



Nilfisk-CFM SS Mercury Vacuum Instructions for Use and Spare Parts Manual



Caution: This Nilfisk-CFM vacuum cleaner is not to be used in explosion hazardous areas as serious injury could result.

Your new Nilfisk-CFM SS Mercury Vacuum is a precision-engineered instrument designed expressly for the capture of inorganic mercury spills and the pickup of mercury compound dust. Ordinary vacuum cleaners do not have the proper activated-carbon adsorbent filter cartridges for the collection of mercury. In addition to the activated-carbon filter cartridge, the Nilfisk-CFM SS Mercury Vacuum is also equipped with an internal HEPA* filter and a special Gore-Tex bag for the purpose of collecting mercury in powder and liquid forms. Proper care of this cleaner is essential to the maintenance of its ultra-fine filtering capabilities.

Attention Employer: Please ensure that these **Instructions for Use** are made available and understood by your employees or any other person who may use this equipment.

Before Use: Do not attempt to operate this cleaner until you have installed its various components according to the following instructions.

ASSEMBLY AND USE

1. Remove the upper two-thirds of the cleaner by releasing the clips attaching the adsorbent filter cartridge to the lower container. Lift off this upper part, taking care when setting it down again that the HEPA pre-filter is not damaged or displaced.
2. Liquid Mercury Collection: Open a GORE-TEX® droplet collection bag (P/N 01722501) and slide the metal retaining clamp (P/N 01703601) around the collar of the bag. Slide the opening, seam side down, over the container's inlet tube (photo 1). To secure the bag, tighten the metal retaining clamp around the inlet tube by pulling the ends together and tightening the clamp.



Mercury Dust and Other Dry Applications: Using a Nilfisk paper bag (P/N 81620000), carefully expand the paper bag and place it in the lower container. With both hands, pull the bag's collar over the suction inlet (photo 2). The Gore-Tex bag can also be used for small dry applications.

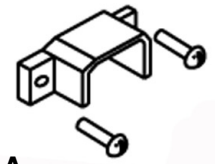


3. Replace the top two-thirds of the machine on the container bottom and secure clips. Be sure that all silicone rubber seals are seated properly to ensure that the seals are tight.

* HEPA – High Efficiency Particulate Air – Retains 99.97% of particles down to 0.3 microns in size.

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4. Fixed Power Cord: The power cord on the SS Mercury Vacuum is secured to the rear of the motorhead by a small plastic bracket. To remove or replace the power cord, simply remove the 2 screws holding the plastic bracket shown in illustration A.



5. Installing the optional HEPA or ULPA* Exhaust Filter: If this cleaner is to be used for the recovery of hazardous or toxic dust in a controlled environment a HEPA or ULPA exhaust filter must be installed (photo 3). On either side of the motor are two large screws. Turn them 90 degrees either way to a vertical position and push down on the center of the motor handle. This will disengage the motor handle and motor diffuser. Replace them with the exhaust filter and its longer exhaust filter handle, then turn the screws 90 degrees back to their original horizontal position. The exhaust filter is now properly mounted.



6. Attaching the Accessories: For liquid mercury spills, install the clear Tygon hose (P/N 01796591). This hose features a tapered reinforced tip; no additional nozzles are needed. Two red plastic caps are provided with the machine. Use one cap to seal the end of the hose when not in use. The other cap should be used to seal the machine inlet if the tygon hose is removed. Sealing the hose and container will prevent Mercury leaks and will prolong the life of the activated carbon filter. For added security, the canister is equipped with positive twist safety latches (photo 4). For dust applications, a variety of optional 1-1/4" diameter hoses, wands and nozzles are available.



7. To start and stop the motor, depress the gray switch on the front of the motor.

CAUTION: IT IS IMPORTANT THAT SPILLS BE ATTENDED TO IMMEDIATELY. IT IS EQUALLY IMPORTANT THAT THEY BE CLEANED UP CAREFULLY, THOROUGHLY AND SLOWLY.

EMPTYING

SINCE THIS VACUUM CLEANER IS USED TO COLLECT HAZARDOUS MERCURY LIQUID AND DUST, DO NOT ATTEMPT TO OPEN OR EMPTY ITS CONTENTS WITHOUT PERSONAL PROTECTIVE CLOTHING AND RESPIRATORY PROTECTION.

