

**Model: 9504-010**  
**750 lb (430.9 kg) Portable Crane**

06/2023 – Rev. 02

**For Spare Parts, Operations & Service Manuals or Service Needs**  
**Scan the QR code or visit [Tronair.com/aftermarket](http://Tronair.com/aftermarket)**



REVISION	DATE	TEXT AFFECTED
01	02/2019	Original release
02	06/2023	Modified Parts List

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This product can not be modified without the written approval of Tronair, Inc. Any modifications done without written approval voids all warranties and releases Tronair, Inc., its suppliers, distributors, employees, or financial institutions from any liability from consequences that may occur. Only Tronair OEM replacement parts shall be used.

**1.0 PRODUCT INFORMATION**

**1.1 DESCRIPTION**

750 lb (430.9 kg) Portable Crane is designed to remove various components from aircraft without the need for an overhead crane. When disassembled and stored in its storage containers, the crane can be taken aboard an HH-60J helicopter for deployment to recovery sites for field maintenance and recovery of aircraft. Once on site, two persons can assemble and operate the crane in ground slope conditions of up to 12°. The crane is capable of lifting and rotating up to 750 pounds. For extended reach operations such as HH-60J accessory and input modules, the boom can be extended an additional 12 inches, which allows the crane to lift and rotate up to 250 lbs.

The crane consists of four outriggers, two short leveling footpads, two long leveling footpads, a lower base, an upper base, a turntable assembly with manual winch, a lower mast, an upper mast and an extendable boom. The manual winch contains an automatic disk brake that will hold the load in position without operator assistance

**1.2 MODEL & SERIAL NUMBER**

Reference nameplate on unit

**1.3 MANUFACTURER**

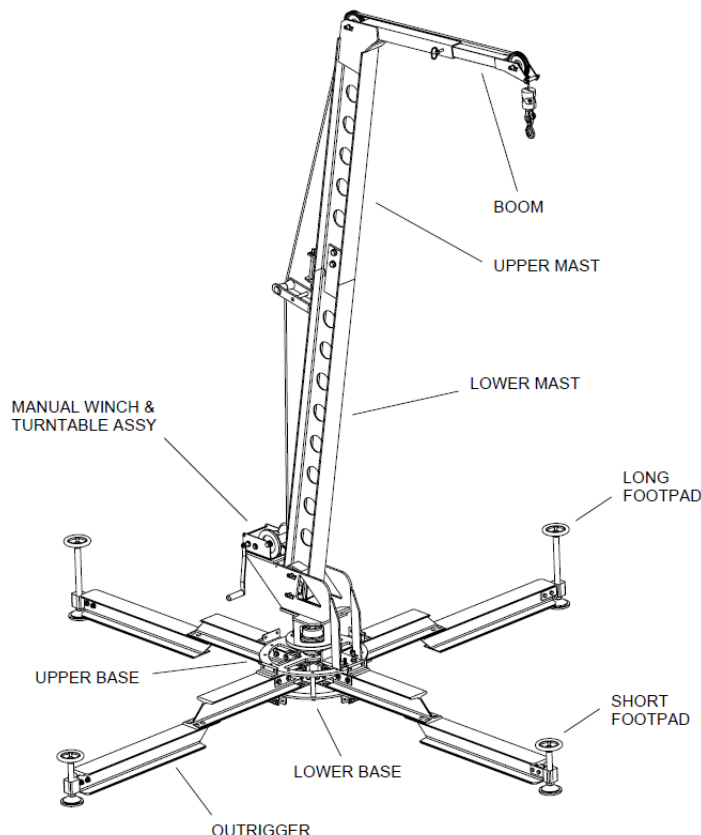
Columbus**Jack**/Regent  
1 Air Cargo Pkwy East  
Swanton, Ohio 43558 USA

Telephone: 614.443.7492  
Fax: 614.444.9337  
E-mail: sales@columbusjack.com  
Website: www.columbusjack.com

**1.4 SPECIFICATIONS**

Capacity .....	750 lb (430.9 kg)
Maximum Hook Height .....	162 in (411.48 cm)
750 lb Capacity Maximum Reach.....	74 in (187.96 cm)
250 lb Capacity Maximum Reach.....	82 in (208.28 cm)
Overall Height .....	180 in (457-2 cm)
Outrigger Area Required .....	144 x 144 in (365.76 x 365.76 cm)
Weight .....	590 lbs (1,301 kg)

**1.5 FEATURES**



## **2.0 SAFETY INFORMATION**

### **2.1 USAGE AND SAFETY INFORMATION**

To insure safe operations please read the following statements and understand their meaning. Also refer to your equipment manufacturer's manual for other important safety information. This manual contains safety precautions which are explained below. Please read carefully.



**WARNING!** — Warning is used to indicate the presence of a hazard that ***can cause severe personal injury, death, or substantial property damage*** if the warning notice is ignored.

**CAUTION!** — Caution is used to indicate the presence of a hazard that ***will or can cause minor personal injury or property damage*** if the caution notice is ignored.

