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LM-Series and LMS-Series Fork Truck Attachments Use and Maintenance Manual



LM-HRT &
LM-HRNT



LM-OBT &
LM-OBNT



LM-1T &
LM-1NT

LMS-EBT &
LMS-EBNT



LM-EBT &
LM-EBNT

Receiving instructions:

After delivery, IMMEDIATELY remove the packaging from the product in a manner that preserves the packaging and maintains the orientation of the product in the packaging; then inspect the product closely to determine whether it sustained damage during transport. **If damage is discovered during the inspection, immediately record a complete description of the damage on the bill of lading.** If the product is undamaged, discard the packaging.

NOTES:

1) Compliance with laws, regulations, codes, and non-voluntary standards enforced in the location where the product is used is exclusively the responsibility of the owner/end-user. Before using the boom for the first time, the end-user/owner should perform an "Initial Inspection". (See "Initial Inspection," p. 27).

2) VESTIL is **not liable** for any injury or property damage that occurs as a consequence of failing to apply either:

a) Instructions in this manual; or b) information provided on labels affixed to the product. Neither is Vestil responsible for any consequential damages sustained as a result of failing to exercise sound judgment while assembling, installing, using or maintaining this product.

Table of Contents

Product Specifications.....	2
Hazard identification.....	3
Safety Recommendations.....	3
Operation Instructions.....	24 - 26
Inspections & Maintenance.....	27 - 28
Label placement diagram.....	29
Limited Warranty.....	30

Table of Figures

Fig. 1: LM-1T & -1NT Exploded Parts Diagrams, Parts Lists, Center of Gravity.....	4 - 7
Fig. 2: LM-OBT & -OBNT Exploded Parts Diagrams, Parts Lists, Center of Gravity.....	8 - 11
Fig. 3: LM-HRT & -HRNT Exploded Parts Diagram, Parts Lists, Center of Gravity.....	12 - 15
Fig. 4: LM-EBT & -EBNT Exploded Parts Diagram, Parts Lists, Center of Gravity.....	16 - 19
Fig. 5: LMS-EBT & -EBNT-46-(4k, 6k, & 8k), Parts Lists, Centers of Gravity.....	20 - 23
Fig. 6 Step 1 - Securely connect boom to fork truck.....	24
Fig. 7 Step 3 - Manual adjust degree of boom extension.....	24
Fig. 8 [OBT Models] Step 4 - Boom Angle Adjustment.....	25

PRODUCT INTRODUCTION:

Thank you for purchasing a fork-mounted Lift Master boom (“boom”, “product” or simply “LM”) made by Vestil Manufacturing Corporation (“Vestil”). Our booms are durable, high-quality products that combine safety-conscious design features and rigorous engineering. Although operation and use procedures are relatively intuitive, all persons who might use or operate of this product must familiarize themselves with the instructions provided in this manual.

Standard design features include: 2 fork pockets that receive the tines (forks) of a fork truck; 2 load attachment points (hooks); and either a safety chain or safety strap to wrap around the fork carriage and prevent the boom from sliding off of the forks during use. Dimensions of offered models, as well as other product specifications appear in the following table:

Model	Overall Height	Maximum Rated Load	Net weight
Telescoping boom variants			
LM-1T-4	22.5" (~57 cm)	4,000 (~1818 kg)	431 lb. (~196 kg)
LM-OBT-4	28" (~71 cm)	4,000 (~1818 kg)	435 lb. (~197.7 kg)
LM-HRT-4	80" (~203 cm)	4,000 (~1818 kg)	942 lb. (~428.2 kg)
LM-EBT-4	13" (~33 cm)	4,000 (~1818 kg)	357 lb. (~162.3 kg)
LM-1T-6	22.5" (~57 cm)	6,000 (~2727 kg)	480 lb. (~218.2 kg)
LM-OBT-6	28" (~71 cm)	6,000 (~2727 kg)	482 lb. (~219.1 kg)
LM-HRT-6	80" (~203 cm)	6,000 (~2727 kg)	976 lb. (~443.6 kg)
LM-EBT-6	13" (~33 cm)	6,000 (~2727 kg)	392 lb. (~178.2 kg)
LM-1T-8	23.5" (~60 cm)	8,000 (~3636 kg)	679 lb. (~308.6 kg)
LM-OBT-8	28" (~71 cm)	8,000 (~3636 kg)	665 lb. (~302.3 kg)
LM-EBT-8	11.5" (~29 cm)	8,000 (~3636 kg)	608 lb. (~276.4 kg)
Non-telescoping models			
LM-1NT-4	25" (~64 cm)	4,000 (~1818 kg)	336 lb. (~153 kg)
LM-OBNT-4	25" (~64 cm)	4,000 (~1818 kg)	340 lb. (~154.5 kg)
LM-HRNT-4	79" (~201 cm)	4,000 (~1818 kg)	880 lb. (~400 kg)
LM-EBNT-4	12" (~30.5 cm)	4,000 (~1818 kg)	260 lb. (~118.2 kg)
LM-1NT-6	25" (~64 cm)	6,000 (~2727 kg)	384 lb. (~174.5 kg)
LM-OBNT-6	28" (~71 cm)	6,000 (~2727 kg)	387 lb. (~176 kg)
LM-HRNT-6	79" (~201 cm)	6,000 (~2727 kg)	914 lb. (~415.5 kg)
LM-EBNT-6	12" (~30.5 cm)	6,000 (~2727 kg)	296 lb. (~134.5 kg)
LM-1NT-8	23.5" (~60 cm)	8,000 (~3636 kg)	502 lb. (~228.2 kg)
LM-OBNT-8	28" (~71 cm)	8,000 (~3636 kg)	490 lb. (~222.7 kg)
LM-EBNT-8	11.5" (~29.2 cm)	8,000 (~3636 kg)	430 lb. (~195.5 kg)
“Shorty” lift master booms			
Telescoping models			
Model	Total Length in Inches (cm)	Maximum Rated Load in Pounds (kg)	Net Weight in Pounds (kg)
LMS-EBT-46-4	46.5 – 76.5 (118 – 194 cm)	4,000 (1,818 kg)	248 (113 kg)
LMS-EBT-46-6	46.5 – 76.5 (118 – 194 cm)	6,000 (2,727 kg)	280 (128 kg)
LMS-EBT-46-8	46.5 – 76.5 (118 – 194 cm)	8,000 (3,636 kg)	440 (200 kg)
Non-telescoping models			
LMS-EBNT-40-4	41.5 (~105 cm)	4,000 (~1818 kg)	203 (~ 92.3 kg)
LMS-EBNT-40-6	41.5 (~105 cm)	6,000 (~2727 kg)	237 (~108 kg)
LMS-EBNT-40-8	41.5 (~105 cm)	8,000 (~3636 kg)	430 (~195.5 kg)

HAZARD IDENTIFICATION: EXPLANATION OF SIGNAL WORDS

This manual classifies personal injury risks and situations that could lead to property damage with SIGNAL WORDS. These signal words announce an associated safety message. The reader must understand that the signal word chosen indicates the seriousness of the described hazard.



Identifies a hazardous situation which, if not avoided, WILL result in DEATH or SERIOUS INJURY. Use of this signal word is limited to the most extreme situations.



Identifies a hazardous situation which, if not avoided, COULD result in DEATH or SERIOUS INJURY.



Indicates a hazardous situation which, if not avoided, COULD result in MINOR or MODERATE injury.



Identifies practices likely to result in product/property damage, such as operation that might damage the boom.

Safety Recommendations:

Vestil diligently strives to identify foreseeable hazards associated with the use of its products. However, material handling is inherently dangerous and no manual can address every conceivable risk. The end-user ultimately is responsible for exercising sound judgment at all times.



Electrocution might result if the boom contacts electrified wires. Reduce the likelihood that an operator or bystander might be electrocuted by applying **common sense**:

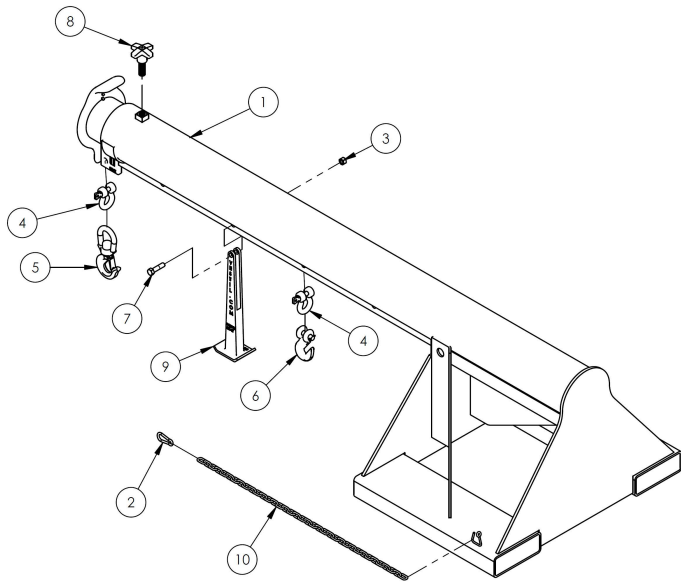
- DO NOT *contact* electrified wires with the boom;
- DO NOT use the boom in an area where it will contact electrified wires;
- DO NOT *operate* the boom *close to* electrified wires or other sources of electricity;



Material handling is dangerous. Improper or careless operation might result in serious personal injuries sustained by the boom operator(s) and bystanders. Always conform to OSHA material handling regulations (29 CFR section 1910 Subpart N). Subpart N includes 2 sections that regulate the use of fork-mounted boom-type devices: section 1910.178, "Powered industrial trucks," and section 1910.179, "Overhead and gantry cranes" (see <http://www.osha.gov/>). In addition to regulatory requirements, boom operators should conform to the following:

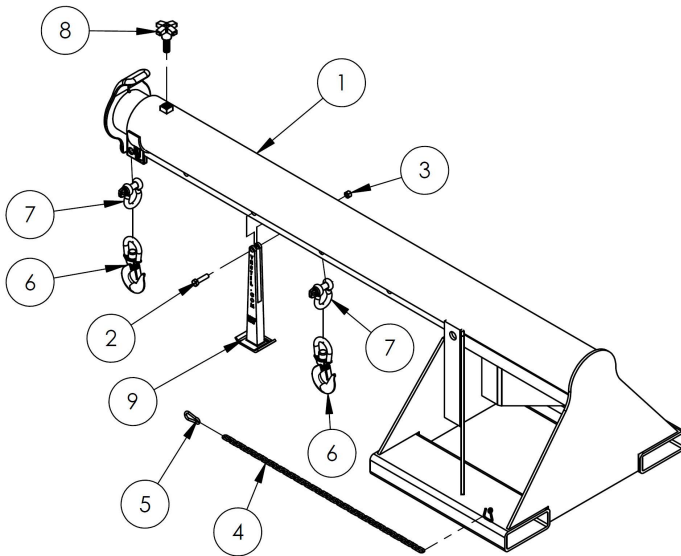
- DO NOT use a damaged boom. Inspect the boom before each use according to the inspection instructions on p. 27. DO NOT use the boom unless it passes *every* part of the inspection.
- DO NOT use the boom if the safety chain/strap is damaged or absent. The only purpose of the safety chain is to prevent the boom from sliding off of the forks—it is NOT intended or designed to bear the full load rating.
- DO NOT use a malfunctioning or structurally compromised boom.
- DO NOT lift the boom until it is securely connected to the carriage of the fork truck with the restraint strap.
- DO NOT attempt to lift a load weighing more than the boom's maximum rated load (see Table on p. 2).
- DO NOT stand beneath or travel under the boom at any time, and especially not when a load is suspended. DO NOT permit any person to stand beneath or travel under the boom or the load.
- Inform all persons in the area that you are going to use the boom; instruct them to stay clear of the device and the supported load during operation.
- Failure to read and understand the instructions included in this manual before using or servicing the boom constitutes misuse
- DO NOT allow people to ride on either the boom or the load.
- DO NOT use the boom if any product label (see p. 29) is unreadable, damaged, or absent. Contact Vestil to order a replacement label(s).
- ALWAYS apply proper (fork) lift operation practices learned during your training program. Before raising the boom from the floor AND before attaching the load to the boom, tilt the fork lift mast away from the boom to ensure that the boom will not slide towards the tips of the forks.
- ALWAYS load the boom according to the instructions that appear on p. 24-26. Failure to properly position a load might cause the load to swing, which might result in the operator(s) or other persons sustaining serious personal injuries.
- DO NOT modify the boom in any way. Modifications automatically void the limited warranty (see p. 30) and might make the boom unsafe to use.

FIG. 1A: LM-1T-4k Exploded Parts Diagram & Bill of Materials



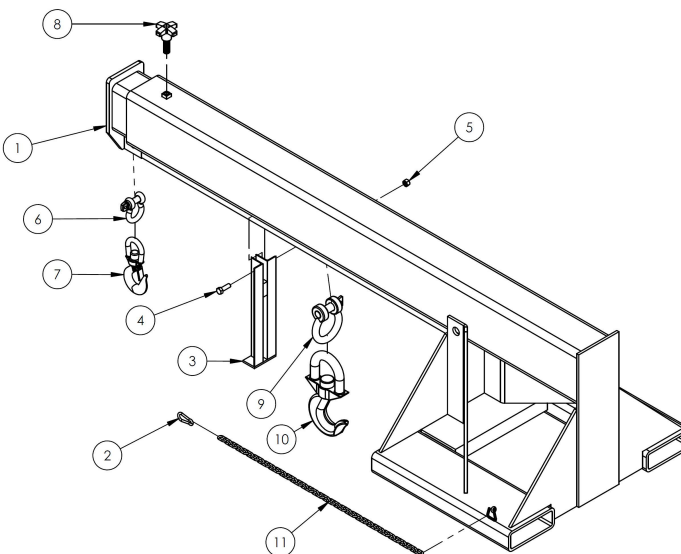
Item No.	Part No.	Description	Quantity
1	08-514-111	Frame, boom + base weldment, LM-1T-4k	1
2	08-145-008	Specialty hardware: 1/2in. snap hook	1
3	36109	1/2in. - 13 UNC hex nut	1
4	08-145-003	Specialty hardware: 2-ton shackle	2
5	08-145-001	2-ton hook	1
6	08-145-009	Specialty hardware: 2-ton hook (7/16in. clevis grab hook)	1
7	11211	1/2in. - 13 UNC x 2in. HHCS zinc-plated bolt	1
8	08-025-004	X-handle locking bolt	1
9	08-014-134	Frame, front support leg casting	1
10	99-145-025	3/16in. x 36in. chain	1

FIG. 1B: LM-1T-6k Exploded Parts Diagram & Bill of Materials



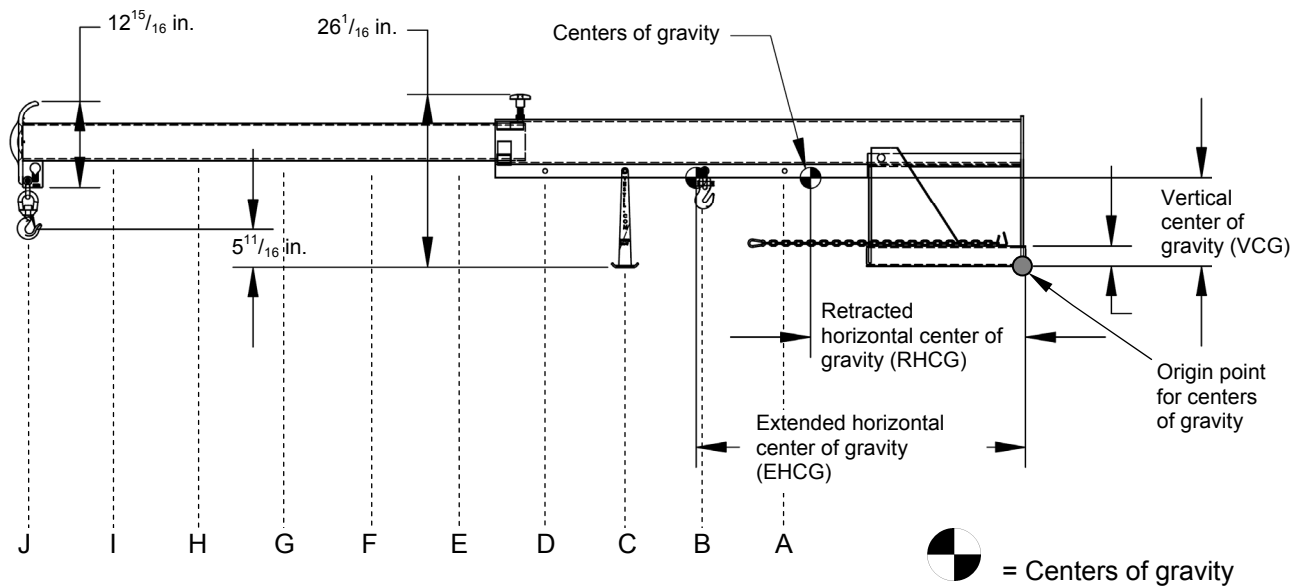
Item No.	Part No.	Description	Quantity
1	08-514-113	Frame, boom + base weldment, LM-1T-6k	1
2	11211	1/2in. - 13 UNC x 2in. HHCS zinc-plated bolt	1
3	36109	1/2in. - 13 UNC hex nut	1
4	99-145-025	3/16in. x 36in. chain	1
5	08-145-008	Specialty hardware: 1/2in. snap hook	1
6	08-145-002	Specialty hardware: 3-ton swivel hook	2
7	08-145-004	Specialty hardware: 3-ton shackle + 3/4in. anchor shackle	2
8	08-025-004	X-handle locking bolt	1
9	08-014-134	Frame, front support leg casting	1

