

Grizzly *Industrial, Inc.*®

MODEL T23110/T23111/T23112

3, 2, & 1½ TON

LEVER CHAIN HOIST

OWNER'S MANUAL



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WARNING!

This manual provides critical safety instructions on the proper setup, operation, maintenance, and service of this machine/tool. Save this document, refer to it often, and use it to instruct other operators.

Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine/tool is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, cutting/sanding/grinding tool integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.



WARNING!

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints.
- Crystalline silica from bricks, cement and other masonry products.
- Arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

SECTION 1: SAFETY

WARNING

For Your Own Safety Read Instruction Manual Before Operating This Equipment

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words which are intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures.

DANGER

Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.

WARNING

Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTICE

This symbol is used to alert the user to useful information about proper operation of the equipment.

WARNING

Safety Instructions for Machinery

- 1. READ THROUGH THE ENTIRE MANUAL BEFORE STARTING MACHINERY.** Machinery presents serious injury hazards to untrained users.
- 2. ALWAYS USE ANSI APPROVED SAFETY GLASSES WHEN OPERATING MACHINERY.** Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
- 3. ALWAYS USE HEARING PROTECTION WHEN OPERATING MACHINERY.** Machinery noise can cause permanent hearing damage.
- 4. ALWAYS WEAR A NIOSH APPROVED RESPIRATOR WHEN OPERATING MACHINERY THAT PRODUCES DUST.** Wood dust is a carcinogen and can cause cancer and severe respiratory illnesses.
- 5. KEEP CHILDREN AND VISITORS AWAY.** Keep all children and visitors a safe distance from the work area.
- 6. MAKE WORKSHOP CHILD PROOF.** Use padlocks, master switches, and remove switch keys.
- 7. MAKE SURE GUARDS ARE IN PLACE AND WORK CORRECTLY BEFORE USING MACHINERY.**

WARNING

Safety Instructions For Machinery

8. **WEAR PROPER APPAREL. DO NOT** wear loose clothing, gloves, neckties, rings, or jewelry which may get caught in moving parts. Wear protective hair covering to contain long hair and wear non-slip footwear.
9. **NEVER OPERATE MACHINERY WHEN TIRED, OR UNDER THE INFLUENCE OF DRUGS OR ALCOHOL.** Be mentally alert at all times when running machinery.
10. **ONLY ALLOW TRAINED AND PROPERLY SUPERVISED PERSONNEL** to operate machinery. Make sure operation instructions are safe and clearly understood.
11. **NEVER LEAVE WHEN MACHINE IS RUNNING.** Turn power off and allow all moving parts to come to a complete stop before leaving machine unattended.
12. **DO NOT USE IN DANGEROUS ENVIRONMENTS.** DO NOT use machinery in damp, wet locations, or where any flammable or noxious fumes may exist.
13. **KEEP WORK AREA CLEAN AND WELL LIT.** Clutter and dark shadows may cause accidents.
14. **USE A GROUNDED EXTENSION CORD RATED FOR THE MACHINE AMPERAGE.** Undersized cords overheat and lose power. Replace extension cords if they become damaged. DO NOT use extension cords for 220V machinery.
15. **ALWAYS DISCONNECT FROM POWER SOURCE BEFORE SERVICING MACHINERY.** Make sure switch is in OFF position before reconnecting.
16. **MAINTAIN MACHINERY WITH CARE.** Keep blades sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
17. **REMOVE ADJUSTING KEYS AND WRENCHES.** Make a habit of checking for keys and adjusting wrenches before turning machinery ON.
18. **CHECK FOR DAMAGED PARTS BEFORE USING MACHINERY.** Check for binding and alignment of parts, broken parts, part mounting, loose bolts, and any other conditions that may affect machine operation. Repair or replace damaged parts.
19. **DO NOT FORCE MACHINERY.** Work at the speed for which the machine or accessory was designed.
20. **SECURE WORKPIECE.** Use clamps or a vise to hold the workpiece when practical. A secured workpiece protects your hands and frees both hands to operate the machine.
21. **DO NOT OVERREACH.** Keep proper footing and balance at all times.
22. **MANY MACHINES WILL EJECT THE WORKPIECE TOWARD THE OPERATOR.** Know and avoid conditions that cause the workpiece to "kickback."
23. **ALLERGIC REACTIONS.** Be aware that certain woods may cause an allergic reaction in people and animals, especially when exposed to fine dust. Make sure you know what type of wood dust you will be exposed to and always wear an approved respirator.

