micro IR-200
Non-Contact Infrared Thermometer

⚠ WARNING!

Read this Operator's Manual carefully before using this tool. Failure to understand and follow the contents of this manual may result in electrical shock, fire and/or serious personal injury.

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*Original Instructions - English

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micro IR-200 Non-Contact Infrared Thermometer	
Record Serial Number below and retain product serial number which is located on nameplate.	
Serial No.	

Safety Symbols

In this operator's manual and on the product, safety symbols and signal words are used to communicate important safety information. This section is provided to improve understanding of these signal words and symbols.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

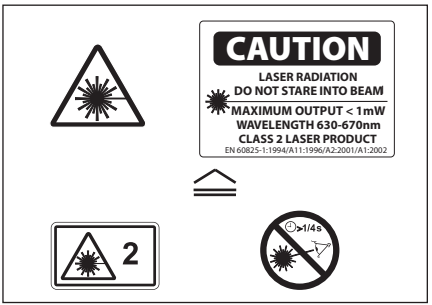
NOTICE NOTICE indicates information that relates to the protection of property.

This symbol means read the operator's manual carefully before using the equipment. The operator's manual contains important information on the safe and proper operation of the equipment.

This symbol means this device contains a Class 2 Laser.

This symbol means do not stare into the laser beam.

This symbol warns of the presence and hazard of a laser beam.



General Safety Rules

⚠ WARNING

Read all safety warnings and instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

SAVE THESE INSTRUCTIONS!

Work Area Safety

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

Electrical Safety

- **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electrical shock if your body is earthed or grounded.
- **Do not expose equipment to rain or wet conditions.** Water entering equipment will increase the risk of electrical shock.

Personal Safety

- **Stay alert, watch what you are doing and use common sense when operating equipment. Do not use equipment while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating equipment 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.
- **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.

Equipment Use and Care

- **Do not force equipment. Use the correct equipment for your application.** The correct equipment will do the job better and safer at the rate for which it is designed.
- **Do not use equipment if the switch does not turn it ON and OFF.** Any tool that cannot be controlled with the switch is dangerous and must be repaired.
- **Disconnect the batteries from the equipment before making any adjustments, changing accessories, or storing.** Such preventive safety measures reduce the risk of injury.
- **Store idle equipment out of the reach of children and do not allow persons unfamiliar with the equipment or these instructions to operate the equipment.** Equipment can be dangerous in the hands of untrained users.
- **Maintain equipment.** Check for misalignment or binding of moving parts, missing parts, breakage of parts and any other condition that may affect the equipment's operation. If damaged, have the equipment repaired before use. Many accidents are caused by poorly maintained equipment.
- **Use the equipment and accessories in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the equipment for operations different from those intended could result in a hazardous situation.
- **Use only accessories that are recommended by the manufacturer for your equipment.** Accessories that may be suitable

for one piece of equipment may become hazardous when used with other equipment.

- **Keep handles dry and clean; free from oil and grease.** Allows for better control of the equipment.

Service

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

Specific Safety Information

⚠ WARNING

This section contains important safety information that is specific to this tool.

Read these precautions carefully before using the RIDGID® micro IR-200 Non-Contact Infrared Thermometer to reduce the risk of eye injury or other serious personal injury.

SAVE THESE INSTRUCTIONS!

Keep this manual with the tool for use by the operator.

Infrared Thermometer Safety

- **Do not look into the laser beam.** Looking into the laser beam may be hazardous to the eyes. Do not look at the laser beam with optical aids (such as binoculars or telescopes).
- **Do not direct the laser beam towards other people.** Make sure the laser is aimed above or below eye level. Laser beams may be hazardous to the eyes.
- **Take appropriate precautions when working near electrical, moving or hot parts.** Close contact may cause electrical shock, entanglement, burns and other serious injury. Protective equipment may be required.

If you have any question concerning this Ridge Tool product:

- Contact your local RIDGID distributor.
- Visit www.RIDGID.com to find your local Ridge Tool contact point.
- Contact Ridge Tool Technical Service Department at rtctechservices@emerson.com, or in the U.S. and Canada call (800) 519-3456.

