

**AERO-MOTIVE COMPANY**

A Woodhead Industries, Inc. Subsidiary



## IMPORTANT SAFETY INSTRUCTIONS

Please read this manual carefully and follow its instructions. Improper use or failure to follow these instructions could result in serious injury, death or property damage. Operators should be instructed in the safe and proper use and maintenance of this product. Keep this manual for future reference.

The following safety precautions call attention to potentially dangerous conditions.

	<b>DANGER:</b> Immediate hazards which <b>WILL</b> result in severe personal injury or death.
	<b>WARNING:</b> Hazards or unsafe practices which <b>COULD</b> result in severe personal injury or death.
	<b>CAUTION:</b> Hazards or unsafe practices which <b>MAY</b> result in <i>minor</i> personal injury or product or property damage.

**NOTE:** Instruct operators in the safe, proper use and maintenance. Keep this manual for future reference.

## INSTALLATION

### MAIN SUPPORT

	<b>WARNING:</b> To prevent hazards or unsafe practices that <b>COULD</b> result in severe personal injury or death, main support device must have break strength exceeding five times the weight of the load.
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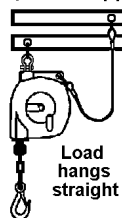
**NOTE:** To prevent nut from turning on shackle pin, ALWAYS use new cotter pin when reassembling.

Install main support device directly over work area.  
Attach balancer to main support, installed previously with shackle and shackle pin. Secure shackle pin with nut

and

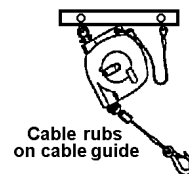
cotter pin.

**CORRECT**  
Balancer directly over work area  
Secondary support attached to separate support



Load hangs straight

**WRONG**  
Balancer not directly over work area  
Secondary support attached to same support



Cable rubs on cable guide

## SECONDARY SUPPORT

**DANGER:** Installation of a secondary support chain or cable is needed. Immediate hazards **WILL** result in severe personal injury or death.

**WARNING:** Do not attach secondary support to same structure that supports balancer. Hazards or unsafe practices **COULD** result in severe personal injury or death.

**NOTE:** Aero-motive offers secondary supports as an accessory item. (See Kit C under replacement parts.)

Attach a secondary support to clevis pin between the housing holes on the side of the balancer housing. Secure clevis pin with washer and cotter pin. Attach secondary support to clevis pin between the housing holes, which are on the side of the balancer housing. Secure clevis pin with washer and cotter pin. Attach other end of the secondary support to a separate support so that the balancer will drop no more than twelve inches if main support fails.

## ADJUSTMENT

### TOOL ATTACHMENT

**WARNING:** Never pull cable to device to be retracted. Always lift object to hook. If the hook is accidentally released when extended, it will snap back. Hazards or unsafe practices **COULD** result in severe personal injury or death.

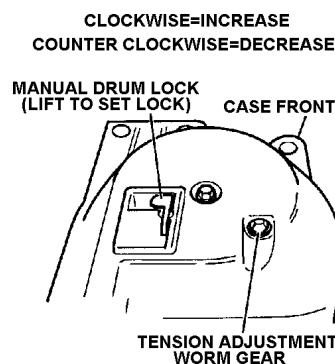
**NOTE:** After tool is attached, make sure retaining latch on tool clip has snapped back to the closed position.

Lift the complete tool (including any hose, cable, fittings and attachments) up to the tool clip.

### SPRING TENSION ADJUSTMENT

Please observe the following before making any spring tension adjustments.

Tool and all tool accessories are attached to the tool clip. Tool will lower if the weight of the tool exceeds the existing tension adjustment of the balancer main spring. The auto stop may prevent drum from rotating when unit is under-tensioned (See Automatic Lock). Tension adjustment worm gear must be turned twenty times to equal one turn on the spring.



