



Vacuum Probe
SAV2000

USER MANUAL





SUMMARY

1. Introduction	4
2. Description	5
3. Operation	8
4. Use	9
5. Maintenance	10
6. Optional	10
7. Caution PPE use	11
8. Warranty.....	12

1. INTRODUCTION

The Vacuum Probe SAV 2000, also known as Depth Probe is a pneumatic grain sampler designed for a relatively quick, easy, and deep probing of grains stored in silos, bulk grain warehouses and others.

By operating through a pneumatic principle, the SAV 2000 literally lifts a continuous sample through coupled aluminum pipes when they are lowered into the mass of grains.

A high-speed engine enables the withdrawing of the sample through double pipes where the grains are lifted by the inner pipe and the air is blown into the mass of grains through the passage between the pipes.



ATTENTION!

The Vacuum Probe has an exclusive 220 Volt power, identified in the equipment plug.

We recommend you pay attention to this item and not use outlet and network adapters which often cause poor electrical contact.

We also recommend special attention and all necessary caution when handling extension cables, their contacts, plug, outlets and connections in environments with suspended particles (explosive atmosphere).

The engine used in Gehaka Vacuum Probe, model SAV 2000 is sealed, offering no risk of sparks.

2. DESCRIPTION



1. CURVED PIPE

Used to couple the flexible pneumatic pipe to the probe sections, ensuring longer hose life and a continuous air flow.

2. CYCLONE

Engine - 1.8 CV, Class II, Group G. Requires 220 AC volts. Fan speed 13,000 rpm. Sampling capacity around 2.5 kg/ extension module. Shutter release controlled by a steel spring. Height adjustable bracket fastened by screws. Strap to carry a unit of about 11.5 kg. The electric power cable extension (not included) must be three no. 12 wires, and securely connected to a UL-approved start-stop lever.

3. EXTENSION MODULE

Anodized aluminum pipes with length of 1 meter – 50mm diameter outer pipe, 30mm diameter inner pipe. Special rubber spacers allow the pipes to move while keeping the inner pipes in the center position. Elastic steel clips and sleeve fittings fitted to provide a secure coupling and a hard probe.

4. TANK

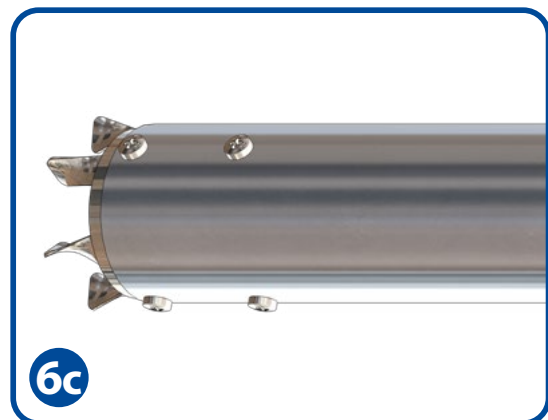
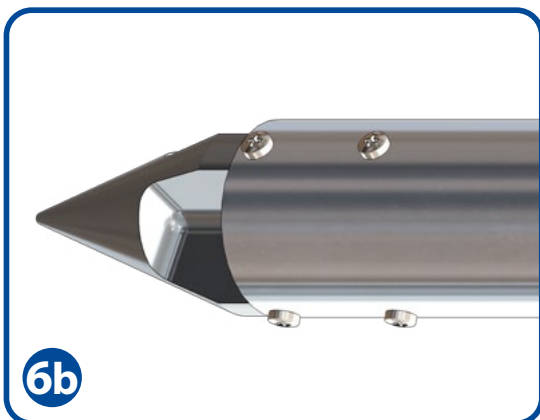
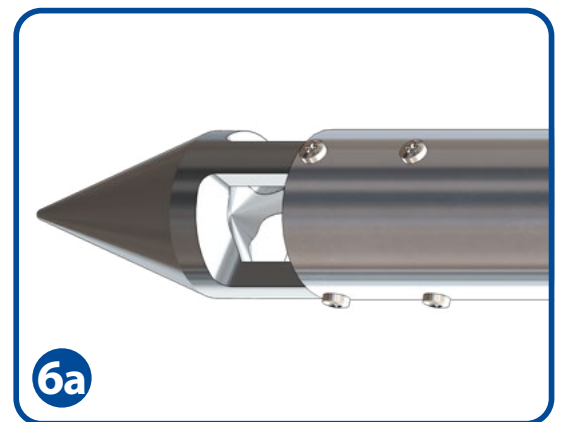
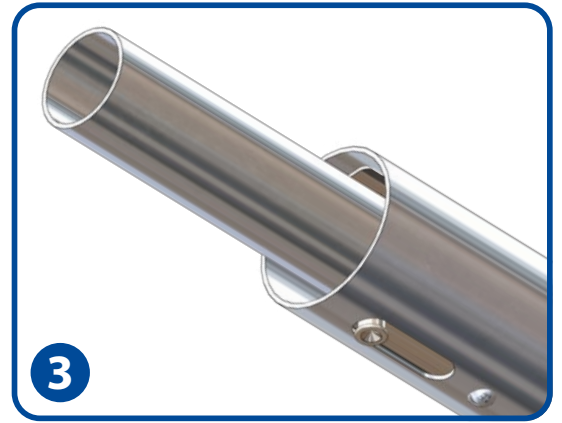
Lifted grain deposit.

