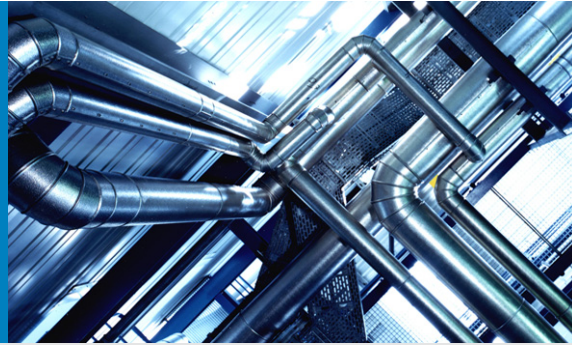


Heated Sample Gas Line Type ELH



Installation
Operation



Document Information

Described Product

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Original documents

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Warning Symbols



Hazard (general)



Hazard by voltage



Hazard in potentially explosive atmospheres



Hazard by poisonous substances



Hazard by high temperature or hot surface

Information Symbols



Important technical information for this device



Important information on electric or electronic functions



Supplementary information



Link to information at another place

Warning Levels / Signal Words

DANGER

Risk or hazardous situation which *will* result in severe personal injury or death.

WARNING

Risk or hazardous situation which *could* result in severe personal injury or death.

CAUTION

Hazard or unsafe practice which *could* result in personal injury or property damage.

NOTICE

Hazard which could result in property damage.

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1 Important Information

Intended use
Own responsibility

1.1 Main hazards

1.1.1 Damage to health



CAUTION: Damage to health due to irritating sample gas

When the sample gas contains noxious or irritating substances:

It is possible that the sample gas line is contaminated with noxious or irritating substances.

- ▶ Take appropriate safety precautions (e.g. wear respiratory protection masks) when working on the sample gas line.

1.1.2 Operational safety



WARNING: Hazard in potentially explosive atmospheres

- ⊗ Do not use the sample gas line in potentially explosive atmospheres.



WARNING: Hazards by explosive or combustible gases

- ⊗ Do not load the sample gas line with explosive or combustible gases.

1.1.3 Hot surface



WARNING: Hot surface, risk of burns

It is possible that the surface of the sample gas line is hot.

- ▶ Wear suitable protective clothes.
- ▶ Check the surface temperature.
- ▶ Make sure that hot parts can not be touched unintentionally.

1.2 Intended use

The sample gas line serves to transport flue gas from the sampling probe to the analyzer.

1.3 Responsibility of user

Intended users

The sample gas line may be operated only by skilled technicians who, based on their technical training and knowledge as well as knowledge of the relevant regulations, can assess the tasks given and recognize the hazards involved.

- ▶ Use the sample gas line only as described in these Operating Instructions. The manufacturer bears no responsibility for any other use.
- ▶ Follow all local laws, regulations and company-internal operating directives applicable at the installation location of the equipment.

Retention of documents

These Operating Instructions:

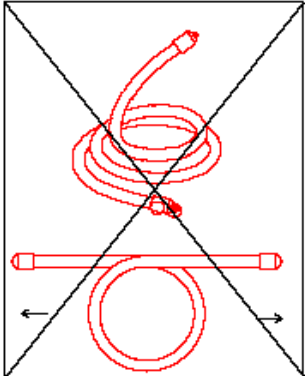
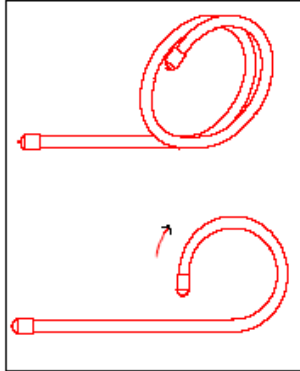
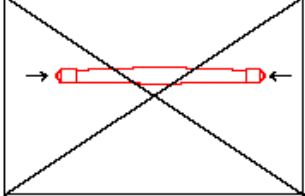
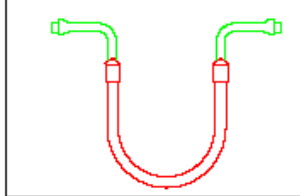
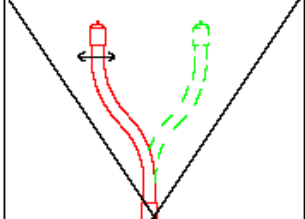
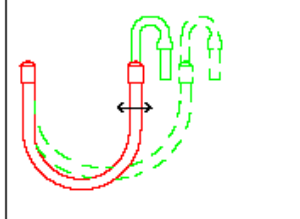
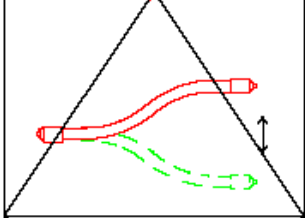
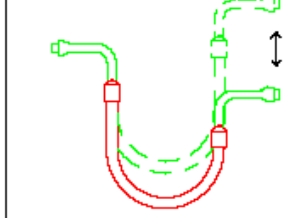
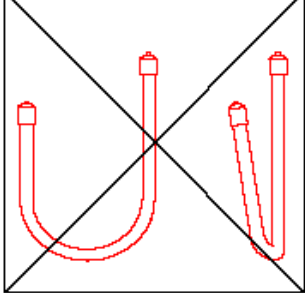
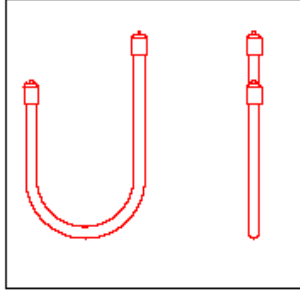
- ▶ Must be available for reference.
- ▶ Must be passed on to new owners.

