

FRICION MATERIALS STANDARDS INSTITUTE, INC., E-210 ROUTE 4, PARAMUS, N. J. 07652

BULLETIN

NO. 581

October 12, 1976

RECEIVED

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F. C. SKELTON

CONTROL OF AIRBORNE ASBESTOS CONCENTRATIONS
IN THE WORKPLACE -- INDUSTRIAL TYPE VACUUM CLEANERS

Over the past many months, without de-emphasis on problems in the factory area, those in favor of stringent regulations on the use of asbestos have targeted friction materials servicing--particularly brake lining service--as a potentially hazardous area. Technical papers in this area have not based observations on the OSHA standard's 8 hour time weighted average for fibers greater than 5 microns in length. Most papers have emphasized peak concentrations (as blowing brake lining dust from a used brake awaiting reline) and the fibers shorter than 5 microns in length.

Based on discussions at the Asbestos Information Association meeting in September, efficient vacuum cleaning systems should be of help not only in the factory but in the brake service area. I have, therefore, enclosed sales literature from two manufacturers, along with the NIOSH (National Institute of Occupational Safety and Health) recommended procedures for asbestos brake and clutch servicing. Before distributing this information, I reviewed this data with Mr. I. H. Unver, Acting Chairman of our Asbestos Study Committee, to be sure this information was worthwhile. He concurred that the following information was worthy of distribution to the membership:

1. NIOSH Recommended (Interim) Procedures for Asbestos Brake and Clutch Servicing
2. NILFISK literature
 - 2.1 NILFISK absolute filter
 - 2.2 NILFISK manometer
 - 2.3 Dust free disposal
3. TEMPO Brake and Clutch Service Vacuum

This literature is being enclosed (one copy to each member) with the mailing to:

Mr. F. C. Skelton
Maremont Corporation
Grizzly Friction Products
700 West Caroline Street
Paulding, Ohio 45879

XC: W.N. BUCKAY
J.W. GREENEN
C.J. HAYES
J.L. MELLOW

EVD/erc

E. W. Drislane
Executive Director

cc-Active Members
Regional Members (Active Dues Level)
Asbestos Study Committee

11/102

RECOMMENDED (INTERIM) PROCEDURES FOR
ASBESTOS BRAKE AND CLUTCH SERVICING

The National Institute for Occupational Safety and Health (NIOSH) has research underway concerning dust exposures during brake and clutch servicing. Due to preliminary data demonstrating significant asbestos exposures during presently used brake and clutch servicing techniques, NIOSH has reviewed alternate techniques whereby asbestos exposures are reduced. The following are interim procedures recommended by NIOSH to minimize dust exposures.

1. If possible, an area shall be designated for all brake and clutch repairs. Entrances into this area shall be posted with an asbestos exposure warning sign as follows:

Asbestos
Dust Hazard
Avoid Breathing Dust
Wear Assigned Protective Equipment
Do Not Remain in Area Unless Your Work Requires It
Breathing Asbestos Dust May Cause Asbestosis and Cancer

2. During brake servicing, an air purifying respirator, either single use or with replaceable particulate filter(s), as approved by the Mining Enforcement and Safety Administration (formerly Bureau of Mines) or NIOSH, shall be worn during all procedures starting with the removal of the wheels and including reassembly. During manual clutch servicing, such a respirator shall be worn during removal and cleaning of the clutch, pressure plate and housing assembly and during installation of the new clutch assembly.
3. Dust shall first be cleaned from brake drums, brake backing plates, brake assemblies and clutch assemblies using an industrial type vacuum cleaner equipped with a high efficiency filter system (>99% efficiency for 0.3 μ m diameter aerosols). After vacuum cleaning, any remaining dust shall be removed using a rag soaked in water and wrung until nearly dry. Under no circumstances shall compressed air or dry brushing be used for cleaning.
4. During arc welding and riveting operations, an approved respirator, as described in (2) above, shall be worn. Grinding (arc welding) machines shall be provided with local exhaust ventilation such that worker exposures are maintained at least below the 1976 OSHA asbestos standard (29 CFR 1910.1001).^{*} At a minimum, the dust bag of the arc welding machine shall be removed and replaced with the hose of the high efficiency industrial vacuum described in (3) above.

