

INSTRUCTION MANUAL

FOR ELECTRIC ORDER PICKER MODELS COVERED: EOP-550





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DIAGRAM OF ASSEMBLED EOP-550









- 1. Control pendant
- 2. Emergency stop button & key
- 3. Gate
- 4. Guard rail
- 5. Handbook
- 6. Platform
- 7. 110V and 240V charger leads
- 8. Scissor pack
- 9. Main lift cylinder

- 10. Emergency plunger valve
- 11. Maintenance props
- 12. Bubble spirit level

· Stabilization

- 14. Forklift pocket (1 of 4)
- 15. Chassis
- 16. Auto front brakes
- 17. Manual brake (1 of 2)
- 18. Hvdraulic tank

- 19. Batterv
- 20. Hydraulic pack
- 21. Battery charger
- 22. Chassis plate
- 23. Battery condition meter
- 24. Battery charging indicator
- 25. Battery charger socket 26. Power selector
- 27. Emergency lowering valve

Section 2 SPECIFICATION

Technical data

Safe working load (SWL)	550 lbs
equivalent to	1 person + 353 lbs tools and materials
edulvalerit to	Derson + 303 ibs tools and materials
Maximum platform height	98.5"
Maximum working height	177"
Platform length	40"
Platform width	20.50"
Platform quard rail height	43.30"
Toe board height	5.9"
Maximum allowable manual force	45 lbs.
Maximum allowable wind speed	0 inches/sec
Maximum allowable chassis inclination	0 degrees
Electrical system	12 volt DC
Motor	0.7 kW
Batteries	1 x 80 Ah
Batterv charger	Universal 90V to 240V DC
Hvdraulic system	
Maximum pressure	13 MPa
Reservoir capacity	0.322 gallon
Function speeds (approx.)	
Raise	24 seconds
Lower	25 seconds
Approx. no. of lifts (fully charged with SWL)	
Overall length	49.60"
Overall height (stowed)	67.70"
Overall width (with stabilisers deployed)	51.20"
Overall width (without stabilisers)	27.60"
Maximum wheel load	770 lbs

Operating site

Select a site for the machine from which the platform will be able to reach the required work area. A visual inspection of the operating site should be made before setting up the machine. Particular attention should be given to the following items:

1. Ground conditions

Ensure that the ground on which the EOP is to operate is capable of supporting the weight of the machine (including the weight of the operator plus tools and materials). Be aware of floors or coverings (e.g. manhole covers) that may not withstand point loadings exerted by the castor wheels. In indoor exposed areas with wind speeds up to 12.5m/sec the EOP can be used with a stabiliser pack. An interlock system ensures that the stabiliser beams and legs are fully deployed before the work platform can be raised. It is essential that each of the four stabiliser feet are located on firm, solid ground. The EOP auto brake kit enables the removal of stabilisers for use in 0m/sec wind conditions.

2. Ground flatness

The **Pop-Up+** must only be operated on flat (0° chassis inclination) and level surfaces. The allowable chassis inclination is indicated when the spirit level bubble is within the marked limits. All castor wheels must be in full contact with the ground.

3. Obstructions

When manoeuvring, raising and lowering, ensure that there are no obstructions or persons that may be struck by the platform.

Noise and vibration

Noise levels emitted from this machine do not exceed 70 dB(A). Hand and arm vibration experienced on this machine does not exceed 19.68"/s²

Limitations

The EOP is limited to operation indoors. The machine must not be used outdoors. Please consult the manufacturer if you are unsure of any application for which the machine is to be used.

