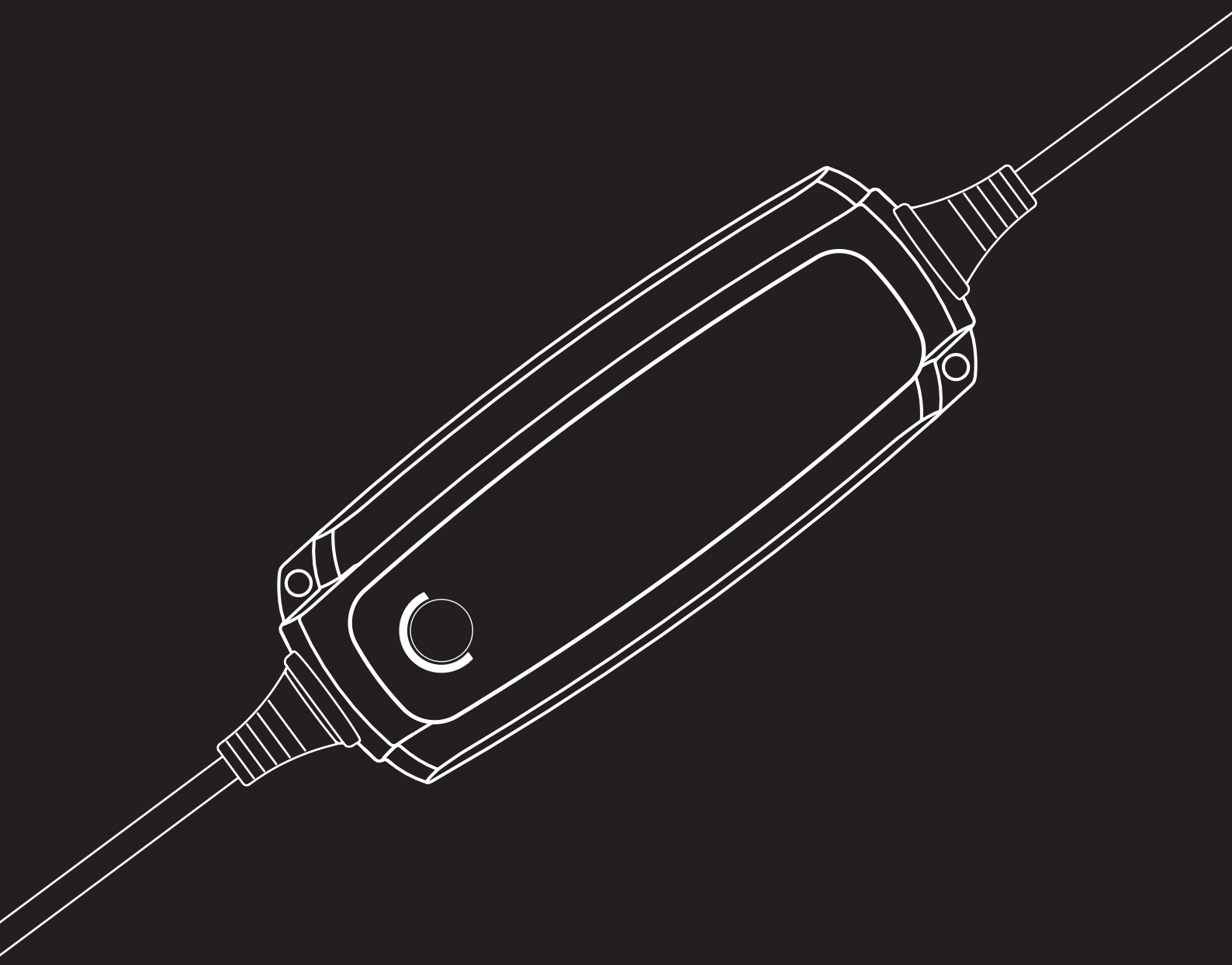
CTEK

FAQ

MXS 5.0 MUS 4.3

Part No: 40-206 MXS 5.0, 56-864 MUS 4.3, 56-959 T&C & 56-958 POLAR



Can I charge a lithium battery using my MXS 5.0, MUS 4.3 Test & Charge or the MUS 4.3 Polar charger?

No, your charger does not have the lithium mode, we have chargers designed for Lithium batteries including the Lithium US, the CT5 Powersport, the Pro25S and the CS Free).

Does my MXS 5.0 charger have a temperature sensor?

If the charger is an MXS5.0 then the charger has automatic temperature compensation.

