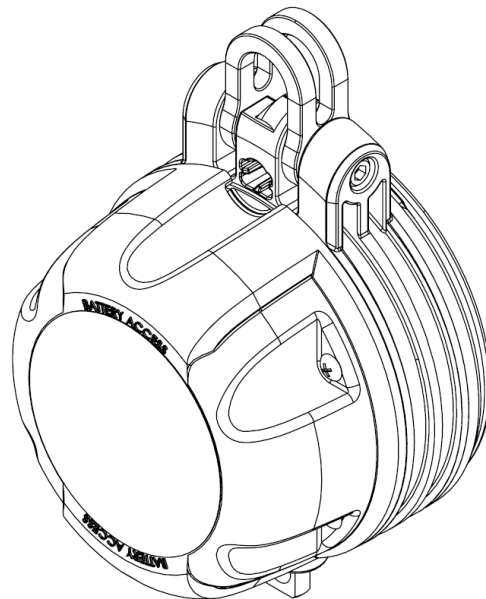


GS085

Radio Anti-Two-Block

Installer and user guide



WARNING! Carefully read and understand this manual and the **GS320/GS550/GS820 Installer and User's manual** before proceeding.

IMPORTANT! Refer to the **"GS375/GS550/GS820 Display & GS Series Sensors - Installer and User's Manual"** for complete information about installation, operation, maintenance, certification and warranty.

BEFORE PROCEEDING

Read and understand the following:

For your safety and that of the people that come into contact with **LSI** products, understand the significance of the instructions included in this guide, respect all laws and regulations and comply with applicable standards.

Pay particular attention to text boxes and the following words:

WARNING!

Warning: this denotes an instruction that if not complied with may lead to serious injury or death.

IMPORTANT!

Important: this denotes an instruction that if not complied with may lead to product performance issues.

WARNING!

Installation must be made in compliance with *LSI* instructions and using *LSI* supplied components only. Failure to install all parts, or replacing parts or components with parts or components not supplied by *LSI*, may lead to system failure, serious injury or death.

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1. Overview

The anti-two-block switch comprises of the radio transmitter, battery and switch mechanism. The switch mounts at the boom tip. A weight and chain assembly is attached to the bottom piston rod of the A2B switch. When the weight assembly is lifted by the ball/block, the internal switch in the A2B will trip an alarm, warning the operator of a two-block event.

The switch mounting bracket design allows the switch to rotate in two axes. The quick slip design of the mounting bracket allows the switch to easily be added or removed from the switch mounting bracket without the need for tools.

2. Switch Bracket Installation LB011

Position the sensor mounting bracket. To ensure that the sensor can pivot securely on the mounting bracket throughout the full range of boom angle, the mounting bracket must be positioned at a 30° from horizontal with the boom parallel to the ground and such that the locking pin of the mounting bracket points up. **Bolt or weld securely.**

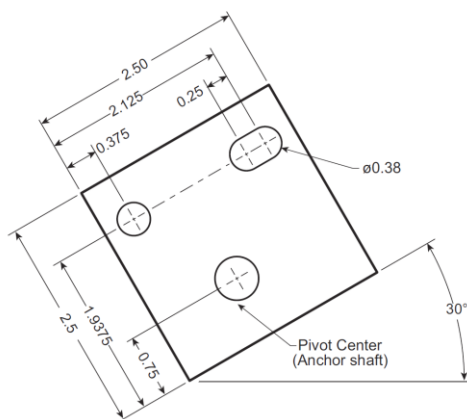


Figure 1: Bracket footprint and orientation, all dimensions in inches, not to scale

WARNING! Keep the anti-two-block switch away from the boom and any connecting metal structures when welding mounting brackets to the boom. Proximity to welding may cause permanent damage to the anti-two-block switch and render the anti-two-block system unsafe.

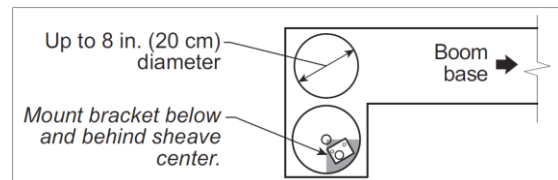


Figure 2: Anti-two-block switch placement on a telescopic boom

If the head sheave diameter is between 8 and 16 inches (20-41 centimetres) then two mounting brackets will be required to permit both live and dead end mounting.

