



Model:

Serial No:

Operation & Maintenance Manual

X5TM

Models: X5L02250, X5L03528, X5L07056,
X5L14000, X5L20000



WARNING

To avoid serious
injury or death:

**READ THIS MANUAL BEFORE USING,
INSPECTION OR REPAIRING THIS PRODUCT
BEFORE PLACING INTO SERVICE. REF, OSHA
AND ASME B30.21.**

This manual provides important information for all personnel involved with the safe installation, operation, and maintenance of these products. ALL USERS, even if you feel you are familiar with this or similar equipment, must read this manual thoroughly before operating the product. Refer to ASME B30.10 and ASME B30.21 for further guidance. All users must be properly trained before the operation of these products. We recognize that most companies who use hoists have a safety program, or standard operating procedures implemented in their plants. In the event you are aware that some conflict exists between a rule set forth in this publication and a similar rule already set by an individual company or local code, the more stringent of the two should take precedence. Safe Operating Instructions are provided to make an operator aware of unsafe practices to avoid. Observe all hazards associated with each operation these units will be applied.

Do not use this product improperly or a unit that has been damaged or modified without manufactures consent. Remove from service immediately. Product safety information is shown to the right, in this manual and warnings on the unit itself. Always obey all warning.



Safe Operation

X5™



WARNING

**To avoid serious
injury or death:**

1. Make this manual available to all persons responsible for the installation, operation, and maintenance of these products.
2. The supporting structures and load-attaching members used in conjunction with this product must provide an adequate safety factor to handle the rated load, plus the weight of the lifting equipment. This is the customer's responsibility. If in doubt, consult a registered structural engineer.
3. Only allow people, trained in safety and operation of this product, to operate.
4. Only operate if you are physically fit to do so.
5. Never exceed the required pulling force to lift full load on the lever arm or hand chain.
6. When a "DO NOT OPERATE" sign is placed on the product, do not operate until the sign has been removed by designated personnel.
7. Before each shift or operation cycle conduct a visual and functional inspection for any evidence of malfunction, maladjustment, damage, or excessive wear.
8. Never use if problems are found by inspection.
9. Properly Lubricate regularly as instructed/outlined in this manual.
10. Do not use hoist if hook latch does not function.
11. Never splice a hoist chain by a bolt between links.
12. Never lift loads greater than the rated capacity
13. Never support the load on the tip of the hook.
14. Never force a hook into place by hammering.
15. Never place your hand inside the throat of a hook.
16. Never insert the point of the hook into a chain link.
17. Never use the hoist load chain as a sling.
18. Never operate if the load chain is making contact with surfaces or edges that can cause damage.
19. Never operate when the load is not centered. Do not "side pull" or "yard." Bearing point to bearing point on upper suspension point of hoist and lower lift hook must always remain "in-line" during operations.
20. Never operate a hoist with twisted, kinked, or damaged load chain.
21. Never operate hoist if chain jumping, excessive noise, jamming or binding occurs.
22. Be certain the load is properly seated in the hook saddle and the hook latch is engaged.
23. When using multiple hoists to suspend a load, each hoist must have a rated capacity equal to or more than the entire load.
24. Pay attention to the load at all times when operating.
25. Always ensure that you, and all other people, are clear of the path of the load.
26. Never use for lifting or transporting people and never lift a load over people.
27. Do not use a cheater bar or extender handle on lever operated hoist.
28. Do not swing a suspended load.
29. Never weld or cut on a load suspended by the hoist.
30. Never use the hoist chain as a welding electrode.
31. Only operate with manual power.
32. After use, or when in a non-operational mode, hoist should be secured against unauthorized and unwarranted use.
33. Do not leave a load suspended when unattended or not in use.
34. Ensure stops are securely installed at both ends of the beam prior to using a trolley
35. Severe injury can be caused by moving loads suspended by trolleys:
36. Falling under a moving load
37. Being caught between a moving load and an object
38. Tripping over an unseen object while pushing a load. To avoid injury do not pull. Pushing will allow you to stay out of the path of the load and also look in the direction you are moving.

X5™

Safe Operation



WARNING

To avoid serious
injury or death:

HOIST NAMEPLATE with basic warnings and information as required by ASME B30.21: It is recommended to copy Model, and Serial number into the blocks on top of the cover of this manual. Make a copy of this manual available to all operators.

To avoid serious injury or death

Read manual before operating

Do Not remove or obscure this label

Do Not operate if restricted in forming straight line between hooks

Do Not operate with lever extension or with other than manual power

Do Not operate with a twisted, kinked, or damaged chain

Do Not lift people or loads over people

Do Not operate a damaged or malfunctioning hoist

Do Not lift more than WLL

1.0 OPERATION

The operator must read and understand Warnings and operational instructions in this manual and as displayed on the hoist.

Set up using free chain mode to pull chain in or out by hand

1. Under no load, move the selector to neutral "N" position.
2. Pull the hand wheel out then counterclockwise (CCW) to hold position. (Do Not attempt to pull out or rotate when hoist is loaded)
3. Pull chain in or out by hand. (Too quick or fast and the brake will set and the set up must be repeated.)
4. Attach hook to load.

Set the Brake and prepare to load

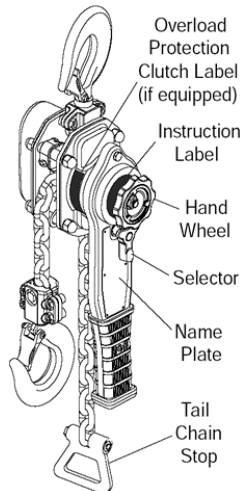
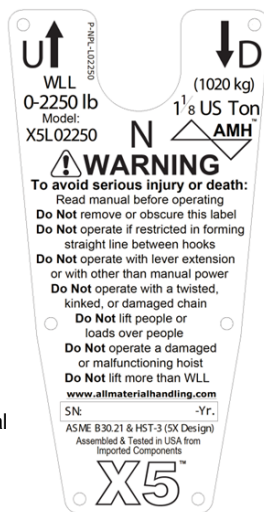
5. Quick pull on the tail chain to tighten the chain against the load or turn the hand wheel clockwise (CW). The hand wheel will then return to the "in-position" when the chain is snug against the load. (Without load, hold the chain with bottom hook and turn the hand wheel clockwise CW)
6. Turn the selector to the up "U" position.

Load the hoist to begin lift or pull.

