

B-PRESSURE VALVES PN16, DIN 14381



B PRESSURE VALVES PN 16
B PRESSURE VALVES "SERVO" PN 25



Shut-off device for pressure outlets of centrifugal fire pumps (FPN/PFPN).

FOREWORD

Applicable standards and regulations

The AWG B pressure valves were designed and manufactured according to the relevant provisions of these directives and harmonised standards or is based on this directive, depending on the series:

- DIN 14381:2017-04
Fire fighting and fire protection - Pressure valve type B PN 16 - Self-locking

Conversions and modifications

Unauthorised conversions or modifications to the B pressure valves are prohibited without written consent from the manufacturer.

AWG Fittings GmbH accepts no liability for damage caused by conversions or modifications, improper handling by the customer or by third parties commissioned by the customer, or caused by non-compliance with these instructions.

Other relevant documents

Apart from this manual, no other applicable documents are required for the safe handling of the AWG B pressure valves.

The data sheet for this device can be downloaded for information purposes from the Internet: www.awg-fittings.com

Copyright

These operating instructions are valid for the following devices:
AWG B pressure valves PN16, AWG B pressure valves "Servo" PN 25
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Subject to technical changes and errors.

These instructions and the applicable documents are not subject to any automatic change service. The latest version can be obtained from the manufacturer.

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1 INTRODUCTION

This manual contains important information regarding your personal safety. This manual must be read and understood by all persons who handle or use the device during any phase of its life cycle.

The manual must be close at hand at the place of use throughout the device's life cycle. All persons handling the device must be able to consult the manual at any time. The manual must be handed over along with the device when the device is sold.

1.1 Key to the symbols

✓ This check mark indicates a prerequisite that must be fulfilled before a task can be carried out.

1. These numbered items list all the steps making up a task.

1.1.1 Safety information



DANGER

Red signal bar and the signal word DANGER

Hazard with a high degree of risk, *resulting* in death or serious injury if not avoided.



WARNING

Orange signal bar and the signal word WARNING

Hazard with a high degree of risk that *may result* in death or serious injury if not avoided.



CAUTION

Yellow signal bar and the signal word CAUTION

Hazard with a low degree of risk that may result in minor injuries if not avoided.

1.1.2 General information

IMPORTANT

Blue signal bar and the signal word IMPORTANT

Instructions on how to avoid damage to property. These instructions are not related to potential physical injuries.



INFORMATION

This info box contains general information and tips for using the device.

1.2 Figures

The illustrations in this manual are given by way of example. Differences between a technical illustration and the actual state of affairs are therefore possible.

The text contains a reference to an illustration with the item number in brackets: (Fig. 2/4) refers to Item 4 in Figure 2.

2 SAFETY INFORMATION

The AWG B pressure valves described here are in line with the state of the art as well as the recognised safety regulations. The safety and health protection requirements have been met. Nevertheless, their use may give rise to hazards for the user or third parties or cause damage to the device itself or other material assets.

2.1 General safety instructions

- The device may only be operated in accordance with these instructions and in perfect condition.
- The operators must have received the necessary training to be able to handle the device properly.
- Unauthorised modifications or the installation of additional components not approved by the manufacturer endanger the proper functioning of the device.
 - Modifications to the device are prohibited
 - Only use accessories approved by the manufacturer
- The operator is responsible for safety in the vicinity of the device, in particular for compliance with the general safety regulations. This includes ensuring, before using the device, that all protective devices are fully in place and functional.

2.2 Safety during operation

- Observe all safety rules and protective measures applicable for use at the place of use.
- Make sure the device does not get damaged during transport, installation, commissioning, operation or maintenance.
- The safety regulations laid down in the country-specific service regulations for fire-fighters (for example in Germany the Feuerwehrdienstvorschrift FwDV) or the corresponding internal company regulations must be observed.

2.3 Qualifications of the operators

Persons handling or using the pressure valve must be technically qualified and trained. They must be aware of all risks involved in handling the device.

The pressure valve may only be used by persons who have been trained and instructed in the operation of the device in accordance with the country-specific fire service regulation (in Germany: FwDV) or corresponding internal company regulations.

Different qualifications are required for personnel performing the different types of activity.

