Dear customer,

Thank you very much for your purchase at RS. We are glad about your decision for one of our first class quality products and that we could convince you of our capability.

**Ultimate perfection is our duty**… i.e. our consequent and complete quality management throughout the whole production process guarantees that only faultless products leave our premises… **quality does not allow any compromises!**

For further detailed information about our products or an individual solution for your scope of work, do not hesitate to contact our sales team. We will assist you with all our experience and product know-how. A visit of our sales representatives can be arranged by appointment. It’s worth it!

Further information about us and our multifarious product range can be found on our web site [www.rs-seliger.de](http://www.rs-seliger.de).

We are looking forward to continuing our cooperation with you.

Yours sincerely

[Signature]

Dr. Jens Reppenhagen
Managing Director
Steam Jet Cleaner DSG
Operating Instructions

Item no.: 274.075000.16109

Subject to design changes
August 2017
Contents

1 Introduction ............................................................................................................................................. 3
  1.1 Examination of the jet steam cleaner and the accompanying documents ........................................... 3
  1.2 Jet extensions ...................................................................................................................................... 3
  1.3 Supply of the jet extension as a separate component ............................................................................. 3
  1.4 Optional accessories ............................................................................................................................ 4

2 Safety instructions .................................................................................................................................... 5
  2.1 Operator's duty of care ......................................................................................................................... 5
  2.2 Staff requirements ............................................................................................................................... 5
  2.3 Intended use ......................................................................................................................................... 5
  2.4 Special hazards ..................................................................................................................................... 6
  2.5 Dangers during assembly and dismantling of the cleaner .................................................................... 6
  2.6 Modifications to steam cleaners and jet extensions ............................................................................. 6
  2.7 Rules for storage and transport .......................................................................................................... 6

3 Description and initial operation ................................................................................................................ 8
  3.1 Initial operation ..................................................................................................................................... 8
  3.2 Equipment for maintenance and repair ............................................................................................... 9

4 Operation ................................................................................................................................................ 12
  4.1 Use in normal operation ..................................................................................................................... 12
  4.2 Decommissioning for a longer period of time ...................................................................................... 12
  4.3 Re-commissioning ............................................................................................................................... 13
  4.4 Shut-down ........................................................................................................................................... 13
  4.5 Maintenance instructions .................................................................................................................... 13
  4.6 Dismantling the steam cleaner ........................................................................................................... 14
  4.7 Improper use ....................................................................................................................................... 14
  4.8 Temperature classification T(x) for use in hazardous areas ............................................................... 14
  4.9 Use of the steam cleaner in hazardous areas of zones 1 and 2 ........................................................... 14

5 Checking the steam and hot water cleaner ............................................................................................... 16
  6 Device name .......................................................................................................................................... 16
  7 Fault detection and elimination .............................................................................................................. 17
  8 Manufacturer ......................................................................................................................................... 17
1 Introduction

These instructions for steam and hot water cleaners are for planners, users and operators of steam and hot water cleaners and their maintenance mechanics.

1.1 Examination of the jet steam cleaner and the accompanying documents

You can gather your order data and our delivery data from the delivery note of the supplied steam and hot water cleaner. This data should be compared with the identification on the cleaners. Furthermore, we are sending you this documentation which must be read before assembly and use of the cleaner. The documentation contains the following documents:

- Device model
- Device operating data
- Instructions for use
- Parts drawing with bill of materials

The adherence to the described limits of performance is the prerequisite for function and operation of our steam cleaners. Before installation of the devices please check carefully whether the use of the cleaner you have ordered complies with our documentation.

CAUTION

For use in hazardous areas there must be a confirmation on the order confirmation, the delivery note and in the documentation.

1.2 Jet extensions

It is possible to screw and clamp on a 600 mm insulated jet extension. Special lengths are available on request. The jet extension has a protective grid with ventilation openings which prevents contact with the inner tube. It is only for assembly on our steam cleaners. The jet extension is screwed on and secured by means of 3 grub screws on steam and hot water cleaners to prevent inadvertent loosening: It is sealed with an O-ring at the outlet of the steam and hot water cleaner. The usual fan nozzles and screw connections are fitted on to the outlet end of the jet extension using a gasket. These screw connections make it possible to vary the position of the different nozzles.

