

  
**ExtraEnergy.org**  
**Bühnenprogramm**  
 23. Juli 2011

**10:00 Uhr** Daten mit Maß: Einführung in die Methodik und das Zielgruppenmodell des ExtraEnergy Tests  
 (Moderation: Wolfgang Kerschbaum, Leiter Marketing und Verkauf, Gruppe der Schweizerische Eidgenossenschaft)

**11:30 Uhr** Digitalisierung: Was wird im digitalen Zeitalter aus dem Fahrrad?  
 (Moderation: Stefan Kerschbaum, Leiter Marketing und Verkauf, Gruppe der Schweizerische Eidgenossenschaft)

**12:30 Uhr** Ist Tourismus per Pedale ein langfristiger Trend?  
 (Moderation: per pedale - ein Weg mehr zu einem neuen Modell von / by Andreas Berger (Koch))

**14:45 Uhr** Energybox: Standardisierung bereitet den Weg für nachhaltige und liberalisierte LTX Industrie  
 (Moderation: Standardisierungsgremium für die LTX Industrie und Liberalisierung der LTX Industrie von / by Klaus Neupert)

**15:30 Uhr** Das als Fahrrad mit 2500-Watt-Motor – LTX – die Chance auf eine neue Ära der Antriebstechnik  
 (Moderation: per pedale - ein Weg mehr zu einem neuen Modell von / by Klaus Neupert)

**16:45 Uhr** Die Antriebstechnik  
 (Moderation: per pedale - ein Weg mehr zu einem neuen Modell von / by Klaus Neupert)

**15:55 Uhr** Mobile Antriebstechnik  
 (Moderation: per pedale - ein Weg mehr zu einem neuen Modell von / by Klaus Neupert)

**16:35 Uhr** Motor: Antriebstechnik  
 (Moderation: per pedale - ein Weg mehr zu einem neuen Modell von / by Klaus Neupert)

**17:25 Uhr** Motor: Antriebstechnik  
 (Moderation: per pedale - ein Weg mehr zu einem neuen Modell von / by Klaus Neupert)

**18:00 Uhr** Motor: Antriebstechnik  
 (Moderation: per pedale - ein Weg mehr zu einem neuen Modell von / by Klaus Neupert)

**19:30 Uhr** Motor: Antriebstechnik  
 (Moderation: per pedale - ein Weg mehr zu einem neuen Modell von / by Klaus Neupert)

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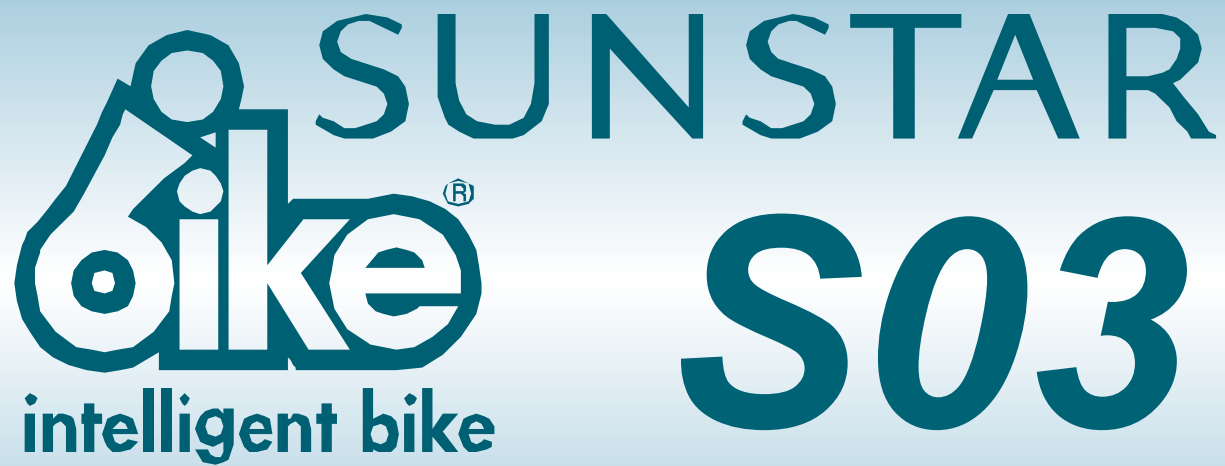
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# S03 Motor Unit Kit

① S03 Motor Unit 250W

② S03 Switch Control

③ Li-ion Battery

④ Battery Hanger

⑤ Battery Charger

⑥ Unit Fitting Parts

⑦ Sprocket

⑧ Crank R,L



# Features and benefits of Sunstar SO3 Motor unit

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## **1. Attachable to any bicycles**

The unit is to be mounted with the bottom bracket as the center, which makes it possible to attach to any kind of bicycles like a part in short time (10 minutes or so).

## **2. Light Weight Unit**

The weight of the unit is only 3.2kg. Increase in weight of the bicycle is minimized so that can easily ride it in the same way as a regular bicycle.

(except the unit, battery 1.1kg/2.5Ah, 1.5kg/5.0Ah + small parts 0.7kg are required)

## **3. Compact but high power lithium-ion battery**

High performance Lithium-ion battery which produces large electric power even at low temperature is loaded, which enables powerful assist in a cold morning in winter. It selects one among 2 types of batteries based on the bike type.

