

KLUTCH[®]

Metal Cutting Band Saw

Owner's Manual



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

Item #**101670**

READ & SAVE THESE INSTRUCTIONS

Thank you very much for choosing a Klutch® product!

For future reference, please complete the owner's record below:

Serial Number/Lot Date Code (if applicable): _____

Purchase Date: _____

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

This product is designed for certain applications only. Northern Tool & Equipment is not responsible for issues arising from modification or improper use of this product such as an application for which it was not designed. We strongly recommend that this product not be modified and/or used for any application other than that for which it was designed.

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

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Intended Use

This Klutch® Benchtop Metal Cutting Band Saw is a compact yet powerful metal cutting band saw that's easy to move right where you need it.

Packaging Contents

- Metal band saw (1)
- Foot (4)
- Work stop with lock handle (1)
- Guide rail with hex nut (1)
- Manual (1)

Technical Specifications

Property	Specification
Motor	120V 60Hz 4.5A S6 40%
Saw blade size	1435x12.7x0.65mm
Saw blade teeth	8/12 teeth per inch
Cutting capacity at circular material	90° 127x125mm, 45° 80x100mm
Cutting angle adjustment	0-60°
Blade speed	125-260FPM (38-80 m/min)

Important Safety Information

⚠WARNING

- Read and understand all instructions. Failure to follow all instructions may result in serious injury or property damage.
- The warnings, cautions, and instructions in this manual cannot cover all possible conditions or situations that could occur. Exercise common sense and caution when using this tool. Always be aware of the environment and ensure that the tool is used in a safe and responsible manner.
- Do not allow persons to operate or assemble the product until they have read this manual and have developed a thorough understanding of how it works.
- Do not modify this product in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the product. There are specific applications for which the product was designed.
- 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 be a safer experience and do the job better at the capacity for which it was intended. DO NOT use this equipment for a purpose for which it was not intended.
- Industrial or commercial applications must follow OSHA requirements.

⚠️WARNING

PROP 65

- This product can expose you to chemicals including lead, which is known to the State of California to cause cancer. For more information, go to www.p65warnings.ca.gov.
- 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 and cement and other masonry products, and
 - - 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 dust masks that are specially designed to filter out microscopic particles.
- Handling power cords on corded products may expose you to lead, a chemical known to the state of California to cause cancer and birth defects or other reproductive harm. Wash your hands after handling.

⚠️WARNING

WORK AREA SAFETY

- Inspect the work area before each use. Keep work area clean, dry, free of clutter, and well-lit. Cluttered, wet, or dark work areas can result in injury. Using the product in confined work areas may put you dangerously close to cutting tools and rotating parts.
- Do not use the product where there is a risk of causing a fire or an explosion; e.g., in the presence of flammable liquids, gases, or dust. The product can create sparks, which may ignite the flammable liquids, gases, or dust.
- Do not allow the product to come into contact with an electrical source. The tool is not insulated and contact will cause electrical shock.
- Keep children and bystanders away from the work area while operating the tool. Do not allow children to handle the product.
- Be aware of all power lines, electrical circuits, water pipes, and other mechanical hazards in your work area. Some of these hazards may be hidden from your view and may cause personal injury and/or property damage if contacted.

⚠️WARNING

PERSONAL SAFETY

- Stay alert, watch what you are doing, and use common sense when operating the tool. Do not use

the tool while you are tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating the tool may result in serious personal injury.

- Dress properly. Do not wear loose clothing, dangling objects, or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts. Air vents on the tool often cover moving parts and should be avoided.
- Wear the proper personal protective equipment when necessary. Use ANSI Z87.1 compliant safety goggles (not safety glasses) with side shields, or when needed, a face shield. Use a dust mask in dusty work conditions. Also use non-skid safety shoes, hardhat, gloves, dust collection systems, and hearing protection when appropriate. This applies to all persons in the work area.
- Do not overreach. Keep proper footing and balance at all times.

