



MOTOCRANE RADICAL

L/S KIT

WARNING

To minimize risk of serious injury, death or damage, before using MotoCrane RADICAL L/S Kit, all drivers and operators must read this Operation Manual and all on-product labels.




All practices and procedures stated herein are required for the proper and safe operation of the RADICAL L/S Kit.

If there are any questions, please contact MotoCrane Support at support@motocrane.com.

Keep this Operation Manual near your RADICAL L/S Kit for future reference.

Safety Signal Words

This manual and the safety labels attached to this equipment utilize signal words that signify safety hazards with different levels of severity. The words are preceded by a triangle signifying that these are safety related. Below are the words used and the definitions for these words:

-  **WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury or damage
-  **CAUTION** indicates a hazardous situation which, if not avoided, could result in minor or moderate injury or damage
-  **NOTICE** is used to address practices not related to physical injury

The terms IMPORTANT and NOTE are also used to describe ideas for better and more efficient use of the RADICAL L/S Kit.

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Before the First Drive

Do the following before using the RADICAL L/S Kit for the first time.

1. Read this Operation Manual
2. Read the Warranty in the Terms of Sale
3. Watch any available video tutorials at www.motocrane.com/knowledge-base
4. Recommended: Attend MotoCrane Training for in-person demonstration

IMPORTANT PRODUCT AND SAFETY INSTRUCTIONS

Safety

The MotoCrane RADICAL L/S Kit is not a toy and can cause serious injury, death or damage if not used properly. You must exercise caution during use of the RADICAL L/S Kit to ensure a safe filming environment for everyone. This Operation Manual describes safe operation and should be read in conjunction with the applicable online training videos or additional in-person training.

IMPORTANT: Restricted Use Statement

The RADICAL L/S Kit must only be used by trained operators 18 years of age or older. Only appropriate motor vehicles driven on a closed course with paved or finished surfaces (for example, asphalt, concrete, or tarmac) or moderate off-road (for example, gravel or dirt roads) conditions may be used. In addition, the speed and acceleration of the motor vehicle must not exceed system ratings for MotoCrane products as set forth in this Operation Manual.

Do not modify or adjust the RADICAL L/S Kit. The RADICAL L/S Kit has been calibrated before it is shipped to you. No modification or adjustment to the RADICAL L/S Kit is allowed without the express written approval of MotoCrane, LLC.

Disclaimer and Limitations of Liability

You agree that you are responsible for your own conduct and any content created while using the RADICAL L/S Kit, and for any consequences thereof. You agree to use this product only for purposes that are proper and in accordance with local laws, regulations or other legal requirements.


You also agree:

1. Any part of this disclaimer is subject to change without prior notice. Refer to www.motocrane.com/knowledge-base for the latest version.
2. MotoCrane, LLC reserves the right of final interpretation of this disclaimer.
3. MotoCrane, LLC has no control over the use, setup, assembly, modification or misuse of the RADICAL L/S Kit, and therefore no liability shall be assumed or accepted by MotoCrane, LLC for any resulting damage, death, or injury incurred directly or indirectly from the use of the RADICAL L/S Kit. By the act of use, setup or assembly, the user accepts all resulting liability.

Limited Warranty

The RADICAL L/S Kit has a limited manufacturer's warranty on parts and assembly. See the Terms and Conditions of Sale for your RADICAL L/S Kit for a complete description of this limited warranty. This Limited Warranty is incorporated by reference into this Operation Manual.

Intellectual Property

MotoCrane™, and  **MOTO CRANE** are trademarks of MotoCrane, LLC. You may not use the trademarks of MotoCrane, LLC without express written permission. All rights reserved.

