

03 Structure of the bushing

3.1 General structure

The AirRIP® flex type series are dry, oil-free and capacitive-controlled bushings. The main insulation body of the bushing comprises resin-impregnated paper (RIP). The conductive surfaces in the insulating body are used for capacitive field control.

The outdoor side is tightly sealed with a silicone or porcelain insulator, being thus protected against humidity.

A vent screw is available to the flange of the bushing to be able to ventilate the transformer. Threads located on the flange can be used for mounting crane eyes or pushing the bushing away from the transformer flange. A self-earthing measuring connection is integrated in the flange, making possible the measurement of the capacity and the loss factor of the bushing in the installed state. Depending on the design, AirRIP flex bushings can be equipped with a fixed bottom contact conductor in

copper or aluminum, removable conductor rod or a short inner terminal for rope conductors. Moreover the bushing can be equipped with draw rod installation system (see dedicated paragraph 13).

The gap between the insulating body and the external insulator is filled with thermal compound, so that the bushings can be operated at any installation angles of up to 30° from the vertical. The data in the dimension sheet are binding.



NOTE: Hitachi ABB Power Grids bushings are dimensioned and designed for applications in mineral oil. For organic oils, please contact Hitachi ABB Power Grids for further information.

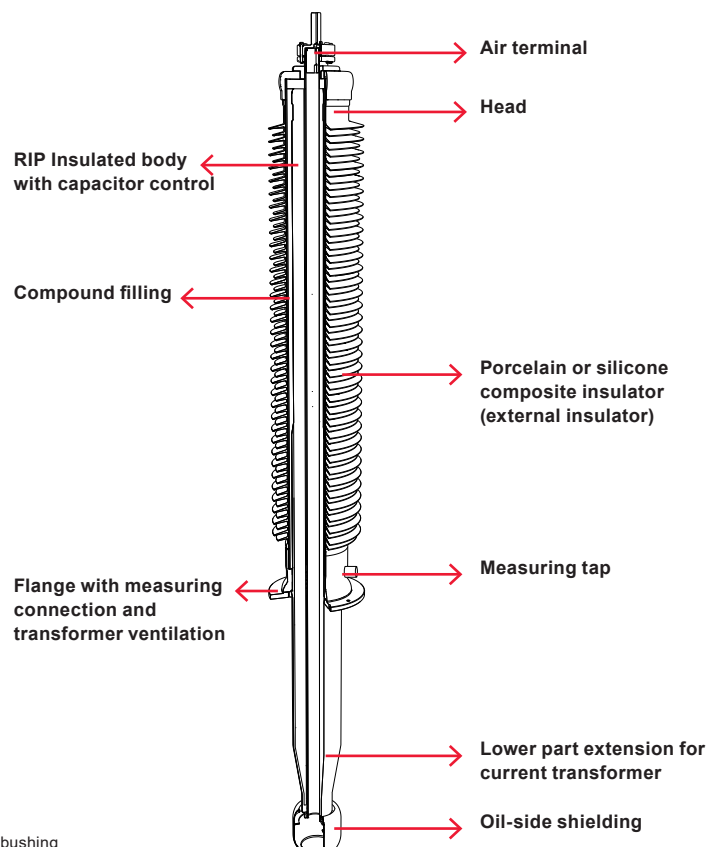


Figure 1: General structure of bushing

10.1 Shield with bayonet catch

This shielding is available for voltages ranging from 245 kV to 550 kV and is suitable for all conductor types. The shielding can normally be mounted on the mounting ring and dismantled from it at the factory.

The fixture ring is screwed onto the conductor and secured with a locking screw for draw lead and removable version. The shield has three mounting holes and is affixed with springs via a bayonet lock.

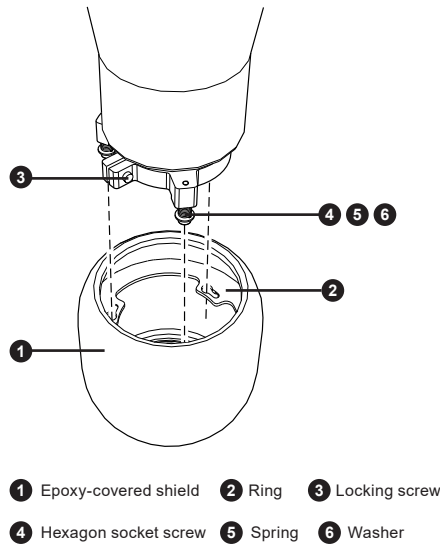


Figure 8: Shield with bayonet catch

Dismounting of the shield from the mounting ring: press the shield lightly against the bushing, rotate it (approx.12°), then pull it off.

The shielding can temporarily be inserted under the bushing with a power cable.

The terminal is then freely accessible and can be connected to the connection pieces. It **must be** in any case made sure that the contact resistance is kept as low as possible.

Bring the shield back to its original position. It **must be** made sure that the 3 holes are positioned over the hexagon socket screws. The screws are inserted through the holes, and with some pressure against the bushing, the shield can be turned in the original secure position (approx.12°) until it locks in place again with spring load.



NOTE: Shield must not be scratched.



NOTE: Do not let parts fall into the transformer tank.



NOTE: The fastening ring at the connections **must not be** dismantled.

10.2 Air shield from 420 kV

Bushings of 420-550 kV have an air-side shield for preventing corona discharges.

The air-side shield can be mounted on the outer terminal with the delivered screws and washers. Threaded holes are provided for this purpose on the air terminal.



Recommended torque

20 Nm \pm 2 Nm



NOTE: Shield must not be scratched.



NOTE: Do not let parts fall into the transformer tank.

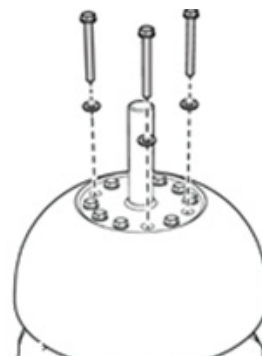


Figure 9