1.3 Supply of the jet extension as a separate component

If the jet extension is supplied as a separate component, it may only be used as additional equipment on our steam cleaners. Please take note of the separate instructions for this in these user instructions. The above notes on documentation examination also apply in a general way to single components.
### 1.4 Optional accessories

The steam cleaner can optionally be equipped with the following accessories:

<table>
<thead>
<tr>
<th>Name:</th>
<th>Item number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jet extension 600mm (other lengths on request)</td>
<td>273.075000.16029</td>
</tr>
<tr>
<td>- Jet kit with LA 40-25 fan nozzle</td>
<td>274.075000.16001</td>
</tr>
<tr>
<td>Fan nozzle flow rate 28.6 l/ at 10 bar, angle of spray 25°</td>
<td>274.075000.16002</td>
</tr>
<tr>
<td>- Jet kit with LA 60-0 spot nozzle</td>
<td>274.075000.16003</td>
</tr>
<tr>
<td>Spot nozzle flow rate 43.4 l/ at 10 bar, angle of spray 0°</td>
<td>274.075000.16002</td>
</tr>
<tr>
<td>- Jet kit with DBIF 47 solid-cone nozzle</td>
<td>274.075000.16003</td>
</tr>
<tr>
<td>Solid-cone nozzle flow rate 31.7 l/ at 8 bar, angle of spray 45°</td>
<td>274.075000.16003</td>
</tr>
<tr>
<td>Further flow rates and angles of spray of similar design and material quality can be supplied on request.</td>
<td></td>
</tr>
<tr>
<td>Additional handle</td>
<td>273.075000.16042</td>
</tr>
</tbody>
</table>

The optional additional handle can be fitted on the front connection of the steam cleaner instead of the jet extension. To do this the two hexagonal screws on the inner side of the setting ring must be loosened until the ring can be pushed on to the connection. The two O-rings that are present should be removed prior to this. After the additional handle has been brought into the correct position the two hexagonal screws must be firmly tightened again so that the handle does not slip.
2 Safety instructions

Provision of the components should be planned by the operator under consideration of the technical data and performance data.

2.1 Operator's duty of care

The operator must ensure that

- The accompanying documentation is available to assembly, operating, maintenance and supervising staff on site.
- The device is used for its intended purpose.
- Any measuring, regulating and controlling technology incl. safety locks are adapted to the data of the device.
- The device and the required safety installations for operating the plant are in perfect functional condition.
- Qualification of staff is ensured through training and teaching.
- The required personal safety and protective equipment for the respective work is available to the staff.
- Maintenance intervals are laid down, adherence to these is checked and the staff is protected through securing of the plant when assembly, dismantling or maintenance work is done.

2.2 Staff requirements

- Only qualified and authorised staff may operate, maintain or repair the devices.
- Staff must be regularly trained in work and plant safety and in environmental protection; they must be familiar with the instructions for use and the data security sheet and follow the instructions.
- The personal safety and protection equipment must be worn.
- Regular maintenance must be carried out and the intervals adhered to.

2.3 Intended use

Design and function of the steam and hot water cleaner are governed mainly by the aspect of safe use and personal protection. The device is suitable for hot water up to +120°C (recommended is approx. +80°C) and an operating pressure of 15 bar, as well as for saturated steam up to an operating temperature of +180°C and an operating pressure of 10 bar. The optional jet extension provided with thread is equally suitable for both operating forms.

As its use is mainly in industry, this steam and hot water cleaner corresponds to the high safety standards of the chemical industry. Steam and hot water cleaners may be used only with the operating media of saturated steam and water.