Instructed personnel:

Transport / use / cleaning as well as "Basic" functional testing

Technical personnel:

Maintenance as well as "Standard" and "Advanced" functional testing

2.4 Personal protective equipment

When using the AWG B pressure valves, personal protective equipment must be worn, in accordance with the country-specific fire service regulation (e.g. in Germany: FwDV) or with internal company regulations, in action.

3 DESCRIPTION

3.1 Function

B pressure valves according to DIN 14381:2017-04 serve as shut-off devices for the pressure outlets of centrifugal fire pumps.

The pressure valve has a non-return function that closes automatically during the venting process (priming). In the event of a brief interruption of pump operation, this eliminates the need for a new venting process. The outlet pressure of the centrifugal fire pump opens the valve against the spring force.

To open the non-return valve manually, pull the knob of the spindle lock and turn the hand wheel further out counter-clockwise. The valve disc is thereby mechanically lifted from its seat, the non-return valve is overridden. This function can be used, for example, to relieve pressure built up in the delivery lines via the centrifugal fire pump.

In the "Servo" version, the valve disc is also hydraulically balanced. This reduces the torque required to close the valve against the pump pressure. The closing torques of the standard valves are significantly higher and comply with the design specifications of the product standard.

The pressure valve is used to slowly open and close a pressure outlet, thus avoiding hazards and damage due to pressure surges.

For water delivery, the pressure valve should be opened as fully as possible. It is not possible to regulate the flow rate by intermediate positions of the valve, as the valve can open automatically during operation due to external influences such as flow, vehicle and turbulence vibrations.

3.2 Intended use

- Shutting off the pressure outlets of fire pumps
- Opening and closing the pressure outlet

Only use the device in technically sound condition and in accordance with the intended purpose and with safety and potential dangers in mind.

3.3 Foreseeable misuse

- Use to control the flow rate (no intermediate positions allowed)
- Use beyond the country-specific fire brigade regulations (in Germany: FwDV)
- Conversion or modification
- Operation in technically unsound condition
- Operation outside the approved characteristic values
- Fitting of spare parts that are not approved or not suitable for the operating conditions

3.4 Characteristic values

Max. operating pressure	16 bar (PN16) / 25 bar (PN 25)
Operating temperature	- 20 °C * to + 60 °C * with running water

With a pressure drop of 1 bar, the flow must be at least 2000 l/min.



Technical data

You can find additional key data in the product information for the relevant pressure valve in the AWG catalogue or on the Internet at www.awg-fittings.com/products/fittings.

3.5 Overview

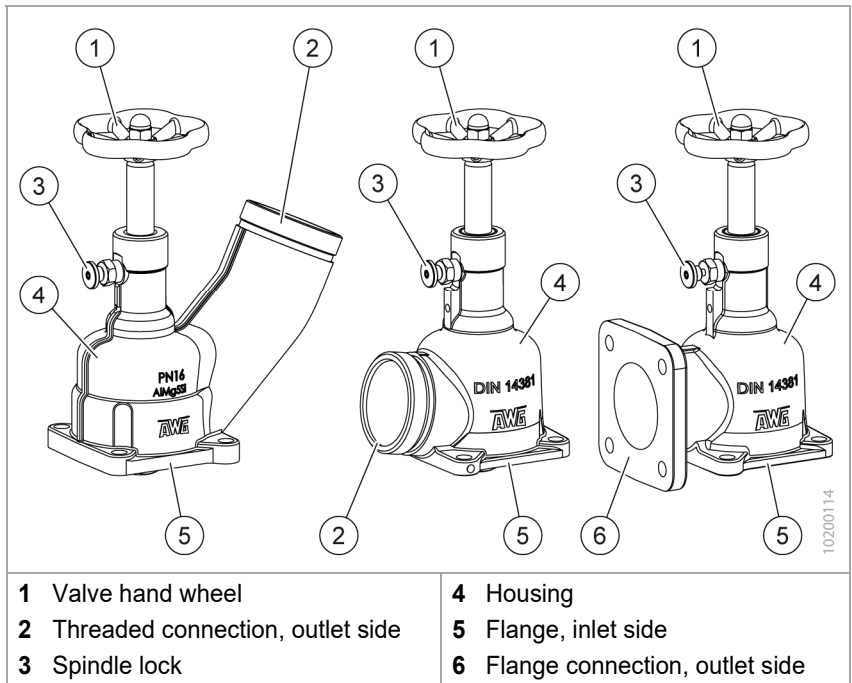


Fig. 1 Overview B pressure valves (examples)

