

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.

WARNING

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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Record of Revisions

Rev	Date	Page(s)	Description of Revision	Approved
A	2026-06-04	All	First Issue	NV, PA

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

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

1.1. Operator 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. Maximum operating temperature: -40°F to +160°F (-40°C to +71°C)
- 1.2.2. Do not exceed Working Load Limit of 3,300 lb (1,500 kg)
- 1.2.3. Maximum load angle from vertical: 5 degrees
- 1.2.4. Do not use in salt spray environments without daily cleaning
- 1.2.5. Prohibited for human external cargo operations

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

2. General

2.1. Part Numbers

- 2.1.1. P/N T016-00-02
Remote Hook with Keeper with Auto-Lock Generation 2, SN 1407 and newer

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2.2. Product Specifications

Assembly Part No.: T016-00-02:

Working Load Limit:	3,300 lb [1,500 kg]
Ultimate Strength:	13,200 lb [6,000 kg]
Power Required:	28 VDC, 7 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]

3. Electrical Connection

- 3.1. Connect the included 3 prong plug to the remote hook cable using the following reference table.
- 3.2. Ensure the plug polarity correlates to your receptacle polarity on your electric longline.
- 3.3. **Note: The Remote hook may not operate if polarity is reversed**

Remote Hook Wire	Polarity
White	Positive
Green	Not Connected
Black	Negative

- 3.4. Power supply from Helicopter

Voltage:	20 V to 31 V
Current maximum:	7.3 A

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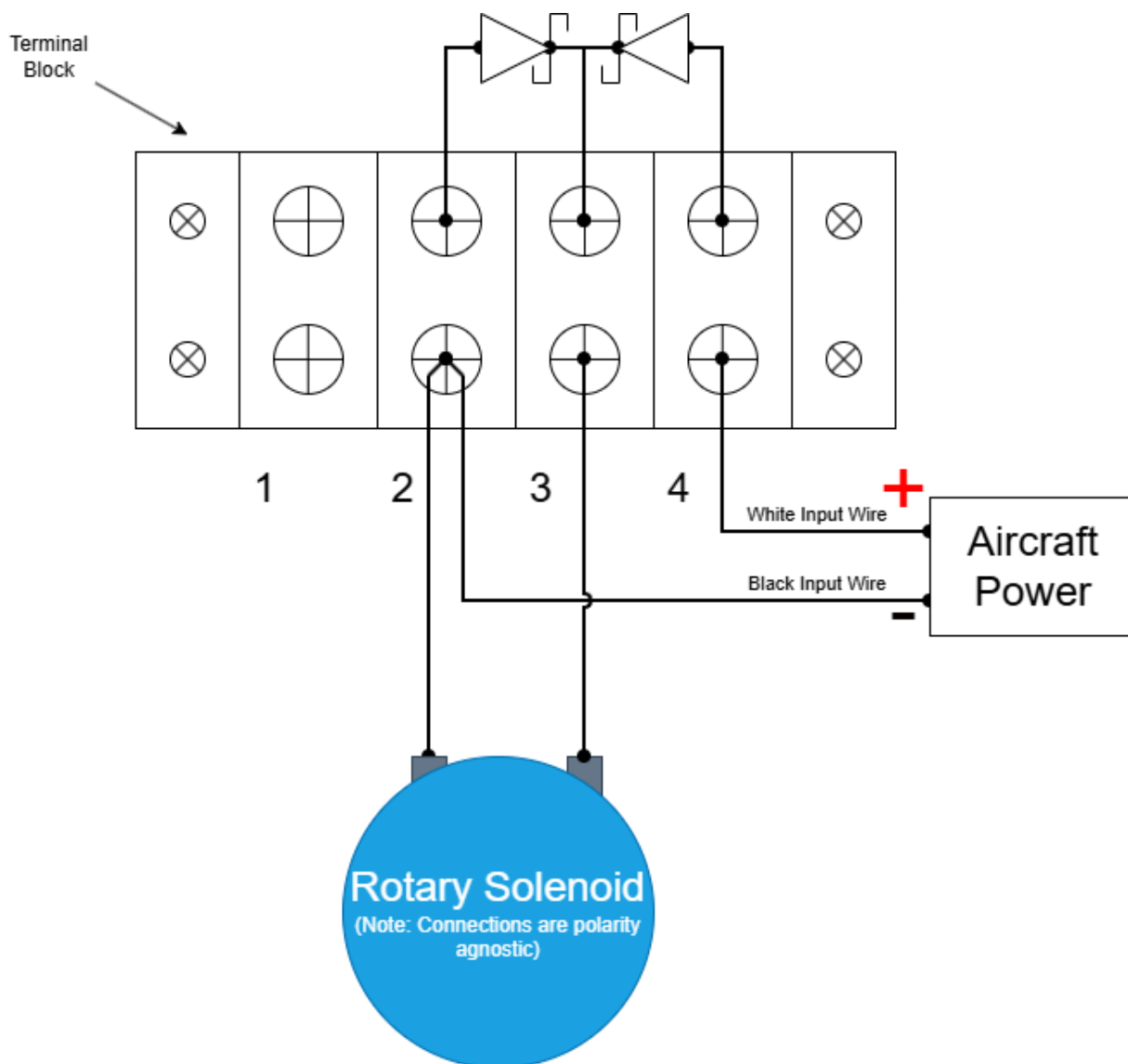


Figure 1: Electrical Wiring Diagram of the Remote Cargo Hook

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Figure 2: Diode Orientation

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 via a 2 tonne [4,400 lb] Working Load Limit (WLL) shackle or equivalent size shackle of minimum 3,300 lb WLL. Ensure the 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.

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- 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.
 - 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.
 - 4.2.2.1. **Danger: Using a ring larger than 3" may increase the risk of dynamic rollout, and loss of the load.**



Figure 3: Remote Cargo Hook Manual Release Knob

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5. Use and Care

5.1. Installation Checks

CAUTION

- 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: 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

CAUTION

- 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: Do not apply power to the remote cargo hook for longer than 10 seconds per minute or damage to the solenoid may occur.**
- 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.
- 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 up to 1.5 x WLL, however, continuous operation of the hook release under loaded conditions may prematurely cause wear to the hook parts.