## **3.0 TRAINING**

### **3.1 TRAINING REQUIREMENTS**

The employer of the operator is responsible for providing a training program sufficient for the safe operation of the unit.

### **3.2 TRAINING PROGRAM**

The employer provided operator training program should cover safety procedures concerning use of the unit in and around the intended aircraft at the intended aircraft servicing location.

### **3.3 OPERATOR TRAINING**

The operator training should provide the required training for safe operation of the unit.

**NOTE: Maintenance and Trouble Shooting are to be performed by a skilled and trained technician.**

**4.0 ASSEMBLY**

**4.1 ASSEMBLY TOOLS REQUIRED**

The following tools are required for assembly and disassembly of the crane:

- |                                   |                                  |
|-----------------------------------|----------------------------------|
| 3/4 Open End Wrench               | 3/4 Socket with Ratchet Handle   |
| 1-1/8 Open End Wrench             | 1-1/8 Socket with Ratchet Handle |
| 1-1/2 Socket with Ratchet Handle  | 3/16 Allen Wrench                |
| 4x4 x 6 in. long Board (4 Req'd.) | 10 inch Drift Pin                |
| "Ford" Wrench                     | Soft Mallet                      |

**4.2 CRANE ASSEMBLY – LEVEL OPERATION**

1. Clear area where crane will be assembled and verify there is sufficient overhead clearance for the mast and boom.



**WARNING!**

**For soft terrain, ensure adequate footpad shoring is available.**

2. Arrange storage containers and open tops.



OUTRIGGERS



UPPER & LOWER  
BASE ASSEMBLIES



LOWER MAST



WINCH & TURNTABLE ASSY



UPPERMAST, BOOM & LEVELING FOOTPADS

3. Remove all four outriggers and both the long and short leveling footpads.
4. Assemble footpads to outriggers

**NOTE: For sloped operation, see section 4.3**



LONG FOOTPAD ASSEMBLY



SHORT FOOTPAD ASSEMBLY

5. Remove lower base and position on ground with bottom angles resting on 4x4's.
6. Insert each outrigger fully into lower base until ends butt together. Ensure that the short leveling footpads are positioned closest to the aircraft. Finger-tighten the attaching bolts.
7. Assemble upper base to lower base. Ensure that alignment marks on each line up. Finger-tighten attaching bolts.

4.2 CRANE ASSEMBLY – LEVEL OPERATION (*continued*)

8. Tighten the installed bolts in the following sequence, then remove the 4x4's from under the base:
  - a. Upper-to-lower base bolts (4).
  - b. Center base bolt.
  - c. Shorter bolts through the web of each outrigger.
  - d. Longer tension bolts on the bottom of each outrigger.
  - e. Ensure all bolts are firmly tightened.
9. Remove turntable assembly and assemble to hub on upper base. **NOTE: NUTS ARE LEFT HAND THREAD.**
10. Position outriggers and turntable assembly as needed for operation.



**WARNING!**  
Insure adequate clearances are available for crane operation.



11. Rotate turntable assembly until bubble levels are aligned in the direction of the outriggers.
12. Adjust leveling footpads until the crane turntable assembly is level.
13. Remove lower mast and assemble to turntable assembly with lower pivot pin.
14. Remove upper mast and assemble to lower mast. Finger-tighten the attaching bolts.



15. First tighten longer tension bolts, then the shorter bolts through the web of the mast.



16. Remove boom and install it into the upper mast and pin in position. **NOTE:** Mast assembly may need to be lifted slightly to allow the boom to be inserted into the upper mast.



17. Remove spacer at end of boom by removing nut, bolt and both washers.

4.2 CRANE ASSEMBLY – LEVEL OPERATION (*continued*)

18. Pay out cable assembly from winch and feed cable over “V” roller and both pulleys.



**WARNING!**

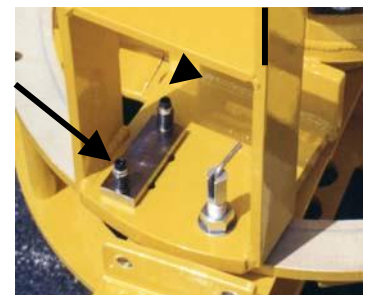
**Keep hands clear of cable drum and pulleys.**



19. Re-assemble spacer at end of boom with nut, bolt and both washers.
20. Tighten loose cable on winch drum, ensuring cable is free from tangles and hook weight is flat against bottom of boom.
21. Rotate winch handle clockwise to raise mast and boom assembly, until holes align between turntable and mast. Insert pin through turntable and mast and lock with spring clip. NOTE: It may be necessary to manually assist the lifting of the mast and boom assembly for the first few feet of lift.



