



# INSTRUCTION MANUAL

## FOR Two Speed Traction-Drive Carts

**MODELS COVERED:** NE-CART-1, NE-CART-2, NE-CART-3, NE-CART-4



NE-CART-1



NE-CART-2



NE-CART-3



NE-CART-4

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## **Introduction**

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### ***Read and follow the instructions contained in this operating manual.***

Please read and follow all instructions in this User's Instruction Manual before attempting to operate your Material Handling Cart (E-CART) for the first time. If there is anything in this manual that you don't understand, or if you require additional assistance for setting it up. Contact factory at 26-665-7586.

Only trained, well-informed personnel, who have been instructed in accordance with this operation manual, may use or work on the stacker.

### **Liability or guarantee is waived if:**

- The instructions in this operating manual are not observed.
- The high-lift stacking truck is operated, cleaned or maintained incorrectly.
- Alterations to the functions are carried out without the consent of manufacturer.
- Original spare parts are not used.

### **Safety instructions**

This chapter informs the user about residual dangers relating to the correct use of the products. It contains generally valid safety instructions which must be observed.

Safety instructions relating to specific actions or situations are listed prior to the respective action and/or description of the situation in the chapter.

### **Principles**

This product complies with state-of-the-art technical standards and recognized safety regulations, but there are still dangers which may occur which must be considered.

Only operate the product in a perfect condition and observing the information contained in the operating manual.

The operator is responsible for integrating the product with as little risk as possible into his working environment. This obligation continues through every phase of the products lifespan, beginning at the planning stage. Residual dangers are to be minimized.

Only trained, competent personnel who have been instructed using the operating manual and the product are permitted to work with the truck.

The operating manual must be understood (responsibility, checking)

## Specifications

Model #	NE-CART-1	NE-CART -2	NE-CART -3	NE-CART-4
<b>Total Capacity</b>	750 lbs	750 lbs	750 lbs	400 lbs
<b>2nd Shelf Capacity</b>	N/A	N/A	250 lbs	200 lbs
<b>3rd Shelf Capacity</b>	N/A	N/A	N/A	150 lbs
<b>Platform Size (L x W)</b>	28 x 48"	24¾" x 46"	24¾" x 46"	24¾" x 46"
<b>2nd deck platform size (L x W)</b>	N/A	N/A	24¾" x 46"	24¾" x 46"
<b>2nd deck platform size (L x W)</b>	N/A	N/A	N/A	24¾" x 46"
<b>Platform Height</b>	14"	14"	14"	14"
<b>2nd Deck Height</b>	N/A	N/A	33"	33"
<b>3rd Deck Height</b>	N/A	N/A	N/A	49¾"
<b>Distance between the platforms</b>	N/A	N/A	17¾"	17¾" (1 & 2) 16¾" (2 & 3)
<b>Steering wheel</b>	(2) Ø9 x 3⅞" (solid-foam tires)	(2) Ø9 x 3⅞" (solid-foam tires)	(2) Ø9 x 3⅞" (solid-foam tires)	(2) Ø9 x 3⅞" (solid-foam tires)
<b>Drive wheel</b>	(2) Ø10¼ x 3⅞" (solid-foam tires)	(2) Ø10¼ x 3⅞" (solid-foam tires)	(2) Ø10¼ x 3⅞" (solid-foam tires)	(2) Ø10¼ x 3⅞" (solid-foam tires)
<b>Overall Size (L x W x H)</b>	59 x 28 x 44 11/16"	59 x 28 x 44 11/16"	59 x 28 x 44 11/16"	59 x 28 x 59⅞"
<b>Handle Height</b>	44 11/16"	44 11/16"	44 11/16"	44 11/16"
<b>Railing Height</b>	N/A	40"	12"	59¾"
<b>Travel Speed (Fast)</b>	<b>Loaded</b>	2.5 mph	2.5 mph	2.5 mph
	<b>Unloaded</b>	2.8 mph	2.8 mph	2.8 mph
<b>Travel Speed (Slow)</b>	<b>Loaded</b>	1.3 mph	1.3 mph	1.3 mph
	<b>Unloaded</b>	1.5 mph	1.5 mph	1.5 mph
<b>Turning Radius</b>	23⅝"	23⅝"	23⅝"	23⅝"
<b>Controller</b>	Curtis 1212	Curtis 1212	Curtis 1212	Curtis 1212
<b>Drive Motor</b>	DC24V/500W	DC24V/500W	DC24V/500W	DC24V/500W
<b>Battery</b>	2 x 12V/80-95Ah	2 x 12V/80-95Ah	2 x 12V/80-95Ah	2 x 12V/80-95Ah
<b>Battery Charger</b>	DC 24V/6A	DC 24V/6A	DC 24V/6A	DC 24V/6A

Frame Height: 11½"

Frame Height: 25¾"

Frame height: 45⅝"

Hi/Low speed

Variable speed control throttle

24V Battery system

Battery Level Indicator

Automatic Brake

Steel Construction

Tread plate surface

Maximum incline is 5 degrees

On-board battery Charger (3-4 hour operation at full charge - 8 hours when used intermittently)

Horn & Belly-bump emergency safety stop.

## **Receiving Instructions**

Every unit is thoroughly tested and inspected prior to shipment. However, it is possible that the unit may incur damage during transit. If you see damage when unloading, make a note of it on the SHIPPER RECEIVER.

Remove all packing & strapping material, inspect for damage. IF DAMAGE IS EVIDENT, FILE A CLAIM WITH THE CARRIER IMMEDIATELY! Also, check fork size, type of power unit, etc., to see that the unit is correct for the intended application.

## **Warnings & Safety Instructions**

***Insure that all employees understand and follow the following instructions***

- Read and understand the owner's manual before using or servicing the stacker.
- Do not use the stacker if any damage or unusual noise is observed.
- Improper use of this lift truck could result in injury and damage to load or equipment.
- Always watch the stacker and any load on it carefully when it is being used or moved.
- DO NOT load beyond rated capacity.
- DISTRIBUTE load evenly
- Avoid sudden stops or quick turns to prevent accidental tipping of the load.
- Load must be centered and evenly distributed on the forks.
- Park the truck on level surfaces and not in the way of other products
- When parked, lower the load fork completely.
- When parked, push E-switch push-button down.
- Do not perform any modifications to the stacker without the manufacturer's approval. Failure to receive authorization for changes to the equipment could void the warranty.
- Do not use brake fluid or jack oil 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 @ 40°C), or a non-synthetic transmission fluid.
- Use only replacement parts either supplied or approved by the manufacturer.

## **Rules For Safe Use**

These symbols below are used in this owners manual to identify warnings and cautions. It is very important for to read and understand them.



Warning: Failure to note the warnings in this users manual may result in personal injury



Caution: Failure to observe the cautions in this users manual may result in damage to your E-CART.

Your E-CART is a powerful machine, for your safety and safety of the bystanders, please read all instructions in this manual before operating your E-CART, they have been prepared from years of experience with this type of equipment. Follow notes carefully to ensure safety at all times.

**Always make certain your machine is in full working order before your operation.**

1. Do not operate E-CART without reading this instruction manual. Also read all of the safety instructions and warnings stated in this manual.
2. Do not exceed the maximum safe gradient outlined for your vehicle.
3. Do not carry passengers or exceed the maximum carrying weight.
4. Do not turn suddenly at full speed, especially on uneven or sloping ground.
5. Avoid climbing or descending curbs, you may permanently damage E-CART.
6. Always stop fully before changing direction (forward or reverse)
7. Always avoid uneven surfaces.

## **SAFETY INSTRUCTIONS AND WARNINGS**

**WARNING:** Don't attempt to operate E-CART for the first time without completely reading and understanding all of the facts in this instruction manual.

When you begin to use E-CART, you will probably encounter situations in which you will need some practice. Simply take your time and practice to control as you maneuver through the doorways, on and off elevators, up and down ramps and over moderate terrain.

### **SAFETY CHECK**

Get to know the feel of your E-CART and its capabilities. Factory recommends that you perform a safety check before each use to make sure that E-CART operates smoothly and safe. For details on how to perform these necessary inspections, see the care and maintenance section of this manual. Perform following inspection prior to using your E-CART.

- Check all battery connections, make sure they are serviceable and not corroded.
- Check batteries if they are fully charged.
- Check operation of brakes.
- Before leaving the cart, make sure turn off the power.

**Warning:** Don't carry people on the E-CART, this may cause in personal injury and/or property damage.

### **WEIGHT LIMIT**

E-CART is designed for a maximum user weight limit of 750 lbs. (340 kgs.)

**Warning:** Exceeding the weight limit will void your warranty and may result in personal injury and damage to E-CART. Vestil will not be held responsible for injuries and/or property damage resulting from failure to observe these weight limitations.

Excessive high cornering speeds can create the possibility of cargo tipping. Factors which affect the possibility of cargo tipping include, but are not limited to, cornering speed, uneven surfaces, inclined surfaces, and abrupt directional changes. Don't corner at high speed! If you feel that your cargo may tip over on a corner, reduce your speed and steering angle to prevent your cargo from tipping.

### **OUTDOOR DRIVING SURFACES**

- Reduce speed when operating on uneven terrain or soft surfaces.
- Avoid long and unsafe grass that can tangle in the running gear or may hide debris and holes.
- Avoid loosely packed sand and gravel.

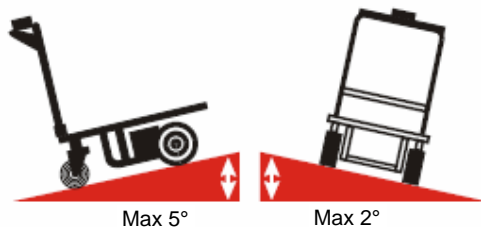
### **INCLINES**

- When descending an incline keep your speed adjustment set to the slowest speed setting to ensure a safely controlled descent and drive in forward direction only.

**Warning:** Never drive down an incline at full speed.

- When climbing an incline, try to keep your E-CART moving, if you must stop, start

up again slowly and then accelerate smoothly with caution. Avoid sudden stops, lean forward towards your handlebars to increase stability.  
 Warning: Any attempt to climb or descend an incline steeper than shown below may put your E-CART in an unstable position and cause it to tip, resulting in personal injury.



## **SYMBOLS & PICTURES**

In addition to the text and illustrations, this operating manual contains various symbols which should draw attention to the safety requirements.





