US MANUFACTURER

HITCH

OWNER'S MANUAL AND SAFETY INSTRUCTIONS

HAND CHAIN HOIST
HITCH CH100

HITCHLIFTING.COM, T: +1 512 823 02 02

MFD FOR: HITCHLIFTING INC., 211 E. 7TH STREET, SUITE 620, AUSTIN, TX, 78701-3218, USA

MFD BY: HITCHLIFTING CO., LTD. 7TH BUILDING, SHANGDING INDUSTRY PARK, NO.22 HONGHU WEST ROAD, NEW NORTH DISTRICT, CHONGQING, CHINA

WARRANTY AND SERVICE

The HITCH company provides a warranty for each product that is sold. If one of our tools needs a service or repair, please contact the Hitch Technical Service team by calling **+1 (512) 823-0202**, between 8AM to 5PM CST on Monday through Friday, by e-mail to **service@hitchlifting.com**, or you may contact the nearest HITCH dealer in your region.

Warranty Duration

Assuming that there has been normal use of the product, the HITCH company ensures its compliance with published specifications, and that the product is free from defects in its materials and workmanship during the warranty period specified below. The duration of the limited warranty depends on which country the product was purchased in; these are specified in the «Warranty Duration for hoists HITCH» table, unless otherwise provided by law. The duration of the limited warranty starts from the date of purchase the of specified product on your purchase receipt.

See the «Warranty Duration for hoists HITCH» table.

• Accessories carry a limited warranty of one year from the date of receipt.
• Consumable items — are defined as spare parts or accessories, which are expected to fail after a certain level of use, and which are subject to a 90-day limited warranty against manufacturing defects.

Who is covered?

The warranty covers the initial purchaser of the product from the date of delivery.

What is covered?

The warranty covers any defects in workmanship or materials that are subject to the limitations stated below. This warranty does not cover product failures that have appeared either directly or indirectly due to misuse, neglect, negligence or accidents, normal wear and tear, improper repairs, delays in service or lack thereof.

More Information

HITCH is constantly adding new products to their product lines. For up-to-date product information, please check with your local distributor or visit the HITCH website.

How State Law Applies

This warranty gives you specific legal rights that are subject to applicable state law.

Getting Support

You can contact the Hitch Technical Service by calling **+1 (512) 823-0202** or you may contact the nearest HITCH dealer in your area. Please note that you will be asked to provide proof of your initial purchase when calling. If a product requires further inspection, the technical service representative will assist with any additional action that is required.

Warranty Limitations

HITCH limits every warranty to the duration of the specific warranty for each product. Except as stated in this document, any other possible warranty for the appearanse of the product or its performance is excluded. Some administrative and territorial entities do not allow limitations to a warranty, so the above mentioned limitations may not apply in your case. HITCH will not be liable for death, personal injury, damage to property, or for incidental, special or consequential damages arising from the use of our products. Some administrative and territorial entities do not allow for the exclusion or limitation of incidental or consequential damages, so the above mentioned limitations may not apply in your case. HITCH only sells its products through distributors. HITCH specifications in printed materials and on the official HITCH website are given as a general guide and are not binding. HITCH reserves the right to make changes to spare parts, fittings, and accessories at their discretion at any time without prior notification.

*- The 5 year HITCH Guarantee. (For markets in North, Central, South America, and the EU only).

For all of the professional HITCH equipment in a black color, the warranty duration is extended to 60 months if the owner registers it within 2 (two) weeks from the date of purchase. Registration can be completed by visiting the following address: **www.hitchlifting.com/warranty** A registration card provides confirmation, and this should be printed immediately after the registration process has completed, and kept alongside the original purchase receipt that shows the purchase date of the product.

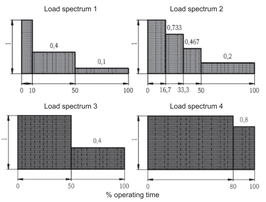
The registration process will only be complete after the purchaser consents to their personal data being kept on file.

Warranty Duration for hoists HITCH

SERIES	MODELS MANUAL HOIST AND TROLLEY HITCH	WARRANTY DURATION	REGION
PROFESSIONAL	HAND CHAIN HOIST HITCH - CH200, CH200-G, CH200-GS, CH200-GSB, CH360, CH202*STORM*, CH203 MC 6, CHM204 MC6MINI, CH205 LARGE-TONNAGE	5* YEARS	NORTH, SOUTH, CENTRAL AMERICA
		5* YEARS	EU
	LEVER HOIST HITCH - LH200, LH200-G, LH201, LH201G, LH201GS, LH202 MCL6-S, LH203 COMPACT, LHM204 MINI PROFF	3 YEARS	MIDDLE EAST, AFRICA
		3 YEARS	ASIAN-PACIFIC AREA
	TROLLEY GEARED HITCH TR200, TR201, BC202 WJ	3 YEARS	RUSSIA, THE CUSTOMS UNION
REGULAR	HAND CHAIN HOIST HITCH - CH100, CH100-G, CHM104 MINI TYPE, CH101 , CH102 TD, CH105	2 YEARS	NORTH, SOUTH, CENTRAL AMERICA
		2 YEARS	EU
	LEVER HOIST HITCH - LHM104 MINI TYPE, LH100	2 YEARS	MIDDLE EAST, AFRICA
	TROLLEY GEARED HITCH TR100, TR101, BC102	2 YEARS	ASIAN-PACIFIC AREA
		2 YEARS	RUSSIA, THE CUSTOMS UNION

MECHANICAL CLASSIFICATION

The safety and lifespan of the hoisting equipment is guaranteed under the presumption that it works in accordance with the specified classification.



