

BACKYARD BUDDY CORP .

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Read instructions and study the illustrations carefully and completely before beginning assembly of your new **BACKYARD BUDDY**.

- 1a) Familiarize yourself with the lift's assembly diagram. (Illustration #1)
 - b) Layout hardware & sort for assembly. (Verify all parts needed)
 - c) Lift must be at least 4 feet from wall, to install "long" safety lock rod (Item 119) on rear of lift.
- 2) Install hardware on crossmembers. (Both crossmembers are assembled the same). (Illustration #2) **Note:** Secondary lock dogs will be installed after crossmember/legs/ramps are assembled.

Parts Needed:

<u>Item No.</u>	<u>Qty.</u>	<u>Description</u>
101	2	Crossmember
102	4	3/4" x 6" Round Pulley Shaft
103	4	Lock Dog
104	4	4" Pulley
105	8	3/4" Set Screw Collar
106	2	5/16" x 5" Eye Bolt
107	2	5/16" Lock Washer
108	4	5/16" Hex Nut

Tools/Materials Needed: 5/32" Allen Head Tool 1/2" Wrench Grease

- A. (Illustration #2) Select two (2) crossmembers (item #101). Insert one 3/4" x 6" round pulley shaft (item #102) through each end of crossmember where the 3/4" collars are welded on.
Note: Be sure the end of the shaft with the Zerk fitting hole is on the pulley guard side of crossmember.
- B. Slide one pulley (item #104) onto pulley guard side of each pulley shaft. (Note: **Apply grease** to the bushing in the center of each pulley before sliding it onto pulley shaft & re-grease once a month there after). **All moving parts need to be lubricated periodically.**
- C. Install one safety lock dog (item #103) onto each pulley shaft (opposite side of pulley guard).
- D. Next take the eight (8) 3/4" collars (item #105) and place one on each side of the pulley shaft to retain lock dogs and pulleys. After lock dogs, pulleys & collars are installed, adjust pulley shafts so that they are evenly spaced through the crossmember and hardware. Tighten the 3/4" collars (inner) welded to the crossmember with a 5/32" allen head tool. Now tighten outer collars making sure that the pulleys and safety lock dogs rotate freely on the pulley shaft. If there is any binding re-adjust outer 3/4" collars. Install snap ring, ensuring it is seated in ring groove. Install Zerk fitting into pulley end of shaft. Grease assembly.
- E. Take 5/16" nut (item #108) and fully thread it onto the 5/16" x 5" eyebolt (item #106). Next insert eyebolt, from the outside (lock dog side) of crossmember, thru the 5/16" hole drilled in the center. Install 5/16" lock washer (item #107) and 5/16" hex nut (item #108), align eyebolt vertically and tighten the nut with a 1/2" wrench.

3) INSTALL CROSSMEMBER ONTO THE TWO FRONT LEGS (Illustrations #1, #3 & #5)

Parts Needed:

<u>Item No.</u>	<u>Qty.</u>	<u>Description</u>
101	1	Crossmember
109	4	Notched Nylon Slider
110	4	Regular Nylon Slider
111	4	Nylon Retainer Clip
112	4	1/4"-20 x 1/2" Hex Head Bolt
113	4	1/4" Flat Washer
201	1	Left Front Leg (w/pump mtg. stand)
202	1	Right Front Leg

Tools Needed: *7/16" Wrench* *Hammer* *2" x 4" x 18" Block (Supplied)*

Note: Be sure to allow at least 4 feet of space for installation of long safety lock rod (Item 119).

