

Eaton OEM line isolation (OLI) installation verification instructions



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Powering Business Worldwide

This document outlines the parts that can be inspected to verify proper installation and adjustment of the handle / operating mechanism inside Eaton OLI switches in accordance with the instruction leaflet (IL008019EN). The instruction leaflet includes the official installation instructions for the Eaton OLI switch..

Prior to opening the OLI cabinet or control cabinet verify that no live voltage is present.

⚠ WARNING

DO NOT ATTEMPT TO INSTALL OR PERFORM MAINTENANCE ON EQUIPMENT WHILE IT IS ENERGIZED. SEVERE PERSONAL INJURY, DEATH, OR SUBSTANTIAL PROPERTY DAMAGE CAN RESULT FROM CONTACT WITH ENERGIZED EQUIPMENT. ALWAYS VERIFY THAT NO VOLTAGE IS PRESENT BEFORE PROCEEDING WITH THE TASK, AND ALWAYS FOLLOW GENERALLY ACCEPTED SAFETY PROCEDURES.

EATON IS NOT LIABLE FOR THE MISAPPLICATION OR MISINSTALLATION OF ITS PRODUCTS.

If operating the OLI handle mechanism with one or both doors open, ensure that the corresponding interlock is defeated to avoid damage.

⚠ WARNING

WHEN INSTALLING A NEW HANDLE MECHANISM, OR NEW DISCONNECT AND HANDLE MECHANISM IN AN EXISTING ELECTRICAL SYSTEM, MAKE SURE THERE IS NO VOLTAGE PRESENT WHERE WORK IS TO BE PERFORMED. SPECIAL ATTENTION SHOULD BE PAID TO REVERSE FEED APPLICATIONS TO ENSURE NO VOLTAGE IS PRESENT. THE VOLTAGE IN ENERGIZED EQUIPMENT CAN CAUSE DEATH OR SEVERE PERSONAL INJURY.

The user is cautioned to observe all recommendations, warnings, and cautions relating to the safety of personnel and equipment as well as all general local health and safety laws, codes, and procedures.

The recommendations and information contained herein are based on Eaton's experience and judgment, but should not be considered to be all-inclusive or covering every application or circumstance which may arise. If any questions arise, contact Eaton for further information or instructions.

How to defeat the two door interlocks prior to operating the OLI handle



Figure 1. Door interlock mechanism inside control cabinet.

Press down on the door hasp on the handle mechanism inside the control cabinet as pictured (see Figure 2).



Figure 2. Defeat control cabinet door interlock.

Press up on mechanism defeat lever on right side of OLI switch at the same time as the door hasp prior to moving the operating handle to the "ON" position with the control cabinet and OLI door open (see Figure 3).



Figure 3. Defeat OLI door interlock.

Identify catalog number and date code

The catalog number is located at the top left of the publication inside the OLI cabinet. The switch's date code is located part way down on the left-hand side.



Figure 4. Location of the catalog number and date code.

Flex cable length

Find the flex cable length printed along the black flexible shaft cable that connects the handle mechanism to the OLI operating mechanism. Standard cable length is 60 in. (1,524 mm) for 30 A – 200 A OLI and 72 in. (1,829 mm) for 400 A – 600 A OLI (see Figure 5).



Figure 5. Location of the flex cable length.

Measurement from front of control cabinet

Measure the distance between the front of the OLI door and the front of the control cabinet door. In Figure 6, the measurement is 0 as the OLI cabinet is installed flush with the front of the control cabinet enclosure. The design tolerance is to mount the front of the OLI within 6 in. (152.4 mm) of the front of the control cabinet.