The steam and hot water cleaner may only be connected to hoses and fittings that correspond to the DIN EN ISO 6134 (DIN2825/2826) standard. Other connections require our express confirmation. Jet extensions may only be used as additional equipment on our steam cleaners.

The swivel joint on the steam cleaner is not intended as a handle. If the steam cleaner is used without the extension, it is recommended using the optional additional handle (see 1.4).
Use of the steam cleaner is only permissible under the following environmental conditions:

- Atmospheric pressure: 0.8 to 1.1 bar
- Ambient temperature: 0°C to 40°C

The steam cleaner must never be dropped; dragging it along the ground is also prohibited.

For use in hazardous areas please also follow the additional instructions in Chapters 4.8 and 4.9 of this manual.

2.4 Special hazards

Steam and hot water cleaners are freely accessible in the plants. No persons may reside in the area of the steam or water jet during work with the steam cleaner.

It must be observed that due to the accessibility of the hose connection there can be temperatures of over 43°C at the point where the hose is attached to the swivel joint. Here the operator should wear appropriate protective clothing to avoid injury from hot surfaces.

Further protective measures during operation are subject to the operator’s duty of care.

2.5 Dangers during assembly and dismantling of the cleaner

The following dangers exist on assembling and dismantling steam cleaners:
- Eye injuries – eye shields should always be worn when working on the cleaner
- Burns through touching the clamping jaw shells, nozzles and couplings at the outlet of the jet extension before they have cooled down
- Scalds from steam or hot water if the feed line has not been completely shut off

2.6 Modifications to steam cleaners and jet extensions

No modifications may be carried out on steam and hot water cleaners or the jet extensions. Failure to comply may affect or even remove the function and safety of the device.

Only original spare parts may be fitted. Please also note our instructions about auxiliary materials in Chapter 3.2 “Equipment for maintenance and repair”.

2.7 Rules for storage and transport

Company-internal transport and storage must always take place in the original packaging. Particularly in storage and transport of the cleaners without the original packaging it must always be ensured that the cleaners sustain no damage.
Storage at temperatures below freezing point should be avoided. Freezing of condensation water has a long-term detrimental affect on the safe function. Proper storage is within a building at a temperature above freezing point.
3 Description and initial operation

The steam and hot water cleaner consists of rubber-sheathed pistols, gaskets, the casing and the heat protection plates as well as a screwed on jet extension. The levering movement when operating the pistols is transferred via a gear to a shaft which opens the valve and thus directs the steam into the nozzle.

The steam cleaner is delivered in a ready-for-use condition. On assembly the maximal operating conditions must be observed. Foreign bodies such as welding beads or other objects must be removed from the incoming pipelines.

The steam cleaner has a G¾ " or G½" (special version) screw thread on the media inlet side and should be connected with corresponding standard hose fittings. Teflon tape or Teflon paste may not be used under any circumstances.

When hoses are connected the general instructions for hoses should be followed. To avoid twisting of hoses and allow better handling of the device a hose pivot bearing is available. It has a G¾" or G½" (special version) thread connection and can be connected directly to the steam cleaner.

If a jet extension is included in the delivery, this is assembled after the assembly of the steam cleaner. For this the 3 thread pins on the jet extension are loosened and the jet extension is screwed on to the thread on the outlet side of the steam cleaner. The O-rings and the threads should be greased with Krytox GPL206 prior to this. To prevent inadvertent loosening, the jet extension is secured with the threaded pins.

3.1 Initial operation

The instructions for use of the steam cleaner must be kept in the company; instructions in the sense of the work protection law and the regulations for the use of work equipment must be available and followed. Staff must be familiar with the instructions for use, the safety equipment and measures to be taken in the case of faults.

It is an advantage if the initial operation takes place under supervision of the responsible planning staff and the subsequent operators.

It has been ensured that the steam cleaner will be used for its intended purpose.

The plant has been checked to ensure that there is no leakage of the installation. The connection of the steam cleaners to the feed pipe should be checked for leakage; conductivity has been proven.

The plant is in a checked condition of safety.

