



## VESTIL MANUFACTURING CORP.

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## SE/HP SERIES COMBINED HAND PUMP & ELECTRICAL STACKER INSTRUCTION MANUAL



**SE/HP-63, SE/HP-98 and  
SE/HP-118**



**SE/HP-63-AA, SE/HP-98-AA and  
SE/HP-118-AA**



### **Receiving instructions:**

After delivery, IMMEDIATELY remove the packaging from the product in a manner that preserves the packaging and maintains the orientation of the product in the packaging; then inspect the product closely to determine whether it sustained damage during transport. **If damage is discovered during the inspection, immediately record a complete description of the damage on the bill of lading.** If the product is undamaged, discard the packaging.

### **Notes:**

- 1) Compliance with laws, regulations, codes, and non-voluntary standards enforced in the location where the product is used is exclusively the responsibility of the owner/end-user.
- 2) VESTIL is **not liable** for any injury or property damage that occurs as a consequence of failing to apply either: a) the instructions in this manual; or b) information provided on labels affixed to the product. Neither is Vestil responsible for any consequential damages sustained as a result of failing to exercise sound judgment while assembling, installing, using or maintaining this product.

### **Table of Contents**

Hazard identification: explanation of signal words.....	2
Safety Guidelines.....	2
Introduction.....	3
Operation.....	3
Specifications.....	5
Inspections & Maintenance.....	6
Trouble Shooting.....	9
Limited warranty.....	11

## HAZARD IDENTIFICATION: explanation of signal words

This manual uses SIGNAL WORDS to indicate the likelihood of personal injuries, as well as the probable seriousness of those injuries, if the product is misused in the ways described. Other signal words call attention to uses of the product likely cause property damage.

The signal words used appear below along with the meaning of each word:



**DANGER** Identifies a hazardous situation which, if not avoided, WILL result in DEATH or SERIOUS INJURY. Use of this signal word is limited to the most extreme situations.



**WARNING** Identifies a hazardous situation which, if not avoided, COULD result in DEATH or SERIOUS INJURY.



**CAUTION** Indicates a hazardous situation which, if not avoided, COULD result in MINOR or MODERATE injury.



**NOTICE** Identifies practices likely to result in product/property damage, such as operation that might damage the product.

Each person who assembles, installs, uses, or maintains this product should read the entire manual **and fully understand the directions in advance**. If after reading the manual you do not understand an instruction, ask your supervisor or employer for clarification, because failure to adhere to the directions in this manual might result in serious personal injury.

## SAFETY GUIDELINES

Vestil diligently strives to identify foreseeable hazards associated with the use of its products. However, material handling is inherently dangerous and no manual can address every conceivable risk. The end-user ultimately is responsible for exercising sound judgment at all times.



**DANGER** Electrocution might result if any part of the product contacts electrified wires. Reduce the likelihood of electrocution by applying **common sense**:

- DO NOT contact electrified wires with any part of this device, your body, or clothing.
- DO NOT use or store the product where contact with electrified wires is likely.

Always inspect the usage area before using the product & implement precautions that account for conditions.



**WARNING** If this product is used improperly or carelessly, the operator and/or bystanders might sustain serious personal injuries or even be killed. To reduce the likelihood of injury:

- ***Failure to read and understand the entire manual before assembling, installing, using or servicing the product is a misuse of the product.***
- Read the manual to refresh your understanding of proper use and maintenance procedures.
- DO NOT attempt to resolve any problem(s) with the product unless you are both authorized to do so and certain that it will be safe to use afterwards.
- DO NOT modify the product in any way UNLESS you first obtain written approval from Vestil. Unauthorized modifications automatically void the Limited Warranty and might make the product unsafe to use.
- DO NOT exceed the maximum rated load shown on the model plate or sticker.
- Inspect the product before each use.
  - A. DO NOT use this product if the inspection reveals structural damage. Examples of structural damage include, but are not limited to, the following: 1) Cracked, broken or significantly deformed load-bearing members; 2) cracked welds; 3) missing or deformed safety chain/strap; 3) corrosion, severe wear, or other condition that affects the ability of the product to support weight or itself. Replace each part that fails to pass an inspection, and DO NOT use the product until it is fully restored to normal condition.
  - B. DO NOT use the product if any unusual noise or movement is observed. If a malfunction occurs, remove the unit from service and notify your supervisor & maintenance personnel about the issue.
- DO NOT use this device UNLESS all product labels (see "Label Placement Diagram") are readable and undamaged.