All of the products HITCH designs for class M5-M2 correspond to the classification of the M5-M2 mechanism according to ISO 4301/1. The average daily working time is set by the load spectrum.

Mechanism Operation Class

The Mechanism Operation Class is characterized by the assumed total in-service time in hours and nominal classes, presented in Table 1.

For classification, it was agreed to provide a mean value of the total operation time, during which a mechanism is in motion.The total in-service time values should be considered as theoretical. They can not be treated as guaranteed values.

Loading Mode

The Loading Mode determines the relative duration during which a mechanism has incurred the impact of a maximum or decreased load. Nominal loading modes are presented in Table 2. Nominal coefficients of a mechanisms load distribution are set in accordance with Table 2 (the nearest larger value is taken).

Determination of a Mechanism's Classification Group as a whole

Having determined the Operation Class and the Loading Mode, the Classification Group of the mechanism is determined using Table 3.

Table 1.

Operation Class	Total Duration of Testing Hours	Notes
T0	200	Irregular operation
T1	400	
T2	800	
T3	1 600	
T4	3 200	Regular operation in normal conditions
T5	6 300	Regular operation with interruptions
T6	12 500	Regular intensive operation
T7	25 000	Intensive operation
T8	50 000	
T9	100 000	

Table 2. Nominal coefficients of mechanisms load distribution *Km*

Operation Class	Nominal coefficient of load distribution *Km*	Notes
L1 — light	0,125	Mechanisms regularly affected by light loading and rarely by maximum loading
L2 — moderate	0,25	Mechanisms regularly affected by moderate loading and quite often by maximum loading
L3 — heavy	0,50	Mechanisms regularly affected by heavy loading and often by maximum loading
L4 — severe	1,00	Mechanisms regularly affected by maximum loading

Table 3. Mechanism Classification Group as a Whole

Loading Mode	Nominal coefficient of load distribution *Km*	Mechanisms Operation Class									
		T0	T1	T2	T3	T4	T5	T6	T7	T8	T9
L1 — light	0,125			M1	M2	M3	M4	M5	M6	M7	M8
L2 — moderate	0,25		M1	M2	M3	M4	M5	M6	M7	M8	
L3 — heavy	0,50	M1	M2	M3	M4	M5	M6	M7	M8		
L4 — severe	1,00	M2	M3	M4	M5	M6	M7	M8			

FOREWARD

The HITCH company highly appreciates its customers, and it always attempts to provide the best quality service and support. This manual contains important information that will help you to install, operate, and maintain your HITCH Hoist for the maximum efficiency of use, economy, and safety.

Please carefully study the contents of this manual before the initial use of your hoist. Following the rules of operation and performing the recommended preventative maintenance instructions, you'll ensure a long-lasting, reliable, and secure operating lifetime.

After becoming familiar with the contents of this manual, we recommend that you carefully store it for future reference. For any questions or comments, you can contact your nearest HITCH dealer or contact HITCH directly. You can also contact HITCH via our website: **www.hitchlifting.com.**

The HITCH Chain Hoist complies with ANSI/ASME B30.16 and HST-2 standards.

*****Options:**

«G» - «Galvanic» - Load chain with a galvanic coating
«B» - «Bearings» - Hoist equipped with friction bearings
«S» - «SMART» - Overload Protection System
«TD» - Trolley Directly

SAFETY INSTRUCTIONS

The improper use of a hoist can create a potentially hazardous situation, which, if not avoided, could cause death or serious injuries. In order to prevent such a potentially hazardous situation, the operator must:

Read and understand the user manual before the assembly or operation of the product.
Read and understand the warnings that come with the product and this manual. Failure to follow any of these warnings can result in serious injury and/or property damage.
When working with a hoist, operating personnel must wear a helmet, gloves and safety shoes.
Replace labels with warnings if they have become hard to see or they have disappeared.
Keep visitors at a safe distance from the work area. Keep children away.
The chain hoist is designed and intended for use by trained and experienced personnel only. If you are not familiar with the rules of the proper and safe operation of the chain hoist, do not use it. Personnel must pass training to obtain the necessary knowledge to use this product.
Always check the chain hoist for damage before using it. If the chain hoist is damaged, do not use it until it has been repaired or replaced.
Always plan how you will move the load in advance, and choose the most secure method to do so. Do not place yourself or others in unsafe locations.
To entrust the maintenance operations to a qualified personnel of the «HITCH» Service Center.
The chain must be replaced by an original factory chain only. Do not use other types of chains.
Do not use the chain hoist for other purposes. If it was used for other purposes, «HITCH» disclaims any warranty and any responsibility for the damage suffered as a result of such usage.
Do not lift people or lift loads over people.
Do not exceed the established maximum load of the chain hoist.
Do not use any other power, but hand power to pull the hand chain.
Do not use the load chain as a sling; it can cause damage to the chain.
Do not use more than one chain hoist for lifting or moving cargo. If this is unavoidable, each chain hoist must have the same workload to move the load.
Never allow the load chain to cling to sharp edges. Every lift should be carried out using a straight chain without obstruction.
If the hand chain becomes difficult to move, it means that the load has exceeded the maximum workload for the chain hoist. In this situation, select a chain hoist with a higher maximum load.
Do not use the chain hoist until the load has been located centrally between the upper and lower hooks.
Never use the chain hoist if the hook is stretched, deformed, or if the safety latch is broken or missing.
Do not put into operation a hoist that has been modified without the manufacturer's approval or certification, in order to comply with the applicable OSHA standards.
Do not touch the chain or hook with working welding equipment.
Do not remove or cover images with warnings on the hoist.
Do not operate the hoist if it is securely fastened.
Do not operate the hoist when the cargo slings or other approved devices are not the right size or not sitting properly in the hook saddle.
Read and follow all of the procedures of the American National Standards described in «Performance Standard for Hand Chain Manually Operated Chain Hoists», ANSI/ASME HST-2; and «Overhead Hoists (Underhung)», ANSI/ASME B30.16.
These standards are available through the «American Society of Mechanical Engineers», 345 East 47th St., NY, NY 10017 (www.asme.org).
Familiarize yourself with the following safety instructions used in this manual: if this is not done, it could lead to a slight injury and/or damage to the device.

