TAERON

Remote Cargo Hook

Product Manual

Part Number(s): T016-00-02

COMPANY:	
PRODUCT SERIAL NUMBER:	
DATE OF MANUFACTURE:	
DATE IN SERVICE:	

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LIMITED WARRANTY

Taeron Systems Inc. [Taeron] warrants this product for 1 year from the purchase date to the original buyer. Products are warranted to be free from defects in materials and workmanship. If a warranty-related defect is discovered, return the product to Taeron for repair or replacement at our discretion. This warranty constitutes the full extent of our liability and terminates upon expiration of the warranty period.

WARRANTY EXCLUSIONS

This warranty does not cover normal wear and tear, unauthorized modifications, improper use or maintenance, accident, misuse, negligence, damage, or use for purposes other than intended. This warranty provides specific legal rights; additional rights may vary by jurisdiction. Taeron shall not be liable for direct, indirect, incidental, or consequential damages arising from product use.

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Products manufactured by Taeron are intended for use by professionals trained and experienced in the use, inspection, and maintenance of helicopter external cargo equipment. Products used in helicopter operations pose substantial risk of serious injury or death. Users must read and understand all manufacturer instructions before use. Any person purchasing or using this equipment assumes responsibility for seeking proper training. The purchaser assumes all risk for any injury or damage sustained while using this equipment. Failure to follow these warnings increases the risk of injury and death.

DANGER	The DANGER sign is used throughout this manual to highlight procedures, techniques, or circumstances that can lead to severe injury or death.

CAUTION	The CAUTION sign is used throughout this manual to highlight policies, procedures, and practices that when not followed could result in damage or destruction of this product.

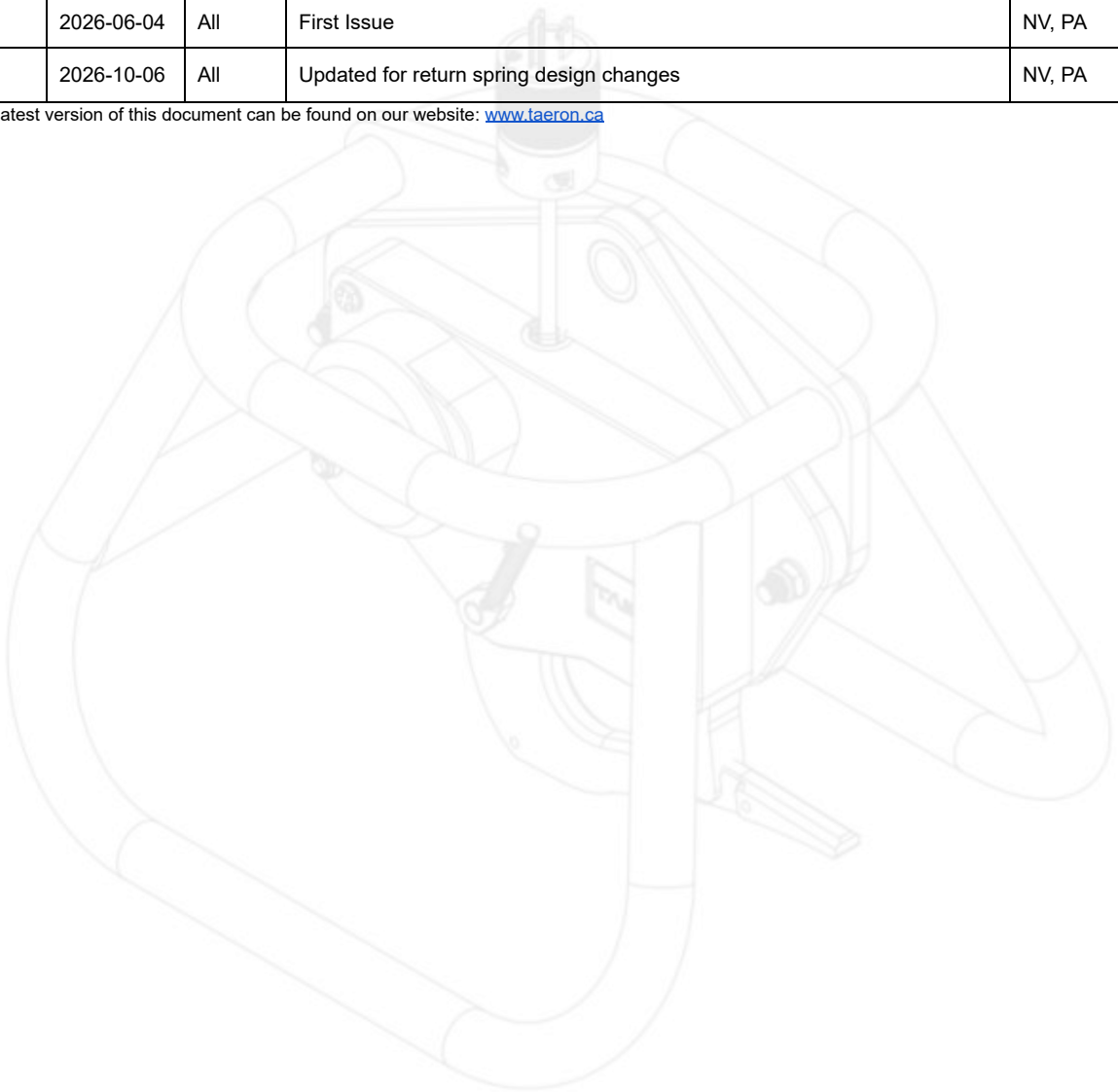
INFORMATION	The INFORMATION sign is used throughout this manual when referring the reader to an outside source for further information regarding this product.

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The latest version of this document can be found on our website: www.taeron.ca



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1. SAFETY WARNINGS AND LIMITATIONS

DANGER

⚠ Danger: Improper installation, maintenance, or operation may result in loss of load, aircraft damage, injury, or death.

1.1. Personnel Qualifications

1.1.1. Overhaul must be performed by trained personnel following this manual
1.1.2. Operators must receive proper training in emergency procedures

1.2. Operating Limitations

1.2.1. Operating temperature: -40°F to +160°F (-40°C to +71°C)
1.2.2. Working Load Limit of 3,300 lb (1,500 kg)
1.2.3. Maximum load angle from vertical: 5 degrees
1.2.4. Prohibited for human external cargo operations
1.2.5. Minimum hook load: 15 lb
1.2.6. Maximum load ring size: 3 in [76 mm] inside diameter, single ring only
1.2.7. Solenoid duty cycle: maximum 10 seconds energized in any one minute
1.2.8. Loaded release limits: refer to Loaded Release in Section 5 for release count limits

1.3. Regulatory Compliance

This product must be operated in accordance with:
1.3.1. Applicable national aviation regulations (FAA, Transport Canada, EASA)
1.3.2. Helicopter flight manual supplements
1.3.3. Operator's operations documentation
1.3.4. This product manual

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2. General

2.1. Part Numbers

2.1.1. P/N T016-00-02

Remote Hook with Keeper and Auto-Lock, SN 2178-1 and newer

2.2. Product Specifications

Assembly Part No.: T016-00-02:

Working Load Limit:	3,300 lb [1,500 kg]
Power Required:	28 VDC, 15 A
Overall Weight:	28 lb [13 kg]
Overall Size (Approx.):	12” x 12” x 12” [30 x 30 x 30 cm]
Minimum Release Load:	15 lb [7 kg]
Supply Voltage:	20 to 31 VDC
Solenoid Duty Cycle:	10 s energized maximum in any one minute
Maximum Ring Size:	3" [76 mm] ID, single ring
Operating Temperature:	-40°F to +160°F [-40°C to +71°C]

2.3. Description and Operation

The T016-00-02 Remote Cargo Hook is an electrically released cargo hook that is suspended at the bottom of a helicopter longline. It allows the pilot to release an external load at the end of the longline, while the longline itself remains attached to the aircraft primary (belly) cargo hook.

Main components. The release mechanism is housed between an aluminum sideplate sub-assembly (T016-14-00) and a steel sideplate sub-assembly (T016-13-00), and is mounted in a tubular steel cage (T016-12-00). The cage

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provides the top attachment point for the longline and protects the mechanism if the hook contacts the ground. The main working parts are:

- **Load beam (T016-21-00):** carries the load ring and pivots open to release the load.
- **Keeper (T016-10-06) and keeper spring:** closes the throat of the load beam so the ring cannot slip out when the line goes slack.
- **Lever arm (T013-23-00):** latches the load beam closed and carries the load reaction through its rollers.
- **Release arm (T016-24-00) and release arm return spring:** holds the lever arm in the latched position until a release is commanded.
- **Solenoid (T016-34-00) and cam plate:** when energized, rotates the cam plate to move the release arm and unlatch the hook.
- **Manual release knob (T016-13-03):** moves the release arm mechanically for release on the ground.
- **Load beam return spring and auto-lock:** return the empty load beam to the closed position and lock it, ready for the next load.
- **Wire harness (T016-11-00):** connects the solenoid circuit to the longline electrical cable through the three prong plug.

Latched (carrying load). With the load beam closed, the internal lever arm and release arm lock the load beam in place. The keeper closes behind the load ring.

Electrical release. When the pilot presses the remote cargo release switch, aircraft power (28 VDC nominal) is applied to the hook through the longline electrical cable and energizes the solenoid. The solenoid cam moves the release arm. The weight of the load then rotates the load beam open and the load ring slides off. The hook circuitry allows it to operate with either wire polarity.

CAUTION

Caution: Do not energize the solenoid for more than 10 seconds in any one minute. Release the switch as soon as the load has been released. Exceeding this duty cycle can overheat and damage the solenoid.

Manual release. Rotating the manual release knob clockwise moves the release arm mechanically and releases the hook in the same way as the solenoid. The manual release is used on the ground for loading and for functional checks; it cannot be operated from the cockpit.

Auto-lock. After the load releases, the load beam must swing fully open. At the fully open position the auto-lock spring closes the empty load beam. No action is needed by the pilot or ground crew to re-arm the hook. The auto-lock spring resists

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opening of the load beam, so approximately 15 lb [7 kg] of load is needed to open the load beam fully. With less than 15 lb on the hook, the load beam may not open fully, the load may not release cleanly, and the hook may not re-lock.