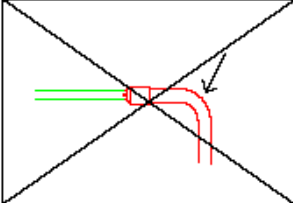
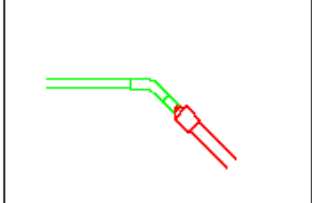
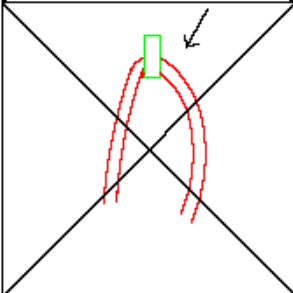
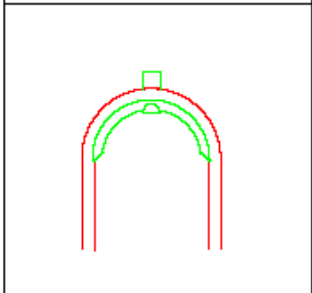
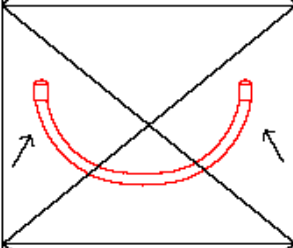
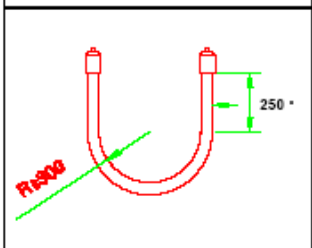
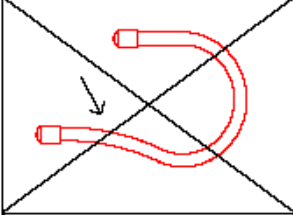
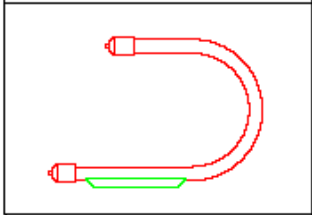
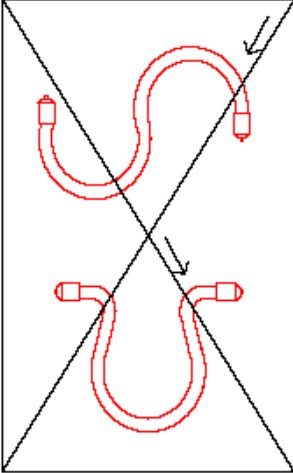
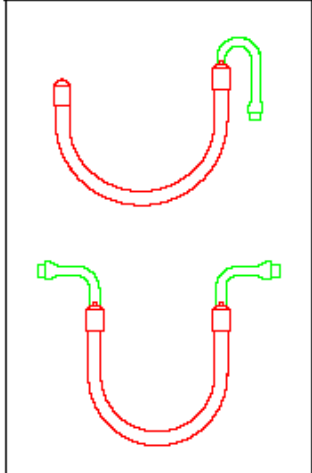
Heated Sample Gas Line Type ELH

2 Installation and Operation

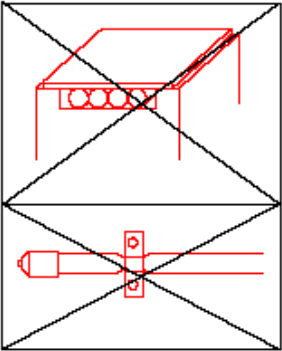
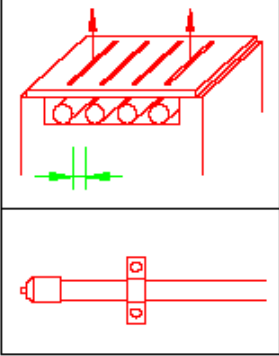
Safety information
Installation
Operation