If your charger is the MUS 4.3 or any variants of the 4.3, the charger does not have temperature compensation.

Can I use the MUS4.3 charger for long term maintenance?

Yes, you can. The charger switches automatically to maintenance charging when the battery is fully charged.

Why is half-battery lamp flashing rapidly and the full-battery lamp is solid on my MUS 3300 charger?

Most likely a bad connection to the battery. Move the clamps or cig plug accessory and make sure there is no loose connection in the quick connector. The charger could also be working in the Desulphation phase.

Why is my MUS 7002 (MXS7.0 240V) charger "clicking" while charging?

This is normal for our 7-amp chargers including the Multi US 7002 chargers. Relay clicks are a confirmation of the communication between the charger and your battery to ensure the best possible charging result combined with a low power consumption.

After connecting, my MUS 4.3 charger immediately goes to step 3, is it faulty?

No. The charger will very quickly go past the first 2 steps if the battery is healthy.

Can I charge a dead battery with a CTEK charger?

Most CTEK charger require a minimum battery voltage of 2V. If the battery voltage is below 2V you will need one of our chargers with a" Supply mode" to accomplish this. The Supply Mode function is currently available on our Multi US 7002, Pro25 series as well as our MXS 25EC chargers in North America.

Does my charger have a 'RECOND' program?

YES - It is a mode that is used for reviving deeply discharged batteries, breaking down sulphation and reversing acid stratification. It requires a manual selection from the user and will add an extra step to the charge cycle, It uses a voltage of up to 15.8v to deliberately gas the battery in a controlled way in order to re-mix the acid to get an optimized acid balance (acid weight). This mode is also recommended for Ca/Ca batteries which require the higher voltage when charging.

What do the program symbols on my charger mean?

MC = 14.4V / 0.8A for batteries 1.2 -14 Ah

CAR = 14.4V/ Charger output (e.g., MXS 5.0 is 4.3A)

SNOWFLAKE/AGM (MXS 5.0) = 14.7V

SUPPLY = 13.6V/ up to a max charger output (e.g., Multi US 7002 = 7A)

'SNOWFLAKE' can be used on batteries when temperature drops under +5^{O}C.

Can I use my CTEK charger with a start/stop vehicle?

Yes. CTEK chargers are safe to use on start/stop vehicles.

Do I have a charger or a maintainer (trickle)?

The CTEK unit is both charger and a maintainer.

The maintenance mode will apply automatically after the battery is fully charged.

Can I charge while the battery is being used?

Yes. But simultaneous consumption or parallel load will prolong charging time.

(The consumption cannot exceed the output of the charger e.g., MXS5.0 the load cannot exceed 4.3A).

What accessories do I need to start charging?

The accessories required to start charging are supplied with the charger. There are a wide range of consumer accessories on the web site to enhance your charging experience.

How should I connect my charger to the battery/vehicle?

The charger should be connected according to the vehicle user manual. If there are no other recommendations available, connecting the red connector to the positive battery terminal first and the black connector to the vehicle chassis is common practice for safety reasons.

Which program should I use?

Use programs according to the battery size or type:

MC = 14.4V / 0.8A charge mode for smaller batteries using a low amperage - 0.8A charge rate.

CAR = 14.4V/ Charge mode using the full amperage rating of the charger e.g., MXS 5.0 would use 4.3A for charging

SNOWFLAKE / AGM= 14.7V/ Charge mode using the higher voltage required by some manufacturers.

How will I know that my battery is fully charged?

Depending on the charger as to the LED configuration but if a green LED (Apart from the power light) is showing then the battery is 100%.

How long does charging take?

It can depend on many factors, for example, the battery size, battery health and state of charge. There is a table located in the user manual with an estimated number if hours to charge up a battery to 80%.

Is it dangerous to interrupt the charging process before my charger has finished?

No.

It is perfectly safe to interrupt the charge process. It is important to let the charger continue the charging cycle when possible, to fully charge the battery.

Can I use my charger with a vehicle that has an engine pre-heater?

Yes. It is safe to use the charger with vehicles that use an engine pre-heater without damage to the vehicle, battery or charger.

My charger never reaches the final step. Is my charger faulty?

No. The charger is not faulty. The final step is a maintenance program. The charger has two maintenance levels:

FLOAT: This shows that the battery is fully charged, and the charger maintains the full charge by supplying ~13.6V and minimum current for approximately 10 days.