Intended Use of RADICAL L/S Kit

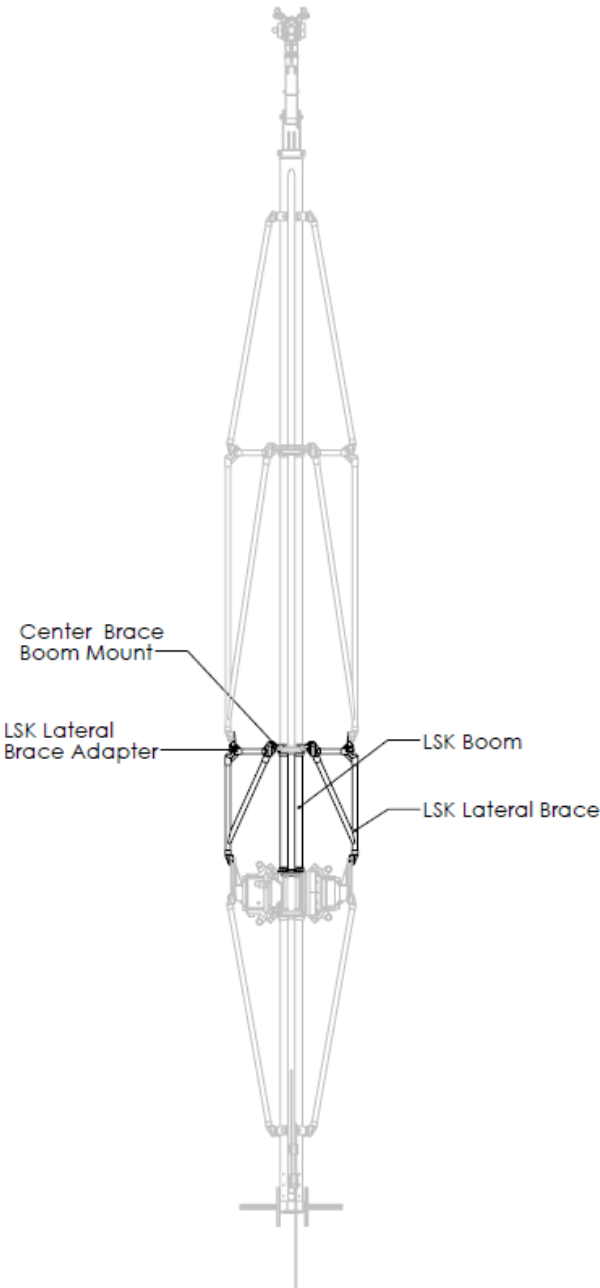
The L/S Kit allows RADICAL w/ Heavylift to operate in 2 new modes "Long" and "Short":

Long Mode extends arm reach by 2ft for a total reach of 14ft with a rated payload capacity of 35lbs. This is especially useful for larger vehicles where added clearance is needed, or in applications where larger sweeping arm movements are desired such as using RADICAL as a motorized jib.

Short Mode adds 10lbs of rated payload capacity to RADICAL at a reduced length of 9ft. This is helpful when larger payloads such as the MoVI XL are desired and the extended reach of RADICAL is not critical such as when mounted to a UTV or compact vehicle.

