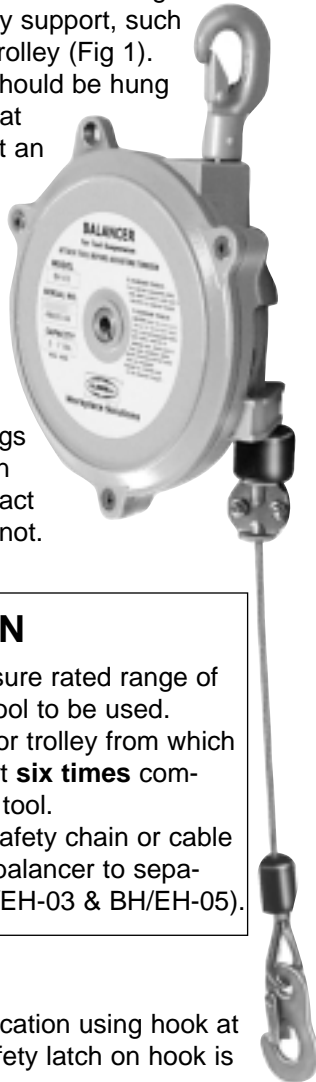


Installation and Operation Instructions

BH/EH-02 through BH/EH-05 Tool Balancers

The BH/EH balancer is designed to be hung above the work area from a stationary support, such as an eye bolt, or a movable trolley (Fig 1). For best operation, balancer should be hung directly above work area so that tool is lowered vertically, not at an angle, when in use (compare Fig 1-A and Fig 1-B, below). Hanging from trolley with safety cable or chain affixed to second trolley is recommended (Fig 1-C). Prior to installation, check to make sure tool weight including air hose or power cable plus fittings falls within the range shown on the balancer serial plate. Contact your local distributor if it does not.



CAUTION

1. Prior to installation, make sure rated range of balancer matches weight of tool to be used.
2. Check to make sure hook or trolley from which balancer will hang will support **six times** combined weight of balancer and tool.
3. It is recommended that a safety chain or cable be installed between eye on balancer to separate hanger or trolley (for BH/EH-03 & BH/EH-05).

INSTALLATION

1. Hang balancer in desired location using hook at top of balancer. Make sure safety latch on hook is in place to prevent unhooking.
2. BH/EH-03 and BH/EH-05 only: Attach safety chain from eye at top of balancer to either a separate support (if statically mounted) or to separate trolley.
3. Attach tool to balance cable by lifting tool to hook. **DO NOT** attempt to pull hook down to tool.

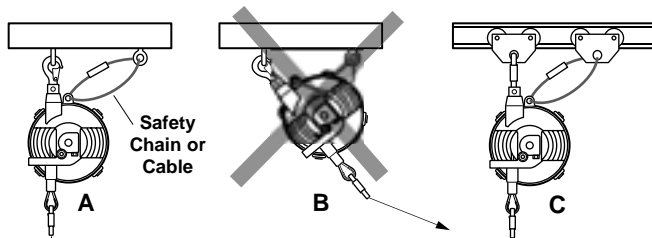


Figure 1



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ADJUSTING TENSION

1. Tension is adjusted by inserting an Allen Wrench into locking wheel at the rear of the balancer (Fig 2). To increase tension, turn the wheel in a clockwise direction. To decrease tension, turn wheel slightly clockwise and lift spring loaded ratchet with screwdriver then turn wheel counter-clockwise. Tool must be supported when adjusting tension to prevent tool from falling.

- A. If balancer will not hold tool in raised position, increase tension by turning wheel clockwise.
- B. If tool is difficult to pull down, decrease tension by turning wheel counter-clockwise.

NOTE: Avoid adjusting tension above or below rated capacity of balancer. Tightening spring over its rated capacity will shorten cable stroke and decrease spring life.