# Key Parts Explanation of S03 Motor Unit

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## ① S03 Motor unit 250W

### 1. EXTRALIGHT CENTRAL MOTOR

3200g of weight and low center of gravity to provide the best handling in any conditions.

### 2. INTEGRATED SENSOR AND DRIVE MECHANISM

Patent registered torque sensor unit integrated with pedal and drive for a smooth feeling.

### 3. ADJUSTABLE TO ANY BICYCLE FRAME

S03 Motor unit is designed to fit standards frames with minimum or no need of modifications.

### 4. ADJUST TO YOUR UNIQUE ASSIST PROGRAM

Assist program can be made by your design.

We adjust the assist program as your request before mass production.

### Specifications:

- Integral construction of Motor and torque sensor
- Axial gap type DC brushless Motor
- Motor Output 250W/24V ( Maximum 330W )



# Key Parts Explanation of SO3 Motor Unit

## ② S03 Switch Control

### 1. THREE DIFFERNT TYPE ASSIST MODE

Turbo, Normal, ECO.

### 2. LED INDICATION

Mode, Battery life are indicated by LED.

### 3. AUTO SWITCH OFF

In case that sensor do not feel the power while 5 minutes, the switch is cut automatically.

### 4. INDICATION IS SUITABLE FOR PROGRAM

Prepare the indication sheet which is suitable for the assistance program



### Indication contents:

- Battery remaining quantity ( 4 Level )
- States of assistance mode ( 3 mode )

Mode = Turbo, Norrr



Mode Change of up/down



Mode Change of Rotary



Mode Change of Rotary with light



# Key Parts Explanation of SO3 Motor Unit

## ③ Li-ion Battery (5Ahr) + ④ Battery Hanger

### 1. HIGH PERFORMANCE BATTERY

High performance Lithium-ion battery which produces large electric power even at low temperature is loaded, which enables powerful assist in a cold morning in winter.

### 2. ADJUSTABLE TO ANY BICYCLE FRAME

Battery hanger is designed to fit standards frames with minimum or no need of modifications.

If your bicycle frame has the fitting boss part for bottle folder, this hanger can be fixed.

### Specifications:

- Li-ion Battery
- 26.6V / 5Ahr (133Whr)
- Weight 1500g
- Charging Cycles 500 times
- Charging time (empty to full) 3.5hr
- For use condition 0 to 45deg



Battery 5Ahr



Battery Hanger

# Key Parts Explanation of SO3 Motor Unit

## ⑤ Battery Charger

### Specifications:

- Power supply AC100V-240V 50/60Hz
- Power consumption 64W
- Output DC 29V / 1.75A
- Weight 332g

(Power cable not included)



## ⑥ Unit fitting parts

- S03 motor unit is fixed by these parts.
- These parts can not stop rotation of motor unit. Therefore need the rotation stopper parts.
- Please prepare the rotation stopper parts or weld for bicycle frame.





# Key Parts Explanation of SO3 Motor Unit

## ⑦ Sprocket

- We can supply 41T or 48T front sprocket
- Please choose between 41T and 48T.
- We recommend to 41T for beyond 24 inch and 48T for less 24inch
- The dimension of sprocket fitting position for



41T



48T

## ⑧ Crank R,L

- 165mm alloy crank arms



# Extra Parts of SO3 Motor Unit

## ⑨ Li-ion Battery 2.5Ahr

We prepare two type shape of battery case and hanger.  
Please select battery size (5Ahr or 2.5Ahr) and battery case

### Specifications:

- Li-ion Battery
- 25.0V / 2.5Ahr (64.5Whr)
- Weight 1100g
- Charging Cycles 500 times



## ⑩ Rotation stopper

- This parts include in the sample unit kit.  
Normally need to prepare it yourself.





# Sunstar SO3 Motor unit Specification

With SO3 motor unit functioning	Assistance with pedal force	Adjustable the assist program with your request of each bicycle model between 0km/hr up to 25km/hr or so.	
Motor unit	Drive method	Front Sprocket Direct Drive	
	Assist force control method	Control proportional to the pedal force	
	Type of motor	Axial gape brushless motor	
	Rated output	250W / 24V (Maximum 330W )	
	Weight	3200g	
Battery	Type	Rechargeable Lithium ion	
	Use range	18V-29V	
	Battery capacity	2.5Ahr (64.5Wh)	5.0Ahr (133Wh)
	Average active voltage	DC 25.0V	26.6V
	Weight	1500g	1100g
	Ambiance temperature for use	0 to 45deg	
	Ambiance temperature for storage	-20 to 20deg	
Battery Charger	Charge method	Switching regulator Method	
	Time for charge ( empty to full)	2.5Ahr : 2hr	5.0Ahr : 3.5hr
	Power supply	AC 100 to 240 V 50/60Hz	
	Output	DC29V 1.75A	
	Weight	333g (Power cable not included)	
	Ambiance temperature for use	0 to 45deg	
	Ambiance temperature for storage	-20 to 20deg	