- A. (Illustration #3) Position the left front leg (item #201) and right front leg (item #202) approximately 92" apart. (Note: The left front leg has the mounting bracket for the power unit welded to it) make sure that the safety lock slots are on the outside front in reference to how the lift will be installed.
- B. Take the two 2" x 4" woodblocks that were used in packing the lift (place on 2" edge) and lay one leg down on each block.
- C. Flip the safety locks on the crossmember so they **will not** engage the safety slots in the legs. Slide the crossmember onto the legs, to the **fourth** (4th) safety slot from the bottom on the Standard 7,000# lift, to the **third** (3rd) slot from the bottom on the Extended 7,000# lift and to the **first** (1st) safety slot from the bottom on the Overheight 7000# lift and engage locks. Now stand the leg and crossmember assembly upright. (Note: The safety locks must be on the same side as the safety slots in the legs).
- D. (Illustration #5). The nylon sliders must now be inserted between the outside slider and the legs. Insert two notched nylon sliders, on the inside of the leg first (item #109). Make sure that the notch is facing toward the crossmember. It **must not** cover the safety slot in the crossmember. Insert the two regular nylon sliders (item #110) on the outside of the leg. You may need to **lightly tap** the sliders in with a hammer and a block of wood. **DO NOT FORCE INTO PLACE!!** Repeat on opposite side of crossmember.
- E. (Illustration #1). Locate the threaded holes, one on the inside and one on the outside of each crossmember outside slider. Install the four nylon slider retainer clips (item #111) using one (1) 1/4" x 1/2" bolt (item #112) and one 1/4" flat washer (item #113) per clip. Tighten with a 7/16" wrench. **DO NOT OVERTIGHTEN!**

4) INSTALL CROSSMEMBER ONTO THE TWO REAR LEGS (Illustrations #1, #4 & #5)

Parts Needed:

<u>Item No.</u>	<u>Qty.</u>	<u>Description</u>
101	1	Crossmember
109	4	Notched Nylon Slider
110	4	Regular Nylon Slider
111	4	Nylon Retainer Clip
112	4	1/4"-20 x 1/2" Hex Head Bolt
113	4	1/4" Flat Washer
203	1	Left Rear Leg
204	1	Right Rear Leg

Tools Needed: 7/16" Wrench Hammer 2" x 4" x 18" Block (supplied)

- A. Repeat step #3 procedures with remaining crossmember (item #101), left rear leg (item #203) and right rear leg (item #204).

5) ATTACH THE RAMPS TO THE FRONT CROSSMEMBER/LEG ASSEMBLY

(Illustrations #1 & #6) **Note:** Make sure the Rolling Jack rails on the ramps are toward the center of the lift, this will insure proper installation of ramps.

Parts Needed:

<u>Item No.</u>	<u>Qty.</u>	<u>Description</u>
101, 201, 202	1	Front Crossmember/Leg Assembly
301	1	Cylinder Ramp
302	1	Non-Cylinder Ramp
303	4	1/2"-13 x 3-3/4" Hex Head Bolt
304	4	1/2" Flat Washer
305	4	1/2"-13 Jam Nut (Thinner than regular nut)

Tools Needed: Two (2) Saw Horses

Note: Be sure to allow at least 4 feet of space for installation of long safety lock rod (Item 119).

- A. (Illustrations #1 & #6) Place front crossmember and leg assembly in the area you choose to install the lift.
- B. The first ramp you install will be the cylinder side ramp (item #301). Unbolt cylinder side ramp (top) from shipping bracket. When placing the ramp onto the crossmember, make sure that the hydraulic hard pipe from the cylinder will be on the left outside, closest to the pump-mounting plate on the left front leg. Lift the cylinder side ramp onto the front crossmember and let the lip of the ramp rest on the crossmember with the other end resting on one sawhorse.
- C. Align bolt holes in the ramp with the holes in the crossmember. Now, insert two (2) 1/2" x 3-3/4" bolts (item #303) from the ramp through the crossmember. (The bolt goes from the inside of ramp out). Install 1/2" flat washer (item #304) and 1/2" jam nut (item #305), **hand tighten only**. Repeat steps B & C on the non-cylinder ramp (item #302). **Before unbolting non-cylinder ramp from shipping bracket, place 2 x 4's (on 2" edge) under each end of ramp to support the ramp when shipping bracket is removed.**

