'
2" NPT Back Inlet Centrally Located	6.5'	8'	4.5'

Table 2 - Gas Inlet Capacities

Burner Installation

Burner operation depends on the unit control setup in which the HMA-2 burner is used. A typical setup should consist of a Flame Safety Control with appropriate air flow proving system and a Modulating Gas Control System.

1. Verify the pressure across the burner. The pressure across the burner can be measured by placing two static pressure probes, one downstream and one upstream of the profile opening and measure the differential pressure. The pressure should be within burner operating specifications and within the expected calculated pressure.

2. With the burner off check the Flame Safety Air Proving System
   a. Check the operation of the air proving system for low and high airflow setting. Refer to the Specifications of the Flame Safety Control for setup instructions and air switch operational characteristics.

3. Adjust the main gas pressure regulator to the pressure needed for the high fire according to *Chart 3*. Take into account pressure drops thru the gas valves and other components in the valve train.

4. For continuous, intermittent, or interrupted ignition systems
   a. Pipe the pilot gas supply line up stream of the main gas valve.
   b. Adjust the pilot pressure regulator to 3.5 inch W.C. for Natural Gas or 2.0 inch W.C. for propane gas.

5. For direct spark ignition system
   a. Pipe the pilot gas supplied line to the main gas line downstream of the main gas valve.
   b. Adjust the pilot pressure regulator to 3.5 inch W.C. for Natural Gas or 2.0 inch W.C. for propane gas.

6. Depending on the pilot configuration make following adjustments.
   a. For Spark rod and flame rod configurations
      Make sure the flame rod is pointing towards burner manifold.
      Make sure the flame rod is not touching baffles or burner manifold.
      Make sure the spark rod is positioned above the pilot gas tube and that it will spark to the end of the gas tube. See Pilot Detail Drawings for this setting on page 16.
   b. Spark rod and UV
      Make sure the spark rod is positioned above the pilot gas tube and that it will spark to the end of the gas tube.

7. Pilot ignition
   a. Make sure the main gas valve to the burner is closed for intermittent or interrupted ignition.
   b. Observe the pilot flame, the flame should be blue and should extend approximately to the half of the burner end plate.
   c. Check the flame signal.

8. Main burner ignition
   Close the manual gas valve.
   a. Set the Modulating Gas Control System to high fire position.
      - Slowly open the manual gas valve.
      - Observe the flame at high fire; the flame should be blue approximately 10 to 12 inches long. If the flame is long, lazy and orange the air to fuel ratio is not correctly adjusted . The pressure across the burner should be increased, refer to *Chart 2*.
      - Check the flame signal.
      - Check the manifold pressure to the corresponding firing rate. If the manifold pressure does not correspond to the pressures shown in *Chart 3*. Check for gas leaks.

   Close the manual gas valve.
   b. Set the Modulating Gas Control System to low fire position.
      Slowly open the manual gas valve.
      - The flame should be evenly extending in the burner.
      - The flame should be located in the casting of the burner.
      - Check the flame signal.

Installation & Trouble Shooting

Burner Installation Continued

For a high fire start system the first gas port next to the pilot might require to be blocked using furnace cement to prevent potential pilot blow outs and flame failures. See page 7 (Burner Assembly) and see Figure 8 - *Pilot Configuration.*

Slight redness and warpage of the baffle plates may occur at the high and intermediate fire inputs. This will not harm the burner. Once an initial discoloration and warp has taken ("set") no further permanent change will take place.

If the end plates redness occurs during high and intermediate fire inputs, the distance between the end plates and the profile opening might not be sufficient for the air to cool the end plates. Profile readjustments might be necessary.

Burner Maintenance

Annual maintenance of HMA-2 burner is recommended to ensure trouble free operation.

1. Make sure the system is off
2. Inspect the burner baffles for plugged openings
   a. Clean baffles with wire brush
   b. Make sure the baffles are tightly attached to each other and to the burner casting.
3. Inspect the burner casting for plugged openings
   a. Clean casting with wire brush
   b. If necessary re-drill gas ports with a 1/8" (0.125") drill size and air ports with a number 43 (0.089") drill size.
4. Turn the system on and visually inspect the flame.
5. For Service Bulletins on the cleaning and maintenance of burners contact Midco.

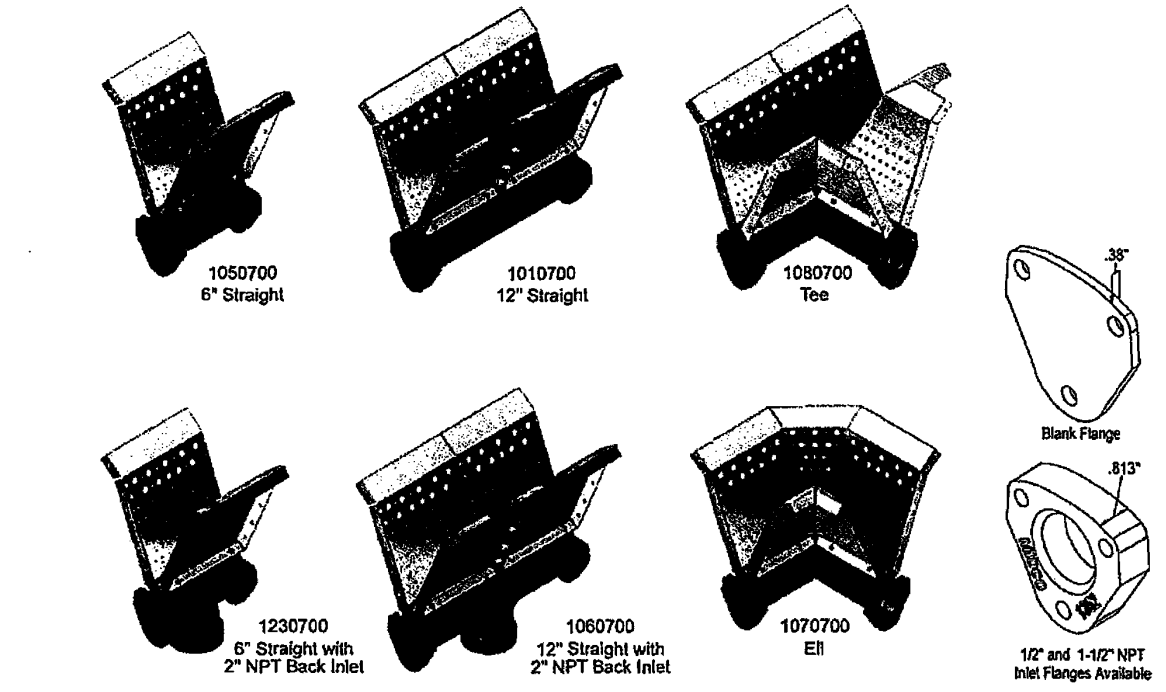
Trouble Shooting

I. The Midco HMA-2 Burner is only a component of the complete system. For trouble shooting of the equipment contact the OEM (Original Equipment Manufacturer) or the component manufacturer.