⚠CAUTION

PRODUCT USE AND CARE

- Do not force the product. Products are safer and do a better job when used in the manner for which they are designed. Plan your work and use the correct product for the job.
- Check for damaged parts before each use. Carefully check that the product will operate properly and perform its intended function. Replace damaged or worn parts immediately. Never operate the product with a damaged part.
- Store the product when it is not in use. Store it in a dry, secure place out of the reach of children. Inspect the tool for good working condition prior to storage and before re-use.
- Use only accessories that are recommended by the manufacturer for use with your product. Accessories that may be suitable for one product may create a risk of injury when used with another tool. Never use an accessory that has a lower operating speed or operating pressure than the tool itself.
- Keep guards in place and in working order. Never operate the product without the guards in place.

Grounding

⚠WARNING

- This machine must be grounded while in use to protect the operator from electrical shock. This unit is equipped with an electrical cord that has an equipment grounding conductor and a grounding plug. The plug **MUST** be plugged into a matching receptacle that is properly installed and grounded in accordance with ALL local codes and ordinances.
- **DO NOT MODIFY THE PROVIDED PLUG.** If it will not fit the receptacle, have the proper receptacle installed by a qualified electrician.

CHECK with a qualified electrician or service person if you do not completely understand the grounding instructions, or if you are not sure the tool is properly grounded.

Grounded Tools: Tools with 3-Prong Plugs

Tools marked **Grounding Required** have a 3-wire cord and 3-prong grounding plug. The plug must be connected to a properly grounded outlet. If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user, reducing the risk of electric shock. (See Figure A.)

The grounding prong in the plug is connected through the green wire inside the cord to the grounding system in the tool. The green wire in the cord must be the only wire connected to the tool's grounding system and must never be attached to an electrically live terminal.

Your tool must be plugged into an appropriate outlet, properly installed and grounded in accordance with all codes and ordinances. The plug and outlet should look like those in the following illustration.

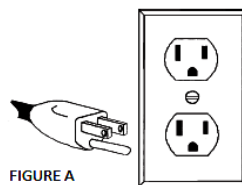


FIGURE A

Double Insulated Tools: Tools with Two-Prong Plugs

Tools marked **Double Insulated** do not require grounding. They have a special double insulation system which satisfies OSHA requirements and complies with the applicable standards of Underwriters Laboratories, Inc., the Canadian Standard Association, and the National Electrical Code. (See Figure B.)

Double insulated tools may be used in either of the 120 volt outlets shown in the following illustration.

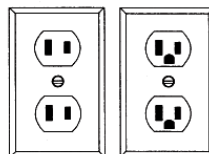


FIGURE B

Extension Cords

⚠ WARNING

- USE A PROPER EXTENSION CORD. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage, resulting in loss of power and cause overheating.
- Be sure your extension cord is properly wired and in good condition. Always replace a damaged extension cord or have it repaired by a qualified person before using it. Protect your extension cords from sharp objects, excessive heat and damp or wet areas.
- Grounded tools require a 3-wire extension cord. Double Insulated tools can use either a 2- or 3-wire extension cord.

- As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage.
- The smaller the wire's gauge number, the greater the capacity of the cord. For example, a 14-gauge cord can carry a higher current than a 16-gauge cord. Minimum extension cord wire size is shown in the following table:

Minimum Wire Size Of Extension Cords				
Nameplate AMPS	Cord Length			
	25'	50'	100'	150'
0-6	18 AWG	16 AWG	16 AWG	14 AWG
6-10	18 AWG	16 AWG	14 AWG	12 AWG
10-12	16 AWG	16 AWG	14 AWG	12 AWG
12-16	14 AWG	12 AWG	NOT RECOMMENDED	

- When using more than one extension cord to make up the total length, make sure each cord contains at least the minimum wire size required.
- If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine the required minimum cord size.
- If you are using an extension cord outdoors, make sure it is marked with the suffix **W-A** (**W** in Canada) to indicate it is acceptable for outdoor use.
- Make sure your extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified electrician before using it.
- Protect your extension cords from sharp objects, excessive heat, and damp or wet areas.