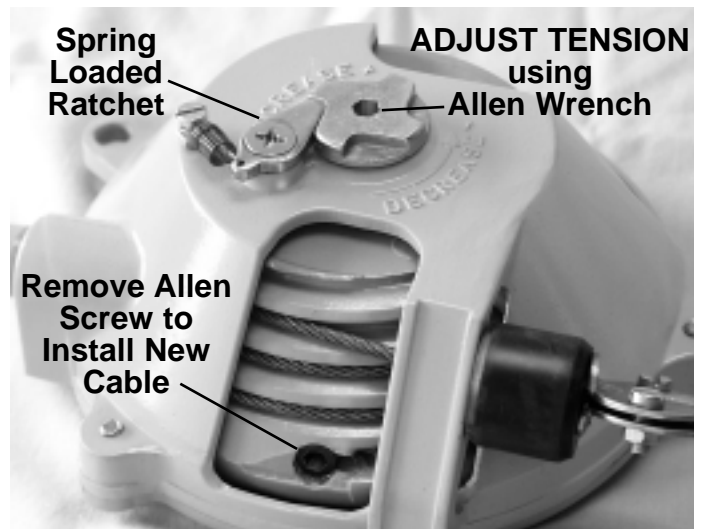


Figure 2

WIRE ROPE REPLACEMENT

1. Remove all tension from main spring (see above).
2. Remove Allen Screw (Figure 2) from tapered drum. Remove damaged cable.
3. Install new cable, replace screw and re-tension spring.

ROUTINE MAINTENANCE

1. All bearings are pre-lubricated and require no periodic lubrication.
2. Periodically check both hooks and cable for wear. Replace if hooks or support show excessive wear or if cable is frayed.
3. Periodically check safety chain or cable. Check fasteners for tightness. Tighten as required. Replace chain or cable if there is undue wear.

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Part No. 63049205.b

Installation and Operation Instructions

BH/EH-09 thru BH/EH-70 Tool Balancers



CAUTION

1. Prior to installation, make sure rated range of balancer matches weight of tool to be used.
2. Check to make sure hook or trolley from which balancer will hang will support **six times** combined weight of balancer and tool.
3. A safety chain or cable **MUST** be installed between eye on balancer to separate hanger or trolley.

The BH/EH balancer is designed to be hung above the work area from a stationary support, such as an eye bolt, or a movable trolley (Fig 1). For best operation, balancer should be hung directly above work area so that tool is lowered vertically, not at an angle, when in use (compare Fig 1-A and Fig 1-B, below). Hanging from trolley with safety cable or chain affixed to second trolley is recommended (Fig 1-C). Prior to installation, check to make sure tool weight including air hose or power cable plus fittings falls within the range shown on the balancer serial plate. Contact your local distributor if it does not.

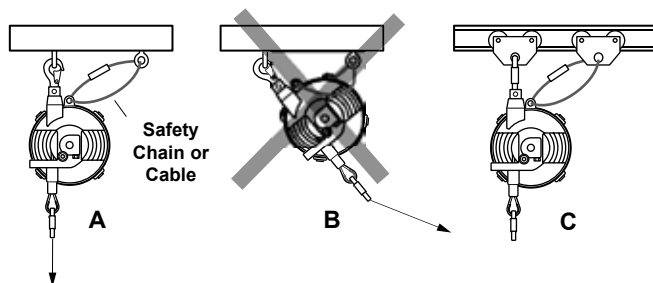


Figure 1

INSTALLATION

1. Hang balancer in desired location using hook at top of balancer. Make sure safety latch on hook is in place to prevent unhooking.
2. Attach safety chain or cable from eye at top of balancer to either a separate support (if statically mounted) or to separate trolley.
3. Attach tool to balance cable by lifting tool to hook. **DO NOT** attempt to pull hook down to tool.

ROUTINE MAINTENANCE

1. All bearings are pre-lubricated and require no periodic lubrication.
2. Periodically check both hooks and cable for wear. Replace if hooks or support show excessive wear or if cable is frayed.
3. Periodically check safety chain or cable. Check fasteners for tightness. Tighten as required. Replace chain or cable if there is undue wear.
4. Check to make sure all safety stop pins (Fig 2) are securely in place. Pins must be fully inserted and secured with allen screw. Replace if missing.



Figure 2

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ADJUSTING TENSION

1. Tension is adjusted by turning the hex drive on the housing at the rear of the balancer (Fig 3). To increase tension, turn the hex drive in a clockwise direction. To decrease tension, turn hex drive counter-clockwise.

- A. If balancer will not hold tool in raised position, increase tension by turning drive clockwise.
- B. If tool is difficult to pull down, decrease tension by turning drive counter-clockwise.

NOTE: Avoid adjusting tension above or below rated capacity of balancer. Tightening spring over its rated capacity will shorten cable stroke and decrease spring life. If spring is loosened to lower than minimum capacity, the safety device may engage preventing operation.