Carefully open the steam cleaner and observe the jet emitted.

If the functionality of the device including its shut-off has been verified, normal operation can be commenced.
3.2 Equipment for maintenance and repair

Maintenance and repair of the steam cleaner may only be done by Roman Seliger or trained staff in authorised workshops.

The gaskets required for steam and hot water cleaners are put together in a gasket set and can be ordered from Roman Seliger under the following item number:

<table>
<thead>
<tr>
<th>Item no.</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>274.075000.101</td>
<td>DSG Seal Kit DN 19 NO / EP</td>
<td>Novapress, EPDM</td>
</tr>
</tbody>
</table>

To replace gaskets the steam and hot water cleaner must be dismantled. For this, the upper heat protection plate must first be loosened and removed using a screwdriver or wrench (SW 7). After loosening the counter nut (SW41, see Fig. 1) on the union nut (SW41, see Fig. 1) the casing can then be loosened and drawn off over the valve shaft.

![Figure 1](image)

After loosening the counter nut (SW13, see Fig. 2) the valve can be twisted easily off the valve shaft. Now the adapter (SW32, see Fig. 3) can be unscrewed out of the pistol.
Figure 2a

1 Valve
2 Thread seal
3 Adapter
4 Disc, nut

Figure 2b

5 O-ring
6 Adapter

CAUTION: Adapter and shaft are spring-loaded!

Through loosening the thumb screw (large screwdriver, see Fig. 4) the valve shaft can then be removed.
In this dismantled condition all the above-described gaskets can be replaced. After the maintenance or repair has been carried out the steam and hot water cleaner can be re-assembled in the reverse order to dismantling. Tighten the thumb screw (item 7, Fig. 4) in such a way that the valve closes securely. After this the thumb screw should not be further adjusted. To complete re-assembly the steam cleaner should be subjected to a final pressure test (see Chapter 5).

If there is damage to parts other than the gaskets then the device should be sent to the Roman Seliger Armaturenfabrik GmbH for assessment of the damage and any necessary repair.
4 Operation

4.1 Use in normal operation

The steam cleaner may only be used by authorised and trained staff.
Staff must be familiar with the instructions for use, the safety equipment and measures to be taken in the case of faults.
Staff must use the appropriate protective equipment. Wearing protective gloves is urgently recommended for all handling of the steam cleaner in order to prevent, for example, touching hot parts such as the hose assembly.
Failure to observe the above points can lead to serious injuries and the safety of the plant is no longer guaranteed. The following tests must be carried out regularly during operation of the plant. Safety functions must be checked regularly and may under no circumstances be switched off during operation.
The steam cleaner (with jet extension) must not display any damage.
The plant, in particular the connecting elements, should be constantly checked for leakage.
Temperatures below 0°C do not usually affect normal operation. If, however, operationally caused breaks in operation are necessary, during these times the device should be stored within a building at a temperature above freezing point to avoid freezing of the condensate in the cleaner.

4.2 Decommissioning for a longer period of time

Shut off the feed pipeline to the steam cleaner. Totally release the pressure in the flow pipe by opening the cleaner. It should be noted that there may still be hot condensate in the cleaner and jet extension after the pipeline has been shut off. This should be drained off in an appropriate way.
If the case of very soiled media it is recommended that the steam cleaner should be dismantled and cleaned after decommissioning. Please follow the instructions for assembly and dismantling.
Switch off the plant part and secure the device in the safe status according to the instructions for use, so that it is not possible to switch on or operate the steam cleaner.
We recommend not only shutting off the connections but making them impassable by means of blind rails. The device should only be stored within a building at temperatures above freezing point to avoid freezing of condensate.
4.3 Re-commissioning

Re-commissioning takes place as described in the section on “Initial operation”. If the functionality of the device including its shut-off has been verified, normal operation can be commenced. The general regulations for the operation of hose pipes must be followed here.

