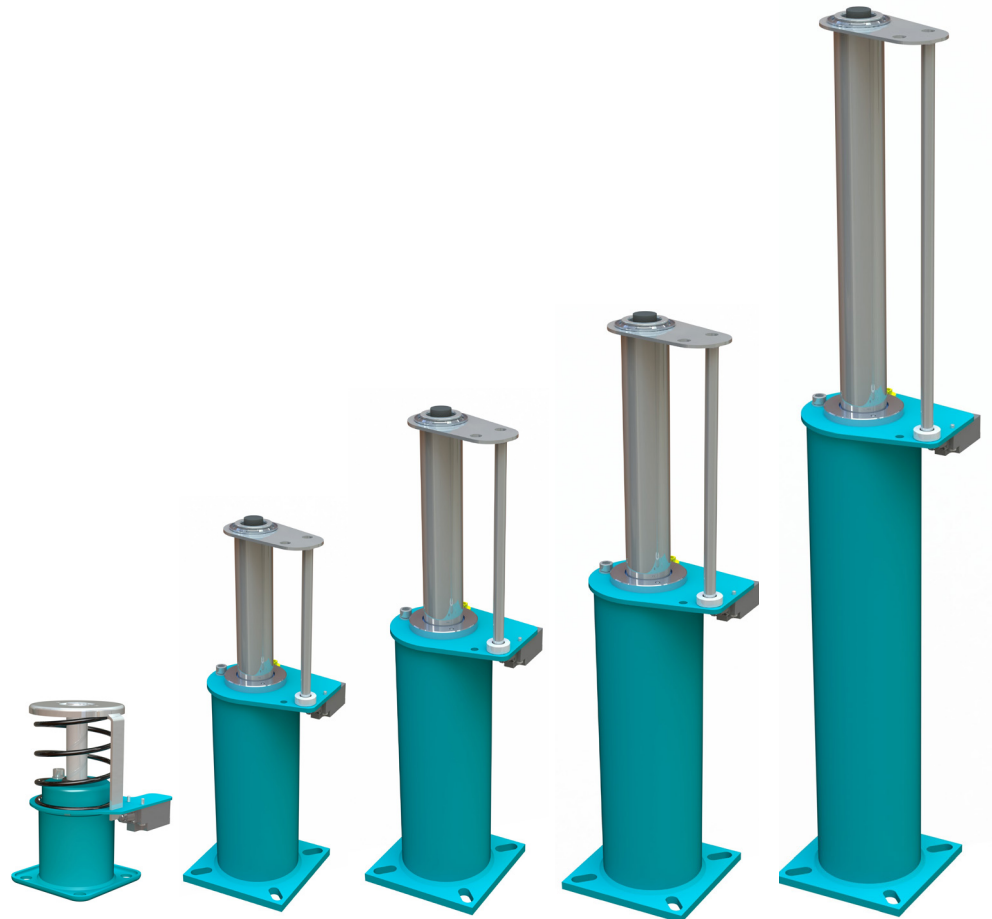




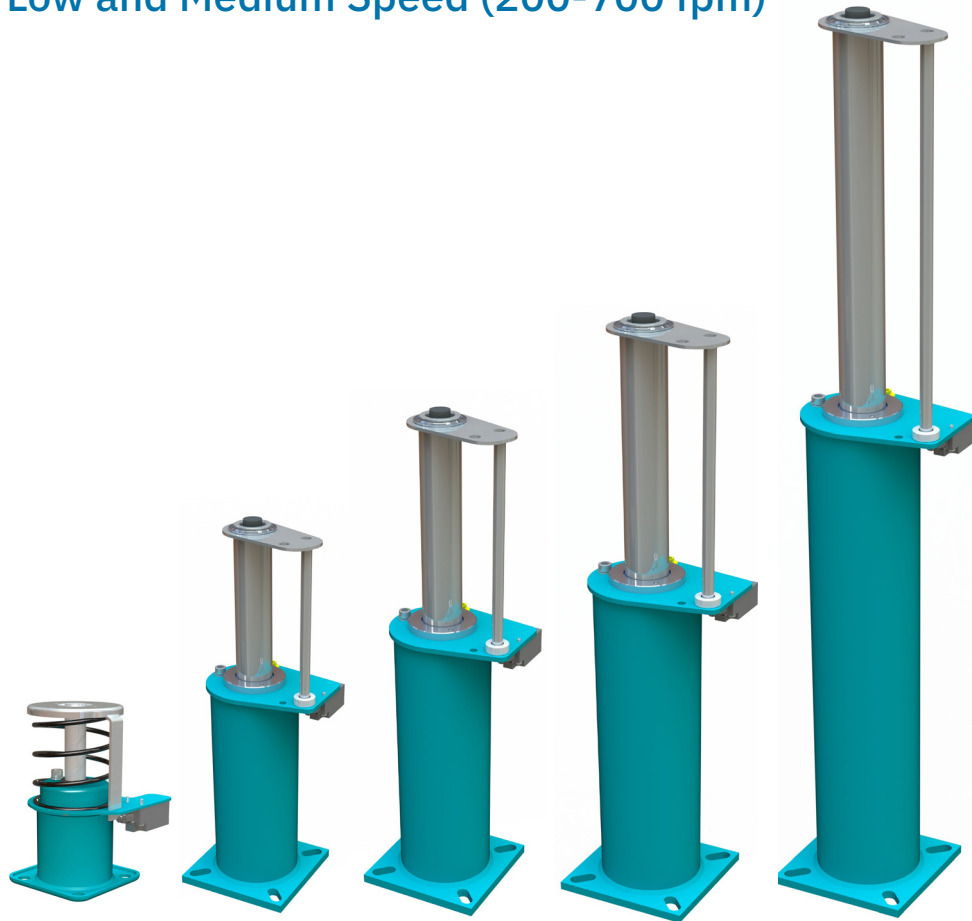
# OLEO BUFFERS LSB & MLB



[www.delcoelevator.com](http://www.delcoelevator.com)  
[info@delcoelevator.com](mailto:info@delcoelevator.com) | 1-866-900-3727

## LSB & MLB SERIES

Low and Medium Speed (200-700 fpm)



The Oleo Oil Buffers series are self contained, maintenance free units designed for low and medium speed applications.

The series provides a cost effective solution with excellent performance characteristics across an exceptionally wide mass range.

Oleo buffers are designed and built according to strict engineering standards, universally approved and globally certified.

- LSB 10
- MLB 13
- MLB 16
- MLB 18
- MLB 20
- MLB 25
- MLB 35

### Specifications

Product	LSB 10	MLB 13	MLB 16	MLB 18	MLB 20	MLB 25	MLB 35
Rated Speed	200	250	300	350	400	500	700
Stroke	2.89"	4.72"	6.81"	8.62"	10.98"	17.13"	34.69"
Overall Height	8.8"	16.1"	20.9"	24.9"	30.7"	45.8"	83"
