



OPERATING INSTRUCTIONS FOR OVERFLOW VALVES

UVA (412, 414)

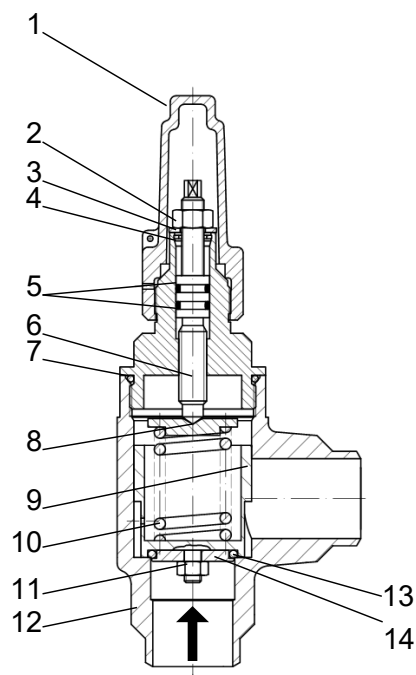
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1 Overview of types

Type 412, 414

DN 10-32



1 Cap	2 Lock nut ISO 4032
3 Washer	4 Retaining ring
5 Stem seal (O-ring SP)	6 Stem
7 Bonnet gasket (O-ring D)	8 Spring plate
9 Sealing piston	10 Compression spring
11 Nut ISO 10511	12 Body
13 Seat seal (O-ring S)	14 Clamping washer

2 Technical characteristics

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

2.1 Pressure/temperature operating limits

Operating pressure depending on the operating temperature.

UVAA 412								UVAB 414				
PN	DN	TS (MWT) [C°]	-60 ²⁾	-60 ¹⁾	-10	+50	+180	-50 ²⁾	-50 ¹⁾	-10	+50	+110
25	10-32	PS	18.7	25	25	25	25	18.7	25	25	25	25
40	10-32	(MWP) [bar]	30	40	40	40	40	30	40	40	40	40

UVAA 412						UVAB 414					
63	10–32		47.2	63	63	63	63	47.2	63	63	63

1) Load case I (low-temperature steel, stainless steel)

2) Load case II (acc. to AD2000-W10) (Steel)

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

2.2 Operating media

The valves described here are suitable for operation with refrigerants in accordance with EN 378 Part 1, e.g. NH₃, R22, R134a, R290 (propane). R507 or mixtures with refrigeration machine oil as well as for neutral, gaseous and liquid media and glycol-based brines.

2.3 Characteristics

Discharge coefficient		DN 15	DN 20	DN 25	DN 32
For steam / gas	K _{dr} (α _w) [-]	0.16	0.14	0.1	0.13
For liquid	K _{dr} (α _w) [-]	0.1	0.11	0.08	0.1
Narrowest flow cross-section	[mm ²]	206.1	380	638	716
Set pressure	p _{set} [bar]	1–25	1–25	1–25	1–25

For pressure ranges of the compression springs, see spare parts list.

Installation position: vertical in accordance with AD2000 data sheet A2 and horizontal.

External leakage: <15g refrigerant per year, seat leakage: <5g refrigerant per year.

3 Safety instructions

4 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.

5 Functional description

AWP overflow valves (UVA) are back-pressure dependent and are not component-tested. The rising stem is sealed by two elastomer O-rings. **NOTICE! : Response pressure = set pressure + external back pressure.** Sealing at the valve seat is also achieved by means of an O-ring.

6 Installation and commissioning

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.**

7 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). 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.

8 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.

8.1 Changing the stem seal

1. Unscrew the cap from the bonnet.

Cap	
Nominal size	DN 10-32
Wrench size	24

2. Loosen the nut anti-clockwise.

Nut ISO 4032	
Nominal size	DN 10-32
	M8
Wrench size	13

3. Unscrew the stem by turning it anti-clockwise. **NOTICE! Unscrew the stem only up to the stop formed 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 RENOLIN UNITEMP 2).** Reassembly is carried out in reverse order.

