

# 2416-B45 Ballchek™ Core Sampler

## Warranty and Parts

We replace all missing or defective parts free of charge. For additional parts, use part numbers on Page 3. All products guaranteed free from defect for 90 days. This guarantee does not include accident, misuse, or normal wear and tear. **Please note warranty limitation on core tubes, below.**

## Important Note

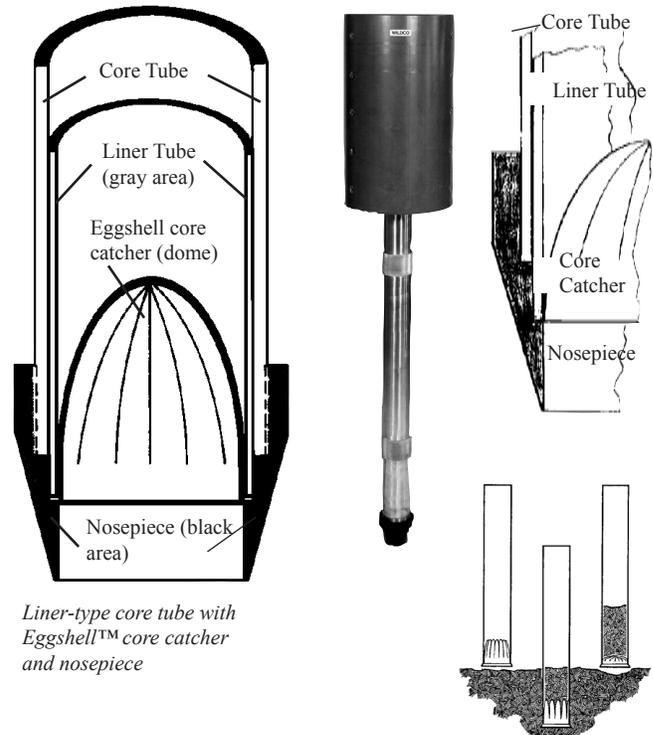
Due to the wide variety of substrates that may be sampled by coring instruments, Wildco® does not warrant the core tubes except for initial production errors. An example of a valid warranty claim would be: "The Ballchek™ corer head would not screw onto the coring tube when I received my shipment." Examples of invalid warranty claims would be: "The threads on the core tube deformed on the Ballchek™ corer during use" or, "The nosepiece hit a large rock, bent and can no longer be removed from the tube."

When inserting or removing the coring sampler, do not rock it back and forth when it is embedded in the ground. Excessive lateral force may bend components, making them unusable. Only forces that are vertical in nature should be applied to these coring instruments.

Do not use wrenches to affix nosepiece, head or couplers. Excessive tightening of these components can lead to warping of the core tube and/or binding of the components. If mechanical means are used to tighten the components, it may become impossible to disassemble them again.

Make certain each and every time the core tubes are threaded into the head, nosepiece or coupler, that the threads are very clean on all parts. Grains of sand, dirt or other foreign substances will cause the components to bind together, making it very difficult or impossible to separate them.

Operation requires winch and winch mount such as **66-C10** and **66-C52**, respectively, manufactured by Wildlife Supply®



*Liner-type core tube with Eggshell™ core catcher and nosepiece*

## Description

The Ballchek™ gravity corer is ideal for both shallow and deep water from 3 to 200 m in those instances where the water/bottom interface is not part of your study. At its heart is a simple seal that prevents the sample from leaving the tube during retrieval. A semirigid polyurethane ball, securely held by a tough, resilient polyurethane ring seat, automatically seals the top of the core tube as it is raised. All parts that contact the sample are made of inert plastic. Both ball and ring seat easily slide out for cleaning when the core tube is removed.

### Head assembly includes:

- 2" head assembly with valve includes bronze central cylinder for attaching eye hook and stabilizing fins
- 3 PVC stabilizing fins provide balance and stability during corer descent, offering high strength and low drag
- Central cylinder is threaded for core tube attachment. The cylinder is 51mm (2") in diameter and 300mm (12") long.
- 254 mm (10") diameter shroud, 305 mm (12") long

### **Ballchek™ Corer includes:**

- 914 mm (36") long stainless steel core tube
- 2 lexan® nosepieces (2449-A11)
- 2 clear CAB liners with end caps (2447-C41)
- 3 Eggshell™ core catchers (2449-B13)
- 1/8" diameter 61-B14 (100') cable

### **How to Assemble:**

1. Be sure that the outside of the liner and the inside of the core tube and all threads are clean. When the nosepiece is unscrewed from the core tube, the liner tube must easily and smoothly slide out with the detached nosepiece and core catcher (if used).
2. Place the polyurethane ball check valve into the central cylinder (if removed for cleaning).
3. Place the polyurethane seal into the groove above the central cylinder (above the threads), if removed for cleaning.
4. Screw the core tube into the head of the corer. Tightly twist the core tube by hand to seal.
5. Remove any caps from liner tubes and retain. Insert liner tube inside core tube.
6. Place Eggshell™ core catcher inside the end of the liner tube, curving fingers upwards.
7. Screw nosepiece onto core tube, thus holding core catcher and liner tube in place.