II. If the pilot fails to light, install a manometer on the pilot pressure tap. Check for 3.5" W.C. for natural gas or 2" W.C. for propane. If no gas check for voltage to pilot solenoid valve. If no voltage check operating controls or primary flame safeguard. If voltage to pilot solenoid valve is present and if there is 3.5" W.C. gas pressure at pilot pressure tap then check for spark or flame rod settings. If there is no voltage to pilot solenoid valve, refer to Flame Safety control specifications or contact the original equipment manufacturer.

III. If Main Burner fails: If no main flame check manifold pressure. If no manifold pressure check for voltage to the gas solenoid valve and check if main manual valve is open. If no voltage to gas valve refer to Flame Safety control specifications or contact the original equipment manufacturer.

IV. If the pilot fails as main gas valves open, the first adjacent gas port hole (next to the pilot) should be plugged with furnace cement. See Figure 8 - *Pilot Configuration.*



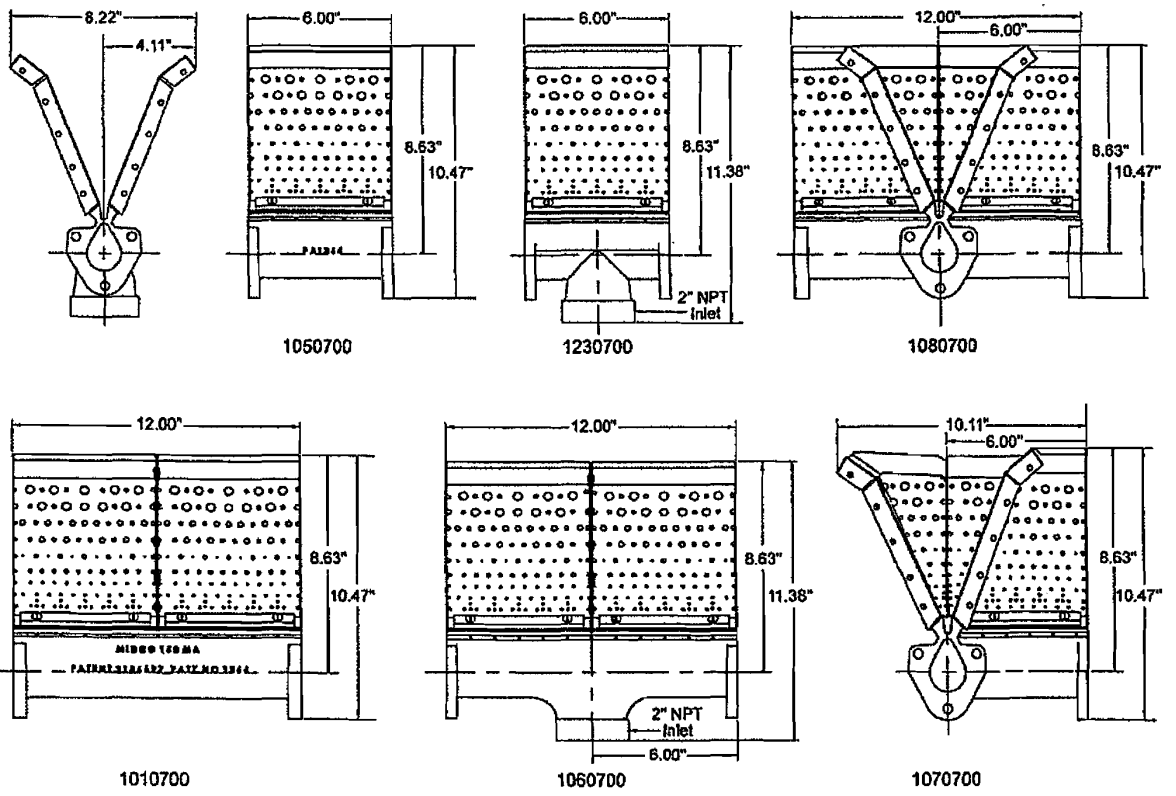


Figure 6 - Burner Sections - Assembly

Parts - Isometric View

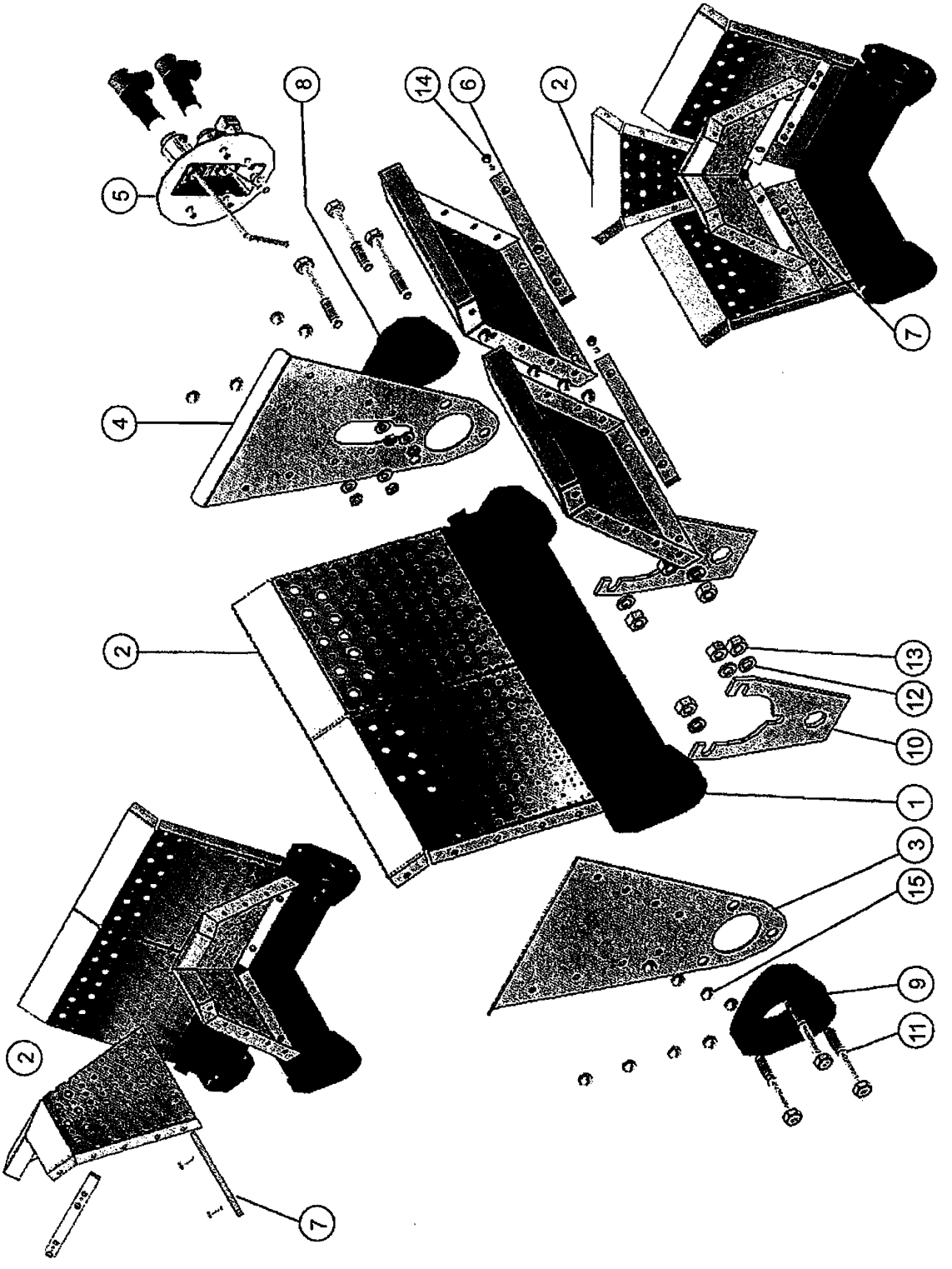


Figure 7 - Burner Assembly Parts - Isometric View

Item No.	Part Description	Part No	Burner Configuration Part Number	6" Straight 1359-09 Quantity	6" Back Inlet 1398-05 Quantity	12" Straight 1364-05 Quantity	12" Back Inlet 1361-07 Quantity	Ell Section 1362-07 Quantity	Tee Section 1365-06 Quantity
1	Burner Casting			1	1	1	1	1	1
2	HMA-2 6" Baffle	1395-23		2	2	4	4	2	2
	HMA-2 Tee Baffle	1395-11						1	2
	HMA-2 Outside Corner Baffle	1395-35						1	
3	HMA Blank End Plate	1354-50		1	1	1	1	1	2
4	HMA Pilot End Plate	1354-60		1	1	1	1	1	1
5	Pilot			See pilot listing on Page 16 - Pilot Configuration (For selection)					
6	Baffle Clamp	1356-00		2	2	4	4	2	2
7	Inside Baffle Clamp	1356-10						2	4
8	Blank Flange	1372-02		1	1	1	1	1	2
9	Inlet Flange (Tapered)	1352-02		1	1	1	1	1	1
10	Support Bracket	1374-00		2	2	2	2	2	3
11	5/16-18x1-1/2 Hex Head Cap Screw			6	6	6	6	6	9
12	5/16 Lock Washer			6	6	6	6	6	9
13	5/16-18 Brass Hex Nut			6	6	6	6	6	9
14	10-24x9/16 Phillips Rd Hd S.S. Mach Screw			4	4	8	8	8	12
15	S62 Steel Rivet Body			12	12	22	22	22	25