PULSE: After 10 days, the charger reaches the final step which is the 'PULSE' program for long-term maintenance. The charger monitors the battery voltage and depending on the situation, pulses up the voltage when needed to optimise battery health and performance.

My charger only reaches step 4, is it faulty?

"No. This step can take longer compared to other steps in the charge process. The step is called 'ABSORPTION' which completes the charge from 80% up to 100%. During this process, the supplied current is gradually reduced, and the charging rate is reduced to optimise battery health and performance. The charger can be in step 4 for up to 8 hours, and in steps 1-4 for up to 36 hours."

The error lamp is lit! Is the charger faulty?

Check the user manual for details on light patterns. This could indicate a problem with the battery. CTEK recommend getting the battery tested - it may need replacing. Try to charge another battery where possible to exclude charger fault. Check the user manual for details on light patterns. This could indicate a problem with the battery. CTEK recommend getting the battery tested - it may need replacing.

Try to charge another battery where possible to exclude charger fault.

Nothing happens when I connect my charger to a mains socket, is the charger faulty?

Connect the charger to a different mains socket. If the problem persists, please contact the dealer, the charger may need replacing.

The charger will not turn on, only the green power lamp is flashing. Is the charger faulty?

Flashing power lamp is an indication that the charger has not established- or has lost- the connection with the battery.
CTEK chargers need counter voltage to establish connection and start/or continue charging.

1. If the connection fails between the charger and the battery, the charging does not start.

2. If the battery is totally flat (under 2 V) the battery is not recognized, and charging will not

start.

If one of the options above occur, the charger shows this by turning to 'Power Safe Mode' and the power lamp starts flashing green.

Can I start my vehicle whilst the charger is connected?

Yes. Remember to disconnect the charger from the vehicle before moving away.

Can I leave the charger connected to the battery for a long time?

Yes. CTEK chargers are designed to fully charge a battery and then automatically switch over to long term maintenance. Before leaving the charger unattended for a long time ensure that the battery is fully charged as indicated by the green LED.

Can I charge my vehicle through the 12V (cig) socket?

Yes, if your socket is still live when the ignition is turned off. Check the vehicle user manual contact your vehicle retailer or test it with any other cig-plug device that works with your vehicle. The maximum amperage charger that can be used is 10A.

Can I use a smaller or bigger charger than recommended for my battery?

Choose charger depending on the size of your battery. Charging with a smaller charger than recommended will take longer time and will not optimally extend the battery life and performance. If your battery has an Ah rating that exceeds that of the charger limit it could mean that the charger will be unable to charge the battery sufficiently and may even lead to it becoming discharged. Charging with a bigger charger than recommended could possibly have an adverse effect on the battery performance and battery service life.

The CTEK manual says:” Connect the black clamp to the vehicle chassis remote from the fuel pipe and the battery". In the picture next to this the black clamp is connected to the battery's negative pole. Which is correct? "

The charger should be connected according to the vehicle user manual. If there are no other recommendations in the manual the negative or black connector should be safely connected to the chassis. If your vehicle has the start stop technology, it will be fitted with a BMS (battery management system) you cannot connect directly to the negative battery pole the connection must be made to the earth or ground point. If the battery is disconnected or removed from the vehicle, then both connections can be made directly to the battery terminal.

Can I charge the battery without removing it from the vehicle or opening the caps?

There is no reason to disconnect or remove the battery from the vehicle – or open the battery caps – while charging with CTEK. CTEK chargers are spark proof reverse polarity protected and electronically safe.

My charger never goes further than the float (first green) level.

The charger stays in float maintenance mode for 10 days keeping the battery topped up using the minimum level of current. After 10 days the program moves on to the last stage – pulse level – for long term maintenance.

My charger gets very warm – is this normal?

Yes, this is normal when the charger is working hard in the bulk charge phase. The heat is generated in certain circumstances depending on the battery that's being charged. The charger does not necessarily heat up when it's charging other types of battery.

My charger will not start charging – is it broken?

CTEK chargers need some counter voltage to start providing tension/current. If there's a poor connection between the charger and the battery charging will not start. If the battery is below 2V charging will not start.

Can I charge Lithium batteries with a regular CTEK charger and ordinary batteries with a Lithium charger?

No. Lithium batteries need a different type of charger to lead/acid batteries. We do not recommend using a CTEK charger designed for lead/acid batteries. Charging lead/acid batteries with a Lithium charger will not give the best results and cannot be recommended.