Parts of the RADICAL L/S Kit

RADICAL L/S Kit System Overview

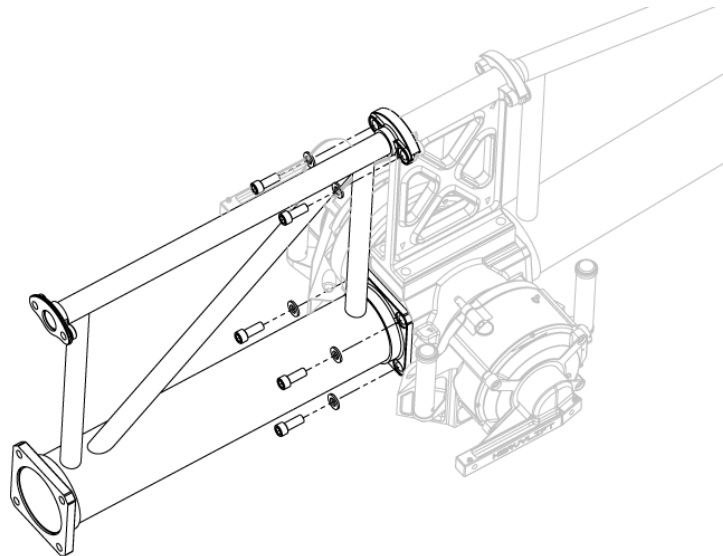


Installing RADICAL L/S Kit Components

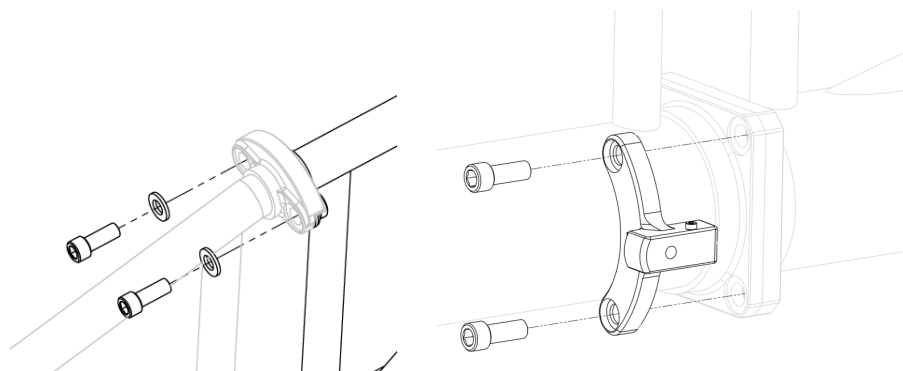
SHORT MODE

Installation for Short Mode should occur after RADICAL is assembled up to the point of the Fulcrum with the Rear Boom attached, the Heavylift Drive Mount and Passive Mount installed, as well as Heavylift End Brace Boom Mounts installed to the Front and Rear booms.

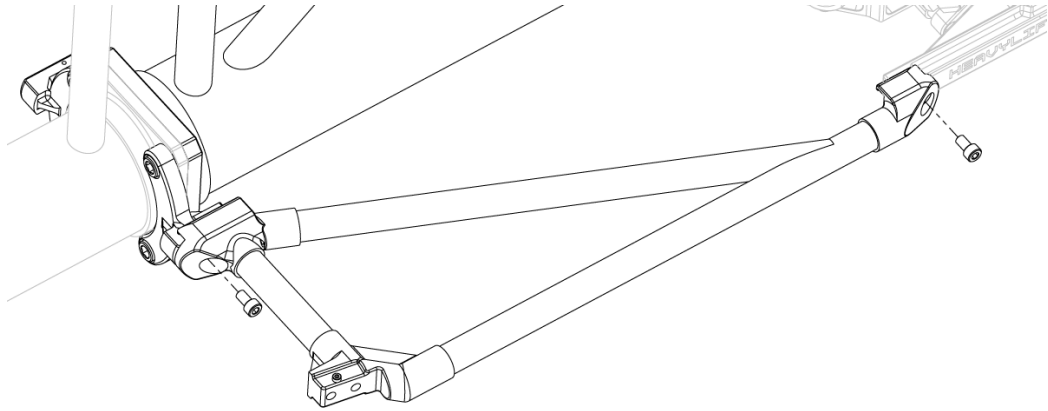
1. Install L/S Kit boom to the fulcrum by securing the clip receiver over the fulcrum clip. Install the x6 SHCS M12 fasteners into the mounting holes with adequate torque to safely secure the L/S Kit boom to the fulcrum.