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- If releasing the remote cargo hook at the WLL (3300 lb) more than 10 times, return to Taeron Systems for inspection and overhaul.
- If releasing the remote cargo hook at loads less than the WLL (3300 lb), but greater than 500 lb, return the hook to Taeron after 50 releases 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 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 returned to Taeron Systems for inspection and maintenance before further use.

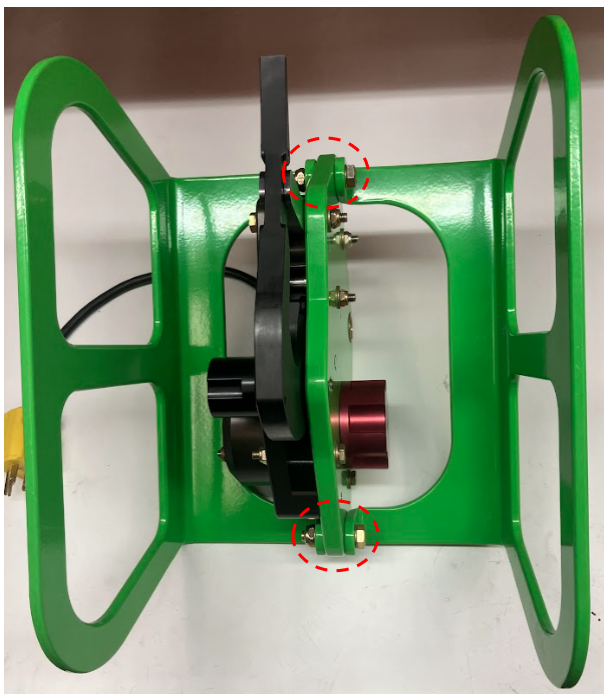
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5.6. Overhaul Instructions

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.

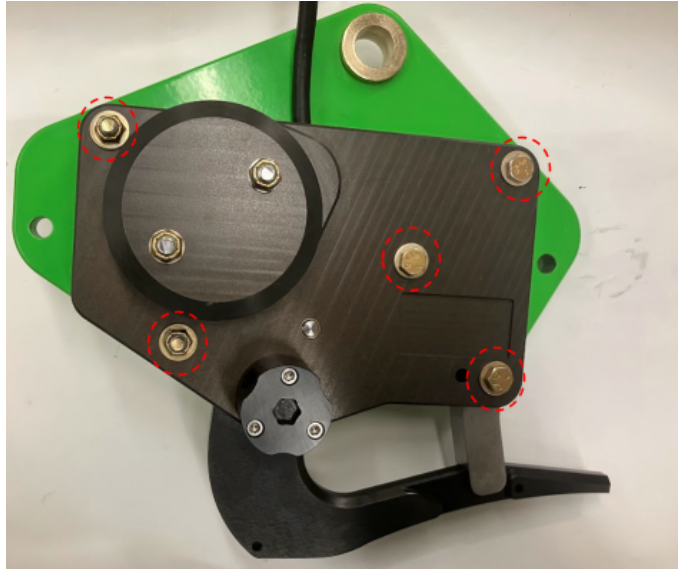
5.6.1. Disassembly Procedure

- 5.6.1.1. Remove the two 3/8-16 bolts, washers and nuts that connect the cage plates to the steel side plate.



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



- 5.6.1.3. Remove the steel sideplate sub-assembly (including the manual release knob). Note that input power wiring, solenoid power wiring, and the number and placement of diodes in the electrical terminal block, may differ from the image below.

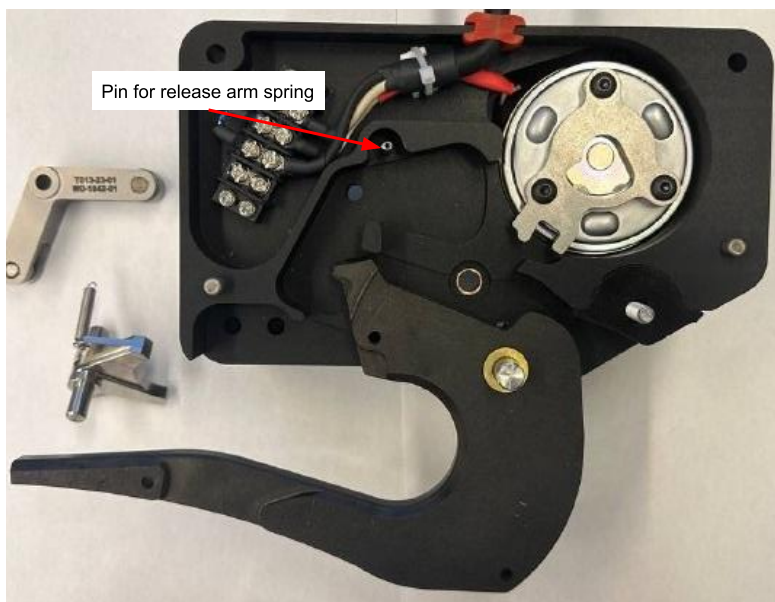


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5.6.1.4. Remove the keeper and keeper spring.

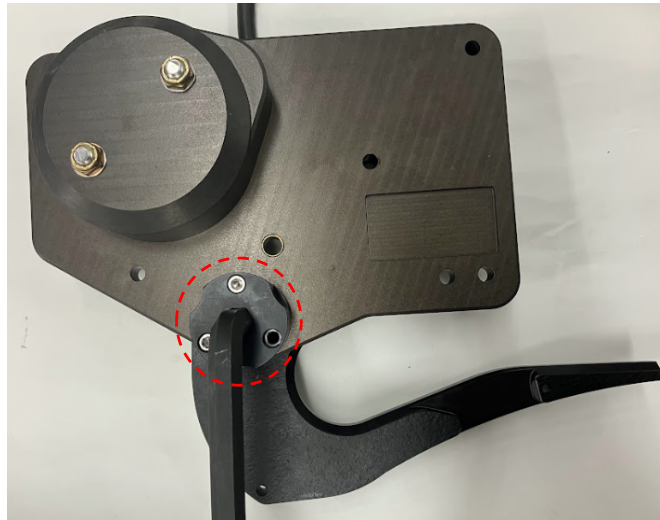


5.6.1.5. Remove the lever arm sub-assembly (T013-23-00), release arm sub-assembly (T016-24-00), and the release arm return spring (T016-24-06), by taking the spring off the pin pressed into the aluminum side plate.

