



MANUAL CHAIN HOIST

OWNER'S MANUAL



0.5-2-TON



3-TON



5-TON



WARNING: Read carefully and understand all **INSTRUCTIONS** before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

**Item#s 21284, #21286, #21302,
#21287, #21288, #21368, #21289**

Thank you very much for choosing a Roughneck™ Product! For future reference, please complete the owner's record below:

Model: _____ Purchase Date: _____

Save the receipt, warranty and these instructions. It is important that you read the entire manual to become familiar with this product before you begin using it.

This machine is designed for certain applications only. The distributor cannot be responsible for issues arising from modification. We strongly recommend this machine is not modified and/or used for any application other than that for which it was designed. If you have any questions relative to a particular application, DO NOT use the machine until you have first contacted distributor to determine if it can or should be performed on the product.

For technical questions, please call **1-800-222-5381**.

APPLICATION

The manual chain hoist is portable lifting device easily operated by hand chain. It is suitable for use in garages, workshops and warehouses for loading and unloading goods. It is specially advantageous for lifting work in open air grounds and places where no power supply is available.

The chain hoist can be attached to a trolley as a travelling chain hoist. It is suitable to monorail overhead conveying system, hand travelling crane and jib crane.

TECHNICAL SPECIFICATIONS

Model		21284	21286	21302	21287	21288	21368	21289
Rated Capacity	ton	0.5	1	1	2	3	3	5
	m	3	3	6	3	3	6	3
Lift Height	ft.	10	10	20	10	10	20	10
	in.	12 1/2	14	14	17 1/2	19	19	26 1/2
Head Room	in.	3/16	15/64	15/64	5/16	5/16	5/16	3/8
Load Chain Dia.	in.							

GENERAL SAFETY REGULATIONS



WARNING: Read and understand all instructions. Failure to follow all instructions listed below may result in serious bodily injury or death, and/or property damage.



WARNING: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions or situations that could occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

- **Keep the work area clean and dry.** Damp or wet work areas can result in injury.
- **Keep children away from work area.** Do not allow children to handle this product.

- **Always wear ANSI-approved safety glasses and heavy-duty work gloves during assembly and use.** Do not wear loose clothing or jewelry which can get caught in moving parts.
- **Store idle equipment.** When not in use, tools and equipment should be stored in a dry location to inhibit rust. Always lock up tools and equipment, and keep out of reach of children.
- **Use the right tool for the job.** Do not attempt to force small equipment to do the work of larger industrial equipment. There are certain applications for which this equipment was designed. It will do the job better and more safely at the capacity for which it was intended. Do not modify this equipment, and do not use this equipment for a purpose for which it was not intended.
- **Check for damaged parts.** Before using this product, carefully check that it will operate properly and perform its intended function. Check for damaged parts and any other conditions that may affect the operation of this product. Replace damaged or worn parts immediately.
- **Do not overreach.** Keep proper footing and balance at all times to prevent tripping, falling, back injury, etc.
- **DO NOT use the equipment when tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating this equipment may result in serious personal injury.
- **Industrial applications must follow OSHA requirements.**

SPECIFIC OPERATION WARNINGS



WARNING: NEVER OVERLOAD!! Make sure the operator be familiar with the hoist controls before being authorized to operate the hoist.



WARNING: DO NOT LIFT PERSONNEL. DO NOT LIFT LOADS OVER PEOPLE.

