



# OPERATING INSTRUCTIONS FOR OVERFLOW VALVES

UVA (412, 414)



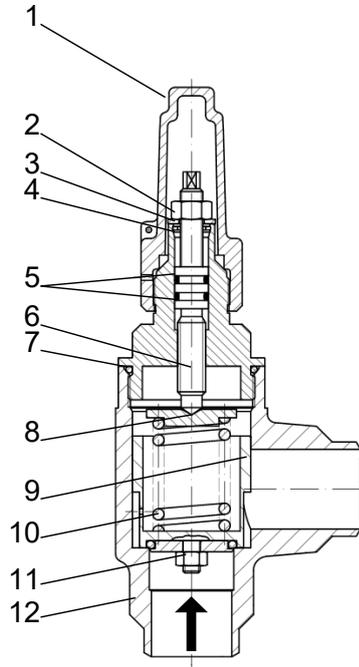
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# 1 Overview of types

Type DN 10-32

- 443 53, 443 63
- 443 73, 443 83
- 412, 414



1 Cap	2 Nut ISO 4032
3 Washer	4 Retaining ring
5 O-ring SP	6 Stem
7 O-ring D	8 Spring plate
9 Sealing piston	10 Compression spring
11 Nut ISO 10511	12 Body

## 2 Technical characteristics

Body material	Selection acc. to AD-2000 Series W
Steel	P235GH, S355J2
Low-temperature steel	P215NL, P255QL, P355NL1
NIRO	X5CrNi18-10 or equivalent

## 3 Pressure/temperature operating limits

Operating pressure depending on the operating temperature.

UVAA 412			UVAB 414							
PN	DN	TB (MWT) [C°]	-60	-10	+50	+180	-50	-10	+50	+110

UVAA 412			UVAB 414							
25	10-32	PS (MWP) [bar]	18.7	25	25	25	18.7	25	25	25
40	10-32		30	40	40	40	30	40	40	40
63	10-32		47.2	63	63	63	47.2	63	63	63

Permissible ambient temperature range (°C) -50 to +50

## 4 Operating media

The valves described here are suitable for operation with refrigerants in accordance with EN 378 Part 1, e.g. NH<sup>3</sup>, R22, R134a, R290 (propane). R507 or mixtures with refrigeration machine oil as well as for neutral, gaseous and liquid media and glycol-based brines.

## 5 Flow coefficient

Installation position: vertical and horizontal. External leakage <5g, seat <15g refrigerant per year  
Set pressure (bar) 1- 30

Spring ranges	
DN 10-15	DN 20-32
1 to <2	1 to <2
2 to <5	2 to <5
5 to <8	5 to <10
8 to <14	10 to <16
14 to <20	16 to <20
20 to <25	20 to <25
25 to <30	25 to <30

## 6 Safety instructions

### NOTICE

#### Danger from improper handling!

Risk of property damage.

- ▶ Do not install valves with transport or storage damage.
- ▶ Valves must be free of axial forces, bending moments, and torsional moments and must not serve as fixed points for pipework.
- ▶ In the event of oxy-fuel welding or brazing, the flame must not touch the valve.
- ▶ Keep the interior of the valves free of contamination.
- ▶ Opening or closing the valves with a valve wheel wrench or other lever-extending objects is not permissible.
- ▶ Only dismantle valves when the pipework is depressurised, evacuated, and sufficiently ventilated.

## 7 Application

AWP overflow valves are suitable as safety devices upstream of the high-pressure side shut-off of the compressor, as safety devices in conjunction with two component-tested safety pressure limiters, and as safety devices for the protection of shut-off liquid lines.

## 8 Functional description

AWP overflow valves are back-pressure dependent and are not component-tested. The rising stem is sealed by two chloroprene O-rings. Note: Response pressure = set pressure + external back pressure. The seal at the valve seat is provided by an O-ring.

## 9 Installation

Clean pipework and system components before installation. **NOTICE! Blowing out the pipelines can lead to damage to the seat and the seat sealing ring and is not permitted. NOTICE! The deviation from parallelism or perpendicularity of the welding ends or flange facings must not exceed 1°. Connecting flanges must be axially aligned. Valves with transport and storage damage must not be installed. After removing the pipe plugs, the valves can be welded or installed in any position. Observe the direction of flow (see arrow on nameplate). NOTICE! When using modern welding processes (e.g. TIG, CO2 arc welding), do not dismantle weld-in valves.**

### 9.1 Setting

AWP overflow valves are set by turning the stem (SW 5). Turning the stem clockwise increases the response pressure and vice versa. Note: Setting can only be performed within the corresponding spring range (see **Flow coefficient** [► 5]). Furthermore, corresponding compression springs must be obtained from the manufacturer. If back pressure is present, it must be subtracted from the response pressure and the valve must be set to the difference. When reducing the response pressure by turning the stem anti-clockwise, ensure that the retaining ring used as a stop is not forced out.

