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PEL-Series Pallet Handlers Instruction Manual

Aluminum models
(PEL-88-A & PEL-100-A)



Steel models
(PEL-88, PEL-100, & PEL-400)



Receiving Instructions

After delivery, remove the packaging from the product. Inspect the product closely to determine whether it sustained damage during transport. If damage is discovered, record a complete description of it on the bill of lading. If the product is undamaged, discard the packaging.

NOTE: The end-user is solely responsible for confirming that product design, use, and maintenance comply with laws, regulations, codes, and mandatory standards applied where the product is used.

Technical Service & Replacement Parts

For answers to questions not addressed in these instructions and to order replacement parts, labels, and accessories, call our Technical Service and Parts Department at (260) 665-7586. The department can also be contacted online at http://www.vestilmfg.com/parts_info.htm.

Electronic copies of Instruction Manuals

Additional copies of this instruction manual may be downloaded from <https://www.vestil.com/page-manuals.php>.

Table of Contents

Signal Words.....	2
Safety Instructions.....	2
Specifications.....	3
National Standards.....	3
FIG. 1: PEL-88 & PEL-100 exploded view & bill of materials.....	4, 5
FIG. 2: PEL-88-A & PEL-100-A exploded view & bill of materials.....	6
FIG. 3: PEL-400-57 & PEL-400-72 exploded view & bill of materials.....	7, 8
FIG. 4: PEL-100-A-SWA exploded view and bill of materials.....	9
Accessory Carriage Attachments.....	10
Installing Accessory Carriage Attachments.....	10
FIG. 5: Electrical circuit diagram.....	11
Operation Instructions.....	12
Chain Tension Adjustment Procedure (PEL-88 & PEL-100).....	12
Chain Tension Adjustment Procedure (PEL-400-57 & PEL-400-72).....	13
Battery Charger Operation.....	14
Record of Satisfactory Condition.....	15
Inspections & Maintenance.....	15
Labeling Diagram.....	16
Limited Warranty.....	17

SIGNAL WORDS

This manual uses SIGNAL WORDS to draw attention to uses of the product that could result in personal injuries, as well as the probable seriousness of those injuries. Other signal words call attention to uses likely to cause property damage. Signal words used in this manual appear below along with the definition of each word.



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



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

SAFETY INSTRUCTIONS

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



If this product is used or maintained improperly serious personal injuries or death might result. ALWAYS use the product properly.

• ***Failure to read and understand the entire manual before assembling, using or servicing the product constitutes misuse.***

- Read the manual to refresh your understanding of proper use and maintenance procedures whenever necessary.
- DO NOT attempt to resolve any issue with the product unless you are certain that it will be safe to use afterwards.
- DO NOT modify the product in any way. Unauthorized modifications might make the lifter unsafe to use and automatically void the LIMITED WARRANTY on p. 17.
- DO NOT exceed the capacity of your unit. Refer to the SPECIFICATIONS table on p. 3 as well as label 287 (see LABELING DIAGRAM on p. 16) on the product for capacity information.
- Inspect the product according to the INSPECTION & MAINTENANCE instructions on p. 15. Replace each part that is not in SATISFACTORY CONDITION. DO NOT use the product until it is fully restored to satisfactory condition. ONLY use manufacturer-approved replacement parts.
- Cycle the deck all the way up and all the way down. Listen for unusual sounds as the deck rises and lowers. Watch the deck for unusual movement.
- DO NOT use the lifter unless all machine guards are in place, i.e. the mast guard that conceals the chain(s).
- This product is NOT a personnel lift. DO NOT use it to lift or transport people.
- DO NOT walk or stand beneath the load deck at any time.
- DO NOT leave the lifter unattended when it is loaded. Lower the deck and unload it before leaving the lifter unattended.
- ONLY transport loads with the deck no higher than necessary to support the load and avoid obstacles.
- DO NOT continue to push the “UP” button on the hand control if the forks do not respond. Remove the unit from service and report the problem to maintenance personnel.
- Always lift pallets properly. Drive forward until the edge of a pallet contacts the heels of the forks.
- ONLY use this lifter on even, level ground.
- NEVER change the setting of the pressure relief valve.
- ALWAYS carefully watch the pallet handler and the load while lifting and transporting loads.
- DO NOT use this device UNLESS all labels shown in the LABELING DIAGRAM on p. 16 are in place, undamaged, and easily readable from a reasonable distance.

NATIONAL STANDARDS

This product is a manually propelled high lift truck. The Industrial Truck Standards Development Foundation (ITSDF) publishes national standard ANSI/ITSDF B56.10 (the “Standard”) on its website (www.itsdf.org). The standard is freely downloadable at <http://www.itsdf.org/cue/b56-standards.html>. Before putting the unit into service, acquire a copy of the Standard and apply all recommendations in Part II: For the User. If instructions provided in this manual conflict with instructions in the Standard, then you should apply the instructions in the Standard. Vestil encourages you to immediately contact TECHNICAL SERVICE to report any differences between instructions in this manual and the Standard.

SPECIFICATIONS

Dimensions and other specifications appear in the diagrams and table below.

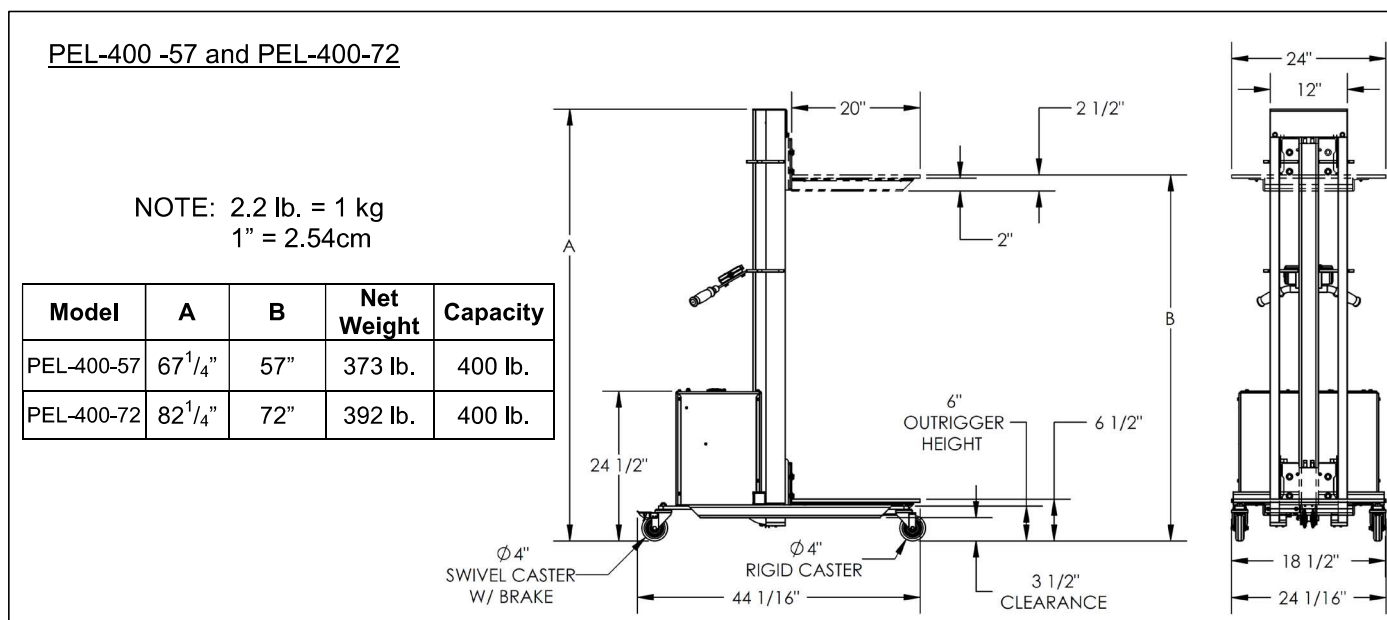
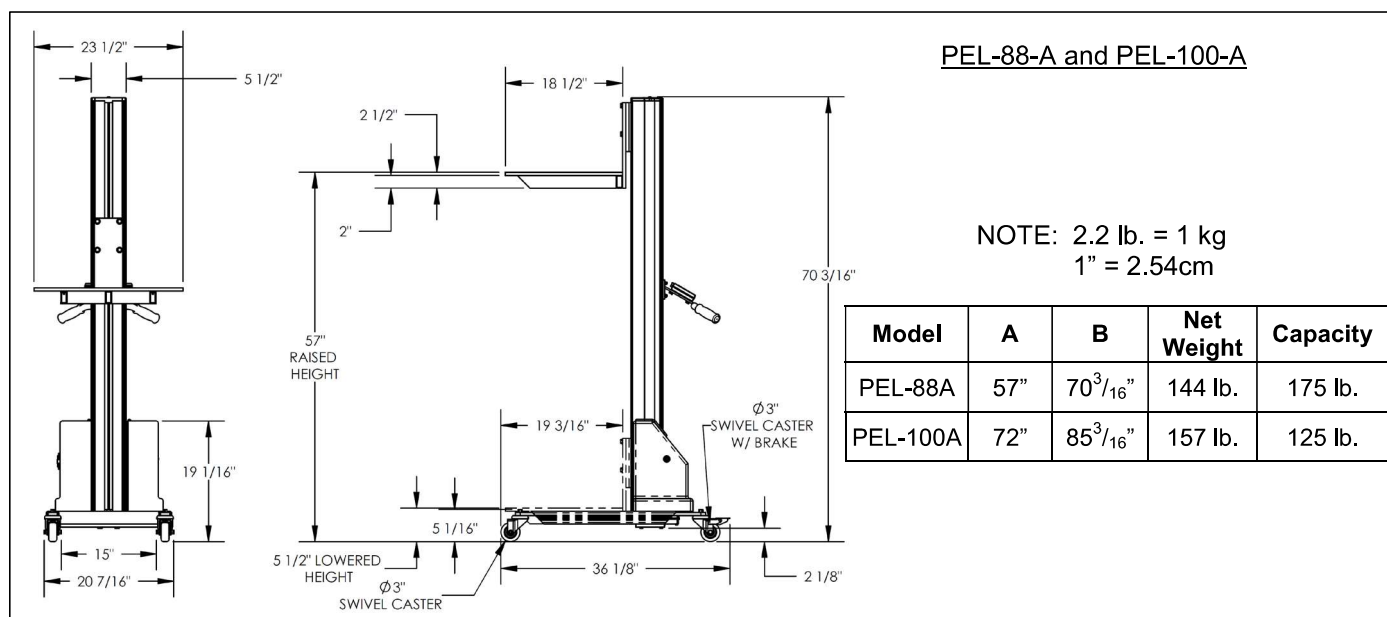
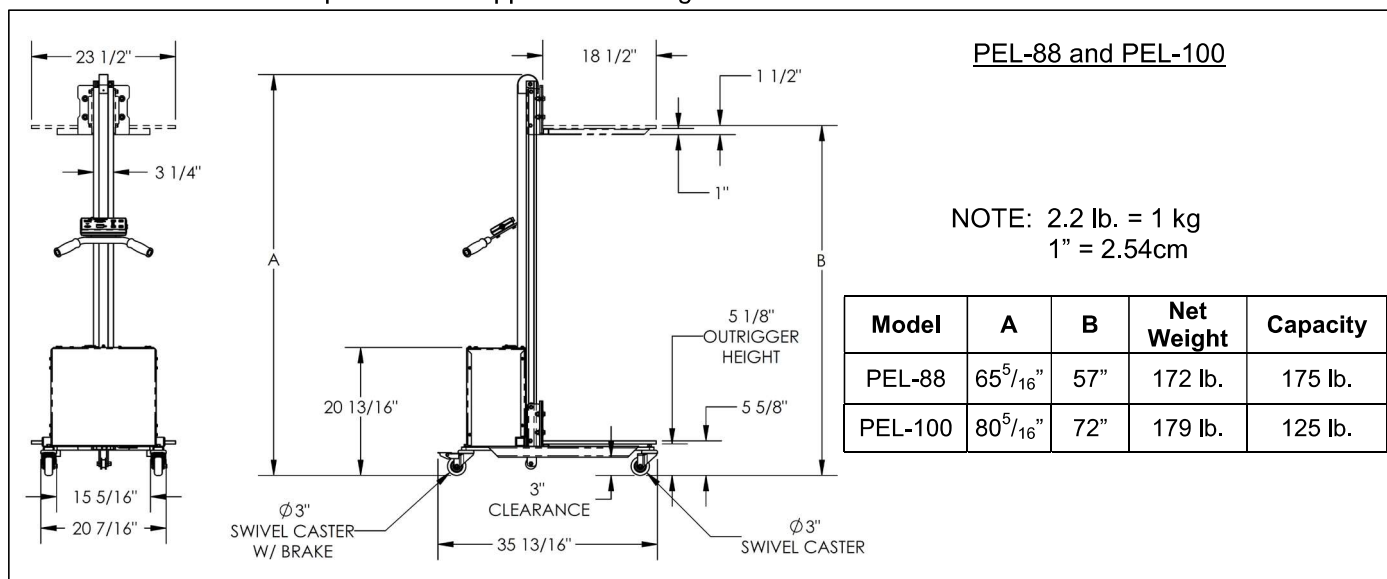