Versions

ID No.	Type	Connection	Dimensions [mm]			Weight [kg]
			L	B	H	
202 159 33	B – F 90 *	Flange connection	145	125	200	1.8
201 962 33	B – G 45 L *	BSP G2 1/2" AG	220	125	200	1.9
208 051 32	B – G 80 K *	BSP G2 1/2" AG	140	125	250	1.6
202 010 33	Servo PN 25	Flange connection	145	125	200	2.0

* Design according to DIN 14381

4 DELIVERY

The pressure valve has been carefully packaged at AWG Fittings GmbH.

- After unpacking, check the delivery for damage and verify completeness.
- Any damage must be immediately reported to the carrier.
- If parts are missing, immediately inform the responsible specialist dealer or AWG Fittings GmbH.
- The packaging material is recyclable, please dispose of it in an environmentally-friendly manner.

The pressure valve is delivered ready to be connected and is immediately ready for use in an extinguishing system after connecting with a suitable coupling.

5 USE

5.1 Notes



WARNING

Attach adapters correctly

Danger of injury due to loosening of adapter connections.

- The flange connections mounted on the customer side and the couplings mounted on the outlet side must be firmly screwed onto the pressure valve.



WARNING

Risk of injury from strong pressure surges

When opening or closing the pressure valve quickly, pressure surges may occur depending on the pressure and the flow rate. Safe handling must be ensured.

The maximum pressure load must be within the specified pressure range.

- Use a pressure relief valve if necessary.



WARNING

Perform the specified inspections

To avoid serious injury, the specified inspections to be carried out to detect damage must be observed.



Installing the B pressure valve

As a rule, the inlet side of the B pressure valve is permanently mounted on a piece of equipment (vehicle, pump). On the outlet side, the pressure valve can also be permanently installed on a flange or a coupling is mounted.

If the B pressure valve is installed by the customer, observe the country-specific service regulations or the in-house regulations as well as the specifications of the vehicle or pump manufacturer.

5.2 Handling

IMPORTANT

Avoid corrosion

To prevent corrosion damage, water or a water/foaming agent mixture must not be constantly present at the valve inlet.

- When used in saltwater areas, drain the valve after use and flush with fresh water.
- When used with a water/foaming agent mixture, drain the valve after use and flush with fresh water.



Handling

The pressure valve is not self-locking, it can open automatically during operation due to external influences such as flow, vehicle and turbulence vibrations.

- Fully open the pressure valve to deliver water.

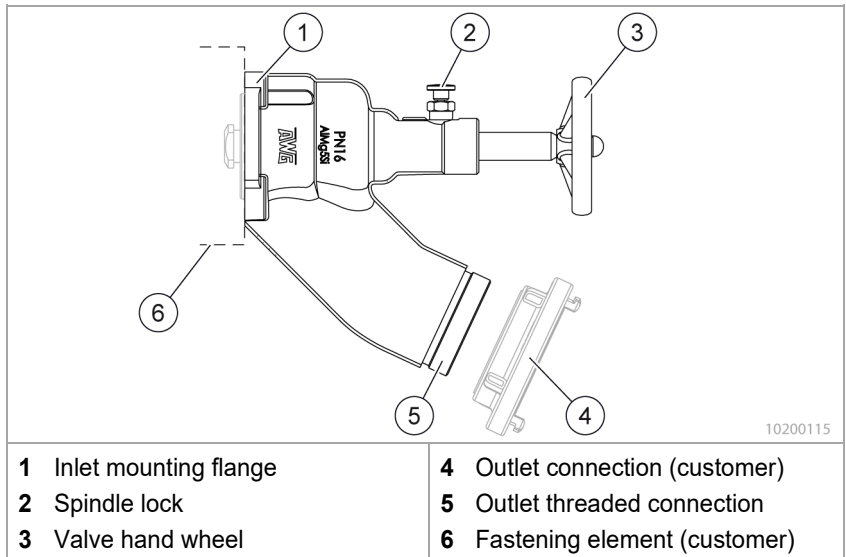


Fig. 2 Handling

- ✓ Personal protective equipment was donned.

