

9 DEALER MANUAL

SR PA2XX.32.ST.C



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9.1 INTRODUCTION

- **Appearance**



- **Name and series**

Name: Torque and speed sensor

Series: SR PA2XX.32.ST.C

- **Product 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

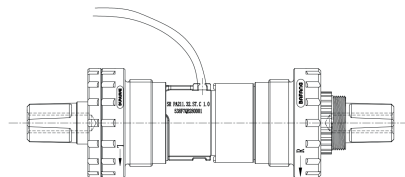
- **Scope of Application**



It is applicable to the EPAC which has the BB length for 68mm, 73mm, 84mm, 100mm, 110mm, 120mm.

- **Identification**

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

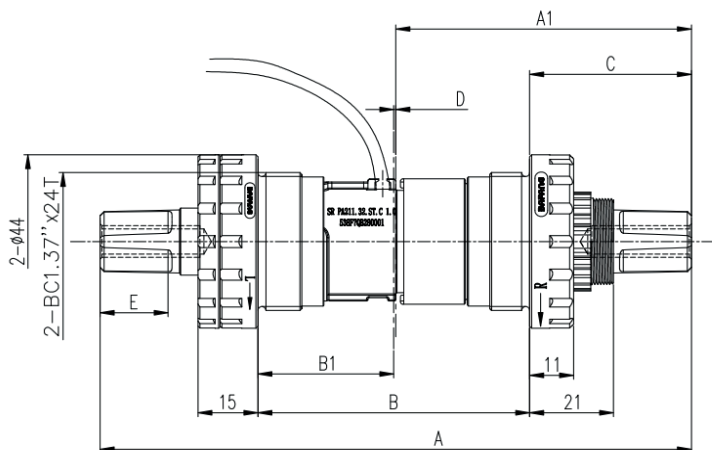


Note: Contents in Label part are important information of this product. Please keep them properly for updating of software or providing after-sales service.

9.2 PERFORMANCE AND CAUTIONS

9.2.1 Main Technical Parameters

9.2.1.1 Structure and Dimensions



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

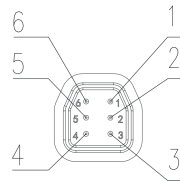
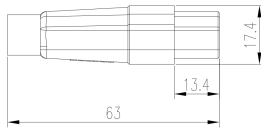
The cable length: L= 250mm

9.2.1.2 Performance

Input voltage (V DC)	5±0.5
Input power (W)	< 0.15
Number of speed pulses	32
Measuring range of torque signal (N.m)	0.5-80
Output voltage of torque signal (V)	0.75-3.2
Slope of output torque signal (mV/ N.m)	35
Accuracy class	deviation(left and right) <1%
Protection grade	IP54
Storage temperature	0 °C ~ 60 °C
Certification	CE , EN15194/14764/14766
Operating environment	-20 °C ~45 °C

Note: Because the performance is constantly updated and improved, please get the latest information before supporting.

9.2.2 Connector definition



Name	Cable Definition		
G6.5.6	1	orange	5V [power +]
	2	white	MCLR [program line 3/speed signal 2 (input)]
	3	brown	Torque signal
	4	green	DAT/speed signal [program line 2/speed signal (output)]
	5	black	GND [power -]
	6	violet	CLK [program line 1/speed signal 1(input)]

9.2.3 Cautions

The function of the product is impaired by the presence of any major caustic gas, any medium that affects the product's electrical insulation properties or any high-intensity magnetic field.

Should be parked in the ventilated dry warehouse, can not be parked in the wet, acid and alkali, but also can not coexist with magnetic items.



It is forbidden to expose to the magnetic objects, especially for the center of the shaft.



It is forbidden to knock on the product when transporting and installing.






To avoid the cable to be broken, the product must be installed and uninstalled according to the specified steps.

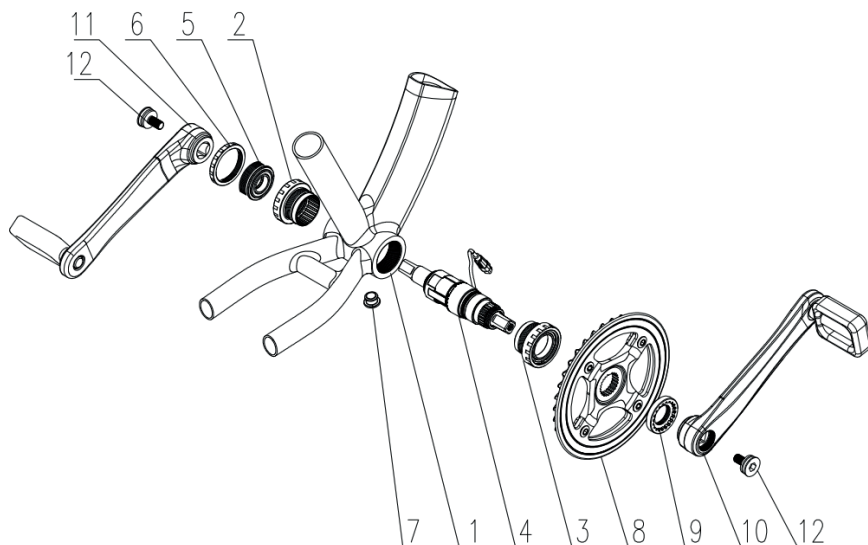
- Product should not be used in the overload status for long time.
- Should avoid to crush into the water or be immersed in the water.