Condition of the hose pipe
Seal of the hose/coupling connection and possibly swivel joint
Conductivity of the entire pipeline

4.4 Shut-down

Shut off the feed pipeline to the steam cleaner.
Totally release the pressure in the flow pipe by opening the cleaner.
If the case of very soiled media it is recommended that the steam cleaner should be dismantled and cleaned after decommissioning. Please follow the instructions for assembly and dismantling.
Switch off the plant part and secure the device in the safe status according to the instructions for use, so that it is not possible to switch on or operate the steam cleaner.

4.5 Maintenance instructions

In the case of very soiled media the steam cleaner should be cleaned every 2-3 months according to how long it is used every day.

Maintenance when the device has not been dismantled:
Check the steam cleaner and jet extension for outer damage.
Check the steam cleaner for leakage.
Check the steam cleaner for through flow.
Check that the handle is firmly in place.
Check the hose swivel joint for stiffness and storage damage and replace if necessary.

If the leak-tightness of the steam cleaner is no longer ensured it should be sent to Roman Seliger for checking or dismantled according to the following instructions.
4.6 Dismantling the steam cleaner

Prior to dismantling the steam cleaner must be empty of medium and pressure-free. The temperature of the steam cleaner must not be above +43°C. The steam cleaner is disconnected from the hose fitting. The required steps for dismantling are described briefly in Chapter 3.2. This work may only be carried out by an expert workshop or directly by Roman Seliger.

4.7 Improper use

On visible damage or previous known damage, the steam cleaner must not be used if the damage constitutes a risk of functional failure.

4.8 Temperature classification T(x) for use in hazardous areas

As our cleaners do not generate any temperature themselves we cannot create our own temperature classification. The operator must ensure that the temperature classification according to the current hazardous area protection guidelines is used for the hazardous area in question, and that the operational data for individual media resulting from this is not exceeded. Due to the steam passing through it, the steam cleaner can have a maximum surface temperature of 180°C.

4.9 Use of the steam cleaner in hazardous areas of zones 1 and 2

In addition to the directives in the instruction manual the following additional safety instructions should be followed for the use of the steam cleaner with and without jet extension in hazardous areas of zones 1 and 2:

Test specification to determine suitability for hazardous areas


Operator’s duty of care

The steam cleaner with and without jet extension corresponds to state-of-the-art technology and guarantees the highest level of safety. However, this safety level can only be achieved in operational practice if all the required measures are implemented. It is the operator’s duty of care to plan these measures and check their implementation. No alterations may be made to the device.

The operator must particularly ensure that:

The hazardous area classification for the planned use is adequate and that all accessory parts are likewise suitable for the same hazardous area classification.
The temperature classification according to the current hazardous area protection guidelines corresponds to the hazardous area in question. We cannot create our own classification here, as our steam cleaners themselves do not generate a temperature.

The cleaner is mechanically, hydraulically and electro-statically put only to its intended use.

The maximal permitted temperatures and pressures are not exceeded.

The risk of burns is pointed out when the temperature of the incoming medium is above 65°C.

The coupling of the hose transporting the medium is securely fastened and made technically watertight.

The earthing measures of the device including the container are carried out and checked before commissioning.

Persons working in areas where there is a risk of explosion are informed about the measures necessary for earthing and for potential equalisation.

Fluids containing solids (e.g. abrasives) as well as materials which could react exothermically with the material of the steam cleaner are not used.

The required personal protective equipment for operators, maintenance and repair staff is used.

**Warning:** Mist and highly charged fluid jets can be caused by the separation of a fluid jet into small drops, irrespective of the conductivity of the fluid. This must be observed on principle when using the steam cleaner.
5 Checking the steam and hot water cleaner

After the assembly of all components the steam and hot water cleaner should be checked for leaks using cold water.

For this the testing pressure must be 10 times the nominal pressure (PN10) of hot steam. The pressure resistance when using the steam cleaner with hot water (PN15) is also covered by this.

This pressure (i.e. 100 bar) should be held for approx. 3 minutes. Then the steam cleaner should be checked again for leaks at low pressure (approx. 1-2 bar).

