



# HALCO PRODUCTS COMPANY

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## ***Air Shower and Air Shower Tunnels***

**A**ir Showers offer an effective way to reduce contaminants carried by individuals entering or leaving a controlled area. The Air Shower can solve many of your decontamination problems.



Roll-Up Doors



Air Shower tunnels are protected passageways that allow large volumes of personnel to pass into controlled areas.

Air Showers and Tunnels supply concentrated CLASS 100 sterile air flows to lift off contamination while an individual stands in, or walks through, a specially constructed air chamber. Pressurized air streams from nozzles at a velocity between 6,000 and 8,000 feet per minute, which ensures efficient scrubbing action necessary to remove particulate matter. Contaminated air is directed downward through grilles and hollow walls of the Air Shower to the filter. 99.97% of all particles as small as .3 microns are removed.

Halco Air Showers and Air Shower Tunnels are economical to operate, and require a minimum of maintenance.



EXPLOSION PROOF

Halco air showers come in a variety of materials, features, shapes, and designs to fulfill your needs and requirements for contamination control and management in your facility. Flexibility in design and construction to allow integration into your unique and special required applications.

# Special Air Shower Features

## PLC CONTROL SYSTEM INCLUDES:

- Light Switch, audible alarm and alarm reset.
- HMI touch screen interface module, monitors system function during normal operation and displays menu functions for service and system changes.
- HMI touchpad for system operation.
  - Security code to turn control on and off
  - Security code to get into systems setup
- PLC programming capabilities:
  - Program time of day
  - Program day of the week
  - Program cycle time
  - Program delay unlock time
  - Designate entry and exit doors
  - Program new security code enter system
  - Program time lock feature
  - Initiate security locking feature with security code
  - Initiate single direction access feature
- PLC diagnostic capabilities:
  - Air shower disabling feature
  - Blower operations check
  - Door switch operations check
  - Door lock operations check
  - Presence sensor/mat switch check
  - Record blower run hours
  - Record air shower cycles
- Interlocking doors (standard), which release automatically with power failure.
- LED lighting (standard) is contained in the ceiling for less turbulence.
- HEPA Ceiling (optional) for constant laminar flow for added protection.
- Ionized Grid (optional) to eliminate static electricity when required.
- Halco warrants their units for (1) year from date of delivery for defects in workmanship.

In case of power failure, locks automatically release for exiting. An emergency stop button on each Air Shower sounds on alarm and releases locks for exiting.