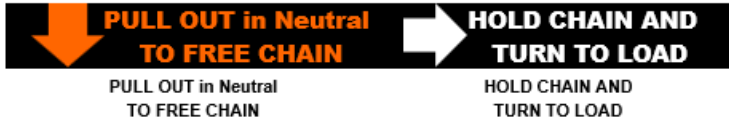
7. Ratchet the lever in the clockwise (CW) direction to lift or pull. Move selector to Down "D" and ratchet in the counterclockwise (CCW) direction to lower the load.
8. Confirm proper operation by Lifting or pulling until the full load is suspended. Stop and check if rigging and the hoist holds the load without slipping. If confirmed, then continue the lift or pull.

Detaching the Load

9. Secure the load.
10. Release tension on the chain by turning the selector to down "D" and ratchet the lever in the counterclockwise (CCW) direction until enough slack to detach the hook. Pull chain out by hand to provide resistance to allow the lever to ratchet.



Instruction Label, wrapped around Hand Wheel, translated



2.0 SPECIFICATIONS


These products exceed requirements of ASME B30.21 "Safety Standard for Lever Hoist" and ASME HST-3 "Performance Standard for Manually Operated Lever Hoist. In addition, the ultimate strength is 5 times Working Load Limit (WLL) meeting structural requirement of ASME HST-3 Appendix A, for use in marine and other applications as specified by US Department of Defense DOD.

Operating temperature: -40°F (-40°C) ~ 140°F (60°C)






APEX Rating: ⒺII 3 GD c IIB 60° C X for limited use in Hazardous Environments.

Materials: Load bearing parts are free of cast iron. Brake is asbestos free. Paints and coatings are lead and chromate free. Load chains are high-strength grade 100 zinc plated.

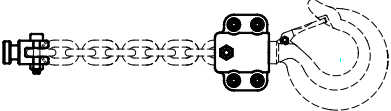

Specifications

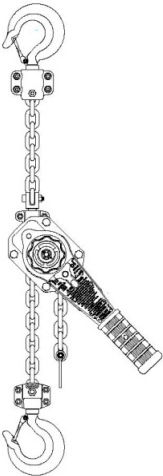
	US tons	1 1/8T	1 3/4T	3 1/2T	7.0T	10.0T
	pounds	2,250	3,528	7,056	14,000	20,000
	(kg)	1020	1600	3200	6350	9070
Model	AMH	X5L02250	X5L03528	X5L07056	X5L14000	X5L20000
Falls	No.	1	1	1	2	3
G100 Chain	(mm)	5.6*17	7.1*20	10*28	10*28	10*28
Pull to WLL	pounds	66	68	84	86	88
	(N)	293	302	374	383	391
125% Proof Load Test	pounds	2813	4410	9625	17500	35000
	(tonnes)	1.28	2.00	4.37	7.94	11.34

3.0 OPTIONS AND ACCESSORIES

Hook Option Part Numbers				
	Self Locking Top or Bottom	Shipyards Hook Top or Bottom	Shipyards Hook Latch Kit	Preset Clutch Kit for X5L
1 1/8T	HOOK-SL010			P-L02250-22C
1 3/4T	HOOK-SL016	P-LA016-31-47SYHK	P-LA016-47SYHK	P-L03528-22C
3 1/2T	HOOK-SL032	P-LA032-31-47SYHK	P-LA032-47SYHK	P-L07056-22C (3 1/2 - 10T)

Top Hook Extender Kits include adapters to extend the reach of the top hook. They are available as a bolt on solution. The standard top hook, that is removed to install, can be utilized + any length of load chain (7') purchased separately

Extender Kit Part Number	
	(Chain and Hook not included)
1 1/8T	HOOK-EXT02250
1 3/4T	HOOK-EXT03528
3 1/2T	HOOK-EXT07056



4.0 INSPECTION AND TEST

Note: Check local and governmental requirements and specifications to ensure compliance in addition to those listed below. If any conflict, utilize the most stringent requirement.

**Inspections required per ASME B30.21 and OSHA
INSPECTION RECORDS (when required)**

Inspections are the responsibility of a qualified person designated by the owner. Dated inspection reports shall be maintained for the service life of the product. They are to be filed by the serial number, stamped into the name plate, and made available for inspection at any time. All inspections shall be by a designated person who is competent and qualified to perform the type inspection being utilized. If any fault is discovered, during any inspection, then the unit shall be taken out of service and quarantined. A qualified person shall then make determination of repair or disposition.

INITIAL INSPECTION of a new unit or an altered unit prior to being placed in service must be performed. It is recommended this inspection be recorded. Items listed under frequent inspection section of this manual must be inspected. No load test is required if tested and certified when manufactured. The new hoist test certification supplied with the hoist should be filed with the initial Inspection. The date of this Initial Inspection, not the date on the manufactures load test, will become the start date for entering a new unit into service and determining timing of the periodic inspections per ASME B30.21 Inspect all items listed under Preoperational Inspection. Prior to initial use or hoists that have been placed in service that have not been used within the preceding 12 months shall have an **operational test** and a frequent inspection. A load of at least 100 lbs. (46 kg) times the number of load-supporting parts of chain, rope, or web strap shall be applied to the hoist in order to check proper load control. Units returned to service after inactivity, will still need to have a periodic inspection performed on the date that was determined by the designated qualified person who performed the initial inspection.

PREOPERATIONAL INSPECTION: The qualified operator designated by the employer shall perform a Visual inspection before the first use of each shift. Records not required but recommended.

See sample PREOPERATION INSPECTION form in back of this manual

Inspect the following:

- a) Proper operation of all operating mechanisms and any unusual sounds.
- b) Visually inspect hooks for deformation or bending and to verify latch function.
- c) Visually inspect load chain for proper reeving, twist, any damage or excessive wear between links.
- d) Visually inspect the hoist body and lever for damage.
- e) Fasteners are in place and tight.
- f) Tail chain end stop is in place.
- g) Nameplate with warnings and operation instruction label are in place and legible.

FREQUENT INSPECTION is required daily to monthly depending on the frequency of service as per ASME B30.21. Records of the inspection are recommended. It is to be performed by a designated persons qualified and familiar with this product and shall consist of:

Inspect for a) through g) items listed in Preoperation Inspection section plus the following:

- h) Visual inspection to determine that the unit is not compromised by corrosion or debris and can operate as intended.
- i) Make a trial lift or pull of a few inches and then stop to determine the hoist operates as intended.
- j) Measure chain and hooks per section 5.0 Inspection Measurements.
- k) Continual observation during use for any damage or change in operation.

