

GLAUNACH

Operating Manual for Dump Tubes



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1. GENERAL

1.1 Preface

Dump Tubes are used to reduce temperature, pressure and noise by smoothly redirecting gas flows from high pressure to low pressure.

The diffuser pipe (= entrance pipe to the Dump Tube) with the appropriate components represents a pressure loaded device in the sense of the guideline PED 2014/68/EU / 2014/68/EU (DGRL) and is classified as part of the piping-system in accordance with appendix II diagram 7 and 6.

A Dump Tube shell / body that is open to the atmosphere is not a pressure device.

1.2 Area of Application

This manual exclusively applies for Glaunach Dump Tubes, which are marked by identification plates. Dump Tubes are part of a system, for that reason the general plant manuals as well as this manual applies for operation.

2. FUNDAMENTAL SAFETY REGULATIONS

2.1 General

This manual contains all important instructions, in order to operate a Dump Tube safely. The safety references have to be considered by all persons who are close to the Dump Tube during blow out. Beyond that, the local rules and regulations for safety have to be kept.

2.2 Obligation of the Plant Owner

The plant owner has to take care that personnel which is close to the Dump Tube during blowout:

- have been informed about the applicable regulations and safety rules
- have permanent access to this informations
- read and understand this manual.

The competences of the personnel for mounting and installation have to be clearly specified. All instructions have to be held in a readable condition.

2.3 Obligations of the Installation Personnel

All individuals, working on Dump Tubes have to read

- the saftey rules of the plant owner
- this manual

2.4 General Warnings

Glaunach Dump Tubes are built with the latest technology. However, inappropriate use can become lethal and can cause damage to

to objects of value. Dump Tubes are only intended for permissible use, under the maximum allowable operating conditions = design conditions.

Disturbances, which may impact security, have to be eliminated immediately.

2.5 Use of Dump Tubes

Dump Tubes are exclusively for the use of reducing temperature, pressure and noise that occurs by expanding gases. Informations of the applicable medium, temperature and pressure can be found on the name plate of each unit.

Safe use means:

- Execution of all advises of this manual
- Regular of maintenance
- Attention to the name plate, specification sheets and warning references

Any other use, e.g. rinsing or cleaning of the piping system by blowing free, are not an intended use of the Dump Tube.

2.6 Guarantee

If no other guarantee is constituted, the guarantee period is 24 months after delivery.

The guarante expires:

- If the Dump Tube is used under not permissible conditions.
- At inappropriate mounting, installation, handling and/or maintenance
- Neglecton of regulations in this manual concerning transport, storage, handling, operation and/or maintenance of the Dump Tube
- If structural changes of the Dump Tube were done without the permission of Glaunach GmbH
- At any deviation of the specified conditions
- At emergencies caused by nature, war or any other event that can not be affected by Glaunach GmbH.

Dump Tubes that are in use under corrosive conditions are subjected to a special wear and do not hold any guarantee without extra notice.

2.7 Safety Precautions

Previous to the use of the Dump Tube a visual control of the surrounding is necessary to prevent hazards for persons and/or values.

2.8 Danger of Pressurized Gases

All pressure – bearing components must be kept depressurized during repair work.

2.9 Danger of Medium and Heat

Individuals staying close to the Dump Tube during blow-off, risks danger for life and health. For that reason, the responsible authority and/or department has to take care that hazard area of Dump Tubes is evacuated during operation. Due to the high temperature of the vented medium, a substantial temperature of the exterior surface of the Dump Tube may occur. For Dump Tubes with high temperatures an external insulation may be necessary, which is not scope of the Dump Tube supplier.

Note: Gas or steam may also vent through the dewatering pipes of the Dump Tube. For dewatering pipes, the same Safety Precautions apply as for Dump Tubes. For flammable gases please also read the appendix "flammable gases": download at www.glaunach.com

2.10 Noise

During the use of the Dump Tube a noise arise at the Dump Tube outlet or at the attached piping system that may lead to hearing damage. Persons near this area have to wear an appropriate ear protection.

