

STARTIUM RANGE



A total solution for working with modern batteries



2014

STARTIUM



The perpetual development of technology in vehicles requires the use of a versatile high-tech tool whenever working with batteries in order to assure the battery's integrity and critically to protect sensitive and expensive on-board electronics.

- ▶ Fast loading, automatic and smart (curve IWUoU).
- ▶ Charge to 100 % all lead based batteries.
- ▶ Ultra-powerful automatic starter.
- ▶ Complete protection of on-board electronics.

1999

GYSTART



Unique already on the market and with leading technology during this period of time :

- ▶ Automatic loading (curve W2).
- ▶ Electronic starter with remote control switch.
- ▶ Protection again short-circuit and reversal polarity.
- ▶ Protection of on-board electronics.

1980

PROSTART



Traditional devices requiring mandatory loading surveillance:

- ▶ Traditional loading (curve W).
- ▶ Manual starter.
- ▶ Protection against short-circuit and reversal polarity.
- ▶ Devices without technology

▶ GYSTART RANGE

15 years ago GYS introduced a revolutionary range of products called **GYSTART**.

They were the first charger-starters, in the world, to offer automatic safe charging of the battery and complete protection of the on-board electronics.

▶ BATIUM RANGE

The market has changed and new batteries appear with their specific charging problems. GYS has developed chargers to deliver an efficient and safe charge also able to maintain a battery extending its life while preserving vehicle electronics.

Then the **BATIUM range arrived** and became the reference across Europe and beyond for charging batteries.

▶ GYSFLASH RANGE

Today, vehicle diagnostics is very important in workshops and is the basis for a successful repair. **GYFLASH** have been especially developed to cover a reliable power supply to the vehicle whilst diagnostics or updating software is conducted.

	GYSTART	BATIUM	STARTIUM
Charging	★★	★★★★	★★★★★
Charging quality	★★	★★★★	★★★★★
Starting	★★★★		★★★★★
Protecting	★★	★★★★	★★★★★

- + Timer
- + Test alternateur
- + Puissance 100%
- + Affichage num.
- + ...



GYS solution :

GYSTART + BATIUM = STARTIUM

STARTIUM chargers-starters are a mix with the start power of GYSTART and the charging quality of BATIUM and with even more functionality.

They integrate the experience of a range which has been very successful in the past. They deliver all of the benefits whether starting or charging, capable even of regenerated sulphated batteries and charging them quickly for a successful start.

The STARTIUM range can provide even more:

- Timer function
- Alternator test
- Sulphated battery detection
- Universal charging mode

STARTIUM + GYSFLASH = DIAG-STARTIUM

Capitalising on the evolution of GYS know-how, these new charger-starters are able to provide a stable power supply regulating the voltage and supplying to 60A on demand, all the functions of the last generation of inverter chargers.

Adapted for cars and trucks, precise voltage level can be adjusted to meet vehicle manufacturer specifications and operate with a 100% duty cycle.

Why choose the new STARTIUM range ?

► Start with no limit

The philosophy of the 'start' has changed. With a GYSTART, you can start everything. The aim here is to provide the energy missing from the battery to effect the start. Then, the alternator takes over the charge.

If the GYSTART is more powerful, then it is less necessary to carry out a pre-charge.

According to its particular technology, batteries require charging with a certain charging curve. With fast charge curves, STARTIUM's is able to regenerate batteries, even those suffering from sulphation. Thus the pre-charge time is cut reducing the necessary starting power required as well.

A STARTIUM, safe starting and which is good for the battery.

200 Ah	✓	✓	✓	✓	✓
150 Ah	✓	✓	✓	✓	✓
100 Ah	✓	✓	✓	✓	✓
50 Ah	✓	✓	✓	✓	✓
	12V 24V	12V 24V	12V 24V	12V	6V 12V 24V

4 PROTECTIONS

- ✓ overload
- ✓ polarity reversal
- ✓ short-circuit
- ✓ end of charge

With its excellent pre-charge, products from the STARTIUM range can start all types of vehicles from small cars to trucks.

✓ Start with fast pre-charge

✓ Possible start (Pre-charge time longer)



i ALL THE STARTIUM RANGE is already compatible with «Start / Stop» batteries (EFB/AGM).

From now until 2017, in Europe, almost 90 % of new cars will be equipped with a Start/Stop system. This system reduce fuel consumption by stopping the engine while the car is stopped thus places high demands on the battery.

