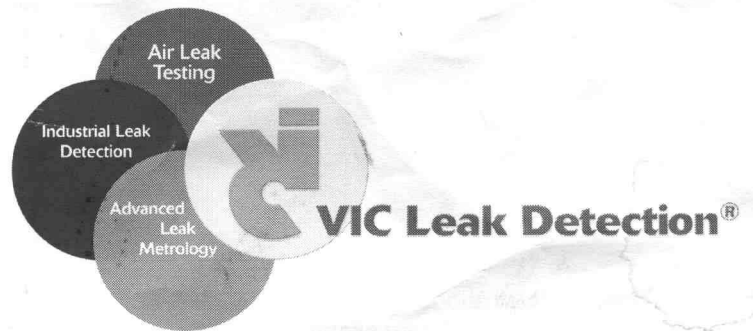


vacuum Syst

Mass Spectrometer Source Rebuild Kit

Instructions for VIC Leak Detection Model MS-40, MS-50 & MS-60 leak detectors along with all Veeco Instruments Leak Detectors



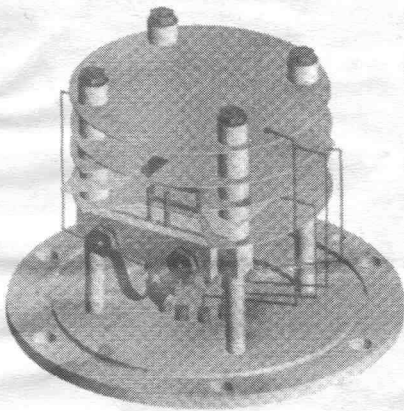


Advanced Leak Metrology Division

Mass Spectrometer Source Rebuild Kit

P/N 0126-186-00

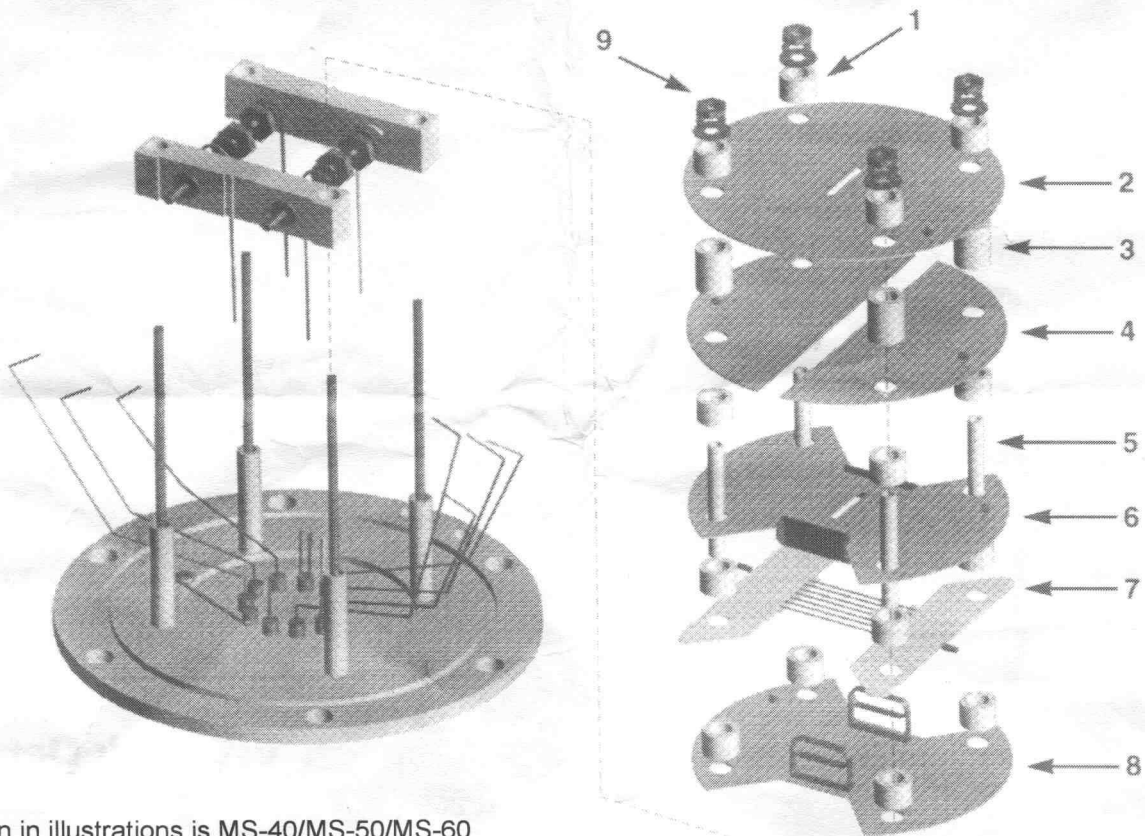
Fig. A: Source (Assembled)