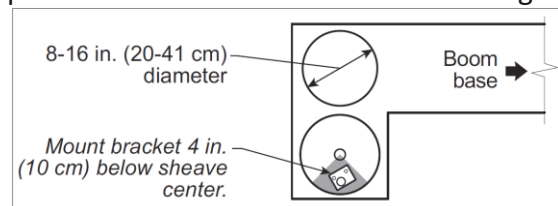


Figure 3: Anti-two-block switch placement for live end mounting on a lattice boom

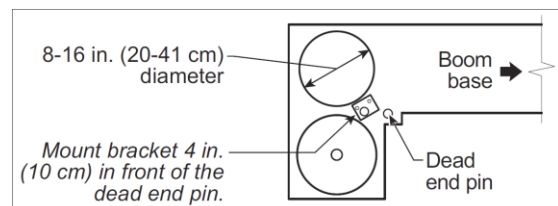


Figure 4: Anti-two-block switch placement for dead end mounting on a lattice boom

For live end mounting on multiple sheave blocks with sheaves greater than 16 inches (41 centimetres) in diameter consult your service representative.

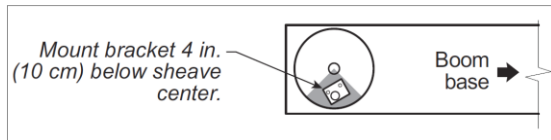


Figure 5: Jib, rooster or other extension: anti-two-block switch placement for single part of line operation only

For fast line weight installation place the anti-twoblock switch mounting bracket directly below the sheave center as low and as close to the edge of the sheave as possible. Place the fast line weight mounting bracket on the opposite side of the sheave with the chain hole pointing down and lined up opposite the pivot of the anti-two-block switch mounting bracket.

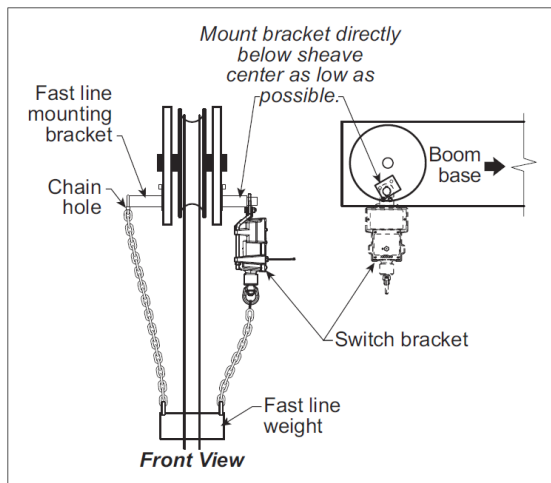


Figure 6: Fast line weight installation

3. GS085 Installation

Install the GS085 on the LB011 (switch bracket) already installed on the crane boom(step 2), with the battery cover pointing away from the boom.

Install a weight and chain assembly to the eye nut. The weight and chain assembly can either be supplied by **LSI** (as an option) or the original assembly supplied with the crane. If the original assembly is to be used, its total weight must not be

more than 13lb and the chain weight must not exceed 2lb.

4. Chain length adjustment

Chain length adjustment **No.1** - minimum boom angle

- a. At minimum boom angle, with no additional weight on the hook block and one part of line only, lift the boom just enough to have the hook block off the ground and clear the sensor chain and weight.

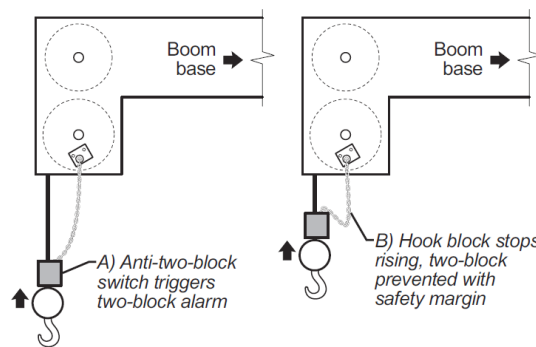


Figure 7: Chain length adjustment - Minimum boom angle

- b. Hoist slowly until the buzzer sounds. Note the hoisting distance remaining; this distance must be great enough to allow the operator and the lockout system, if installed, to prevent a two-block event. If necessary, add chain between the sensor and weight to increase warning distance. If still insufficient, contact your service representative.