**NOTICE** Proper use, maintenance, and storage are essential for this product to function properly.

- Always use this product in accordance with the instructions in this manual and consistent with any training relevant to machines, devices, etc. used in conjunction with this product.
- Keep the product clean & dry. Lubricate moving parts.
- FOR HYDRAULIC UNITS: Do not use brake fluid or jack oils in the hydraulic system. If oil is needed, use an anti-wear hydraulic oil with a viscosity grade of 150 SUS at 100°F, (ISO 32 cSt @ 40°C), or Dexron transmission fluid.
- Contact the manufacturer for MSDS information.

## Receiving Instructions

Inspect the unit and verify damage has not occurred during shipment. If damage is evident, FILE A CLAIM WITH THE CARRIER IMMEDIATELY.

The unit is removed from the pallet by an overhead hoist, crane, fork truck, etc with a lifting and carrying capacity rated for the weight of the SE/HP stacker. The stacker has specifically designed features for unloading located on the outside of each lifting channel, as shown in Figure: Suspended Stacker. Use a lifting belt, shown in red, with a minimum tensile strength, 2,000 lb. capacity.

When unloading the stacker, all personnel should be cleared from the area.

The stacker is ready for service once unpacked and unloaded. The battery is fully charged. The hydraulic aggregate tank has been filled. The steering roller, running rollers and the mast rollers are equipped with maintenance-free bearings.



Figure: Suspended Stacker

## Introduction

The SE/HP stacker is ideal for maintenance and commercial applications. The economical, alternative stacker can lift loads with DC power or manually with a hand pump. The high quality, hand pump is ideal for small height increments. The DC lifter is powered by two 12V, 40Ah batteries. The user manages the battery power with the integral battery charger, battery level gauge and adjustable lowering speed control. The solid, compact design is ideal to transport dies, molds and open bottom pallets. All models are easily maneuverable with standard push/pull handles. The individual forks are 6" wide. The “-AA” models come with adjustable width outriggers for improved stability at higher heights.

## Operation

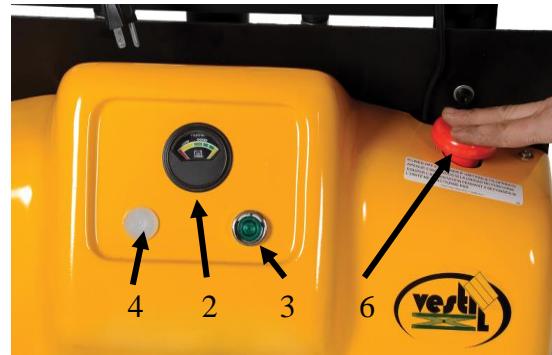
Only trained operators can use the stacker. The minimal recommended training should include reading this complete manual, proficiently able to perform all stacker operations without load and augmented instruction deemed necessary by your company's safety practices.

The trained operator is responsible for determining the actual load's weight and for evaluating the safety of the environmental conditions within the stacker will operate. Some conditions to consider are:

- The floor's available space, degree of levelness and condition to transport and lift the load.
- The stacker's condition. Reference Inspection and Maintenance section for proper care.
- The inventory rack's or stowage structure's stability and condition to support the transported load.

### Operating Elements

1. Pump Handle
2. Power Meter
3. Lift Button
4. Receptacle for Remote Input (optional)
5. Manual Release
6. E-Stop
7. Push / Pull Bars



## **Moving:**

To transport a load, start with completely lowered forks. Verify the load is evenly distributed across the forks. Make adjustments as appropriate. Slowly raise the forks just high enough so the load can be transported.