Compressed Height	5.7"	10.8"	13.5"	15.7"	19.2"	28.1"	47.6"
Min Load (lbs)	838	992	992	992	992	992	1323
Max Load (lbs)	7165	12125	12125	12125	12125	12125	12125
Ship Wt (lbs)	9	19.2	28	31	37	54	135
Delco SKU	C-11-2200	C-11-2250	C-11-2300	C-11-2350	C-11-2400	C-11-2500	C-11-2700

## LSB 10 HANDLING

When handling LSB buffers ensure your regional health and safety laws are adhered to.

### WARNING

DO NOT lift buffer with the striker rod shown in Figure 1. Avoid contact as this may cause damage.

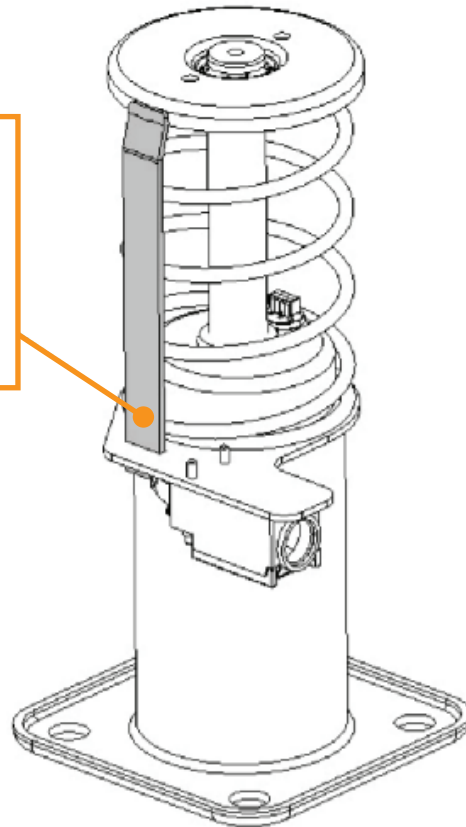


Figure 1

Always confirm the weight of the buffer to be lifted and ensure that a suitable lifting method is used.

### Installation Procedure

- Ensure the buffer has been secured into this installation position.
- Oleo recommends a bold size M10 fixings for LSB10, and all four fixing positions are used.
- Ensure this area at the base of the buffer, shown in figure 2 is supported.
- Buffers are to be fitted vertically parallel to guide rail  $\pm 5\text{mm}$ .