5. PROBE TIP

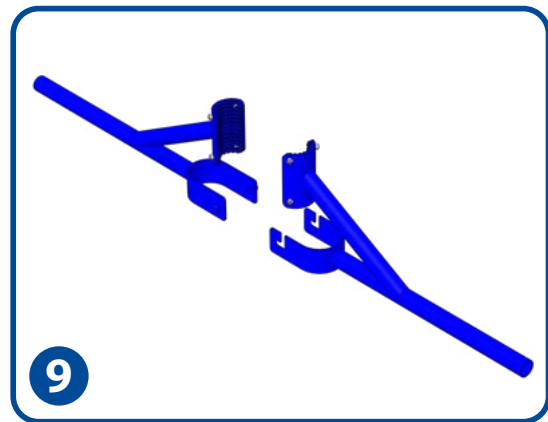
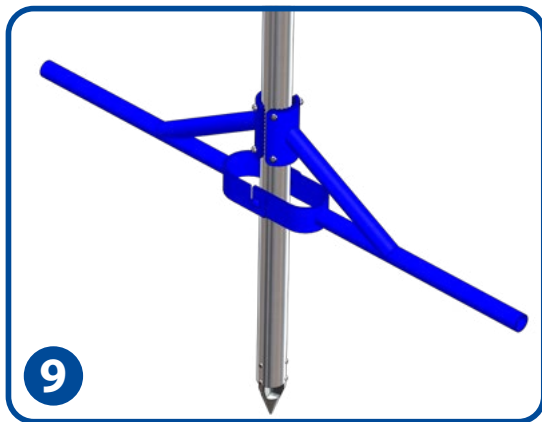
Tip to collect grains.

6. GRAIN TIP TYPES

- a. Tip with a larger opening for soybean, corn, oat, and beans
- b. Tip with small grain tip for wheat, sorghum, rye, barley, rice, and flax.
- c. Special “crown” tip for grain fumigation.



7. FLEXIBLE PNEUMATIC PIPE AND HOSE (CURVED PIPE)
Durable 1 ½" diameter vinyl hose. Neoprene sleeve for easy connection.
8. ENGINE BRACKET
Its adjustable height allows to place the sample collector containers under the steel spring-loaded shutter.
9. CROSSHEAD
A two-piece steel handlebar with friction claw for the pipe.
10. CARRYING BAGS
Sturdy canvas bag with strap and zipper closing. It bears up to 12 pipes. Smaller bag for the crosshead, curved pipe and pliers.
11. ADJUSTING SCREW
Used to lower or lift the air cyclone and the grain tank.
12. PLIERS
Specially designed to operate the elastic steel clips to connect or disconnect the extension modules.
13. SHUTTER
To unload the collected grain sample.