When ready, the trained operator will push or pull the Push/Pull Bars to transport the load over a level, smooth and spacious surface. Push the stacker forward to transport the load over longer distances.

Only when setting down or picking up a load with *raised*, loaded forks is it permissible to move the stacker forwards or in reverse. This activity should be on a smooth, level surface. Once the load is completely over the floor, lower the forks to the floor then raise the load just enough so the load can be transported.

When unloaded, completely lower the forks before moving the stacker.

Always avoid sudden stops, quick turns or quick starts to prevent accidental tipping or shifting of the load.

**Figure: Transporting a load**



## **Figure: Minimizing the Gap**



## **Lifting and Lowering:**

Before lifting, verify the load does not exceed the stacker's carrying capacity or its lifting height. Ensure the load is evenly distributed across both forks. Verify the load will not extend or project into the stacker's lifting frame. Prevent and ensure no one will be under the load, even if they are just walking through or by. Lastly, verify the surface is level.

For the –AA version, widen the stability forks as necessary.

The trained operator positions the stacker's forks securely under the load. The space between the load and the stacker is as close as possible, as shown in Figure: Minimizing the Gap. If the forks are shorter than the load, the load should not extend 50mm beyond the lifting forks' end reach.

To raise the load, the trained operator has two options. First, if the Power Meter, item 2, indicates the batteries have a charge, the trained operator can press the Lift Button, item 3. Secondly, the manual option is always available. Lowering the Pump Handle, item 1, will incrementally raise the load. Continue to actuate the lifting mechanism with the Pump Handle until the load is at the desired height.

Lowering the load can be achieved with the Lowering Handle, item 4. Squeezing the Lowering Handle towards the Pump Handel will lower the load. When the Lowering Handle is released, the load stops descending. Lower the load in a smooth and safe manor as not to disturb the weight distribution on the forks.

**Figure: De-activating the Brake**



## **Before Leaving the Stack:**

The stacker needs to be stowed on a level, clean surface that is clear of other vehicles.

There are a few steps to follow: First, lower the forks completely. Then, depress the E-Stop push-button down. Lastly, activate the parking brake by pressing down on the "ON" flange until it is snug, as shown in Figure: De-activating the Brake.

## Specifications

**Table: SE/HP Common Specifications**

<b>Specification</b>		<b>Common</b>
Capacity*		2000 lbs.
Fork Dimension		42 $\frac{1}{8}$ x 5.9 x 2 $\frac{3}{8}$ "
Overall Fork Width		26 $\frac{3}{4}$ "
Ground Clearance		1"
Lowered Fork Height		3 $\frac{3}{8}$ "
Head Dimension		23 $\frac{5}{8}$ x 7 $\frac{7}{8}$ x 33 $\frac{1}{2}$ "
Loading Center		19 $\frac{5}{8}$ "
Wheel Base		41 $\frac{3}{8}$ "
Turning Radius		48 $\frac{1}{4}$ "
Steering Wheel		$\varnothing$ 7 x 2"
Front Wheel		$\varnothing$ 3 $\frac{1}{8}$ x 3 $\frac{3}{8}$ "
Slope		Less than 10°
Lift Speed	Load	4.35" / sec
	Unload	---
Lower Speed	Load	2 $\frac{1}{4}$ " / sec
	Unload	1 $\frac{1}{8}$ " / sec
Lift Motor		12V / 1200W
Amps Loaded		94.7 amps
Amps Unloaded		54.3 amps
Battery		2 x 12V/ 40Ah
Battery Charger		DC 12/24V, 10amp
Weight		560lbs.
Width of Aisle		32"

**Table: SE/HP Model Specific Specifications**

<b>Model</b>	<b>Overall Size</b>	<b>Fork Lift Height</b>	<b>Overall Extended Height</b>
SE/HP-63	63 x 30 x 78"	63"	81 $\frac{7}{8}$ "
SE/HP-63-AA	64 x 46 x 78"	63"	81 $\frac{7}{8}$ "
SE/HP-98	63 x 30 x 72"	98"	119 $\frac{5}{8}$ "
SE/HP-98-AA	64 x 46 x 70"	98"	119 $\frac{5}{8}$ "
SE/HP-118	63 x 30 x 78"	118"	139 $\frac{3}{8}$ "
SE/HP-118-AA	64 x 46 x 78"	118"	139 $\frac{3}{8}$ "

\* Capacity is based on the position of the load's center of gravity. It was located between the forks and half the fork's length away from the stacker. As the load's center of gravity moves further outward, or away from the stacker, the stacker's lifting capacity will be reduced.