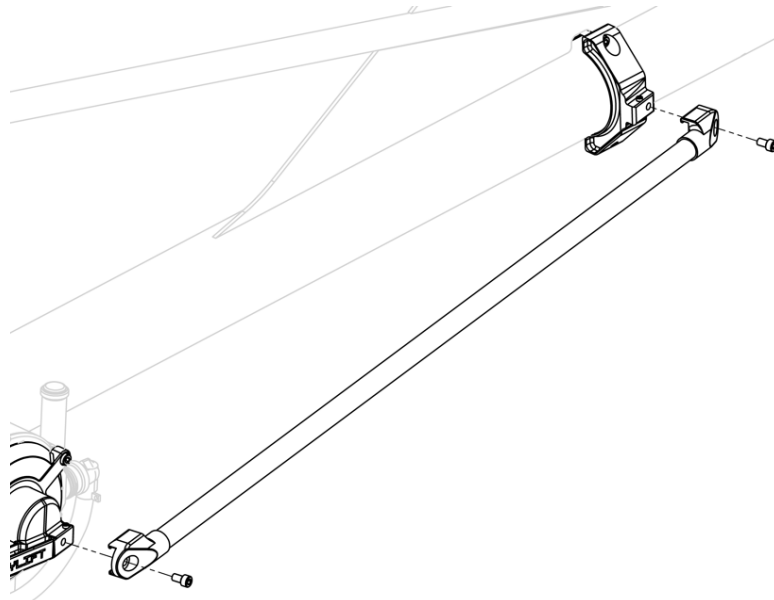
2. Install the Front Boom to the L/S Kit boom by securing the clip receiver. Install the x2 SHCS M12 fasteners to the top flange of the boom and then install both Center Brace Boom Mounts to the Front Boom plate using 2X SHCS M12 on each side. Apply appropriate torque to the fasteners.



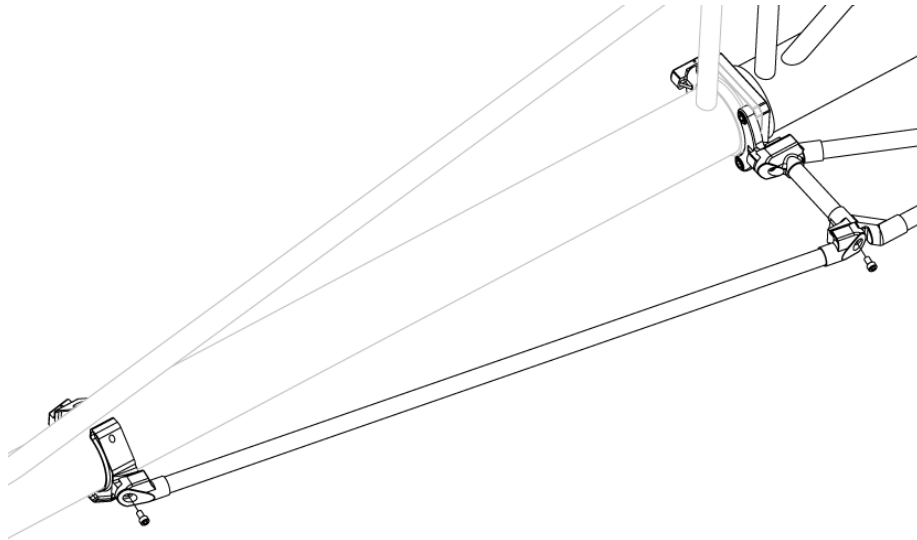
3. Attach a L/S Kit Lateral Brace to the Passive Mount and Center Brace Boom Mount using 2X SHCS M8. Make sure the clip receivers are hooked over the SHCS M4 fastener heads before letting go. Apply appropriate torque to the fasteners.



4. Attach an End Brace to the Passive Mount and End Brace Boom Mount using 2x SHCS M8. Apply appropriate torque to the fasteners.



5. Attach the End Brace to the L/S Kit Lateral Brace and End Brace Boom Mount using 2x SHCS M8. Apply appropriate torque to the fasteners.