Item	Part No.	Description	Quantity
1	0103-124-00	Ceramic Insulator, .155"	16
2	0137-228-00	Accelerating Plate	1
3	0103-125-00	Ceramic Insulator, .354"	4
4	0103-154-00	Focus Plates	2
5	0137-126-00†	Ceramic Insulator, 1.35"	4
6	0120-055-00	Grid Plate (Shield)	1
7	0120-284-00	Repeller	1
8	0120-057-00	Anode Plate	1
9	Commercial	#4-40 Hex Nuts	4
10	0103-146-00	Filament Clamp	2
11	0103-145-00	Filament Block	2
12	0137-622-00	Source Rebuild Instructions	1

†MS-60, MS-40 and MS-50 only; all other units use P/N 0103-126-00

Fig. B: Source (Exploded)



Note:

Source shown in illustrations is MS-40/MS-50/MS-60 version. Other models will vary slightly; however, rebuild procedure is identical for all units.

1 Vent The Vacuum System

Complete venting of the vacuum system is required prior to removal of the source for rebuilding.

Proper vacuum system venting procedure is detailed in the operations and maintenance manual for your leak detector.



Electrical Hazard Precaution:

The mass spectrometer source operates at extremely high, and potentially lethal, electrical voltages. To eliminate the risk of accidental electrical shock, it is strongly recommended that you disconnect AC power to the unit before proceeding with the following maintenance steps.

2 Remove The Source Assembly

- Disconnect the electrical harness from the source.
- Remove the screws securing the heat sink to the source (if applicable) and set them aside for reinstallation.
- Remove the remaining screws securing the source to the mass spectrometer housing and set them aside for reinstallation.
- Remove the source assembly.

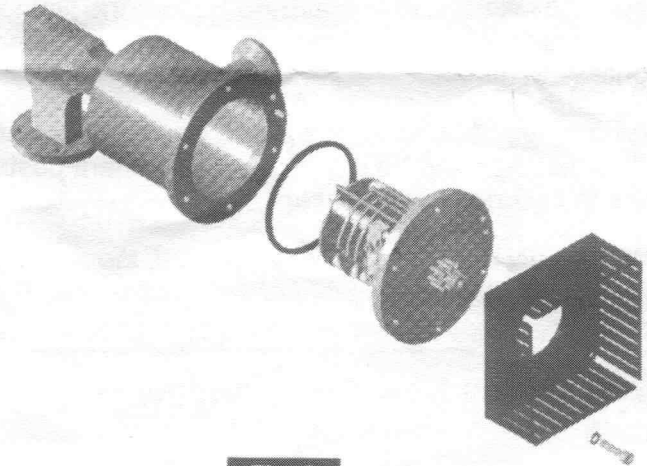


Fig. C

3 Detach Wires

Wires extend from the pins on the base of the source, and are connected to various components. These must be detached prior to disassembling the source.

Using a pair of needle nose pliers, gently pull each wire from its socket and away from the source assembly, as shown in **Figure D1**. Do not pull the wires further back than necessary - they are relatively fragile and can break if bent repeatedly or excessively.

4 Remove Used Components

Remove the four sets of hex nuts, spacers, and lock washers (**Fig. D2**) holding the source components in place.

Slide the used source components up and off of the alignment pins.

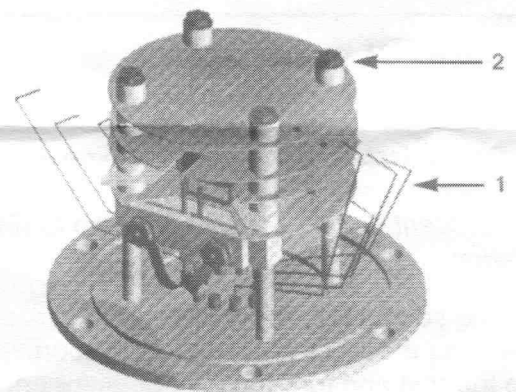


Fig. D

5 Replace Filaments

NOTE: Replaced filaments are not included in the source rebuild kit and must be ordered separately.

