

LDS2006A Pulpit/Podium Lift

Replacement for older Gifford/Pulpit Man Lifts

Problem:

Gifford/Pulpit Man lifts are aging, require frequent maintenance, are difficult to troubleshoot, can pinch and injure a body or pinch and bind on hard object. They frequently coast after the control panel button is released, and the original manufacturers no longer support these units.

In the past, replacing these lifts required extensive cabinet wood work and finish work which was time consuming and expensive.

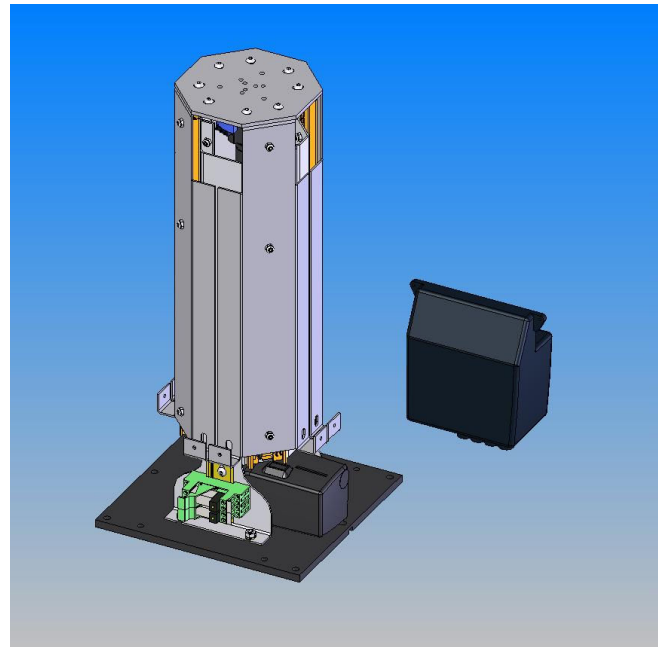
Solution:

Replace these aging units with a state-of-the-art LDS2006A lift designed to replace them economically.

The LDS2006A lift improves safety and reduces or eliminates maintenance costs.

The Details:

The LDS2006A system includes the complete lift assembly and control box (shown at the right). This lift will fit inside the neck of the pulpit of any Gifford/Pulpit Man lift that is between 6-1/4" and 6-1/2" square (inside dimension). If the neck of the pulpit lectern is different than these dimensions please provide pictures of the pulpit cabinet and dimensions of the neck and I will provide instructions on how to proceed.



The standard control box plugs into a standard 120VAC grounded outlet. (220VAC and foreign power cords are available for an additional charge). All other connecting cables are uniquely sized and keyed so that they cannot be installed incorrectly. This lift will interface with all past and present Bishop's Control Panels. The existing three control wires (UP-Common-DOWN) are used to complete the connection to the Bishop's Control Panel.

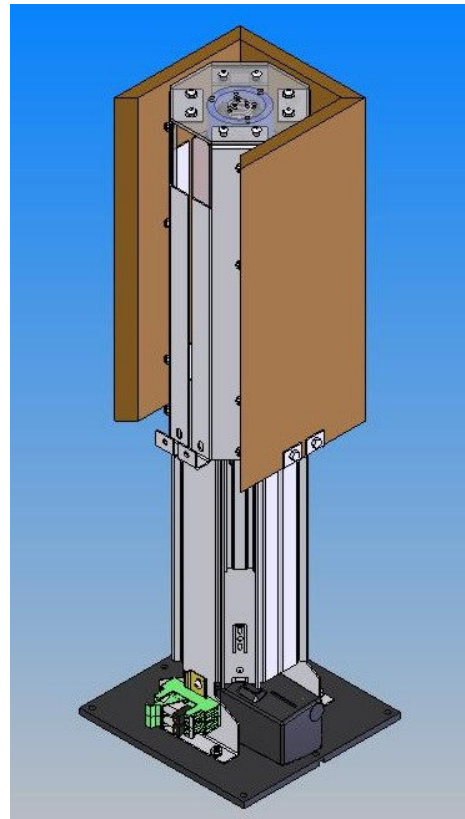
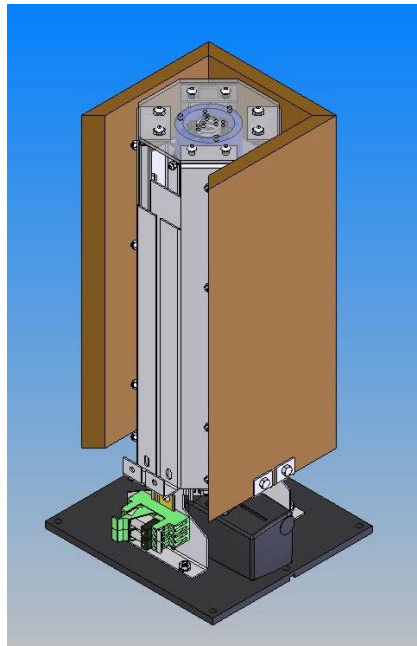
This pulpit lift includes a safety system that prevents an object or body from being pinched. This same system prevents the lift from being overloaded with more than 30lbs so that it can't be misused. In the event of a system failure the top part of the lift can physically separate from the lifting actuator to prevent an object from being trapped or the lift from binding.

The LDS2006A improves safety, reduces maintenance costs, can be easily installed, and most of all it is economically priced.

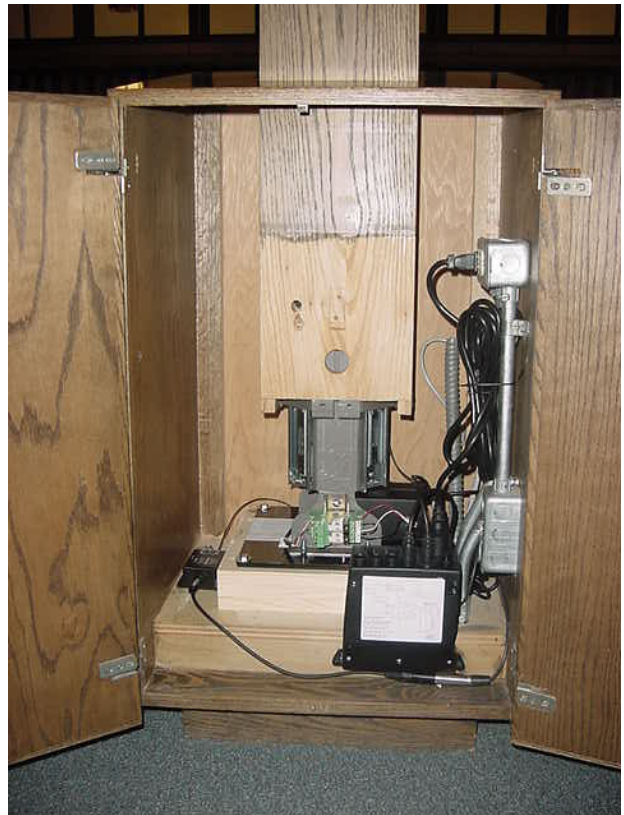
On-sites installation services are available.

For pricing details please contact Mark Eaton LLC via e-mail mark@markeatonllc.com or call 801-756-5639.

The following illustrations show the lift retracted and extended (three sides of the lectern neck are shown.)



These photos show a pulpit before and after upgrading. (No cabinet modifications required).



