

FROM R. R. WISHNER

TO MEMORANDUM

1984 JANUARY 18

RE: RESPIRATOR PROTECTION PROGRAM FOR KPCC

Attached is a copy of our "Respirator Protection Program" for your review and reference. Please advise if you have any comments.

Bob
R. R. WISHNER

RRW/bh

Attachment

cc: C. F. DiMascio
C. Grimes
D. Knott
T. R. Mills
F. Rohde
D. E. Huddleston - Alcoa, Pittsburgh

H & S
Industrial Hygiene

BDD	JAN 23 1984	SC
EER		DEH
TBB		CD
RMJ		PW
JES		LMN
MJV		EDS

PLAINTIFF'S
EXHIBIT
AL-1389

KPCC

410994 0058

1984 January 18

KESSLER PREMIUM CASTINGS COMPANY

RESPIRATOR PROTECTION PROGRAM

410994 0059

I. PURPOSE

To establish a respirator program at Kessler Premium Castings Company which provides information, guidance, and defines procedures for proper selection, care and use of respirators. The overall responsibility and authority for the complete respirator program shall be assigned to the person responsible for industrial hygiene.

II. OBJECTIVES

To provide a written procedure governing the selection and use of respirators in the control of those occupational diseases caused by breathing air contaminated with harmful concentrations of airborne substances. To comply with applicable State and Federal Safety and Health Standards.

III. SCOPE

This program sets forth accepted practices for respirator users and shall apply to all employees, salaried and hourly who are assigned to jobs and/or tasks requiring Mandatory Respirator Protection. See Appendix "A"

IV. PROCEDURE

When a potentially harmful concentration of an airborne substance is identified and effective engineering controls are not feasible, or while they are being instituted or evaluated, individuals who may be exposed will be required to wear appropriate respiratory protection specified by the person responsible for industrial hygiene.

A. Determination of Designated Areas

Periodic air sampling of the work environment is conducted by an Industrial Hygiene technician. The sampling is performed to identify new areas of potential over-exposure and to monitor existing jobs and/or tasks where mandatory respiratory protection is required.

B. Training

Periodic training, at least annually, will be required for all persons who are assigned to a regulated job classification or task. The supervisor, the person issuing the respirators, and the respirator wearers shall be given adequate training by a qualified person or persons to insure the proper use of respirators. Written records of who and when trained shall be kept.

Training shall include, but not be limited to, the following:

1. The reasons for the need of respiratory protection.

2. The nature and effects of the respiratory hazards to which the individual may be exposed.
3. An explanation of why more positive control is not immediately feasible. This shall include a discussion of what effort is being made to reduce or eliminate the need for respirators.
4. An explanation of why a particular respirator has been selected for a particular purpose.
5. A discussion of the respirator's capabilities and limitations.
6. Instruction in inspecting, donning and wearing of the respirator.
7. Instruction in facepiece fit tests and procedures, which shall include demonstrations and practice in how the respirator should be worn, how to adjust it and how to determine if it fits properly.

To insure proper protection, it is the wearer's responsibility to check the facepiece fit each time he or she puts on a respirator. This may be done by using procedures recommended by the respirator manufacturer.

C. Selection

The person responsible for industrial hygiene shall select a respirator approved by NIOSH in accordance with the capabilities and limitations afforded by the respirator for the nature and concentrations of the air contaminants.

D. Issuance

Supervisors shall issue the proper respiratory protection equipment for the designated jobs or tasks.

1. Supervisors or an industrial hygiene technician shall insure that the employee has received proper instruction in the use of respirators including, but not limited to:
 - a. Limitations of the respirator.
 - b. Proper fit.
 - c. Installation/replacement of filters.
 - d. Visual inspection of valves, covers, straps, etc.
2. Each individual is responsible for replacement of cartridges, filters and filter covers. Also each individual is responsible for immediately reporting to their supervisor the need for a replacement respirator in the event of damage or loss.

3. Each person issued a respirator shall inspect it prior to use to insure that it is in good operating condition.

E. Maintenance

Maintenance shall be carried out on a regular schedule which insures that each employee is provided with a respirator that is clean and in good working condition. Maintenance shall include:

1. Washing, sanitizing, rinsing and drying.
2. Inspection for defects.
3. Replacement of worn or deteriorated parts.
4. Stored to protect against dust, sunlight, heat, extreme cold, excessive moisture and damaging chemicals.

V. MANAGEMENT CONTROLS

The Kessler Premium Castings Company Respirator Program contains, but is not limited to, the following provisions for evaluating the control and effectiveness of the program.

A. Employer Responsibility

1. To maintain a standard operating procedure which governs the selection, care and use of approved respirators.
2. To determine each individual's fitness to wear a respirator under working conditions.
3. To insure that all individuals wear respirators as prescribed - Department Supervision.
4. To perform periodic audit/evaluations of respirator effectiveness including, but not limited to:
 - a. Area designations and respirator requirements - Industrial Hygiene technician or other competent authority.
 - b. Respirator usage and maintenance in conformance with published policy - All Management.
 - c. Effectiveness of individual training in care and use of respirators by:
 - (1) Random, visual audits - Supervisors.
 - (2) Random, recorded audits.

B. Individual Responsibility

Each individual wearing a respirator will be required to:

1. Use the prescribed respirator in accordance with instructions.
2. Inspect the respirator prior to use to insure that it is in proper working condition.
3. Immediately report malfunction, damage, or loss to supervision.
4. Each employee required to wear a negative pressure respirator with a facepiece, shall check the seal of that facepiece prior to each entry into a hazardous atmosphere.
5. To protect against respirator damage, misuse, loss and to assure proper storage at all times. Failure or refusal to wear a respirator as designated may result in disciplinary action.

APPENDIX A

JOBS AND TASKS REQUIRING RESPIRATOR PROTECTION

AREA	JOB CLASSIFICATION	CONTAMINENT	RESPIRATOR
Chill Prep.	Core Remover 2	Metal Dust and Spray Mist	3M 8710
Gateline Shop	Coremaker 1	Particulate Dust	3M 8710
Core Room	Rollover Operator	Particulate Dust	3M 8710
Foundry	Assemblers	Spray Mist	3M 8710
Foundry	Furnace Tenders	Particulate Dust and Metal Fumes	3M 9940
Trim	Trimmer/Grinder	Metal Dust	3M 8710
Penetrant	Penetrant Procsr.	Spray Mist	3M 8710
Sandblast	Sandblaster	Silica Dust	Hankison Catalite Model 1911
Weld	Weld Trimmer	Metal Dust	3M 8710
Weld	Production Welder	Metal Fumes	3M 9940
Finishing	Finisher	Metal Dust	3M 8710
Waterblast	Waterblaster	Particulate Dust	Bullard Free Air Supply

**Anyone emptying drums or dust collectors must use a 3M 8710 respirator.

File Kessler

FROM

FERDI ROHDE
KESSLER PREMIUM CASTINGS
EL PASO, TEXAS

M. W. WEI
PITTSBURGH OFFICE
ROOM 5027 WPH

1985 JANUARY 28

RE: EXPERIMENTAL BERYLLIUM CONTROL VACUUM SYSTEM

Attached, you will find a sketch and photographs to clarify the layout and to make our experiment more understandable.

