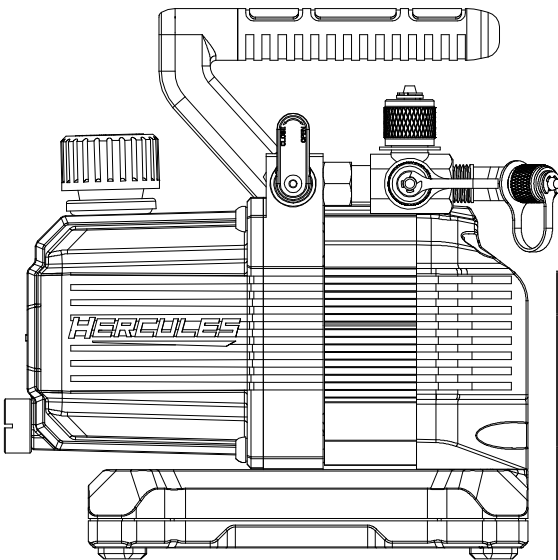




Owner's Manual & Safety Instructions

23g



**Model
HC1011B**

⚠ WARNING



To prevent explosion, serious injury, and death:

- Service of air conditioning systems must be done only by trained and experienced technician to avoid overfilling.
- Technicians opening refrigeration circuit in automotive air conditioning systems **MUST** be certified in refrigerant recovery and recycling procedures in compliance with section 609 of Clean Air Act Amendments of 1990. For additional information regarding ozone depletion and air conditioning service regulations, visit EPA's website: www.epa.gov/ozone

Battery and Charger Sold Separately

20V Brushless Cordless Two Stage Vacuum Pump

⚠ WARNING: To prevent serious injury, User must read and understand Owner's Manual. SAVE THIS MANUAL.

When unpacking, make sure that the product is intact and undamaged.
If any parts are missing or broken, please call 1-888-866-5797
as soon as possible. Reference 59438.

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IMPORTANT SAFETY INFORMATION

General Power Tool Safety Warnings

⚠ 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 all warnings and instructions for future reference.

The term "power tool" in the warnings refers to your battery-operated (cordless) power tool.

Work area safety

1. **Keep work area clean and well lit.**
Cluttered or dark areas invite accidents.
2. **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.
3. **Keep children and bystanders away while operating a power tool.**
Distractions can cause you to lose control.
4. **NEVER use this Vacuum Pump to vent refrigerants into the air. It is illegal and harmful to the environment to do so.**

Electrical safety

Do not expose power tools to rain or wet conditions.

Water entering a power tool will increase the risk of electric shock.

Personal safety

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

2. **Use personal protective equipment. Always wear eye protection.** *Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.*
3. **Only use safety equipment that has been approved by an appropriate standards agency.** *Unapproved safety equipment may not provide adequate protection. Eye protection must be ANSI-approved and breathing protection must be NIOSH-approved for the specific hazards in the work area.*

Power tool use and care

1. **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.*
2. **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.*
3. **Disconnect 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.*
4. **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.*
5. **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, have the power tool repaired before use.** *Many accidents are caused by poorly maintained power tools.*
6. **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.*

Service

1. **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.*
2. **Never service damaged BATTERY packs.** *Service of BATTERY packs should only be performed by the manufacturer or authorized service providers.*
3. Maintain labels and nameplates on the tool. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.

Battery tool use and care

1. **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.*
2. **Use power tools only with specifically designated battery packs.** *Use of any other battery packs may create a risk of injury and fire.*
3. **When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects, that can make a connection from one terminal to another.** *Shorting the battery terminals together may cause burns or a fire.*
4. **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.*
5. **Do not use a battery pack or power tool that is damaged or modified.** *Damaged or modified batteries may exhibit unpredictable behavior resulting in fire, explosion or risk of injury.*
6. **Do not expose a battery pack or power tool to fire or excessive temperature.** *Exposure to fire or temperature above 140°F may cause explosion.*
7. **Follow all charging instructions and do not charge the battery pack or power tool outside of the temperature range specified in the instructions.** *Charging improperly or at temperatures outside of the specified range may damage the battery and increase the risk of fire.*
8. For use only with Hercules 20V battery.
9. **Do not modify or attempt to repair the power tool or the battery pack except as indicated in the instructions for use and care.**