Main Parts of Product

Subassembly

Metal band saw
Work stop with lock handle
Foot (4)
Guide rail with hex nut

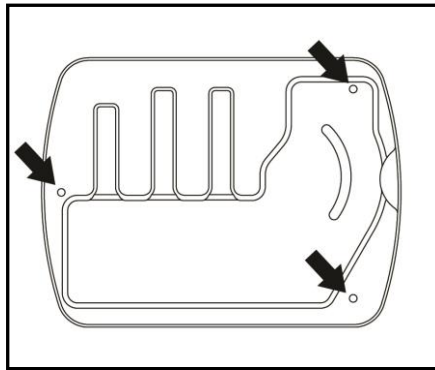
Assembly Instructions

⚠️ WARNING

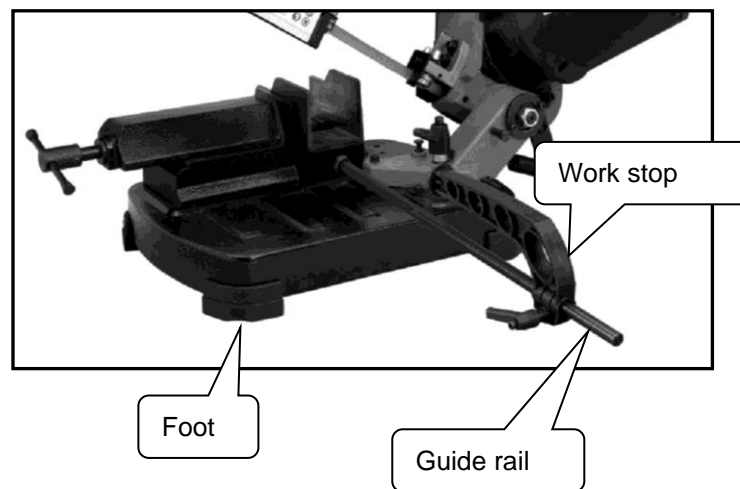
Read the ENTIRE MANUAL - IMPORTANT SAFETY INFORMATION: Read all sections of this manual including all text under subheadings therein before set-up or use of this product.

1. Slide the four rubber feet onto the base of the saw.

2. Place the band saw on a workbench or the optional band saw stand item 101740 and secure with the three bolts.



3. Screw the guide rail to the thread hole on vise base. Tighten the nut to fix it.
4. Attach the work stop to the guide rail. Secure it by tightening the lock handle.



Before Each Use

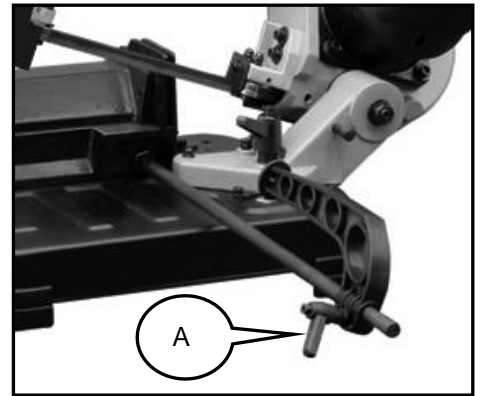
⚠ WARNING

- Make sure the band saw is securely fastened down.
- Make sure all safety guards are installed and positioned correctly.
- Make sure the blade is tensioned appropriately.

Positioning the work stop

Use the work stop if you have to do several cuts on pieces of the same length.

1. Loosen the lock handle A and place the work stop at the desired distance from the blade.
2. Retighten the lock handle.



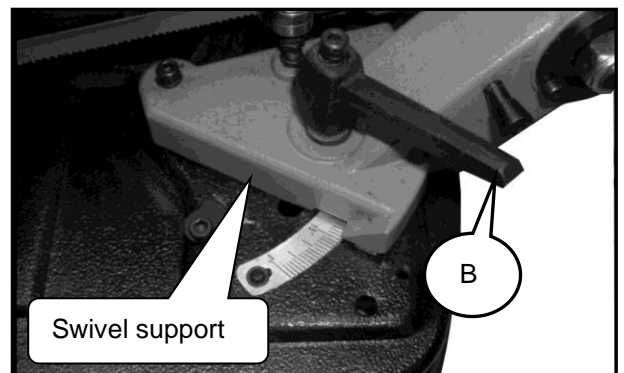
CAUTION

Make sure that the work stop does not interfere with the downward movement of the blade!