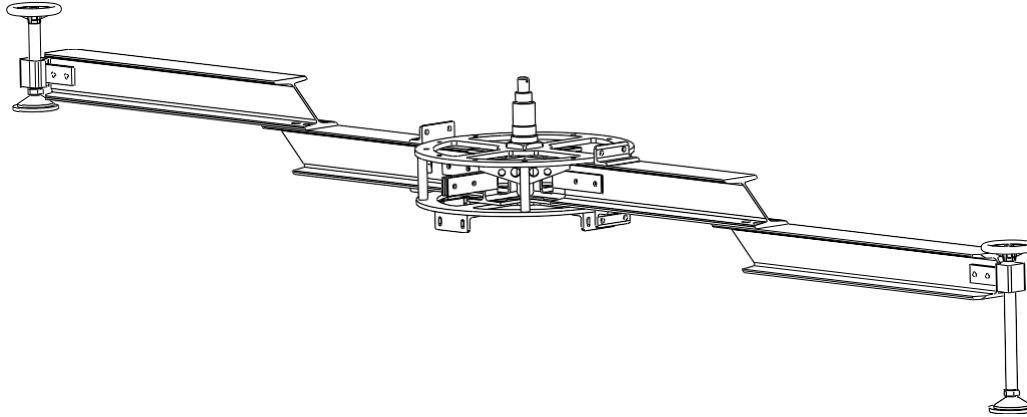
22. With bubble levels aligned in the direction of the outriggers, adjust leveling footpads as necessary to level crane and ensure all footpads contact ground.
23. Ensure turntable roller is in contact with ring on upper base throughout rotation of turntable assembly. Adjust roller as necessary by tightening both socket head capscrews until bearing begins to contact ring, then tighten two full turns.
24. Crane is now ready for operation.



#### 4.3 CRANE ASSEMBLY – SLOPPED OPERATION

For sloped operation, assemble outriggers as follows:

1. Insert the two outriggers “up slope” with the short footpads and outriggers in the up position.
2. Insert the two outriggers “down slope” with the long footpads and outriggers in the down position.
3. Assemble as described in Section 4.2, 5 thru 24.



#### 5.0 OPERATION

1. Visually inspect crane for damaged or missing components.
2. Disengage rotation lock pin and manually rotate mast and boom assembly into position to center hook over load.

**NOTE: Boom may be extended by removing boom lock pin and sliding boom out from upper mast, then locking in place.**



**WARNING!**

**Crane capacity is 250 pounds with boom in fully extended position.**



**WARNING!**

**Keep hands clear of cable drum and pulleys.**

3. Rotate winch handle counterclockwise to lower hook to desired height.
4. Ensure load is totally disconnected before lifting. Turn winch handle clockwise to raise load. Stop turning handle to hold load in place.

## 6.0 CRANE DISASSEMBLY

1. Rotate winch handle clockwise to fully raise hook weight against bottom of boom.
2. Rotate turntable assembly so that mast may be lowered clear of any obstructions.
3. With mast and boom assembly weight supported by winch, remove top mast lock pin.



4. Rotate winch counterclockwise to lower mast and boom assembly fully.



### **WARNING!**

Ensure personnel are clear of mast and boom before lowering. Rapid descent of mast and boom will occur during last few feet of lowering.



### **WARNING!**

Keep hands clear of cable drum and pulleys.

5. Remove spacer at end of boom by removing nut, bolt and both washers.
6. Remove cable assembly from all pulleys. Rotate winch handle clockwise and wind cable on winch drum, ensuring cable is wound tight and free of tangles.
7. Re-assemble spacer at end of boom with nut, bolt and both washers.
- 8.
9. Remove boom from upper mast.

**NOTE: Mast assembly may need to be lifted slightly to allow the boom to be removed from upper mast. Store in storage container.**

10. Disassemble upper mast from lower mast by removing longer tension bolts and then shorter bolts through the web. Store in storage container.
11. Remove lower mast from turntable assembly by removing lower pivot pin. Store in storage container.
12. Remove turntable assembly from hub on upper base.

**NOTE: nuts are left hand thread.**

13. Store in storage container.
14. Position 4x4's under bottom angles on lower base.
15. Remove upper base from lower base by removing upper-to-lower base bolts (4) and center base bolt.
16. Remove all four outriggers by removing longer tension bolts on the bottom and then the shorter bolts through the web.
17. Remove footpads from outriggers. Store footpads and outriggers in storage containers.
18. Store lower and upper bases in storage container.

**7.0 MAINTENANCE**

**7.1 PREVENTATIVE MAINTENANCE SCHEDULE**

The following Preventative Maintenance Schedule is provided as a guide to insure that the Crane is always ready for operation. The time intervals listed are a general recommendation only. The actual interval used should include factors for the climatic conditions in which the equipment is stored and the frequency of equipment use.

- Grease winch teeth.....6 months
- Grease footpad adjusting screws.....6 months
- Grease hub bearing ..... 12 months

**7.2 REPAIR GUIDELINES**

1. All aluminum components are fabricated from 6061-T6 and have been heat treated after welding.

**CAUTION!**

**Any weld repair will affect the heat treatment of these components. Proper AWS welding and heat treat procedures must be followed for any repair.**

2. All steel components may be weld repaired with standard AWS welding procedures.

**8.0 PROVISION OF SPARES**

**8.1 SOURCE OF SPARE PARTS**

Spare parts may be obtained from the manufacturer:

Columbus <b>Jack</b> /Regent	Telephone: 614.443.7492
1 Air Cargo Pkwy East	Fax: 614.444.9337
Swanton, Ohio 43558 USA	E-mail: sales@columbusjack.com
	Website: www.columbusjack.com



For Spare Parts, Operations & Service Manuals or Service Needs:  
Scan the QR code or visit [Tronair.com/aftermarket](http://Tronair.com/aftermarket)

**8.2 RECOMMENDED SPARE PARTS LISTS**

Reference the following page(s) for Replacement Parts and Kits available.