PERIODIC INSPECTION is required annually as a minimum and must be recorded. Periodic Inspection may be required more often as determined by severity of service or as experience dictates. Consult ASME B30.21 for determination of service and instruction. Periodic inspection is also required for repaired units. Periodic inspections may be performed with the hoist at its location and do not require the hoist to be disassemble unless conditions as determined by a qualified person indicate that disassembly should be done to permit detailed inspection. Covers and other items that allow inspection of components should be opened or removed for the inspection and then closed or replaced before restoring the hoist to normal operation.

NOTE: Periodic Inspection is a visual inspection by a designated person making records of conditions to provide the basis for a continuing evaluation.

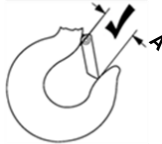
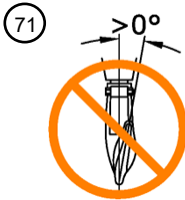
See sample PERIODIC INSPECTION form in back of this manual.

Inspect a) through k) items listed in Preoperation and Frequent Inspection. If the qualified designated person determines the unit needs to be disassemble for further evaluation you shall inspect the following items: Reference Section 5 and 8 of this manual .

- l) Disassemble lever end of hoist to expose the brake components. Inspect brake pawls, disc, springs and ratchet surfaces for contamination or abnormal wear.
- m) Inspect; chain, springs and load bearing parts per section 5.0 INSPECTON MEASUREMENTS as illustrated in this Manual.
- n) Disassemble hook blocks and check hooks 100% for any sign of cracks, bending, twist or stretching and opening measurement per section 5.0 INSPECTON MEASUREMENTS as illustrated in this Manual.
- o) Check chain wheel or wheels for smooth operation and visually for wear.
- p) Check chain guide and guards for damage.
- q) If load suspension parts have been replaced or repairs have been made perform a Load test to Min. of 100% WLL - 125% WLL Max. during which confirm function is as intended. After the test load is released inspect again for requirements of a) through g).
- r) After unit has been properly reassembled perform an operational test per page 4 of this manual.

5.0 INSPECTON MEASUREMENTS

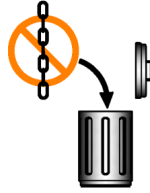
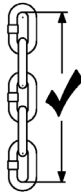
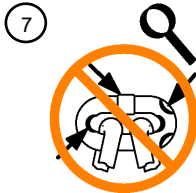
The values are nominal since the dimension is not controlled to a tolerance. The “A” dimension should be measured when the hook is new. When inspected the “A” dimension should not be greater than 1.05 times that measured and recorded at the time of purchase.



Hooks

A max.

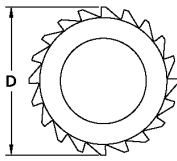

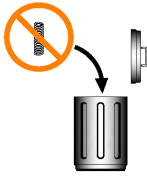
1½ US Ton (1t metric)	10% allowable wear criteria from original dimension in bearing saddle surface and hook body	2.06 in (52mm)
1¾ US Ton (1.6t metric)		2.14 in (54mm)
3½ US Ton (3.2t metric)		2.48 in (63mm)
7 US Ton (6.3t metric)		3.38 in (86mm)
10 US Ton (9t metric)		4.62 in (112mm)

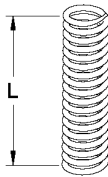
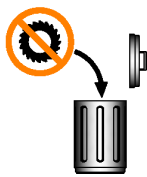


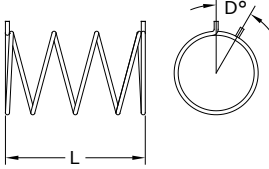
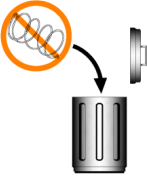
Chain

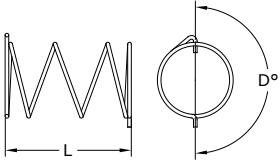
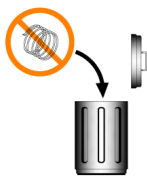
Max.

1½ US Ton	C5.6H17Z G100	3.45 in (87.6mm)
1¾ US Ton	C7.1H20Z G100	4.09 in (104mm)
3½, 7 & 10 US Ton	C10H28Z G100	5.71 in (145mm)

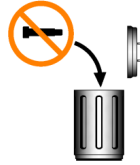
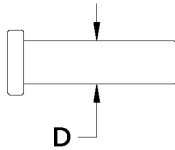
18			
Brake Ratchet Disc	D min.	T min.	
1 $\frac{1}{8}$ & 1 $\frac{1}{4}$ US Ton	2.40 in (61mm)	0.28 in (7mm)	
3 $\frac{1}{2}$, 7 & 10 US Ton	2.79 in (71mm)	0.28 in (7mm)	

25			
Spring Ratchet	L		
1 $\frac{1}{8}$ & 1 $\frac{1}{4}$ US Ton	< 1.20 in. (30.5 mm), >1.52 in (38.5mm)		
3 $\frac{1}{2}$, 7 & 10 US Ton	< 1.79 in. (45.5 mm), >1.91 in (48.5mm)		

32			
Brake Spring, Inner	L min.	D°	
1 $\frac{1}{8}$ & 1 $\frac{1}{4}$ US Ton	1.26 in (32mm)	0° +/- 10°	
3 $\frac{1}{2}$, 7 & 10 US Ton	1.46 in (37mm)	30° +/- 10°	

34			
Brake Spring, Outer	L min.	D°	
1 $\frac{1}{8}$ & 1 $\frac{1}{4}$ US Ton	2.17 in (55mm)	180° +/- 10°	
3 $\frac{1}{2}$, 7 & 10 US Ton	2.56 in (65mm)	180° +/- 10°	

6



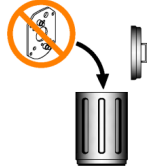
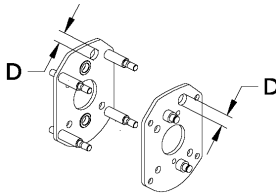
Top Hook Pin

D min.

1½ US Ton	0.45 in (11.4mm)
1¾ US Ton	0.45 in (11.4mm)
3½, 7 & 10 US Ton	0.60 in (15.2mm)

1

8

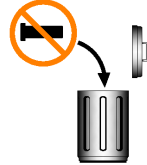
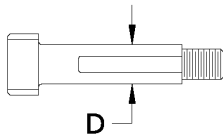


Frame Plate

D max.

1½ US Ton	0.50 in (12.7mm)
1¾ US Ton	0.50 in (12.7mm)
3½, 7 & 10 US Ton	0.66 in (16.7mm)

75



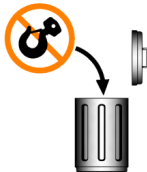
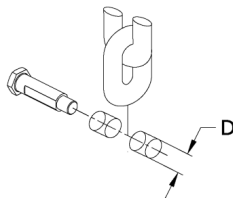
Chain Pin

D min.

