

PURPOSE

To provide a comparison of the LBL5 lever hoist features to those of the LBL4.

SCOPE



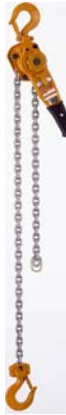





Compare the LBL5 specification and dimension features to the LBL4. Highlight the LBL5 improvements over the LBL4.

Point out the differences between the L4 and L5. Provide detail to Sales and Marketing for training, marketing and sales literature determination.

DETAILED INFORMATION

Improvements were identified and implemented into the L5 product line. The hoists were reduced in size and weight to improve ease of handling and operation. The durability and safety of the hoists were improved to enable heavier use.

The number of L5 hoist bodies was increased to four (4) from the three (3) for L4. A 2¾T model (LB028) was added to expand the LB product line.

LB	Capacity (T)							
L5	¾	1	1½	2	2¾	3	6	9
L4	¾	1	1½	2	N/A	3	6	9
Hoist								

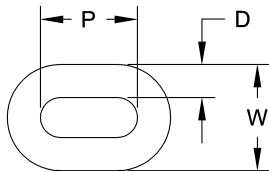
IMPROVED HOIST STATIC STRENGTH

To meet the static stress requirements of ASME B30.21* the L5 load chain was redesigned
*4 times rated capacity at the most harsh load sheave angle, see figures below



NEW CHAIN

1. L5 chain pitch shortened from 3.0 times chain wire diameter to 2.8
2. Shortening the pitch decreased the chain link length that reduced the stress on the chain link allowing the load stress to be increased
3. Reduced chain pitch results in a smaller pocket wheel which allowed a reduction in the overall size and weight of the hoist bodies
4. New L5 LB020 and 028 hoist load chain diameter is 8.8 mm
5. L5 LB030, 060 and 090 hoist load chain diameter increased from 9 to 10 mm



P = PITCH

D = DIAMETER

W = WIDTH

6. L5 Hoists have nickel plated (NP) load chain as standard
7. Black and ND chain is not available for the L5LB
8. NP chain plated using electroless (chemical) plating process
9. NP adheres to chain much better
10. NP process increased chain corrosion and wear resistance



L4 Black Chain



L5 Nickel Plated Chain

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STRENGTHENED SIDE PLATE

1. Side plate thickness increased to provide extremely high rigidity
2. Load supporting areas induction hardened to increase strength and eliminate the need for bushings



L4



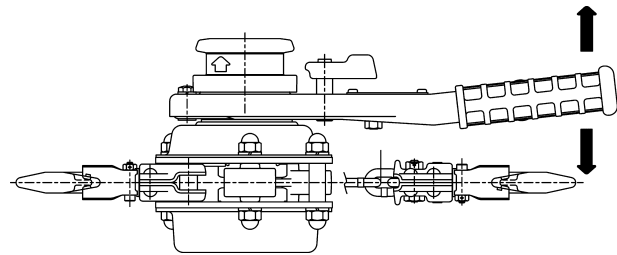
L5

HOIST LEVER STRENGTHENED AND SHORTENED

1. Lever shape and material changed to increase strength
2. Lever length shortened on L5 LB008, LB010 and LB015 hoists to make hoist more compact



L5 Lever Redesigned and Material Thickness Increased



Lever Strength Increased to Better Handle Pull Force Loads and Resist Twisting

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HOOK AND HOOK LATCH CHANGED

1. Hook material on L5 LB020 and larger hoists changed from structural carbon steel to chrome-molybdenum alloy steel
2. Use of chrome-moly steel reduced the size and weight of the hook
3. L5 latch is notched to better secure the latch to the hook tip
4. Latch lever material thickness increased to increase latch strength and resistance to deformation and damage
5. Hook chain pin diameter increased on L5 LB030, 060 and 090 to increase strength