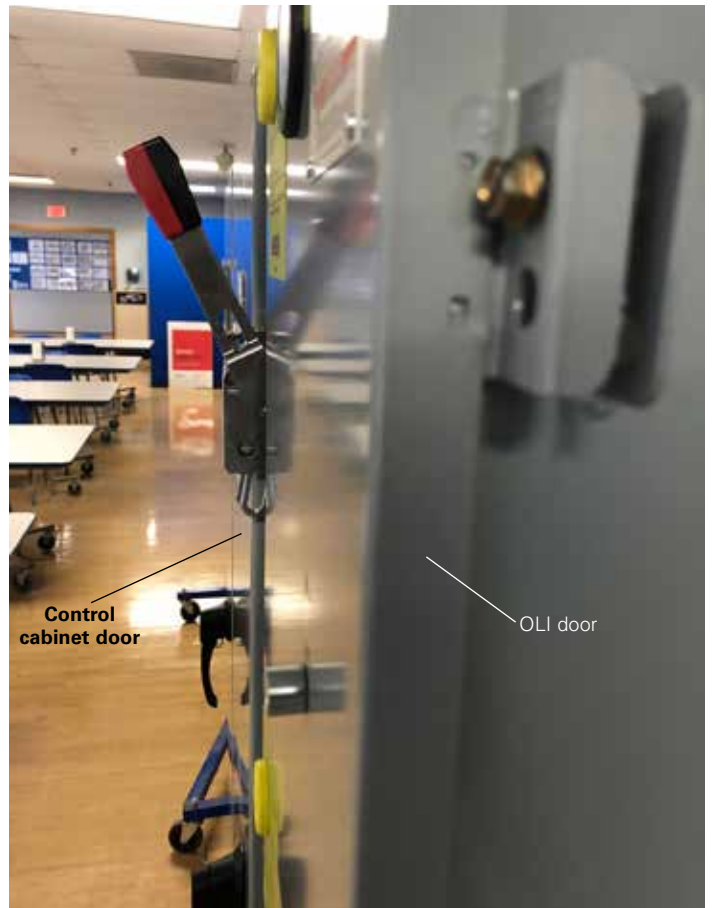


Figure 6. OLI cabinet is installed flush with the front of the control cabinet enclosure.

OLI switch mechanism inspection

This section verifies the installation and adjustment of the flex shaft handle to the switching mechanism located near the right side-wall of the OLI enclosure.

Confirm door interlock functionality

With the OLI door closed and the operating handle in the ON position loosen the enclosure door hold down screws on the right-hand side of the enclosure. With all screws loose confirm that the mechanism interlock prevents the OLI door from opening while the handle remains in the ON position. If the OLI door opens with the handle in the ON position the door interlock is not operating properly. This could be the result of improper adjustment of the cylinder connector. To evaluate the connection of the flexible shaft operation cable to the cylinder connector turn the operating handle to the OFF position and open the OLI door.

Number of threads showing on cylinder connector

The cylinder connector is what threads on to the flexible shaft operating cable and connects to the OLI switch mechanism. Verify there are at least four threads showing above the cylinder connector. Ensure that the E-ring is installed on the operating mechanism.



Figure 7. Location of cylinder connector threads and E-ring.

Bulk head nut adjustment and tightness

Confirm that the bulk head nuts are tight on either side of the mechanism bracket and that they are near the bottom of the thread end.



Figure 8. Correct placement of the bulk head nuts.

Switching base inspection

This section is for inspection of the switching base to ensure that it is operating properly and that the electrical connections inside are tight.

With the control cabinet door closed and the OLI mechanism defeat lever depressed ensure that the switch blades open and close fully when the operating handle is turned OFF and ON.



Figure 9. Switch base and fuses.



Figure 10. Lexan line shield and switch base.

Line shield

Verify that the clear Lexan line shield is installed inside the OLI. It may need to be removed for the inspection of the other switch base components but should be re-installed after the inspection.

Switching base lugs

Verify that the switch base lugs (line and load) are securely attached to the switch base. Verify that the line and load conductors are tight in the mechanical lugs. If voltage indicators are installed, ensure that the ring terminals are securely fastened under the lug terminal hold down screws and are tight in the terminal blocks where line and or load side voltage indicators are connected. Reference torque value chart on publication inside of OLI door. Also confirm that fuses are properly installed in the fuse clips.



Terminal blocks Voltage indicator wire ring terminals Line side lugs (unwired)

Figure 11. Switch base components.

Control cabinet handle mechanism inspection

For this portion of the inspection the handle mechanism inside the control cabinet will be inspected for proper adjustment and condition.

Control cabinet door interlock

To test the control cabinet door interlock close both the OLI and control cabinet doors. With the operating handle in the ON position ensure that the control cabinet door will not open. This ensures that the door hasp on the handle mechanism is operating properly and catches the door hardware on the control cabinet. Some control cabinets are not readily compatible with the Eaton C371 handle operator and require modification to properly interlock.