Table 3 - Burner Assembly Parts List

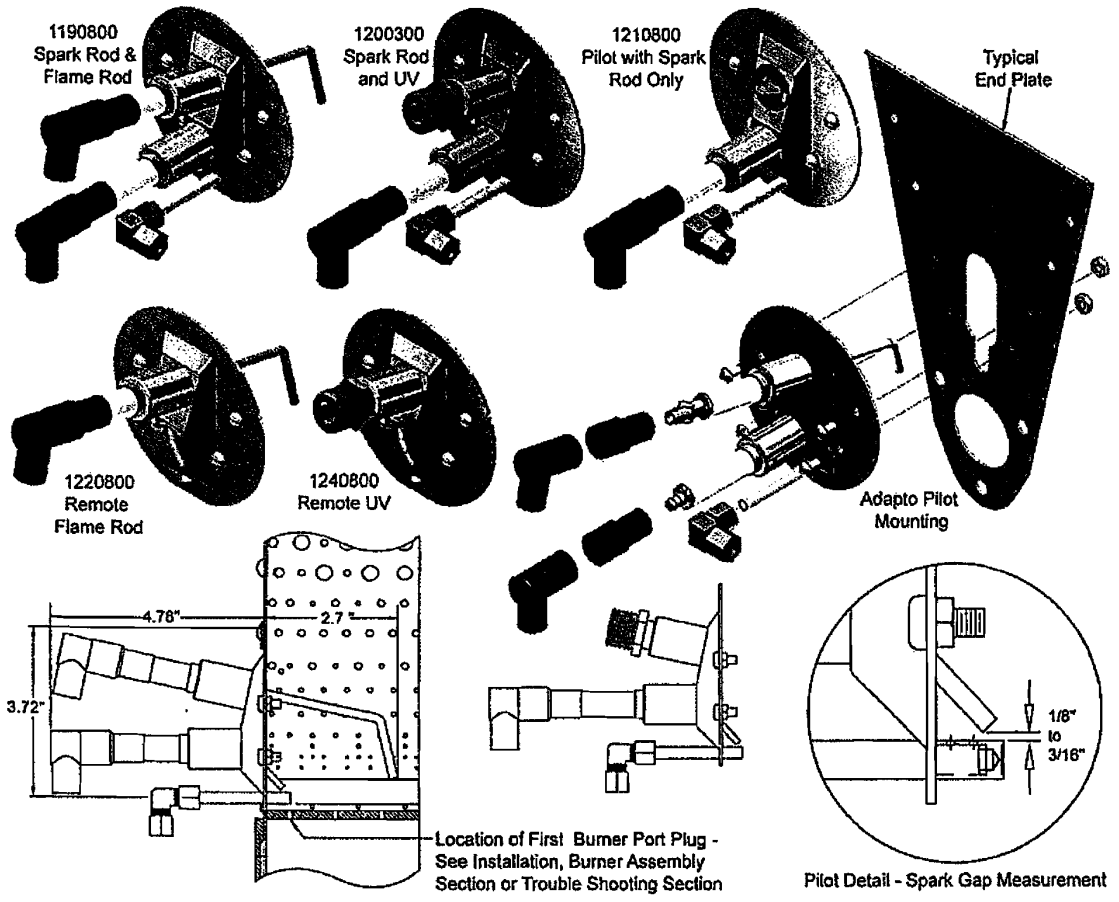


Figure 8 - Pilot Configuration

Equation Reference

1. Conversion of SCFM to Actual CFM of air

   $$SCFM = CFM \times \frac{\rho}{0.075}$$

2. Air density as a function of Temperature – $\rho = 1.35 \times \frac{Barometric\ Pressure\ (in\ Hg)}{T_{(out)} + 460}$

3. Change in Standard Barometric Pressure as a function of Altitude

   Barometric Pressure (in.Hg) = 29.921x (1–6.8753 x 0.000001x *altitude (ft)*)^5.2559

4. Temperature difference – Temperature Rise = $T_{(out)} - T_{(in)}$

5. Energy equation -- BTU/hr = SCFM x Temperature Rise x 1.08

   Where: 1.08 is a sensible heat equation constant

   $$1.08 = 0.2397 \left(\frac{BTU}{lb}\right) \times 60 \left(\frac{min}{H}\right) \times 0.075 \left(\frac{lb}{ft^3}\right)$$

Midco International Inc. 4140 West Victoria Street * Chicago, Illinois 60646
tel 773.604.8700 fax 773.604.4070 web www.midco-intl.com email sales@midco-intl.com

105
8471 34
Printed in USA

Rimpo and Associates, Inc.
Air Quality & Climate Change Consulting
Environmental Software Development
www.rimpoandassociates.com

September 16, 2009

Steve McKinney
Senior Engineer
El Dorado County Air Quality Management District
2850 Fairland Court
Placerville, CA 95667

Dear Steve:

As you requested during our phone conversation earlier today, I have enclosed printouts of the dispersion modeling results and the health risk assessment that I conducted for Kniesels' proposed Auto Collision Center in Shingle Springs. I have enclosed both the SCREEN3 dispersion modeling results (including input assumptions) and the health risk assessment calculations, which are based on the modeling results.

Please feel free to contact me if you have any questions about this.

Sincerely,

Tim Rimpo

Tim Rimpo

cc: Rob Champe, Kneisels

6097 Garden Towne Way, Orangevale, CA 95662
Phone (916) 337-8449 Fax (916) 988-4802

HRA

Pollutant	MSDS Sheet Percentage	max emission rate ROG (grams/sec)	Maximum Pollutant Emission Rate (grams/sec)	Worst Case Concentration (ug/m3) @ 1 gram/sec	Estimated 1-hour Concentration (ug/m3)	Estimated Annual Concentration (ug/m3)	Acute REL	Acute Risk	Chronic REL	Chronic Risk	Inhalation Cancer Potency (mg/kg-d)-1	Cancer Risk (chances per million)
Paints												
Sealer												
Parachlorobenzotrifluoride	30	2.52E-03	7.57E-04	5.39E+02	4.08E-01	3.26E-02	0	N/A	0	N/A	0.00E+00	N/A
Talc	13	2.52E-03	3.28E-04	539.2	1.77E-01	1.41E-02	0	N/A	0	N/A	0.00E+00	N/A
Titanium Dioxide	13	2.52E-03	3.28E-04	539.2	1.77E-01	1.41E-02	0	N/A	0	N/A	0.00E+00	N/A
Barium Sulfate	10	2.52E-03	2.52E-04	539.2	1.36E-01	1.09E-02	0	N/A	0	N/A	0.00E+00	N/A