A steel vacuum ring is placed between the furnace top and the A-622 fluxing unit. The ring is connected by a flexsteel hose to an air operated vacuum cleaner system. This system consists of a Hako-Minuteman model X-702 cleaner unit equipped with a H.E.P.A. filter. Certification and filter data from the filter supplier are also enclosed. The use of the vacuum cleaner unit was only to test the feasibility of the reducing beryllium levels using the vacuum ring. The ring could just as easily be piped to a stationary collector type filter. After our continuous testing, we hope to prove that this system will be effective in controlling beryllium levels for everyone in the foundry area.

If you have any further questions or require any additional information, please feel free to contact me.

Sincerely,

Ferdie
FERDI ROHDE

FRS g

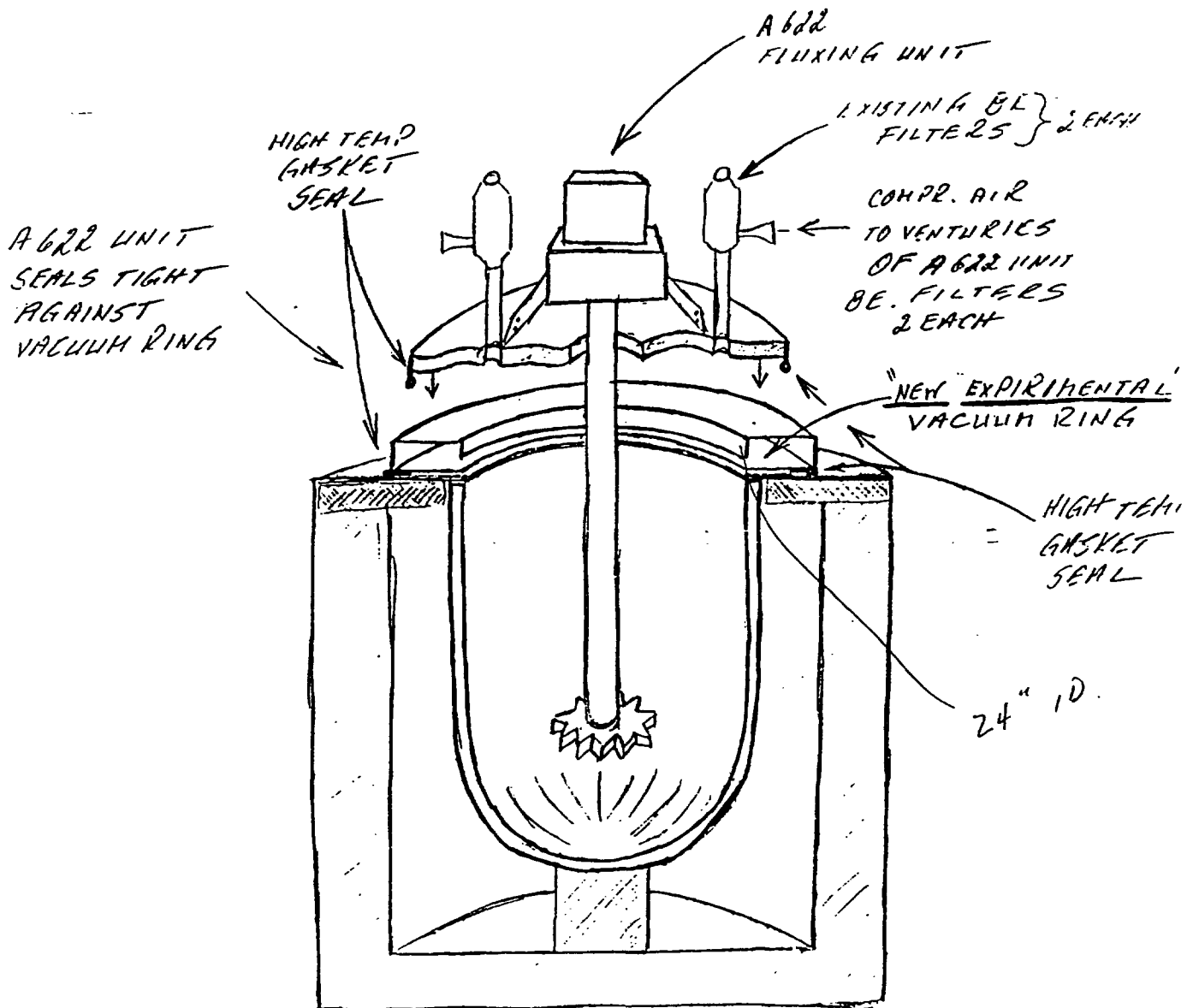
- 1) Evaluation of control Tech 2-07-85
- 2) DESIGN & selection optimum control 4-30-85
- 3) PROCURE & INSTALL 7-20-85
- 4) TEST FOR COMPLIANCE 8-16-85

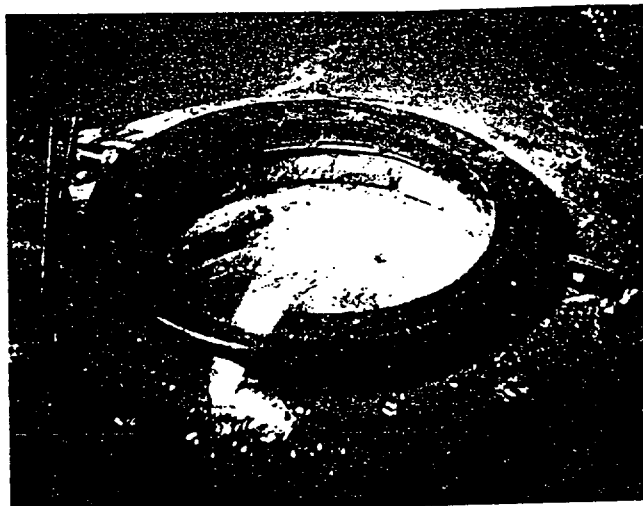
[Check gas temp]