3. TECHNICAL SPECIFICATION

3.1 Drawings, Specifications and Part Lists

All technical information can be found at the drawings, specifications and part lists

These are

- Max allowable design pressure
- Max allowable design temperature
- Max allowable capacity
- Medium
- Materials
- Dimensions

3.2 Name Plate

Following operation data are indicated on the name plate of each Dump Tube. (Unless otherwise requested by customer)

- Manufacturer
- Fabrication Number
- Design Pressure
- Operation Pressure
- Design Temperature
- Operation Temperature

- Year of construction
- Capacity
- Medium

4. TRANSPORT AND STORAGE

All Dump Tube surfaces and sealings have to be protected during transport and storage. Protection materials shall be used if the Dump Tube is not stored or transported in a box or container. Sealings (e.g. flanges) have to be protected by additional protection materials until the time of installation.

Only the lifting lugs shall be used for lifting, attachments to any other part of the Dump Tube are not allowed.

Storage shall only be done on an appropriate ground and/or on original Dump Tube pallets. Punctual load may lead to deformations.

All pipes and/or flanges associated to the Dump Tube have to be sealed for transportation. Removal of such sealings shall only be done by qualified personell at the time of installation.

Repair the paint coat that has been damaged during transport, storage or assembly, in accordance with the applicable painting specifications.

5. INSTALLATION

5.1 Conditions for installation

The Dump Tube has to be handled in such a way that persons are not endangered. Necessary protection distances and safety precautions are to be kept according to the applicable national regulations and rules of the country of installation.

Dump Tube shall only be mounted to the intended construction. All dimensions can be found at the drawings. The Dump Tube has to be protected against mechanical forces that may occur during operation. On request Dump Tubes can be equipped with earthing lugs to discharge electrostatic charging. Earthing lugs (if available) must be connected to a grounding cable.

5.2 Connecting the Dump Tube to pressure units

The Dump Tube must be installed on a suitable foundation. Forces, moments or vibrations shall be avoided. This also includes thermal expansions of the connected pipe system during operation.

Welding has to be done according to the appropriate standards.

Dewatering pipes have to be protected from freezing.

5.3. External Insulation of the Dump Tube

Due to temperature, vibration or noise issues an external insulation of the Dump Tube can be recommended by GLAUNACH. Such insulations must be applied by the customer after installation.

6. First Start-Up

First Start-Up may take place if

- the Dump Tube was duly installed to the system
- The installation instructions were obeyed
- the Dump Tube was controlled by qualified personell regarding mounting and connection
- the upstream blow-off system of the Dump Tube is free of debris

The final release before first start-up has to be arranged by the operator of the Dump Tube according to the national rules and regulations of the country of installation.

7. OPERATION

7.1 General

The operator of the Dump Tube has to take care that only instructed personnel will operate the Dump Tube. The operator has to protect persons from any danger that a Dump Tube may cause during operation.

A safety zone near the Dump Tube has to be considered. The operator must provide an appropriate operating instruction system, so that his personnel can be sufficiently advised.

The operator of the Dump Tube has to consider all national regulations of the country of installation according to Dump Tubes.

7.2 Inappropriate use

If the Dump Tube was overloaded, e.g. from an unexpected event or as a result of overload during the operation or if the Dump Tube was damaged before, during or after operation, an immediate examination of the Dump Tube has to take place.

7.3 Structural changes at the Dump Tubes

No structional changes of the Dump Tube are allowed without the written permission of the manufacturer. This includes also the attachment or removing of any kind of parts.

7.4 Fault Prevention

Dump Tubes should be installed away from work areas.

All noise emitters not related to the Dump Tubes shall be identified and acoustic insulated if necessary.

Do not be by-pass Dump Tubes drain pipes (dewatering) to the upstream blow-off system

Drain pipes (dewatering) must be protected against freezing

8. Maintenance

The operator of the Dump Tube has to take care, that the Dump Tube outlet will be free from water, ice, dust etc.

9. RECURRING EXAMINATIONS BY CERTIFIED SUPERVISORS

An annual inspection is mandatory.

The Plant Owner has to arrange recurring examinations by certified supervisors if this is demanded by the national rules and regulations of the country of installation. Lifting lugs must be inspected VT & PT(MT) before disassembly & reassembly of the Dump Tube..

Repair the paint coat in accordance with the applicable painting specifications.

10. ASSOCIATED DOCUMENTS

- Pressure Equipment Directive PED 2014/68/EU
- Harmonised Standards
- national rules and regulations of the country of installation
- Glaunach Information „Installation“
- Glaunach Information „Insulation“
- Glaunach Information „Fault Prevention “