6) ATTACH RAMPS TO REAR CROSSMEMBER (Illustration #1 & #6).**Parts Needed:**

<u>Item.</u>	<u>Qty.</u>	<u>Description</u>
101, 203, 204	1	Rear Crossmember & Leg Assembly
301	1	Cylinder Ramp
302	1	Non-Cylinder Ramp
303	4	1/2"-13 x 3-3/4" Hex Head Bolt
304	4	1/2" Flat Washer
305	4	1/2"-13 Jam Nut (Thinner than regular nut)
306	4	Wheel Stop Retainer Plate
307	8	1/2"-Lock Washer
308	8	1/2"-13 Hex Nut

Tools Needed: 3/4" Wrench 3/4" Socket & Ratchet

- A. (Illustration #1 & #6) Position rear crossmember and leg assembly under the lips of the two ramps.
- B. Lift either ramp high enough to slide the sawhorse out from under the ramp and place the lip of the ramp down on the rear crossmember. (**"Caution" – Make sure lip of ramp contacts crossmember**).
- C. Align bolt holes between ramp and crossmember. Insert two (2) 1/2" x 3-3/4" bolts (item #303) from the ramp through the crossmember. (The bolt goes from the inside of ramp out). Install 1/2" flat washer (item #304) and 1/2" jam nut (item #305), **hand tighten only**. Repeat steps B & C for opposite ramp.
- D. Using a 3/4" wrench and 3/4" socket, tighten all eight (8) 1/2" jam nuts. Make sure a flat of the jam nut is parallel to the floor, for later wheel stop installation. Now slide the four (4) wheel stop retainer plates (item #306) onto 1/2" x 3 3/4" bolts extending out of front & rear crossmember. (Note: Holes in retainer bar are not centered vertically on plate – high end should be up.) Install two (2) 1/2" lock washers (item #307) & two (2) 1/2" nuts (item #308) and tighten.

7) ASSEMBLE SECONDARY LOCK DOG TO CROSSMEMBER (Illustration #5A).**Parts Needed:**

<u>Item.</u>	<u>Qty.</u>	<u>Description</u>
105	8	3/4" Set Screw Collar
117	8	Spring
130	4	Secondary Lock Dog
131	4	3/4" x 4" Round Shaft
132	4	1 1/4" Dia. Pulley
133	4	3/8"-16 x 5" Hex Head Bolt
134	4	3/8" Flat Washer
135	4	3/8"-16 Hex Nut
136	4	3/8"-16 Lock Nut
350	8	Snap Ring

Tools Needed: 5/32" Allen Head Tool Pliers

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- A. Install a snap ring (item #350) into the groove on one end of the 3/4" x 4" round shaft (item #131). Insert shaft thru "boss" in crossmember gusset, from pulley side of crossmember.
Note: Insert shaft until snap ring contacts gusset "boss".
- B. Slide one 3/4" set screw collar (item #105) onto shaft. Next slide secondary lock dog (item #130) onto shaft. **Note: Notch goes toward leg.** Slide another collar onto shaft. Install snap ring into groove on shaft.
- C. Tighten all set screws - 4 total (one in each gusset "boss" and one in each collar).
- D. Install 3/4" flat washer (item #135), 1 1/4" pulley (item #133) and 3/4" hex nut (item #136) onto 3/8"-16 x 5" hex head bolt (item #134). Install bolt, from pulley side of crossmember, into lock dog. Install 3/8"-16 lock nut (item #137) on bolt and tighten. Tighten hex head nut.
- E. Hook springs (item #132) onto spring retainer bar on lower end of crossmember gusset. Using pliers hook top of spring onto 3/8-16 x 5" bolt.

8) ASSEMBLE CROSSMEMBER LOCKING LINKAGES (Illustration #7).