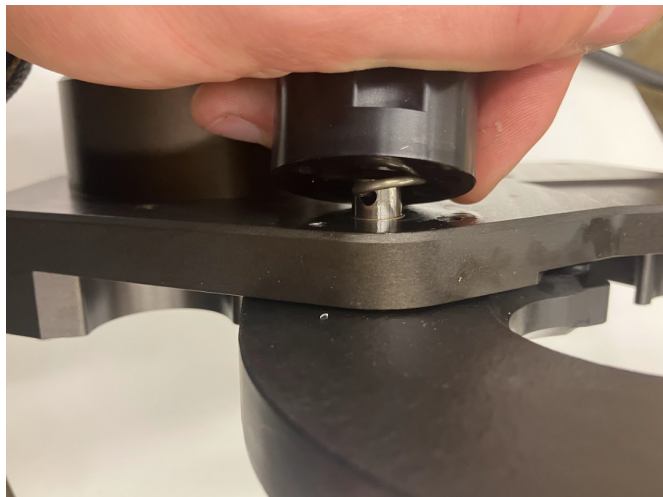


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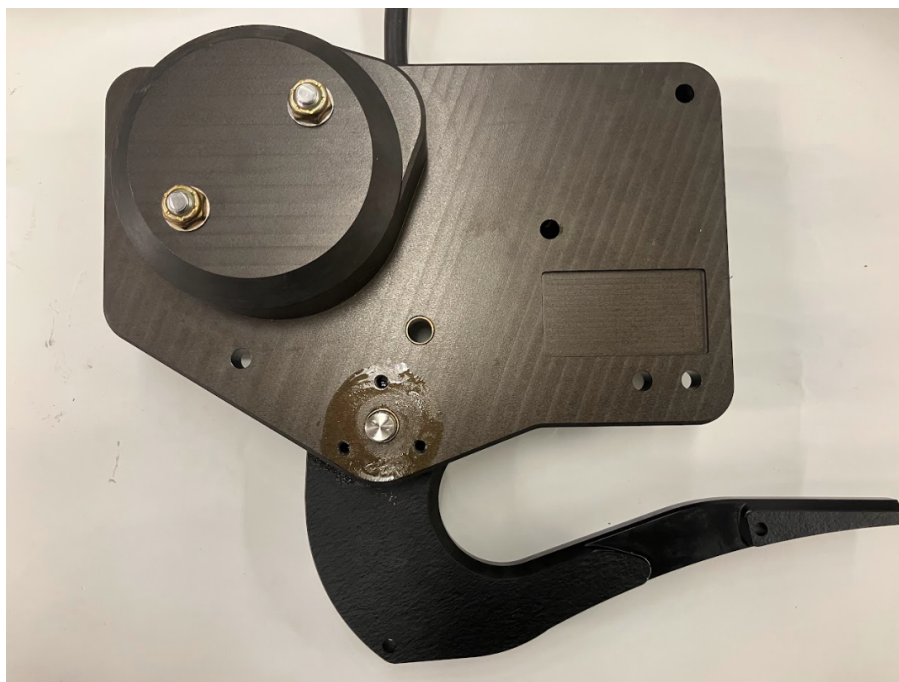
- 5.6.1.6. Remove the load beam return spring sub-assembly (T016-21-00) by removing the three 10-32 socket head cap screws on the return spring housing. **Caution:** The spring inside the housing will be under tension when removing these bolts. Use a 3/8 allen key in the hole on the center of the housing to prevent the housing from rotating, as shown below.



- 5.6.1.7. Unhook the spring from the load beam sub-assembly and remove the load beam sub-assembly from the side plate.



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



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5.6.2. Inspection Procedure

5.6.2.1. 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 bushings (T016-13-05 and T016-13-06). If the ID of T016-13-05 is greater than 0.3145", replace (Nominal ID: 0.3135"). If the ID of T016-13-06 is greater than 0.77", replace (Nominal ID: 0.75").	No
T016-14-00	Aluminum sideplate sub-assy	Check for visible cracks and wear on 2 bronze bearings connected to the load beam sub-assy. If the ID of T016-20-02 is greater than 0.3145", replace (Nominal ID: 0.3135). If the ID of T016-20-03 is greater than 0.386", 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

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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 should be replaced (e.g. exposed conductors).	No
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
T016-12-01	Cage, bent plate, steel	Inspect for corrosion. If plates are bent preventing access to the load beam, replace the plates	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