### **How to Use:**

1. As the corer is lowered into the water, the polyurethane ball check is pushed upward by the flow of water. A rod prevents the stopper from moving beyond that point, but allows the water to escape. The single tube corer has stabilizing fins to assist in maintaining the corer in a vertical position as it is lowered.
2. As the corer begins to penetrate the bottom surface, the Eggshell™ core catcher fingers are pushed open by the entering core material. Water continues to be pushed out through the top.
3. When the cable goes slack, raise the corer, which, causes the following actions:
  - a. The downward pressure on the ball check closes, creating a vacuum at the top of the corer
  - b. The pressure downward (of the corer) forces the closing of the fingers of the core catcher, thus securing the sample. Vacuum also aids in securing the sample.
4. To empty the sample into a container, remove the

nosepiece and core catcher. Keep the core intact by holding the corer upright. Unscrew the nosepiece and place an end cap on the bottom of the liner tube. (It is a good idea to leave the core catcher in the liner tube until the sample is removed later.) You may wish to tape it in place. Slide the liner tube out of the corer and place an end cap on the top of the liner tube.

5. Liners may be stored for later testing, and a new liner and core catcher inserted and the process repeated. Depending upon the sample, the core catcher may or may not be able to be reused.

### **How are liner tubes held?**

1. The length of the core tube is 16 mm (5/8") less than its corresponding liner tube. The nosepiece pushes the liner tube against the corer head.
2. Because the liner tube projects from the bottom of the core tube when the nosepiece is removed, you can easily grip the liner tube to remove it. You can also install the liner tube cap before removing the liner tube from the core tube.
3. Liner tubes and core tubes are a full 36" in length.

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Check out our website for prices, replacement parts, new products and more!

### **Accessories and Replacement Parts:**

61-B14	Aircraft cable, stainless steel, 100'
2449-A21	Stainless steel nosepiece
2449-A11	Lexan® nosepiece
2416-L36	Check valve with seal only
2416-L38	Check valve ball silicone replacement
2416-D15	Head assembly
2447-C48	2 x 36" liner tube with caps, pack 12
2447-C41	2 x 36" liner tube with caps, each
2449-B13	Eggshell™ core catchers, <i>Pack 3</i>
66-C10	Winch
66-C52	Winch mount

### **P/N 24-2416**

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## A sample checklist for using the Ballchek™ Corer:

*The purpose of this equipment is to obtain a core sample from a lake or ocean bottom. Because the equipment is heavy, take care.*

1. Attach cable from winch to corer head
2. Loop cable over end of pulley wheel on boom of crane. Use winch to gently lift corer vertically until suspended by the cable.
3. Swivel boom with corer off boat, slowly lower corer into the water with the winch. Stop just beneath the surface to let air escape from the liner.
4. Lower until it is about 5 m above the bottom. Verify depth, position.
5. Release the ratchet brake on the winch and allow the corer to free fall to the bottom. Keep hands and clothing away from cable during free fall. The cable will slacken once the corer has penetrated the bottom.
6. Wait about 2 minutes before attempting to reel in the corer.
7. Lock ratchet brake into place and reel in slack line. Do not overtighten.
8. Reel in cable until corer reaches the surface.
9. Keeping the corer upright, remove the nosepiece and place end cap on the plastic liner.
10. Remove plastic liner and attach an end cap to the other end. Use a marking pen to label top and bottom of the core and its ID number.
11. Inspect sediment inside of liner. Measure and record the recovered length of core and its condition. Describe contents. Place core in a storage box. Wash off deck and corer of any loose sediment.
12. Record: Sample # \_\_\_\_\_ Location \_\_\_\_\_ Date \_\_\_\_\_  
 Time \_\_\_\_\_ Latitude \_\_\_\_\_ Longitude \_\_\_\_\_ Depth \_\_\_\_\_  
 Recovered length \_\_\_\_\_ Condition \_\_\_\_\_  
 Description of core: \_\_\_\_\_

### Perform lab analysis of core

1. Stratigraphic description (describe on cm scale the record of sediment layers in terms of composition, particle size, color etc.)
2. Chemical and/or organic analyses performed (list type and results)

### Comparison of corers:

**Hand Corer** Usually used with extension handle  
 For shallow water or for divers  
 Simple automatic flap valve - good seal  
 Fast, "quick and dirty" method of sampling when using handle

**Ogeechee™** For coring sand or hard substrate where gravity alone is insufficient to penetrate  
 Can use in deep, fast-moving water  
 Can drive in and out of sediments by hand (with optional slide hammer)

**Ballchek™** Shallow or deep, 10 to 60'. Can be used in water too shallow for a K-B® corer  
 Valve works automatically, good seal  
 Where bottom interface not important  
 Primarily for oceanographic use  
 — Fin provides stability in descent

**K-B®** Primarily for use in deep lakes - generally used 100' or deeper  
 Any depth where bottom interface important or where bottom debris impairs sampling  
 Messenger operated valve, good seal  
 Less stable descent than Ballchek™ - can add weight or fin.  
 Wildco®'s best corer as it is the heaviest. In two sizes, medium and heavy



Ballchek™  
corer