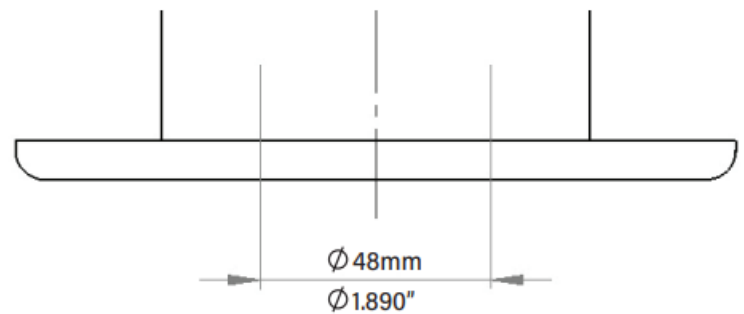


Figure 2

## Oil Specification

The oil must confirm to the specification on the buffer data plate - ISOVG68 : SG.88/90 at 15 °C : hydraulic.

Pour Point : 18 °C or lower. Viscosity index 75 or higher.

### CAUTION

Take care when handling the oils. Observe the oil manufactures recommendations.

Approximate Oil Volume	0.45 litres
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## Oil Filling Procedure

### NOTICE

The buffer must be vertical and fully extended before filling with oil.

1. Unscrew the dipstick ( indicated on figure 4) and remove from the buffer.
2. Wipe dipstick clean and keep safe.
3. Gradually fill the buffer with oil until the oil level is visible between the minimum and maximum levels on the dipstick ( indicated on figure 3)
4. Allow the buffer to stand for a minimum of 30 minutes.
5. Re-insert the dipstick DO NOT screw down.
6. Remove dipstick and inspect level. The oil level needs to be between the minimum and maximum marks indicated on the dipstick as shown in figure 3.
7. Once oil level is correct, replace dipstick and securely fasten.

### Minimum & Maximum

The oil level needs to be between the Minimum and Maximum marks indicated on the dipstick as shown in figure 3

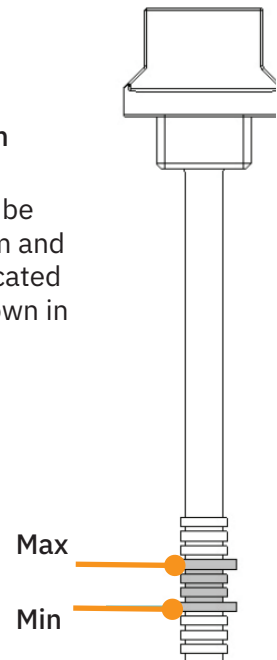


Figure 3

### CAUTION

Take care when handling the oils. Observe the oil manufactures recommendations.

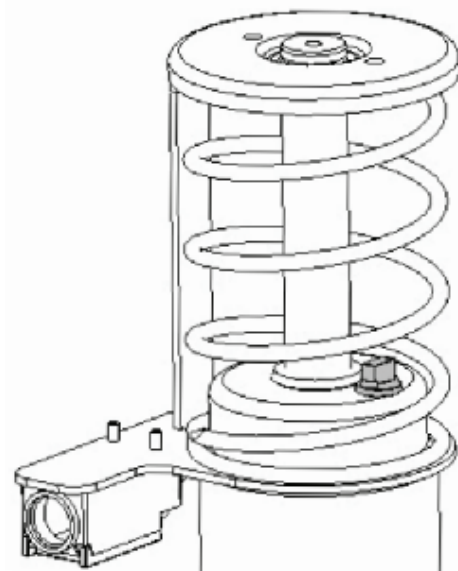


Figure 4

The oil must be within the correct operating range for the buffer to perform correctly.

If further oil is required after checking repeat steps 1-7.

**The buffer now needs to stand for at least 30 minutes; this allows the oil to settle.**

## Oil Checking Procedure

The oil level must be correct and needs to be checked using the following procedure:

1. Unscrew the dipstick ( indicated on figure 4) and remove from the buffer.
2. Wipe dipstick clean.
3. Re-insert the dipstick DO NOT screw down.
4. Remove dipstick and inspect level. The oil level needs to be between the minimum and maximum marks indicated on the dipstick as shown in figure 3.
5. Once oil level is correct replace dipstick and securely fasten.

