

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

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CM CHAIN HOISTS

3/4 TON AND 1-1/2 TON

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1. GENERAL

1.01 This section replaces Issue 2 and covers the description⁴ and maintenance of two sizes of Chisholm-Moore chain hoists, 3/4 ton and 1-1/2 ton. It has been reissued to cover the 3/4 ton hoist which has been added to supplement the 1-1/2 ton hoist for those work operations where a smaller capacity hoist will be adequate and where the lighter weight will be advantageous.

1.02 The chain hoists are for use principally in connection with the following work operations within the safe load limits designated in Paragraph 1.03:

- (a) Pulling up guys.
- (b) Transferring, raising and lowering aerial cables.
- (c) Installation and removal of house cables.
- (d) Tensioning suspension strand and groups of line wires.

1.03 The choice of the size of hoist for a particular job depends upon the work conditions and the expected loads involved. The safe load limit and weight of the chain hoists are as follows:

<u>Size</u>	<u>*Safe Load Limit</u>	<u>Weight</u>
3/4 Ton	1500 Pounds	13 Pounds
1-1/2 Ton	4000 Pounds	23 Pounds

*See Paragraph 2.01

2. PRECAUTIONS

2.01 Both sizes of hoists are designed with a margin of safety to withstand a reasonable amount of overloading during the work operation. For this reason the 1-1/2 ton chain hoist, having a rated capacity of 3000 pounds, may be loaded up to a safe load limit of 4000 pounds. However, due to the greater possibility of seriously overloading the smaller 3/4 ton hoist, the safe load limit for this hoist is the same as its rated capacity of 1500 pounds. **These hoists should not be used where there is a possibility that the work loads may exceed their safe load limits.**

2.02 The first evidence of serious overloading of the tools will be a spreading or opening of one or both hooks. If this should be observed, immediately reduce the load to a safe value. Discontinue the work operation until it can be safely resumed through the use of equipment suitable for the work or through changes in the method to enable the available equipment to be used safely.

2.03 In raising or lowering hoists and in handling hoists on a pole, prevent contact between any part of the tools and electric circuits on the pole or within reach.

2.04 Before using a hoist, make certain the ratchet pawl on the housing (button B in Fig. 1) moves freely in the housing guide and is not restricted in any way, such as being pressed against a pole.

2.05 While operating a hoist under load, never move trigger A unless button B is in the **inward** position, flush against the housing.

2.06 Never place an extension, such as a length of pipe, on a handle or reinforce it in any way to increase the normal leverage of a hoist.

3. DESCRIPTION

3.01 The 3/4 ton and 1-1/2 ton chain hoists (1-1/2 ton size shown in Figs. 1, 2, and 3) are similar in design and operation, except for size and omission of the gear reduction assembly in the 3/4 ton hoist, and consist principally of the following:

- (a) A housing which contains the operating mechanism and provides a channel for the chain. The housing is equipped with a swivel hook at its top.

(b) A 5-1/2 foot welded link chain which is flexible in all directions and free of any kinking tendency. The chain is equipped with a swivel hook at one end and ring at the other end. The ring is intended to prevent the chain from being inadvertently pulled through the housing when the chain is extended to its maximum length.

(c) A ratchet handle by means of which the tool is operated. The handle is equipped with a trigger "A" which is used for controlling the direction of travel of the chain through the housing under load.

3.02 The handle of the 3/4 ton hoist is 5 inches shorter than the handle of the 1-1/2 ton hoist. Approximately 76 pounds applied to the end of the handle will lift the rated load (safe load limit) of 1500 pounds. Correspondingly, a force of 83 pounds applied to the end of the handle of the 1-1/2 ton hoist will lift the rated load of 3000 pounds; 110 pounds are required to lift the safe load limit of 4000 pounds.

3.03 The hoist size is clearly marked on the housing cover plate of each tool for easy identification.

3.04 If desired, the chain can be moved freely in either direction through the housing when there is no load on the chain. Fig. 1 illustrates the setting of the trigger in the handle and the position of the button in the housing to provide a free running chain. This feature enables the position of the chain to be adjusted readily for attachment to the load without operating the handle.