This machine has been tested for Electromagnetic Compatibility (EMC) however, operation near to high powered radio transmission apparatus (e.g. radar, antennae) or within strong electrical and/or magnetic fields may affect some features of this product

WARNING

THIS MACHINE HAS NOT BEEN DESIGNED FOR OPERATION WITHIN POTENTIALLY EXPLOSIVE ATMOSPHERES

WARNING

THIS MACHINE IS NOT ELECTRICALLY INSULATED AND MUST NEVER BE USED FOR LIVE LINE WORKING. DEATH OR SERIOUS INJURY CAN RESULT FROM CONTACT WITH. OR INADEQUATE CLEARANCE FROM. ELECTRICAL CONDUCTORS

Safety Rules

Sate	tv Rules
NEVER	Exceed the rated capacity (Safe Working Load or SWL) of the platform 550 lbs.
NEVER	Use the EOP as a 'crane' (e.g. by suspending loads from beneath the platform).
NEVER	Make any attempt to increase the working height or outreach of the platform (e.g. by use of stepladders in the platform).
NEVER	Operate the EOP if the bubble spirit level is outside the marked limits.
NEVER	Manoeuvre the EOP on an inclined surface otherwise it may become uncontrollable.
NEVER	Manoeuvre the EOP whilst in its elevated position, as this may cause instability.
NEVER	Manoeuvre the EOP with a person or materials in the platform.
NEVER	Enter or exit the platform unless the platform is in the lowered and transport position.
NEVER	Apply external side loads to the platform or scissor structure.
NEVER	Allow persons at ground level to operate the controls whilst the platform is occupied (unless in an emergency situation).
NEVER	Operate the EOP outdoors.
NEVER	Attempt to overreach.
NEVER	Interfere with, wedge or attempt to override hydraulic, electrical or mechanical safety devices.
ALWAYS	Check that there are no obstructions or persons that may be struck by the platform before and during the raising and lowering of the platform.
ALWAYS	Ensure that the access gate is closed once the operator has entered the work platform.
ALWAYS	Ensure that another responsible person on site knows how to use the emergency controls.
ALWAYS	Undertake the daily checks recommended in this handbook prior to operation of the machine.
ALWAYS	Ensure that all instructions, warning and Safe Working Load decals are clean and legible.
ALWAYS	Ensure the EOP is positioned on adequate around to support the weight of the machine.
ALWAYS	Ensure that sufficient clearance is given if working near to live conductors.
ALWAYS	Ensure the manual rear brakes have been engaged before elevating the work platform.
ALWAYS	Ensure that auto front brakes are functioning correctly before attempting to use the machine.
ALWAYS	Ensure that the platform does not come into contact with fixed objects (e.g. buildings, etc.) or moving objects (e.g. vehicles, other plant equipment, etc.).
ALWAYS	Replace any removable quard rails (e.g. close and lock access gate) to enable full edge protection to be maintained.
ALWAYS	Ensure that the load is evenly distributed within the platform.
ALWAYS	Ensure the safety of persons that may enter the area around the platform (e.g. cordon off the area to prevent persons entering the danger area).

ALWAYS Ensure hands are kept within the confines of the guard rails whilst elevating the work platform.

Daily checks

Prior to operating the EOP . the following items must be checked:

- Structure (e.g. damage. cracks. corrosion. abrasion. welds. connections)
- · Platform (floor, rails)
- · Castors (smooth movement, damage)
- · Rear manual brakes
- Auto front brakes
- · Hydraulic oil
- · Oil leaks

- Battery condition
- Raise and lower functions (including descent delay)*
- Emergency stop and lowering functions
- · Limit switch
- Safety decals
- Stabilisers (optional if EOP is fitted with auto brakes)
- * The raise and lower functions can be tested by removing the upper control box from its holder in the work platform and using the controls whilst at ground level. (NOTE: unless in an emergency situation, this practice must not be employed when a person is in the work platform).

If the above checks reveal malfunctions or damage on the EOP , then the machine must not be used until the problem is rectified.

If in doubt, seek further assistance from the manufacturer.

If safety decals are no longer legible or missing, please contact the manufacturer for replacements.

The **Dailv Checks** page in Section 7 of this handbook may be photocopied to provide an aide memoir for operators when undertaking these important checks.

WARNING

BEFORE OPERATING YOUR EOP .YOU MUST ENSURE THAT YOU HAVE BEEN ADEQUATELY TRAINED IN ITS USE AND HAVE FULLY READ AND UNDERSTOOD THIS OPERATOR'S HANDBOOK. PAYING PARTICULAR ATTENTION TO SECTION 3 - SAFETY RULES

Manoeuvring the platform

Manoeuvre the platform into position using both hands on the platform rails as shown. Take care to avoid trapping hands or feet whilst manoeuvring the platform.

