

The manual of Blue Arrow BA-TS-3.6/4.3

Declaration: This manual contains general information for Blue Arrow Servos. In order that you can use it correctly and enjoy the new feeling that Blue Arrow BA-TS-3.6/4.3 servo bring to you, please read this manual carefully before the usage, and note that when the servo is modified the warranty in each case goes out.

1. Product's feature

The net weight of Blue Arrow BA-TS-3.6 servo is 3.6g. It can also be rebuilt into a lighter one. With the servo-case bottom removed or using the JST plug, the weight can be reduced to 3.3g. Use the enameled wire to connect, the weight can be reduced by 0.8g. Totally, the weight can be reduced by 1.1g, and finally, you only get a servo only at 2.5g.

The net weight of Blue Arrow BA-TS-4.3 servo is 4.3g. It can also be rebuilt into a lighter one. With the servo-case bottom removed or using the JST plug, the weight can be reduced to 4.0g. Use the enameled wire to connect, the weight can be reduced by 0.8g. Totally, the weight can be reduced by 1.1g, and finally, you only get a servo only at 3.2g.

2. Torque

The torque of BA-TS-3.6 servo is 0.3kg.cm/4.8V and 0.4kg.cm/6V; the torque of BA-TS-4.3 servo is 0.7kg.cm/4.8V and 0.8kg.cm/6V. The torque of these two types of servos are set based on considering their strength and durable, they are the best conclusion following the scientific rule of precision and sensitivity. (these two types of servos are used on the airplanes ranged from 50g to 400g)

3. The data of impulse

BA-TS-3.6/4.3 servo needs a square-wave impulse with amplitude of 3-5 V. The length of the impulse amounts from 1.5 ms to 1.9 ms, and the frequency amounts to 50 cycles per second (20 ms).

4. Voltage range

BA-TS-3.6/4.3 servo can be operated exclusively with a voltage of 4.8 V~6V! The torque will be changed according the different voltage. We point expressly thereupon that 4 or 5 cells of NiHM or NiCd accumulator for this servo is intended. The current that provided by the BEC of speed controller must be above 1A, it can guarantee that 3pcs servo can work properly. If more servos are used, you should choose a kind of speed controller that has more powerful current.

5. The rotate speed

BA-TS-3.6/4.3 servo's speed can reach 0.12sec/60 with no load.

6. The meaning of the colors at the servo cable

The connector of the servo that compatible with FUTABA/HITEC is black for the negative pole and red for the positive terminal. The third wire is the impulse. The connector of the servo that compatible with JR/SANWA is brown for black for the negative pole and orange for the positive terminal and the yellow one is the impulse. There are two kinds of borehole patterns for JST connector, please check the receiver you use carefully, and connect the servo and receiver after

you are sure of it.

7. Working direction of the Servo

All Blue Arrow Servos turn in the clockwise direction according to the input pulse from weak to strong.

8. Which servo for which application purpose?

The most commonly asked question is: "which servo should I choose for a targeted application...?" We try to give you some notes to this topic.

1. Servos are designed either for regulating speed or on adjusting force. In many cases Blue Arrow first develops the servo and offers it then its speed and a power version.
2. If you are not sure of the sufficiency of the torque, you'd better use a servo with somewhat higher torque - thus you are confident.
3. If you have doubts, please check with your model port colleagues that what is the similarity of using Servos and compare the data of the Servos.
4. On our Website www.ltair.com, we give you some rough information on some present-considered questions for every Servo. You must pay much attention to it.. You can also send e-mails to bluearrow@ltair.com, our engineers will give your reply in time.
5. Micro and mini Servos of Blue Arrow have enormous adjusting forces; however, high-powered flight models are mostly overtaxed. The heavy rudders, the vibrations and impacts on the transmission are enormous, so that the transmissions of the Micro and mini Servos would be completely overloaded.
6. We don't believe that the smaller, the better, the micro and high quality servos should be used on the R/C plane and R/C equipment that require high precision and suitable weight.
7. The application of BA-TS-3.6/4.3 servo: Micro planes, Hand launch gliders, Small electrics helicopters ect.
8. If you have a model, which needs an impact on the servo transmission (F3B, F3J, F5B, powered flight models, RC Cars), we recommend exclusively the use of Servos with metal transmissions.

9. The exchange of the accessories:

Blue Arrow offers accessories for replacement. You should put the new gear wheels on a piece of clean cloth for use. Please remove the horn from servo and carefully take off the label and the heat membrane. Please don't damage the heat membrane because it will be used again. Then unscrew the screws of the servo casing, take the upper servo casing off carefully. If an axle or gear wheels in the upper casing remained, carefully install it in the servo again! Now, please remove the individual gear wheels and put them on a file accurately in this order. It shows you the correct order of the installation of the new gear wheels! Clean servo casing bowls of the old fat and remove fragments of the old gear wheels if necessary. Put some fat on the new gear wheels and install them in the servo. The upper servo casing should be locked again. Importantly, the upper servo casing must be completely landed!

Please take it easy even though you can't finish the replacement at once, as it's a task that needs great patience. You can have a try again lest should damage the servo completely.

10. External current supply (BEC current):

Many servos possess a BEC current supply. The BEC used here is not for the high speed or

digital Servos. In order to be able to operate such Servos at these current, the link of the accumulator must be made by a separate v-cable.

11. The correct current recipient in model:

The modern high speed and digital Servos supply enormous adjusting forces and also results in high power inputs. The receiver can work well for the Servo only with the current, which gets from its own accumulator and switch cable. Especially, models with 4 or more such Servos, it can come to a substantial current peak. Make sure that you always use a generously dimensioned, high-quality switch cable and an appropriate accumulator! The average working current for BA-TA-3.6/4.3 is 100mA, and it can bear as high as 300mA current, the static state current is only 1mA.

12. Problem solution:

Here are just some solutions of the problems occur under the situation that used correctly. The solution is not listed here that the servo is damaged by improper use and installation

1. The label is out of place: the temperature can cause label on the servo out of place, it doesn't affect the use of the servo, and you can stick the label on the servo.

2. The heat membrane fall off: we believe that the case of the servo is tight enough to work; we just use it to reinforce the fixture, you can also not use it.

3. The servo slides: please check if the gears have been damaged, if necessary please exchange.

4. The servo trembles: please open the servo and check the lever and gears, make sure they are straight, and add some fat on them.

5. The servo blocks: try to take off the transmission and assemble it again, the gear of umbrella form on the transmission should be put in the front place and make sure it works in the inner gears of the servo when you insert the transmission, then try to turn the horn gently and close the servo if there is no problem.

6. If the transmission makes scratching/clicking noise, please open the servo and exchange the transmission.

7. If the problems still exist or you can't solve it yourself, please return the servo together with the label to the distributor where you bought from, the distributors will in charge to return the servo to us for maintain or replacement. You can also return it back to us for repair or replacement directly if your pay the postage. We charge free for this work. But please forgive that we don't in charge to repair or replace the servos that with different brand or shabby brand.

Thank you very much for your selection of this surpassing brilliancy micro servo, it's occurrence and outstanding performance would bring you endless fun for flying, please enjoy it!