

# 9 DEALER MANUAL FOR SR PA2XX.32.ST.C

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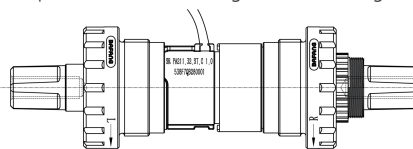
# 9.1 INTRODUCTION OF SENSOR



- Name: Torque and speed sensor
- Model: SR PA261.32.ST.C  
SR PA251.32.ST.C  
SR PA241.32.ST.C  
SR PA231.32.ST.C  
SR PA221.32.ST.C  
SR PA211.32.ST.C

- Scope: It is applicable to the EPAC which has the BB length for 68mm, 73mm, 84mm, 100mm, 110mm, 120mm.
- The material of locking cap is PA Aluminium.
- Identification:

There are the unique identification of the product on the housing, as shown in figure:



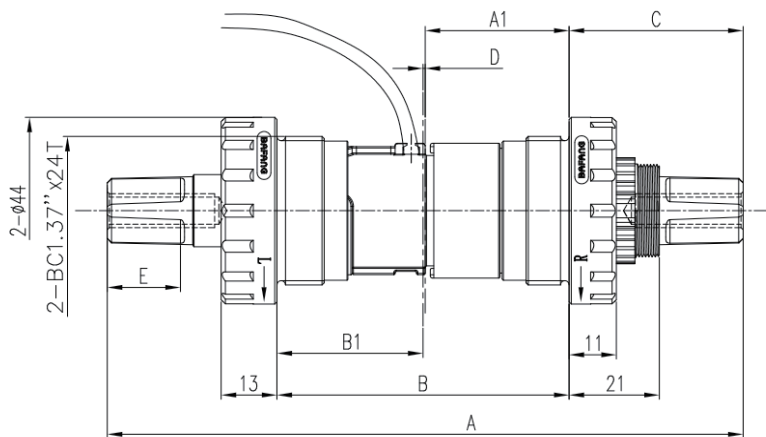
Note: Contents in Label part are important information of this product. Please keep them properly for updating of software or providing after-sales service.

# 9.2 SPECIFICATIONS

Model: SR PA 2XX.32.ST.C

Input voltage (V DC)	5±0.5
Number of speed pulses	32
Measuring range of torque signal (N.m)	0-80
Output voltage of torque signal (V)	0.75-3.2
Accuracy class	deviation(left and right) <3%
Protection grade	IP54
Storage temperature	0 °C ~ 60 °C
Certification	CE , EN15194/14764/14766
Operating environment	-20 °C ~45 °C

## 9.2.1 Outline and geometric size



Model	A	A1	B	B1	C	D	E	X1
SR PA261.32.ST.C	200	100	120	60	40.5	0.5	17	73.5
SR PA251.32.ST.C	187	93.5	110	55	38	0.5	15	68.5
SR PA241.32.ST.C	160	80	84	42	40.5	2.5	17	55.5
SR PA231.32.ST.C	148	74	73	36.5	40.5	3	17	50
SR PA221.32.ST.C	167	83.5	100	50	38	4.5	15	63.5
SR PA211.32.ST.C	148	74	68	34	40.5	0.5	17	47.5

A: Shaft length

A1: Half length of shaft

B: BB length

B1: Half length of BB

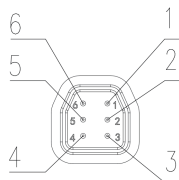
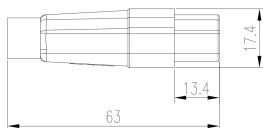
D: Distance between A1 and B1

E: Shaft side length

X1: Chain line

The cable length: L= 300mm

## 9.2.2 Connector definition



Name	Cable Definition		
G6.5.6	1	orange	5V [power +]
	2	white	CAN L
	3	brown	Speed signal 1
	4	green	CAN H
	5	black	GND [power -]
	6	violet	Speed signal 2

## 9.2.3 Cautions

- The pedelec should be stored in a ventilated dry room. Avoid storing the pedelec near strong magnetic objects.
- Should not be used for a long time overload.
- Should avoid wading to use.



Do not contact magnetic materials with products (mainly axes)







It is forbidden to be knocked during product transportation and installation.



