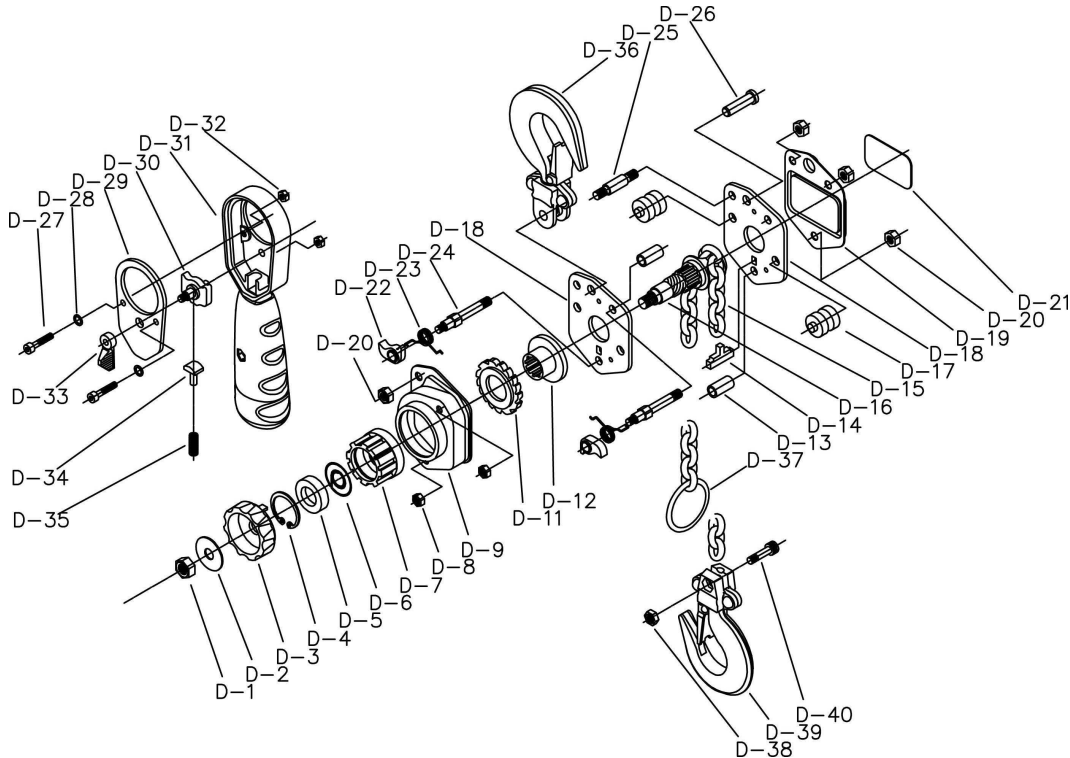


WARNING

This hoist should not be installed, operated or maintained by any person who has not read all the contents of these General Instructions. Failure to read and comply with these instruction or any one of the limitation noted herein can result in serious bodily injury and / or property damage.

