

KLUTCH™

BRUSHLESS DIE GRINDER

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 # 5796925

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:

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 BRUSHLESS DIE GRINDER is designed for certain applications only. Northern Tool and 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 **1-866-915-8626**.

IMPORTANT SAFETY INFORMATION

WARNING! Read all instructions. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury. The term “power tool” in all of the warnings listed below refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

WORK AREA SAFETY

- Keep work area clean and well lit. Cluttered or dark areas invite accidents.
- Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Power tools create sparks which may ignite the dust or fumes.
- Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.

ELECTRICAL SAFETY

- Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.
- Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators, There is an increased risk of electric shock if your body is earthed or grounded.
- Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
- Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
- When operating a power tool outdoors, use an extension cord suitable for outdoor use. Use of a cord suitable for outdoor use reduces the risk of electric shock.
- If operating a power tool in a damp location is unavoidable, use an earth leakage circuit breaker. Use of an earth leakage circuit breaker reduces the risk of electric shock.

PERSONAL SAFETY

- Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol

IMPORTANT SAFETY INFORMATION

or medication. A moment of inattention while operating power tools may result in serious personal injury.

- Use personal protective equipment. Always wear eye protection. Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool. Carrying power tools with your finger on the switch or energizing power tools that have the switch on invites accidents.
- Remove any adjusting key or wrench before turning the power tool on. A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
- Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
- Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts,
- If devices are provided for the connection of dust extraction and collection facilities ensure these are connected and properly used. Use of dust collection can reduce dust-related hazards.
- Use ear protectors. Exposure to noise can cause hearing loss.

POWER TOOL USE AND CARE

- Do not force the power tool. Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed.
- Do not use the power tool if the switch does not turn it on and off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.
- Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous in the hands of untrained users.
- Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged,

IMPORTANT SAFETY INFORMATION

have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.

- Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- Use the power tool, accessories and tool bits etc., in accordance with these instructions, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from those intended could result in a hazardous situation.

BATTERY TOOL USE AND CARE

- Ensure the switch is in the off position before inserting battery pack. Inserting the battery pack into power tools that have the switch on invites accidents.
- Recharge only with the charger specified by the manufacturer. A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.
- Use power tools only with specifically designated battery packs. Use of any other battery packs may create a risk of injury and fire.
- When battery pack is not in use, keep it away from other metal objects like paper clips, keys, nails, screws, or other metal objects that can make a connection from one terminal to another. Shorting the battery terminals together may cause burns or a fire..
- Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water; If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery may cause irritation or burns.

SERVICE

- Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained

INSTRUCTIONS FOR SAFE HANDLING

- Make sure that the tool is only connected to the voltage marked on the name plate.
- Never use the tool if its cover or any bolts are missing. If the cover or bolts have been removed, replace them prior to use. Maintain all parts in good working order.
- Always secure the tool when working in elevated positions.
- Never touch the blade, drill bit, grinding wheel or other moving parts during use.
- Never start the tool when its rotating component is in contact with the work piece.
- Never lay the tool down before its moving parts have come to a complete stop.
- **ACCESSORIES:** The use of accessories or attachments other than those recommended in this manual might present a hazard.
- **REPLACEMENT PARTS:** When servicing use only identical cal replacement parts.

CORDLESS DIE GRINDER SAFETY PRECAUTIONS

- This power tool is intended to function as a grinder. Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.
- Operations such as sanding, wire brushing, polishing or cutting-off are not recommended to be performed with this power tool. Operations for which the power tool was not designed may create a hazard and cause personal injury.
- Do not use accessories which are not specifically designed and recommended by the tool manufacturer. Just because the accessory can be attached to your power tool, it does not assure safe operation.
- The RATED SPEED of the accessories must be at least equal to the operating speed setting marked on the power tool. Accessories running faster than their RATED SPEED can break and fly apart.
- The outside diameter and the thickness of your accessory must be within the capacity rating of your power tool. Incorrectly sized accessories cannot be adequately controlled.
- The arbour size of accessories must properly fit the spindle or collet of the power tool. Accessories that do not match the mounting hardware of the power tool will run out of balance, vibrate excessively and may cause loss of control.