1. The Tygon hose that is supplied with the Nilfisk SS Mercury Vacuum Cleaner has a smooth lining. This smooth lining notwithstanding, tiny mercury droplets may occasionally remain in the hose after the spill has been picked up. It is therefore of extreme importance that THE HOSE END BE RAISED UP TO A VERTICAL POSITION AND SHAKEN BEFORE THE MOTOR IS SWITCHED OFF. The hose should then be sealed with the hose cap provided (P/N 01799015).
2. Remove the upper two-thirds of the cleaner by releasing the container clamps attaching the adsorbent filter cartridge to the lower container. Lift off this upper part, taking care when setting it down that the HEPA pre-filter is not damaged or displaced.
3. Liquid Mercury Collection: To remove the Gore-Tex collection bag, loosen the bag clamp. Carefully pull bag away from inlet tube, taking care to keep the bag in a VERTICAL POSITION so as not to spill any of its contents. Liquid mercury can then be poured from the bag into another container for reuse or disposal, and the bag can be saved for future use.

* ULPA – Ultra Low Penetration Air – Retains 99.999% of particles down to 0.12 microns in size.

Mercury Dust and Dry Applications: Remove the paper bag by simply pulling the bag opening free of the inlet tube, taking care not to squeeze or compress it. Dispose of the paper bag in a sealable plastic bag. Install a new paper bag according to “Assembly and Use”, Step 2.

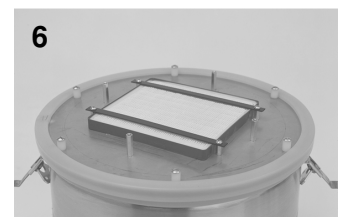
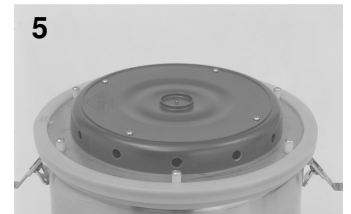
4. Disposal: Depending on local regulations and the composition of the material you have collected, there will be a requirement for special handling and labeling of the filled and sealed plastic bags. Consult your local Occupational Safety and Health Agency (OSHA) and Environmental Protection Agency (EPA) officials for details.

FILTER REPLACEMENT

To ensure that your Nilfisk vacuum cleaner delivers the years of trouble-free operation for which it was designed, it is necessary to check and replace filters regularly.

1. Gore-Tex Collection Bag: After it is emptied, this bag can be replaced in the machine to be used repeatedly for collecting liquid mercury.
2. Disposable Paper Bag: This should be replaced when approximately one-third (1/3) full and then disposed of only in a sealed plastic bag. Do not attempt to reuse the disposable paper bag. Specify Nilfisk part number 81620000 when reordering.
3. Internal HEPA Filter: The glass fiber element in the internal HEPA filter (P/N 12015500) should perform satisfactorily for a minimum of one year. It cannot be renewed or restored. Exact life of the filter will depend upon the frequency of use and amount and type of material collected.
NOTE: The HEPA filter must be replaced more frequently if the cleaner has had unusually heavy use or if the vacuum cleaner has been operated without a paper bag installed.

Remove the top one-third of the container and set it aside. Remove the next section, turn it over and you will see a plastic HEPA filter cover (photo 5). With a screwdriver, unscrew the four screws from the HEPA cover. Remove the HEPA cover and set aside. Next, loosen and remove the four screws from the two metal clamps securing the HEPA filter (photo 6). Remove both metal clamps and carefully remove the filter. Discard the filter in a sealable bag.



To install the new filter, insert the HEPA cartridge in the square cavity with the gasket side down. Replace the two metal clamps and secure them with the four screws. NOTE: Make sure the screws are well tightened to provide the necessary seal. Replace the plastic HEPA filter cover and secure with the four screws. Reassemble container.

4. Mercury Vapor Adsorbent Cartridge: There are no visual means of determining when this cartridge needs to be replaced (P/N 01796549). For more information, please refer to the Special Notes section on Page 4.



5. Microfilter: This small white felt sock, which fits over the motor bottom, will require periodic inspection (photo 7). Dark colored dust will discolor this white microfilter. Change the microfilter as soon as discoloration is easily noticeable. Frequency of replacement will depend on the amount of use the cleaner gets. Do not shake the microfilter since this can cause liberation of potentially harmful microscopic dust into the air. Remove carefully and discard with collected debris in the sealable poly bag. Specify Nilfisk part number 11730410 when reordering the microfilter.

