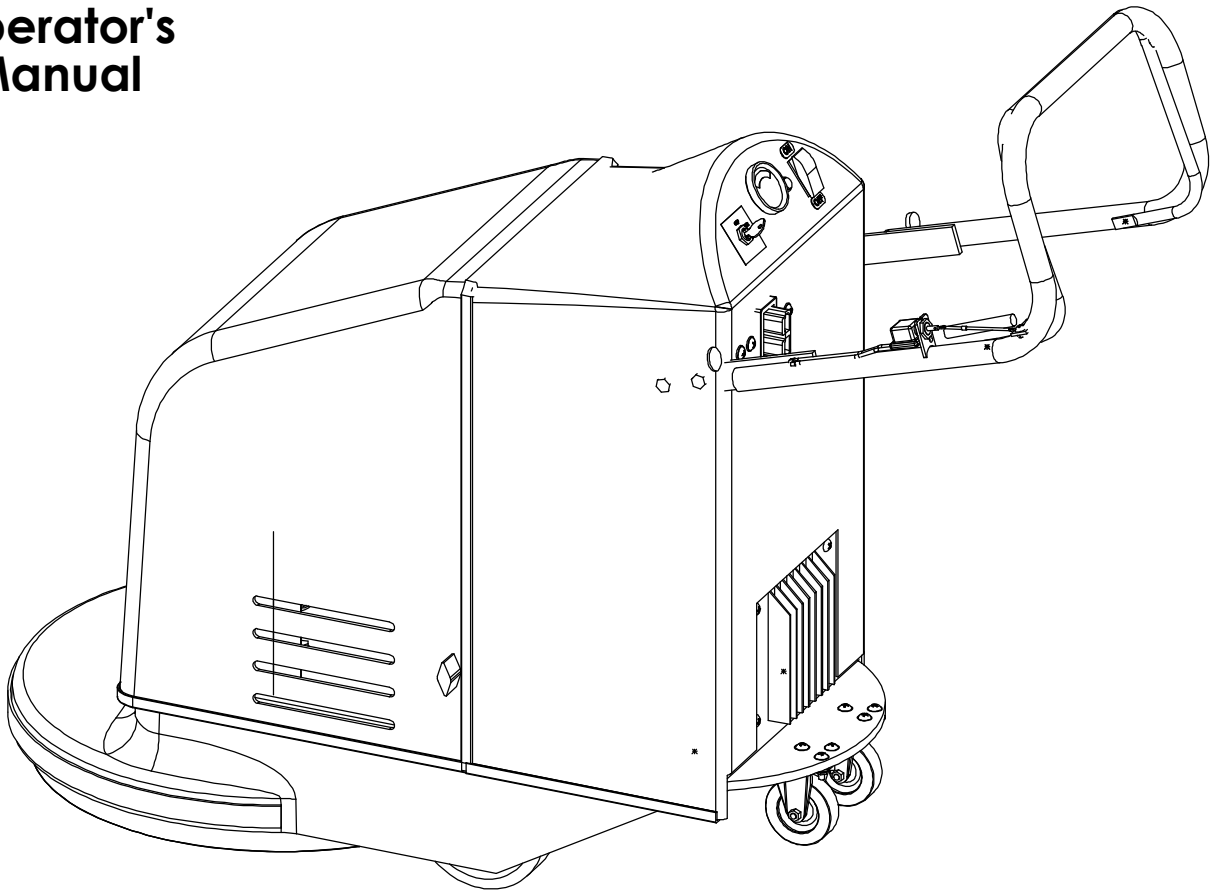




When Performance Counts. . . You Can Count on POWERBUFF!

Operator's Manual



XT-21 GENERATION II

! IMPORTANT ! -- READ THIS MANUAL -- ! IMPORTANT !

This manual contains important information about your machine. Read and understand all instructions before operating the machine. Failure to read and follow the instructions could result in injury to the person operating the machine or to others. Damage to the machine or other property could occur if instructions are not followed.



When Performance Counts. . . You Can Count on POWERBUFF!

XT-21 THREE YEAR LIMITED WARRANTY

PowerBuff, Inc. warrants new machines to be free from defects in material and workmanship under normal use and service to the original purchaser. This warranty period is subject to the conditions stated below.