Traditional lead-batteries were designed for a different role, starting once and then being recharged by the alternator. Hence, it is necessary to use specific batteries to deliver repeated starting power and to accept more recharging cycles.



i According to the battery voltage, the start can be done with or without pre-charge.

	Direct start	Fast pre-charge
Discharged battery	✓	-
Deeply discharged battery	-	✓

i **Booster, specific needs.**

The booster starts your vehicle with its own internal battery. It provides a high amount of energy over a short period of time.



- ➕ Easy to use, portable
- ➕ Ideal for emergency, self contained
- ➕ On-board electronics protected
- ➖ Dedicated device, no charge
- ➖ Limited attempts

More robust, safer and more efficient

These new chargers-starters **STARTIUM 330E**, **480E** and **680E** have been made for intensive use and meet expectations of workshops, farmers, transport operators providing robustness, reliability and safety.

Smart Auto Start

The remote control is now out-of-date as the Startium automatically activates when required, provides current only if the user activates vehicle's ignition. If the battery is damaged or sulphated, no start is possible vital to protect the vehicle. The Startium with start automatically a battery above 1V.

Timer

The «Timer» function enables to manually set a charging time adjustable from 10 to 120 minutes. The charge stops automatically after the set-up time.

Charge to 100%

The STARTIUM range provides a constant voltage to insure a complete and safe charge for every lead based battery. A standard old generation automatic charger charges batteries, in general, to 80% which is not enough to regenerate the battery.

Intelligent

Controlled by microprocessor, these devices permanently analyse the health of the battery and regulate the charge according to the battery's needs. They automatically compensate for power supply fluctuations to protect sensitive electronics equipment on the vehicle.

Automatic charge

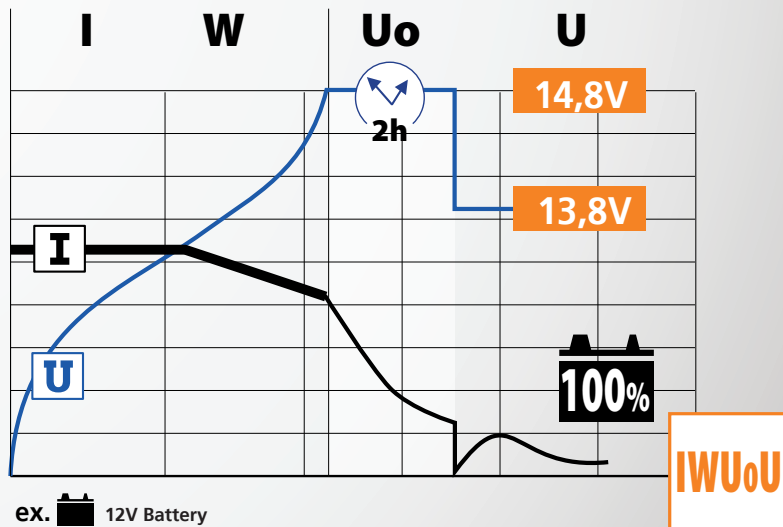
The product can stay connected safely with no supervision. The automatic restart, in case of power failure, can be activated to carry on with the charge.

Alternator test

More than a charger-starter, these devices enable to determinate the condition and performance of the vehicle charge system. They measure the alternator output voltage.



Quality charge with no compromise

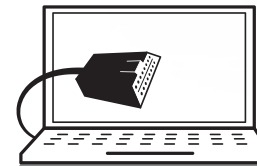


Diag-Startium, partner for automotive workshops.

With its large digital control panel, DIAG-STARTIUM 60-12 and 60-24 are the perfect tools for automotive workshops. Indeed, in addition to all the functions within STARTIUM the chargers-starters DIAG-STARTIUM also provide powerful battery support ensuring a constant voltage during diagnostics which protect the vehicle electronics and guarantee a fully-charged battery when the vehicle leaves the workshop.

Stabilized power supply

During diagnostics and internal vehicle software updates, DIAG-STARTIUM 60-12 and 60-24 ensure the vehicle power supply up to 60A. Voltage can be adjusted (DIAG+) (on 12V systems only) to meet manufacturer specifications.



Connect without risk

Parts such as airbags, engine management modules etc are very sensitive and must be protected against peak voltage when charging the battery.

Historically, the battery needed to be disconnected from the on-board circuitry. STARTIUM's and DIAG STARTIUM's enable the charging of the battery directly on the vehicle with no risk of damaging the electronics.

100% Duty cycle

On complex systems, 60A could be necessary for more than 90 minutes for a diagnosis. DIAG-STARTIUM's provide 60A constantly without activating the thermal protection. of the product. This enables long duration programming or re-flashing to be carried out without risk of system failure.