! CAUTION

Improper use of a hoist can create a potentially hazardous situation, which, if not avoided, could result in mild or moderate injury. In order to prevent such a potentially hazardous situation, the operator must:
Stand on a hard surface or be in a safe position during the operation of the hoist.
Check the stop mode, by pulling the hoist prior to each lift or thrust operation.
Make sure that the hook latches are closed and not in contact with the load.
Make sure that the movement of the cargo does not interfere, and that it does not catch in the process of moving.
Regularly check the hoist, replace damaged or worn out parts, and make detailed records of maintenance.
Use recommended hoist spare parts for the repair of units.
Lubricate the load chain of a hoist as recommended by the manufacturer.
Work only with manual force.
Always consult your HITCH dealer or the HITCH company, if you plan to use the hoist in a dusty, humid, oil polluted or corrosion aggressive working environment.
Do not swing the load or hook.
Do not use the overload protection device to measure the load weight.
Do not allow more than one operator to pull one hand chain simultaneously. More than one operator may overload the hoist.
Do not be distracted when controlling the hoist.
Do not allow contact with other hoists, other things, or objects.
Do not adjust or repair the hoist without having the appropriate qualifications for the adjustment or repair work.
Do not pull or lift a load by the edge of the load.
Do not allow the hoist to go into operation until personnel have been warned of an approaching load and to take a safe distance.
Never lift as high as to touch the hook pulley.
Never unwind the chain so that it does not remain unloaded.
Never to drive the chain or hook into place with a kick.
Never move the cargo in jerky movements in order to prevent the sudden throwing of a load.
Never leave a load suspended for a long period of time.
Never leave a suspended load unattended.
Never use a hoist with a rusty chain.
Never use a hoist without a chain stopper (or chain finger) at the end of the unloaded side of the chain.
Never use a hoist without a rating plate or without a warning label or signpost, or with an unreadable rating plate, warning labels and signposts.
Never use hoists at a temperature below - 40 ° F or above + 150 ° F.

HITCH REPAIR / REPLACEMENT PROCESS

All of our products, HITCH Hand hoists and HITCH trolleys, are carefully checked and tested in operational conditions before shipment.

If any of the HITCH products, have been serviced in accordance with the rules, but create problems when in operation due to defects in the materials or the process of manufacture, which was confirmed by HITCH or an authorized service station, repair or replacement of the product will be made to the original purchaser without a charge.

This repair and replacement process only applies to HITCH products that have been installed, maintained, and operated as described in this manual, and which do not contain components or spare parts that are worn out, operated inappropriately, improperly installed, improperly or poorly maintained, were subjected to aggressive environmental influences and/or unauthorized repairs or modifications.

We reserve the right to change the materials and design, if, in our opinion, such changes will improve our products. Operation not to destination, repair by unauthorized persons, or the usage of non-original spare parts that are not produced by HITCH, lead to a loss of guarantee and can cause unsafe operation.

OPERATION

Before operating

Hooks, clevis pins, trolleys, or beam clamps can all be holders for hoists, Whichever method of hanging is chosen, the loading capacity of the holder components must meet or exceed the load capacity of the chain hoist. Before installing the assembly pulley, make sure that it is not damaged.

Always make sure that the supporting structure is strong enough to withstand the presumed load during the time of manipulation. Prohibited installation on the construction, which carrying capacity is unknown. The Consumer is **always** responsible for the supporting structure!

If the chain hoist has not been used for a long time, you must check its proper operation before starting work.

It is necessary to monitor the brake mechanism and keep it free from dirt, water, or oil. Never allow oil to penetrate into the brake. Always keep your chain hoist clean and store it in a clean, dry place.

Although chain lubrication with oil is not necessary, periodically applying a thin layer of oil with a coefficient viscosity of 30 on the chain will contribute to an easier operation and extended product lifespan.

Check the chain for damage and distention. Replace a damaged chain before using the chain hoist. The load chain supplied with your HITCH chain hoist has been designed, manufactured and tested for its compatibility and durability. After some time, the chain may need to be replaced. For your safety, only use an original chain or replacement. Using other chains may lead to serious injury and / or damage to the chain.

The top and bottom hooks on your HITCH chain hoist have been designed to warn in the event of an overload. See Table 4, (Opening of Hook Throat) to determine whether a hook needs to be replaced. Measurements are made when you open the clamp.

Hooks on 10 and 20-ton hoists do not have marks. The measurements can be made from when you open the clamp.

It is very important to check the top and bottom hooks for a proper opening. If the safety latch no longer makes contact with the hook when opening, then you will need to replace the hook.

Important: make sure that the hoist is set to the correct length of the load chain for safe lifting and lowering. Do not try to lower the hoist below its limit.

! WARNING

An assembly pulley with a lifting height of 40 Ft., or more in some cases, (e.g. fast descent) may heat the brake up. In this case, lower the load slowly with stops.