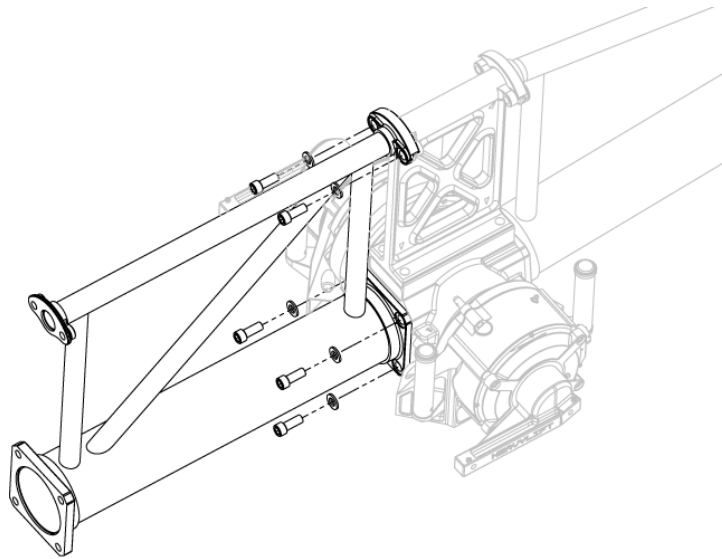


6. Repeat step 3, 4, & 5 on the other side. **Loosen the mounts to make slight adjustments if necessary.** Make sure the braces are centered, and are not crooked. After adjustments have been made, ensure all fasteners are properly tightened.

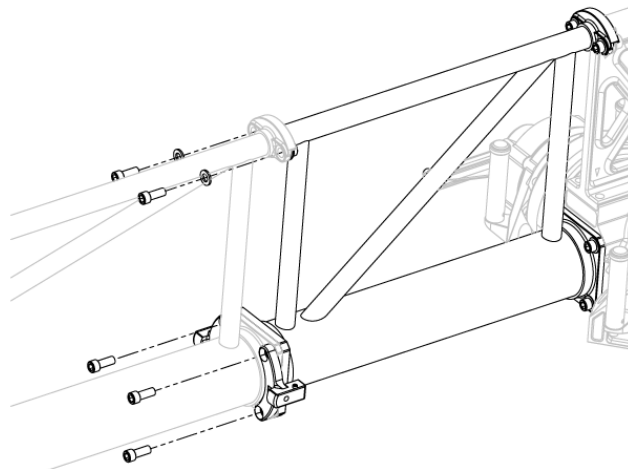
LONG MODE

Installation for Long Mode should occur after RADICAL is assembled up to the point of the Fulcrum with the Rear Boom attached, the Heavylift Drive Mount and Passive Mount installed, as well as Heavylift End Brace Boom Mounts installed to the Front and Rear booms.

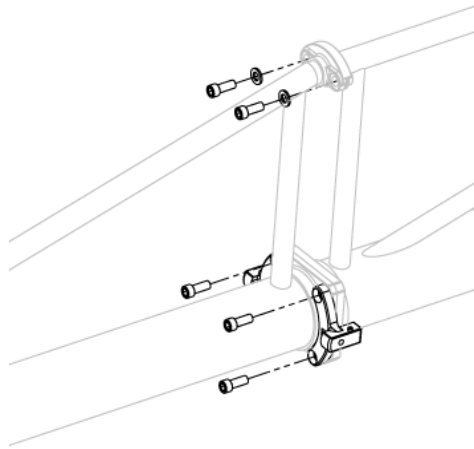
1. Install L/S Kit boom to the fulcrum by securing the clip receiver over the fulcrum clip. Install the x6 SHCS M12 fasteners into the mounting holes with adequate torque to safely secure the L/S Kit boom to the fulcrum.



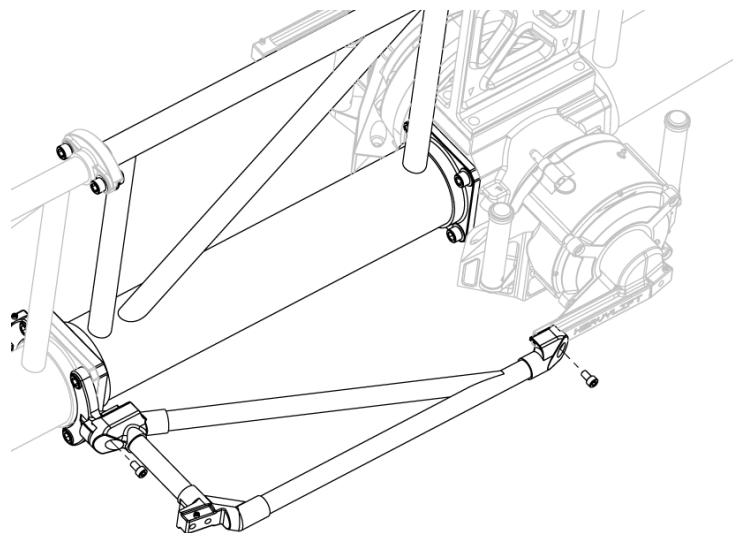
2. Install the Middle Boom to the L/S Kit boom by securing the clip receiver. Install the x2 SHCS M12 fasteners to the top flange of the boom and then install both Center Brace Boom Mounts to the Middle Boom plate using 2X SHCS M12 on each side. Apply appropriate torque to the fasteners.