BATTERY AND BATTERY CHARGER WARRANTIES

Battery warranty is for one year on a pro rated basis. Battery warranty is void if batteries are not maintained at the proper fluid level with distilled water. Battery charger is warranted for one year.

EXCLUSIONS

This warranty does not cover normal wear and maintenance items including, but not limited to: carbon motor brushes, scrub brushes, squeegees, valves, gaskets, wheels, casters, and routine adjustments. This warranty does not cover damage or failure which is the result of misuse, negligent operation, handling or repair, or which is the result of modification or repair by any person other than an authorized PowerBuff, Inc. service representative.

LIMITATIONS

STATED WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. PowerBuff's liability under this warranty is limited to repair of the product and/or replacement parts and is given to purchaser in lieu of all other remedies, including incidental and consequential damages.

WARRANTY DETAILS AND CLAIM PROCEDURES

PowerBuff, Inc. warrants to buyer that for the applicable shipment, such material will be free from defects in material and workmanship or failure to meet specifications (a defect) appears in the material; then seller will, at it's option, either repair or replace the defective goods without charge or credit or refund the purchase price of the defective material, provided that:

The defect appears within the applicable warranty period.

Buyer notifies seller in writing of the claimed defect promptly after buyer knows or reasonably should know of the claimed defect.

Seller's examination if the material discloses that the claimed defect actually exists.

Buyer shall follow seller's instruction regarding return of defective material, and no material will be accepted for repair, replacement, credit, or refund without the written authorization of and in accordance with seller's instructions. In the case of any such return, buyer shall bear the risk if in-transit loss or damage; and shall prepay all transportation charges to seller. Repaired or replacement material will be shipped prepaid by seller, and buyer shall bear the risk of in-transit loss or damage. The replaced material shall become the seller's property.

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Safety Instructions

<u>Hazard Level</u>	<u>Explanation or Description of Hazard Level</u>
	Failure to follow safety instructions labeled  could result in severe injury or death to the machine operator or others.
	Failure to follow safety instructions labeled  could result in injury to the machine operator or others. Also, machine or property damage could occur.
	Failure to follow safety instructions labeled  could result in damage to the machine or other property.



This manual contains important information about your machine. Read and understand all instructions before operating the machine. Failure to read and follow the instructions could result in injury to the person operating the machine or injury to others. Damage to the machine or other property could occur if instructions are not followed.



Do not operate this machine around any solvents, thinners, or other flammable liquids or materials. Electrical sparks can cause a fire or even an explosion.



Do not smoke around the machine. Also, keep all sparks and flames away from the batteries. The batteries generate gases that can cause an explosion.



Special care needs to be used when working on or near the batteries. Wear eye protection. Do not lay tools on batteries, as they may short out battery terminals. Do not wear metal jewelry, as it may short out battery terminals.



Charging batteries can be dangerous. Be aware that the battery charger may have a relatively low voltage output, but the current output is very high and therefore dangerous. Do not operate the charger if any parts of the charger or charger cords are damaged. Do not stand on a wet floor when connecting or disconnecting charger to the power outlet or to the machine.

Safety Instructions are continued on the next page 

Safety Instructions



Battery acid is dangerous. Wear eye and face protection, hand protection, and body protection when working on and around batteries. If you get acid on your skin, wash off immediately. If you get acid on your clothing, remove clothing and wash any skin that was in contact with the clothing. Baking soda mixed with water will help to neutralize the acid on your skin.



The machine is very heavy, so be very careful when loading, transporting, and unloading the machine.



To charge, plug connector into burnisher, then plug charger into wall receptacle. When finished, remove wall receptacle plug first, then the burnisher connector.



Keep all body parts, clothing, and objects away from moving parts.



Operate machine from the rear, not from the side.



Disconnect a wire to the batteries before working on the machine.



Do not operate machine with charger plugged in.



Do not operate machine with any parts damaged or missing.



Do not operate close to stairs, loading docks, or other drop-offs. Do not park machine in such a manner that it could roll, forward or backward, off a drop-off.



Authorized personnel must perform maintenance and repairs. Do not alter or modify the machine, unless authorized by the manufacturer.



Do not expose the electrical components to water or excessive moisture.



Always put caution signs around the areas that are being cleaned.