9.3 INSTALLATION

9.3.1 List of Tools to be used

Use of the Tools	Tools
Adjustment ring (on left cap) Bracket locking ring	 Spanner (TL-UN65)
Left and right cap	 Spanner
Check BB	 GO - NO GO GAUGES

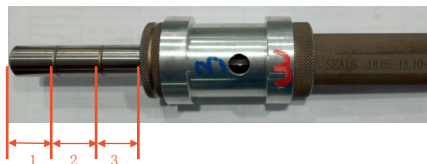
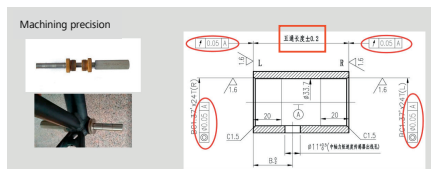
9.3.2 Installation Drawing



- | | | | |
|-------------------------------|-------------------------------|-------------------|-----------------|
| 1. BB | 2. Left cap | 3. Right cap | 4. Shaft sensor |
| 5. Adjustment ring (left cap) | 6. Securing ring for left cap | 7. Rubber grommet | 8. Chain wheel |
| 9. Bracket locking ring | 10. Crank (right) | 11. Crank (left) | |
| 12. M8 inner hex 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

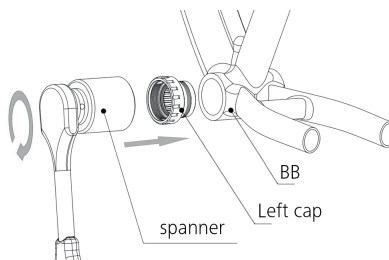
Section3: 0.05mm

Section4: 0.01mm

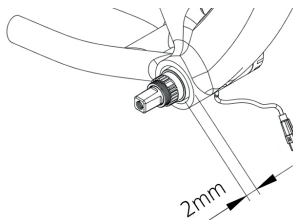
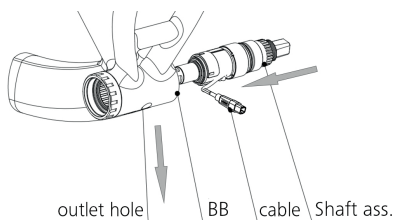
The concentricity of BB must meet requirement of section 3 (0.05mm)

9.3.4 Install the Sensor

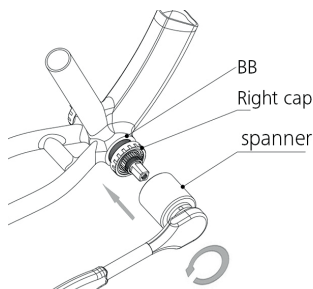
1. Use spanner to fasten the left cap (non-sprocket side) into the BB. Max. torque is 40N.m.



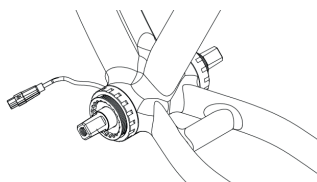
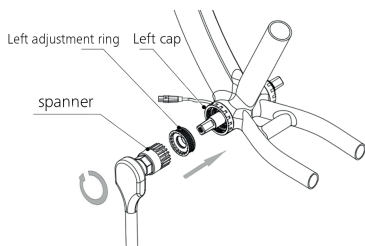
2. Insert first the cable into the BB from sprocket side and let the cable go through the outline hole and push the shaft into the BB, please make sure that the cable is not scratched, push it until the step surface of the sensor is about 2 mm higher than the end face of BB.



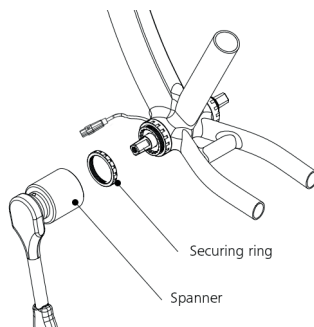
3. Use spanner to fasten the right cap (sprocket side) into the BB, max. torque is 40N.m.



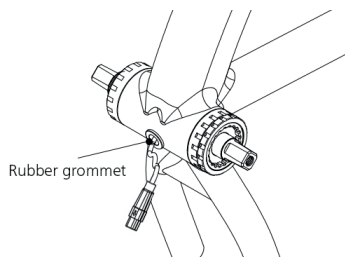
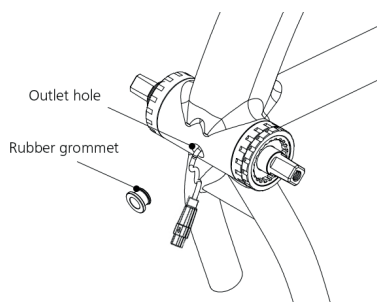
4. Use spanner (TL-UN65) to fasten the left locking ring into the left cap, max. torque is 8N.m, please make sure that the shaft can rotate smoothly.



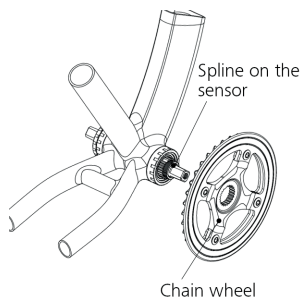
5. Fasten the securing ring for left cap onto adjustment ring (left), max. torque is 40N.m, please make sure that the shaft can rotate smoothly.



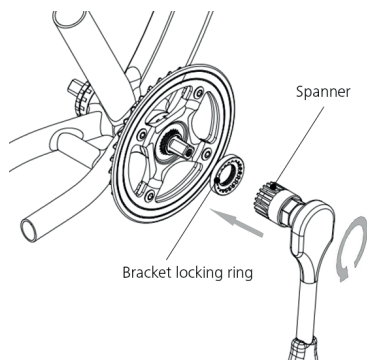
6. Push the rubber grommet into the outlet hole along the cable of the sensor, as below in figure:



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



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



9. On both ends of shaft, use pneumatic tools to fasten M8x15 screws onto left and right crank sets, max. torque is 35N.m.