WARNING

Additional Safety Instructions for Lever Chain Hoists

1. **LIFTING POWER.** This lever chain hoist is designed to be comfortable for one person to lift the load using only hand power. Never use a motor or an additional mechanical device with this hoist to lift the load.
2. **SAFETY HOOKS.** Before lifting, inspect the safety hooks to make certain they are securely attached, and verify that the safety catches are operating correctly.
3. **METAL FATIGUE.** Before using, inspect the hooks, chains, and hoist housing to verify that the metal parts do not have cracks or other signs of potential failure.
4. **DYNAMIC LOADING.** Swinging or jerking the load will cause dynamic loading that could exceed the capacities of the hoist, which could result in the load falling.
5. **CHAIN ENTANGLEMENT.** Always make sure the chains are not twisted around each other before lifting. Keep body parts, long hair, and jewelry away from the chains and hooks to prevent entanglement during lifting.
6. **VERTICAL MOVEMENT.** The lever chain hoist is designed to only move the load straight up and straight down. Swinging or dragging the load could cause hoist failure and the load to fall.
7. **LOAD TYPES.** Never lift personnel or livestock with this chain block.
8. **WARNING LABEL.** Always make sure the warning label on the hoist is legible so that the operator can be aware of the immediate hazards of operating the hoist. If the label becomes damaged, replace it.
9. **CRUSHING HAZARD.** If the load should fall, it could cause death or serious personal injury to anyone underneath the hoist. Always make sure the operator and bystanders never move under the load.
10. **OPERATION SPEED.** Use a slow and steady pace when raising or lowering the load to avoid jerking or tangling the chains and load.
11. **HEAD PROTECTION.** Always wear a hard hat or similar head protection when using the hoist.
12. **OPERATIONAL DIFFICULTY.** If the hoist seems to require excessive force to lift the load, check for the following and resolve them before continuing:
 - Is the load heavier than the rated capacity of the hoist?
 - Are the chains or load entangled in any way?
 - Is an obstacle blocking the load or chains?
 - Are the chains and load not directly under the hoist?
 - Have the gears inside the hoist housing jammed?

CAUTION

No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment or poor work results.

SECTION 2: INTRODUCTION

Contact Info

If you have any comments regarding this manual, please contact us:

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Most importantly, we stand behind our tools. If you have any service questions or parts requests, please call or write us at the location listed below.

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Phone: (570) 546-9663
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Specifications

Refer to the table below to verify the operation specifications of the specific model of lever chain hoist that you purchased. The model number appears on the label attached to the side of the gear block housing. Be sure you understand the capacity and lift requirements for your particular model before using it!

Description	T23110	T23111	T23112
Maximum Load Capacity	3 Ton	2 Ton	1½ Ton
Maximum Lifting Chain Length	59"	59"	59"
No. of Load Chain Lines	1	1	1
Lifting Chain Link Thickness	¾"	5/16"	5/16"
Lifting Chain Hardness	Grade 8	Grade 8	Grade 8
ISO 9002 Factory	Yes	Yes	Yes
Net Weight	40 lbs.	24 lbs.	23 lbs.

SECTION 3: OPERATIONS

To operate the lever chain hoist:

1. Read and follow the safety precautions included in the front of the manual, wear protective head gear, and clear the area around the lifting operation.
2. Secure the safety hook on top of the hoist housing to a structurally sound overhead beam that is capable of supporting the load weight.

Make sure that the overhead connection point conforms to the required local and state safety and building codes for the hoist and load used.