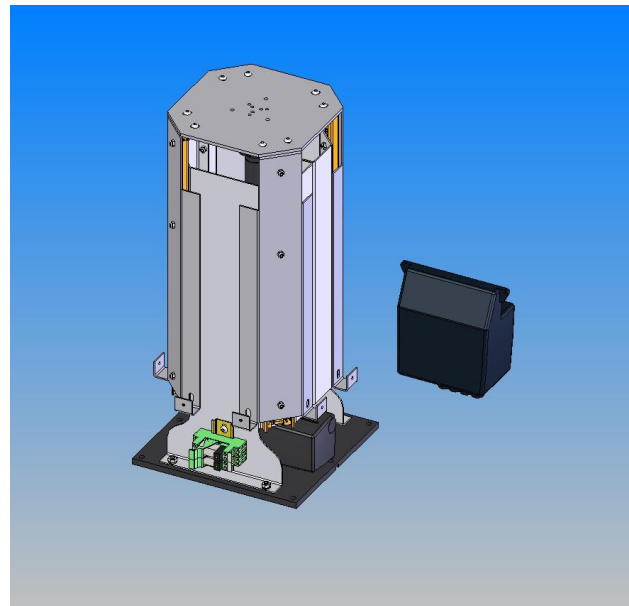
LDS2005A:

The big brother of the LDS2006A

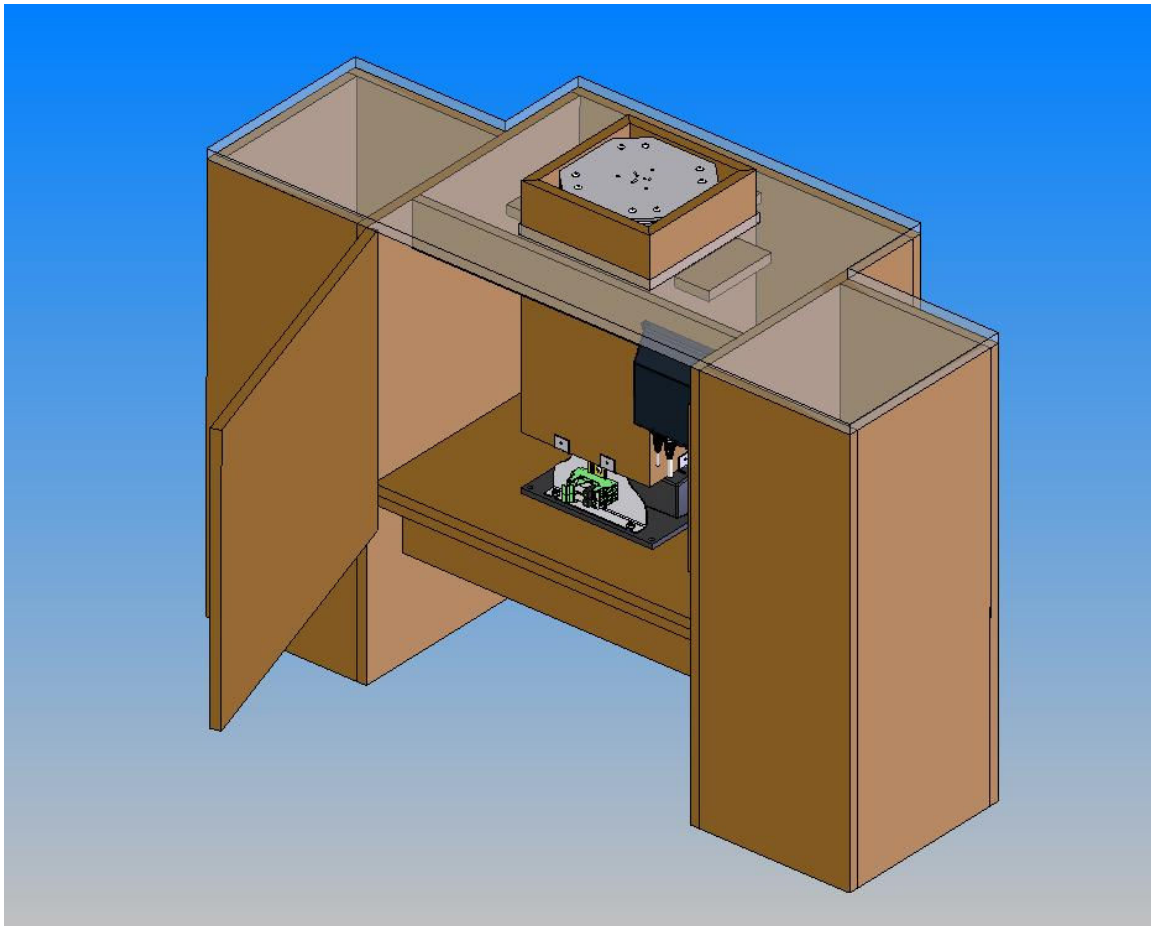
Chain drive lifts and lifts manufactured after their implementation have a lectern neck that measures 8-3/4" square. The LDS2005A is used to replace these types of lifts.

All new construction pulpits also have this larger neck and use the LDS2005A lift.

This design standardizes the look, feel, operation of, and components of all of the lifts across the board. Compare the figure on the right to the one on the first page of this document so the see the size difference.

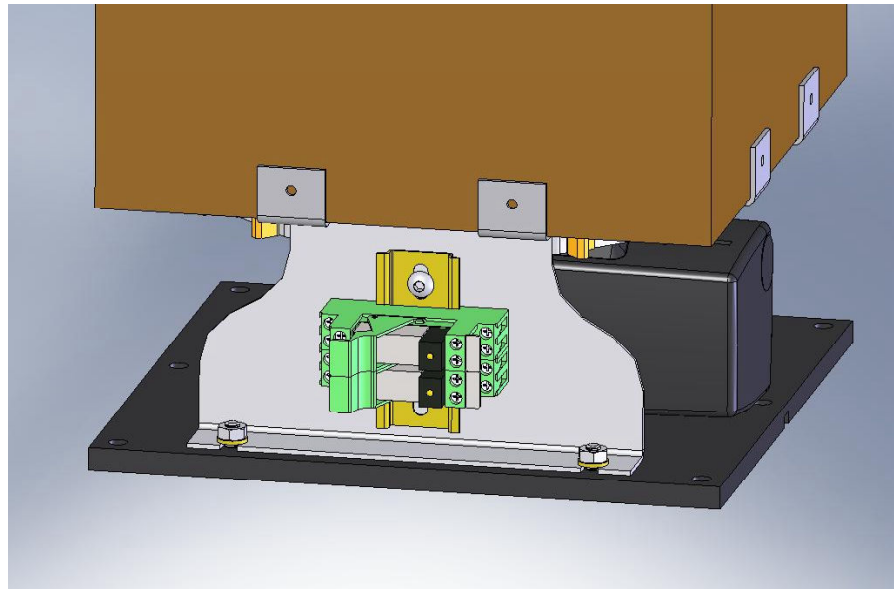


This following figure illustrates a generic podium cabinet with the LDS2005A pulpit lift installed in the cabinet. The black box in the upper right-hand corner of the cabinet is called a CB9. This control box processes the up and down input signals from the Bishop's Control Panel (CP-884) and converts them into an output signal that runs the lift up or down.

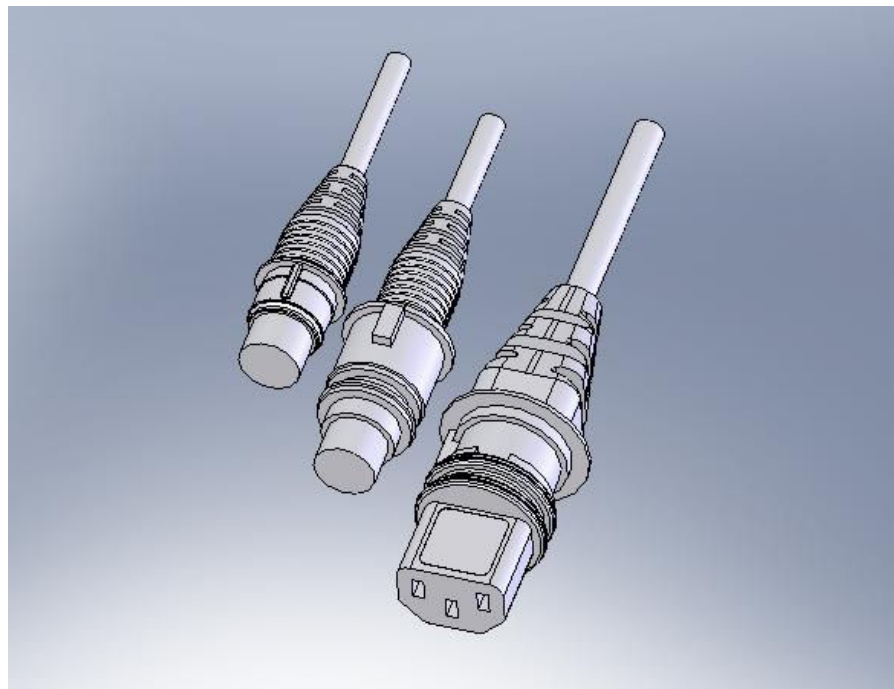


In this figure you can see the two green and white relays mentioned on the previous page in more detail. The Electrician in the field connects three wires from the Bishop's control panel to the four screw clamps, located closest to the center of the figure in a vertical row. Just to right of these four screws are two rectangular white marker tabs. In the field these marker tabs are labeled as follows (reading from the bottom up): The bottom marker tab is labeled "C UP" while the top marker tab is labeled "C DWN". A "common" wire is run from the Bishop's control panel (CP-884) to the screw clamp labeled "C" on the bottom relay and then it is looped up to the screw clamp labeled "C" on the top relay. A second wire is run from the "UP" connection on the CP-884 to the screw clamp on the bottom relay labeled "UP". A third wire is run from the "DOWN" connection on the CP-884 to the screw clamp on the top relay labeled "DWN".