CAUTION

Caution: The load beam must open fully for the hook to auto-lock. Always confirm the load beam is locked closed (pull at least 15 lb on the load beam) before attaching the next load.

Load ratings. The Working Load Limit (WLL) is 3,300 lb [1,500 kg]. The rating of the complete external load system is limited by its lowest rated component (aircraft cargo hook, longline, swivel, shackle, and remote hook). Include the 28 lb [13 kg] weight of the remote hook in the external load weight. The hook can be released under load up to the WLL; frequent loaded releases increase wear and are subject to the release count limits under Loaded Release in Section 5.

Load rings. Attach the load with a single ring of no more than 3 in [76 mm] inside diameter, fully seated in the throat of the load beam behind the keeper. Do not attach more than one ring, or hooks, shackles, or slings, directly to the load beam.

DANGER

Danger: A ring larger than 3 in [76 mm] ID, or more than one ring on the load beam, increases the risk of dynamic rollout and loss of the load.

Backup release. The remote hook has no backup release from the cockpit. In an emergency, the complete longline and load are jettisoned with the aircraft primary cargo hook.

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3. Electrical Connection

3.1. The hook is powered via 2 x DC wires, and can be wired as per the recommended table below.

3.2. The hook internal wiring must be wired as per Figure 1 below.

3.3. Use the included 3 prong plug, or operators preferred connector type to connect power to the hook.

INFORMATION

Note: The remote hook contains circuitry that allows it to work regardless of the wire polarity.

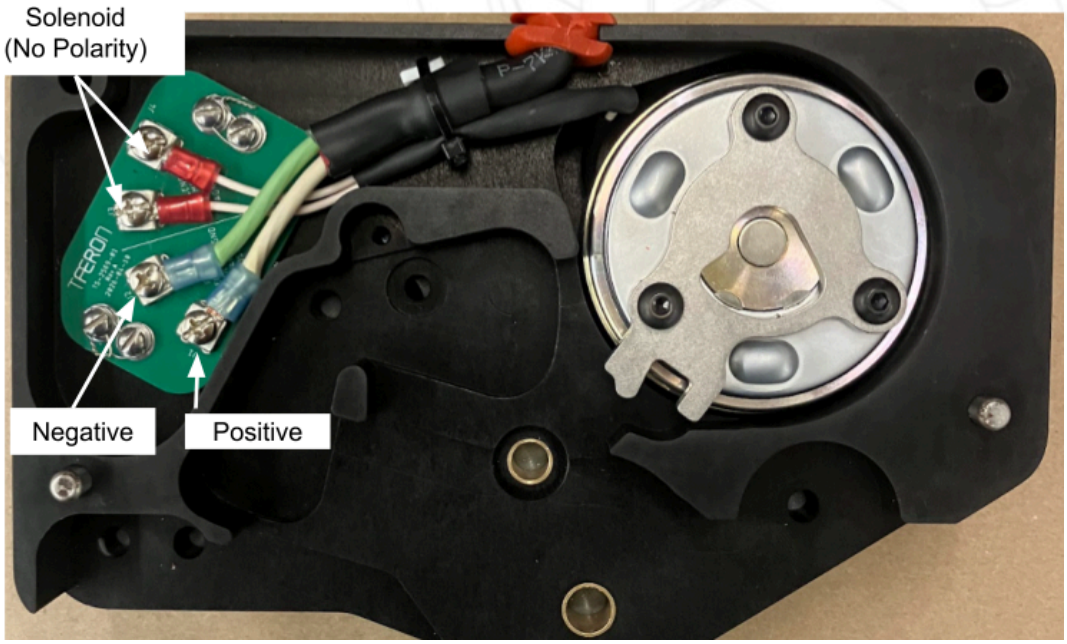
Remote Hook Wire	Recommended Polarity
White	Positive
Green	Negative
Black	Not Connected

3.4. It is recommended that helicopters be equipped with a 20 Amp breaker. Power supply from Helicopter:

INFORMATION

Voltage: 20 V to 31 V

Current maximum: 15 A



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Figure 1: Wiring of the Remote Cargo Hook

4. Hardware Connection

4.1. Helicopter longline connection to the remote hook can be directly to the Taeron electric swivel P/N T003-22-00, or to the Taeron Shackle P/N T001-20, or via an equivalent size shackle of minimum 3,300 lb WLL. Ensure the swivel or shackle cotter pin is properly installed prior to use. Use hardware with a WLL of at least 3,300 lb to not limit the full load capacity of Remote Cargo Hook.

4.2. Connect load (Max Ring Size: 3” ID) to load beam by:

4.2.1. Option 1: Push ring against keeper, moving the ring far enough into the load beam throat to allow the keeper to return closed. Pull at least 15 lb on the load beam to check the hook is properly latched.

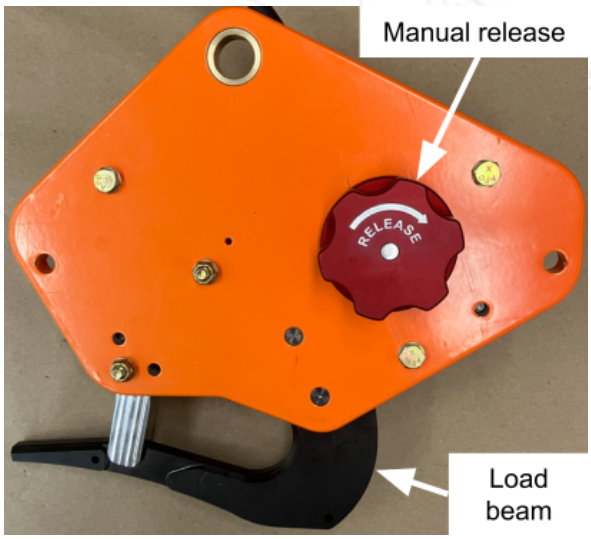
INFORMATION

- The hook needs approximately 15 lb to overcome the autolock spring. If loaded with less than 15 lb, the hook load beam may fail to fully open and drop the load

4.2.2. Option 2: Rotate the manual release knob clockwise while pulling at least 15 lb on the load beam to force the load beam open. Place the ring in the throat of the load beam and return the load beam to the latched position. Check the hook is properly latched by pulling on the load beam.

DANGER

- **Danger: Using a ring larger than 3” may increase the risk of dynamic rollout, and loss of the load**.
    - Dynamic rollout is when the ring is larger than the gap between the keeper and the load beam tongue, which can lift the keeper and drop the load in certain conditions.



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Figure 2: Remote Cargo Hook Manual Release Knob

5. Use and Care

5.1. Installation Checks

- Perform installation checks on each installation
- Confirm the remote cargo hook is secured to the longline or swivel and the safety cotter pin or equivalent is in place.

CAUTION

- **Caution: a longline and remote hook installed without a swivel increases the risk of damage to the longline, aircraft cargo hook, remote cargo hook, and/or remote cargo hook wiring if the load starts spinning.**
- Confirm the remote cargo hook is connected to the helicopter power via the included three prong plug. A small wrap of electrical tape around the plugs may be required to ensure connection to the helicopter power is maintained during flight.

5.2. Functional Checks

- Perform functional checks on initial receipt of the remote cargo hook and prior to each day of operation.
- Connect the remote cargo hook to the helicopter power via the three prong plug. Apply approximately 15 lb to the remote cargo hook load beam and then provide power to the remote cargo hook. Confirm the load beam opens when power is provided.

CAUTION

- **Caution: Do not apply power to the remote cargo hook for longer than 10 seconds per minute or damage to the solenoid may occur.**
- **Note: The remote hook needs approximately 15 lb to release the load with the auto-lock spring.**
- Apply approximately 15 lb to the load beam and turn the remote cargo hook manual release knob clockwise. Confirm the load beam opens when the manual release knob is rotated.
- **Keeper check:** With the load beam closed, press the keeper inward and release it. Confirm the keeper moves freely, returns fully closed against the load beam under spring force, and is not bent or cracked. Push a load ring past the keeper into the load beam throat and confirm the keeper snaps closed behind the ring.
- **Auto-lock check:** With approximately 15 lb on the load beam, release the hook (electrically or with the manual release knob) and allow the load beam to swing fully open. Remove the weight and let the load beam return spring close the load beam. Without operating the release, pull at least 15 lb on the load beam and

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confirm it stays locked closed. Repeat the check for both the electrical and manual release.

CAUTION

- **Caution: The hook load beam must be fully open to auto-lock. If the load beam only partially opens (for example, released with less than about 15 lb, or obstructed), the hook may not re-lock. Never attach a load to a hook that has not been confirmed locked closed.**
- Check the remote cargo hook is properly latched after each test by pulling at least 15 lb on the load beam.
- The remote cargo hook is not safe to operate if it fails any of these tests. Perform overhaul, or return to Taeron Systems for inspection and maintenance before further use.

5.3. Operational Requirements

5.3.1. Loaded Release

- The remote cargo hook is designed to be able to release while loaded, however, continuous operation of the hook release under loaded conditions may prematurely cause wear to the hook parts.
- If releasing the remote cargo hook at the WLL (3300 lb) more than 10 times, remove the hook from service for inspection and overhaul.
- If releasing the remote cargo hook at loads less than the WLL (3300 lb), but greater than 500 lb, after 50 releases, remove the hook from service for inspection and overhaul.
- If releasing the remote cargo hook below 500 lb, maintenance of the hook is as per this manual.

5.4. Storage Requirements

Store remote cargo hooks in a clean and dry environment when not in use.

5.5. Maintenance Requirements

5.5.1. Cleaning

Clean the remote cargo hook externally with mild detergent and water. Use a synthetic brush or cotton cloth to wipe down the hook. Do not wash with boiling

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water. Do not spray with high pressure water. Do not immerse in water. Do not use chemicals for cleaning other than mild detergent.

