

The BIC Round Stic Xtra Life Ballpoint Pen

A Technical Description



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1 General description of the BIC Round Stic Xtra Life Ballpoint Pen

The BIC Round Stic Xtra Life Ballpoint Pen is a disposable hand-held tool that contains and releases ink when pressed against a surface. It serves as a tool for writing language on paper. People in schools, workplaces, and at home use the BIC Round Stic Xtra Life Ballpoint Pen. It does not require training, and costs \$6.49 (2018 price) for a pack of 60 pens.

The BIC Round Stic Xtra Life Ballpoint Pen provides enough ink to write one line for over 2 km [1].

The BIC Round Stic Xtra Life Ballpoint Pen has a cap that covers the head. The cap measures 4.172 cm in length. When the cap covers the head, the BIC Round Stic Xtra Life Ballpoint Pen measures 14.92 cm in length. When the cap does not cover the head, the BIC Round Stic Xtra Life Ballpoint Pen measures 14.3 cm in length. The body measures 12.07 cm in length, and 0.95 cm in diameter. The body contains the ink barrel from where the ink releases. The transparent cap and body provide a view of the head and ink barrel (See **Figure 1** and **Figure 2**).

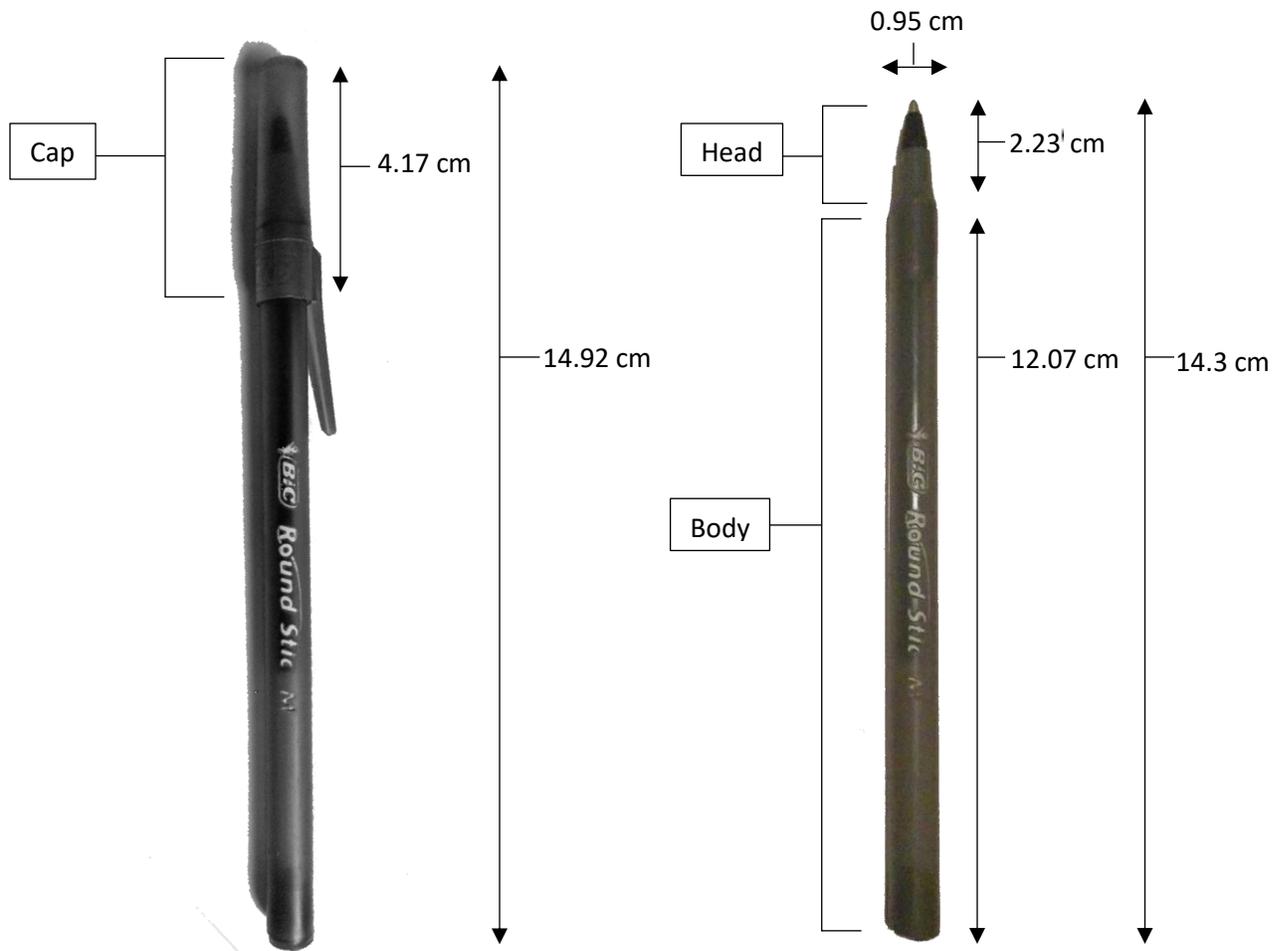


Figure 1 BIC Round Stic Xtra Life Ballpoint Pen (Head covered)