! WARNING

An assembly pulley with a lifting capacity of 20 tons is to be operated by 2 operators! The speed of the chain when lifting or lowering must be synchronized so that the chain in the chambers remain the same length! Maintenance personnel must control the alignment marked in the middle of the chain on the block (HITCH CH200/100 - 20T).

Table 4. Opening of Hook Throat

REPLACE HOOK WHEN OPENING MORE THAN, INCHES	MAXIMUM LOAD OF HOIST, TON
1-1/4	1/2
1-7/16	1
1-5/8	1-1/2
1-3/4	2
2	3
2-1/4	5
2-13/16	10
4-1/8	20

Hook Throat opening

Never lift the load over the edge of the top or bottom hook; this practice is dangerous and can lead to serious injuries.

If the vertical deflection angle of the bottom or top hook from the axis reaches 10°, replace the hook (see Figure 1).

Figure 1.

Correct all of a chain's irregularities prior to use.

The distance from the end of the bottom loop of the hand chain to the surface, on which the operator of the chain block stands during work, must be in the range of 1-5/8—3-1/4 Ft.

Hooking Loads

Fix the top hook.

Choose a safe attaching point for the bottom hook to the object that needs to be lifted.

Insert the sling or chain into the center of the bottom hook, making sure that the safety latch is securely closed.

Never load a hook without closing the safety latch.

Do not use two chain hoists for lifting a single load. If this is unavoidable, distribute the load equally on both hoists and use the hoist within its appropriate maximum load. The maximum load of each hoist should be equal to the total load to be lifted.

Check that the chain is not over wound in the bottom hook. All welding seams should face the same direction.

For hoists with two or more falls of chain, make sure that the bottom hook is not flipped. This may cause twisting of the chain.

Raising Loads

To lift the load, pull the right side of the hand chain clockwise (Up). To lower the load, pull the left side of the hand chain counterclockwise (Down).

HAND CHAIN – CUTTING AND INSTALLING

Disconnect the hand chain for the purpose of lengthening and shortening: to change the length of the hand chain, it is necessary to disconnect and add chain links to increase the overall length or remove some links to reduce the length.

This is done as follows:

1. Insert the link longitudinally in a vise. Make sure that the opposite side of the weld seam is completely below the surface of the vise jaws (about 1/3 of the link). This prevents cleavage or cutting the lower part of the link.

2. Using a hacksaw cut the top of the link at the weld line.

3. Loosen the link, set the link upright on the edge of the vise so that the level of the cut is above the vise jaw.

4. Clamp the vice.

5. Turn the link horizontally from front to back using an adjustable wrench. Open wide enough to have enough space to insert (or remove) more links.

6. Insert or remove the other end of the ring to the open part of the cut of the ring.

7. Using an adjustable wrench, turn the link horizontally until it reaches its normal position. Do not push the link inward from its rounded ends. This will lead to the deformation of the link.

8. When installing a completely new chain, insert the end of the hand chain in the groove at the top of the chain wheel. Scroll through the chain wheel and pull the chain through.

9. Weld the link in the place of the cut.

10. Grind the welding residues so that the link becomes smooth again.

TROLLEY INSTALLATION

⚠ WARNING

Operating a hoist with a trolley on a beam without rail stops can lead to a fall from the end of the beam.
To prevent injury:
set the rail stops at the end of each of the beams, on which the trolley hoist is to be used.

⚠ WARNING

If you do not follow the recommendations for installing the sets of washers, the trolley may fall from the beam.
To prevent injury:
measure the width of the beam, on which the hoist trolley will be placed and determine the location/number of spacer washers for the given beam width.

⚠ WARNING

Heavily worn beam flange can cause the fall of a trolley from a beam.
To prevent injury:
periodically inspect the beam flange for wear. Replace the beam if its flange is badly worn.

Rail stops should be located so that they do not have any effect on the components of the hoists and the wheels of the trolleys. They should touch the outer sides of the trolley frame. Due to the existence of different beam flange widths, it is recommended that you measure the width of the beam flange to determine the exact position of the spacer washers.

The distance between the track wheel flanges (Figure 2, shows the value of «Xx») should be 3-5 mm greater than the width of the beam flange for straight runway beams, and 5- 6 mm larger than the width of the beam flange with sharp curves. Also, the use of rings, that are not produced by HITCH may lead to deviations between the track wheel and the flange of the beam.

Install the trolley on the beam, by sliding one side out far enough to allow the wheels to close the beam flange. Connect the side of the frame and tighten the nuts (not twisted), and then set the cotter pins.

Immediately after the installation operate the trolley with a capacity load over the entire length of the runway, or monorail system, to make sure that the device is configured and functioning properly.

When attaching weight, make sure that it is right under the trolley. Do not allow for the slightest displacement of the center of gravity. Placing the load closer to the side may spread the trolley's side frames. On systems with curves, the edges of the rail at the curved sections should be slightly greased.

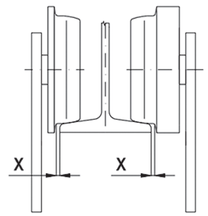


Figure 2.

MAINTENANCE

Lubrication
The lubricants recommended for use on the HITCH Hand Chain Hoist may contain hazardous substances that require special attention during their use and disposal.

To prevent contamination and contact, the use and disposal of the lubricants must happen strictly according to the safety regulations that are specified in the relevant reference materials, and in accordance with the applicable local, regional and federal level legislation.

NOTE: to achieve a maximum useful life and best performance, make sure that the lubricants used to lubricate the various parts of the HITCH Hoist are listed below. Refer to Table 5 for information on ordering the lubricants.

Table 5.