8.2 Replacing the seat seal / sealing piston / compression spring

1. Unscrew the bonnet anti-clockwise.

Bonnet		
Nominal size	DN 10-15	DN 20-32
Wrench size	30	36

2. Remove the spring plate, compression spring and sealing piston.
3. Unscrew the valve disc nut, remove the seat seal and replace it with a new O-ring (see spare parts).

Nut ISO 15011		
Nominal size	DN 10-15	DN 20-32
	M5	M6
Wrench size	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 RENOLIN UNITEMP 2).

6. Oil the outside of the sealing piston lightly (e.g. with RENOLIN MR 520).
Reassembly is carried out in reverse order.

Bonnet		
Nominal size	DN 10-15	DN 20-32
Wrench size	30	36
Tightening torque [Nm]	70	90

9 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.

10 Warranty

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.

11 Spare parts

The following spare parts are available for AWP shut-off valves in accordance with the Overview of types.

Type	Nominal size	Seal kit	Repair kit	Valve insert, complete
UVAA (Type 412)	DN 10 – 15	41200.10.5/00019	41200.10.5/00029	412**E10.5110001
	DN 20 – 32	41200.13.5/00019	41200.13.5/00029	412**E13.5110001
UVAB (Type 414)	DN 10 – 15	41400.10.5/00019	41400.10.5/00029	414**E10.5110001
	DN 20 – 32	41400.13.5/00019	41400.13.5/00029	414**E13.5110001

** describes the set pressure.

Nominal size	Setting range [bar]	** Code for valve insert, complete	Compression spring Item number
DN 10-15	1–1.9	01	562002
	2–4.9	02	562003
	5–7.9	05	562004
	8–13.9	08	562005
	14–19.9	14	562006
	20–25	20	562001
DN 20-32	1–1.9	01	562010

Nominal size	Setting range [bar]	** Code for valve insert, complete	Compression spring Item number
	2–4.9	02	562011
	5–9.9	05	562012
	10–15.9	10	562013
	16–19.9	16	562042
	20–25	20	562016

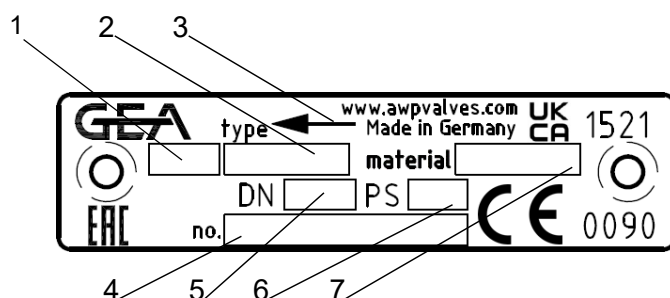
A seal kit contains all necessary O-rings and flat sealing rings suitable for the respective nominal diameter. A valve insert contains all internal parts including seals, i.e. stem, valve disc, bonnet and nameplate (with new serial number!), as well as the cap, pre-assembled. All spare parts mentioned above refer to the standard design of the valves, i.e. body material = steel, pressure rating = PS 25, O-ring material = CR, with cap. Different spare part numbers apply to valves with a design deviating from this.

In case of doubt, please contact our Sales Support either via our website awpvalves.com/contact or by email to info@awpvalves.com. The most reliable method to correctly identify the required spare part is to send a photo of the nameplate on which the serial number of the valve is clearly visible.

12 Marking

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

Nameplate on body



1 Type designation	2 Type no.
3 Flow direction	4 Serial number
5 Nominal size (DN)	6 Pressure rating (PS)
7 Material number	

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

13 Notice regarding residual risks in accordance with the Pressure Equipment Directive 2014/68/EU

Residual hazards that cannot be eliminated by the manufacturer include:

NOTICE

- ▶ Do not remove the cover during operation (without authorization).
- ▶ Do not install flange connections (inlet and outlet flanges, flanged valve covers) incorrectly.
- ▶ Contaminants in the operating fluid or improper handling of components can cause damage to the seat seal.
- ▶ Failure to observe the operating limits and manufacturer's instructions as specified in these operating instructions.

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