Figure 12. Hardware included with OLI to extend or replace existing control cabinet door hardware, if required¹.

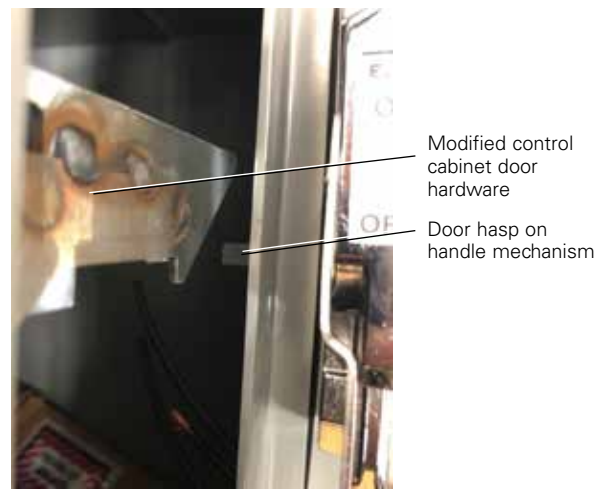


Figure 13. Control cabinet door hardware and door hasp on handle mechanism.

¹ Eaton Catalog # OLIHOFFKIT1 available to modify some Hoffman Enclosure doors

Pivot bracket inspection

Confirm that the handle mechanism hardware is tight on the operating handle.

From inside the control cabinet (back of the handle mechanism) confirm that there are threads showing above and below the pivot bracket attachment for the flexible shaft handle

Handle mechanism hardware



Figure 14. Handle mechanism and mounting hardware.

Threads

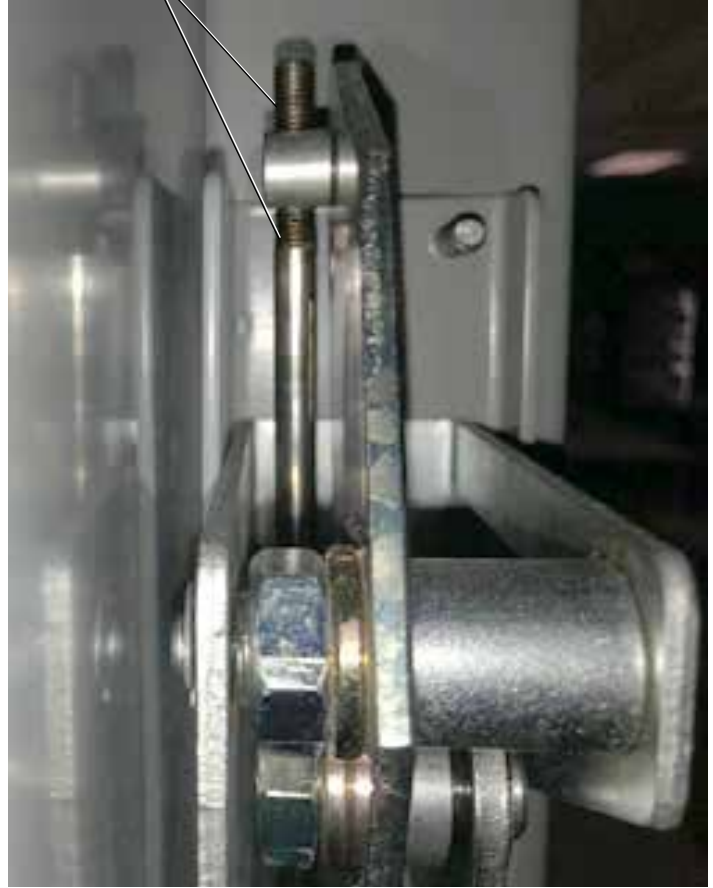


Figure 15. Threads showing above and below the pivot bracket attachment for the flexible shaft handle.

Actuator link and adapter link rivet and hardware

Ensure that the rivet connecting the actuator link and adapter link extends through the front and back of both links.