The steam cleaner should be operated several times quickly in succession at a pressure of approx. 10-15 bar. Here it should be checked that the valve closes securely each time and that there is no leakage at the valve.

If the steam cleaner is used with a jet extension, the jet extension should be shut off with a G¾” covering and checked for approx. 3 minutes at a pressure of approx. 25 bar. The area of the connecting thread of the jet extension should also be checked for leaks.

The conductivity within the jet extension should be checked with a suitable measuring instrument. For this, one measuring point should be on the heat protection plate of the steam cleaner and the second point on the rubber covering of the handle.

6 Device name

On the upper contact protection area the device is labelled with identification plates supplying the following information:

Manufacturer
Type, item number of device
Serial number, year of manufacture
CE (named location, no. of the test certification)

Roman Seliger
DSG.
Ser.-no.: TÜV SÜD P. S. EX8 07 11 64026 001

Hot water 15 bar, 120°C
Hot water 10 bar, 180°C
Ambient temperature range: 0°C Ta 40°C
II 2 G c T(x)
## 7 Fault detection and elimination

<table>
<thead>
<tr>
<th>Fault</th>
<th>Elimination measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escape of steam at screwed couplings</td>
<td>Check couplings incl. gaskets, replace gaskets if necessary; If the fault continues send the device to Roman Seliger.</td>
</tr>
<tr>
<td>Escape of steam at the operating handle</td>
<td>Stop using the cleaner; send it immediately to Roman Seliger for checking.</td>
</tr>
<tr>
<td>Operating handle cannot be moved</td>
<td>Stop using the cleaner; send it immediately to Roman Seliger for checking.</td>
</tr>
<tr>
<td>Steam cleaner twisted or mechanically damaged</td>
<td>Stop using the cleaner; send it immediately to Roman Seliger for checking.</td>
</tr>
<tr>
<td>Static charge on steam cleaner</td>
<td>Check the connection of the steam cleaner to the hose or to the potential equalisation with regard to conductivity (R ≤ 10⁶ Ohm) and restore conductivity.</td>
</tr>
<tr>
<td>Stiffness or bearing damage of the hose pivot joint</td>
<td>Check regularly. In case of stiffness or obvious bearing damage the hose pivot joint should be replaced.</td>
</tr>
</tbody>
</table>

## 8 Manufacturer

![RS logo](logo.png)

**RS Roman Seliger**
Armaturenfabrik GmbH
An’n Slagboom 20
D-22848 Norderstedt
Fon +49 40 523064-0
Fax +49 40 523064-25
info@rs-seliger.de

[www.rs-seliger.de](http://www.rs-seliger.de)
EC Declaration of Conformity
of the above-mentioned manufacturer for the product:
Steam jet Cleaner for cleaning with hot steam and hot water
Type: DSG for steam: 10 bar, 180°C, for hot water: 15 bar, 120°C

For the purpose of EC directive 97/23/EC.
The manufacturer certifies that the dry disconnect coupling meets the above-mentioned directive.
The following standards and rules were applied:

- BGR 500       BG-Guideline for safety
- DIN EN 12266   Testing of valves
- AD-Merkblatt B 0 Calculation of pressure vessels

Marking: none

For the purpose of EC directive 94/9/EC.
An "ignition hazard assessment" was undertaken according to the stipulations of the above-mentioned EC directive, documented, and submitted to the notified body (ID no. 0044).
The manufacturer certifies that the dry disconnect coupling meets the above-mentioned directive and may be used in the device group II, device category 2, temperature range < 200°C.
The following standards and rules were applied:

- DIN 1127       Explosion prevention and protection, Basic concepts and methodology
- DIN EN 13463-1  Non-electrical equipment for potentially explosive atmospheres - Basic method and requirements
- DIN EN 13463-5  Non-electrical equipment intended for use in potentially explosive atmospheres - Protection by constructional safety
- BG-Regel 132   Prevention of ignition hazards due to electrostatic charges.

Marking: II 2G T3