

## OPERATING INSTRUCTIONS

### Automatic quick acting shut-off device

#### HDS17

#### Operating and fundamental safety recommendations

The safety device has a manufacturer's label which indicates any special requirements.

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Thank you for choosing the WITT automatic quick acting shut-off device. These operating instructions contain information for operating your automatic quick acting shut-off device as well as important tips and notes. Please keep these instructions in a safe location for future reference.

#### Description and regulations for operation

Automatic quick acting shut-off device according to EN ISO 15615, applicable for use with acetylene bottles and manifold systems according to DIN EN ISO 14114.

It is used according to DIN EN ISO 14114 as an automatic quick acting shut-off device, to avoid automatically the flow of gas in case of acetylene decomposition from gas supply.

#### Qualified Personnel

The term „Qualified Personnel“ relates to persons who are familiar with the installation, assembly, start up and operation of the product and have the qualification corresponding to their responsibilities. Such as: Instruction and awareness to comply with all operational, regional and in-company regulations and

requirements; Training or instruction in accordance with safety technology standards with regard to the upkeep and use of appropriate safety equipment; First aid training, etc.

#### Foreword

These operating instructions should serve to make the correct operation and safe use of the HDS17 possible. Attention to following these instructions helps to avoid hazards, to reduce down time, and to increase operating life and certification.

The operating instructions should be kept in an accessible place within reach at all times. All persons working with the HDS17 should read and observe the operating instructions. If in doubt contact the manufacturer. In addition to the specific instructions there may be mandatory regulations or codes of practice regarding the installations or use of the equipment. Any such regulations should be complied with.

All particulars marked  $\Delta$  must be regarded as important safety recommendations.

#### 1 Description

The HDS17 is consisting of housing, in- and outlet fittings, impact pipe and clamp.

The sealing from fitting connections between housing and in- and outlet fittings against atmosphere is by O-rings.

The threaded connections are secured against unauthorized opening with an anaerobic liquid plastic.

The piston for closing has a radial shoulder. This radial shoulder is clamped by the impingement tube at the in-ner end of the inlet fitting.

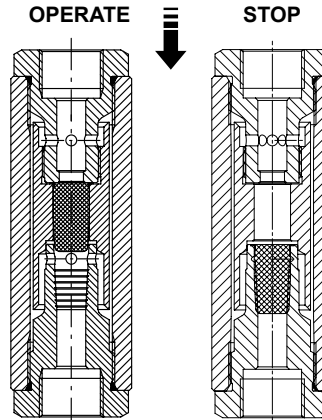
The conical end of the piston which is opposite the radial shoulder is standing for a short time in the outlet fitting.

#### 2 Function

The acetylene supply is via the inlet screw connection of the HDS17. It flows through the cross drillings to the impingement tube along by deflection through cross drillings to the outlet fitting further to the main pressure reducer.

Only a pressure pulse in marked flow direction - e.g. acetylene decomposition - can trigger the closing in case of integrated HDS17.

The shock pressure strikes without deflection the piston. The clamped bead shears off and the piston directly pushes into the cone seat of the outlet fitting. The valve is closed thereafter, the acetylene decomposition is stopped, a withdrawal of gas is not possible and the HDS17 must be replaced by a new device.



#### 3 Testing and certification

The product is certified by the German Bundesanstalt für Materialprüfung (BAM) in Berlin.

Every HDS17 is inspected before shipping. Furthermore, batch samples are checked every year by the BAM in Berlin.

#### 4 Operating and fundamental safety recommendations

##### 4.1 Authorised operation

The HDS17 label indicates any special requirements.

The HDS17 must installed immediately upstream of the main pressure regulator, in the high pressure part at acetylene distribution lines which are supplied by more than six simultaneously connected acetylene bottles.

$\Delta$  Note the flow direction, marked with an arrow.

$\Delta$  Max. operating pressure 25 bar.

$\Delta$  The flame arrester prescribed directly downstream of the main pressure regulator (e.g. WITT Type FN12, FN40, 85-10, 85-20 or 85-30) must be equipped with an automatic shut-off feature, to avoid automatically the flow of gas in case of acetylene decomposition (burn back at the safety device) from gas supply in the downstream pipework.

##### 4.2 Unauthorised operation (examples)

Inappropriate handling and unauthorised operation could result in risk of injury to the operator and other persons as well as damage to the equipment. Some examples:

$\Delta$  The HDS17 may only be used on acetylene supply systems!

The HDS17 may not be used with gases in the liquid phase and is not certified for use in temperatures below minus 20 °C and above 70 °C.

$\Delta$  Modification and dismantling of the safety device is not permitted.

#### 5 Marking

The HDS17 has a manufacturer's label which indicates any special requirements.

#### 6 Recommendations for operation, maintenance and repair

The HDS17 may only be fitted by qualified personnel to connections designed for the purpose.

##### 6.1 Installation, measures before starting up

$\Delta$  Marking of the safety device eg. part number or date of purchase, must not be done with punches or any other method requiring force.

$\Delta$  Check that all connecting threads and seating surfaces are clean and without damage.

The HDS17 may only be fitted to clean and tested pipelines.

$\Delta$  Consider the flow direction marked with an arrow!

$\Delta$  After installations all connections should be tested under pressure for leak tightness to atmosphere. Suitable leak protection fluids should be used. Leak detection should not be carried out with a naked flame.

##### 6.2 Malfunctions

##### 6.2.1 No gas flow

Check the isolation valve before the HDS17 is open.

In case of acetylene decomposition, the HDS17 is closed and must be replaced.

Reduced gas flow signs a acetone contamination. The HDS17 may be only refurbished by the manufacturer.

##### 6.3 De-commissioning

Close carefully the shut-off valve before HDS17 in case of unused gas supply.

##### 6.4 Maintenance

The HDS17 operates maintenance-free. All connections should be tested for leak tightness to atmosphere by qualified personnel.

$\Delta$  Repairs of defect HDS17 may only be carried out by the manufacturer.

##### 6.5 Repair

$\Delta$  Repairs may only be carried out by the manufacturer.

$\Delta$  Unauthorised repair or modification by the user or third part will result in any warranty issued by or liability upon the manufacturer or agent becoming null and void.

Model	Gases max. working pressure [bar]	
HDS17	Acetylene (A)	25.0

Flow diagram for acetylene (20 °C / 68 °F)