FIG. 1: PEL-88 and PEL-100 exploded view

NOTE: Bill of materials appears on following page

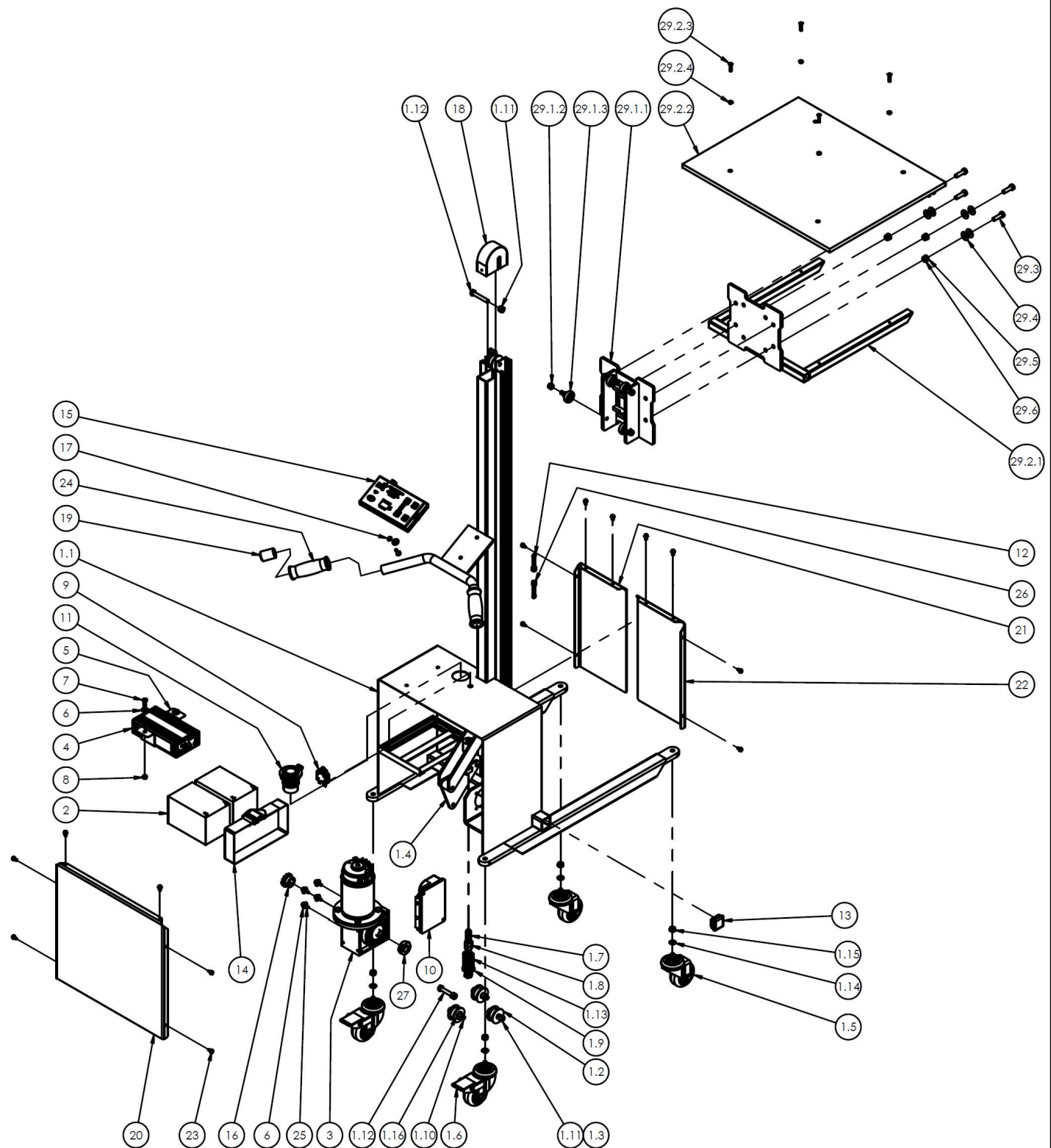
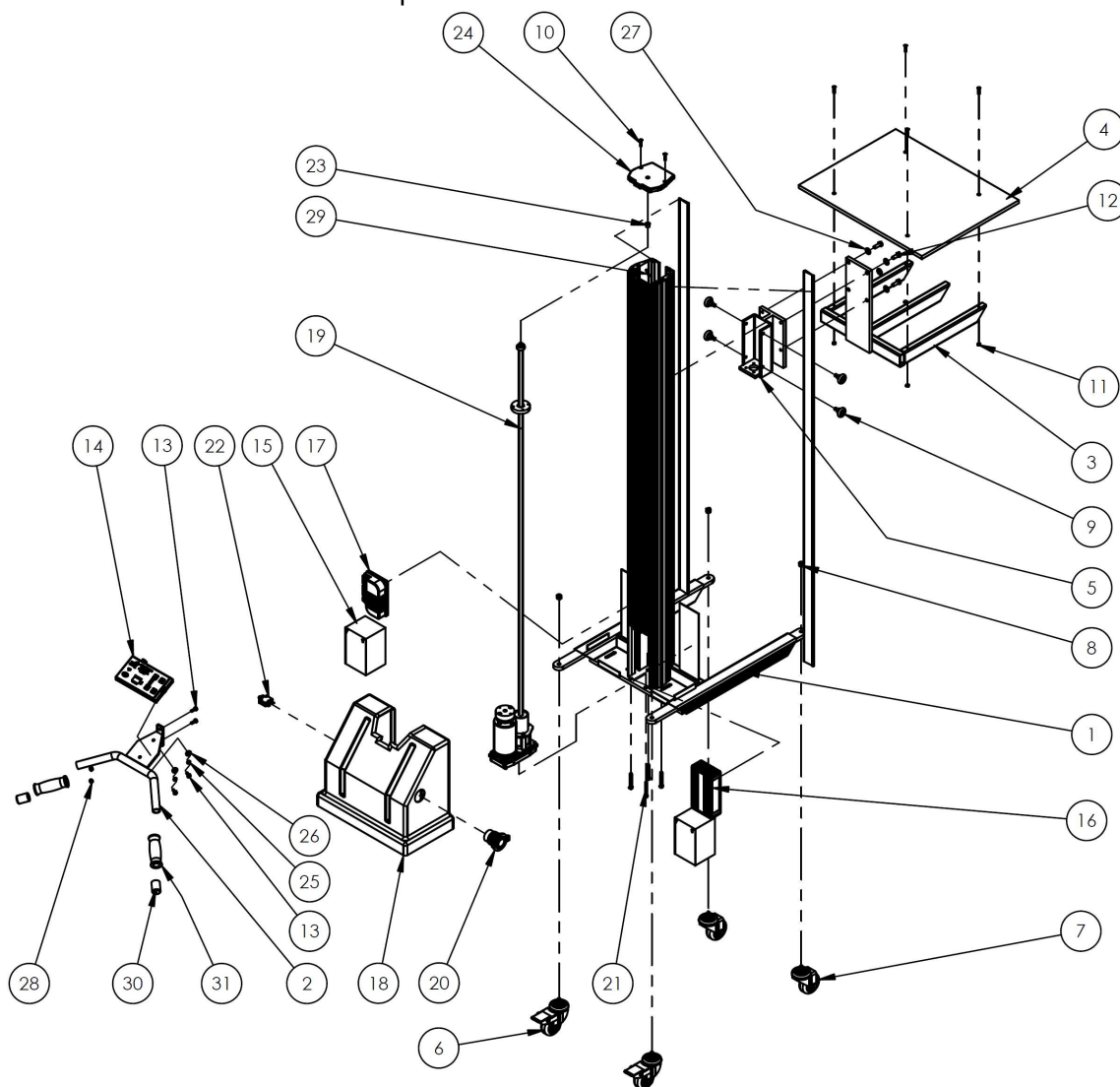