Never manoeuvre the **EOP** whilst it is elevated or with a person. tools or materials in the platform.



Engaging the brakes

Always ensure that both rear manual castor brakes are engaged before elevating the work platform to prevent any inadvertent movement. The brakes are engaged by pushing down on the lever as shown. Releasing the brake is simply a reversal of the engaging procedure. Before operating please ensure that both of the manual rear brakes are engaged.







Engage

Release

Auto brakes

Auto brakes

On the latest models Pop-Up+ is fitted with a secondary automatic brake system acting on the front fixed wheels. EOP does not require stabilisers if these auto brakes are fitted. An auto brake kit is available to purchase. This system should be checked for functionality before attempting to use the machine. To check, leave the rear manual brakes 'OFF' and elevate the machine approximately 150mm. Hold the handrail on both sides at the gate end and attempt to push the machine. It should be difficult to push the machine if the auto brakes are functioning correctly. Please consult the manufacturer if the machine is easily pushed. Before operating please ensure the manual rear brakes are engaged. An auto brake kit is available for EOP for the safe removal of stabilisers.

Battery isolation switch

The EOP - 500 is provided with a kev operated switch which is used to isolate the battery and therefore the electrical system, preventing unauthorised use. To enable the electrical system, insert the key and turn clockwise, as shown below, making sure the emergency stop button is fully released.

Ensure that when the machine is not in use, the emergency stop button is depressed and the key removed. Further electrical isolation can be achieved by selecting '0' on the power selector switch. Position '1' is for normal operation and position '2' is for charging the machine.





Entering and leaving the work platform

Always use three points of contact when entering or exiting the platform. using the handholds provided. For example, use two hands and one foot, as shown below. Use the step provided on the base of the machine.

On entering the platform, ensure that the gate is closed behind you.





Control pendant

The control pendant houses the platform raise and lower controls.

Pressing the 'UP' button raises the platform.

Pressing the 'DOWN' button lowers the platform.

To avoid crushing and shearing hazards, a delay feature is fitted which actuates when the platform is lowered to the transport position. The platform will momentarily stop to enable the operator to look around the machine to determine whether any persons are adiacent to the scissor mechanism. After a time delay, the lowering control will be enabled once more to permit the operator to continue to lower to the transport position.

Take care to avoid repeated ierky movements which could cause unnecessary impact loads on the structure.



Emergency stop

An emergency stop button is provided on the control pendant.

Once depressed, this isolates power to the raise and lower functions.

To restore functionality, twist the emergency stop button clockwise to release the button, as shown below.

Turning the Power Selector to the '0' position also has the effect of isolating power to the raise and lower functions.





Emergency lowering

- 1. Pull out Plunger 'A' and rotate through 90 degrees.
- Turn valve 'B' anticlockwise until platform starts to lower.To stop the platform at any time, turn valve clockwise until platform stops descending.
- Once platform has descended fully, please ensure valve 'B' is closed off by turning clockwise.
- Also ensure that the plunger valve is reset before operating, see instructions for plunger valve resetting.







Valve 'B'

Emergency plunger valve

The plunger valve must be reset to enable the machine to operate correctly. To reset the valve firstly ensure Valve'B' has been fully closed. Depress the raise button on the pendant control and raise the platform until the maintenance stands can be deployed. Once the stands have been deployed simply pull Plunger 'A' and turn through 90 degrees. Push the plunger back into the slot as shown left.

Depress the raise button once again and reset the maintenance stands. The machine is now able to operate correctly.



Battery charging

A battery condition meter is fitted to the EOP as shown. This meter displays the amount of charge in the battery. To accurately check the battery condition, a load must be applied across the battery, elevating the machine from ground level will achieve this. Stand away from the machine with the control pendant and press the UP button whilst observing the bars on the meter. All bars illuminated shows that the battery is fully charged. If less than four bars are on the display, the battery requires charging.

The EOP is supplied with a dedicated battery charger, which is separate to the machine. Do not use any other type of battery charger to charge your EOP machine.