Note: *The hoist can be mounted a beam trolley if the capacity of the trolley system is at least twice the maximum load capacity of the hoist.*

3. Position the load directly under the hoist.

WARNING

Always connect the chain block lifting hook to a separate lifting device attached to the load, such as straps, chains, or an eye bolt, so that the lifting chain is vertical. DO NOT wrap the lifting chain and hook around the load in any way, which could cause them to fail under load. Ignoring this warning could lead to serious personal injury or property damage.

4. Flip the selector on the lever to the neutral ("N") position. This allows the lifting chain to freely move through the gear block housing by either pulling on the lifting chain or rotating the handwheel.
5. Make sure the chains are not tangled, then attach the lifting hook to the load.
6. Eliminate the slack in the lifting chain between the gear block housing and the load by pulling on the chain.
7. Flip the selector on the lever to the up ("U") position, then pull on the lever until there is slight tension on the lifting chain.
8. Inspect the hoist and load to make sure that the lifting chain will stay vertical and will not twist during the lifting operation, that there is not a possibility of any type of entanglement, and that there are no obstacles in the path of the lift.
9. While keeping to the side of the lifting path, continue to pull on the lever with a slow and steady pace.

Note: *The lever chain mechanism will suspend the load at the current position when you release the handle.*
10. To lower the load, flip the selector on the lever to the down ("D") position, then pull on the lever with a slow and steady pace.
11. When the tension between the hoist and the load is completely released, detach the hoist hook from the load.

SECTION 4: MAINTENANCE

Follow regular maintenance to keep the hoist in good working condition. To avoid serious injury from hoist failure, never attempt to repair a hoist that malfunctions or becomes damaged. Hoist repair or service must be done by a qualified technician only.

The hazard of an improper repair job is that it could cause the hoist to fail and unexpectedly drop the load, which could crush or kill people below, or cause major property damage. For this reason, we strongly recommend replacing the hoist if it malfunctions or becomes damaged.

To avoid contaminating the friction brake during maintenance, you must know the difference between the gear cover and the brake cover (see **Figure 1**).

The Gear Cover will be removed during routine maintenance. The Brake Cover should only be removed by a qualified technician; it encloses the friction brake and protects it from exposure to contaminants, such as liquids or lubrication, that will cause the brake to fail under load.

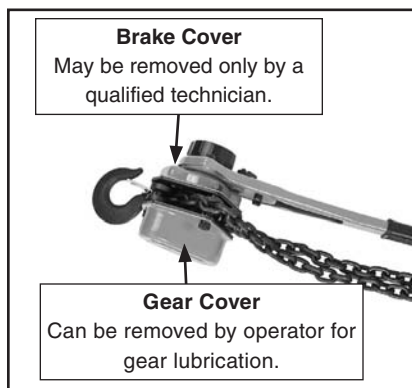


Figure 1. Hoist housing cover identification.

Cleaning

To prevent the chains from jamming, clean away dirt and debris from the outside of the hoist housing and the chains.

NOTICE

DO NOT submerge the hoist housing in liquid of any kind or allow liquid to enter the brake cover during cleaning, or the braking mechanism may fail to work properly.

Chain Lubrication

When the chains are clean and dry, apply a thin coat of light machine oil to the links with an oiled shop rag to ensure smooth movement and prevent corrosion.

Storage

Before storing the hoist, clean and lubricate the chains. Always store the hoist in a clean, dry, and protected area to prevent corrosion or damage.

WARNING

A malfunctioning or damaged hoist may drop its load and crush or kill people below, or cause major property damage. To reduce this risk, observe all care and maintenance noted in the manual. If hoist malfunctions or becomes damaged, replace it, or have it serviced by a qualified service technician.

Greasing Gears

Clean and grease the chain block gears every 6 months with normal use, or more frequently with heavy use or exposure to adverse conditions.

Items Needed

Qty

Wrench or Socket 13mm.....	2
Mineral Spirits.....	As Needed
Stiff-Bristled Brush.....	1
Shop Rags.....	As Needed
Multi-Purpose Gear Grease.....	As Needed

To grease the hoist gears:

1. Lay the hoist housing on a flat working surface with the brake cover facing down.
2. Remove the three lock nuts that secure the gear cover, then remove the cover (see **Figure 2**).