L4



L5

PINION REDESIGNED

1. Pinion shortened to match hoist size reduction
2. Pinion shape redesigned to increase strength
3. L5 LB008, 010, 030, 060 and 090 pinion shaft diameter increased to increase pinion strength



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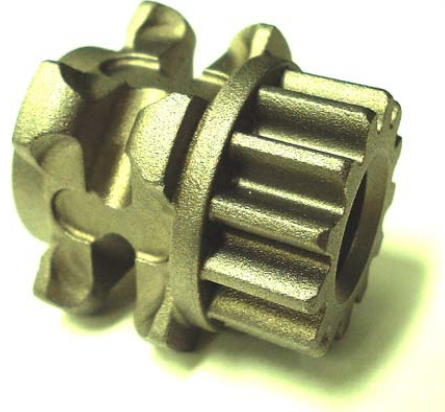
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LOAD SHEAVE LOAD GEAR REDESIGNED

1. Load sheave and load gear combined on L5 LB008, 010 and LB015 hoists
2. Mono-block casting provides solid construction
3. All L5 hoists utilize a 4 pocket load sheave, unlike the L4 LB008 and 010 models that utilized a 5 pocket load sheave.



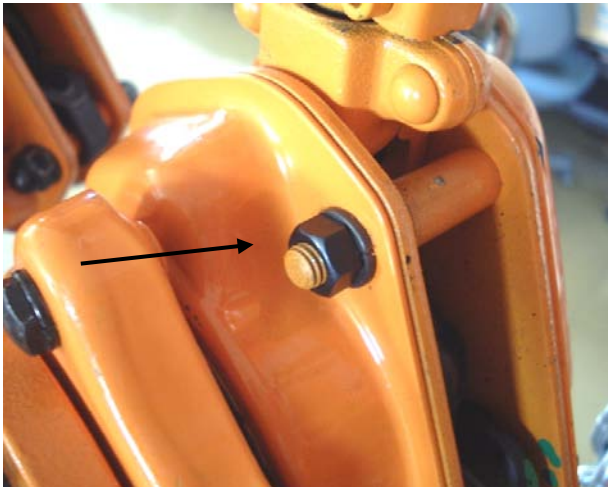
L4



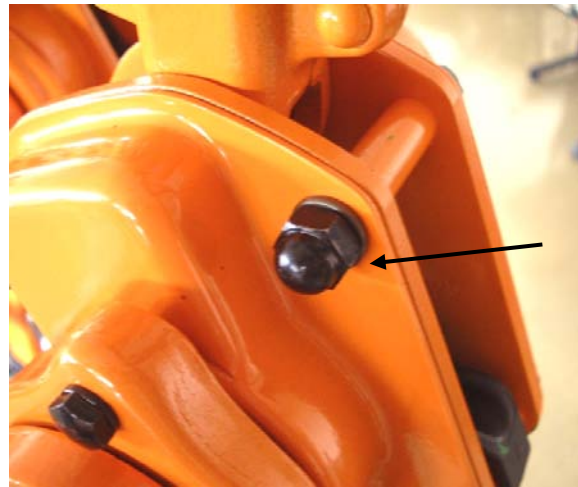
L5

GEAR CASE/BRAKE COVER FASTENER CHANGED

1. L4 utilized a regular hex nut to attach the gear case to the brake cover
2. L5 utilizes an acorn nut to attach the gear case to the brake cover
3. Acorn nut protects the bolt threads from damage allowing easier removal for hoist maintenance



L4



L5

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ADDITIONAL LBL5 DIFFERENCES/IMPROVEMENTS OVER LBL4

1. New shorter lever handle on L5LB028, 2¾T hoist, offers a compact design that can fill many applications that previously required a 3T hoist
2. Adding the Load Limit Warning Handle to the L5LB008 AND L5LB010 models requires a specific load limit warning handle brake cover
3. Majority of L5LB008 model brake parts used on L5LB008 to L5LB028 models
4. Some L5LB015 model brake parts used on L5LB030 TO L5LB090 models.
5. Shipyard Hooks available for L5LB015 and L5LB030.
6. All L5 Shipyard Hooks include latches
7. L5 Lever Handle Grip uses the same binding screw to hold the grip onto the lever as later L4008 and 010 models
8. L5 Free Wheel Knob label changed to "International" version with increased legibility (may not be on first shipments)
9. L5LB020 is a de-rated L5LB028 (L4LB020 was a relabeled L4LB015)