Part Numbers for packaged lubricants used in HITCH Hand and Trolley Hoists	
Lubricant Usage	Type of Lubricant
1. Gears	Grease
2. Hand Wheel Threads	Spray
3. Chain	Oil
4. Track Wheel Bearings	Grease
5. Track Wheel Gears	Heavy Cup Grease
6. Hand Wheel Shaft	Light Machine Oil

Load Chain
The chain must be lubricated with a thin layer of Lubriplate® Bar and Chain Oil (Fiske Bros. Refining Co.) or equivalent. Make sure that the lubricant covers the space contact links. Remove the excess oil from the surface of the chain.

The engine oil used contains known carcinogens.
To avoid health problems:
Never use waste oil as a lubricant for the chain. Use only Lubriplate® Bar and Chain Oil 10-R, or analogues for the lubrication of the load chain.
Always lubricate the chain hoists each week, or more often, depending on the severity of the operating mode.
Always lubricate hoists more frequently than usual in a corrosive environment *.
Always use machine oil that conforms to ISO VG46 or 68.
Always clean the chain with a solvent that contains no acids, only remove rust or abrasive powder accumulation. After cleaning, lubricate the chain.
Always lubricate each link in the chain and apply lubricant on the existing layer.
* - As an option to supply, there is a corrosion-resistant chain. For information about the specifications and dimensions of the standard and the corrosion-resistant chains produced by the HITCH corporation, please contact a HITCH dealer.

NOTE: The brake is designed to work in dry conditions. Do not use any kind of lubricants on the braking surfaces. Upon reassembly, when lubricated parts make contact with the brake, do not use any additional lubrication that could seep onto the braking surfaces.

Load Limiter
Apply a small amount of a stay-put lubricant, such as Moly-Duolube Style 69 (Hercules Packing Co.), on the load limiter of the hand wheel thread. Make sure that the lubricant does not make contact with the braking surface or the surface of the friction load limiter.

Gears
Lubricate the gears using Texaco Novatex # 2 or an analogue, 3 drops for the ¼ to 1 ton units and 4 drops for 1 ½ to 10 tons units.

Apply a small amount of grease onto the gear's teeth, also put some into the rest of the gear housing to make contact with the gears. During an annual technical inspection, remove the old grease and replace it with a new lubricant.

Geared Trolleys
After installation, and once every month, lubricate the track wheel gears and the drive wheel of the flywheel with some Texaco Novatex # 2 lubricant or an equivalent heavy cup grease or graphite grease.

INSPECTIONS

To maintain the product's quality of operation, each operator should be set a regular schedule of inspections. All of the inspections should result in submitted reports with maintained records and dates placed in a record log book. These records must be available for every employee related to the product, and should be made available for Hitchlifting Inc., if any questions related to the warranty arise.

Definitions
The following definitions are from ANSI / ASME B30.16 and will be used in the subsequent inspections procedure.

Normal Service - describes operation with several randomly distributed loads, the total weight of which do not exceed the rated load limit, or evenly distributed loads with a total weight of less than 65% of the maximum rated load and no more than 15% of the time.
Heavy Service - describes operation within the rated load limit of the maximum load that exceeds the load during normal operation.
Severe Service - describes operation in normal or heavy service with non-standard operating conditions.

Inspection Classifications
The initial inspection must be carried out for all new, modified and refurbished products in accordance with Table 6 (Inspection Chart). Thereafter, items indicated in Table 6 as F (Frequent) or P (Periodic) for hoists operating in harsh environmental conditions should be subject to more frequent inspections.

Table 6. Inspection chart
In the chart, F – Frequent Inspection, P – Periodic Inspection

Location		Check for	F	P
Braking mechanism		Slipping under load	✓	
		Hard to release	✓	
Brake parts	Brake Discs	Glazing		✓
		Oil contamination		✓
	Pawl, Ratchet	Excessive wear		✓
	Pawl, Spring	Corrosion; stretch		✓
Hook		Chemical damage	✓	
		Deformation	✓	
		Cracks (dye pentrant, magnetic particle, or other suitable detection method)	✓	✓
Hook retaining members (Pins, Bolts, Nuts)		Not tight or secure		✓
Hook latch		Damaged, does not close	✓	
Suspension Members (Sheaves, Hand wheels, Chain attachment, Suspension bolts or pins)		Excessive wear		✓
		Cracks	✓	✓
Gears		Distortion		✓
		Broken or worn teeth		✓
		Cracks		✓
		Inadequate lubrication		✓
Load Block: Suspension housing		Distortion	✓	✓
		Cracks	✓	✓
Trolley: Supporting structure		Possible inability to continue supporting loads		✓
Bolts, Nuts, Rivets		Not tight or secure		✓
WARNING label		Removed or illegible	✓	

NOTE: This inspection and maintenance checklist has been drafted in accordance with our interpretation of Safety Standard Requirements for lever hoists ASME B30.16. However, ultimately, the responsibility for the interpretation and compliance with the requirements established by this safety standard rests with the employer / user.

Hook Inspection
Hooks damaged by chemicals, deformations or cracks, or that have a twist in the hook from the plane of the unbent hook, excessive opening or wear of its seat must be replaced (see ASME B30.10).
Furthermore, the hooks that are opened to the extent that the latch does not engage with the tip of the hook must be replaced. Any hook that is twisted or has an excessive throat opening indicates improper use or hoist overloading. Other load supporting parts must be inspected for damage.

