

Pressure relief replacement kit for ZV2.2

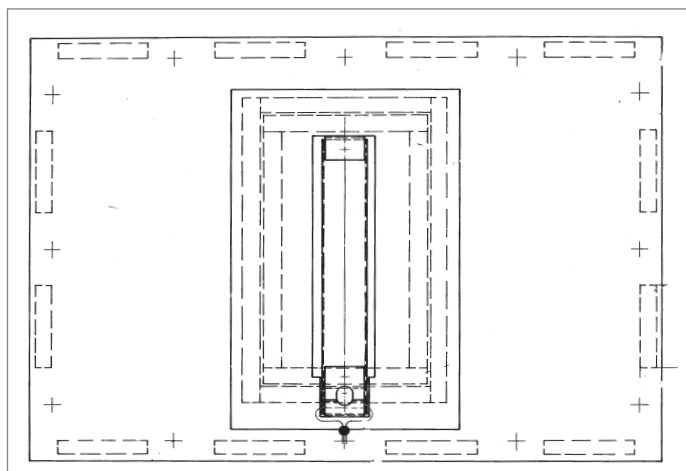
Increase safety and decrease SF₆ -gas emission

Between 1988 and 1994, ABB produced the first generation of medium voltage gas insulated switchgear, type ZV2.2. Due to its high quality and the associated long lifetime, this switchgear is still in service on a lot of sites worldwide.

Since SF₆ gas has the highest known Greenhouse warming potential (GWP), operators of the ZV2.2 switchgear are faced with difficulties in regard to compliance with new environmental regulations. New environmental regulations, especially the Kyoto protocol, defined legally binding target levels for greenhouse gas emissions which are viewed as the primary cause of global warming.

The way the ZV2.2 switchgear was designed, the SF₆ in the gas compartments could not be exchanged or evacuated except by polluting the environment. Since environment protection and greenhouse gas reduction are one of the most important topics for ABB today, a retrofit solution was developed to allow an environmental friendly evacuation of ZV2.2 gas compartments.

Besides the environmental aspect, also deterioration affects the old pressure relief system. The glue which was used for fixing the aluminum foil at the bursting area can lose its strength after 15-20 years and gas can leak. This might result in an internal arc failure. So in order to ensure an environmental friendly and failure free operation, the replacement retrofit solution is recommended.



1 The pressure relief system which was used for the ZV2.2 during the active life cycle phase consisted of an aluminum foil clued over a hole in the gas compartment.

Why is evacuation necessary

Evacuation of the gas rooms is mandatory to:

- ensure high impurity level of the SF₆ gas to prevent internal arcs in the switchgear
- reduce emissions and the use of SF₆ referred to recovering, recycling, reprocessing during e.g. inspection or maintenance on the switchgear.

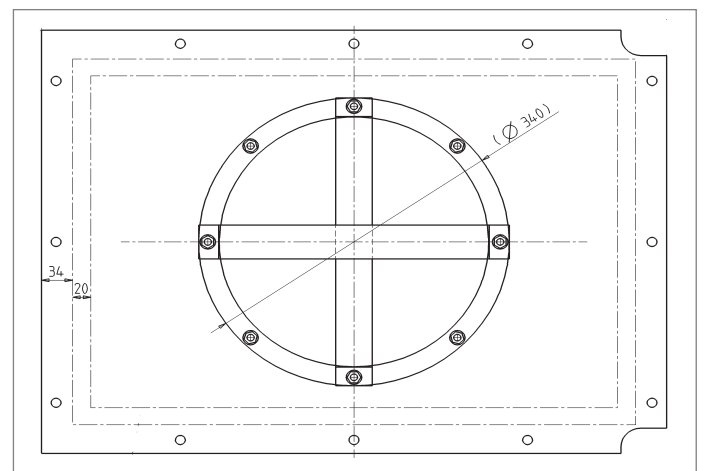
The replacement kit

The pressure relief system which was used for the ZV2.2 during the active life cycle phase consisted of an aluminum foil clued over a hole in the gas compartment. This was state-of-the-art in the past. Advanced findings made it possible for ABB to replace the aluminum foil by bursting disks.

The replacement solution ABB developed consists of a kit that makes it possible to exchange the aluminum foil against a bursting disk of the current ZX switchgear family on ZV2.2 switchgear up to 31,5 kA. By implementing the bursting disk evacuation of the gas room can be done without any emission of SF₆ gas.

For customers, who operate the ZV2.2 switchgear within Europe, this upgrade of the switchgear with a state of the art pressure relief will result in conformity according to EU regulation No 305/2008.

Additional to the ZV2.2, this retrofit solution can also be used for the ZV2.3. The ZV2.3 already has a bursting disk and is evacuate able, but can be upgraded to the state-of-the-art pressure relief of the ZX-family with the replacement kit.



2 The replacement solution makes it possible to exchange the aluminum foil against a bursting disk of the current ZX switchgear family.

Note:

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