## Inspections & Maintenance

### Maintenance Intervals

#### **Before Each Use**

Inspect the following:

- Frayed wires
- Battery surface should be clean and dry. The battery should be locked down and secured.
- Pinched or chaffed hoses
- Damage or structural deformation to the structural members, the cylinder brackets, etc.

- Proper functioning of all limit switches, including those on the perimeter pinch point guard, if applicable.
- Check for load chain damage and for play / slack.
- Oil leaks

#### **Monthly**

- Verify the oil level is between the maximum and minimum lines.
- Worn or damaged hydraulic hoses and electrical wires
- Pivot point wear
- Roller looseness and wear
- Retaining ring integrity on all rollers and all pivot points
- Clean off dirt and debris as necessary.

- Looseness, wear or damage to the front rollers and drive wheel, bearings, mounting hardware or surface material.
- Proper functioning of any hand or foot operated mechanisms
- Proper water level in battery. Not necessary with a maintenance-free or gel battery.
- Unusual noises or movement during operation
- All the information, safety and warning labels are present, legible and securely attached.

#### **Yearly**

- The oil should be changed if it darkens, becomes gritty or turns a milky color which indicates the presence of water. Replace with anti-wear hydraulic oil with a viscosity grade of 150 SUS at 100°F (ISO 32 at 40°C). E.g. AW 32 or HO 150 hydraulic oil or a non-synthetic transmission fluid. You may use a synthetic transmission fluid if you flush the system with the synthetic fluid before filling the reservoir.

- Check chain and chain linkages for mechanical damage.
- Clean upright channels and mast rollers and grease slightly.
- Check the lift motor's brushes for carbon built up. Replace the motor as necessary.

### Chain Maintenance

For normal use, load chains should be lubricated every 250 operation hours. In heavy soiling and/or moisture and spray environments or after high prolonged loading, the chain should be lubricated every 100 operating hours or sooner if required based on the chain's extreme environmental conditions. If the chain has been exposed to corrosive media, it should be cleaned and lubricated immediately.

#### **Chain Lubrication and Conservation**

Flyer chains are correctly lubricated and are in a perfect state if:

- The chain is free of exterior soiling.
- When touched, your finger is wetted with oil. This assures the chain links are sufficiently lubricated.

#### **Lubricant Type**

A low viscosity, mineral, machine oil, engine oil or synthetic oil should be used. The oil's viscosity should be viscous during all operating, ambient temperatures.

Under normal temperature conditions, lubricating oils with a viscosity of SAE 20 to SAE 40 are appropriate.

## Lubricating Methods

The lubricant can be applied by means of brush, paint brush or compressed air spray. When using spray cans, ensure the following basic requirement is fulfilled:

After the thinner has vaporized, a viscosity conforming to the Lubricant Type, stated above, must be met.

## Cleaning

If the chain's operating environment significantly alters the oil's integrity or its ability to lubricate the chain, the chain must be cleaned and lubricated.

This is only to be effected with paraffin derivatives; such as: diesel fuel, petroleum, cleaner's naphtha, etc.

Do not clean with steam injectors, cold cleaners or corrosive or acidic substances. They can directly lead to chain damage.

If the chains have to be cleaned with steam injectors, please contact our customer service.

## Chain Inspection

Chains used in the stacker should be inspected at least once a year or every three months if exposed to severe contamination or high continuous load stress.