### INCREASE & DECREASE TENSION

**NOTE:** If the drum locks up (cable will not pull out) when reducing spring tension, increase tension until the automatic lock disengages. (See Automatic Lock)

**NOTE:** Do not over tension balancer main spring. This will reduce travel and spring life.

To increase tension, turn the worm gear in a clockwise direction (indicated by the "+" symbol on the case). Repeat this process until desired tension is achieved. To decrease tension, turn worm gear in a counter clockwise direction indicated by the "-" symbol on the case. Repeat this process until desired tension is achieved.

## CABLE STOP ADJUSTMENT

**NOTE:** Make all cable stop adjustments after tool and accessories have been attached to the tool clip and after adjusting the spring tension. (See Spring Tension Adjustment)

**NOTE:** Moving cable stop and bumper closer to the cable guide will shorten the active travel of the cable. If additional cable is required; extension cable assemblies are offered as an accessory.

Loosen hex on cable stop and dislodge lead inserts clamping cable. Slide cable-stop up or down on cable so that tool is positioned at desired working height. Reinsert lead inserts into cable stop thimble. Tighten loosened hardware to hold cable stop at set position.

## AUTOMATIC LOCK

If tension is reduced to below the rated range, the automatic lock will engage and prevent cable drum from turning. Increase tension until automatic lock disengages. If a spring should break, the automatic lock will engage to prevent drum from rotating. The lock will disengage when a new spring assembly is installed and tension is applied. (See Spring Replacement)

## SERVICE

### TOOL REPLACEMENT

**WARNING:** Do not release manual drum lock lever without installing load on tool clip. Cable & Tool Clip will retract rapidly. Hazards or unsafe practices COULD result in severe personal injury or death.

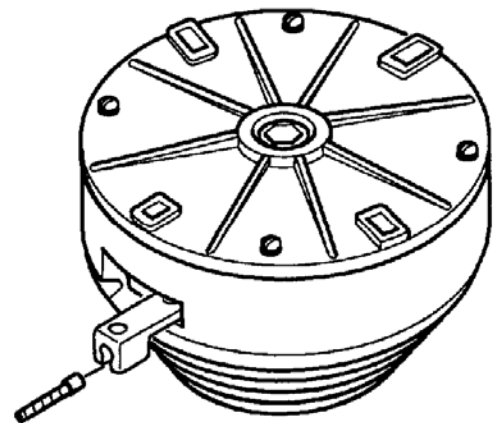
Pull tool down to convenient height and lock drum by lifting manual drum lock lever. Install new tool and unlock drum by pulling manual drum lock lever and folding it back to its original position.

### CABLE REPLACEMENT


**WARNING:** Do not release drum lock lever without installing load on tool clip. Cable and tool clip will retract rapidly. Hazards or unsafe practices COULD result in severe personal injury or death.

**CAUTION:** Do not adjust main spring tension until tool and attachments are suspended from balancer. Hazards or unsafe practices MAY result in *minor* personal injury or product or property damage.

Pull tool down to full pay-out, exposing cable anchor in housing window. Lock drum by lifting manual drum lock lever allowing drum lock shaft to engage drum. Remove tool from tool clip. Swing cable anchor out into housing window. Loosen set screw in cable anchor. Remove cable by pulling it through cable guide. Install new cable by feeding it in through cable guide and out housing window. Insert swaged end on cable into cable anchor. Tighten setscrew. Pull down on cable until cable anchor swings back into position. Install tool onto tool clip. Unlock drum by pulling manual drum lock lever and folding it back to its original position.



## SPRING ASSEMBLY REPLACEMENT

 **WARNING:** Never remove spring from drum and spring assembly. Replacement springs are sealed for safety. Hazards or unsafe practices which COULD result in severe personal injury or death.