KPCC

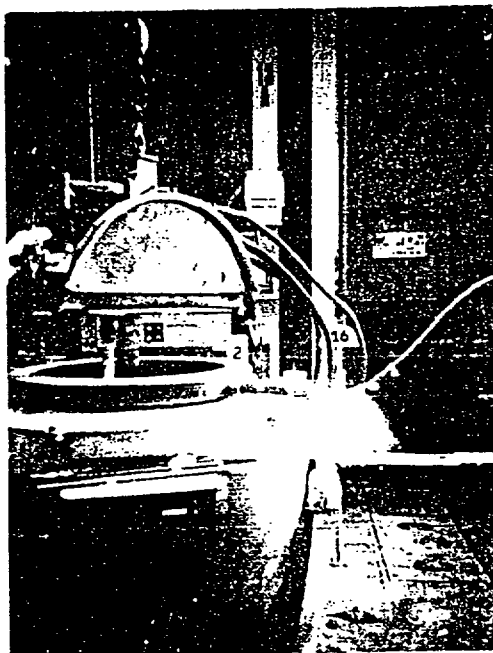
SENT TO G STEINER CORONA
85/7/25
DAH

410994 0065

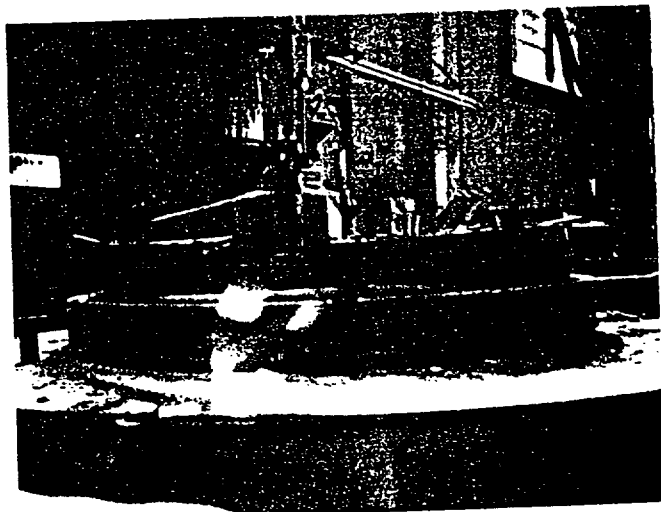




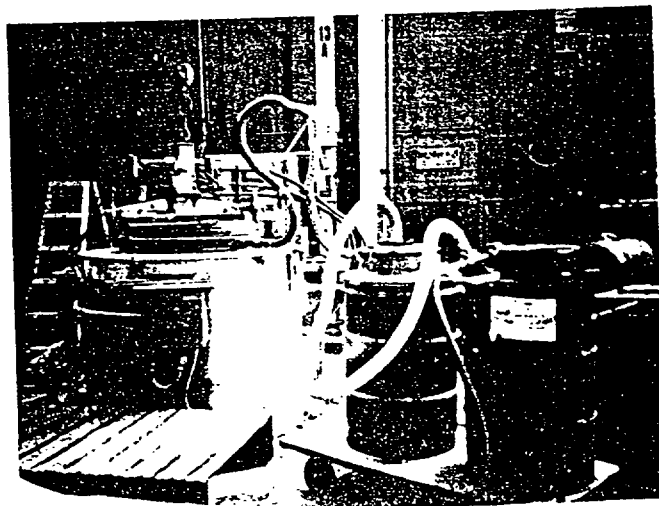
Vacuum ring in place on top of furnace



A-622 unit is being placed on top of vacuum ring.



A-622 Fluxing unit in place on top of vacuum ring.



Vacuum ring hooked to two-stage H.E.P.A. filter vacuum system.

DEC 16 1983

CAMBRIDGE FILTER CORPORATION

POST OFFICE BOX 4906 SYRACUSE, NEW YORK 13221 (315) 457-1000

December 14, 1983

Hako Minuteman
111 South Route 53
Addison, IL 60101

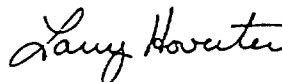
Attn: Mr. Dom Leone

Dear Dom:

This will certify that the Absolute filters which we currently supply to Hako Minuteman are individually tested and have a minimum efficiency of 99.97% on .3 micron as tested by the DOP test method in accordance with MIL-STD-282. Each filter is marked with the test results and a certified copy of the test results accompanies the shipment.

If there are any questions, please contact us.

Sincerely,

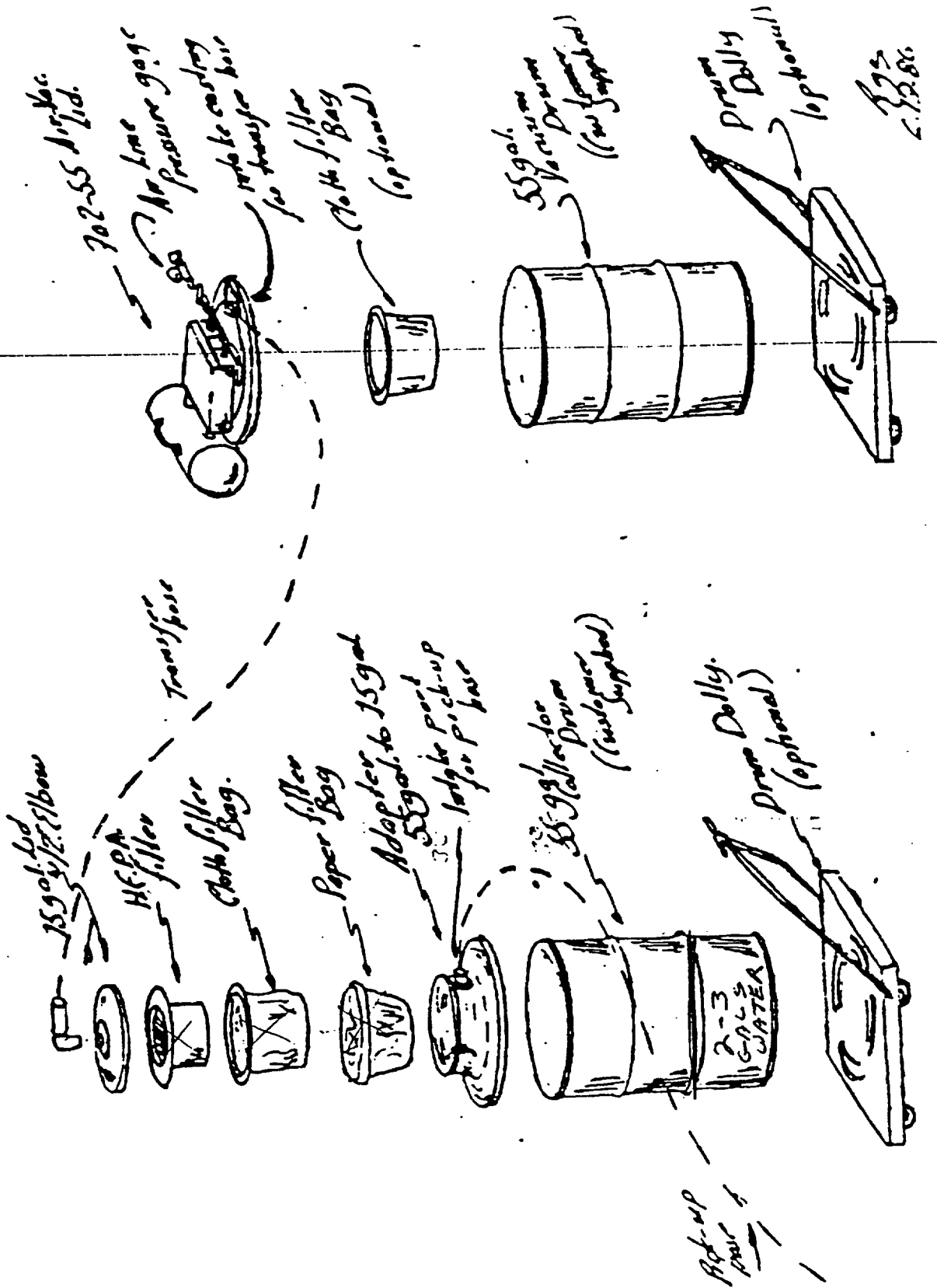


Larry Hoverter
OEM Sales

LH/ss

H.E.P.A. Critical Filter
Test Data
Mod.# 10E-SER-1 (s)
Part # A1247285G51
Ser.# 3041397
Rated 95 CFM
DOP Pen. 0.011%
Test CFM 95 at 91 inch W.G.