## 10 Maintenance

AWP overflow valves operate maintenance-free. If functional defects occur, repair is possible. During the warranty period, repairs may only be carried out by AWP or, with their consent, by the system operator's trained maintenance personnel.

### 10.1 Changing the O-ring SP

1. Unscrew the cap from the bonnet.

Cap	
DN	10-32
SW	24

2. Loosen the nut anti-clockwise.

Nut ISO 4032	
DN	10-32
M	8
SW	13

3. Unscrew the stem by turning it anti-clockwise. **NOTICE! Only as far as the stop provided by the retaining ring.**
4. Remove the retaining ring with suitable tools (e.g. screwdriver) and take out the stem.
5. Replace O-rings SP according to the spare parts list. **NOTICE! When installing the O-rings, ensure that they are not damaged by the stem thread. Clean individual parts before assembly and grease the stem thread (e.g. with RENAX UNITEMP 2).** Reassembly is carried out in reverse order.

### 10.2 Replacing the O-ring S/sealing piston/compression spring

1. Unscrew the bonnet anti-clockwise.

Bonnet		
DN	10-15	20-32
SW	30	36

2. Remove the spring plate, compression spring and sealing piston.
3. Unscrew the valve disc nut and remove and replace O-ring S (see spare parts).

Nut ISO 15011		
DN	10-15	20-32
M	5	6
SW	8	10

4. Before assembly, replace all damaged parts according to the spare parts overview.
  5. Grease the stem and bonnet threads (e.g. with RENAX UNITEMP 2).
  6. Lightly oil the outside of the sealing piston (e.g. with ANTICORIT 5F).
- Reassembly is carried out in reverse order.

Bonnet		
DN	10-15	20-32
SW	33	36
Tightening torque [Nm]	70	90

## 11 Transport, storage and disposal

AWP components are transported protected against impact and covered with foil.

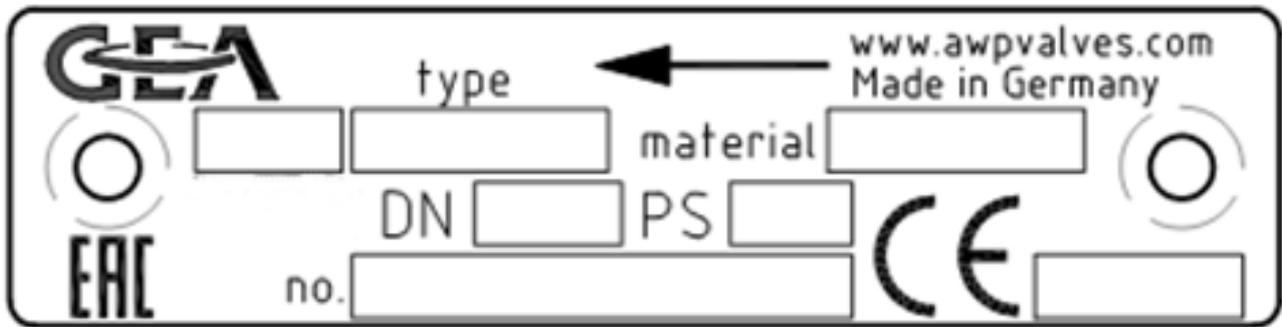
- Storage must take place in dry rooms.
- Ensure that the connection ports are sealed intact.
- Contamination of any kind must be kept away from the interior.
- The external surfaces are provided with a corrosion protection coating for dry storage at room temperature, which is effective for at least 1 year.
- The corrosion protection coating CELEROL® Reaktionsgrund 918 is a good adhesion promoter for 1- and 2-component top coats.
- Dismantle for disposal.
- Collect lubricants during dismantling. The materials must be separated from one another and disposed of in accordance with local regulations.

## 12 Garantie

Unless agreed otherwise, the statutory warranty provisions apply. For further information, please also refer to our General Terms and Conditions, available on our website [awpvalves.com](http://awpvalves.com).

## 13 Marking

The marking of the valves is carried out in accordance with Pressure Equipment Directive 2014/68/EU.  
Nameplate on body



PS [bar]	Max. permissible operating pressure
DN [mm]	Nominal size
DIN EN ISO 21922	Refrigerating valves, safety requirements, testing and marking

## 14 Hinweis auf Restgefahren entsprechend Druckgeräterichtlinie 2014/68/EU

Residual risks that cannot be avoided by the manufacturer exist due to:

### NOTICE

- ▶ Do not loosen bonnets (without authorisation) during operation.
- ▶ Do not incorrectly assemble flange connections (inlet and outlet flanges, flanged bonnets).
- ▶ Contamination in the operating medium or improper handling of internal components can lead to damage to the seat seal.
- ▶ Non-compliance with the operating limits and manufacturer's regulations according to these operating instructions.

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