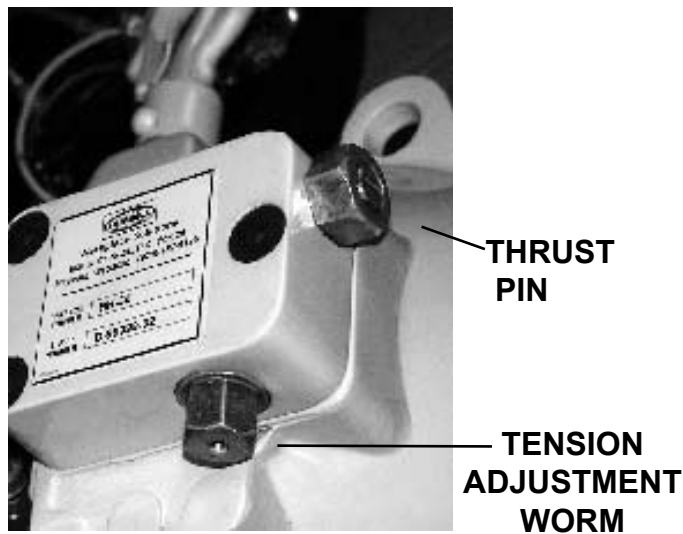


Figure 3



CAUTION

Do not adjust thrust pin (Fig 3). The thrust pin holds the tension adjustment worm in place and has been factory adjusted.

PROCEDURE TO DISENGAGE LOCKING DEVICE

In the event that the safety device becomes engaged and locks the spool, follow this procedure to disengage the safety device.

1. Loosen allen screws and remove all safety stop pins.
2. Rotate tension adjustment worm approximately 100 turns in a counter-clockwise direction in order to ensure that all tension is relieved from power spring.
3. Rotate tension adjustment worm 115 to 120 turns in a clockwise position to ensure that the safety pin on the spring/spool assembly is retrieved back into the spool.
4. Hang the tool balancer reel by the upper hook and load the reel with suitable weight within the rated capacity. Pull the load up and down to ensure that the safety pins will not lock the spool, then replace all safety stop pins and tighten allen screws.
5. Hang tool from lower hook on wire rope and adjust tension to desired balance range.

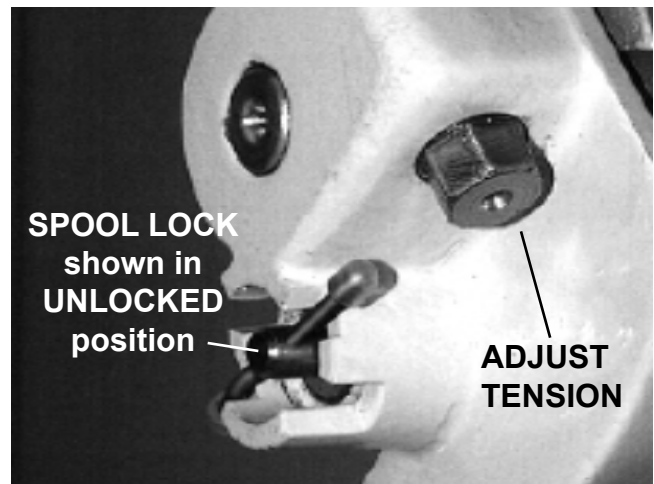


Figure 4

USING SPOOL LOCK

Activate spool lock (Fig 4) by pulling out slightly and rotating 1/4 turn in a clockwise direction, inserting it into hole in spool. Spool may have to be rotated slightly so lock can line up with hole. Disengage by pulling out and rotating 1/4 turn in a counter-clockwise direction.

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Installation and Operation Instructions

BH/EH-85 Tool Balancers



CAUTION

1. Prior to installation, make sure rated range of balancer matches weight of tool to be used.
2. Check to make sure hook or trolley from which balancer will hang will support **six times** combined weight of balancer and tool.
3. A safety chain or cable **MUST** be installed between eye on balancer to separate hanger or trolley.

The BH/EH balancer is designed to be hung, above the work area, from a stationary support, such as an eye bolt, or a movable trolley (Fig 1). For best operation, balancer should be hung directly above work area so that tool is lowered vertically, not at an angle, when in use (compare Fig 1-A and Fig 1-B, below). Hanging from trolley with safety cable or chain affixed to second trolley is recommended (Fig 1-C). Prior to installation, check to make sure tool weight including air hose or power cable plus fittings falls within the range shown on the balancer serial plate. Contact your local distributor if it does not.

