THE SMARTEST BATTERY CHARGERS IN THE WORLD

QUICK PROBLEM SOLVING GUIDE

CTEK battery chargers are extremely reliable. Most 'fault's' are a result of battery issues rather than the charger itself. Using this guide will help you to identify common problems and reach a quick conclusion as to whether the fault lies with the charger or elsewhere and whether a warranty return is necessary.

Common problems include: attempting to charge a battery that is too big for the CTEK model selected, attempting to charge a battery that is defective, not just discharged and poor connection between charger and battery / earth.

Before accepting a customer warranty claim undertake these three basic tests. Each test / check is quick to perform and can be done face to face or even over the telephone.

TEST 1: CHECK BATTERY AND CHARGER COMPATIBILITY

Often the problem is that the battery is just too big for the CTEK model selected - XS800 in particular

TEST 2: TEST POWER AND CONNECTIVITY (BOTTOM ROW LIGHTS)

CTEK chargers require power from the battery as well as the mains - bad connections or a battery with very low voltage can falsely suggest a charger fault.

TEST 3: CHECK CHARGING PROCESS (TOP ROW LIGHTS)

Depending on the CTEK model, the top row light sequence can identify battery defects which may initially be thought to be charger faults. Read this section to match light sequences with possible explanations.

TO RULE OUT THE BATTERY AS THE SOURCE OF THE PROBLEM ALWAYS ENSURE THAT A DIFFERENT BATTERY OF GOOD CONDITION AND SUITABLE CAPACITY IS AVAILABLE TO PERFORM THE CHARGER TESTS AND CHECKS UPON.

TEST 1: CHARGER AND BATTERY COMPATIBILITY

Hint: Where possible check the charger on a battery of suitable capacity and known to be in good condition

Question 1	**Test**
What is the capacity in Ah of the battery to be charged? (recharging a discharged battery)	Check MAX. CHARGE column in table below to see if CTEK charger is suitable
Question 2	**Test**
What is the capacity in Ah of the battery to be maintained? (maintaining a charged battery)	Check MAX. MAINTAIN column in table below to see if CTEK charger is suitable

				Approx. Battery Capacity (Ah)						
CHARGER	MIN. BATTERY VOLTAGE	(Ah) MAX. CHARGE	(Ah) MAX. MAINTAIN	2Ah	8Ah	20Ah	60Ah	100Ah	225Ah	500Ah
XC800	4V	32	100	2	8	20	60			
XS800	4V	32	100	2	8	20	60			
MXS3600 / M45	2.2V	75	120	2	8	5	15	25		
MXS7000 / M100	1.5V	150	225			3	8	12	25	
MXS4003	2.0V	120	140	2	8	4	12	20		
MXT4000	2.5V	100	250		2	3	8	12	25	
MXS25000 /M300	1.5V	500	500				2	3	7	16
MXT14000	7V	300	500				4	5	13	28
M200	1.5V	300	500				3	5	12	25

TEST 2: POWER / CONNECTIVITY (BOTTOM ROW LIGHTS)

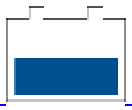
Hint: Check connections at mains socket, Comfort Connector and clamps / eyelets

Hint: CTEK chargers require a minimum voltage from the battery to operate (see table above for Min. battery voltages by model)

Test A	**Reason**
With the charger CONNECTED to BATTERY and MAINS, check if charger is showing any lights on the BOTTOM ROW.	This establishes that there is power. If no lights showing TEST ALL CONNECTIONS. Only if no effect, REPLACE CHARGER
Test B (Not XC800 / XS800)	**Reason**
With the charger CONNECTED to BATTERY and MAINS and with BOTTOM ROW lights working, press MODE button repeatedly.	Tests MODE switch. If lights do not move in sequence when pressed, REPLACE CHARGER.

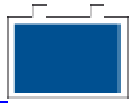
TEST 3: CHARGING PROCESS (TOP ROW LIGHTS)

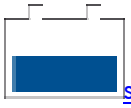
XC 800 / XS800 / MXS3600 /M45 /M300 STARTER

- The charger does not switch from  into maintenance charging 

  Explanation 1: Larger loads are connected to the battery at the same time.
  Test: Disconnect the loads from the battery and try to charge again.

  Explanation 2: Defective battery
  Test: If possible, measure the voltage on the battery when the charging is completed. If the voltage is under 7V (12V chargers) 4V (XC800 only) the battery is probably faulty.
  Test: Try the charger on another fresh battery.

-  and  is lit (flashing rapidly) simultaneously and there is a ticking sound
- **Explanation 1:** Bad connection
  Test: Move the clamps and make sure there is no loose connection in the Comfort Connector
  Explanation 2: The charger is working in the desulphation phase
  Test: Leave the charger to charge for 24h (with some supervision). If the charger does not start charging (one of the LED's are lit) within 24h the battery is in very poor condition.