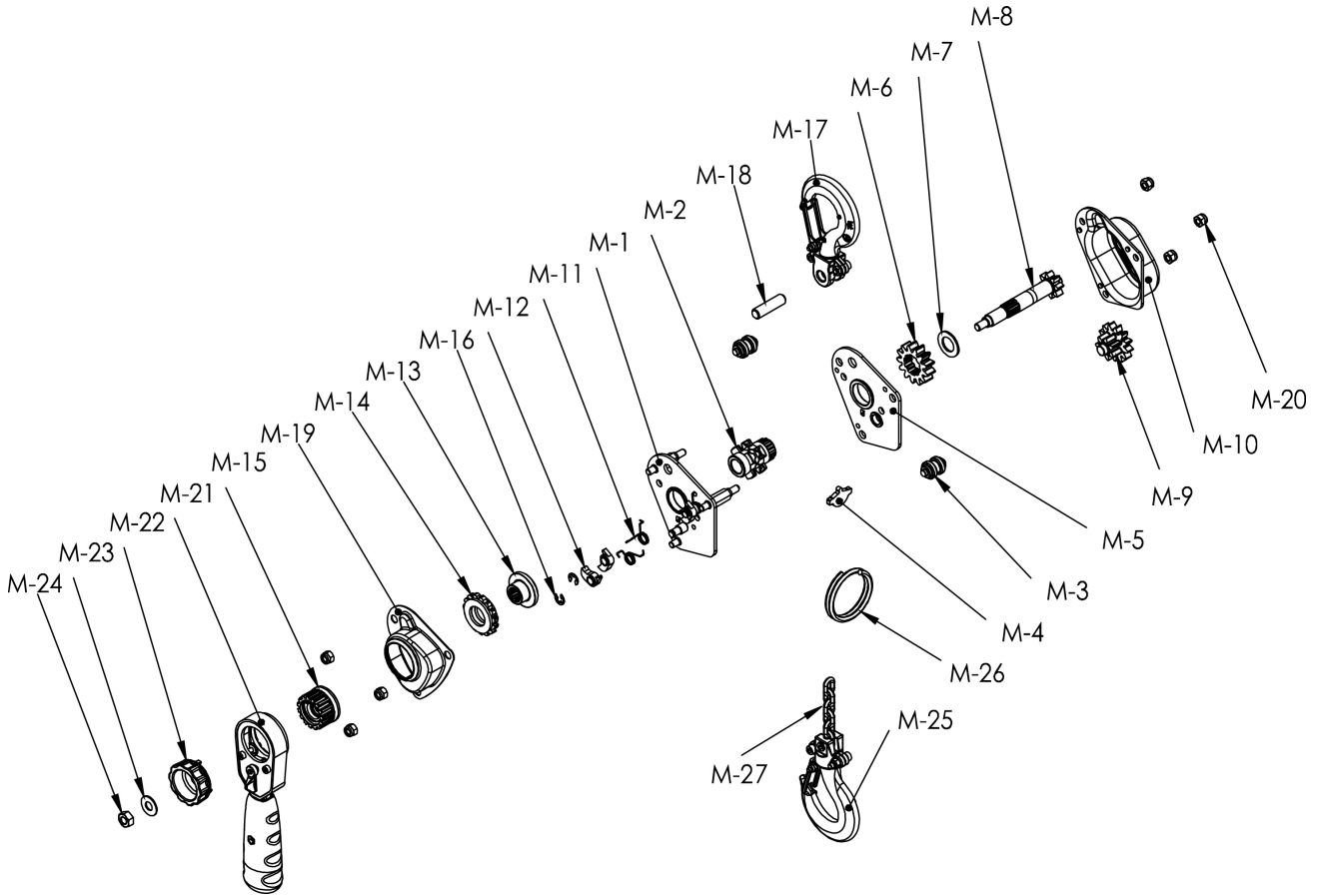
EXPLODED VIEW & PARTS LIST – 250kg



TO ORDER PARTS: When ordering replacement parts, please specify Capacity, Part No. & Quantity. User should use only original equipment manufacturer authorized replacement parts in the service and maintenance of this hoist.

PART NO.	QUANTITY	PART NAME	PART NO.	QUANTITY	PART NAME
D-01	1	Pinion Nut	D-22	2	Brake Pawl
D-02	1	Washer	D-23	2	Pawl Spring
D-03	1	Grip Ring	D-24	2	Brake Pawl Bolt
D-04	1	Snap Ring	D-25	1	Plate Bolt
D-05	1	Fixing Plate	D-26	1	Top Hook Pin
D-06	1	Retaining Spring	D-27	2	Screw for Handle Cover
D-07	1	Change Gear	D-28	2	Spring Washer
D-08	2	Nut for Brake Cover	D-29	1	Handle Cover
D-09	1	Brake Cover	D-30	1	Change Pawl
D-11	1	Ratchet Gear with Brake Disc	D-31	1	Handle Assembly
D-12	1	Disc Hub	D-32	2	Nut for Handle
D-13	2	Collar	D-33	1	Change Lever
D-14	1	Chain Stripper	D-34	1	Pushing Up Pin
D-15	1	Load Chain	D-35	1	Pushing Up Spring
D-16	1	Pinion Shaft	D-36	1	Top Hook Assembly
D-17	2	Load Chain Guide	D-37	1	End
D-18	2	Plate	D-38	1	Nut for Bottom Hook Pin
D-19	1	Plate Cover	D-39	1	Bottom Hook Assembly
D-20	4	Nut for Plate Cover	D-40	1	Bottom Hook Pin
D-21	1	Label			

EXPLODED VIEW & PARTS LIST – 500kg



TO ORDER PARTS: When ordering replacement parts, please specify Capacity, Part No. & Quantity. User should use only original equipment manufacturer authorized replacement parts in the service and maintenance of this hoist.

PART NO.	QUANTITY	PART NAME	PART NO.	QUANTITY	PART NAME
M-01	1	Wheel-side Plate Assembly	M-15	1	Change Gear
M-02	1	Load Sheave	M-16	2	Snap Ring for Pawl Pin
M-03	2	Load Chain Guide	M-17	1	Top Hook Assembly
M-04	1	Chain Stripper	M-18	1	Top Hook Pin
M-05	1	Gear-side Plate Assembly	M-19	1	Brake Cover
M-06	1	Load Gear	M-20	6	Nut
M-07	1	Washer	M-21	1	Handle Assembly
M-08	1	Pinion Shaft	M-22	1	Grip Ring
M-09	1	Pinion with Pinion Gear	M-23	1	Washer
M-10	1	Gear Cover	M-24	1	Pinion Nut
M-11	2	Pawl Spring	M-25	1	Bottom Hook Assembly
M-12	2	Brake Pawl	M-26	1	End
M-13	1	Disc Hub	M-27	1	Load Chain
M-14	1	Ratchet Gear with Brake Disc			

NOTICE

Upon receiving hoist, check immediately for evidence of damage during shipment. Do NOT USE a damaged hoist report damage to carrier.