How should I connect the charger? My car has BMS (Battery Management System)

Connect the red clamp (or eyelet) to the battery's positive (+) pole. You can connect the black negative (-) clamp (or eyelet) to the chassis or a recommended earthing point.

I can't guarantee that I will be at home when the charger says it's finished. Should I disconnect it and continue charging when I come home?

No, you don't have to monitor on the charger. It will automatically switch to maintenance mode and keep the battery fully charged until you return. If you want to leave the battery in maintenance mode long term, you should make sure that the charger has successfully charged the battery and that the "Care" light is showing.

The charger has switched to error mode. What could the problem be?

1. First check that the charger is connected correctly. Check that the positive clamp (or eyelet) is connected to the battery's positive pole (or emergency start point) and the negative clamp (or eyelet) is connected to the chassis (or suitable body earth or ground), and not the other way round.
   2. The charger has discovered a problem inside the battery. The charger will try repeatedly to continue, but if it can't, it will switch over to error mode. Causes can include cell faults, sulphation, or the battery's capacity to retain charge.
   Try first to restart the programme by pressing the Mode button.
   Error mode can also be shown if the loads on the battery are too great, making the voltage decrease too quickly. Disconnect these loads and try again.
   3. Test the charger on another battery to exclude the possibility of a charger fault.

Can I use the charger for long term maintenance?

Yes, you can. The charger switches automatically to maintenance charging when the battery is fully charged.

No LED or display is lit when the charger is connected only to the battery.

The plug has to be connected to the mains output for the LED & and the displays to be lit.
No LED or display is lit when the charger is connected only to the power outlet.

No LED or display is lit when the charger is connected only to the power outlet.

The displays and LED should light up when the charger is connected to the power outlet.
Please test to make sure that there is power from the power outlet.

What is ripple and how does it affect batteries?

Ripple is a measurement of the AC power leaking through to the DC side of the charger. High current ripple results in the heating up and drying out of a battery and in a shortened lifetime. High voltage ripple results in imprecise charging and can damage a vehicle

electronics.
CTEK's chargers have a very 'pure' charge current and voltage, i.e., minimal ripple.

What aspects should I think about when choosing a charger?

You should think about 3 things when choosing a charger:
1. How large the battery you want to charge is.
2. How discharged it will be before you get a chance to recharge it.
3. How quickly you need the battery to fully recharge.
If the battery is large, completely flat and must be charged quickly! Then you should choose a powerful charger such as the Multi US 7002 or the Pro25S.

If you instead want to be sure that your motorcycle battery is charged and is kept charged no matter whether you are going to use it tomorrow or in 6 months, then time is not so important and a small charger will work well.

A CTEK charger is so small. How can it charge so quickly and efficiently, when compared with ordinary chargers?

CTEK's chargers use the same type of technology that computers use to reduce dimensions, to increase power and to charge using a well-controlled and 'pure' current. Also, think how big mobile telephones were 15 years ago and how small they are today, and can even so do so much more.

How much electrical energy does it take to charge a lead-acid battery with a CTEK charger?

Here is an easy way to calculate the electrical energy expenditure when charging a lead-acid battery with CTEK chargers.
Given:
Battery voltage, Bv = 12V
Battery size, Bs = 75Ah
The battery's charge level, Bl = 50%
The battery's efficiency level = 87%
CTEK charger's efficiency level = 80%
Calculate:
Energy consumed from the mains supply to fully charge the battery (En)
First, how much energy is needed to fill the battery?
12V x 75Ah x 50% = 12x75x0.5=450Wh

How much energy does the charger need to deliver based on the battery's efficiency level?
450Wh / 87% = 450/0.87 = 517Wh
How much energy does the mains supply deliver to the charger when taking the efficiency level into consideration?
En = 517Wh / 80% =517 / 0.8 = 647Wh or 0,647kWh.
Answer:
0.647kWh is used to charge the battery based on the given data.

With today's electricity prices, the cost is about .10 cents (USD) to charge a half-charged 75Ah battery.

It is possible to calculate to 80% efficiency for all models of CTEK chargers.
Vary the battery sizes (Bs) and charging level (Bl) to calculate other examples.

What happens if I use the charger for batteries that are larger than you recommend?

Charging with a smaller charger than recommended will take longer time and will not optimally extend the battery life and performance.
Charging with a bigger charger than recommended will not result in a completely charged battery and will not optimally extend the battery life and performance.

How deeply discharged can a battery be and still be recharged by a CTEK charger?