## HALCO PERSONNEL AIR SHOWERS

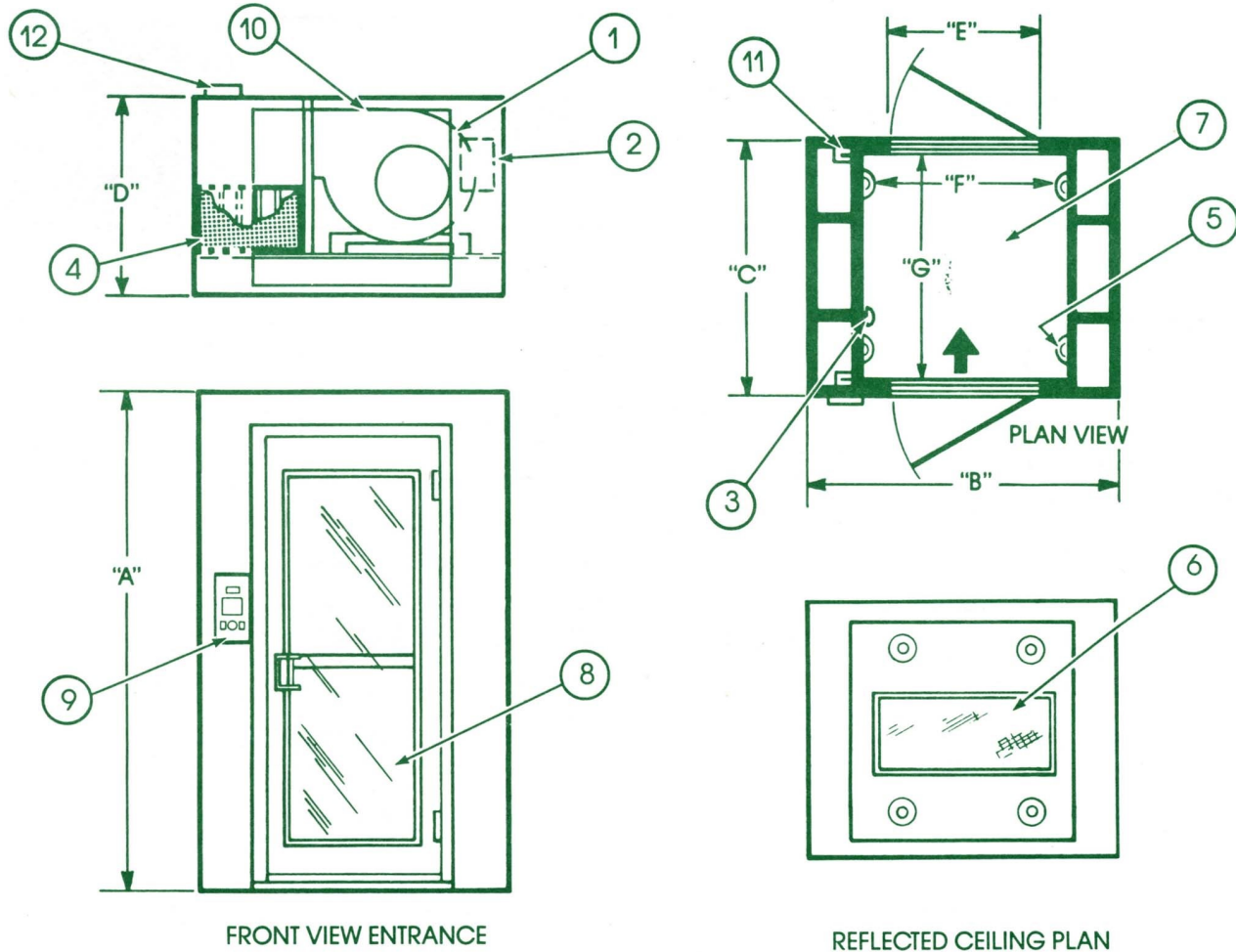
### Air Shower Tunnels

MODEL#	337	347	357	367	447	457	467	557	567	667	777	3127	3157
(A) Base Sec. HT.*	90	90	90	90	90	90	90	90	90	90	90	90	90
(B) Width	52	52	52	52	58	58	58	64	64	70	84	52	52
(C) Length	44	56	60	72	56	60	72	60	72	72	84	144	180
(D) Blower Box HT.	26	26	30	30	30	30	30	30	30	30	30	30	30
(E) Door Width	30	30	30	30	36	36	36	42	42	48		30	30
(F) Width—ID	35½	35½	35½	35½	41½	41½	41½	47½	47½	53½		35½	35½
(G) Length—ID clear	35	47	51	63	47	51	63	51	63	63		135	171
No. Nozzles	20	20	32	36	32	32	36	32	36	40		60	96
Qty. Blowers	1	1	1	1	1	1	1	1	1	1		3	3
CFM/Blower @ 2" WG	1010	1010	1820	1820	1820	1820	1820	1820	1820	1820		3030	5460
RPM	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600		3600	3600
Wheel Dia.	12½	12½	13½	13½	13½	13½	13½	13½	13½	13½		12½	13½
3 Door Available	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Shipping Wt.	1600	1800	1900	2100	1800	2000	2200	2000	2200	2400		5300	5700
Filter size—11½ deep x	18x24	18x24	24x24	24x24	24x24	24x24	24x24	24x24	24x24	24x24		3-18x24	3-24x24
H.P.	2	2	5	5	5	5	5	5	5	5		3-2HP	3-5HP

\*HFC Model—for HEPA Filter Ceiling Model add 6" to base section height.

**\*SPECIAL SIZES ARE ALSO AVAILABLE UPON REQUEST.**

# General Layout



## Typical Components

1. Motor/Blower assembly
2. Power control box.
3. Emergency release button
4. HEPA filter 99.97% effective on .3 micron particles
5. Adjustable nozzles.
6. LED light fixture
7. Proximity sensor actuation
8. Anodized aluminum doors with acrylic.
9. PLC control panel—On/Off lights—Reset—Alarm.
10. Access panels for easy maintenance.
11. Electric interlocking chamber.
12. Single connection junction box.