They generally have the following appearance:

Signal wording	Explanation
<b>DANGER</b>	Warning of an imminent danger! Non-observance cause death or serious injury
<b>WARNING</b>	Warning of a possibly incoming dangerous situation. Non-observance may cause death or serious injury.
<b>CAUTION</b>	Warning of a possibly incoming dangerous situation. May also be used for warnings of major damage to property.

Other definitions:

<b>DIRECTION</b>	Marks recommendations for use and other useful information. Does not warn of dangerous situations.
<b>IMPORTANT</b>	Warns of a harmful situation. Non-observance may cause damage to material.

## **USE SYMBOLS & PICTURES**


	Possible danger to file and limb or machine!		Do not reach into running motor!
	Danger of crushing!		Wear safety shoes



## Product description

### Designated use

- ❖ The CART is to be used on hard level surfaces.
  - To move the stacker between buildings, warehouses etc
    - The gradient of the slope must not be more than 5%
    - Make sure load is not loose or unstable.
    - Do not pick up loads on tips or forks or edge of platform.
    - Do not overload.
    - The road surfacing must be solid and have a good grip.
- ❖ Travel routes must offer sufficient load-bearing capacity for the loaded CART.
- ❖ The CART is not suitable for continuous use in cool-houses!

Ambient conditions				
Temperature	From To	14 113	°F °F	
Degree of humidity		≤70	%	
Permitted floor incline				
• Loaded		Max. 0.5	%	
• Unloaded <sup>1</sup>		Max. 2.0	%	

## OPERATION

**Visually inspect E-CART for damaged and worn parts, before Electric Cart is taken into operation. Authorized person should read and understand all instructions**



### Caution!

Pedestrian controlled industrial trucks may only be operated by persons who have been satisfactorily instructed in operating the truck and have proved their ability to operate the truck to the responsible representative of the operating company.

The first driving attempts should take place on level and spacious surfaces.

### Recommendation:

The operator who is to maneuver the CART should be allowed to practice, when unloaded, until they can safely operate these functions.

## Travel

The butterfly switch controls the direction and speed of the lift truck. Rotating the butterfly control towards the forks moves the truck in the forward direction. Rotating the butterfly control away from the forks, moves the truck in the reverse direction. The control is progressive – the further you rotate the control, the faster the truck will travel.



DIRECTIONAL SPEED CONTROL THROTTLE

## Emergency reverse safety button

At the top of the handle is a red safety reverse button. The button is designed to change the travel direction away from the operator when depressed. The truck will stop moving away from the operator when the button is released. When the fork truck is traveling forward (away from the operator) the button has no effect when activated.

If the belly switch becomes jammed or stuck, it will move forward (away from the operator) for a maximum of 3 seconds at which time the control circuit will become disabled until the handle is re-set to the full up or full down position and the belly switch is returned to normal operation.



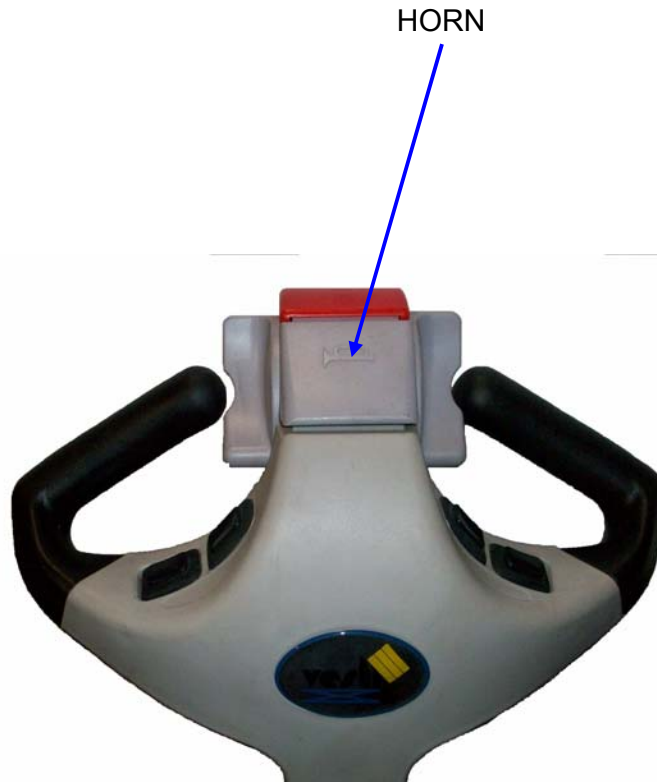
BELLY SWITCH (SAFETY REVERSE BUTTON)

### **TO BRAKE**

This cart is equipped with a brake that is applied between 1~5 degrees of the vertical position . When you release your hand from the handle. It will resume the neutral position automatically, as the brake in work. Always make sure that the brake is in work before operating the cart .

### **HORN**

A horn is located on the front side of the handle.



## Maintenance and repair

### TROUBLESHOOTING GUIDE --

Warning: Before performing any task, always block drive wheel off of the ground.  
Consult the factory for problems at time of installation, or for any problems not addressed below.

<u>Problem:</u>	<u>Possible cause(s):</u>	<u>Action:</u>
Unit doesn't move when controls are used.	Battery voltage low (<17)  Problem with motor controller (check for LED flash code on side of controller)  Fuse blown	Charge batteries.  Consult diagnostics page/factory  Remove back shroud and check fuses (3 fuses).
Unit will not charge	Charger malfunction  Bad batteries	Verify output voltage on charger, will only get a reading when connected to batteries; should be approximately 28 volts.  Load test batteries
Unit will not go forward; reverse works; belly switch just kills unit (does not go forward and time out)	Broken wire, or loose connection  Contactor bad, motor controller bad	Locate Pin 2 on Molex connector at motor controller. Trace wiring to contactor and verify connection.  When forward is depressed, there should be 24 volts on this wire from Molex connector to the contactor, if not, the motor controller may be bad; consult diagnostics page/factory. If 24 volts is present at contactor, verify ground connection. If ground is good, remove both wires and check with ohm meter; resistance should be approximately 38 ohms. If it's open or zero, the contactor should be replaced.
Unit will not go reverse; belly switch works (i.e. when the handle is in operating range and rotating throttle in reverse and the belly switch is hit, the unit moves forward and times out)	Broken wire, or loose connection, contactor bad, motor controller bad	Same as above; except locate Pin 3 on Molex connector on motor controller...and follow procedure.

E-CART (ELECTRIC CART)

<u>Problem:</u>	<u>Possible cause(s):</u>	<u>Action:</u>
<p>Unit will not go forward, or reverse, but belly switch still functions properly.</p>	<p>Broken wire, or loose connection, bad motor controller,</p> <p>Throttle assembly bad</p>	<p>Locate Pin 6 on Molex connector at the motor controller. Try to drive the unit in forward, there should be 0 to 5 volts (5v is full throttle) at this pin. If there is voltage and the unit does not move, the motor controller may be bad, consult diagnostics page/factory. If there is no voltage, trace the wiring back towards the tiller head and check voltage on each side of connectors. Continue this until bad connection is found.</p> <p>If the connections are all good, and there is no voltage coming out of throttle assembly, then the throttle assembly may be bad. Verify there is 24 volts going into the assembly and that there is a good ground. If there is still no output voltage for pin 6, replace throttle assembly. See Fig. 1</p>
<p>Unit will not move forward, or reverse, and the Belly switch will not function, unit does turn on as indicated by the battery gage lighting up.</p>	<p>Blown fuse</p> <p>Broken wire, or loose connection</p>	<p>Verify fuses are good, replace if blown.</p> <p>Locate Pin 7 on Molex connector at the motor controller. Trace wire back up to tiller head and verify continuity all the way to the throttle assembly. Repair any loose connections.</p> <p>If there is continuity up to the throttle assembly, then check the ground wire that comes off of B- on the motor controller (3<sup>rd</sup> terminal down). Add more length to this wire if necessary, and re-terminate with a ring terminal.</p>

E-CART (ELECTRIC CART)

<p>Unit will not go forward; the belly switch functions; reverse works.</p>	<p>Broken wire, or loose connection, bad motor controller</p> <p>Bad throttle assembly</p>	<p>Locate Pin 11 on Molex connector at the motor controller. Try to drive the unit in forward; there should be 24 volts at this pin. If there is voltage and the unit does not move, the motor controller may be bad, consult diagnostics page/factory. If there is no voltage, trace the wiring back towards the tiller head and check voltage on each side of connectors. Continue this until bad connection is found.</p> <p>If the connections are all good, and there is no voltage coming out of throttle assembly, then the throttle assembly may be bad. Verify there is 24 volts going into the assembly and that there is a good ground. If there is still no output voltage for pin 11, replace throttle assembly. See Fig. 1</p>
<p>Unit will not reverse; belly switch does not function; forward ok</p>	<p>Broken wire, or loose connection, bad motor controller</p> <p>Bad throttle assembly</p>	<p>Locate Pin 12 on Molex connector at the motor controller. Try to drive the unit in reverse; there should be 24 volts at this pin. If there is voltage and the unit does not move, the motor controller may be bad, consult diagnostics page/factory. If there is no voltage, trace the wiring back towards the tiller head and check voltage on each side of connectors. Continue this until bad connection is found.</p> <p>If the connections are all good, and there is no voltage coming out of throttle assembly, then the throttle assembly may be bad. Verify there is 24 volts going into the assembly and that there is a good ground. If there is still no output voltage for pin 12, replace throttle assembly. See Fig. 1</p>
<p>Belly switch does not function; forward ok; reverse ok</p>	<p>Broken wire, or loose connection, bad motor controller</p> <p>Bad belly switch</p>	<p>Locate Pin 13 on Molex connector at the motor controller. Try to drive the unit in reverse, and hit the belly switch... there should be 24 volts at this pin. If there is voltage and the unit does not move, the motor controller may be bad, consult diagnostics page/factory. If there is no voltage, trace the wiring back towards the tiller head and check voltage, or continuity on each side of connectors. Continue this until bad connection is found.</p> <p>If the connections are all good, and there is no voltage, then the switch may be bad. Verify there is 24 volts going into the switch.</p>

E-CART (ELECTRIC CART)

		If there is still no output voltage for pin 13, replace the switch.
Unit will not reverse. The unit only goes forward for about 1 second and dies when the handle is pulled down. When the handle is re-set and pulled down the unit will move forward again then die.	Stuck Switch	The belly switch is stuck on. Tap the orange assembly to see if the switch can be freed. If this doesn't work, disassemble the tiller head by removing 3 screws from bottom. Slightly loosen up the two screws that hold the switch in place, this may free the switch. If it is still stuck, contact the factory for a replacement switch.
Unit will not reverse; belly switch does not function; forward ok	Broken wire, or loose connection, bad throttle assembly, bad motor controller.	Locate Pin 12 on Molex connector at the motor controller. Try to drive the unit in reverse; there should be 24 volts at this pin. If there is voltage and the unit does not move, the motor controller may be bad, consult factory. If there is no voltage, trace the wiring back towards the tiller head and check voltage on each side of connectors. Continue this until bad connection is found. If the connections are all good, and there is no voltage coming out of throttle assembly, then the throttle assembly may be bad. Verify there is 24 volts going into the assembly and that there is a good ground. If there is still no output voltage for pin 12, replace throttle assembly.