5.5.2. Corrosion Prevention

When used in corrosive environments, apply a corrosion prevention compound (ie. ACF-50 or similar) to the exterior surfaces of the remote cargo hook.

5.5.3. Inspection

Inspect the remote cargo hook for wear, damage, corrosion, or distortion prior to use. Checks should include:

- Ensuring that all shafts rotate freely
- Inspecting for signs of cracking or bending in the housing or load beam
- Ensuring that there is no separation of the housing from the steel frame
- Checking that all fasteners are secure

If any of these are observed to interfere with the function of the remote hook then it should be removed from service for inspection and maintenance before further use.

DANGER

Danger: Remove the hook from service immediately if a crack is found in any part, including the load beam, keeper, lever arm, release arm, sideplates, or cage welds, regardless of the size of the crack or whether the hook still appears to function normally. Do not weld, straighten, or repair cracked parts.

5.5.4. Daily Checks

Complete the following checks before the first flight of each day, in addition to the Functional Checks in Section 5.2. Do not use the hook if any check is unsatisfactory.

- Data plate is present and legible. The hook is within its overhaul interval and the loaded release count limits.
- Cage: no cracks (inspect all welds), no dents deeper than 0.25 in, no corrosion. The top attachment point is free of wear, gouges, and distortion.
- Sideplates: no cracks, distortion, or separation of the housing from the steel frame. All bolts and nuts are present and tight.
- Load beam: no cracks, gouges, or burrs at the nose and throat. The load beam pivots freely and returns closed under spring force.

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- Load beam return spring is connected and its safety wire is intact.
- Keeper moves freely and returns fully closed. Rubber bumper is present and undamaged.
- Manual release knob rotates freely and returns to its rest position.
- Electrical cable and plug: no cuts, chafing, exposed conductors, or damaged prongs. The cable is secured so that the plug and wiring do not carry load.
- Longline connection: swivel or shackle is correctly installed, with the cotter pin or equivalent in place.
- Functional Checks (Section 5.2) completed, including the electrical release, manual release, keeper, and auto-lock checks.
- If the hook was used in a salt spray environment, it has been cleaned as per Section 5.5.1.

5.5.5. Unscheduled Inspections

Remove the hook from service and inspect it in accordance with the Inspection Procedure in the Overhaul Instructions, or return it to Taeron Systems for inspection, after any of the following events:

- A load exceeding the WLL, or any suspected overload or shock load, such as a snagged load or a load that dropped and was caught on the line.
- The hook was dropped, dragged, or struck the ground, an obstacle, or the aircraft.
- Dynamic rollout, any uncommanded release, or any failure to release when commanded.
- The load beam fails to auto-lock, or the hook fails any functional check.
- Lightning strike, contact with power lines, electrical arcing, or an electrical fault (tripped breaker, burnt smell, or damaged wiring).
- Exposure to fire or to temperatures outside the operating temperature range.
- Immersion in water (fresh or salt), mud, or concrete, or contamination by chemicals.
- The loaded release count limits under Loaded Release are reached.
- Any aircraft accident or incident involving the external load system.
- Any crack found in any part of the hook or cage.

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5.6. Troubleshooting

The table below lists common faults, their likely causes, and corrective actions. If a fault cannot be corrected with the actions listed, remove the hook from service and contact Taeron Systems.

DANGER

Danger: If the hook releases without a release command, or does not hold the load beam closed under a 15 lb pull, remove it from service immediately.

Symptom	Possible Cause	Corrective Action
Hook does not release when the cargo release switch is pressed	No power at the hook: aircraft breaker tripped, or plug not fully engaged. Damaged longline electrical cable or connector (broken conductor). Loose screw terminal or damaged wire harness inside the hook. Solenoid open or shorted. Mechanism binding from debris, ice, or corrosion.	Check breaker, switches, and plug engagement. Measure 20 to 31 VDC at the hook plug with the release switch pressed. Check continuity of the longline conductors. Repair or replace the cable or connector. Check the terminals and wiring against Figure 1. Tighten or replace. Use the manual release on the ground. Measure solenoid resistance (see Inspection Procedure). Return to Taeron Systems if out of limits. Clean and inspect the mechanism. If not resolved, return to Taeron Systems.
Solenoid can be heard operating but the load beam does not open	Load less than approximately 15 lb. Worn solenoid cam plate or release arm. Binding or damaged lever arm or load beam pivot.	Increase load or use the manual release. Remove from service; inspect per the Inspection Procedure. Remove from service; inspect per the Inspection Procedure.
Aircraft breaker trips when release is selected	Short circuit in the longline cable, plug, wire harness, or solenoid.	Do not reset the breaker repeatedly. Inspect the wiring and measure solenoid resistance. Repair or return to Taeron Systems.
Release becomes weak or slow after repeated releases; solenoid hot	Solenoid duty cycle exceeded. Low supply voltage at the hook.	Allow the solenoid to cool. Observe the 10 seconds per minute limit. Confirm at least 20 VDC at the hook during release.

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Symptom	Possible Cause	Corrective Action
Load beam does not auto-lock after release	Load beam did not open fully (light load or obstruction). Load beam return spring broken or disconnected. Release arm return spring broken. Worn lever arm or release arm. Lever arm or release arm shafts binding	Open the load beam fully and repeat the auto-lock check. Replace the spring and safety wire. Replace the spring. Remove from service; inspect per the Inspection Procedure. Check for obstructions. Clean and lubricate the hook shafts and recheck.
Load beam opens under a 15 lb pull without a release command	Worn lever arm rollers or release arm. Broken release arm return spring. Lever arm or release arm shafts binding	REMOVE FROM SERVICE IMMEDIATELY. Contact Taeron Systems. REMOVE FROM SERVICE IMMEDIATELY. Contact Taeron Systems. Check for obstructions. Clean and lubricate the hook shafts and recheck.
Keeper sticks or does not close	Broken or weak keeper spring. Bent keeper. Debris in the keeper.	Replace the keeper spring. Replace the keeper. Clean
Manual release knob is stiff or does not return	Broken manual release return spring. Corrosion or debris.	Remove from service; overhaul or return to Taeron Systems. Clean and apply corrosion prevention. If not resolved, overhaul.
Hook releases on the ground but intermittently fails in flight	Plug separating in flight. Chafed or broken conductor along the longline.	Secure the plug connection (e.g., electrical tape) and add strain relief. Inspect the full length of the longline cable; repair.
Load spins; wiring or longline twisted	No swivel installed.	Install a swivel such as the Taeron electric swivel P/N T003-22-00.

5.7. Return for Service (RMA)

Hooks returned to Taeron Systems for inspection, overhaul, repair, or warranty assessment. Contact Taeron Systems before shipping:

- **Taeron Systems Inc.**
- Email: info@taeron.ca
- Phone: +1-778-802-9944
- Website: www.taeron.ca

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When requesting an RMA, provide the following:

- Hook part number and serial number.
- Company name, contact name, phone number, and return shipping address.
- Reason for return: the fault or symptom, the service required, or the unscheduled inspection event.
- Approximate operating hours and number of loaded releases since the last overhaul.
- For warranty claims, the date of purchase.

Clean the hook before shipping. Package it to protect the load beam, electrical cable, and plug.

5.8. Overhaul Instructions

The remote cargo hook should be overhauled every 1000 operating hours or every 5 years. An overhaul service kit (Part Number: T016-15-00) can be purchased from Taeron Systems with consumable parts that should be replaced during the overhaul. During the overhaul, the remote cargo hook should be disassembled, inspected, and re-assembled following the instructions below. If a part that was not included in the overhaul service kit needs to be replaced, please contact Taeron Systems for a replacement.

5.8.1. Disassembly Procedure

5.8.1.1. Remove the two 3/8 bolts, washers and nuts that connect the steel side plate to the cage. Remove the hook from the cage.

5.8.1.2. Remove the load beam return spring.

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Figure 3: Remote Cargo Hook load beam return spring

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5.8.1.3. Remove the five 1/4-28 bolts, washers, and nuts that connect the steel and aluminum side plates sub-assemblies.