Parts Needed:

<u>Item</u>	<u>Qty.</u>	<u>Description</u>
114	2	3/8" Round Safety Rod
115	4	3/8" Heim End
116	2	3/8" Hex Nut
117	2	Spring

Tools Needed:

9/16" Wrench

Pliers

- A. (Illustration #7) Slide 3/8" round safety rod (item #114), with welded washer closer to cylinder side ramp, through 5/16" eyebolt. (The washer welded to the safety rod should end up on the cylinder side of the lift).
- B. Thread 3/8" Heim ends (item #115) onto each end of the safety rod. **(7 turns for initial setup)**
- C. The heim ends are now attached to the non-cylinder side safety lock dogs with a 3/8" hex nut (item #116) and tightened with a 9/16" wrench. The cylinder side heim ends are not attached yet.
- D. Attach one end of the spring (item #117) to the washer on the safety rod and the other end to the eye bolt with a pair of pliers.

9) INSTALL LONG & SHORT 3/8" SQUARE BAR SAFETY RODS (Illustrations #1, #8 & #9)

Parts Needed:

<u>Item</u>	<u>Qty.</u>	<u>Description</u>
115	4	3/8" Heim end
116	10	3/8" Hex Nut
119	1	3/8" Square Bar "Long" Safety Rod
120	1	3/8" Square Bar "Short" Safety Rod
121	1	3/8" Square Collar Sleeve
123	1	Ball Handle
125	2	3/8" x 2 3/4" Threaded Studs

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Tools Needed: 3/16" Allen Head Tool**9/16" Wrench**

- A. Check fit of both 3/8" square bar safety rods (short – item #120 & long – item #119) to 3/8" square collar sleeve (item #121). If necessary grind or file as needed for ease of assembly.
- B. (Illustration #8) Slide the 3/8" square bar "long" safety rod (item #119) from the rear crossmember through the cylinder side ramp and the loops (3/4" pipe) welded under the ramp. Attach 3/8" Heim end (item #115) on 3/8" round safety rod to the top hole on the end of square bar safety rod with 3/8" hex nut (item #116), tighten with 9/16" wrench.
- C. Slide the 3/8" square bar "short" safety rod (item #120) from the front crossmember through the cylinder side ramp and the loops (3/4" pipe) welded under the ramp. Attach 3/8" Heim end (item #115) on 3/8" round safety rod to the top hole on the end of square bar safety rod with 3/8" hex nut (item #116), tighten with 9/16" wrench.
- D. (Illustration #9) Insert the "long" safety rod (item #119) into the end of the square collar sleeve (item #121), being sure that the setscrews on the sleeve are facing toward the center of the lift for accessibility to tighten.
- E. Insert the "short" safety rod (item # 120) into the other end of the sleeve, making sure there is approximately 1/4" clearance between square rod & crossmember for free rotation. Tighten the setscrews with a 3/16" allen head tool.
- F. Thread two (2) 3/8" nuts (item #116) onto 3/8" x 2 3/4" threaded stud (item #125). Next, thread two (2) 3/8" Heim ends (item #115) onto 3/8"x 2 3/4" threaded stud (item #125). There will be two (2) assemblies (one assembly for each end of the lift).
- G. Attach 3/8" Heim ends to cylinder side safety lock dog and bottom hole, on the end of the 3/8" square bar safety rod, with 3/8" nut (item #116). Tighten with 9/16" wrench. Tighten 3/8" hex nuts on threaded studs to lock Heim ends in place.
- H. Install ball handle (item #123) on safety rod release handle.

