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Disassembly & Recycling Guidance

English

APC Smart-UPS[®]

Uninterruptible Power Supply – 500Va to 3000Va

February 2008



Product End-of-Life Disassembly & Recycling Guidance

Introduction: This disassembly and recycling guidance provides general guidance for the disassembly of the referenced APC product to remove components and materials requiring selective treatment, as defined by EU directive 2002/96/EC, Waste Electrical and Electronic Equipment (WEEE).

Product Identification	Typical Tower Configuration	Typical Rack-Mount Configuration
<p>APC Smart-UPS, sized 500Va to 3000Va, 100V (J), 120V (no letter or XL) or 230V (I) Input and Output, tower or rack-mount (RM) configuration and containing maintenance-free sealed lead-acid battery with suspended electrolyte : leakproof</p>		
<p>Product Synonyms:</p>		
<p>SUA500(XL),(I),(J),(RM) SUA750(XL),(I),(J),(RM) SUA1000(XL),(I),(J),(RM) SUA1500(XL),(I),(J),(RM) SUA2200(XL),(I),(J),(RM) SUA3000(XL),(I),(J),(RM)</p>		

Material Summary: Uninterruptible Power Supplies (UPSs) such as the above referenced products are composed of the following subassemblies:

UPS Unit

- Housing (plastic and metal)
- Wire harnesses and cords
- Populated Printed Wiring Board (PWB)
- Transformer
- Power Cord (when included)
- Miscellaneous hardware

Battery Cartridge

- Sealed Lead Acid Batteries
- Wire harnesses
- Miscellaneous hardware
- Frame (when included)

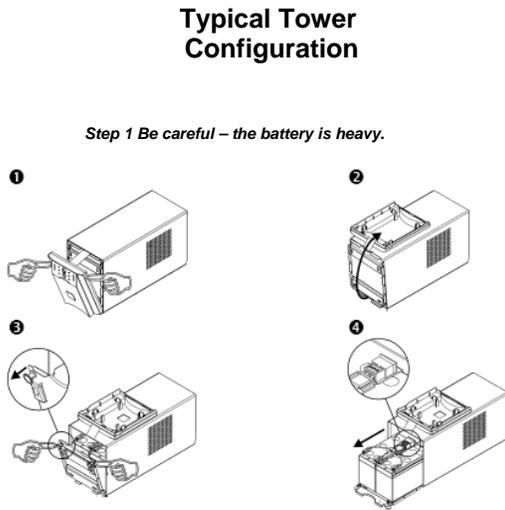
Disassembly Summary (See Figure A):

1. Remove the battery cartridge from the UPS unit. The battery cartridge is a user replacement component accessible via a door at the rear of the unit. Open door by removing fastener and removing battery cartridge. Be careful, the battery cartridge is heavy. APC does not recommend separating the battery cartridge into individual components until the cartridge has reached its final disposition location
2. Remove the housing by removing screws that secure the cover, base and other housing components. The housing is composed of cold rolled steel, galvanized with RoHS compliant passivation, and either no finish or powder coat finish. Included in the housing

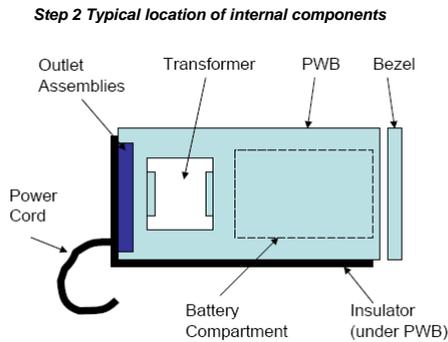
is a polycarbonate or ABS plastic bezel.

3. Disconnect external and internal wire harnesses by unsnapping or shearing connectors.
4. Remove the transformer and PWB by removing screws that secure them to housing base. The transformer is a multi-material component composed of M6 silicon steel, copper windings, plastic, connecting wires, plastic and metal fasteners, internal electrical connections using lead(Pb) solder. The PWB is a multi-material component composed of an FR4 board with lead(Pb) and copper tracings, electrical components including relays that contain silver cadmium contacts, connecting wires, plastic and metal fasteners, and electrical connections using lead(Pb) solder.
5. Remove insulator and other miscellaneous hardware. Hardware consists of RoHS compliant steel fasteners, nylon ties and connectors, and urethane foam or RoHS compliant PVC insulator (under the PWB).