## AIR SHOWER ELECTRICAL REQUIREMENTS

### 3 Phase Voltage

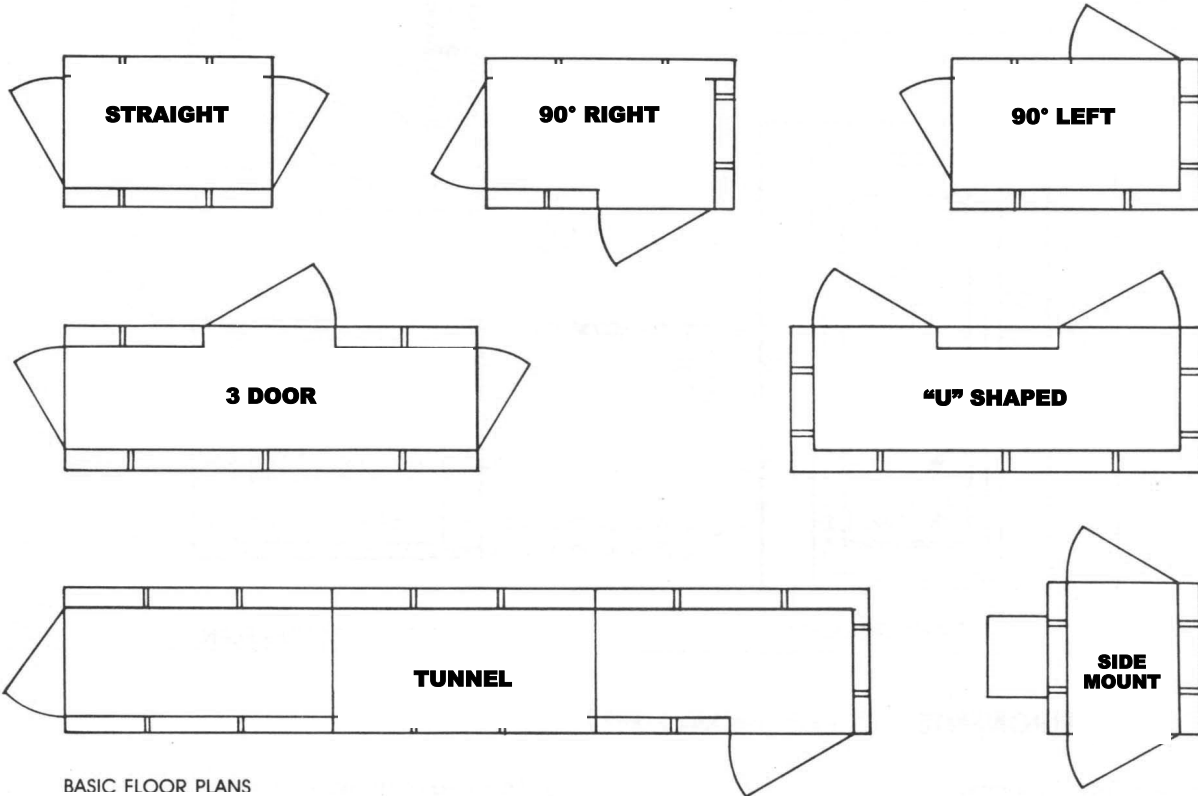
HP	MOTOR	BLOWER	VOLTAGE	AMPS
5HP	3N669	4C330	208V	15.3
			230V	13.6
			460V	6.8
2HP	3N667	4C329	208V	7.0
			230V	6.6
			460V	3.3

### Construction Options

- ◆ Painted Steel
- ◆ Stainless Steel 304
- ◆ Stainless Steel 316
- ◆ Unpainted galvalume
- ◆ Knock-Down Construction
- ◆ L-Shaped Design
- ◆ Low Profile

\* Other voltages available upon request.

# BASIC FLOOR PLANS



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*NOTE: ANY DOOR MAY BE USED AS AN ENTRANCE OR EXIT*

## OPTIONAL EQUIPMENT/MODELS

- Safety Plate Glass Doors
- Magnahelic Gauge HEPA
- Magnahelic Gauge Prefilter
- Photohelic Gauges with Alarms
- Aluminum Grated Floor with Clean Out Pan
- Models:
  - L - 90° L-Shaped
  - U - U Shaped
  - 3D - Three Door
  - KD - Knock Down Assembly
  - SM - Side Mount HEPA, Motor Blower
  - ADA - ADA Compliant
- Sprinkler Head
- Laminar Ceiling Blower
- Auto Bi-part Doors
- Proximity Sensor
- TEFC or Special Frame Motors
- HFC - HEPA Filter Ceiling
- IG - Ionized Grid
- NF - No Floor
- EXP - Explosion Proof
- RFR - Raised Floor Return
- RUD - Roll-up Door

**\*HALCO will custom build to exact specifications.**

HALCO Shower Tunnels are used as downflow booths to remove particulate contamination from personnel entering lunch and break areas, clean rooms & sterile rooms. This is accomplished by putting basic floor plan styles side by side and end to end.

