

# KLUTCH

## 1/2In. Mini Air Regulator

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 #57392

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 air regulator 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

One of the most commonly used air line accessories, regulators are used to maintain a steady outlet pressure, unaffected by variations/fluctuations in the inlet pressure. Regulators step down the air line pressure and can be set at any desired pressure below the inlet air pressure. With an aluminum die cast body, these are designed with a non-raising “press to lock” adjusting knob for locking at any set pressure. Regulators work on a diaphragm operated, relieving mechanism with pressure compensated by a balanced poppet. These can be installed in any position.

### WHY USE A REGULATOR?

Air regulators are used to provide a controlled and consistent air supply as required by different pneumatic equipment. The knob can be used to adjust the air supply thus resulting in increasing or decreasing the air pressure.

### WETTED COMPONENTS

Aluminum, Brass, Steel, Acetal, Stainless Steel, and Nitrile

### STANDARD CONFIGURATION

- Pressure adjustment range of 7 - 145 PSI (0.5 - 10 BAR)

### OPTIONAL CONFIGURATION

Custom built includes the following pressure adjustment ranges:

- 3 - 28 PSI (0.2 - 2 BAR)
- 3 - 58 PSI (0.2 - 4 BAR)
- 8 - 100 PSI (0.5 - 7 BAR)

## Technical Specifications

| Part # | Port Size | Flow Rate (Max)** |      | Pressure Gauge Port Size | Height |     | Width |    |
|--------|-----------|-------------------|------|--------------------------|--------|-----|-------|----|
|        |           | CFM               | LPM  |                          | Inch   | mm  | In    | mm |
| 57392  | 1/2"      | 140               | 4000 | 1/8"                     | 6.5    | 165 | 2.75  | 70 |

## 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**

### **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 other 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.
- 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**

### **AIR REGULATOR USE AND CARE**

- Do not force the air regulator. 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.