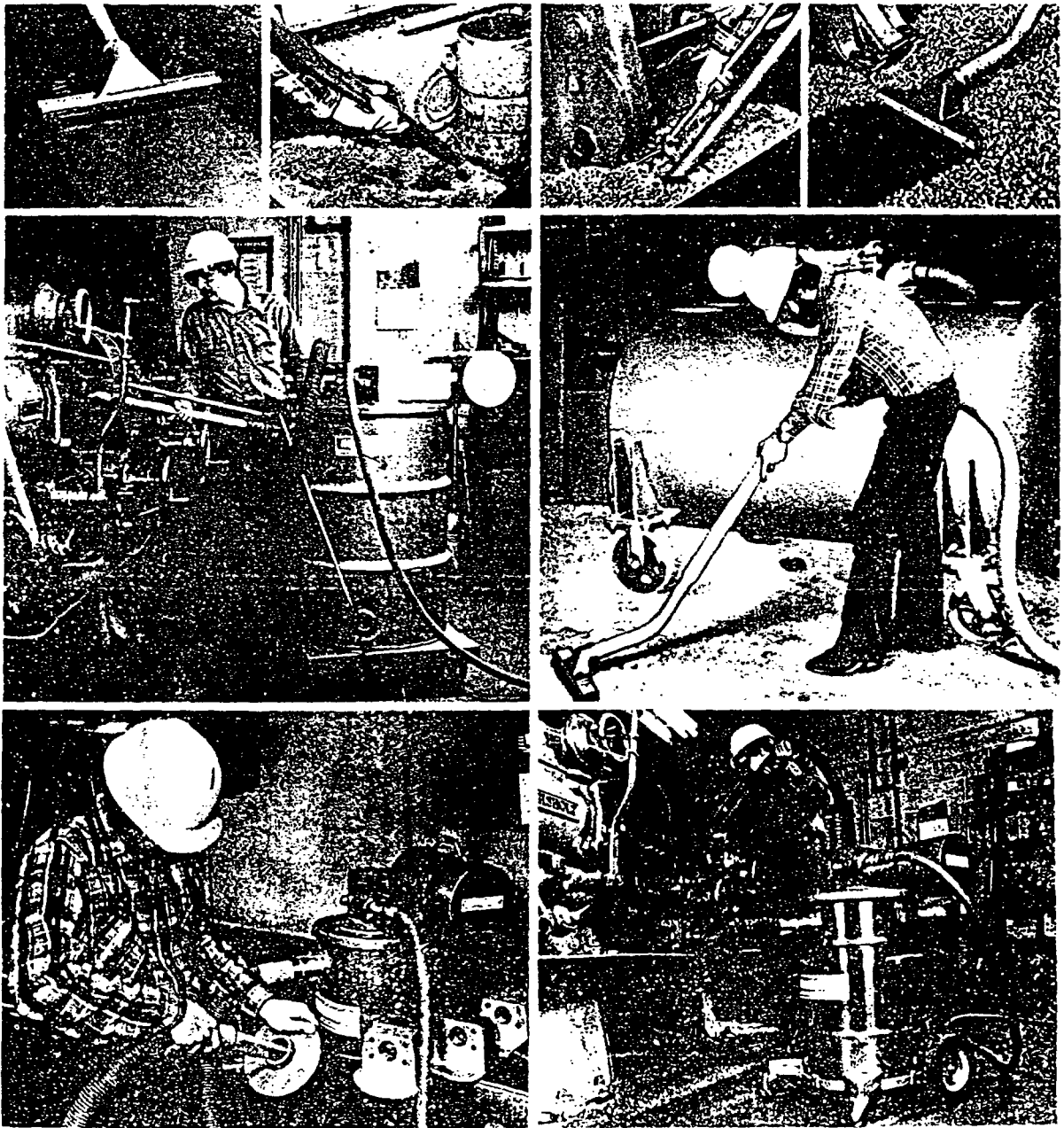
702-55 Dry only Transfer System w/ H.F.P.A. filler
 Air-powered.



Hako Minuteman

Series 700 Air Vacs

**Compressed Air Operated for
Heavy Duty Industrial Use**



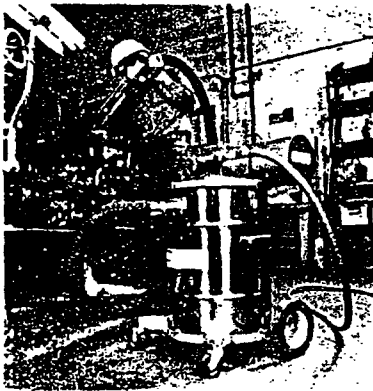
Super Suction • Non Electric • No Moving Parts

410994 0071

Application

From heavy duty large capacity to portable, workbench applications, Series 700 Air Vacs offer a variety of models to suit specific wet or dry pick-up requirements.

Starting from the top, Air Vac lid assemblies can be applied to 250 and 475 gallon master tanks for large capacity wet or dry applications such as sump cleaning or foundry pit cleaning.



Model 70015 is shown cleaning metal shavings at a lathe. Steel chips and shot are among other materials which can be recovered by Air Vacs.

At the low volume end of the capacity scale are the 4 or 6 gallon tanks for table top applications where portability is required or for access to tight spaces where larger equipment will not fit.

Air Vacs can also be equipped with H.E. PA (High Efficiency Particulate Air) filters for toxic dust control, pick-up of radioactive material and for other hazardous material applications.



475 gallon air operated master tank vac can be used for large sump cleaning operations and for other high capacity liquid applications.

Steel chip shot or scale recovery, asbestos dust or iron oxide cleaning, pick-up of hot materials from ceramic or heat treating ovens and flour, fly ash or grain dust pick up are just a few of the applications that can be handled by the complete range of Air Vacs from the 4 gallon model through the 55 gallon Extra Heavy Duty Vac.



Portable and compact Model 70004 is ideal for numerous plant cleaning and maintenance jobs where larger sized models would be impractical to use.



Extra heavy duty Model 70455 with 3" vacuum hose and quad-jet venturi units offer big job capabilities. They are used for heavy bulk, sludge, and liquids where large capacity air movement is required for dense and heavy material or for long distances. Shown with closed drum and transfer lid.



Air Vacs offer the suction power to permit use of larger closed drums with transfer lids eliminating the transfer of salvaged materials from open head to closed drums.



Equipped with special filters, Air Vacs can be used to pick up radioactive materials, asbestos dust, and other wet or dry hazardous wastes.

Operation

Hako-Minuteman Series 700 Heavy Duty Air Vacs use compressed air and the venturi principle to create a vacuum of exceptionally high flow and high static lift capable of lifting or moving an extensive variety of solid or liquid materials.