## Final Commissioning

Oleo recommends the final 7 step process is followed prior to commissioning:

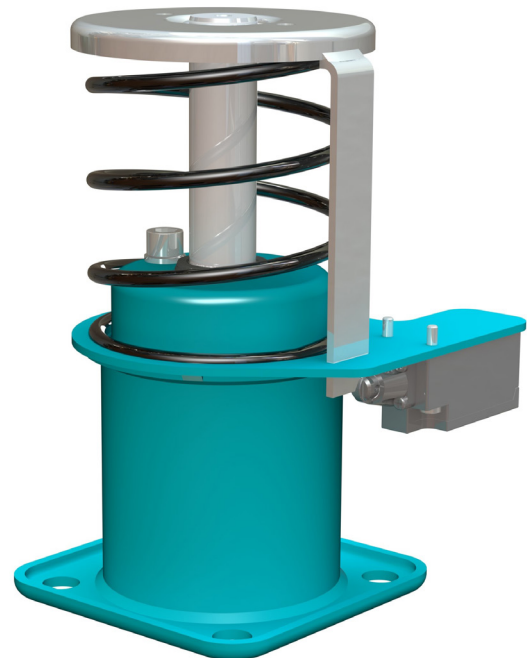
1. Ensure oil level is correct.
2. Ensure striker is vertically aligned to  $\pm 0.5\text{mm}$ .
3. Complete electrical connections to the limit switch.

### WARNING

As a safety critical component , buffers should not be installed without a switch.

### WARNING

DO NOT overfill past the maximum dipstick mark. If this occurs, then oil must be removed from the buffer.



4. Compress the buffer at slow speed across the full working stroke then allow to recoil.
5. Allow the oil to settle for 30 minutes then recheck oil level - see oil checking procedure.
6. Finally, impact the buffer at the full rated speed of the elevator.
7. Complete final checks of oil level and the buffer is at correct working height.

## NOTICE

CHECK: The maximum overall height for LSB10 (+0/-2.8mm) - 8.748 in

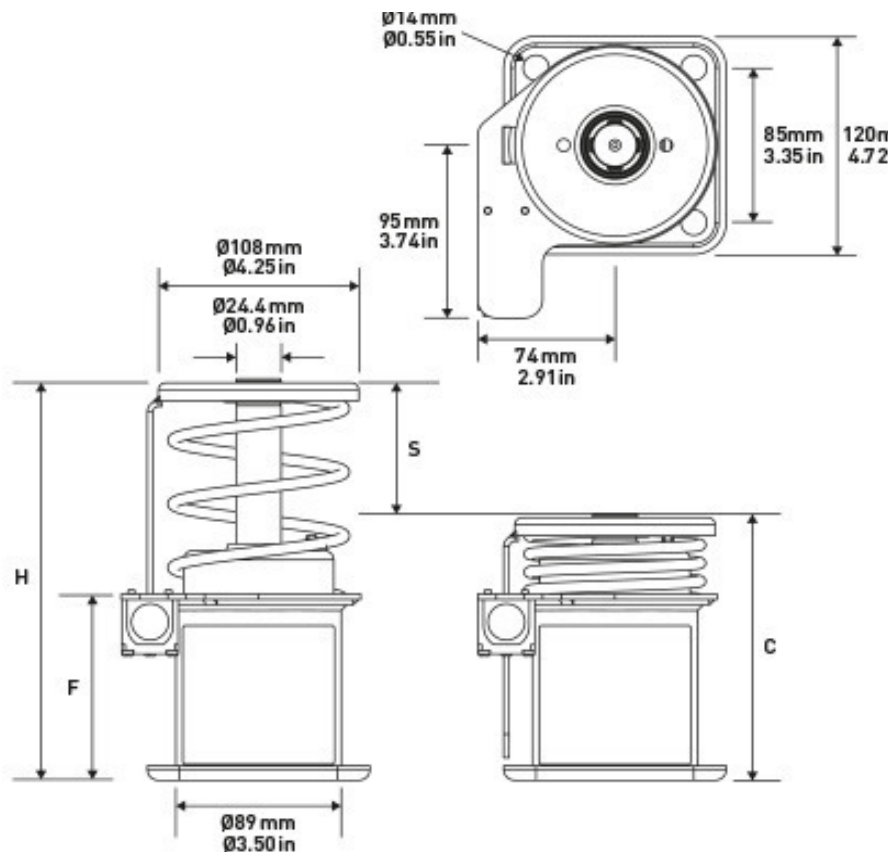
If the buffer has not returned to the fully extended position (determined by measuring overall height) contact Oleo International.