We recommend attending to the following points:

- Unusual noise
- Surface rust
- Linkage rust
- Stiff links
- Distorted points
- Loose link pins
- Damage
- Broken link plates
- Broken pins
- Contamination
- Stretching or elongation

Even with the optimum amount of lubrication, it is impossible to prevent chain elongation.

**Chain elongation is most profound in the links traveling over the chain sprocket/guide sprocket. Thus when checking for elongation, this chain section is selected for measurement.**

According to the regulations currently in force, a chain with 3 percent elongation is considered to be beyond its functional life.

If a single chain application is connected to particularly critical or potentially hazardous safety issues, we consider it necessary to replace a chain once 2 percent elongation has occurred.

## Measuring Procedure

Using a chain wear gauge, measure the chain's elongation for the chain section that travels over the chain sprocket / guide sprocket.

If a wear gauge is not available, then compare the lengths of a used and a new chain. First, measure the distance covered by 33 links on the used chain. Secondly with the new chain, measure the 34 link distance. Lastly, compare the two measurements. When 33 links of the older, worn chain span the same distance as 34 new links, the chain has stretched 3 percent. The chain needs to be replaced.

A 2 percent elongation can be measured comparing 50 worn links with 51 new links using the above procedure.

## Chain Replacement

If the product has two chains used in tandem, both chains should be changed at the same time.

Using an authorized chain specialist, the chain(s) removal should be done with consideration and care appropriate to any safety equipment item.

Product liability becomes invalid if a repaired chain contains sections bearing different silver label numbers.

## Battery Removal and Charging

### Warning

- Working with or near lead acid batteries is dangerous. Batteries contain sulfuric acid and produce explosive gases. A battery explosion could result in loss of eyesight or serious burns.
- Do not smoke or allow a spark or flame near batteries. Charge batteries in locations which are clean, dry and well ventilated. Do not lay tools or anything metallic on top of any battery. All battery repairs must be made by experience and qualified personnel.
- When working with batteries, remove personal items such as rings, bracelets, necklaces and watches. Batteries can produce enough energy to weld jewelry to metal causing a severe burn.
- Always have fresh water and soap nearby in case battery acid contacts skin, clothing or eyes.
- Operating the battery with a low battery voltage can cause premature motor contact failure.
- Do not expose the lift or charger to rain or adverse conditions.
- Replace defective cords or wires immediately.
- Check the battery's water level frequently unless you have a maintenance-free or gel battery.
- Make sure the battery charger is unplugged from the 120 volt source.

### Removal

Lock out all potential energy sources before attempting. Turn off the unit by depressing the E-Stop button.

### Charging

Plug the charger into a standard 120V receptacle. If an extension cord must be used, use a minimal length cord with the highest amperage rating. Longer cords and lower amperage rated cords both increase the charging time due to their higher, internal resistance leading to a voltage drop at the batteries. Also, the cord may overheat.

When properly connected, the charge LED will indicate the charging current's status flowing into the battery. The LED will be green while charging.

A fully charged, lead, acid battery in good condition at room temperature should read about 12.6 volts. At 11.9 volts, it is considered to be fully discharged. When checking the battery voltage, wait at least  $\frac{1}{2}$  hour after the charger has been turned off.

Unplug the charger before moving the stacker. Failure to do so could damage the cord, the receptacle and/or other equipment.

## Long-term Storage

If the stacker will be out of service for two or more months, perform the following:

- Secure the stacker for servicing. Place stacker on blocks so the wheels are off the floor.
- Clean the stacker thoroughly.
- It may be necessary to support the lifting gear in a suitable manner to relieve the load chain of any stress.
- Check the hydraulic fluid level. Replenish as needed.
- Grease the stacker thoroughly.

- Clean all bright and moving parts with a thin film of oil and grease.
- Store the stacker in a dry, frost-free, dust-free environment.
- Do not use plastic sheeting to cover the stacker. Condensation can occur.