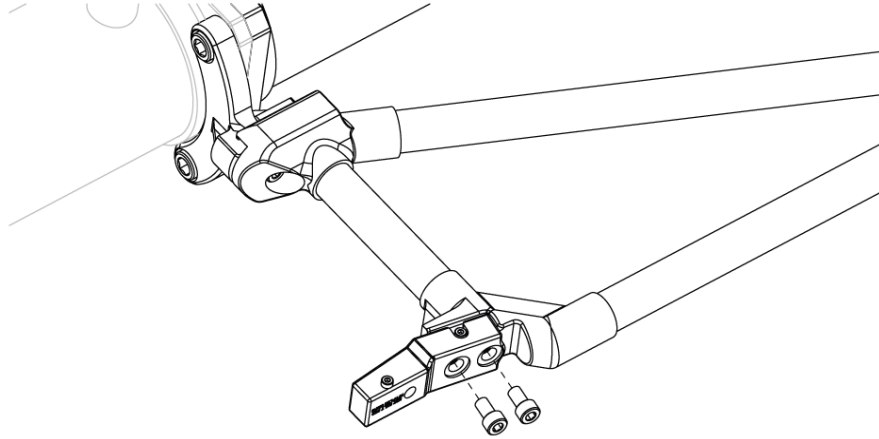
3. Install the Front Boom to the Middle Boom by securing the clip receiver over the Middle Boom clip. Install the x2 SHCS M12 fasteners to the top flange of the boom and then install both Center Brace Boom Mounts to the Front Boom plate using 2X SHCS M12 on each side. Apply appropriate torque to the fasteners



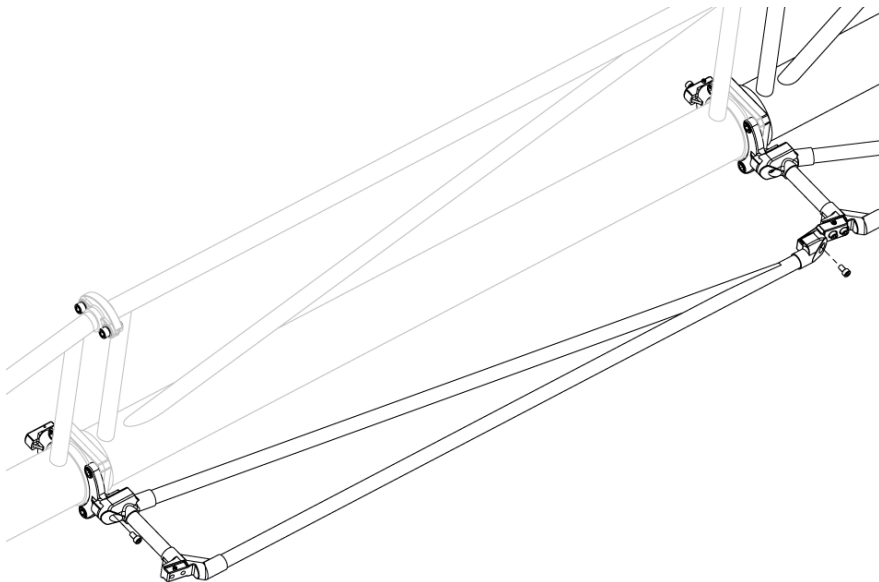
4. Attach a L/S Kit Lateral Brace to the Passive Mount and Center Brace Boom Mount using 2X SHCS M8. Make sure the clip receivers are hooked over the SHCS M4 fastener heads before letting go. Apply appropriate torque to the fasteners.