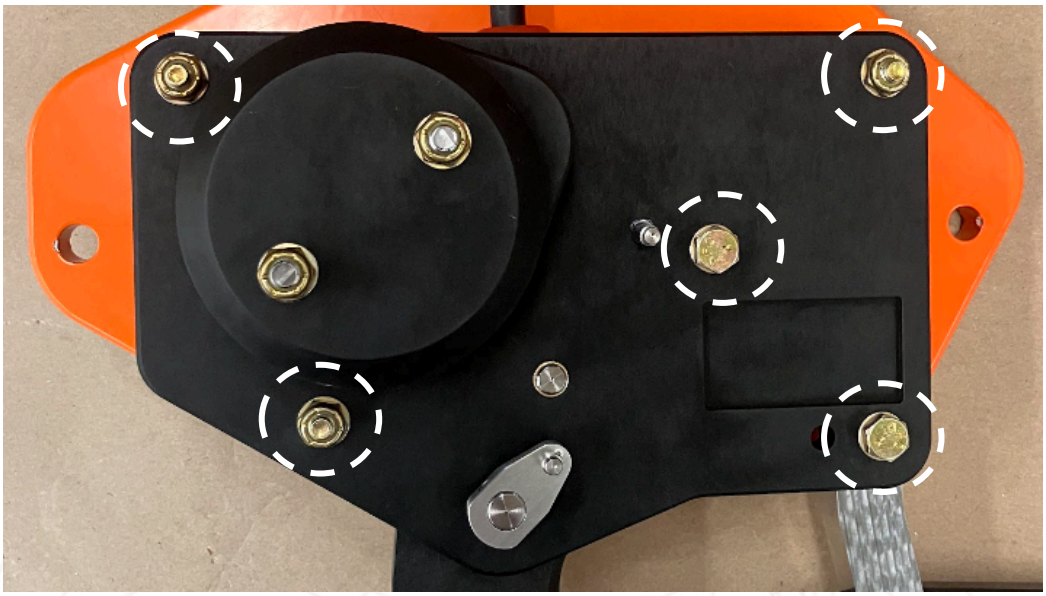


Figure 4: Remote Cargo Hook AN4 Bolts

5.8.1.4. Remove the steel sideplate sub-assembly (including the manual release knob).

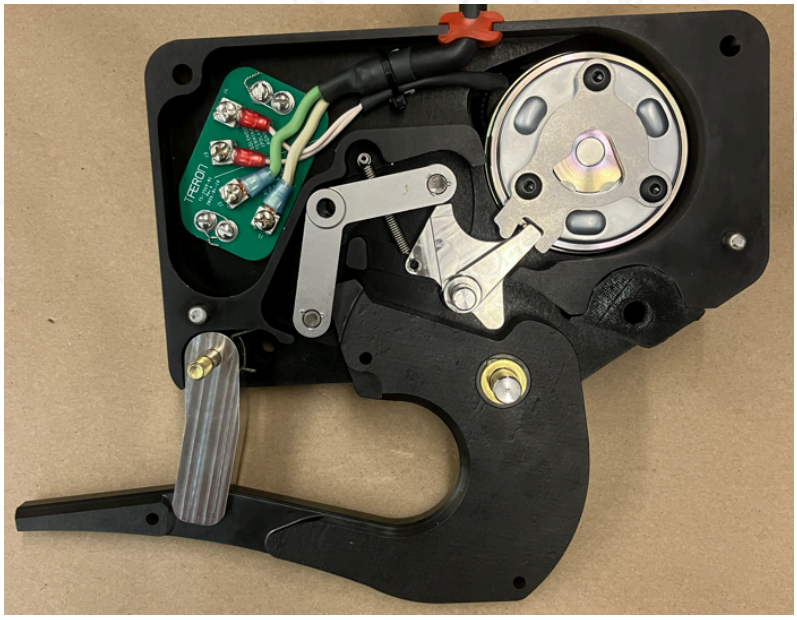


Figure 5: Remote Cargo Hook internals

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5.8.1.5. Remove the keeper and keeper spring.

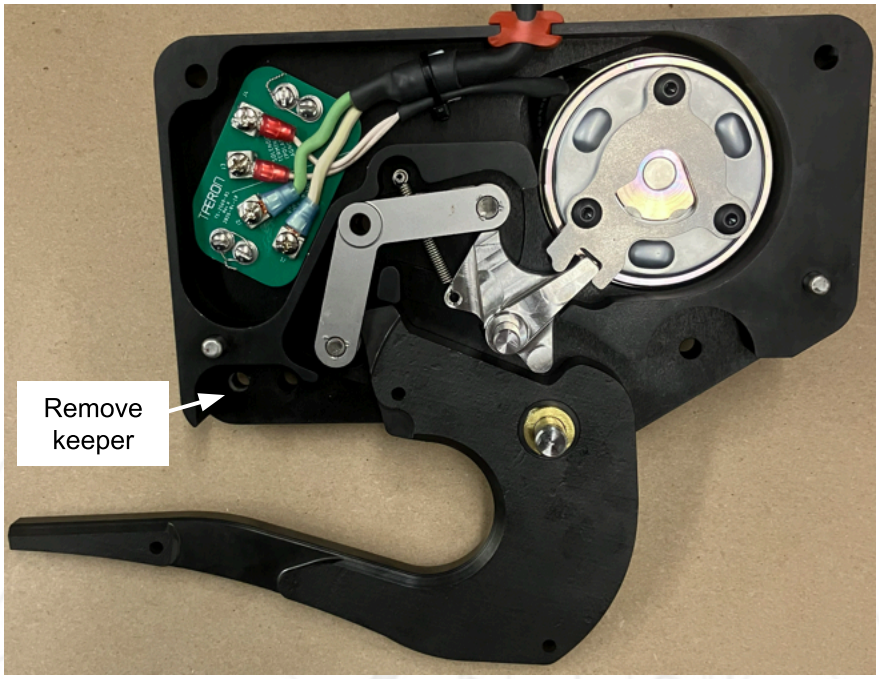
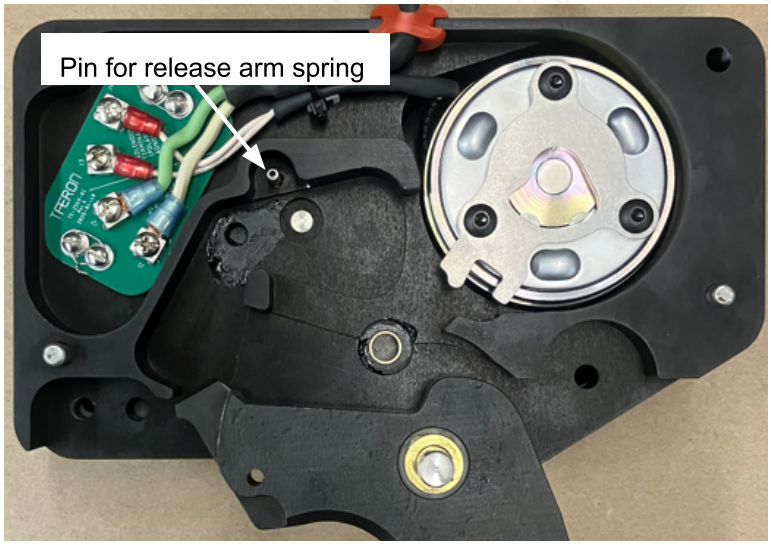


Figure 6: Remote Cargo Hook keeper removed

5.8.1.6. Remove the lever arm sub-assembly (T013-23-00), release arm sub-assembly (T016-24-00), and the release arm return spring (T016-24-06), by taking the spring off the pin pressed into the aluminum side plate.



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Figure 7: Remote Cargo Hook pin for release arm spring

5.8.1.7. Remove the load beam return spring attachment by removing the spring pin.



Figure 8: Remote Cargo Hook load beam return spring attachment

5.8.1.8. Remove the load beam assembly from the aluminum sideplate sub-assembly

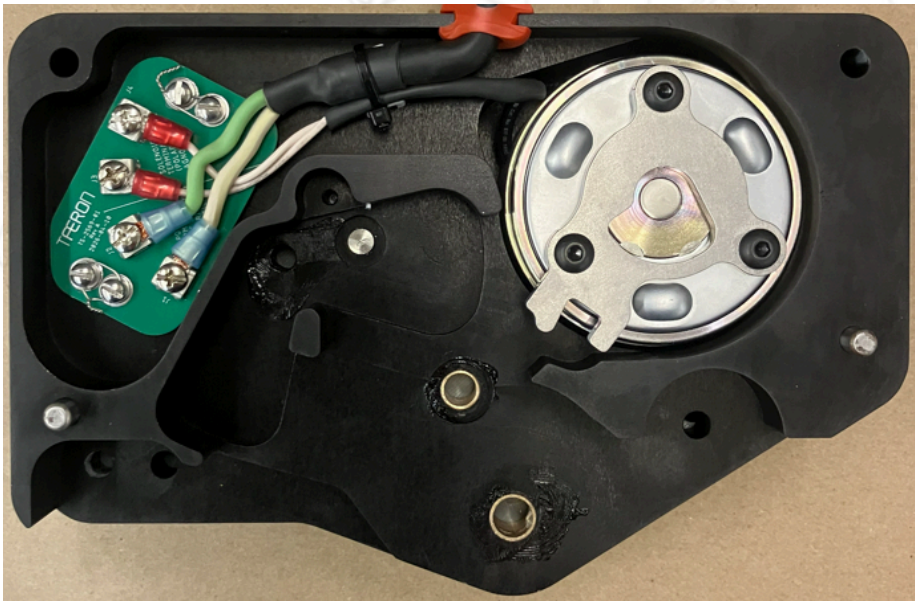


Figure 9: Remote Cargo Hook load beam removed

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5.8.2. Inspection Procedure

5.8.2.1. After disassembly, inspect the components according to the instructions listed in the table below. Refer to Section 6 (Exploded Views), and Section 7 (Table of Components), for identification of part numbers. If a replacement part is needed which is not included in the overhaul kit, contact Taeron Systems.

Part Number	**Component**	**Inspection process**	**Mandatory replacement during overhaul**
T016-13-00	Steel sideplate sub-assy	Check for visible cracks and wear of bronze bushing T016-20-02. If the ID of T016-20-02 is greater than 0.316”, replace (Nominal ID: 0.314”).	No
T016-14-00	Aluminum sideplate sub-assy	Check for visible cracks and wear on 2 bronze bushings connected to the load beam sub-assy. If the ID of T016-20-02 is greater than 0.316”, replace (Nominal ID: 0.314”). If the ID of T016-20-03 is greater than 0.381”, replace (Nominal ID: 0.376”).	No
T013-23-00	Lever arm sub-assy	Check for visible cracks and wear on roller surfaces. If rollers are worn, replace lever arm assembly. Note: flats on rollers are indicative of high load/high usage. Replace sub-assy if flats are evident.	No
T016-34-00	Solenoid sub-assy	Check resistance for a shorted or open electrical circuit. (Resistance of 1.88 ohms should be measured across the solenoid wires). Check wear on solenoid cam plate (T016-34-01)	No
T016-10-06	Keeper	Check for visible cracks and dents larger than 0.1”.	No
T016-10-07	Rubber bumper	Check for cracks, cuts, or abrasion larger than 0.25”. Replace if damaged.	No
T016-11-00	Wire harness sub-assy	Check electrical connector for damage to prongs and plastic case. Check for damage to wires. If there is damage to insulation, the wiring harness	No

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		should be replaced (e.g. exposed conductors). Ensure all screw terminal connections are tight.	
2001-01-01	Taeron ID tag 1”X2”	Replace if damaged or illegible	No
T016-21-00	Load beam sub-assy	Check for visible cracks, wear, or gouges deeper than 0.03” at the nose, and 0.06” at the bearing surface (see Figure 4 below). Check for corrosion.	No
T016-24-00	Release arm sub-assy	Check for visible cracks. Check for wear on the surface that contacts the lever arm assembly (See Figure 5 below).	No
T016-12-00	Cage	Inspect for corrosion. Check for visible cracks (inspect all welds). Check for any major dents (>0.25” deep). The cage can be repainted if necessary to prevent corrosion (sandblast and powder coat).	No
n/a	Springs	Replace all springs at service intervals.	Yes
n/a	Hardware (bolts, washer, nuts, cotter pins)	Replace hardware at service intervals.	Yes