3. OPERATION

1. The air cyclone and sample collection unit can be placed in the grains at the probing point or on the floor of the sampling tunnel if present.
2. Set the adjusting screw to accommodate the sampling container.
3. 220 Volt power supply for total unit efficiency.
4. Connect the flexible hose to the cyclone, the other end must be connected to the curved pipe. The curved pipe must be connected to the inner pipe of the desired probe section. The inner tube must protrude 10 to 15 centimeters out of the outer pipe.
5. Check the shutter at the cyclone base making sure it is properly closed to ensure full air suction.
6. Starter engine. Turn on the “power” switch.
7. Push the probe section into the grains holding the pipe in your hands. The crosshead is not necessary for the first sections. The probe section must be pushed down into the grains until a 15 to 20 cm section is appearing over the grains.
8. The samples can be taken once the probing has begun. STOP the engine and wait until it stops before opening the shutter at the bottom of the collector. Let the grains be poured into the sampling container.
9. The collector is designed to deal with one sample from each probe section. If the manifold is filled before the additional section is required, stop the engine and empty it.
10. If no grain is lifted and the Vacuum Probe is on, you have hit a crust, a hot spot, a moisture cavity, or a foreign material cavity that will not flow into the airflow. Keep on applying force with a torsion action on the probe section. This action will “feed” material into the air flow and will allow the probe to move on into the sturdy mass. Do not push the section into the grains unless the engine is on.
11. If the engine is shut down when the probe continues to be pushed into the grains, or if the probe is pushed too quickly, the material can be forced into the lifting tube and prevent the airflow. If this happens, take the probe out of the grains until the “grain stopper” comes out.

ADDING EXTENSION MODULES

The engine must be OFF.

Make sure the grains are out of the collector. This will ensure an accurate sample at the following depth. Remove the curved pipe from the probe section, force the inner pipe of the new section out to facilitate tightening (the rubber spacer attaches it to the outer pipe, but allows movement) and fit it into the inner pipe of the previous section. Let the outer pipe fall into place and connect it by tightening the elastic clips with pliers.

CHECK TO ENSURE THAT BOTH ELASTIC CLIPS ARE IN THE LOCKED POSITION

The extension modules can be added until reaching the desired depth.

If it exceeds 8 to 10 meters, two or more men may be required to overcome the friction load on the tubes.

PROBE REMOVAL

Turn the crosshead and lift. Remove the extension modules when they come out of the grain area. Use the special pliers to remove the outer pipe and separate it by twisting the inner pipes.

Do not leave the probe in the grains overnight.

4. USE

Probing - tests up to 15m are now possible with the development of the Vacuum Probe, thus overcoming the problem of "fine sampling" found in deep grain storage tanks. The probe collects a continuous sample as it passes through the grains, eliminating the need to remove each sample. The speed with which they can be made is one of the important benefits of the Vacuum Probe SAV 2000.

Sampling: The multi-level spot sampling is possible, or a composite sampling of the whole set can be done.

Pest Location and Fumigation - Insecticide Distribution - When hot spots are located due to insects or moisture, treatment can be performed simply by inserting the Vacuum Probe into the damaged area and simultaneously introducing the insecticide into the probe. The pest type, size and geographic location of the hot spot can be determined by successive surveys. And, the insecticides can be distributed locally to solve the problem, eliminating the need to treat the whole silo, or to change the grain location.

In addition to these basic uses, the Vacuum Probe SAV 2000 was successfully used to obtain samples from trucks and boats.

The speed and ease with which Vacuum Probe can be manipulated makes it ideal for this usage.

5. MAINTENANCE

The vacuum probe only needs reasonable care and maintenance. A minimal amount of “working” parts makes the maintenance a simple matter.

