

JIS

JAPANESE INDUSTRIAL STANDARD

**Manually operated chain
lever hoists**

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In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

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Manually operated chain lever hoists

B 8819-1990

1. Scope

This Japanese Industrial Standard specifies the chain lever hoists using a link chain capable of lifting, lowering, drawing and the like by operating the lever manually (hereafter referred to as the "lever hoist").

Remark: The applicable Standards of this Standard shall be as given under.

JIS B 0148 Glossary of Terms for Hoists

JIS B 2803 Hooks

JIS B 8812 Link Chains for Manually Operated Chain Hoists

JIS Z 8601 Preferred Numbers

2. Definitions

For the purposes of this Standard, the following definitions apply. Other terms and the definitions are given in JIS B 0148.

- (1) idling of engine To feed the load chains quickly when the lever hoists is at no-load.
- (2) winding · unwinding To wind and unwind the load chain by the operation of lever.
- (3) winding · unwinding change-over device Device to change the direction of rotation of load sheave in order to wind and unwind it.

3. Class

The classes of lever hoists shall be as given in Table 1. Provided that the classes specified in Annex may be used for the time being.

Reference Standards:

JIS G 0565-Methods for Magnetic Particle Testing of Ferromagnetic Materials and Classification of Magnetic Particle Indication

JIS Z 2343-Methods for Liquid Penetrant Testing and Classification of Indication

Table 1. Classes

Unit: t

Class	Rated load
L 0.25 T	0.25
L 0.5 T	0.5
L 0.8 T	0.8
L 1.6 T	1.6
L 3.2 T	3.15
L 6.3 T	6.3
L 9 T	9

Remark: The rated load shall be
in accordance with
JIS Z 8601.

4. Performance

4.1 Strength When the static tensile load of four times of rated load (hereafter referred to as the "tensile load") has been added, the lever hoist shall hold this load.

4.2 Working When suspending the working load as given in Table 2 and winding and unwinding the working distances of Table 3, the working of lever hoist shall meet the following specifications.

- (1) The lever shall work smoothly.
- (2) The load chain and load sheave, and the load chain and idle sheave shall be favorable in gearing.
- (3) The brake shall work surely.
- (4) The load chain shall be free from twist and tangle at the time of winding · unwinding.
- (5) The hand motive power for the winding shall be free from excessive change.

Table 2. Working Load at the Time of Working Test

Unit: t

Class	Working load
L 0.25 T	0.315
L 0.5 T	0.63
L 0.8 T	1.0
L 1.6 T	2.0
L 3.2 T	4.0
L 6.3 T	8.0
L 9 T	11.3

Table 3. Working Distance at the Time of Working Test

Suspension number of load chains ⁽¹⁾	1	2	3	4
Working distance cm	30	15	10	7.5

Note ⁽¹⁾ The suspension number of the load chains for a lever hoist body.

4.3 Idling of Engine The lever hoist shall be able to feed the load chains quickly under the condition of no load, but be unable to feed the load chains quickly under the loaded condition.

4.4 Brake Function The brake function shall be as follows. Suspend each test load of the first, the second and the third as given in Table 4. Lower the length equivalent to not less than one rotation of each load sheave and leave it alone as it is for one hour. At this time, the load shall not descend.

Table 4. Test Loads for Brake Function

Unit: t

Class	Test load		
	The first	The second	The third
L 0.25 T	0.063	0.25	0.315
L 0.5 T	0.125	0.5	0.63
L 0.8 T	0.2	0.8	1.0
L 1.6 T	0.4	1.6	2.0
L 3.2 T	0.8	3.15	4.0
L 6.3 T	1.6	6.3	8.0
L 9 T	2.24	9.0	11.3

4.5 Continuous Performance The continuous performance shall be as follow. When lifting and lowering the working loads of Table 2, with working frequency of Table 5 continuously at the working distance of Table 3 manually or the similar method, each part shall be free from anything unusual and shall conform to the specifications of 4.2 to 4.4 in addition to it.

Table 5. Working Frequency of Continuous Performance

Class	Working frequency
L 0.25 T	500
L 0.5 T	
L 0.8 T	
L 1.6 T	
L 3.2 T	250
L 6.3 T	150
L 9 T	

Remark: The working frequency shall be as follows:
Take the reciprocating of lifting and lowering as one time.

5. Construction

5.1 Construction in General The construction in general shall be composed of the body of which the main frame is equipped with gear mechanism ⁽²⁾, brake device, lever, winding · unwinding change-over device, idling device load sheave and the like, and the load chain. The upper part of the body and the lower end of load chain are equipped with hook. Transmit the force to the gear mechanism ⁽²⁾ by operating the lever manually so that the load can be lifted · lowered and drawn by the rotation of the load sheave (see Fig. 1).

Note ⁽²⁾ The gear mechanism may be not provided.

5.2 Hook The hook shall be in accordance with JIS B 2803. The hook shall be equipped with a latch. Furthermore, the underhook shall be able to rotate.

5.3 Load Chain The load chain shall be the load chain of JIS B 8812 and the chain of grade T or grade V shall be used.

5.4 Load Sheave and Idle Sheave The load sheave and the idle sheave shall be so constructed that they interlock with the load chain smoothly and can prevent the coming-off and an appropriate heat treatment for the load sheave shall be performed.

5.5 Brake Device The brake device is a mechanical brake using brake lining, claw, ratchet wheel and the like. The brake device is so constructed that the brake works to support the load immediately after the operation of lever is discontinued, and shall be equipped with a cover to prevent dust and the like.