TO PROVIDE FREE RUNNING CHAIN

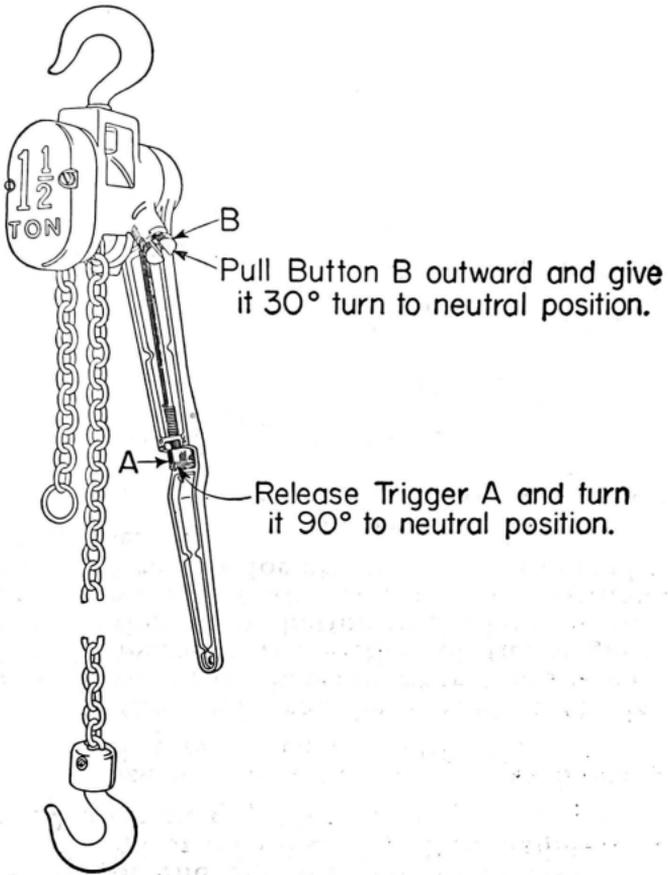


Fig. 1

3.05 In order to use the hoists for lifting or pulling a load, set the button and trigger controls as shown in Fig. 2.

TO LIFT OR PULL LOAD

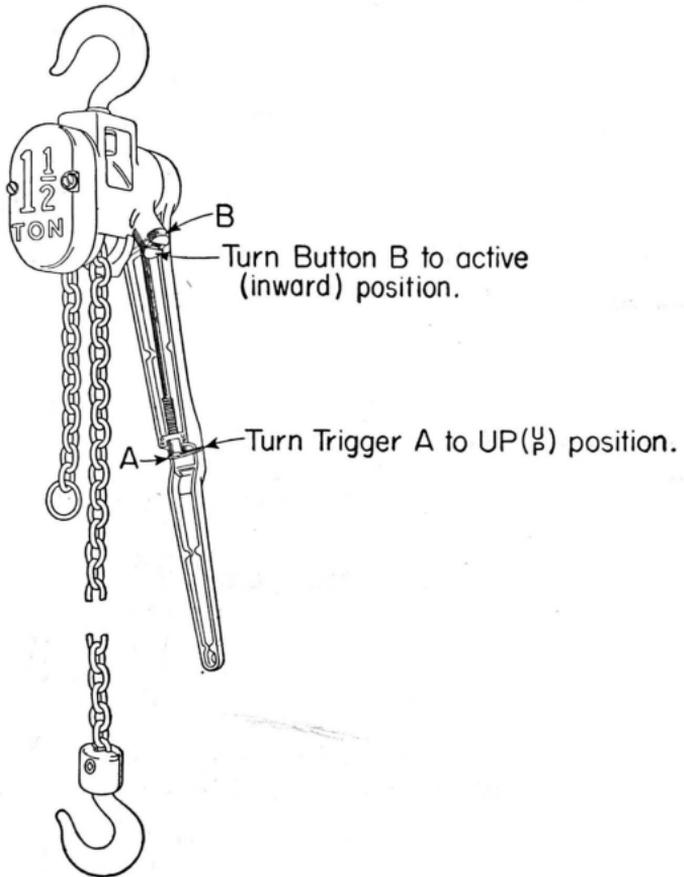


Fig. 2

NOTE: While under load:

- (a) Make certain that button B restores to a flush position against the housing as the pawl slides over the ratchet during the lifting operation.
- (b) If button B is inadvertently or accidentally held in the "OUT" position, the weight of the load will be on the handle.