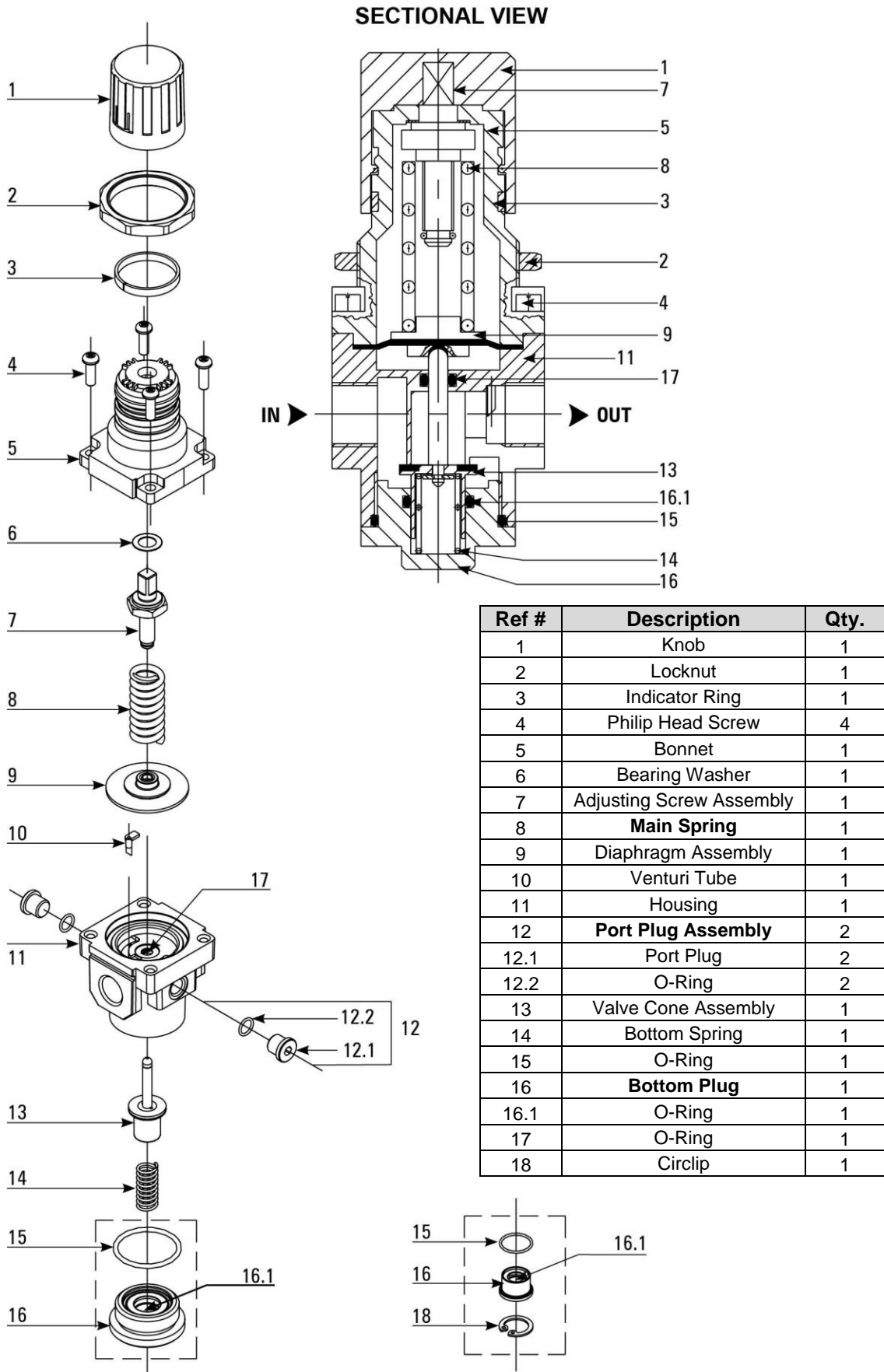
- Store the air regulator when it is not in use. Store it in a dry, secure place out of the reach of children. Inspect the tool for good working condition prior to storage and before re-use.
- Use only accessories that are recommended by the manufacturer for use with your product. Accessories that may 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.

## Specific Operation Warnings

### **⚠WARNING**

- Do not exceed the PSI rating.
- Wear ANSI Z87.1 compliant eye protection during use.

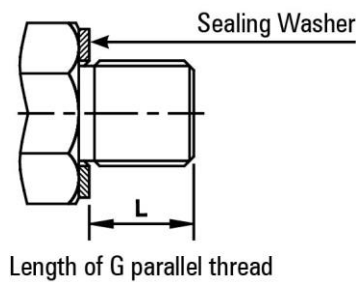
## Main Parts of Product



## Assembly Instructions

1. Install in a clean/ acid free atmosphere.
2. Flush the piping for dirt, dust, and other foreign particles.
3. Use proper thread sealant for taper threads to create a leak-proof connection.
4. Screw the Inlet/Outlet pipe with the respective port.
5. Open the inlet valve/ switch on the air supply.
6. When using (G) parallel thread nipples, check the length of the thread from the given table.

| Thread Size | Tightening Torque, Lb. - In (Nm) | Length (L) of Thread |
|-------------|----------------------------------|----------------------|
| G1/2        | 250-270 (28-30)                  | 12mm Max.            |



## Before Each Use

### WHERE TO INSTALL A REGULATOR?

- As close as possible to the tool or equipment to avoid any further pressure loss.
- Between the filter and lubricator.
- With arrows pointing in the direction of air flow (towards tool/equipment).

### WHERE TO INSTALL A PRESSURE GAUGE?

Pressure gauges must be installed on the pressure gauge port on the Regulator. Regulator has 1/8" pressure gauge port. The Pressure gauge must also be of 1/8" port size. Steps to install the pressure gauge:

- Unscrew the bolt on the pressure gauge port.
- Replace the bolt with the corresponding size Pressure Gauge.
- Pressure Gauge can be installed on any of the two Pressure Gauge ports on the Regulator.