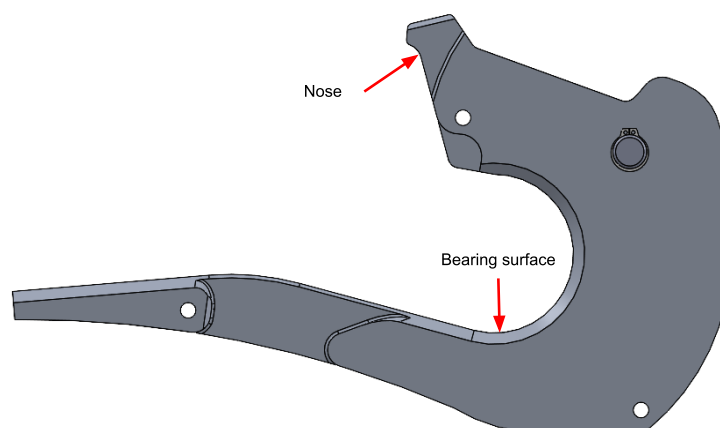


Figure 4: Load Beam Inspection

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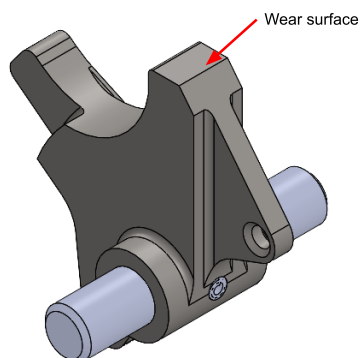
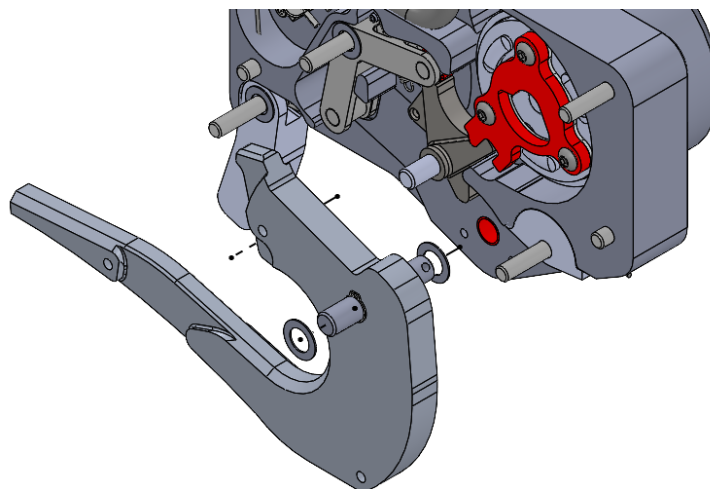
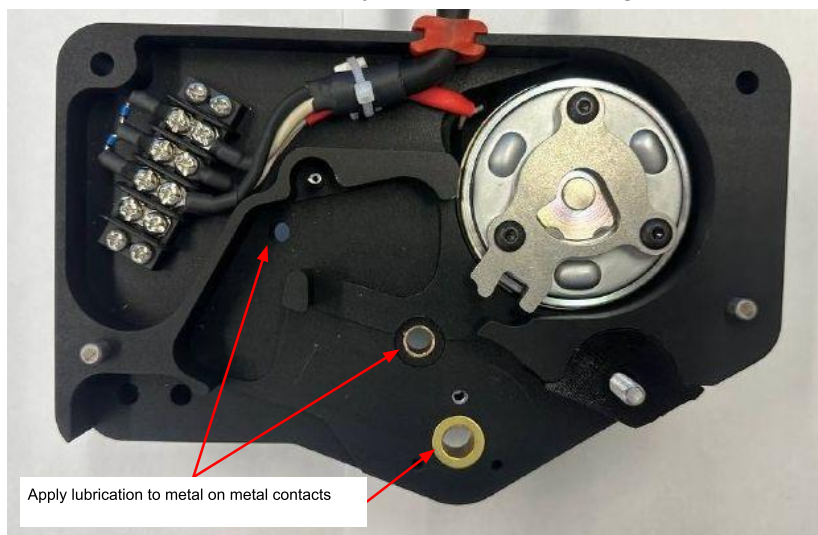


Figure 5: Release Arm Inspection

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5.6.3. Assembly Procedure

- 5.6.3.1. 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 3/8" washers (T013-20-05) on the load beam shaft, one on each side of the load beam as shown in the figure below. Install the load beam sub-assembly into the aluminum sideplate sub-assembly. Note that input power wiring, solenoid power wiring, and the number and placement of diodes in the electrical terminal block may differ from the image below.



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- 5.6.3.2. Connect the return spring to the release arm, then pass 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 (AN4-20) at the lever arm pivot point.