To charge the battery, follow these steps:

- 1. Turn the power selector switch to '0' (OFF) position.
- Connect either the 240V or 110V lead (depending on mains supply) to the EOP at the point shown.
- 3. Connect the mains lead to a suitable power supply (either 110V or 240V)
- 4. Turn the power selector to '2' (CHARGE) position and leave the charger to complete the charging cycle. It will shut off automatically once finished. The battery should be fully recharged after a period of 12 hours, which is indicated by the 95% light illuminating on the battery charging indicator panel as shown.







Safety during maintenance

When performing maintenance on the EOP with the platform elevated. always ensure that the maintenance props are engaged as shown.





WARNING

FAILURE TO ENGAGE THE MAINTENANCE PROPS MAY RESULT IN THE PLATFORM LOWERING WITHOUT WARNING

Periodical maintenance and checks

The following checks should be undertaken at the recommended intervals shown:

	Dailv/Pre-use	Monthly	6 Monthly	12 Monthly
Inspect structure	•	•	•	•
Inspect platform	•	•	•	•
Check castors	•	•	•	•
Check manual rear brakes function	•	•	•	•
Check auto brakes function	•	•	•	•
Inspect for oil leaks	•	•	•	•
Check battery condition	•	•	•	•
Check raise/lower functions	•	•	•	•
Check emergency stop	•	•	•	•
Check emergency lower	•	•	•	•
Check stabilisers and lights function	•	•	•	•
Inspect training card and safety decals	•	•	•	•
Check hydraulic oil level		•	•	•
Inspect limit switches		•	•	•
Inspect wiring		•	•	•
Check electrical connectors		•	•	•
Lubricate roller quides		•	•	•
Lubricate grease nipples		•	•	•
Lubricate pivot pins			•	•
Lubricate castor mounts			•	•
Replace hydraulic oil				•

Periodical maintenance and checks

Prior to first use of the EOP . all daily/pre-use checks must be undertaken. If the machine has been in storage for a long period of time, it may be necessary to undertake additional checks and tests as per the table on the preceding page (e.g. lubrication, hydraulic oil, battery condition).

The Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) require that lifting equipment for lifting persons must be THOROUGHLY EXAMINED every six months.

Following any maintenance on the EOP . a full function test should be undertaken to ensure correct operation of the machine.

It is essential that only manufacturer's approved replacement parts are used when maintaining and servicing the EOP . Failure to do so may result in an unsafe or unstable machine.

Storage

The electrical components of this **EOP** are not protected from external weather conditions and the machine should therefore not be stored outdoors. Storage in a clean, dry indoor environment is recommended.

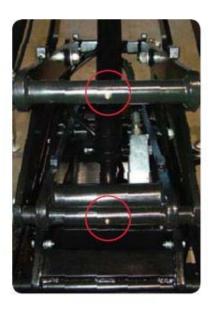
Frequent checks on the condition of the machine should be made to ensure no excessive deterioration occurs due to the environment in which the machine is housed.

Lubrication

The required lubrication points are shown opposite.

Lubrication points are to be found on the end of the scissor pack at both ends of the machine.

The lubricant recommended for use with this EOP is: standard machine grease



Hvdraulic oil

The hydraulic oil level can be checked by removing the filler cap. The correct amount of oil is in the tank when the tip of the level rod has hydraulic oil on it. This check must be carried out on a level surface.

The hydraulic oil can be topped up by adding oil to the filler as shown below. Take care not to spill hydraulic fluid over any of the surrounding machine components.

The hydraulic oil can be drained by removing the tank. Remove the bolts as shown above and separate the tank from the pump body. The hydraulic fluid can then be correctly disposed of.

Reassembly is the reverse of above.