Do not use machine as a "ladder". Do not use machine as a "forklift" to push stuff around. Do not ride or let anyone ride on the machine.

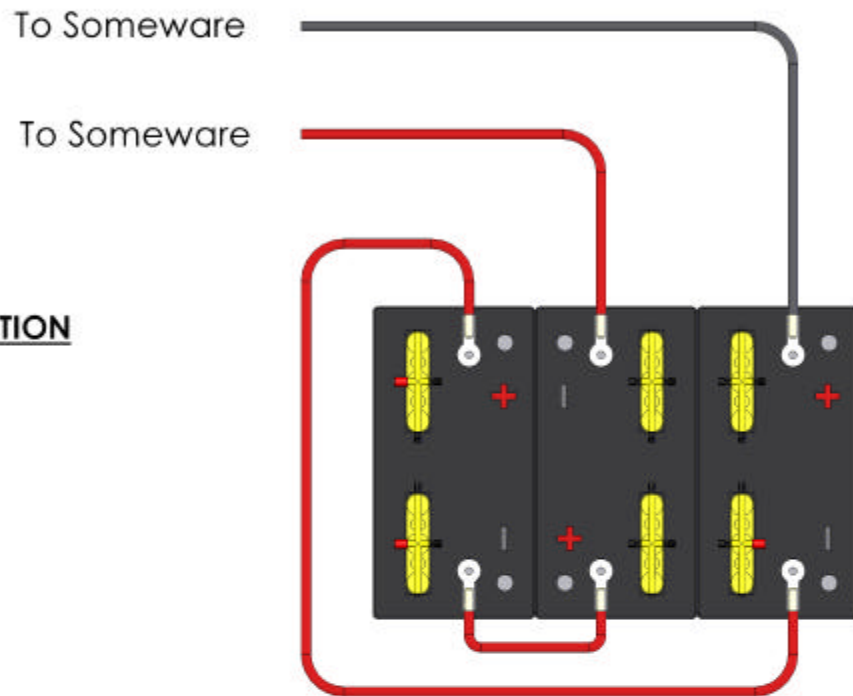


Your machine warranty may be voided if parts other than PowerBuff parts are used.

Battery Installation and Charging

BATTERY INSTALLATION

- Xxxxxxx
- Xxxxxxxx
- Xxxxxxxx
- XXXXXXXXXXX
- XXXXXXXXXXX
- XXXXXXXXXXX
- XXXXXXXXXXX
- XXXXXXXXXXX
- XXXXXXXXXXX
-