Instructions for Changing the Batteries, estimated time, 15 min.

**READ ALL INSTRUCTIONS BEFORE PROCEEDING!**

**Only qualified personnel should work on this equipment!**

**Lock out all potential energy sources before attempting this installation; turn off the unit and remove the key.**

**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 repairs to a battery must be made by experienced 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 if this applies to your battery type.
- ! Make sure the battery charger is unplugged from 115vac source.

**Battery Charger Operating Instructions**

Plug the charger into a standard 115V receptacle. If an extension cord must be used, keep it as short and as large as possible. A small cord will decrease the output of the charger due to the voltage drop in the line. This will increase the charging time. It can also cause the 115V cord to overheat.

When properly connected, the charge LED will indicate the status of charge current flowing to the battery, as follows: Power LED is always green when charger is plugged in. The status light is as follows:

Red only – the charger is providing full output to the battery.

Yellow – the charger is “topping off” the battery.

Green – the charger is providing a “float,” or maintenance, charge.

Remember to unplug the charger before moving the equipment. Failure to do so could cause damage to cords, receptacles and other equipment.



Troubleshooting:

If the unit does not operate, check all of the wiring connections to make sure they're both mechanically and electrically sound – specifically at the battery, and the motor.

A fully-charged lead acid battery in good condition at room temperature should read 12.65 volts. At 11.9 volts it is considered to be fully discharged and in need of charging. When checking battery voltage, wait at least 1\2 hour after the charger has been turned off before checking the battery's voltage.

If the batteries aren't being charged by the charger, check the output charger fuse. Verify fuse is good with an ohmmeter, or close visual (ohm meter best). Fuse is a 10Amp 250 Volt; GBD 10A. If it is good, check the battery's state of charge with a voltmeter. The charger must be connected to the battery in order to read the output voltage of the battery charger. Depending on the state of charge of the batteries, the voltage should be somewhere around 27 to 28 volts dc.

If it is determined the batteries are dead, and need replaced, change the batteries.

**Tools Required:**

14mm wrench, or crescent wrench

Regular flat bladed screw driver

Instructions; Changing the Motor Controller in; estimated time, 30 min.

**READ ALL INSTRUCTIONS BEFORE PROCEEDING!**

**Only qualified personnel should work on this equipment!**

**Lock out all potential energy sources before attempting this installation; turn off the unit and remove the key.**

**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 repairs to a battery must be made by experienced 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 if this applies to your battery type.
- ! Make sure the battery charger is unplugged from 115vac source.

Troubleshooting:

If it has been determined the motor controller needs to be replaced, the following procedure can be used.

Tools Required:

2x 14mm wrench, open face

Philips head screwdriver

8mm wrench

This is the top side of the tiller. Fig1



Fig.1

This is the driver side of the tiller, looking at the belly switch. Fig 2



Fig.2

This is the bottom side of the tiller handle. 3 Allen head screws need to be removed. Fig.3



Fig.3

Lift the front top edge of the tiller cover up. Fig4



Fig.4



Fig.5

Carefully pull the belly switch back off of the tiller while tipping the front up.  
Fig 6



Fig.6

The tiller assembly cover should come off, just be careful not to drop it and rip out the wiring from the connectors. At this point, the tiller throttle assembly can be replaced with a new one by just unplugging the two connectors. Or, if the problem appears to be in the belly switch itself, further breakdown of the assembly can continue to search for the problem. Fig 7



Fig.7

Unplug the two connectors from the tiller throttle assembly. Fig8

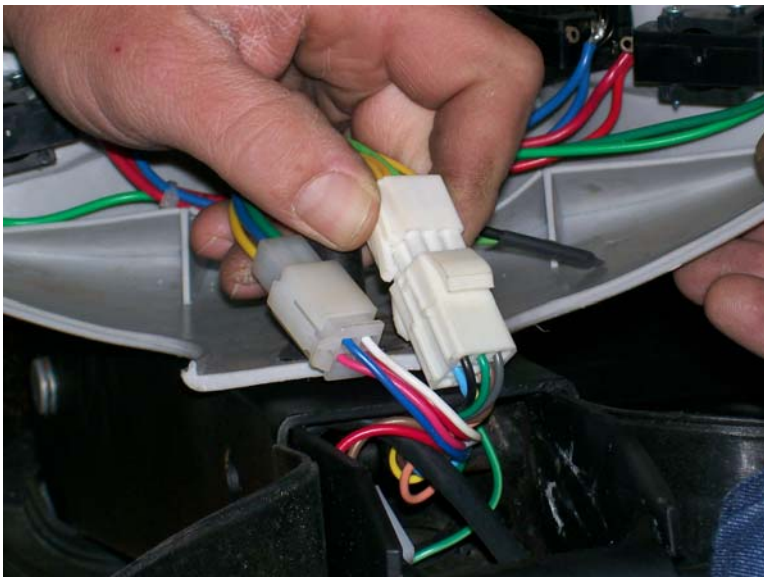


Fig.8

Remove Philips screw on throttle. Fig.9



Fig.9

Throttle wheel will then pull off. Take note of the orientation of the wheel on the shaft. Correct orientation is shown here. Fig 10



Fig.10

Do the same on the other side, taking note of the orientation of the two plastic bushings. If the throttle wheel had a tendency to stick, contact Vestil Manufacturing for replacement bushings. Fig 11

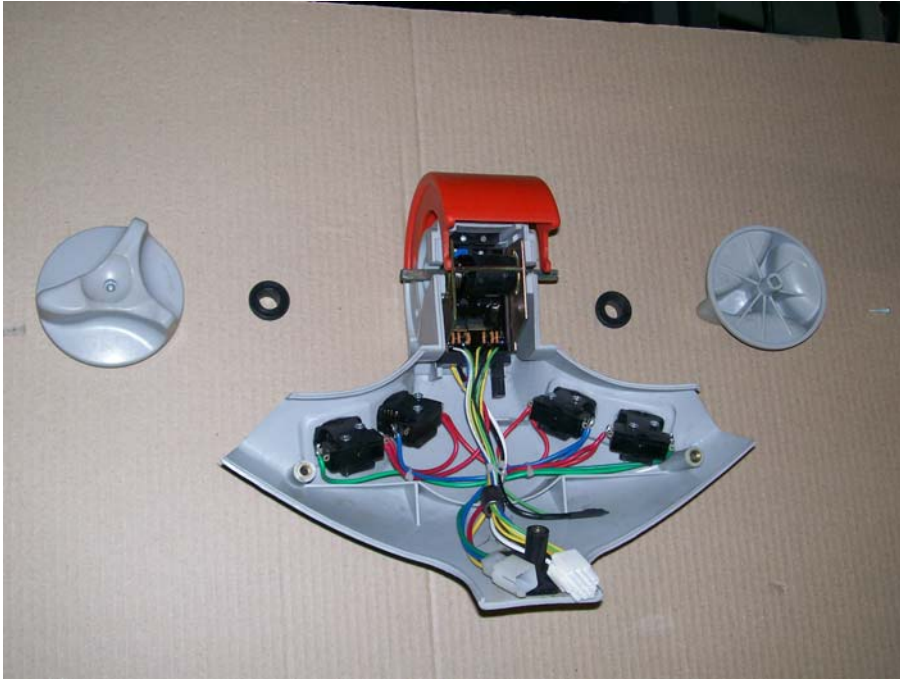


Fig.11

The front of the red cover should be connected via the gray nub. Fig 12



Fig.12



To remove the red cover, use a small screwdriver and carefully lift the plastic up over the gray nub.  
Fig 13

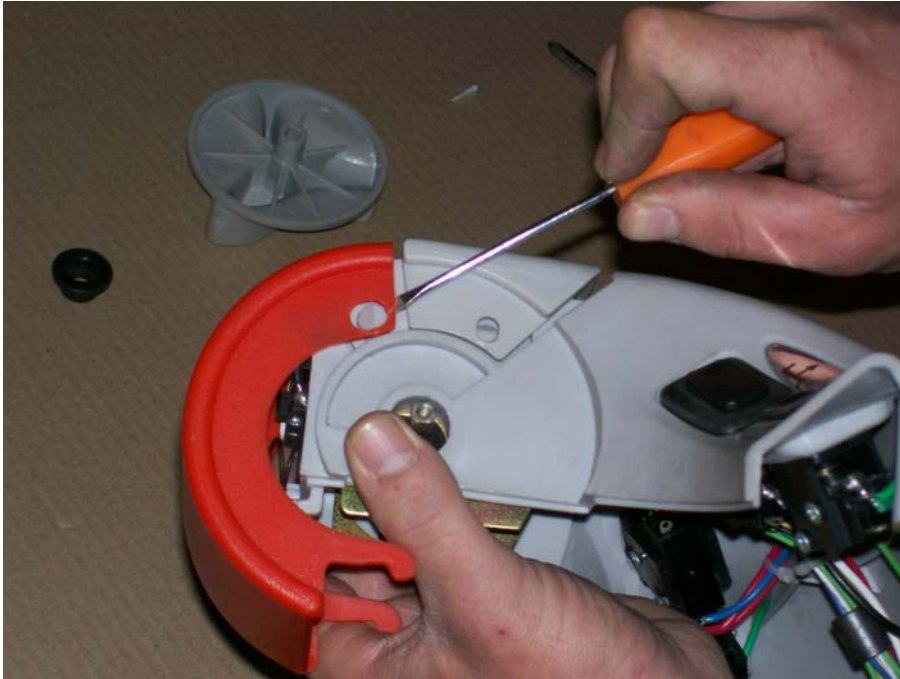


Fig.13

Do the same on the other side, and remove. Fig 14



Fig.14

Filename: Belly Switch trouble shoot

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This should expose a spring. This spring has a specific orientation. When assembled the spring sets in the red cup on the inside of the red belly cover. Fig 15