Filler cap

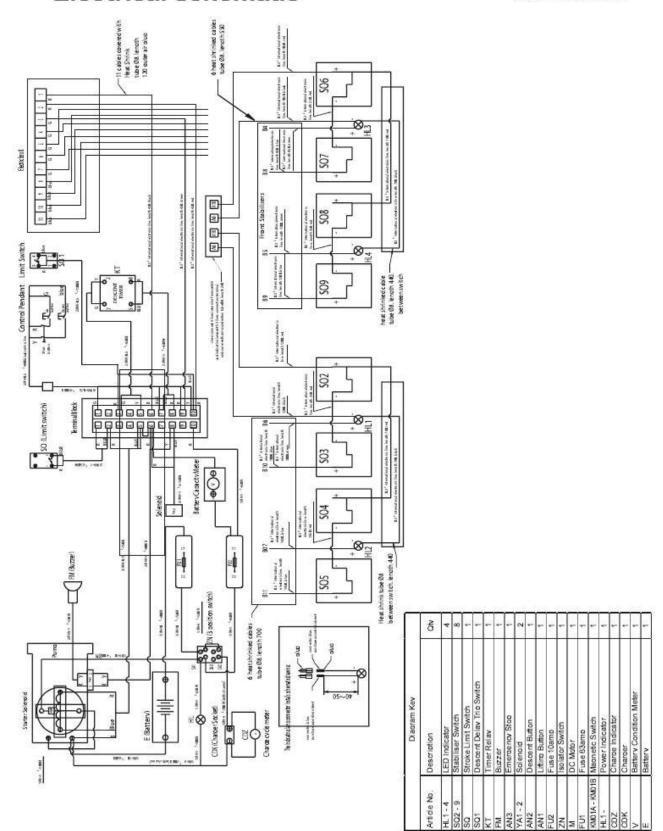
Bolts

The hydraulic oil recommended for use with this **Pop-Up+** is: mineral basis hydraulic oil with lubricating, antifoaming, anti-corrosive, antioxidant HL-HLP (ISO and UNI HM)-HV-HLPD performances according to DIN51524 part 1-2 standards

(77. 39 SSU at 100°F)	
(3708 SSU at 100°F)	
(463.5 SSU at 100°F)	
(119.3 ÷ 186.3 SSU a 100°F)	
Max (176°F)	
(86 ÷ 140°F)	
	(3708 SSU at 100°F) (463.5 SSU at 100°F) (119.3 ÷ 186.3 SSU a 100°F) Max (176°F)

