




## Aero-Motive Company

**W** A Woodhead Industries, Inc. Subsidiary



### IMPORTANT SAFETY INFORMATION

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. All reference numbers are located on page 5.

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>COULD</b> result in <i>minor</i> personal injury or product or property damage.

### INSTALLATION

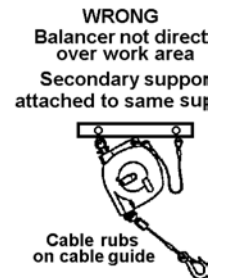
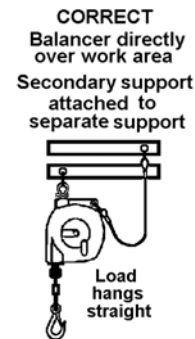
	<b>WARNING:</b> Main support device must have break strength exceeding five times weight of load. Hazards or unsafe practices <b>COULD</b> result in severe personal injury or death.
	<b>CAUTION:</b> Use new cotter pin when re-assembling clevis pin. Hazards or unsafe practices <b>COULD</b> result in <i>minor</i> personal injury or product or property damage.

#### MAIN SUPPORT

Install the main support device directly over work area. (See illustration). Attach balancer to main support with swivel fork and clevis pin. Secure clevis pin with washer and cotter pin.

#### SECONDARY SUPPORT CHAIN

A hole has been provided at side of housing to permit installation of secondary support chain. All balancers mounted over head must have a secondary support chain to protect personnel in case of structure or mounting component failure. Attach one end of secondary support chain or cable to secondary support point (shackle) on balancer. Attach other end of secondary support chain or cable to a support component other than that which supports balancer. Chain or cable should be as short as possible allowing balancer to drop no more than 6 to 12 inches if primary connection is released. (See Illustration) A secondary support is offered as an accessory item.



	<b>DANGER:</b> A secondary safety cable or chain is to be attached to all balancers mounted overhead to prevent balancer from falling. Immediate hazards <b>WILL</b> result in severe personal injury or death.
---	---

### ADJUSTMENT

	<b>CAUTION:</b> Do not pull cable down to tool clip. Raise tool to clip. Hazards or unsafe practices <b>COULD</b> result in <i>minor</i> personal injury or product or property damage.
---	---

#### TOOL ATTACHMENT

Lift the complete tool (including any hose, cable, fittings and attachments) up to the tool clip. After tool is attached, make sure the retaining latch on tool clip has snapped back to the closed position.

## SPRING TENSION ADJUSTMENT



**CAUTION:** Do not push tension lock lever without placing wrench onto mainshaft first. Extreme amounts of stored spring torque will turn mainshaft rapidly clockwise. Hazards or unsafe practices **COULD** result in *minor* personal injury or product or property damage.

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

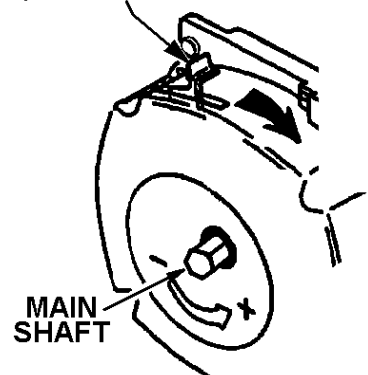
**NOTE:** If drum locks up (cable will not pull out) when reducing spring tension, increase tension until automatic lock disengages. (See Automatic Lock)

Observe following before making spring tension adjustments:

- Tool and all accessories are attached to tool clip.
- All balancers are factory pre-set.
- Tool will lower if the weight of tool exceeds tension adjustment of balancer mainspring.
- If cable stop is up against cable guide prior to adjustment, there is too much tension on balancer mainspring.

To increase spring tension, turn mainshaft with wrench  $\frac{1}{4}$  turn (one click at a time) in a counter-clockwise direction ( "+" symbol on case). Repeat process until desired tension is achieved. To reduce spring tension, turn mainshaft with wrench in counter-clockwise direction until tension lock lever disengages. Hold tension lock lever in disengaged position and allow mainshaft to turn clockwise. Repeat process until desired tension is achieved.

**TENSION LEVER LOCK  
(PUSH TO RELEASE TENSION)**



## CABLE STOP ADJUSTMENT

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

**NOTE:** Moving cable stop and bumper closer to the cable guide will shorten active travel of cable.

Loosen two hex nuts and machine screws. Slide cable stop and bumper up or down on cable so that tool is positioned at desired working height. Tighten loosened hardware to hold cable stop at set position.