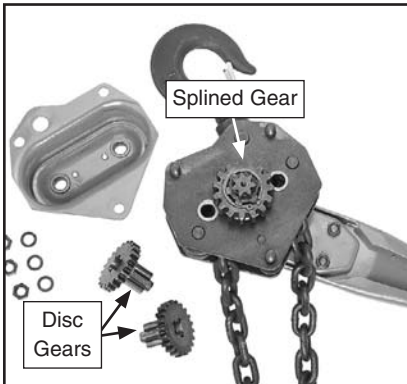


Figure 2. Gears exposed.

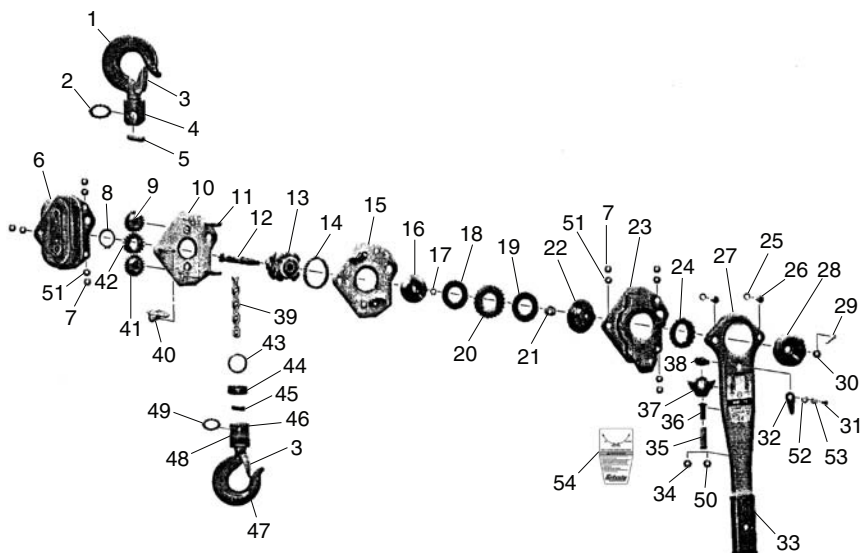
3. Remove the two disc gears from the housing.
4. Use mineral spirits, a stiff-bristled brush, and shop rags to clean the old grease and grime from the disc and splined gears.

Take care not allow the mineral spirits or lubricant to drip into the lower brake housing and onto the braking mechanism.

5. When the parts are dry, apply a medium coat of multi-purpose gear grease to the gear teeth.
6. Re-assemble the components in the reverse order that you disassembled them.
7. Test the lifting capabilities of the hoist with no load, then, if successful, with the rated maximum load for your hoist.

— If you suspect any problems with the lifting or brake mechanisms, immediately lower the load and resolve any issues before using the hoist again.

T23110/T23111/T23112 Parts Breakdown



T23110 Parts List

REF PART #	DESCRIPTION
1	PT23110001 TOP HOOK
2	PT23110002 TOP HOOK BALL BEARING
3	PT23111003 HOOK SAFETY LATCH ASSY
4	PT23110004 TOP HOOK BRACKET
5	PT23110005 TOP HOOK BRACKET PIN
6	PT23110006 GEAR COVER
7	PN09M HEX NUT M12-1.75
8	PT23110008 EXT RETAINING RING
9	PT23110009 PINION SHAFT
10	PT23110010 GEAR PLATE
11	PT23110011 DBL-END STUD M12-1.75 x 90
12	PT23110012 DRIVE SHAFT
13	PT23110013 CHAIN SPROCKET
14	PT23110014 ROLLER BEARING
15	PT23110015 BRAKE PLATE
16	PT23110016 BRAKE SEAT
17	PT23110017 EXT RETAINING RING
18	PT23110018 INNER BRAKE
19	PT23110019 OUTER BRAKE
20	PT23110020 RATCHET GEAR
21	PT23110021 SPACER
22	PT23110022 GEAR CAP
23	PT23110023 BRAKE COVER
24	PT23110024 CHANGE-OVER GEAR
25	PLW04M LOCK WASHER 8MM
26	PB84M HEX BOLT M8-1.25 X 14
27	PT23111027 LEVER HANDLE