FIG. 1 Bill of Materials: PEL-88 and PEL-100

Item	Part no.	Description	Quantity
1		<u>Subassembly, frame:</u>	
	21-514-050	PEL-88	1
	21-514-051	PEL-100	1
1.1		<u>Weldment, frame:</u>	1
	21-514-055	PEL-88	
	21-514-056	PEL-100	
1.2	21-042-020	Roller	4
1.3	21-113-027	Spacer, sleeve, rollers	4
1.4	21-516-003	Weldment, bracket, center rollers	1
1.5	16-132-164	Caster, front	2
1.6	16-132-163	Caster, rear	2
1.7	10896	HHCS tap bolt, $\frac{1}{2}$ " – 13UNC x 6", fully threaded	1
1.8	36109	Hex nut, grade A, plain finish, $\frac{1}{2}$ " – 13UNC	3
1.9	33012	Flat washer, low carbon, zinc finish, $\frac{1}{2}$ "	1
1.10	11111	HHCS #2, zinc plated, $\frac{3}{8}$ " – 16 x 2"	3
1.11	37024	Nylon insert lock nut, grade 2, zinc finish, $\frac{3}{8}$ " – 16	5
1.12	11112	$\frac{3}{8}$ " – 16 x 2 $\frac{1}{4}$ " HHCS bolt	2
1.13	21-146-004	Spring, compression	1
1.14	33622	Split lock washer, carbon steel, medium zinc finish, $\frac{3}{8}$ "	4
1.15	36106	Hex nut, grade A, zinc plated, $\frac{3}{8}$ " – 16	4
1.16	33006	Flat washer, zinc plated, USS, $\frac{5}{16}$ "	1
2	21-139-001	Battery, 12V DC	2
3	21-641-005	Motor with gearbox, shaft and key stock	1
4	21-034-010	Accessory, electric, battery charger, 24V	1
5	15-016-068	Bracket, battery charger mount, formed	1
6	33004	Flat washer, USS, zinc plated, $\frac{1}{4}$ "	8
7	11003	Hex bolt, grade A, zinc plated, $\frac{1}{4}$ " – 20 x $\frac{3}{4}$ "	4
8	37018	Nylon lock nut, grade 2, zinc finish, $\frac{1}{4}$ " – 20	2
9	21-034-006	Circuit breaker, 15amp	1
10	21-156-006	Accessories, electrical, control box	1
11	21-034-025	Flanged inlet sleeve with locking ring	1
12	21-145-008	Specialty hardware, eyebolt	2
13	21-024-016	Cap, square ribbed inserts	2
14	99-034-013	Strap, battery box, with buckle	1
15	21-156-002	Control, touchpad, electronic	1
16	20-042-009	Sprocket drive	1
17	33618	Medium split lock washer, $\frac{1}{4}$ "	6
18	21-524-001	Weldment, cover, top sprocket	1
19	21-024-038	Handle, grip, flexible vinyl round cap	2
20	21-024-012	Cover, front, formed	1
21	21-024-014	Cover, back, right side, formed	1
22	21-024-013	Cover, back, left side, formed	1
23	31802	Screw, self-tapping	14
24	15-025-006	Grip, handle	2
25	31959	Hex washer head self-drilling screw	4
26	36102	Hex nut, grade A, zinc plated, $\frac{1}{4}$ " – 20	4
27	34308	Split shaft collar, low carbon steel, black oxide finish, $\frac{3}{4}$ "	1
28		<u>#35 roller chain:</u>	1
	21-042-012	[PEL-88] x 337P w/2 CL	
	21-042-013	[PEL-100] x 417P w/2 CL	
29	21-513-025	Subassembly, carriage with deck	1
29.1	21-538-035	Subassembly, carriage	1
29.1.1	21-538-034	Weldment, carriage	1
29.1.2	37021	Nylon insert lock nut, grade 2, zinc finish, $\frac{5}{16}$ " – 18	4
29.1.3	20-110-008	Bearing, roller	4
29.2	21-513-089	Subassembly, deck	1
29.2.1	21-513-024	Weldment, deck	1
29.2.2	21-013-057	Deck, top	1
29.2.3	24213	Flat head socket cap screw #10-32 x 1" long	4
29.2.4	37015	#10-32 Nylock nut, zinc plated	4
29.3	11107	Hex bolt, grade A, zinc finish, $\frac{3}{8}$ " – 16 x $1\frac{1}{4}$ "	4
29.4	33008	Flat washer, low carbon, USS, zinc plated, $\frac{3}{8}$ "	8
29.5	33622	Split lock washer, carbon steel, medium zinc finish, $\frac{3}{8}$ "	4
29.6	36106	Hex nut, grade A, zinc plated, $\frac{3}{8}$ " – 16	4

FIG. 2: PEL-88-A and PEL-100A exploded view and bill of materials

Item	Part no.	Description	Qty.	Item	Part no.	Description	Qty.
1	42-514-002	Weldment, frame:	1	17	21-156-006	Accessory, electrical control box	1
	42-514-003	PEL-88A	1				
2	42-525-001	Weldment, handle	1	18	21-024-042	Cover, motor	1
3	42-513-002	Weldment, deck	1	19	21-641-008	Screw drive:	1
4	21-013-057	Deck, top	1		21-641-009	PEL-88A: 64 ⁵ / ₈ " length	1
5	42-538-001	Weldment, carriage	1	20	21-034-025	PEL-100A: 75 ³ / ₈ " length	1
6	16-132-163	Caster with brake, PP-3/1.25-STM-TTL	2	21	11012	Flanged inlet sleeve with locking ring	1
7	16-132-164	Caster, swivel, PP-3/1.25-STM	2			Hex bolt, gr. A, zinc finish, 1/4"-20x2 1/4"	4
8	37024	Nylon insert lock nut, grade 2, zinc finish, 3/8"-16	4	22	21-034-004	Circuit breaker	1
9	42-110-001	Bearing, roller	4	23	42-111-001	Bearing, sleeve	1
10	24213	Flat head socket cap screw #10-32x1"	6	24	42-024-002	Cover/guard, top cap	1
11	37015	10-32 lock nut, zinc plated	4	25	33618	Medium split lock washer, 1/4"	2
12	11105	Hex bolt, grade A, zinc plated, 3/8"- 16 x 1"	4	26	33004	Flat washer, USS, zinc-plated, 1/4"	2
13	11003	Hex bolt, grade A, zinc plated, 1/4"-20 x 3/4"	4	27	33006	Flat washer, USS, zinc plated, 5/16"	4
14	21-156-002	Control, touchpad, electronic	1	28	37018	Nylon lock nut, gr. 2, zinc finish 1/4" - 20	2
15	21-139-001	Battery, 12VDC	2	29	64137	Spring pin, AISI 1070-1095, pain finish, 3/16" x 1 1/2"	1
16	21-034-010	Accessory, battery charged, 24V	1	30	21-024-038	Handle, grip, flexible vinyl round cap	2
				31	15-025-006	Grip, handle	2
				32	42-027-002	Brush seal, standard PP flex	2

FIG. 3: PEL-400-57 and PEL-400-72 exploded view
 NOTE: Bill of materials appears on following page