Every Air Shower is under warranty for a period of one year from date of delivery.

Air Showers and Tunnels meet all federal, military and industrial specifications for air showers used for life science, bio medical, pharmaceutical, parenteral drug, micro-electronic, aerospace, precision manufacturing and other applications.

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In line with our policy of continual product improvement, HALCO reserves the right to incorporate and use equipment and material to conform with the latest design of its products, and in keeping with the specifications of this equipment.



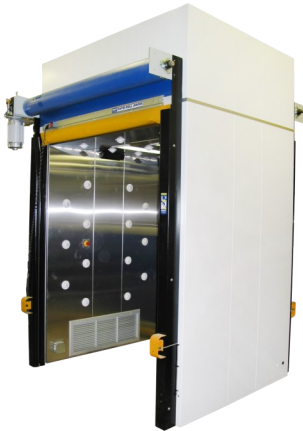
# Roll-up Doors and Tunnels



AS615 Lift Truck Air Shower TUNNEL



AS68 Pallet Jack Air Shower TUNNEL



Air Shower Tunnel Entrance



Air Shower Tunnel Entrance

# Low Profile and L-Shaped



Low Profile Side Mount Blower



Low Profile L-Shaped Side Mount Blower



Bottom Mount Blower

# Misting Air Showers

Halco™ Misting Showers are used for the control and containment of hazardous dusts, powders and potent compounds. The Misting Shower provides a fine atomized fog to affix any loose powders to the users garment to prevent the powders from becoming airborne or migrating outside of the containment area during degowning. The addition of the Air Shower option aids in the removal of the contaminated water to the bottom containment pan.

## AVAILABLE OPTIONS

- ALL STAINLESS STEEL CONSTRUCTION
- EPOXY PAINTED STEEL CONSTRUCTION
- POLY-PRO
- HEPA/ULPA FILTRATION
- CUSTOM SIZES
- CUSTOM CONFIGURATIONS
- DRENCH SHOWERS
- STEP-OFF PLATFORMS
- SOILED GOWN CONTAINMENT
- MICROPROCESSOR CONTROLLED
- EXHAUST SYSTEMS



## PLC CONTROLLED:

Allowing for custom adjustment of mist cycle duration, door interlock system, and air shower sequence. The control system can also be integrated to operate with house monitoring systems

## FILTRATION:

Optional laminar flow HEPA/ULPA filtration systems can create and maintain up to a class 10 (ISO 4 ) environment inside the Shower

## AIR SHOWER CYCLE:

The Air Shower cycle can be used to remove contaminants before entry into the clean area without the mist cycle, and as an aid to rid excess water after the mist cycle. The air shower cycle uses a high velocity air stream of 6000-8000 fpm to provide efficient scrubbing action of the cleanroom garment

# Specifications

Section # \_\_\_\_\_ Lab "Specialties" Air Shower Module

## Part 1 General

### 1.01 Description:

- A. Provide Air Shower "Blow Off" vestibule to allow personnel to enter BSL Lab (Clean Room) (CEF) to limit cross contamination of controlled environmental area.
- B. **Unit Size:** As shown on drawings and bill of material listings.
- C. **Operation:** In accordance with (CDC/NIH/US/USP), (OBS/LCDC/Canada), (FDA), (Customer requirements), (OTHER)\, And any applicable specification for this specific project as noted on drawings and here in the specifications.

### 1.02 Submittals:

- A. Submit shop drawings showing plan and elevation views with overall and interconnecton point dimensions.
- B. **Product Data:** Submit data sheets; component cuts and specific detail drawings for subcomponent items unique and part of specified unit.
- C. **Installation Instructions:** Submit placement and configuration drawings; utility connection requirements; job specific instructions and descriptions.
- D. **Manufacturer's Certificate:** Certify that product will meet or exceed specified requirements. Provide standard testing protocol list; to insure requirements are met and that unit is factory tested and certified prior to shipment. Submit test report for files.

### 1.03 Close Out Submittals:

- A. Execution requirements close out procedures.
- Operation and Maintenance Data:  
As Built drawings, Start-up instructions, parts lists, Maintenance and operation instructions.

### 1.04 Qualifications:

- A. **Manufacturer:** Company specializing in manufacturing products specified in this section with minimum of 10 years experience.
- B. **Installer:** Company specializing in performing work of this section with Minimum three (3) years documented experience approved by manufacturer.

### 1.05 Delivery, Storage, Handling:

- A. Product storage and handling requirements.
- B. Accept Air Shower Modules on site in factory packaging and inspect for damage.
- C. Protect Air Shower Modules from contamination by storing in clean "Project Manager Approved" location.