Connect release arm return spring here

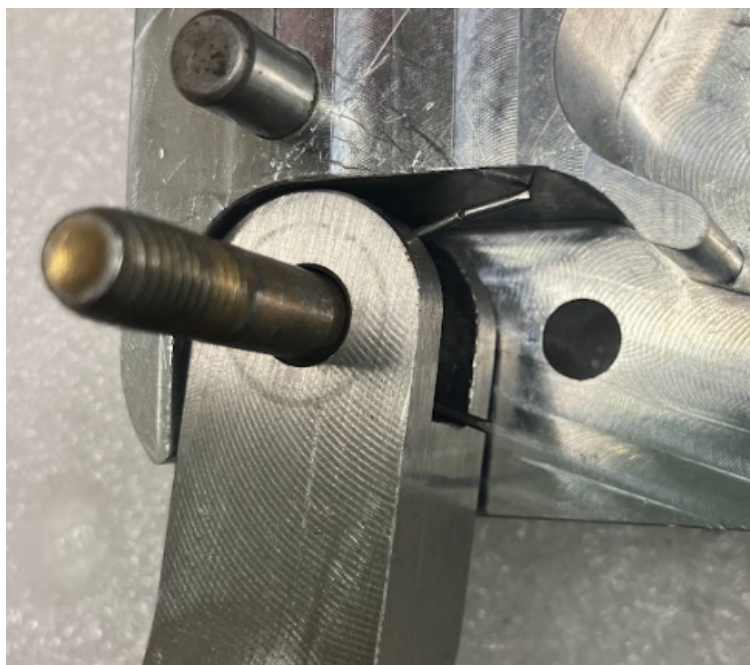


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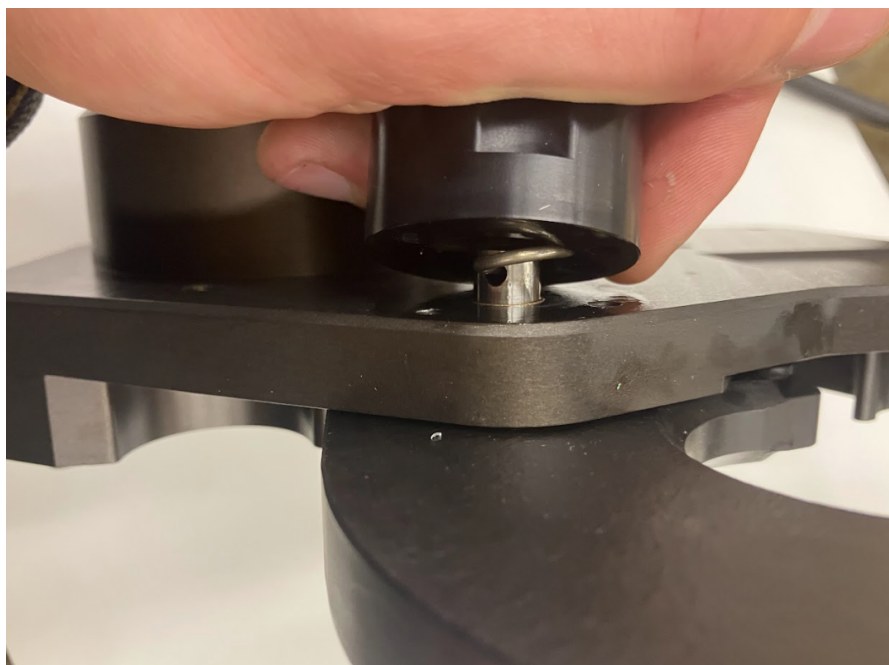
- 5.6.3.3. Install the keeper and keeper spring into the aluminum side plate using the 1/4-28 bolt (AN4-20). The correct orientation of the keeper spring is shown below (longer leg is on top).



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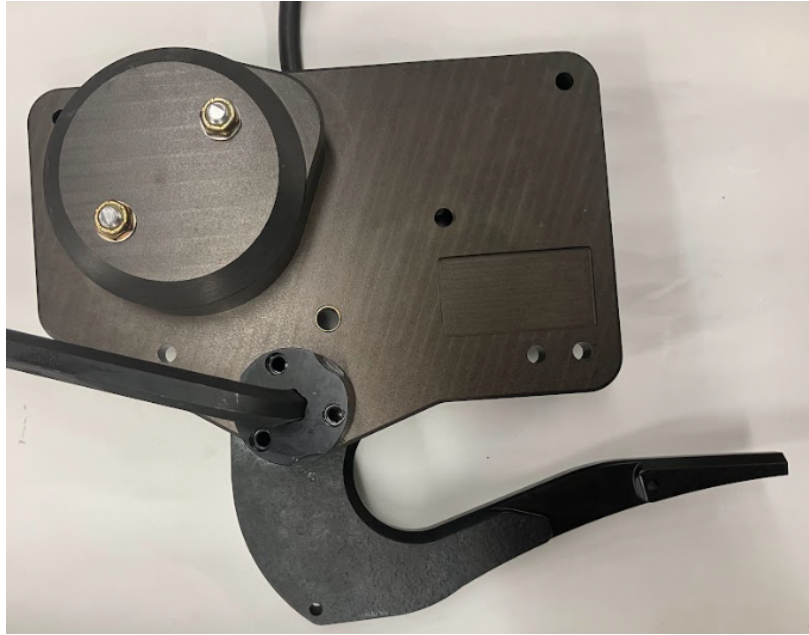


5.6.3.4. Connect the load beam return spring to the hole in the load beam shaft.

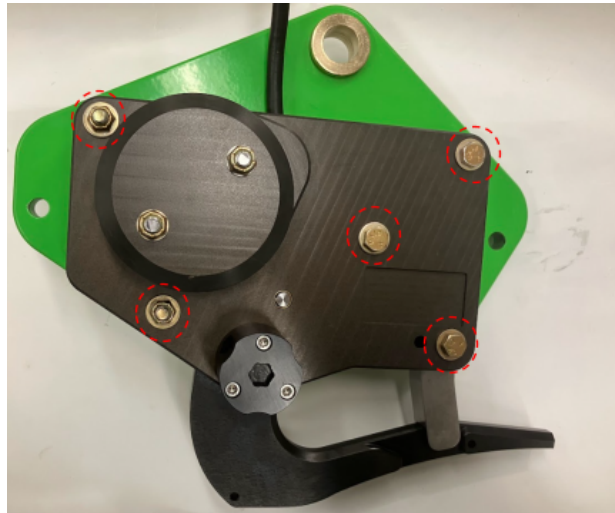


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- 5.6.3.5. Tension the spring by turning the housing 60 degrees (using an allen key in the hole in the spring housing), then install the 3x 10-32 bolts to connect the load beam return spring housing to the aluminum side plate.

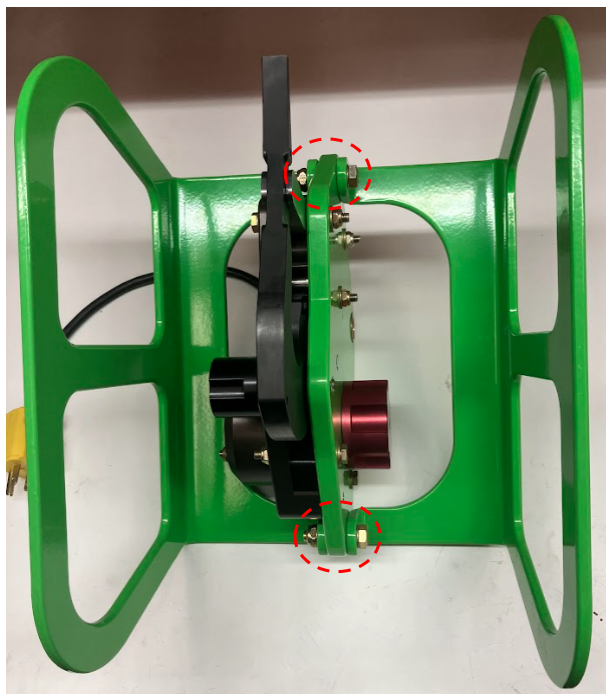


- 5.6.3.6. Install the 5x 1/4-28 bolts (AN4-20) that connect the load beam sub-assy and the sideplate sub-assy. Use washers (NAS1149F0432P) below the bolt heads and nuts (MS21083N4). Torque to 50-70 in-lbs.