The filament assembly is shown in **Figure E**.

To remove a filament:

Remove hex nuts (**a**) and slide the filament tips from their alignment posts. Remove hex nuts (**b**) and slide the filament clamp (**10**) from the alignment posts. Remove the filament.

To install a filament:

Seat the filament posts into the channels in the center of the block (**11**). The small ceramic tie bar (**c**) should rest flush against the bottom edge of the block and the filament ribbon should be aligned as illustrated in figure F. Secure the filament to the block by replacing the clamp and hex nuts. Be careful not to over tighten the hex nuts.

Using a pair of needle nose pliers, bend the filament so that its perforated tips can be slid over the alignment posts. Replace hex nuts to secure the filament tips.

IMPORTANT: When properly secured, the filament should not contact the metal base plate of the Source (see Fig. F).

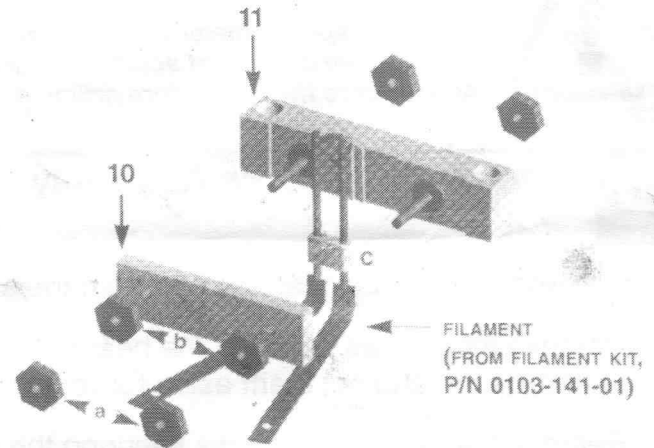
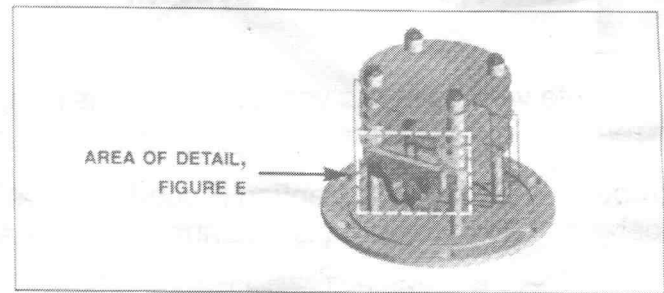


Fig. E

6 Install New Components

Slide replacement components onto the alignment pins in the order shown in **Figure B**. Reconnect the wires detached in Step 3. Fasten components using hex nuts. Tighten hex nuts until components sit snugly. Do not over tighten.

7 Reinstall Source

NOTE: Before installing the rebuilt source, check the O-ring for wear. If wear is evident, replace the O-ring. A thin coating of vacuum lubricant should be placed on the O-ring prior to reinstallation.

Reinstall the source into the mass spectrometer housing. Reconnect the electrical harness to the source. Reconnect AC power to the unit and turn the leak detector on.

A tuning and calibration check is required for each filament before resuming leak testing (consult your leak detector manual for details). Successful completion of the tuning and calibration check procedures will confirm proper source assembly and installation.

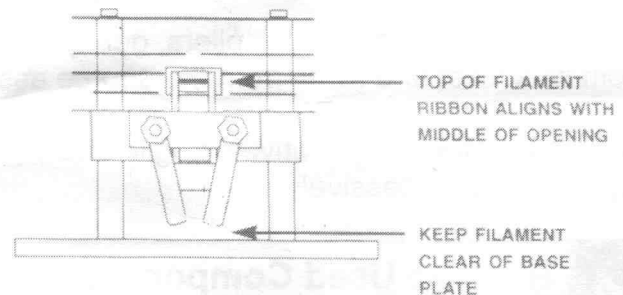


Fig. F