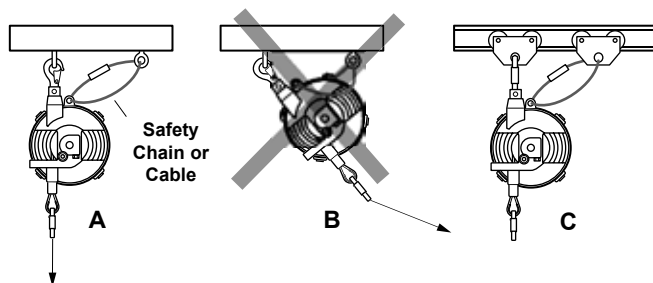


Figure 1

INSTALLATION

1. Hang balancer in desired location using hook at top of balancer. Make sure safety latch on hook is in place to prevent unhooking.
2. Attach safety chain or cable from eye at top of balancer to either a separate support (if statically mounted) or to separate trolley.
3. Attach tool to balance cable by lifting tool to hook. **DO NOT** attempt to pull hook down to tool.

ROUTINE MAINTENANCE

1. All bearings are pre-lubricated and require no periodic lubrication.
2. Periodically check both hooks and cable for wear. Replace if hooks or support show excessive wear or if cable is frayed.
3. Periodically check safety chain or cable. Check fasteners for tightness. Tighten as required. Replace chain or cable if there is undue wear.
4. Check to make sure all safety stop pins (Fig 2) are securely in place. Pins must be fully inserted and secured with allen screw. Replace if missing.



Figure 2

ADJUSTING TENSION

1. Tension is adjusted by turning the hex drive on the housing at the rear of the balancer (Fig 3). To increase tension, turn the hex drive in a clockwise direction. To decrease tension, turn hex drive counter-clockwise.

- A. If balancer will not hold tool in raised position, increase tension by turning drive clockwise.
- B. If tool is difficult to pull down, decrease tension by turning drive counter-clockwise.

NOTE: Avoid adjusting tension above or below rated capacity of balancer. Tightening spring over its rated capacity will shorten cable stroke and decrease spring life. If spring is loosened to lower than minimum capacity, the safety device may engage preventing operation.

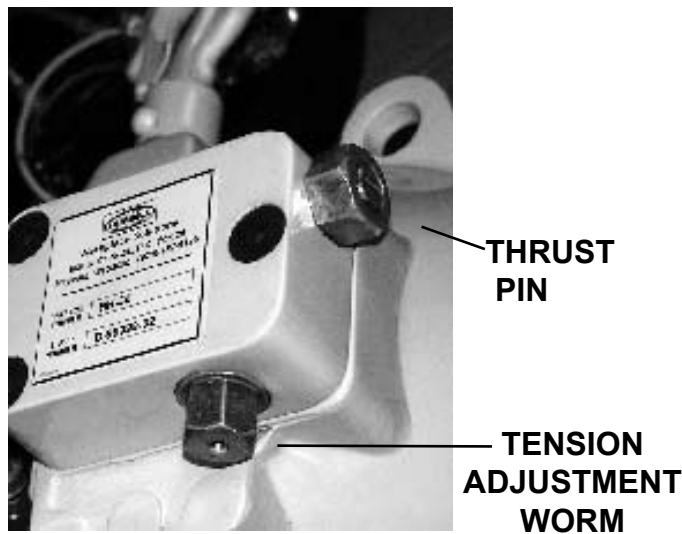


Figure 3



CAUTION

Do not adjust thrust pin (Fig 3). The thrust pin holds the tension adjustment worm in place and has been factory adjusted.

PROCEDURE TO DISENGAGE LOCKING DEVICE

In the event that the safety device becomes engaged and locks the spool, follow this procedure to disengage the safety device.

1. Loosen allen screws and remove all safety stop pins.
2. Rotate tension adjustment worm approximately 100 turns in a counter-clockwise direction in order to ensure that all tension is relieved from power spring.
3. Rotate tension adjustment worm 115 to 120 turns in a clockwise position to ensure that the safety pin on the spring/spool assembly is retrieved back into the spool.
4. Hang the tool balancer reel by the upper hook and load the reel with suitable weight within the rated capacity. Pull the load up and down to ensure that the safety pins will not lock the spool, then replace all safety stop pins and tighten allen screws.
5. Hang tool from lower hook on wire rope and adjust tension to desired balance range.