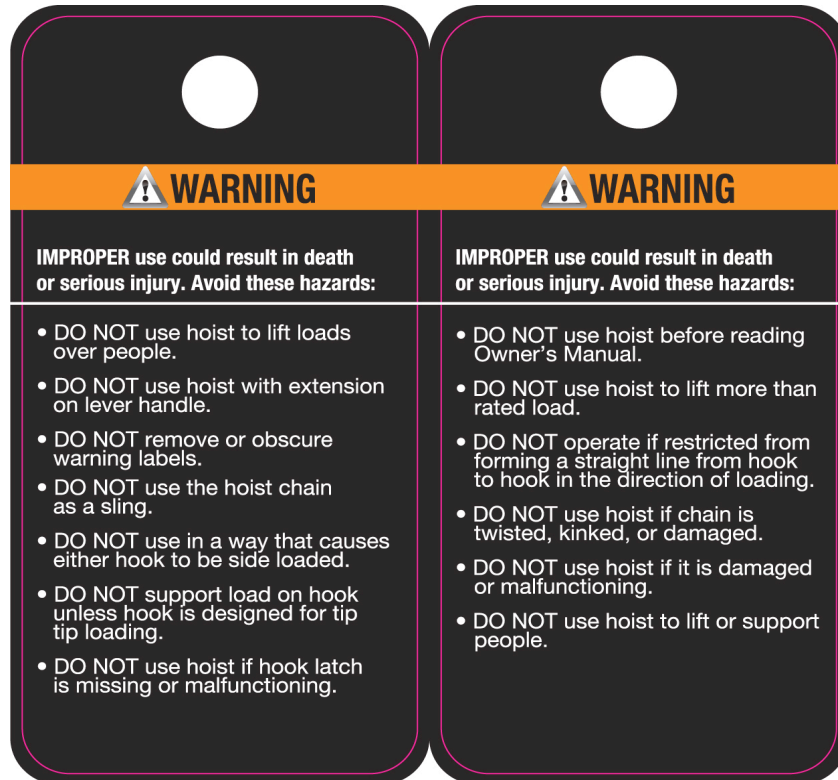


WARNING: DO NOT walk under a suspended load. DO NOT perform any work on a suspended load that requires a worker to be positioned under the suspended load.

- Inspect chain for nicks, gouges, and any type of deformation or damage, and check load chain for lubrication.
- Inspect hooks for nicks, gouges, deformation of the throat opening, wear on saddle or load bearing point, and twisting.
- Inspect hook latches for proper operation or damage that does not allow proper operation.
- DO NOT operate hoist if any damage or malfunctions exist.
- DO NOT use the hoist load chain as a sling to wrap around the load.
- DO NOT use the hoist in such a way that could result in shock or impact loads being applied to the hoist.
- DO NOT attempt to lengthen the load chain or repair damaged load chain.
- DO NOT operate beyond the limits of the load chain travel.
- Make sure all persons stay clear of the supported load.
- Make sure load slings or other approved single attachments are properly sized, rigged and seated in the hook saddle.

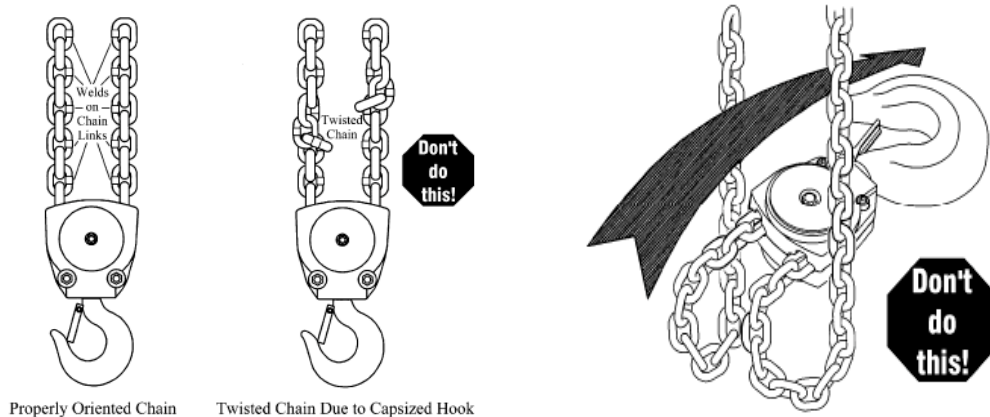
- Take up slack carefully – make sure load is balanced and load-holding action is secure before continuing.

NOTICE: The warning tag illustrated below is supplied with each hoist shipped from the distributor. If the tag is not attached to your hoist’s no-load side of the load chain, order a tag from the distributor and install it. Read and obey all warnings attached to this hoist. Tag is not shown actual size.



OPERATION INSTRUCTIONS

1. Judge the weight of the load to be lifted and make sure if the weight is not over the rated capacity of the chain hoist. Never overload the hoist on any occasion.
2. Careful inspection should be made to the parts, such as hooks, load chain, braking device, etc. and the lubrication of the hoist. The chain hoist can only be put into operation when it is found to be in good condition.
3. Before lifting, inspect the hooks to see whether they are securely attached. Obliquity of the hooks and load suspension at hook tip are not permissible. For perfect performance of the hoist, the load chain should be kept vertically straight without twist so as to prevent it from tangling.