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5. Industrial vacuum cleaner bags containing asbestos dust and cloths used for wiping brake and clutch assemblies shall be sealed in plastic bags and labeled with the following warning label printed in letters of sufficient size and contrast to be readily visible and legible;

Caution
Contains Asbestos Fibers
Avoid Breathing Dust
Breathing Asbestos Dust May Cause Asbestosis and Cancer

All asbestos waste shall be disposed of in accordance with the OSHA asbestos regulation, 29 CFR 1910.1001(h). During removal of vacuum bags, an approved respirator, as described in (2) above, shall be worn.

6. All floor cleaning in areas where brakes and clutches are repaired shall be done with the high efficiency industrial vacuum cleaner as described in (3) above. Grinding (arcing) machines shall also be cleaned with such a vacuum cleaner and any remaining dust wiped with a damp cloth. An approved respirator, as described in (2) above, shall be used during this cleaning.
7. Although adherence to the above procedures should minimize any contamination of work clothing, it is required that the appropriate portions of the OSHA regulations on asbestos (29 CFR 1910.1001(d), (3) and 4)) concerning special clothing, change rooms, etc. be followed.

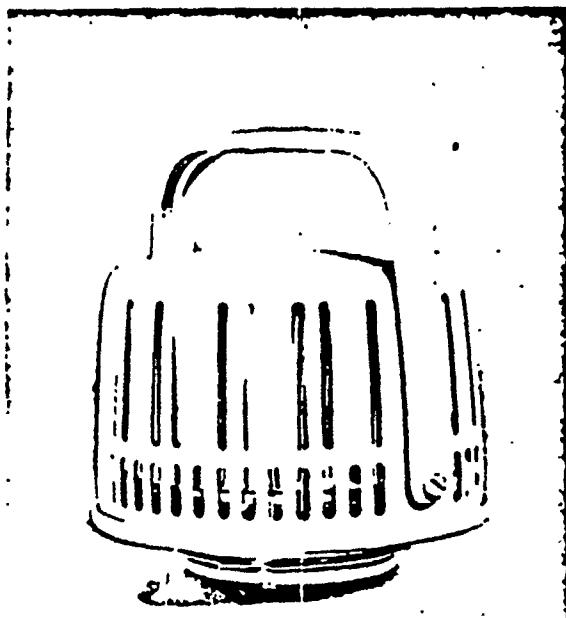
NOTE: Strict adherence to the above procedures should minimize exposures to mechanics during brake and clutch servicing. These are interim recommendations and are subject to revision pending results of ongoing NIOSH research.

- * Section 1910.1001 of the Code of Federal Regulations was formerly Section 1910.93a. This change was noted in the Federal Register, May 28, 1975.

Prepared By
Division of Field Studies and Clinical Investigations
National Institute for Occupational Safety and Health
Cincinnati, Ohio

NILFISK absolute filter

— where absolute clean air is a necessity

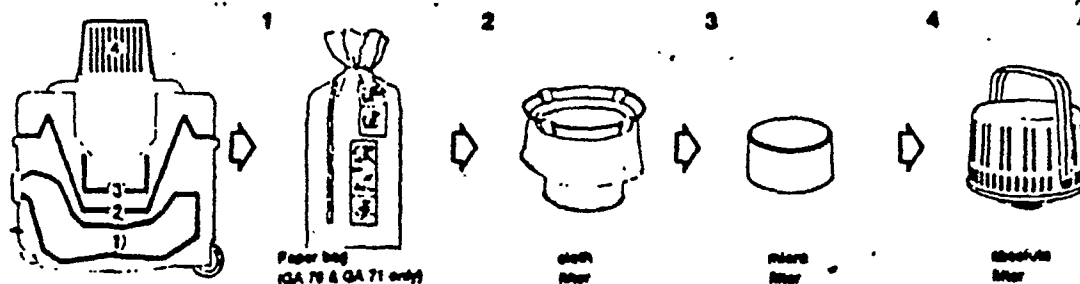


The Nilfisk absolute filter is used when the air from the vacuum cleaner needs to be as pure as possible. This is particularly important in the chemical, pharmaceutical, ceramic, asbestos, lead, electronic, food and enamelling industries. As well as other areas such as laboratories, "white rooms", computer rooms, institutions and hospitals.



Special versions of the Nilfisk GA 72 and GA 73 have been approved by the "Staubforschungsinstitut", Bonn, Germany for use in areas where it is essential to prevent the spread of health hazardous dust such as asbestos. Both these machines include absolute filters, a shakable main filter and are provided with a manometer which indicates when the filter needs to be shaken.