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- 5.6.3.7. Install 2x 3/8-16 bolts, washer, and nuts to connect the cage plate to the steel sideplate. Torque to 160-190 in-lbs.



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6. Exploded Views of Assembly

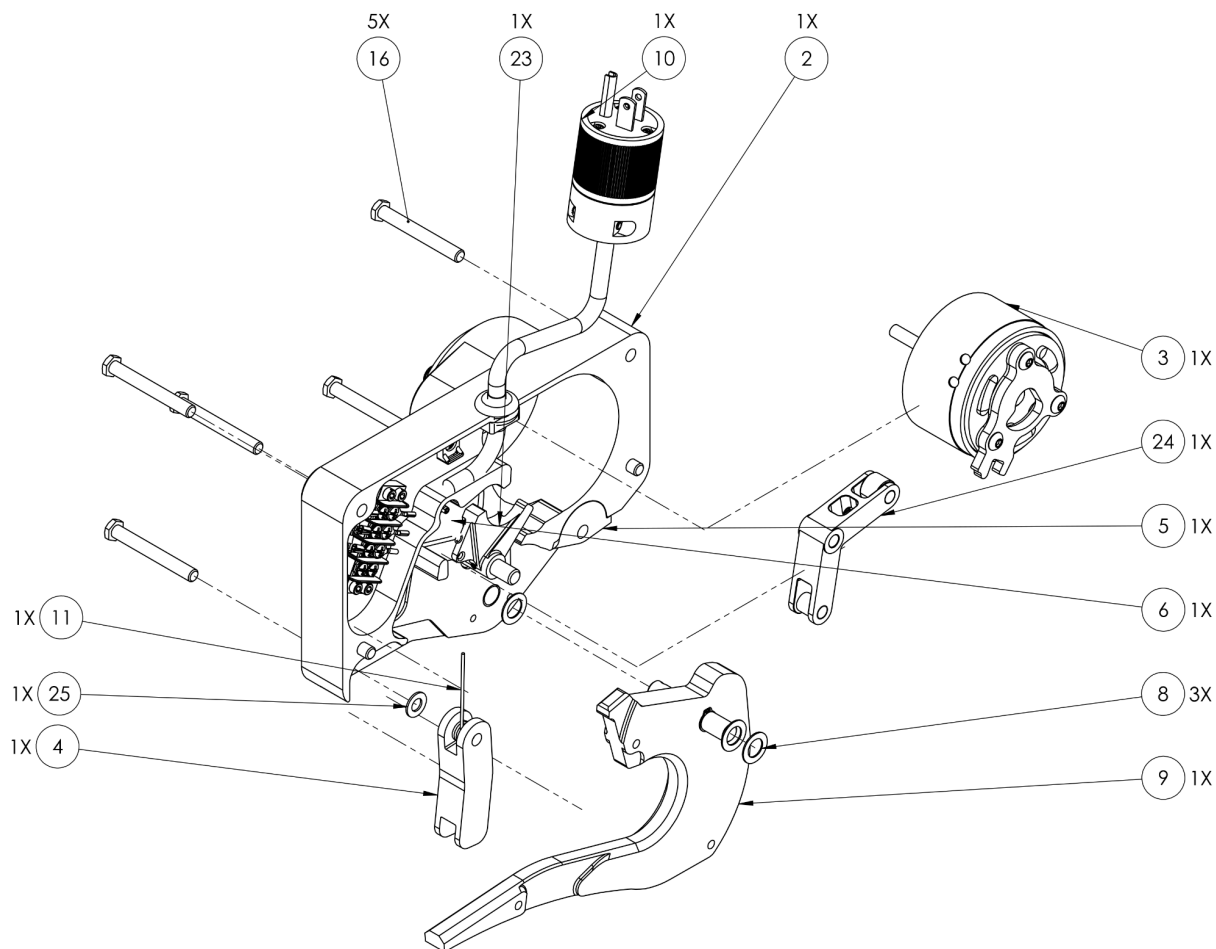


Figure 6: Exploded view 1 (internal components)