If connected properly the little yellow LED on each relay will light up when the appropriate UP or DOWN button is pressed on the Bishop's control panel (CP-884), and the pulpit will raise or lower accordingly. The CP-884 outputs a 24VDC signal to operate these relays. In Figure 2, located directly behind the green relays you can see the black motor housing of the LA31 lift mechanism.

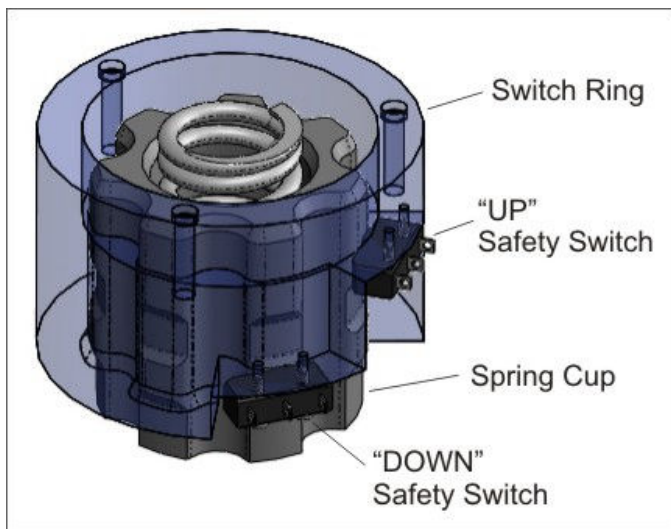


Three cables are plugged into the CB9. These cables are all sized and keyed so they can only be installed in one place. One large cable is the AC power cord and plugs into a square white surge cube which then plugs into a 120VAC outlet. This outlet is installed in the pulpit cabinet, in the field by an Electrician. A second cable runs up into the pulpit lift to the safety and back down to the left side of two green control relays. A third cable runs from the CB9 to the black LA31 lift motor located in the center of the pulpit lift.

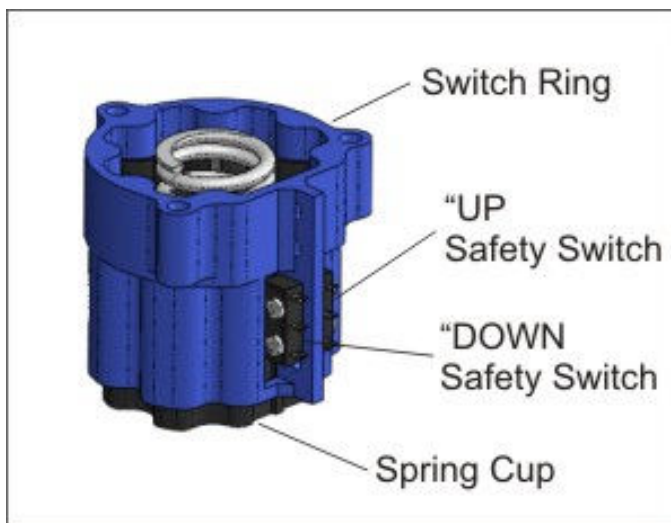


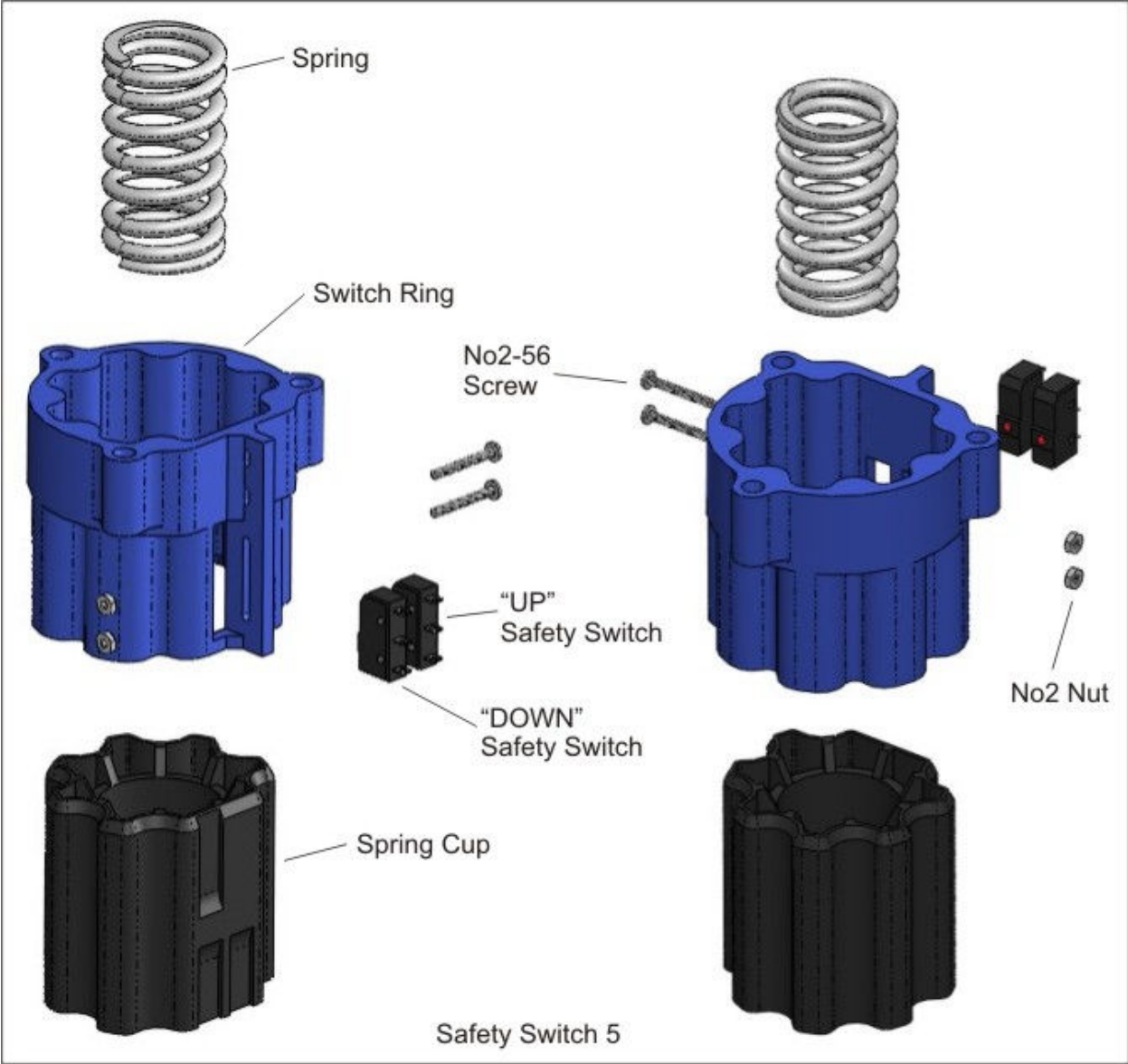
In the figure below you will see the Safety Assembly. In the center of this assembly is a compression spring. This spring is contained within a lobed part called a Spring Cup. The Spring Cup is manufacture from a black plastic. The outside ring of this assembly (shown transparent here for illustration purposes only) is called the Switch Ring. In reality, the switch ring is manufactured from a black or blue plastic. It is called a Switch Ring because two black limit switches are mounted to it. The switch located in the picture half way up toward the right side, is used to stop upward motion. It is activated if the pulpit is overloaded (more then 50 lbs). When overloaded the pulpit lift will not run up or down. The switch located in this picture, in the center, toward the bottom, is the switch used to break downward motion. This switch is activated if the pulpit pinches an object. In this case the pulpit will not run down but will still run up to release the object that is pinched. Please refer to the "Installation and Troubleshooting Guide" shipped with the pulpit for more details.