Figure 2 BIC Round Stic Xtra Life Ballpoint Pen (Head uncovered)

2 Part-By-Part description of the BIC Round Stic Xtra Life Ballpoint Pen

The BIC Round Stic Xtra Life Ballpoint Pen consists of three main parts: (1) the cap, (2) the head, (3) the body.

2.1 Cap

The cap is a grey plastic casing that prevents ink from releasing onto objects when not in use. It is made up of two parts: (1) a cap mouth, (2) a cap tooth. When viewed from the underside of the cap, there is a hole. This hole is called the cap mouth (see **Figure 3**). From the cap mouth, a piece extends out further than the cap mouth. This piece is called the cap tooth (see **Figure 3**).

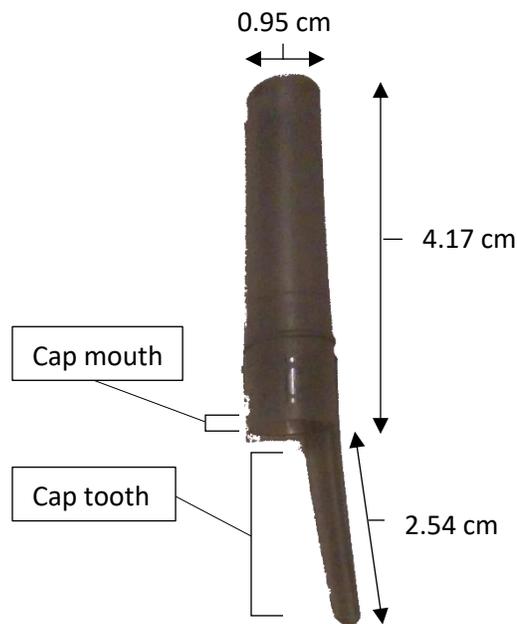


Figure 3 cap removed from body

2.1.1 Cap mouth

The cap mouth is an opening on the bottom of the cap, which is 0.95 cm in diameter. This diameter is enough to cover the head and attach to the body. The cap covers the head to prevent ink from drying out, and to prevent ink from releasing onto objects that the user does not want to soil (See **Figure 4**).

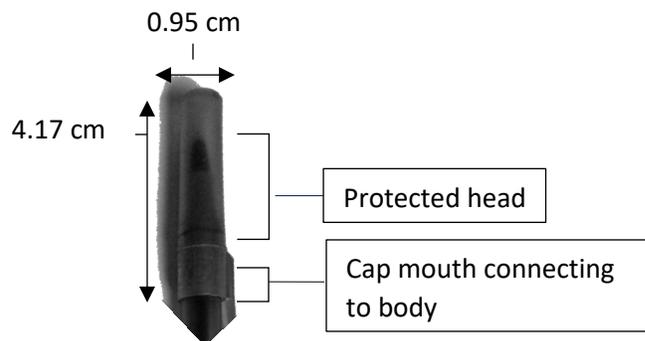


Figure 4 cap mouth protecting head

2.1.2 Cap tooth

The cap tooth is a grey piece of plastic that extends downward at a 10° angle off of the cap mouth. Under the cap tooth is a length-wise ridge that connects to the cap above the cap mouth. When the cap covers the head, the angled cap tooth creates a gap between the body and the cap tooth. This allows the user to hang the BIC Round Stic Xtra Life Ballpoint off of the top of an object (see **Figure 5**).