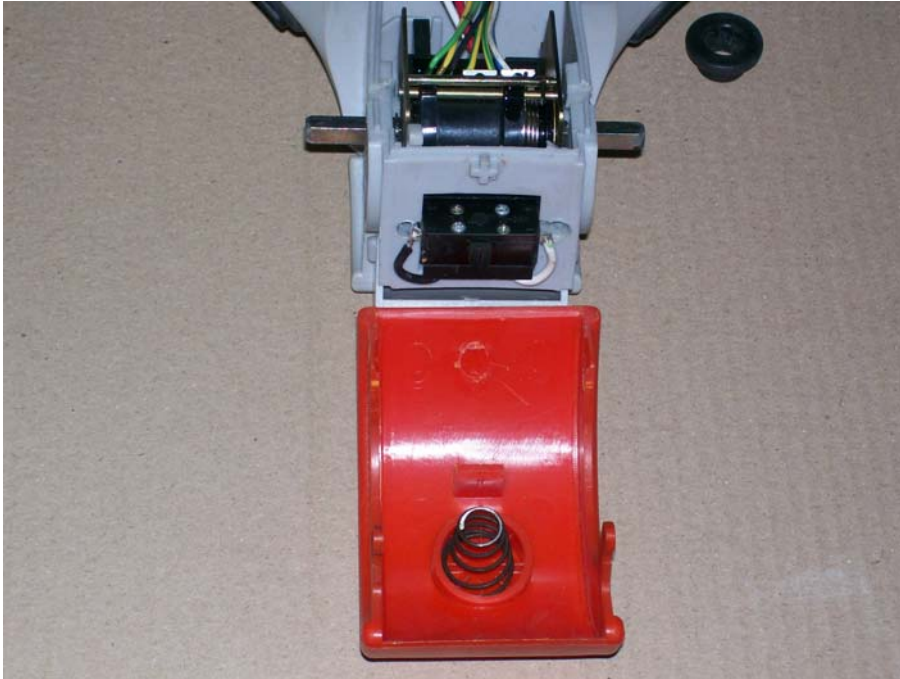


Fig.15

The other side of the spring fits over the gray plastic nub above the switch. Fig 16



Fig.16

Another picture of the nub, spring not shown. At this point, verify the solder joints are in tact and the two wires are attached to the switch as shown below. Also verify the belly switch is not stuck in. You should be able to push on the switch and the actuator will move freely in and out, you should here a click as you do this. If the switch is stuck in contact Vestil Manufacturing for replacement options. Fig17

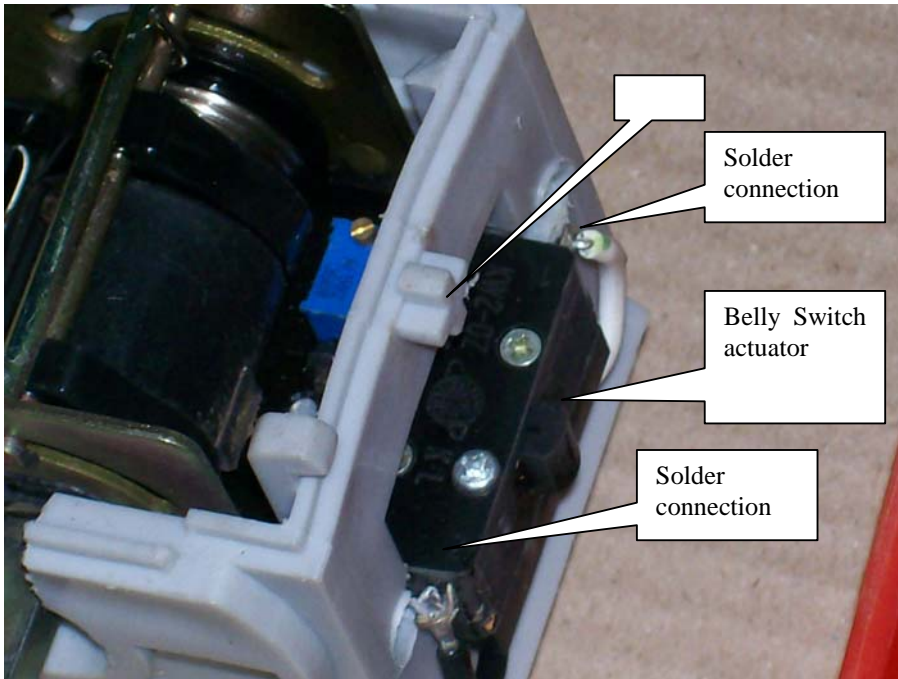


Fig.17

Replace any broken/missing components. To assemble, press the red belly switch cover back on the tiller head seating the red holes over the gray nubs. Basically the opposite of the procedure in Fig. 17, but without a screwdriver. Fig 18



Fig.18

The spring can be pushed into position.  
Fig. 19



Fig.19

This is the spring shown not seated completely. Push the spring into the pocket, and over the gray plastic nub. Fig20



Fig.20

Install bushings. Fig21



Fig.21

Put throttle thumb wheels back on. Fig22



Fig.22

Install Philips screw. Fig23



Fig.23

Re-installing the tiller cover is basically reversing steps Fig 3 thru 7; with the following precautions/steps.

Make sure red tabs on each side goes on top of black nubs when installing tiller cover on the handle.

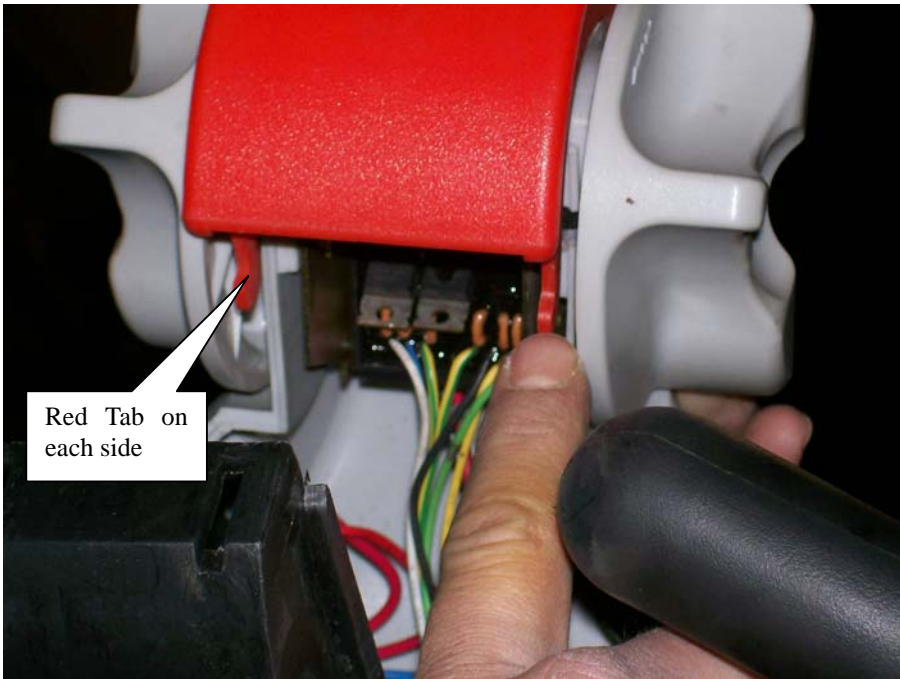


Fig.24

Black nub for right side shown here; and the next photo Fig 25

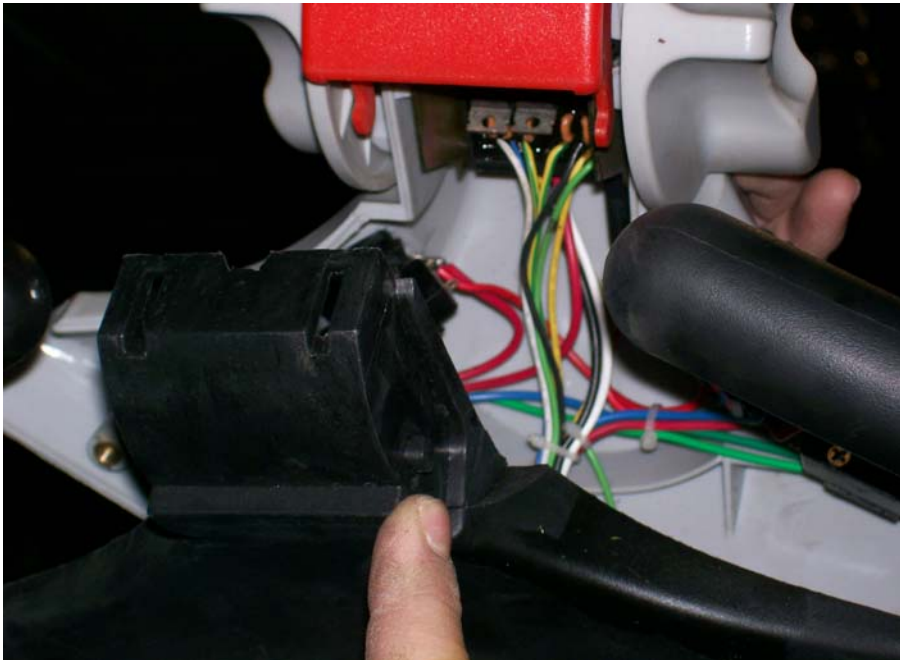


Fig.25

The red tab slides over the top of this black nub on each side when installing the tiller throttle assembly back on the handle. Fig 26