NOTE: PART# 21-042-017 NOT SHOWN
 21-024-023,024,025 ARE NOT SHOWN
 FOR CLARITY

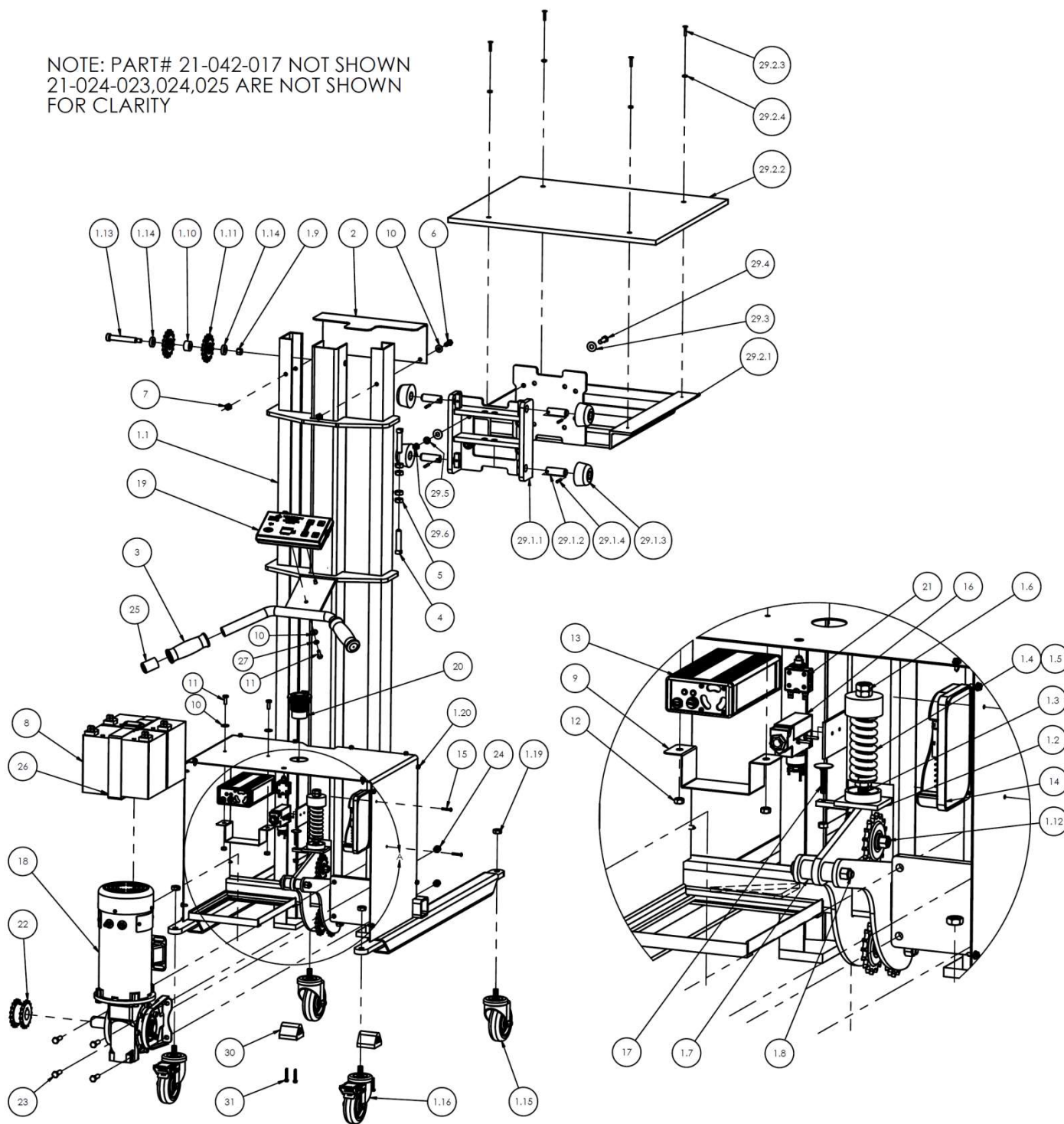
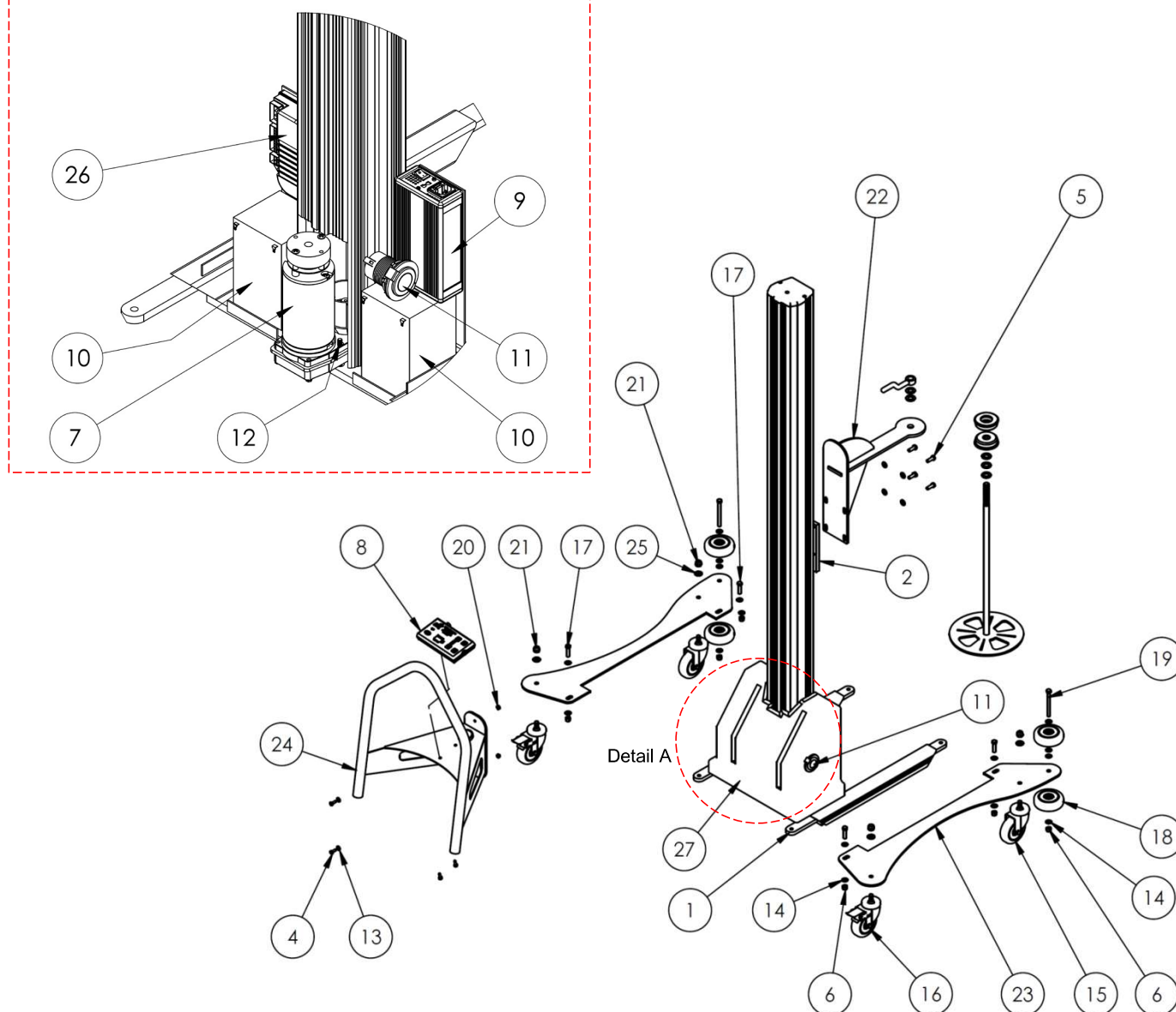


FIG. 3 Bill of Material: PEL-400-57 and PEL-400-72

Item	Part no.	Description	Quantity
1	21-002-059 21-002-060	Final assembly without power unit: PEL-400-57 PEL-400-72	1 1
1.1	21-514-068 21-514-069	Frame, weldment: PEL-400-57 PEL-400-72	1 1
1.2	21-516-009	Weldment, bracket, sprocket	1
1.3	10896	HHCS tap bolt $\frac{1}{2}$ " – 13UNC x 6" fully threaded	1
1.4	21-146-005	Spring, compression	1
1.5	33012	Flat washer, low carbon, zinc finish, $\frac{1}{2}$ "	1
1.6	36209	$\frac{1}{2}$ " – 13 hex jam nut, plain	3
1.7	21-113-033	Spacer, 23/32" length	2
1.8	26356	SHSCS, $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " shoulder, $\frac{3}{8}$ " – 16 THD	2
1.9	37024	Nylon insert lock nut, grade 2, zinc finish $\frac{3}{8}$ " – 16	4
1.10	21-113-032	Spacer, $\frac{9}{16}$ " length	2
1.11	21-042-018	Sprocket, idler	6
1.12	26353	Socket head shoulder bolt, $\frac{1}{2}$ " x 1 $\frac{3}{4}$ " with $\frac{1}{4}$ " hex, $\frac{3}{8}$ " – 16UNC threads	1
1.13	26358	$\frac{3}{8}$ " – 16 SHSB, $\frac{1}{2}$ " x 3" shoulder	1
1.14	21-113-030	Spacer, $\frac{1}{4}$ " length	2
1.15	16-132-342	Stem caster, welded, rigid	2
1.16	16-132-156	4" stem caster with brake	2
1.17	21-024-024	Cover, left side, formed	1
1.18	21-024-023	Cover, right side, formed	1
1.19	37032	$\frac{1}{2}$ " nylon insert jam nut	4
1.20	31802	Self-tapping screw	14
2	21-024-029	Guard, top, formed	1
3	15-025-006	Grip, handle	2
4	21-145-004	Bolt, chain, adjustment, $\frac{1}{2}$ " – 13 x 2 $\frac{1}{4}$ "	4
5	36209	$\frac{1}{2}$ " – 13 hex jam nut, plain	8
6	11055	Hex bolt, grade A, zinc plated, $\frac{5}{16}$ " – 18 x 1"	2
7	37021	Nylon insert lock nut, grade 2, zinc finish, $\frac{5}{16}$ " – 18	2
8	21-139-002	Battery, 12V DC	2
9	15-016-068	Bracket, battery charger mount, formed	1
10	33004	Flat washer, USS zinc plated, $\frac{1}{4}$ "	6
11	11003	Hex bolt, grade A, zinc plated, $\frac{1}{4}$ " – 20 x $\frac{3}{4}$ "	4
12	37018	Nylon lock nut, grade 2, zinc finish, $\frac{1}{4}$ " – 20	3
13	21-034-010	Accessory, electric battery charger, 24V	1
14	21-156-004	Control, motor, electronic, 1228	1
15	27402	RHSMS #8-32 x 1" long	2
16	01-022-001	Limit switch with roller arm	1
17	22804	Flat countersunk head elevator bolt, plain finish, $\frac{1}{4}$ " – 20 x 1 $\frac{1}{2}$ "	1
18	21-641-002	Leeson motor/gearbox	1
19	21-156-002	Control, touchpad, electronic	1
20	21-034-025	Flanged inlet sleeve with locking ring	1
21	21-034-004	Circuit breaker	1
22	21-042-019	Gearbox sprocket	1
23	11107	Hex bolt, grade A, zinc finish, $\frac{3}{8}$ " – 16 x 1 $\frac{1}{4}$ "	4
24	37024	Nylon insert lock nut, grade 2, zinc finish, $\frac{3}{8}$ " – 16	4
25	21-024-038	Handle, grip, flexible vinyl, round cap	2
26	99-034-013	Strap, battery box, with buckle	1
27	33618	Medium split lock washer, $\frac{1}{4}$ "	2
28	21-042-017 21-042-021	Chain: PEL-400-57: #40-1R x 265 links PEL-400-72: #40-1R x 325 links	2 2
29	21-513-036	Subassembly, carriage with deck	1
29.1	21-538-037	Subassembly, carriage	1
29.1.1	21-538-036	Weldment, carriage	1
29.1.2	21-112-008	Pin, rollers	4
29.1.3	21-527-003	Assembly, roller bearing	4
29.1.4	64135	Pin, roll pin, $\frac{3}{16}$ " x 1 $\frac{1}{4}$ "	4
29.2	21-513-090	Subassembly, deck	1
29.2.1	21-513-035	Weldment, deck	1
29.2.2	21-013-064	Deck, top	1
29.2.3	24213	Flat head socket cap screw #10-32 x 1" long	4
29.2.4	37015	10-32 Nylock nut, zinc-plated	4
29.3	33008	Flat washer, low carbon, USS, zinc plated, $\frac{3}{8}$ "	8
29.4	11107	Hex bolt, grade A, zinc finish, $\frac{3}{8}$ " – 16 x 1 $\frac{1}{4}$ "	4
29.5	33622	Split lock washer, carbon steel, medium zinc finish, $\frac{3}{8}$ "	4
29.6	36106	Hex nut, grade A, zinc plated, $\frac{3}{8}$ " – 16	4
30	21-037-020	Stop, rubber bumper	2
31	31807	Self-drilled screw, steel, zinc-plated, #8-18 x 1 $\frac{1}{4}$ "	4

