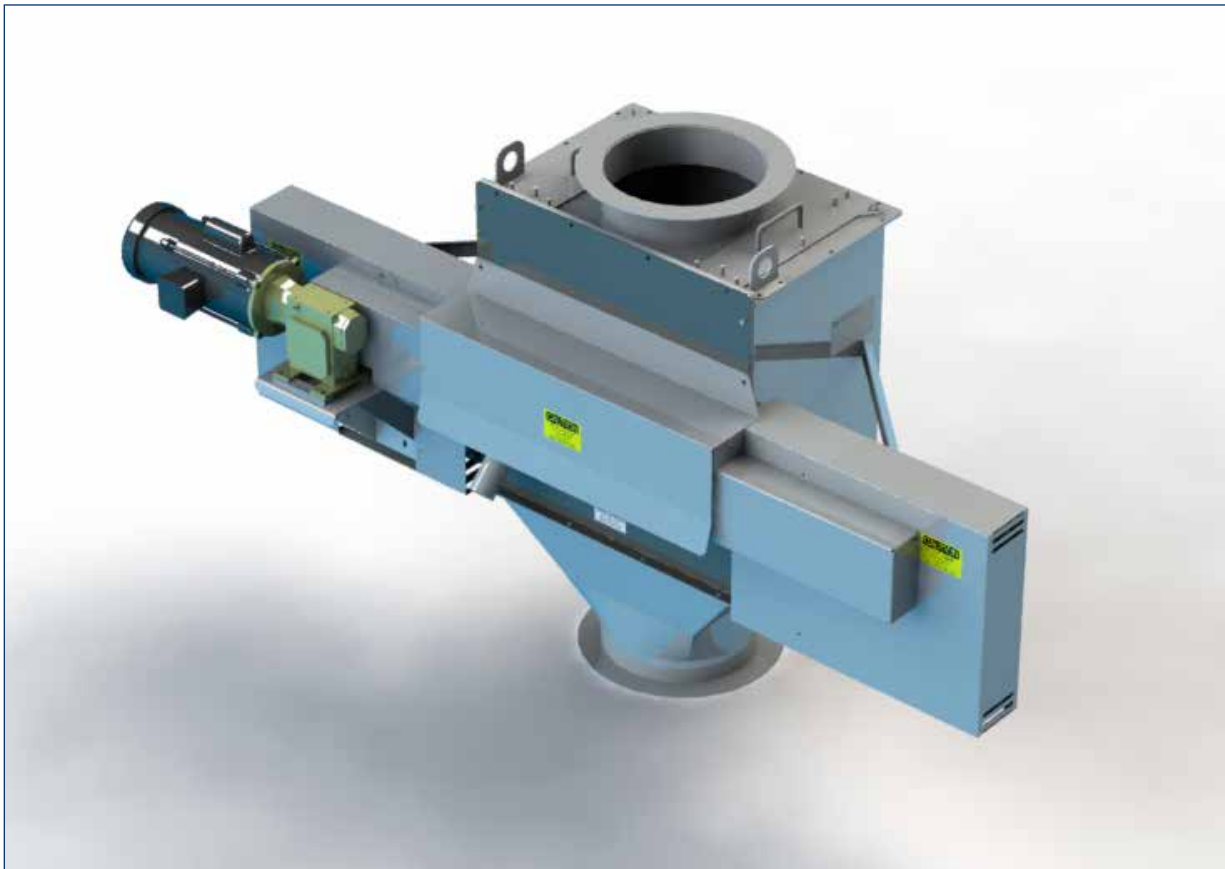


Original Instructions

# Installation, Operation & Maintenance Manual

## Sentry GE Sampler Cross-Cut Samplers

S-AS-IOM-00459-0 02-18





Do not install, maintain, or operate this equipment without reading, understanding, and following the appropriate Sentry Equipment Corp instructions. Otherwise, injury, damage, or both may result.

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## Note

The information contained in this document is subject to change without notice.

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# Safety Information

Please read the entire manual before attempting to unpack, set up, or operate this product. Pay careful attention to all Warnings, Cautions, and Notes. Failure to do so could result in serious personal injury and/or equipment damage.

## Use of Hazard Information

If multiple hazards exist, the signal word corresponding to the greatest hazard shall be used.

## Definitions

### **DANGER**

**DANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.

### **WARNING**

**WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.

### **CAUTION**

**CAUTION**, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

### **NOTICE**

**NOTICE** is used to address practices not related to personal injury.

### **NOTE**

Information that requires special emphasis.