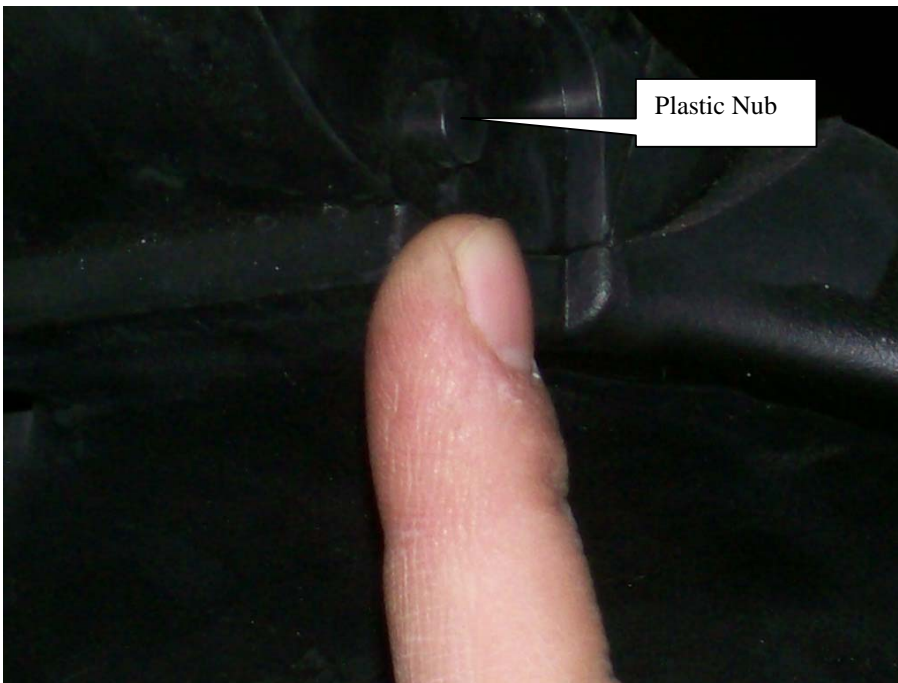


Fig.26

This shows sliding the red tabs over the black nub. This is basically the reverse of Fig6.

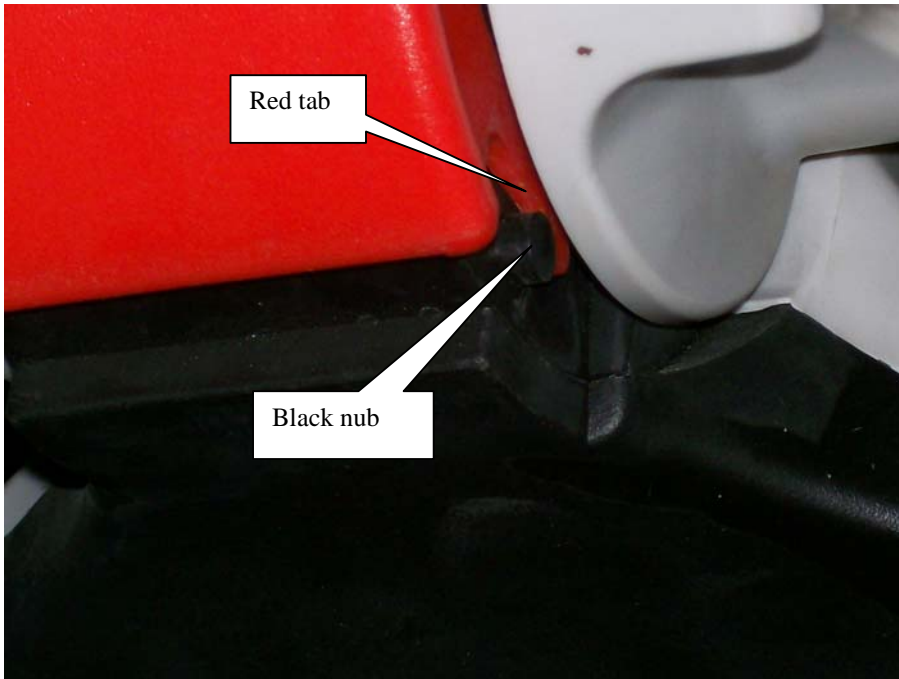


Fig.27

This is the top front where the two connectors are. Make sure they are on each side of the stand off so the wires do not get pinched. Fig28

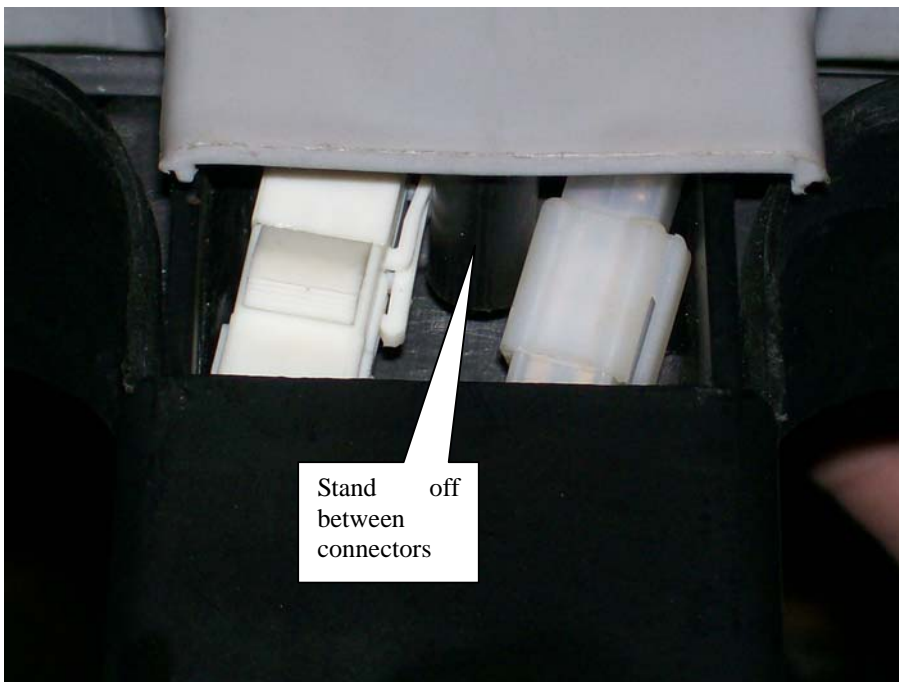


Fig.28



Gently push the tiller throttle assembly in place. Again, it's just reversing steps 3 through 7 to get the tiller throttle assembly back on the handle. Re-install the 3 Allen screws, verify no switches are sticking, and that the thumb wheel moves freely. Turn the unit on and verify operation. This completes the assembly.

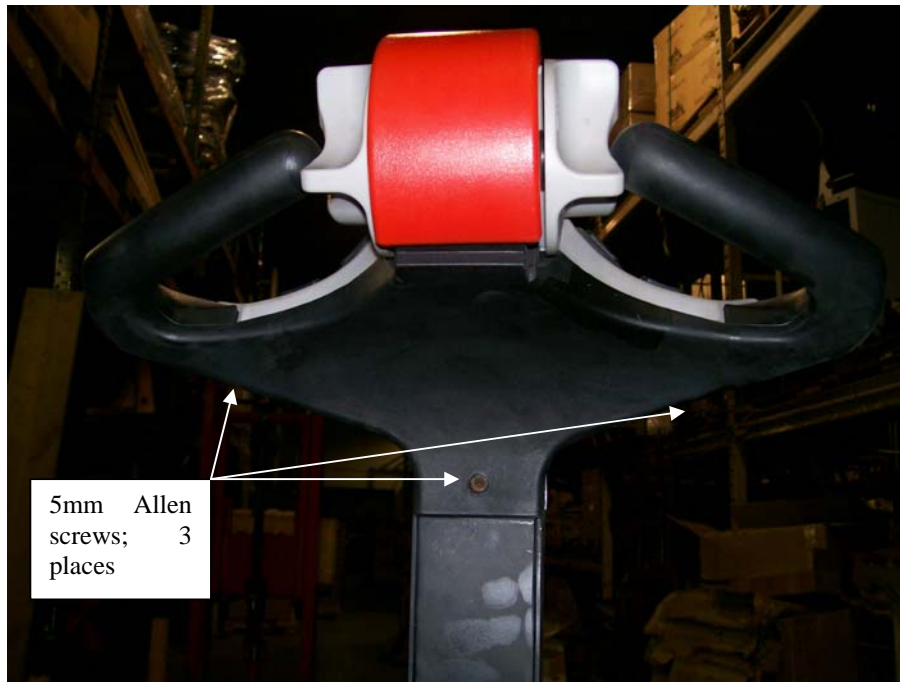


Fig.29

## **Free Wheeling E-CART**

If for reasons of convenience, you require to push your E-CART for a short distance, the drive system can be put into 'freewheels mode'. This will allow your E-CART to roll freely.

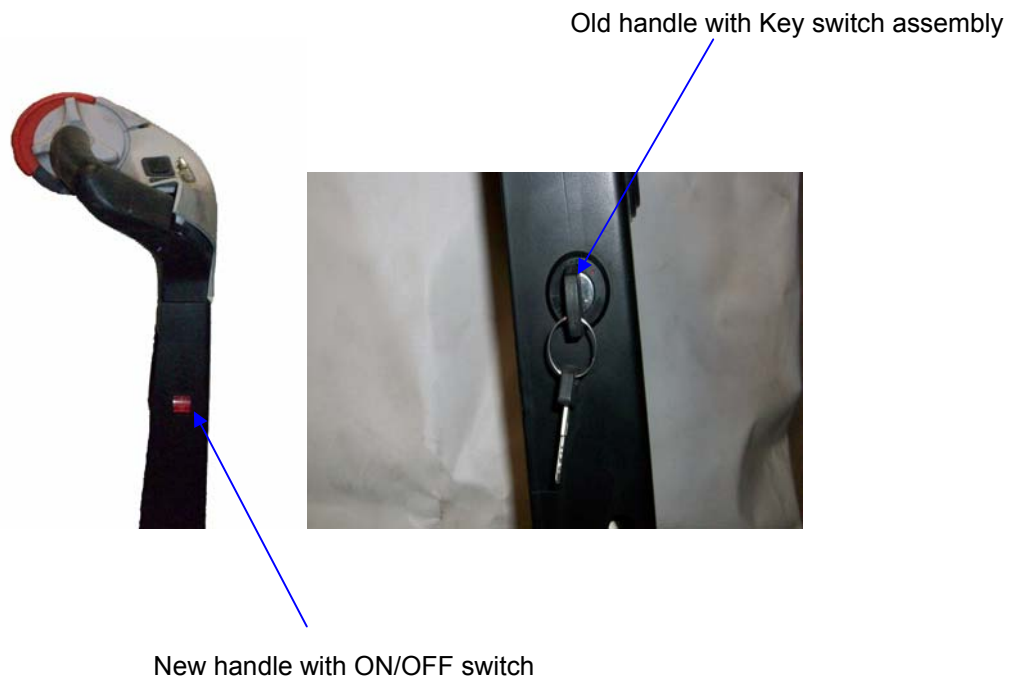
### **E-CART Freewheel Procedure**

The freewheel device is a lever located at the front right hand side of your E-CART (Fig.1)



Fig.1

To freewheel E-CART first switch off the power switch located on control handle (Fig.2)



Pull up the lever until a distinct click is felt (disengage) Fig.3.