Cutting angle adjustment

The band saw can cut at angles from 0° to 60°.

1. Loosen the lock handle B.
2. Turn the swivel support until the mark on support matches desired angle on the scale.
3. Retighten the locking handle.



CAUTION! Make sure the lock handle B has been tightened before turning on the machine.

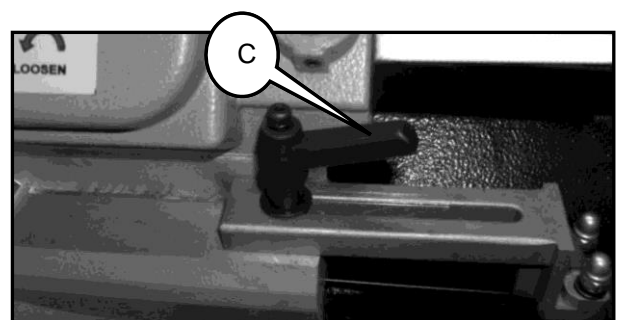
CAUTION

Make sure the lock handle B has been tightened before turning on the machine.

Adjusting the blade guide

The sliding blade guide must be adjusted to bring the guide close to the material. If the adjustment is not done, it will result in an unclear cut.

1. Loosen the lock handle C.
2. Slide the blade guide to move it closer to the workpiece.



3. Retighten the lock handle C.

Set cutting speed

The cutting speed always depends on the material being cut.

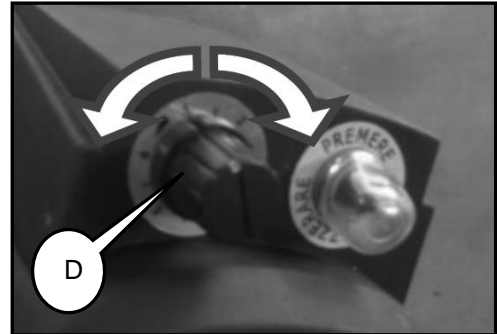
1. Turn the control knob D to increase or decrease the speed as required.

Sample speeds:

Common steel: 40-60m/min

Aluminum, alloy: 80m/min

Pipes/sections: 70-80m/min

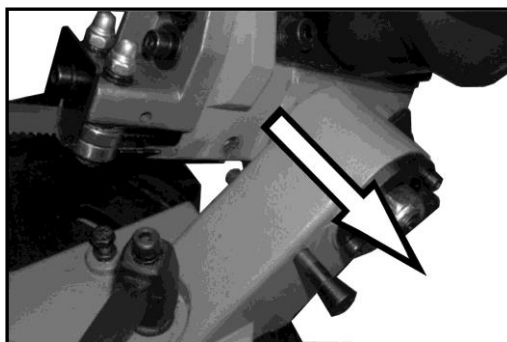


Operating Instructions

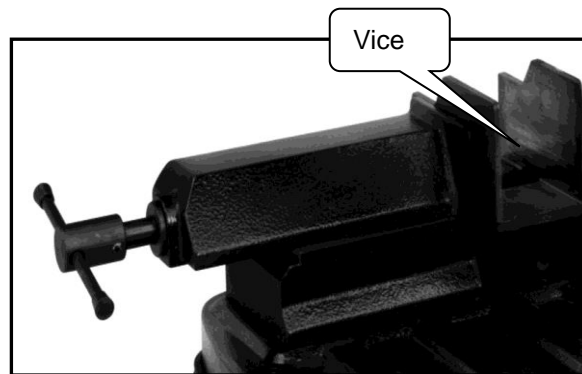
⚠WARNING

- The machine must be switched off before inserting material to be cut in the vice or before removing material to be cut from the vice.
- Keep your hands and fingers in a safe distance from the running saw blade at all times.
- Safety equipment and guards, etc, must not be removed.
- Never remove the cutting chips by hand. Use a brush at all times.
- Never leave the machine when in operation.