REF PART #	DESCRIPTION
28	PT23111028 HANDWHEEL
29	PT23111029 COTTER PIN
30	PT23111030 SLOTTED HEX NUT M10-1.5
31	PS09M PHLP HD SCR M5-.8 X 10
32	PT23111032 SELECTOR
33	PT23111033 HANDLE GRIP RUBBER
34	PN03M HEX NUT M8-1.25
35	PT23111035 COMPRESSION SPRING
36	PT23111036 SPRING SHAFT
37	PT23111037 PAWL
38	PT23111038 SELECTOR PIN
39	PT23110039 LIFTING CHAIN G8
40	PT23110040 CHAIN STRIPPER
41	PT23110041 DISC GEAR
42	PT23110042 SPLINE GEAR
43	PT23110043 LIFTING HOOK CHAIN LINK
44	PT23110044 LIFTING HOOK TOP RING
45	PT23110045 LIFTING HOOK CHAIN PIN
46	PT23110046 LIFTING HOOK BOTTOM RING
47	PT23110047 LIFTING HOOK
48	PT23110048 LIFTING HOOK BRACKET
49	PT23110049 LIFTING HOOK BALL BEARING
50	PLW04M LOCK WASHER 8MM
51	PLW05M LOCK WASHER 12MM
52	PW02M FLAT WASHER 5MM
53	PLW01M LOCK WASHER 5MM
54	PT23110054 ID/WARNING LABEL

T23111 Parts List

REF PART #	DESCRIPTION
1	PT23111001 TOP HOOK
2	PT23111002 TOP HOOK BALL BEARING
3	PT23111003 HOOK SAFETY LATCH ASSY
4	PT23111004 TOP HOOK BRACKET
5	PT23111005 TOP HOOK BRACKET PIN
6	PT23111006 GEAR COVER
7	PN02M HEX NUT M10-1.5
8	PT23111008 EXT RETAINING RING
9	PT23111009 PINION SHAFT
10	PT23111010 GEAR PLATE
11	PT23111011 DBL-END STUD M10-1.5 X 75
12	PT23111012 DRIVE SHAFT
13	PT23111013 CHAIN SPROCKET
14	PT23111014 ROLLER BEARING
15	PT23111015 BRAKE PLATE
16	PT23111016 BRAKE SEAT
17	PT23111017 EXT RETAINING RING
18	PT23111018 INNER BRAKE
19	PT23111019 OUTER BRAKE
20	PT23111020 RATCHET GEAR
21	PT23111021 SPACER
22	PT23111022 GEAR CAP
23	PT23111023 BRAKE COVER
24	PT23111024 CHANGE-OVER GEAR
25	PLW04M LOCK WASHER 8MM
26	PB84M HEX BOLT M8-1.25 X 14
27	PT23111027 LEVER HANDLE

REF PART #	DESCRIPTION
28	PT23111028 HANDWHEEL
29	PT23111029 COTTER PIN
30	PT23111030 SLOTTED HEX NUT M10-1.5
31	PS09M PHLP HD SCR M5-.8 X 10
32	PT23111032 SELECTOR
33	PT23111033 HANDLE GRIP RUBBER
34	PN03M HEX NUT M8-1.25
35	PT23111035 COMPRESSION SPRING
36	PT23111036 SPRING SHAFT
37	PT23111037 PAWL
38	PT23111038 SELECTOR PIN
39	PT23111039 LIFTING CHAIN G8
40	PT23111040 CHAIN STRIPPER
41	PT23111041 DISC GEAR
42	PT23111042 SPLINE GEAR
43	PT23111043 LIFTING HOOK CHAIN LINK
44	PT23111044 LIFTING HOOK TOP RING
45	PT23111045 LIFTING HOOK CHAIN PIN
46	PT23111046 LIFTING HOOK BOTTOM RING
47	PT23111047 LIFTING HOOK
48	PT23111048 LIFTING HOOK BRACKET
49	PT23111049 LIFTING HOOK BALL BEARING
50	PLW04M LOCK WASHER 8MM
51	PLW06M LOCK WASHER 10MM
52	PW02M FLAT WASHER 5MM
53	PLW01M LOCK WASHER 5MM
54	PT23111054 ID/WARNING LABEL