Vacuum Pump Specific Safety Warnings

1. Avoid overfilling. Do not service air conditioning systems improperly.
2. Read manual before set up and/or use.
3. Wear ANSI-approved safety goggles during set up and/or use.
4. Certification is required by law for technicians opening refrigeration circuit.
5. Use in dry locations only.
6. Do not cover this unit. This Vacuum Pump gets very hot when in use. Do not use near combustibles and allow the unit to cool down completely after using, and/or before moving or storage.
7. Maintain labels and nameplates on the tool. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
8. Do not leave the tool unattended when the Battery Pack is connected. Turn off the tool, and remove the Battery Pack before leaving.
9. 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.
10. This product is not a toy.
Keep it out of reach of children.
11. 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.
12. 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.

Lithium Battery Safety Warnings



**LITHIUM BATTERIES
STORE A LARGE AMOUNT
OF ENERGY AND WILL**

VENT FIRE OR EXPLODE IF MISTREATED:

1. Keep Battery Pack dry.

2. **DO NOT DO ANY OF THE FOLLOWING
TO THE BATTERY PACK:**

- Open,
- Drop,
- Short-circuit,
- Puncture,
- Incinerate, or
- Expose to temperatures greater than 140°F.

3. Charge Battery Pack only according to instructions.

4. Inspect Battery Pack before every use;
do not use or charge if damaged.



SAVE THESE INSTRUCTIONS.

HERCULESTM

GROUNDING

⚠ WARNING



TO PREVENT ELECTRIC SHOCK AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION:

Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the power cord plug provided with the tool. Never remove the grounding prong from the plug. Do not use the tool if the power cord or plug is damaged. If damaged, have it repaired by a service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

Extension Cords

Extension cords must not be used with this item's Charger.

Symbology

V	Volts
— — —	Direct Current
A	Amperes
n₀ xxxx/min.	No Load Revolutions per Minute (RPM)
	WARNING marking concerning Risk of Eye Injury. Wear ANSI-approved safety goggles with side shields.
	Read the manual before set-up and/or use.
	WARNING marking concerning Risk of Fire. Do not cover Charger ventilation ducts. Charge on fireproof surface only.
	WARNING marking concerning Risk of Explosion. Do not puncture, short, or open battery packs and do not charge damaged battery packs.

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SPECIFICATIONS

Battery Type	Hercules 20V Li-Ion 57373 (sold separately)
Charger Type	Hercules 20V Li-Ion 56559 (sold separately)
Air Displacement	2 CFM
Fittings	3/8" SAE, 1/4" SAE, 1/2" ACME
Ultimate Vacuum	23 microns
Oil Capacity	4.4 Ounces (130 ml)

Warning Symbols and Definitions



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.



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



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



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



Addresses practices not related to personal injury.

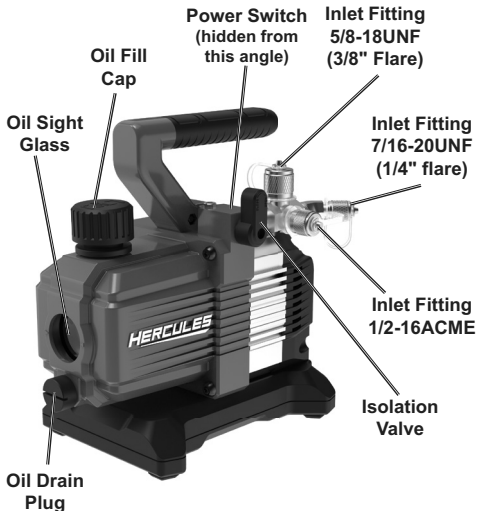
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SETUP - BEFORE USE:



Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

Functional Description



OPERATION



Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

Tool Set Up

1. Before operating the Vacuum Pump, check the oil level by placing the Vacuum Pump on a flat, level surface. Observe the Oil Sight Glass. The oil should be at the fill line on the Oil Sight Glass.
 - A Low oil level will affect the performance of the pump.
 - Too much oil will cause oil to leak from the exhaust.
2. If oil is needed, unscrew the Oil Fill Cap and add oil. Use a low viscosity vacuum pump oil (i.e., HFV-46).
3. Inspect the sealing O-ring each time the Oil Fill Cap is removed. Look for tears, cracks, and other damage. Replace if needed.
4. Replace the Oil Fill Cap and tighten securely to prevent oil from escaping under pressure during use.