CORDLESS DIE GRINDER SAFETY PRECAUTIONS

- Do not use a damaged accessory. Before each use inspect the accessory for chips and cracks. If power tool or accessory is dropped, inspect for damage or install an undamaged accessory. After inspecting and installing an accessory, position yourself and bystanders away from the plane of the rotating accessory and run the power tool at maximum no-load speed for one minute. Damaged accessories will normally break apart during this test time.
- Wear personal protective equipment. Depending on application, use face shield, safety goggles or safety glasses. As appropriate, wear dust mask, hearing protectors, gloves and workshop apron capable of stopping small abrasive or workpiece fragments. The eye protection must be capable of stopping flying debris generated by various operations. The dust mask or respirator must be capable of filtering particles generated by your operation. Prolonged exposure to high intensity noise may cause hearing loss.
- Keep bystanders a safe distance away from work area. Anyone entering the work area must wear personal protective equipment. Fragments of workpiece or of a broken accessory may fly away and cause injury beyond immediate area of operation.
- Hold power tool by insulated gripping surfaces only, when performing an operation where the cutting accessory may contact hidden wiring or its own cord. Cutting accessory contacting a “live” wire may make exposed metal parts of the power tool “live” and could give the operator an electric shock.
- Always hold the tool firmly in your hand(s) during the start-up. The reaction torque of the motor, as it accelerates to full speed, can cause the tool to twist.
- Use clamps to support workpiece whenever practical. Never hold a small workpiece in one hand and the tool in the other hand while in use. Clamping a small workpiece allows you to use your hand(s) to control the tool. Round material such as dowel rods, pipes or tubing have a tendency to roll while being cut, and may cause the bit to bind or jump toward you.
- Never lay the power tool down until the accessory has come to a complete stop. The spinning accessory may grab the surface and pull the power tool out of your control.
- After changing the bits or making any adjustments, make sure the collet nut, chuck or any other adjustment devices are securely tightened. Loose adjustment devices can unexpectedly shift, causing loss of control, loose rotating components will be violently thrown.
- Do not run the power tool while carrying it at your side. Accidental contact with the spinning accessory could snag your clothing, pulling the accessory into your body.

CORDLESS DIE GRINDER SAFETY PRECAUTIONS

- Regularly clean the power tool's air vents. The motor's fan will draw the dust inside the housing and excessive accumulation of powdered metal may cause electrical hazards.
- Do not operate the power tool near flammable materials. Sparks could ignite these materials.
- Do not use accessories that require liquid coolants. Using water or other liquid coolants may result in electrocution or shock.
- Maintain labels and nameplates on the tool. These carry important safety information.
- Avoid unintentional starting. Prepare to begin work before turning on the tool.
- Do not leave the tool unattended when the Battery Pack is connected. Turn off the tool, and remove the Battery Pack before leaving.
- Use clamps (not included) or other practical ways to secure and support the workpiece to a stable platform. Holding the work by hand or against your body is unstable and may lead to loss of control and personal injury.
- The battery Charger gets hot during use. The Charger's heat can build up to unsafe levels and create a fire hazard if it does not receive adequate ventilation, due to an electrical fault, or if it is used in a hot environment. Do not place the Charger on a flammable surface. Do not obstruct any vents on the Charger. Especially avoid placing the Charger on carpets and rugs; they are not only flammable, but they also obstruct vents under the Charger. Place the Charger on a stable, solid, nonflammable surface (such as a stable metal workbench or concrete floor) at least 1 foot away from all flammable objects, such as drapes or walls. Keep a fire extinguisher and a smoke detector in the area. Frequently monitor the Charger and Battery Pack while charging.
- This product is not a toy. Keep it out of reach of children.
- People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure. In addition, people with pacemakers should:
 - Avoid operating alone.
 - Do not use with power switch locked on.
 - Properly maintain and inspect to avoid electrical shock.
- The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may 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.