### **TIP**

Alternate techniques or clarifying information.

**SHALL:** This word is understood to be mandatory.

**SHOULD:** This word is understood to be advisory.

# General Safety Precautions

## Product Selection, Installation, and Use

### WARNING

Improper selection, installation, or use can cause personal injury or property damage. It is solely the responsibility of users, through their own analysis and testing, to select products suitable for their specific application requirements, ensure they are properly maintained, and limit their use to their intended purpose.

Follow proper local, state, and federal regulations for proper installation and operational requirements.

Always use caution and common sense when working with any chemical. Read the product label and Material Safety Data Sheets (MSDS) carefully and follow the instructions exactly.

## Potential Equipment Hazards

### WARNING

**Hot surfaces!** This equipment may have very hot surfaces. If an operator contacts a hot surface, injury may occur. Use protective clothing to prevent injury. If other equipment comes in contact with a hot surface, damage to the equipment may occur. Ensure the area around this equipment is kept clear to prevent damage from occurring.

**High pressures!** This equipment may contain fluids at very high pressures. Prior to installing, removing or maintaining this equipment, ensure that the equipment is isolated from all connecting piping, the equipment is depressurized, the contents have been drained, and the equipment is cool.

**Moving parts!** This equipment may contain moving parts. All drive guards and doors must be secured in place when this machine is being operated.

# General Description

The Sentry® GE automatic cross-cut sampler obtains samples of dry, free-flowing segregated materials from angular or vertical gravity spouts. A sample is taken when a pelican-type diverter head moves across the product flow. The material diverted is discharged through a flexible hose to a collection point.

Because the pelican cuts across the entire material stream, the sample obtained is truly representative. Sample size can be changed at the sampler if an adjustable pelican aperture is included, or by changing the pelican head velocity. Sample frequency is regulated at the sampler controller.

## ⚠ WARNING

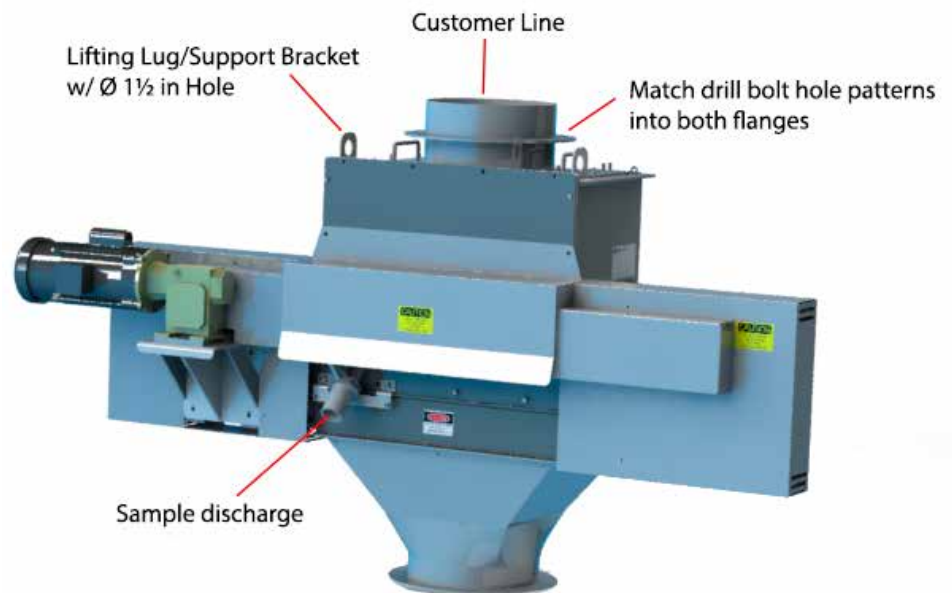
Read these instructions completely before proceeding to assemble, install or operate this machine. This machine should be installed, operated and serviced by qualified individuals. All drive guards and doors must be secured in place when this machine is being operated. Follow proper local, state and federal regulations for proper installation and operational requirements.

# Installation

## ⚠ CAUTION

Sampler must be supported in two planes to protect personnel and assets and prevent damage.