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Installation and Operation Instructions

BH/EH-100 Thru BH/EH-140 Tool Balancers



CAUTION

1. Prior to installation, make sure rated range of balancer matches weight of tool to be used.
2. Check to make sure hook or trolley from which balancer will hang will support **six times** combined weight of balancer and tool.
3. A safety chain or cable **MUST** be installed between eye on balancer to separate hanger or trolley.

The BH/EH balancer is designed to be hung, above the work area, from a stationary support, such as an eye bolt, or a movable trolley (Fig 1). For best operation, balancer should be hung directly above work area so that tool is lowered vertically, not at an angle, when in use (compare Fig 1-A and Fig 1-B, below). Hanging from trolley with safety cable or chain affixed to second trolley is recommended (Fig 1-C). Prior to installation, check to make sure tool weight including air hose or power cable plus fittings falls within the range shown on the balancer serial plate. Contact your local distributor if it does not.

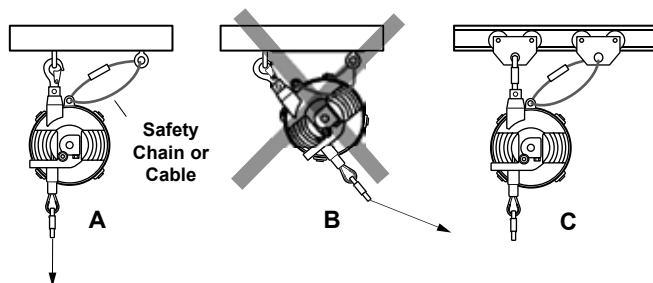


Figure 1

INSTALLATION

1. Hang balancer in desired location using hook at top of balancer. Make sure safety latch on hook is in place to prevent unhooking.
2. Attach safety chain or cable from eye at top of balancer to either a separate support (if statically mounted) or to separate trolley.
3. Attach tool to balance cable by lifting tool to hook. **DO NOT** attempt to pull hook down to tool.

ROUTINE MAINTENANCE

1. All bearings are pre-lubricated and require no periodic lubrication.
2. Periodically check both hooks and cable for wear. Replace if hooks or support show excessive wear or if cable is frayed.
3. Periodically check safety chain or cable. Check fasteners for tightness. Tighten as required. Replace chain or cable if there is undue wear.
4. Check to make sure all safety stop pins (Fig 2) are securely in place. Pins must be fully inserted and secured with allen screw. Replace if missing.



Figure 2

ADJUSTING TENSION

1. Tension is adjusted by turning the hex drive on the housing at the rear of the balancer (Fig 3). To increase tension, turn the hex drive in a clockwise direction. To decrease tension, turn hex drive counter-clockwise.

- A. If balancer will not hold tool in raised position, increase tension by turning drive clockwise.
- B. If tool is difficult to pull down, decrease tension by turning drive counter-clockwise.

NOTE: Avoid adjusting tension above or below rated capacity of balancer. Tightening spring over its rated capacity will shorten cable stroke and decrease spring life. If spring is loosened to lower than minimum capacity, the safety device may engage preventing operation.

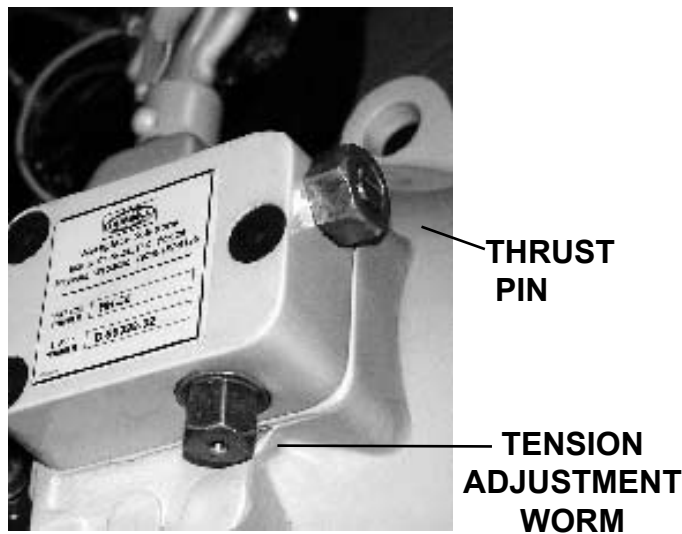


Figure 3



CAUTION

Do not adjust thrust pin (Fig 3). The thrust pin holds the tension adjustment worm in place and has been factory adjusted.