Most CTEK 12V chargers can charge up batteries 2V. Our 6V charger can charge from 3V, and our 24V chargers manage batteries from 4V. Chargers equipped with the "Supply" mode need no counter voltage, and therefore can charge up batteries from 0V.

Can I charge GEL batteries with my CTEK charger?

GEL batteries are a type of lead/acid battery where the acid is bound in a gel. These batteries can be charged with a CTEK charger with no problems whatsoever.

Can a frozen battery be charged?

No, the battery must be thawed first. Note that the battery was discharged first. Otherwise, it would not have frozen. Check the battery carefully for cracks or other damage. A fully charged battery freezes at -67 degrees Celsius, while a drained battery can freeze at just a few degrees below zero. If you think your battery is or was frozen, we recommend that you have the battery tested. It has probably been damaged and may have to be replaced.

Can I maintenance charge several batteries at the same time?

CTEK chargers are fully capable of charging or maintenance charging several batteries connected in parallel provided that the total size of the batteries (Ah) does not exceed the recommended size for the charger. Remember to completely charge each battery individually before connecting them. Otherwise, there is a risk of current surges between that batteries that can cause unnecessary wear.

What happens if I use the charger for batteries that are larger than you recommend?

Using a small charger makes the charging time longer. Sometimes, this is critical. In such cases, you should use a larger charger. If you only use the charger for maintenance charging, a really small charger is often sufficient.

Does the battery have to be disconnected from the vehicle when it is being charged with a CTEK charger?

No, CTEK chargers cannot damage sensitive electronics. So, you don't have to disconnect the battery from the vehicle! However, you should take extra care when using Recond because the voltage is 15.8V. Most manufacturers consider everything to be fine as long is voltage is below 16V and CTEK is under that limit by a good margin, even during Recond. Note that the service life of some components is shortened by high voltage. A rule of thumb says that a light bulb's life span is halved by increasing voltage by 5%, but this is normally not any great danger. If you have any sensitive electronics for which the manufacturer warns against high voltage: disconnect them!

I have an AGM battery. Do I charge it in snowflake mode?

Yes. For some AGM batteries, CTEK recommends snowflake- or AGM- mode that gives a little higher voltage; 14.7V. Different battery brands may have different recommendations, so check with your battery manufacturer what applies to your battery.

I have a CTEK charger. It used to work well, but now nothing happens when I press the mode button. I can't change between the "MC", "CAR” and "SNOWFLAKE” modes. What can I do?

If you can't change the charging mode by pressing the mode button regardless of which battery you are trying to charge, the charger is probably faulty. If you still have the warranty, I recommend you go to your dealer with the charger, and the receipt the dealer will be able to help.

Will a CTEK charger remember the settings if you disconnect it from the mains power?

In the event of a power outage or when the charger is unplugged from power, CTEK chargers do have a mode memory and will resume charging in the mode that was last selected when power is restored.

Can you just connect up and then forget the charger?

Always check that the charger has switched to maintenance charging mode before leaving the charger unattended and connected for long periods of time. Chargers must be disconnected from batteries where the charger does not switch to maintenance charging within three days.

If the charger has switched over to maintenance charging, then everything is as it should be, the battery is probably healthy and will function for a long period of time together with your CTEK charger.

If the charger has not switched over to maintenance charging (green lamp lit) within a couple of days, then this is a sign that something is wrong.

Possible causes:

A large older type of battery, antimony batteries, behave differently.

Charging takes longer and the battery can be overcharged if large consumers are connected to the battery.

The battery is sulphated from start. Charging will then take longer, as the battery's higher inner resistance limits how much current it can receive.

The battery is spent and needs to be replaced.

Why does the charger switch quickly over to maintenance, without any battery capacity being achieved?

The battery's capacity is probably reduced due to lack of maintenance. The remaining capacity is therefore less than the battery label tells. The result is that the charger sees the battery smaller than it is and goes quickly over into maintenance mode.

Are there CTEK chargers for other battery types?

CTEK also produces the CTEK LITHIUM US charger, which has an ideal charging programme for 4x LiFePO4 (lithium iron phosphate) with a nominal 12V terminal voltage.

The CTEK LITHIUM US can also communicate with the battery's built-in electronics if the electronics have shut down the battery to protect it against deep discharging.

Can I charge a 24V system with two 12V chargers?

Yes, this is perfectly OK and is preferable for the batteries. Connect one charger for each battery.

Does CTEK have a Y-cable so you can charge 2 MCs with one charger? It would be practical so I could maintenance charge 2 MCs all winter without having to switch the charger back and forth between two motorcycles.