Description, Specifications And Standard Equipment

Description

The RIDGID® micro IR-200 Non-Contact Infrared Thermometer provides simple, quick, and accurate surface temperature readings at the push of a button. You simply squeeze the trigger and point the ultra-sharp dual class II lasers at the surface being measured. The micro IR-200 provides an immediate temperature measurement on a clear, easy-to-read backlit LCD display. In addition to numerous other uses, this rugged, compact instrument enables professional tradesman to diagnose heating and ventilation problems, perform preventative monitoring of electrical motors and systems, troubleshoot steam traps and quickly check fuses or circuit breakers for overheating without contact.

The micro IR-200 uses optics to sense emitted, reflected and transmitted energy, which is collected and focused onto a detector. The unit's electronics translate the information into a temperature reading, which is displayed. Lasers are used to assist in aiming.

Specifications

Temperature Range .....-58°F to 2192°F
(-50°C to 1200°C)
Distance To Spot Ratio .....30 to 1

Measuring Accuracy	-58°F ~68°F (-50°C ~20°C) : ±4.5°F (2.5°C) 68°F ~1472°F (20°C ~800°C) ±1.0% or ±1.8°F (1.0°C)
Repeatability	-58°F ~68°F (-50°C ~20°C) : ±2.3°F (1.3°C) 68°F ~1472°F (20°C ~800°C) ±0.5% or ±0.9°F (0.5°C)
Response Time	150ms
Spectral Response	8~14um
Emissivity	Adjustable, 0.10 - 1.00
Over Range Indication	LCD will show "----"
Diode Laser	Output <1mW, Wavelength 630~670nm, Class 2 Laser Product
Temperature Display	Current Temperature, MAX Temperature
Measuring Units	Fahrenheit, Celsius
Operating Temperature	32°F to 122°F (0°C to 50°C)
Storage Temperature	14°F to 140°F (-10°C to 60°C)
Display Resolution	0.1°F (0.1°C)
Relative Humidity	10%~90% RH Operating, <80% RH Storage
Batteries	9V Battery (1), NEDA 1604A or IEC 6LR61, or Equivalent
IP Rating	IP54
Weight	0.6 lbs (0.3 kg)

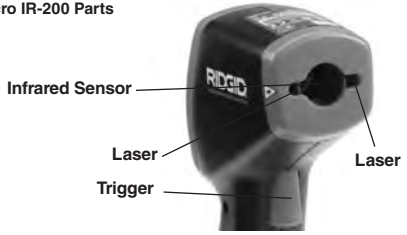
Features

- Rapid Detection Function
- Dual Class II Laser Sighting
- Automatic Data Hold
- MAX Temperature Displays
- Backlight LCD Display
- Trigger Lock
- Set High and Low Alarms
- Adjustable Emissivity
- Precise Non-Contact Measurements
- Automatic Selection Range and Display Resolution 0.1°F (0.1°C)

Figure 1 – micro IR-200 Non-Contact Infrared Thermometer

Parts

Figure 2 – micro IR-200 Parts



LCD Display Icons

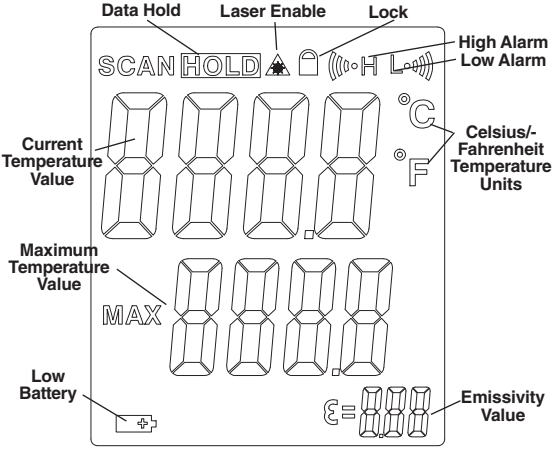


Figure 3 – micro IR-200 Display Icons

Standard Equipment

- micro IR-200
- Carrying Case
- Battery 1 x 9V
- Operator's Manual

NOTICE This equipment is used to make temperature measurements. Incorrect use or improper application may result in incorrect or inaccurate measurements. Selection of appropriate measurement methods for the conditions is the responsibility of the user.