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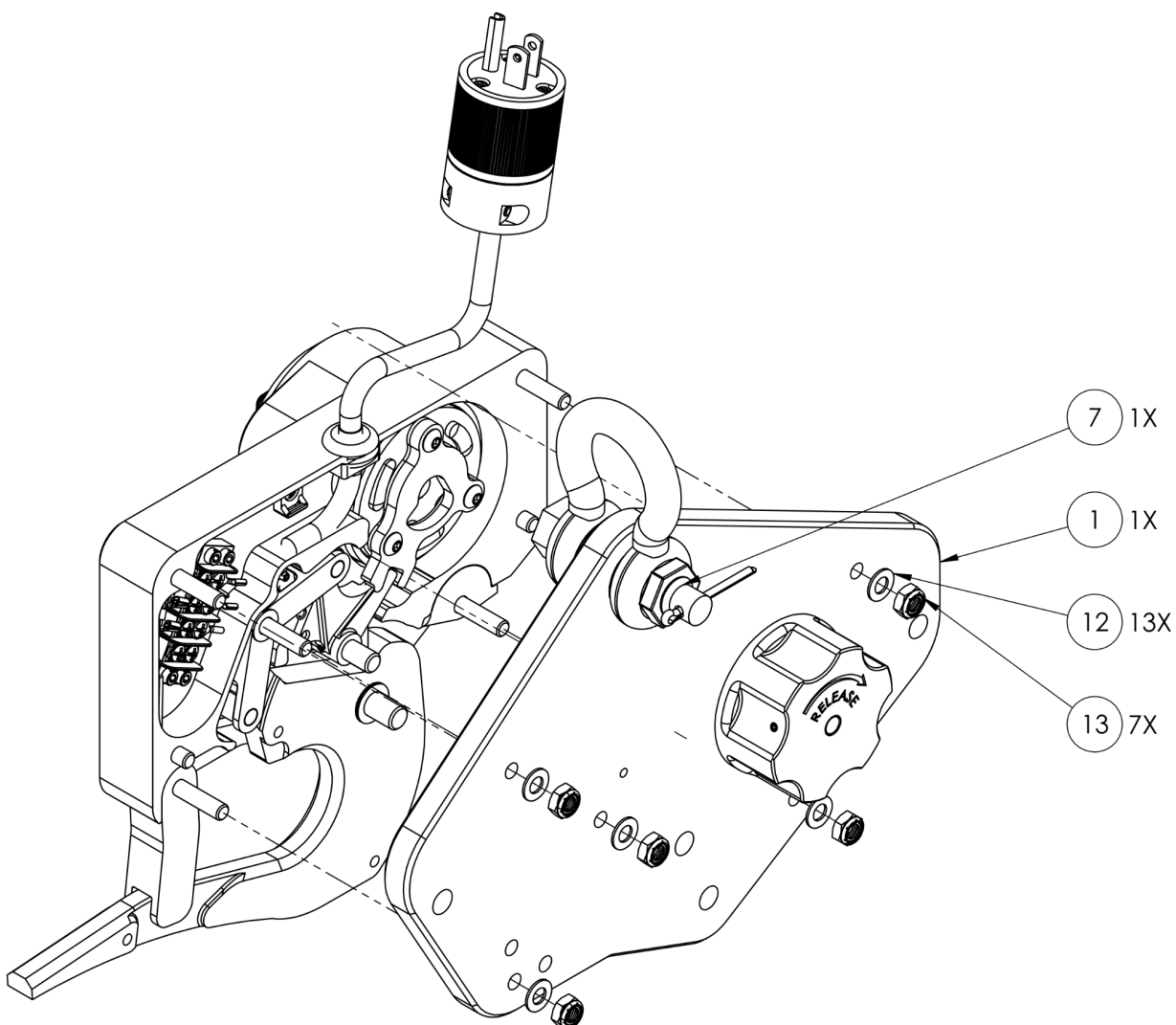


Figure 7: Exploded view 2 (steel sideplate)

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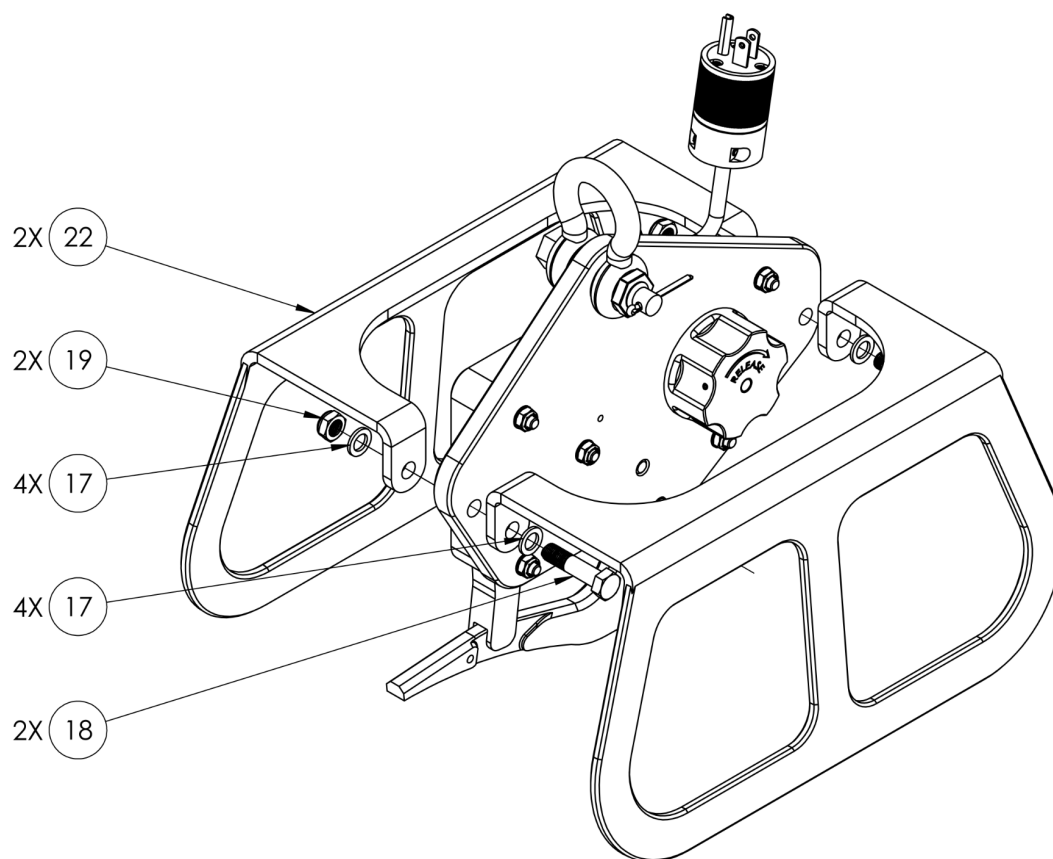


Figure 8: Exploded view 3 (with cage)