FIG. 1C: LM-1T-8k Exploded Parts Diagram & Bill of Materials



Item No.	Part No.	Description	Quantity
1	08-514-113	Frame, boom + base weldment, LM-1T-6k	1
2	11211	1/2in. - 13 UNC x 2in. HHCS zinc-plated bolt	1
3	36109	1/2in. - 13 UNC hex nut	1
4	99-145-025	3/16in. x 36in. chain	1
5	08-145-008	Specialty hardware: 1/2in. snap hook	1
6	08-145-002	Specialty hardware: 3-ton swivel hook	2
7	08-145-004	Specialty hardware: 3-ton shackle + 3/4in. anchor shackle	2
8	08-025-004	X-handle locking bolt	1
9	08-014-134	Frame, front support leg casting	1

Fig. 1D: LM-1T- 4k, 6k & 8k Centers of Gravity and Maximum Load Ratings for Varying Load Attachment Point and Boom Extension Combinations



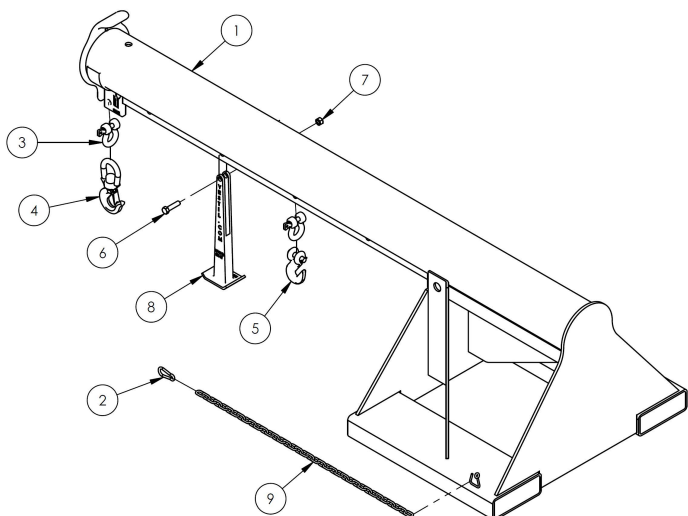
Hook position	A	B	C	D	E	F	G	H	I	J
Distance from mast end of boom in inches (cm)	36 (~91)	48 (~122)	60 (~152)	72 (~183)	84 (~213)	96 (~244)	108 (~274)	120 (~305)	132 (~335)	144 (~366)
Maximum rated load in pounds (kg) of a load suspended from a <i>single</i> hook located at the corresponding "Hook position".										
LM-1T-4k	4000 (~1820)	3750 (~1705)	3500 (~1590)	3250 (~1477)	3000 (~1363)	2750 (~1250)	2500 (~1136)	2250 (~1022)	2000 (~909)	1750 (~795)
LM-1T-6k	6000 (~2727)	5000 (~2272)	4500 (~2045)	4000 (~1820)	3500 (~1590)	3000 (~1363)	2600 (~1181)	2300 (~1045)	2000 (~909)	1800 (~818)
LM-1T-8k	8000 (~3636)	6650 (~3022)	6000 (~2727)	5300 (~2409)	4650 (~2113)	4000 (~1820)	3500 (~1590)	3000 (~1363)	2600 (~1181)	2200 (~1000)

The center of gravity of the boom changes as boom length changes. As shown in the diagram above, the horizontal center of gravity may be located at any point from RHCG to EHCG:

- **Retracted horizontal center of gravity (RHCG):** boom fully *retracted*, and load attached at position A. RHCG is measured from the "origin point" of the above diagram (edges of the fork pockets);
- **Extended horizontal center of gravity (EHCG):** boom fully *extended* with a load attached at position J. EHCG is also measured from the "origin point" of the above diagram (edges of the fork pockets);
- All other combinations of boom extension and load position produce a horizontal center of gravity located somewhere between RHCG and EHCG.

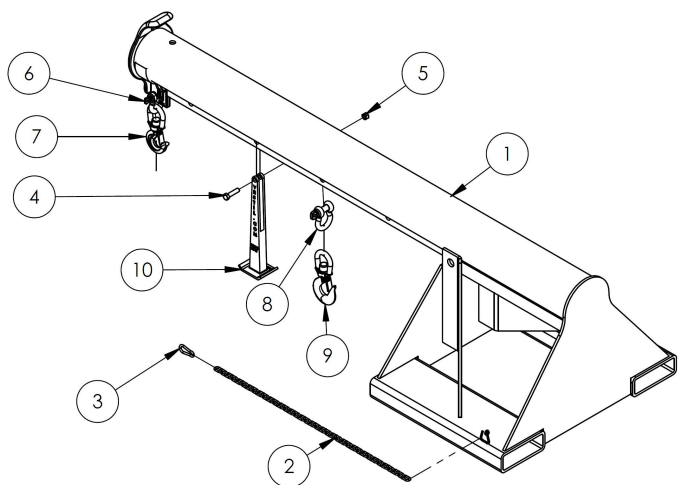
Model	EHCG	RHCG	VCG
LM-1T-4k	49½ in. (~126cm)	32 5/16 in. (~82cm)	13 5/16 in. (~34cm)
LM-1T-6k	46 5/16 in. (~123cm)	30 5/8 in. (~78cm)	12 3/8 in. (~31cm)
LM-1T-8k	47 in. (~119cm)	31 in. (~79cm)	15 ½ in. (~39cm)

FIG. 1E: LM-1NT-4k Exploded Parts Diagram & Bill of Materials



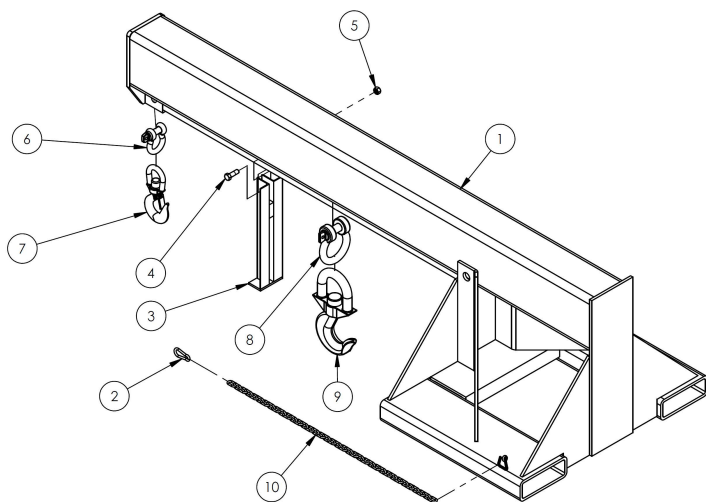
Item No.	Part No.	Description	Quantity
1	08-514-128	Frame, boom + base weldment, LM-1NT-4k	1
2	08-145-008	Specialty hardware: 1/4in. snap hook	1
3	08-145-003	Specialty hardware: 2-ton shackle	2
4	08-145-001	2-ton hook	1
5	08-145-009	2-ton hook (1/16in. clevis)	1
6	11211	1/2in. - 13 UNC x 2in. HHCS zinc-plated bolt	1
7	36109	1/2in. - 13 UNC hex nut	1
8	08-014-134	Frame, front support leg casting	1
9	99-145-025	3/16in. x 36in. chain	1

FIG. 1F: LM-1NT-6k Exploded Parts Diagram & Bill of Materials



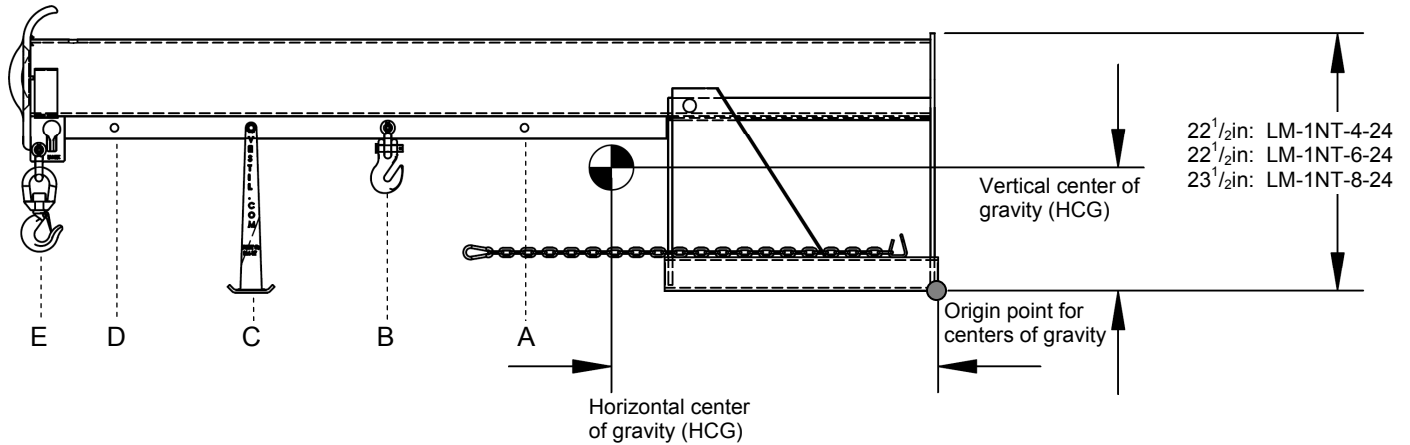
Item No.	Part No.	Description	Quantity
1	08-514-129	Frame, boom + base weldment, LM-1T-6k	1
2	99-145-025	3/16in. x 36in. chain	1
3	08-145-008	Specialty hardware: 1/4in. snap hook	1
4	11211	1/2in. - 13 UNC x 2in. HHCS zinc-plated bolt	1
5	36109	1/2in. - 13 UNC hex nut	1
6	08-145-003	Specialty hardware: 2-ton shackle	1
7	08-145-001	2-ton hook	1
8	08-145-004	Specialty hardware: 3/4in. anchor shackle (3-ton)	1
9	08-145-002	Specialty hardware: 3-ton swivel hook	1
10	08-014-134	Frame, front support leg casting	1


FIG. 1G: LM-1NT-6k Exploded Parts Diagram & Bill of Materials



Item No.	Part No.	Description	Quantity
1	08-514-130	Frame, boom + base weldment, LM-1T-8k	1
2	08-145-008	Specialty hardware: 1/4in. snap hook	1
3	08-514-117	Frame, front support leg weldment, LM-1NT-8k	1
4	11209	1/2in. - 13 UNC x 1 1/2in. HHCS #2 zinc-plated bolt	1
5	36110	1/2in. - 13 UNC hex nut	1
6	08-145-004	Specialty hardware: 3/4in. anchor shackle (3-ton)	1
7	08-145-002	Specialty hardware: 3-ton swivel hook	1
8	08-145-006	Specialty hardware: 5-ton shackle	1
9	08-145-005	5-ton hook (D-FORK)	1
10	99-145-025	3/16in. x 36in. chain	1

FIG. 1H: LM-1NT- 4k, 6k & 8k Centers of Gravity and Maximum Load Ratings for Varying Load Attachment Points



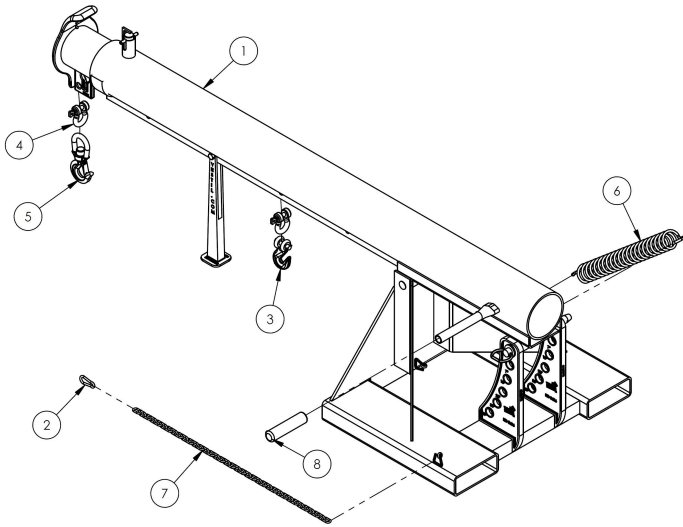
 = Center of gravity

Hook position	A	B	C	D	E
Distance from mast end of boom in inches (cm)	36 (~91)	48 (~122)	60 (~152)	72 (~183)	84 (~213)
Maximum rated load in pounds (kg) of a load suspended from a <i>single</i> hook located at the corresponding "Hook position".					
LM-1NT-4k	4000 (~1820)	3750 (~1705)	3500 (~1590)	3250 (~1477)	3000 (~1363)
LM-1NT-6k	6000 (~2727)	5000 (~2272)	4500 (~2045)	4000 (~1820)	3500 (~1590)
LM-1NT-8k	8000 (~3636)	6650 (~3022)	6000 (~2727)	5300 (~2409)	4850 (~2205)

Center of gravity has both a horizontal component and a vertical component. The *vertical* center of gravity (VCG) lies along a horizontal line above the bottom edges of the fork pockets. Similarly, the *horizontal* center of gravity (HCG) is located along a vertical line as shown in the diagram above.

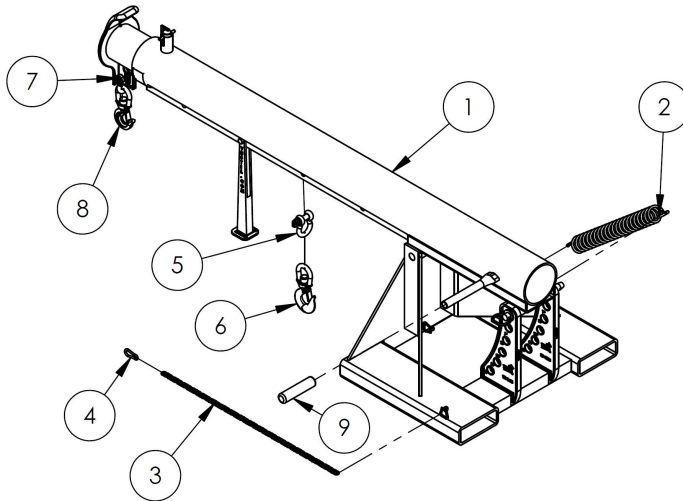
Model	HCG	VCG
LM-1NT-4k	28 ¹¹ / ₁₆ in. (~73cm)	10 ¹³ / ₁₆ in. (~27½ cm)
LM-1NT-6k	27 in. (~69cm)	10 ¹³ / ₁₆ in. (~27½ cm)
LM-1NT-8k	30 ¹ / ₈ in. (~77cm)	11 ³ / ₄ in. (~30cm)

FIG. 2A: LM-OBT-4k Exploded Parts Diagram & Bill of Materials



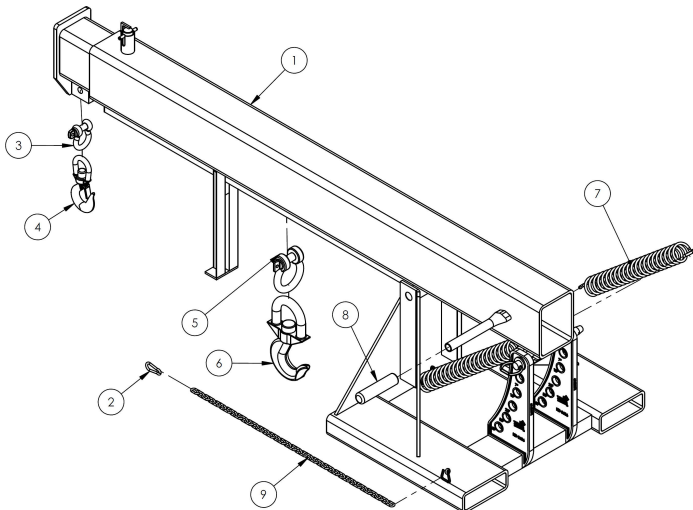
Item No.	Part No.	Description	Quantity
1	08-514-119	Frame, boom + base weldment, LM-OBT-4k	1
2	08-145-008	Specialty hardware: 1/4in. snap hook	1
3	08-145-009	Specialty hardware: 2-ton hook (1/16in. clevis pin)	1
4	08-145-003	Specialty hardware: 2-ton shackle	2
5	08-145-001	2-ton hook	1
6	08-146-002	Spring	1
7	99-145-025	3/16in. x 36in. chain	1
8	13-025-003	1/8in. diameter white grip	1