### 1.06 Field Measurements:

- A. Verify field measurements prior to fabrication

### 1.07 Warranty:

- A. Product warranties and product "As-Built" drawings and manuals.
- Provide (1) one year warranty from date of acceptance on unit and all subcomponents against defects in material and workmanship.

## Part 2 Products

### 2.01 Air Shower and Specialties:

- A. Manufacturers: Shall have a minimum of TEN (10) years experience fabricating this type of product.
  - 1. Halco™ Products Company
  - 2. \_\_\_\_\_
  - 3. \_\_\_\_\_
  - 4. Substitutions: Section 1.04-Product Requirements.

### 2.02 Usage and Isolation Level:

- A. Air Shower shall be utilized in a \_\_\_\_\_ (laboratory/clean room) rated at \_\_\_\_\_ (insert rating) i.e. BSL 1,2,3 or 4 or class/ISO rating \_\_\_\_\_ (insert rating) and shall be designed for such use.

### 2.03 Purging, Isolation, Decontamination, Control Within the Air Shower:

- A. Pass-Thru shall include \_\_\_\_\_ (insert spec). QA/QC Protocols and applicable agency FDA/CSA/OBS/LCDC/USP or \_\_\_\_\_ and include \_\_\_\_\_.

### 2.04 Doors:

- A. Air Shower shall have \_\_\_\_\_ (insert type) doors. IE roll-up, sliding, motorized sliding, automatic swing, bi-part motorized sliding, Etc., Etc., Etc. Windows in the doors to \_\_\_\_\_ (insert spec) of a \_\_\_\_\_ width by \_\_\_\_\_ height, color to be \_\_\_\_\_ (insert color), and rated at \_\_\_\_\_ (insert rating).
- B. Doors to be \_\_\_\_\_ (interlocked, not interlocked) using \_\_\_\_\_ (mechanical, electrical, pneumatic) power to avoid having both doors open at the same time to avoid contamination cross over.
- C. Air Shower to include "PLC" control with Digital "HMI" located at entry door for operation.

### 2.05 Materials of Construction:

- A. Air Shower to be constructed of \_\_\_\_\_ (insert material). IE laminated particle board, polycarbonate, steel painted with \_\_\_\_\_ (insert paint spec) stainless steel \_\_\_\_\_ (insert S/S spec) other \_\_\_\_\_ (insert other spec).
- B. Unit to include (Magnehelic Gauge(S), Continuous purge, Anti-static ionisation bars, OTHER, fabricated of \_\_\_\_\_ (insert spec), and be \_\_\_\_\_ (fixed, moveable, motorized, sliding, adjustable).

### 2.06 Air shower "TUNNEL" Designs:

- A. Air shower "TUNNEL" shall be designed to allow passage of multiple personell and or wheeled carts of \_\_\_\_\_ (insert size and type) and include internal bumper rails to prevent damage to items. Interior to be \_\_\_\_\_ (insert spec) Voltages and sizes as shown on drawings.

### 2.07 Specialties:

- A. Interior to be supplied with HEPA Filtered air to maintain Class/ISO \_\_\_\_\_ (insert value) conditions.
- B. Interior to be exhausted to system return air to maintain alight (negative/positive) in relation to primary clean room area. CFMS and sizes as shown on drawings.
- C. UV germicidal lamps
- D. Anit-static systems and power supplies, voltage as shown on drawings.
- E. Special purge options and designs, CFMS and sizes as shown on drawings.
- F. Special supply air and exhaust air options as shall be required CFMS and sizes as shown on drawings.
- G. Site specific items such as seismic tie down lugs, broken down designs to allow easy access in to the area, top, bottom, side rear, access of any items so specified, colors, paints, voltages, air pressures, handicap, illumination, support of and installation specific details. (As shown on drawings)

## Part 3 Execution

### 3.01 Examination:

- A. Verify that area and surfaces are ready to recieve and accept unit installation and field dimensions are as shown on drawings prior to starting installation.
- B. Verify that proper required utilities are available and in proper location and ready for use.
- C. Beginning of installatin means installer accepts existing conditions.

### 3.02 Installation:

- A. Install in accordance with manufacturer's instructions.

### 3.03 Field Quality Control:

- A. Field inspection and testing will be performed under provisions of general conditions.
- B. Unit to be cleaned and tested and validation report submitted to project manager for files and future reference and to validate the Warranty.

Customized specifications upon request.  
Please contact our office for details.



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