Workpiece and Work Area Set Up

1. Designate a work area that is clean and well-lit. The work area must not allow access by children or pets to prevent distraction and injury.
2. Vehicle exhaust fumes and accumulated refrigerant gas can kill you. Do not operate vehicle's engine or service air conditioner in enclosed or poorly ventilated area.
3. Set the vehicle's parking brake, block the tires, and set the vehicle's transmission to neutral or park.

Charging Battery Pack

Charge battery after unpacking and before using this tool. Follow instructions included with battery charger (sold separately).

General Operation

⚠WARNING

TO PREVENT SERIOUS INJURY AND DEATH FROM EXPLOSION:

Service of air conditioning systems must be done only by trained and experienced technician to avoid overfilling.

Technicians opening refrigeration circuit in automotive air conditioning systems **MUST** be certified in refrigerant recovery and recycling procedures in compliance with section 609 of Clean Air Act Amendments of 1990. For additional information regarding ozone depletion and air conditioning service regulations, visit EPA's website: www.epa.gov/ozone

1. Before operating the Vacuum Pump, check the oil level as explained under **Tool Set Up** on page 7.
2. Use only one Inlet Fitting at a time. Keep the other Fittings capped while not in use.
3. Turn the vehicle/appliance and AC system OFF.
4. As appropriate, attach the R-12, R-22, or R-134A manifold to the AC drain port of the vehicle/appliance. This is a "quick release" fitting. The drain port is generally the lower of the two manifold ports and will be located downstream from the compressor in the vehicle/appliance. Refer to the vehicle/appliance owner's manual for vehicle-specific information.
5. Attach an AC refrigerant recovery system and drain the refrigerant.
6. After reaching 26 to 28 in/hg vacuum, stop and disconnect the recovery system.
7. Turn the Switch ON.
8. The vacuum will build for approximately 2 minutes before reaching full power. Allow the Pump to operate for at least 10 minutes to thoroughly remove all moisture from the system.
9. The Gauge (not included) should show negative pressure and maintain that reading for 10 minutes. If, during that time the pressure reading rises back toward "0", there may be a leak in the system.
10. Close all valves on the Manifold (sold separately), and turn the Switch OFF before disconnecting the hose from the vacuum fitting.

11. Allow the Vacuum Pump to completely cool before wiping down and storing indoors out of children's reach.

NOTE: The process is the same for both vehicle and other refrigeration systems.

Maintenance and Servicing



Procedures not specifically explained in this manual must be performed only by a qualified technician.

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:

Turn the Power Switch of the tool off and unplug the tool from its electrical outlet before performing any inspection, maintenance, or cleaning procedures.

TO PREVENT SERIOUS INJURY FROM TOOL FAILURE:

Do not use damaged equipment.

If abnormal noise or vibration occurs, have the problem corrected before further use.

Cleaning, Maintenance, and Lubrication

1. **BEFORE EACH USE**, inspect the general condition of the tool. Check for:
 - loose hardware,
 - misalignment or binding of moving parts,
 - cracked or broken parts,
 - damaged electrical wiring, and
 - any other condition that may affect its safe operation.
2. **AFTER USE**, wipe external surfaces of the tool with clean cloth.
3. Li-Ion BATTERY MUST BE RECYCLED OR DISPOSED OF PROPERLY. Do not short, incinerate or open battery.
4. 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.
5. Change the oil when it becomes cloudy to keep the pump operating at optimum performance. Follow **Tool Set Up** instructions on page 7.