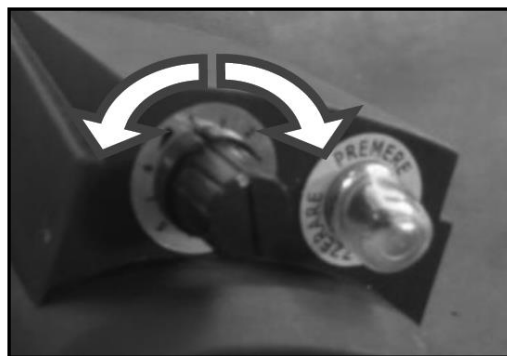
1. Pull out the locking pin from the hole in the body and tilt the saw body to upper position.



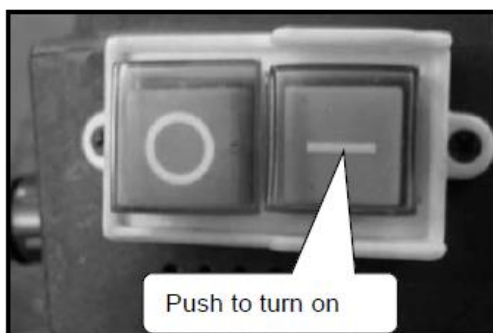
2. Use the vice to securely clamp the workpiece.



3. Check workpiece stop and cutting speed adjustments.



4. Push the green button to turn on the main switch. Using the index finger of your right hand, press the run button.



5. Gradually lower the machine body until it comes lightly into contact with the workpiece. Now begin to apply gradual pressure on the workpiece and complete the cut.

Maintenance

⚠WARNING

Always wear protective gauntlets before changing saw blade!

Changing the Saw Blade

1. Remove the protective casing unscrewing the six screws.
2. Loosen the blade tension, turning the knob E in the anti-clockwise direction.
3. Extract the blade first from the guides and then from the cast iron pulleys.
4. Insert the new blade first between the guides and then into the cast iron pulleys, checking to make sure the blade teeth are facing toward the work piece.
5. Turn the knob E to adjust the blade tension.
6. Replace the protective casing.
7. Reposition the blade guides in the correct position for next cut.



Maintain the product by adopting a program of conscientious repair and maintenance in accordance with the following recommended procedures. It is recommended that the general condition of any tool be examined before it is used. Keep your tool in good repair. Keep all cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control. Keep handles dry, clean, and free from oil and grease. Also refer to the engine manufacturer's instruction manual for additional information about engine maintenance. The following chart is based on a normal operation schedule.

Maintenance Interval	Maintenance Point
Every 3 months	Check blade for dullness and replace if necessary.
Every 2 months	Usually check the condition of the power supply cords and replace them if they are broken, or even worse if the internal wires are shown.