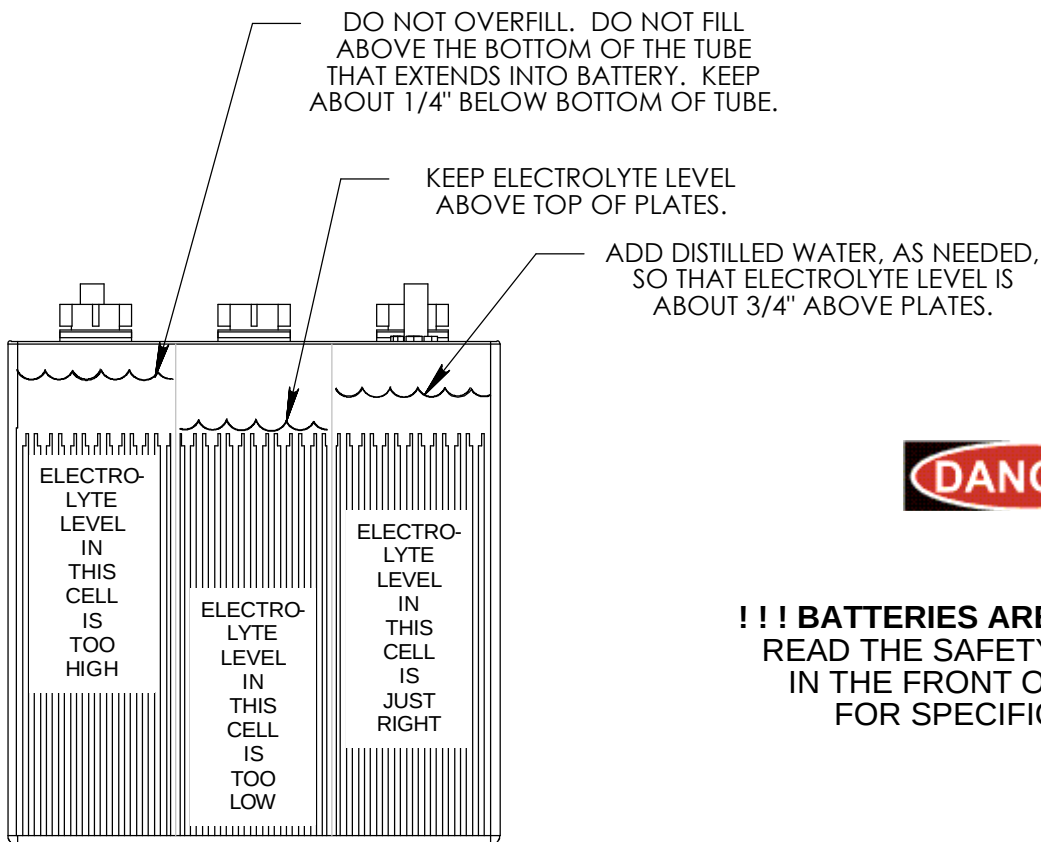


BATTERY CHARGING

- Place the charger on a safe place. Make sure that air can circulate around the charger. Do not get the charger wet.
- All switches on scrubber must be off.
- Do not remove battery caps (the caps are vented).
- Do not charge scrubber in a wet area.
- Do not stand in a wet area when plugging in charger to the 110 volt receptacle or plugging into the scrubber.
- Connect the charging plug from the charger to the charging plug on the back of the scrubber (item 16)
- Plug in the charger to a properly grounded 110 volt receptacle.
- Indicator needle will rise and then will fall slowly as batteries charge.
- Charger will shut off automatically when batteries are fully charged.

Battery Maintenance

- To receive the longest life from the batteries, charge them when they have between 25% and 50% of a full charge.
- Do not allow batteries to remain in a discharged state for very long, as this shortens the total battery life.
- Be aware that a discharged battery will freeze easily.
- Check the electrolyte level weekly. Top off with distilled water as shown in figure 2. Do not overfill. Make sure that all plugs are tight.
- Make sure battery connections are tight and free from corrosion. A baking soda and water solution and a wire brush are helpful when cleaning battery connections. Keep caps on when cleaning batteries, so that electrolyte is not contaminated.



!!! BATTERIES ARE DANGEROUS !!!
READ THE SAFETY INSTRUCTIONS
IN THE FRONT OF THIS MANUAL
FOR SPECIFIC WARNINGS

IF YOU WOULD LIKE TO LEARN MORE ABOUT BATTERIES

THERE IS A VERY INFORMATIVE PUBLICATION AVAILABLE. IT COVERS SUBJECTS SUCH AS BATTERY TERMS AND HOW A BATTERY WORKS TO SPECIFIC GRAVITY TESTING WITH A HYDROMETER AND DIAGNOSIS OF BATTERY PROBLEMS.