NO CHANGE

1. L5 Special Boeing and Conrail versions available (no design change from L4)

LBL4 TO LBL5 COMPARISON CHART SUMMARY (CHART ON PAGE 8)

1. Headroom stayed the same for LB008 and decreased for all other models except LB010 and LB0020
2. Hoist Body Height decreased for all except LB020
3. Hoist Body Width decreased for all except LB020 and LB090
4. Hoist Lever Length decreased for all, but remained the same for LB030, LB060 and LB090
5. Hand Pull Force decreased for all except LB015, LB028, LB060 and LB090
6. LB020 and LB030 through LB090 Load Chain Diameter increased, LB028 decreased and LB008 through LB015 the same
7. Hoist Weight decreased for all, except LB020

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LBL4 TO LBL5 COMPARISON (SEE HOIST FIGURES ON NEXT PAGE)																	
MODEL	LB008	Δ%	LB010	Δ%	LB015	Δ%	LB020	Δ%	LB028*	Δ%	LB030	Δ%	LB060	Δ%	LB090	Δ%	
CAPACITY (T)	¾		1		1½		2		2¾		3		6		9		
HEADROOM: C (IN)	L5	11.0	0	11.8	7.3	13.2	-4.4	14.8	7.3	14.8	-10.3	15.6	-5.5	21.3	-4.9	26.8	-3.6
	L4	11.0		11.0		13.8		13.8		16.5		16.5		22.4		27.8	
BODY HEIGHT: a (IN)	L5	5.7	-5.0	5.7	-5.0	6.3	-6.0	6.8	1.5	6.8	-11.7	7.5	-2.6	7.5	-2.6	7.5	-2.6
	L4	6.0		6.0		6.7		6.7		7.7		7.7		7.7		7.7	
BODY WIDTH: b (IN)	L5	4.7	-2.1	4.7	-2.1	5.0	-10.7	5.9	5.4	5.9	-15.7	6.3	-10.0	8.5	-2.3	12.0	8.1
	L4	4.8		4.8		5.6		5.6		7.0		7.0		8.7		11.1	
LEVER LENGTH: D (IN)	L5	9.6	-7.7	9.6	-7.7	10.4	-36.2	10.4	-36.2	10.4	-36.2	16.3	0	16.3	0	16.3	0
	L4	10.4		10.4		16.3		16.3		16.3		16.3		16.3			
HAND PULL FORCE (LBS)	L5	54.0	-6.9	72.0	-6.5	64.0	10.3	59.0	-23.4	81.0	15.7	69.0	-1.4	72.0	0	78.0	5.4
	L4	58.0		77.0		58.0		77.0		70.0		70.0		72.0		74.0	
LOAD CHAIN DIAMETER (mm)	L5	5.6	0	5.6	0	7.1	0	8.8	24	8.8	-2.2	10.0	11.1	10.0	11.1	10.0	11.1
	L4	5.6		5.6		7.1		7.1		9.0		9.0		9.0		9.0	
NET WEIGHT (LBS)	L5	13	-7.1	13	-7.1	18	-14.3	25	19.5	25	-32.4	33	-2.9	57	-5.0	88	-5.4
	L4	14.0		14.0		21.0		21.0		34.0		34.0		60.0		93.0	