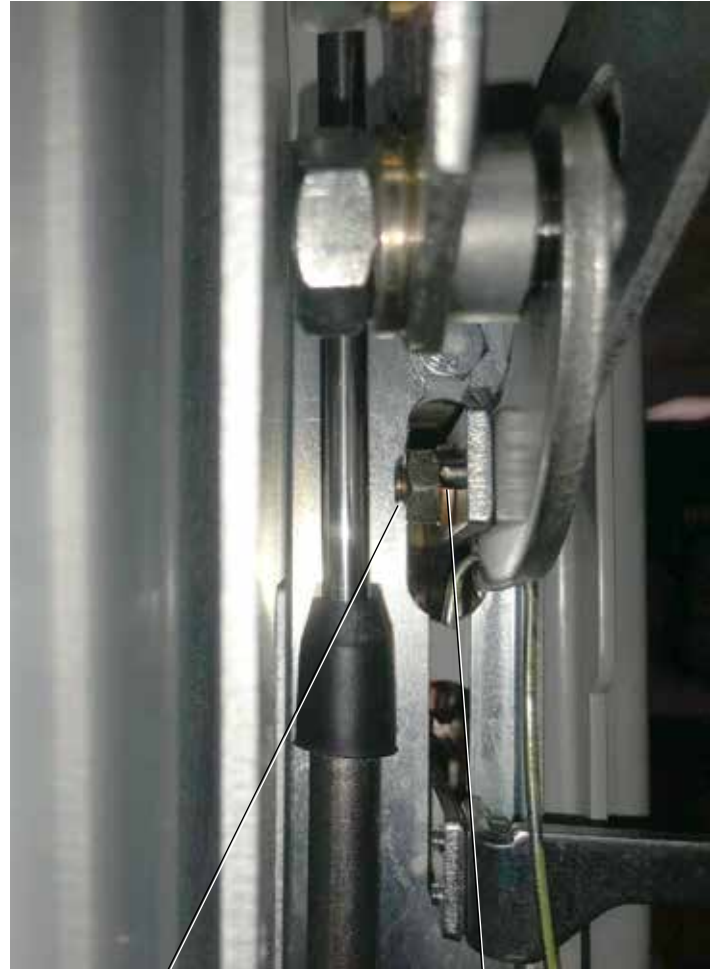
The screw attaching the actuator link and adapter link in the handle mechanism should be tight with threads showing from the washer and nut on the back side of the actuator link.



Rivet through front of adapter link

Bolt through front of adapter link

Figure 16. Adapter link hardware.



Washer, nut, and bolt threads through back of actuator link

Rivet through back of actuator link

Figure 17. Actuator link hardware.

E-ring and actuator link spring

Ensure that pivot bracket E-ring is installed, actuator link spring is installed, and door hasp screws are tight.

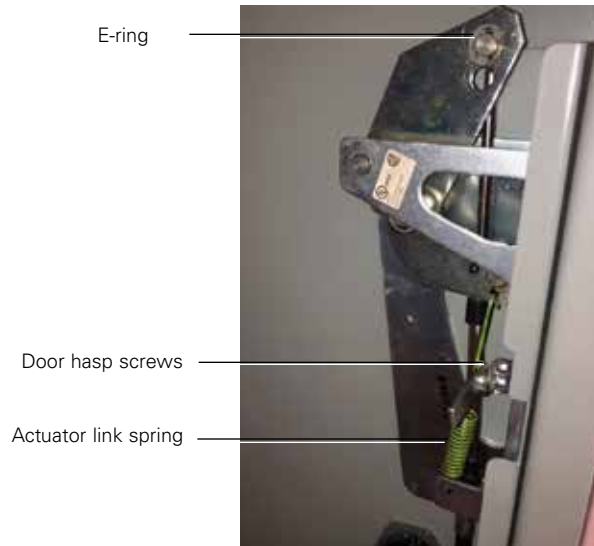


Figure 18. Control cabinet handle mechanism.

Flex shaft cable routing

Prior to closing the control cabinet door, confirm that the flex shaft cable is routed to minimize any sharp bends. The photo depicts a standard 60A OLI with a 60 in. (1,524 mm) flex shaft cable which should have some slack inside the control cabinet.