A multi-conductor cable runs from this unit to the CB9 control box and to the left side of the green relays.

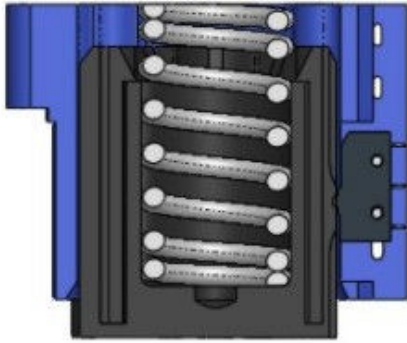


The switch shown above (Safety Switch 4) was installed on lifts produced from 2004 through 2007. In 2007 the switch design change to improve field adjustment. The following two illustrations show the design (Safety Switch 5) produced from 2007 through 2009.





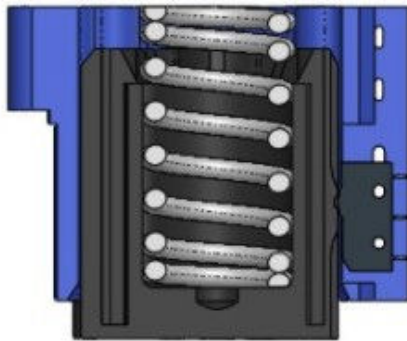
This safety switch was manufactured on a 3D printer and has a ribbed texture on the blue and black parts.



Std. Switch Position

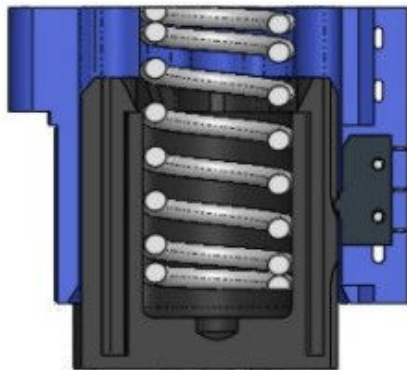
The illustration to the left displays several cross-sections of the safety switch assembly. Each cross-section displays a function state of the safety switch.

The first cross-section shows the safety switch assembly in the “normal” operating state. Note how the lobe on the right side of the spring cup holds the button of the safety switch closed. In the state the lift will run up and down.



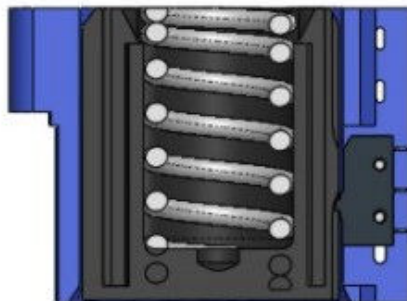
Alt. Switch Position

The second cross-section illustrated an alternate method of installing the safety switches. Note that the switch units are located “up-side down”. Both the UP and DOWN switch must be installed in the same orientation. This method of installation allows the button of the switch to be located close to the top of the switch ring. This type of installation is typically used for heavy lectern/neck assemblies.



Pinch Position

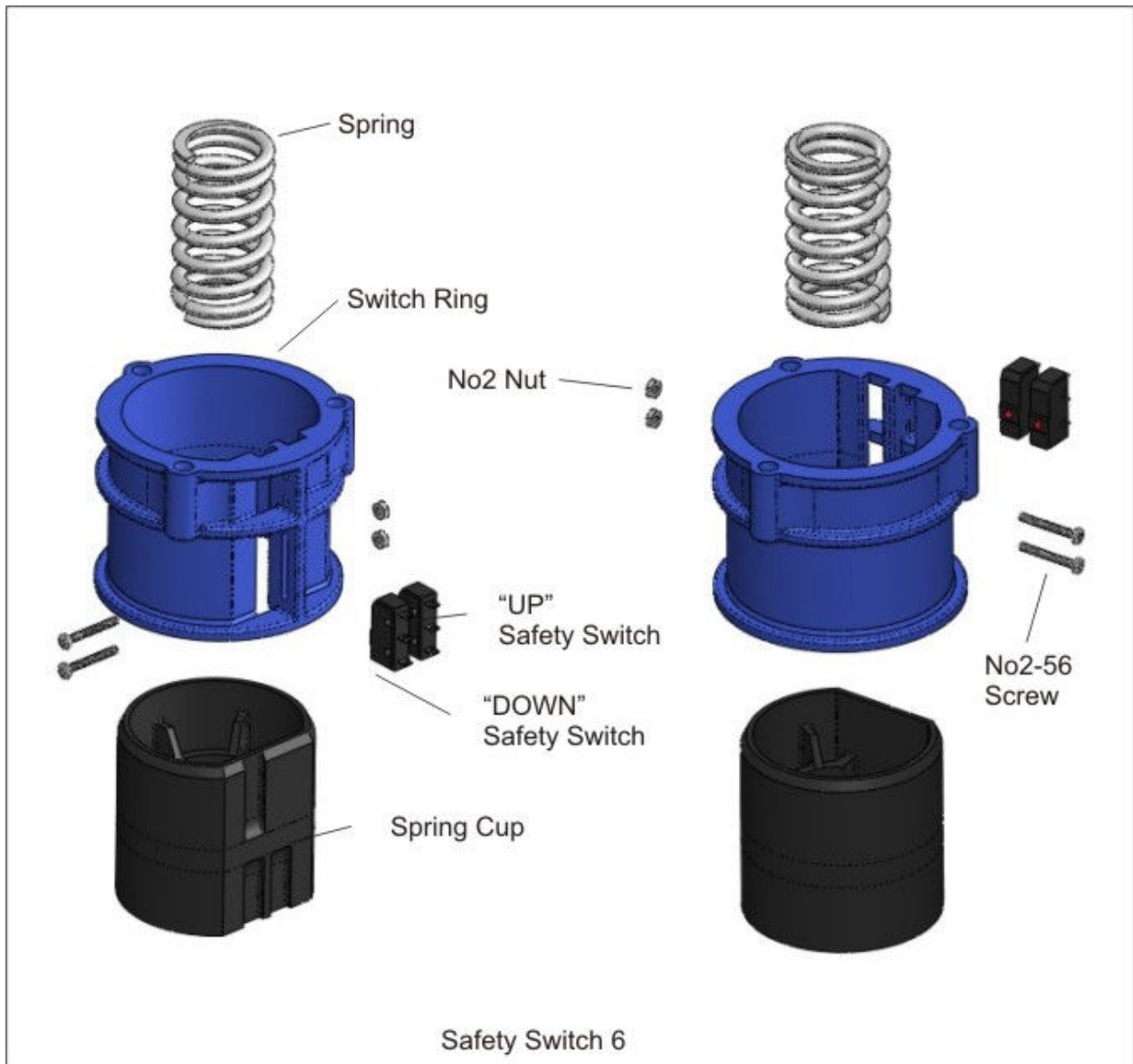
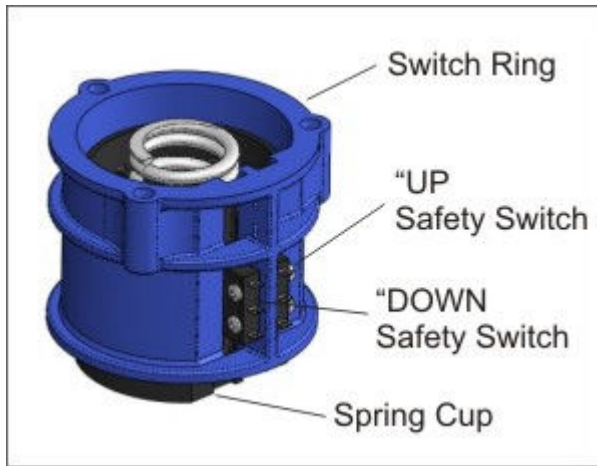
In this cross-section you can see that the gap between the top of Switch Ring (blue part) and the top of the Spring Cup (black part) is larger than shown in the previous cross-sections. This is the case in a “pinch” situation. In this state the lobe of the Spring Cup that normally holds the DOWN switch closed is now below the switch button. The switch is now OPEN and the lift will not lower. However, it will still rise to release the “pinched” object.