FIG. 2B: LM-OBT-6k Exploded Parts Diagram & Bill of Materials



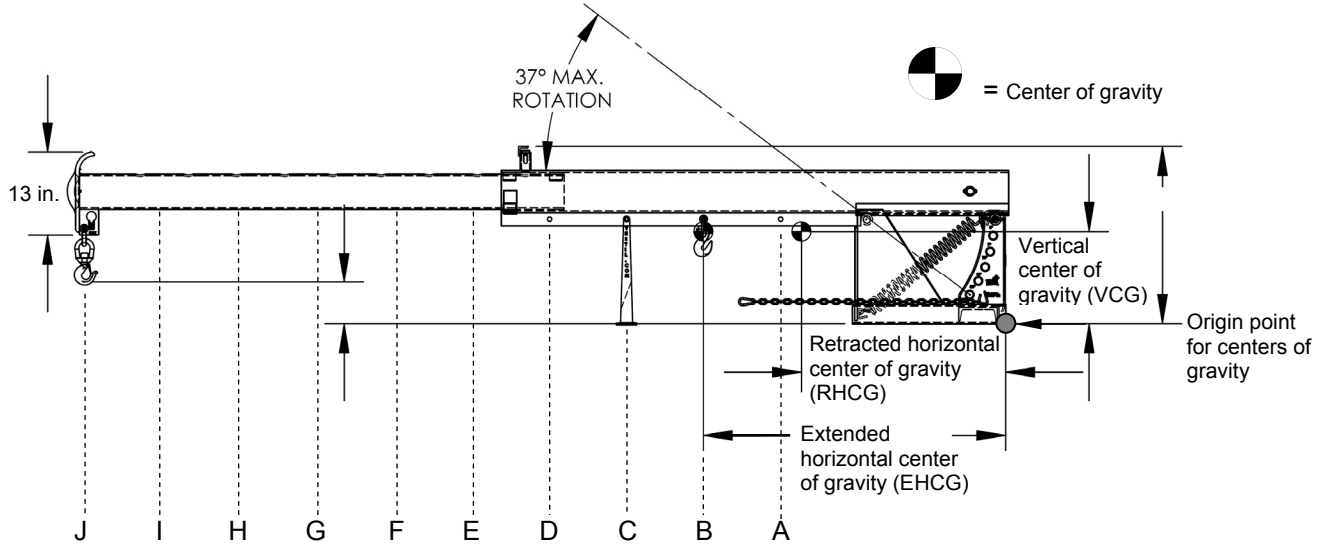
Item No.	Part No.	Description	Quantity
1	08-514-122	Frame, boom + base weldment, LM-OBT-4k	1
2	08-146-002	Spring	1
3	99-145-025	3/16in. x 36in. chain	1
4	08-145-008	Specialty hardware: 1/4in. snap hook	1
5	08-145-004	Specialty hardware: 3/4in. anchor shackle (3-ton)	1
6	08-145-002	Specialty hardware: 3-ton swivel hook	1
7	08-145-003	Specialty hardware: 2-ton shackle	1
8	08-145-001	2-ton hook	1
9	13-025-003	1/8in. diameter white grip	1

FIG. 2C: LM-OBT-8k Exploded Parts Diagram & Bill of Materials



Item No.	Part No.	Description	Quantity
1	08-514-125	Frame, boom + base weldment, LM-OBT-4k	1
2	08-145-008	Specialty hardware: 1/4in. snap hook	1
3	08-145-004	Specialty hardware: 3/4in. anchor shackle (3-ton)	1
4	08-145-002	Specialty hardware: 3-ton swivel hook	1
5	08-145-006	Specialty hardware: 5-ton shackle	1
6	08-145-005	5-ton hook (D-FORK)	1
7	08-146-002	Spring	2
8	13-025-003	1/8in. diameter white grip	1
9	99-145-025	3/16in. x 36in. chain	1

FIG. 2D: LM-OBT- 4k, 6k & 8k Centers of Gravity and Maximum Load Ratings for Varying Load Attachment Point and Boom Extension Combinations



Hook position	A	B	C	D	E	F	G	H	I	J
Distance from mast end of boom in inches (cm)	36 (~91)	48 (~122)	60 (~152)	72 (~183)	84 (~213)	96 (~244)	108 (~274)	120 (~305)	132 (~335)	144 (~366)
Maximum rated load in pounds (kg) of a load suspended from a <i>single</i> hook located at the corresponding "Hook position".										
LM-OBT-4k	4000 (~1820)	3750 (~1705)	3500 (~1590)	3250 (~1477)	3000 (~1363)	2750 (~1250)	2500 (~1136)	2250 (~1023)	2000 (~909)	1750 (~795)
LM-OBT-6k	6000 (~2727)	5000 (~2272)	4500 (~2045)	4000 (~1820)	3500 (~1590)	3000 (~1364)	2600 (~1182)	2300 (~1045)	2000 (~909)	1800 (~818)
LM-OBT-8k	8000 (~3636)	6650 (~3022)	6000 (~2727)	5300 (~2409)	4650 (~2113)	4000 (~1820)	3500 (~1590)	3000 (~1363)	2600 (~1181)	2200 (~1000)

The center of gravity of the boom changes as boom length changes. As shown in the diagram above, the horizontal center of gravity may be located at any point from RHCG to EHCG:

- **Retracted horizontal center of gravity (RHCG):** boom fully *retracted*, and load attached at position A. RHCG is measured from the "origin point" of the above diagram (edges of the fork pockets);
- **Extended horizontal center of gravity (EHCG):** boom fully *extended* with a load attached at position J. EHCG is also measured from the "origin point" of the above diagram (edges of the fork pockets);
- All other combinations of boom extension and load position produce a horizontal center of gravity located somewhere between RHCG and EHCG.

Model	EHCG	RHCG	VCG
LM-OBT-4k	47 1/8 in. (~120cm)	31 13/16 in. (~81cm)	14 3/8 in. (~36 1/2 cm)
LM-OBT-6k	44 3/16 in. (~112cm)	31 in. (~79cm)	14 3/8 in. (~36 1/2 cm)
LM-OBT-8k	51 11/16 in. (~131cm)	35 in. (~89cm)	15 1/4 in. (~39cm)

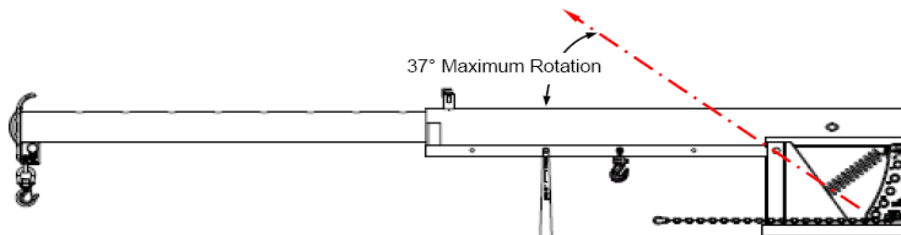
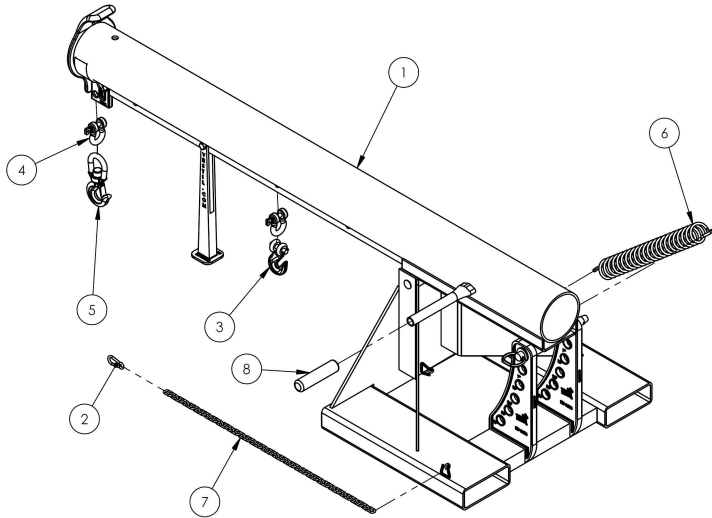
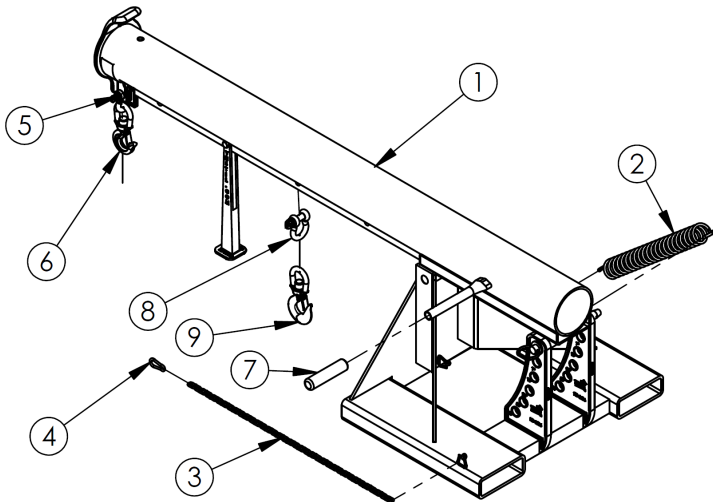


FIG. 2E: LM-OBNT-4k Exploded Parts Diagram & Bill of Materials



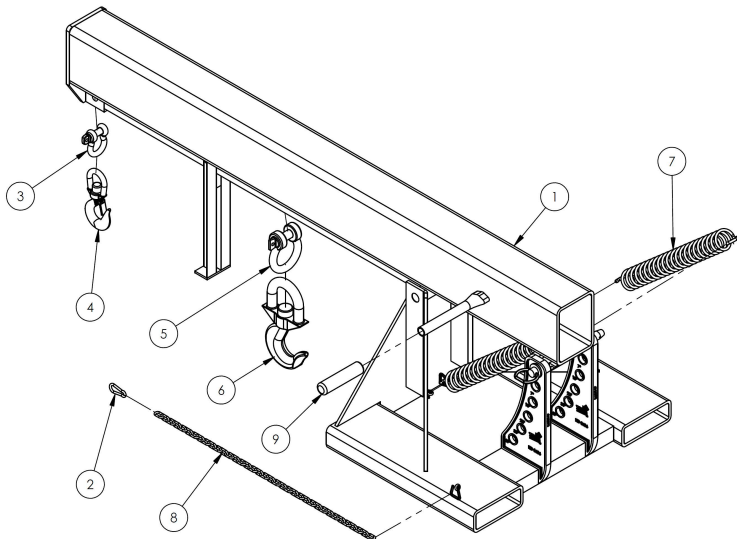
Item No.	Part No.	Description	Quantity
1	08-514-132	Frame, boom + base weldment, LM-OBNT-4k	1
2	08-145-008	Specialty hardware: 1/4in. snap hook	1
3	08-145-009	Specialty hardware: 2-ton hook (7/16in. clevis pin)	1
4	08-145-003	Specialty hardware: 2-ton shackle	2
5	08-145-001	2-ton hook	1
6	08-146-002	Spring	1
7	99-145-025	3/16in. x 36in. chain	1
8	13-025-003	1 1/8in. diameter white grip	1

FIG. 2F: LM-OBNT-6k Exploded Parts Diagram & Bill of Materials



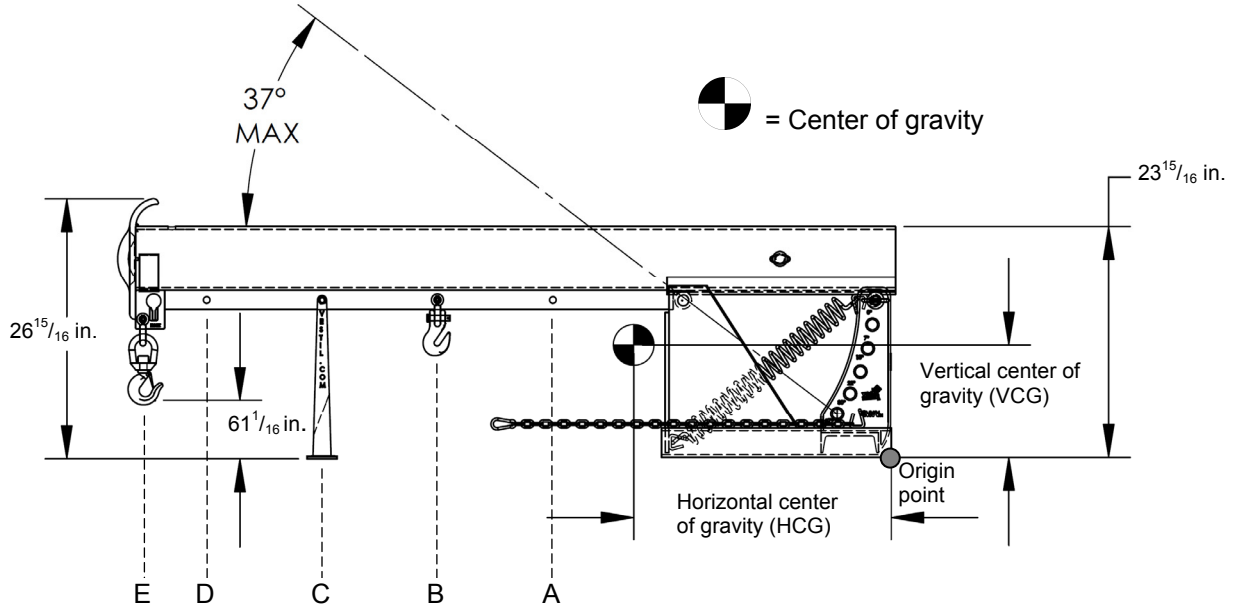
Item No.	Part No.	Description	Quantity
1	08-514-134	Frame, boom + base weldment, LM-OBNT-6k	1
2	08-146-002	Spring	1
3	99-145-025	3/16in. x 36in. chain	1
4	08-145-008	Specialty hardware: 1/4in. snap hook	1
5	08-145-003	Specialty hardware: 2-ton shackle	1
6	08-145-001	2-ton hook	1
7	13-025-003	1 1/8in. diameter white grip	1
8	08-145-004	Specialty hardware: 3/4in. anchor shackle (3-ton)	1
9	08-145-002	Spring	1

FIG. 2G: LM-OBNT-8k Exploded Parts Diagram & Bill of Materials



Item No.	Part No.	Description	Quantity
1	08-514-136	Frame, boom + base weldment, LM-OBNT-8k	1
2	08-145-008	Specialty hardware: 1/4in. snap hook	1
3	08-145-004	Specialty hardware: 3/4in. anchor shackle (3-ton)	1
4	08-145-002	Spring	1
5	08-145-006	Specialty hardware: 5-ton shackle	1
6	08-145-005	5-ton hook (D-FORK)	1
7	08-146-002	Spring	2
8	99-145-025	3/16in. x 36in. chain	1
9	13-025-003	1 1/8in. diameter white grip	1

FIG. 2H: LM-OBNT- 4k, 6k & 8k Centers of Gravity and Maximum Load Ratings for Varying Load Attachment Points



Hook position	A	B	C	D	E
Distance from mast end of boom in inches (cm)	36 (~91)	48 (~122)	60 (~152)	72 (~183)	78 (~198)
Maximum rated load in pounds (kg) of a load suspended from a <i>single</i> hook located at the corresponding "Hook position".					
LM-OBNT-4k	4000 (~1820)	3750 (~1705)	3500 (~1590)	3250 (~1477)	3000 (~1363)
LM-OBNT-6k	6000 (~2727)	5000 (~2272)	4500 (~2045)	4000 (~1820)	3500 (~1590)

Hook position	A	B	C	D	E
Distance from mast end of boom in inches (cm)	36 (~91)	48 (~122)	60 (~152)	72 (~183)	78 1/2 (~199)
LM-OBNT-8k	8000 (~3636)	6650 (~3022)	6000 (~2727)	5300 (~2409)	4850 (~2205)

Center of gravity has both a horizontal component and a vertical component. The *vertical* center of gravity (VCG) lies along a horizontal line above the bottom edges of the fork pockets. Similarly, the *horizontal* center of gravity (HCG) is located along a vertical line as shown in the diagram above.