FIG. 4: PEI-100-A-SWA exploded parts diagram
NOTE: Bill of materials on following page

Detail A: Housing removed to show internal components









Item	Part no.	Description	Quantity	Item	Part no.	Description	Quantity
1	42-514-003	Weldment, frame (upright portion referred to as the "Mast")	1	15	16-132-155	Caster, swivel, stem, HR-4/1.25-SLB-S	2
2	42-538-001	Weldment, carriage	1	16	16-132-156	Caster, swivel with brake, HR-4/1.25-SLB-S	2
*3	20-110-008	Roller bearings	4	17	11109	$\frac{3}{8}$ " - 16 x $1\frac{1}{2}$ " HHCS #2 zinc-plated bolt	4
4	11003	$\frac{1}{4}$ " - 20 x $\frac{3}{4}$ " hex head bolt	4	18	16-132-009	Wheel, PP-4/1.25-W	4
5	11105	$\frac{3}{8}$ " - 16 x 1 in. hex head bolt	4	19	11109	$\frac{3}{8}$ " - 16 x 4" HHCS#2 zinc-plated hex head bolt	2
6	37024	$\frac{3}{4}$ " lock nut	6	20	37018	$\frac{1}{4}$ " - 20 lock nut	2
7	21-135-001	Motor	1	21	37030	$\frac{1}{2}$ " - 13 lock nut	4
8	21-156-002	Electronic touchpad control	1	22	20-538-002	Assembly, carriage, stretch wrap carrier	1
9	21-034-010	24V battery charger	1	23	20-016-076	Bracket, roller	2
10	21-139-001	12V battery	2	24	20-525-001	Weldment, handle	1
11	21-034-025	Flanged inlet sleeve with locking ring	1	25	33011	$\frac{1}{2}$ " flat washer	4
12	11012	$\frac{1}{4}$ " - 20 x $2\frac{1}{4}$ " HHCS #2 zinc-plated bolt	4	26	21-156-006	Accessories, electrical control box, Curtis 1210-2401	1
13	33004	$\frac{1}{4}$ " type A narrow flat washer	2	27	21-024-042	Motor cover	1
14	33008	$\frac{3}{8}$ " flat washer	20	*28	20-522-004	Hand control switch, pressure sensor	1

*Not shown in exploded parts diagram.

ACCESSORY CARRIAGE ATTACHMENTS

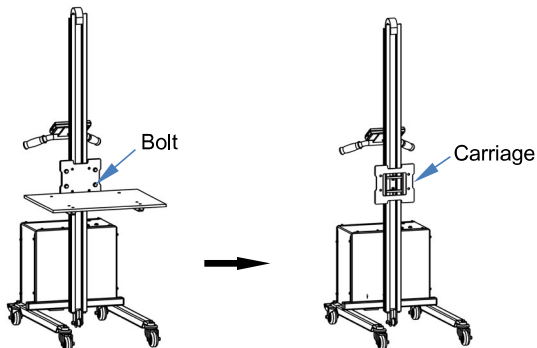
The following carriage attachments can be purchased separately. Remove the standard load deck to install an attachment. See [INSTALLING ACCESSORY CARRIAGE ATTACHMENTS](#). NOTE: 2.2 lb. = 1kg

 <p>PEL-DSPIN Weight = 20 lb. Capacity: PEL-88 & PEL-88-A = 175 lb. PEL-100 & PEL-100-A = 125 lb. PEL-400-57/72 = 400 lb.</p>	 <p>PEL-HOOK Weight = 9 lb. Capacity: PEL-88 & PEL-88-A = 175 lb. PEL-100 & PEL-100-A = 125 lb. PEL-400-57/72 = 400 lb.</p>	 <p>PEL-PL-5 Weight = 12 lb. Capacity = 100 lb. *Only lift 5gal. pails with this attachment.</p>	 <p>PEL-VBLK Weight = 27 lb. Capacity: PEL-88; PEL-88-A = 175 lb. PEL-100; PEL-100-A = 125 lb. PEL-400-57/72 = 400 lb.</p>	 <p>PEL-CONV Weight = 40 lb. Capacity = 175</p> <p>PEL-RR Weight = 40 lb. Capacity = 125 lb.</p>
 <p>PEL-SPIN Weight = 11 lb. Capacity: PEL-88 & PEL-88-A = 175 lb. PEL-100 & PEL-100-A = 125 lb. PEL-400-57/72 = 400 lb.</p>	 <p>PEL-PAIL Weight = 20 lb. Capacity = 125 lb.</p>			

INSTALLING ACCESSORY CARRIAGE ATTACHMENTS

Each attachment (except PEL-VBLK) includes a carriage mounting plate with 8 bolt holes as shown in the diagram below. Use the wider bolt pattern (see red rectangle) to mount your attachment to the carriage of any steel quick lift. To mount an attachment to an aluminum quick lift, use the narrow bolt pattern (shaded blue).

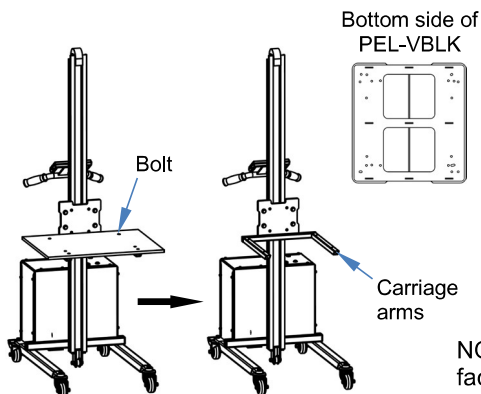
Step 1: Remove the $\frac{3}{8}$ " – 16 x $1\frac{1}{2}$ " bolts that fasten the deck to the carriage.



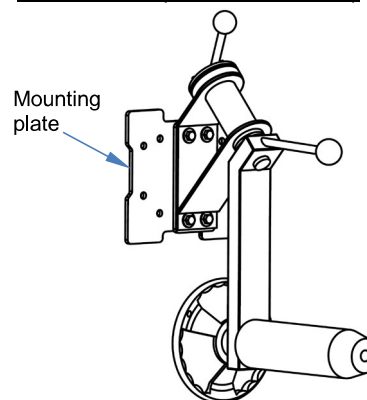
Step 2: Fasten the mounting plate of your attachment to the carriage using the hardware removed during step 1. The correct top-to-bottom orientation of each attachment is indicated in the "Accessory carriage attachments" section above.

Installing attachment PEL-VBLK:

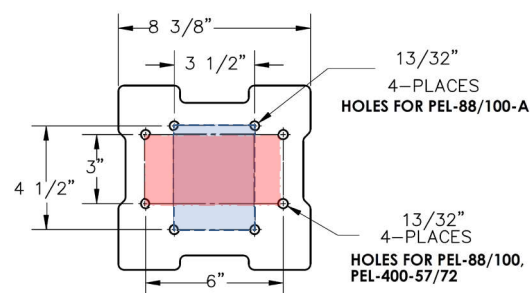
1. Disconnect the deck from the carriage arms by removing the 10-32 x 1" flat head bolts.
2. Center the attachment on the arms and align bolt holes in the VBLK with the bolt holes in the carriage arms. Use the bolts to fasten the VBLK attachment to the carriage arms.



Attachment (PEL-RR shown):