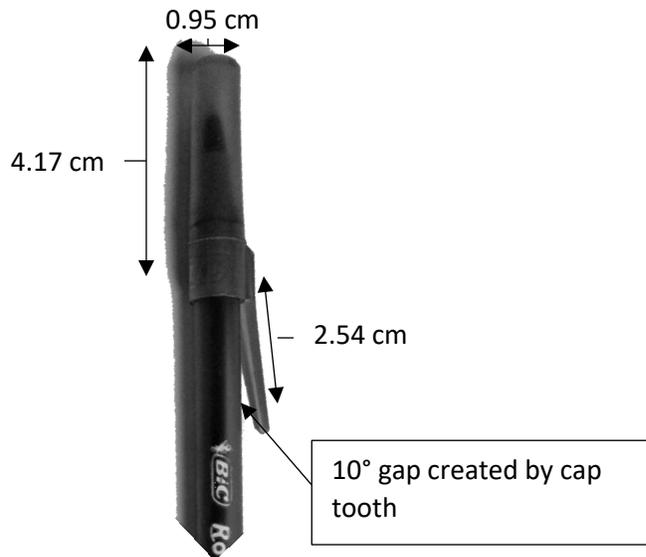


Figure 5 gap created by cap tooth

2.2 Head

The head is a mechanical device that contains and releases ink when held vertically and dragged against a surface. The head measures 14.07 cm in length. The head performs best when held between a 70 – 90° angle. The head contains three parts: (1) head nose, (2) head casing, (3) ink barrel (see **Figure 6**).

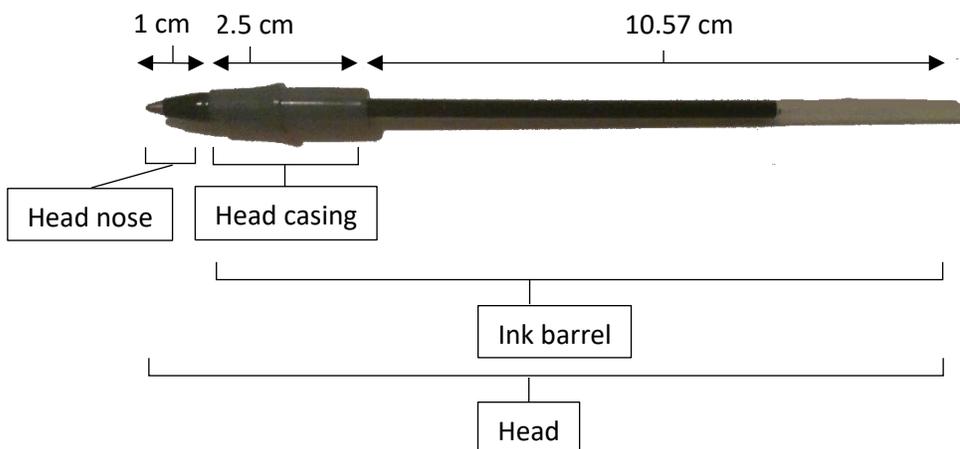


Figure 6 head with head casing attached

2.2.1 Head nose

The head nose is a black and brown metal point that contains a steel roller ball, and is attached to the ink barrel. The head nose attaches to the head casing, which covers the connecting point between the head nose and the ink barrel. The head nose measures 1 cm in length (see **Figure 7**).

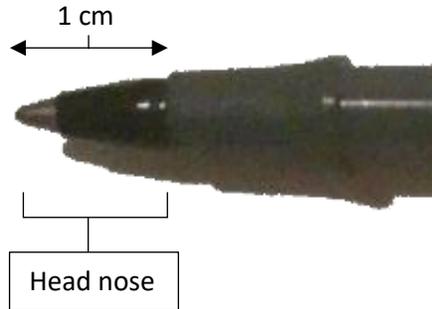


Figure 7 head nose with head casing attached

2.2.2 Head casing

The head casing is a grey transparent cylinder with a cone-like exterior that acts as a grip for the user. The head casing attaches to the head nose and the body. The head casing measures 2.5 cm in length, and serves to protect the connecting point between the head nose and the ink barrel (see **Figure 8**).

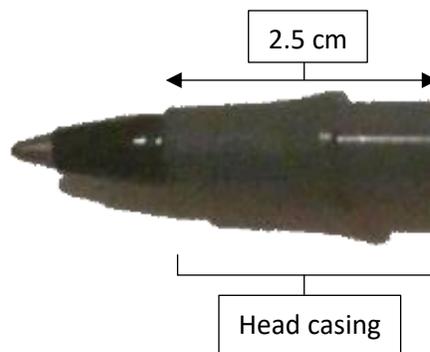


Figure 8 head casing attached to head

2.2.3 Ink barrel

The ink barrel is a clear plastic tube that contains ink, which connects to the head nose inside of the head casing, and releases ink through the head nose. The ink barrel measures 13.07 cm in length, and is contained inside of the body. The body protects the ink barrel from the user's hand (see **Figure 9** and **Figure 10**).



Figure 9 ink barrel covered by the body



Figure 10 ink barrel uncovered

2.3 Body

The body is a grey plastic cylinder that attaches to the head casing and the body plug. The body also protects and contains the ink barrel. It serves as a handle that fits in between the thumb and the index finger. It measures 12.07 cm in length, and 0.95 cm in diameter (see **Figure 11**).

