



FILTRATION

SPARK SEPARATORS



Original instructions for use



Manual version: v1
Date created: 2023-11-12

CONTENTS

ABOUT THE INSTRUCTION	1
1 DELIVERY	2
PACKAGING AND DELIVERY CONTENT	2
HANDLING OF THE VAN	2
STORAGE BEFORE UNPACKING	2
2 TECHNICAL INFORMATION	3
PURPOSE OF THE DEVICE	3
IMPROPER USE OF EQUIPMENT	3
DESCRIPTION OF SPARK ARRESTOR	4
USED LABELS	5
DECLARATION OF CONFORMITY	5
3 SAFETY INFORMATION	6
GENERAL INFORMATION	6
OBLIGATIONS OF THE OPERATOR	6
STAFF REQUIREMENTS	7
PROHIBITED ACTIVITIES	7
INSTRUCTIONS FOR SAFE OPERATION AND MAINTENANCE	7
RESIDUAL RISKS	8
4 INSTALLATION AND COMMISSIONING	9
AVAILABILITY	9
Positioning on lifting equipment	9
ASSEMBLY	10
5 MAINTENANCE	11
RUNNING MAINTENANCE	11
REPLACEMENT PARTS	11
DISMANTLING AND DISPOSAL	12
7 DOCUMENTATION OF THE MANUFACTURER AND SUBCONTRACTORS	13
SUPPLIED DOCUMENTATION	13
8 WARRANTY CONDITIONS	13
WARRANTY CONDITIONS	13

ABOUT THE INSTRUCTION






PURPOSE OF INSTRUCTION

The instructions are intended for the operator of the equipment and all persons who come into contact with it.
 contact during **installation, operation and maintenance**.

PLATINUM INSTRUCTIONS

These instructions are valid for all **G&G** spark arrestors supplied. Differences types are described in the instructions.

SYMBOLS USED IN INSTRUCTIONS

SYMBOL	IMPORTANCE
	These symbols have the meaning of " WARNING " and " CAUTION " and indicate facts that may cause serious injury to the user and/or damage to the equipment. They also draw attention to an important instruction, feature, procedure or matter that must be followed during <u>installation and maintenance of the equipment to comply with or take note of.....</u>
	
	The symbol draws attention to an important action that must be followed but which does not endanger health or cause damage to the product.
	The symbol highlights useful information related to the device <u>and accessories.....</u>
	The symbol is a reference to another chapter in this manual.

IMPORTANT NOTICES

Please read these instructions carefully. Follow the instructions in it exactly to not only make it easier for you to use the equipment, but also to ensure its optimum use and longevity.

Do not operate the equipment until you are thoroughly familiar with all the instructions, prohibitions and recommendations contained in this manual.

The illustrations used in this manual do not necessarily correspond to reality; they are intended to describe the main principles of the device. However, the texts, drawings, photographs and other elements shown here are protected by copyright. Any misuse or unauthorized copying is punishable by law.

The manual must be considered as part of the equipment and must not be separated from it. Therefore, keep it for future reference.

RELATED DOCUMENTATION

In addition to these instructions, further documentation is available from the manufacturers of the installed components and is included with the equipment. A full list of documentation is provided in the **MANUFACTURER DOCUMENTATION** section **AND SUBCONTRACTORS**.

CONTACT US MANUFACTURER

In practice, there are also unforeseen situations that could not be included and described in this manual. Therefore, always contact the manufacturer if you are unsure of the procedure:

G&G filtration CZ, s.r.o.
 Hrubínova 1903/9
 664 51 Šlapanice
 Czech Republic

T: +420 725 745 300
 E: vesely@ggf.cz
 W: www.ggf.cz

ABOUT THE INSTRUCTION

1 | DELIVERY

PACKAGING AND DELIVERY CONTENT

The spark arrestor is delivered as a complete unit, mounted on a standard shipping pallet. It is wrapped with suitable foil and the areas susceptible to damage are secured with paper reinforcement.



Upon receipt of the equipment, check for any damage to any part or packaging and report any damage to the carrier immediately. In addition, check that the delivery is complete and that it agrees with the order or packing slip. Report any shortcomings immediately. contractors.