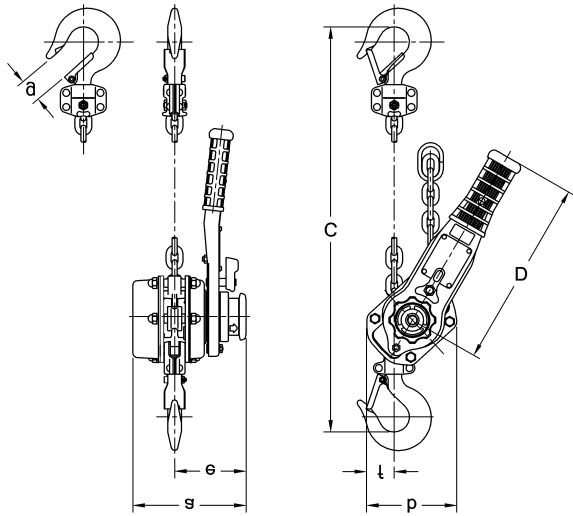
Δ% = Per Cent Difference between L4 to L5 values. Negative values indicate L5 less than L4 and positive values indicate L5 more than L4.

* = Compared to L4LB030

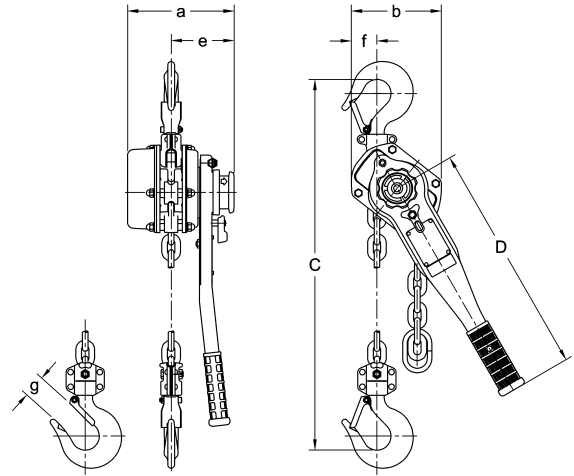
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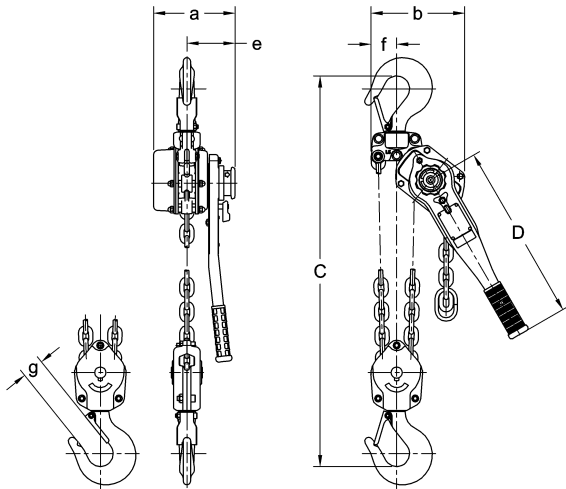
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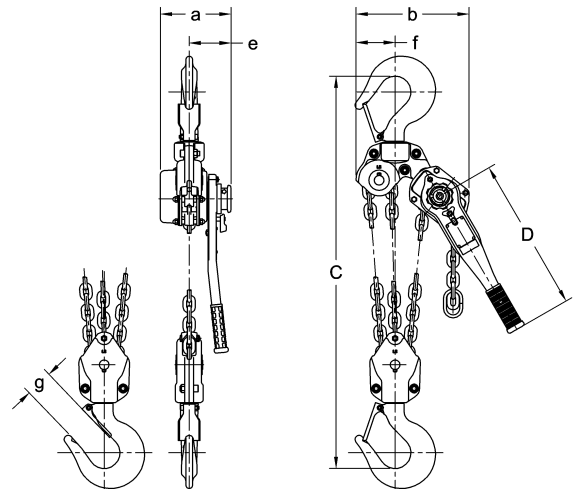
L5LB015



L5LB030



L5LB060



L5LB090

END

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