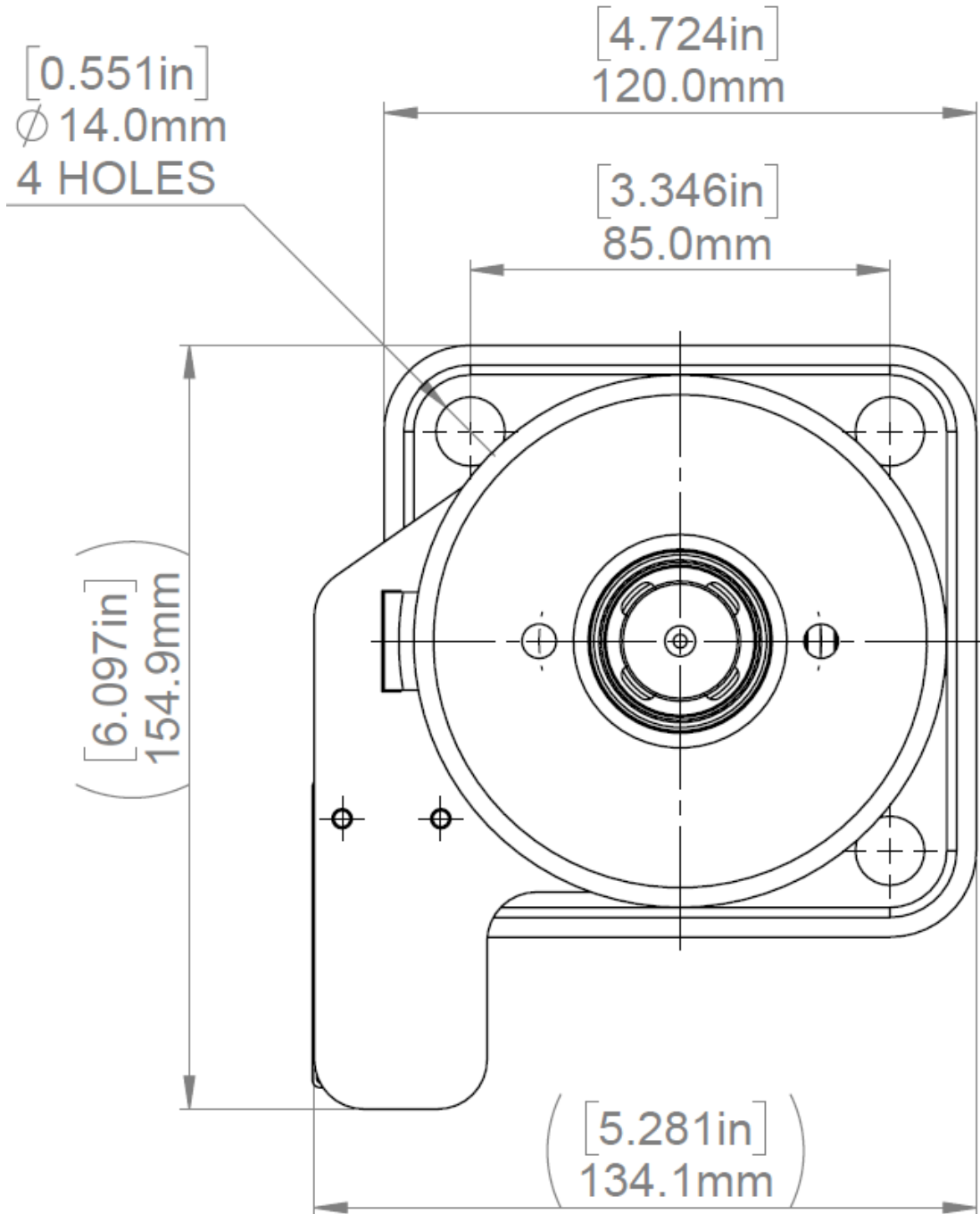
## Maintenance

Oleo recommends the following be carried out every 12 months from installation:

1. Clean away debris and dirt from around the plunger and switch.
2. Check the oil level is correct.
3. Compress the buffer across its full working stroke.
4. After the compression, ensure the buffer has returned to its correct working height and visually check for any damage.

Ensure regional jurisdictions and laws for maintenance are adhered to.





**LSB 10 BASE DIMENSIONS**



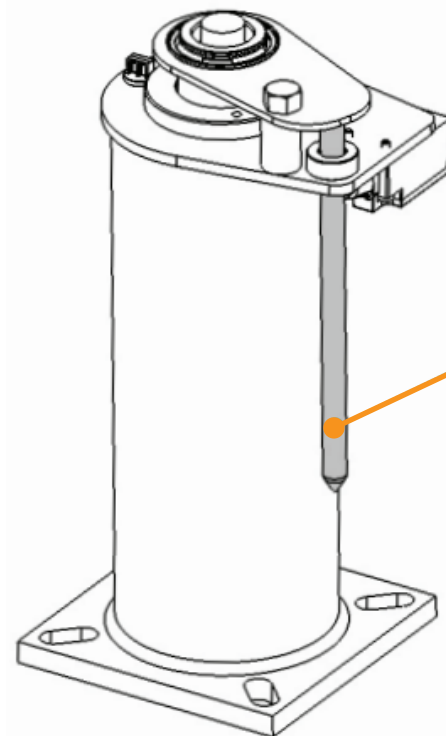
## MLB SERIES

- The MLB series has been designed to complement the successful LB series while retaining key operational characteristics.
- The MLB gas hydraulic buffer series is a self contained, maintenance free\* unit designed for quick and easy installation, primarily designed for medium speed elevator applications, typical applications include low to medium rise buildings.
- Oleo's MLB buffers weigh approx half of a conventional buffer and have a small space envelope, this means that shipping costs are significantly reduced.
- The MLB series provides a cost effective solution with excellent performance characteristics across an exceptionally wide mass range.