Opening the pressure valve

1. Connect the piece of equipment or the hose to the connection mounted on the outlet side of the pressure valve.
2. Open the water supply.
3. Fully open the hand wheel (Fig. 2/3) by turning it anticlockwise.
4. Open the fittings connected on the outlet side.

Note By releasing the spindle lock (Fig. 2/2) on the valve neck, the non-return effect is cancelled, the valve is then permanently open.

Closing the pressure valve

1. End the discharge of the extinguishing agent.
2. Shut off the water supply.
3. Fully close the hand wheel (Fig. 2/3) by turning it clockwise.
4. Disconnect the piece of equipment or the hose from the connection mounted on the outlet side of the pressure valve.

Attention Water may emerge when the connection is opened.



Drain Servo-type pressure valve if there is a risk of frost

Open the valve beyond the spindle lock. The valve is then completely open. The water inside the valve is thus automatically forced out.

Then close the valve completely again.

5.3 After every use

✓ The pressure valve is disconnected from the water supply.

1. Clean the pressure valve and check for visible damage.

Caution Do not continue to use damaged components!
If you discover any damage, this must be reported to the person or department responsible.

2. After use, open the pressure valve by a quarter to half turn to relieve the pressure on the valve disc.

6 FUNCTIONAL TEST

6.1 Prerequisites

All tests of the functional safety of the AWG pressure valves must be carried out in accordance with the manufacturer's technical documentation and documented if necessary.

The following inspections are defined for the pressure valves:

- Mandatory BASIC Inspection after each use
- Mandatory STANDARD Inspection every 12 months
- Optional ADVANCED Inspection every 12 months

The STANDARD and ADVANCED inspections may only be carried out by qualified personnel who have been trained for these inspections:

- Fire-fighters who have received training as fire-fighting equipment maintenance technicians or persons with equivalent qualifications
- or, if desired, directly by the manufacturer

Inspection by the manufacturer

AWG Fittings GmbH offers an inspection as part of its service offering. Send us the pressure valve and you will receive the inspected device back by the agreed date. You will find a return delivery form on our website www.awg-fittings.com. If required, a rental device can also be provided.



Documenting the inspection result

To meet the requirements for occupational safety and accident prevention, the test results for each test must be documented. Please observe the country-specific regulations.

In Germany, the guidelines of the DGUV (Deutsche Gesetzliche Unfallversicherung e.V. [German Statutory Accident Insurance]) apply.

A product specific test chart in accordance with the DGUV can be downloaded from www.awg-fittings.com

- Keep the documented test result as proof.

6.2 Performing the inspection



CAUTION

Performing the inspection safely

Some inspection steps are performed with pressurised systems. For testing purposes, the valve can be statically subjected to 1.5 times the nominal pressure (PN) with a test time < 2 minutes.

- Observe the safety regulations.
- Wear personal protective equipment.
- Do not put other persons in danger.

6.2.1 BASIC Inspection after each use

1. Check the pressure valve for visible damage, loose parts and dirt.
2. Check the lock nut of the hand wheel valves for tight fit.
3. Check the function of the spring-loaded pull knob of the spindle lock.

6.2.2 STANDARD Inspection every 12 months

1. Static pressure test in flow direction at closing pressure of the FPN/PFPN (duration 2 minutes; tightness of the valve).
2. Check the lock nut of the hand wheel valves for tight fit.
3. Check the pressure valve for calcification.
4. Check the adjustment spindle for sufficient lubrication.

6.2.3 ADVANCED Inspection every 12 months

- Check the valve disc and gasket for wear.
- Threaded version: Check the thread for heavy wear and tear.

Replace device if worn.

7 MAINTENANCE

7.1 Inspection and maintenance

Apart from visual inspection, cleaning and the recommended relubrication of the spindle, no regular service work is necessary.

Spindle relubrication

1. Relubricate the pressure valve spindle after approx. 100 operating hours.

Closing torques and wear can be considerably reduced with this spray grease: *Rivolta W.A.P. Aerosol / Bremer & Leguil GmbH, Duisburg*, (www.Bremer-Leguil.de)

Limescale deposits

Limescale leads to leaks and wear as well as to the sluggishness of moving parts. The period of time during which the pressure valve calcifies or whether calcification occurs at all depends largely on the frequency of use and the composition of the pumped water. Therefore, no regular maintenance or repair intervals can be specified.