The following is included:

- transport pallet
- spark arrestor according to the operator's specification
- instructions for use and manufacturers' manuals for selected components
- fasteners

MANIPULATION S BY DELIVERY

Use a forklift or lifting device with adequate lifting capacity to handle the packed separator. The weight of the equipment supplied is indicated on the nameplate.



For a description of how to lift the unpacked spark arrestor, see the chapter PLACEMENT ON THE EQUIPMENT.

Lift the load with the lifting device and transport it to the designated unpacking or storage location.



The delivered equipment may only be transported in the position in which it was stored by the manufacturer. Under no circumstances may it be transported in any other position - there is a risk of serious damage to the components.

We recommend that the lifting equipment and load are handled by persons who are qualified to do so.

STORAGE BEFORE UNPACKING

If you will not unpack and install the spark arrestor immediately after delivery, store it under the following conditions:

- Leave the spark arrestor and any other accessories attached to the transport pallet provided, do not tip it on its side or lean it at an angle
- Do not place any other objects or materials on the packed spark arrestor

Recommended storage site characteristics:

Temperature:	from -5 °C to +50 °C
Humidity:	<60%, nocondensation
Air cleanliness:	Dust-free environment
Others:	Dry Storage Dry areas, Protected from direct sunlight and shocks



Unpacking and transporting the equipment to the installation site is described in the chapter INSTALLATION AND REPLACEMENT.

2 | TECHNICAL INFORMATION

PURPOSE OF THE DEVICE

G&G spark arrestors are industrial fittings designed for installation in horizontally routed exhaust duct upstream of the filtration equipment, or into the exhaust duct downstream of the technology producing sparks or hot particles. The spark arrestors are equipped with a passive rotor at their inlet to put the airflow and the extracted dust into rotation.



The design of a spark arrestor always varies according to the individual requirements of its operator and this manual cannot cover all configurations.

Further description of the function is given in the chapter DESCRIPTION OF THE SPARK REMOVER.

IMPROPER USE OF EQUIPMENT

The spark arrestors must not be used for purposes and under conditions other than those agreed during the commercial negotiations and confirmed in the commercial contract.

During operation, the maximum operating pressures and temperatures specified in the technical data sheet must not be exceeded.

Improper use also includes installation and maintenance by untrained or unauthorized persons, operation with a malfunction or defect, and operation with any unauthorized modification.

If it is found that the spark arrestor has been installed or serviced by an untrained or unauthorized person, or has been used for purposes other than those for which it was originally intended, or has been operated in violation of applicable standards, general regulations, end user's internal regulations, or in violation of this manual, all warranties on this equipment are automatically terminated.



A description of the prohibited uses of the spark arrestor is given in the PROHIBITED ACTIVITIES section.

**DESCRIPTION
 REFUSERS
 JISKER**

**Construction
 spark arrestors**

The spark arresters are equipped with a passive rotor at their inlet, which the airflow and the extracted dust into rotation. The rotating sparks are centrifuged in sedimentation part of the separator and diverted by the auxiliary collection pipe to the storage tank separated. The exhausted air, free of sparks, continues through the outlet flange to the filtration equipment. Spark separators are used both for spark separation and as spark eliminators coarse particles from the exhausted air. The separator function reduces the risk of ignition filtration system and contributes to prolonging the life of the downstream filter media filtration equipment. In the event of a high risk of ignition, spark arrestors are usually installed on a filtration system in combination with a sprinkler system. For proper functioning of the separators, it is essential that the collection container is tightly seated and there was no air suction. The spark separators, due to their weight, must be installed on a separate steel structure or support bracket. G&G spark arresters are manufactured in a welded, flanged design for Group III circular pipes and are supplied in dimensions corresponding to conventional dimension range of piping from diameter **D150** up to diameter **D1250**. For proper functioning of the separators, it is essential that the collection container is seated tightly and there was no air suction. Once the collection container is filled, it must be dismantle from the separator (using the quick release) and empty the collection container.

**Installation of the spark
 arrestor in the
 exhaust
 system**

The spark arrestor is not designed for stand-alone operation, it is only able to perform its function when integrated into the operator's exhaust system piping. It is therefore the responsibility of the person assembling the supply to familiarise themselves with this manual and to ensure that the safety requirements set out herein are met. It is also obliged to ensure the requirements arising from the relevant standards for such equipment.