PROCEDURE TO DISENGAGE LOCKING DEVICE

In the event that the safety device becomes engaged and locks the spool, follow this procedure to disengage the safety device.

1. Loosen allen screws and remove all safety stop pins.
2. Rotate tension adjustment worm approximately 100 turns in a counter-clockwise direction in order to ensure that all tension is relieved from power spring.
3. Rotate tension adjustment worm 115 to 120 turns in a clockwise position to ensure that the safety pin on the spring/spool assembly is retrieved back into the spool.
4. Hang the tool balancer reel by the upper hook and load the reel with suitable weight within the rated capacity. Pull the load up and down to ensure that the safety pins will not lock the spool, then replace all safety stop pins and tighten allen screws.
5. Hang tool from lower hook on wire rope and adjust tension to desired balance range.

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BH/EH-85-140 Balancers

- 1. Remove load from balancer and remove balancer from its support and place on a work surface.
- 2. Ensure the drum lock mechanism is engaged.
- 3. Release all tension from the spring motor by fully loosening and removing the worm gear.
- 4. Un-install the 8 stop pins from the perimeter of the case by removing the setscrews that retain them.
- 5. Lift and turn the drum lock lever mechanism to dis-engage.
- 6. Remove the 4 screws from the perimeter of the case to separate the housing halves.
- 7. Tap the end of the main shaft (with a non-metallic hammer) to remove it.
- 8. Remove the 3 screws from the perimeter of the spring to remove the spring cover

!! Exercise extreme caution as to not allow the spring to become free from the canister !!



- 9. Lift the drum and spring sub-assembly out of the case and separate them.

!! Take note of the alignment of the spring end curl and the detent in the housing !!

- 10. Re-assemble unit in reverse order.

Important tip: After re-assembly of unit turn worm to pull cable onto drum !! Continue to turn worm approx. 95-100 times to re-tension unit then re-install the 8 stop pins into their place around the case !!



DRUM LOCK



BH/EH Balancer Replacement Parts Instructions

REPLACEMENT PARTS

TYPE	P/N	MODEL #	DESCRIPTION
BH	GR62428105	BH85-SPG	SPRING FOR BH-85
	GR62428305	BH100-SPG	SPRING FOR BH-100
	GR62428505	BH120-SPG	SPRING FOR BH-120
	GR62428605	BH140-SPG	SPRING FOR BH-140
	GR62428104	BH85140-DRM	DRUM W/CABLE FOR BH-85 THRU BH-140
EH	GR62428115	EH85-SPG	SPRING FOR EH-85
	GR62428315	EH100-SPG	SPRING FOR EH-100
	GR62428515	EH120-SPG	SPRING FOR EH-120
	GR62428615	EH140-SPG	SPRING FOR EH-140
	GR62428114	EH85140-DRM	DRUM W/CABLE FOR EH-85 THRU EH-140

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BH/EH-02-05 BALANCERS

1. Remove load from balancer and remove balancer from its support and place on a work surface.

2. Release all tension from the spring motor by a combination of turning an Allen wrench and depressing the lock lever.

!! Exercise extreme caution when doing so as the spring tension will cause 'quick-spin' of the wrench and will likely cause injury !!