It is the responsibility of the owner/user to install, inspect, test, maintain and operate the hoist in accordance with the Safety Standard for Lever Hoists (ANSI/ASME B30.21) and OSHA Standards. Any ANSI Standards referenced in this manual may be purchased from American National Standards Institute, 11 West 42nd Street New York, NY10036.

WARNINGS

Equipment described herein is not designed for, and should not be used for, lifting, supporting, or transporting humans. User should not use this hoist in conjunction with other equipment unless necessary and/or required safety devices applicable to the system are installed by the user. Modifications to upgrade, rerate or otherwise alter this hoist shall be authorized only by the original equipment manufacturer or qualified professional engineer.

Failure to comply with any one of limitations noted herein may result in serious bodily injury.

SAFETY PRECAUTIONS

1. Read and heed all instructions and warnings furnished with or attached to hoist.
2. Support for stationary hook must be strong enough to sustain load.
3. DO NOT install with hooks and chain out of alignment.(Fig. 1).
4. Make sure load can move without obstruction.
5. Eliminate any twist or kinks in chain before operating.
6. Before operating, inspect hooks for nicks, gouges, cracks, and signs of deforming, pulling apart or twisting. (MAINTENANCE-HOOKS)
7. Be sure load is secured in saddle of hook. AVOID TIP LOADING(Fig.1). DO NOT OVERLOAD.
8. NEVER load when in free-wheeling position.
9. DO NOT transport loads over heads of people.
10. DO NOT wrap load chain around load, or use load chain as a sling.(Fig. 2)
11. DO NOT try to suspend load with two blocks.(Fig. 3)

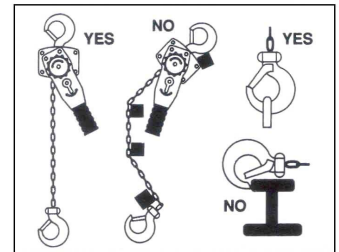


FIGURE 1

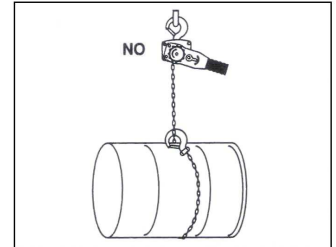


FIGURE 2

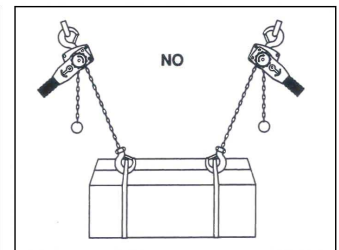


FIGURE 3

OPERATING INSTRUCTIONS

1. Apply a thin coat of oil to the chain to ensure smooth operation of links and prevent twisting.
2. Attach hooks and chain linearly to avoid undue strain (PRECAUTION 3, FIG. 1).
3. To Adjust Chain Length
 - a. To shorten slightly:
Set change lever in central position and turn grip ring clockwise for up / counterclockwise for down.
 - b. For major adjustment:
 - ① Set change lever in central position then adjust chain freely by hand in either direction, UP or DOWN.(Fig. 4)
 - ② Set change lever in desired direction, UP or DOWN, and operate handle back and forth to move load in proper directions. (Fig. 5 & Fig. 6)

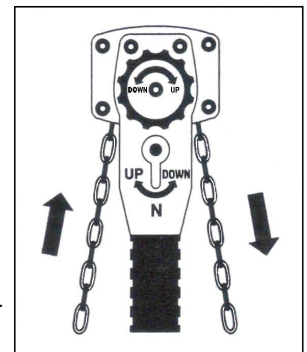


FIGURE 4

NOTE

For hoists used as pullers-horizontal movement of load: When change lever is at Up, chain moves clockwise. When lever is at DOWN, chain moves counterclockwise. Change lever at center position is for free wheeling.

NEVER MOVE CHAIN TO THE EXTREME IN EITHER DIRECTION

Brake is always active, regardless of direction of movement UP or DOWN. However, DO NOT attach a load when hoist is in the free-wheeling mode.

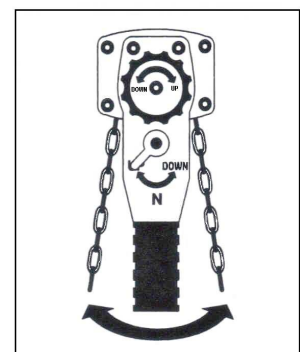


FIGURE 5

AFTER OPERATING

1. Wipe dirt and water off, and apply oil to the chain, revolving parts of hook, retaining pawl, shaft, and brake pawl. Apply grease to gears.
2. To store lever hoist, hang it in a dry place.

