

# 891 Series Loading-Arm Counterbalance

The 891 Series Hi-Load Counterbalance represents the best available technology in loading-arm counterbalancing. Today's applications demand higher spring loads to accommodate longer reaches and additional equipment that is commonly specified on loading arms. The 891 delivers by providing roughly 50% more spring capacity than our previous counterbalance model.

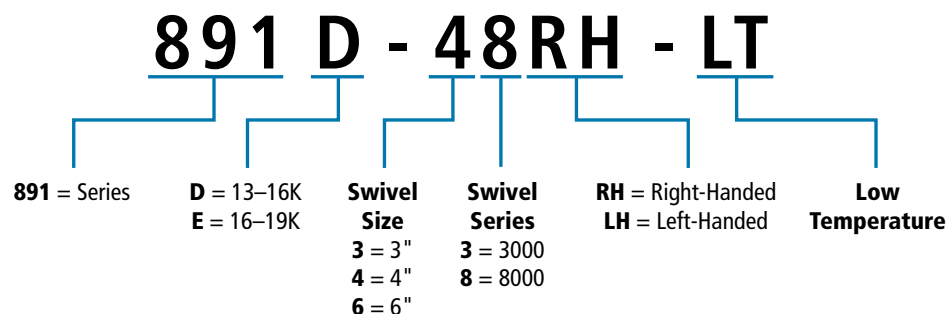
## Benefits

- **Easy, Precise Adjustment** – A simple turn of the adjustment bolt provides finite adjustment to tune your loading arm to the desired balance point.
- **No Special Tools Required** – Standard socket wrench
- **Wide Range of Motion** – 80° of motion (55° up and 25° down)
- **Stable Balancing** – Through the entire range of motion
- **Integral Upward & Downward Travel Stops** – Fully adjustable to limit the range to your application
- **Safe, Robust Design** – Tested under full-load conditions for more than 100,000 cycles with no degradation in performance

## Specifications

- **Type** – Right-Hand/Left-Hand Hi-Load Loading Arm Counterbalance
- **Working Temperature Range** – -50° F to +176° F (-46° C to +80° C)