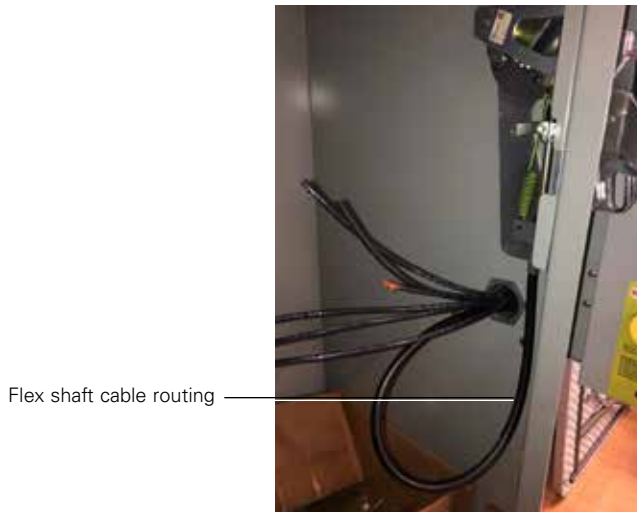


Figure 19. Flex shaft cable routing.

Final operational check

With the OLI cabinet screwed closed and the control cabinet door closed verify the proper operation of the handle mechanism. It should only take 8 -12 lbs (3.6 - 5.4 kg) of handle pressure to operate the handle mechanism turning the OLI switch mechanism ON and OFF.



Figure 20. OLI installed on control cabinet with handle in ON position.

Reference Drawings

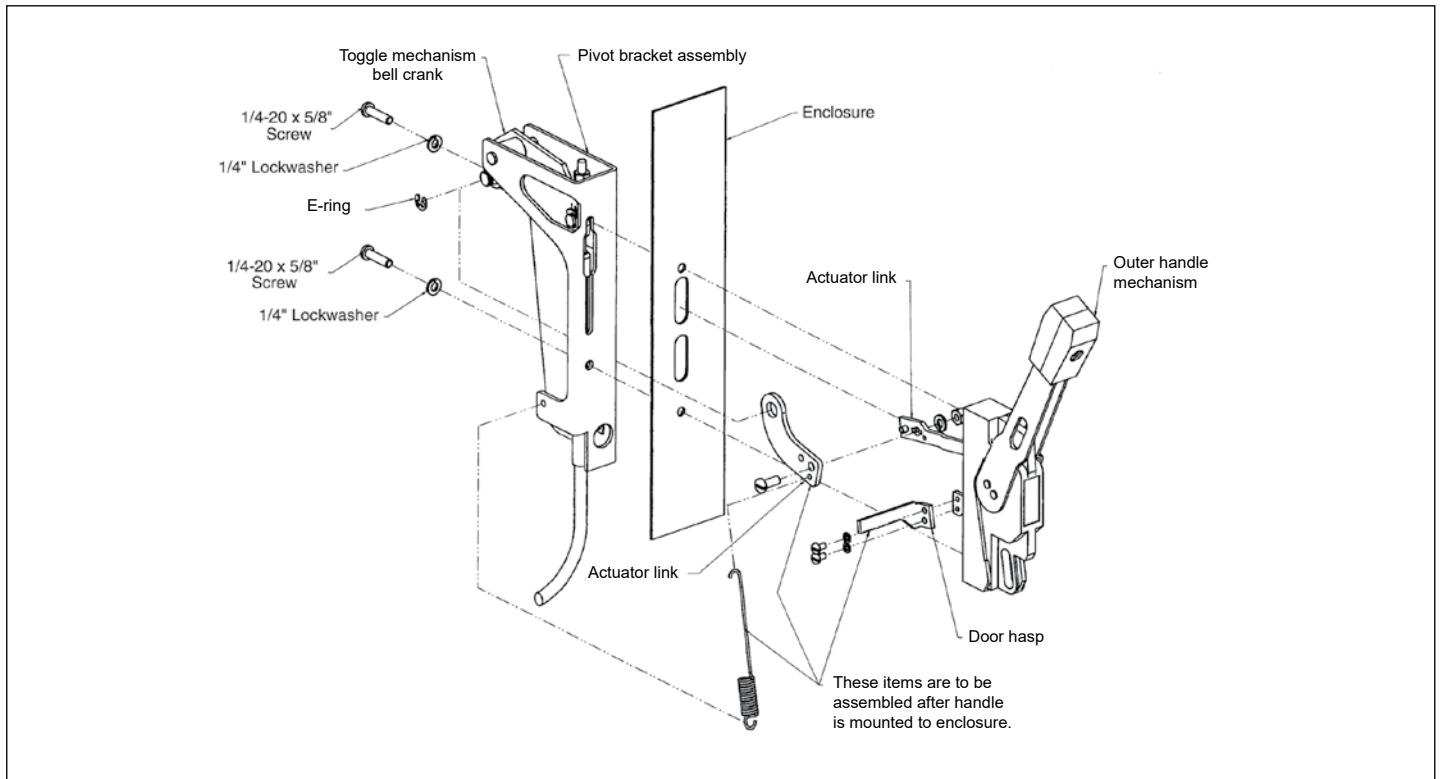


Figure 21. Pivot bracket and outer handle mechanism assembly.