**NOTE:** Auto stop must be held out to release mainspring assembly.

**NOTE:** Cable must be fully wound onto drum before attaching rear case.

Remove balancer from service. Remove all spring tension from balancer by turning worm gear counter-clockwise. Remove four screws and rear case. Remove four screws and mainspring assembly. Install replacement mainspring onto drum. Reassemble screws and rear case in reverse order.

### MAINTENANCE INSPECTION

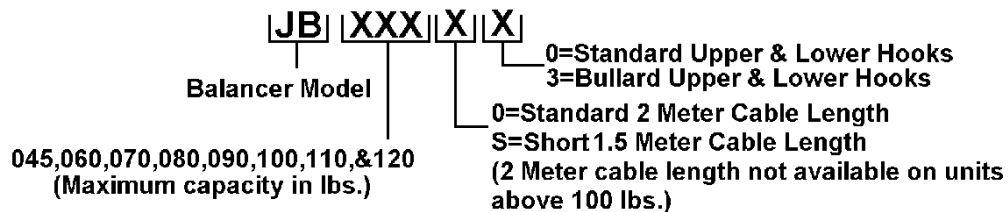
The balancer is designed to require little maintenance. Periodically check cable, tool clip, and shackle for wear. Replace all worn parts immediately. The balancer is lubricated at the factory; no additional lubrication is required.