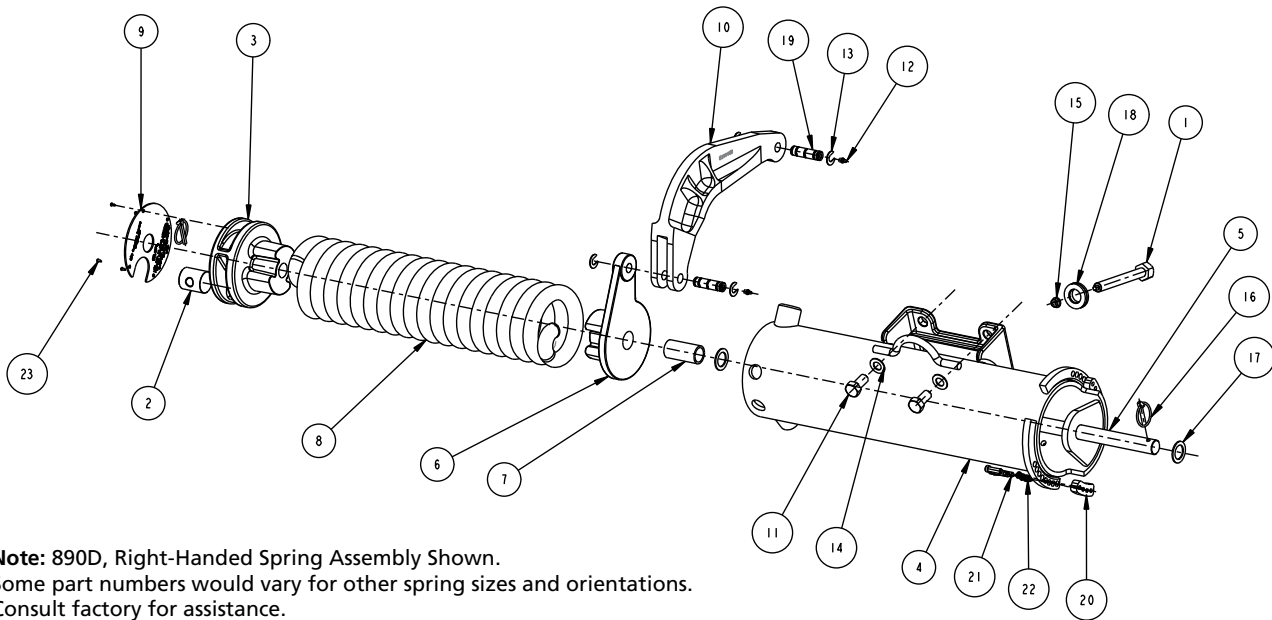
## Selection Guide



**891 Series Counterbalance**

**IMPORTANT:** OPW products should be used in compliance with applicable federal, state, provincial, and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and materials to be handled. OPW MAKES NO WARRANTY OF FITNESS FOR A PARTICULAR USE. All illustrations and specifications in this literature are based on the latest product information available at the time of publication. OPW reserves the right to make changes at any time in prices, materials, specifications and models, and to discontinue models without notice or obligation.

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- **Note:** 890D, Right-Handed Spring Assembly Shown. Some part numbers would vary for other spring sizes and orientations. Consult factory for assistance.

#	Qty	Description	890D-48RH	890D-48LH	890E-48RH	890E-48LH
1	1	Bolt, Adjustment, 890 HLTS, SST	C-21557-M	C-21557-M	C-21557-M	C-21557-M
2	1	Nut, Barrel, 890 HLTS, SST	C-21399-M	C-21399-M	C-21399-M	C-21399-M
3	1	End Cap, 890 HLTS, DI	C-21401-DI	C-21401-DI	C-21401-DI	C-21401-DI
4	1	Housing Assy, 890 HLTS, Lo-Temp CST/SST, RH, 4"	C-22633	C-22792	C-22633	C-22792
5	1	Shaft, 890 HLTS, SST	C-21558-M	C-21558-M	C-21558-M	C-21558-M
6	1	Spring Arm, 890 HLTS, RH, DI	C-21404-DI	C-21496-DI	C-21404-DI	C-21496-DI
7	1	Bushing, Spring Arm, 890 HLTS, BRZ	C-21405-M	C-21405-M	C-21405-M	C-21405-M
8	1	Torsion Spring (Spring Coil Color)	C-21465-M (White)	C-21466-M (Black)	C-21406-M (Blue)	C-21407-M (Green)
9	1	Nameplate, 890 HLTS, Alum	C-21495-M	C-21495-M	C-21495-M	C-21495-M
10	1	Link Arm, DI	E-20041-DI	E-20041-DI	E-20041-DI	E-20041-DI
11	4	Screw, Hex Cap, CST, ZP, 5/8"-11 x 1-1/4"	H-33183-M	H-33183-M	H-33183-M	H-33183-M
12	2	Grease Fitting, SST, 1/4-28	H-06713-M	H-06713-M	H-06713-M	H-06713-M
13	4	Retaining Ring, CST, 5/8"	H-30321-M	H-30321-M	H-30321-M	H-30321-M
14	4	Washer, Flat	H-30361-M	H-30361-M	H-30361-M	H-30361-M
15	1	Nut, Hex, SST, 5/8"-18"	H-32931-M	H-32931-M	H-32931-M	H-32931-M
16	2	Pin, Linch, CST ZP, 1-4"	H-32281-M	H-32281-M	H-32281-M	H-32281-M
17	1	Washer, Flat, CP/ZP, 1"	H-32280-M	H-32280-M	H-32280-M	H-32280-M
18	1	Washer, Spherical, CST ZP, 7/8"	H-32393-M	H-32393-M	H-32393-M	H-32393-M
19	2	Pin, Link Arm, Greasable, SST, 5/8"	H-32394-M	H-32394-M	H-32394-M	H-32394-M
20	2	Bumper Stop, 890 HLTS, CST	H-32421-M	H-32421-M	H-32421-M	H-32421-M
21	8	Screw, Cap, Socket Head, ZP, 5/16"-18	H-31278-M	H-31278-M	H-31278-M	H-31278-M
22	8	Washer, Lock, ZP, 21/64"	H-03563-M	H-03563-M	H-03563-M	H-03563-M
23	4	Drive Screw, Type U, #10 X 3/8"	H-30741-M	H-30741-M	H-30741-M	H-30741-M

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## Upward/Downward Travel Stops



The 891 is equipped with integral upward and downward travel stops. This allows you to limit the travel of your loading arm to avoid obstructions that may be at your site (e.g., overhead lighting or pipe racks).