WARNING: Attach the hoist's top hook to the fixed suspension point. Ensure that the fixed suspension point is on the center of the hook's saddle and that the hook's latch is engaged.

4. During operation, the operator should stand in the plane of the hand wheel (part# 26). To lift the load, pull the hand chain (part# 31) to rotate the hand wheel in clockwise direction. When pulling the hand chain in the reverse direction, the hand wheel will be separated from brake disc (part# 21), the friction plate (part# 23/25) checked by pawl (part# 22) will be released, and the load will be lowered down smoothly. Do not pull the hand chain in a position oblique to the plane of the hand wheel to prevent tangling of the hand chain and turning of the hoist.

5. The load should be lifted only a few inches and stopped to check that the load is properly balanced, that slings, if used, are properly positioned, that load or sling is seated in the saddle, base, or bowl of the load hook; and that the hoist holding brake stops and holds the load before continuing with the lift.

6. For the sake of safety, passing or working under a lifting load is strictly forbidden.

7. While lifting or lowering a load, the hand chain should be pulled steadily so as to prevent it from jerking or tangling.

8. Stop operation immediately in case the hand chain cannot be pulled any further. Don't ask more hands for pulling. Proceed inspection as follows:

- (1) If there is anything entangled with the load.
- (2) Whether there is any trouble with the parts of the hoist.
- (3) Whether the load weight is over the rated capacity of the hoist.

MAINTENANCE

1. Clean off the dirt on the chain hoist after use and store it in a dry place to keep it from getting rusty and corrosive.

2. Clean the parts with kerosene and smear the gears and bearings with grease once a year by a skilled hand.

3. The load chain guide (part# 17) of the chain sprocket bearing may be stuck to the journal of the chain sprocket (part# 47) with grease before fitting them into the outer race of the bearing (part# 13-1) on the side plate.

4. While assembling the brake mechanism, care should be taken to mesh the slanting teeth of the ratchet disc and the pawl. Make sure that the pawl is controlled by the spring in a sensitively and reliable

way. Then turn the hand wheel clockwise after screwing it onto the driving shaft, and it must press the disc and the plates on the brake seat. Turning it counterclockwise, there should be clearances between the disc and the plates.

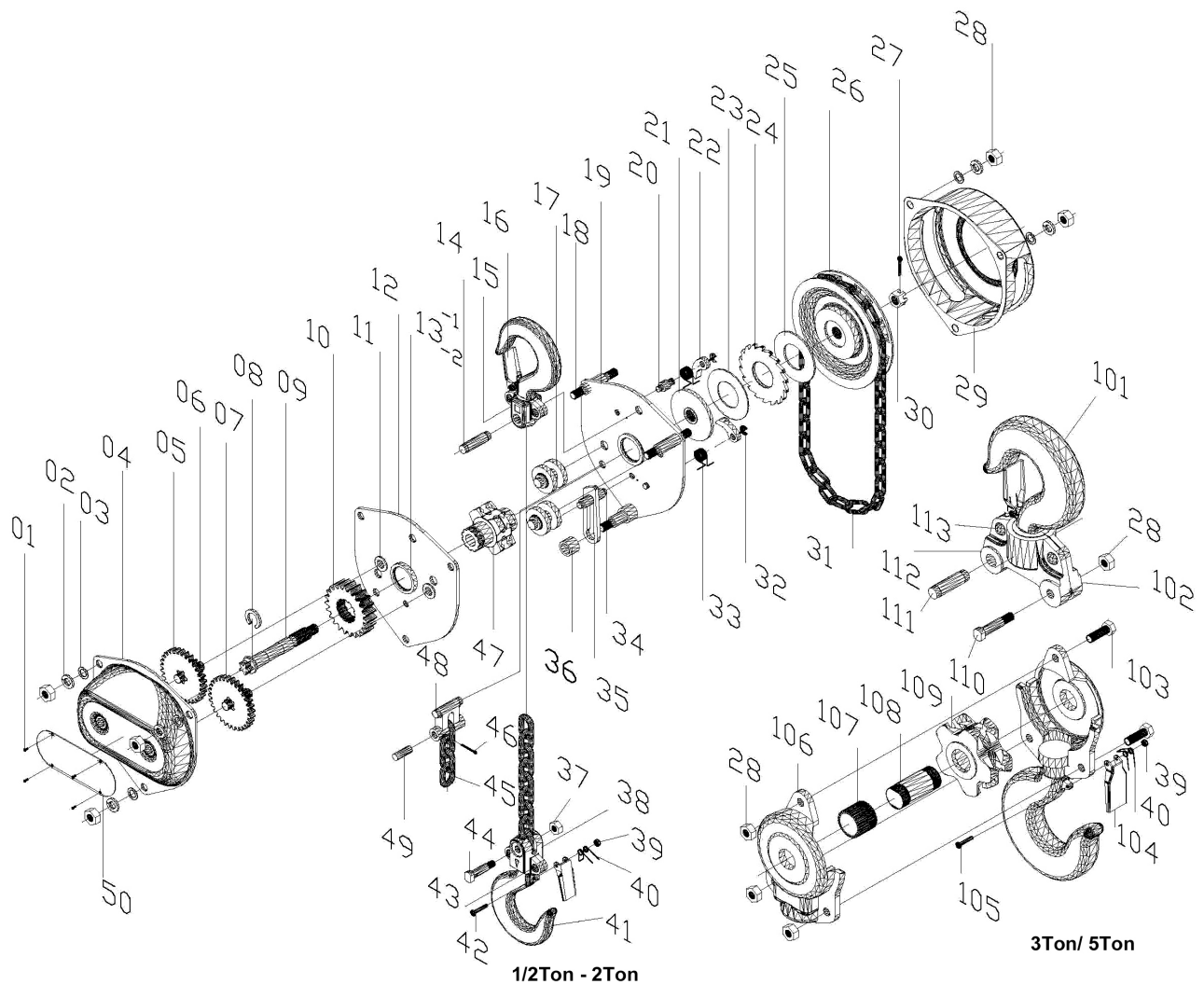
5. Transition fit is applied to the stay (part# 18) and the side plate II (part# 19). Don't dismantle them, or they will get loose.