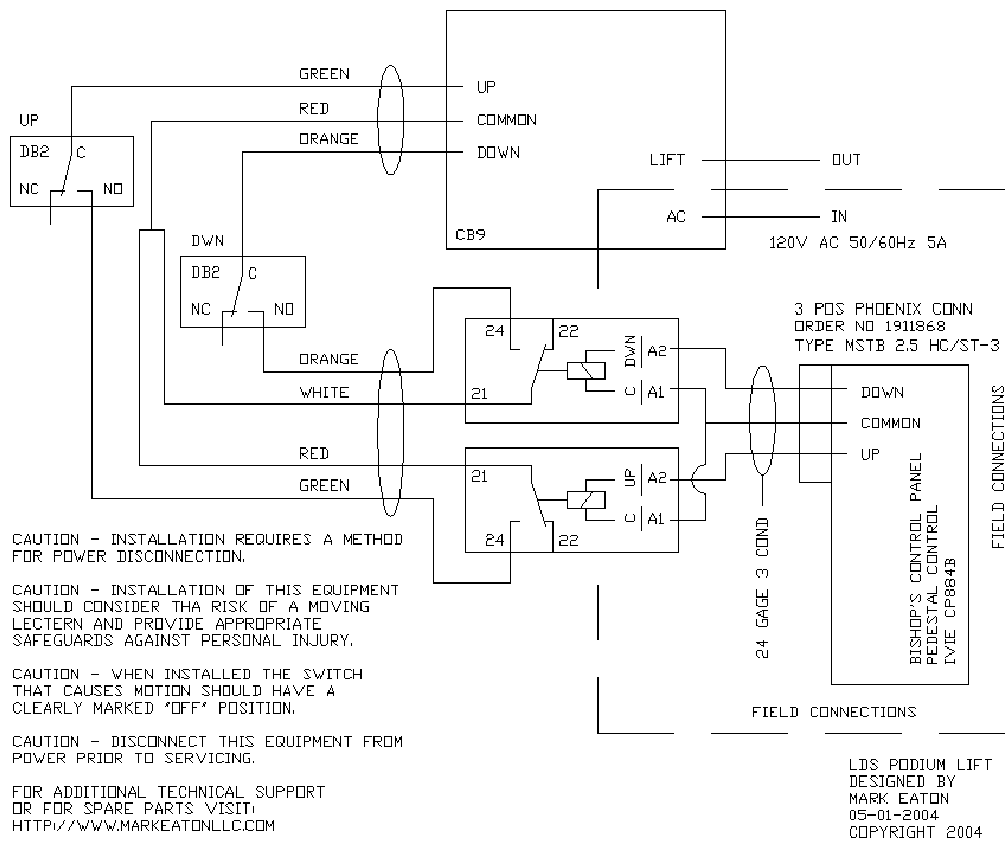
Overload Position

In this cross-section you can see that the gap between the top of the Switch Ring (blue part) and the top of the Spring Cup (black part) is gone. This is the case in an “overload” situation. In this state the lobe of the Spring Cup that normally holds the UP and the DOWN switches closed is now above the switch button. The switch is now OPEN and the lift will not raise or lower. However, once the overloading weight is removed from the lectern the safety switch assembly will automatically reset.

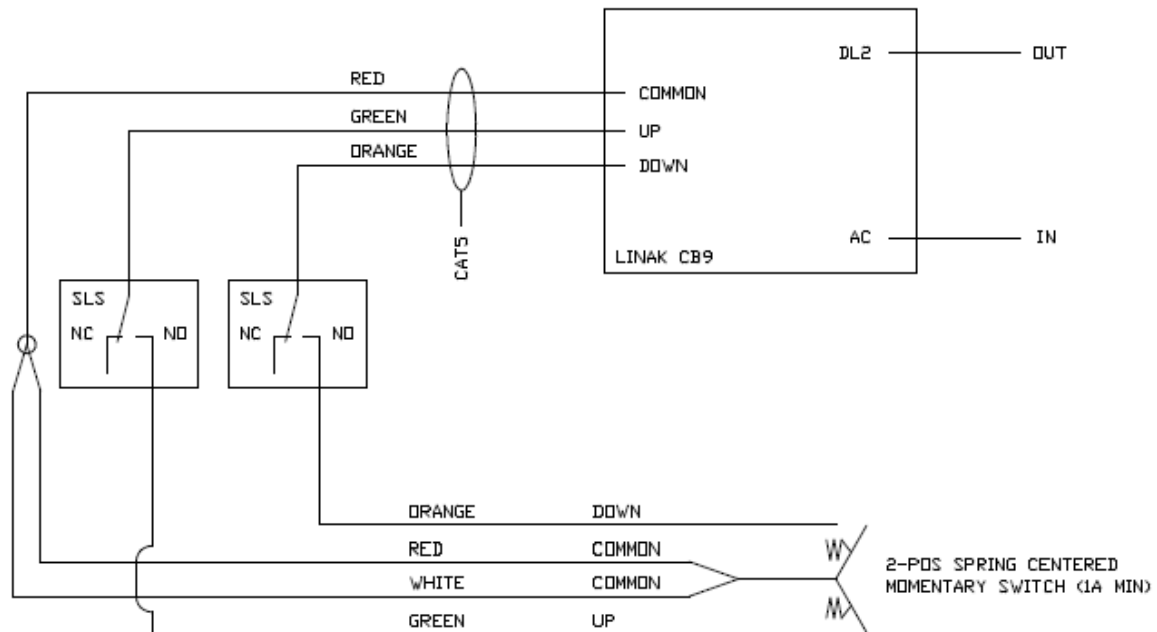
In 2010 the Safety switch was changed to a design that could be injection molded. This design (Safety Switch 6) is shown below. Its operation is the same as Safety Switch 5.



This figure illustrates the electrical connection diagram. A copy of this diagram is affixed to the CB9 control before it is shipped into the field for installation.



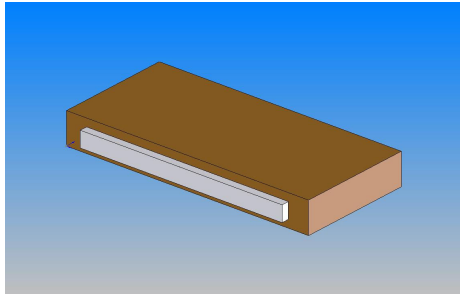
The following figure illustrates the electrical connection diagram for operating the lift with a rocker switch.



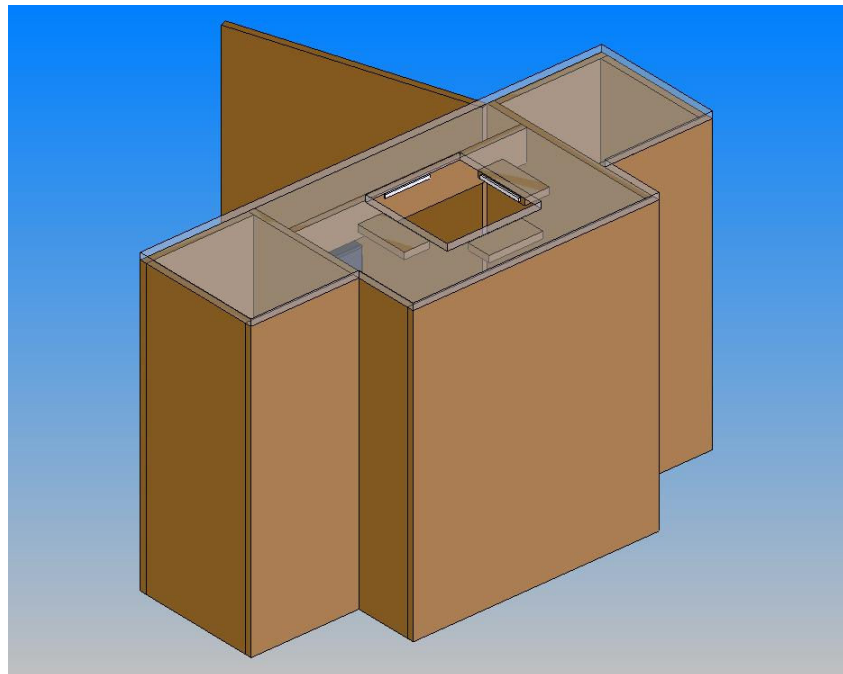
The final key to a successful installation of a pulpit lift upgrade is the installation of four felt guide pads which add stability to the lectern as the pulpit lectern is extended to its highest position.