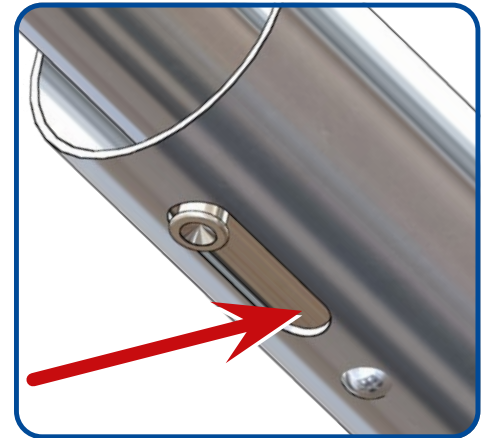
Engine and Cyclone – the sealed engine and the cyclone are permanently sealed and lubricated. They must be occasionally blown up with an air hose to clean out dust and grain particles.

Tube Section Locking Elastic Clips - Dust, straw and grain particles occasionally accumulate under the elastic clips and prevent the bolts from advancing to the correct locking position. They should be checked after each probing.

Clean by compressing the elastic clips with pliers, turn them upside down and tap on a board a few times. If this does not remove the foreign material, use a screwdriver or a knife.

This precaution will ensure that the probe sections are in working condition the next time they are needed, ensuring safe connections of all sections.

Extension Modules - improper handling can deform the round end of the pipe and make the connection difficult. Tapping it with a light tool to return it to the circular shape will solve the problem.



6. OPTIONAL

EXPURGATION

Used in the “Probe Tip” to place pressed insecticide.



7. CAUTION PPE USE

The correct use of all Personal Protection Equipment (PPE) required is mandatory for this operation with the Gehaka SAV 2000 vacuum sampling probe, whether in confined spaces, environments with suspended particles (explosive atmosphere), when lifting equipment to the top of warehouses, silos, and grain storage tanks and other places.

When using the vacuum probe SAV 2000 in expurgation or fumigation operations, in addition to the recommendations of the activity itself, the operational procedures indicated by the suppliers and manufacturers of insecticides should be followed, we warn to take the following precautions:

Mandatory use of PPE, including respirator for use with chemical gases, face shield, gloves, cap, hood or hat, clothing providing necessary impermeability and suitable boots.

Checking all probe components immediately after use with fumigant lozenges or tablets is required and mandatory to make sure insecticide leftovers were not trapped inside the pipes and extension modules.

The probe components may not be transported or stored with insecticide leftovers.



8. WARRANTY

The information in this manual is considered correct until the date of its publication and it is included in the sales invoice of the product.

Gehaka does not take any responsibility resulting from the incorrect use or misuse of the product, nor is it responsible for non-compliance with the information in this manual, reserving the right to change it without prior notice.

Gehaka is not directly or indirectly responsible for accidents, damages, losses or gains, good or bad results of analysis, processing, purchase or sale of goods based on this instrument. The devices sold are warranted against defects caused by defective finish or materials for one year from the date of manufacture or sale.

Gehaka's liabilities, within the limits of this warranty, are limited to the repair, replacement, or optional crediting of any of its products that are returned by the user/ purchaser during the warranty period.

This warranty does not cover damages or malfunction caused by fire, accident, alteration, negligence, misuse, repair or recalibration without the manufacturer's permission, or negligence, malpractice, and recklessness in use.

Gehaka does not take any express or implied responsibility, except for what has been established herein.

Gehaka does not guarantee the continuity of the product commercialization or suitability for any particular use.

Gehaka's responsibility will be limited to the unit sales price stated in the invoice or price list of any defective goods and will not include compensation for material and/or moral damages and losses, loss of profits or any other damage resulting from the equipment use other than those previously provided for.

This product warranty is valid for one year, based on the invoice issuing date. However, the product paint warranty is that of thirty days from the invoice issuing date. The product requiring technical assistance during the warranty period will have the freight to send the product to Gehaka and for its return be at the customer's expense.

Gehaka's salespersons or representatives are not allowed to offer any additional warranty to the one clearly provided for in this Manual.

TECHNOLOGY AT THE CUSTOMER'S SERVICE

CONTACTS

 gehaka.com.br/en

 +55 (11) 2165-1100

 vendas@gehaka.com.br

 @gehakaoficial

 /gehakaoficial

 /gehakaoficial

 /GehakaEquipamentos



Av. Duquesa de Goias, 235 - Real Parque - CEP 05686-900 - Sao Paulo/SP - Brazil