

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Butterfly Valves**

with type designation(s)

**TBD - Tandem Butterfly Damper, SBD - Single Butterfly Damper**

Issued to

**HMT GmbH  
Bocholt, Germany**

is found to comply with

**DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems  
DNV GL class programme DNVGL-CP-0186 – Type approval – Valves****Application :****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.****SBD and TBD dampers approved by this certificate fulfill the requirement of self-cleaning as per DNV GL Rules Pt. 4 Ch.6 Sec.8 [3.3.11].**

Type:	Temperature range:	Max. working press.:	Sizes:
TBD - Tandem Butterfly Damper	see certificate	see certificate	see certificate
SBD - Single Butterfly Damper	see certificate	see certificate	see certificate

Issued at **Hamburg** on **2019-05-22**for **DNV GL**This Certificate is valid until **2024-05-21**.DNV GL local station: **Essen**Approval Engineer: **Guido Friederich**

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**Olaf Drews  
Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Job Id: **262.1-021516-2**  
Certificate No: **TAP00000GN**  
Revision No: **1**

## Product description

HMT exhaust gas dampers are used for control and shut-off applications for installation within exhaust gas systems as well as hot flue and process gases. The exhaust gas dampers are of a butterfly valve design with additional mounted actuator.

The exhaust gas dampers can be fitted and operated with pneumatic, hydraulic or electric actuator. The HMT exhaust gas dampers are available in two different designs:

- TBD: Tandem design providing two combined disks for optimized flow characteristics and reduced pressure loss of exhaust gases and to ensure 100 % tightness in case of seal air use.
- SBD: Single design with one disk for standard control and shut-off applications.

### Design conditions

Design pressure and temperature conditions for HMT SBD / TBD exhaust gas damper nominal sizes vary according to the different requirements of the applications. The range is listed as following:

Nominal HMT SBD / TBD exhaust gas damper sizes: DN 250 to DN 3500  
Design pressure: up to 250 mbar  
Design temperature: up to 650 °C

### Materials

All exhaust gas damper sizes are fabricated of either carbon or stainless steel depending on the operating requirements of the applied process.

### Connection

For mounting purpose into an exhaust gas duct all exhaust gas dampers are designed with a flange connection.

### Installation

The installation of the exhaust gas dampers can be made in horizontal, vertical or inclined position.

## Application/Limitation

Installation of HMT SBD / TBD exhaust gas dampers within exhaust gas and/or flue gas cleaning applications on ship's steam boiler and combustion systems.

## Type Approval documentation

Type Approval Assessment Report / Manufacturer's Audit, dated 2019-03-21  
HMT Industrial Dampers Seal Air Test, dated 2016-06-20  
HMT Inspection Plan (ITP), dated 2016-06-16  
HMT Definition of Design Conditions for SBD/TBD Dampers, dated 2019-05-21  
HMT List of drawings, dated 2016-06-20  
Design drawings HMT exhaust gas dampers (DN 350, DN 400, DN 600, DN 700, DN 2500)  
HMT Tandem- / Single Butterfly Damper Product description  
HMT Welding Procedure Specifications (WPS), diverse  
HMT Inspection Reports, HMT Dampers, NDT Reports, Record of Corrosion Protection, dated 2016-06-20  
HMT Organigramm QMU.0502.R08, dated 2019-02-15  
HMT Verzeichnis und Wartung Prüf und Messmittel- QMU.0704.R01, dated 2019-02-09  
TÜV Nord Certificate of Conformity EN 1090-1[2009]+A1[2011],  
Certificate No. 0045-CPR-1090-1.00003.TÜVNORD.2012.005, dated 2019-03-14  
HMT Tandem-Butterfly / Single-Butterfly Damper Type Approval Test Report for TBD DN 800 A/K,  
dated 2019-04-09  
Certificate DIN EN ISO 9001 [2015], valid until 2021-03-15

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## Tests carried out

### Test standards

DNV GL Rules Pt.4 Ch.6  
DNV GL CP 0186 – Valves  
HMT Self Cleaning Test Procedure

### Type of test

Functional Test

Pressure Test

Tightness Test

Self Cleaning Test

### Purpose of test / Results of Tests

Satisfactory operation of Butterfly damper including mounted actuator and seal air supply

Shell strength /Test pressure =1,5 times the design pressure

Leakage measurement of closed butterfly damper

Evidence of self cleaning ability of HMT butterfly dampers

Test medium used: Air / Soot, sawdust (dry and moist)

Tandem Butterfly Damper Type TBD

Single Butterfly Damper Type SBD

Result: Completely cleaned sealing seat from used test media

## Marking of product

Marking of the HMT Butterfly dampers

For traceability to this type approval each HMT exhaust gas damper shall be marked on its type plate with the following minimum information:

- Manufacturer's name and/or trade mark
- Exhaust gas flap type designation
- Design pressure
- Design temperature

## Periodical assessment

A condition for retention of the Type Approval Certificate in its validity period is that periodical assessments are successfully carried out.

Periodical assessments for type approvals with a validity period of five years will be required after two years (+/- 90 days) and after 3.5 years (+/- 90 days).

The objective of the periodical assessment is to verify that the conditions for the type approval have not been altered. The main scope of the periodical assessment will normally include:

- Verification of the TA applicant's production and quality system with relation to ensuring continued consistent production of the type approved products at the TA applicant's own premises and at other companies that are given the responsibility for manufacturing of the products.
- Review of the TA documentation and that this is still used as a basis for the production
- Review of possible changes to the design, the material and the performance of the product
- Verification of the product marking

**END OF CERTIFICATE**