KICKBACK AND RELATED WARNINGS

- Kickback is a sudden reaction to a pinched or snagged rotating accessory. Pinching or snagging causes rapid stalling of the rotating accessory which in turn causes the uncontrolled power tool to be forced in the direction opposite of the accessory's rotation at the point of the binding.
- For example, if an accessory is snagged or pinched by the workpiece, the edge of the accessory that is entering into the pinch point can dig into the surface of the material causing the wheel to climb out or kick out. The wheel may either jump toward or away from the operator, depending on direction of the accessory's movement at the point of pinching.
- Kickback is the result of power tool misuse and/or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below.
- Maintain a firm grip on the power tool and position your body and arm to allow you to resist kickback forces. The operator can control torque reactions or kickback forces, if proper precautions are taken.
- Use special care when working corners, sharp edges etc. Avoid bouncing and snagging the accessory. Corners, sharp edges or bouncing have a tendency to snag the rotating accessory and cause loss of control or kickback.
- Do not attach a toothed saw blade. Such blades create frequent kickback and loss of control.
- When using rotary files, always have the work securely clamped. These accessories will grab if they become slightly canted in the groove, and can kickback. When a rotary file grabs, it may jump from the groove and you could lose control of the tool. Feeding the tool in the wrong direction causes the cutting edge of the bit to climb out of the work and pull the tool in the direction of this feed.

SAFETY WARNINGS SPECIFIC FOR GRINDING

- For threaded abrasive cones and plugs use only undamaged wheel mandrels with an unrelieved shoulder flange that are of correct size and length. Proper mandrels will reduce the possibility of breakage.
- Do not position your hand in line with and behind the rotating accessory. When the accessory, at the point of operation, is moving away from your hand, the possible kickback may propel the spinning accessory and the power tool directly at you.

DISPOSAL OF THE EXHAUSTED BATTERY

- Li-ion batteries must be recycled.
- Take the battery to the shop from which it was purchased as soon as the post-charging battery life becomes too short for practical use.
- Do not discard the exhausted battery.

SPECIFICATIONS

Voltage: 20V Max

No Load Speed: 10000/13000/16000/19000/22000/26000 RPM, 6-speed setting

Collet Size: 1/4"

Max. Grinding Capacity: 1"

Accessories:

Spanner x 2

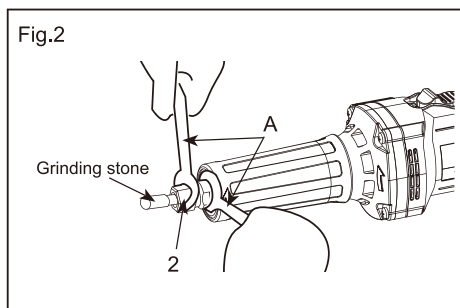
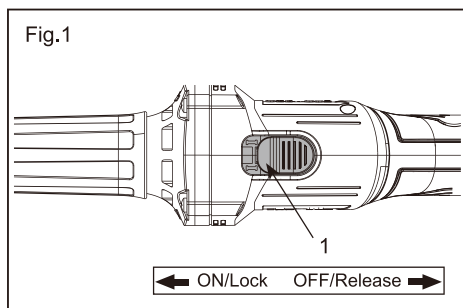
FUNCTION

1. Collect
2. Collect Nut
3. Neck Grip
4. Slide Switch
5. Handle
6. Speed Control Button



OPERATING PROCEDURES

ASSEMBLY



OPERATING PROCEDURES

Installing or removing grindingstone((Fig. 2))

- Loosen the collet nut(2) and insert the grinding stone into the collet nut.
- Use one spanner(A) to hold the spindle and the other one to tighten the collet nut securely.
- The grinding stone should not be mounted more than 8mm from the collet nut (Fig. 2) and make sure the insert part is more than 50% of the total length of the wheel point. Exceeding this distance could cause vibration or a broken shaft.
- To remove the grinding stone, follow the installation procedure in reverse.

HOW TO CHARGE THE BATTERY PACK ?

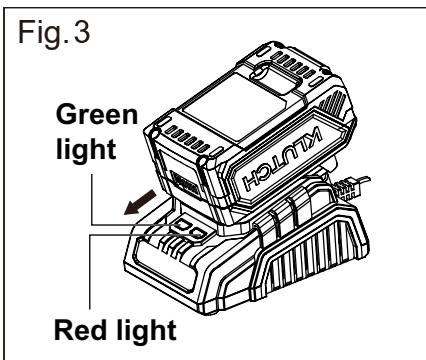
CHARGING BATTERIES

- Place the Battery Pack on a dry fireproof surface in a room where the temperature is from 50° F to104° F.