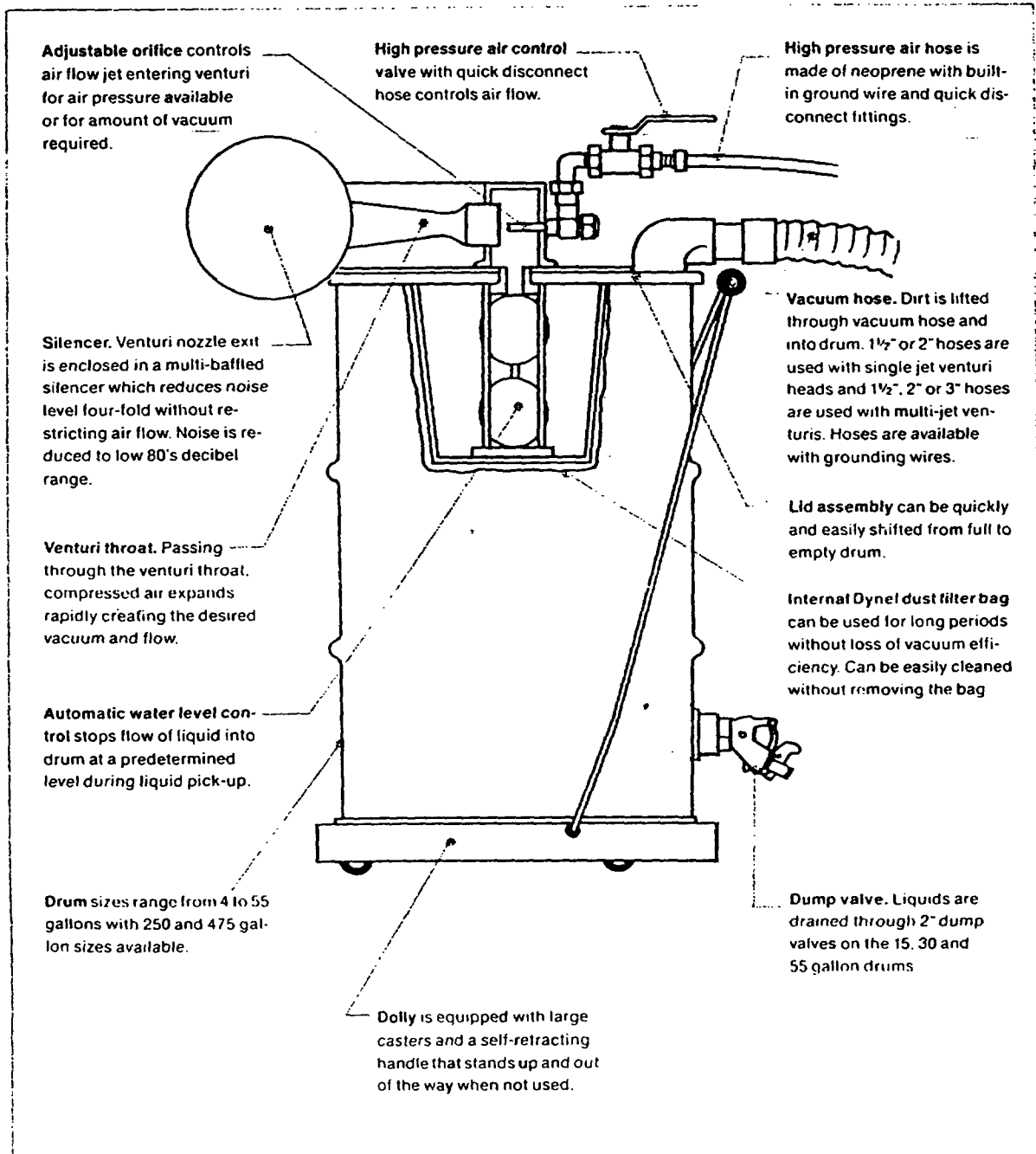
Series 700 Air Vacs operate without electricity and have no moving parts, thus simplifying maintenance. A silencer at-

tached to the lid of each unit reduces noise to acceptable levels

Compressed air enters the system through a compressed air hose and passes through the adjustable orifice leading to the venturi throat. The compressed air jet passing through the throat of the venturi generates an ex-

tremely high air flow and a powerful vacuum.

The venturi exhausts into a silencer which causes the noise to reflect from numerous surfaces before leaving the exit port. Although these reflections reduce the noise level, they do not seriously decrease the flow of air



Selection

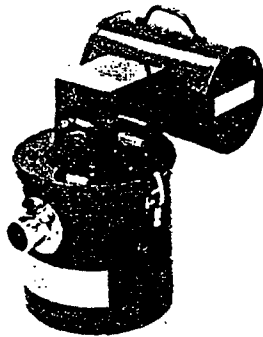
Hako-Minuteman Air Vacs offer a selection of models and sizes to satisfy specific industrial applications. Ranging from the 4 gallon portable table top model through the extra heavy duty 55 gallon Model 70455 and up to special application arrangements in the 475 gal-

lon wet or dry range for sump cleaning or foundry material pick-up, there is an Air Vac in the Hako-Minuteman line to get the clean-up or recovery job done in almost any industrial setting.

Most Air Vacs are available with painted or stainless steel drums, in a selection of

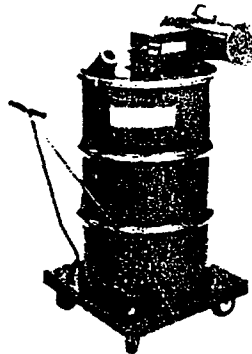
filter arrangements, number of venturi and hose sizes, for wet, dry or wet/dry pick-up.

And no motor, cords, connections or moving parts mean continuous service without costly and inconvenient maintenance requirements.



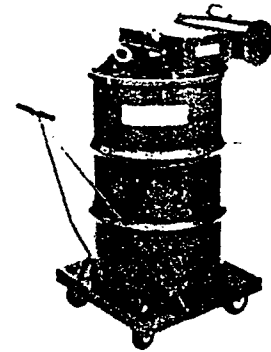
Model 70004

Available in 4 gallon tank size for dry pick-up and in 6 gallon (70006) for wet or dry use. Painted or stainless steel tank. Single-jet venturi. Suggested air pressure req'd: 80 lbs & 37 c.f.m. Air hose connection: 1/2" quick coupler. Vac hose connection: 1 1/4", 1 1/2" or 2". Weight: 22 lbs.



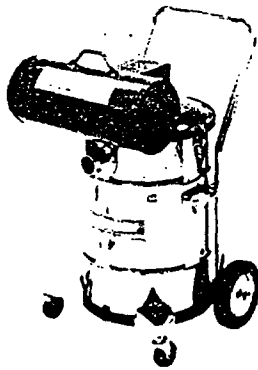
Model 70155 Standard Air Vac

55 gallon tank size for wet or dry pick-up. Painted drum. Single-jet venturi. Suggested air pressure req'd: 100 lbs & 46 c.f.m. min. Air hose connection: 1/2" quick coupler. Vac. hose connection: 1 1/2", 2" or 3". Weight: 122 lbs.



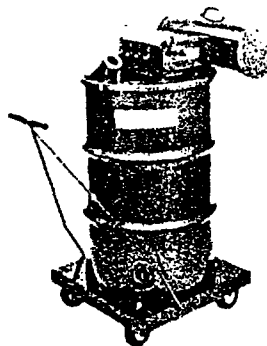
Model 70255 Heavy Duty Air Vac

55 gallon tank size for wet or dry pick-up. Painted drum. Twin-jet venturi for heavy duty operation. Suggested air pressure req'd: 100 lbs. & 91 c.f.m. min. Air hose connection: 3/4" quick coupler. Vac hose connection: 1 1/2", 2" or 3". Weight: 127 lbs.



Model 70015

Choice of 15, 30 or 55 gallon tank sizes for wet or dry applications. 30 and 55 gallon models use 15 gallon lids with adapters (see Options page). Available in painted or stainless drum in 15 gallon size, painted drum for 30 and 55 gallon sizes. Single-jet venturi. Suggested air pressure req'd: 90 lbs. & 42 c.f.m. min. Air hose connection: 1/2" quick coupler. Vac. hose connection: 1 1/2" or 2". Weight: 51 lbs.