Digital display

In automotive workshops, displaying voltage values has to be accurate and fast. The STARTIUM range displays the voltage on a digital display, more accurate than an analog dial.



- ✓ **Accuracy**
- ✓ **Simplicity**
- ✓ **Efficiency**



60-12, The charger-starter with total safety

The majority of recent cars in workshops are equipped with 12V batteries. This is the reason why GYS has developed the DIAG-STARTIUM 60-12, a charger-starter only for 12V batteries. The technician can connect his battery without being concerned in the knowledge that safety is assured.

Designed for cars

Compatible with all 12V systems

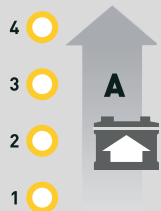
Total electronic safety



Charging in 3 steps

1

Choose the charging rate respecting the capacity of the battery (Ah).



2

Choose battery type.

When the type of battery is unknown, select universal.

- Liquid
- Gel
- Start Stop / AGM
- Universal

3

To switch on the charge, press briefly the power switch



the automatic restart of the device.

i Loading will start only if the battery voltage is above or equal to 1V.



Batteries which have started a sulphation process will not charge with a normal charge. SOS Recovery will start automatically a specific regeneration charge cycle.

Simplified keyboard , ergonomic product



Startium 680E control panel

Easy start «Press & Go»



Once you have connected the starter on the battery, START ENGINE has to be pressed (or select START ENGINE on STARTIUM's), to engage the pre-charge.

The function «START ENGINE» detects sulphated batteries and refuses the start in this case. Then the device launches an automatic desulphation before every start in order to protect on-board electronics.



Simply turn the ignition key to activate the starter function.

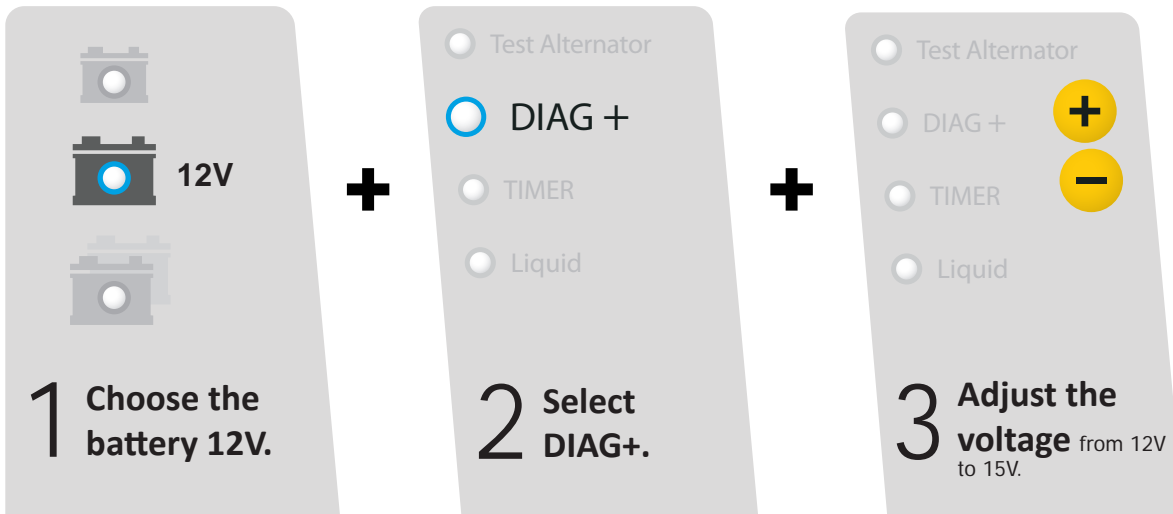
DIAG-STARTIUM, diagnostic expert



DIAG-Startium 60-24 control panel

DIAG+ mode (only 12V)

This function provides a stable and robust power supply to compensate the current used during 'key on engine off' diagnostics (up to 60A), to allow testing of high consumption consumers : engine ventilation, electric window motors, electric suspension, etc.. providing a stabilised voltage.



Power supply

i In workshops, diagnostic operations and software updates require a stable and robust power supply.

Diagnostic work requires a substantial current supply at a stable voltage. If only the battery is providing the power the voltage will quickly drop.