Note: If recharging a newly spent Battery Pack, allow it to cool completely before charging.

- Examine the Battery Pack. It must be an undamaged 20V lithium-ion type Battery Pack. Do not charge a cracked, open, or leaking Battery Pack, or charge a non-recommended type of Battery Pack.
- The Battery Pack's terminals are designed to fit this Charger specifically. If the Battery Pack does not fit the Charger properly, do not try to insert it. Do not force a Battery Pack into the Charger.
- Make sure the power supply is normal household voltage, 120 volts, AC only, 60 Hz.
- Connect the charger to a power supply.
- Slide the Battery Pack onto the Charger.
- The battery pack may become slightly warm to the touch while charging. This is normal and does not indicate a problem.
- After charging is complete, the green LED will remain on while the charger is in Maintenance mode.
- Charger will periodically wake from Energy Save mode to ensure the battery pack remains in a fully charged state.
- To remove the battery pack from the charger, depress the latches on the top of the battery pack and separate battery from charger.

OPERATING PROCEDURES



CHARGING A HOT BATTERY PACK

- When using a tool continuously, the battery pack may become hot. A hot battery pack may be placed directly onto the charger port but charging will not begin until the battery temperature cools to within acceptable temperature range. When a hot battery pack is placed on the charger, the red LED will begin flashing. When the battery pack cools, the charger will automatically begin charging.

The LED lights on charger show different status as below.

LED FUNCTIONS			
RED LED	GREEN LED	STATUS	ACTION
Off	On	Power	Ready to charge battery pack.
Off	Flashing	Charging	Battery is being charged.
Off	On	Fully charged	Disconnect charger from power supply and remove battery pack from charger.
Flashing	Off	Hot battery	The charger will recover to charge when the temperature drops to 104° F (40°C).
On	Off	Battery defective	Battery pack or charger is defective

Caution

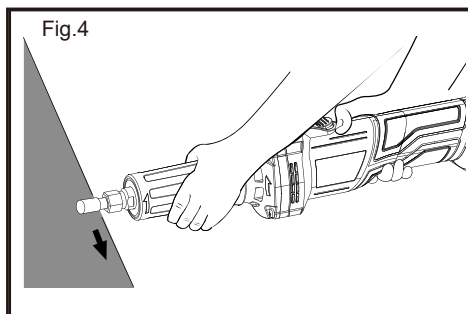
- Fully charge battery before first use.
- Avoid short periods of charging. Only charge battery pack when it completely runs out.
- In order to extend the battery life, fully charge it after each use and ensure that it is charged every three months; avoid storing batteries in cold places as low temperatures may cause them to fail.

OPERATING PROCEDURES

OPERATING

Slide on-off switch with lock(fig.4)

- The tool is switched "ON" by the switch button located at the top of the motor housing. The switch can be locked in the "ON" position, a convenience for long grinding operations.
- To turn the tool "ON" without locking it, slide the switch button forward by applying pressure ONLY at the REAR portion of the button. When pressure is released the switch button will snap to "OFF" position.
- To lock the switch "ON", slide the switch button forward and press "IN" the FRONT portion.
- To unlock the switch, simply press and release the REAR portion of the button. Switch is spring loaded and will snap back automatically.



WARNING! Hold the tool with both hands while starting the tool, since torque from the motor can cause the tool to twist.

- Start the tool before applying to work and let the tool come to full speed before contacting the workpiece. Lift the tool from the work before releasing the switch. DO NOT turn the switch "ON"and "OFF" while the tool is under load; this will greatly decrease the switch life.

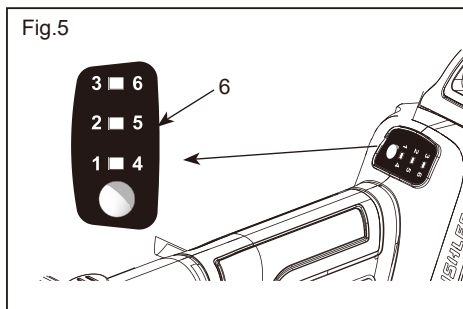
CAUTION! Apply light pressure on the tool. Excessive pressure on the tool will only cause a poor finish and overloading of the motor.

Speed selector (fig.5)

- This tool is equipped with 6-speed controls which can be found in the bottom of the tool.
- Press speed control button(6) to select desired speed.