Frequent Inspections
The operator or another designated person should carry out frequent inspections by performing a visual inspection and listening out for uncharacteristic sounds during operation. Frequent inspections are generally performed according to the following schedule:

Normal Service - Monthly inspections
Heavy Service - Weekly to monthly inspections
Severe Service - Daily or before each use to weekly Inspections

Periodic Inspections
The designated person carries out periodic inspections, which are more detailed visual inspections of the external and internal conditions. These inspections are performed on the following schedule:

Normal Service - Yearly inspection
Heavy Service - Semi-annually inspections
Severe Service - Quarterly inspections

Exception
Brakes require more detailed checks than a simple audio-visual inspection. Daily checks on the operation of the equipment with a load and without a load, and with stops in different positions to ensure safe operation. Any fault must be corrected before the hoist is returned into operation. Also, external conditions may show the necessity for a more detailed inspection, which in turn may require the use of a non-destructive test type. Any part found to be unsuitable should be replaced with a new part before resuming the operation of the hoist. It is very important that unusable parts are destroyed, and properly disposed of, to prevent their possible future use as spare parts for repairs. If you intend to use the product in an intensive mode or dusty, sandy, wet, or corrosive atmospheric conditions, inspection intervals should be reduced. Every part must be inspected for abnormal wear, corrosion or damage, and in addition to the inspections, specifically indicated in the schedule.

Make sure that the latch is not damaged or bent and that it is running properly. The latch must have sufficient spring pressure to tightly press against the tip of the hook and spring back to the tip of the hook when released. If the latch does not work properly, replace it.

Use Table 4 (Hook Throat Opening), to determine when the hook must be replaced. Hook replacement is required if any of the problems listed above are detected, or it has reached the maximum dimensions specified in Table 4 (Hook Throat Opening).

Chain Inspection
The chain should feed smoothly in and out of the hoist. If the chain binds, jumps, or makes noise, first of all clean and lubricate the chain (see the maintenance section). If problems persist, inspect the chain and the connecting link for wear, deformation, or other damage. First clean the chain with a non-caustic/non-acid type solvent, and perform a link by link inspection of the chain for the presence of nicks, gouges, twisted links, weld spatter on the welded joints, corrosion pits, striations (small parallel lines), cracks in the weld areas, wear and stretching. Chains that have any of these defects must be replaced.

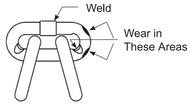


Figure 4. Chain Inspection

Use Table 7 to determine when the chain should be replaced.
The replacement of the whole chain is necessary if any of the problems listed above are found, or the maximum dimensions indicated in Table 7 and 8 have been reached. Only use a «knife edge» caliper to exclude the possibility of an erroneous reading by not measuring the full pitch length.

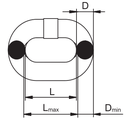


Figure 5. Load Chain - Diameter of one link length

Table 7.

Dia	Standard L (mm)	Max L (mm)	Standard D (mm)	Min D (mm)
4 mm	12	12.6	4	3.8
5 mm	15	15.8	5	4.5
6 mm	18	18.9	6	5.4
8 mm	24	25.2	8	7.2
10 mm	30	31.5	10	9

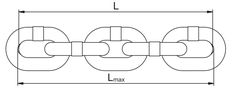


Figure 6. Load Chain - Five link length

Table 8.

Dia	Standard L (mm)	Max L (mm)
4 mm	60	61.8
5 mm	75	77.5
6 mm	90	92.7
8 mm	120	123.8
10 mm	150	154.5

! WARNING Using anything other than a HITCH supplied load chain may jam the chain into the hoist and / or rupture the chain and drop the load. To avoid injury: only use an original load chain supplied by HITCH for HITCH manually operated lever hoists, because of their size and physical property requirements.

Check for signs of wear on the chain as this can be a sign of worn out parts on the hoist. For this reason, the frame of the hoist, stripper, and lift wheel should be checked for wear and replaced if necessary during the replacement of a worn chain. In addition, the load chain is subjected to special heat treatment and hardened, so it should never be repaired.

! IMPORTANT Never use the replaced chain for other purposes such as lifting or pulling. The load chain may break suddenly without any visible signs of deformation. For this reason, cut the replaced chain into short lengths to avoid its reuse after its removal.

Time stamp replacement gears
If the gear of a HITCH hoist requires replacement for any reason, make sure that it is properly installed again. Figure 7 shows the correct orientation of the time stamp when meshing the gears.

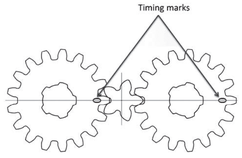


Figure 7.

TESTING

Before the first use, all modified, repaired, or used hoists that have not been exploited within the last 12 months, should be tested by the user for their reliable operation.

First, test the product unloaded, and then with light weights of 55 lbs multiplied by the number of loaded falls of the load chain in order to ensure that it operates reliably and that the brake holds the load when the hand chain is released; then carry out tests with a load,

* the weight of which should be 125% of the stated load capacity, by a responsible person or under his direction, document the results.

After this test, check the functioning of the Load Limiter.

* If the load limiter does not allow the lifting of load of 125% of the rated load capacity of the hoist, select a weight equal to the stated load capacity of the hoist.

NOTE: For more information on inspections and testing, refer to the current edition of ASME B30.16 «Overhead Hoists» which can be obtained from ASME Order Department, 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300, U.S.A.

SMART PROTECTION SYSTEM

Overload (Option)
Some models of the HITCH Hoist have overload protection in the form of a slip clutch (using the present identifier «S», which means «SMART»). The slip clutch may trigger at a hoist load of 160% +/- 20% of the stated load capacity. The slip clutch will allow the flywheel of the hand chain to move without lifting the load if the load is too heavy for the hoist. The slip clutch is adjusted at the factory and should not require any adjustments by the user. If you need to make an adjustment or a repair to the clutch in the future, it must be done by qualified personnel.
Never disassemble or attempt to adjust the load limiter assembly. Any attempt to implement it will void the warranty. If you need maintenance and repair, contact the nearest HITCH dealer.
Improper use of the hand chain hoists with an overload protection («SMART») device can lead to serious injury or death. To avoid these hazards:
Do not disassemble or adjust the overload limiter.
Do not operate the hoist under an overload.
Do not continue to lift a load when the overload limiter is in operation. Lower the load.