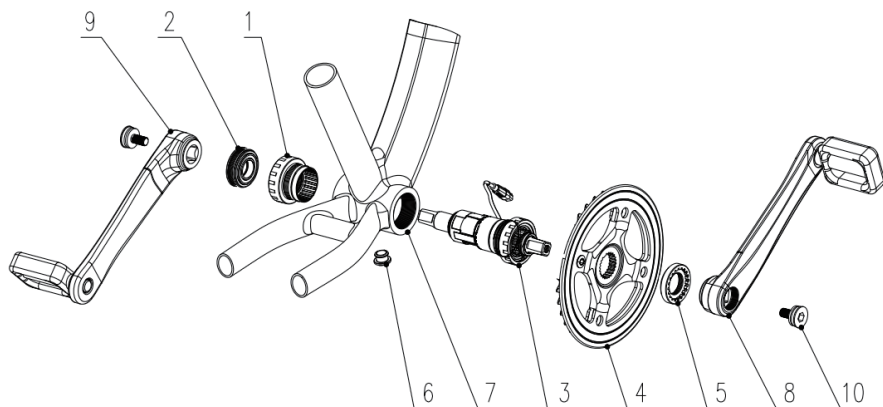
At installation and disassembly it shall be carried out in accordance with the prescribed procedures to prevent break line.

## 9.3 SENSOR INSTALLATION

### 9.3.1 List of Tools to be used

Use of the Tools	Tools
Locking ring (left cap) Bracket locking ring	 Spanner (TL-UN65)
Left and right cap	 Spanner
Left and right crank sets	 Internal hex wrench
Check BB	 GO - NO GO GAUGES

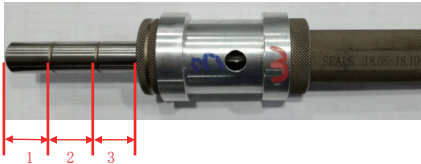
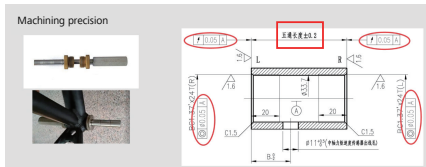
### 9.3.2 Installation Drawing



- |                |                            |                                       |
|----------------|----------------------------|---------------------------------------|
| 1. Left cap    | 2. Locking ring (left cap) | 3. Shaft Sensor (including right cap) |
| 4. Chain wheel | 5. Bracket locking ring    | 6. Rubber grommet                     |
| 8. Right crank | 9. Left crank              | 7. BB                                 |
|                |                            | 10. M8 socket hexagon screw           |

### 9.3.3 Check BB

- ① Check whether there are any iron chips, paint or burrs on the inner thread of the BB. If any, please clean it up.
- ② The spec. of the inner thread of the BB is BC1.37"×24, please must use the tool (GO - NO GO GAUGES) to test.
- ③ Must check the parallelism and concentricity of the BB, the requirement refer to the figure below:
- ④ Check the length of the BB, it shall meet the requirement of the tolerance ( $\pm 0.2\text{mm}$ ).



Section1: 0.15mm

Section2: 0.10mm

Section3: 0.05mm

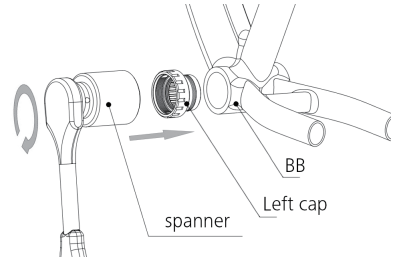
Section4: 0.01mm

The concentricity of BB must meet requirement of section 3 (0.05mm)

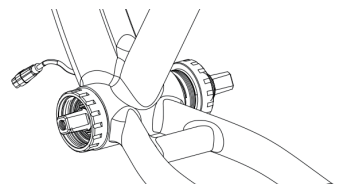
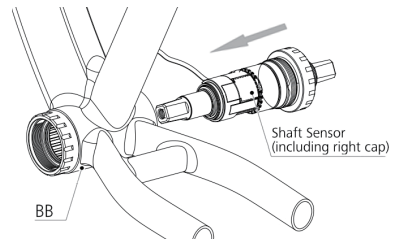
### 9.3.4 Install the Sensor

1. Use spanner to fasten the left cap (non-sprocket side) into the BB. Max. torque is 30N.m.

**NOTE:** If the form and position tolerance of the BB is at 0.1mm - 0.15mm, it is recommended that the wrench torque is controlled at 30 - 40 N.m during the installation of the locking cap.

