

ORIGINAL OPERATING MANUAL

SIAMESE COUPLING DIN 17407



SIAMESES WITH NON-RETURN VALVES
AND ATMOSPHERIC VACUUM BREAKERS



With Siamese couplings, extinguishing water flows from several supply lines merged into a hose line.

The non-return valves and atmospheric vacuum breakers serve to protect drinking water hygiene and prevent damage to the drinking water pipe.

FOREWORD

Applicable standards and regulations

The AWG Siamese couplings 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 EN 174072020:11

Portable equipment for projecting extinguishing agents supplied by fire fighting pumps – Siamese couplings and dividers PN 16

Conversions and modifications

Unauthorised conversions or modifications to the Siamese couplings 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 Siamese couplings.

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

Copyright

The following operating instructions apply to the devices:

AWG Siamese coupling, supply line with 2, 3 or 4 connections, and one outlet.

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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 Siamese couplings 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 Siamese coupling must be technically qualified and trained. They must be aware of all risks involved in handling the device.

The Siamese coupling 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 Siamese couplings, 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

With a Siamese coupling according to DIN EN 17407:2020-11, the extinguishing water arriving from several supply lines is brought together into a hose line in order to increase the flow rate.

These water-carrying fittings are provided with two or three fixed couplings at the inlets and a rotatable clamp fitting at the outlet. The inlets are provided with non-return flaps to close the inlets if no water is supplied.

The non-return flaps can be designed as pendulum flaps (only double Siamese couplings) or as single flaps (double or multiple Siamese couplings).

With the water supply at a typical place of use, up to 800 l/min can be supplied from each B-line. In order to ensure an optimal water supply for fire-fighting centrifugal pumps FPN 10-2000 according to DIN EN 1028-1 (≥ 2000 l/min), Siamese couplings with 3 Storz-B (75) inlets and non-return valves are necessary.

Execution of drinking water protection and line protection

Pressure surges and negative pressure endanger the hygiene in the drinking water network.

With this design, atmospheric vacuum breakers integrated in every Storz coupling on the inlet side work fully automatically. If negative pressure occurs in the extinguishing water pipe network, air flows in from the outside and prevents the build-up of negative pressure in the extinguishing water line.

As soon as a pressure surge arrives on the outlet side, the non-return valves close automatically and independently of one another. This protects the drinking water pipeline from contamination and damage.

3.2 Intended use

- Combining several extinguishing agent flows into one hose line

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 beyond the country-specific fire brigade regulations (in Germany: FwDV)
- Operation against the direction of flow
- Continuous operation without any connected hose
- 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)
Operating temperature	-20 °C * to +60 °C * with running water



Technical data

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

3.5 Overview

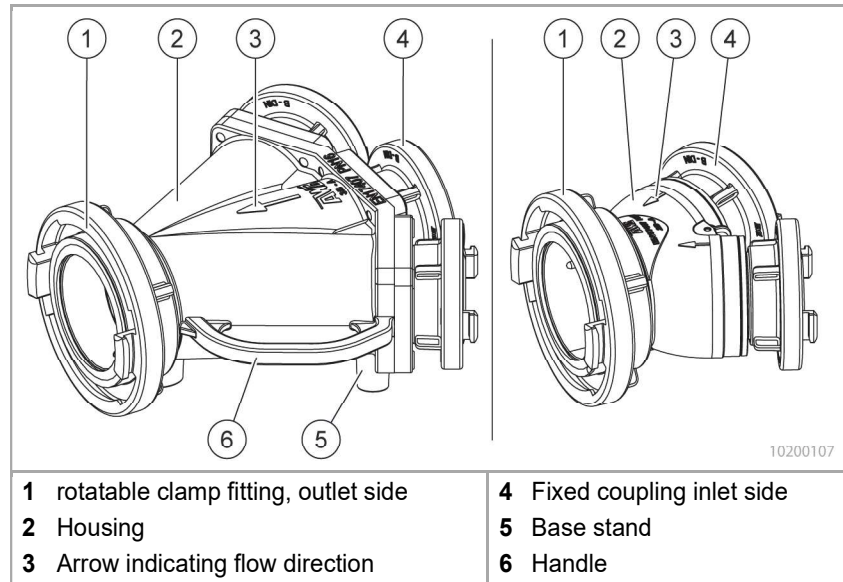


Fig. 1 Overview of Siamese couplings (examples)

4 DELIVERY, TRANSPORT, STORAGE

4.1 Delivery

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

4.2 Transport in a vehicle, storage

- ✓ The Siamese coupling has run dry.

The Siamese coupling can be transported and stored in any position.

Especially during transport inside a vehicle, the Siamese coupling must not fall over. If necessary, secure the Siamese coupling using a belt. During transport, the Siamese coupling must not be damaged by other heavy equipment.

To ensure proper functioning, the Siamese coupling may only be stored in a clean condition.

5 USE

5.1 Notes



WARNING

Attach adapters correctly

Danger of injury due to loosening of adapter connections.

- Pay attention to the direction of flow when coupling (indicated by an arrow on the valve on some devices).
- Always insert the adapters up to the stop and couple them fully.



WARNING

Drawing water from the drinking water mains

If water is drawn from a water supply system from which drinking water is dispensed, a safety device that complies with the generally recognised rules of engineering must be used to protect the drinking water.

- Use a suitable safety device, such as a system separator according to DIN 14346.



WARNING

Pinching of fingers

Risk of injury from reaching into the inlet of the Siamese coupling.

- Avoid reaching into the inlet of the Siamese coupling.
- Wear suitable safety gloves whenever possible.
- Draw attention to this danger during training.