1½ US Ton	0.28 in (7.1mm)
1¾ US Ton	0.37 in (9.5mm)
3½, 7 & 10 US Ton	0.49 in (12.4mm)

70

80



Chain Pin Holes

D max.

1½ US Ton	0.33 in (8.5mm)
1¾ US Ton	0.43 in (11.0mm)
3½, 7 & 10 US Ton	0.55 in (14.0mm)



WARNING

To avoid serious injury wear eye protection when near where hoist are being worked on

6.0 TOOLS REQUIRED FOR SERVICE

- External retaining ring pliers (small size)
- Wrenches: 6, 8, 10, 12, 13 and 17 mm
- Socket wrench: 6, 8, 10, 12, 13 and 17 mm
- 6 inch caliper (0.001 in. increments).
- Soft face hammer

7.0 LUBRICANTS REQUIRED FOR SERVICE

- No 2 lithium grease for gearing & bearings (temperature -40°C~120°C)
- Gear oil for the load chain (any viscosity) (Dry lubricant can be substituted.)

8.0 DISASSEMBLY

Hoist repair and inspection should not be attempted unless by capable and qualified persons familiar with this product. (During disassembly, parts should be cleaned and inspected per section **5.0 INSPECTON MEASUREMENTS** as illustrated in this Manual.

To access brake, lay the hoist on the gear side for disassembly from the lever side:

Reference the exploded parts illustration drawings in this manual. Begin by loosening nut (36) while holding down on (35) as it is spring loaded. Slowly remove (35) allowing the spring (34) to release. Remove hand wheel (33) and spring (32). Remove the lever (27) by loosening bolt (29) and nuts (31). Remove cam (28) and the brake driver (22) or overload protected brake driver assembly (22C).

Note: If equipped with an overload protection assembly (22C), it is pre-set at the factory to slip if the hoist is severely overloaded. It is not recommended to disassemble or reset this device. by other than a qualified person familiar with this product. If this assembly malfunctions it is recommended that it be replaced.

Loosen nuts (15) on the lever side and remove lower lever assembly (21) to expose the brake disc (20) pawls, springs and retaining rings (17).

To access the chain wheel (5), chain stripper (4), chain guards (3), bearings (2) and the top hook assembly remove the brake side frame plate (1).

To access the gearing: If continuing the disassembly from above, loosen nuts (15) on the gear side and remove gear cover (13). Planet gears (9), pinion (12), thrust washer (11) and output gear (10) and top hook attachment pin (6) can all be removed by hand. If accessing the gearing without first disassembling from the lever side; the pinion (12), thrust washer (11) and output gear (10) may not be removed.

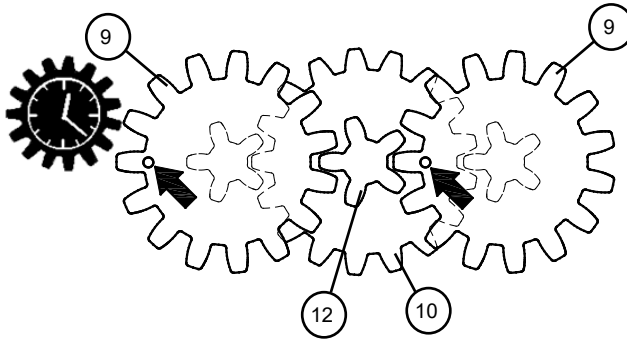
To disassemble hooks simply view the parts exploded drawing. The top hook assembly (70) can be easily detached from the hoist body by removing the gear cover (13) and pin (6) within.

9.0 ASSEMBLY

Hoist repair and inspection should not be attempted unless by capable and qualified persons familiar with this product.

To reassemble the unit: Reference the exploded parts illustration drawings in this manual. Assemble in the reverse order from section 8.0 DISASSEMBLY above with the additional instruction provided below. It is recommended a load test and operational test be done if disassembly occurs.

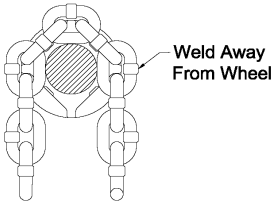
Assembly of gearing: Assemble gearing with a liberal coating of #2 chassis grease on the roller bearings (2), hardened bushings, gear teeth (9) (10) & (12) and thrust washer (11). A light coat of grease should be applied to the entire pinion shaft (12), wipe excess from the spline end before assembly as it passes into the brake area. Install bearing (2) in the gear side frame plate (8) and chain wheel (5) into the bearing. Install output gear (10) over the chain wheel (5) spline. Insert pinion shaft (12) through thrust washer (11) and then into the chain wheel (5). Insert top hook pin (6). Insert the planet gears (9) to be timed with marks aligned as per the below illustration. **Be sure hook pin (6) is in place then attach gear cover (13)** to the gear side frame plate (8).



Assemble the Chain wheel and chain: Assemble the chain pull stop (16) to one end of the chain. Before or after assembly, lubricate chain with any viscosity gear oil. Apply so that it reaches contact areas between the links then wipe off excess (dry lubricant may be substituted).

Lay the gear end assembly on a workbench with pinion shaft (12) up. Place the load chain (7) around the chain wheel (5). Insure the chain weld is facing away from wheel, (see illustration below) and that the chain stop (16) is on the right hand side and perpendicular to the frame plates without twist in the chain. Looking at the gear side frame (8), with hook pin (6) at the 12 o'clock position, insert the stripper (4) at the 7 o'clock position, and guides (3) at 4 and 10 o'clock positions. Place the top hook assembly (70) over the protruding pin (6). Position brake side frame plate assembly (1) over the parts while aligning; bosses on the stripper and guides, hook pin (6) and spacer bolts to the mating holes.