Purchase a package of “Felt Gard” 1/2"x6" Heavy Duty Felt Pads manufactured by Shepherd, part number 9954, from Home Depot. See the illustration on the right.

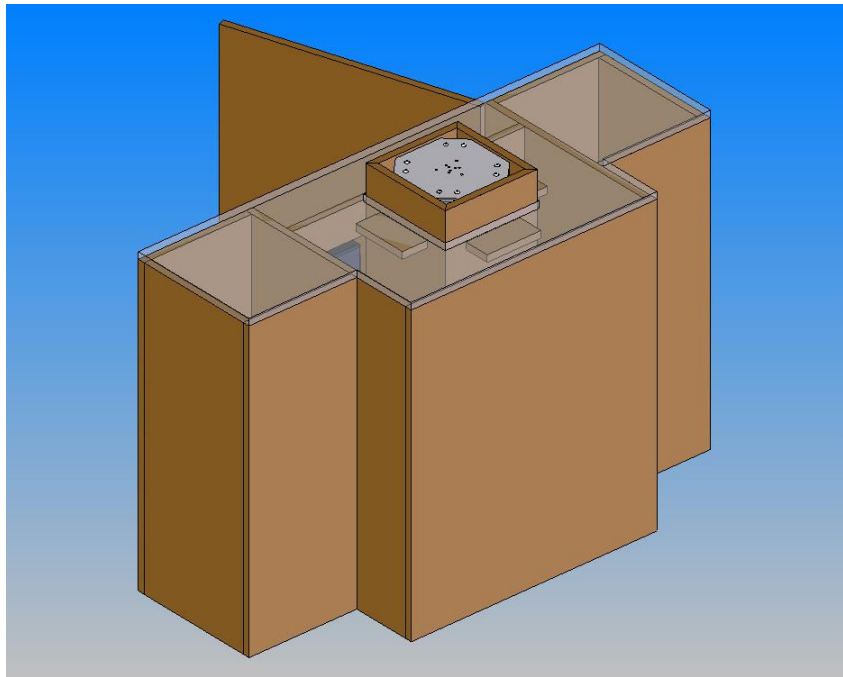
Attach one pad to the edge of a 1"x2"x8" oak (or other solid hardwood) board. For LDS2005A retrofits you will need to cut the boards 1"x 2" x 10". You will need to make up four of these board-pad assemblies. See the illustration below.



The illustration to the right shows an example of the pulpit cabinet with the lectern, neck, and lift removed. The top of the cabinet is transparent for the purpose of illustrating where to place the felt pads and the board-pad assemblies described earlier.



With the lift, neck, and lectern re-installed - place the board-pad assemblies described earlier in position on each side of the lectern neck as shown. Attach these to the bottom side of the cabinet top with grabber screws.



IMPORTANT:

BE VERY CAREFULL OR YOU MIGHT DRIVE THE GRABBER SCREWS THROUGH THE TOP OF THE PULPIT CABINET!

DO NOT push these blocks against the neck too tightly. If they are too tight they will activate the pinch sensor and the lift will not lower.

DO NOT position them too loosely or they will not have the desired effect and may even chatter as the lectern moves up and down.

Installation & Troubleshooting

Step 1:

Connect the Bishop's control panel (CP884) to the green Phoenix relays located on the lower right hand corner of the lifting column using a 3 conductor 24 AWG cable (customer supplied) per the attached schematic.

Step 2:

Apply power to the sound system, which should then supply 24VDC to the CP884 (see documentation provided with the sound system). Plug the CB9 into the surge cube (provided) then plug the surge cube into a 120VAC outlet.

Step 3 (Testing):

Press the "UP" arrow button on the CP884. The light on the lower Phoenix relay will light up and the lift will rise.

If the lift does not raise, it may be at the top of its stroke, Press the "DOWN" arrow on the CP884 and lower the lift.

If the lift is not at the end of stroke then it may be loaded with too much weight (more than 50 lbs). Remove any weight from the top of the lift and try again.

Press the "DOWN" arrow button on the CP884. The light on the upper Phoenix relay will light up and lift will lower.

If the lift does not lower it may be blocked by an object. Remove any object that may be between the lectern and the top of the pulpit.

If there is nothing blocking the path of the lectern the lift may be sticking. Place a small amount of weight on the top of the lectern and try again. On a retrofit of an existing pulpit the wood lectern head and neck must weigh 50lbs or the lift will not operate properly. You may need to add weight to an older pulpit lectern before the lift will operate properly.

Failure Points:

There are a total of 8 possible failure points:

2 relays on the CP884 – one "UP" and one "DOWN" (see CP884 documentation)

To bypass the CP884 disconnect it from the Phoenix relays on the lifting column. To activate the Phoenix relay apply 24VDC across the A1 and A2 contacts of the same relay.

2 Phoenix relays on the lifting column – one "UP" and one "DOWN"

To bypass the Phoenix relays touch a test lead or scrap of wire from contact 21 to contact 22 on the same relay.

CAUTION: This can activate the lift column if the CB9 has power.

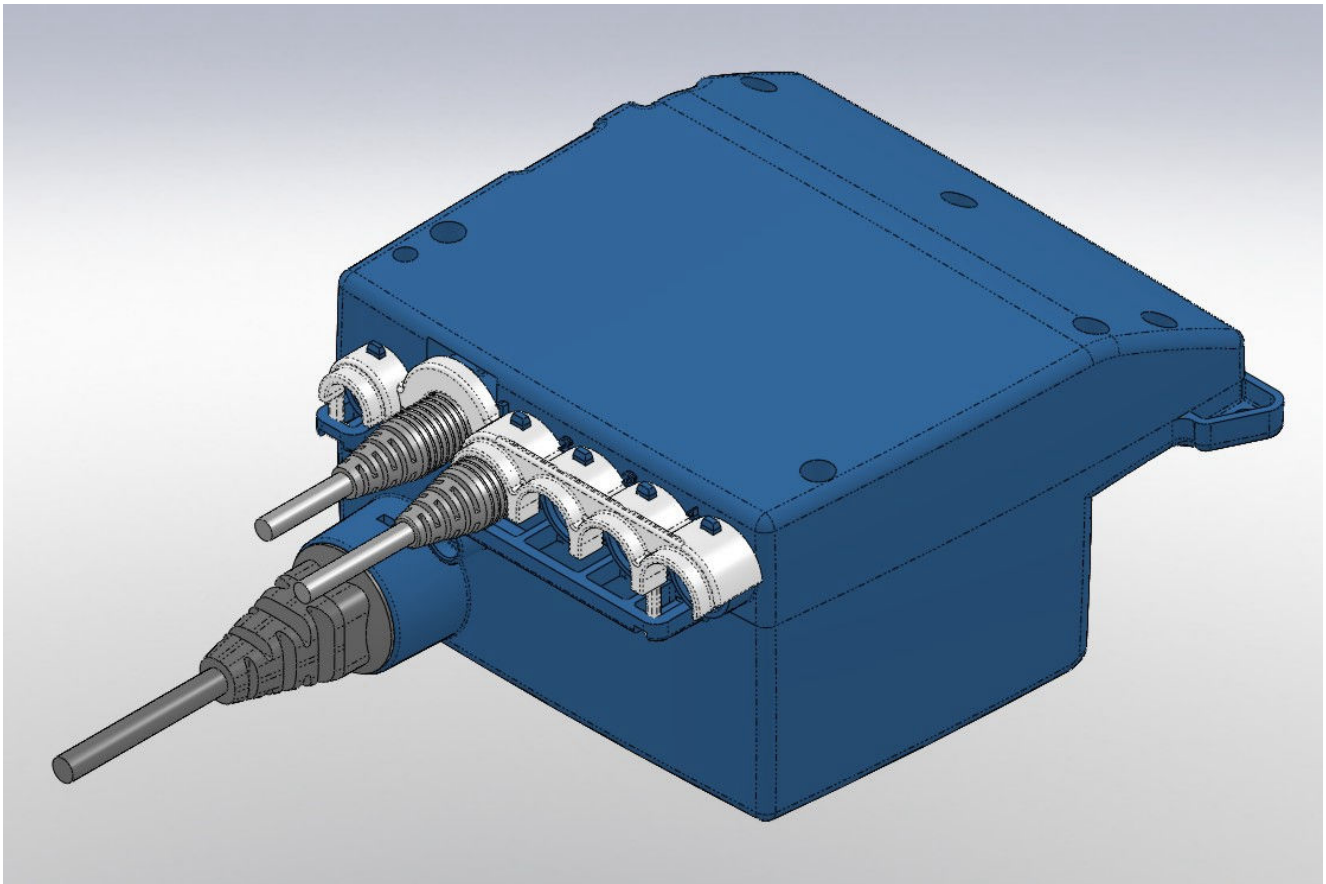
2 safety relays inside the lifting column – one "UP" (green wires) and one "DOWN" (orange wires)

To bypass these relays remove the lectern from the lifting column and connect a test lead or scrap of wire from "C" contact to the "NO" contact on the same relay.

