1775-A10 Van Veen Instructions

Introduction:

The Van Veen Grab is a time-tested sampling device that was first used in 1933. It can be used to retrieve sediment samples from deep water bodies with soft or sandy substrates. It is a relatively lightweight sampler that is useful for collecting the benthic macroinvertebrate organisms that inhabit the sediment. The top of the sampler has neoprene rubber flaps covering 500 micron mesh screens. The flaps open during deployment, thus reducing the frontal wave which could disturb the substrate. The flaps close over the screens when the sampler is retrieved.

Quantitative studies can be performed on the collected sediment since the Van Veen will retrieve a sample of a given surface area of benthic substrate and the organisms within that substrate. Chemical and physical properties of the substrate are also often performed on samples collected using the Van Veen Grab. After sampling, the screens can be removed from the top of the grab for subsampling and easy cleaning.

Extension arms are provided which can be attached to the arms on the unit when better leverage is needed.

Materials:	304 stainless steel
Fasteners:	18-8 stainless steel
Chains:	304 stainless steel
Bottom opening:	359 x 279mm (14-1/8 x 11in)
Weight empty:	18.5 kg (41 lb)
Weight with sample:	68-90 kg (150-200 lb)
Volume:	24 L (1465 cubic inches)
Sample area:	0.1 square m (154 square in)
Mesh on screens:	500 microns

Safety:

1. Be sure you are able to keep the boat in proper balance at all times. The Van Veen Grab is heavy when full. Lowering, raising, dumping and washing contents may require leaning over the side of the boat. Keep your balance. Use a winch or crane.

2. Severe injury to hands or fingers can be caused by movement of the lever arms. Keep the safety pin fully latched in its position when the Van Veen Grab is not being deployed. Push the safety pin through both locking holes. Be very careful when the safety pin is not in place.

3. Use a winch or crane! The Van Veen Grab weighs150 to 200 pounds when full (68 to 90 kg). We strongly recommend use of a crane or winch along with a 7 foot or larger boat (22mm).

How to Use:

1. WARNING: Do not handle or move the Van Veen Grab unless the safety pin is fully pushed into the locking holes. Keeping clear of the jaws and other working parts of the grab, move the jaws to the open position. Move the arms until the center holes are aligned. Insert the Safety Pin Lock.

2. Inspect the sampler to ensure all parts are in good working condition. Check all nuts, bolts and other fasteners. Straighten out the chains (no kinks or twists).

3. Attach the extension arms if more leverage is required.

4. Attach strong line or stainless steel cable (recommended) by looping it through the clevis that connects the chains. Tie the line or clamp the cable securely. Clamp the other end of the cable securely to the winch or boat. Secure clamping is essential for operator safety and to prevent losing the sampler.

5. Just before lowering the sampler into the water, and while the grab is resting on the deck, hold the line taut and remove the Safety Pin. Firmly push the Pinch-Pin in its place. The Pinch-Pin has a spring that will cause the pin to pop out when the line goes slack. Be very careful to keep pressure on the pin. This will keep the jaws open.

6. Use the winch to lift the Van Veen clear of the boat and motor.

7. Lower the sampler slowly. The 500 micron stainless steel screens help prevent drift and reduce the shock wave when the grab reaches the bottom. It also helps prevent bottom sediments and organisms from escaping.
8. When the grab reaches the bottom (the cable will go slack), the Pinch-Pin will pop out. When you pull up on the cable, the arms will move upward, allowing the jaws to close. This motion tends to force the jaws deeper into the sediment as they close.

9. Maintain tension on the cable by operating the winch, which will close the sampler and raise it back to the surface. We recommend a steady, relatively slow lift.

10. When the Van Veen reaches the surface, lift it clear of the boat and swing it onboard over a tub or sieving device. As soon as the tension is released, the jaws can be opened manually to release the sample. Take care to avoid the working parts of the grab and the edges of the jaws. To take small sub-samples, keep the scoops closed and slide open the top screens. A common sub-sampling procedure is to push small diameter clear plastic tubes through the collected sample down to the jaws.

11. Samples should be screened, sieved, separated, bottled, labeled and otherwise processed for analysis and classification by the standard operating procedures for the study. The Wildco Wash Frame is recommended for sieving the samples in the field. It has the same 500 micron mesh as the sampler, and is able to accept the weight of the full grab. It allows both the grab and the sample to be rinsed easily.

12. At the end of sampling operations, reengage the Safety Pin to prevent accidental closing of the jaws in handling or shipping. Rinse the sampler with fresh water.

P/N 24-1775

Maintenance:

1. During sampling, rinse the Van Veen after each drop. Also inspect the cutting edges. Severe nicks or dents may require reworking these edges to assure good cutting action and tight closure.

2. At the end of each sampling day, give the entire apparatus a thorough washing with fresh water to remove any sediment and residue chemicals. Use particular care after use in salt or acid water. Remove the two top screens and wash out any dirt or debris from the slots they slide in. You can adjust the tension of the top screens by increasing or decreasing the twist. Hold by the short sides, twist as needed.

3. Rinse down all other equipment used during sampling – cable, crane, wash frame, winch, boat, etc. *Never store any aquatic sampling instrument while damp or wet. Always allow them to air dry completely. Otherwise rust or mildew may form.*

4. Keep the moving parts lightly oiled and/or greased. An automotive grade grease or oil can be used on the lever arm pivots and big hinge pin. *When the sampler is out of service for a prolonged length of time, we recommend applying a coat of oil or other rust barrier to protect the unit's metal surfaces. Coat all surfaces, chains, joints, bolts and stud-bolt holes if these are to be left open.*

5. After extensive sampling in hard water, calcium carbonate and other insoluble particles may build up. Remove these by soaking the entire sampler in a 3 N solution of nitric, sulfuric or hydrochloric acid. These solutions will remove the scale without damaging the metal parts. Limit soaking time to 30 minutes. Rinse thoroughly. Check it carefully by eye. Repeat as necessary.

Accessories:

1728-L12	Replacement Release Pin (Pinch-Pin) with chain
188-E50	Wash Frame, 500 micron mesh
61-B14	Aircraft Cable, 100 feet, 1/8 inch diam, w/thimble, shackle, 4 cable clamps
61-B52	Aircraft Cable, 100 m, 1/8 inch diam, w/thimble, shackle, 4 cable clamps
85-E10	Winch and Depth Meter, measures in feet
85-E20	Winch and Depth Meter, measures in meters
81-A10	Boat Crane w/winch, 48 feet of 3/16 inch cable
81-A11	Boat Crane w/winch, all-stainless steel, 48 feet of 3/16 inch cable