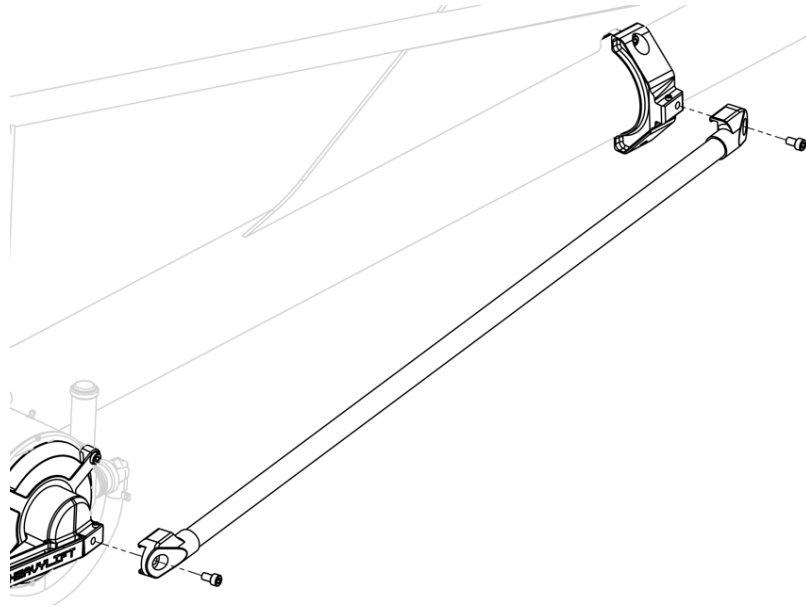
5. Install an L/S Kit 14' Mode adapter to the L/S Kit Lateral Brace using 2X SHCS M8, and apply appropriate torque to the fasteners.



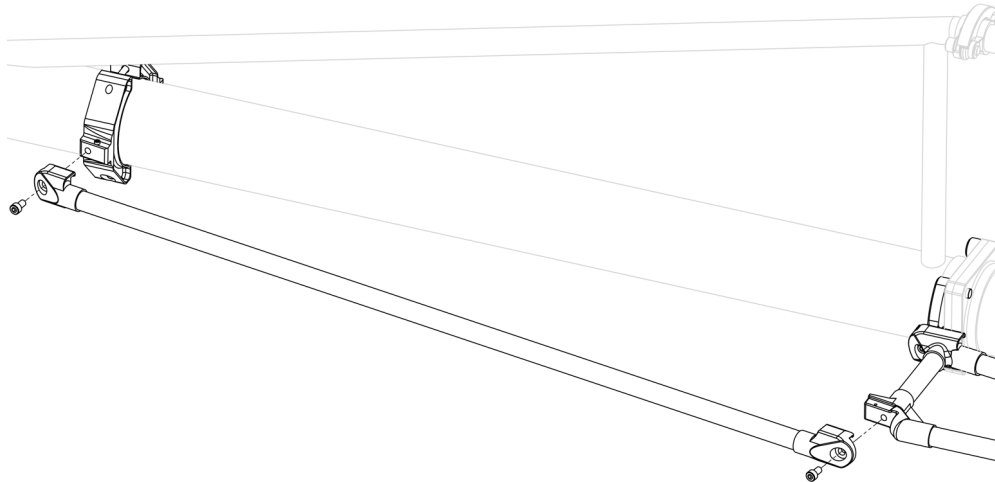
6. Install a Heavylift Center Brace to the L/S Kit Adapter and Center Brace Boom Mount using 2X SHCS M8. Apply appropriate torque to the fasteners.



7. Attach an End Brace to the Passive Mount and End Brace Boom Mount using 2x SHCS M8. Apply appropriate torque to the fasteners.



8. Attach an End Brace to the Center Brace and End Brace Boom Mount using 2x SHCS M8. Apply appropriate torque to the fasteners.