\* other than statutory inspections.

## HANDLING

- When handling MLB buffers ensure your regional health and safety laws are adhered to.
- Always confirm the weight of the buffer to be lifted and ensure that a suitable lifting method is used.



**WARNING**  
DO NOT lift buffer with the striker shown in Figure 1. Avoid contact as this may cause damage.

Figure 1



## Installation Procedure

- Ensure the buffer has been secured into this installation position.
- Oleo recommends a bold size M12 for fixing and all four fixing positions are used.
- Ensure this area at the base of the buffer, shown in figure 2 is supported.
- At this point the buffer is still compressed in its transportation state, now the buffer can be released by removing the transportation bolt. The following is the recommended removal procedure.
- For a controlled release, lower the elevator car (or equivalent) onto the buffer. This mass must be at least equivalent to the minimum mass of the specified buffer.
- Minimum mass of the buffer show on the table below:

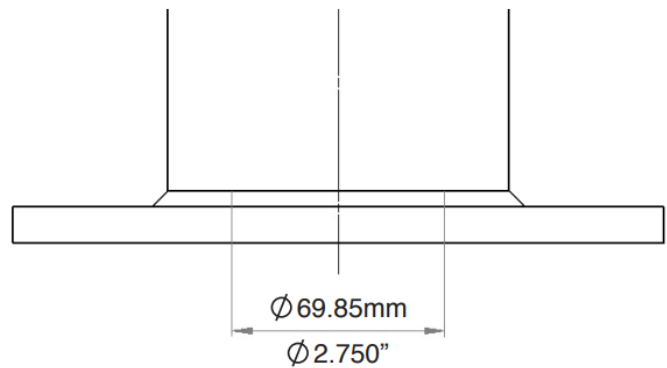


Figure 2

Buffer Model	<b>MLB 13</b>	<b>MLB 16</b>	<b>MLB 18</b>	<b>MLB 20</b>	<b>MLB 25</b>	<b>MLB 35</b>
Min. Mass						
Kg	450	450	450	450	450	600
Lbs	992	992	992	992	992	1323

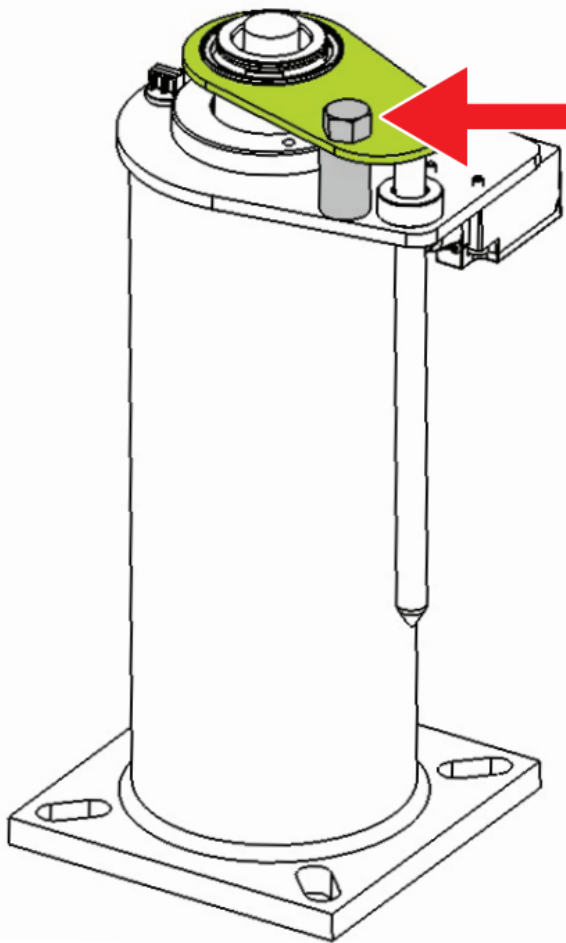


Figure 3

## DANGER

Now to release the plunger.  
DO NOT stand over the plunger when releasing

- To release the plunger, undo the transportation bolt. ( GREY in figure 3)
- Discard the transportation bolt and spacer ( GREY in figure 3)
- If used, remove the elevator car ( or equivalent) and this will control the recoil and buffer.
- After periods of being held in the compressed state during transportation and storage, the plunger may require assistance to initially extend. This should be done using rubber dead blow mallet to tap the underside of the buffer top plate ( GREEN in figure 3) at 90 degree intervals until the plunger extends.
- Once fully extended and stroked the buffer will perform as designed.
- Buffers are to be fitted vertically parallel to guide rail  $\pm 5\text{mm}$ .