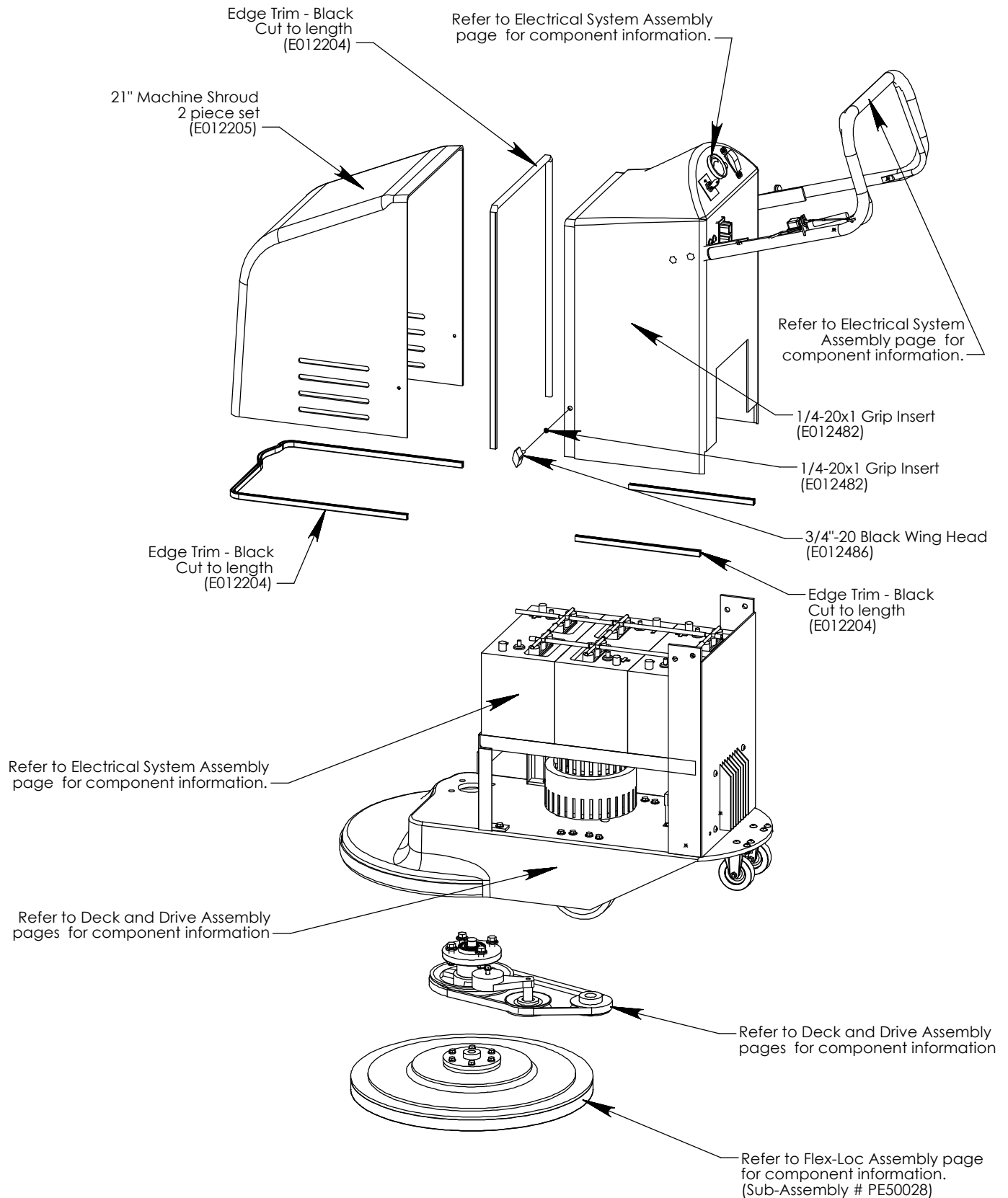
YOU CAN OBTAIN A COPY OF THE "BATTERY SERVICE MANUAL" FROM:

BATTERY COUNCIL INTERNATIONAL
401 N. MICHIGAN AVENUE
CHICAGO, IL 60611
PHONE 312-644-6610

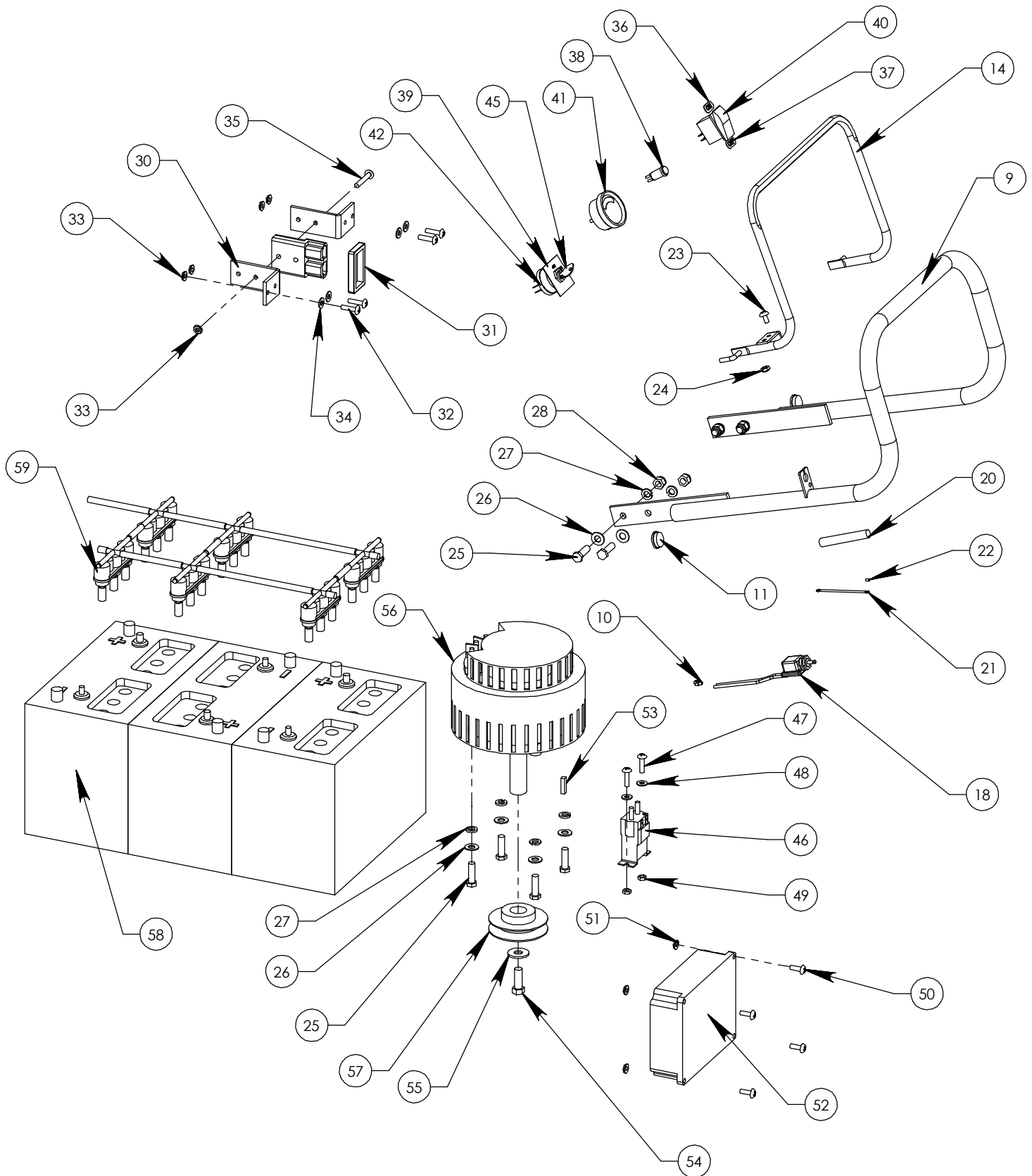
PowerBuff XT Generation II Specifications

Model Item	XT21	XT27
Buff Path Width	21"	27"
Coverage	24,000 SF/Hour	36,000 SF/Hour
Run Time	2.0 – 2.5 Hrs (Constant Speed & Torque)	3.0 – 3.5 Hrs (Constant Speed & Torque)
Battery Pack	36 Volt System (3) 12 Volt Batteries	36 Volt System (6) 6 Volt Batteries
Charger	36V – 20 Amp	36V – 20 Amp
Buff Pad Motor	x Hp – x Amp Maintenance Free	x Hp – x Amp Maintenance Free
Controller	Computer Controlled	Computer Controlled
Pad Speed	7,074 FPM (Constant)	7,074 FPM (Constant)
Smart Watering System	Quick-Fill Onboard Watering System	Millennium 18 Cell W/ Regulator & Connectors
Pad Driver	PowerBuff Exclusive Flex-Loc 21"	PowerBuff Exclusive Flex-Loc 27"
Wheels	Colson 6" Wheels Non-Marking	Colson 6" Wheels Non-Marking
Casters	Dual 3" Casters	Dual 3" Casters
Forward Speed	Walking Speed	Walking Speed
Reverse Speed	Walking Speed	Walking Speed
Weight with Batteries	330 Lbs	552 Lbs
Warranty	Three Year, Limited	Three Year, Limited
Dimensions	54" - Length 22" - Width 42" - Height	61" - Length 29" - Width 44" - Height