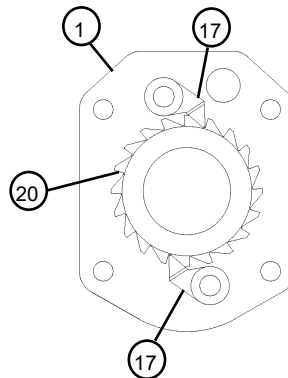
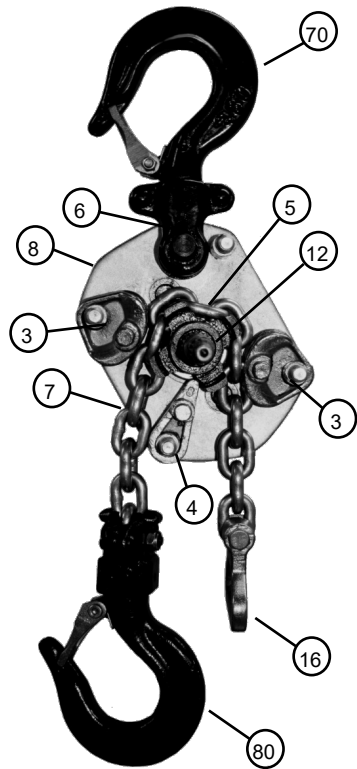
Hoist Drive
Wheel Only



Note: X5 hoists are designed to allow the chain weld to be assembled in any orientation. However, ASME Standard B30.21-4.3.1 (f) implies the chain is to be assembled per this instruction

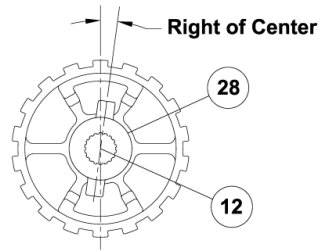
Assembly of the brake components:

After assembly of all parts, between the gear cover (13) and the brake side frame plate (1), place the brake seat (19) down on the pinion shaft (12). Place the brake ratchet disc (20) onto the brake seat (19). Assemble (17) brake pawls, pawl springs and retainers in the position shown in the illustration onto the brake side frame plate (1). If assembled correctly the pawls (17) must snap into the teeth of the brake disc and stop the disc from rotating in the counter clockwise direction.

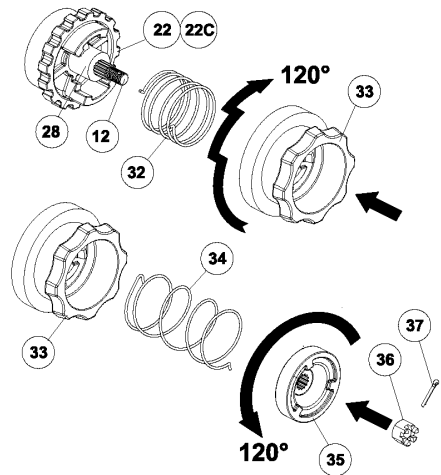


Assembly of control components:

After assembly of the brake components, assemble the lower lever assembly (21). Install the brake driver (22), or overload protection clutch kit (22C) if equipped, clockwise over the threaded pinion shaft (12) until snug against the brake disc (20) while holding the hook side chain. Attach the lever assembly (27) to the lower lever assembly (21). Install the brake cam (28) down and over the pinion spline (12) and index slightly to the right of center per the below diagram.



Place the inner brake spring (32) into brake driver (22) or (22C) if equipped with overload protection. Install the hand wheel (33). While holding the hook side chain, turn hand wheel clockwise until snug with the brake spring (32) then rotate the hand wheel 120° clockwise while pushing in until it drops down. Continue to push in and rotate clockwise until the hand wheel drops again into home position and will not rotate further, (see below illustration). Turn the Up-Down selector to the up position to hold the hand wheel (33) in the home position.




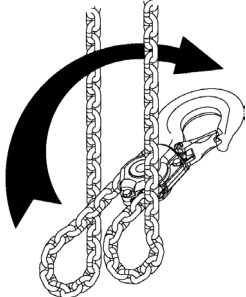
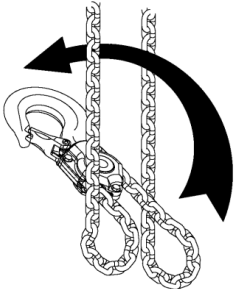
Hold the hook side chain by hand and ratchet the lever in the up direction to insure the brake driver (22 or 22C) is in contact with the brake ratchet disc (20).

Place the outer brake spring (34) into the hand wheel cover (35). Place into the hand wheel (33) and turn counterclockwise until snug, then rotate the hand wheel 120° counterclockwise and push in until it can engage the spline on pinion shaft (12) (see illustration). Continue to hold down on the hand wheel cover (35) until nut (36) is threaded onto pinion shaft (12). Tighten slotted nut (36) and assemble split pin (37). Check free chain function by hand at no load to insure assembly is correct. Before returning the hoist to service it must be load tested and recorded per Periodic Inspection requirements. See section 4.0 INSPECTION AND TEST in this manual.

10.0 TROUBLESHOOTING

Trouble	Cause	Cure
Hand Wheel (33) does not move in or out.	Selector not in neutral "N" position.	Move Selector to neutral "N".
	Hoist is loaded.	Remove load or tension Never attempt to pull hand wheel out when the hoist is loaded.
	Improper assembly.	Requires service for repair
Free chain mode does not allow chain to be pulled freely.	Chain pulled too fast or accelerated too quickly causing the brake to set.	Reset the hand wheel (33) and pull load chain with less force.
	Assembly of brake improper Assembly of outer brake spring (34) may be preloaded in excess of 120.	Requires service for repair.
Hoist will not lift or lower at no load.	Brake is not set.	See section 1.0 OPERATION in this manual: instructions 5 and 6.
	Lever moves without clicking, chain does not continue to move in or out.	There must be some resistance to cause the lever to ratchet. Hold or pull the slack chain by hand while ratcheting the lever. Or, use the free chain mode to easily position the chain.
	Improper assembly of brake components between the hand wheel (33) and brake driver (22).	Requires service for repair. Re-assemble components between the hand wheel (33) and brake driver (22) per instruction and illustration in section 9.0 ASSEMBLY in this manual.
Hoist will not lift. No clicking when lever is rotated in up direction.	Pawls (17) not engaging the brake disc (20). Due to spring failure, corrosion or contamination.	Requires service for repair. Clean and inspect pawl and spring for proper function.
	Up, Dn Selector is not indexed correctly or spring (25) missing.	Requires service for repair. Clean and inspect parts and assure proper assembly.
	Bottom hook (80) and slack end pull handle (16) are assembled on the wrong end of the chain.	Requires service for repair. Looking at the lever end, the bottom hook (80) should be on the left side and the Pull handle (16) on the right.,