Fig.3

Push and maneuver E-CART manually with ease.

To re-engage the drive system, simply push down on the lever until a distinct click is felt (engage).



Turn the power switch "ON" on the control handle and you will be able to operate the E-CART once again.

Warning: Always check that the freewheel device is in the drive position before attempting to operate your E-CART after it has been left unattended for a period of time. Failure to observe this warning may result in an accident.

## **Maintenance and repair**

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### **(A) DAILY CHECK THE FOLLOWING:**

- 1) Frayed wires
- 2) Damage or structural deformation to the structural members.
- 3) Unusual noise or binding, or evidence thereof.
- 4) Proper functioning of all limit switches, including those on the perimeter pinch point guard (if applicable)
- 5) Horn works
- 6) Battery, keep the surface of battery clean and dry. Make sure battery is secured against slipping. Make sure batteries are fully charged.
- 7) Tire condition.

### **(B) SIX MONTHS Check and adjust as necessary:**

- 1) Tire wear, replace as necessary
- 2) All fasteners and fittings for sound function. Unusual noises or movement during operation
- 3) Tension of handle bar lock and hinge bolt
- 4) Battery connections
- 5) Inspect all electrical plugs and sockets for damage and good contact and fit. Proper water level in the battery
- 6) Proper functioning of any hand-or foot-operated mechanisms
- 7) All the information, safety, and wearing labels being in place and in good condition
- 8) The need to clean off dirt and debris

### **(C) ANNUALLY Check the following and adjust as necessary:**

- 1) Tire bearings for wear
- 2) Handle bar bolts and nuts
- 3) Chassis for sounds
- 4) Drive wheel hub keys
- 5) All wheel bolts
- 6) Drive axle securing bolts
- 7) Motor mounting bolts
- 8) Magnetic motor brake disc and function
- 9) Main wiring harness for damage
- 10) Clean chassis and repaint any exposed parts
- 11) Lubricate ON/OFF power key barrel
- 12) Replace any damaged axle seals
- 13) Cycle test charger for full operation function
- 14) Cycle test batteries for operating capacity
- 15) Check motor brushes for any wear in the lift motor, & if necessary change motor brushes.
- 16) Check the condition of your tires regularly. Look for sign of wears, cuts and foreign objects lodged in the tread.

Note the items listed under weekly and six months should be incorporated into this annual inspection.

Use a general purpose light lubricating oil on moving parts.

All wheel bearings are factory sealed and should not normally need lubrication.

## **DRIVE TRANSMISSION LUBRICATION**

This unit is factory filled and will not normally need additional lubrication.

Note: E-CART transmission is filled with a special lubricant. Don't attempt to force grease into the transmission as this will contaminate the original lubrication and will invalidate your warranty.

Serial No. \_\_\_\_\_

Model: \_\_\_\_\_

## LIMITED WARRANTY

Vestil Manufacturing Corporation (Vestil) warrants E-CART model Traction-Drive Carts, 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 (a part that used to make the product as shipped to the warrantee) after we receive a proper request for warranty service. "Proper request" means that we must receive: 1) a photocopy of the Customer Invoice from Vestil (or authorized distributor) that displays the shipping date; AND 2) a written request for warranty service. Send requests by any of the following methods:

Mail

Vestil Manufacturing Corporation  
2999 North Wayne Street, PO Box 507  
Angola, IN 46703

Fax

(260) 665-1339

Email

sales@vestil.com

In the written request, list the parts you believe are defective and include the address where replacements should be delivered. After Vestil receives your request, an authorized representative will contact you to determine whether your claim is covered by the warranty (also see "What will Vestil do to correct defects" below). Before providing warranty service, Vestil may require you to send the entire product or the defective part or parts to its facility in Angola, IN.

### Who may request service?

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

### What is covered under the warranty?

The warranty covers the following *original* drive components: drive motors, electronic controllers, and switches. It also covers *original* parts that wear under normal usage conditions ("wearing parts"): bearings, wheels, seals, motor brushes, batteries, and the battery charger. The warranty period for drive and lift components is 1 year. For wearing parts, the warranty period is 90 days. Both warranty periods begin on the date when Vestil ships the product to the warrantee. If you purchased the product from an authorized distributor, the periods begin when the distributor ships the product, which extends the warranty by up to an additional 30 days.

### 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 and to arrange warranty service.

### What is not covered by the warranty?

1. Labor costs;
2. Any of the following automatically void the warranty:
  - Product misuse;
  - Negligent operation or repair;
  - Corrosion or use in corrosive conditions;
  - Inadequate or improper maintenance;
  - Failure to exercise good judgment;
  - Damage sustained during shipping;
  - Accidents involving the product;
  - Unauthorized modifications: Do NOT modify the product IN ANY WAY without first receiving written authorization from Vestil. Modifications may render the pallet truck or stacker unsafe to use or might cause excessive and/or abnormal wear.

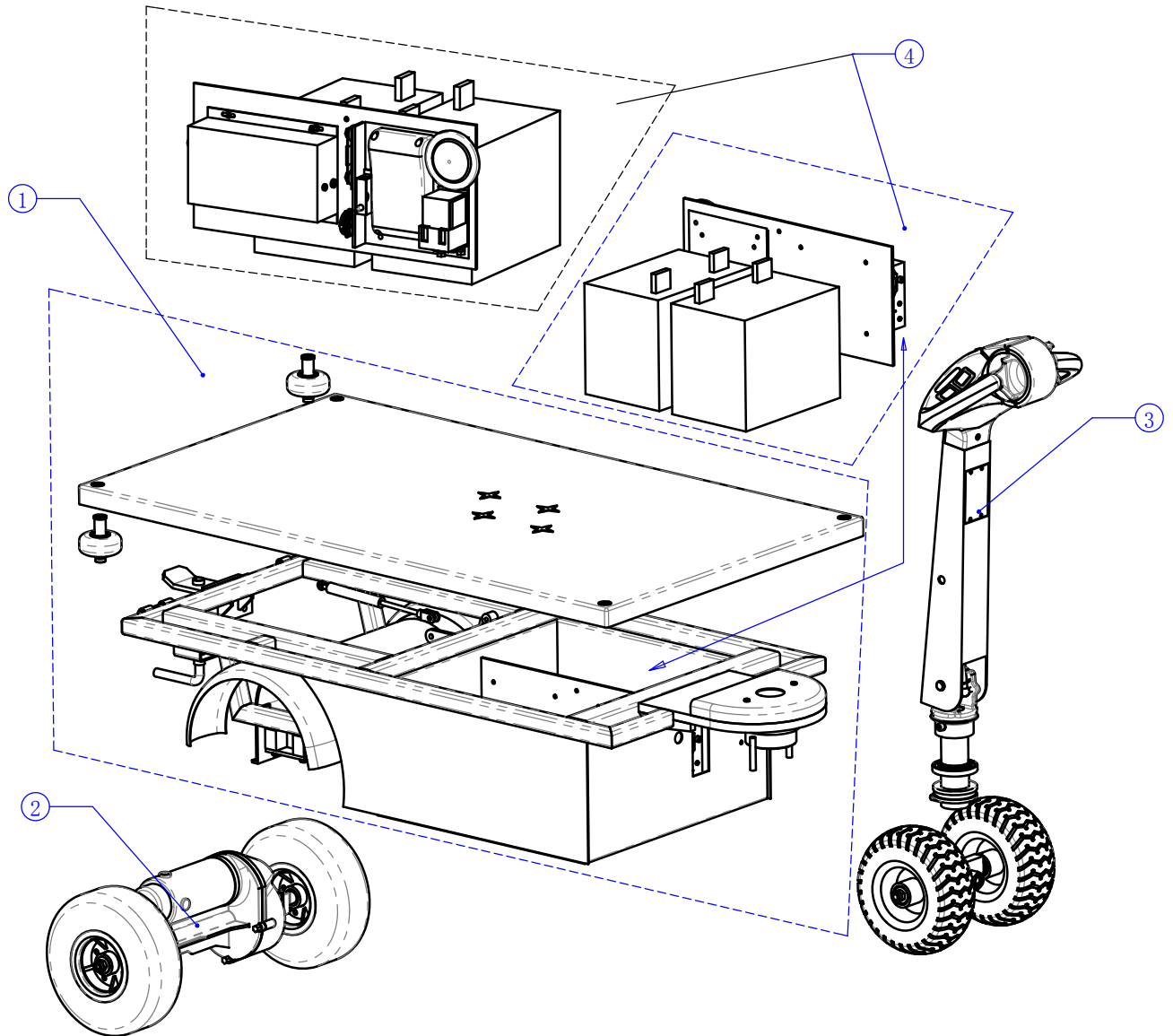
### Do any other warranties apply to the ladder stand?

Vestil Manufacturing Corp. makes no other express warranties. Any warranty implied-by-law is limited in duration to the warranty period.