3. After all tension is released turn drum to expose cable end through side of case.

4. Remove the setscrew anchor that retains the cable end.

5. Remove cable end from drum.

6. Simultaneously rotate drum and maneuver cable end to free it from the confines of the case.

7. Flip balancer over and remove the 3 screws to lift off the case cover and expose the drum.

8. Lift drum (w/ spring) up and out of the case

9. Re-assemble in the reverse order.
-
-
- Important tip: Lower drum (w/ spring) onto shaft ensuring the spring end tab fits into the slot of the shaft by inserting a screwdriver to manipulate !!**
-
- | REPLACEMENT PARTS | | | |
|-------------------|------------|----------|-------------------------|
| TYPE | P/N | MODEL # | DESCRIPTION |
| BH | GR62426605 | BH02-SPG | SPRING W/DRUM FOR BH-02 |
| | GR62426705 | BH03-SPG | SPRING W/DRUM FOR BH-03 |
| | GR62426805 | BH05-SPG | SPRING W/DRUM FOR BH-05 |
| | GR62426603 | BH02-CBL | CABLE FOR BH-02 |
| | GR62426703 | BH03-CBL | CABLE FOR BH-03 |
| | GR62426803 | BH05-CBL | CABLE FOR BH-05 |
| EH | GR62426615 | EH02-SPG | SPRING W/DRUM FOR EH-02 |
| | GR62426715 | EH03-SPG | SPRING W/DRUM FOR EH-03 |
| | GR62426815 | EH05-SPG | SPRING W/DRUM FOR EH-05 |
| | GR62426613 | EH02-CBL | CABLE FOR EH-02 |
| | GR62426713 | EH03-CBL | CABLE FOR EH-03 |
| | GR62426813 | EH05-CBL | CABLE FOR EH-05 |
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- BH/EH-09-70 BALANCERS
1. Remove load from balancer and remove balancer from its support and place on a work surface.

2. Ensure the drum lock mechanism is engaged.

3. Release all tension from the spring motor by fully loosening and removing the worm gear.

4. Un-install the 4 stop pins from the perimeter of the case by removing the setscrews that retain them.

5. Lift and turn the drum lock lever mechanism to dis-engage.

6. Manually turn drum to expose the cable end through the opening in the side of the case.

7. Remove the setscrew anchor that retains the cable end.

8. Remove the plastic cable guide at the payout side of case.

9. Manipulate cable end to and through the opening at the bottom of the groove in drum near the cable anchor by a combination of turning the drum and pulling the cable at the payout end.

10. Continue to pull the cable to remove it from the balancer.

11. Disassemble the case by removing the 4 screws around its parameter and pulling it apart.

12. Lift out the drum and spring sub-assembly.

13. Mark one of the bolt-holes on the drum and mark the corresponding bolt-hole of the spring canister, also before separating the two parts be sure to mark the corresponding hole in the canister cover.

14. Pull the drum apart from the spring canister.

15. Re-assemble unit in reverse order.
- !! Exercise extreme caution as to not allow the spring to become free from the canister !!**
- Important tip: Install and re-attach cable to drum before re-installing the tensioner worm gear !!**
-
-
-
- DRUM LOCK
- | REPLACEMENT PARTS | | | |
|-------------------|------------|------------|----------------------------|
| TYPE | P/N | MODEL # | DESCRIPTION |
| BH | GR62426905 | BH09-SPG | SPRING FOR BH-09 |
| | GR62427005 | BH15-SPG | SPRING FOR BH-15 |
| | GR62427105 | BH22-SPG | SPRING FOR BH-22 |
| | GR62427205 | BH30-SPG | SPRING FOR BH-30 |
| | GR62427405 | BH40-SPG | SPRING FOR BH-40 |
| | GR62427605 | BH50-SPG | SPRING FOR BH-50 |
| | GR62427805 | BH60-SPG | SPRING FOR BH-60 |
| | GR62428005 | BH70-SPG | SPRING FOR BH-70 |
| | GR62426903 | BH915-CBL | CABLE FOR BH-09 & BH-15 |
| | GR62427103 | BH2270-CBL | CABLE FOR BH-22 THRU BH-70 |
| | GR62426904 | BH915-DRM | DRUM FOR BH-09 & BH-15 |
| | GR62427104 | BH2270-DRM | DRUM FOR BH-22THRU BH-70 |
| EH | GR62426915 | EH09-SPG | SPRING FOR EH-09 |
| | GR62427015 | EH15-SPG | SPRING FOR EH-15 |
| | GR62427115 | EH22-SPG | SPRING FOR EH-22 |
| | GR62427215 | EH30-SPG | SPRING FOR EH-30 |
| | GR62427415 | EH40-SPG | SPRING FOR EH-40 |
| | GR62427615 | EH50-SPG | SPRING FOR EH-50 |
| | GR62427815 | EH60-SPG | SPRING FOR EH-60 |
| | GR62428015 | EH70-SPG | SPRING FOR EH-70 |
| | GR62426913 | EH915-CBL | CABLE FOR EH-09 & EH-15 |
| | GR62427113 | EH2270-CBL | CABLE FOR EH-22 THRU EH-70 |
| | GR62426914 | EH915-DRM | DRUM FOR EH-09 & EH-15 |
| | GR62427114 | EH2270-DRM | DRUM FOR EH-22 THRU EH-70 |