10) INSTALL TOP CAPS AND ATTACH CABLES TO TOP CAPS (Illustration #10).**Parts Needed:**

<u>Item</u>	<u>Qty.</u>	<u>Description</u>
205	4	Top Cap
206	4	3/4" Flat Washer
207	4	3/4"-16 Hex Nut

Tools Needed: Wire cutters

- A. (Illustration #10) Insert the top caps (item #205) into the top of each leg. Make sure that the cable hole in the top cap is in vertical alignment with the pulley.
- B. Cut wire ties on cables (under ramp) to release and separate for attachment to top caps.
- C. Run cables to appropriate top cap on each leg, **making sure the cable is routed on the inside of the secondary lock dog pulley** (item #133), and install one 3/4" flat washer (item #206) and one 3/4" hex nut (item #207) onto each cable end. Hand tighten until the 3/4" hex nut is in the middle of the threaded cable end, for preliminary cable setup. (Final cable adjustment is covered later in the instructions).

11) ATTACHING THE POWER UNIT.**Parts Needed:**

<u>Item</u>	<u>Qty.</u>	<u>Description</u>
309	1	Hydraulic Power Unit
310	4	5/16" x 1" Hex Head Bolt
107	4	5/16" Lock washer
108	4	5/16" Hex Nut
313	1	Hydraulic Hose
314	1	Female Quick Disconnect
315	1	Male Quick Disconnect

Tools Needed: *1/2" Wrench* *11/16" Wrench* *3/4" Wrench* *Crescent Wrench*
Pipe Dope *3 Gals. Standard hydraulic oil*

- A. Bolt the power unit (item #309) to the mounting stand plate on the left front leg with four 5/16" x 1" bolts, lock washers and nuts (item #s 310, 107 & 108). Tighten with 1/2" wrench.
- B. Attach the hydraulic hose (item #313) to the 3/8" port on the front of the power unit. Tighten with a 11/16" wrench.
- C. Attach the Female Quick Disconnect (item #314) to the other end of the hose (pipe dope recommended). Tighten with 3/4" wrench and crescent wrench.
- D. Attach the Male Quick Disconnect (item #315) to the 3/8" threaded hard pipe coming from the hydraulic cylinder (pipe dope recommended). Tighten with crescent wrench.
- E. Couple the Female and Male quick disconnects together.
- F. Remove the fill cap on the pump reservoir and add three (3) gallons of hydraulic oil. (Note: on 12 Volt systems fill until the reservoir is full).

12) PLUG POWER UNIT IN AND REMOVE SLACK FROM THE CABLES

- A. You may need a second person to assist you at this point. One person should check the four cables under the cylinder side ramp making sure that the cables stay on the pulleys, and the second person should operate the power unit and watch that the cables stay on the crossmember pulleys. Run the unit by pressing the button on the center of the power unit until the slack has been removed in the cables.
"CAUTION" THIS IS EXTREMELY IMPORTANT. BE SURE THAT ALL CABLES HAVE REMAINED ON ALL PULLEYS BEFORE CONTINUING.
- B. Disengage safety locks with the safety release handle and lower the lift to the ground by pushing the ball handle on the power unit downward. (Both handles must be held simultaneously).

13) ADJUSTING THE LIFT CABLES**Tools Needed: 5/8" Wrench Crescent Wrench**

- A. Raise the lift up until one of the outside sliders on the crossmember is even with one of the safety slots in the leg. With a crescent wrench and 5/8" wrench adjust the cables so that the other three sliders are in the same position in reference to the safety slots in the legs. **ALL SAFETY LOCK DOGS (EXCEPT SECONDARY LOCK DOGS) SHOULD ENGAGE AT THE SAME TIME, WHEN LIFT IS OPERATED. If not, re-adjust until they do.**

14) ATTACHING PULLEY COVERS**Parts Needed:**

<u>Item</u>	<u>Qty.</u>	<u>Description</u>
127	4	Pulley Cover
128	16	1/8" x 1/2" Self-Tapping Screw

Tools Needed: 1/4" Nut Driver

- A. Attach four pulley covers (item #127) over the four pulleys on the crossmembers with the sixteen 1/8" x 1/2" self-tapping screws (item #128). (Four on each pulley cover). Use a 1/4" Nut Driver. **AGAIN VERIFY THAT ALL CABLES HAVE REMAINED ON ALL PULLEYS.**

15) FINAL CHECK

Double check all hardware for proper installation (paying special attention to the cable routing) and check all fasteners to verify that they are tight and secure.