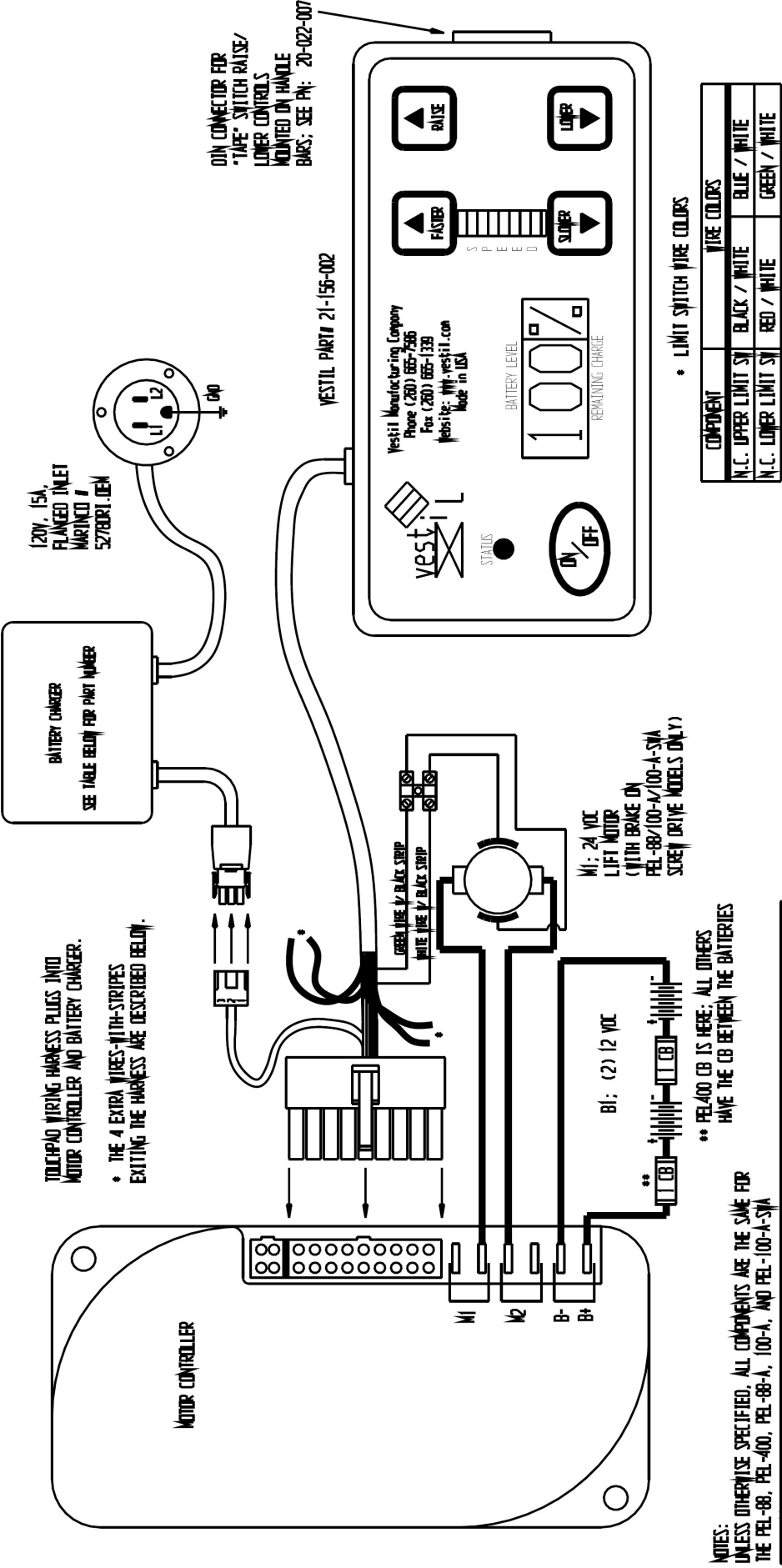


Dimensions of mounting plate:



NOTE: The PEL-VBLK can be mounted with the groove facing forward or to the side.

FIG. 5: Electrical circuit diagram



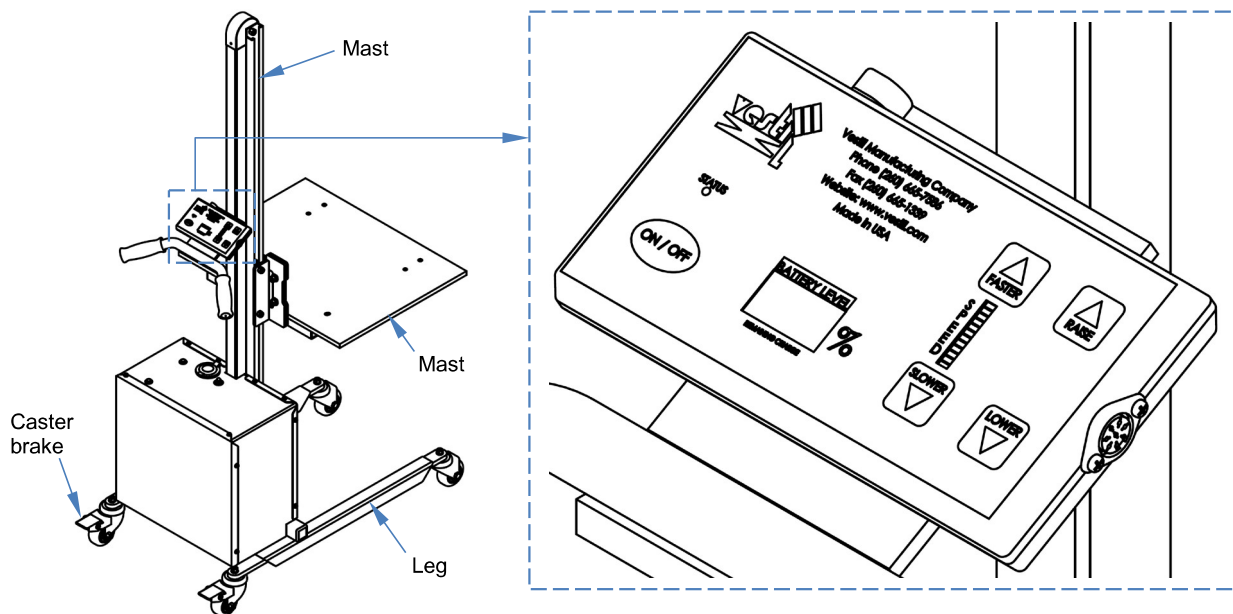
NOTES:
UNLESS OTHERWISE SPECIFIED, ALL COMPONENTS ARE THE SAME FOR THE PEL-88, PEL-400, PEL-88-A, 100-A, AND PEL-100-A-SMA

COMPONENT	PEL 88, 100	PEL 88 A, 100 A	PEL 400	PEL-100-A-SMA
MOTOR	21-641-005	21-141-004, -005	PE250051	21-141-005
BATTERIES: BI	21-139-001	21-139-001	21-139-002	21-139-002
I CB	21-034-006	21-034-006	21-034-004	21-034-004
CHARGER	21-034-010	21-034-010	21-034-010	21-034-010
I.L.S.: ROLLER ARM	NONE	OPTIONAL	01-022-001	NONE
MOTOR CONTROLLER	21-155-006	21-155-006	21-155-004	21-155-006
PART NO.	21-124-022	21-124-040	21-124-023	21-124-041

OPERATION INSTRUCTIONS

Place a load on the load deck. The weight of the load must not exceed the capacity of your lifter. Capacity information appears **SPECIFICATIONS** diagrams on page 3 as well as on label 287 shown in **LABELING DIAGRAMS** on p. 16. Always center the load on the deck before raising it, and make sure that the load does not hang over the sides of the deck.

Deck position and raising/lowering speed are controlled by inputs from the touchpad controller or optional handheld pendant control. To elevate or lower the deck, press and hold either the “RAISE” button or the “LOWER” button on the touchpad. If your lifter is equipped with a pendant control, press the left button to raise the deck or the right button to lower it. Deck travel speed is also adjustable. Press the “FASTER” button to increase speed or the “SLOWER” button to decrease speed. The percentage of battery charge remaining is displayed in a small window in the touchpad as well.

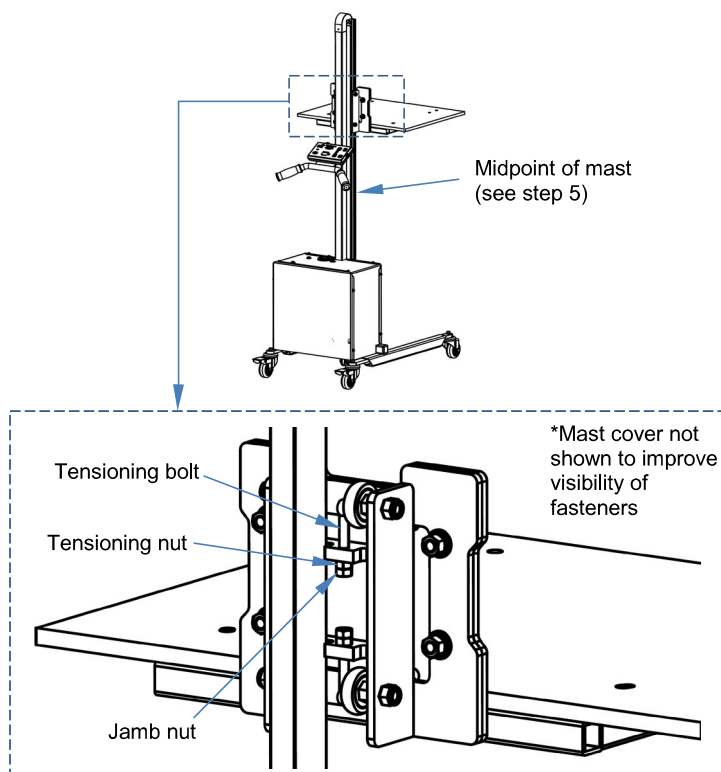


CHAIN TENSION ADJUSTMENT PROCEDURE

[NOTES: Unload the deck before beginning the adjustment.]

PEL-88 & PEL-100 model lifters:

1. Raise the deck halfway.
2. Locate the tensioning bolts. A bolt is present at each end of the chain.
3. Using $\frac{7}{16}$ " crescent wrenches loosen the 2 jamb nuts (2) by turning them counterclockwise. Loosen the jamb nuts so that they are close to the ends of the bolts.
4. Raise the deck to the top of the mast.
5. Turn each tensioning nut (3) until the chain can be pulled ~3in. away from the mast at the midpoint of the mast. Turn both nuts equally.
6. Lower the deck by pressing the LOWER button. Continue to hold the button for 2 seconds after the deck reaches the lower travel limit and stops moving. If the chain jumps on the sprocket, raise the platform to the top of the mast. Tighten one of the tensioning nuts by another half turn. Repeat the first part of this step. If the chain no longer jumps on the sprocket, proceed to step 7.
7. Raise the deck halfway up the mast. Turn the jamb nuts by hand until they are firmly pressed against the tensioning nuts. Then, wrench-tighten each jamb nut.