Model 70455 Extra Heavy Duty Air Vac

For extra high air movement and static lift for big industrial wet or dry cleaning jobs, the Model 70455 is equipped with quad-jet venturi units and up to 3" vacuum hose. 55 gallon painted drum. Suggested air pressure req'd: 100 lbs. & 182 c.f.m. min. Air hose connection: 1" quick coupler. Vacuum hose connection 2" or 3". Weight: 142 lbs.



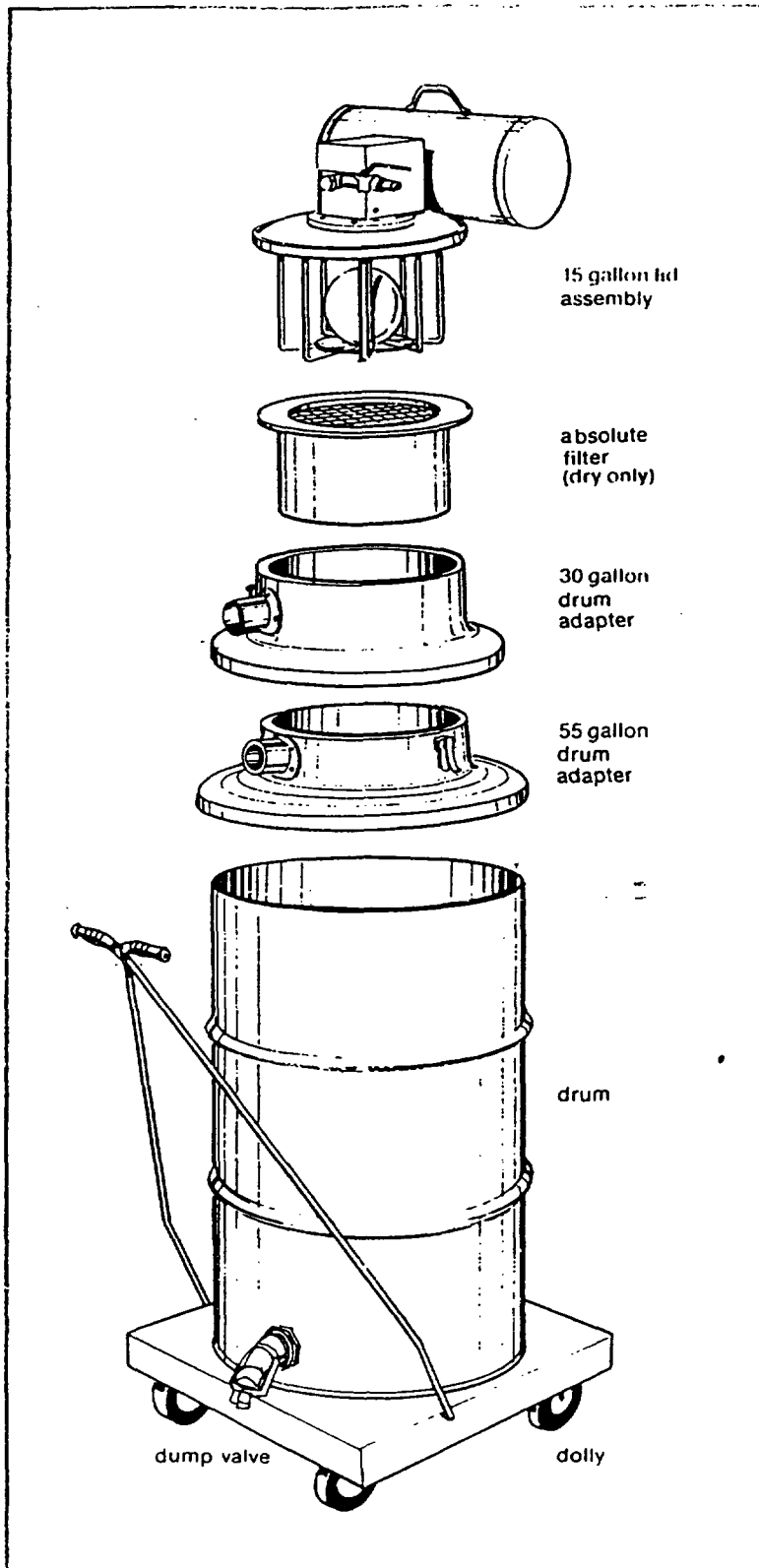
55 gallon drum transfer lids

For the bulk filling of 55 gallon drums using a remote vacuum source.

Absolute (H.E.P.A.) filter.

High Efficiency Particulate Air filter is an ultra high efficiency filter which meets U.S. Government specifications. Used when exhaust air must be exceptionally clean. Not applicable on Model 70455.

Options



Series 700 Air Vacs can accommodate numerous options to further expand the capabilities of each machine. Drum adapters are available to enable the use of 15 gallon lids on both 30 and 55 gallon drums. When using a lid adapter, the position of the vacuum intake is in the adapter rather than on the side of the tank as it is on some models. This allows use of a disposable plastic liner bag which can be easily and quickly removed for disposal of picked up materials.

Also, a disposable paper filter protector can be used on the 15 gallon lid. With this lid and appropriate adapters, both the plastic bag and filter protector can simplify waste disposal and extend filter life. When the cleaning job is finished the filter protector is dropped into the plastic bag to be discarded with waste material.

The absolute filter is another option which may be attached to any of the 700 Series models (except for the Model 70455) when the exhaust of pure air is required. (See the "Selection" page for further information on this option).

Also, please note the partial list of applications and materials which can be picked up by Series 700 Air Vacs.

Applications:

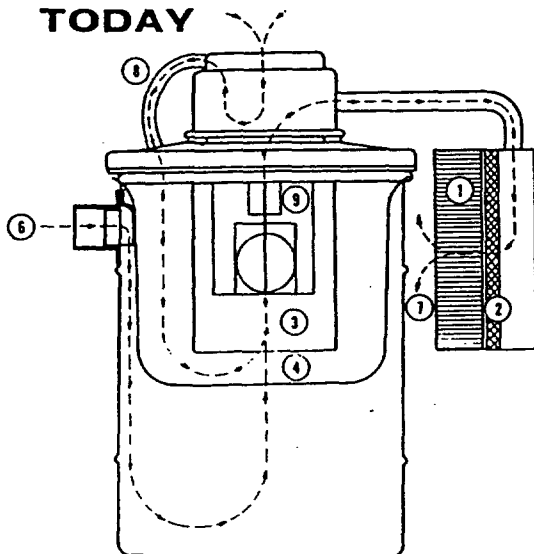
- sump cleaning
- sand and gravel
- steel chip recovery
- aluminum chips
- steel scale recovery
- grains
- grain dust
- foundry sand cleaning
- fly ash
- nuclear power station decontamination
- asbestos dust
- flour
- coolants
- flux recovery
- oil
- iron oxide cleanup
- grease
- bulk water recovery
- chemicals
- metal stamping
- steel shot
- ceramic oven materials
- copy machine toner
- grit blast

410994 0075

MINUTEMAN
AMERICAN CLEANING EQUIPMENT CORPORATION

X-100

**HIGHEST FILTERING
EFFICIENCY OF
ANY VACUUM
CLEANER AVAILABLE
TODAY**



- ① H.E.P.A. Filter
- ② Impact Filter
- ③ Cloth Filter
- ④ Filter Protector
- ⑤ Intake
- ⑥ Exhaust
- ⑦ Motor Cooling Air Recirculation
- ⑧ Water Shut-off



Exclusive honeycomb (absolute) design final filter has the highest filtering efficiency of any commercially available filter. Before it is accepted for installation, every X-100 final filter must pass the most stringent filter efficiency tests yet devised. Every filter is accompanied by a Certificate of Filter Performance which certifies the results of tests on that filter, and indicates the expected filter performance.