Model	HCG	VCG
LM-OBNT-4k	26 3/4 in. (~68cm)	11 5/8 in. (~29 1/2 cm)
LM-OBNT-6k	26 3/4 in. (~68cm)	11 5/8 in. (~29 1/2 cm)
LM-OBNT-8k	30 1/4 in. (~77cm)	13 3/16 in. (~33 1/2 cm)

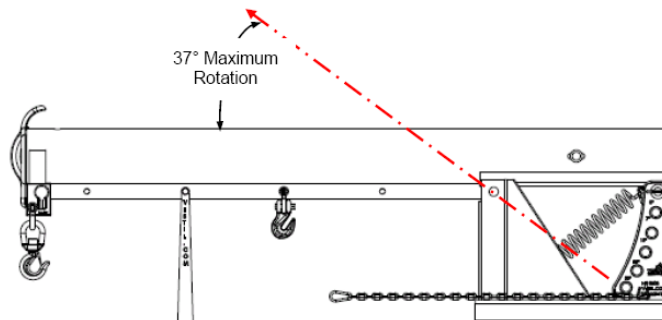
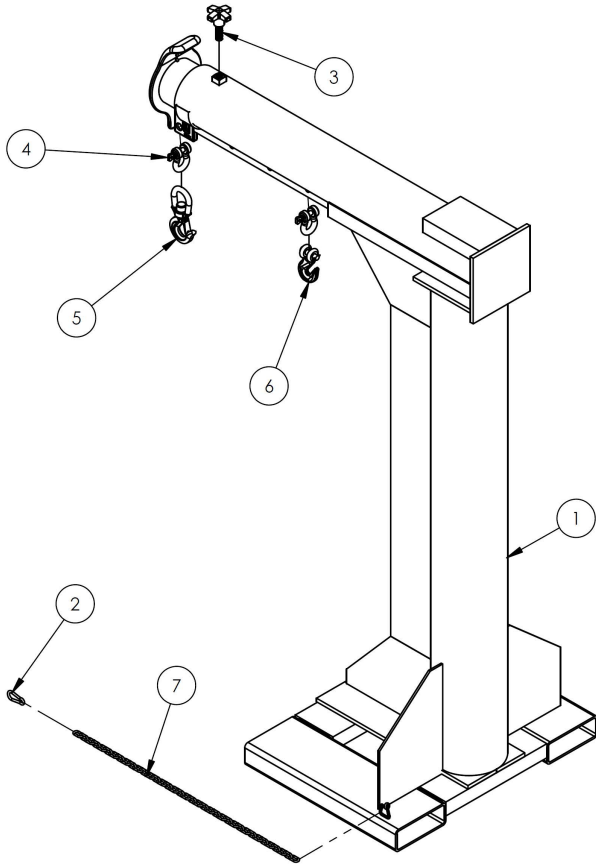
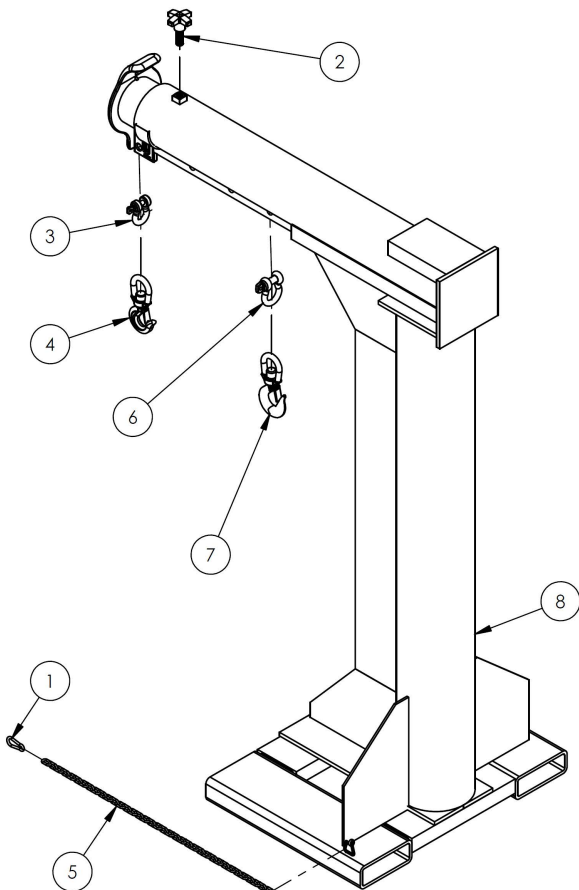


FIG. 3A: LM-HRT-4k Exploded Parts Diagram & Bill of Materials



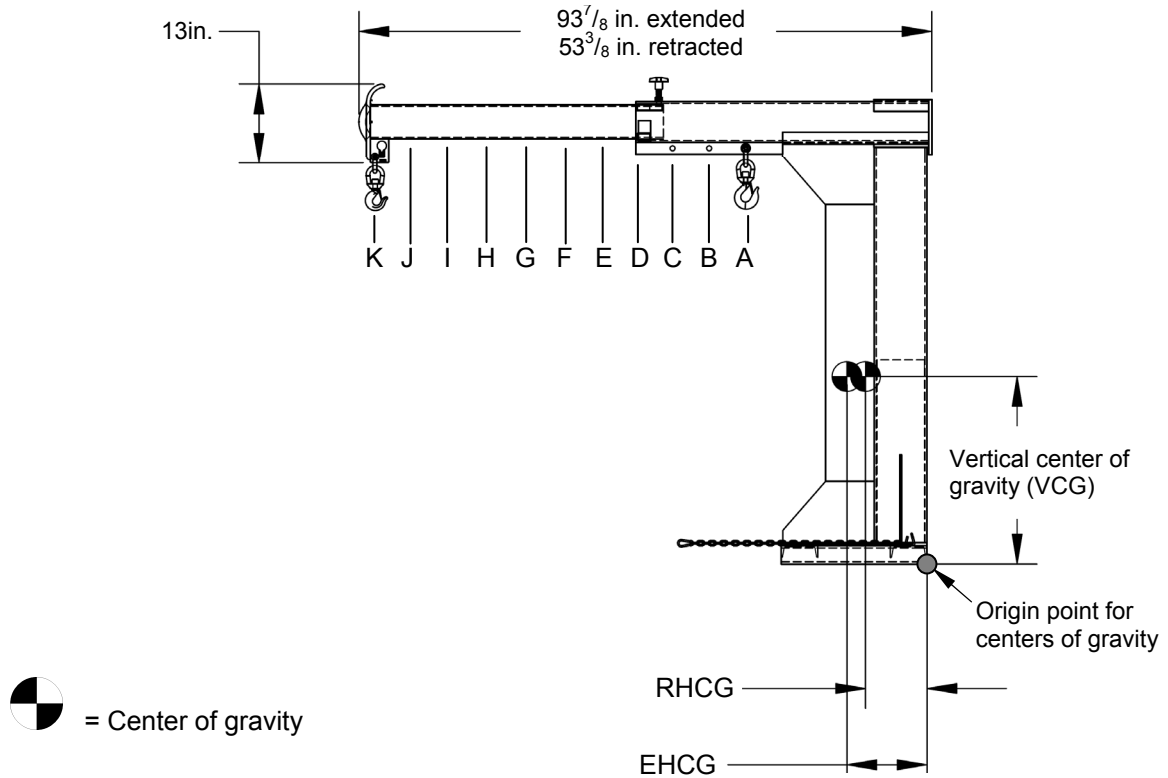
Item No.	Part No.	Description	Quantity
1	08-514-005	Frame, boom + base weldment, LM-HRT-4k	1
2	08-145-008	Specialty hardware: $\frac{1}{4}$ in. snap hook	1
3	08-025-004	X-handle locking bolt	1
4	08-145-003	Specialty hardware: 2-ton shackle	2
5	08-145-001	2-ton hook	1
6	08-145-009	Specialty hardware	1
7	99-145-025	$\frac{3}{16}$ in. x 36in. chain	1

FIG. 3B: LM-HRT-6k Exploded Parts Diagram & Bill of Materials



Item No.	Part No.	Description	Quantity
1	08-145-008	Specialty hardware: $\frac{1}{4}$ in. snap hook	1
2	08-025-004	X-handle locking bolt	1
3	08-145-003	Specialty hardware: 2-ton hook	1
4	08-145-001	2-ton hook	1
5	99-145-025	$\frac{3}{16}$ in. x 36in. chain	1
6	08-145-004	Specialty hardware: $\frac{3}{4}$ in. anchor shackle (3-ton)	1
7	08-145-002	Specialty hardware: 3-ton swivel hook	1
8	08-514-006	Frame, boom + base weldment, LM-HRT-6k	1

FIG. 3C: LM-HRT- 4k & 6k Centers of Gravity and Maximum Load Ratings for Varying Load Attachment Point and Boom Extension Combinations



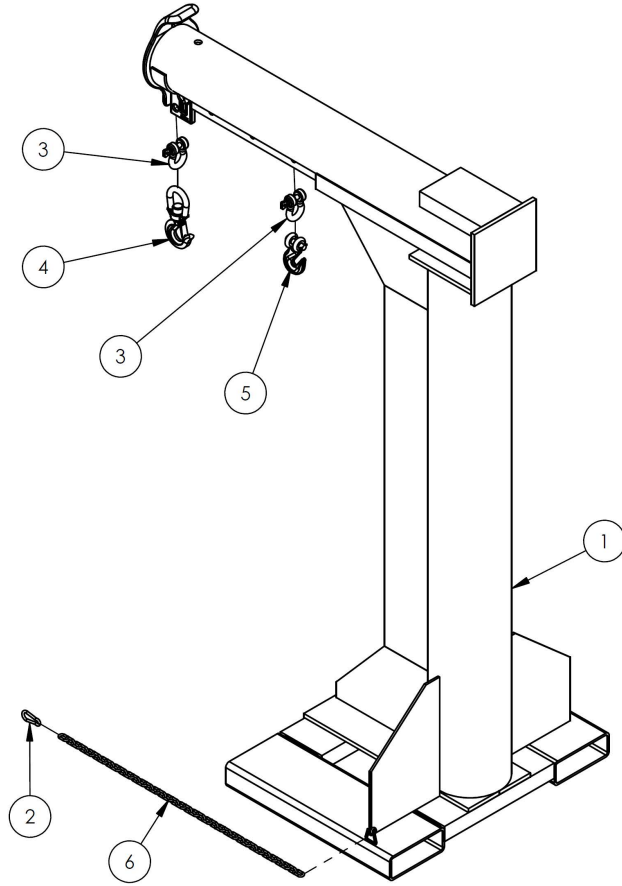
Hook position	A	B	C	D	E	F	G	H	I	J	K
Distance from most end of boom in inches (cm)	30 (~76)	36 (~91)	42 (~107)	48 (~122)	54 (~137)	60 (~152)	66 (~168)	72 (~183)	78 (~198)	84 (~213)	90 (~229)
Maximum rated load in pounds (kg) of a load suspended from a <i>single</i> hook located at the corresponding "Hook position".											
LM-HRT-4-24	4000 (~1820)	3750 (~1705)	3500 (~1590)	3250 (~1477)	3000 (~1363)	2750 (~1250)	2500 (~1136)	2250 (~1022)	2000 (~909)	1750 (~796)	1500 (~682)
LM-HRT-6-24	6000 (~2727)	5000 (~2273)	4500 (~2046)	4000 (~1818)	3500 (~1591)	3000 (~1363)	2600 (~1182)	2300 (~1046)	2000 (~909)	1800 (~818)	1550 (~705)

The center of gravity of the boom changes as boom length changes. As shown in the diagram above, the horizontal center of gravity may be located at any point from RHCG to EHCG:

- **Retracted horizontal center of gravity (RHCG):** boom fully *retracted*, and load attached at position A. RHCG is measured from the "origin point" of the above diagram (edges of the fork pockets);
- **Extended horizontal center of gravity (EHCG):** boom fully *extended* with a load attached at position J. EHCG is also measured from the "origin point" of the above diagram (edges of the fork pockets);
- All other combinations of boom extension and load position produce a horizontal center of gravity located somewhere between RHCG and EHCG.

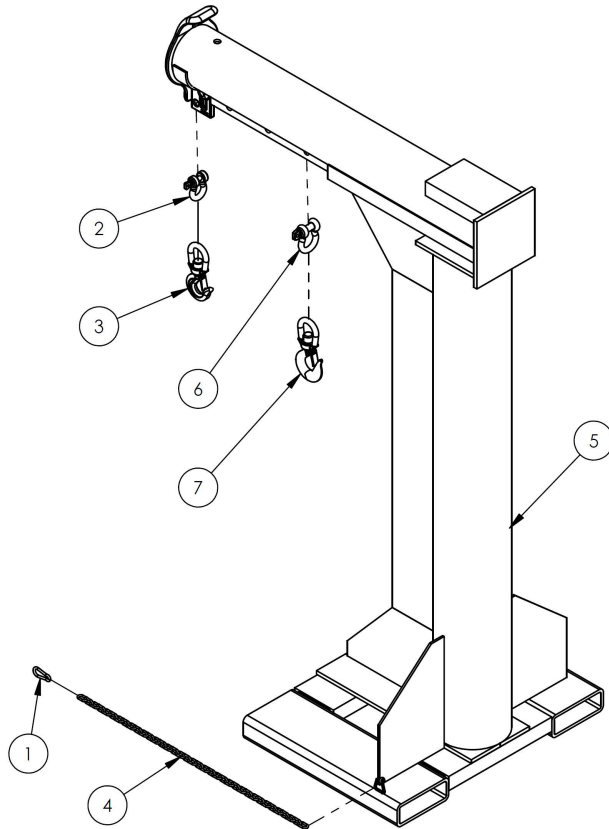
Model	EHCG	RHCG	VCG
LM-HRT-4k	13 1/8 in. (~33 cm)	9 15/16 in. (~25 cm)	31 5/8 in. (~80 cm)
LM-HRT-6k	13 1/8 in. (~33 cm)	10 1/16 in. (~26 cm)	30 3/4 in. (~78 cm)

FIG. 3D: LM-HRNT-4k Exploded Parts Diagram & Bill of Materials



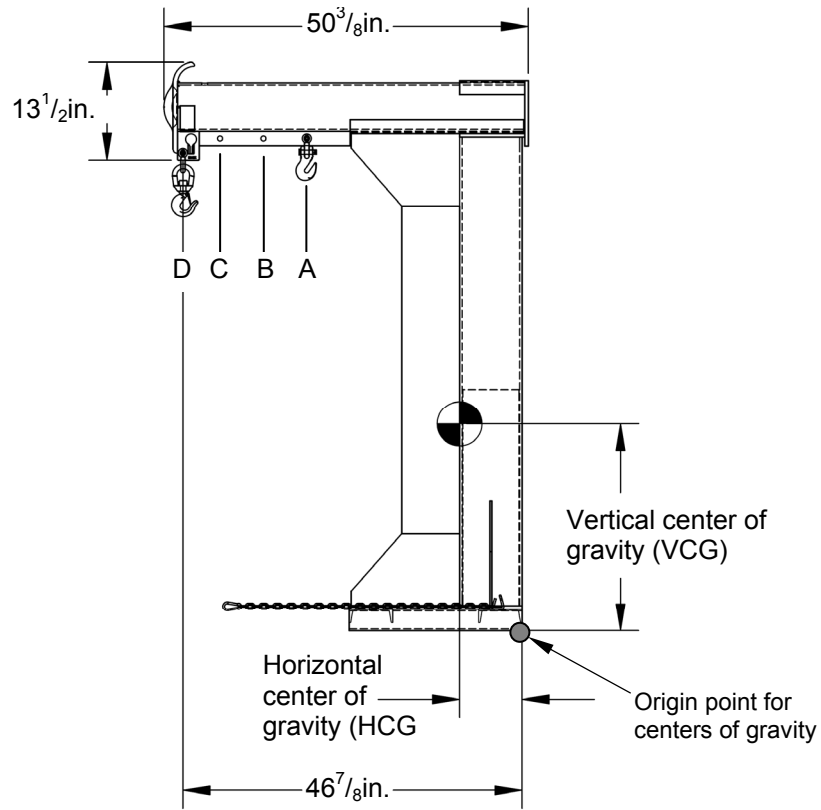
Item No.	Part No.	Description	Quantity
1	08-514-007	Frame, boom + base weldment, LM-HRNT-4k	1
2	08-145-008	Specialty hardware: 1/4in. snap hook	1
3	08-145-003	Specialty hardware: 2-ton shackle	2
4	08-145-001	2-ton hook	1
5	08-145-009	Specialty hardware: 1/16in. clevis pin hook (2-ton)	1
6	99-145-025	3/16in. x 36in. chain	1


FIG. 3E: LM-HRNT-6k Exploded Parts Diagram & Bill of Materials



Item No.	Part No.	Description	Quantity
1	08-145-008	Specialty hardware: 1/4in. snap hook	1
2	08-145-003	Specialty hardware: 2-ton shackle	1
3	08-145-001	2-ton hook	1
4	99-145-025	3/16in. x 36in. chain	1
5	08-514-008	Frame, boom + base weldment, LM-HRNT-6k	1
6	08-145-004	Specialty hardware: 3/4in. anchor shackle (3-ton)	1
7	08-145-002	Specialty hardware: 3-ton swivel hook	1

FIG. 3F: LM-HRNT- 4k & 6k Centers of Gravity and Maximum Load Ratings for Varying Load Attachment Points



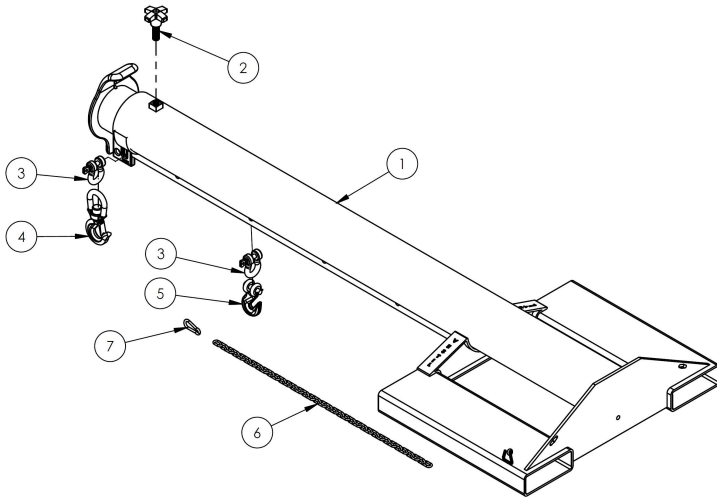
 = Center of gravity

Hook position	A	B	C	D
Distance from mast end of boom in inches (cm)	30 (~76)	36 (~91)	42 (~107)	48 (~122)
Maximum rated load in pounds (kg) of a load suspended from a <i>single</i> hook located at the corresponding "Hook position".				
LM-HRNT-4k	4000 (~1820)	3750 (~1705)	3500 (~1590)	3250 (~1477)
LM-HRNT-6k	6000 (~2727)	5000 (~2045)	4500 (~1727)	4000 (~1363)

Center of gravity has both a horizontal component and a vertical component. The *vertical* center of gravity (VCG) lies along a line 38 inches (~97 cm) from the bottom edges of the fork pockets. Similarly, the *horizontal* center of gravity (HCG) is located 8 inches (~20cm) from the front edge of the vertical support.