Do not operate the hoist in a manner that generates an impact load.
Do not use the overload limiter regularly. Excessive use of the overload limiter may cause a decline in the slipping load.
Do not use the hoist to detect an overload.
Do not attach oil such as grease to the clutch plate.
Do not lift an anchored load.
Do not lower excessively.
Do not store the hoist for a long period in an atmosphere including oil mist.
In a case there an overload via the hook of the hoist attached to the hook of a crane is lifted by the crane, the overload limiter will not operate since this is not a lever operation.
Do not replace a female thread assembly and the brake cover assembly, as they are exclusive parts.
Always contact your dealer if the overload limiter is activated with the rated load or less, or needs to be replaced.

STORAGE

! CAUTION
When storing a hoist observe the following terms.
Always store the hoist unloaded.
Always remove all of the dirt and water.
Always lubricate the chain, top pin, chain pin, and hook latches.
Always store in a dry place indoors.
Always check the chain for faults at the start of its use after a period of inactivity in accordance with the procedures for a periodic inspection
When the hoist is not being used, make sure that it does not interfere with other work.
When installing outdoors, cover the hoist to prevent the ingress of rain, or store it under a canopy.
Before storing the hoist, pull the hand chain 4 Inches to move the hook down and make sure that the brake is functioning.

TROUBLESHOOTING

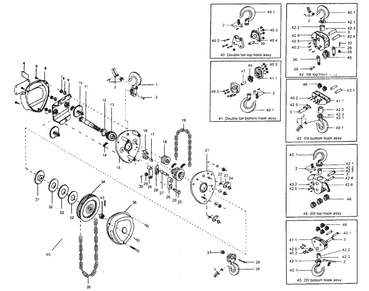
Always test the HITCH hoist under a load after the reassembly of any parts to be sure that it operates properly and holds the load when the hand chain is ...

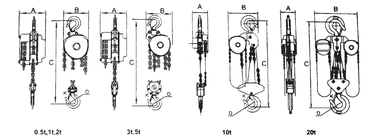
PROBLEM	CAUSE MAY BE	REMEDY
1. Hoist is hard to operate in either direction.	**a.** Load chain is worn along the gauge, thus binding between the lift wheel and the chain guide, **b.** Load chain is rusty, corroded or clogged up with foreign matter such as cement or mud, **c.** Load chain is damaged, **d.** Lift wheel is clogged with foreign matter or worn excessively, causing binding between the lift wheel and the chain guide, **e.** Hand chain is worn along the gauge, thus binding between the hand wheel and the cover, **f.** Hand wheel is clogged with foreign mater or worn, **g.** Lift wheel or gear teeth are deformed,	**a.** Check the gauge of the chain, Replace it if it is worn excessively, **b.** Clean by tumble polishing or using a non-acid or non-caustic type solvent. Lubricate with Lubriplate® Bar and Chain Oil 10-R (Fiske Bros, Refining Co.) or equal lubricant, **c.** Check the chain for gouges, nicks, bends or twisted in the links, Replace if damaged, **d.** Clean out the pockets, Replace it if it is worn excessively, **e.** Check gage of chain, **f.** Clean out the pockets, Replace it if it is worn excessively, **g.** Excessive overload has been applied, Replace the damaged parts.
2. Hoist is hard to operate in the lowering direction.	**a.** Brake parts are corroded or coated with foreign matter, **b.** Chain is binding.	**a.** Disassemble the brake and clean it thoroughly, (By wiping with a cloth - not by washing it in a solvent). Replace the washers if gummy, visibly worn or coated with a foreign matter. Keep the washers and the brake surfaces clean and dry, **b.** See Items 1A, 1B and 1C.
3. Hoist is hard to operate in the hoisting direction.	**a.** Chain is binding, **b.** Chain is twisted, (3 ton capacity or larger), **c.** Overload.	**a.** See Items 1A, 1B and 1C, **b.** Rereeve the chain on the 3 and 5 ton units, if both of the chains are twisted, capsize the hook block through the loop in the chain until the twists have been removed. Caution - do not operate the unit in hoisting direction with a twisted chain or serious damage will result, **c.** Reduce the load or use the correct hoist capacity.
4. Hoist will not operate in either direction.	**a.** Lift wheel gear key or friction hub key is missing or sheared, **b.** Gears jammed.	**a.** Install or replace the key, **b.** Inspect for foreign matter in the gear teeth.
5. Hoist will not operate in the lowering direction.	**a.** Locked the brake due to a suddenly applied load, shock load, or a load removed by means other than by the operating unit in the lowering direction. **b.** Chain is binding, **c.** Lower the hook all the way out. Load chain is fully extended.	**a.** With the hoist under the load keep the chain taut, pull sharply on the hand chain in the lowering direction to loosen the brake, **b.** See Items 1A, 1B and 1C. **c.** Chain is taut between the lift wheel and the loose end screw. Operate the unit in the hoisting direction only.
6. Hoist will not operate in the hoisting direction.	Chain is binding.	See Items 1A, 1B and 1C.
7. Hoist will not hold load in suspension.	**a.** Lower hook or the load side of the chain on wrong side of the lift wheel, **b.** Ratchet is assembled in reverse, **c.** Pawl is not engaging with the ratchet, **d.** Ratchet teeth or pawl are worn or broken, **e.** Worn brake parts, **f.** Oily, dirty or corroded brake friction surfaces,	**a.** Lower hook must be on same side of the lift wheel as the upper hook, **b.** Ratchet must be assembled as shown in the Spare Parts section, **c.** Pawl spring is missing or broken. Pawl is binding on the pawl stud, Replace the spring and clean it so that the pawl operates freely and it engages properly with the ratchet Do not oil, **d.** Replace the pawl and/or ratchet, **e.** Replace the brake parts that are worn, **f.** See item 2A.
8. The pawl makes a proper clicking sound but fails to lift the load.	Worn friction plates.	Disassemble and replace the friction plates and bushing.
9. The pawl produces absolutely no sound and fails to lift the load.	**a.** The pawl has been improperly assembled. **b.** The pawl is not moving smoothly.	**a.** Disassemble and then reassemble the parts correctly. **b.** Same as above.