T23112 Parts List

REF PART #	DESCRIPTION
1	PT23112001 TOP HOOK
2	PT23112002 TOP HOOK BALL BEARING
3	PT23112003 HOOK SAFETY LATCH ASSY
4	PT23112004 TOP HOOK BRACKET
5	PT23112005 TOP HOOK BRACKET PIN
6	PT23111006 GEAR COVER
7	PN02M HEX NUT M10-1.5
8	PT23111008 EXT RETAINING RING
9	PT23111009 PINION SHAFT
10	PT23111010 GEAR PLATE
11	PT23111011 DBL-END STUD M10-1.5 X 75
12	PT23111012 DRIVE SHAFT
13	PT23111013 CHAIN SPROCKET
14	PT23111014 ROLLER BEARING
15	PT23111015 BRAKE PLATE
16	PT23111016 BRAKE SEAT
17	PT23111017 EXT RETAINING RING
18	PT23111018 INNER BRAKE
19	PT23111019 OUTER BRAKE
20	PT23111020 RATCHET GEAR
21	PT23111021 SPACER
22	PT23111022 GEAR CAP
23	PT23111023 BRAKE COVER
24	PT23111024 CHANGE-OVER GEAR
25	PLW04M LOCK WASHER 8MM
26	PB84M HEX BOLT M8-1.25 X 14
27	PT23111027 LEVER HANDLE

REF PART #	DESCRIPTION
28	PT23111028 HANDWHEEL
29	PT23111029 COTTER PIN
30	PT23111030 SLOTTED HEX NUT M10-1.5
31	PS09M PHLP HD SCR M5-.8 X 10
32	PT23111032 SELECTOR
33	PT23111033 HANDLE GRIP RUBBER
34	PN03M HEX NUT M8-1.25
35	PT23111035 COMPRESSION SPRING
36	PT23111036 SPRING SHAFT
37	PT23111037 PAWL
38	PT23111038 SELECTOR PIN
39	PT23111039 LIFTING CHAIN G8
40	PT23111040 CHAIN STRIPPER
41	PT23111041 DISC GEAR
42	PT23111042 SPLINE GEAR
43	PT23112043 LIFTING HOOK CHAIN LINK
44	PT23112044 LIFTING HOOK TOP RING
45	PT23112045 LIFTING HOOK CHAIN PIN
46	PT23112046 LIFTING HOOK BOTTOM RING
47	PT23112047 LIFTING HOOK
48	PT23112048 LIFTING HOOK BRACKET
49	PT23112049 LIFTING HOOK BALL BEARING
50	PLW04M LOCK WASHER 8MM
51	PLW06M LOCK WASHER 10MM
52	PW02M FLAT WASHER 5MM
53	PLW01M LOCK WASHER 5MM
54	PT23112054 ID/WARNING LABEL

WARRANTY

Grizzly Industrial, Inc. warrants every product it sells for a period of **1 year** to the original purchaser from the date of purchase. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence, accidents, repairs or alterations or lack of maintenance. This is Grizzly's sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant or represent that the merchandise complies with the provisions of any law or acts unless the manufacturer so warrants. In no event shall Grizzly's liability under this warranty exceed the purchase price paid for the product and any legal actions brought against Grizzly shall be tried in the State of Washington, County of Whatcom.

We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special, or consequential damages arising from the use of our products.

To take advantage of this warranty, contact us by mail or phone and give us all the details. We will then issue you a "Return Authorization Number," which must be clearly posted on the outside as well as the inside of the carton. We will not accept any item back without this number. Proof of purchase must accompany the merchandise.

The manufacturers reserve the right to change specifications at any time because they constantly strive to achieve better quality equipment. We make every effort to ensure that our products meet high quality and durability standards and we hope you never need to use this warranty.

Please feel free to write or call us if you have any questions about the machine or the manual.

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Thank you again for your business and continued support. We hope to serve you again soon!