The inlet and outlet flanges of the pipeline must be continuously connected to the flanges of the separator

Spark.



For a description of the installation of the spark arrestor, see Chapter 4 | INSTALLATION AND REPLACEMENT.

**Operational
 conditions**

Air temperature

Spark arrestors are designed for air materials with temperatures from -30° to +400°C

Air pressure range

The transported air shall have a pressure in the range of -5000 to 5000 Pa

Ambient temperature

Spark arresters are designed for operation in outdoor environments with temperatures in the range of -25 °C to +50 °C.

Material and surface edit For use in common applications, spark arrestors are manufactured from 11375 material in a painted finish.

Service The spark arrester does not require a constant presence of an operator.

Noise The spark arrester itself does not emit noise in excess of 70 dB(A) during operation. However, the manufacturer of the spark arrester does not know the overall operating conditions of the piping system into which the spark arrester is installed, so the local the operator's operating rules and regulations regarding hearing protection.

TECHNICAL DATA

Each spark arrester is designed and manufactured based on the requirements of its future of the operator, transmitted during the business meeting. Therefore, the technical data is not listed in this manual.

USED LABELS

Example of a production label



Výrobek:	Odlučovač jisker
Typ:	SSGG-630
Rak výroby:	2022
Zakázkové číslo:	V21196
Výrobní číslo:	SS-2022-00004
Rozměry:	Ø 630 mm
Prostředí uvnitř:	BNV
Prostředí vně:	BNV
Materiál:	11375
Hmotnost:	225 kg

„Made in Czech & Slovak company“



Výrobek:	Odlučovač jisker
Typ:	SSGG-900
Rak výroby:	2022
Zakázkové číslo:	V21196
Výrobní číslo:	SS-2022-00005
Rozměry:	Ø 900 mm
Prostředí uvnitř:	BNV
Prostředí vně:	BNV
Materiál:	11375
Hmotnost:	400 kg

„Made in Czech & Slovak company“



Výrobek:	Odlučovač jisker
Typ:	SSGG-1000
Rak výroby:	2022
Zakázkové číslo:	V21196
Výrobní číslo:	SS-2022-00006
Rozměry:	Ø1000 mm
Prostředí uvnitř:	BNV
Prostředí vně:	BNV
Materiál:	11375
Hmotnost:	472 kg

„Made in Czech & Slovak company“

Other labels



Air flow direction



Danger of injury

SUBSCRIPTIONS ABOUT THE AGREEMENT

Declaration of conformity is supplied in separate documentation, delivered with the separator spark.

3 | SAFETY INFORMATION

GENERAL INFORMATION

For your personal safety in the operation of the spark arrester and its accessories is primarily the responsibility of the person designated by the operator. The manufacturer of the spark arrester is not responsible for personal injury or damage to the spark arrester and environmental damage caused by not using and operating the spark arrester in accordance with the instructions for use and applicable safety regulations.

Spark arresters are designed in accordance with international standards and regulations applicable to the manufacture of such fittings.

The spark arrester must be fully comprehensive throughout its service life, i.e. the spark arrester itself and the accessories must be functional. If the spark arrester or any of the accessories are found to be defective, the defect must be rectified immediately. If the user is unable to remove it himself, he must contact the supplier of the spark arrester or the company that installed it in the pipe.

OBLIGATIONS OF THE OPERATOR

A company that implements a spark arrester in its technology, or the operator of the spark arrester, must ensure the following:

- It shall clearly define the scope of responsibilities and competencies of the personnel designated to operate (in the case of a manually operated spark arrester) and maintain the spark arrester.
- Before putting the spark arrester into operation, it must ensure that all those who come into contact with it can thoroughly familiarise themselves with the contents of the instructions for use.
- They must take care to protect the health of the workers carrying out the installation of the spark arrester (unless it is carried out by an external specialist company) and provide them with suitable personal protective equipment (PPE).