WARNING

Perform the specified inspections

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

- The fixed coupling and the rotatable clamp fitting must be firmly screwed onto the Siamese coupling.



CAUTION

Stability of the water shield

When in use, the water shield creates a recoil force on the ground on which it stands. Once the water curtain is up, the water shield is fixed and can no longer be moved.

However, under certain circumstances the water shield can rotate or tilt during filling or due to pressure fluctuations.

- Set up the water shield on a level, firm and sturdy subsurface so that it stands firmly.
- Lay the hose straight out in front of the water shield and fill slowly.
- Do not leave the water shield unattended. It must be possible to interrupt the water supply immediately.

If the water shield rotates or tips over while filling, first stop the water supply, then realign the water shield and ensure that it stands securely and firmly.

5.2 Handling



Coupling and uncoupling

The coupling torques are such that the Siamese coupling can also be fitted without the use of a coupling spanner using only manual force.

Observe the country-specific service regulations and/or internal company regulations.

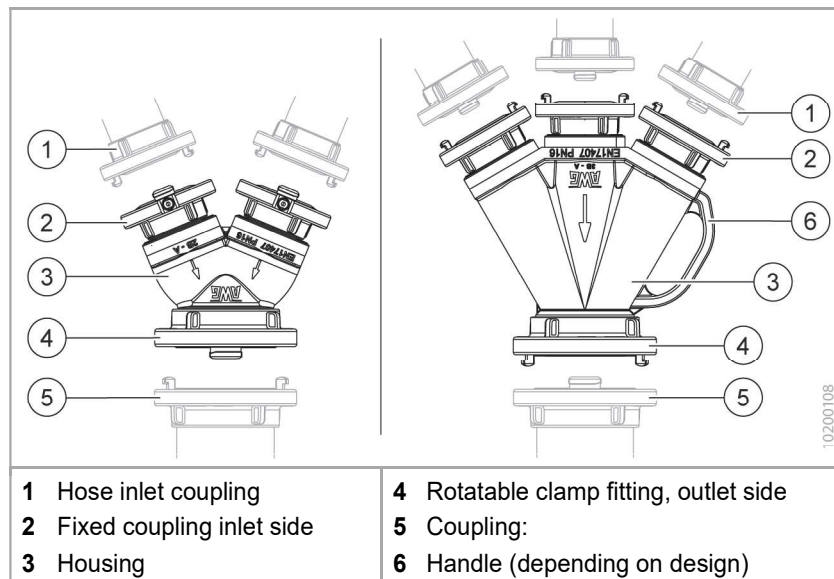


Fig. 2 Handling

- ✓ Water hoses with the appropriate couplings for the required inlet connections are available.
- ✓ Personal protective equipment was donned.

Coupling

1. Connect the coupling of the inlet side hose (Fig. 2/1) to the couplings on the corresponding inlet side (Fig. 2/2) of the Siamese coupling by hand or using a coupling spanner.

Attention Observe the direction of flow.
Couplings must be fully engaged.

2. Connect the coupling on the outlet side (Fig. 2/4) of the Siamese coupling to the coupling (Fig. 2/5) by hand or with a coupling wrench.
3. Fill the hoses with water and pressurise slowly.

Uncoupling

1. Shut off the water supply and, by hand or with the use of a coupling spanner, detach the input and output side couplings from the fixed couplings.

Attention Water may emerge when the coupling is released.

5.3 Visual inspection after each use

- ✓ The Siamese coupling is disconnected from the water supply.

1. Clean the Siamese coupling and check for visible damage.
2. Check the function of the Storz couplings:
 - Ease of movement of the clamped fitting.
 - Easy movement of the rotatable coupling.
3. Check if the individual non-return flaps or pendulum flaps move properly.

Attention Risk of finger being crushed.

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

6 FUNCTIONAL TEST

6.1 Prerequisites

The AWG Siamese couplings must be checked in accordance with the manufacturer's technical documentation and must be documented if necessary.

The following inspections are defined for the Siamese couplings:

- 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 Siamese couplings 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.

- 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 Siamese coupling for visible damage, loose parts and dirt.
2. Manually check the rotatable clamp fitting with threaded connection for firm seating.
3. Check if the individual non-return flaps or pendulum flaps move properly. **Attention:** Risk of finger being crushed.

6.2.2 STANDARD Inspection every 12 months

1. Static pressure test in the direction of flow at 10 bar inlet pressure (duration 2 minutes; tightness of the valve and the couplings)
2. Static pressure test against the direction of flow at 10 bar inlet pressure (duration 2 minutes; tightness of the flaps)

6.2.3 ADVANCED Inspection every 12 months

- Check the coupling torque of the Storz adapter:

Threshold value	Storz 52 (C): 1.5 Nm	Storz 125: 4.0 Nm
	Storz 75 (B): 2.5 Nm	Storz 150: 4.0 Nm
	Storz 110 (A): 3.0 Nm	

If the coupling torque is below the applicable threshold value, the adapter must be replaced.

- Threaded version: Check the thread for heavy wear and tear. Replace device if worn.

7 MAINTENANCE

7.1 Inspection and maintenance

Apart from the visual inspection and cleaning of the AWG Siamese couplings, no regular maintenance work is required.

7.2 Repair

Repair work on the AWG Siamese couplings 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:	Powder-coated aluminium
Flange:	Aluminium
Flap:	Stainless steel
Spring:	Stainless steel
Seals:	NBR

8 ACCESSORIES / SPARE PARTS

Designation	Article number
Seal set for the Siamese coupling	62059780



Anyone who saves lives and protects material assets every day must be able to rely on their tools. Many of you choose products from AWG and Alco.

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

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