Xylene	7	2.52E-03	1.77E-04	539.2	9.52E-02	7.62E-03	20000	4.75994E-06	700	1.08799E-05	0.00E+00	N/A
Kaolin	5	2.52E-03	1.26E-04	539.2	6.80E-02	5.44E-03	0	N/A	0	N/A	0.00E+00	N/A
n-butyl acetate	5	2.52E-03	1.26E-04	539.2	6.80E-02	5.44E-03	0	N/A	0	N/A	0.00E+00	N/A
4-methylpentan-2-one	5	2.52E-03	1.26E-04	539.2	6.80E-02	5.44E-03	0	N/A	0	N/A	0.00E+00	N/A
2-methoxy-1-methyl acetate	5	2.52E-03	1.26E-04	539.2	6.80E-02	5.44E-03	0	N/A	0	N/A	0.00E+00	N/A
acetone	5	2.52E-03	1.26E-04	539.2	6.80E-02	5.44E-03	0	N/A	0	N/A	0.00E+00	N/A
benzl butyl phtalate	1.5	2.52E-03	3.78E-05	539.2	2.04E-02	1.63E-03	0	N/A	0	N/A	0.00E+00	N/A
ethylbenzene	1	2.52E-03	2.52E-05	539.2	1.36E-02	1.09E-03	0	N/A	2000	5.43993E-07	8.70E-03	3.56706E-09
toluene	1	2.52E-03	2.52E-05	539.2	1.36E-02	1.09E-03	37000	3.67563E-07	300	3.62662E-06	0.00E+00	N/A
1,2,4-trimethylbenzene	1	2.52E-03	2.52E-05	539.2	1.36E-02	1.09E-03	0	N/A	0	N/A	0.00E+00	N/A
carbon black	1	2.52E-03	2.52E-05	539.2	1.36E-02	1.09E-03	0	N/A	0	N/A	0.00E+00	N/A
Basecoat												
2-butoxy ethanol	30	9.46E-03	2.84E-03	5.39E+02	1.53E+00	1.22E-01	0	N/A	0	N/A	0.00E+00	N/A
titanium dioxide	30	9.46E-03	2.84E-03	539.2	1.53E+00	1.22E-01	0	N/A	0	N/A	0.00E+00	N/A
graphite	5	9.46E-03	4.73E-04	539.2	2.55E-01	2.04E-02	0	N/A	0	N/A	0.00E+00	N/A
aluminum powder	5	9.46E-03	4.73E-04	539.2	2.55E-01	2.04E-02	0	N/A	0	N/A	0.00E+00	N/A
1-butoxy-2-propanol	5	9.46E-03	4.73E-04	539.2	2.55E-01	2.04E-02	0	N/A	0	N/A	0.00E+00	N/A
carbon black	5	9.46E-03	4.73E-04	539.2	2.55E-01	2.04E-02	0	N/A	0	N/A	0.00E+00	N/A
mica	5	9.46E-03	4.73E-04	539.2	2.55E-01	2.04E-02	0	N/A	0	N/A	0.00E+00	N/A
diethylene glycol	5	9.46E-03	4.73E-04	539.2	2.55E-01	2.04E-02	0	N/A	0	N/A	0.00E+00	N/A
monobutyly ether	5	9.46E-03	4.73E-04	539.2	2.55E-01	2.04E-02	0	N/A	0	N/A	0.00E+00	N/A
propylene glycol monoethyl ethe	1.5	9.46E-03	1.42E-04	539.2	7.65E-02	6.12E-03	0	N/A	7000	8.74274E-07	0.00E+00	N/A
methyl ethyl ketoxime	1	9.46E-03	9.46E-05	539.2	5.10E-02	4.08E-03	13000	3.92303E-06	0	N/A	0.00E+00	N/A
Clearcoat												
Parachlorobenzotrifluoride	60	7.09E-03	4.26E-03	5.39E+02	2.29E+00	1.84E-01	0	N/A	0	N/A	0.00E+00	N/A
acetone	30	7.09E-03	2.13E-03	539.2	1.15E+00	9.18E-02	0	N/A	0	N/A	0.00E+00	N/A
xylene	10	7.09E-03	7.09E-04	539.2	3.82E-01	3.06E-02	22000	1.73861E-05	700	4.37137E-05	0.00E+00	N/A
heptan-2-one	5	7.09E-03	3.55E-04	539.2	1.91E-01	1.53E-02	0	N/A	0	N/A	0.00E+00	N/A
n-butyl acetate	5	7.09E-03	3.55E-04	539.2	1.91E-01	1.53E-02	0	N/A	0	N/A	0.00E+00	N/A
ethylbenzene	1.5	7.09E-03	1.06E-04	539.2	5.74E-02	4.59E-03	0	N/A	2000	2.29497E-06	8.70E-03	1.50485E-08
TOTALS								2.64E-05		6.19E-05		1.86156E-08
												0.001861559