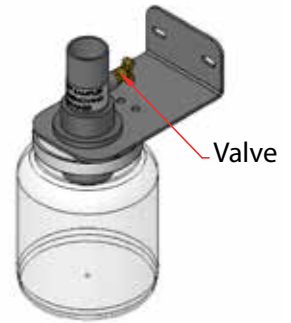
1. Choose a location for the sampler. Product should be evenly dispersed in the material line. Make sure that the mounting location is six to eight feet beyond all elbows or line irregularities.
2. Mount the sampler to the line. Make sure the pelican aperture faces the flow of material so the sample can enter. The product discharge must face down.
3. Remove a section of the chute equal to the height of the sampler.
4. Samplers are provided with blank flanges as standard, and the customer supplies the matching flanges unless otherwise stated. Drill a bolt pattern into the sampler flanges and matching flanges.
5. Weld the customer flanges to the ends of the chute and bolt the sampler into position.
6. Mount the sample bottle assembly. It may be mounted in any convenient location below the sampler. Best results are obtained when, in the sampling position, the discharge of the sampler is in direct line with the intake of the sample bottle.
7. Connect a flexible hose from the sample discharge to the sample collection container. In certain applications, rigid metal tubing can be used following a short length of hose attached to the discharge.
8. Mount the controller in a vibration-free location and have a qualified electrician wire the controller to the electrical supply and connect the proximity switches from the sampler.
9. Connect the motor leads and junction box to the sampler controller or PLC per the motor wiring diagram and the controller wiring diagram found in the Sentry SBC Controller manual.



# Operation

## Sample Bottle Assembly

The valve on the sample bottle assembly is used to release pressure in the container. The valve may be opened a one quarter turn to allow pressure to bleed slowly between sampling cycles. The valve must be closed when sampling on a vacuum line.



## Sample Pelican Speed

Timer settings determine how often a sample is taken. Timers with ranges can be changed by following the instructions that are located inside the controller. Please see the controller manual prior to making any adjustments.

### NOTE

The Sentry GE sampler meets U.S.D.A. Grain inspection regulations that require the pelican to travel 100 feet per minute.

# Maintenance

## Seals and Slide Plate

Because the Sentry GE sampler can be used with a wide variety of products and installations, there are no definite guidelines on how often maintenance should be performed. Maintain the sampler very closely for the first three to four months from initial installation and document wear vs. usage. Using this information, determine a maintenance program that fits your specific application and environment.

When the pelican is not in the sample mode, it rests under a nitrile seal. Check for wear on this seal and replace as needed.

### To replace seal:

1. Remove seal door(s)
2. Remove seal plate and seal from the seal door
3. Replace seal
4. Reinstall in reverse order

### Slide Plate Adjustment and Maintenance

1. To adjust the slide plate, remove the hardware holding the pelican to the chain, loosen the slide plate tensioners, and loosen rollers.
2. Center the pelican in the housing.
3. Raise the lower rollers so that the slide plate assembly is resting on the rollers without touching the lower or upper spacers. Use a level to ensure the slide plate is square to the rest of the unit. The slide assembly should stay in contact with the rollers on both sides while moving from end to end.
4. Adjust the upper rollers so that the slide plate is within the roller groove but 1/16-inch from touching the inside diameter of the groove.
5. Adjust the tensioners to provide slight tension to the upper and lower panels. Be careful not to over-adjust the tension, as this will cause the movement of the slide plate assembly to stutter or bind.
6. Attach the pelican to the chain and test. Movement should be smooth and even. Fine-tune rollers and tensioners as needed.
7. The upper and lower liners and tensioner pads are wear items. Inspect and replace as needed.

## Proximity Switches

- Both proximity switches are preset at the factory. If the slide assembly is disassembled for any reason, or a proximity switch is replaced, the proximity switches will need to be reset.
- Verify that the position of the proximity sensor has a gap of 1/16 to 1/8 inch (see adjustment procedure below).

### Proximity Sensor Adjustment for Stopping Position

The slide plate moves from side to side when viewed from the back. Verify the pelican position before readjusting the stopping position.

1. Disconnect the power from the unit and access the position of the proximity sensor located at the back of the unit.
2. Loosen the proximity sensor retaining nuts and adjust the position of the proximity sensor along the bracket's slot.
3. Verify that the gap between the sensor and slide plate assembly is 1/16 to 1/8 inch.

## Chain Adjustment and Tension

1. Disconnect the power from the unit and access the chain idler sprocket and chain support located at the front of the unit.
2. Loosen the idler sprocket mounting bracket Qty (4) bolts. After loosening the lock nut, turn the two hex bolts located on the rear of the bracket clockwise to tighten and counter clockwise to loosen to achieve the proper chain tension.

## Torque Limiter and Gear Reducer

Disconnect the power from the unit and access the torque limiter and gear reducer located at the front of the unit.