**9.0 IN SERVICE SUPPORT**

Contact Columbus Jack. for technical services and information. See Section 1.3 – Manufacturer.

## 10.0 GUARANTEES/LIMITATION OF LIABILITY

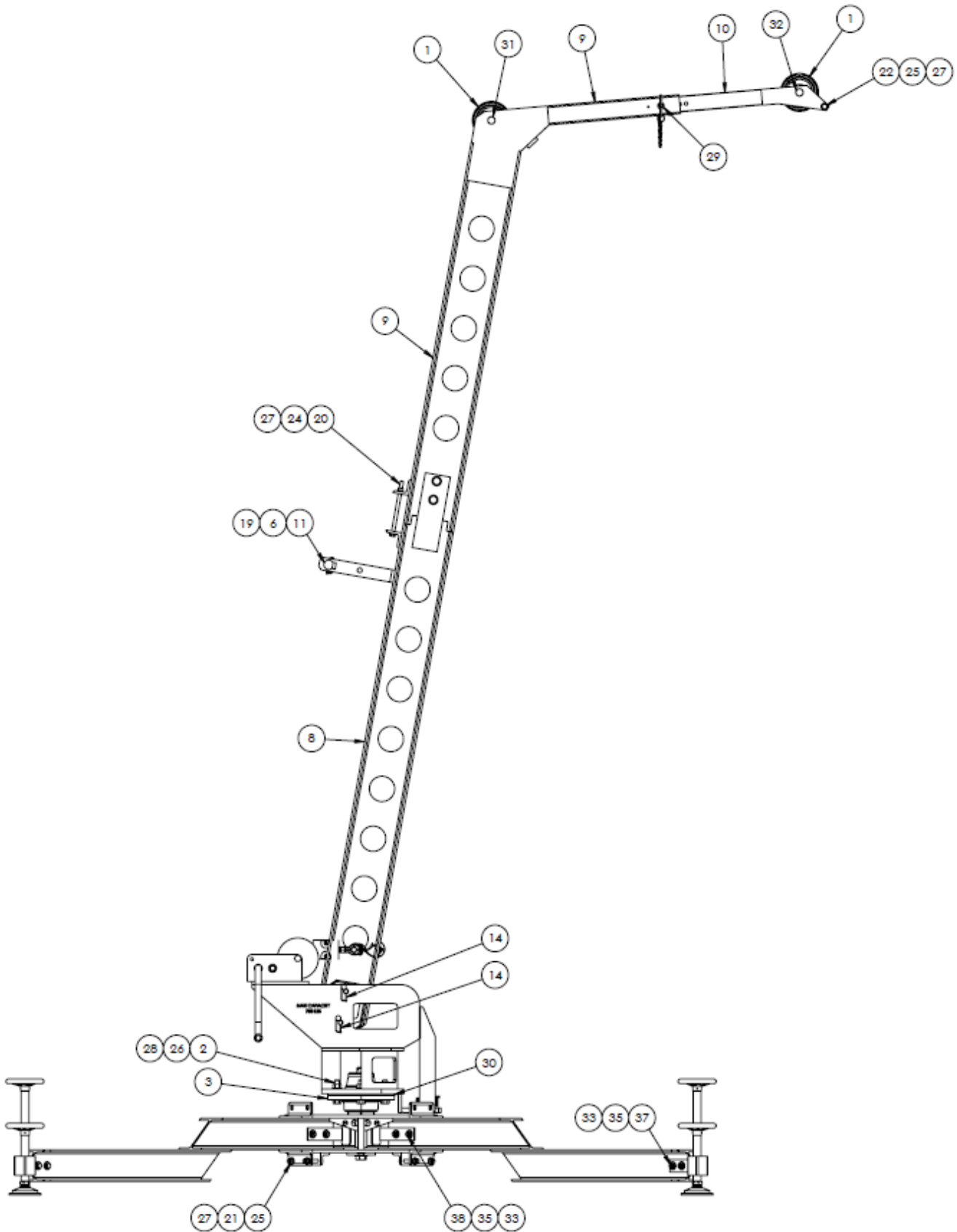
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2. Where Buyer claims an alleged defect in material or workmanship and so advises Seller in writing within ten (10) days after discovery thereof, then and in such event, Buyer shall return said equipment, transportation prepaid, to the Seller, provided such return is timely and within twelve (12) months form date of original shipment. This warranty and liability of the Seller is expressly limited solely to replacement of repair of defective parts or goods, and return at Buyer's expense to Seller after find by Seller the product was defective prior to original shipment or, at the option of Seller, to making refund to Buyer of the purchase price for said product.
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  - b. The Buyer's sole and exclusive remedy shall be repair or replacement of defective parts by the Seller. Should the goods, in the judgment of Seller, preclude the remedying of the warranted defects by repair or replacement, the buyer's sole and exclusive remedy shall the be the refund of the purchase price, and