6. Optional HEPA or ULPA Exhaust Filter: If the microfilter is properly maintained, the glass fiber element in the exhaust filter should perform satisfactorily for at least one year (photo 8). It cannot be renewed or restored by shaking. Locate the large gray screws on either side of the motor top. Turn them 90 degrees either way to a vertical position and push down on the exhaust filter handle. Once the exhaust filter is disengaged, remove the protective aluminum casing by removing the four Phillips head screws in the housing. Replace the cartridge (HEPA filter P/N 01727631, ULPA filter P/N 01737631) and reassemble.



Cartridges should be replaced if the vacuum cleaner has noticeably stronger suction without them.

CAUTION: Use only genuine Nilfisk replacement filter components. The use of substitute components could pose a grave risk of personal exposure and will cause all equipment warranties to be void.

SPECIAL NOTES – IMPORTANT!

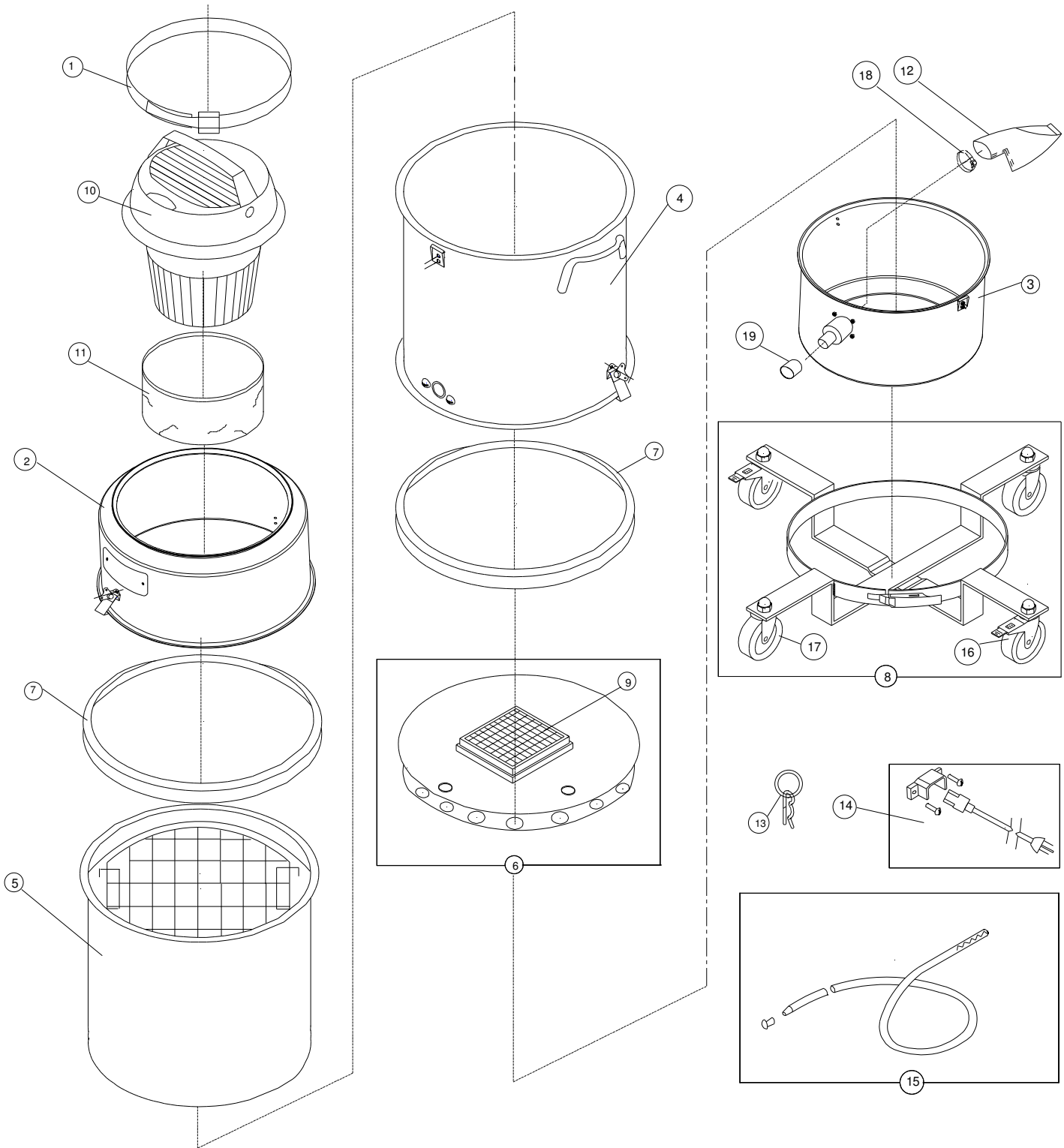
The oversize capacity of the Nilfisk mercury vapor adsorbent cartridge is designed to provide extended filter protection against accidental discharge of mercury vapor during spill cleanup. Although the activated-carbon is designed to have a service and/or shelf life of five years, the only way to ensure that your activated-carbon filter still has useful capacity is to perform regular periodic checks of the cleaner's exhaust with a mercury detection device.