CAUTION: This can activate the lift column if the CB9 has power and either the CP884 is activate, or the Phoenix relays are bypassed as in the steps above.

1 LA31 actuator - This is the black actuator in the center of the lifting column; replace if defective. This is not a user serviceable part.

1 CB9 control box – This is the black box hanging in the upper right corner of the pulpit cabinet; replace if defective. This is not a user serviceable part.

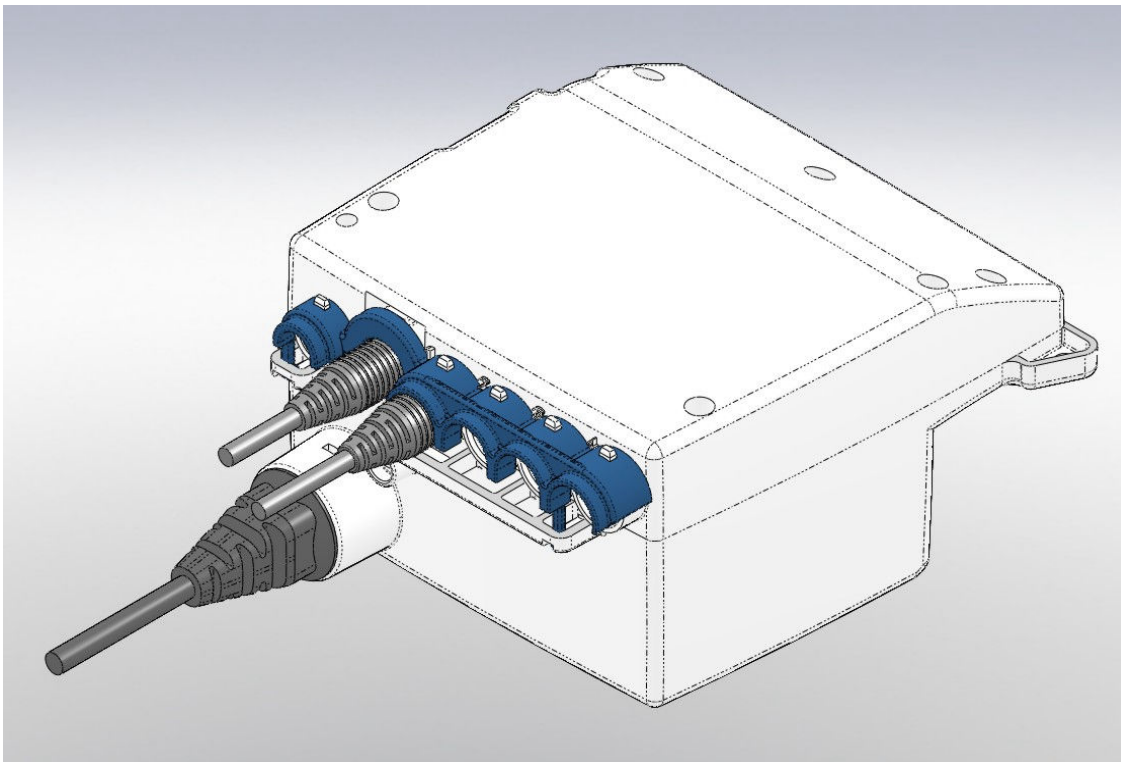


The part shown in blue is the CB9 control box.

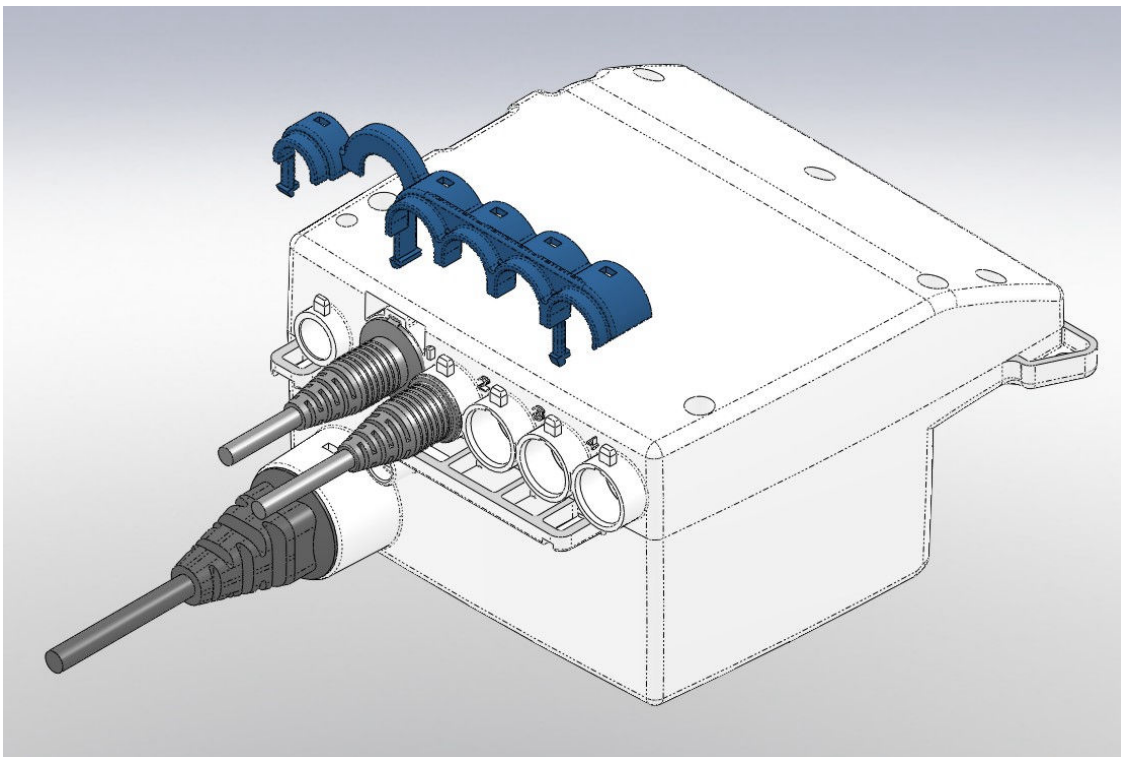
The part shown in white is the cable restraint. It locks to the CB9 in three locations. This part must be installed to prevent the cords from being pulled out of the CB9 accidentally.

The three parts shown in gray are the power cord (large), safety switch cable (medium), and motor cable (small).