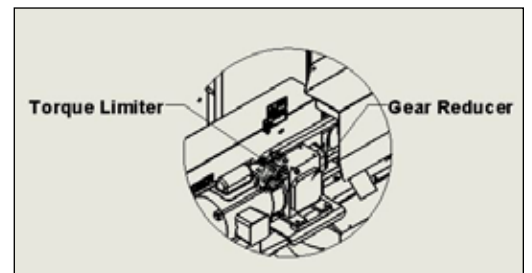
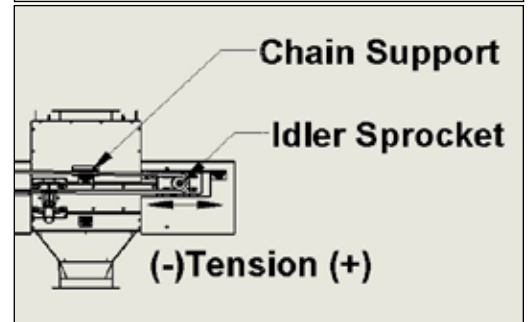
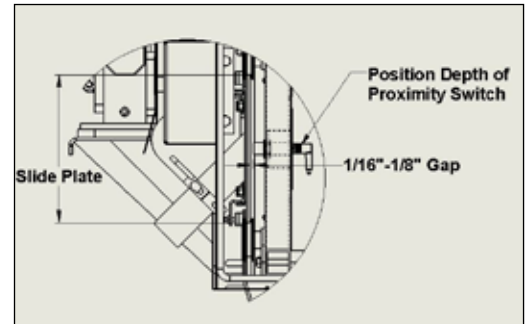
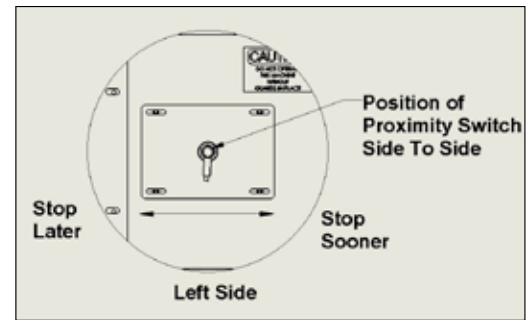
### Gear Reducer

1. Check fluid level monthly.
2. Initial fluid change should occur at 250 hours of operation.
3. Subsequent fluid changes occur every 2500 hours of operation.
4. Consult the Gear-Reducer documentation provided at purchase for fluid specifications.
5. All other adjustments are on an as-needed basis

### Torque Limiter

The Sentry GE sampler is equipped with an adjustable clutch on the drive sprocket. This is installed to prevent damage to the sampler if the sampler should become plugged with product. If this clutch is slipping on normal flow conditions, it needs to be tightened.

1. Remove the drive sprocket cover.
2. Rotate the sprocket so the two set screws on the inside nut are accessible.
3. Loosen the set screws.
4. Tighten the inside nut clockwise. Do not over tighten, 1/8 to 1/4 turn should be enough. Tighten only enough so that the clutch will not slip under normal flow.
5. Retighten the setscrews. Loctite should be used on the setscrews.





# Troubleshooting

The following information is a synopsis of the problems you may encounter prior to troubleshooting your equipment. Divide the unit into three sections and try solving the problem before you continue on.

## Potential Problems

### Electrical

- Controller
- Connections
- Circuit breaker
- Proximity switches
- Motor

### Mechanical

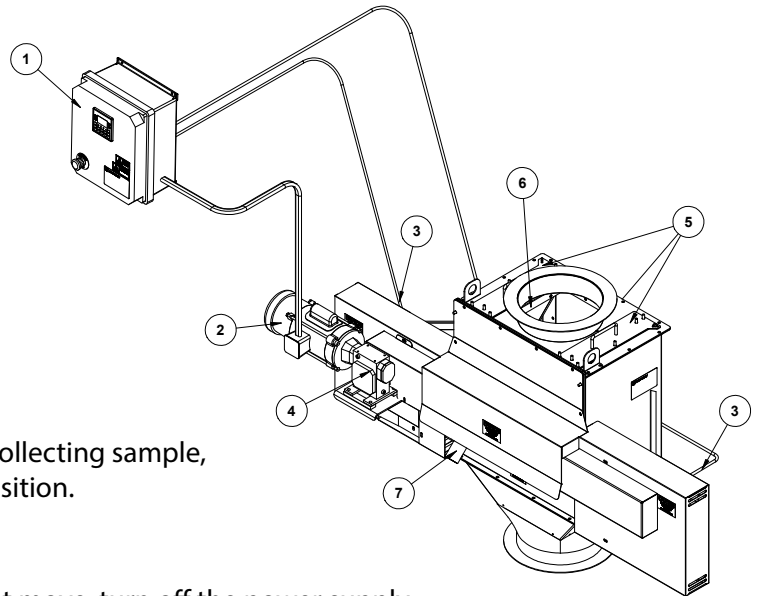
- Alignment (binding of slide assembly)
- Chain tension
- Gear reducer

### **⚠ WARNING**

Disconnect main power to controller before attempting any adjustments or disassembly.