The operator of the spark arrester is also obliged to:

- Operate the spark arrester under the conditions for which it was designed and manufactured. The manufacturer has based the design of the spark arrester on the characteristics of the medium (type, temperature, pressure) to be conveyed through the spark arrester and a change in the characteristics of the medium may affect the operation of the spark arrester.
- Prevent access to dangerous places and dangerous areas of the spark arrester where fingers could be caught, body parts caught, falling, etc.
- Ensure proper lighting in the handling area and where operators and employees are present.

The operator of the spark arrester is recommended to:

- Establish a maintenance regime for the spark arrester, including the dates, extent and method of performance, and specify the regime in a maintenance book (or similar document) and designate personnel to maintain this documentation.
- Specify prohibited acts and activities for operators and other employees and identify other specifics arising from the local situation.

REQUIREMENTS FOR WORKERS

Qualification of staff for mounting the spark arrestor Engineering education - a knowledgeable person, i.e. a person with appropriate technical education, training and/or experience to recognise and avoid the hazards that may occur during the installation and commissioning of a spark arrestor.

Qualification of the operator Operation of the spark arrestor is only necessary if it is manually operated to open/close. The spark arrestor may then only be operated by a mentally and physically fit person, over 18 years of age and designated by the operator.

Dressing up During the installation, operation and maintenance of the spark arrestor, the designated personnel must use appropriate personal protective equipment according to the general regulations, internal regulations and the nature of the work to be performed, such as a work suit, work boots with a reinforced steel toe, gloves, helmet, goggles, ear protectors and respirators (according to local conditions).



PROHIBITED ACTIVITIES

- The spark arrestor shall not be used to convey any media other than that for which it was designed. Never exceed the allowable areas and use values of pressure, temperature, etc. for which the spark arrestor was rated.
- The mounted spark arrestor must not be stepped on or stepped on.
- It is forbidden to use the spark arrestor as a support for the piping structure.
- It is forbidden to modify in any way the design of the spark arrestor and its accessories without the manufacturer's knowledge.
- It is forbidden to remove or damage spark arrestor labels.
- It is forbidden to permit the operation, maintenance and servicing of persons who are not designated or competent to operate, maintain and service this type of valve.
- It is forbidden to use the spark arrestor if a defect is found in it or in the accessories.
- It is forbidden for operating and maintenance personnel to remove protective devices, e.g. touch protection during operation, installed by the spark arrestor operator.
- The use of spare parts from other suppliers is prohibited. The safe operation of the spark arrestor cannot be guaranteed if non-original parts are used.

INSTRUCTIONS FOR SAFE OPERATION AND MAINTENANCE

- Always stop first for any kind of malfunction, cleaning and maintenance the flow of the medium through the spark arrestor.
- Do not remove or modify the spark arrestor's protective elements.
- Unauthorized persons are prohibited from entering the area where the spark arrestor is mounted.
- If the operator detects a fault or damage during operation, he must safely stop the flow of the medium and report the fault to the responsible personnel. Faults should be recorded in an operating log or similar document.
- When replacing spare parts and dismantling the spark arrestor, suitable lifting equipment of adequate capacity must be used.
- They must use fall protection work platforms when carrying out installation or maintenance work at overhead height.
- The spark arrestor area must be adequately illuminated during maintenance or repair work.

- When working around the spark arrester that could lead to its contamination (e.g. painting, bricklaying or concrete work), the spark arrester must be protected by a suitable cover.

RESIDUAL RISKS

The spark arrester is designed so that when used properly for impeccable technical condition did not endanger the health of persons and did not cause economic damage to surrounding facilities. Nevertheless, during installation, operation and maintenance, situations may arise which are a source of danger to the user if he is not aware of them and does not observe the principles of safe working. These hazards are so-called residual risks - they are risks that remain even when all preventive and protective measures have been considered and implemented.

RISK: Injury to body parts when handling the spark arrester during its installation. Injuries due to slips, trips and falls of persons during installation or maintenance.

SAFETY: Always pay the utmost attention to the work you are doing and follow safety regulations. Wear the prescribed personal protective equipment. Make sure that any person involved in installation or maintenance is familiar with each step of the installation.

RISK: Hearing damage from exposure to excessive noise.