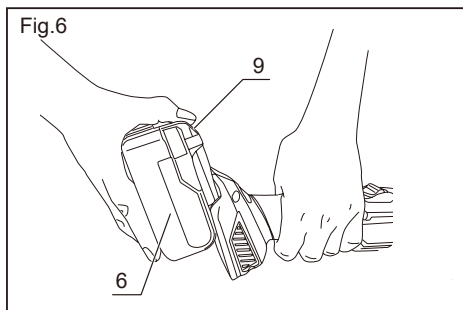
OPERATING PROCEDURES

- When the speed is 10000(NO.1) / 13000(NO.2) / 16000(NO.3) RPM, the light is green.
- When the speed is 19000(NO.4) / 22500(NO.5) / 26000(NO.6) RPM, the light is red.



Installing and removing battery pack(fig.6)

- To install battery pack, lock the trigger switch by placing the forward/reverse switch in the center position. Align the body with the groove in the battery pack and push in the direction of the arrow until the battery pack is secured on the tool.To remove the battery pack from the tool, push the battery clip (6) on and remove the battery pack in the direction of the arrow.
- Always remove battery pack from your tool when you are assembling parts,making adjustments, cleaning,or when not in use. Removing battery pack will prevent accidental starting that could cause serious personal injury.



Storing the tool

- Store the tool in a dry place that does not get too hot. Avoid places which can be reached by children or from where the tool may fall.
- Pay attention to the following when storing the battery pack for an extended period of time.

OPERATING PROCEDURES

- Store lithium ion batteries when they are charged. Avoid high temperatures. Do not store for an extended period of time in places that are 45°C (113F) or hotter.
- Do not store in places that are -20°C(-4F) or colder.
- Do not store in places that are near to heat sources or places that are subject to direct sunlight.
- Do not store in places which have large changes in temperature and may have condensation.
- Do not store in humid places.
- Do not allow it come in contact with water.
- Store in a dry place.
- Do not subject it to large vibrations or allow it to fall when moving it.
- In order to avoid short circuits, do not allow it to come in contact with metal objects.
- Before storing the battery pack, remove it from the charger.

MAINTENANCE

BEFORE EACH USE, inspect the general condition of the tool. Check for:

- Leaking, swollen, or cracked battery pack
- Loose hardware
- Misalignment or binding of moving parts
- Cracked or broken parts
- Any other condition that may affect its safe operation.
- AFTER USE, wipe external surfaces of the tool with clean cloth.
- Li-Ion BATTERY MUST BE RECYCLED OR DISPOSED OF PROPERLY. Do not short, incinerate or open battery.
- Disconnect battery pack and store battery pack, charger, and tool in dry, indoor area out of reach of children and away from metal objects (i.e., paperclips, coins) to prevent shorting.

PARTS LIST

No.	Description	Qty	No.	Description	Qty
1	ST4x25 Screw	4	19	Bracket	1
2	Aluminum Sleeve	1	20	Armature	1
3	Collet Assembly	1	21	607 Bearing	1
4	Pivot	1	22	Stator	1
5	Washer	1	23	Switch	1
6	6001 Bearing	1	24	Switch Button	1
7	Shaft Ring	1	25	Switch Lever	1
8	6200 Bearing	1	26	Rubber Column	1
9	Seal Ring	1	27	Function Key Panel	1
10	Wave Washer	2	28	Controller	1
11	Retaining Ring	1	29	Socket	1
12	Shaft Ring	1	30	Right Motor House	1
13	Spring	1	31	Left Motor Housing	1
14	Connecting Sleeve	1	32	Screw	5
15	Retaining Ring	1	33	Speed Label	1
16	Retaining Ring	1	34	Wire	1
17	Seal Ring	1	35	Spanner	2
18	608 Bearing	1	36	Sheath	1

REPLACEMENT PARTS

- For replacement parts and technical questions, please call Customer Service at 1-866-915-8626.
- 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

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 1-866-915-8626, 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

LIMITED WARRANTY

- 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 instruction 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.

KLUTCH™

Distributed by:

Northern Tool & Equipment Company, Inc.

Burnsville, Minnesota 55306

www.northerntool.com

Made in China