### **Additional operations for vehicles with integral electrical systems**

- Disconnect the batteries from the stacker's electrical system.
- Charge the batteries.
- Clean the top of the battery case and terminals.
- Check the electrolyte level and top off as necessary. Not required for maintenance-free or gel batteries.
- Recharge the batteries every 90 days and every 6 months for gel batteries.
- Spray a suitable contact spray on unattached electrical contacts.

### **Return to service**

- Thoroughly clean and grease the stacker
- Remove the film of protective grease
- Check the hydraulic fluid tank and hydraulic fluid for condensation. If necessary, change the fluid.
- Inspect hydraulic hose lines for brittleness.
- Verify all the vehicle functions are performing as expected.

### **Troubleshooting**

Before performing troubleshooting tasks, set the stacker on blocks so all the wheels clear the floor.

Problem	Possible Causes	Action
Unit will not charge	<ul style="list-style-type: none"> <li>• Charger malfunction</li> <li>• Bad batteries</li> </ul>	<ul style="list-style-type: none"> <li>• Verify output voltage on charger. There will be a voltage reading when connected to the batteries. It should be approximately 28 volts.</li> <li>• Load test the batteries.</li> </ul>
Unit will not raise or motor does not run	<ul style="list-style-type: none"> <li>• Loose Wire</li> <li>• Bad solenoid</li> <li>• Upper limit switch out of adjustment</li> <li>• Blown fuse</li> <li>• Batteries discharged</li> </ul>	<ul style="list-style-type: none"> <li>• Verify 24 volts at the coil when raise button is depressed. If voltage is not present, trace wiring back until a short or open is found.</li> <li>• If voltage is present at the solenoid and the unit does not rise, remove the two wires to the coil and measure the coil's resistance. It should be about 19 ohms. Replace coil as needed.</li> <li>• Bypass the upper limit switch and see if the forks rise. DO NOT TAKE THEM ALL THE WAY UP. If it does rise, verify the limit switch is normally closed and will open when activated. If the limit switch is ok, adjust the switch until the fork height is 7 to 8 inches.</li> <li>• Check fuses above the motor controller.</li> <li>• Charge the batteries.</li> </ul>

The table continues on the next page.

Problem	Possible Causes	Action
Unit will not raise and motor runs	<ul style="list-style-type: none"> <li>Lower solenoid stuck</li> <li>No hydraulic fluid</li> </ul>	Is the lowering switch stuck on? If yes, then remove the tiller head via 3 screws on the bottom and replace switch or tap the switch to see if it unfreezes.
Unit will not lower	<ul style="list-style-type: none"> <li>Loose wire</li> <li>Bad coil</li> <li>Upper limit switch out of adjustment</li> </ul>	<ul style="list-style-type: none"> <li>Verify 24 volts at the coil when the lowering button is depressed. If the voltage is 0 volts, then trace wiring back to the tiller head looking for voltage on each side of the connectors until the short or open is found.</li> <li>If voltage is present and the unit does not lower, remove the connector to the coil and measure the coil resistance. It should be around 39 ohms. Replace as necessary.</li> <li>Loosen the hydraulic line at the pump to relieve the pressure. Adjust the limit switch so the unit stops at 7 to 8 inches above the floor.</li> <li>Look for binding in chain or rollers.</li> </ul>
Blowing fuses while rising	Shorted solenoid for motor raise	Remove the wire to the solenoid coil on the pump motor. Measure the resistance. It should be around 19 ohms. Replace as necessary.
Maximum lifting height is not achieved	Hydraulic oil level is too low	Fill the hydraulic oil when forks are lowered.
Unit jerks when lifting	Air in the system	Open the vent screw on the lift cylinder with forks completely lowered. Lift the forks with vent screw open until oil is free of air bubbles. Tighten vent screw.
Forks raise then drift downward	<ul style="list-style-type: none"> <li>Check valve or solenoid valve leakage</li> <li>Lowering vent leakage</li> </ul>	<p><b>Remove and Inspect</b></p> <ul style="list-style-type: none"> <li>Remove any load from the forks.</li> <li>Remove the nut holding the solenoid coil on the valve stem and then unscrew the valve from the manifold.</li> <li>Inspect the valve for contaminants and inspect the valve's O-rings and back-up washers for cuts, tears and other damage.</li> <li>With the valve immersed in mineral spirits or kerosene, use a thin tool; such as, a small screwdriver or small hex wrench, to push the poppet in and out several times from the bottom end of the valve. The valve should move freely, about <math>\frac{1}{16}</math>" from closed to open position. If it sticks in, the valve stem could be bent and will need to be replaced. If it doesn't free up after cleaning, blow the valve off with compressed air while again pushing the poppet in and out.</li> </ul> <p><b>Dirt or Debris in the Cylinder</b></p> <ul style="list-style-type: none"> <li>Inspect the valve for contaminants and inspect the valve's O-rings and any back-up washers for cuts, tears or other damage.</li> </ul>
Batteries are not charging	<ul style="list-style-type: none"> <li>Blown fuse</li> <li>Dead battery</li> </ul>	<p>Verify the fuse is good with an ohm meter.</p> <p>If the fuse is good, check the charged battery's voltage. A fully charged battery should be between 12.6 and 13.0 volts.</p>