**NOTE:** Pressure Gauge may not be included as a standard accessory, but can be purchased separately.

## Operating Instructions

1. To set the regulator, pull the regulating knob till "Red Band" (Indicator Ring) is visible.
2. To increase the pressure, turn the regulating knob in a clockwise direction.
3. To reduce the pressure, turn the regulating knob in a counter clockwise direction.
4. Set the pressure within the specified pressure range.

## Maintenance

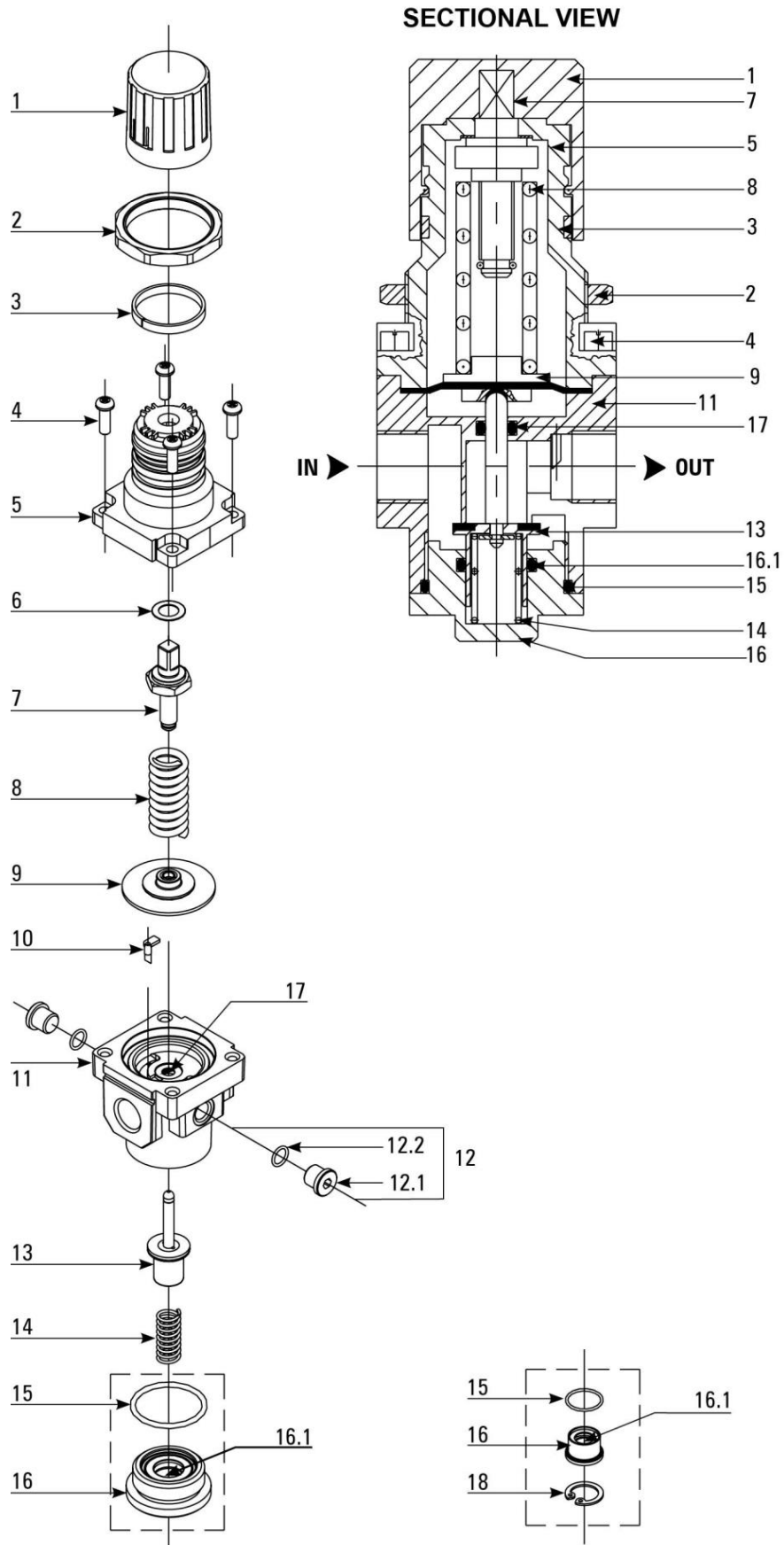
1. Before dismantling the unit, exhaust the air in the line completely.
2. Dismantle the components and clean them in kerosene and blow with compressed air.
3. Check for damages in the O-rings (15), (16.1), (17) and at sealing areas in the valve cone rubber, spherical relieving seating, seating area of the housing, etc. Replace if needed or clean and reassemble.
4. For assembly of the unit: Apply general purpose grease on the O-rings (15), (16.1), (17) and on the cylindrical surface of the valve cone (13), on threads of the adjusting screw (7), and on bearing washer (6). Reassemble all the components.