  - c. Seller shall not be liable for prospective profits or special, indirect or consequential damages, nor shall any recovery of any kind against Seller be greater in amount than the purchase price of the specific material sold and causing the alleged loss, damage or injury. Buyer assumes all risk and liability for loss, damage or injury to persons or property of Buyer or others arising out of use or possession of any product or part sold hereunder, and
  - d. The Seller shall in no way be deemed or held to be obligated, liable or accountable upon or for any guarantees or warranties, express or implied, or created by statute or by operation of law or otherwise, in any manner of form beyond its express agreement above set forth, and
  - e. No warranty herein shall apply to any product which shall have been repaired or altered, unless such alteration or repair has been made by Seller or where, after return to and inspection by Seller, the product is found by Seller to have been subject to misuse, negligence or accident, and
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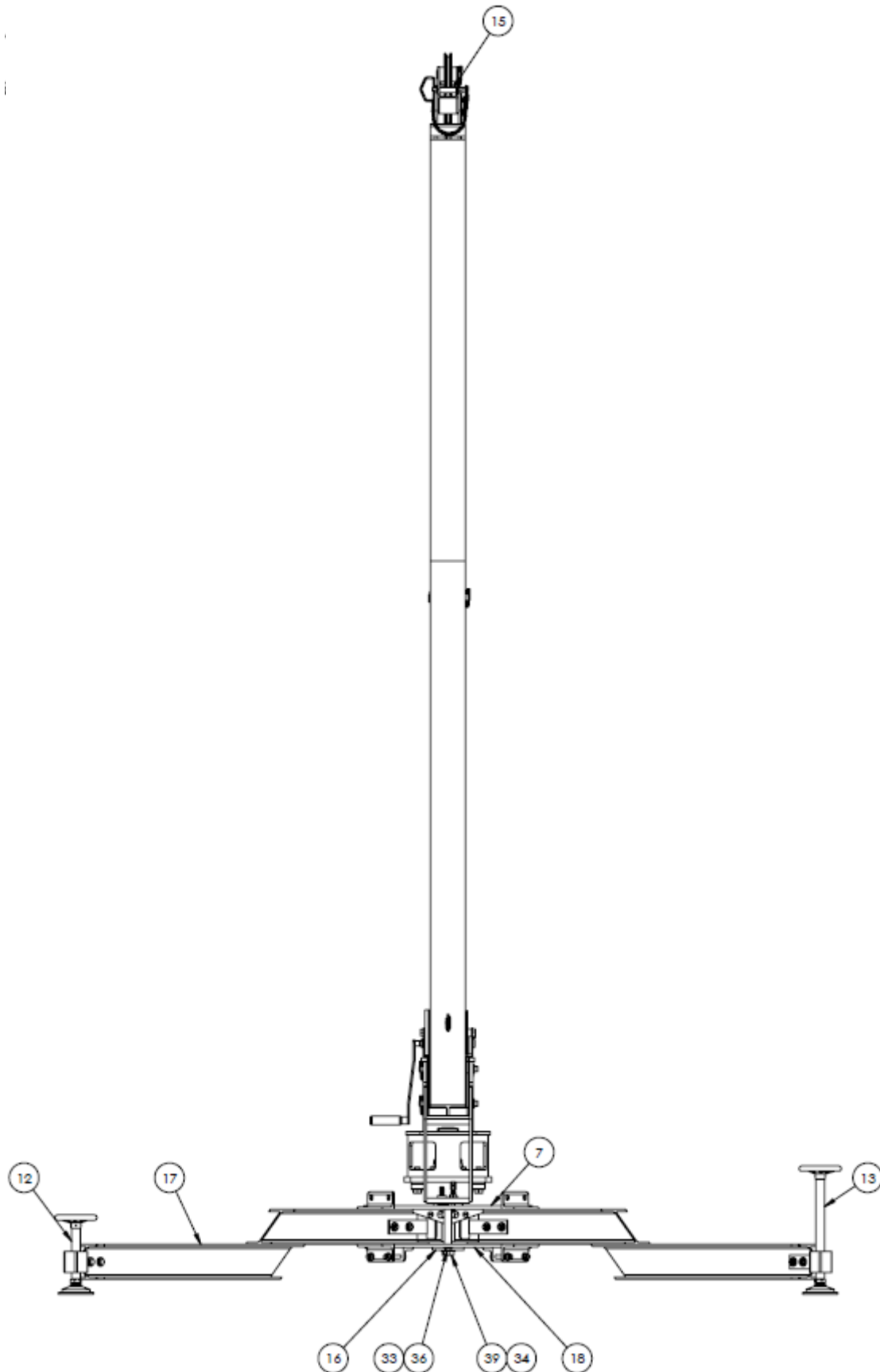
### Parts List

When ordering replacement parts/kits, please specify model, serial number and color of your unit.