PROTECTION: The resulting noise level of all running machinery and equipment of the technology in which the spark arrester is implemented may exceed a limit suitable for the hearing of workers. Therefore, in such cases, use certified hearing protection.

HAZARD: Burn on spark arrester body used for media with temperature exceeding 50 °C.

PROTECTION: If the spark arrester is used for high temperature media, the temperature of the spark arrester body can also reach very high values during operation. Therefore, always wear protective gloves when operating the spark arrester manually. Allow the spark arrester to cool down before servicing. **CAUTION** - The hot surface of the spark arrester can also be a potential source of fire, so do not use or leave flammable materials near the spark arrester.

HAZARD: Ignition of the surrounding gaseous environment during installation of the spark arrester.

PROTECTION: If the spark arrester is installed in an environment where gases are present, mechanically caused sparks, such as tools striking the spark arrester, can be a source of gas ignition. Installers must inform the installer of such an environment inform the operator and must provide them with the appropriate safeguards.

4 | INSTALLATION AND COMMISSIONING



The manufacturer and supplier of the spark arrestor strongly recommends that you have it installed by a trained company. Otherwise, the company assumes no liability for damages caused by improper installation made by third parties.

AVAILABILITY

Due to the variety of packaging of spark arresters because of the dimensions and different control system, the manual does not show all the unpacking options. Therefore, the following procedure is indicative. After transporting the packed spark arrestor to the installation site, proceed as follows:

- 1 Loosen the reinforcing straps securing the spark arrestor to the pallet, remove the protective and packaging material.
- 2 Visually check that some parts of the spark arrestor have not been damaged during transport. Report defects to the supplier or carrier as soon as possible.
- 3 Verify that the specification of the spark arrestor according to its nameplate matches the intended use and specified values.
- 4 To hang the spark arrestor on the lifting device, follow the description in the subsection "Positioning on the lifting device" below.



Dispose of used packaging material according to the operator's internal regulations or the legislation in force in the country of installation of the spark arrestor.

POSITIONING ON LIFTING EQUIPMENT

Hang the spark arrestor on a suitable lifting device, e.g. workshop crane, forklift rails, etc. Select the most suitable device depending on the accessibility of the location where the spark arrestor is to be installed.

When selecting and using lashings, pay attention to the weight of the spark arrestor and the type of lashings. The use of lashings must comply with all national regulations.

One of the options raised

Another option is the use of lifting rods, hooks or lifting lugs pushed or screwed into the screw holes in the spark arrestor flanges.

Lift the spark arrestor slowly and quietly. Spark arrestors with large clearances may not have a center of gravity and may swing sideways or tip over when lifted sharply.

The spark arrestor must be protected from external damage, e.g. impact, shock or vibration, when lifting.



When lifting loads, follow the relevant standards and the operator's internal regulations.

Only persons duly authorised to use lifting equipment and carry out binding work may do so. Never stand under a lifted load or place any part of your body under a lifted load. Do not move the load over any part of another person's body. When handling the equipment, remember that the lifting capacity of the lifting equipment must always be greater than the weight of the load.

Inspect tying and lifting devices before use and replace defective parts with new ones. Do not use damaged or incomplete lashings. Lashing chains or ropes or straps must not be twisted, knotted or kinked when lifting. Never attempt to repair defective parts in an unprofessional manner.

Always use personal protective equipment such as work boots when handling the equipment with reinforced tip, protective gloves and protective helmets.

ASSEMBLY

Spark arrestors can only be installed in horizontal pipework. Spark arrestors is designed unidirectionally and can only be installed in the specified flow direction.

Installation space and operation

The location of the spark arrester must be chosen to provide sufficient space for installation, operation, inspection and maintenance work. It is most important to provide sufficient hand space and protect hands from injury by catching or pinching.

If the spark arrester is to be installed in a pipe in an outdoor environment, it must be protected against extreme weather conditions by suitable covering.

Activities before assembly

The following must be observed before installation:

- 1 Check that the dimensions of the spark arrester flange and the pipe match. Checking the inside diameter of the flanges is very important for the proper operation of the spark arrester. An incorrectly selected diameter of the separator will result in improper airflow and therefore poor spark separation.