Troubleshooting

Problem	Possible Causes	Likely Solutions
Tool will not start.	1. Battery Pack not properly connected. 2. Battery Pack not properly charged. 3. Battery Pack stopped working. 4. Internal damage or wear. (Switch, for example.)	1. Remove Battery Pack, make sure there are no obstructions, clean battery contacts on tool, reinsert the Battery Pack according to its shape (it should only fit one way), and press firmly until the Battery Pack locks in place. 2. Make sure Charger is connected and operating properly. Give enough time for Battery Pack to recharge properly. 3. Dispose of old Battery Pack properly or recycle. Replace Battery Pack. 4. Have technician service tool.
Tool operates slowly.	Battery Pack wearing out.	Dispose of old Battery Pack properly or recycle. Replace Battery Pack.
Excessive noise/rattling.	Internal damage or wear.	Have technician service tool.
Low vacuum.	1. Secondary air inlet connection cap loose. 2. Damaged O-ring inside the connection cap. 3. Oil level is low. 4. Oil has become cloudy or too impure. 5. Oil pump is clogged or there is insufficient oil supply. 6. Connection hoses or manifold has a leak.	1. Tighten the connection cap. 2. Replace O-ring. 3. Add oil until it is at the full line. 4. Change the oil. 5. Clean the oil filter and the oil entry hole. 6. Inspect connection hose gaskets and the manifold and repair leaks.
Oil leak.	1. Oil seal damaged. 2. Oil box connections loose or damaged.	1. Replace oil seal. 2. Replace O-rings and tighten the connecting screws.
Oil spray.	1. Oil level too high. 2. Inlet pressure is excessive for a long period of time.	1. Remove oil until level with fill line. 2. Use the appropriate pump, increase pumping speed.
 Follow all safety precautions whenever diagnosing or servicing the tool. Disconnect Battery Pack and Charger power supply before service.		

Record Product's Serial Number Here: _____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts. Specify UPC 193175470980 when ordering parts.

PARTS LIST AND DIAGRAM

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

Parts List

Part	Description	Qty
1	Oil Drain Plug	1
2	Oil Housing	1
3	Exhaust Cap	1
4	O-ring	1
5	Pump Body	1
6	Mounting Plate	1
7	Handle	1
8	Inlet Port	1