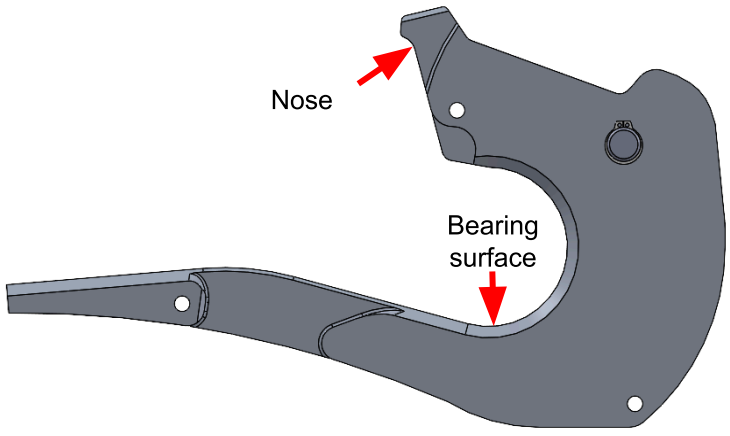


Figure 10: Load Beam Inspection

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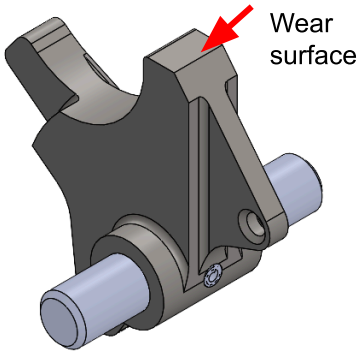
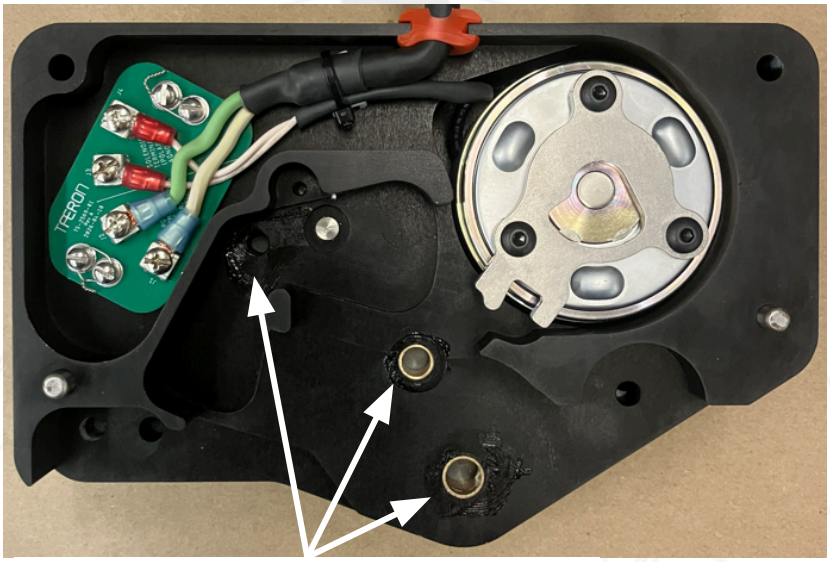


Figure 11: Release Arm Inspection

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5.8.3. Assembly Procedure

5.8.3.1. Apply lubrication to metal on metal contacts on the aluminum sideplate (Lithium or Synthetic cold temperature greases are acceptable, MIL-PRF-81322 specification greases are acceptable). Install the two 3/8" washers on the load beam shaft, as shown in the figure below. Install the load beam sub-assembly into the aluminum sideplate sub-assembly.



Apply lubrication to metal on metal contacts

Figure 12: Remote Cargo Hook lubrication locations

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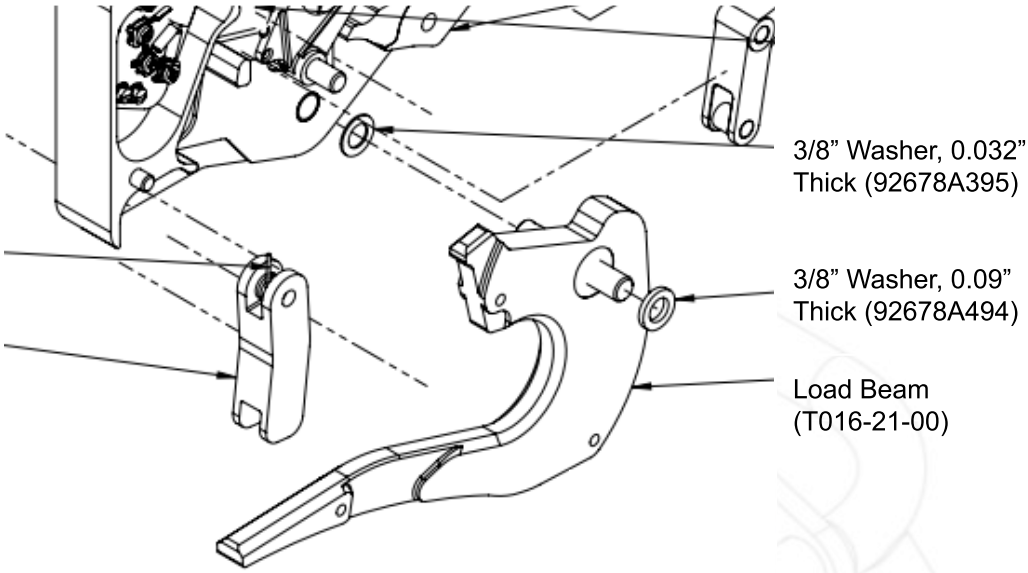


Figure 13: Remote Cargo Hook load beam washers

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5.8.3.2. Connect the return spring to the release arm, then pass the spring through the hole in the lever arm. Connect the other end of the return spring to the pin pressed into the aluminum side plate. Install the lever arm (T013-23-00), release arm (T016-24-00), and the release arm return spring (T016-24-06), into the aluminum sideplate. Install 1/4-28 bolt (AN4-20A) at the lever arm pivot point.

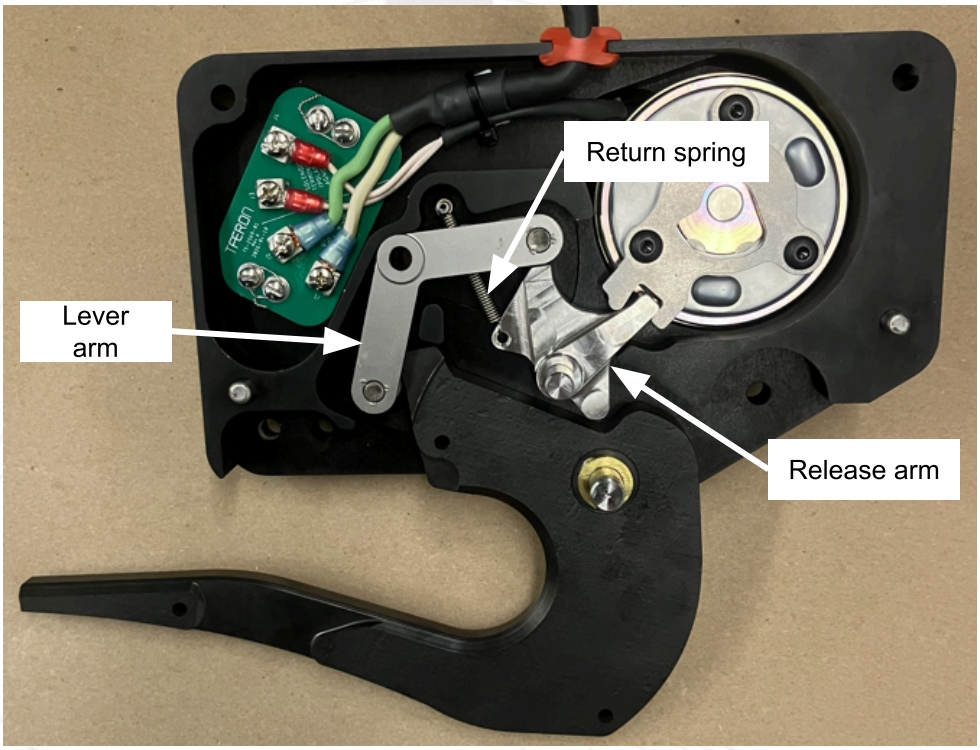


Figure 14: Remote Cargo Hook Internals

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5.8.3.3. Install the keeper and keeper spring into the aluminum side plate using the 1/4-28 bolt (AN4-20A).The orientation of the keeper spring is shown below (longer leg is on top).