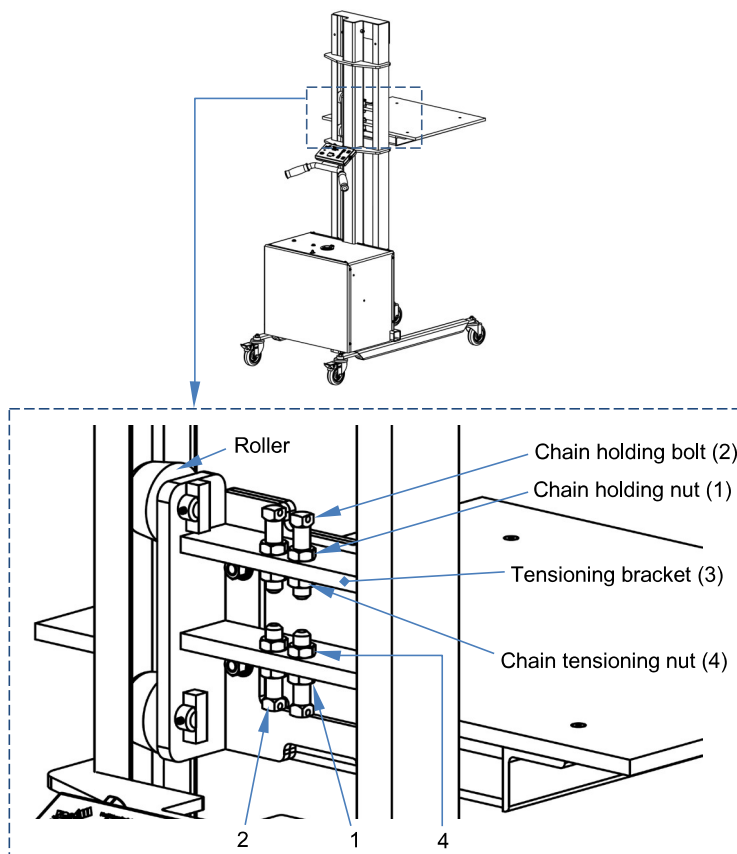


CHAIN TENSION ADJUSTMENT PROCEDURE

[NOTES: 1) Unload the deck before beginning the adjustment. 2) Numbers in parentheses correspond to item numbers in the diagram.]

PEL-400 series lifters:

8. Raise the deck halfway.
9. Locate the chain holding nuts. Turn the four holding nuts counterclockwise to loosen them. Loosen the nuts until they are close to the head of the chain holding bolts. Use a $\frac{3}{4}$ " wrench to loosen the nuts and a $\frac{1}{2}$ " wrench to hold the chain to prevent it from turning.
10. Raise the deck to the top of the mast.
11. Use the $\frac{3}{4}$ " and $\frac{1}{2}$ " wrenches to tighten all of the chain tensioning nuts (i.e. wind them further onto the bolts). Turn all of the nuts equally. Tighten the nuts until the chains can only be pulled ~2.5 inches from the front of the mast. Slack in both chains should be equal.
12. Lower the deck by pressing the LOWER button. Continue to hold the button for 2 seconds after the deck reaches the lower travel limit and stops moving. If the chain jumps on the sprocket, raise the platform to the top of the mast. Tighten the tensioning nuts by another half turn; then repeat the first part of this step. If the chain no longer jumps on the sprocket, proceed to the next step.
13. Raise the deck halfway up the mast. Turn all four of the holding nuts by hand until they are firmly pressed against the tensioning brackets. Wrench-tighten each nut to make sure that the connections are secure.

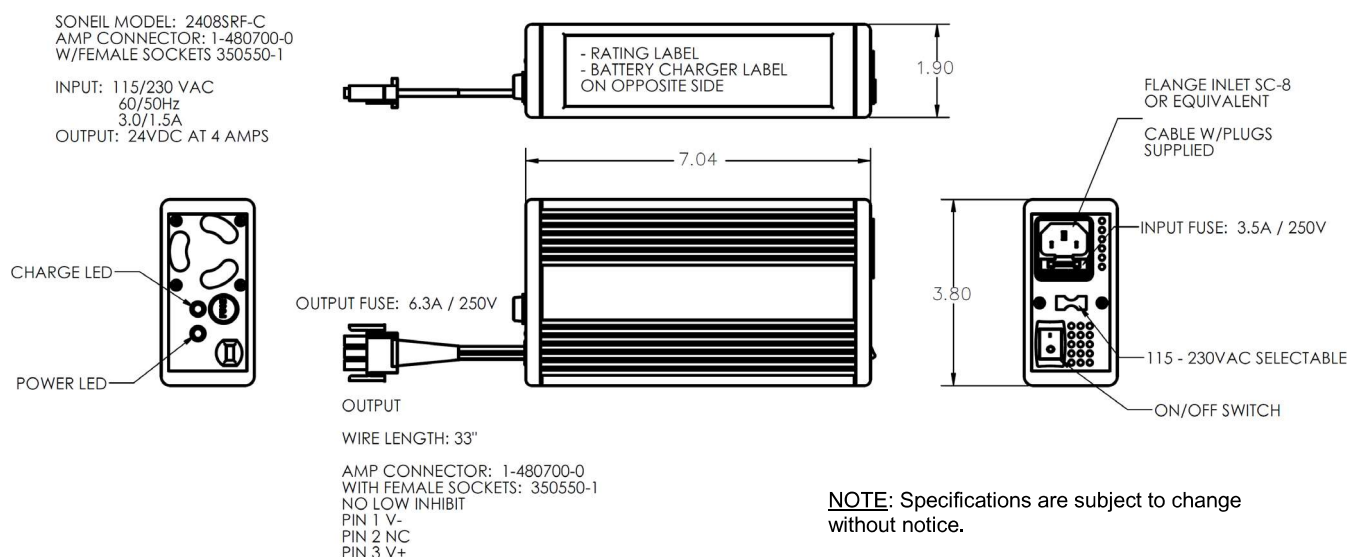


BATTERY CHARGER OPERATION (DC-POWERED UNITS ONLY)

⚠ WARNING Working on 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 near the battery or expose the battery to a spark or flame.
- ONLY charge batteries in dry, well-ventilated locations.
- DO NOT lay tools or metallic items on top of a battery. NEVER touch both terminals simultaneously! Remove personal items such as rings, bracelets, necklaces, and watches. A battery can produce enough voltage to weld jewelry to metal.
- Always have plenty of fresh water and soap nearby in case contact with battery acid occurs.
- Operating the battery with low voltage can cause premature motor contact failure.
- The charger is equipped with an external ground wire (small green wire). To properly ground the charger, ensure that this wire is always connected to the frame of the lifter.
- Confirm that all battery connections are sound and clean. Remove all accumulated deposits on the terminals.
- Replace defective electrical cords and wires immediately.
- DO NOT use the charger if the flanged inlet is damaged.
- DO NOT connect the charger to a damaged extension cord.

Every DC powered PEL is equipped with an onboard battery charger with a flanged electrical inlet. The charger is current limited and will not exceed its rated output even if loads are placed on the battery while it is charging. The charger fuse will break if it is connected in reverse polarity.



To charge the battery:

- 1.) Plug the charger into an 115V, 60 Hz receptacle by connecting the flanged inlet on the charger to an extension cord. Plug the other end of the cord into a wall socket. Use a short, thick extension cord.
- 2.) When properly connected, the charge LED will indicate the status of charge current flowing to the battery.
 - If only the red LED is on, the charger is providing full output to the battery.
 - If both the red and green LED's are on, the charger is "topping off" the battery.
 - When only the green LED is on, the unit is providing a "float" (maintenance) charge.
 - DO NOT leave the charger on for long periods after the battery is fully charged.
- 3.) Unplug the charger before using the lifter. Failure to do so could cause damage to cords, receptacles, etc.

TROUBLESHOOTING--If the charger does not work:

- 1) Make sure all battery connections sound.
- 2) Confirm that the AC power source (e.g. wall socket) is supplying power.
- 3) Examine the fuse (see diagram above). Replace only with a fuse having the same rating as the original fuse.
- 4) Determine battery condition. It may take some time before current begins to flow through a highly sulfated battery.

RECORD OF SATISFACTORY CONDITION

Before putting this machine into service, make a record of its appearance and operation. Photograph the unit from multiple vantage points in the lowered and fully elevated positions. Take close range photographs of all labeling applied to the machine. Referring to the diagrams on page 12 and 13, photograph the touchpad controller, casters/wheels and caster brakes, legs, mast (inside and outside), mast rollers, and fasteners (pins, bolts, nuts, etc.). Describe the motion of the deck as it elevates and descends, e.g. smoothly and evenly from side-to side without binding or lurching. Describe the sound of the machine as it operates. Collate all photographs and writings into a file. Mark the file appropriately to identify it. This file is a record of the unit in satisfactory condition. Compare the results of all inspections to this RECORD to determine whether the lifter is in satisfactory condition. Do not use the lifter unless it is in satisfactory condition. Purely cosmetic changes, like damaged paint or powdercoat, are not changes from satisfactory condition. However, touchup paint should be applied as soon as damage occurs.

INSPECTIONS & MAINTENANCE

NOTICE Regular maintenance is essential to keep this product in normal working order. Before beginning maintenance, completely unload and lower the deck. Always use this product in accordance with the instructions in this manual.

- Keep the product clean & dry. Lubricate moving parts at least once per month.
- ONLY use manufacturer-approved replacement parts. Vestil is not responsible for issues or malfunctions that result from the use of unapproved replacement parts.

Inspections and all necessary repairs should be performed by qualified persons. Compare the results of each inspection to the **RECORD OF SATISFACTORY CONDITION**. Do not use the cart unless every part is in satisfactory condition. If you have any questions about the condition of your cart, contact the **TECHNICAL SERVICE** department. The phone number is provided on the cover page of this manual. Never make temporary repairs of damaged or missing parts. Only use manufacturer-approved replacement parts to restore the ladder to satisfactory condition.

Inspect the following components at least once per month:

1. Wiring: inspect the electrical wiring for cuts or frays.
2. Casters: examine the casters and confirm normal operating condition.
3. Structure: inspect the base and frame for deformations and cracked welds.
4. Deck, carriage, carriage rollers, and mast: cycle the deck up and down while listening and watching unusual noise, motion, or binding. Check rollers and retaining hardware for normal condition. If the carriage does not move smoothly or makes noise as it moves up or down the mast, apply a silicon wax or silicon spray to the inside of the mast frame.
5. Touchpad and (optional) pushbutton controller: inspect both the touchpad and the handheld controller. Look for damage that exposes users to risk of electric shock.
6. Battery: check the water level in the battery. *(DC models only)*
7. Chain: inspect for excessive wear. Particularly examine each chain for stretched, twisted, and cracked links. Check chain tension and inspect the hardware fastening each chain to the lifting carriage (see pages 12 & 13).
8. Labels (see "Labeling diagram; p. 16): confirm that all labels are in place and easily readable.
9. Surfaces: remove dirt and debris. Remove rust with a steel bristle brush and apply touchup paint to the affected areas.