OPERATION OF THE BACKYARD BUDDY

- 1) Run the lift up and down **EMPTY** several times to become familiar with the controls and safety lock operation. Also, look for any final adjustment **BEFORE** loading a vehicle.
- 2) Attach the approach ramps. At this point, drive a vehicle onto the lift. Set the parking brake and/or chock the wheels. Drop in the removable wheel stops (item #317).
- 3) Push the power button on the power unit and raise the lift to the first set of safety slots. Check to see that all four locks are engaging.
- 4) Continue to raise the lift to the desired height. Check to see that all safety locks have engaged into the safety slots.
- 5) Push the release handle on the power unit down to allow the lift to set down on the safety lock dogs.
- 6) To lower the lift to the ground, you must raise the lift approximately 2". Pull the safety release handle down to disengage the safeties and push the release handle down at the same time (simultaneously). **(MAKE SURE THAT ALL FOUR SAFETY LOCKS HAVE FULLY DISENGAGED. FAILURE TO DO SO WILL CAUSE THE LIFT TO REMAIN UP IN THAT CORNER).**

SAFETY PROCEDURES

- 1) Never operate the lift when not fully alert.
- 2) Always check that safety locks are engaged before working under the lift.
- 3) Clear the area under the lift of all debris before lowering.
- 4) Keep hands and feet clear during operation.
- 5) Never leave the pressure on the system for an extended period of time. (Leaving the lift between lock positions).
- 6) Do not run the power unit dry of hydraulic oil or without fill cap.
- 7) All moving parts must be lubed at least once a month.

5 YEAR WARRANTY

Backyard Buddy equipment registered with the Company is warranted to be free from any parts and labor defects within five (5) years from the original purchase date. Any electrical parts or hydraulic cylinder found to be defective within five years from the original purchase date will be replaced FOB, Warren, Ohio. This warranty is limited to repairing or replacing any part, which proves to have been defective, and which has not been misused or altered. Defects to cables or any other component caused by ordinary wear and tear, abuse, misuse, overloading accident, including shipping damage, improper maintenance and alterations are excluded. We reserve the right to decline responsibility when repairs have been made or attempted by others. Warranty is non-transferable. Return shipping is by standard ground rates, with customer paying any premium services.

LIMITED WARRANTY

The warrantor for this limited warranty is Backyard Buddy, Corp. 140 Dana Street, N.E., Warren, Ohio 44483, an Ohio corporation. This limited warranty applies to all Backyard Buddy Corp. automobile lifts sold and is non transferable to subsequent owners. The limited warranty period begins on the original purchase date by the original owner and extends for a period of five (5) years thereafter. Backyard Buddy, Corp. lifts are warranted to be free from defects for the warranty period. Repairs and/or replacement parts covered by this limited warranty will be made at no charge, including transportation, which shall be furnished to the owner at shipping charges determined by Backyard Buddy, Corp. Customer shall pay for any expedited transportation charges. The repair and/or replacement parts are the exclusive remedy under this limited warranty. Any implied warranty of merchantability or fitness for a particular purpose is limited to the duration of this written limited warranty (some states do not allow restrictions on how long an implied warranty lasts, so this limitation may not apply to you). This limited warranty does not cover damage or failure resulting directly or indirectly from any of the following: fire, accidents, or theft; abuse or negligence; misuse; improper repairs; alteration or tampering, including the installation of non-approved parts; lack of or improper maintenance; airborne chemicals, garage debris, salt, floods, lightning and other environmental conditions; and water contamination. **This limited warranty also does not cover the following: complete lifts and/or component parts shipped in unopened boxes supplied by third party manufacturers; deterioration caused by normal wear and tear; incidental or consequential damages associated with lift failure (such damages include but are not limited to inconvenience, the cost of transportation, telephone calls and lodging, the loss of personal or commercial property, and the loss of pay or rental).** The performance of necessary repairs and/or replacement parts is the exclusive remedy under this limited warranty. Backyard buddy, Corp. shall not be liable for incidental or consequential damages resulting from breach of this written limited warranty. Additionally, Backyard Buddy, Corp. may make changes to this written limited warranty, or to the products described herein, at any time without notice.