CTEK has never supplied Y-cables because it is an unsafe solution. With a Y-cable, you connect the batteries of the two motorcycles. You could compare this to the starter cables you use to jump-start a car. If one battery is fully charged and the other is completely drained, there is an incredibly high current between the batteries. But the difference is that the cable is much thinner than if you have starter cables between 2 cars. There are two risks. The cable could burn off – and then you'd have to pray to a higher power that the cable is the only thing burned. If the Y-cable is fuse protected and the fuse is tripped, you think you're charging even though you're not. This leads to a lot of anger and expense when spring arrives. A better method is to have one INDICATOR on each MC. When you check on the bikes, you can then easily see if you need to switch the charger from one MC to the other. Naturally, it would be even easier to have one charger for each MC.

Why do you connect minus to ground and not to the battery?

Vehicles with start stop technology have a battery management system, by connecting directly to the negative / ground terminal you bypass the BMS sensor this can confuse the system when the vehicle is restarted after charge. Also, you can connect a CTEK charger directly to the minus pole instead of to the chassis without any risk. CTEK recommends connecting the minus clamp to ground instead of the minus pole to eliminate the risk of sparking close to the battery. Explosive oxy-hydrogen gas could be found near the battery. However, CTEK chargers are non-sparking and with their smart charging, generate minimal oxy-hydrogen gas. There is therefore very little risk associated with connecting both clamps to the battery poles.

Can I connect all of my 12V batteries and maintenance charge them all at the same time?

That is possible. But remember that all batteries should be fully charged individually before they are connected in parallel. Bear in mind that the combined size of the batteries must not exceed the recommended charging range of the charger. If the batteries differ greatly in size (Ah), age and condition, this could cause great wear to the batteries that are in the best condition. A battery in good condition that is being stored for the winter might self-discharge under 90% of fully charged once or twice over the course of the winter. But batteries in poor condition may do this once or twice a week. If the batteries are parallel connected with a charger connected, each individual battery does not get the charge it needs. It may be easier to set an INDICATOR on all individual batteries and move a charger between the batteries needing charging. This gives each battery the best charging based on its individual needs and no battery will become worn and require early replacement.

Are the primary and secondary sides galvanically separated in your chargers?

Yes, all CTEK chargers are galvanically separated.

Can I leave the charger connected to the battery for a long time?

Yes! CTEK chargers are developed to fully charge a battery and then automatically switch over to long term maintenance. Before leaving the charger unattended for long time, ensure that the battery is fully charged, indicated by a green light.

What charger is suitable for my vehicle?

Choose charger depending on the size of your battery. The more amps the charger can deliver, the faster your battery will be recharged. A rough guide to correct charger size is to divide the battery Amp hour rating (Ah) by 10 e.g. If the battery Ah rating is 75Ah then 75 / 10 = 7.5amps .... A charger of approximately 7amps would be suitable.

Can I use a smaller / bigger charger then recommended for my battery?

Choose charger depending on the size of your battery.
Charging with a smaller charger than recommended will take longer time and will not optimally extend the battery life and performance.
Charging with a bigger charger than recommended will not result in a completely charged battery and will not optimally extend the battery life and performance.

Can I charge without removing the battery from the vehicle, or opening the caps?

There is no reason to disconnect or remove the battery from the vehicle, or open the battery caps, while charging. CTEK chargers are spark proof and reverse polarity protected and electronic safe.

My charger gets very warm, is it normal?

Yes, that is normal when the charger is working hard in the bulk stage. The heat is developed in certain circumstances and is depending on the receiver (battery).
The charger does not necessarily heat up while charging another battery.

My charger does not start charging, is it broken?

CTEK chargers needs some counter voltage to start providing tension/current the minimum requirement is 2V
If the connection is poor between the charger and the battery, the charging does not start.
If the battery is completely flat, 0V, the charging does not start.
If you think the product is faulty and within warranty:
1. Connect the product to another battery
2. Connect the product to mains
3. Check if the LEDs light up
4. Press the mode button and see if it works

If you still believe the charger is faulty, please return it with the receipt to the retailer.

Can I charge Lithium batteries with a regular CTEK charger and vice versa?

No. Lithium batteries needs a different charge than lead/acid batteries. Due to severe risks if overcharging, we do not recommend using a CTEK charger that is developed for lead/acid batteries, for that purpose. Charging lead/acid batteries with a Lithium charger does not give the best result and cannot be recommended.