Main Buffer Components



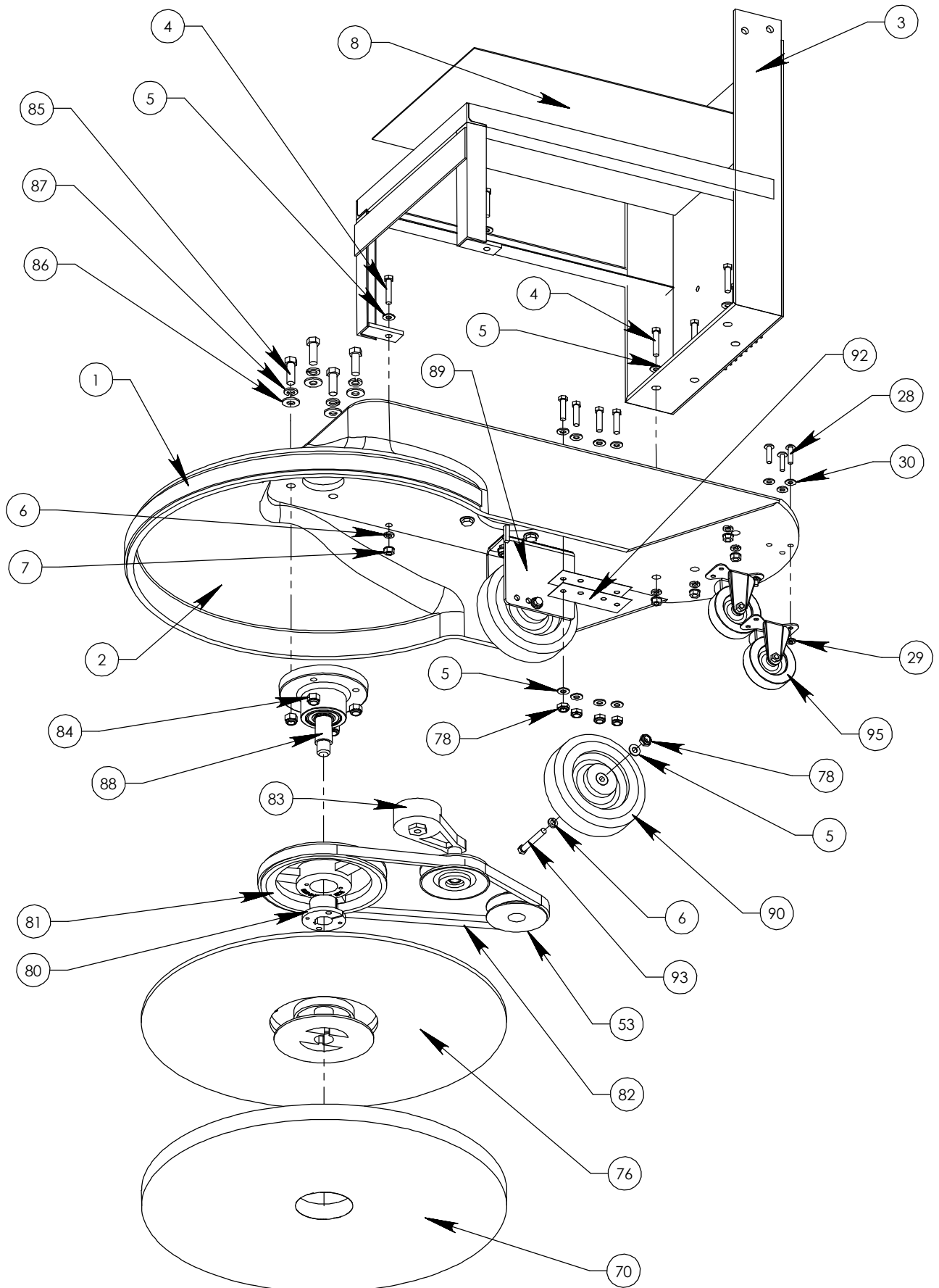
Electrical System Components



Electrical System Components

ITEM NO.	BETCO PART #	DESCRIPTION
9	E012194	Handle XT_21
10	E012587	16-14 Ga. Male Quick Slide Terminal
11	E010259	Caps (Black)
14	E012196	Handle, Safety Shut-Off
18	E012215	Red Kill Switch (#091130-02)
20	E011565	Spring, Handle Return
21	E011553	Lanyard, 3/64 x 6"
22	E012221	Sleeve, 1/16 Alum Oval
23	E011122	1/4-20x1/2 PHMS - SS
24	E012242	1/4-20 Unc Spinlock Nut
25	E011051	3/8-16X1.25 BOLT - HH
26	E011136	3/8 SAE Flat Washer
27	E011504	3/8 SAE Lock Washer
28	E011097	3/8-16 NYLOC NUT
29	PE50043	Anderson Plug
30	PE50043	Bracket, Anderson Plug
31	E012512	Grommet, Anderson Plug
32	E012469	1/4-20X1.00 PHMS Phip Screw
33	E012242	1/4-20 UNC Spinlock Nut
34	E011133	1/4 Flat Washer
35	E011192	1/4-20X1.75 PHMS Phip Screw
36	E012239	ON Label
37	E012240	OFF Label
38	PE50041	Light, Red 36v
39	E010550	Label, On-Off Ignition Switch
40	E011529	Switch, Rocker
41	E010865	36v System Gauge
42	E012291	Switch, Keyed Ignition
45	E012290	Key, Ignition Switch (2)
46	EO12592	Solenoid (36V) #70 1202245B1 (Sect. J)
47	E012219	1/4-20x1.00 PHMS Black
48	E011834	1/4 Flat Washer Black
49	E011089	1/4-20x1.00 Hex Nut
50	E011833	1/4-20x.75 PHMS - BLK
51	E012242	1/4-20 UNC Spinlock Nut - BLK
52	EO12199	Controller #633T23602
53	None	.250 x .250 x 1.00 Key (Motor)
54	E011500	5/8"x1.25 Fine Thread Bolt
55	E011501	7/16 USS Flat Washer Zinc
56	E012197	Motor, Electric 36V #AB0201012501KK001