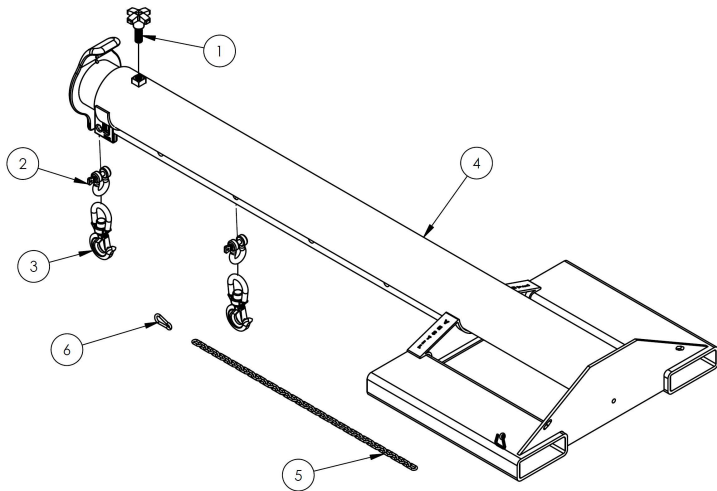
Model	HCG	VCG
LM-HRNT-4k	8 ⁵ / ₈ in. (~21 cm)	28 ¹¹ / ₁₆ in. (~ cm)
LM-HRNT-6k	8 ¹³ / ₁₆ in. (~21 cm)	27 ⁷ / ₈ in. (~72 cm)

FIG. 4A: LM-EBT-4k Exploded Parts Diagram & Bill of Materials



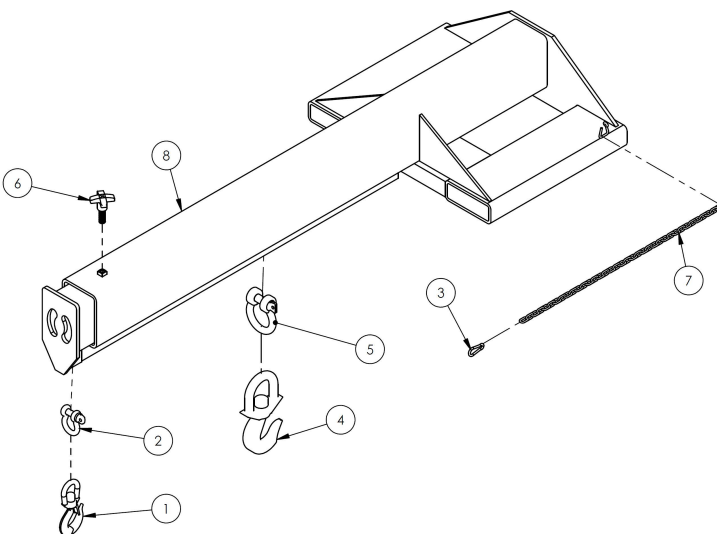
Item No.	Part No.	Description	Quantity
1	08-514-001	Frame, boom + base weldment, LM-EBT-4k	1
2	08-025-004	X-handle locking bolt	1
3	08-145-003	Specialty hardware: 2-ton shackle	2
4	08-145-001	2-ton hook	2
5	08-145-009	Specialty hardware: 1/16in. clevis hook (2-ton)	1
6	99-145-025	3/16in. x 36in. chain	1
7	08-145-008	Specialty hardware: 1/4in. snap hook	1

FIG. 4B: LM-EBT-6k Exploded Parts Diagram & Bill of Materials



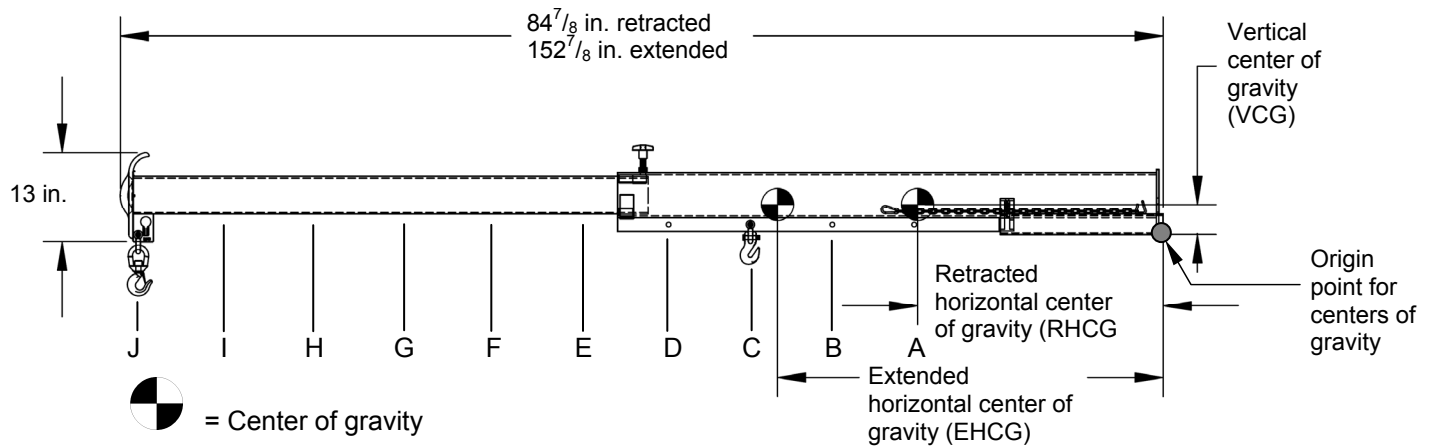
Item No.	Part No.	Description	Quantity
1	08-025-004	X-handle locking bolt	1
2	08-145-003	Specialty hardware: 2-ton shackle	2
3	08-145-001	2-ton hook	2
4	08-514-002	Frame, boom + base weldment, LM-EBT-6k	1
5	99-145-025	3/16in. x 36in. chain	1
6	08-145-008	Specialty hardware: 1/4in. snap hook	1

FIG. 4C: LM-EBT-8k Exploded Parts Diagram & Bill of Materials



Item No.	Part No.	Description	Quantity
1	08-145-002	Specialty hardware: 3-ton swivel hook	1
2	08-145-004	Specialty hardware: 3/4in. anchor shackle (3-ton)	1
3	08-145-008	Specialty hardware: 1/4in. snap hook	1
4	08-145-005	5-ton hook (D-FORK)	1
5	08-145-006	Specialty hardware: 5-ton shackle	1
6	08-025-004	X-handle locking bolt	1
7	99-145-025	3/16in. x 36in. chain	1
8	08-514-192	Frame, boom + base weldment, LM-EBT-8k	1

FIG. 4D: LM-EBT – 4k, 6k & 8k Centers of Gravity and Maximum Load Ratings for Varying Load Attachment Point and Boom Extension Combinations



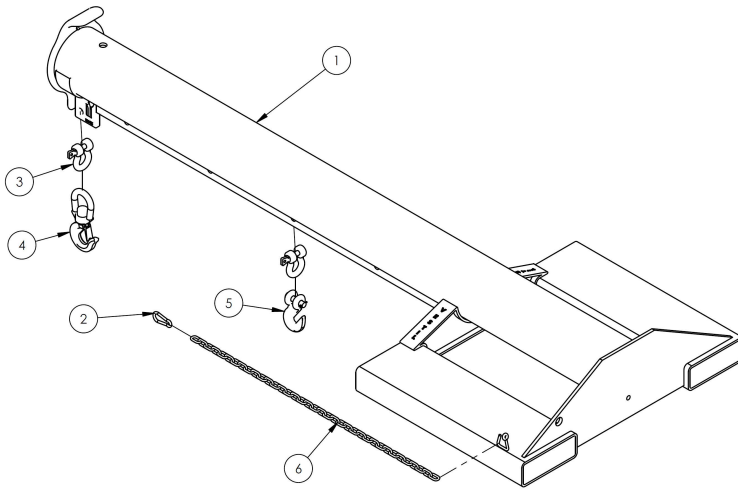
Hook position	A	B	C	D	E	F	G	H	I	J
Distance from mast end of boom in inches (cm)	36 (~91)	48 (~122)	60 (~152)	72 (~183)	84 (~213)	96 (~244)	108 (~274)	120 (~305)	132 (~335)	144 (~366)
Maximum rated load in pounds (kg) of a load suspended from a <i>single</i> hook located at the corresponding "Hook position".										
LM-EBT-4-24	4000 (~1820)	3750 (~1705)	3500 (~1590)	3250 (~1477)	3000 (~1363)	2750 (~1250)	2500 (~1136)	2250 (~1022)	2000 (~909)	1750 (~796)
LM-EBT-6-24	6000 (~2727)	5000 (~2273)	4500 (~2046)	4000 (~1818)	3500 (~1591)	3000 (~1363)	2600 (~1182)	2300 (~1046)	2000 (~909)	1800 (~818)
LM-EBT-8k	8000 (~3636)	6650 (~3022)	6000 (~2727)	5300 (~2409)	4650 (~2113)	4000 (~1820)	3500 (~1590)	3000 (~1363)	2600 (~1181)	2200 (~1000)

The center of gravity of the boom changes as boom length changes. As shown in the diagram above, the horizontal center of gravity may be located at any point from RHCG to EHCG:

- **Retracted horizontal center of gravity (RHCG):** boom fully *retracted*, and load attached at position A. RHCG is measured from the "origin point" of the above diagram (edges of the fork pockets);
- **Extended horizontal center of gravity (EHCG):** boom fully *extended* with a load attached at position J. EHCG is also measured from the "origin point" of the above diagram (edges of the fork pockets);
- All other combinations of boom extension and load position produce a horizontal center of gravity located somewhere between RHCG and EHCG.

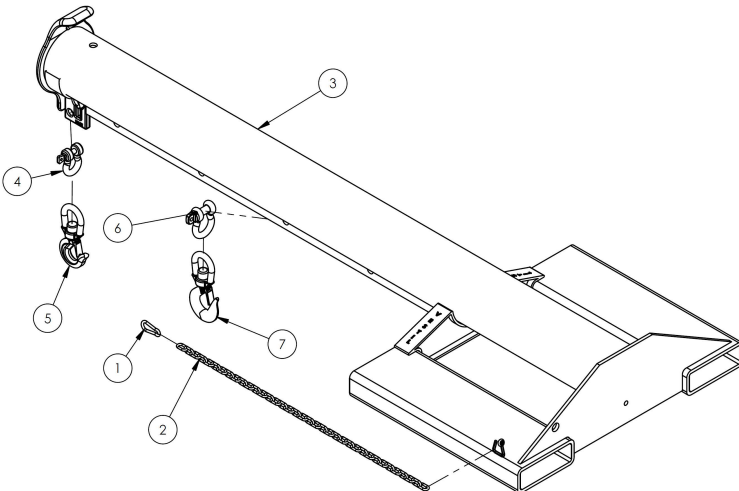
MODEL	EHCG	RHCG	VCG
LM-EBT-4k	56 $\frac{1}{2}$ in. (~143 $\frac{1}{2}$ cm)	36 in. (~91 $\frac{1}{2}$ cm)	4 $\frac{7}{16}$ in. (~11 cm)
LM-EBT-6k	56 $\frac{1}{2}$ in. (~143 $\frac{1}{2}$ cm)	36 in. (~91 $\frac{1}{2}$ cm)	4 $\frac{7}{16}$ in. (~11 cm)
LM-EBT-8k	57 $\frac{1}{8}$ in. (~145 cm)	38 in. (~96 $\frac{1}{2}$ cm)	4 $\frac{13}{16}$ in. (~12cm)

FIG. 4E: LM-EBNT-4k Exploded Parts Diagram & Bill of Materials



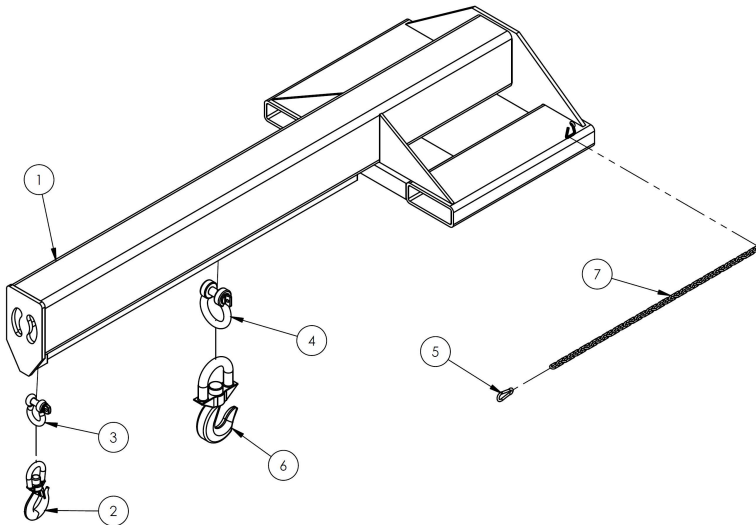
Item No.	Part No.	Description	Quantity
1	08-514-003	Frame, boom + base weldment, LM-EBNT-4k	1
2	08-145-008	Specialty hardware: 1/4in. snap hook	1
3	08-145-003	Specialty hardware: 2-ton shackle	2
4	08-145-001	2-ton hook	1
5	08-145-009	Specialty hardware: 7/16in. clevis hook (2-ton)	1
6	99-145-025	3/16in. x 36in. chain	1

FIG. 4F: LM-EBNT-6k Exploded Parts Diagram & Bill of Materials



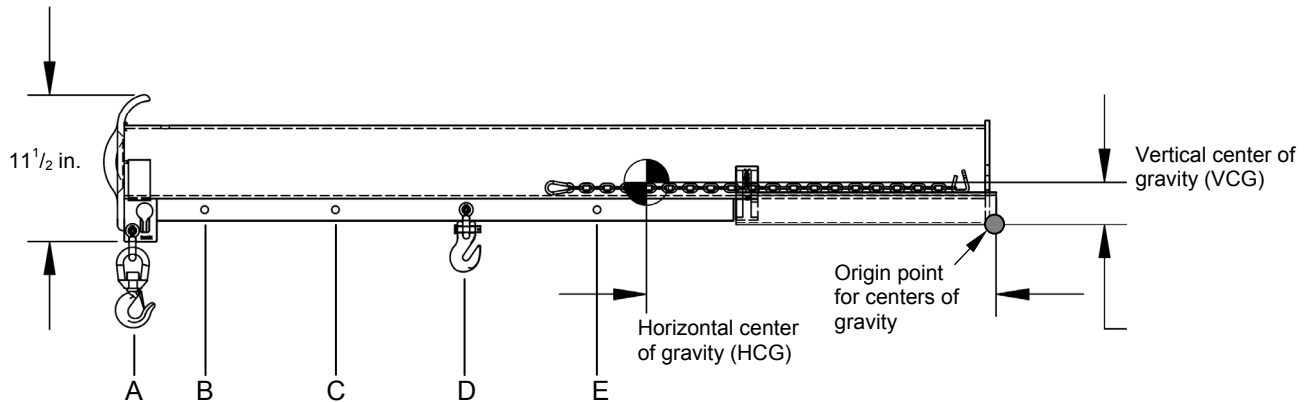
Item No.	Part No.	Description	Quantity
1	08-145-008	Specialty hardware: 1/4in. snap hook	1
2	99-145-025	3/16in. x 36in. chain	1
3	08-514-004	Frame, boom + base weldment, LM-EBNT-6k	1
4	08-145-003	Specialty hardware: 2-ton shackle	1
5	08-145-001	2-ton hook	1
6	08-145-004	Specialty hardware: 3/4in. anchor shackle (3-ton)	1
7	08-145-002	Specialty hardware: 3-ton swivel hook	1

FIG. 4G: LM-EBNT-8k Exploded Parts Diagram & Bill of Materials



Item No.	Part No.	Description	Quantity
1	08-514-191	Frame, boom + base weldment, LM-EBNT-8k	1
2	08-145-002	Specialty hardware: 3-ton swivel hook	1
3	08-145-004	Specialty hardware: 3/4in. anchor shackle (3-ton)	1
4	08-145-006	Specialty hardware: 5-ton shackle	1
5	08-145-008	Specialty hardware: 1/4in. snap hook	1
6	08-145-005	5-ton hook (D-FORK)	1
7	99-145-025	3/16in. x 36in. chain	1

Fig. 4H: LM-EBNT- 4k, 6k & 8k Centers of Gravity and Maximum Load Ratings for Varying Load Attachment Points



= Center of gravity

Hook position	A	B	C	D	E
Distance from mast end of boom in inches (cm)	36 (~91)	48 (~122)	60 (~152)	72 (~183)	84 (~213)
Maximum rated load in pounds (kg) of a load suspended from a <i>single</i> hook located at the corresponding "Hook position".					
LM-EBNT-4k	4000 (~1820)	3750 (~1705)	3500 (~1590)	3250 (~1477)	3000 (~1364)
LM-EBNT-6k	6000 (~2727)	5000 (~2045)	4500 (~1727)	4000 (~1363)	3500 (~1591)

Hook position	A	B	C	D	E
Distance from mast end of boom in inches (cm)	36 (~91)	48 (~122)	60 (~152)	72 (~183)	84 (~213)
LM-EBNT-8k	8000 (~3636)	6650 (~3023)	6000 (~2727)	5300 (~2409)	4850 (~2205)

Center of gravity has both a horizontal component and a vertical component. The *vertical* center of gravity (VCG) lies along a line 15 inches (~38 cm) from the bottom edges of the fork pockets. Similarly, the *horizontal* center of gravity (HCG) is located 35-7/8 inches (~91 cm) from the outer edges of the fork pockets.