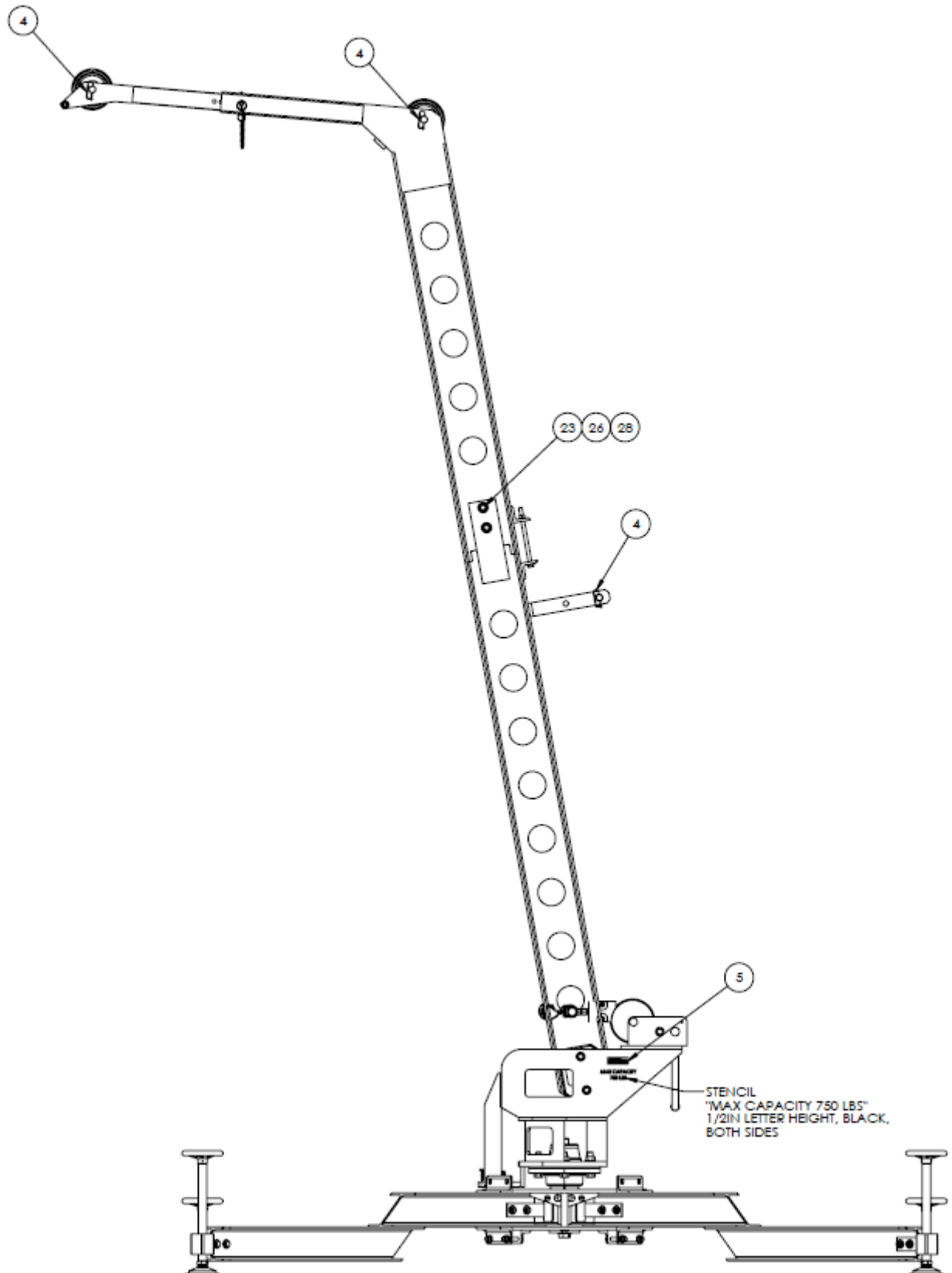
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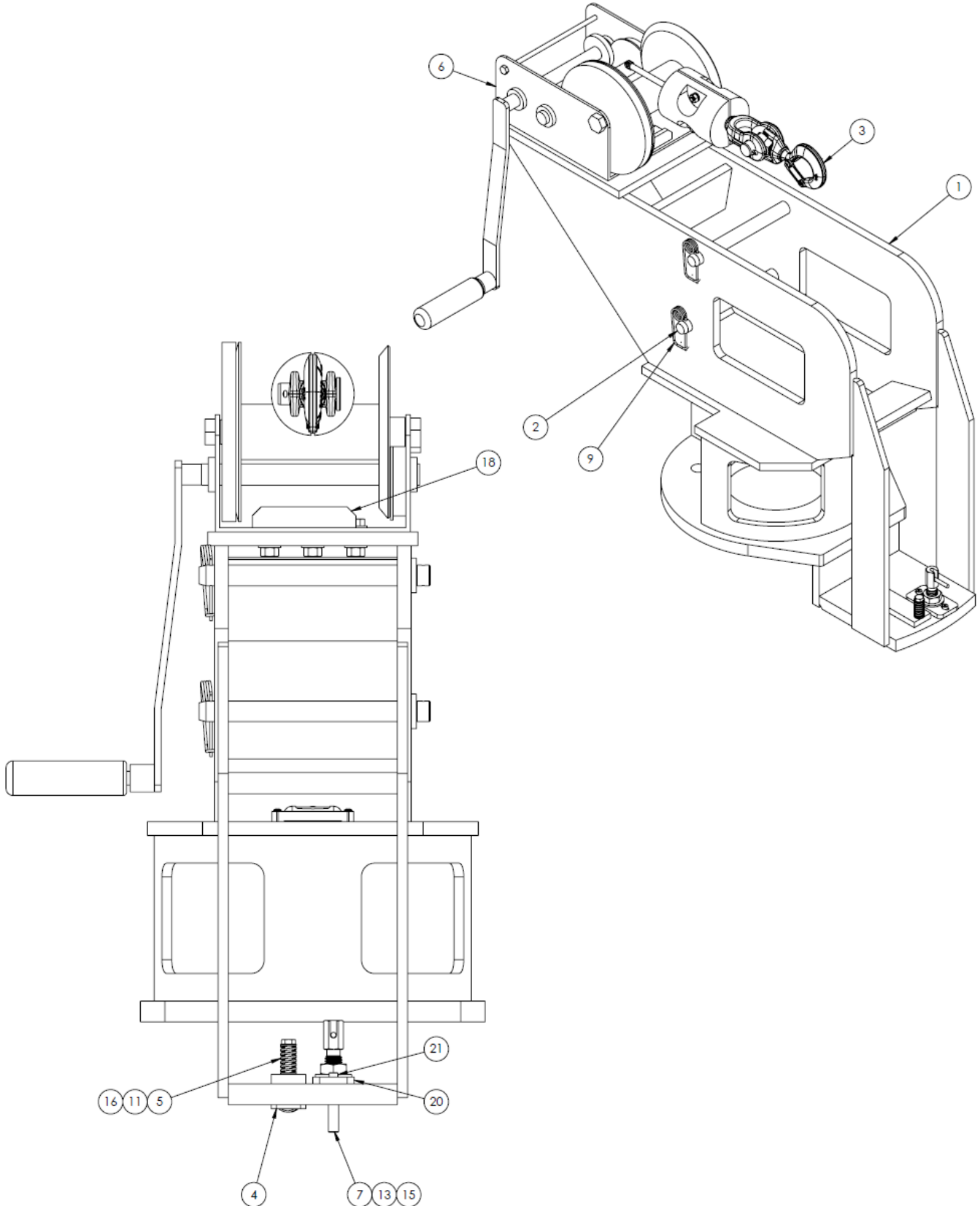
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Item	Part Number	Description	Qty
1	450A6265	SHEAVE	2
2	321-187	HHCS, 3/4-16 x 3-1/4 GR5	6
3	521069	HUB	1
4	90174A114	CLIP SPRING	3
5	915-176-1	NAME PLATE	1
6	9319-39	TUBE	1
7	9504-101	SPINDLE BASE WELDMENT	1
8	9504-104	1ST STAGE MAST	1
9	9504-105	BOOM WELDMENT	1
10	9504-107	BOOM EXTENSION	1
11	9504-118	PIVOT PIN, MAST	1
12	9504-124	LEVELING FOOTPAD	2
13	9504-125	LEVELING FOOTPAD	2
14	9504-129	TURN TABLE ASSY	1
15	9504-136	SPACER, BOOM	1
16	9504-137	SPACER PLATE	1
17	9504-208	OUTRIGGER	4
18	9504-211	BASE WELDMENT	1
19	450A5915	FLANGE BEARING	2
20	G-1100-109084	BOLT, 1/2-13 HEX HD GR 5	2