Impaction filter — which is often the final filter on other machines — retains bacteria and other micro-organisms as small as 0.3 micron diameter.

This filter is the heart of the X-100 unit and the reason for its superior performance by virtue of its ability to trap and retain 99.97% of all bacteria and micro-organisms down to 0.3 micron diameter. Note: This filter has an unusually long service life... up to a year, depending on usage. Because the honeycomb design has great inherent strength and rigidity, filter collapse and failure has never been experienced. In addition, the steel filter housing provides further protection for the filter. When the X-100 is used for ordinary cleaning and the final filter is not required, it may be easily removed.

FEATURES...

- **4 FILTERING MEDIUMS**
 - Paper filter protector, helps to prevent clogging of primary cloth filter, prolongs the life of the cloth filter; disposable.
 - Primary (cloth filter) reusable easy-to-clean filter bag.
 - Secondary impaction filter, prevent premature loading of the final (H.E.P.A.) filter, disposable.
 - Final (H.E.P.A.) absolute filter rated at 99.97% efficiency at .3 microns.
- **DUAL AIR SYSTEM** Air brought into main filtering system is expelled into one compartment; air for cooling the motor is conducted by a special series of intake fans around and through the motor housing and expelled into another compartment. This prevents any trace of moisture from entering the motor to cause shorting out.
- **EXCLUSIVE MOTOR COOLING AIR H.E.P.A. FILTERING** For critical "white room" application, even carbon particles from the motor's brushes are trapped and prevented from contaminating the room air. A special recirculation system assures that all motor cooling air is exhausted thru the H.E.P.A. filter preventing deposition of these particles on sensitive electronic assemblies and components.
- **POSITIVE WATER LEVEL CONTROL** automatically shuts off the motor vacuum air flow when water reaches a pre-determined level in the tank, preventing water from reaching the motor when the X-100 is used for wet pick-up.
- **QUIET OPERATION** Special sound-deadening motor insulation and mounting pads isolate and reduce motor noise, making the X-100 whisper quiet to prevent disturbing workers or hospital patients.
- **RUST AND CORROSION RESISTANT CONSTRUCTION** Wherever possible, aluminum and aluminum alloy is used for critical components to ensure maximum resistance to the action of water, chemicals, and cleaning solvents.
- **QUICK, EASY UNIT CLEANING** Large inside Primary Filter bag which traps everything but microscopic particles, is easily removed and replaced. Two snap type latches hold motor housing and cover securely on tank. Special gasket material provides air-tight seal between tank and cover to ensure maximum vacuum performance. This seal further serves to isolate motor noise and prevent resonance conditions within the tank.

How the X-100 FILTERING SYSTEM WORKS

- 1 Air-borne bacteria, micro-organisms, dust, and dirt enter primary filtering medium through suction hose. All dust and bulk material is retained in the tank except for microscopic dust and bacteria.
- 2 Air moves through the outlet at top of the primary filter chamber and passes through the secondary Impaction type filter which retains particles as small as 0.3 micron diameter.
- 3 The air then passes through the final honeycomb filter which removes all particles down to .3 at 99.97% efficiency micron diameter. Air is exhausted to atmosphere through outlet side of this filter, where it passes around the periphery of the tank without disturbing dust around the vacuum cleaner.

MODEL	TANK SIZE	AMPS (120 volt) AC-DC	CFM ±10%	STATIC LIFT ±10%	CABLE	HEIGHT	WIDTH	WT.
C-80015-00	15 Gal.	130	117	100"	50' 16-3	30"	18"	110±
PRODUCTION LINE TESTING								

AMERICAN CLEANING equipment corporation
111 South Route 53, Addison, Illinois 60101



410994 0076

Minuteman

Vacuums

Effective 9/21/81

See Vacuum Tools and Attachments for accessories.

Series 800 Critical Filter Vacuums

American Cleaning Equipment Corporation offers many sizes and configurations of the Minuteman Critical Filter Vacuums for safely trapping and containing nuclear, mercury, chemical, asbestos and other hazardous materials. Minuteman Critical Filters Vacuum Systems are the safest and most reliable way to collect contaminants, because each model contains a high density "impact" type filter with 90 to 95% efficiency as measured by the "D.O.P." test and a H.E.P.A. (High Efficiency Particulate Air) filter 99.97% effective at 0.3 microns. The Critical Filter Vacuums are approved for use in hospitals, "white rooms", electronic assembly areas, testing labs and nuclear plants — or wherever there is a need to remove hazardous material and prevent its escape into the air. Almost any size — from 4 to 475 gallons — and any configuration — wet, dry, or both — can be adapted to your particular needs. Options include extra-large-volume water pick-up, paper or plastic filter bags, lightweight (24 lb.) models, and 95 c.f.m. to 300 c.f.m. lift power.

HOSPITAL VACUUMS

Excellent for nursing homes, convalescent centers and hospitals, these high-powered lightweight portable vacuums have a "Quiet Power 4" motor assembly with a 62 db rating. Bacteria and sub-micron dust particles are trapped in disposable debris collection bags by the 3 stage filter system. Front swivel casters and 6" rear wheels provide easy maneuverability. Available with #3a plastic tool kits and 3 position pull-along handles.

ASBESTOS VACUUMS

Because it meets or exceeds OSHA requirements for cleaning the air of asbestos and other toxic and noxious dusts, this dry-only vacuum can be used in offices, schools and industrial areas where daily or weekly removal of sub-micron particles is necessary. Each Minuteman Asbestos Vacuum contains 5 different filters: disposable paper bag coarse filter (standard in 15 gal. models) for the bulk of the particles, impact filter, H.E.P.A. filter, primary cloth filter and paper filter protector. Heavy-gauge plastic drum-liner bags may be used in the 30 and 55 gallon models to safely remove large-volume pick-ups. While specifically designed for asbestos particles, this vacuum is also effective in filtering other airborne pollutants such as cement, foundry and lime kiln dusts, insecticides, fertilizer dusts, coal dust, limestone dusts, and many others. With an efficiency rating of 99.999% on particles of 5 micrometers, the Asbestos Vacuum is particularly useful for cleaning up after insulation operations on pipes, in removing asbestos-covered ceiling dust to prevent "snowing" and for vehicle maintenance procedures involving brakes, clutches and other asbestos-loaded material. Each unit features a 2 stage by-pass motor, front casters, 8" rear wheels and a carriage handle. An optional starter tool kit is recommended for each unit.

X-100 SERIES VACUUMS

This H.E.P.A. filter vacuum meets the requirements of the U.S. Atomic Energy Commission and the Army Chemical Warfare Service for use in hospitals, testing labs and industrial "white rooms" in both wet and dry applications. When used for dry pick-up, 4 filters — a H.E.P.A. final filter, impact filter, cloth bag and filter protector bag — contain copper, carbon and other contaminants. A filtered 3 stage by-pass motor cools and circulates air, with 99.97% efficiency in retaining particles down to 0.3 microns. The external filter box allows quick and easy changing and cleaning of the H.E.P.A. filter. For cleaning up water spills just remove the cloth filter and protector. A positive water level shutoff cuts off the flow. Each unit is equipped with front casters, 8" rear wheels and carriage handle. (All motor cooling air is exhausted through the cleansing H.E.P.A. filter without exhaust turbulence).