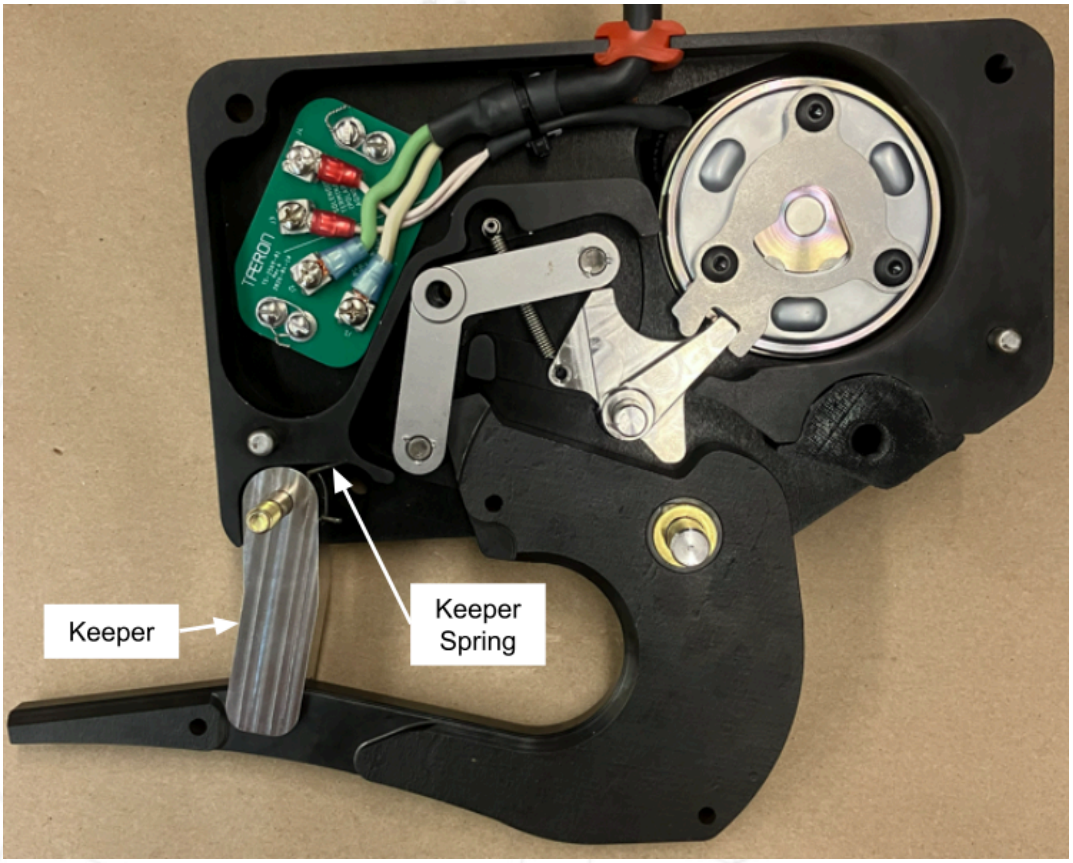


Figure 15: Remote Cargo Hook keeper install

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5.8.3.4. Install the remaining 3 x 1/4-28 bolts (AN4-20A) that connect the load beam sub-assy and the sideplate sub-assy. Use washers (NAS1149F0432P) below the bolt heads and nuts (MS21083N4). Torque all 5 x ¼-28 bolts to 50-70 in-lbs.

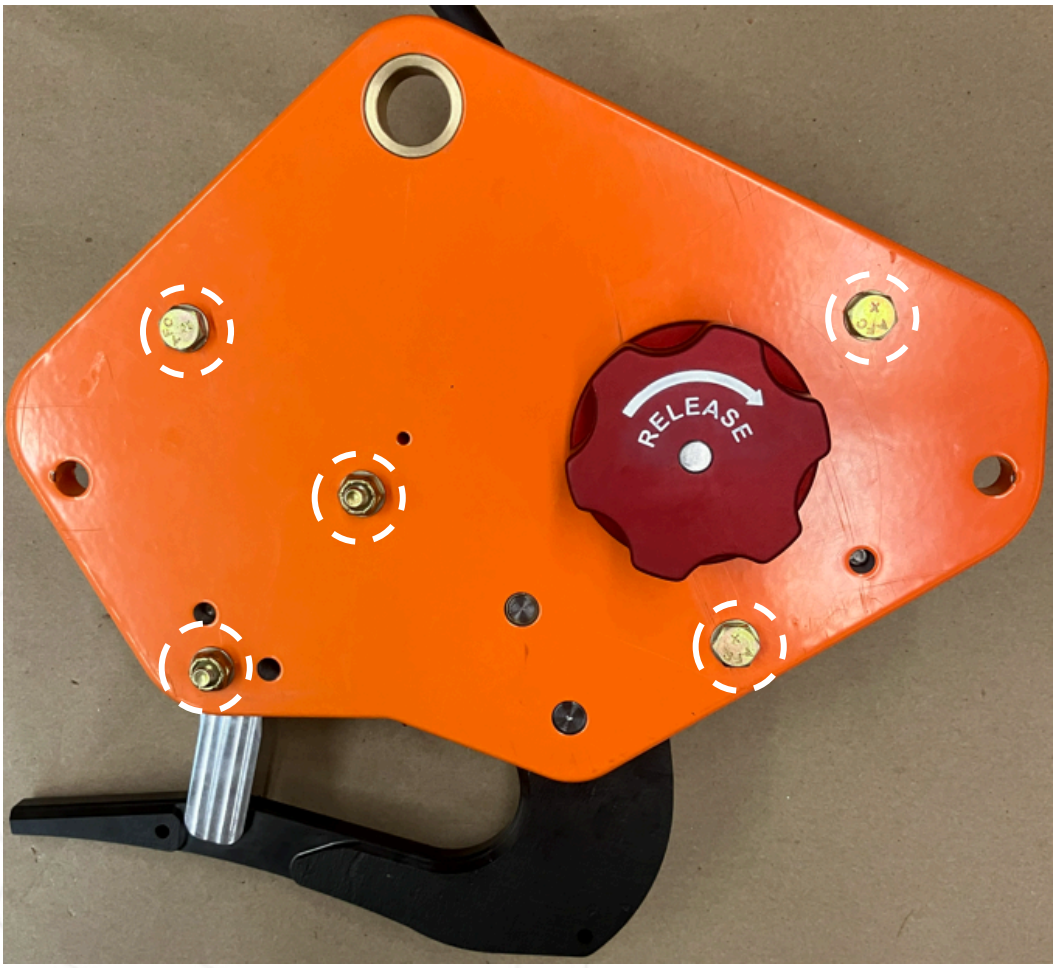


Figure 16: Remote Cargo Hook AN4 Assembly bolts

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5.8.3.5. Install the load beam return spring attachment by sliding it onto the load beam and installing the 1/8” diameter, 5/8” long spring pin.

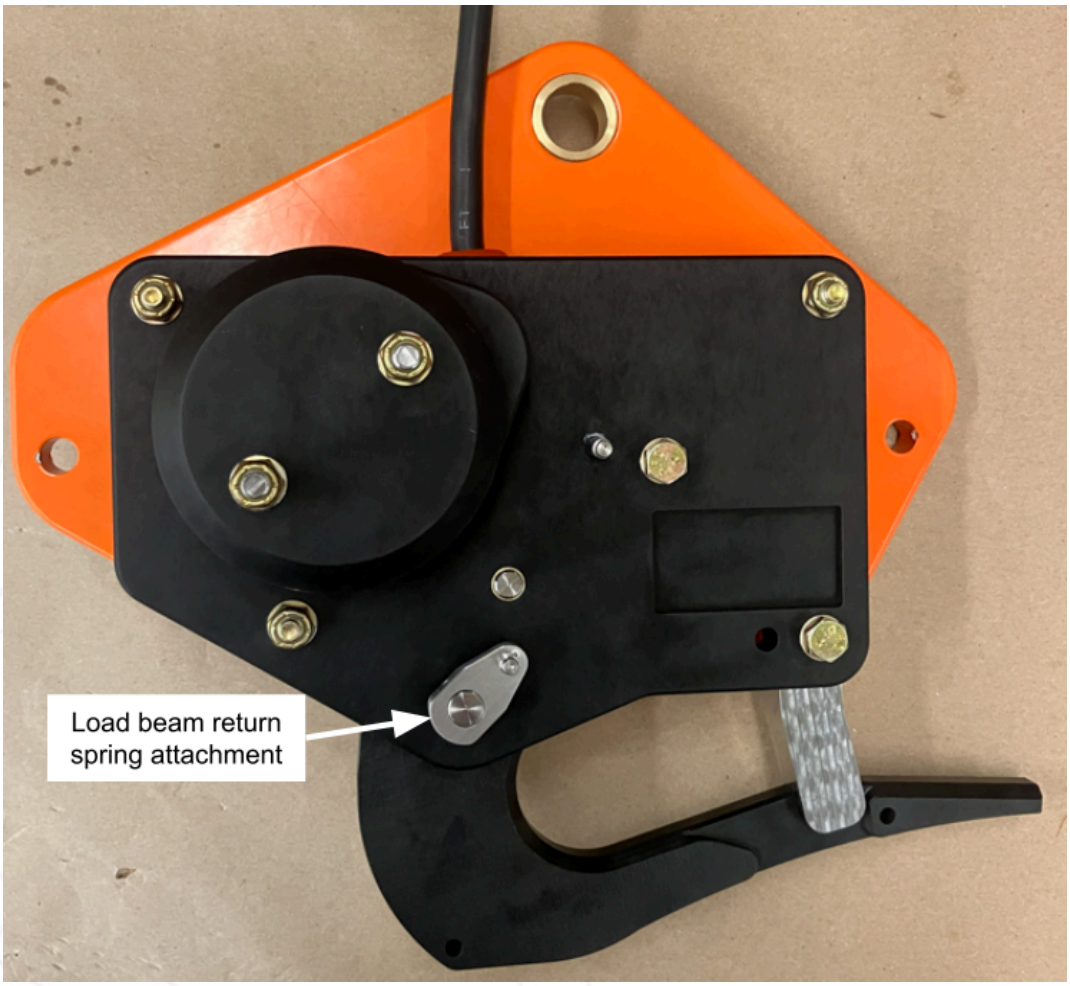


Figure 17: Remote Cargo Hook load beam return spring attachment

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5.8.3.6. Install the load beam return spring. Use safety wire to secure the spring to the posts. Use 0.032 in [0.81 mm] diameter corrosion resistant steel safety wire, NASM20995C32 (formerly MS20995C32), installed in accordance with NASM33540 (formerly MS33540).