21	G-1100-109534	BOLT, 1/2-20 X 3-1/2" HEX HD GR 5	8
22	G-1100-109540	BOLT, 1/2-20 X 4.0" HEX HD GR 5	1
23	G-1100-111526	BOLT, 3/4-16 X 2-3/4" HEX HD GR 5	2
24	G-1200-1090	NUT, 1/2-13 HEX	2
25	G-1200-1095	NUT, 1/2-20 HEX	9
26	G-1200-1115	NUT, 3/4-16 HEX	8
27	G-1250-1090N	FLATWASHER, 1/2 NARROW	22
28	G-1250-1110N	FLATWASHER, 3/4 NARROW	16
29	G-1883	HITCH PIN, 1/2 DIA X 4 IN EFF LNG	1
30	J-8378	SHIM, 10.5 IN OD, 6.25 ID	1
31	MS20392-12C125	PIN, HEADED	1
32	MS20392-12C97	PIN, HEADED	1
33	MS27183-17	WASHER, FLAT .5 ID X .083 THK	36
34	MS27183-27	WASHER, FLAT 1.062 ID X .134 THK	1
35	MS35691-37	NUT, HEX 1/2-20UNF	16
36	MS90726-111	HEX HD CAPSCREW, 1/2-13UNC X 1.25" LG	4
37	MS90726-113	HHCS, 1/2-20 x 1-1/2 LG.	8
38	MS90726-114	CAPSCREW, HEX 1/2-20UNF X 1-3/4 GR 5	8
39	MS90726-228	CAPSCREW	1