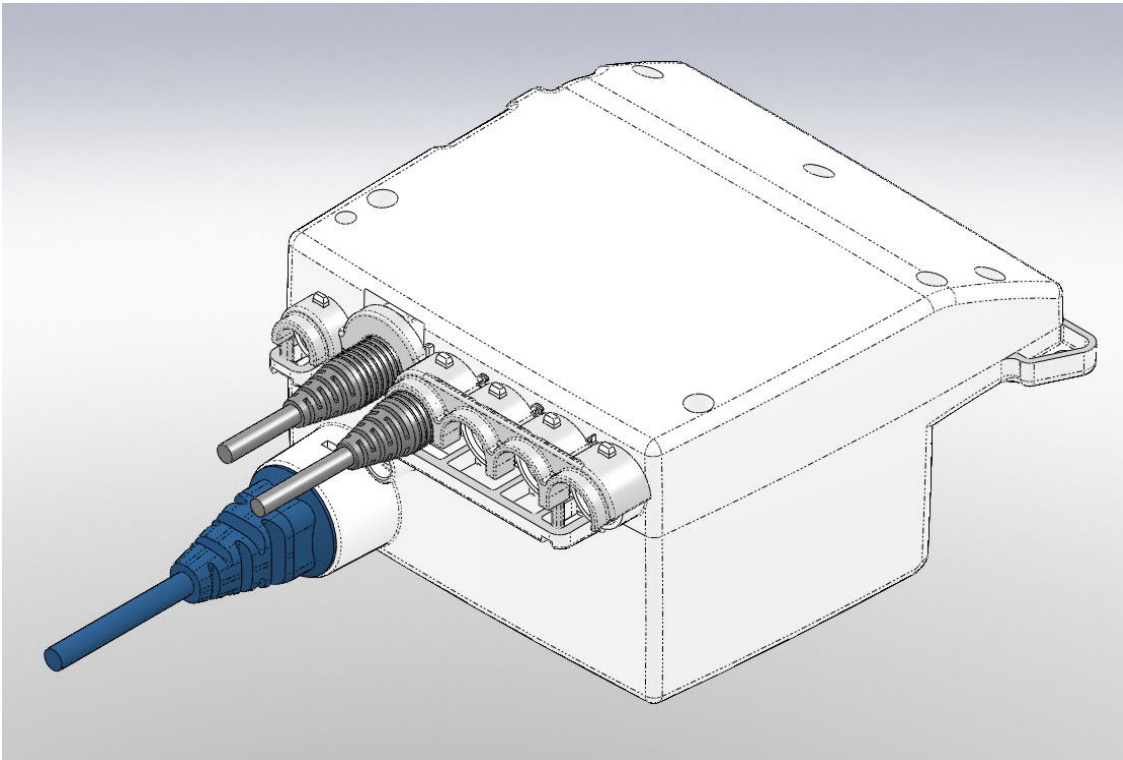
The CB9 is NOT user serviceable. The factory must perform all repairs.



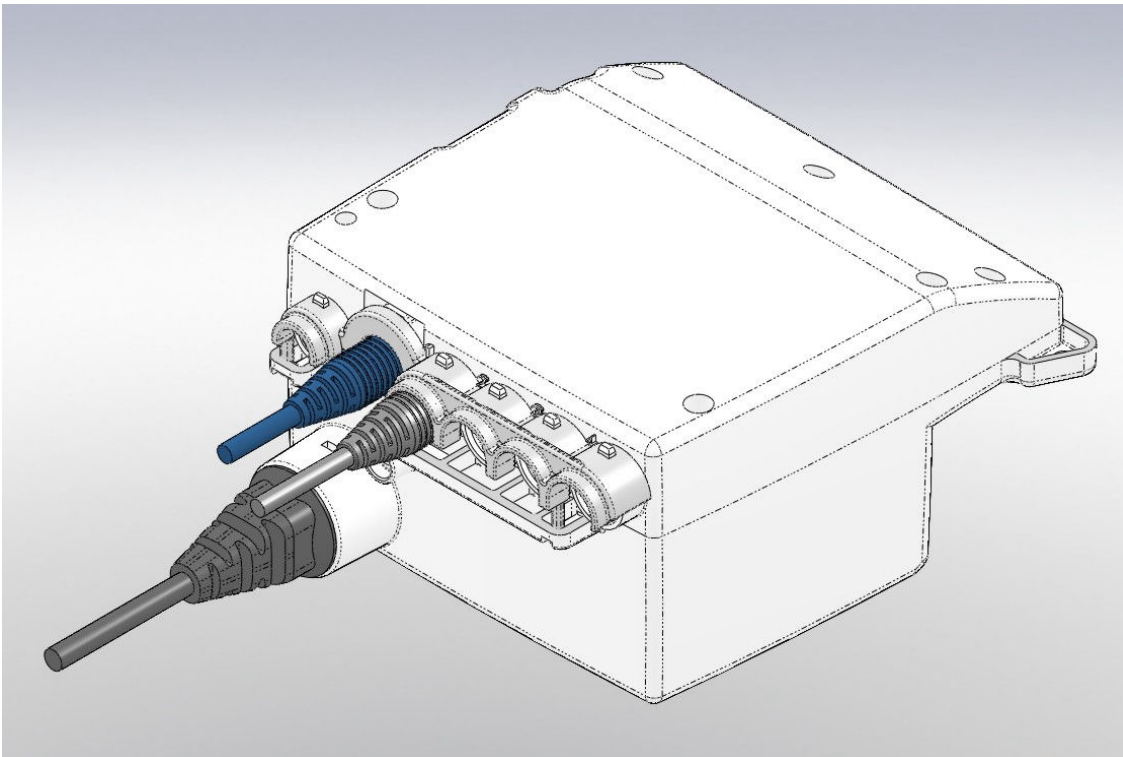
Cord restraint (shown in blue) installed.



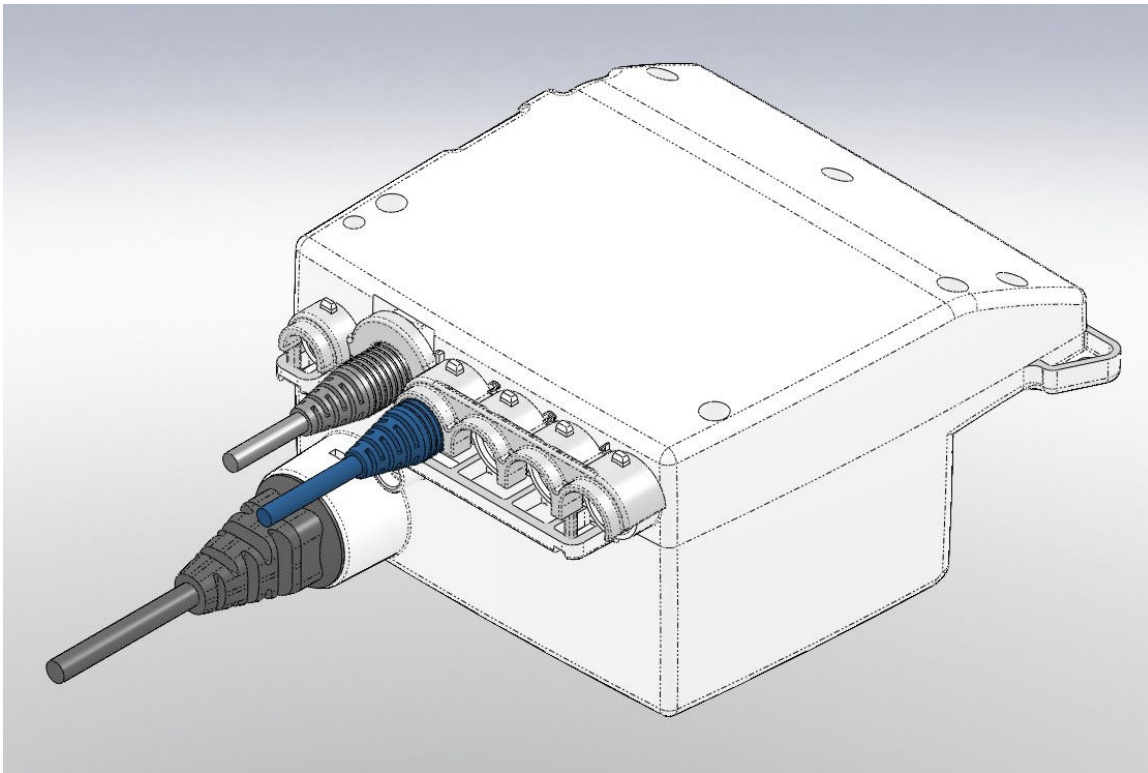
Cord restraint (shown in blue) removed. Note the three locking tabs.
Common Problem: Service Tech cannot figure out how to remove this part and cables are damaged during a repair.



Power cord (shown in blue) installed.



Safety Switch Cable (shown in blue) installed.
Common installation problem: Not plugged in completely.



Motor cable (shown in blue) installed.
Common installation problem: Not plugged in completely.

Visit the web site at <http://www.markeatonllc.com> for pictures and additional trouble shooting information, or call 801-756-5639 for telephone tech support.