CAUTION: IN-LINE CLOCKS USED TO INDICATE MOTOR RUNNING TIME DO NOT NECESSARILY INDICATE FILTER EXPOSURE TIME.

Mercury spills are seldom foreseen. As a precaution against large spills or difficulties in storing recovered mercury, we recommend a supply of airtight droplet recovery bottles with lids (P/N 01725702).

NOTE: To extend carbon filter life, install the inlet plug (P/N 01799015) into the orifice of the machine when not in use. When storing, place the entire unit in a sealed plastic bag.

Exploded Diagram - SS Mercury Vacuum



See next page for corresponding part numbers

See previous page for corresponding item numbers

Item #	Description	Part Number	Qty
1	Motor Clamp	80386300	1
2	Upper Container Assembly	01796514	1
3	Lower Container Assembly	01796515	1
4	Center Sleeve Assembly	01796546	1
5	Mercury Carbon Filter	01796549	1
6	HEPA Plate Assembly	01796540	1
7	Gasket	01796535	2
8	Trolley Assembly	01796590	1
9	HEPA Filter	12015500	1
10	Motorhead 115V	01796518	1
10	Motorhead 230V	01796517	1
11	Microfilter	11730410	1
12	Gore-Tex bag	01722501	1
13	Latch Pin, trolley	01796593	1
14	Power Cord Assembly	21827400	1
15	Hose Assembly	01796591	1
16	Caster, locking	01796421	2
17	Caster	01796420	2
18	Clamp	01703601	1
19	Inlet Cap	01799015	1

Optional HEPA and ULPA Exhaust Filters

Complete HEPA Exhaust Filter Kit	01710440
Replacement HEPA Filter Cartridge	01727631
Complete ULPA Exhaust Filter Kit	01720440
Replacement ULPA Filter Cartridge	01737631

WARRANTY

The Nilfisk companies warrant that Nilfisk equipment will be free of defects in workmanship or material for a period of two years from the date of delivery. Should any failure to conform to this warranty appear, the Nilfisk companies shall upon notification within such time period, correct such non-conformity, at its option, either by repairing any defective part or parts, or by replacing a part or parts provided that the equipment is returned to an authorized Nilfisk service facility. In all cases freight both ways will be at the expense of the customer. Equipment shall not be returned without advance notice to, and consent of the Nilfisk companies.

EXCEPT AS SPECIFICALLY SET FORTH HEREIN, THE NILFISK COMPANIES MAKE NO WARRANTIES, EITHER EXPRESSED OR IMPLIED AS TO ANY MATTER WHATSOEVER, INCLUDING WITHOUT LIMITATION ANY AND ALL WARRANTIES OF MERCHANTABILITY, FITNESS FOR PURPOSE, OR OTHER WARRANTIES, ALL OF WHICH ARE EXPRESSLY DISCLAIMED AND EXCLUDED. NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOSS OF PRODUCTION, LOSS OF TIME, LOSS OF PROFITS OR OTHER SIMILAR INDIRECT LOSSES WHICH MIGHT OCCUR AS A RESULT OF DEFECTS, PARTIAL OR TOTAL FAILURE OF THE PRODUCT TO PERFORM AS SPECIFIED.

Correction of non-conformities or defects in the manner and for the period of time provided above, shall constitute fulfillment of all liabilities of the Nilfisk companies to the customer, whether based on contract, negligence or otherwise with respect to, or arising out of such equipment. The remedies set forth herein are exclusive, and the liability of the Nilfisk companies with respect to this sale or anything done in connection therewith, whether in contract, in tort, under any warranty, or otherwise, shall not except as expressly provided herein, exceed the price of the equipment or part on which such liability is based.

The warranty does not cover repairs due to normal wear and tear, accident, neglect, misuse or abuse, incorrect installation or use other than as described in the instruction booklet. Breaks in hoses and cables are not covered. This warranty is rendered void if the motor number plate is removed or defaced or if repairs are made or attempted by persons not authorized by the Nilfisk companies.