X-1000 SERIES VACUUMS

3 stage by-pass motor and 4 stage filtering system purifies all vacuum and motor-cooling air of carbon dust and copper particles. Low noise level makes this model ideal for dry-only use in Class 100 "white rooms", "clean rooms" and laboratories. Available in 4, 6, 15, 30 and 55 gal. configurations with carriage handles, front casters and 8" rear wheels. (All motor cooling air is exhausted through the cleansing H.E.P.A. filter without exhaust turbulence).

Class 100 denotes 100 particles (.5 micron and larger) per cu. ft.

MODEL X-1000-4

To recover small quantities in tight places, this 4 gal. critical filter vacuum is lightweight, portable. Contains H.E.P.A. filter, cloth filter bag and heavy-duty by-pass motor. Fits 1 1/4" and 1 1/2" tools. Handle and 50 ft. 16-3 cable are standard.

MODEL X-1000-6

Lightweight portable vacuum with 6 gallon tank and many of the same features as X-1000-4. Additional equipment includes 5" taller size and disposable paper bag inside which traps material for testing or safe disposal.

MODEL X-1700-4

This lightweight, 4 gallon portable air-powered vacuum is so powerful it can be used as an emergency pump or power head vacuum with transfer drum/lid system when recovering large quantities. Complete with cloth filter bag. Requires 1/2" air line.

MODEL X-1700-6

The same as X-1700-4, but this model has disposable bag inside and is 5" taller for larger volume pick-up.

MODEL MX-1000

This wet/dry version of the X-1000-15 has a dual intake system, water shut-off module and disposable plastic bags inside. The powerful motor with a multi-stage impeller is whisper quiet but achieves extra high suction and static water lift. 4 special internally-mounted filters provide 99.97% retention of micro-organisms and sub-micron particles down to 0.3 microns. All motor cooling air is exhausted through the cleansing H.E.P.A. filter without exhaust turbulence.

MERCURY RECOVERY VACUUM SYSTEMS

This specially adapted critical filter vacuum system recovers liquid mercury (quick-silver) and cleans mercury contaminated dry and liquid soil and air. The modular 4 element system allows user tailoring to particular needs. The basic unit, M.R.S.-1, includes an easily disposable liquid trap, disposable paper bag, and a charcoal filter module with timer to monitor charcoal filter life, for liquid mercury recovery. M.R.S.-2 includes disposable paper bag, paper filter protector, critical filter module (less separator trap), for recovering mercury-contaminated dust. M.R.S.-3 is a basic unit with an absolute filter for mercury vapors and particulate matter. With a water cut-off module and charcoal filter, M.R.S.-4 is excellent for the recovery of mercury-contaminated liquids. All units feature 115V or 220V AC/DC air-cooled motor which is also usable as a high performance standard vacuum cleaner when the special filter modules are removed. Each unit comes complete with wand, 24" crevice tool and small nozzle to handle most clean-up jobs.

410994 0077

Specifications

The following 700 Series specifications provide the practical information to allow specific comparisons between sizes ranging from 4 to 55 gallons.

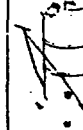
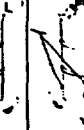
In order to clarify certain abbreviations it should be noted that the letters C.F.M.

represent cubic feet per minute and P.S.I. represents pounds per square inch. These figures are averages only. Maximum allowable pressure is 150 P.S.I. Please note also that information on two

air operated vacuum models, the X-700 and X-1700, is not included on these pages or on this specification table. See Series 800 Critical Filter Series for specific information on these two models.

Specifications Subject To Change Without Notice



								
	70004	70006	70015	70030	70055	70155	70255	70455
Wet	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Nom. Tank Size	4 gallon	6 gallon	15 gallon	30 gallon	55 gallon	55 gallon	55 gallon	55 gallon
Capacity Wet (gallons)	—	3½	10	25	45	45	45	45
Capacity Dry (cu. ft.)	.21	.41	1.86	4.36	7.16	7.16	7.16	7.16
Static Lift (in. water)	140+	140+	180+	180+	180+	220+	220+	220+
Air Flow (C.F.M.)	150+	150+	166+	166+	166+	182+	364+	728+
Wheel Size Front (in.)	—	—	3"	5"	5"	5"	5"	5"
Wheel Size Rear (in.)	—	—	8"	5"	5"	5"	5"	5"
Filter	Cloth	Cloth	Cloth	Cloth	Cloth	Cloth	Cloth	Cloth
Air Line Size (in.)	½"	½"	½"	½"	½"	½"	¾"	1"
Input Press. (P.S.I.)	80	80	90	90	90	100	100	100
Input Air (C.F.M.)	37	37	42	42	42	46	91	182
Weight (lbs.)	22	24	51	90	110	122	127	142

We offer a complete line of attachments, special tools, accessories and compressed air fittings for all Hako-Minuteman Air Vacs. See tools, parts & accessories catalog.

American Cleaning Equipment Corporation

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H & S
Industrial Hygiene

FROM: S. M. ANDERSON

BDD
~~EDS~~
TBB
RMJ
JES
JD
BEP

MAR 12 1984

SC
DEH
CD
PW
LMN
EDS

TO: B. L. KONKOSKI - 204

1984 March 08

RE: SAMPLING RESULTS - INGOT PLANT BLDGS. 221 & 222

On 1984 January 10 and 11, air sampling was conducted to evaluate the exposure to total particulates, copper, and lead, while working near the ceiling of the Ingot Plant. The air samples were taken while two electricians repaired #36 crane and two other electricians worked above #30 complex.

The results of the air sampling indicates that the exposure to total particulates, copper and lead are within safe limits (Table I).

The wearing of respiratory protective equipment, while working near the ceiling, is not required at this time. However, circumstances may arise when the use of respirators may be necessary, i.e. when trace levels of chlorine are detected, or when performing dust generating activities, the appropriate respirator should be worn.

If I can be of any additional assistance, please call.


S. M. ANDERSON

SMA:vag

Attachment

xc: M. J. Elder, M.D. - 22
E. E. Rumberger - Pittsburgh - 6
P. T. Woerz

Info. Copy to: R. L. Hargis - 201

TABLE I
Sampling Results

DATE	NAME	JOB CLASS	LOCATION	8 HOUR TIME WEIGHTED AVERAGE		
				<u>T.P. mg/m³</u>	<u>Cu mg/m³</u>	<u>Pb mg/m³</u>
84/1/10	R. N. King	Gen. Elec.	36 Crane	5.52	0.01	0.051*
84/1/10	R. J. Morrell	Gen. Elec.	36 Crane	1.44	0.01	0.009
84-1-10	D. O. Rockhill	Gen. Elec.	30 Complex	2.93	0.01	0.012
84/1/10	K. A. Susice	Gen. Elec.	30 Complex	0.02	0.01	0.001
84/1/11	K. A. Susice	Gen. Elec.	30 Complex	2.97	0.01	0.007
84/1/11	D. O. Rockhill	Gen. Elec.	30 Complex	<u>0.39</u>	<u>0.01</u>	<u>0.002</u>
PEL				15.0	1.0	0.050
AVER. EXPOSURE				2.15	0.01	0.014

T.P. - Total Particulate
 Cu - Copper
 Pb - Lead
 * - Exceed permissible exposure limit