Adjustment is very simple:

Position bumper stop(s) in the desired positions and secure with four (4) supplied cap screws and lock washers.

## Adjustment

### When to Adjust

- To raise loading arm higher or for more lifting action **INCREASE** torque
- To decrease loading arm vertical travel or to slow the rate at which the arm rises, **DECREASE** torque

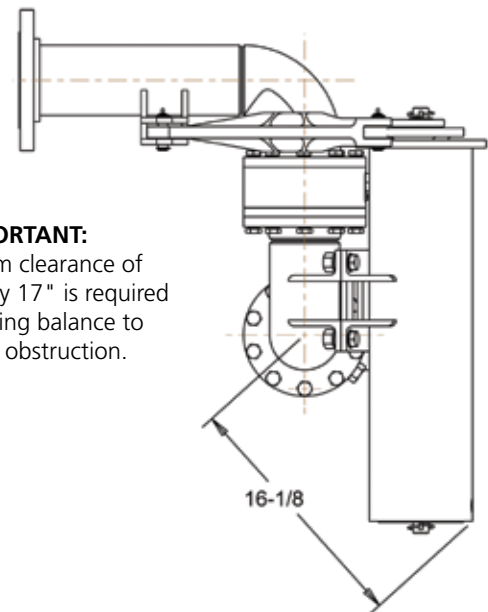
**Note:** Prior to any adjustment, loading arm should be raised and secured in highest possible position (preferably 45°).



- Place 1-1/16" socket wrench on **ADJUSTMENT BOLT**
- To **INCREASE** torque rotate **ADJUSTMENT BOLT** clockwise
- To **DECREASE** torque rotate the **ADJUSTMENT BOLT** counter-clockwise
- Release wrench and test loading-arm lifting action

**Note:** Prior to any loading-arm disassembly, spring tension should be completely relieved.

**Note:** Right-hand spring balance shown.



### IMPORTANT:

A minimum clearance of approximately 17" is required for the spring balance to clear any obstruction.

### Torque:

For more lifting action **INCREASE** torque.

For less lifting action **DECREASE** torque.



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## Maintenance

### Lubrication

Pins [22] should be lubricated on an annual basis.

Any bearing gel that meets local conditions is acceptable.

Shaft [5] should be lubricated on an annual basis.

1. Raise loading arm to highest position to unload spring. Secure arm.
2. Mark end cap [3] position, and loosen adjustment bolt [1]. Adjustment bolt should move easily with spring unloaded.
3. Remove pin [19] and washer [18] from end cap side of shaft.
4. Move shaft [5] two inches from housing and cover extended shaft with grease. (Recommend using heavy bearing grease, such as Royal Purple or Thermasil T-100)
5. Complete maintenance in reverse order.

**Note:** Consider using an OPW Lock Down Unit with the 891 Spring.

## Safety

**DANGER:** Before performing any maintenance, always secure the Loading Arm and remove all tension from the counterbalance and torsion spring. The Loading Arm counterbalance spring contains a substantial amount of stored energy. You must relieve this energy before any disassembly. Failure to remove all tension from the counterbalance spring of the Loading Arm before maintenance may cause serious personal injury or death.



### WARNING

Failure to follow these warnings could result in serious personal injury, property damage or product failure.

1. While installing and using the Loading Arm, always wear adequate personal protection, including hard hats, gloves and steel-toed work boots. Failure to wear adequate personal protection may cause serious personal injury and death.
2. Always follow the procedures prescribed in this document. Failing to follow the procedures prescribed may damage the Loading Arm and cause serious personal injury and death. Consult Loading Arm Installation, Maintenance & Safety Manual for more details.