## Oil Specification

The oil must confirm to the specification on the buffer data plate - ISOVG68 : SG.88/90 at 15 °C : hydraulic.

Pour Point : 18 °C or lower. Viscosity index 75 or higher.

### CAUTION

Take care when handling the oils. Observe the oil manufactures recommendations.

Buffer Model	MLB 13	MLB 16	MLB 18	MLB 20	MLB 25	MLB 32	MLB 35
Approximate Oil Volume							
Litres	1.02	1.41	1.74	2.18	3.32	5.19	19.5
US Gallons	0.27	0.37	0.46	0.58	0.88	1.37	5.15

### Minimum & Maximum

The oil level needs to be between the Minimum and Maximum marks indicated on the dipstick as shown in figure 4

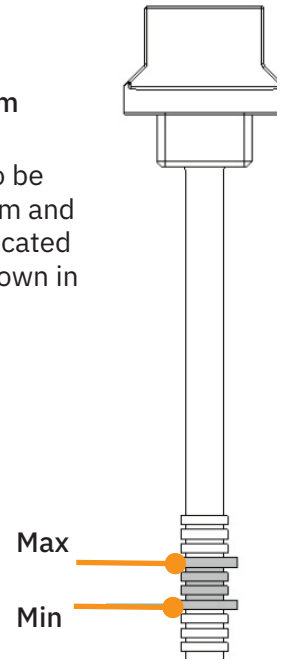


Figure 4

## Oil Filling Procedure

### NOTICE

The buffer must be vertical and fully extended before filling with oil.

### CAUTION

Take care when handling the oils. Observe the oil manufactures recommendations.

1. Unscrew the airscrew, remove from the buffer and keep safe. ( GREEN in figure 5)
2. Unscrew the dipstick, remove from the buffer and keep safe. ( GREY in figure 5).
3. Gradually fill the buffer with oil until the oil level is visible between the minimum and maximum levels on the dipstick ( indicated on figure 4)
4. Allow the buffer to stand for a minimum of 30 minutes.
5. Re-insert the dipstick DO NOT screw down.
6. Remove dipstick and inspect level. The oil level needs to be between the minimum and maximum marks indicated on the dipstick as shown in figure 4.
7. Once oil level is correct replace airscrew and securely fasten.
8. Once oil level is correct replace dipstick and securely faster.

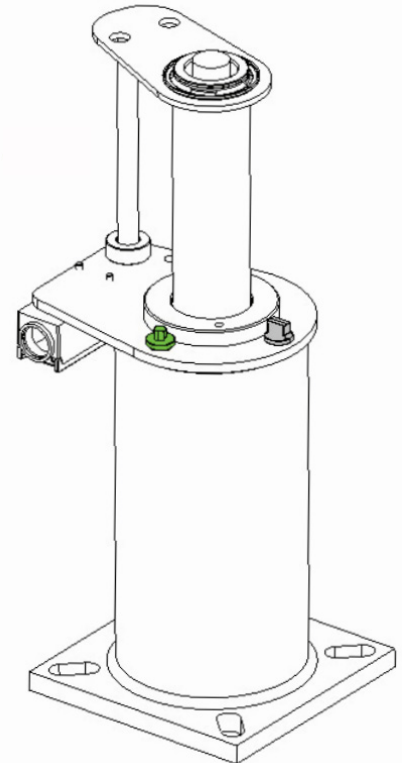


Figure 5

The oil must be within the correct operating range for the buffer to perform correctly.

If further oil is required after checking repeat steps 1-8.

**The buffer now needs to stand for at least 30 minutes; this allows the oil to settle.**

## Oil Checking Procedure

The oil level must be correct and needs to be checked using the following procedure:

1. Unscrew the dipstick and remove from the buffer. ( GREY on figure 5)
2. Wipe dipstick clean.
3. Re-insert the dipstick DO NOT screw down.
4. Remove dipstick and inspect level. The oil level needs to be between the minimum and maximum marks indicated on the dipstick as shown in figure 4.
5. Once oil level is correct replace dipstick and securely fasten.

## Final Commissioning

Oleo recommends the final 7 step process is followed prior to commissioning:

1. Ensure oil level is correct.
2. Ensure striker is vertically aligned to  $\pm 0.5\text{mm}$ .
3. Complete electrical connections to the limit switch.

### WARNING

As a safety critical component , buffers should not be installed without a switch.

### WARNING

DO NOT overfill past the maximum dipstick mark. If this occurs, then oil must be removed from the buffer.