09/11/09
17:13:00

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

C:\Projects\Kniesels Auto Supply\Kneisels.scr

SIMPLE TERRAIN INPUTS:
SOURCE TYPE = POINT
EMISSION RATE (G/S) = 1.00000
STACK HEIGHT (M) = 10.3700
STK INSIDE DIAM (M) = 0.8700
STK EXIT VELOCITY (M/S)= 5.7000
STK GAS EXIT TEMP (K) = 316.5000
AMBIENT AIR TEMP (K) = 293.0000
RECEPTOR HEIGHT (M) = 1.5000
URBAN/RURAL OPTION = RURAL
BUILDING HEIGHT (M) = 7.3000
MIN HORIZ BLDG DIM (M) = 38.0000
MAX HORIZ BLDG DIM (M) = 46.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.785 M**4/S**3; MOM. FLUX = 5.691 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	U10M STAB	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH	
75	539.2	6	4	4.1	10000	11.71	3.12	5.52	SS
100	386.8	4	3.5	3.5	1120	11.14	8.2	6.29	SS
200	353	4	2.5	2.5	800	12.63	15.56	9.35	SS
300	281.1	4	2	2	640	14.58	22.61	12.11	SS
400	226.1	4	1.5	1.5	480	18.48	29.45	15.27	SS
500	191.6	4	1.5	1.5	480	18.48	36.15	18.3	SS
600	171.3	4	1	1	320	25.35	42.72	21.21	SS
700	153.6	4	1	1	320	25.35	49.19	24.03	SS
800	135.9	4	1	1	320	25.35	55.57	26.78	SS
900	119.9	4	1	1	320	25.35	61.88	29.47	SS
1000	106	4	1	1	320	25.35	68.13	32.09	SS

MAXIMUM 1-HR CONCENTRATIC AT OR BEYOND 75 M:

75	539.2	6	4	4.1	10000	11.71	3.12	5.52	SS

24-hour
PM10 Emission Rate
0.013662037 grams/sec
7.36657037 micrograms/m3

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED

```
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**********************************************
   *** REGULATORY (Default) ***
  PERFORMING CAVITY CALCULATIONS
 WITH ORIGINAL SCREEN CAVITY MODEL
      (BRODE, 1988)
**********************************************


*** CAVITY CALCULATION - 1 ***     *** CAVITY CALCULATION - 2 ***
 CONC (UG/M**3)   =   0.000      CONC (UG/M**3)   =   0.000
 CRIT WS @10M (M/S) =  99.99      CRIT WS @10M (M/S) =  99.99
 CRIT WS @ HS (M/S) =  99.99      CRIT WS @ HS (M/S) =  99.99
 DILUTION WS (M/S) =   99.99      DILUTION WS (M/S) =   99.99
 CAVITY HT (M)    =   7.30       CAVITY HT (M)    =   7.30
 CAVITY LENGTH (M) =  31.26       CAVITY LENGTH (M) =  28.90
 ALONGWIND DIM (M) =  38.00       ALONGWIND DIM (M) =  46.00

CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S.  CONC SET = 0.0

**********************************************
   END OF CAVITY CALCULATIONS
**********************************************


   ******************************************
   *** SUMMARY OF SCREEN MODEL RESULTS ***
   ******************************************

 CALCULATION      MAX CONC   DIST TO  TERRAIN
  PROCEDURE      (UG/M**3)   MAX (M)  HT (M)
 ------------    ---------   -------  -------
SIMPLE TERRAIN    539.2        75.      0.


**********************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**********************************************************


**********************************************************
**
**********************************************************
```

```
    12          Background
19.36657037

Annual
0.58932563
        12
12.58932563
```