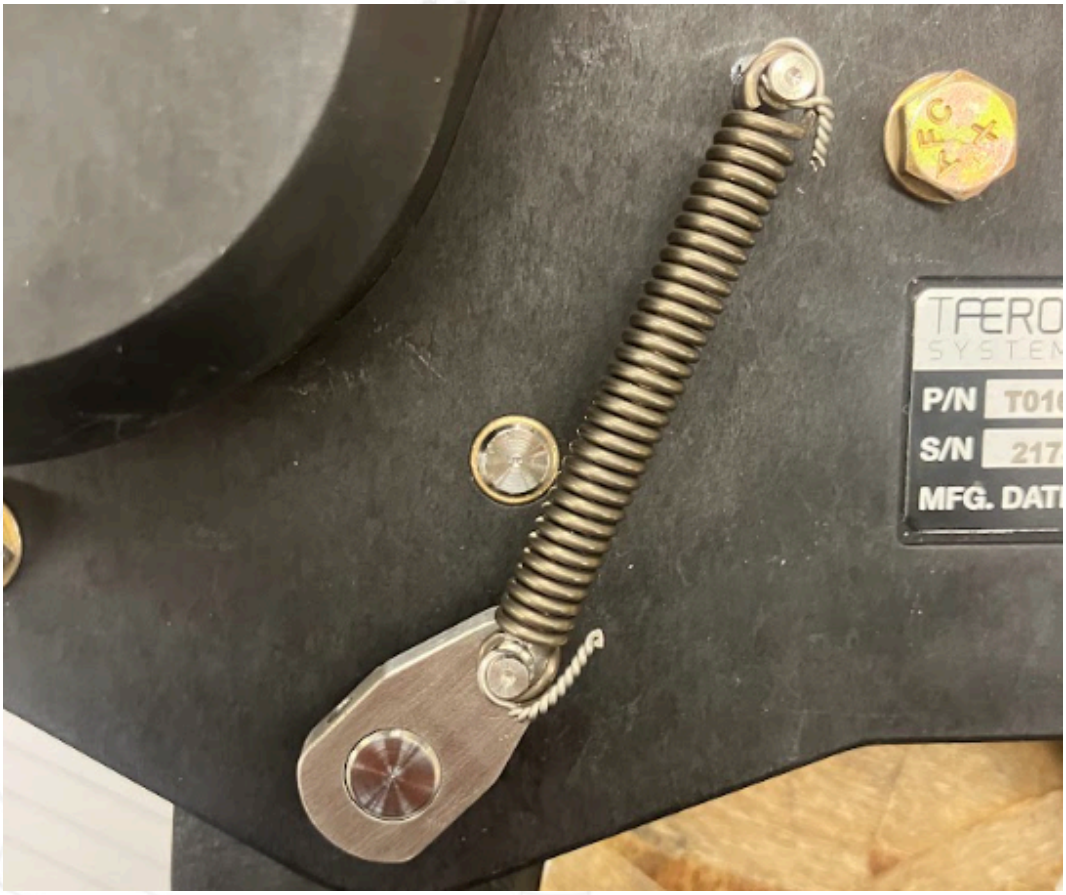


Figure 18: Remote Cargo Hook load beam return spring

5.8.3.7. Install 2x 3/8-16 bolts, washer, and nuts to connect the cage plate to the steel sideplate. Torque to 160-185 in-lbs.

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6. Exploded Views of Assembly

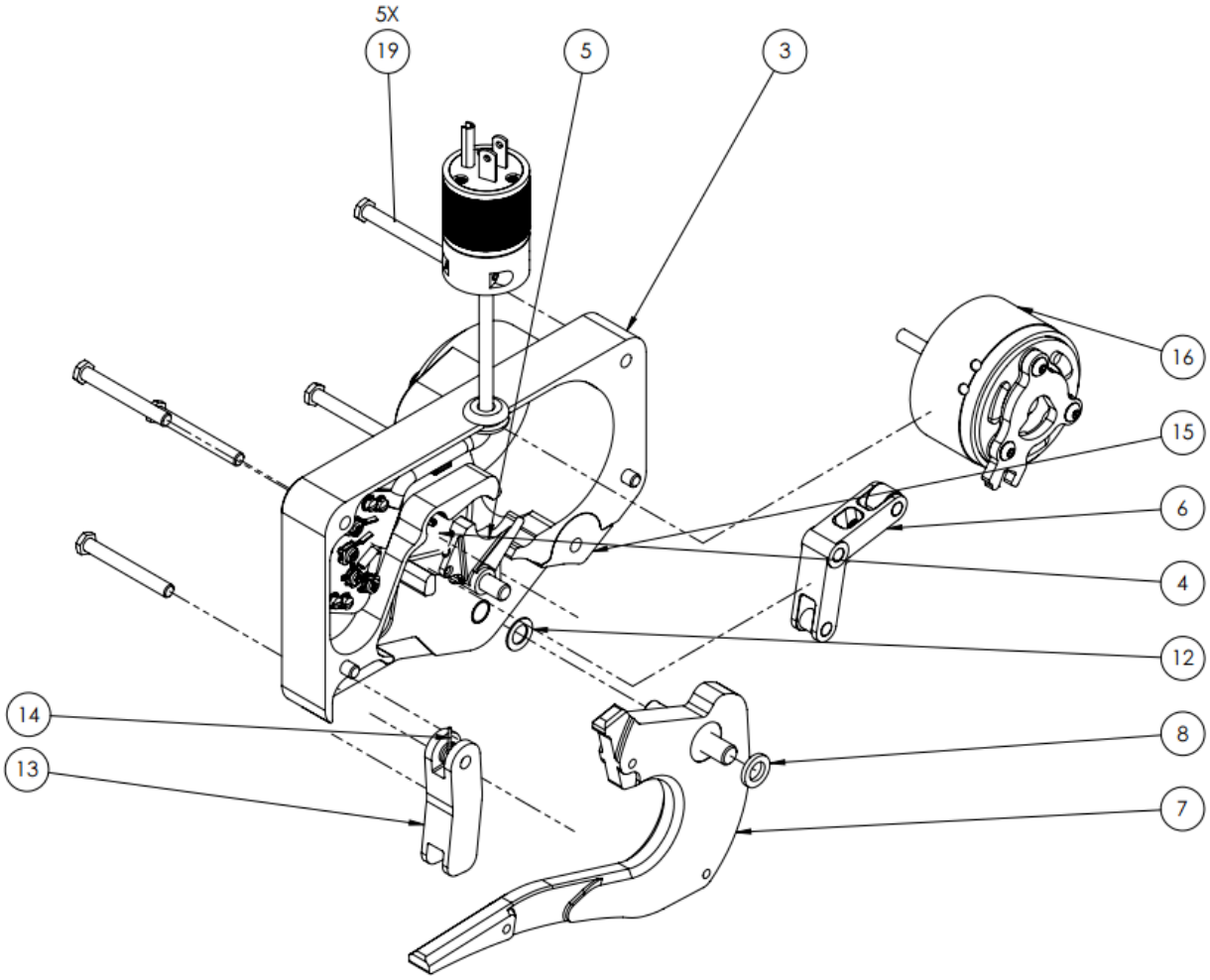


Figure 19: Exploded view 1 (internal components)

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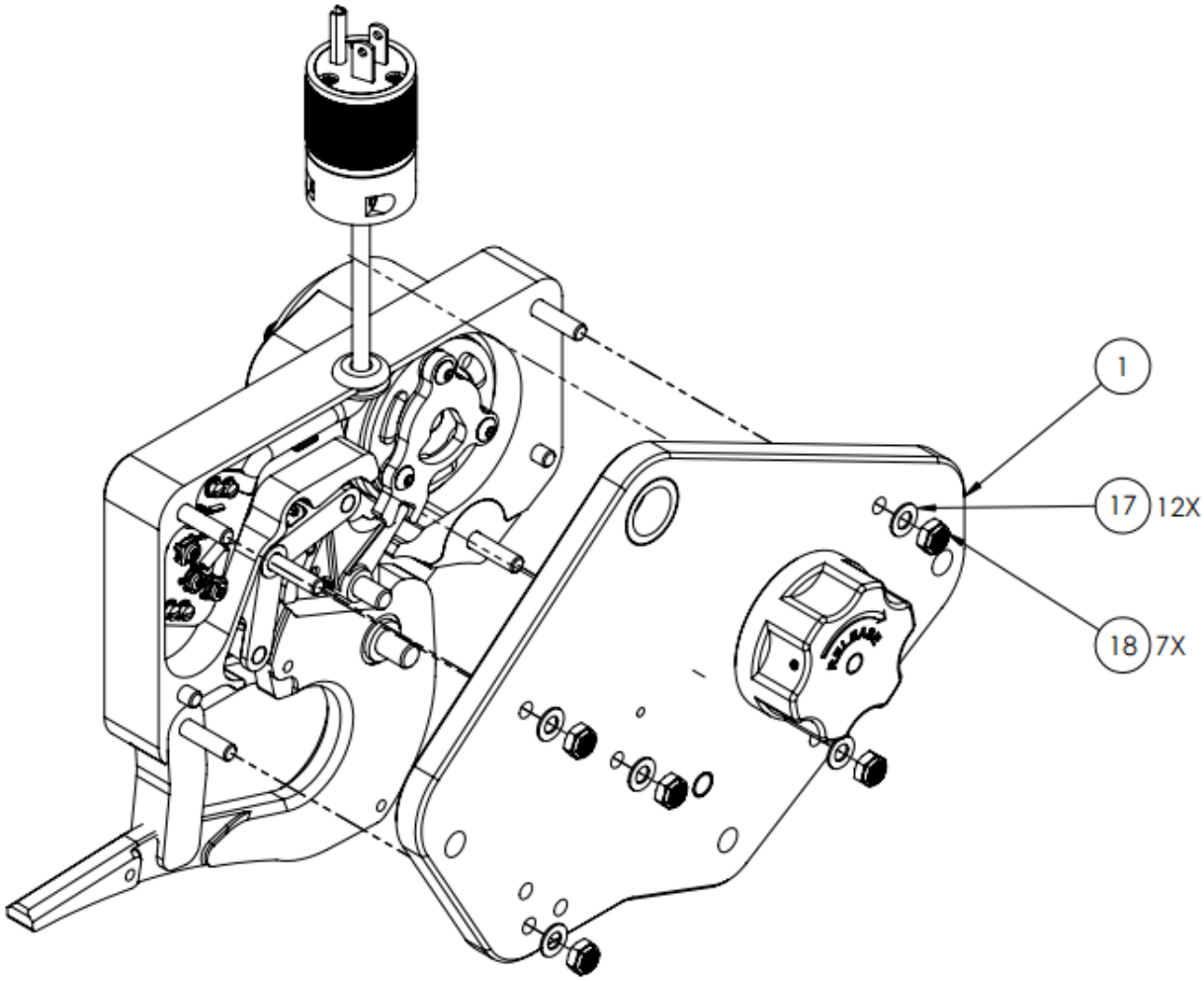