Laser Classification

The RIDGID micro IR-200 generates a visible laser beam that is emitted from the front of the device.

The device complies with class 2 lasers according to: EN 60825-1:1994/A11:1996/A2:2001/A1:2002

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

Electromagnetic Compatibility (EMC)

The term electromagnetic compatibility is taken to mean the capability of the product to function smoothly in an environment where electromagnetic radiation and electrostatic discharges are present and without causing electromagnet interference to other equipment.

NOTICE The RIDGID micro IR-200 conforms to all applicable EMC standards. However, the possibility of it causing interference in other devices cannot be precluded.

Figure 4 – Removing Battery Compartment

Changing/Installing Batteries

The micro IR-200 is supplied without a battery installed. If the battery indicator *(Figure 3)* displays  , the battery needs to be replaced. Remove the battery prior to long term storage to avoid battery leakage.

1. Squeeze the battery clips and remove battery compartment from the thermometer *(See Figure 4)*. If needed, remove battery.

2. Install 9V alkaline battery (6LR61), observing the correct polarity as indicated on the battery compartment.

Figure 5 – Battery Holder and Polarity Marking

3. Squeeze the clips and firmly insert into thermometer. The holder will only go in one way. Do not force. Confirm securely attached.

Pre-Operation Inspection

⚠ WARNING

Before each use, inspect your infrared thermometer and correct any problems to reduce the risk of injury or incorrect measurements.

Do not look into the laser beam. Looking into the laser beam may be hazardous to the eyes.

1. Clean any oil, grease or dirt from equipment. This aids inspection.
2. Inspect the micro IR-200 for any broken, worn, missing, misaligned or binding parts, or any other condition which may prevent safe and normal operation.
3. Check that the warning labels are present, firmly attached and readable. *(See Figure 6.)*
4. If any issues are found during the inspection, do not use the infrared thermometer until it has been properly serviced.
5. Following the Operation Instructions, turn the infrared thermometer ON, make a measurement and confirm the same measurement with another instrument (contact thermometer, etc.). If the correlation between the measurements is not acceptable, do not use the infrared thermometer until it has been properly serviced.

Figure 6 – Warning Labels

Set-Up and Operation

⚠ WARNING

Do not look into the laser beam. Looking into the laser beam may be hazardous to the eyes. Do not look at the laser beam with optical aids (such as binoculars or telescopes).

Do not direct the laser beam towards other people. Make sure the laser is aimed above or below eye level. Laser beams may be hazardous to the eyes.

Take appropriate precautions when working near electrical, moving or hot parts. Close contact may cause electrical shock, entanglement, burns and other serious injury. Protective equipment may be required.

Set up and operate the infrared thermometer according to these procedures to reduce the risk of injury or incorrect measurements.

Set-Up

1. Check for an appropriate work area as indicated in the *General Safety Section*.
2. Inspect the object being measured to and confirm that you have correct equipment for the application. *See the Specifications section* for range, accuracy and other information.

   There are a variety of factors that can affect the accuracy of the micro IR-200, including:

   Field of view – The micro IR-200 uses two lasers to project points on either side of the area to be measured. These points indicate the approximate diameter of the area (the "Spot") that the temperature is being measured in. As the micro IR-200 moves further (D) away from the surface, that area and spot size (S) increases. The area is approximately $^{1}/_{30}$ times the distance to the surface. *(See Figure 7.)*

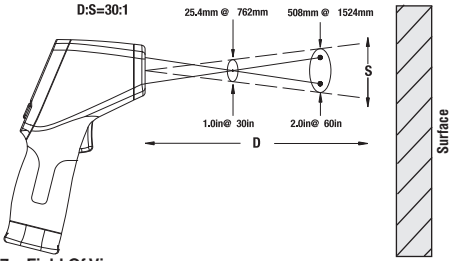


Figure 7 – Field Of View

The spot should always be smaller than the surface. The smaller the surface, the closer the micro IR-200 should be to the surface. For the best accuracy, the surface should be twice as large as the spot.