09/11/09

17:13:00
*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

C:\Projects\Kniesels Auto Supply\Kneisels.scr

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	1.00000
STACK HEIGHT (M)	=	10.3700
STK INSIDE DIAM (M)	=	0.8700
STK EXIT VELOCITY (M/S)	=	5.7000
STK GAS EXIT TEMP (K)	=	316.5000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	1.5000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	7.3000
MIN HORIZ BLDG DIM (M)	=	38.0000
MAX HORIZ BLDG DIM (M)	=	46.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.785 M**4/S**3; MOM. FLUX = 5.691 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
75.	539.2	6	4.0	4.1	10000.0	11.71	3.12	5.52	SS
100.	386.8	4	3.5	3.5	1120.0	11.14	8.20	6.29	SS
200.	353.0	4	2.5	2.5	800.0	12.63	15.56	9.35	SS
300.	281.1	4	2.0	2.0	640.0	14.58	22.61	12.11	SS
400.	226.1	4	1.5	1.5	480.0	18.48	29.45	15.27	SS
500.	191.6	4	1.5	1.5	480.0	18.48	36.15	18.30	SS
600.	171.3	4	1.0	1.0	320.0	25.35	42.72	21.21	SS
700.	153.6	4	1.0	1.0	320.0	25.35	49.19	24.03	SS
800.	135.9	4	1.0	1.0	320.0	25.35	55.57	26.78	SS

```
   900.   119.9        4     1.0    1.0   320.0   25.35   61.88   29.47
SS
  1000.   106.0        4     1.0    1.0   320.0   25.35   68.13   32.09
SS

 MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    75. M:
    75.   539.2        6     4.0    4.1 10000.0   11.71    3.12    5.52
SS

  DWASH=   MEANS NO CALC MADE (CONC = 0.0)
  DWASH=NO MEANS NO BUILDING DOWNWASH USED
  DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
  DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
  DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 ****************************************
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
         (BRODE, 1988)
 ****************************************


 *** CAVITY CALCULATION - 1 ***       *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)      =    0.000        CONC (UG/M**3)      =    0.000
  CRIT WS @10M (M/S)  =   99.99        CRIT WS @10M (M/S)  =   99.99
  CRIT WS @ HS (M/S)  =   99.99        CRIT WS @ HS (M/S)  =   99.99
  DILUTION WS (M/S)   =   99.99        DILUTION WS (M/S)   =   99.99
  CAVITY HT (M)       =    7.30        CAVITY HT (M)       =    7.30
  CAVITY LENGTH (M)   =   31.26        CAVITY LENGTH (M)   =   28.90
  ALONGWIND DIM (M)   =   38.00        ALONGWIND DIM (M)   =   46.00

CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S.  CONC SET = 0.0

 ****************************************
      END OF CAVITY CALCULATIONS
 ****************************************


      ****************************************
      *** SUMMARY OF SCREEN MODEL RESULTS ***
      ****************************************

 CALCULATION         MAX CONC     DIST TO    TERRAIN
  PROCEDURE         (UG/M**3)     MAX (M)     HT (M)
--------------     -----------    -------    --------
SIMPLE TERRAIN       539.2           75.         0.


**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
```

Final Air Quality Report for Kniesel's Proposed Shingle Springs Collision Center

Prepared for:
Kniesel's Collision Centers
4680 Pacific Street
Rocklin, CA 95677
Contact: Rob Champe
Phone: (916) 315-8888

Prepared by:
Rimpo and Associates, Inc.
6097 Garden Towne Way
Orangevale, CA 95662
Contact: Tim Rimpo
Phone: (916) 337-8449

September 14, 2009

Executive Summary

Kniesel's Collision Centers is proposing to build an Auto Collision Center (Center) at 4031 Wild Chaparral Drive in Shingle Springs, California. The proposed Center would repair, repaint, and customize cars, trucks, and other vehicles. During normal operations, the Center would generate emissions of particulate matter (measured as PM10) and reactive organic gases (ROG).

This report examines the Center's emissions and evaluates their potential to cause health impacts to nearby residents. The report finds that the Center's emissions of particulate matter (measured as PM10) and reactive organic gases (ROG) would be less than levels considered significant by the California Air Resources Board and the El Dorado County Air Quality Management District.

The project's emissions were also compared to emissions from the adjacent one mile segment of Highway 50. The project would release 10% of the ROG and 50% of the PM10 emitted by vehicles traveling on Highway 50.

Even though PM10 and ROG emissions would be less than significant, the individual constituents of PM10 and ROG could pose acute, chronic, and carcinogenic health risks. To address these risks, a screening level health risk assessment (HRA) was conducted. The HRA found that the project would not result in significant acute, chronic, or carcinogenic health risks to individuals living in the project vicinity.

Table of Contents

Introduction

Kniesel's Collision Centers is proposing to build an auto collision center at 4031 Wild Chaparral Drive in Shingle Springs, California (Figure 1). This report estimates the air emissions from this facility and analyzes potential health risks to nearby residents.

Figure 1. Location of Proposed Collision Center

The proposed project would repair, repaint, and customize cars, trucks, and other vehicles. The activities to be conducted include sanding, cleaning, and painting, all of which release pollutants into the air and may contribute to health concerns in the community.

Regulatory Background

The two primary classes of pollutants that would be emitted by the Shingle Springs Collision Center (Center) include particulate matter less than 10 microns in diameter (PM10), and reactive organic gases (ROG). State and federal ambient standards have been set for PM10. Table 1 summarizes the state standards, which are more restrictive than federal standards. They include a maximum allowable concentration of 50 micrograms PM10 per cubic meter (24-hour average) and 20 micrograms PM10 per cubic meter (annual average).

Although no state or federal ambient standards have been set for ROG, the El Dorado County Air Quality Management District (EDCAQMD) has established a mass emission

significance threshold of 0.041 pounds PM10 per day and 82 pounds ROG per day (EDCAQMD, 2002). Table 1 summarizes the PM10 and ROG concentration and mass emission thresholds.

Table 1. PM10 and ROG Emission Standards

Pollutant	Standard
PM10	50 $\mu g/m^3$ 24-Hour Average 20 $\mu g/m^3$ Annual Average 0.41 pounds per hour
ROG	82 pounds per day

Notes: The concentration thresholds are based on the California ambient air quality standards for PM10. The mass emission thresholds are based on CEQA standards established by the EDCAQMD.