-  switches to  after the charge has been stopped

  Explanation: When the charger restarts the battery voltage is monitored. If the battery voltage is above 6,5V (XC800 only), 12.9V (12V Chargers) the charging will not commence until voltage drops below this.

- The error LED  is lit

  Explanation: Reverse polarity
  Test: Make sure that the + cable/clamp is connected to the + terminal and the – cable/clamp is connected to the – terminal.

MULTI XS 4003 / 7000 / M100 (12V) / MXT 4000 (24V)

- No LED's are lit on the top row when the charger is connected to both the power outlet and the battery

  The LED's on the lowest row are lit and you can change charging mode however, none of the LED's on the top row are on to indicate charging status.
  Explanation: The battery voltage could be under 1,5V. (12V) or 2.5V (24V)
  Test: Try to charge the battery in Supply mode for approximately 5 min. (Multi XS 7000 only) then try regular charging.
  Test: Test the charger on a fresh battery. If nothing happens the charger may be faulty.

-  is lit for 4 hours and then turns into error mode()

  If the battery voltage is not above 12,5V / 25.5V after 4h the charger will turn into error mode, this is because the voltage has not increased in the way it should have done.
  Explanation 1: The battery is too large in relation to the capacity of the charger.
  Test: Make sure that the battery/batteries size is not larger than the recommendations
  Test: Try to restart the charger - it might need more time to charge the battery.
  Explanation 2: Larger loads are connected to the battery
  Test: Disconnect the battery and try to charge it without the loads.
  Test: Try to restart the charger - it might need more time to charge the battery.
  Explanation 3: If the battery is warm and/or is boiling heavily during the charging, it is most likely due to a defective cell in the battery.
  Test: Change the battery.

-  is flashing for 4 hours, then turns into error mode ()

  Explanation: The battery is probably too sulphated to revive.
  The battery is faulty and it needs to be changed.

-  is lit and then turns into error mode ()

  The analysis phase is testing if the battery can retain the charge given.
  Explanation 1: Large loads are connected to the battery and are draining the voltage.
  Test: Disconnect the battery and try charging again.
  Explanation 2: The battery cannot retain the charge given.
  Test: The battery needs replacing.

- The error LED  is lit

  Explanation 1: Reverse polarity.
  Test: Make sure that the + cable/clamp is connected to the + terminal and the – cable/clamp is connected to the – terminal.
  Explanation 2: The clamps are short circuited (unlikely)

XS 25000 /MULTI XS 25000 / M200 / M300 (12V)

XT 14000 / MULTI XT 14000 (24V)

- No LED's are lit on the top row when the charger is connected to both the power outlet and the battery

  The LED's on the bottom row are lit and you can change charging mode however, none of the LED's on the top row are on to indicate charging status.
  Explanation: The battery voltage could be under 1,5V. (7V for 24V)
  Test: Try to charge the battery in Supply mode for approximately 5 min. Then try regular charging.
  Test: Test the charger on a fresh battery. If nothing happens the charger may be faulty

-  is lit for 4 hours and then turns into error mode()

  If the battery voltage is not above 12,5V / 25.5V after 4h the charger will turn into error mode, this is because the voltage has not increased the way it should have done.
  Explanation 1: The battery is too large in relation to the chargers capacity.
  Test: Make sure that the battery/batteries are not larger than the recommendations.

Test: Try to restart the charger because the charger might need some more time to charge the battery.

Explanation 2: Larger loads are connected to the battery.

Test: Disconnect the battery and try to charge it without the loads.

Test: Try to restart the charging, the charger might need more time to charge the battery.

Explanation 3: If the battery is warm and/or is boiling heavily during the charging, it is most likely a defective cell in the battery.

Test: Change the battery.

-  is flashing, then turns 

Explanation: The battery is probably too sulphated to revive.
The battery is faulty and it is time to change it.

-  is lit and then turns into error mode ()

The analysis phase is testing if the battery can retain the charge given.

Explanation 1: Large loads are connected to the battery and drain the voltage.

Test: Disconnect the battery and try charging again.

Explanation 2: The battery cannot retain the charge given.

Test: The battery needs replacing.

- The error LED  is lit

Explanation 1: Reverse polarity.

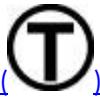
Test: Make sure that the + cable/clamp is connected to the + terminal and the – cable/clamp is connected to the – terminal.

Explanation 2: Loads are connected to the battery which requires more power than the charger can provide.

Test: Turn off or disconnect the loads when charging.

Explanation 3: The clamps have short circuited in Supply mode.

Test: Separate the clamps.

- Temperature LED () is lit

Explanation: DC interruption or short circuit in cable.