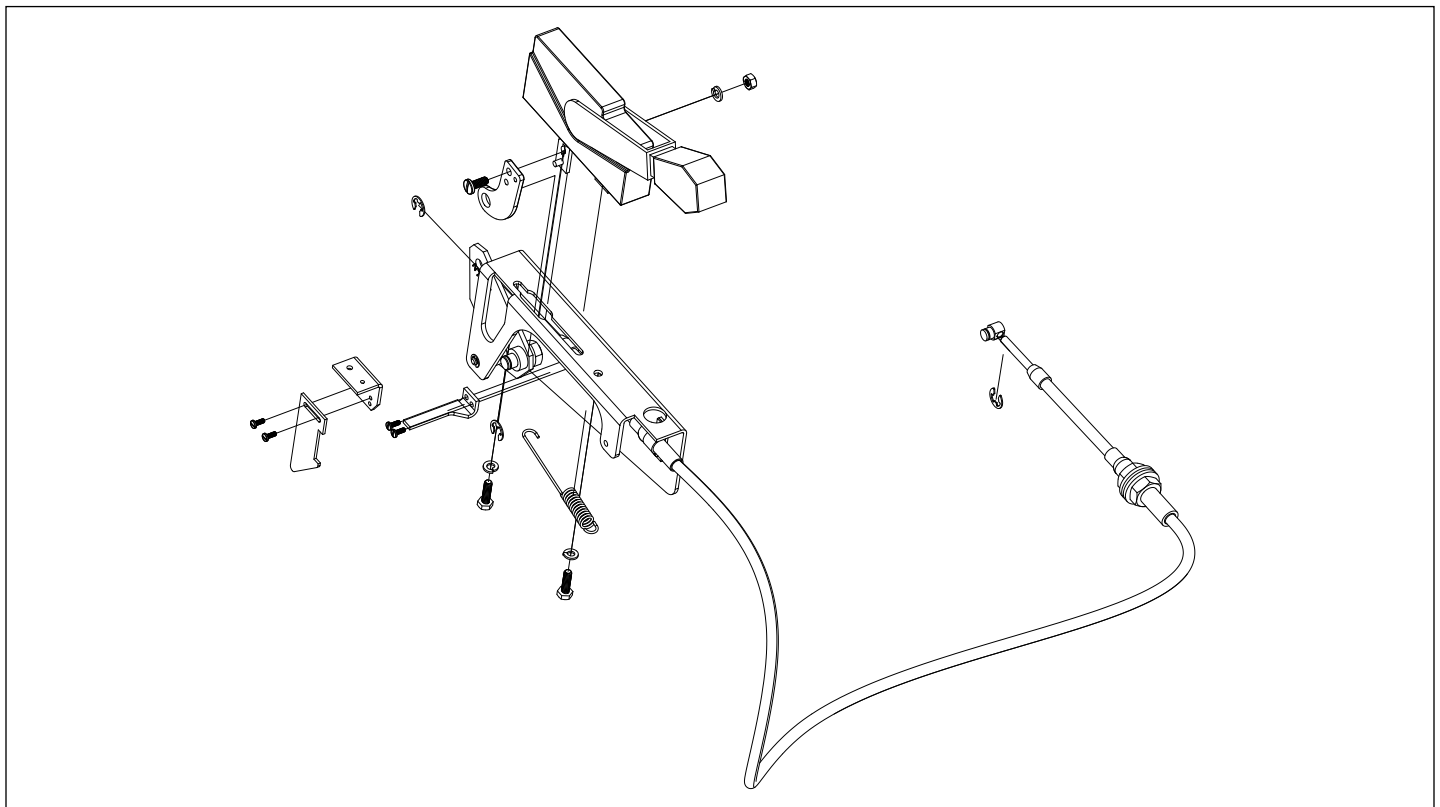


Figure 22. Assembly exploded view.

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