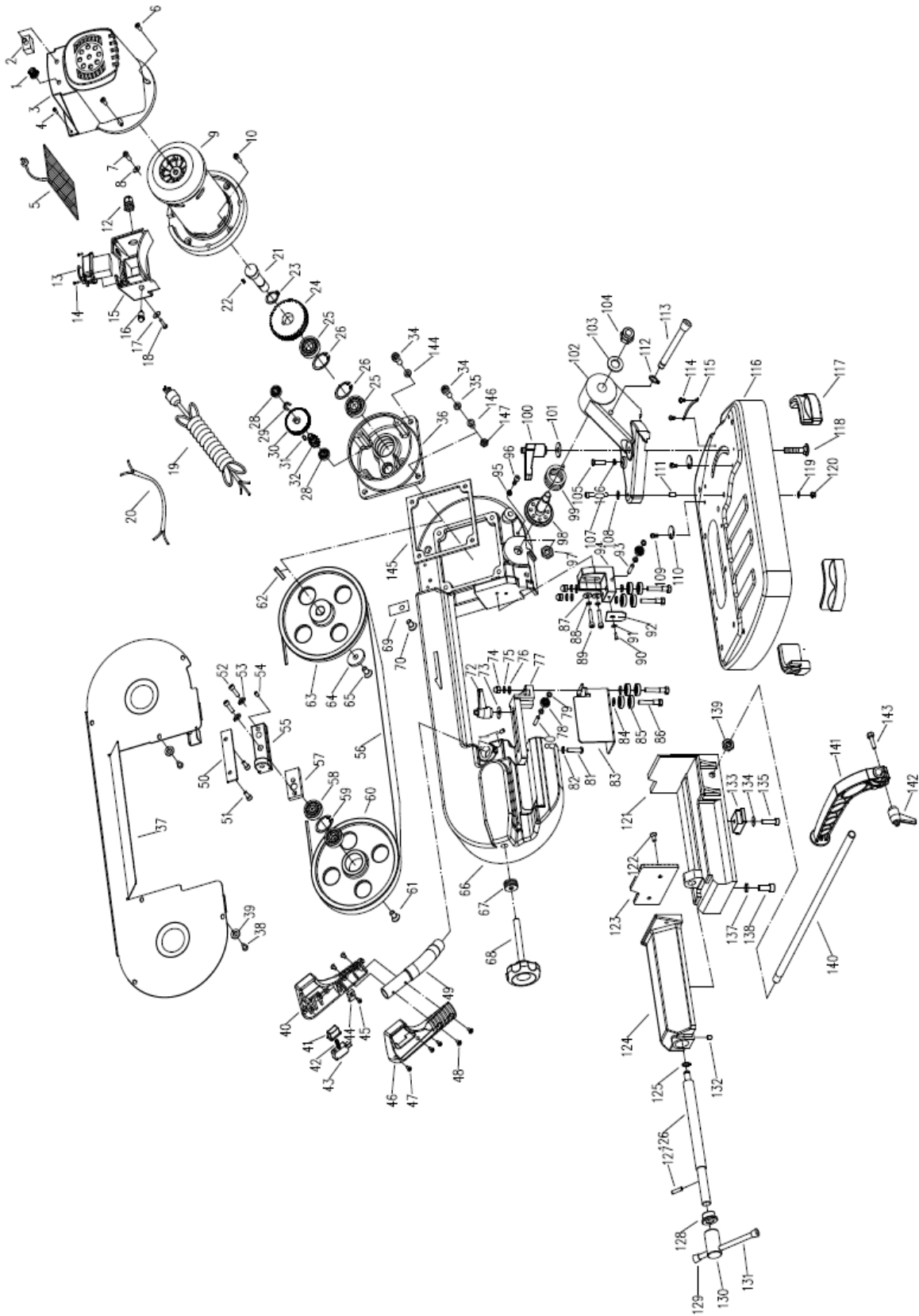
	<p>Use a brush and a shop vacuum to remove chips and other debris from the machine.</p> <p>Always keep the machine handgrip clean to prevent accidental slipping during use.</p> <p>Remove the processing residues from the cutting area and the blade guides whenever necessary.</p> <p>If you do not intend to use the band saw for a long time, clean it and put it in a dry place if possible. In this case it is advisable to reduce tension on the blade.</p> <p>To ensure effective machine operation, check the condition of the blade daily and sharpen or replace whenever necessary.</p>
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Troubleshooting

Use the table below to troubleshoot problems before contacting service personnel or your local dealer. If the problem continues after troubleshooting, call your local dealer for assistance.

Failure	Possible Cause	Corrective Action
The motor does not work	Defective motor, power cable or plug. The overload cutout has tripped.	Check the machine and reset the overload cutout.
Overload cutout tripped	Motor overload caused by excessive cutting pressure. Motor breakdown.	Perform the cut on the piece at the correct pressure.
Inaccurate cut squaring	Excessive cutting pressure. Incorrect blade tooth in relation to the workpiece. Incorrect adjustment of the sliding blade guide. Incorrect cutting speed in relation to work piece. The workpiece is wrongly positioned in the vice. Poor blade tension.	Decrease cutting pressure. Chose proper blade for workpiece. Check blade guide adjustment. Adjust to correct cutting speed. Check workpiece positioning and clamping in the vice. Check blade tension.
The blade tends to protrude from the guide	Excessive blade tension. Incorrect eccentric blade guide adjustment. The blade slips on the pulleys, caused by oil or grease required for cutting operations.	Check blade tension Check eccentric blade guide adjustment Never use any type of lubricant or coolant for the cutting operations; specialized personnel should check and replace the pulleys, if necessary.