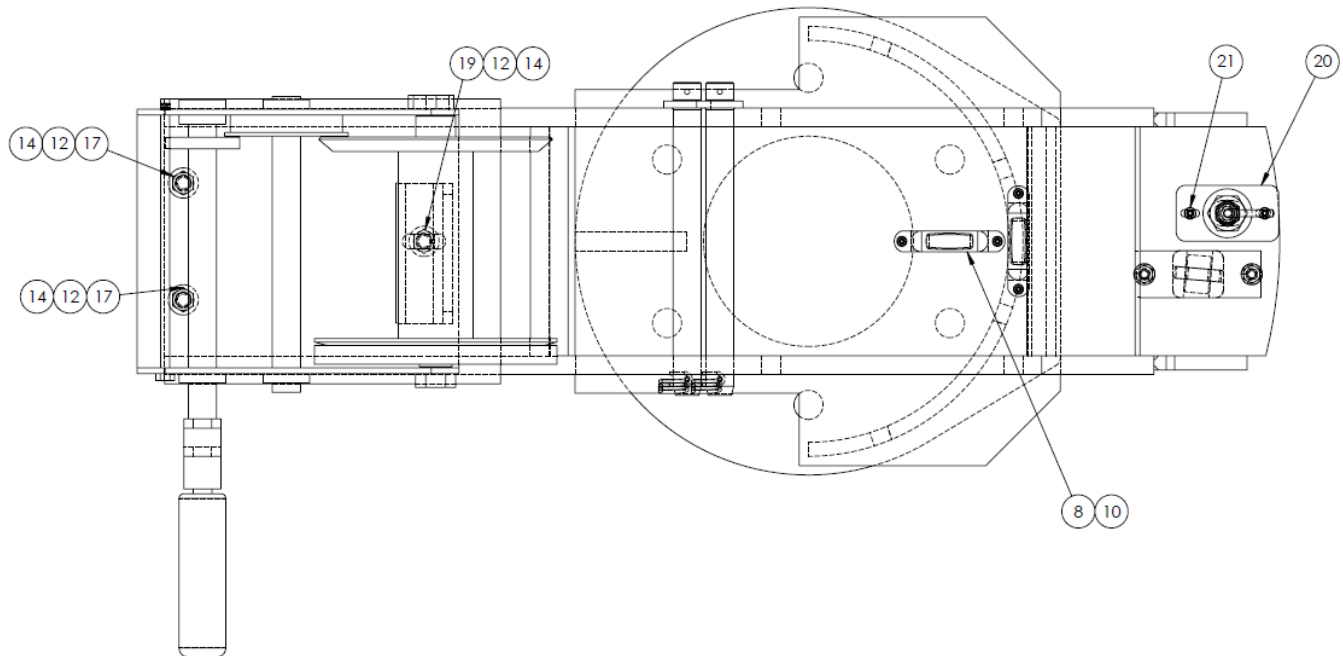
**Parts List**

When ordering replacement parts/kits, please specify model, serial number and color of your unit.



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Item	Part Number	Description	Qty
	<b>9504-129</b>	<b>Turn Table Assembly</b> ; consists of:	
1	9504-103	TURN TABLE WELDMENT	1
2	9504-116	PIN, TURNTABLE	2
3	9504-120	CABLE ASSEMBLY	1
4	9504-126	ROLLER SUPPORT ASSEMBLY	1
5	9504-134	SPRING	2
6	K2550	WINCH	1
7	3403A73	PLUNGER	1
8	2160A43	LEVEL, TUBULAR	2
9	90174A114	CLIP SPRING	2
10	G-1497-101006	SCREW, #6-32 X 3/4 LG SST ROUND HD PH	4
11	MS27183-9	WASHER	4
12	G-1250-1100N	FLATWASHER, 3/8 NARROW	5
13	G-1250-1100N	FLATWASHER, 5/8 NARROW	1
14	G-1200-1070	NUT, 3/8-16 HEX	3
15	G-1207-1100	NUT, 5/8-11 JAM	1
16	G-1100-105020	BOLT, 1/4-20 X 2.0 LG HEX HD GR 5	2
17	G-1100-107512	BOLT, 3/8-24X 1-1/4 LG HEX HD GR 5	2
18	9504-150	WINCH BRACE	1
19	G-1100-107514	BOLT, 3/8-24 X 1-1/2 LG HEX HD GR 5	1
20	J-8487	PLATE, PIN MOUNT	1
21	G-1668	SCREW, 3/16 SHOULDER	2