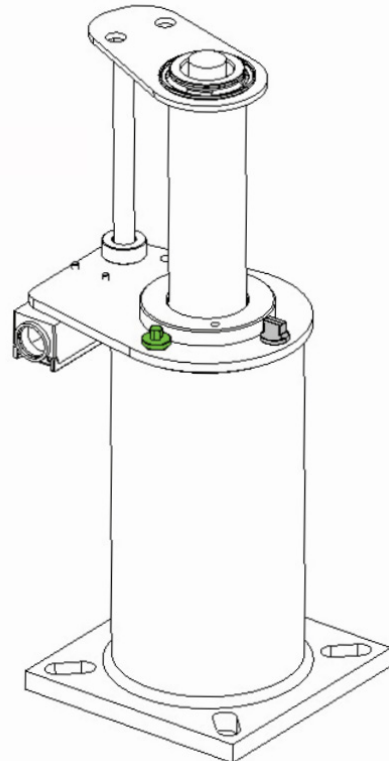


Figure 5

4. Compress the buffer at slow speed across the full working stroke then allow to recoil.
5. Allow the oil to settle for 30 minutes then recheck oil level - see oil checking procedure.
6. Finally, impact the buffer at the full rated speed of the elevator.
7. Complete final checks of oil level and the buffer is at correct working height.

## NOTICE

CHECK: The maximum overall height against table below MLB 16-25 +0/-8.8mm of the figure stated.

If the buffer has not returned to the fully extended position (determined by measuring overall height) contact Oleo International.

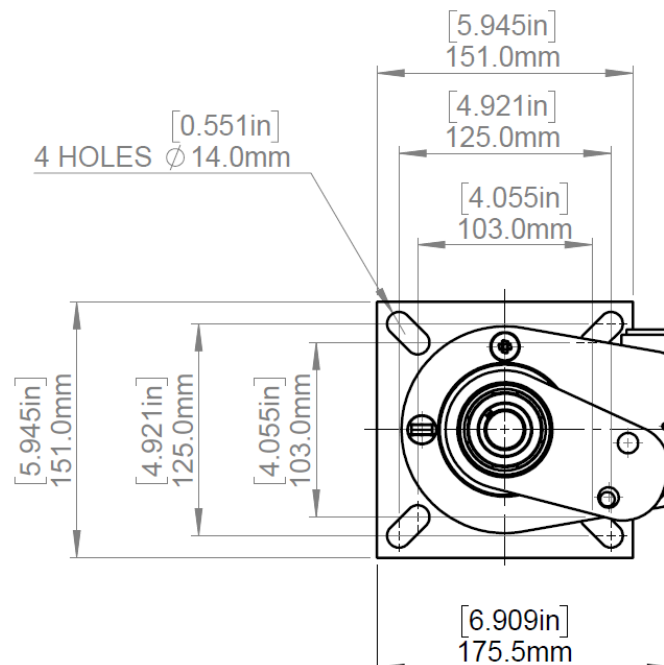
Buffer Model	MLB 13	MLB 16	MLB 18	MLB 20	MLB 25
Extended Height					
m	0.4103	0.5323	0.6343	0.7823	1.1643
in	16.154	20.957	24.972	30.799	45.839

## Maintenance

Oleo recommends the following be carried out every 12 months from installation:

1. Clean away debris and dirt from around the plunger and switch.
2. Check the oil level is correct.
3. Compress the buffer across its full working stroke.
4. After the compression, ensure the buffer has returned to its correct working height and visually check for any damage.

Ensure regional jurisdictions and laws for maintenance are adhered to.



# PRODUCT LINE



**In Stock, Non-Proprietary, Proven & Competitive**

## Product Line:

- Haider Drive Elevator Machines
- New Construction Packages
- Governors
- Roller Guide Assemblies
- Oleo Oil Buffers
- Shackles
- Safety Barricades
- Cartop and Run Stations
- Limit Switches
- Door Detectors
- Door Closers
- Boards, Parts and Tools

## The Delco Difference

- **In Stock:** We keep our inventory stocked to make sure that customers receive what they need, when they need it.
- **Non-Proprietary:** Delco's products are universal – perfect for modernizations.
- **24 Hours:** From when you place your order until it's picked, packed and shipped out the door.
- **Proven Products:** Delco manufactures and distributes products that are tried, tested and proven in the field.
- **Compliant:** Delco products and equipment meet all elevator industry compliance and certification standards.
- **Value for Money:** In a highly competitive marketplace, Delco provides the best quality elevator equipment at the lowest possible prices.
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- **US and Canadian Locations:** No hassles, no border crossings, no tariffs, no waits... your order will be fulfilled and shipped in country.

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Suite 300, Auburn, WA 98001

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