9. Repeat steps 4, 5, 6, 7 & 8 on the other side of the booms. **Loosen the mounts to make slight adjustments if necessary.** Make sure the braces are centered, and are not crooked. After adjustments have been made, ensure all fasteners are properly tightened.

WARNING Loose mounts will not support the additional payload and can result in a failure. Remember to tighten all hardware before use.

RADICAL L/S Kit Weight Chart

Start by measuring the All-Up Weight (AUW) of the payload, then use the chart below to determine how much counterweight (CW) should first be installed before mounting the payload.

“Payload” includes everything hanging from the RADICAL Isolator including AVM’s like Tranquilizer, stabilized head, camera and accessories. You must weigh for accuracy. “Tallying” of weight often leads to balancing error.

▲CAUTION The Lift axis is equipped with a fail-safe brake. Failure to observe the proper counterweighting method will result in excessive imbalance beyond the max permissible limit, and may cause permanent system damage.

SHORT MODE Payload All Up Weight [AUW] vs Counterweight [CW] Pre-load Chart

Payload AUW	Counterweight Pre-load
Empty/No Payload	16.25 lbs/kg
15lbs/7kg	43.75 lbs/kg
20lbs/9kg	52 lbs/kg
25lbs/11kg	60.5lbs/kg
30lbs/14kg	68.75 lbs/kg
35lbs/16kg	77.5 lbs/kg
40lbs/18kg	86.25 lbs/kg
45lbs/20kg	95 lbs/kg
50lbs/23kg	103.25 <i>Add 100.00lbs/45.5kg, mount payload, add remaining weight after</i>
55lbs/25kg	112.5 <i>Add 100.00lbs/45.5kg, mount payload, add remaining weight after</i>

LONG MODE Payload All Up Weight [AUW] vs Counterweight [CW] Pre-load Chart

Payload AUW	Counterweight Pre-load
Empty/No Payload	73.75lbs /kg
15lbs/7kg	117.5 lbs/kg <i>Add 100.00lbs/45.5kg, mount payload, add remaining weight after</i>
20lbs/9kg	130 lbs/kg <i>Add 100.00lbs/45.5kg, mount payload, add remaining weight after</i>
25lbs/11kg	143.75lbs/kg <i>Add 100.00lbs/45.5kg, mount payload, add remaining weight after</i>
30lbs/14kg	156.25 lbs/kg <i>Add 100.00lbs/45.5kg, mount payload, add remaining weight after</i>
35lbs/16kg	171.25 lbs/kg <i>Add 100.00lbs/45.5kg, mount payload, add remaining weight after</i>

NOTE: The values/weights listed above are "coarse" measurements that take into account the weight of provided fairing and counterweight lock knobs. You are responsible for "fine-tuning" the counterweight to your exact payload. To achieve "fine-tuned" balance, please refer to the BALANCE TEST feature of the COMMAND Console. This is explained in detail within the COMMAND Console Operation Manual.

Maximum allowable Counterweight Pre-load without payload attached to the RADICAL Isolator is 100lbs/45.5kg!

Known Hazards

⚠ WARNING The following list represents a list of known hazards that exist when operating the RADICAL L/S Kit. This is not exhaustive, but represents some common hazards to watch out for.

- RADICAL L/S Kit mounting. Make sure the RADICAL L/S Kit is secured and does not shift around during operation. All fasteners must be tight and secured, as per the setup instructions.
- RADICAL L/S Kit mounting. Tighten the RADICAL L/S Kit braces AFTER securing the booms.

Weather & Water

RADICAL L/S Kit parts are weather resistant. After using RADICAL L/S Kit in wet or dusty conditions, wipe all components down with a soft dry cloth.

Revision History

Revision	Date	Description
1.0	September 2022	Initial Release

MotoCrane Technical Support
support@motocrane.com

This content is subject to change.

Download the latest version from
www.motocrane.com/knowledge-base

If you have any questions about this document, please contact MotoCrane, LLC by sending a message to contact@motocrane.com.

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