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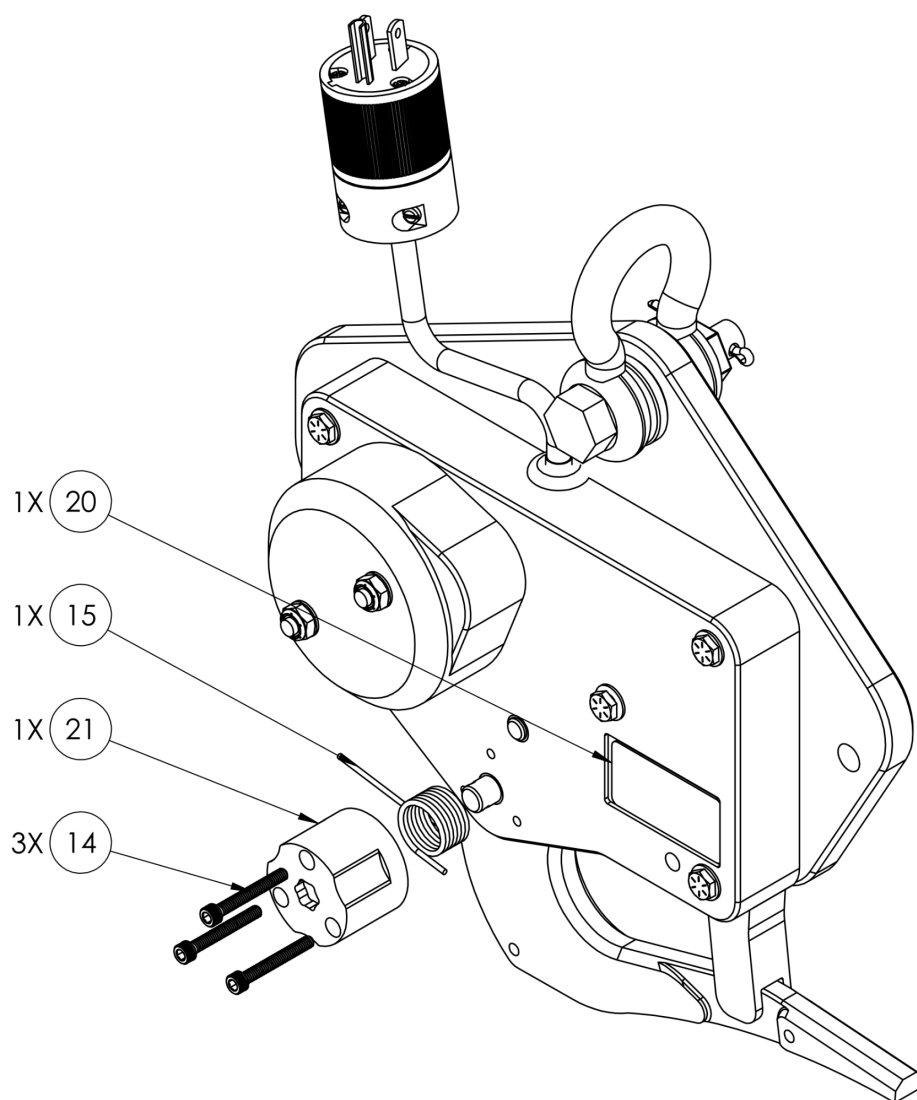


Figure 9: Exploded view 4 (load beam return spring housing)

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7. Table of Components

Table 2: List of Components

ITEM NO.	PARTNO	QTY.	TITLE
1	T016-13-00	1	STEEL SIDEPLATE SUB-ASSY
2	T016-14-00	1	ALUMINUM SIDEPLATE SUB-ASSY
3	T016-34-00	1	SOLENOID SUB-ASSY
4	T016-10-06	1	KEEPER, 1500KG REMOTE HOOK
5	T016-10-07	1	RUBBER BUMPER
6	T016-24-06	1	RELEASE ARM RETURN EXTENSION SPRING ALT PN 7749N187
7	8-838-13	1	ANCHOR SHACKLE, YOKE, 1/2", 3.3 T WLL
8	T013-20-05	3	WASHER, 0.025" THK X 0.38" ID X 0.63" OD
9	T016-21-00	1	1500 KG REMOTE HOOK LOAD BEAM ASSEMBLY
10	T016-90-00	1	WIRING HARNESS SUB-ASSY
11	T016-10-09	1	KEEPER SPRING
12	NAS1149F0432P	14	WASHER, 1/4", 0.035" THK, STL CD PLT
13	MS21083N4	7	NUT, 1/4"-28, NYLOC
14	92185A202	3	SOCKET HEAD SCREW, 8-32, 1-1/4" LONG, FULLY THREADED
15	T016-21-07	1	LOAD BEAM RETURN SPRING ALT PN 9287K185
16	AN4-20A	5	BOLT, HEX, 1/4-28 X 2.031" L, STL CD PLT
17	NAS1149F0663P	4	WASHER, 3/8"
18	91257A628	2	BOLT, HEX, 3/8-16, 1-1/2" LONG, ZINC-YELLOW CHROMATE PLATED STEEL
19	94945A217	2	NUT, 3/8"-16
20	2001-01-01	1	TAERON BLANK DATA PLATE
21	T016-21-06	1	LOAD BEAM RETURN SPRING HOUSING
22	T016-12-01	2	CAGE, BENT PLATE, STEEL
23	T016-24-00	1	RELEASE ARM SUB-ASSY
24	T013-23-00	1	LEVER ARM SUB-ASSY 3K CARGO HOOK

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8. Service Kit

Table 3: Service Kit BOM

PART NO	QTY.	DESCRIPTION
T016-10-07	1	RUBBER BUMPER
T016-13-06	1	FLANGED BUSHING, 3/4" SHAFT OD, 1" HOUSING ID, 3/4" LONG
T016-13-07	1	MANUAL RELEASE RETURN SPRING
T013-20-05	3	WASHER, 0.025" THK X 0.38" ID X 0.63" OD
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 BRONZE
T016-24-06	1	RELEASE ARM RETURN EXTENSION SPRING
95304A238	1	RETAINING RING
1061T26	1	SILICONE RUBBER GROMMET
T016-10-09	1	KEEPER SPRING
92185A202	3	SOCKET HEAD SCREW, 8-32, 1-1/4" LONG
T016-21-07	1	LOAD BEAM RETURN SPRING
AN4-20A	5	BOLT, HEX, 1/4-28 X 2.031" L, STL CD PLT
NAS1149F0432P	14	WASHER, 1/4", 0.035" THK, STL CD PLT
MS21083N4	7	NUT, 1/4"-28, NYLOC
NAS1149F0663P	4	WASHER, 3/8"
91257A628	2	BOLT, HEX HEAD, 3/8-24
94945A217	2	NUT, 3/8-24, NYLOC