Figure 20: Exploded view 2 (steel sideplate)

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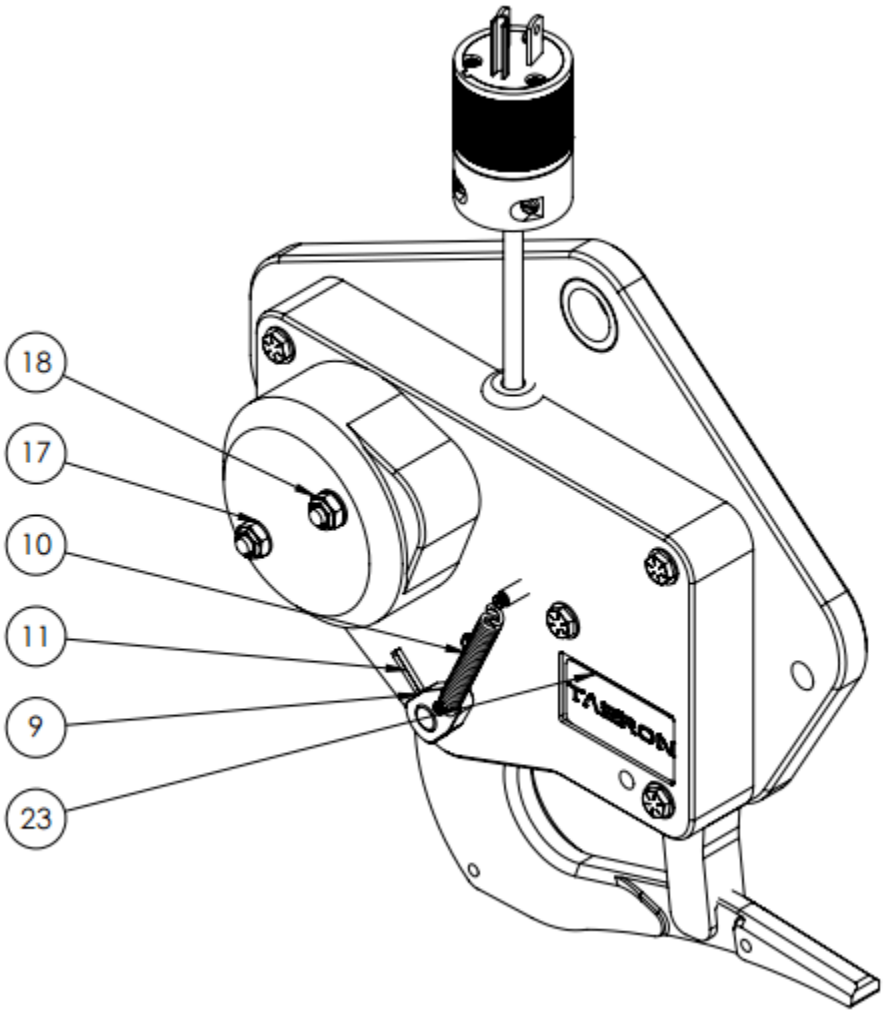


Figure 21: Exploded view 3 (aluminum sideplate side)

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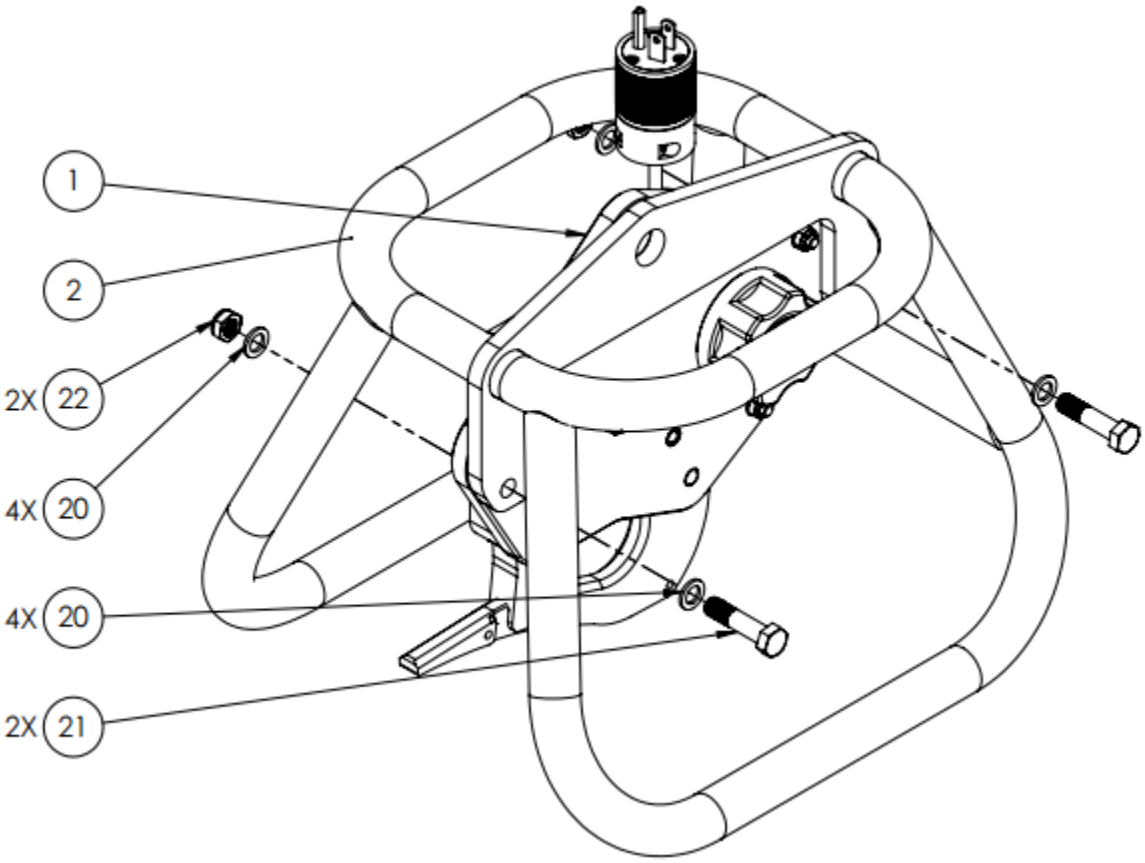


Figure 22: Exploded view 4 (Cage)

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7. Table of Components

Table 2: List of Components

ITEM NO.	PART NO	QTY.	TITLE
1	T016-13-00	1	STEEL SIDEPLATE SUBASSY
2	T016-12-00	1	CAGE WELDMENT
3	T016-14-00	1	ALUMINUM SIDEPLATE SUBASSY
4	T016-24-06	1	RELEASE ARM RETURN EXTENSION SPRING
5	T016-24-00	1	RELEASE ARM SUBASSY
6	T013-23-00	1	LEVER ARM SUB-ASSY 3K CARGO HOOK
7	T016-21-00	1	LOAD BEAM ASSEMBLY
8	92678A494	1	WASHER, 5/8" OD, 3/8" ID, 0.09" THICK, BRASS
9	T016-21-05	1	LOAD BEAM RETURN SPRING ASSY
10	9044K209	1	EXTENSION SPRING, 2.25" LENGTH, 0.3" OD, 0.055" WIRE DIA
11	93740A212	1	SPRING PIN, 1/8" DIA, 5/8" LONG, 420 STAINLESS STEEL
12	92678A395	1	WASHER, 3/8" ID, 5/8" OD, 0.032" THICK, BRASS
13	T016-10-06	1	KEEPER
14	T016-10-09	1	KEEPER SPRING
15	T016-10-07	1	RUBBER BUMPER
16	T016-34-00	1	SOLENOID SUBASSY
17	NAS1149-F0432P	12	WASHER, 1/4", 0.035" THCK
18	MS21083N4	7	NUT, 1/4"-28, NYLOC
19	AN4-20A	5	BOLT, HEX, 1/4-28 X 2.031" L, STL CD PLT
20	NAS1149-F0663P	4	WASHER, 3/8"
21	91257A628	2	BOLT, HEX, 3/8-16, 1-1/2" LONG
22	94945A217	2	NUT, 3/8"-16, NYLOC
23	T001-01-01	1	TAERON DATA PLATE
24	NAS620C6	4	WASHER, NO.6

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8. Service Kit

Table 3: Service Kit BOM

PART NO	QTY.	DESCRIPTION
T016-10-07	1	RUBBER BUMPER
T016-13-07	1	MANUAL RELEASE RETURN SPRING
93740A231	1	SPRING PIN, 1/8" DIA, 2" LONG
93740A215	1	SPRING PIN, 1/8" DIA, 3/4" LONG
92678A395	1	WASHER, 3/8" ID, 0.032" THICK
92678A494	1	WASHER, 3/8" ID, 0.09" THICK
9044K209	1	LOAD BEAM RETURN SPRING
93740A212	1	SPRING PIN, 1/8" DIA, 5/8" LONG
T016-20-02	2	BUSHING, 3/8" HOUSING X 5/16" SHAFT X 7/16" L, SAE 660 BRONZE
T016-20-03	1	BUSHING, 3/8" SHAFT X 7/16" HOUSING X 1/2" L, SAE 660 OR SAE 841 BRONZE
T016-24-06	1	RELEASE ARM RETURN EXTENSION SPRING
1061T26	1	SILICONE RUBBER GROMMET
T016-10-09	1	KEEPER SPRING
AN4-20A	5	BOLT, HEX, 1/4-28 X 2.031" L, STL CD PLT
NAS1149-F0432P	12	WASHER, 1/4", 0.035" THCK, STL CD PLT
MS21083N4	5	NUT, 1/4"-28, NYLOC
NAS1149-F0663P	4	WASHER, 3/8"

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