DISASSEMBLY, INSPECTION, MAINTENANCE, REASSEMBLY

During disassembly, any parts found to be unfit for further use must be discarded and replaced with new parts when reassembling. Refer to parts List, Page 1 & 2, for item number references.

1. Disconnect the chain.
 - A. Remove the end (Part D-37 or M-26) and put it aside.
 - B. Slip chain out in free wheeling condition.
 - C. Check chain, end, and bottom hook for deformation.

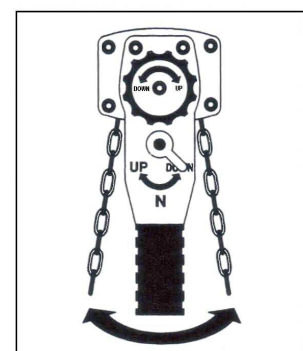


FIGURE 6

CHAIN PART D-15 OR M-27

Inspect chain at least once a month. Between regular inspections check visually for nicks, gouges, weld splatter, corrosion, or distorted links. Check chain thoroughly if it does not feed smoothly over load sheaves. Inspection procedure is as follows:

1. Clean chain with solvent before inspection.
2. Test hoist under load and observe operation of chain over load sheaves.
3. Slacken chain and check contact points for excessive wear.
4. Check for stretch. Using caliper-type gauge, measure outside length of 11 links while under tension.
Replace chain if measurement exceeds maximum allowable gauge length (Fig. 7 , Table 1)

FLGURE 7

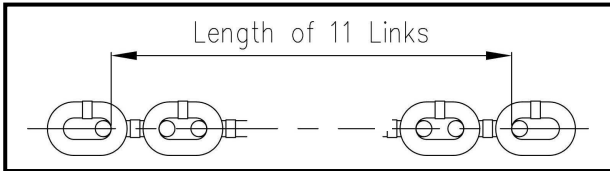


TABLE 1

CAPACITY (kg)	DIAMETER OF CHAIN WIRE	MAXIMUM ALLOWABLE GAUGE LENGTH
250	Ø4mm	11 links = 135mm
500	Ø4mm	11 links = 135mm

An authorized person must determine whether conditions detected during inspection (such as corrosion, wear, ect.) are sufficient to warrant replacement of chain. When chain must be replaced, inspect other loadbearing parts and replace (if necessary) at the same time.

HOOKS (Parts D-36 & D-39 & M-17 & M-25)

Refer to Safety Standard for Hooks, ANSI B30.10 Hooks will yield under excessive load. Check throat opening frequently (Fig. 8)Table 2 shows throat opening of new hook and the dimension which indicates a need for replacement.

TABLE 2

CAPACITY (KG)	Hook Throat Opening (mm)	
	e	
	Normal	Discard \geq
250	26mm	28mm
500	29mm	32mm

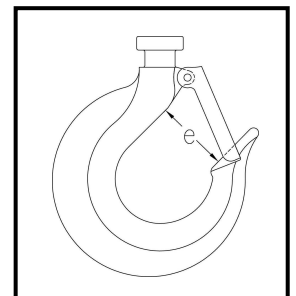
CAUTION

Any hook that is twisted or has throat opening in excess of acceptable maximum indicates abuse or overloading of hoist. Other load-bearing components of hoist should be inspected for damage.

Inspection procedure is as follows:

- 1.Measure throat opening from metal to metal of hook. (e - Fig. 8).
DO NOT measure from latch.
2. Maximum allowable wear on bearing point of the hook is 10%
3. More than 10 twist from plane of hook is sufficient to warrant replacement of hook.
4. Check latch for damage. Make sure it closed securely.
5. Excessive damage from chemicals or deformation are reasons for replacing hook.
Repairs by welding and / or reshaping are not recommended.
6. Use dye penetrant, magnetic particle, or other suitable method for detecting cracks.

An authorized person must determine whether conditions detected during inspection are sufficient to warrant replacement of hook. DO NOT lubricate the two brake discs (Parts D-11 & M-14) or the friction surfaces contacting them.



FLGURE 8

REPLACE BRAKE DISC IF THICKNESS IS LESS THAN 1.5MM

LUBRICATION

Keep hoist well lubricated at all times. Lubricate as noted under AFTER OPERATING.

Use the following:

OIL...AGMA No. 2 (Duro AW100)

GREASE...NLGI No. 2

TEST CERTIFICATE

It is hereby certified that this product was manufactured under our single-unit control of quality and was passed in strict inspection in accordance with our inspection standard.

Capacity (kg)	S. W. L. (kg)	Test Load (kg)
250	250	375
500	500	750

Quality Control Department.