## 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   |
|---|--|---|
| Continuous leak through the knob (1).   | Diaphragm (9) damaged.                                     | Replace Diaphragm assembly (9).   |
|   | Relieving spherical seating of the valve cone damaged.     | Replace valve cone assembly (13).   |
|   | Dirt found in between the seating and the valve cone (13). | Clean and reassemble.   |
|   | O-ring (16.1) damaged.                                     | Replace the o-ring (16.1).  |
| Air leaks through housing and bottom plug (16) interface.                                 | O-ring (15) damaged.                                       | Replace the o-ring (15).  |
| Setting pressure goes on increasing slowly.   | Relieving spherical seat of the valve cone damaged.        | Replace the valve cone assembly (13).   |
|   | Dirt found in between the seating and the valve cone.      | Clean and reassemble.   |
|   | O-ring (16.1) damaged.                                     | Replace the o-ring (16.1).  |
| After frequent use of adjustment knob, the pressure setting becomes impossible.           | Wearing out of the adjusting Screw (7).                    | Replace the adjusting screw assembly and apply general purpose grease on threads and at washer (6).   |
| Supply pressure directly connected to outlet port and making pressure setting impossible. | Valve cone assembly (13) is stuck.                         | Dismantle the valve assembly (13). Clean using kerosene and air jet. Reassemble after applying general purpose grease on o-ring (17) and on the valve cone cylindrical portion. |

# Parts Diagram



## Parts List

| Reference | Item Description           | Quantity |
|-----------|----------------------------|----------|
| 1         | Knob                       | 1        |
| 2         | Locknut                    | 1        |
| 3         | Indicator Ring             | 1        |
| 4         | Philip Head Screw          | 4        |
| 5         | Bonnet                     | 1        |
| 6         | Bearing Washer             | 1        |
| 7         | Adjusting Screw Assembly   | 1        |
| 8         | <b>Main Spring</b>         | 1        |
| *         | 0.2 - 2 BAR (3 - 28 PSI)   | *        |
| *         | 0.2 - 4 BAR (3 - 58 PSI)   | *        |
| *         | 0.5 - 7 BAR (8 - 100 PSI)  | *        |
| *         | 0.5 - 10 BAR (8 - 145 PSI) | *        |
| 9         | Diaphragm Assembly         | 1        |
| 10        | Venturi Tube               | 1        |
| 11        | Housing                    | 1        |
| 12        | <b>Port Plug assembly</b>  | 2        |
| 12.1      | Port Plug                  | 2        |
| 12.2      | O-Ring                     | 2        |
| 13        | Valve Cone Assembly        | 1        |
| 14        | Bottom Spring              | 1        |
| 15        | O-Ring                     | 1        |
| 16        | <b>Bottom Plug</b>         | 1        |
| 16.1      | O-Ring                     | 1        |
| 17        | O-Ring                     | 1        |
| 18        | Circlip                    | 1        |

## 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 or 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**

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