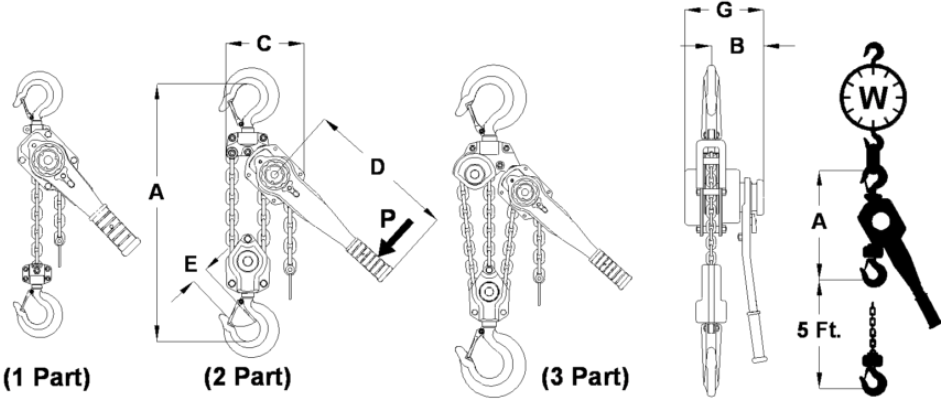
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Trouble	Cause	Cure
Hoist will not lift. Slight clicking when lever is rotated in up direction.	Brake disc (20) installed upside down not allowing the pawls (17) to engage.	Requires service for repair improper brake disc installation.
Hoist binds internally while lifting or lowering.	Gearing improperly installed.	Requires service for repair. Remove gear cover and inspect for proper gear timing per instruction and illustration in section 9.0 ASSEMBLY in this manual.
	Twisted or kinked chain was allowed to be ingested into the hoist.	Requires service for repair by disassembly to inspect for damage.
Will not descend.	Brake is over tightened from shock load or removing the load by other than lowering with the hoist.	With the hoist selector in DN position, exert a hard sharp pull on the lever in the down direction.
 <p>Twisted Chain on multiple part hoist</p>	 <p>Capsized or flipped lower hook</p>	 <p>Flip Lower hook block</p>

Product Dimensions



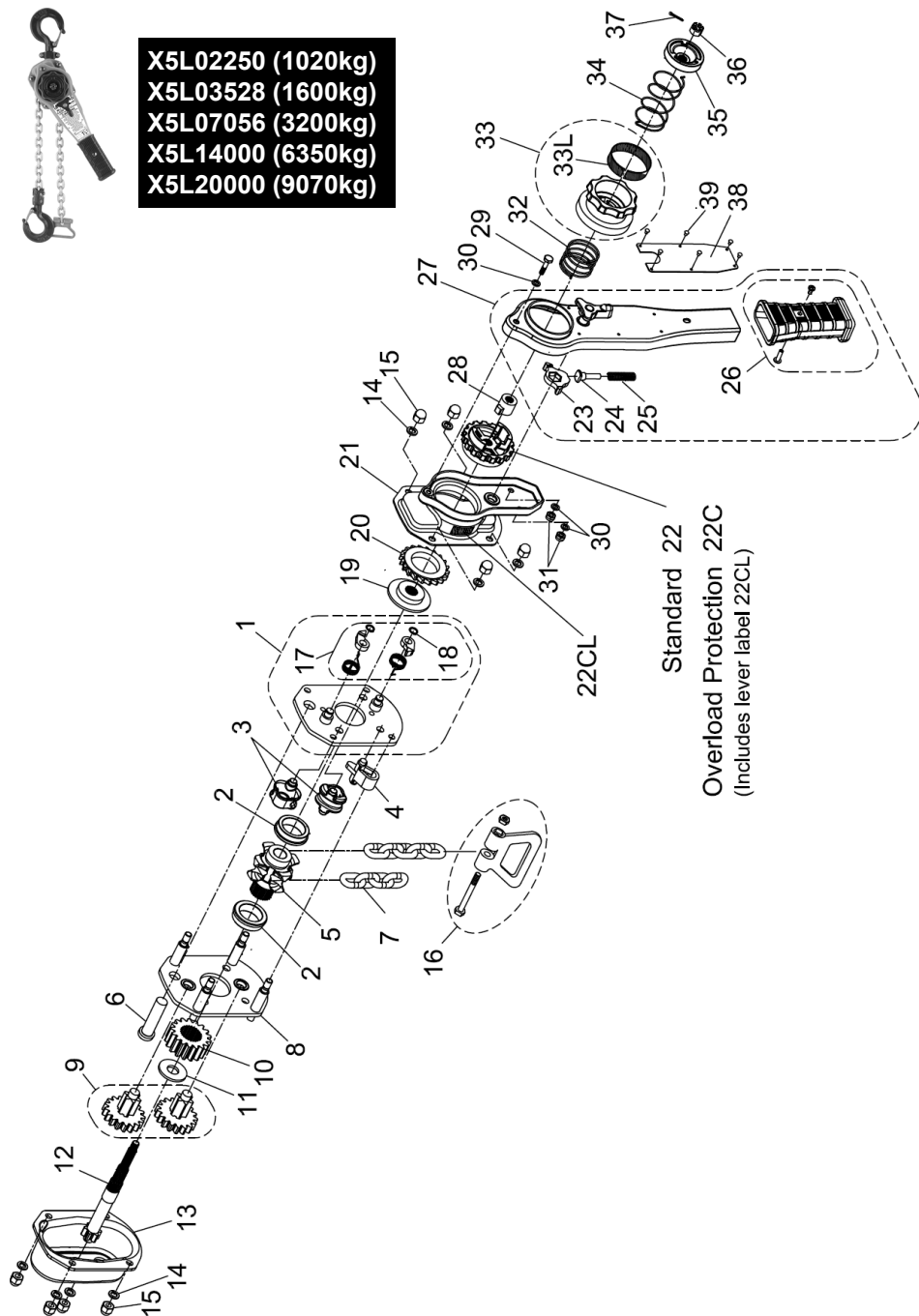
Models: X5L02250, X5L03528, X5L07056,
X5L14000, X5L20000



Base Model	US Ton	kg	A" Min.	B"	C"	D"	E" with Latch	G"	P (lbs)	W (Lbs) /Ft Lift	W (1) (lbs) 5' Lift
X5L02250	¾ to 1 ½	1,020	11.8	3.8	4.7	9.6	1.1	5.7	66	0.5	13.5
X5L03528	1 ½ to 1 ¾	1,600	13.2	3.9	5.0	10.4	1.2	6.5	68	0.7	18.0
X5L07056	3 to 3 ½	3,200	15.6	4.5	6.3	16.3	1.4	7.7	84	1.5	36.5
X5L14000	6 to 7	6,350	21.3	4.5	8.6	16.3	1.8	7.7	86	3.0	55.0
X5L20000	9 to 10	9,070	26.8	4.5	11.7	16.3	2.1	7.7	88	4.5	90.0