Parts Diagram



Parts List

Reference	Part Number	Part Description	Quantity
1	1	Speed adjusting knob	1
2	2	Circuit breaker	1
3	3	Motor housing	1
4	4	2.9-1X13mm Thread forming screw	2
5	5	Motor driver	1
6	6	M4X8mm Pan head screw	3
7	7	M4X8mm Pan head screw	1
8	8	4mm Serrated washer	1
9	9	Motor assembly	1
10	10	M5X10mm Socket head screw	4
11	12	Strain relief	1
12	13	Switch	1
13	14	2.9-1X9.5mm Thread forming screw	2
14	15	Switch box	1
15	16	Indicator light	1
16	17	4mm Flat washer	2
17	18	2.9-1X16mm Thread forming screw	2
18	19	Power cord	1
19	20	Inner line	1
20	21	Front wheel shaft	1
21	22	5x5x10mm Key	1
22	23	15mm Retaining ring	1
23	24	50T Gear	1
24	25	6202ZZ Ball bearing	2
25	26	35mm Retaining ring	2
26	28	607ZZ Ball bearing	2
27	29	11mm Retaining ring	1
28	30	43T Gear	1
29	31	4x4x6mm Key	1
30	32	Pinion gear	1
31	34	M8X25mm Socket head screw	4
32	35	8mm Flat washer	4
33	36	Gear box	1
34	37	Frame cover	1
35	38	M5X8mm Pan head screw	6
36	39	5mm Flat washer	6
37	40	Left handle part	1
38	41	Button	1
39	42	Spring	1
40	43	Operating switch	1
41	44	Cord clamp	5
42	45	M5X10mm Pan head screw	5
43	46	Right handle part	1
44	47	2.9-1X9.5mm Thread forming screw	3
45	48	M4X8mm Flat head screw	4
46	49	Tube	1
47	50	Guide plate	2
48	51	M5X10mm Socket head screw	4
49	52	M8X25mm Socket head screw	2
50	53	8mm Lock washer	2
51	54	M8X10mm Set screw	1
52	55	Sliding block	1

Reference	Part Number	Part Description	Quantity
53	56	Blade	1
54	57	Bevel plate	1
55	58	6201ZZ Ball bearing	2
56	59	32mm Retaining ring	1
57	60	Rear blade wheel	1
58	61	M8X12mm Flat head screw	1
59	62	4X4X20mm Key	1
60	63	Front blade wheel	1
61	64	Flat washer	1
62	65	M6X12mm Flat head screw	1
63	66	Frame	1
64	67	Spring washer	8
65	68	Blade tension knob	1
66	69	Cord clamp	2
67	70	M5X 8mm Pan head screw	2
68	71	M6X8mm Set screw	
69	72	Lock handle	1
70	73	6mm Flat washer	1
71	74	M6 Nut	4
72	75	6mm Lock washer	4
73	76	6mm Flat washer	4
74	77	Rear blade guide block	1
75	78	625ZZ Ball bearing	2
76	79	5mm Flat washer	4
77	80	5x24mm Pin	1
78	81	M6X25 Socket head screw	1
79	82	6mm Lock washer	1
80	83	Blade guard	1
81	84	6mm Flat washer	4
82	85	607ZZ Ball bearing	8
83	86	Shaft	4
84	87	6mm Flat washer	2
85	88	6mm Lock washer	2
86	89	M6X25mm Socket head screw	2
87	90	M5X10mm Socket head screw	1
88	91	5mm Flat washer	1
89	92	Guard plate	1
90	93	5X35mm Pin	1
91	94	Front blade guide block	1
92	95	M6 Nut	1
93	96	M6X25mm Socket head screw	1
94	97	M16-1.5mm Nut	1
95	98	Center shaft	1
96	99	Torsion spring	1
97	100	Lock handle	1
98	101	10mm Flat washer	1
99	102	Swivel support	1
100	103	12mm Flat washer	1
101	104	M12 Nut	1
102	105	M6X25mm Hex head bolt	1
103	106	M6 Nut	1
104	107	M6X35mm Socket head screw	1
105	108	6mm Flat washer	1
106	109	M5X10mm Socket head screw	2