Emissivity – Emissivity is a term use to describe energy emitting characteristics of materials and has a value ranging from 0 to 1. The micro IR-200 allows adjustment of the emissivity value from 0.10 to 1.00 to calculate temperatures. If the emissive property of a surface is unknown, an emissivity of 0.95 can be appropriate for many applications, such as painted surfaces. Values of emissivity for common materials are included in *Figure 8*.

Material	Emissivity	Material	Emissivity
Aluminum, polished	0.05	Paint	0.95
Asphalt	0.88	Paper, white	0.90
Brick	0.90	Plaster, rough	0.89
Concrete, rough	0.91	Rubber	0.93
Copper, polished	0.04	Steel, galvanized	0.28
Glass	0.95	Steel, oxidized	0.88
Limestone	0.92	Water	0.96
Marble, polished	0.90		

Figure 8 – Emissivity Values of Common Materials

Temperature – While the micro IR-200 compensates for variation from ambient temperature, large changes in ambient and measured temperatures can reduce accuracy. When significant changes in ambient temperature (more than 30°F or 17°C) are encountered, allow fifteen minutes for the micro IR-200 to adjust for best accuracy.

Obstructions – Steam, dust, smoke and other obstructions like glass or plastic between the micro IR-200 and the surface being measured can decrease accuracy. These obstruct the unit optics or give false readings (measure the temperature of the glass instead of the surface). Do not use when obstructions are present.

3. Make sure that all equipment has been properly inspected.

Operation

Turning ON and OFF (Taking Measurements)

1. Hold the micro IR-200 by the handle grip and point it at the surface to be measured. Keep away from any electrical, moving or hot parts. Make sure that the unit is pointed in a safe direction away from any bystanders before turning ON.
2. Squeeze the trigger to turn the micro IR-200 ON. When the trigger is squeezed, the SCAN icon will be ON, and the micro IR-200 will continuously update the displayed current temperature value and display the maximum temperature value since the unit was turned ON.

   The micro IR-200 can be moved slowly over the surface to locate hot or cool areas. *See the High Alarm and Low Alarm sections* for information on high and low alarm settings.
3. When the trigger is released, the HOLD icon will be ON. The micro IR-200 will automatically turn OFF after seven seconds unless the unit is in Continuous Measurement mode.

micro IR-200 Controls

Figure 8 – micro IR-200 Display/Buttons

Continuous Measurement (Scanning) Mode

The micro IR-200 can be locked ON to allow measurements without holding the trigger. Make sure that the unit is pointed in a safe direction away from any bystanders before turning ON. Turn the micro IR-200 ON by squeezing and holding the trigger. While holding the trigger, press and release the menu button. The SCAN and Lock icons will be ON. Release the trigger, and the micro IR-200 will continuously update the measured temperature until the trigger switch is squeezed and released again.

Laser Enabled/Disabled

If needed, the lasers used for aiming can be turned off to help conserve battery life. If this is done, extra care must be used when aim-

ing the micro IR-200 to ensure good readings. To enable or disable, while squeezing the trigger, press and release the laser enable button. The Laser Enable icon will be ON when the laser is enabled.

Backlight

If using in a low lit area, the micro IR-200 is equipped with a display backlight. To turn the backlight ON and OFF, with the unit ON, press the backlight button.

Menu Button Use

After squeezing the trigger, pressing and releasing the menu button will allow you to cycle through the following settings in this order: High Alarm ON/OFF, High Alarm Temperature Setting, Low Alarm ON/OFF, Low Alarm Temperature Setting, Temperature Display Units, Emissivity.

High Alarm

High Alarm will give an audible tone when the current temperature exceeds a preset limit. To turn the High Alarm ON, squeeze and release the trigger, and then press and release the menu button until the High Alarm icon is flashing. Use the up/down buttons to turn the High Alarm feature ON/OFF as indicated on the current temperature value line. Press and release the menu button again. The High Alarm icon will continue to flash, and the High Alarm temperature will appear. Use the up/down buttons to change the High Alarm temperature as desired. Squeeze the trigger to exit the Settings mode and save your selection.