## Troubleshooting Sequence

1. Controller
2. Motor
3. Proximity sensors
4. Gearbox
5. Inspection doors
6. Pelican
7. Slide assembly



### Electrical

- 1,2. See controller manual.
3. If sampler does not cycle to correct position after collecting sample, make sure that proximity sensors are secured in position.

### Mechanical

- 4,5. If the gear box is operating but the pelican does not move, turn off the power supply.
  - a. Open the inspection door and check for any binding of the pelican.
  - b. Remove gear box drive sprocket cover.
  - c. Check the torque limiter assembly for proper function. Adjust or replace as needed.
- 6,7. If the pelican and/or slide assembly is bound, its causes can include the following:
  - a. Foreign particles
  - b. Slide is out of alignment
  - c. Pelican support may be out of alignment
  - d. Worn parts

Follow the instructions below to determine the cause:

1. Remove the pelican guard
2. Disconnect the drive chain from the pelican drive assembly
3. Remove the four (4) slide guards
4. Blow and/or clean off the roller wheel assembly
5. Blow and/or clean off liners

6. Check the pelican guide support on the inside of the sampler for misalignment or warping
7. Slide track by hand
8. Replace or repair any damaged parts
9. Reassemble and run the sampler
10. To check the pelican, remove its support bracket. Loosen the attachment bolts and slide it out through the front inspection door.

## Standard Warranty

Sentry Equipment Corp (“Seller”) warrants products manufactured by it and supplied hereunder (“Products”) to be free from defects in workmanship and, to the extent materials are selected by Seller, to be free from defects in materials, in each case for a period as defined in the table below:

Product Line	Product Category	Warranty Period
Sentry®	<ol style="list-style-type: none"> <li>1. Automatic Sampling</li> <li>2. Corrosion Monitoring</li> <li>3. Manual Sampling</li> <li>4. Sample Conditioning</li> <li>5. Sampling &amp; Analysis Systems</li> <li>6. Replacement Parts (without expiration dates)</li> </ol>	Eighteen months from date of shipment or twelve months from startup, whichever occurs first
Waters Equipment	<ol style="list-style-type: none"> <li>1. Sampling &amp; Analysis Systems</li> <li>2. Replacement Parts (without expiration dates)</li> </ol>	Twelve months from date of shipment

To view the full warranty, go to [www.sentry-equip.com/warranty](http://www.sentry-equip.com/warranty).

# Customer Support

With proven sampling expertise since 1924, Sentry products and services provide business operations the critical insights to optimize process control and product quality. We deliver true representative sampling and analysis techniques to customers around the globe, empowering them to accurately monitor and measure processes for improved production efficiency, output, and safety. Standing behind our commitments, we are determined to tackle any application, anywhere.

We know that running an efficient operation isn't easy. It requires thorough, careful analysis of controlled, real-time data achieved through reliable, accurate, and repeatable process monitoring, and measuring. By effectively conditioning, sampling, and measuring gas, liquid, slurry, powder, solids, steam, or water within their production environments, our customers obtain the critical insights they need to control and optimize their processes.

Yet, controlling your processes also means reliable customer support throughout the life cycle of your equipment.

- Customer Service—General information, warranty claims, order management.
- Installation Service—For systems that require specialized expertise upon installation.
- Technical Support—Troubleshooting, training, and technical manuals.
- Field Service & Retrofits—When a problem needs immediate attention.
- Replacements Parts & Consumables—Order your replacement parts and consumables.
- Sentry ProShield Services – select from four ProShield Guardian service plans providing different levels of support to protect your large system investments with regularly scheduled maintenance.

To learn more, go to [www.sentry-equip.com/support](http://www.sentry-equip.com/support).

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across six continents worldwide.



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966 Blue Ribbon Circle North, Oconomowoc, WI 53066 U.S.A. | +1-262-567-7256 | [support@sentry-equip.com](mailto:support@sentry-equip.com)