What is AGM?

AGM stands for Absorbed Glass Mat and differs from a standard Flooded battery in that the electrolyte is held on a fibre glass mat and pressed against the active plate area, instead of being allowed to flood around the plates. This type of battery has a low internal resistance and can accept charge very quickly making it ideal for the modern start stop systems. If the battery casing should become damaged the electrolyte will not leak out.

What is EFB or ECM?

EFB stands for Enhanced Flooded Battery, ECM stands for enhanced cyclic mat, two different names for the same type of battery and both are similar in set up to a standard Flooded battery. There are some design changes with this technology, active plate material is more dense, anti-corrosion treatment for negative and positive grid and lower specific gravity to improve charge acceptance are just some of the differences. The EFB battery provides a more cost-effective battery solution over more expensive AGM type batteries.

What is CA/CA?

Calcium Calcium batteries are a flooded low maintenance or maintenance free battery usually VRLA type. During construction some of the Antimony used in the construction is replaced by Calcium (2% approx.). The benefits are a more robust grid, low water loss and longer shelf life.

What is WET/ FLOODED?

The Flooded battery consists of a series of negative plates (sponge lead) and positive plates (Lead Dioxide) separator material and an Electrolyte solution which is approx. 65% water 35% Sulphuric acid. The flooded type of battery can be vented (which can be topped up) or VRLA which is sealed.

What is MF/VRLA?

MF or Maintenance free also known as a VRLA or Valve Regulated Battery type battery is a flooded battery with the addition of Calcium / Silver to the grid material to reduce gassing and water loss. The battery becomes a small pressure vessel by the addition of a pressure valve (instead of the vents in a standard battery) designed to retain gasses created during charging process - Hydrogen and Oxygen within the battery long enough to recombine into water, which replenishes the electrolyte level. Because of this process these batteries are also called recombination batteries.

What is GEL?

The Gel battery differs from any other lead acid battery because the electrolyte is no longer a fluid, Silica is added to create an electrolyte Gel which is applied to the active surface area of the plate. If the battery casing should become damaged the electrolyte will not leak out.

What is SPIRAL CELL?

A very distinctive looking battery, and very similar internally to the AGM battery. But instead of the plates being flat they are wound together very tightly into a cylindrical shape, which gives the battery its name Spiral cell. If the battery casing should become damaged the electrolyte will not leak out.

What is $LiFePo_4$?

The lithium iron phosphate (LiFePO4) battery is a totally different technology from all the lead acid types mentioned previously. Due to its low weight and high-power output, it has become very popular in weight critical environments such as Powersports etc. The replacement cost of the unit at present makes its application restricted.

What is NORMAL mode?

The charger will have a Bulk charge rate of 14.4v which is suitable for charging most lead acid type batteries.

What is SUPPLY mode?

This mode is used in modern workshops to support the battery during software reprogramming. Assisting the battery in keeping a stable voltage and ensuring the software download is not affected by low voltage.

What is BOOST mode?

This mode is used on the much larger professional units and is designed to eliminate acid stratification on larger batteries or battery banks. The voltage is increased anything up to 15.8V in 12V mode or 31.6V in 24V mode, and a timer is user selectable between 8 hrs and 24hrs.

What is RECOND mode?

A mode that is used for reviving deeply discharged batteries, breaking down sulphation and reversing acid stratification. It requires a manual selection from the user and will add an extra step to the charge cycle, it uses a voltage of up to 15.8v to deliberately gas the battery in a controlled way in order to re-mix the acid to get an optimized acid balance (acid weight). This mode is also recommended for Ca/Ca batteries which require the higher voltage when charging.

What is AGM / SNOWFLAKE mode?

Because the AGM battery has a low internal resistance some can accept a higher charge voltage, in this mode the Bulk charge rate is 14.7v which is the optimum chare rate for the AGM type battery. In cold weather the internal battery chemistry slows considerably, this leads to the battery being reluctant to accept charge at a normal rate. By raising the charge rate to 14.7 (15v on the Polar) the battery accepts charge more readily.

What is CACA mode?

This mode is available on the larger professional units and is specifically for the Calcium Calcium (CACA) battery. It has a bulk charge rate of 14.7v which is higher than the standard flooded voltage of 14.4v, it will automatically add the recond function to the charge cycle.

What is DESULPHATION mode?