Low Alarm

Low Alarm will give an audible tone when the current temperature falls below a preset limit. To turn the Low Alarm ON, squeeze and release the trigger, and then press and release the menu button until the Low Alarm icon is flashing. Use the up/down buttons to turn the Low Alarm feature ON/OFF as indicated on the current temperature value line. Press and release the menu button again. The Low Alarm icon will continue to flash, and the Low Alarm temperature will appear. Use the up/down buttons to change the Low Alarm temperature as desired. Squeeze the trigger to exit the Settings mode and save your selection.

Temperature Display Units - °C/°F

The micro IR-200 can display temperatures in either degrees Celsius (C) or Fahrenheit (F). To change the display unit, squeeze and release the trigger, and then press and release the menu button until the temperature unit on the screen is flashing. Use the up/down buttons to switch between F or C as desired. Squeeze the trigger to exit the Settings mode and save your selection.

Emissivity

The emissivity value can be set from 0.10 to 1.00. See the Set-Up section to determine an appropriate value for your application. To adjust this value, squeeze and release the trigger, and then press and release the menu button until the emissivity value on the screen is flashing. Use the up/down buttons to increase or decrease the emissivity value. Squeeze the trigger to exit the Settings mode and save your selection.

Cleaning

Do not immerse the RIDGID micro IR-200 Non-Contact Infrared Thermometer in water. Wipe off dirt with a damp soft cloth. Do not use aggressive cleaning agents or solutions. Treat the instrument as you would a telescope or camera.

Storage

The RIDGID micro IR-200 Infrared Thermometer must be stored in a dry secure area between -10°C (14°F) and 60°C (140°F).

Store the tool in a locked area out of the reach of children and people unfamiliar with the micro IR-200.

Remove the battery before any long period of storage or shipping to avoid battery leakage.

Service and Repair

⚠ WARNING

Improper service or repair can make the RIDGID micro IR-200 Non-Contact Infrared Thermometer unsafe to operate.

Service and repair of the micro IR-200 must be performed by a RIDGID Independent Authorized Service Center.

For information on your nearest RIDGID Independent Service Center or any service or repair questions:

- Contact your local RIDGID distributor.
- Visit www.RIDGID.com to find your local Ridge Tool contact point.
- Contact Ridge Tool Technical Service Department at rtctechservices@emerson.com, or in the U.S. and Canada call (800) 519-3456.

Disposal

Parts of the RIDGID micro IR-200 Non-Contact Infrared Thermometer contain valuable materials and can be recycled. There are companies that specialize in recycling that may be found locally. Dispose of the components in compliance with all applicable regulations. Contact your local waste management authority for more information.

For EC Countries: Do not dispose of electrical equipment with household waste!

According to the European Guideline 2002/96/EC for Waste Electrical and Electronic Equipment and its implementation into national legislation, electrical equipment that is no longer usable must be collected separately and disposed of in an environmentally correct manner.

Battery Disposal

For EC countries: Defective or used batteries must be recycled according to the guideline 2006/66/EEC.

What is covered
RIDGID® tools are warranted to be free of defects in workmanship and material.

How long coverage lasts
This warranty lasts for the lifetime of the RIDGID® tool. Warranty coverage ends when the product becomes unusable for reasons other than defects in workmanship or material.

How you can get service
To obtain the benefit of this warranty, deliver via prepaid transportation the complete product to RIDGE TOOL COMPANY, Elyria, Ohio, or any authorized RIDGID® INDEPENDENT SERVICE CENTER. Pipe wrenches and other hand tools should be returned to the place of purchase.

What we will do to correct problems
Warranted products will be repaired or replaced, at RIDGE TOOL'S option, and returned at no charge; or, if after three attempts to repair or replace during the warranty period the product is still defective, you can elect to receive a full refund of your purchase price.

What is not covered
Failures due to misuse, abuse or normal wear and tear are not covered by this warranty. RIDGE TOOL shall not be responsible for any incidental or consequential damages.

How local law relates to the warranty
Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific rights, and you may also have other rights, which vary, from state to state, province to province, or country to country.

No other express warranty applies
This FULL LIFETIME WARRANTY is the sole and exclusive warranty for RIDGID® products. No employee, agent, dealer, or other person is authorized to alter this warranty or make any other warranty on behalf of the RIDGE TOOL COMPANY.