3.06 In order to use the hoists for lowering a load or reducing a pull, set the button and trigger controls as shown in Fig. 3.

TO LOWER OR RELEASE LOAD

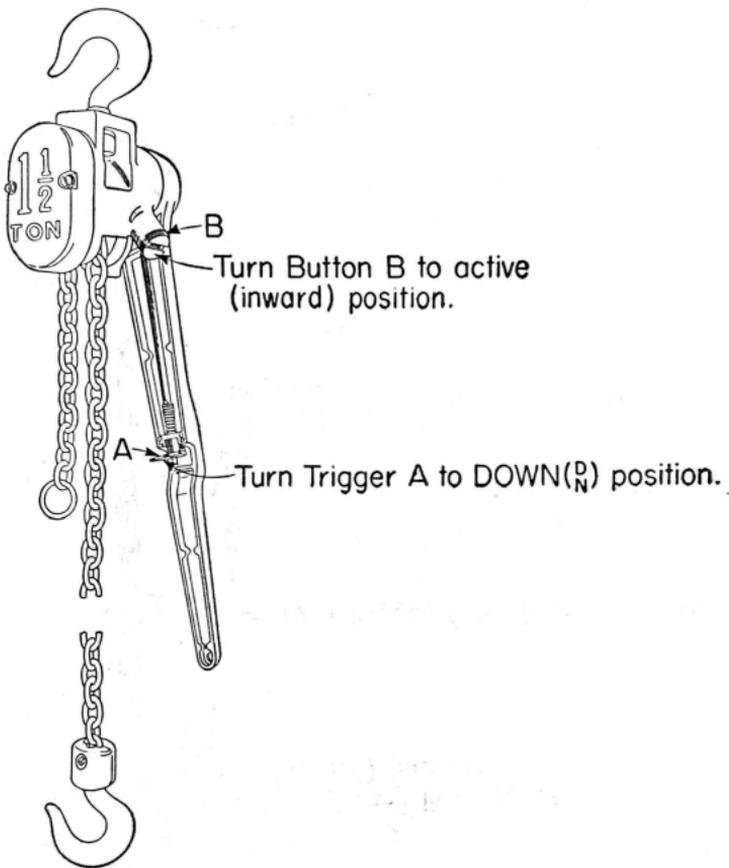


Fig. 3

NOTE: While under load:

- (a) Make certain that button B is flush against the housing during the lowering operation.
- (b) If button B is inadvertently or accidentally held in the "OUT" position, the load will be free to drop.

4. MAINTENANCE

4.01 No lubrication of the hoists is required. The gears are packed with non-aging grease at the factory and sealed in a dust-proof, grease-tight enclosure. Avoid particularly applying any oil or other lubrication at the surface contact between the handle and the housing as lubricant applied here might penetrate to the dry braking mechanism inside of the housing and affect its proper operation.

4.02 Slippage of the friction brake resulting from normal wear of the braking surfaces may be compensated for by adjusting the brake in accordance with the following directions given on the inside of the circular cover plate:

"To adjust brake turn hub clockwise until cam shoulders[←] contact. Tighten nut until snug then back nut off two slots and insert pin."

If such adjustment should be necessary, make certain that the cam is properly seated before backing off the adjusting nut by turning the hub hard in the clockwise direction. Use a new cotter pin for securing the adjusting nut. After such a brake[←] adjustment has been made and before the tool is again used in a work operation, operate the tool under a test load, checking the raising and lowering operation. If the test indicates that the operation is faulty in any respect, do not use the tool. Obtain a replacement.

4.03 Keep the chain and housing free of dirt and foreign matter.