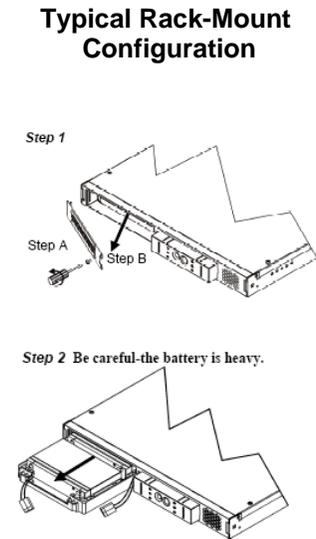
Figure A:



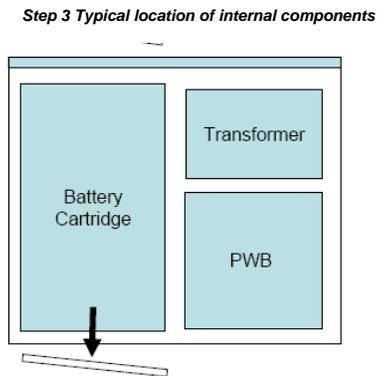
Remove Battery Cartridge



Remove Internal Components



Remove Battery Cartridge



Remove Internal Components

Items Requiring Selective Treatment:

Item Description	Included in this Product	Identify Items or Substances of Concern	Notes
Batteries	Y	Lead Acid Batteries	Manage the battery cartridge in accordance with local requirements regarding the handling, storage, shipment, treatment and disposal of lead acid batteries.
Printed Circuit Board (PCB)	Y	PCB, Lead, Cadmium	The PCB is a multi-material component composed of an FR4 board with lead(Pb) and copper tracings, electrical components including relays that contain silver cadmium contacts, connecting wires, plastic and metal fasteners, and electrical connections using lead(Pb) solder.
External Electrical Cables & Cords	Y	External Power Cord (when included), Smart UPS signaling RS-232 cable	External wire harnesses are composed of various gauge copper wires with RoHS compliant PVC wire wrap and RoHS compliant connectors.
Capacitors or condensers greater than 2.5 cm in height	Y		On PCB
Plastics containing Bromated Fire Retardants	Y	PCB	RoHS Compliant FR4 (TBBPA) in PCB, wire harness and connectors containing brominated flame retardant.
Fluids	N		The sealed lead acid battery is leak proof and contents are not considered a fluid
Liquid Crystal Displays with surface greater than 100 cm ²	N		
Components containing Ozone Depleting Substances	N		
Ozone Depleting Substances CFC, HFC, HCFC, HC	N		
Asbestos	N		
Mercury	N		
Capacitors or condensers containing PCB/PCT	N		
Cathode Ray Tubes (CRTs)	N		
Refractory Ceramic Fibers	N		
Radioactive Substances	N		
Gas Discharge Lamps	N		
Toner, Ink or other consumables	N		

RoHS Restricted Substances:

Substance Category Name	Substance Category intentionally added or present	In grams and maximum PPM				If Yes, Detailed Material/Substance Information
		SUA 500 and 750	SUA 1000 and 1500	SUA 2200	SUA 3000	
Cadmium	Yes	0.112 85,000	0.139 85,000	0.139 85,000	0.139 85,000	As contact material in (3) relays (exemption 8) on PCB. In wire harness cable material at concentrations less than 25 PPM
Hexavalent Chromium	None					
Lead	Yes	12.21 850,000	17.62 850,000	23.12 850,000	22.00 850,000	Solder on PWB (exemption 7b) and electrical components (exemptions 7c, 14). Copper, steel and aluminum mechanical parts (exemption 6), In cable wrap at concentrations less than 100 PPM
Mercury	None					
Polybrominated Biphenyls (PBB)	None					
Polybrominated Diphenylethers (PBDE)	None					

RoHS Exemption Key:

- 6 Lead as an alloying element in steel containing up to 0.35% lead by weight, aluminum containing up to 0.4% lead by weight and as a copper containing 4.0% lead by weight.
- 7a Lead in high melting temperature type solders (i.e. lead based alloys containing 85% by weight or more lead),
- 7b Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunications,
- 7c Lead in electronic ceramic parts (e.g. piezoelectronic devices).
- 8 Cadmium and its compounds in electrical contacts and cadmium plating except for applications banned under Directive 91/338/EEC (1) amending Directive 76/769/EEC (2) relating to restrictions on the marketing
- 14 Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80% and less than 85% by weight and use of certain dangerous substances and preparations

For more information, please visit:
<http://www.apc.com/corporate/stewardship/index.cfm>