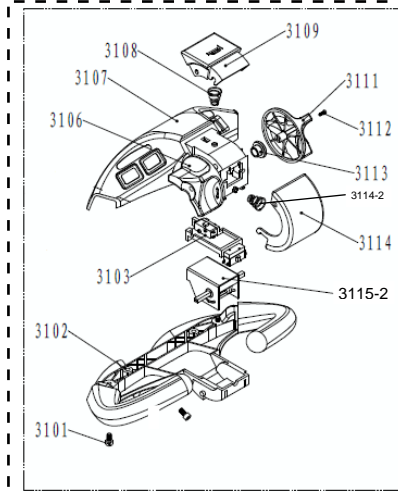
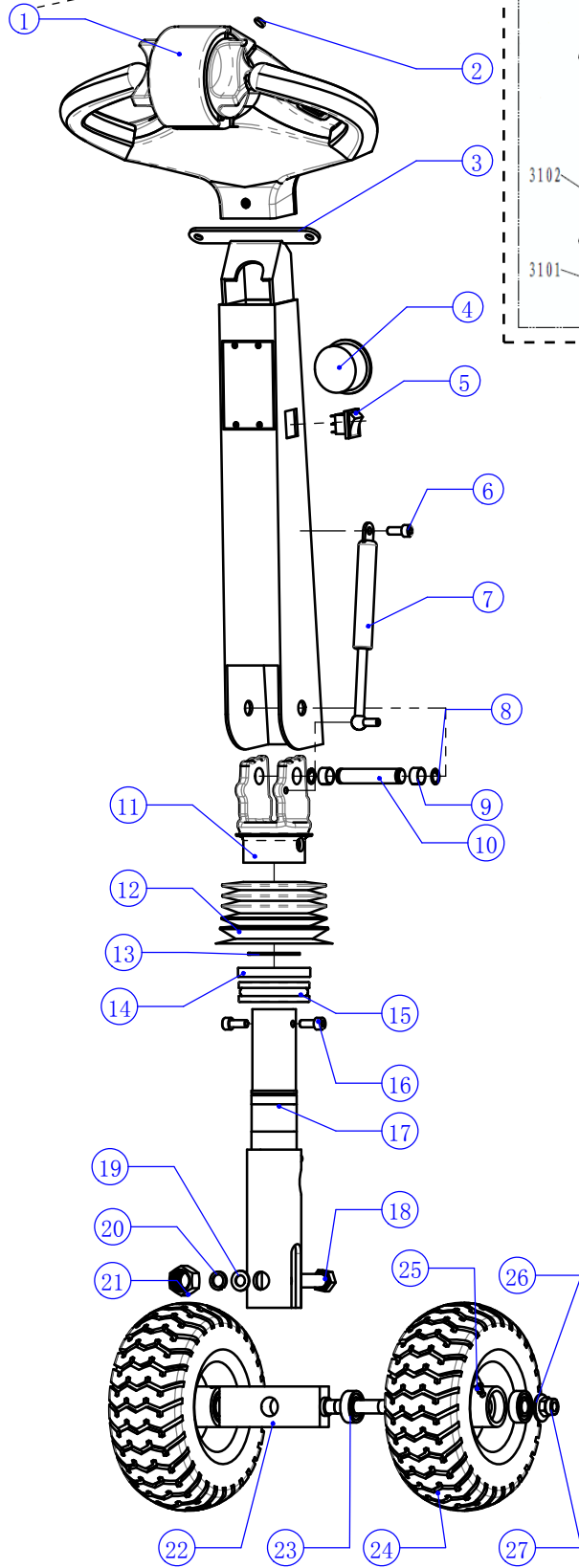
**NE-CART-1 (2014)**

**NE-CART-1 MAIN ASSEMBLY**



NE-CART-1 (Main Assembly)		
Part #	Description	Qty
NE-CART-1-BFA14-1	Base Frame Assembly	1
NE-CART-1-DWA14-2	Drive Wheel Assembly	1
NE-CART-1-CHSA14-3	Control Head & Steering Assembly	1
NE-CART-1-ECA14-4	Electric Control Assembly	1

# NE-CART-1 CONTROL HEAD AND STEERING ASSEMBLY

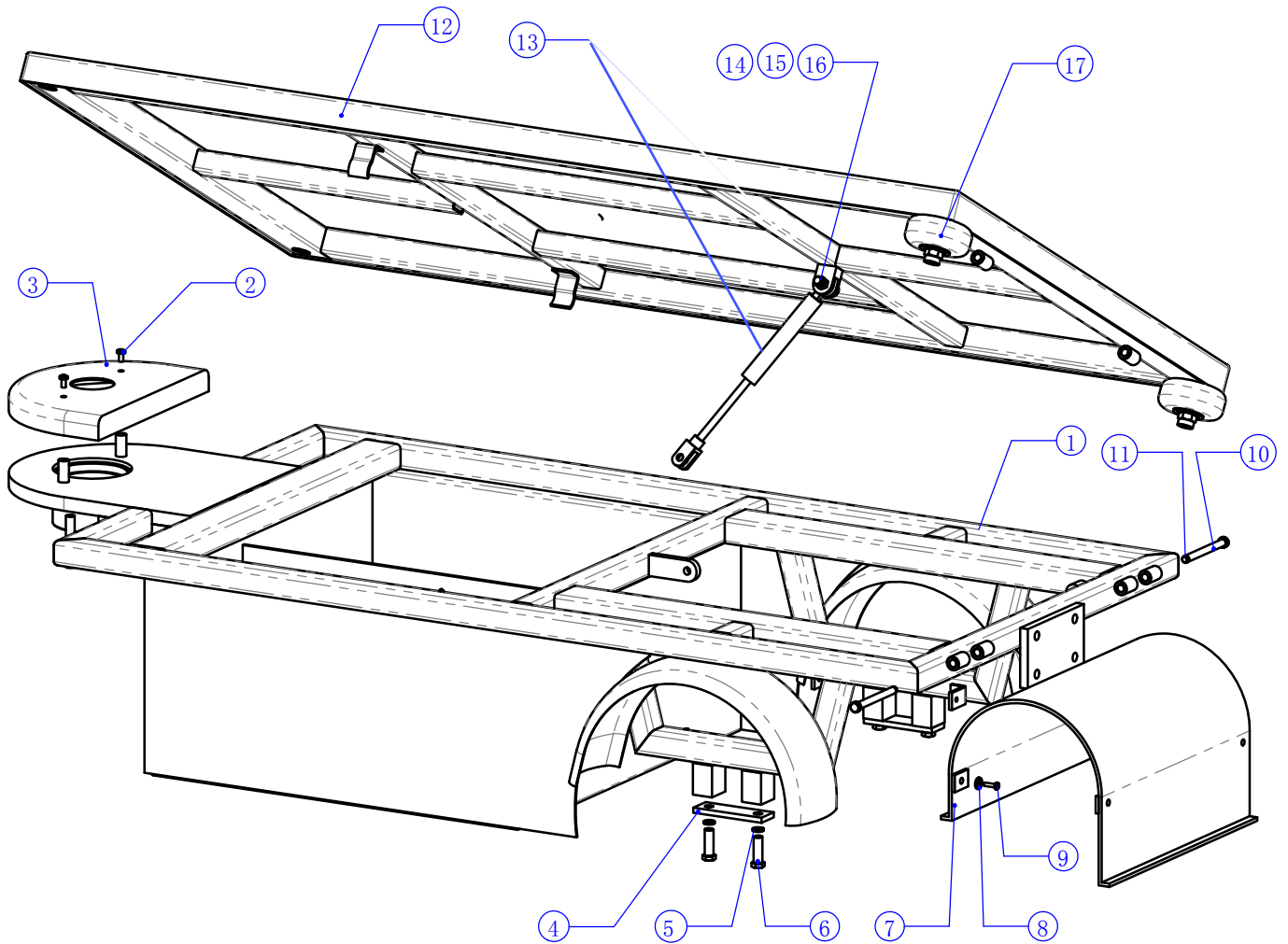


NE-CART-1 (Control Head)		
Part #	Description	Qty.
NE-CART-1-3101	Bolt, Socket Head	3
NE-CART-1-3102	Cover, Bottom Handle	1
NE-CART-1-3103-2	Seat, Throttle - w/ Switches	1
NE-CART-1-3106	Knob, Throttle	1
NE-CART-1-3107	Cover, Top Handle	1
NE-CART-1-3108	Spring, Return	1
NE-CART-1-3109	Cover, Horn Switch	1
NE-CART-1-3110	Raise / Lower Button	4
NE-CART-1-3111	Knob, Throttle	1
NE-CART-1-3112	Screw, Phillips Head Machine	2
NE-CART-1-3113	Throttle Shaft Bushing	2
NE-CART-1-3114	Cover, Belly Switch	1
NE-CART-1-3114-2	Spring, Return	1
NE-CART-1-3115-2	Assembly, Throttle	1

NE-CART-1 (Steering Assembly)		
Part #	Description	Qty.
NE-CART-1-CHSA14-1	Control Head	1
NE-CART-1-CHSA14-2	Slow/Fast, Switch	1
NE-CART-1-CHSA14-3	Bracket, Handle	1
NE-CART-1-CHSA14-4	Battery Charge Indicator	1
NE-CART-1-CHSA14-5	On/Off, Switch	1
NE-CART-1-CHSA14-6	Bolt, Socket Head	1
NE-CART-1-CHSA14-7	Shock, Gas	1
NE-CART-1-CHSA14-8	Ring, Retaining	2
NE-CART-1-CHSA14-9	Bushing	2
NE-CART-1-CHSA14-10	Pin, handle Pivot	2
NE-CART-1-CHSA14-11	Coupler, Handle	2
NE-CART-1-CHSA14-12	Cover, Coupler	1
NE-CART-1-CHSA14-13	Snap ring	1
NE-CART-1-CHSA14-14	Bearing, Ball	1
NE-CART-1-CHSA14-15	Bearing, Plane	1
NE-CART-1-CHSA14-16	Bolt, Socket Head	2
NE-CART-1-CHSA14-17	Steering post	1
NE-CART-1-CHSA14-18	Bolt, Hex Head	1
NE-CART-1-CHSA14-19	Washer, Flat	1
NE-CART-1-CHSA14-20	Washer, Lock	1
NE-CART-1-CHSA14-21	Nut	1
NE-CART-1-CHSA14-22	Axle, Wheel	1
NE-CART-1-CHSA14-23	Bearing, Ball	2
NE-CART-1-CHSA14-24	Wheel, Steering	2
NE-CART-1-CHSA14-25	Grease Fitting	2
NE-CART-1-CHSA14-26	Washer, Flat	2
NE-CART-1-CHSA14-27	Nut, Lock	2