HAND CHAIN HOIST HITCH CH100 / 100-G*

SPARE PARTS (0.5T-20T)

1. TOP HOOK ASSY
2. SAFETY LATCH ASSY
3. HOOK PIN
4. NAME PLATE
5. COVER SCREW
6. SHEET COVER
7. HEX NUT
8. LOCKMASTER
9. BEARING PLATE ASSY
10. DISC GEAR ASSY
11. DRIVING PINON
12. RETAINING RING
13. SPLINED GEAR
14. ROLLER
15. RIGHT SIDE PLATE ASSY
16. END ANCHOR
17. END ANCHOR PIN
18. GUIDE ROLLER
19. LOAD CHAIN
21. LEFT SIDE PLATE ASSY
22. PAWL SPRING
23. PAWL
24. RETAINING RING25. SLING PLATE PIN
26. SLING PLATE
27. STRIPPER PIN
28. STRIPPER
29. SLOTTED NUT
30. COTTER PIN
31. BRAKE SEAT
32. FRICTION DISC
33. RATCHET DISC
34. HAND CHAIN WHEEL
35. HAND CHAIN
36. CHAIN WHEEL COVER
37. LOCK NUT
38. BOTTOM HOOK ASSY
39. PIN
40. DOUBLE FALL TOP HOOK ASSY
40.1. HOOK
40.2. SCREW
40.3. NUT
40.4. TOP HOOK FRAME
41. DOUBLE FALL BOTTOM HOOK ASSY
41.1. BOTTOM HOOK FRAME
42.1. 0T TOP HOOK ASSY
42.1. ROW
42.2. HOOK FRAME BAR
42.3. LOCK SCREW
42.4. MOVE WHEEL PIN
42.5. STRIPPER
42.6. BUNTON
43. 10T BOTTOM HOOK ASSY
43.1. MOVE WHEEL PIN
44. 20T TOP HOOK ASSY
45. 20T BOTTOM HOOK ASSY
46. MOVE WHEEL
47. MOVE WHEEL PIN
48. WARNING LABEL (NOT SHOWN)
49. PENDANT WARNING TAG (NOT SHOWN)





MAIN SPECIFICATIONS

STOCK NUMBER **		102 053	102 013	102 053	102 023	102 033	102 503	102 103	102 203
RATED CAPACITY [TONS]		1/2	1	1-1/2	2	3	5	10	20
TEST LOAD [TONS]		3/4	1-1/2	2-1/4	3	4-1/2	7-1/2	15	30
STANDARD LIFT [FT.] ***		10	10	10	10	10	10	10	10
PULL TO RATED LOAD [LBS.]		49	67	76	90	76	91	91	91x2
NUMBER OF LOAD CHAIN FALLS		1	1	1	1	2	2	4	8
LOAD CHAIN DIA. STRENGTH CLASS 690 [MM]		6	6	8	8	8	10	10	10
MECHANICAL CLASS		M2							
OPERATION TEMPERATURE (F) ****		-5 F Up to +120 F							
DIMENSIONS [IN.]	**A**	4-7/16	5	5-9/16	5-9/16	5-9/16	6-7/16	6-7/16	7-1/2
	B	5	5-13/16	7-3/16	7-3/16	7-13/16	8-7/16	16	23-7/16
	C (HEADROOM)	10	12	14-1/2	14-1/2	19-1/8	24-1/4	29-1/2	39-3/8
	D	1-7/16	1-9/16	1-3/4	2	2-5/16	2-1/2	3-3/8	4-5/16
	K	1-3/16	1-5/16	1-1/2	1-5/8	1-7/8	2	2-1/2	3-3/8
NET WEIGHT [LBS]		18-3/4	24-1/4	39-11/16	39-11/16	59-1/2	92-9/16	183	425-1/2
WEIGHT FOR ADDITIONAL 3.3 FT OF LIFT [LBS]		3-3/4	3-3/4	5	5	8-3/16	12-3/8	21-3/8	42-3/4

* Options:
«G» - «Galvanic» - Load chain with a galvanic coating
«B» - «Bearings» - Hoist equipped with friction bearings
«S» - «SMART» - Overload Protection System
«TD» - Trolley Directly

** Stock Number is indicated for standard designs and standard lifts. For more detail see www.hitchlifting.com

*** Maximum standard lift height of 60 Ft. Specify your required lifting height in your order.

**** Necessary to check the brake at a temperature below 32 F in case of freezing

Operation humidity - 100%

These specifications were relevant at the date of publication, but because of the continuous improvement process HITCH reserves the right to change the specifications at any time without notice, and without any additional obligation.