6. Never allow any layman to disassemble the hoist.

7. After cleaning and repairing the hoist should be subjected to no-load test and heavy load test. A chain hoist can be put into operation after it has been tested and found in good condition.

8. Keep clean the friction surfaces of the brake while lubricating or operating the hoist. Brake mechanism should be inspected regularly for prevention of faulty braking and falling of the load.

DIAGRAM & PARTS LIST



No.	Description	QTY	No.	Description	QTY	No.	Description	QTY
01	Rivet	4	22	Pawl	2	44	Top Hook Pin	1
02	Spring Washer	6	23	Friction Plate	1	45	Load Chain	1
03	Washer	6	24	Ratchet Disc	1	46	Split Pin	1
04	Support Plate	1	25	Thick Friction Plate	1	47	Chain Sprocket	1
05	Pinion Gear A	1	26	Hand Wheel	1	48	Chain Stopper Link	1
06	Short Pinion Shaft	2	27	Cotter Pin	1	49	Pin	1
07	Pinion Gear B	1	28	Nut	6	50	Nameplate	1
08	Pinion Washer	1	29	Wheel cover	1	101	Hook	2
09	Long Pinion Shaft	1	30	Slotted Nut	1	102	Top Hook Frame I	1
10	Splined Gear	1	31	Hand Chain	1	103	Screw	3
11	Bushing	4	32	Circlip	2	104	Safety Latch	2
12	Side Plate (I)	1	33	Pawl Spring	2	105	Screw	2
13-1	Bearing Race	2	34	Pin	1	106	Bottom Hook Frame	2
13-2	Needle	80	35	Chain Stripper	1	107	Needle	29
14	Top Shaft	1	36	Circlip	2	108	Shaft	1
15	Top Hook Frame	2	37	Nut	1	109	Loose Pulley	1
16	Safety Latch	2	38	Bottom Hook Frame	2	110	Top Hook Pin	1
17	Chain Guide	2	39	Nut	2	111	Top Shaft	1
18	Stay	3	40	Spring	2	112	Top Hook Frame II	1
19	Side Plate (II)	1	41	Hook	2	113	Rivet	2
20	Pin	2	42	Screw	2	NOTE: Part#101-113 are for 3/5ton hoists.		
21	Brake Disc	1	43	Rivet	4			

For replacement parts and technical questions, please call **1-800-222-5381**.

WARRANTY

One-Year Limited Warranty



Distributed by
Northern Tool + Equipment Co., Inc.
Burnsville, MN 55306
NorthernTool.com
Made in China