Chain length adjustment **No.2** - maximum boom angle

- a. Raise the boom to the maximum angle.
- b. Hoist slowly as described in *Step 1.b*. Verify that the warning distance is equal to or greater than

that determined at the minimum boom angle.

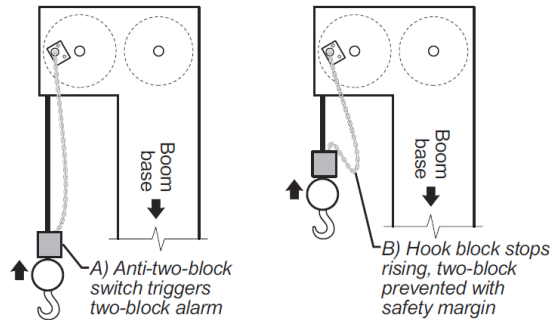


Figure 8: Chain length adjustment - Maximum boom angle

Chain length adjustment **No.3** - speed test: Lower the boom until the weight height becomes visually clear to the operator. Repeatedly create two-block, progressively hoisting faster, to ensure that the warning and lockout work within acceptable amount of time and distance. Increase the length of the chain if needed.

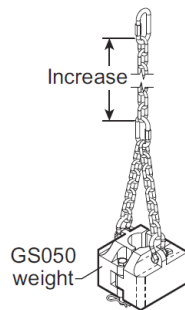


Figure 9: Chain length adjustment

IMPORTANT!
To increase chain length, only use lightweight chain

5. Operation

The radio anti-two-block is fully functional. It does not need to be calibrated or adjusted.

Refer to the GS375/GS550/GS820 manual for how to add this sensor to the sensor list to be displayed.

6. Security

The radio anti-two-block is equipped with a failsafe power system allowing it to instantaneously communicate an alarm via radio signals if the battery of the power circuit is rendered inoperative.

In the advent of a radio failure, the radio communication protocol will generate an alarm within 5 minutes of the loss of signal.

7. Battery replacement

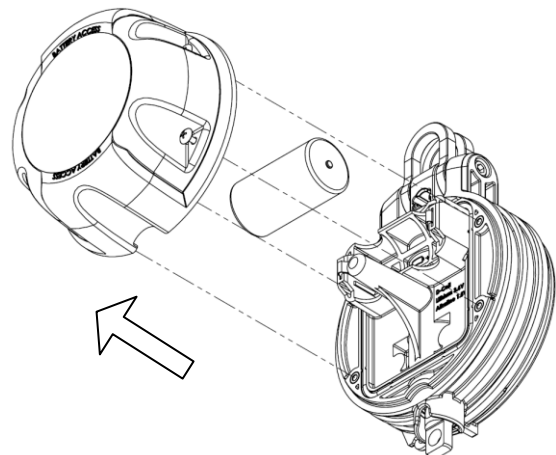
After a period of about 4 years, the battery may need to be replaced. To ensure the same performance as the supplied battery, replace with:

3.6V lithium D cell

If this type of battery is not available, this type can be used but with a reduced life:

1.5V Alkaline D cell

To replace a battery, unscrew the 4 cover bolts of the battery cover and remove it. Change the battery, verify that the o-ring is clean & in good shape and re-install the battery cover.



8. FCC and IC – Instructions to the User

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radiofrequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception.

IMPORTANT!

Changes or modifications to this equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC ID: QVBGS002 IC: 7076A-ICGS002

RF Exposure Warning:

This product complies with FCC/IC radiation exposure limits set forth for an uncontrolled environment. To comply with RF exposure requirements, the unit must be installed and operated with 20 cm (8 in.) or more between the product and your body. This product may not be collocated or operated in conjunction with any other antenna or transmitter.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

This Class A digital apparatus complies with Canadian ICES-003.

LSI Contact Information

Technical support :

LSI Technical Support is available 24 hours a day, 7 days a week from our *Houston* and *Dubai* locations.

Please direct all technical support questions to either of these locations or contact us via email:
techsupport@loadsystems.com

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