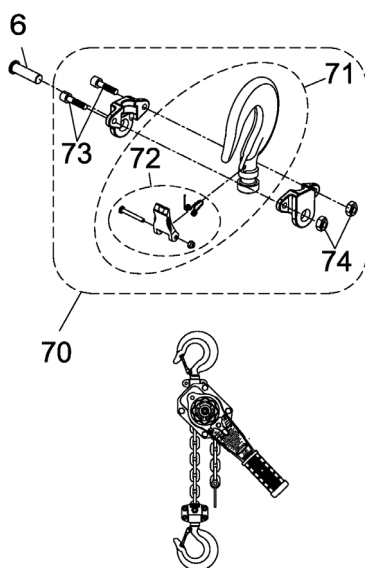


X5L02250 (1020kg)
X5L03528 (1600kg)
X5L07056 (3200kg)
X5L14000 (6350kg)
X5L20000 (9070kg)

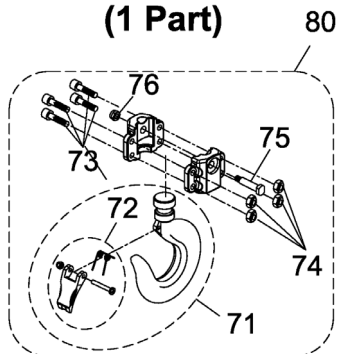


#	X5L02250 (1 Part)	X5L03528 (1 Part)	X5L07056 (1 Part)	X5L14000 (2 Part)	X5L20000 (3 Part)
1	P-L02250-1	P-L03528-1		P-L07056-1	
*2	P-L02250-2	P-L03528-2		P-L07056-2	
3	P-L02250-3	P-L03528-3		P-L07056-3	
4	P-L02250-4	P-L03528-4		P-L07056-4	
5	P-L02250-5	P-L03528-5		P-L07056-5	
6	P-L02250-6	P-L03528-6		P-L07056-6	
7	C5.6H17Z	C7.1H20Z		C10H28Z	
8	P-L02250-8	P-L03528-8		P-L07056-8	
9	P-L02250-9	P-L03528-9		P-L07056-9	
10	P-L02250-10	P-L03528-10		P-L07056-10	
11	P-L02250-11	P-L03528-11		P-L07056-11	
12	P-L02250-12	P-L03528-12		P-L07056-12	
13	P-L02250-13	P-L03528-13		P-L07056-13	
14	P-M8 WASHER LOCK				
15	P-M8 NUT ACORN				
16	P-L02250-16	P-L03528-16		P-L07056-16	
*17	P-L02250-17			P-L07056-17	
18	P-L02250-18			P-L07056-18	
19	P-L02250-19			P-L07056-19	
*20	P-L02250-20			P-L07056-20	
21	P-L02250-21	P-L03528-21		P-L07056-21	
22	P-L02250-22	P-L03528-22		P-L07056-22	
22C	P-L02250-22C	P-L03528-22C		P-L07056-22C	
22CL	P-L02250-22CL				
23	P-L02250-23			P-L07056-23	
24	P-L02250-24			P-L07056-24	
25	P-L02250-25			P-L07056-25	
26	P-L02250-26	P-L03528-26		P-L07056-26	
27	P-L02250-27	P-L03528-27		P-L07056-27	
28	P-L02250-28			P-L07056-28	
29	P-M6X12 HEXHD			P-M8X12 HEXHD	
30	P-M6 WASHER LOCK			P-M8 WASHER LOCK	
31	P-M6 NUT HEX			P-M8 NUT HEX	
32	P-L02250-32			P-L07056-32	
33	P-L02250-33			P-L07056-33	
33L	P-L02250-33L			P-L07056-33L	
34	P-L02250-34			P-L07056-34	
35	P-L02250-35			P-L07056-35	
*36	P-M8 NUT SLOTTED-9.5			P-M10 NUT SLOTTED-12	
*37	P-M1.5X16 COTTER			P-M2X20 COTTER	
38	P-NPL-X5L02250	P-NPL-X5L03528	P-NPL-X5L07056	P-NPL-X5L14000	P-NPL-X5L20000
39	P-M2.5X6 SCREW DRIVE				

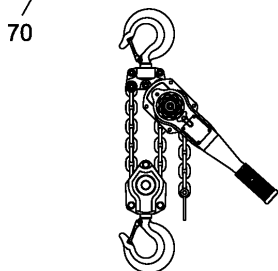
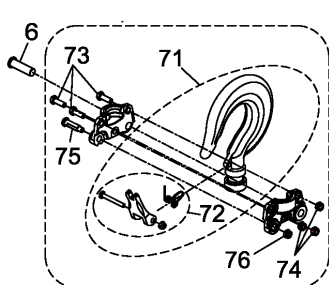
*Recommended Spare Part



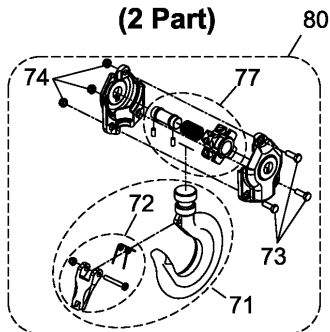
(1 Part)



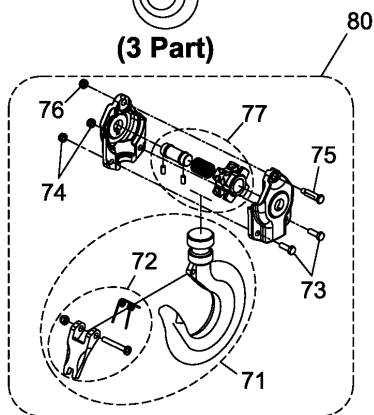
#	X5L02250 (1 Part)	X5L03528 (1 Part)	X5L07056 (1 Part)
70	P-L02250-70	P-L03528-70	P-L07056-70
*71	P-L02250-71	P-L03528-71	P-L07056-71
*72	P-L02250-72	P-L03528-72	P-L07056-72
73	P-M5X18 CSKHD	P-M6X22 CSKHD	
74	P-M5 NUT LOCK	P-M6 NUT LOCK	P-M6 NUT LOCK
75	P-L02250-75	P-L03528-75	P-L07056-75
76	P-M6 NUT LOCK	P-M8 NUT LOCK	P-M10 NUT LOCK
80	P-L02250-80	P-L03528-80	P-L07056-80
*Recommended Spare Part			



(2 Part)



(3 Part)