## AUTOMATIC LOCK



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

If tension is reduced to below rated range, automatic lock will engage and prevent cable drum from turning. Increase tension until automatic lock disengages. If a spring should break, automatic lock will engage to prevent drum from turning. Lock will disengage after new spring assembly is installed.

## SERVICE

### TOOL REPLACEMENT

When replacing tool and attachments, make sure cable is fully retracted. (See Tool Attachment).

### DRUM & SPRING ASSEMBLY REPLACEMENT

Remove balancer from service and remove all spring tension from balancer. (See Spring Tension Adjustment). Remove two screws and cable guide. Remove four screws and nuts. Remove rear case assembly & retaining ring from mainshaft. Remove mainshaft, hub and tension lock and cable assembly with all attached parts from drum and spring assembly. Remove cable assembly from old drum and spring assembly. Attach cable assembly to new drum and spring assembly (See Cable Replacement). Reassemble unit in reverse order. Place balancer back in service and attach tool. (See Tool Attachment). Set spring tension with tool and attachments in place. (See Spring Tension Adjustment.).

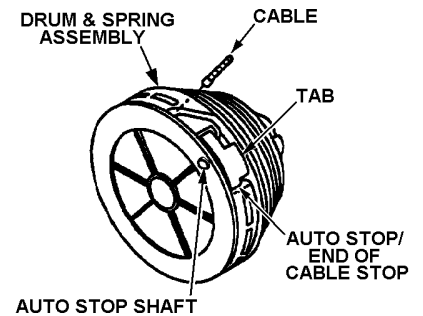
## CABLE REPLACEMENT



### CAUTION:

Do not disassemble balancer without reducing all spring tension first. (See Spring Tension Adjustment). Also, do not adjust mainspring tension until tool and attachments are suspended from balancer. Hazards or unsafe practices COULD result in *minor* personal injury or product or property damage.

To replace cable, remove balancer from service and remove all spring tension from balancer. (See Spring Tension Adjustment). Remove two screws at cable guide, four (4) screws and nuts. Remove case rear assembly, auto stop shaft, auto stop with compression spring, and cable assembly. Remove cable guide, bumper, cable-stop, hex nuts, machine screw and tool clip from old cable assembly. Attach these items to the new cable assembly. Place the swaged cable assembly end into the slot. Reassemble unit in reverse order. Place balancer back in service and attach tool. (See Tool Attachment). Set spring tension. (See Spring Tension Adjustment)



## PARTS REPLACEMENT

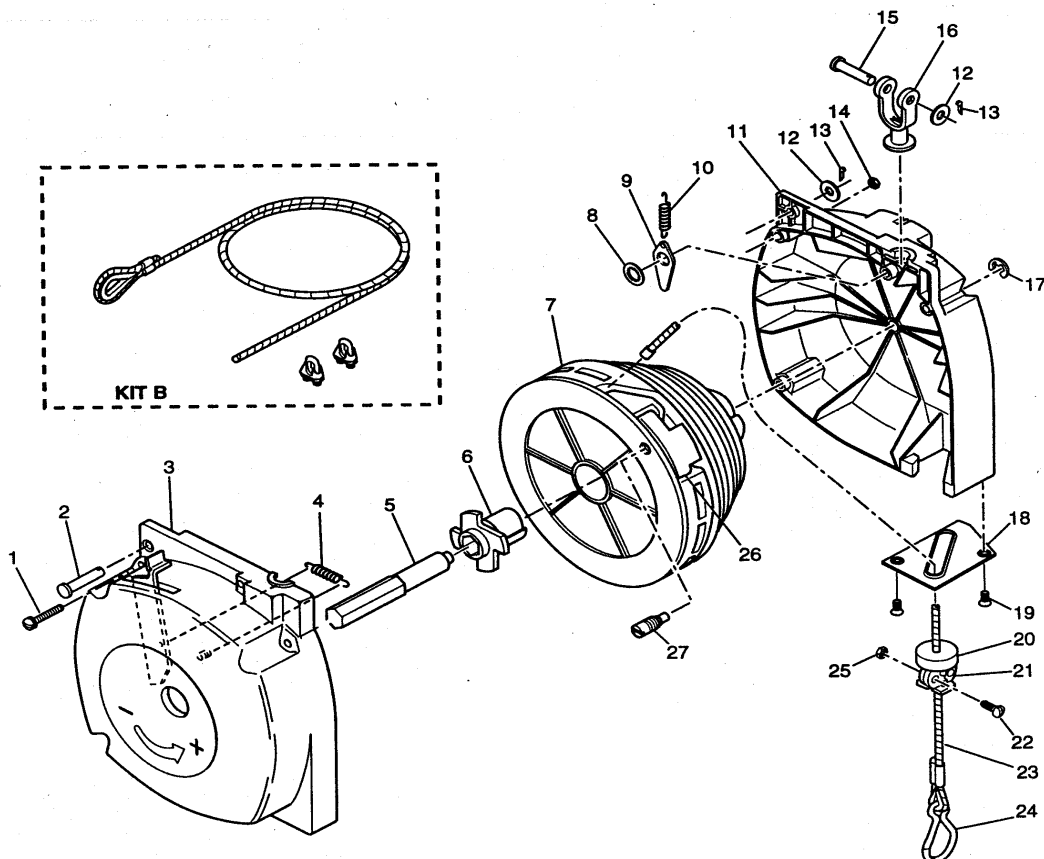
**NOTE:** When ordering replacement parts, always include the balancer model number and serial number.