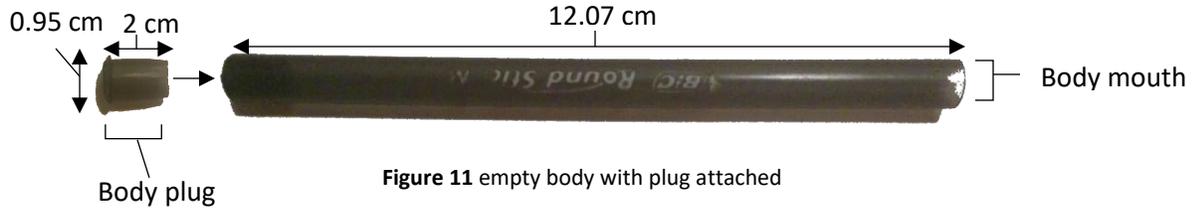


Figure 11 empty body with plug attached

2.3.1 Body mouth

The body mouth is a hole in the head-most end of the body. It receives the head casing, which slides inside of the body mouth. The body mouth secures the head casing to prevent the ink barrel from sliding out, and to provide a stable grip for the user. The body mouth measures 0.95 cm in diameter (see **Figure 12**).



Figure 12 body mouth (head casing-receiving end)

2.3.2 Body plug

The body plug is a grey plastic knob that prevents debris from entering the body and ruining the ink inside of the ink barrel. There is a ridge on the top of the body plug, which serves to secure the body plug inside of the body. The body plug measures 0.95 cm in diameter, and 2 cm in length (see **Figure 13**).

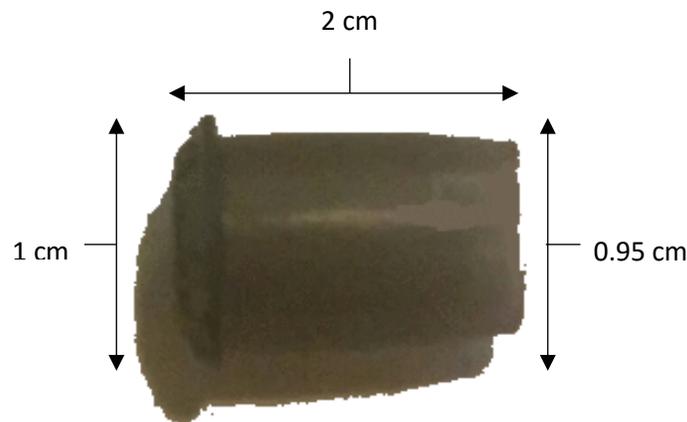


Figure 13 body plug detached from body

3 Conclusion

The BIC Round Stic Xtra Life Ballpoint Pen is a useful and portable tool that does not require any maintenance. It comes in a large pack, which makes disposing effortless if any one of the pens is faulty. Because of the availability of the pen, in most stationary stores and stationary sections in superstores, the pen is convenient to replace and easy to find when short on units.

3.1 Cycle of Operation

The end of the body with the body plug is placed in the user's dominant hand between the thumb and the index finger. The body plug end is held firmly with the user's dominant hand while the cap is pulled off of the body with the user's nondominant hand. The head nose and the head casing are revealed when the cap is removed from the body. The head casing is held by the user's dominant index finger, middle finger, and thumb. The nose head is pointed down towards a surface, and the nose head is pressed and dragged against a surface. Ink from the ink barrel is released onto the surface. After use, the head of the pen is lifted away from the surface and is covered by the cap for storage or transportation.

3.2 Value of the BIC Round Stic Xtra Life Ballpoint Pen to the User

The BIC Round Stic Xtra Life Ballpoint Pen is a portable hand-held tool with several features and benefits. The pen is intuitive if the user has used other pens before, which makes learning the tool less time consuming. The plastic material makes for a lightweight tool that can be stored everywhere, thus not burdening the user with a heavy weight. The transparent body provides for a view of how much ink is left in the tool, which allows the user to know when they should bring a backup pen or when new ones should be bought. The plastic cap protects user's belongings from being soiled by ink if uncovered, which saves the user money on buying replacement belongings, or buying cleaning supplies to clean soiled belongings. Finally, the cap's tooth allows the user to clip the pen anywhere, which provides for quick access when short on time.

4 References

- [1] BIC USA Inc., 2018. [Online]. Available: <https://www.bicworld.com/en/our-products/what-we-do>. [Accessed 2018].