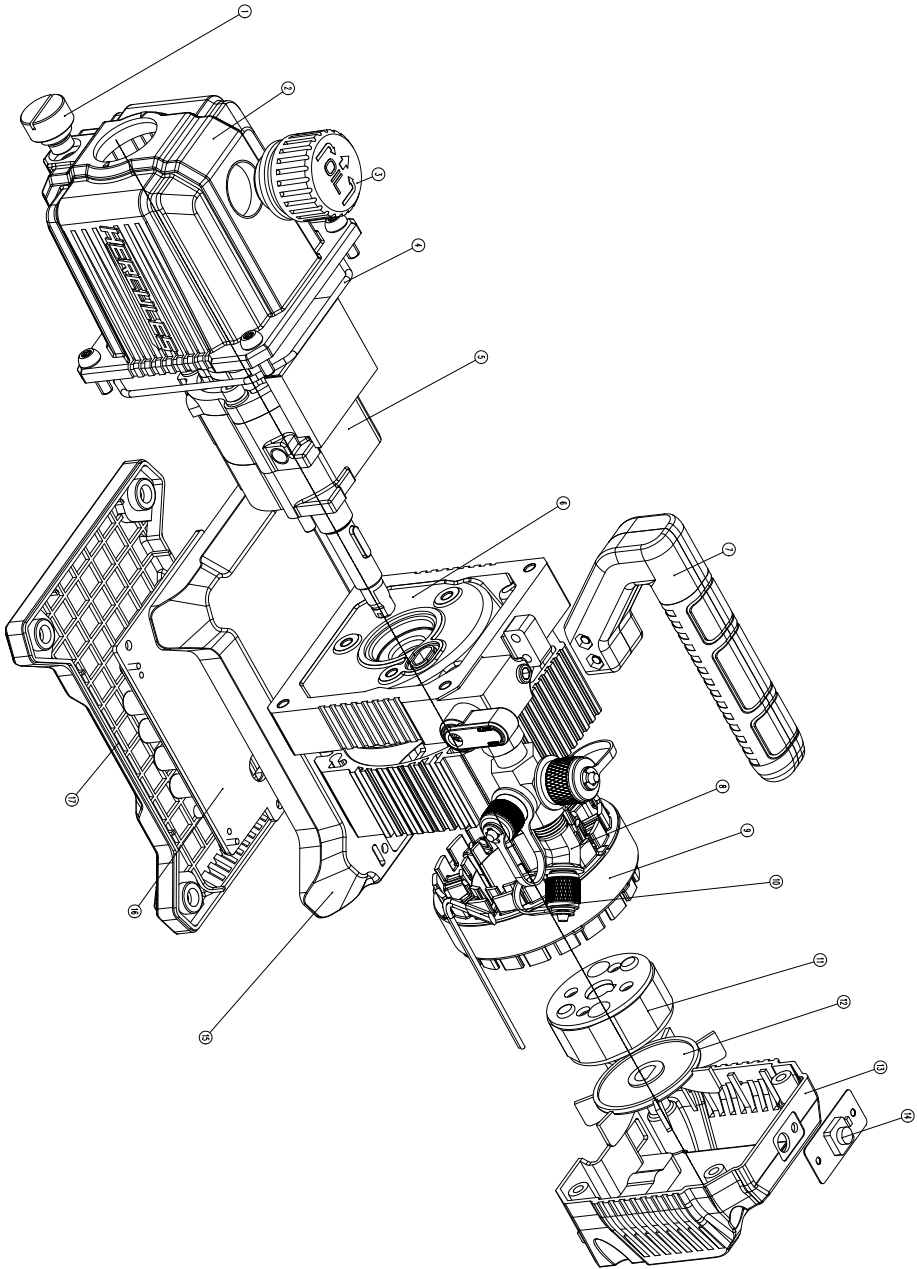
Part	Description	Qty
9	Motor Stator	1
10	Thermal Protector	1
11	Motor Rotor	1
12	Fan Blade	1
13	Rear Cover	1
14	Start Button	1
15	Upper Baseplate	1
16	PCB	1
17	Bottom Baseplate	1

Record Product's Serial Number Here: _____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts. Specify UPC 193175470980 when ordering parts.

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5-YEAR LIMITED WARRANTY

This Hercules tool is warranted to the original purchaser to be free from defects in materials and workmanship for a period of five (5) years beginning on the date of purchase. This warranty does not cover battery packs and battery chargers, which are covered under separate warranties. To obtain warranty service, visit your local Harbor Freight retail store. Warranty registration is not required. The product or part must be returned to us with proof of purchase (e.g. in-store receipt or packing slip/invoice) and may require shipment by purchaser to a service center at purchaser's expense. If our inspection verifies a covered defect in materials or workmanship during the warranty period, we will, at our option, repair or replace the defective product. We will return repaired products within a reasonable time at our expense, but if we determine that there is no defect, or that the defect resulted from causes not within the scope of our warranty, then we will return the product to you if you pay return shipping costs.

This warranty does not cover any failure or damage that we determine is due directly or indirectly to normal wear and tear, misuse, use not for the intended purpose or not in accordance with the product manual, abuse, accident, rental, modification or alteration, unauthorized repair, improper installation, neglect, lack of maintenance, or any other failure not arising from defective materials or workmanship. Fraudulent returns or claims will be denied. The repair or replacement described in this warranty shall be your sole and exclusive remedy. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES, WRITTEN OR ORAL, AND ANY IMPLIED WARRANTIES ARE DISCLAIMED TO THE EXTENT PERMITTED BY LAW AND OTHERWISE LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN. HARBOR FREIGHT SHALL NOT BE LIABLE UNDER ANY CIRCUMSTANCES FOR ANY INCIDENTAL, INDIRECT, SPECIAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES OR COSTS ARISING FROM THIS WARRANTY OR THE USE OF THIS PRODUCT. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THESE LIMITATIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

The logo for Hercules, featuring the word "HERCULES" in a bold, italicized, sans-serif font. The letters are black with a white outline, and the entire word is set against a black background that tapers off to the right, creating a sense of motion or a stylized underline.