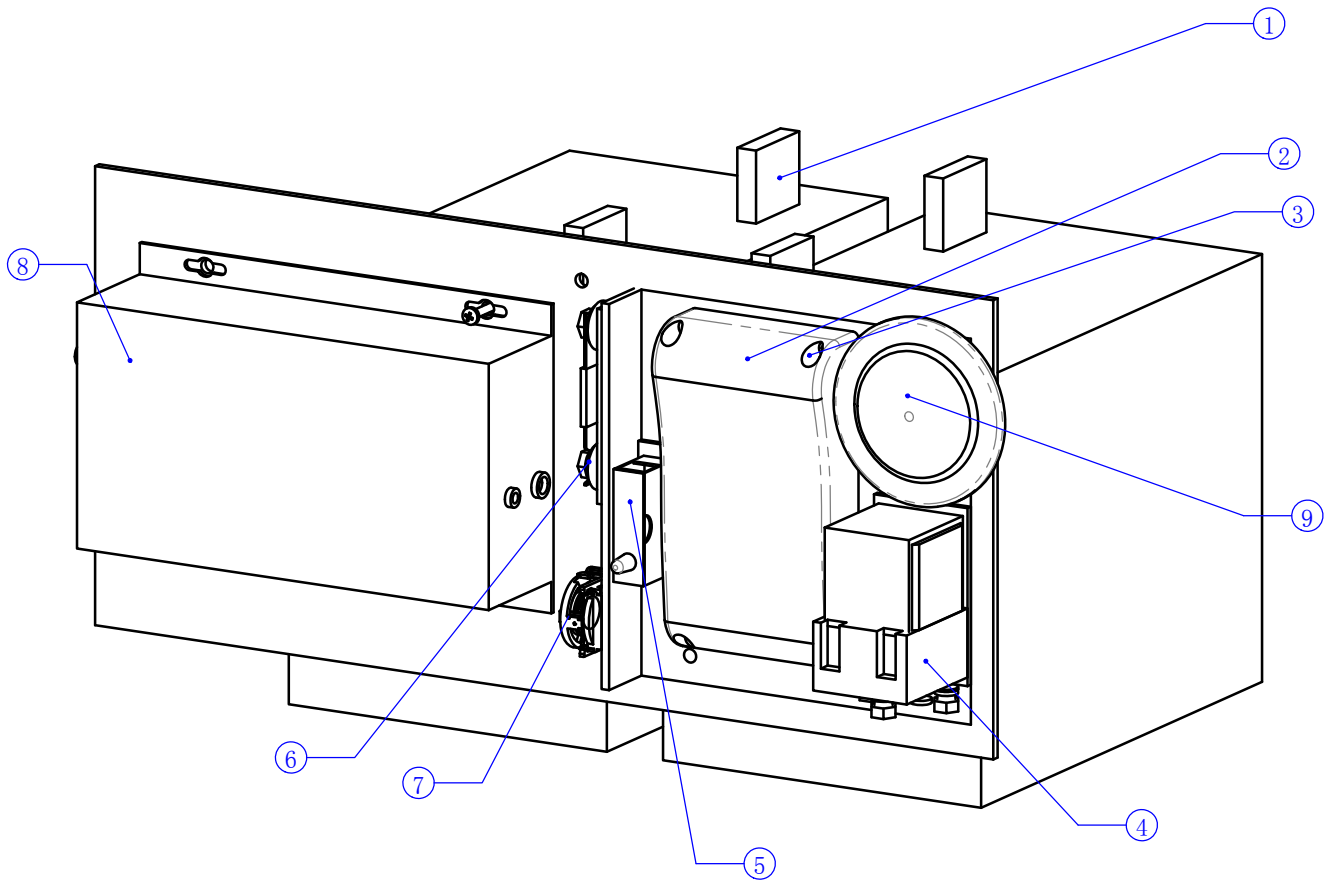


## NE-CART-1 BASE FRAME ASSEMBLY



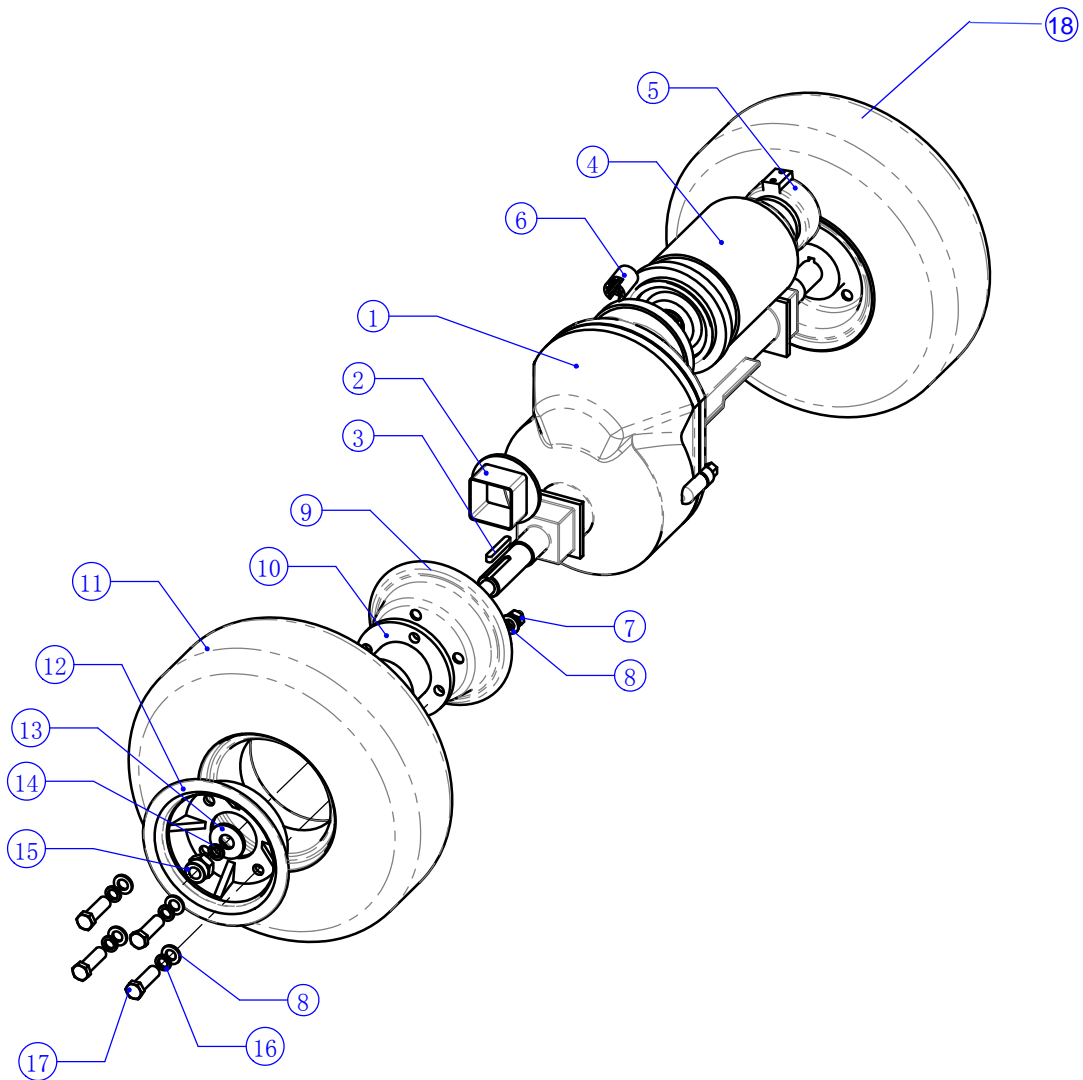
NE-CART-1 (Base Frame Assembly)						
Part #	Description	Qty.	Part #	Description	Qty.	
NE-CART-1-BFA14-1	Frame, Base	1	NE-CART-1-BFA14-10	Pin	2	
NE-CART-1-BFA14-2	Screw	12	NE-CART-1-BFA14-11	Ring, Retianing	2	
NE-CART-1-BFA14-3	Cover, stainless steel	1	NE-CART-1-BFA14-12	Platform	1	
NE-CART-1-BFA14-4	Drive wheel axle bracket	2	NE-CART-1-BFA14-13	Shock, Gas	1	
NE-CART-1-BFA14-5	Washer, Spring	4	NE-CART-1-BFA14-14	Bolt, Hex Head	2	
NE-CART-1-BFA14-6	Bolt, Hex Head	4	NE-CART-1-BFA14-15	Nut	2	
NE-CART-1-BFA14-7	Cover, Drive Wheel	1	NE-CART-1-BFA14-16	Washer, Flat	2	
NE-CART-1-BFA14-8	Washer, Spring	4	NE-CART-1-BFA14-17	Roller, Guide	2	
NE-CART-1-BFA14-9	Screw	4				

## NE-CART-1 ELECTRICAL CONTROL ASSEMBLY



NE-CART-1 (Electric Control Assembly)		
Part #	Description	Qty.
NE-CART-1-ECA14-1	Battery (12V)	2
NE-CART-1-ECA14-2	Controller, Motor	1
NE-CART-1-ECA14-3	Screw	12
NE-CART-1-ECA14-4	Contactor, F/R	1
NE-CART-1-ECA14-5	Fuse	1
NE-CART-1-ECA14-6	Fuse	1
NE-CART-1-ECA14-7	Potentiometer	1
NE-CART-1-ECA14-8	Charger, Battery	1
NE-CART-1-ECA14-9	Horn	1

## NE-CART-1 DRIVE WHEEL ASSEMBLY



NE-CART-1 (Drive Wheel Assembly)		
Part #	Description	Qty.
NE-CART-1-DWA14-1	Gear Box	1
NE-CART-1-DWA14-2	Cushion, protecting rubber cover	2
NE-CART-1-DWA14-3	Key	2
NE-CART-1-DWA14-4	Motor	1
NE-CART-1-DWA14-5	Brake Assembly	1
NE-CART-1-DWA14-6	Spline Sleeve	1
NE-CART-1-DWA14-7	Nut	8
NE-CART-1-DWA14-8	Washer, Flat	16
NE-CART-1-DWA14-9	Wheel, inner hub	2
NE-CART-1-DWA14-10	Connecting Flange	2
NE-CART-1-DWA14-11	Wheel, Foam Rubber	2
NE-CART-1-DWA14-12	Wheel, Outer hub	2
NE-CART-1-DWA14-13	Washer, Flat	2
NE-CART-1-DWA14-14	Washer, Lock	2
NE-CART-1-DWA14-15	Nut, Lock	2
NE-CART-1-DWA14-16	Washer, Lock	2
NE-CART-1-DWA14-17	Bolt, Hex Head	8
NE-CART-1-DWA14-18	Wheel, Drive	2