Center Emission Estimates for ROG and PM10

This section evaluates the Center's PM10 and ROG emissions and compares them to the PM10 and ROG standards listed in Table 1. Another concern not addressed by the standards shown in Table 1 is that the individual constituents of the project's ROG and PM10 emissions may pose health hazards to residents living in the vicinity. These are often referred to as toxic air contaminants or TACs. Consequently, the following section of this report evaluates the health risks from the Center's TAC emissions.

The Center would generate PM10 emissions from a range of activities, including sanding and paint overspray. PM10 from sanding would be controlled with vacuum capture equipment. PM10 from paint overspray would be controlled using negative pressure and by ducting the overspray through a series of filters that capture at least 98 percent of PM10 emissions. The 98 percent capture level has been established by the U.S. EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP Subpart HHHHHH). All remaining PM10 emissions will be ducted to a stack on the Center's roof.

The Center would generate ROG emissions from the evaporation of coatings, which would also be ducted to the stack on the Center's roof. The Center would use low-VOC (volatile organic compound) containing water-based coatings for most applications. The use of these low-VOC coatings minimizes the amount of ROG that would be released from the facility[1].

Table 2 compares the Center's emissions to the standards shown in Table 1. The emission estimates assume that the average collision repair job requires painting three automotive panels per day, and that three repair jobs would occur per day. The Center's hourly PM10 emissions (2.6 pounds per day/8 hours/day = 0.325 pounds/hour) would be

[1] For this report volatile organic compounds or VOCs include solvents and related evaporative compounds in liquid form. When VOCs evaporate and become airborne, they are considered to be reactive organic gases or ROG.

less than the EDCAQMD's significance threshold (for industrial sources) of 0.41 pounds PM10 per hour (EDCAQMD, 2002). The Center's daily ROG emissions of 3.7 pounds would be less than EDCAQMD's 82 pound per day threshold.

SCREEN3 modeling was used to estimate the worst case daily and annual ambient PM10 concentrations. As Table 2 shows, the worst case 24-hour concentration associated with the project equals 19.4 micrograms per cubic meter ($\mu g/m^3$). This is less than the 24-hour ambient standard of 50 $\mu g/m^3$. Also, the project's worst case annual concentration of 12.6 $\mu g/m^3$ is less than the California ambient standard of 20 $\mu g/m^3$.

Table 2. Comparison of the Collision Center's Emissions to Established Standards

Pollutant	Standards	Estimated for Project	Exceed Standard?
PM10	50 $\mu g/m^3$ 24-hr	19.4 $\mu g/m^3$ 24-hr	No
	20 $\mu g/m^3$ Annual	12.6 $\mu g/m^3$ Annual	No
	0.41 pounds per hour	0.325 pounds per hour	No
ROG	82 pounds per day	3.7 pounds per day	No

Notes:

Standards are set by the California Air Resources Board and the El Dorado County Air Quality Management District, as described in the notes of Table 1. The project's PM10 concentrations were estimated using the SCREEN3 model. The project's hourly and daily emissions were based on estimates of average daily collision repairs expected for the Center.

The Center's ROG and PM10 emissions were also compared to emissions from vehicles traveling on the one mile segment of Highway 50 adjacent to the project. Highway 50 emissions were estimated using Caltrans traffic counts and the California Air Resources Board's EMFAC2007 on-road vehicle emissions model.

Figure 2 shows that the Center would emit 3.7 pounds per day of ROG, which is approximately 10 percent of the ROG emitted by traffic traveling on Highway 50. The Center's PM10 emissions would equal 50 percent of the emissions produced by vehicles traveling on Highway 50.

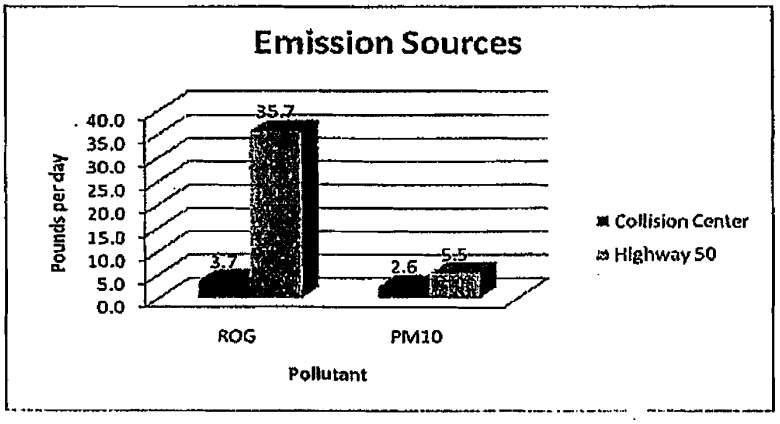


Figure 2. Collision Center Emissions Compared to Highway 50 Emissions

Health Risk Assessment

The analysis described above focuses on emissions of ROG and PM10. Both ROG and PM10 represent classes of pollutants made up of different chemical constituents. The individual constituents of PM10 and ROG represent another potential health risk. With regard to the Center, the individual constituents of coatings include different metals that make up PM10, and different types of solvents that are part of ROG emissions.

A health risk assessment (HRA) was conducted to determine whether the Center would present acute (short term), chronic (long term but non-carcinogenic), or carcinogenic health risks. This HRA focused on the individual constituents of ROG and PM10, referred to here as toxic air contaminants (TACs). TACs include substances that cause acute (short-term) and chronic (long-term) non-cancerous health effects and substances that cause cancer.

We first obtained material safety data sheets (MSDS) for the coatings that would be used at the Center. The MSDS forms list the individual chemical constituents of each coating. We then examined each coating's individual constituents to determine whether they have been listed by the California Office of Environmental Health Hazard Assessment (OEHHA) as either an acute, chronic, or carcinogenic inhalation risk.

We then estimated emissions of each TAC listed by OEHHA as posing a potential health risk. Then, using the SCREEN3 model, we estimated the ambient concentration at the closet receptor. Finally, using OEHHA's recommended procedure, we calculated whether the estimated ambient concentrations of each TAC represented a significant acute, chronic, or carcinogenic health risk.

For chronic TACs, a hazard index (HI) is determined by dividing the annual exposure level by the reference exposure level (REL). The REL is the dose at or below which no adverse health effects are anticipated. The REL varies by individual TAC. If the HI is less than 1, the chronic health impact is considered less than significant.

For acute substances, an HI is determined by dividing the 1-hour exposure level by the substance's REL. If the resulting HI is less than 1, the acute health impact is considered less than significant.