# Mounting SO3 Motor unit to The Normal bike



Then, installing SO3 motor kits to the bicycle without any modification  
Soon after, e-Bike comes out and enjoying your powerful ride

This is normal bicycle 26Inch  
Total Weight Only 10.5kgs, which  
You can buy at any bicycle dealer





# Installation sample of SO3 Motor (1)

Example: 26inch bicycle



# Installation sample of SO3 Motor (1)-2

Example: 26inch bicycle



# Installation sample of SO3 Motor (2)

## Example: DAHON Boost





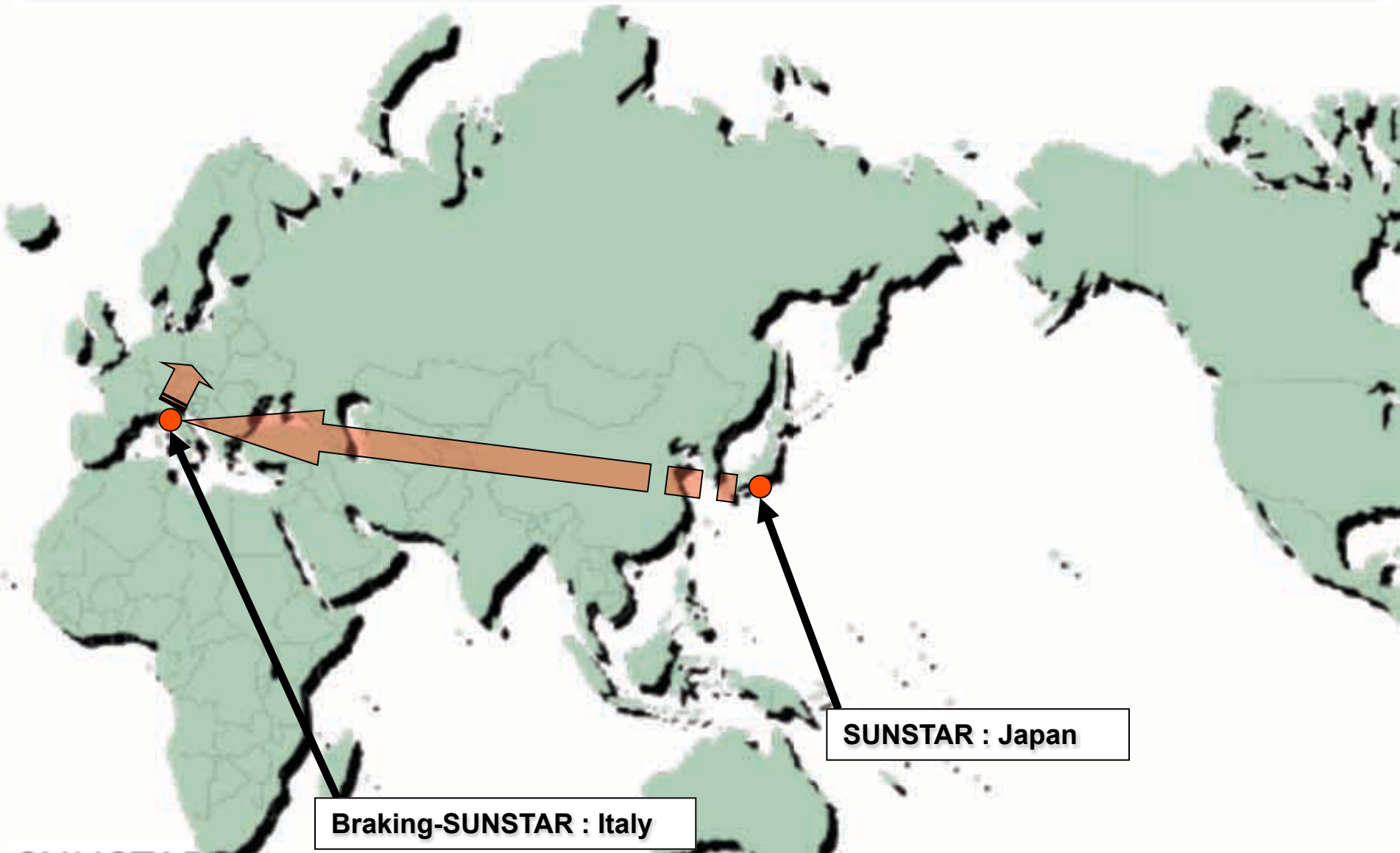
# Many Application with SO3 Motor unit

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- To install your existing bicycle frame
- No additional cost required for development and/or modify of new frame
- Assist program can be changed and modified as your request in different model and design
- Available to use the same battery cabinet for 5.0Ah and 2.5Ah
- All SO3 motor unit, the Lithium Ion battery and Charger comply with EN15194 regulation

# How to purchase of SO3 Motor unit

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SUNSTAR : Japan

Braking-SUNSTAR : Italy

# SUNSTAR S03 cooperation

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## **JAPAN**

### SUNSTAR Engineering Inc

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Duties: i-bike business management, Sales, Manufacturing,  
Purchasing (parts),

Quality control, Development

## **EUROPE**

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