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

## MAINTENANCE INSPECTION

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

## REPLACEMENT PARTS



Reference Number	Part Number	Qty.	Description
1	C20850137	4	M5 SEM (Screw with washer)
2	01235P0008	1	Clevis pin
3	H22510061	1	Case rear assembly
4	M15120003	1	Extension spring
5	M26830001	1	Mainshaft
6	M08720004	1	Hub and tension lock
	H42160027	1	Drum and spring assembly (BF(L)-6 Orange) Includes items 26 & 27
	H42160023	1	Drum and spring assembly (BF(L)-9 Green) “
7	H42160024	1	Drum and spring assembly (BF(L)-13 Red) “
	H42160025	1	Drum and spring assembly (BF(L)-18 White) “
	H42160026	1	Drum and spring assembly (BF(L)-24 Blue) “
8	C01880416	1	Retaining ring
9	M08710005	1	Ratchet lever
10	M15120004	1	Extension spring
11	H22510079	1	Case front
12	00126P0050	2	Flat washer
13	00228P0011	2	Cotter pin
14	C22180115	4	M5 hex nut
15	01235P0009	1	Clevis Pin
16	H16510014	1	Swivel fork
17	C01700119	1	Retaining ring
18	M67310001	1	Cable guide
19	C03550100	2	M5 CTSK overall HD screw (48-2)
20	1003100000	1	Bumper
21	1361400000	2	Cable stop
22	00002P0202	2	Machine screw #6-32
23	H13120009	1	Cable assembly
24	01146P0015	1	Tool clip
25	00151P0015	2	Hex nut #6-32
26	M04600000	1	Drop Stop
27	M25360212	1	Drop Stop Screw
KIT B	H13760000	1	Secondary support cable
KIT A	H13120012	1	Working cable assembly complete (Items 20-25 above)

**Aero-Motive Company**

**W** A Woodhead Industries Inc. Subsidiary  
 PO Box 2678  
 Kalamazoo, MI 49003-2678  
 (616) 337 7700  
 (800) 999 8559  
 FAX: (800) 333 6119  
 www.aeromotive.com

**AKAPP Electro Industrie**

**W** A Woodhead Industries Inc. Subsidiary  
 Nijverheidsweg 14 Box 54  
 NL-3771 ME Barneveld  
 NL-3771 AB Barneveld  
 Holland  
 (31) 34 241 4022  
 FAX: (31) 34 249 2384  
 www.akapp.com

**Woodhead Connectivity LTD.**

**W** A Woodhead Industries Inc. Subsidiary  
 Factory No. 9  
 Rassau Industrial Estate  
 Ebbw Vale Gwent NP3 5SD  
 United Kingdom  
 (0495) 35 0436  
 FAX: (0495) 35 0877  
 sales@wdhd.co.uk

**Woodhead Asia PTE LTD.**

**W** A Woodhead Industries Inc. Subsidiary  
 401 Commonwealth Drive #04-04  
 Haw Par Technocentre  
 Singapore 0314  
 (65) 261 6533  
 FAX: (65) 479 3588  
 sales@wasia.com.sg

**Woodhead Canada LTD.**

**W** A Woodhead Industries Inc. Subsidiary  
 1090 Brevik Place  
 Mississauga Ontario  
 L4W 3Y5 Canada  
 (905) 624-6518  
 FAX: (905) 624-9151  
 www.woodhead.ca