57	E012295	BC 3.5 dia. Pulley
58	E011767	Battery - 12V - 140AH(C20) - (#31DC36)
59	E012202	36V QuickFill Watering System

Deck And Drive Assembly Components



Deck And Drive Assembly Components

ITEM NO.	BETCO PART #	DESCRIPTION
1	E010705	Bumper Guard (Red)
2	E011281	XT21 DECK GEN 2
3	E012193	Battery Tray w/ Heat Sink for 21
4	E011057	5/16-18X1.50 Bolt-HH
5	E011498	5/16 Flat Washer
6	E011505	5/16 Lock Washer
7	E011151	5/16 Spinlock Nut
8	E012518	16ga Battery Platform For XT
28	E012469	1/4-20X1.00 PHMS Phip Screw
29	E012242	1/4-20 UNC Spinlock Nut
30	E011133	1/4 Flat Washer
53	E012295	BC 3.5 dia. Pulley
70	F084621	PAD21 IM/COM/PRK
76	PE50028	Flex-Loc Assembly 21in
78	E011176	5/16-18 Nyloc Nut
80	E012400	D25mm Bushing / QT25mm (Pulley Shaft)
81	E012401	BG 7.5 dia. Pulley
82	E010107	BX 40 Belt
83	E010459	Sm. Belt Tensioner - FS0111
84	E011418	7/16-14 UNC Elastic Locknut
85	E010116	7/16-14 x 1 1/4 USS Bolt
86	E012218	7/16 SAE G8 Flat Washer
87	E012217	7/16 Zinc Lock Washer
88	E012284	Front End Bearing Assembly
89	E012365	Adjustable Wheel Bracket
90	E012285	6" Wheel w/ Bushing
92	E012593	6in Wheel Shim
93	E010958	5/16 X 2 1/2 Grade 8 Bolt
95	E012237	3" Caster w/ Gray Rubber

21" Flex-Loc Pad Driver

(Complete - PE50028)

ITEM NO.	BETCO PART #	DESCRIPTION
1	E010586	3/4" Shaft Plate
2	E010250	21" Flex Loc
3	E012517	Center-Loc 2 (1 of 2)
4	E012517	Center-Loc 2 (2 of 2)
5	PE50028	Flex-Loc Assembly 21in
6	E012247	5/16-18 X 1-1/4 Bolt
7	E011505	5/16 Lock Washer
8	E011176	5/16-18 Nyloc Nut
9	E010118	AAP64 Rivet