1. As soon as you notice limescale on the pressure valve, descale the machine with a mild descaler. Follow the user instructions for the descaling agent.

7.2 Repair

Replacing the guide bush and valve disc

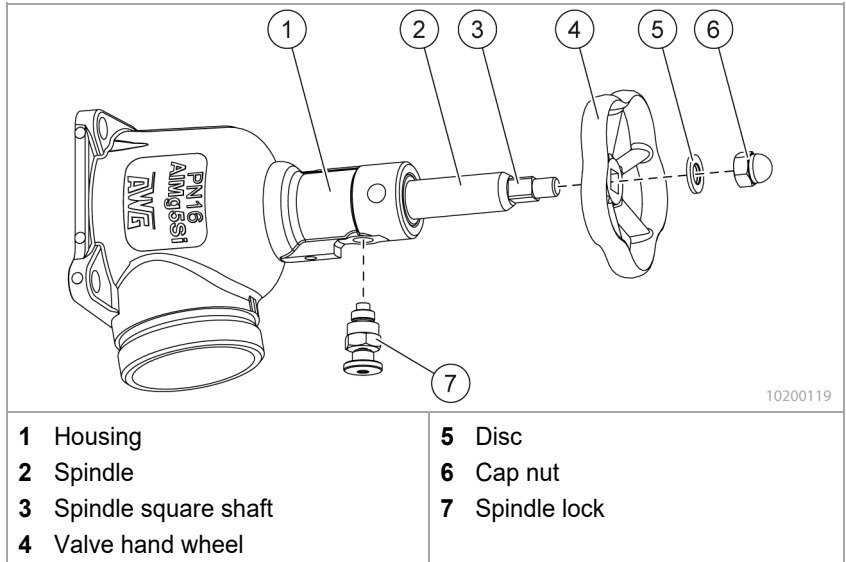


Fig. 3 Dismantling the spindle

Replacing the guide bush

1. Unscrew the pressure valve from the inlet and the fittings connected on the outlet side.
2. Unscrew the cap nut (Fig. 3/6), remove the washer (Fig. 3/5) and the hand wheel (Fig. 3/4).
3. Unscrew the spindle lock assembly (Fig. 3/7) completely from the housing (Fig. 3/1).
4. Unscrew the spindle completely downwards out of the housing using a suitable spanner on the square (Fig. 3/3).
5. Knock out the guide bush.
6. Fit the new guide bush with the pre-mounted O-rings.

Attention: When inserting, take care not to damage the O-rings.