Sulphation is the formation of Lead sulphate on the active surface area of the battery plates, this has an insulating effect on the plates and prevents them from accepting charge. Sulphation is the cause of 85% of battery failures under warranty and is caused by a lack of charge - low voltage in the battery. Every CTEK charger starts its charge cycle with a de sulphation phase - designed to break down the sulphates and restore battery performance if it is required.

What is STRATIFICATION?

In a deeply discharged flooded battery or a flooded battery that has not been used for several weeks the acid in the electrolyte begins to sink to the bottom of the battery - since the acid is heavier than water. Because the acid in the electrolyte is no longer evenly distributed across the whole of the active plate area, the performance of the battery is reduced. The top of the plates in the battery with a very low acid content perform poorly

when compared to the lower part of the plates where the acid concentration is higher. This leads to several problems - Increased corrosion, Increased erosion, sulphation and a poorly performing battery are just a few.

What is BULK?

A stage of intelligent charging where the battery is taken to approx. 80% of full charge. This is achieved with constant current and a rising voltage. The cut off voltage can vary dependant on the type of battery being charged e.g., Flooded battery has a bulk charge voltage of 14.4v whereas the AGM has a cut off voltage of 14.7v. Note possible temperature compensation that makes the voltage vary depending on ambient temperature.

What is ABSORPTION?

The control of gassing within the battery is very important when charging. At the end of the Bulk stage the battery is beginning to gas freely, if we were to continue with constant current and voltage the battery would gas excessively. In Absorption the voltage is now constant, and the current is reduced to take the battery from 80% to 100% with minimal gassing, the CTEK charger is constantly responding to the amount of current the battery is taking and reducing accordingly.

What is FLOAT?

A short-term maintenance stage designed to keep the battery at 100% charge. CTEK will keep the battery in Float for a maximum of 10 days before changing automatically to pulse.

What is PULSE?

Pulse is a long-term maintenance stage, the charging ceases and the open circuit voltage of the battery is monitored by the charger, when the OCV drops by 5 % the charger will switch back on take the battery to 100% and then go back to standby. This "pulse"- cycle is repeated until charging is interrupted.

What does SoC mean?

SoC means State of Charge and gives the state of charge as a percentage. A battery that has 11.65V (or less) is flat and has SoC 0. A battery with 12.76V (or more) is fully charged and has SoC 100.

There is a buzzing sound in my charger?

The charger can emit a buzzing sound in light load charge situation as in the last phase of step 4 (absorption step) or in float step in the charge program. (Float = first maintenance mode, first green light)
This depends on small variations in charge current that causes the transformer inside the charger electronics to make the buzz sound.

This situation will not cause any harm to the battery or the battery charger.
By placing the charger on a non-sound conducting surface the sound can be minimized somewhat.

Can I charge while I use a motor heater?

Yes, you can.

Can I use the battery while I am charging?

Yes, you can.

Can you charge a lead acid battery with the Lithium mode?

No - CTEK recommend the correct charge mode be used at all times.

Can I charge a dead battery with a CTEK charger?

Most CTEK charger require a minimum battery voltage of 2V. If the battery voltage is below 2V you will need one of our chargers with a" Supply mode" to accomplish this.

My charger never reaches pulse maintenance – why?

The charger stays in float maintenance mode for 10 days, keeping the battery topped off using the minimum level of current. After 10 days, the program moves on to the last stage – pulse maintenance – for long term battery maintenance.

Can you connect a CTEK charger directly to the battery or does the negative connection need to go to the vehicle chassis?

When using a CTEK charger, you can use both connections. The charger should be connected according to the vehicle user manual. If there are no other recommendations in the vehicle manual, the negative or black connector should be safely connected to the chassis.
If your vehicle has a Battery Management System you cannot connect to the negative battery pole, the connection must be made to the earth or ground point. If you are in any doubt, then connect to the nearest earth or ground point. Eyelets must be connected to the battery in the same way Red to positive terminal Black to earth or ground point on the chassis.
If the battery is disconnected or removed from the vehicle the connections can then be made directly to the battery terminals.

What charger is suitable for my vehicle?

Choosing the right charger can be determined by the Ah size of your battery. The more amps the charger can deliver, the larger the battery capacity it will charge. The website will give ideal battery size range for each charger in their technical specification or use our Charger Selection Chart for recommendations.

Can I leave the charger connected to the battery for a long time?

Yes. CTEK chargers are designed to fully charge a battery and then automatically switch over to long term maintenance. Before leaving the charger unattended for a long time, ensure that the battery is fully charged, as indicated by the green LED.

CTEK

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