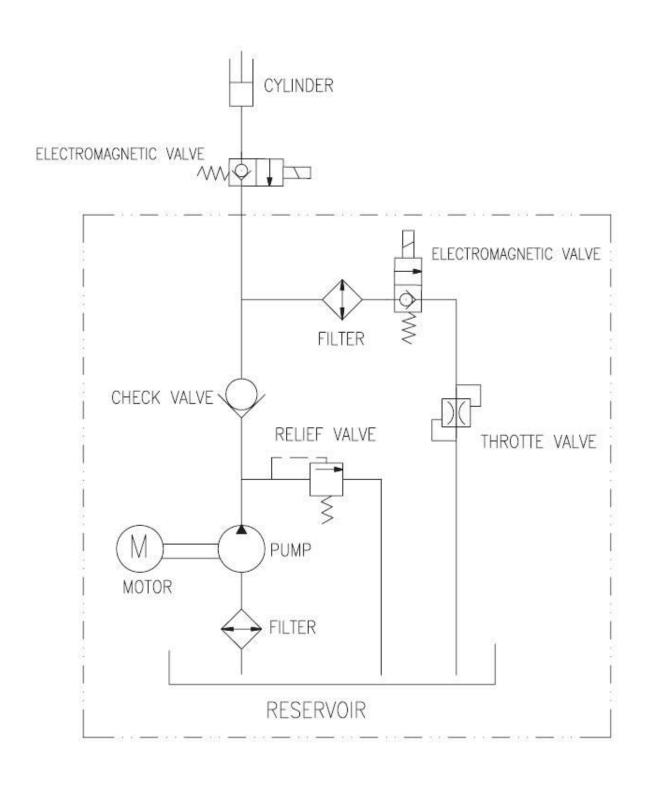
Section 5 MAINTENANCE

Electrical schematic



Hvdraulic schematic





Section 5 MAINTENANCE

Troubleshooting

Problem	Cause	Repair
Platform does not raise (motor not running)	1. Faultv wiring	Check the wiring referring to the electrical schematic
	2. Batterv is disconnected	2. Reconnect the batterv
	3. Batterv charge is insufficient	3. Charge the battery
Platform does not raise (motor running)	Faultv adjustment of relief valve	1. Adiust relief valve
	2. Faultv hvdraulic pump	2. Replace power pack
	3. Insufficient hydraulic oil	3. Add hvdraulic oil
Platform creeps	Oil leakage in power pack	1. Replace lowering valve
(uncontrolled lowering)	Oil leakage from hvdraulic circuit	Check hvdraulic circuit and repair
Oil leakage from cylinder	Faultv sealing	Replace sealing
Oil leakage from piping or ioint	Insufficient tiahtenina	Tighten joint again
<u> </u>	or seal invalid	or replace seal
Oil leakage from air breather	Excessive quantity of oil	Reduce oil quantity

Lifting

No lifting attachment points are provided on the EOP and therefore lifting of the machine (e.g., with a crane or straps) is prohibited.

Preparation for transport

Prior to transporting the EOP on a vehicle, ensure that the following precautions are taken in order to avoid damage to the machine or damage to the transporting vehicle.

- 1. Ensure that the platform is fully lowered to its rest position.
- Ensure that loose items (e.g. control pendant, battery charger) are secured to the platform.
- 3. Ensure brakes are engaged on both rear castor wheels.
- Secure the EOP to the transport vehicle using straps across the platform as shown below.



Loading and unloading

When loading or unloading the EOP . use one of the methods shown.





Forklift

Tail lift

When using a forklift to lift the EOP . ensure the forks are sufficiently inserted into the forklift pockets in the base of the machine. Safety decals applied to the EOP show the location of the forklift pockets.

When using a tail lift to load or unload the EOP ensure that the manual brakes are applied to both rear castor wheels. Ensure that the capacity of the tail lift is sufficient to handle the EOP . Take care when manoeuvring the machine on the tail lift.

WARNING

NEVER ATTEMPT TO LOAD OR UNLOAD THE EOP BY MANUAL EFFORT ONLY. SERIOUS INJURY. MACHINE OR PROPERTY DAMAGE COULD RESULT

Maintenance

Date	Scheduled maintenance undertaken	Ви
	+	
		Ţ.

Repairs

Date	Repairs undertaken	Bv
	+	

Examinations/tests

Date	Examinations/tests undertaken	Bv

Section 7 MAINTENANCE AND REPAIR RECORD

Notes

Daily checks - operator checklist

The following checklist has been provided to enable daily checks to be undertaken prior to use of this EOP. These checks should be carried out each working day or at the beginning of each shift. The purpose of the checks is to identify any wear and tear or malfunction of the machine's components and systems.

WARNING

FAILURE TO UNDERTAKE THESE CHECKS MAY RESULT IN DEFECTS ON. OR DETERIORATION OF THIS EOP GOING UNDETECTED AND POSSIBLY RESULTING IN AN UNSAFE MACHINE

Machine number	

1. Prior to operating the platform, the following items must be checked:

OK? (please tick)	OK? (please tick)	
Structure	Batterv condition	
Platform	Raise and lower	
Castors	Emergency stop	
Rear manual brakes	Emergency lower	
Front auto brakes	Limit switch	
Hvdraulic oil	Safetv decals	
Oil leaks		

Date

Checked by

2. Use raise. lower and emergency stop functions to ensure correct operation.

Should any defects be identified in any of the above areas, these should be reported to your employer. It may be necessary to further seek assistance from the supplier of the machine, this may be the hire company or the manufacturer. You should only rectify any defects if you are authorised and competent to do so.

Do not use the machine unless each of the items above is checked and stated OK.

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 <u>used to make the product as shipped</u> to the warrantee.

What is a "proper request"?

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

MailFaxEmailVestil Manufacturing Corporation(260) 665-1339sales@vestil.com2999 North Wayne Street, PO Box 507PhoneAngola, IN 46703(260) 665-7586

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 <u>90 days</u>. 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;
- 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;
 - <u>Unauthorized modifications</u>: 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.