Installation principles

The following must be observed before installation:

- If there is a possibility of fire or even explosion due to electrostatic charge or stray currents, the spark arrester must be grounded.



When installing the spark arrester in the pipe, the pipe must not be pressurized and filled with medium.

Installation spark arrestors between flanges

- 1 Using a suitable tool, pull the pipe flanges apart so that the spark arrester can be inserted between them. Ensure that the flanges are parallel and aligned.
- 2 Center the spark arrester between the pipes, slowly slide out the tool used to extend it and hand bolt the spark arrester to the flanges using the bolts and nuts provided.
- 4 Tighten the screws one at a time using the "criss-cross" method, i.e. tighten opposite screws. Tighten them until metal to metal contact is made between the spark arrester body and flanges. Do not tighten further. Do not use excessive force.

Checks before the first introduction up and running

After installation, do the following:

- 1 Visually inspect all elements of a functioning spark arrester.
- 2 Check that all screw connections are tightened.



Obvious functional faults must be rectified before commissioning.

When retrofitting the fittings with paint, the functional parts must not be repainted. No labels or markings shall be painted over when repainting. If a thinner is used for cleaning, take care not to disturb the seals in the pipe or fitting.

5 | MAINTENANCE



Before any mechanical maintenance or inspection of the spark arrester, always depressurize the piping first, shut off the media supply and secure the piping against unintentional re-entry.

Depending on the type and hazardousness of the operating medium, all necessary safety regulations must be observed!

RUNNING MAINTENANCE

Visual inspection Periodically visually check the spark arrester flange connections for tightness. In case of leaks, the joints must be tightened or the pipe and flange contact surfaces resealed.

Visually inspect the condition of the paint or the surface of the spark arrester.

Mechanical check It is important to regularly check the waste bin at the separator for fullness and clean it regularly.



Under extreme conditions of the valve's working environment, these inspection tasks should be carried out more frequently.



Keep appropriate records of periodic visual and continuity checks Records.

REPLACEMENT PARTS

If you need to replace any part or assembly, please contact **G&G filtration, s.r.o.**, or the company that installed the spark arrester, to agreed to provide the delivery and assembly of the required component.

When ordering spare parts from our company, the following information is required:

- Spark arrester serial number
- Component name
- Parameters
- Number of pieces

**DEMONTAGE
 A LIKVIDATION**

Due to the nature of the working conditions, which vary from application to application, it is not possible to determine the lifetime of a spark arrester in general. However, before disposing of the spark arrester and its parts, render them unusable.



Depending on the type and hazardousness of the operating medium, all necessary safety regulations must be observed!

**Dismantling
 spark arrestors**

- 1 Depressurise the pipe and secure the pipe against unintentional reintroduction into operation.
- 2 Hang the spark arrester on a suitable lifting device (see the section PLACEMENT ON LIFTING DEVICES).
- 3 Carefully loosen the flange bolts and gradually unscrew them.
- 4 Move the hanging spark arrester outside the duct to a suitable location.

**Disposal
 spark arrestors**

When disposing of spark arrester parts, the relevant national waste disposal regulations must be observed. We recommend that you sort the individual components of the spark arrester by group (metals, plastics, grease and lubricants, electrical parts, etc.) or dispose of the complete spark arrester at a specialised disposal facility.

7 | DOCUMENTATION OF THE MANUFACTURER AND SUBCONTRACTORS

ADDED DOCUMENTATION

Each spark arrester is supplied with the following manufacturer's documentation and subcontractors:

- delivery note (handed over on delivery)
- declaration of conformity

8 | WARRANTY CONDITIONS

WARRANTY CONDITIONS

The manufacturer guarantees its product for 24 months from the date of delivery or handover and acceptance.

THE WARRANTY COVERS:

- hidden defects in the material
- demonstrable design defects

Defects covered by the warranty must be reported in writing to the manufacturer's service department.

Special cases can only be decided after discussion, inspection and assessment by the manufacturer.

THE WARRANTY DOES NOT COVER DEFECTS CAUSED BY:

- mechanical damage
- negligent handling
- by unprofessional intervention
- normal mechanical wear and tear, etc.



Other warranty conditions can be agreed in the contract.