	X5L14000 (2 Part)	X5L20000 (3 Part)
70	P-L14000-70	P-L20000-70
71	P-L14000-71	P-L20000-71
*72	P-L14000-72	P-L20000-72
73	P-M10X30 HEXHD	P-M10X35 HEXHD
74	P-M10 NUT LOCK	P-M10 NUT LOCK
75	P-L07056-75	P-L07056-75
76	P-M10 NUT LOCK	P-M10 NUT LOCK
77	P-L14000-77	P-L14000-77
80	P-L14000-80	P-L20000-80

* Recommended Spare Part

Model:	Serial No.:	Date:
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Type of Inspection

Pick one: ☐ Initial ☐ Preoperational ☐ Frequent

Reference this manual and ASME B20.21

INITIAL INSPECTION of a new unit or an altered unit prior to being placed in service must be performed. It is recommended this inspection be recorded. Items listed under frequent inspection section of this manual must be inspected. No load test is required if tested and certified when manufactured. The new hoist test certification supplied with the hoist should be filed with the initial inspection. The date of this Initial Inspection, not the date on the manufactures load test, will become the start date for entering a new unit into service and determining timing of the periodic inspections per ASME B30.21

Prior to initial use or hoists that have been placed in service that have not been used within the preceding 12 months shall have an operational test and a frequent inspection. A load of at least 100 lbs (46 kg) times the number of load-supporting parts of chain, rope, or web strap shall be applied to the hoist to check proper load control.

Owners Name:	
Description:	
Working Load Limit (WLL):	
Evaluated by:	
Comments:	

Check List

- a) Proper operation and any unusual sounds.
- b) Visually inspects hooks for deformation or bending and to verify latch's function. Document throat opening (ref. section 5 of this manual).
- c) Visually inspect Load chain for proper reeving twist, damage, or excessive wear between links (ref. section 5 of this manual).
- d) Visually inspect the Hoist body and lever for damage.
- e) Fasteners are in place and tight.
- f) Tail chain stop is in place.
- g) Nameplate and Warnings and operation instruction label are legible

Frequent Inspection Continue Below

(Ref: ASME B30.21 for frequency of this inspection)

- h) Visual inspection to determine that the unit is not compromised by corrosion or debris and can operate as intended.
- i) Make a trial lift or pull of a few inches and then stop to determine the hoist operates as intended.
- j) Measure chain and hooks per section 5.0 Inspection Measurements
- k) Continual observation during use for any damage or change in operation.

Model:	Serial No.:	Date:
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PERIODIC INSPECTION

Reference this manual and ASME B30.21

PERIODIC INSPECTION is required annually as a minimum and must be recorded. Periodic Inspection may be required more often as determined by severity of service or as experience dictates. Consult ASME B30.21 for determination of service and instruction. Ref. Periodic Inspection section 4 of this manual.

Owners Name:			
Description:			
Working Load Limit (WLL):		Test Load:	
Evaluated by:			
Comments:			

Check List

- a) Proper operation and any unusual sounds.
- b) Visually inspects hooks for deformation or bending and to verify latch's function. Document throat opening (ref. section 5 of this manual.)
- c) Visually inspect Load chain for proper reeving, twist, damage, or excessive wear between links (ref. section 5 of this manual).
- d) Visually inspect the Hoist body and lever for damage.
- e) Fasteners are in place and tight.
- f) Tail chain stop is in place.
- g) Nameplate and Warnings and operation instruction label are legible.
- h) Visual inspection to determine that the unit is not compromised by corrosion or debris and can operate as intended.
- i) Make a trial lift or pull of a few inches and then stop to determine the hoist operates as intended.
- j) Continual observation during use for any damage or change in operation.
PROCEED BELOW ONLY IF DISASSEMBLY IS DETERMINED BY A QUALIFIED PERSON. REFERENCE PERIODIC INSPECTION AND SECTION 5 AND 8 OF THIS MANUAL.
- k) Disassemble lever end of hoist to expose the brake components. Inspect brake pawls, disc, springs and ratchet surfaces for contamination or abnormal wear.
- l) Inspect; chain, springs, and load bearing parts per INSPECTON MEASUREMENTS as illustrated in the Operation and Maintenance Manual.
- m) Disassemble hook blocks and check hooks 100% for any sign of cracks, bending, twist or stretching and opening measurement per INSPECTON MEASUREMENTS as illustrated in the Operation and Maintenance Manual.
- n) Check chain wheel or wheels for smooth operation and visually for wear.
- o) Check chain guide and guards for damage.
- p) If Load test is required minimum 100% of WLL (not more than 125% WLL). During which confirm function is as intended. After the test load is released inspect again for requirements of a) through j).

LIFETIME LIMITED WARRANTY

on Models: X5L02250, X5L03528, X5L07056, X5L14000, and X5L20000

We make every effort to assure that our products meet high quality and durability standards and we warrant to the original consumer of the product that each is free from defects in material and workmanship as follows:

This warranty does not apply to defects due directly or indirectly to misuse, negligence or accidents, repairs or alterations outside our facilities or to a lack of maintenance. The warranty begins with the date of purchased from an authorized AMH dealer by the original user. **Please retain your dated sales receipt as proof of purchase to validate the warranty.** Except as stated herein, any implied warranties or merchantability and fitness are excluded. AMH shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special or consequential damages arising from the use of our products. Some states do not allow the exclusions or limitation of incidental or consequential damages; hence the above limitations or exclusions may not apply to you. To take advantage of this warranty, the product must be returned for examination, postage prepaid to an authorized service station. Proof of purchase date and an explanation of the complaint must accompany the product. **No returns will be accepted without prior authorization obtained through an AMH dealer.** If our inspection discloses a manufacturing defect we will either repair or replace the product or refund the purchase price, if we cannot quickly provide a repair or replacement, if you are willing to accept such a refund. We will return repaired products or the replacement at our expense, but if we find that there is no defect, or that the defect resulted from causes not within the scope of this warranty, then the user must bear the cost of returning the product. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

Typical issues caused by misuse that are not covered by warranty:

- Bent, stretched or broken hooks
- Missing or sprung hook latch
- Bent or damaged lever
- Missing parts
- Corrosion
- Worn, deformed or stretched load chain
- Damage to chain guides and other parts from not allowing the hoist to form a straight line between hooks. Example is binding the hoist function by contact of the body with a structure.
- Wear from normal use.

AMH products are only sold through authorized dealers. The specifications and dimensions listed on the AMH website or in printed materials are provided as general information and are not binding. AMH reserves the right to alter equipment, parts, fittings, or accessories without prior notice for any reason.

This manual and other product information is available from: www.allmaterialhandling.com