Maintenance:

Implement a maintenance program to ensure the proper function and safety of the device. ANSI/ITSDF standard B56.10, "Safety Standard for Manually Propelled High Lift Industrial Trucks" provides some recommended maintenance procedures. The standard is freely downloadable from <http://www.itsdf.org>. The following steps should be utilized in conjunction with those recommendations.

Step 1: Tag the unit, "Out of Service."

Step 2: Inspect the lifter as described above. If deformity, corrosion, rusting, or excessive wear of structural members is present, DO NOT use the lifter. Contact Vestil for instructions.

Step 3: Remove any dirt or other debris from all surfaces.

Step 4: Perform all other necessary adjustments and/or repairs. DO NOT modify the lifter.

Step 5: Make a dated record of the repairs, adjustments and/or replacements.

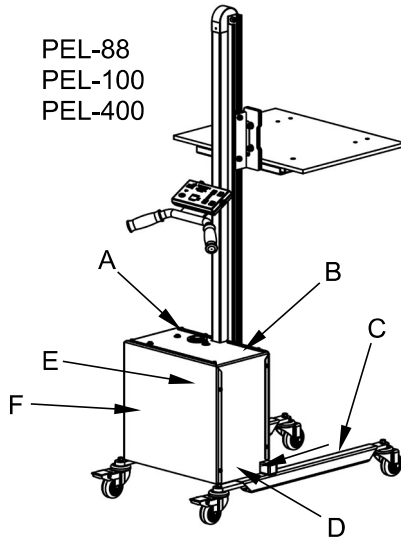
REPLACEMENT PARTS

Our company uses carefully selected parts in our equipment. Whenever parts must be replaced, only use manufacturer approved replacement parts. To order parts for your equipment, contact Customer Service at the factory. In any correspondence with the factory please include the Serial Number which is inscribed on the nameplate of the equipment. Use only the part numbers provided in this Owner's Manual. When ordering parts for AC power units, please be prepared with the motor phase and voltage of the equipment.

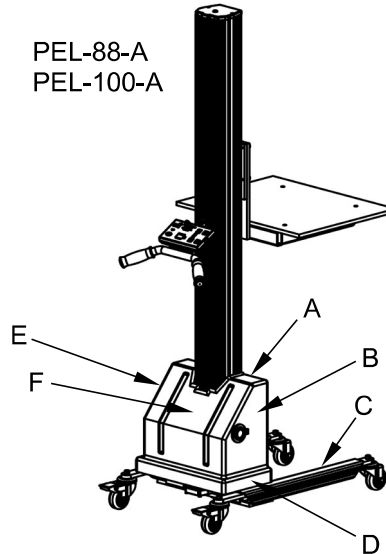
LABELING DIAGRAMS

The unit should be labeled as shown in the diagram. However, label content and location are subject to change so your product might not be labeled exactly as shown. Compare this diagram to your **RECORD OF SATISFACTORY CONDITION**. Replace all labels that are damaged, missing, or not easily readable (e.g. faded). Order replacement labels by contacting the **PARTS DEPARTMENT** online at http://www.vestilmfg.com/parts_info.htm. Alternatively, you may request replacement parts and/or service by calling (260) 665-7586 and asking the operator to connect you to the **PARTS DEPARTMENT**.

PEL-88
PEL-100
PEL-400



PEL-88-A
PEL-100-A



A: Label 287

MODEL/MODÉLO/MODELÉ	
STATIC CAPACITY (evenly distributed)	_____ lbs.
LA CAPACIDAD CONSTANTE (distribuida uniformemente)	_____ kgs.
CAPACITÉ STATIQUE (distribuée régulièrement)	_____ kgs.
SERIAL/SERIE/SÉRIE	_____

287 REV 0812

B: Label 454

Charge unit at least every two weeks or leave plugged in when not in use. Disconnect battery when storing unit without power for more than one month.

Cargue la unidad por lo menos cada dos semanas o enchúpelo cuando no en uso. Desconecte la batería al salvar la unidad sin carga por más de un mes.

Charger l'unité au moins deux fois par semaine ou laissez branché lorsque la batterie lorsque l'unité est rangée et ne va pas fonctionner pendant plus d'un mois.

VESTIL MANUFACTURING CORP. • Angola, IN 46703 USA
Phone (260) 665-7586 • Fax (260) 665-1339 • www.vestil.com 454

C: Label 208

⚠ WARNING	⚠ ADVERTENCIA	⚠ AVERTISSEMENT
KEEP CLEAR OF PINCH POINT	MANTENGASE ALEJADO DEL PUNTO DE CORTE	SE TENIR À DISTANCE DU POINT DE PINCEMENT

208A

D: Label 212

⚠ WARNING	⚠ ADVERTENCIA	⚠ AVERTISSEMENT
LOCK CASTER and/or FLOOR LOCK when loading and unloading	La RUEDECILLA de la CERRADURA y/o el PISO CIERRAN al cargar y descargar	LOCK CASTER et/ou SOL LOCK lors du chargement et de déchargement

212 Rev 0111

E: Label 527

⚠ WARNING

Only trained, authorized persons should operate this device. Improper operation might result in serious personal injuries sustained by the truck operator and/or bystanders. Operators must observe the following safety-enhancing practices:

- **BEFORE** operating, inspect mast, carriage, forks/deck, cable/chain, wheels, and brakes for damage. **DO NOT** use if damaged.
- **ALWAYS** walk travel path before using truck to identify hazards:
 - 3 **DO NOT** contact electrical lines or overhead objects with device or load;
 - 3 **DO NOT** travel up/down inclines if an alternate route is available;
 - 3 **DO NOT** travel over debris.
- **ONLY** travel with forks/deck in lowest position appropriate for conditions.
- **ALWAYS** center and evenly distribute loads on forks/deck.
- **ALWAYS** secure load to forks/deck.
- **ONLY** drive or operate truck functions from operator position.
- **DO NOT** exceed maximum rated load (capacity).
- **DO NOT** allow people to ride on device.
- **DO NOT** lift loads over people; **DO NOT** permit people to walk beneath the forks/deck when raised (loaded or unloaded).
- **DO NOT** leave unattended UNTIL fully lowered AND unloaded.
- **DO NOT** modify device in any way.

⚠ ADVERTENCIA

Solo personas entrenadas y autorizadas deben operar este equipo. La operación inadecuada podría resultar en daños serios al operario del camión y/o a los transeúntes. Los operarios deben observar y seguir las siguientes prácticas de seguridad:

- **ANTES** de usar, inspeccione el mástil, el equipo, las horquillas/plataforma, cable/cadena, ruedas y frenos por daños. **NO** use si se observan daños.
- **SIEMPRE** camine el trayecto de viaje antes de usar el camión para identificar riesgos:
 - 3 **NO** toque las líneas eléctricas u objetos altos con el dispositivo o la carga;
 - 3 **NO** viaje en inclinaciones de subida y bajada si hay otra ruta alternativa;
 - 3 **NO** viaje sobre desechos;
- **SOLO** viaje con las horquillas/plataforma en la posición de descenso más apropiada para las condiciones.
- **SIEMPRE** centre y distribuya las cargas uniformemente en las horquillas/plataforma
- **SIEMPRE** asegure la carga a las horquillas/plataforma.
- **SOLO** conduzca u opere las funciones del camión desde la posición del operario.
- **NO** exceda la capacidad máxima tasada de carga.
- **NO** permita que la gente viaje en el equipo.
- **NO** eleve las cargas sobre la gente; **NO** permita que la gente camine debajo de las horquillas/plataforma cuando este elevada (con carga o sin carga).
- **NO** deje el equipo desatendido **HASTA** que este completamente cargado Y descargado.
- **NO** modifique el equipo de ninguna manera.

527 • Rev 1109

F: Label 295

⚠ WARNING

Enclosed battery contains hazardous chemicals.

DO NOT handle enclosed battery **UNLESS** wearing eye protection and other appropriate personal protective equipment.

DO NOT directly contact skin with battery.

DO NOT expose to sparks or extreme heat; battery contains explosive gases.

⚠ ADVERTENCIA

La batería incluida contiene materiales peligrosos.

NO use la batería incluida **A NO SER** que lleve protección de ojos y otros equipos de protección apropiados para el personal.

NO tenga contacto directo en la piel con la batería.

NO exponga a destellos o a calor excesivo, la batería contiene gases explosivos.



295
REV 0111

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 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.

Definition of "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 one of the following methods:

US Mail

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

Fax

(260) 665-1339
Phone
(260) 665-7586

Email

info@vestil.com
Enter "Warranty service request"
in the subject field.

In the written request, list the parts believed to be defective and include the address where replacements should be delivered. 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 will require you to send the entire product, or just the defective part (or parts), to its facility in Angola, IN.

What is covered under the warranty?

The warranty covers defects in the following original, dynamic parts: motors, hydraulic pumps, motor controllers, and cylinders. It also covers defects in original parts that wear under normal usage conditions ("wearing parts"), such as bearings, hoses, wheels, seals, brushes, and batteries.

How long is the warranty period?

The warranty period for original dynamic components is 1 year. For wearing parts, the warranty period is 90 days. Both warranty periods begin on the date Vestil ships the product to the Warrantee. If the product was purchased from an authorized distributor, the periods begin when the distributor ships the product. Vestil may, at its sole discretion, extend a 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?

The Warrantee (you) is responsible for paying labor costs and freight costs to return the product to Vestil for warranty service.

Events that automatically void this Limited Warranty.

- Misuse;
- Negligent assembly, installation, operation or repair;
- Installation/use in corrosive environments;
- Inadequate or improper maintenance;
- Damage sustained during shipping;
- Collisions or other accidents that damage the product;
- Unauthorized modifications: Do not modify the product IN ANY WAY without first receiving written authorization from Vestil.

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. Vestil makes no warranty or representation that this product complies with any state or local design, performance, or safety code or standard. Noncompliance with any such code or standard is not a defect in material or workmanship.