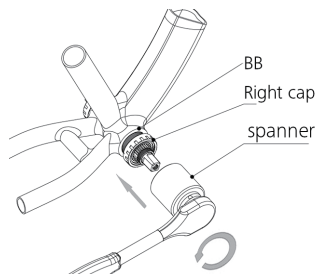


2. Insert first the cable into the BB from sprocket side and let the cable go through the outline hole and push the shaft into the BB, please make sure that the cable is not scratched, push it until the step surface of the sensor is about 2 mm higher than the end face of BB.



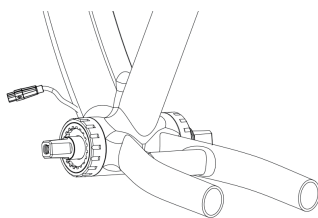
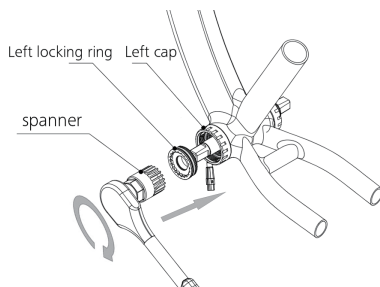
3. Use spanner to fasten the right cap (sprocket side) into the BB, max. torque is 30N.m.

**NOTE:** If the form and position tolerance of the BB is at 0.1mm - 0.15mm, it is recommended that the wrench torque is controlled at 30 - 40 N.m during the installation of the locking cap.

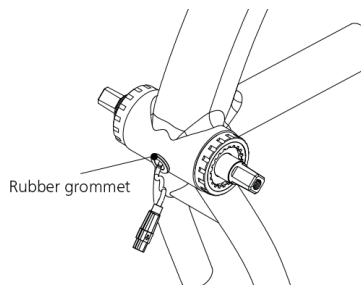
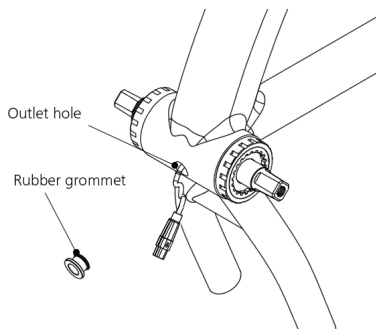


4. Use spanner (TL-UN65) to fasten the left locking ring into the left cap, max. torque is 8N.m, please make sure that the shaft can rotate smoothly, test method: place the crank (with pedal) horizontally, the crank can freely droop.

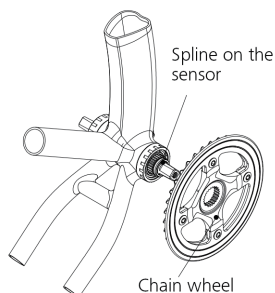
**NOTE:** If the form and position tolerance of the BB is at 0.1mm - 0.15mm, it is recommended that the wrench torque is controlled at 10 - 20 N.m during the installation of the locking cap. Please make sure that the shaft can rotate smoothly.



5. Push the rubber grommet into the outlet hole along the cable of the sensor, as below in figure:

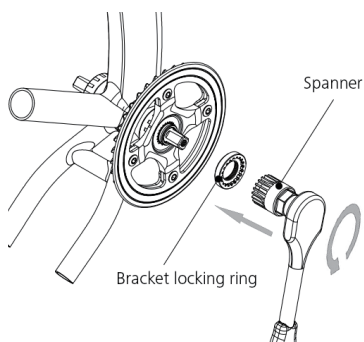


6. Push the chain wheel onto the sensor along the spline.



7. Use spanner to fasten the support locking ring into the external thread of the sensor, max. torque is 35N.m.

**NOTE:** It is recommended that the wrench torque is controlled at 25 - 35 N.m during the installation of the locking ring.



8. On both ends of shaft, use Internal hex wrench to fasten M8x15 screws onto left and right crank sets, max. torque is 35N.m.

**NOTE:** It is recommended that the wrench torque is controlled at 25 - 35 N.m during the installation of the screws.