Reference	Part Number	Part Description	Quantity
107	110	End stop washer	2
108	111	Bushing	1
109	112	8mm Retaining ring	1
110	113	Lock pin	1
111	114	M4X8mm Pan head screw	2
112	115	Angle scale	1
113	116	Base	1
114	117	Foot	4
115	118	M10X40mm Carriage bolt	1
116	119	6mm Flat washer	1
117	120	M6 Nut	1
118	121	Vise base	1
119	122	M6X12 Flat head screw	2
120	123	Vise jaw	1
121	124	Sliding case	1
122	125	M10 nut	1
123	126	Screw	1
124	127	5X12mm Spring pin	1
125	128	Bushing	1
126	129	Handle cap	2
127	130	Socket rod	1
128	131	Handle rod	1
129	132	M5X8mm Set screw	1
130	133	Guide block	1
131	134	6mm Lock washer	1
132	135	M6X25mm Hex head bolt	1
133	137	8mm Lock washer	6
134	138	M8X12mm Socket head screw	6
135	139	M12 Nut	1
136	140	Work stop rod	1
137	141	Work stop	1
138	142	Lock handle	1
139	143	M6X25mm Hex head bolt	1
140	144	serrated washer	1
141	145	Rubber spacer	1
142	146	Rubber bushing	3
143	147	Lock nut	4

Replacement Parts

- For replacement parts and technical questions, please call Customer Service at **1-800-222-5381**.
- Not all product components are available for replacement. The illustrations provided are a convenient reference to the location and position of parts in the assembly sequence.
- When ordering parts, the following information will be required: item description, item model number, item serial number/item lot date code, and the replacement part reference number.
- The distributor reserves the rights to make design changes and improvements to product lines and manuals without notice.

Limited Warranty

Northern Tool and Equipment Company, Inc. ("We" or "Us") warrants to the original purchaser only ("You" or "Your") that the Klutch® product purchased will be free from material defects in both materials and workmanship, normal wear and tear excepted, for a period of **one year** from date of purchase. The foregoing warranty is valid only if the installation and use of the product is strictly in accordance with product instructions. There are no other warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose. If the product does not comply with this limited warranty, Your sole and exclusive remedy is that We will, at our sole option and within a commercially reasonable time, either replace the product or product component without charge to You or refund the purchase price (less shipping). This limited warranty is not transferable.

Limitations on the Warranty

This limited warranty does not cover: (a) normal wear and tear; (b) damage through abuse, neglect, misuse, or as a result of any accident or in any other manner; (c) damage from misapplication, overloading, or improper installation; (d) improper maintenance and repair; and (e) product alteration in any manner by anyone other than Us, with the sole exception of alterations made pursuant to product instructions and in a workmanlike manner.

Obligations of Purchaser

You must retain Your product purchase receipt to verify date of purchase and that You are the original purchaser. To make a warranty claim, contact Us at 1-800-222-5381, identify the product by make and model number, and follow the claim instructions that will be provided. The product and the purchase receipt must be provided to Us in order to process Your warranty claim. Any returned product that is replaced or refunded by Us becomes our property. You will be responsible for return shipping costs or costs related to Your return visit to a retail store.

Remedy Limits

Product replacement or a refund of the purchase price is Your sole remedy under this limited warranty or any other warranty related to the product. We shall not be liable for: service or labor charges or damage to Your property incurred in removing or replacing the product; any damages, including, without limitation, damages to tangible personal property or personal injury, related to Your improper use, installation, or maintenance of the product or product component; or any indirect, incidental or consequential damages of any kind for any reason.

Assumption of Risk

You acknowledge and agree that any use of the product for any purpose other than the specified use(s) stated in the product instructions is at Your own risk.

Governing Law

This limited warranty gives You specific legal rights, and You also may have other rights which vary from state to state. Some states do not allow limitations or exclusions on implied warranties or incidental or consequential damages, so the above limitations may not apply to You. This limited warranty is governed by the laws of the State of Minnesota, without regard to rules pertaining to conflicts of law. The state courts located in Dakota County, Minnesota shall have exclusive jurisdiction for any disputes relating to this warranty.

KLUTCH[®]

Distributed by:

Northern Tool & Equipment Company, Inc.

Burnsville, Minnesota 55306

www.northerntool.com

Made in China