RIDGID
FULL LIFETIME WARRANTY
Against Material Defects & Workmanship

Full lifetime warranty (garantie légale étendue à la durée de vie du produit, voir conditions de garantie / legal warranty extended to the product lifecyle, see warranty conditions)

Ce qui est couvert
Les outils RIDGE® sont garantis contre tous vices de matériaux et de main d'oeuvre.

Durée de couverture
Cette garantie est applicable durant la vie entière de l'outil RIDGE®. La couverture cesse dès lors que le produit devient inutilisable pour raisons autres que des vices de matériaux ou de main d'oeuvre.

Pour invoquer la garantie
Pour toutes réparations au titre de la garantie, il convient d'expédier le produit complet en port payé à la RIDGE TOOL COMPANY, Elyria, Ohio, ou bien le remettre à un réparateur RIDGID® agréé. Les clés à pipe et autres outils à main doivent être ramenés au lieu d'achat.

Ce que nous ferons pour résoudre le problème
Les produits sous garantie seront à la discrétion de RIDGE TOOL, soit réparés ou remplacés, puis réexpédiés gratuitement ; ou si, après trois tentatives de réparation ou de remplacement durant la période de validité de la garantie le produit s'avère toujours défectueux, vous aurez l'option de demander le remboursement intégral de son prix d'achat.

Ce qui n'est pas couvert
Les défaillances dues au mauvais emploi, à l'abus ou à l'usure normale ne sont pas couvertes par cette garantie. RIDGE TOOL ne sera tenue responsable d'aucuns dommages directs ou indirects.

L'influence de la législation locale sur la garantie
Puisque certaines législations locales interdisent l'exclusion des dommages directs ou indirects, il se peut que la limitation ou exclusion ci-dessus ne vous soit pas applicable. Cette garantie vous donne des droits spécifiques qui peuvent être éventuellement complétés par d'autres droits prévus par votre législation locale.

Il n'existe aucune autre garantie expresse
Cette GARANTIE PERPETUELLE INTEGRALE est la seule et unique garantie couvrant les produits RIDGID®. Aucun employé, agent, distributeur ou tiers n'est autorisé à modifier cette garantie ou à offrir une garantie supplémentaire au nom de la RIDGE TOOL COMPANY.

Qué cubre
Las herramientas RIDGID están garantizadas contra defectos de la mano de obra y de los materiales empleados en su fabricación.

Duración de la cobertura
Esta garantía cubre a la herramienta RIDGID durante toda su vida útil. La cobertura de la garantía caduca cuando el producto se torna inservible por razones distintas a las de defectos en la mano de obra o en los materiales.

Cómo obtener servicio
Para obtener los beneficios de esta garantía, envíe mediante porte pagado, la totalidad del producto a RIDGE TOOL COMPANY, en Elyria, Ohio, o a cualquier Servicentro Independiente RIDGID. Las llaves para tubos y demás herramientas de mano deben devolverse a la tienda donde se adquirieron.

Lo que hacemos para corregir el problema
El producto bajo garantía será reparado o reemplazado por otro, a discreción de RIDGE TOOL, y devuelto sin costo; o, si aún resulta defectuoso después de haber sido reparado o sustituido tres veces durante el período de su garantía, Ud. puede optar por recibir un reembolso por el valor total de su compra.

Lo que no está cubierto
Esta garantía no cubre fallas debido al mal uso, abuso o desgaste normal. RIDGE TOOL no se hace responsable de daño incidental o consiguiente alguno.

Relación entre la garantía y las leyes locales
Algunos estados de los EE.UU. no permiten la exclusión o restricción referente a daños incidentales o consiguientes. Por lo tanto, puede que la limitación o restricción mencionada anteriormente no rija para Ud. Esta garantía le otorga derechos específicos, y puede que, además, Ud tenga otros derechos, los cuales varían de estado a estado, provincia a provincia o país a país.

No rige ninguna otra garantía expresa
Esta GARANTIA VITALICIA es la única y exclusiva garantía para los productos RIDGID. Ningún empleado, agente, distribuidor u otra persona está autorizado para modificar esta garantía u ofrecer cualquier otra garantía en nombre de RIDGE TOOL COMPANY.