Replacing the disc

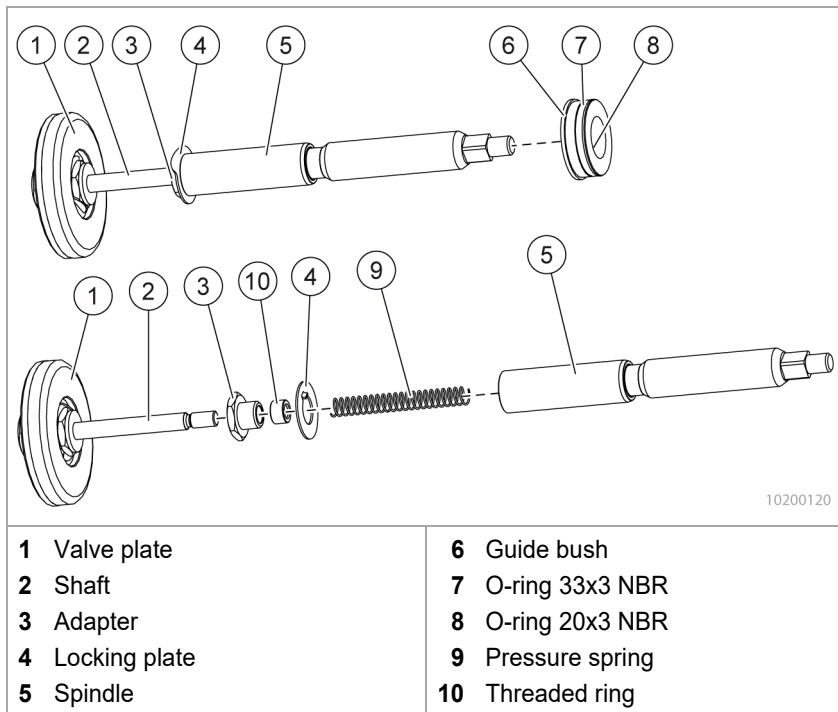


Fig. 4 Bush and valve disc / spindle

1. Straighten the lug of the locking plate (Fig. 4/4).
2. Completely unscrew the valve disc (Fig. 4/1) with the mounted axle (Fig. 4/2) from the adapter M14x1.5~00 (Fig. 4/3).
With repair set Advanced: Replace pressure spring (Fig. 4/9) and spindle (Fig. 4/5).
3. Screw the adapter in the correct position onto the axle of the new valve disc and screw on the threaded ring (Fig. 4/9).
4. Insert the new locking plate in the correct position.
5. Screw on the spindle. The guide of the locking plate must be seated in the notch of the spindle.
6. Screw the adapter tight and secure the position by bending the lug of the locking plate.

7. Put the spindle back into the housing and screw on the hand wheel.



Repair version "Servo"

A gasket set and a repair set are also available for the "Servo" version. Training is required for the repair, or have this version repaired by AWG customer service or an authorised specialist workshop.

Any other repair work on AWG pressure valves may only be performed by the AWG Fittings GmbH customer service or by an authorised specialist workshop.

If you need technical support, please contact our Service Centre:

AWG Fittings GmbH
 Service Centre
 D-89177 Ballendorf
 Telephone: +49 (0) 73 40 / 91 88 98 880
 Email: awg-service@idexcorp.com

We will accept devices in need of repair or maintenance, discuss with you the quickest and cheapest solution, create cost estimates, take care of the execution of the repair work and are at your disposal for any questions.

7.3 Disposal

Observe the local regulations regarding proper waste recycling or disposal.

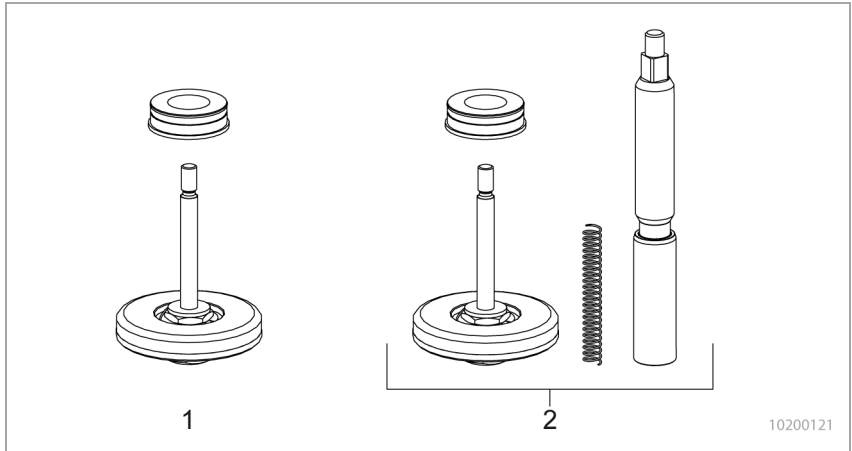
Materials

Body:	Aluminium alloy or gunmetal*
Spindle:	Brass
Hand wheel:	Glass fibre reinforced plastic
Valve disc:	Aluminium alloy with NBR or brass
Gaskets:	NBR

* Version not in accordance with DIN 14381

8 ACCESSORIES / SPARE PARTS

Spare parts



10200121

Item	Designation	Article number
1	B pressure valve, repair set Standard Pressure valve guide bush O-ring 33x3 NBR O-ring 20x3 NBR Valve disc with mounted axle 52 mm O-ring 93x3 NBR Locking plate with J-lug	62060799
2	B pressure valve, repair set Advanced as standard; plus: Spindle RD 20x1/8" L=180 mm Pressure spring 9.7x0.8x115	62077099
-	B pressure valve "Servo", gasket set	20202180
-	B pressure valve "Servo", repair set	60535899



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Two brands that together offer one of the widest ranges of premium equipment for rescue services. An overview can be found on our website.

www.awg-fittings.com



AWG Fittings GmbH

Bergstraße 25 · D-89177 Ballendorf

Phone: +49 (0) 73 40 / 91 88 98 0

awg-info@idexcorp.com · www.awg-fittings.com

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