Model	HCG	VCG
LM-EBNT-4k	32 ¹ / ₁₆ in. (~81 1/2 cm)	3 ¹⁵ / ₁₆ in. (~10 cm)
LM-EBNT-6k	30 ¹ / ₈ in. (~76 1/2 cm)	3 ⁵ / ₈ in. (~9 cm)
LM-EBNT-8k	32 ⁵ / ₁₆ in. (~82 cm)	4 ¹ / ₁₆ in. (~10 cm)

FIG. 5A: LMS-EBT-46-4 Exploded Parts Diagram & Bill of Materials

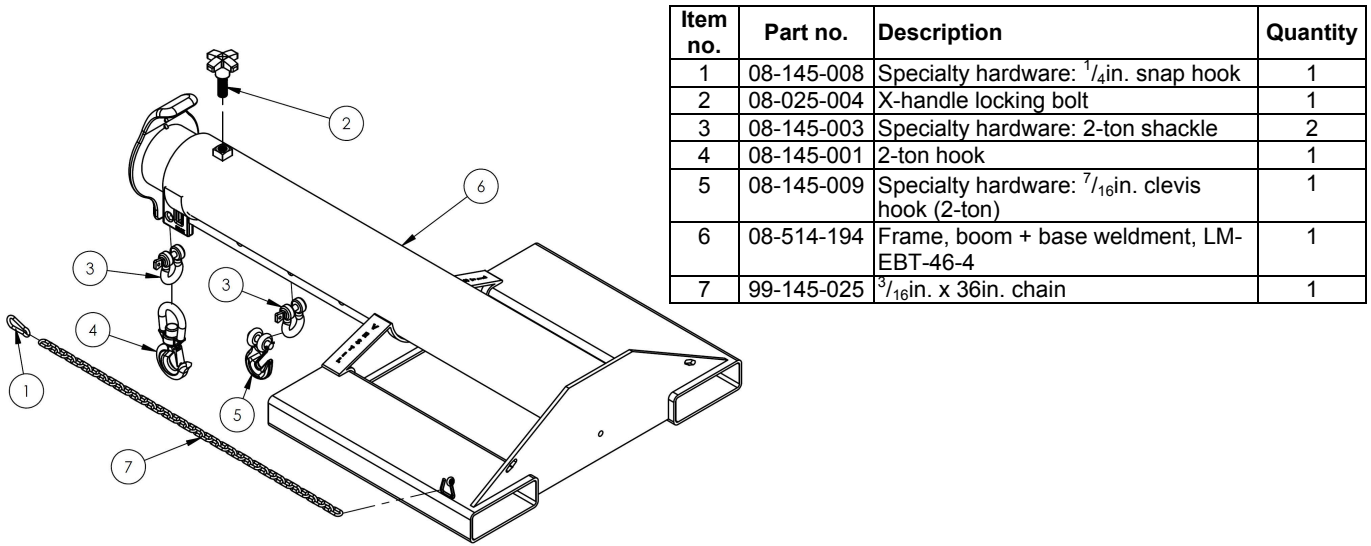


FIG. 5B: LMS-EBNT-46-6 Exploded Parts Diagram & Bill of Materials

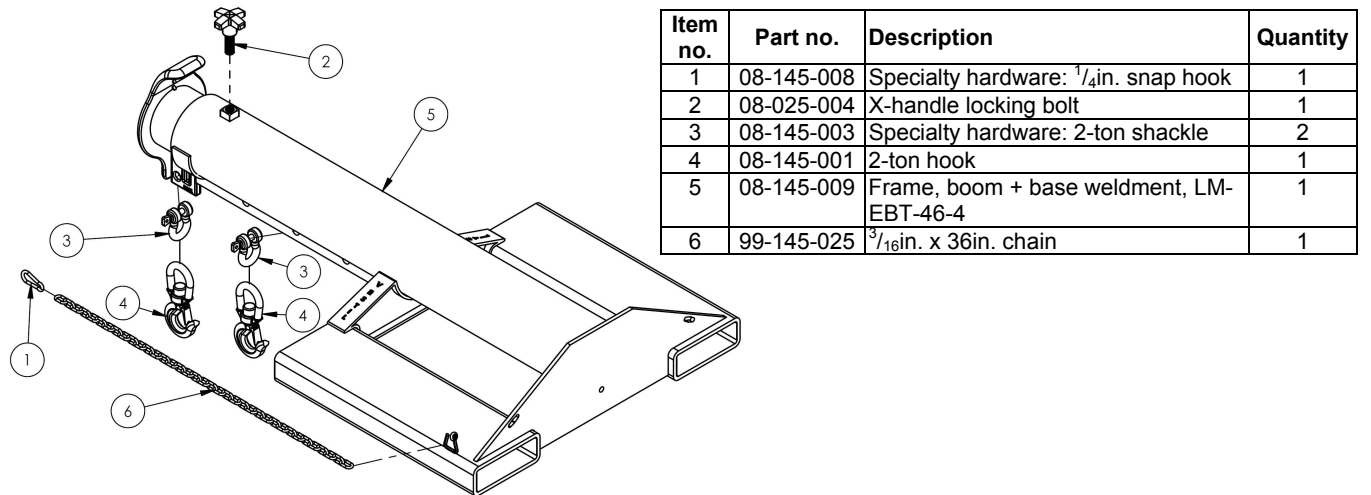


FIG. 5C: LMS-EBNT-46-8 Exploded Parts Diagram & Bill of Materials

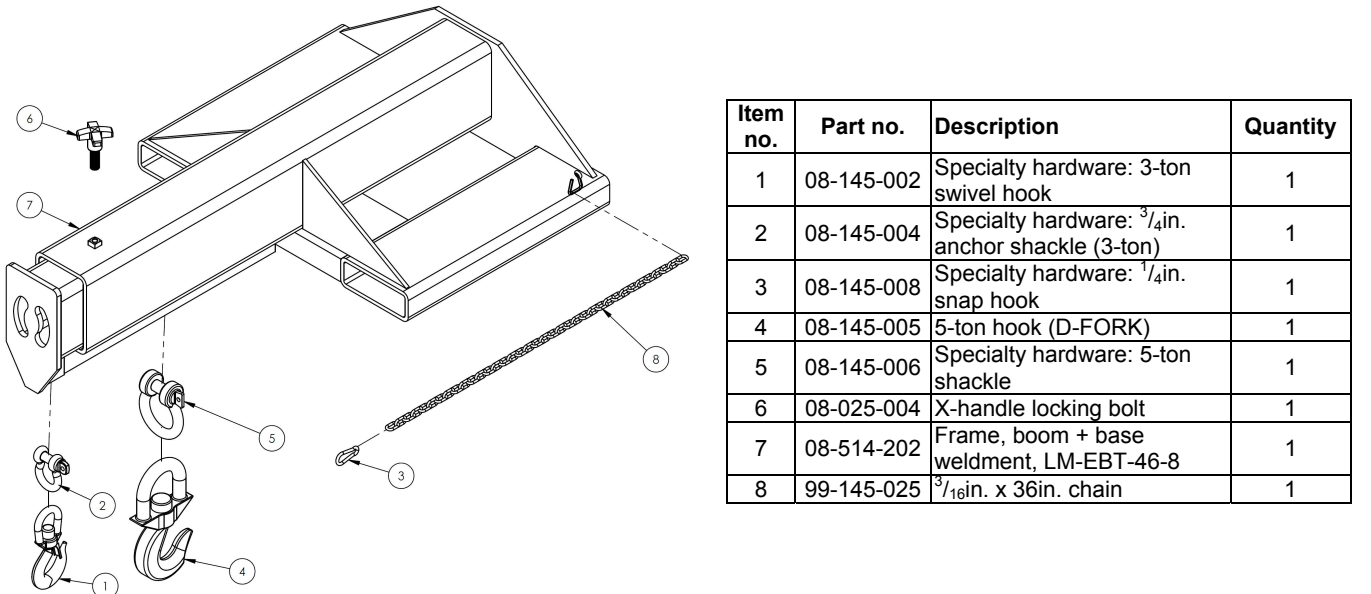
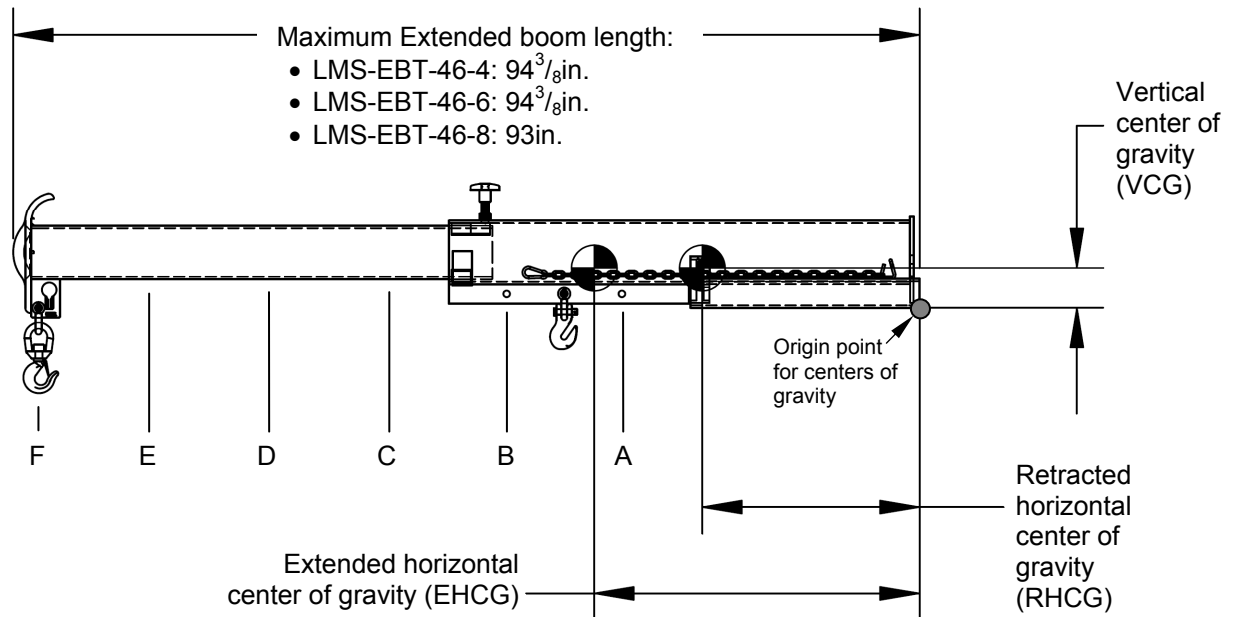


Fig. 5D: LMS-EBT-4k, 6k & 8k Centers of Gravity and Maximum Load Ratings for Varying Load Attachment Points



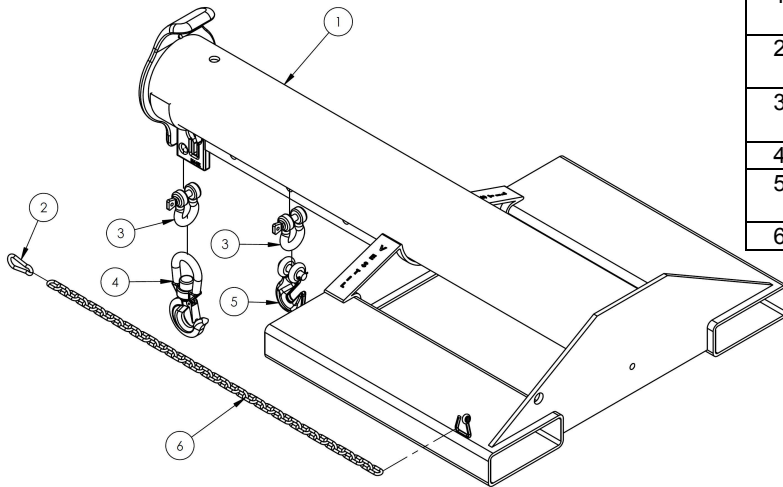
Hook position	A	B	C	D	E	F
Distance from mast end of boom in inches (cm)	31 (~91)	48 (~122)	60 (~152)	72 (~183)	84 (~213)	92 (~234)
Maximum rated load in pounds (kg) of a load suspended from a <i>single</i> hook located at the corresponding "Hook position".						
LMS-EBT-46-4	4000 (~1820)	3750 (~1705)	3500 (~1590)	3250 (~1477)	3000 (~1364)	2750 (~1250)
LMS-EBT-46-4	6000 (~2727)	5000 (~2045)	4500 (~1727)	4000 (~1363)	3500 (~1591)	3000 (~1364)
LMS-EBT-46-8	8000 (~3636)	6650 (~3023)	6000 (~2727)	5300 (~2409)	4650 (~2205)	4000 (~1360)

The center of gravity of the boom changes as boom length changes. As shown in the diagram above, the horizontal center of gravity may be located at any point from RHCG to EHCG:

- **Retracted horizontal center of gravity (RHCG):** boom fully *retracted*, and load attached at position A. RHCG is measured from the "origin point" of the above diagram (edges of the fork pockets);
- **Extended horizontal center of gravity (EHCG):** boom fully *extended* with a load attached at position J. EHCG is also measured from the "origin point" of the above diagram (edges of the fork pockets);
- All other combinations of boom extension and load position produce a horizontal center of gravity located somewhere between RHCG and EHCG.

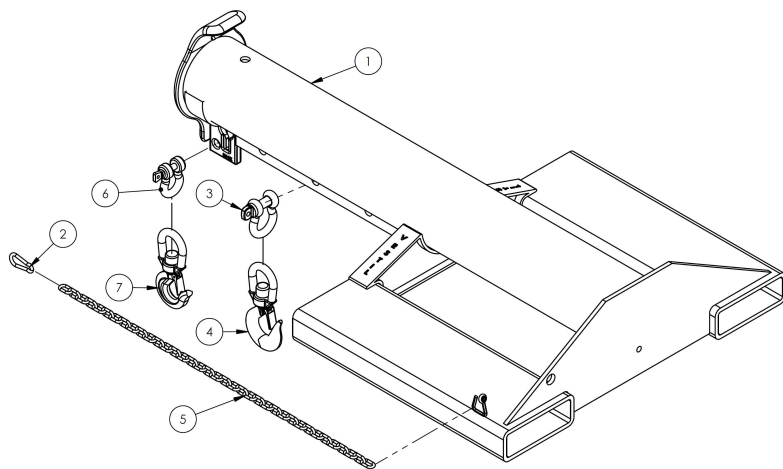
MODEL	EHCG	RHCG	VCG
LMS-EBT-46-4	$33\frac{7}{8}$ in. (~86 cm)	$22\frac{5}{8}$ in. (~57 $\frac{1}{2}$ cm)	$4\frac{1}{8}$ in. (~10 $\frac{1}{2}$ cm)
LMS-EBT-46-6	$31\frac{7}{16}$ in. (~80 cm)	$21\frac{3}{8}$ in. (~54 cm)	$3\frac{7}{8}$ in. (~10 cm)
LMS-EBT-46-8	$34\frac{1}{16}$ in. (~87 cm)	$22\frac{3}{4}$ in. (~58 cm)	$4\frac{3}{8}$ in. (~11cm)

FIG. 5E: LMS-EBNT-40-4 Exploded Parts Diagram & Bill of Materials



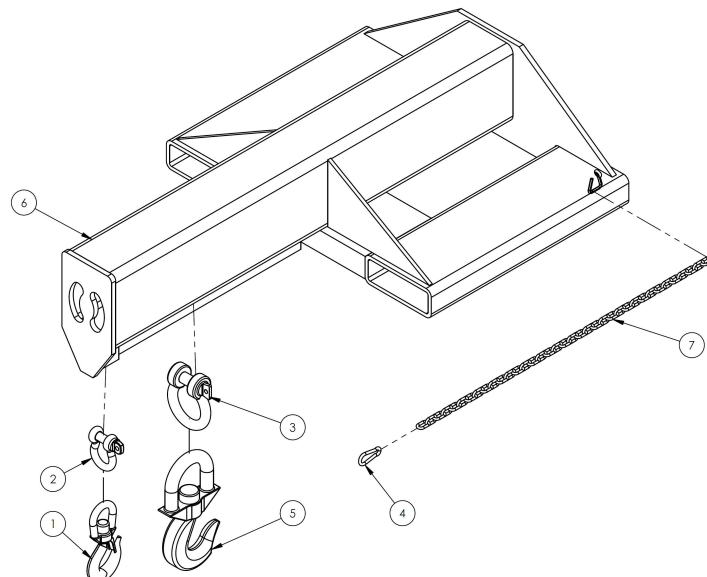
Item no.	Part no.	Description	Quantity
1	08-514-196	Frame, boom + base weldment, LM-EBNT-40-4	1
2	08-145-008	Specialty hardware: 1/4in. snap hook	1
3	08-145-003	Specialty hardware: 2-ton shackle	2
4	08-145-001	2-ton hook	1
5	08-145-009	Specialty hardware: 1/16in. clevis hook (2-ton)	1
6	99-145-025	3/16in. x 36in. chain	1