If the battery falls down below 12V, then the process stops causing serious problems:

- The battery needs to be charged and the test process needs restarting.
- More seriously, there is a risk of components breakdown which can lead to extra costs (electronic parts and labour) to be paid by the repairer.

i Power consumption during a diagnostic



Sleep
5A



Windscreen-wiper
11A



Lights
19A



Defrosting
15A



Ventilation
36A



100% compatible for lead battery

Unlike other chargers-starters on the market, the STARTIUM range are designed to work with all battery types now found on modern vehicles. It is not necessary to select a charger according to the technology type of the battery. We guarantee effective and safe charging for all types of battery.

✓ Liquid

Liquid batteries are traditional technology but still in common use. They accept deep discharges subject to maintaining a level of electrolyte.

✓ AGM

These batteries are an evolution of the lead-battery. An AGM battery uses fibreglass to maintain the electrolyte in close proximity to the plates.

✓ GEL

For this type of battery, the electrolyte is held in the form of gel. Gel batteries have, in general, a longer life and better cycle capacity than AGM batteries.

✓ VRLA (Start & Stop)

VRLA battery is a rechargeable battery equipped with a safety valve which enables the internal pressure to be released in case of accidental overload. These batteries do not require maintenance.

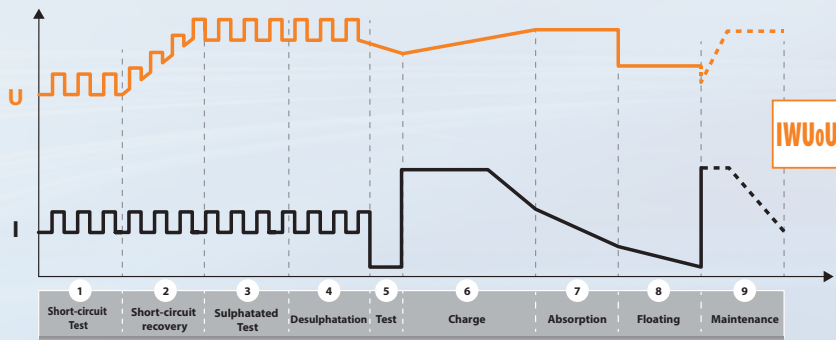
✓ Calcium

These batteries have the same origin as liquid batteries but positive and negatives plates have been replaced by an alloy of lead and calcium. The waste is around 80% less than a normal battery.

Technical tables

Image	50 / 60 Hz	I	Battery	W	CHARGE					START			Dimensions	Weight	
					Capacity	Charging Curve	Reg	Efficace / RMS	Moyen / Average (EN 60335)	Boost	1/VC	0/VC			AUTO START
Startium 330E (ref: 026469)	230 V	16A	12 V	800 W	20>370 Ah	IWUoU	4	40A	25A	-	165A	270A	•	43 x 26 x 26 cm	15 kg
			24 V		20>300 Ah				20A		130A	210A			
Startium 480E (ref: 026483)	230 V	16A	12 V	1700W	20>600 Ah	IWUoU	4	65A	30A	40A	280A	390A	•	31 x 48 x 80 cm	26 kg
			24 V		20>450 Ah				15A	30A	210A	290A			
Startium 680E (ref: 026490)	230 V	16A	12 V	2200 W	20>675 Ah	IWUoU	4	75A	30A	45A	380A	550A	•	31 x 48 x 80 cm	30 kg
			24 V		20>525 Ah				25A	35A	270A	380A			

Image	50 / 60 Hz	I	Battery	W	CHARGE					START			Dimensions	Weight	
					Capacity	Charging Curve	Reg	Efficace / RMS	Moyen / Average (EN 60335)	Boost	1/VC	0/VC			AUTO START
Diag-Startium 60-12 (ref: 026513)	230 V	16A	12 V	2700 W	20>900 Ah	IWUoU	4	95A	60A	-	310A	440A	•	48 x 35 x 90 cm	34 kg
Diag-Startium 60-24 (ref: 026520)	230 V	16A	6 V	2700 W	20>600 Ah	IWUoU	4	65A	40A	-	-	-	•	48 x 35 x 90 cm	34 kg
			12 V		20>900 Ah			95A	60A		300A	400A			
			24 V		20>600 Ah			65A	40A		280A	410A			



► AUTOMATIC CHARGE

- 1 - Test to identify short circuited components within the battery
- 2 - Battery recovery following a long deep discharge
- 3 - Test of sulphated battery
- 4 - Desulphatation/battery recovery
- 5 - Battery recovery check-up
- 6 - Battery charge to 80%
- 7 - Battery charge to 100%
- 8 - Maintenance charge
- 9 - Restart a new charge cycle to maintain performance = maintenance