BACKYARD BUDDY 7000# MATERIAL LIST**MAIN ASSEMBLY**

<u>Item No.</u>	<u>Quantity</u>	<u>Description</u>
101	2	Crossmember
114	2	3/8" Round Safety Rod
119	1	3/8" Square Bar "Long" Safety Rod
120	1	3/8" Square Bar "Short" Safety Rod
201	1	Left Front Leg (w/pump mounting stand)
202	1	Right Front Leg
203	1	Left Rear Leg
204	1	Right Rear Leg
301	1	Ramp - Lift Cylinder
302	1	Ramp - Non-Cylinder
306	4	Wheel Stop Retainer Plate
316	2	Approach Ramp
317	4	Wheel Stop

POWER UNIT BOX

<u>Item No.</u>	<u>Quantity</u>	<u>Description</u>
309	1	Hydraulic Power Unit
313	1	Hydraulic Hose
314	1	Female Quick Disconnect
315	1	Male Quick Disconnect

LARGE HARDWARE BOX

<u>Item No.</u>	<u>Quantity</u>	<u>Description</u>
109	8	Notched Nylon Slider
110	8	Regular Nylon Slider
121	1	3/8" Square Collar Sleeve
127	4	Pulley Cover
205	4	Top Cap

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SMALL HARDWARE BOX

<u>Item No.</u>	<u>Quantity</u>	<u>Description</u>
102	4	3/4" x 6" Round Pulley Shaft
103	4	Lock Dog
104	4	4" Pulley
105	16	3/4" Set Screw Collar
106	2	5/16"-18 x 5" Eye Bolt
107	6	5/16" Lock Washer
108	8	5/16"-18 Hex Nut
111	8	Nylon Retainer Clip
112	8	1/4"-20 x 1/2" Hex Head Bolt
113	8	1/4" Flat Washer
115	8	3/8"-24 Heim End
116	12	3/8"-24 Hex Nut (4 Already On Safety Rod)
117	10	Spring
123	1	Ball Handle
125	2	3/8" x 2 3/4" Threaded Stud
128	18	1/8" x 1/2" Self-Tapping Screw (16 Req'd)
130	4	Secondary Lock Dog
131	4	3/4" x 4" Round Shaft
132	4	1 1/4" Dia. Pulley
133	4	3/8"-16 x 5" Hex Head Bolt
134	4	3/8" Flat Washer
135	4	3/8"-16 Hex Nut
136	4	3/8"-16 Lock Nut
206	4	3/4" Flat Washer
207	4	3/4"-16 Hex Nut
303	8	1/2"-13 x 3-3/4" Hex Head Bolt
304	8	1/2" Flat Washer
305	8	1/2"-13 Jam Nut (Thinner Than Normal Nut)
307	8	1/2" Lock Washers
308	8	1/2"-13 Hex Nut
310	4	5/16"-18 x 1" Hex Head Bolt
350	16	Snap Rings

TOOLS AND MATERIALS NEEDED

7/16" Wrench	3/4" Socket & Ratchet
1/2" Wrench	Wire Cutters
9/16" Wrench	Saw Horses
5/8" Wrench	Pliers
11/16" Wrench	Hammer
3/4" Wrench	Grease
Crescent Wrench	Pipe Dope
5/32" Allen Head Tool	3 Gallons – Hydraulic Oil
Snap Ring Pliers	