FIG. 5F: LMS-EBNT-40-6 Exploded Parts Diagram & Bill of Materials



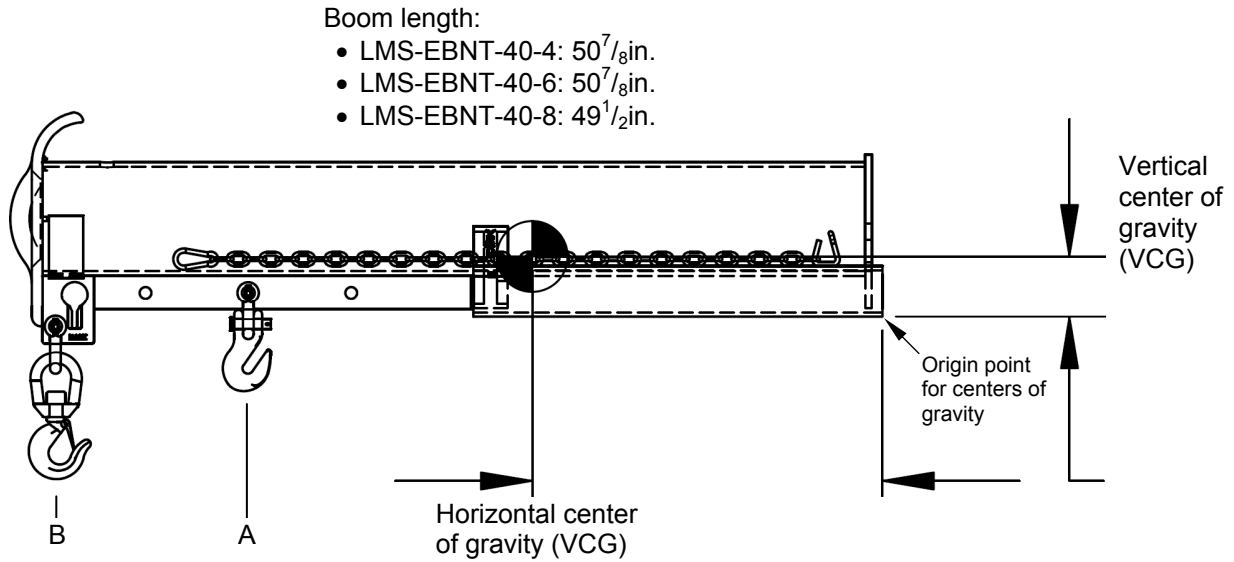
Item no.	Part no.	Description	Quantity
1	08-514-197	Frame, boom + base weldment, LM-EBNT-40-4	1
2	08-145-008	Specialty hardware: 1/4in. snap hook	1
3	08-145-004	Specialty hardware: 3/4in. anchor shackle (3-ton)	1
4	08-145-002	Specialty hardware: 3-ton swivel hook	1
5	99-145-025	3/16in. x 36in. chain	1
6	08-145-003	Specialty hardware: 2-ton shackle	1
7	08-145-001	2-ton hook	1

FIG. 5G: LMS-EBNT-40-8 Exploded Parts Diagram & Bill of Materials



Item no.	Part no.	Description	Quantity
1	08-145-002	Specialty hardware: 3-ton swivel hook	1
2	08-145-004	Specialty hardware: 3/4in. anchor shackle (3-ton)	1
3	08-145-006	Specialty hardware: 5-ton shackle	1
4	08-145-008	Specialty hardware: 1/4in. snap hook	1
5	08-145-005	5-ton hook (D-FORK)	1
6	08-514-203	Frame, boom + base weldment, LMS-EBNT-40-8	1
7	99-145-025	3/16in. x 36in. chain	1

Fig. 5H: LMS-EBNT-40-4k, 6k & 8k Centers of Gravity and Maximum Load Ratings for Varying Load Attachment Points



Hook position	A	B
Distance from end of boom in inches (cm)	36 (~91)	48 (~122)
Maximum rated load in pounds (kg) of a load suspended from a <i>single</i> hook located at the corresponding "Hook position".		
LMS-EBT-46-4	4000 (~1820)	3750 (~1705)
LMS-EBT-46-4	6000 (~2727)	5000 (~2045)
LMS-EBT-46-8	8000 (~3636)	6650 (~3023)

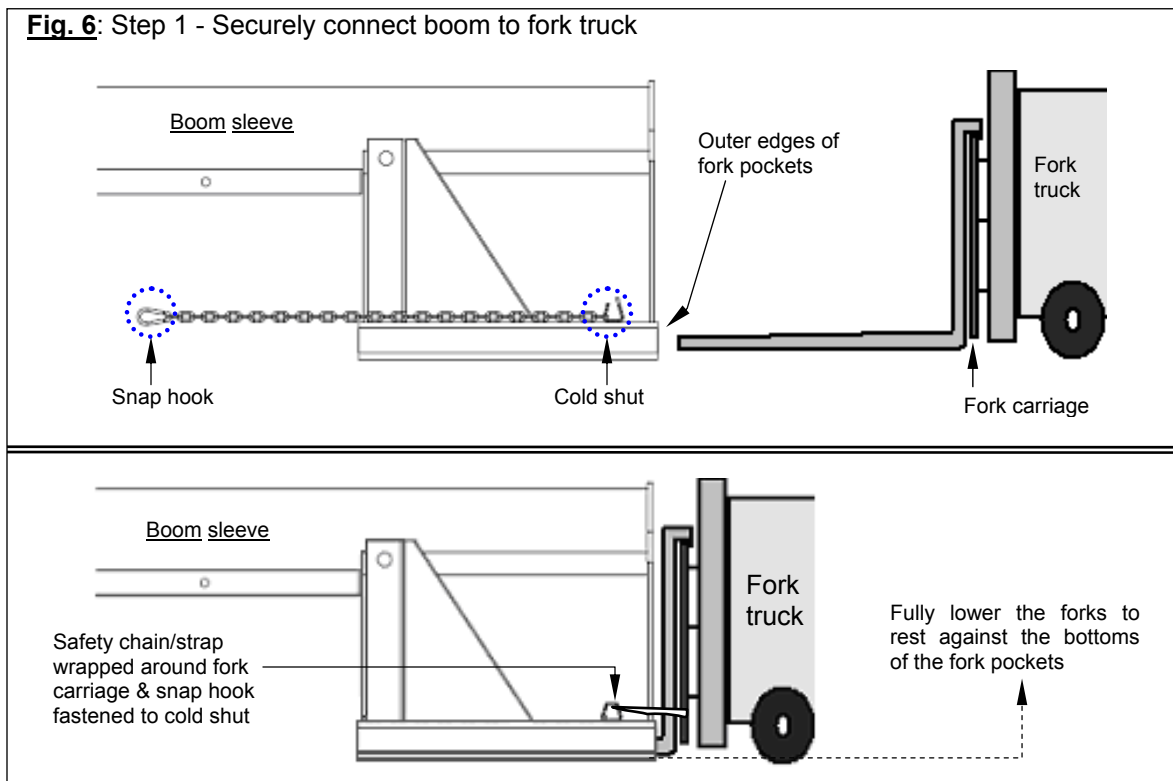
Center of gravity has both a horizontal component and a vertical component. The *vertical* center of gravity (VCG) lies along a line parallel to the bottom edges of the fork pockets. Similarly, the *horizontal* center of gravity (HCG) lies along a vertical line from the outer edges of the fork pockets.

Model	HCG	VCG
LMS-EBNT-4k	20 ⁷ / ₁₆ in. (~52 cm)	3 ⁹ / ₁₆ in. (~9 cm)
LMS-EBNT-6k	19 ¹ / ₂ in. (~50 cm)	3 ¹ / ₄ in. (~8 cm)
LMS-EBNT-8k	20 ⁵ / ₈ in. (~52 cm)	3 ⁵ / ₈ in. (~9 cm)

Operation Instructions:

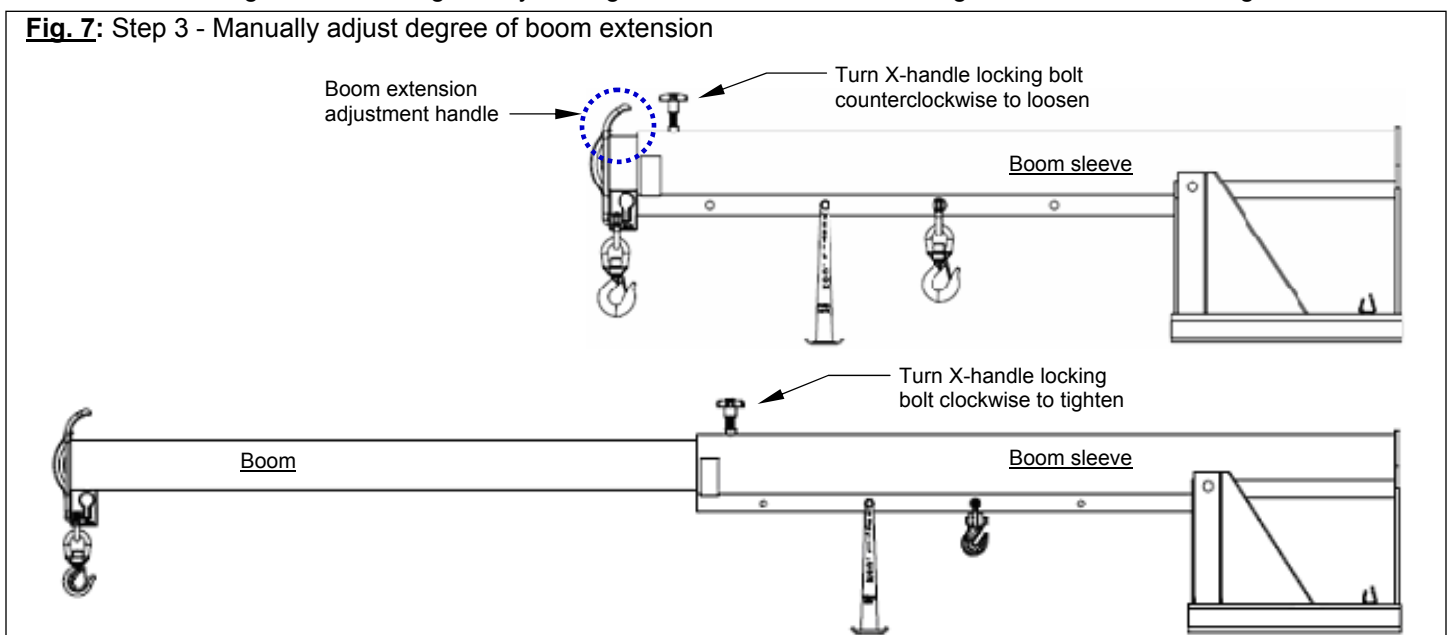
WARNING Review "Safety recommendations" on p. 3 before using the boom.

1. Insert fork truck tines into the fork pockets and drive as far forward as possible; then lower the forks completely. The drawings below demonstrate this step:



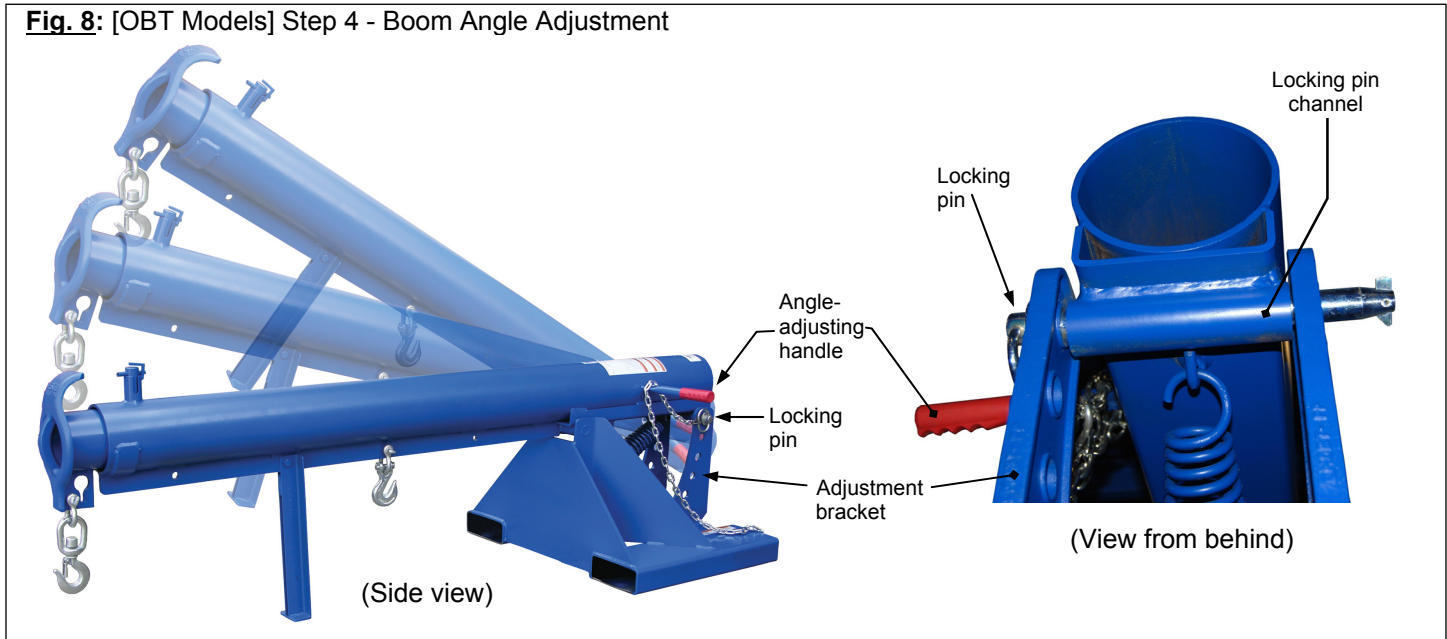
2. Securely connect the boom to the carriage of the fork truck with the safety chain.
Wrap the safety chain (or strap) around the fork carriage so that it cannot slide free of the carriage; then fasten the hook to the chain/strap. There should be no slack in the chain/strap. The only purpose of the safety chain is to prevent the boom from sliding off of the forks—it is NOT intended or designed to bear the full load rating.
3. **[Telescoping models only]** Adjust the boom length:
 - a. Loosen the X-handle locking bolt ("locking bolt"), by turning it counterclockwise.
 - b. Grasp the adjustment handle at the end of the boom and pull the boom to the desired length.
 - c. Tighten the locking bolt by turning it clockwise. Turn the locking bolt until it cannot be tightened more.

Fig. 7: Step 3 - Manually adjust degree of boom extension



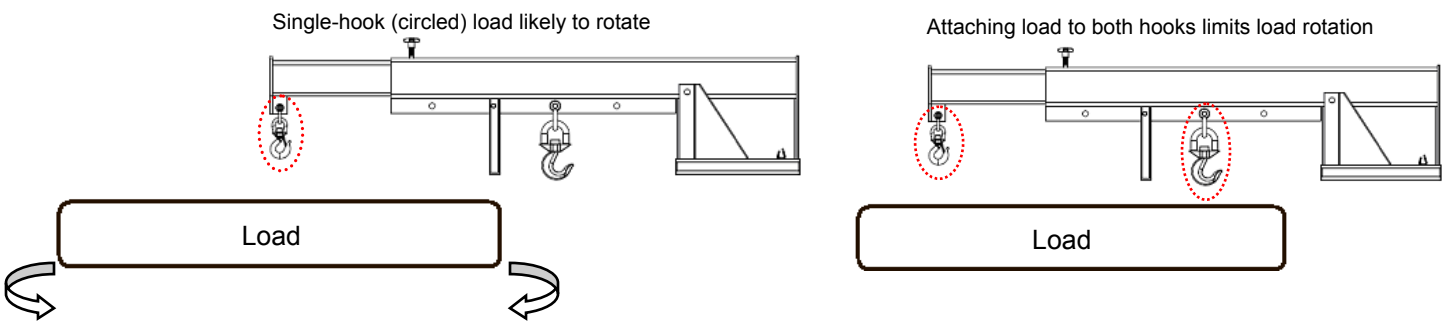
4. **[OBT models only]** Adjust the angle of the boom as required by the size/shape of the intended load. To safely perform the adjustment process requires *at least* 2 people:
- 1 person must grasp the red pitch handle with one hand
 - while the other person pulls out the locking pin; then
 - both persons press down on the angle-adjusting handle until the desired angle is achieved;
 - The person who removed the locking pin should reinsert the pin through the openings in the adjustment brackets and through the locking pin channel (see FIG. 8 below).

