

Power transformer and reactor fittings —

Part 8: Butterfly valves for insulating liquid circuits

The European Standard EN 50216-8:2005, incorporating amendment A1:2006, has the status of a British Standard

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National foreword

This British Standard was published by BSI. It is the UK implementation of EN 50216-8:2005, incorporating amendment A1:2006.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1**. Tags indicating changes to CEN text carry the number of the CEN amendment. For example, text altered by CEN amendment A1 is indicated by **A1** **A1**.

The UK participation in its preparation was entrusted to Technical Committee PEL/14, Power transformers.

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**Power transformer and reactor fittings
Part 8: Butterfly valves for insulating liquid circuits**

Accessoires pour transformateurs de
puissance et bobines d'inductance
Partie 8: Vannes à papillon
pour circuits à liquides isolants

Zubehör für Transformatoren und
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kreise mit Isolierflüssigkeit

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CENELEC

European Committee for Electrotechnical Standardization
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Foreword

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This EN 50216-8 is to be read in conjunction with EN 50216-1.

The following dates were fixed:

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1 Scope

This standard covers the butterfly valves used on the pipelines, in which the insulating liquid of power transformers or reactors flows, in order to allow the replacement of components, without removing the whole or a large amount of the insulating liquid from the conservator and the tank.

This standard defines the general overall dimensions and some functional and manufacturing characteristics to guarantee interchangeability.

2 Normative references

Addition to EN 50216-1:

EN 1092-1 2001 Flanges and their joints – Circular flanges for pipes, valves, fittings and accessories, PN designated – Part 1: Steel flanges

3 Requirements and characteristics

3.1 Description

The main components of a butterfly valve are:

- a “flanged body”, which allows the mounting on the pipe according to one of the assembly layouts listed in Clause 4. The free passage in the body gives the nominal dimension of the valve, which should be preferably within the range shown in the attached dimension tables. Except for the few exceptions shown in the tables, the flanged body has PN10 fixing dimensions, according to EN 1092-1;
- the “butterfly” which opens or shuts the opening of the body;
- the “drive assembly”, which allows to open or shut the butterfly and to block it in the open or closed position.

3.2 Operating characteristics

The butterfly valves are intended to be mounted on the pipelines in any position and with any orientation. They shall be capable to withstand mechanically to a overpressure of 200 kPa either on the flanged body or on the butterfly in closed position, indifferently in both directions, without any obstacle to the operation of the butterfly.

The sealing of the butterfly should not be subject to ageing, so that a metal to metal design is preferable, in order to avoid components subject to ageing problems such as rubber gaskets.

The operation of opening or shutting the butterfly must be done using only spanners.

All the characteristics are related to valves having the butterfly in fully open or fully closed position.

3.3 Components characteristics

3.3.1 Flanged body

The flanged body must be metallic, free from porosity or defoliation which may cause leakage; it is preferable to use forged steel bodies or bodies cut from sheet steel or big bars; cast bodies must be individually tested for tightness.

The faces of the flanged body, in contact with the flanges of the pipeline or of the component to be connected, have a seat for an O-Ring gasket. Recommended dimensions of gaskets and gasket seats are shown in the tables "Gasket Seat Dimensions" in Clause 5; other dimensions may be used upon agreement between manufacturer and purchaser.

3.3.2 Butterfly

The butterfly shall be capable to perform in the long run its sealing properties within the maximum permitted leakage values and to resist mechanically to the maximum permitted overpressure.

3.3.3 Drive assembly

The drive assembly shall

- be completely contained within the thickness of the flanged body up to the limit of the flange diameter when the butterfly is in open or closed position,
- assure the mechanical resistance necessary to withstand the test pressure on the closed butterfly; for ND ≥ 125 mm the butterfly should be guided also on the lower part,
- indicate the butterfly position with standard symbols or in writing,
- open the butterfly anticlockwise, shut the butterfly clockwise,
- have full oil tightness towards the outside of the pipeline; the gaskets of the drive assembly, if any, must be easily replaced in case of gasket failure or wear,
- be capable to withstand, eventually with the help of an adequate mask, to all the surface protection process of the transformer tank, like sandblasting and painting, particularly for the radiator valves of the weld-on type,
- preferably be arranged to accept a padlock (or a lead seal) in open and closed position, to avoid unattended operations by non authorized personnel.

3.3.4 Protection against corrosion

All the screws exposed to the atmosphere shall be of stainless steel A1 or brass A1 .

The butterfly valves and their components shall be supplied adequately protected against the corrosion which may occur during transport and warehousing.

The body of the valves to be mounted between flanges shall be zinc-plated and passivated (cold process), with the function of protection against corrosion, and to allow an easy painting process. The bore of the valve shall be cleared of the zinc-plating before assembling.

The body of the welding type radiator valves shall be self colour.