For TACs that are carcinogenic, the project is considered to result in a significant impact if the project would increase the cancer risk by more than 10 in one million (El Dorado County Air Quality Management District, 2002).

The screening-level health risk assessment conducted for this analysis is based on the methodology recommended in the CalEPA Office of Environmental Health Hazard Assessment (2003). The SCREEN3 model, an extremely conservative air dispersion model, was used for this analysis. SCREEN3 assumes worst-case meteorological

conditions and is used to calculate the worst-case 1-hour concentrations at varying distances from an emissions source. The maximum 1-hour concentrations produced by SCREEN3 were converted to annual concentrations by multiplying by 0.08 (U.S. EPA, 1992).

The results of the SCREEN3 health risk assessment are shown in Table 3. This health risk assessment (HRA) accounts for the inhalation health risks associated with the emission of TACs. This HRA assumes that all TACs are emitted from the emission stack that would be located on the top of the Center building.

The combined cancer risk of 0.002 per million is less than the significance threshold of 1 per million. This cancer risk represents a worst case using the extremely conservative SCREEN3 model. The cancer risk estimates are based on the maximum predicted downwind concentration of TACs emitted by the Center's emission sources and assume that all emission sources are released from the stack.

The chronic and acute health hazards indices shown in Table 2 represent the total risk of all TACs that would be emitted by the project's stationary sources. The project would not pose a significant health risk to nearby residents because those indices, both individually and combined, are less than 1. This conservative screening analysis indicates that the project would not pose a significant health risk to residents living in the project vicinity.

Table 3. Health Risk Assessment Results

Screening Criteria	Risk
Cancer risk (significant if greater than 10 per million)	0.002 per million
Chronic Risk (significant if greater than 1)	0.00006
Acute Risk (significant if greater than 1)	0.00003

References

El Dorado County Air Pollution Control District. 2002. Guide to Air Quality Assessment, Determining the Significance of Air Quality Impacts Under the California Environmental Quality Act – First Edition. February. Placerville, CA.

U.S.Environmental Protection Agency. 1992. Screening Procedures for Estimating the Air Quality Impact of Stationary Sources. EPA-454-R-92-019.

Kniesel's - Shingle Springs

Prioritization done according to CARB Guidelines - AB2588 Air Toxics "Hot Spots" Information and Assess Act of 1987

Prioritization Score Totals:		
0.221	**0.011**	**0.007**

2/10/2015 - Lisa Petersen

See Appendix E&F in the Pri Guidelines

			EMISSIONS				TOXICITY VALUES					PRIORITIZATION SCORES:		
Substances	CAS Number	Deg. of Acc. (lbs/yr)	CANCER actual (lbs/yr) Ec	ACUTE maximum (lbs/hr) Ea	CHRONIC average (lbs/hr) Ech	multi-path way	UNIT RISK $(ug/m^3)^{-1}$ Pc	ACUTE REL (ug/m^3) Pa	CHRONIC REL (ug/m^3) Pch	Stack Height Factor D	Dist. factor RP	**CANCER** score Sc	**ACUTE** score Sa	**CHRONIC** score Sch
Ethyl Benzene	100-41-4	200	**5.26E+01**	**1.53E-02**	**6.01E-03**		2.50E-06		2000	60	1	0.2211		0.0005
Ethylene Glycol	107-21-1	200	**2.19E+01**	**6.37E-03**	**2.50E-03**				400	60	1			0.0009
Monobutyl Ether (2-butoxyethanol)	111-76-2	200	**2.19E+02**	**6.37E-02**	**2.50E-02**			14000		60	1		0.0068	
Xylenes	1210	200	**2.14E+02**	**6.24E-02**	**2.44E-02**			22000	700	60	1		0.0043	0.0052

SCORE = **0.221** **0.011** **0.007**

Notes

1. 'Stack Height: < 20 meters — D = 60
2. 'Receptor Proximity: ~= 33.5 meters — RP = 1
   Nearest Resident at ~ 110 feet

Sc = Ec * Pc * RP * D * 28
Sa = Ea / Pa * RP * D * 25
Sch = Ech / Pch * RP * D * 2.5

3. **Chronic, Acute HIs and Cancer Risks calculated at PTEI!**

Assumed 78 days/quarter x 11 hrs/day x 4 = 3432 hours per year

Pollutant	VOC Content (Lbs/Gallon)	Maximum Daily Usage (Gal/Day)	Maximum Emissions (Lbs/Day)	Maximum Emissions (Lbs/Hour)
Primer Surfacer ECP15 (SG 1.63)	**2.10E+00**	**3.80E-01**	**7.98E-01**	**7.25E-02**
xylene (Maximum content = 5%)			**2.58E-01**	**2.35E-02**
ethylbenzene (Max content = 1%)			**5.17E-02**	**4.70E-03**
Primer Sealer ECS25 (SG 1.49)	**2.10E+00**	**6.20E-01**	**1.30E+00**	**1.18E-01**
xylene (Maximum content = 1%)			**7.71E-02**	**7.01E-03**
ethylbenzene (Max content = 1%)			**7.71E-02**	**7.01E-03**
Envirobase HP EHP-1 (SG 1.12)	**3.50E+00**	**7.50E-01**	**2.63E+00**	**2.39E-01**
2-butoxyethanol (Maximum content = 10%) CAS: 111-76-2			**7.01E-01**	**6.37E-02**
ethylene glycol (Max content = 1%)			**7.01E-02**	**6.37E-03**
Clearcoat EC700 (SG 1.18)	**2.10E+00**	**6.20E-01**	**1.30E+00**	**1.18E-01**
xylene (Maximum content = 7%)			**4.27E-01**	**3.89E-02**
ethylbenzene (Max content = 1.5%)			**9.16E-02**	**8.33E-03**

Notes
1. VOC Emissions in Gray
2. Density of water (ρ_{water}) = 8.346 lbs/gallon
3. Example Calculation -

Primer Surfacer ECP15 - Xylene (max of 5%) = ρ_{water} lbs/gallon x Specific Gravity x toxic maximum % x maximum gallons/day

= 8.346 lbs/gal * 1.63 * 0.05 * 0.38 gal/day

= **2.58E-01 lbs/day**

=	**2.35E-02**	**lbs/hour**	(assumes 11 hours/day operation)

15-0936 Public Comment
PC Rcvd 08-13-15