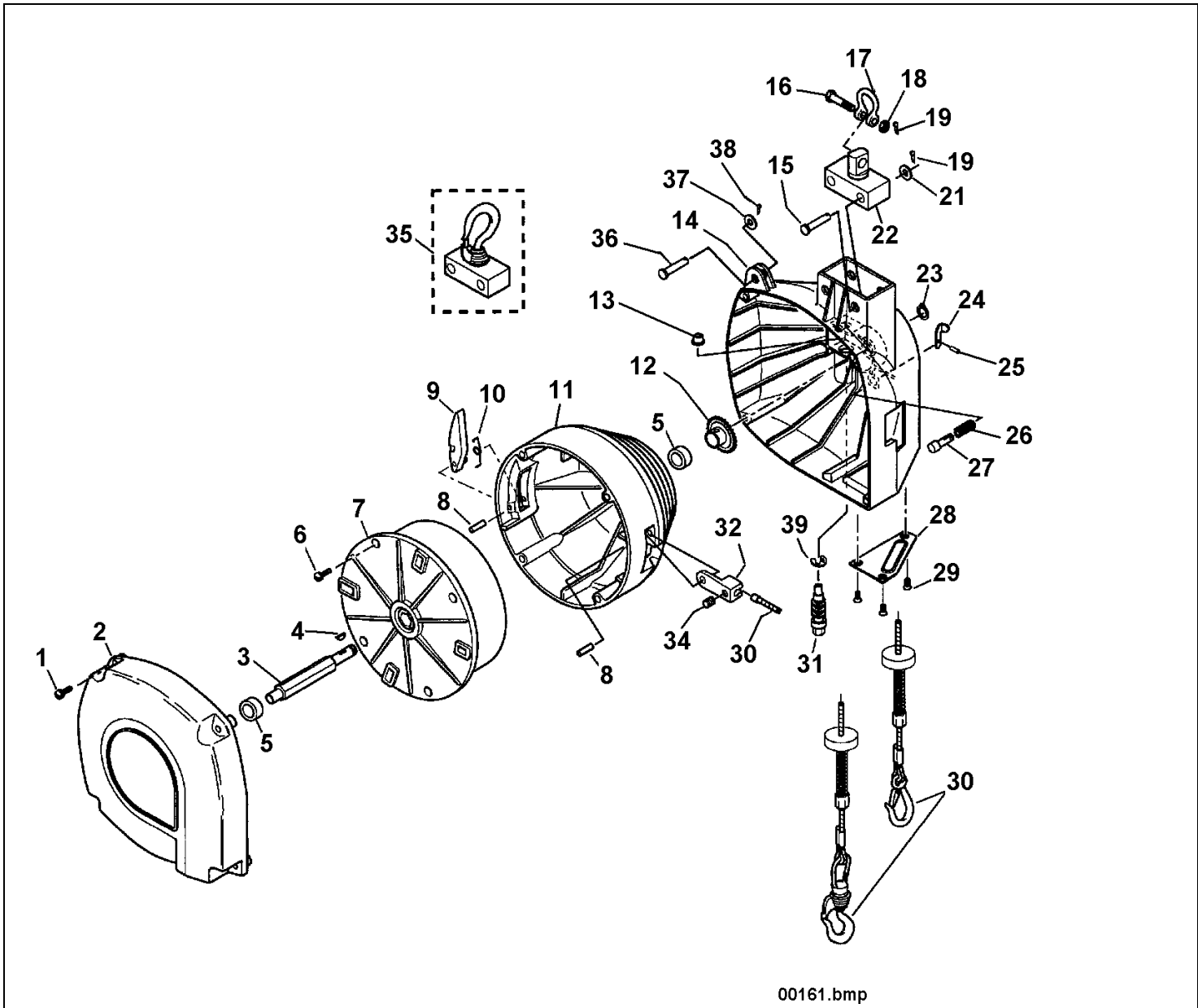
## REPLACEMENT PARTS

### PARTS REPLACEMENT

**NOTE:** When ordering replacement parts, always include the balancer model number and serial number.

All parts shown on parts list are replaceable in the field without special tools.





00161.bmp

Reference Number	Part Number	Qty.	Description
1	C03500258	4	M6 x 30 Pan head screw
2	M04360015	1	Rear case
3	M26830002	1	Mainshaft
4	00751P0010	1	Woodruff key
5	00376P0010	1	Bearing
6	C03500253	4	M6 x 16 Pan head screw
7	H41220097	1	Spring assembly (JB045 Orange)
	H41220098	1	Spring assembly (JB060 Black)
	H41220099	1	Spring assembly (JB070 Brown)
	H41220100	1	Spring assembly (JB080 Green)
	H41220101	1	Spring assembly (JB090 Aluminum)
	H41220102	1	Spring assembly (JB100 Red)
	H41220103	1	Spring assembly (JB110 Blue)
	H41220104	1	Spring assembly (JB120 Gold)
8	C00400102	2	Groove pin 3/16 x 1-1/4
9	M08730002	1	Auto stop

10	M15250006	1	Torsion spring
11	M04840001	1	Drum
12	3105800000	1	Gear
13	1106000000	1	Bushing
14	M04360014	1	Front case
15	C00640106	2	Clevis Pin
16	M28850024	1	Hex head capscrew-drilled
17	01240P0007	1	Shackle body
18	00151P0070	1	Hex nut
19	00228P0012	2	Cotter pin
21	3123400000	2	Washer
22	H16510012	1	Support block assembly-00 option
23	00576P0044	1	Retaining ring
24	3129400000	1	Manual drum lock lever
25	00229P0010	1	Drive pin
26	3164300000	1	Manual drum lock spring
27	3129500000	1	Manual drum lock shaft
28	M57710001	1	Cable guide
29	C03520153	3	M6 x 16 Counter-sunk head
30	H13120013	1	Standard 2 meter cable assembly-JBXXX00 option
	H13120014	1	Bullard 2 meter cable assembly-JBXXX03 option
	H13120024	1	Standard 1.5 meter cable assembly-JBXXXS0 option
	H13120025	1	Bullard 1.5 meter cable assembly-JBXXXS3 option
31	M16300005	1	Worm gear
32	M70780010	1	Cable anchor
34	00053P0222	1	Set screw
35	H16510015	1	Bullard support block assembly-03 option
36	C00640130	1	5/16 x 1-1/2 Clevis pin
37	C01010222	1	3/8 washer
38	00228P0012	1	Cotter pin
39	C01810425	1	Retaining ring
KIT C	4963900000	1	Safety chain

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