Fig. 8: [OBT Models] Step 4 - Boom Angle Adjustment



⚠ WARNING Material handling is dangerous. Improper use of this product might result in serious personal injuries. To reduce risk:

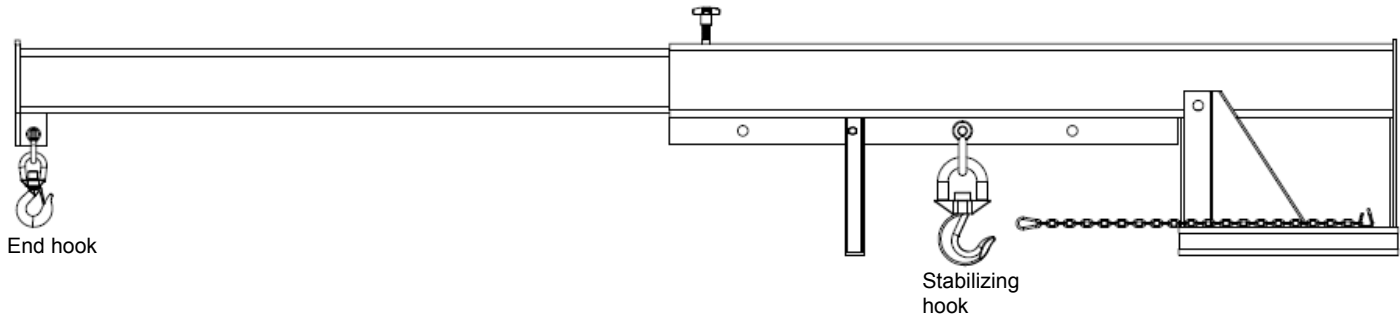
- Verify that the load weighs less than the maximum rated load of your boom model AND that your fork lift is rated to safely lift both the boom and the load.
- Contact the manufacturer of your fork lift truck BEFORE using a boom to request:
 1. Written approval to use boom with your lift truck; AND
 2. Markings (labels) for the lift truck that:
 - Identify your LM-boom; AND
 - Provide the approximate net weight of the forklift truck and boom at the maximum fork elevation with laterally-centered load. [29 CFR 1910.178(a)(5)].
- DO NOT use the boom UNTIL the lift truck manufacturer provides adjusted maximum rated load tags for your fork lift.
- DO NOT attempt to lift more than the rated load of the boom or lift truck, **whichever is smaller**. The maximum rated load information presented in the tables with figures 1D, 1H, 2D, 2H, 3C, 3F, 4D, 4H, 5D, 5H is the capacity of the specified boom only.
- Strictly adhere to lifting rules applied at your worksite.
- Attach the load to the boom following OSHA-recommended practices for “Hoisting equipment,” 29 CFR 1910.179(h).
- ONLY use rigging having maximum load ratings that exceed the load weight.
- DO NOT connect a load to only 1 hook, if the load is likely to rotate during lifting and/or transport operations. A load should connect to both hooks simultaneously:



Test the stability of the load attachment. Raise the forks *slowly* to minimize load movement. Raise the forks until the load is entirely suspended from the boom. Watch the load and boom closely for *either* of the following issues: 1) Load sliding in rigging; or 2) Boom sliding towards tips of forks. If you notice either #1 or #2 occurring, immediately lower the forks; then adjust the rigging. Retest the stability of the load in the rigging. If a stable lift cannot be performed, DO NOT use the boom.

- While transporting a load with the boom, the load should only be 6-8 inches from the ground. Adjust load height to avoid obstacles along the travel path.
- DO NOT exceed approximately 1.5mi./hr (2.4km/hr) while transporting a load with the boom. Travel ONLY on smooth, level surfaces. Turn slowly and smoothly.

5. Attach the load to the boom.
 - a. Connect the load to appropriate rigging;
 - b. Attach the rigging to the end hook or to both the end hook and the stabilizing hook;



- c. Verify that the load attachment is stable;
- d. Raise the load until it is elevated no more than 6-8 inches above the ground (entirely suspended from the boom).
- e. Slowly transport the load to the desired unloading location;
- f. Slowly lower the load until it is entirely supported by the ground and there is slack in all rigging.
- g. Disconnect the rigging from the hooks;
- h. Adjust the fork position until no more than 6-8 inches above the ground;
- i. Transport the boom to its storage location.

NOTE: Users of OBT and OBNT model booms should return the boom to the fully lowered (horizontal) position by reversing Step 4 on p. 25 BEFORE backing out of the fork pockets

Inspections & Maintenance:

⚠WARNING Immobilize the boom before either conducting inspections or performing maintenance. **If an inspection reveals problems, restore the boom to normal operating condition BEFORE using it again.** DO NOT use a boom that is structurally damaged in any way. Structural damage includes, but is not limited to, cracked welds, warping or deformation of the fork pockets, support leg, frame members, boom, or boom sleeve.

Lift Master booms function like a hoist-less crane. Instead of using a hoist to lift loads, the bridge girder rises and lowers through the movement of the forks of a lift truck. Boom owners should inspect the boom regularly. An example of an inspection procedure appears in 29 CFR 1910.179 (visit <http://www.osha.gov/> and navigate to “Regulations” section 1910.179). Paraphrased relevant portions appear below:

1. Initial inspection — before using a new or modified boom for the first time, inspect it to ensure normal operating condition.

After the first use, inspect the boom as described below:

2. Frequent inspection [29 CFR 1910.179(j)(1)(ii)(a)] — Daily to monthly intervals.
Inspect the items listed for defects at the intervals specifically indicated. Diligently observe the boom *during operation* for any defects which might appear between inspections. All deficiencies such as those listed shall be carefully examined to determine whether they constitute a safety hazard:
 - [Inspect daily] All functional operating mechanisms (boom, X-handle locking bolt, boom sleeve, base frame weldment, safety chain, fork pockets, support arm, and all fasteners) for maladjustment or damage that might interfere with proper operation. Inspect the boom for:
 1. Dirt or other matter on the surface.
 2. Pivot point wear (if applicable);
 3. Looseness or wear of all moving parts;
 4. Integrity of hardware and fasteners, including but not limited to bolts, nuts, pins, knobs, shackles, and hooks;
 5. Normal operability of manually-operated mechanisms;
 6. Abnormal or noisy movement during use;
 7. Excessive wear or damage (or indications of metal fatigue) to any portion of the fork pockets, support frame, boom or boom sleeve;
 8. Damaged or unreadable labels;
 9. Thinned regions or tears in the safety strap, or stretching, thinning, or twisting of any link(s) in the safety chain;
 10. Evidence of corrosion or rust-related metal erosion.
 - [Inspect daily (visually) and at least once per month make a record which includes the date of inspection, the signature of the person who performed the inspection and the serial number (or other identifier) of the hook inspected] Hooks with deformations or cracks. Immediately discard cracked hooks or hooks whose throat opening is more than 15 percent wider than the normal throat opening, or that are twisted more than 10° from the plane of the unbent hook.
 - [Inspect daily (visually) and at least once per month inspect and make a record which includes the date of inspection, the signature of the person who performed the inspection and an identifier of the chain which was inspected] Hooks and shackles, including end connections, for excessive wear, twist, stretch. Disconnect any hook or shackle found to exhibit these problems and discard them.
 - [Inspect weekly] All functional operating mechanisms--boom, X-handle locking bolt, boom sleeve (base frame weldment), safety chain/strap, fork pockets, support arm, and all fasteners--for excessive wear.
3. Periodic inspection [29 CFR 1910.179(j)(1)(ii)(b)] — 1-to-12 month intervals.
Complete inspections of the boom shall be performed at intervals depending upon its activity, severity of service, and environment, or as specifically indicated below. Perform all of the applicable “Frequent inspection” steps and carefully examine the boom for *any* of the issues that appear below to determine whether they constitute a safety hazard:
 - Deformed, cracked, or corroded members.
 - Loose bolts or rivets.
 - Worn, cracked or distorted parts such as pins, shackles, hooks.

Annual performance evaluation: At least once per year, authorized inspection personnel should verify the soundness of the boom. Use the LM to lift a maximum rated load. Afterwards, conduct a “Frequent inspection” to verify that the product is in normal operating condition.

Maintenance:

The end-user, i.e. operators and operators' employer, must implement a maintenance program to ensure that the product functions properly and is adequately maintained. OSHA "General Industry" standards applied to "Overhead and gantry cranes," 29CFR 1910.179, describe official, recommended maintenance procedures. The following steps should be utilized in conjunction with those recommendations.

Step 1: Tag the boom, "Out of Service."

Step 2: Remove any dirt or other matter from all surfaces.

Step 3: Conduct a "Frequent" inspection (p. 28). If deformity, corrosion, rusting, or excessive wear of structural members is found, DO NOT use the product.

Step 4: Perform all other necessary adjustments, replacements and/or repairs, but DO NOT modify the boom.

⚠WARNING The reader should understand the significant difference between necessary adjustments and repairs, and modifications.

An "adjustment" is a simple correction that restores the boom to normal operating condition, such as tightening loose fasteners, or removing dirt or other debris from the surface. "Repair" refers to removing worn parts and installing replacement parts.

➤ DO NOT use the Lift-Master boom if adjustments and/or repairs are incomplete! Return it to service ONLY after finishing all necessary repairs and adjustments.

A "modification" is a change that alters the boom from normal operating condition, like bending the structural members or removing a part or several parts. NEVER modify the boom without the express, written approval of Vestil. Modifications may render the device unsafe to use.

Step 5: Make a dated record of any repairs, adjustments and/or replacements.

Label placement diagram:

Each boom should be labeled as shown below. Replace any label that is damaged or not easily readable.

One of labels 928-935 as indicated in TABLE 1 (on either fork pocket)

⚠ WARNING

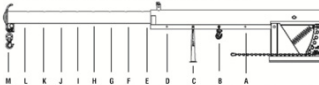
Material handling is inherently dangerous; improper use of this product might result in serious personal injuries sustained by the operator and/or bystanders. To reduce the risks:

- DO NOT use if safety chain/strap is damaged or absent.
- Law requires you to contact manufacturer of your (fork) lift truck BEFORE using boom to request:
 1. Written approval to use boom with lift truck [29 CFR 1910.178(a)(4)];
 2. Markings (labels) for lift truck that:
 - Identify this fork-mounted boom; AND
 - Give approximate net weight of truck and boom at maximum fork elevation with laterally-centered load. [29 CFR 1910.178(a)(5)]
- DO NOT use boom UNTIL lift truck manufacturer provides corrected maximum rated load tags for your forklift truck.
- DO NOT attempt to lift more than the rated load of the boom or lift truck, whichever is smaller. The table below shows the maximum rated load of the BOOM ONLY; you MUST compare the appropriate table entry with the corrected max. rated load label provided by the fork truck manufacturer.

⚠ ADVERTENCIA

La manipulación de materiales es inherentemente peligrosa; uso impropio de este producto podría resultar en daños personales serios al operador y/o a los espectadores. Para reducir los riesgos:

- NO use si la cadena/correa de seguridad está dañada o ausente
- No hay require que se ponga en contacto con el fabricante de su (horquilla) camioneta elevadora ANTES de usar el auge para pedir:
 1. Aprobación por escrito para el uso del auge con la camioneta elevadora [29 CFR 1910.178(a)(4)];
 2. Marcas (etiquetas) para la camioneta elevadora que:
 - Identifiquen este auge de la horquilla montada. Y
 - Den peso neto aproximado del camion y el auge a una elevación de la horquilla máxima con la carga lateralmente centrada. [29 CFR 1910.178(a)(5)]
- NO use el auge HASTA que el fabricante de la camioneta elevadora le haya proveído con las etiquetas de la correcta carga máxima tasada para su camioneta elevadora.
- NO intente elevar más de la carga tasada del auge o camioneta elevadora, lo que sea menor. La tabla a continuación del ensaño la máxima carga tasada para EL AUJE SOLO. DEBE comparar la tabla con la correcta carga máxima tasada de la etiqueta que el fabricante le ha proveído.



Weight of LM-boom by model: (Peso del LM-Auge por modelo)	LM-OBT-4k	405 (-184 kg)
LM-OBT-6k	456 (-207.3 kg)	
LM-OBT-8k	622 (-283 kg)	

HOOK POSITION (Posición del gancho)	A	B	C	D	E	F	G	H	I	J	K	L	M
Distance from outer edges of fork pockets in inches (cm) (Distancia desde los extremos externos de los bolsillos de las horquillas en cm)	36 (-91)	48 (-122)	60 (-152)	72 (-183)	84 (-213)	91.5 (-232)	99 (-251)	106.5 (-271)	114 (-290)	121.5 (-309)	129 (-328)	136.5 (-347)	144 (-366)

Maximum rated load in pounds (kg) of a load suspended from a single hook located at the corresponding "Hook position". (Máxima carga tasada en pounds (kg) de la carga suspendida desde un solo gancho localizado a la correspondiente posición del gancho.)

LM-OBT-4k	4000 (-1820)	3750 (-1705)	3500 (-1590)	3250 (-1477)	3000 (-1363)	2845 (-1290)	2690 (-1223)	2450 (-1114)	2375 (-1080)	2220 (-1010)	2060 (-936)	1945 (-884)	1750 (-795)
LM-OBT-6k	6000 (-2727)	5600 (-2527)	5200 (-2345)	4800 (-2180)	4500 (-2045)	4100 (-1891)	3800 (-1733)	3400 (-1551)	3265 (-1491)	3000 (-1366)	2760 (-1256)	2560 (-1166)	2300 (-1048)
LM-OBT-8k	8000 (-3636)	6650 (-3022)	6000 (-2727)	5300 (-2409)	4650 (-2113)	4000 (-1820)	3500 (-1590)	3000 (-1363)	2850 (-1303)	2600 (-1181)	2440 (-1109)	2280 (-1036)	2000 (-908)

TABLE 1:

Label	Model
928	LM-OBT
929	LM-OBNT
930	LM-1T
931	LM-EBT
932	LM-HRT
933	LM-EBNT
934	LM-HRNT
935	LM-1NT

Label 287 (on either fork pocket)

MODEL/MODÉLO/MODELE _____

CAPACITY _____ lbs.

CAPACIDAD/CAPACITÉ _____ kgs.

SERIAL/SERIE/SÉRIE _____

VESTIL MANUFACTURING CORPORATION 287

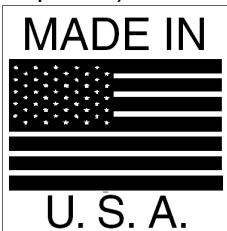
sales@vestil.com • www.vestil.com REV 03/07



Label 218 (on either fork pocket)

⚠ WARNING	⚠ ADVERTENCIAS
<p>Improper use might result in death or serious personal injury. Attach device to fork carriage with safety chain/strap.</p> <ul style="list-style-type: none"> • Drive lift truck forward until forks contact ends of fork pockets. • Chain/straps must not be able to disconnect (slide free) from carriage. • Safety chain/strap must be taut. Connect chain/strap to carriage via shortest line. 	<p>El uso impropio puede resultar en muerte o heridas personales. Atar aparato al mástil del montacargas con cadenas/correas.</p> <ul style="list-style-type: none"> • Maneje el montacargas para adelante hasta que las cuñas hagan contacto con la orilla del bolsillo de las cuñas. • La cadenas y correas no deben de deslizarse (soltarse) del mástil del montacargas. • La cadena/correa de seguridad debe de estar apretado. Asegure la cadena/correa al mástil via la ruta mas corta.

Label 203-2 (on either fork pocket)



LIMITED WARRANTY

Vestil Manufacturing Corporation (“Vestil”) warrants this product to be free of defects in material and workmanship during the warranty period. *Our warranty obligation is to provide a replacement for a defective original part if the part is covered by the warranty, after we receive a proper request from the warrantee (you) for warranty service.*

Who may request service?

Only a warrantee may request service. *You are a warrantee if* you purchased the product from Vestil or from an authorized distributor AND Vestil has been fully paid.

What is an “original part”?

An original part is a part used to make the product as shipped to the warrantee.

What is a “proper request”?

A request for warranty service is proper if Vestil receives: 1) a photocopy of the Customer Invoice that displays the shipping date; AND 2) a written request for warranty service including your name and phone number. Send requests by any of the following methods:

<u>Mail</u>	<u>Fax</u>	<u>Email</u>
Vestil Manufacturing Corporation 2999 North Wayne Street, PO Box 507 Angola, IN 46703	(260) 665-1339 <u>Phone</u> (260) 665-7586	sales@vestil.com

In the written request, list the parts believed to be defective and include the address where replacements should be delivered.

What is covered under the warranty?

After Vestil receives your request for warranty service, an authorized representative will contact you to determine whether your claim is covered by the warranty. Before providing warranty service, Vestil may require you to send the entire product, or just the defective part or parts, to its facility in Angola, IN. The warranty covers defects in the following *original* dynamic components: motors, hydraulic pumps, electronic controllers, switches and cylinders. It also covers defects in *original* parts that wear under normal usage conditions (“wearing parts”), such as bearings, hoses, wheels, seals, brushes, and batteries.

How long is the warranty period?

The warranty period for original components is 1 year. The warranty period begins on the date when Vestil ships the product to the warrantee. If the product was purchased from an authorized distributor, the period begins when the distributor ships the product. Vestil may extend the warranty period for products shipped from authorized distributors by *up to* 30 days to account for shipping time.

If a defective part is covered by the warranty, what will Vestil do to correct the problem?

Vestil will provide an appropriate replacement for any *covered* part. An authorized representative of Vestil will contact you to discuss your claim.

What is not covered by the warranty?

1. Labor;
2. Freight;
3. Occurrence of any of the following, which automatically voids the warranty:
 - Product misuse;
 - Negligent operation or repair;
 - Corrosion or use in corrosive environments;
 - Inadequate or improper maintenance;
 - Damage sustained during shipping;
 - Collisions or other incidental contacts causing damage to the product;
 - Unauthorized modifications: DO NOT modify the product IN ANY WAY without first receiving written authorization from Vestil. Modification(s) might make the product unsafe to use or might cause excessive and/or abnormal wear.

Do any other warranties apply to the product?

Vestil Manufacturing Corp. makes no other express warranties. All implied warranties are disclaimed to the extent allowed by law. Any implied warranty not disclaimed is limited in scope to the terms of this Limited Warranty.