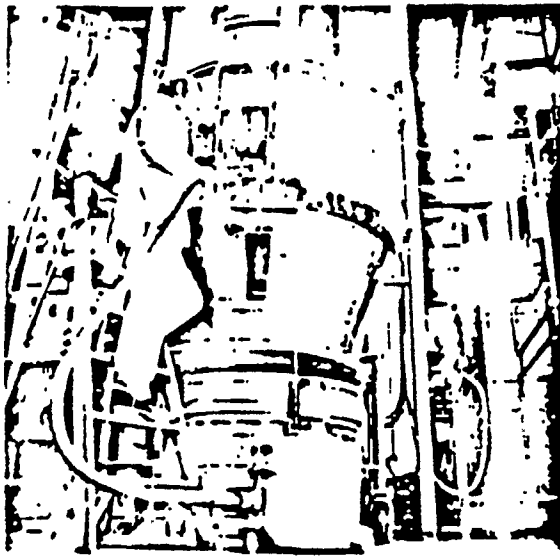
Nilfisk offer 3 and 4 stage filter systems



All Nilfisk filter systems incorporate a large surface area as standard. This allows the air to pass through at a lower speed, ensuring better filtration.

NILFISK absolute filter

improves safety standards in industries at risk from dangerous dust and fumes



Pharmaceutical Industry

By using the Nilfisk absolute filter, the operator is protected against dangerous dust while cleaning down equipment.



Lead Industry

Despite the very strict precautions at force in the lead industry to protect staff's health, it is not possible to prevent dust particles spilling on to the floor when components are transported. To ensure that this dust is not raised into the atmosphere and inhaled, vacuuming with a Nilfisk machine fitted with absolute filters is the most effective solution.



Ceramic Industry

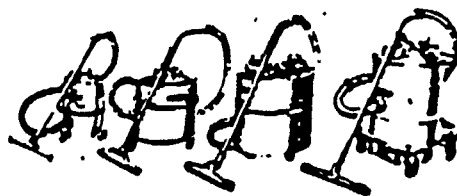
The dangerous microscopic dust found in this particular industry which causes silicosis is so fine that only by using Nilfisk absolute filters can it



Hospitals

Where it is constantly necessary to maintain the highest hygiene standards Nilfisk vacuum cleaners equipped with absolute filters are the most

NILFISK
OF AMERICA, INC.



P. O. BOX 142, 706 DUNCOMBE ST., GREENVILLE, S. C. 29602, (803) 271-3271
SALES OFFICES: 3244 PROSPECT STREET N. W., WASHINGTON, D. C. 20007

GA 73

DUST FREE DISPOSAL

Nilfisk announces the introduction of a revolutionary dust-free disposal system!

No more tilting and spilling; no more pouring collected materials into larger receptacles; no more dust clouds at the waste disposal point.

Instead, line your Nilfisk model GA 73 vacuum cleaner, and/or your cyclone separator, with heavy gauge (5 mil) polyethylene liners. Insert the anti-collapse frame (which keeps the liner from being sucked up into the main filter.) Slide the container in under the vacuum cleaner, step down on the pedal to close the machine, and you are ready to go to work.

When the cleaner is full, turn off the motors, shake the filter thoroughly, lift the container release pedal, and remove the container. Your collected debris is now in the polyethylene liner bag. Simply remove the anti-collapse frame, tie up the bag and dispose of it in completely DUST-FREE fashion!

When ordering, be sure to specify correct part numbers:

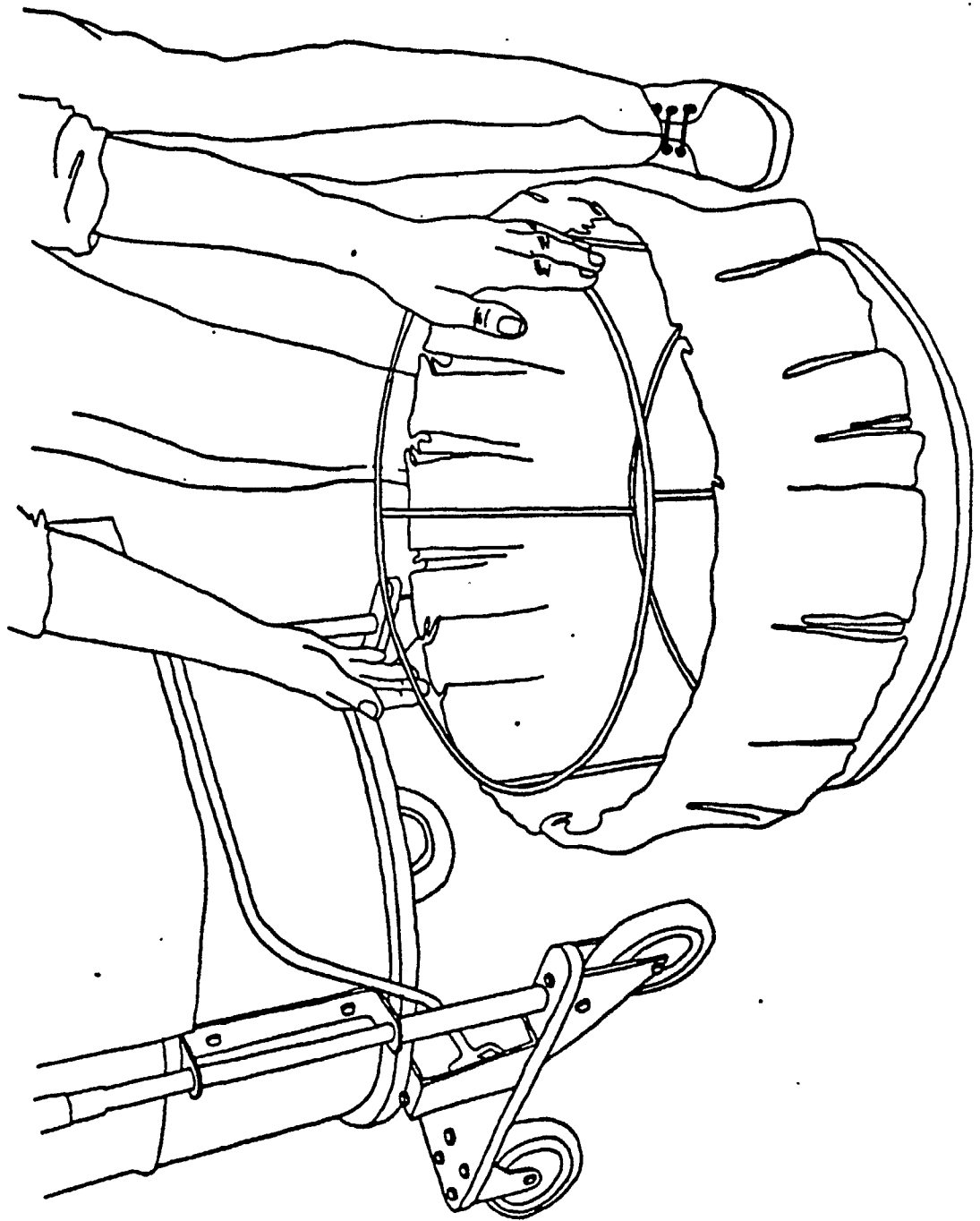
- 017101 Container anti-collapse frame, GA 73
- 017301 Frame, 30 gallon separator
- 017201 Frame, 55 gallon separator

- 017102 Polyliners, GA 73 (100 per case)
- 017202 Polyliners, 55 gallon separator (50 per case)

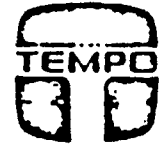
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NEW



BRAKE & CLUTCH SERVICE VACUUM*

WITH AN APPROVED SPECIAL FILTERING SYSTEM
FOR FAST COLLECTION & DISPOSAL OF ASBESTOS FIBERS

During Service Work . . .

. . . Use the procedures recommended by NIOSH (National Institute for Occupational Safety and Health) for cleaning brake drums, brake backing plates, brake and clutch assemblies.

**For employee safety in handling asbestos, NIOSH specifies:

- "Use an industrial-type vacuum cleaner equipped with a high efficiency filter system"
- "Under no circumstances shall compressed air or dry brushing be used for cleaning"
- "Grinding (arcing) machines shall also be cleaned with such a vacuum cleaner."
- "All floor cleaning, where brakes and clutches are repaired, shall be done with the high efficiency industrial vacuum cleaner as described above."
- "All asbestos waste shall be disposed of in accordance with the OSHA regulation, 29CFR 1910.1001 (h)."



Model AB-7515
Dealer Net \$499.80

Includes 4 Replacement Filter Kits for a total of 8 months service

*** Quoted from NIOSH Procedures. Complete servicing procedures are available from:

NIOSH - National Institute for Occupational Safety and Health

ACIA - Automotive Service Industry Association

* Patent applied for

Tempo's AB-7515 Brake/Clutch Service Vacuum and filter system passed independent Environmental Lab Tests and is certified to comply with current OSHA regulations covering asbestos dust collection, filtration and disposal when used according to instructions.