## LIMITED WARRANTY

Vestil Manufacturing Corporation ("Vestil") warrants this product to be free of defects in material and workmanship during the warranty period. *Our warranty obligation is to provide a replacement for a defective original part if the part is covered by the warranty, after we receive a proper request from the warrantee (you) for warranty service.*

### Who may request service?

Only a warrantee may request service. *You are a warrantee if you purchased the product from Vestil or from an authorized distributor AND Vestil has been fully paid.*

### What is an "original part"?

An original part is a part used to make the product as shipped to the warrantee.

### What is a "proper request"?

A request for warranty service is proper if Vestil receives: 1) a photocopy of the Customer Invoice that displays the shipping date; AND 2) a written request for warranty service including your name and phone number. Send requests by any of the following methods:

<u>Mail</u>	<u>Fax</u>	<u>Email</u>
Vestil Manufacturing Corporation 2999 North Wayne Street, PO Box 507 Angola, IN 46703	(260) 665-1339 <u>Phone</u> (260) 665-7586	sales@vestil.com

In the written request, list the parts believed to be defective and include the address where replacements should be delivered.

### What is covered under the warranty?

After Vestil receives your request for warranty service, an authorized representative will contact you to determine whether your claim is covered by the warranty. Before providing warranty service, Vestil may require you to send the entire product, or just the defective part or parts, to its facility in Angola, IN. The warranty covers defects in the following *original* dynamic components: motors, hydraulic pumps, electronic controllers, switches and cylinders. It also covers defects in *original* parts that wear under normal usage conditions ("wearing parts"): bearings, hoses, wheels, seals, brushes, batteries, and the battery charger.

### How long is the warranty period?

The warranty period for original components is 90 days. The warranty period begins on the date when Vestil ships the product to the warrantee. If the product was purchased from an authorized distributor, the period begins when the distributor ships the product. Vestil may extend the warranty period for products shipped from authorized distributors by up to 30 days to account for shipping time.

### If a defective part is covered by the warranty, what will Vestil do to correct the problem?

Vestil will provide an appropriate replacement for any *covered* part. An authorized representative of Vestil will contact you to discuss your claim.

### What is not covered by the warranty?

1. Labor;
2. Freight;
3. Occurrence of any of the following, which automatically voids the warranty:

- Product misuse;
- Negligent operation or repair;
- Corrosion or use in corrosive environments;
- Inadequate or improper maintenance;
- Damage sustained during shipping;
- Collisions or other incidental contacts causing damage to the product;
- Unauthorized modifications: DO NOT modify the product IN ANY WAY without first receiving written authorization from Vestil. Modification(s) might make the product unsafe to use or might cause excessive and/or abnormal wear.

### Do any other warranties apply to the product?

Vestil Manufacturing Corp. makes no other express warranties. All implied warranties are disclaimed to the extent allowed by law. Any implied warranty not disclaimed is limited in scope to the terms of this Limited Warranty.