2.1 **Notes on installation**

Incorrect	Description	Correct
	<p>Usually, the heating hoses are delivered coiled. Follow the rules for unpacking and removing the hoses as described beforehand.</p>	
	<p>Compressing the hoses decreases the pressure resilience. Instead, fit hoses with U-bends.</p>	
	<p>When installed straight, the hoses must have little movement. Fit with U-bends.</p>	
	<p>The axis of the hoses have to run parallel to each other, so that the direction of movement is at one level.</p>	
	<p>The axis of the hoses have to run parallel to each other, so that the direction of movement is at one level.</p>	

Incorrect	Description	Correct
	<p>Transportable devices have to be equipped with bend protection according to the operating position.</p>	
	<p>When the sample gas line is deflected, a bend protection has to be attached according to the minimum bending radius.</p>	
	<p>The hose ends have to be straight for at least 250 mm. Adhere to bending radius ≥ 300 mm.</p>	
	<p>Make sure the sample gas line does not sag. Attach a support.</p>	
	<p>Excessive bends stress the hoses too much. Use pipe bends here.</p>	

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Incorrect	Description	Correct
	<p>Installing the hoses in closed housings (boxes etc.) leads to a buildup of heat. Make sure that there is adequate ventilation. Ensure that hoses installed parallel do not touch each other as this could cause overheating.</p> <p>When the hoses are fixed with clamps or similar, make sure that they are not squeezed in this area.</p> <p>Do not brick in or foam in the heating hoses.</p>	

2.2 Assembly

2.2.1 Unpack

The sample gas line is coiled in a ring.

- ▶ Unroll sample gas line. Do not pull out straight (avoid twisting).

2.3 Mechanical installation



Most frequent errors:

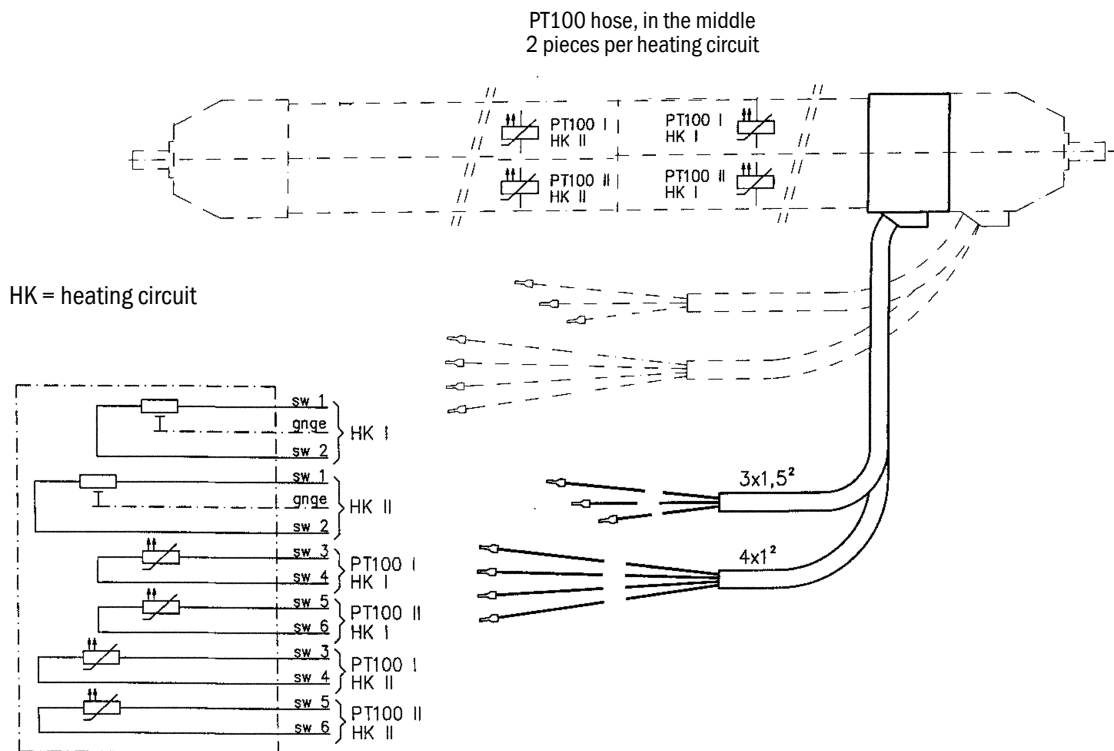
- 1 Do not lay the sample gas lines directly over each other (do not coil) and do not lay them directly next to each other (buildup of heat).
 - ▶ Keep approx. 2 cm distance.
- 2 Do not lay the sample gas line directly next to a tube bundle cable (buildup of heat).
 - ▶ Keep approx. 2 cm distance.
- 3 If the sample gas line is too long:
 - ▶ Install the sample gas line on the gas sampling system (not on the analyzer) in a U-shape.
- 4 Observe a minimum bending radius of 300 mm

- 1 Install the sample gas line.
 - ▶ The electrical connection of the sample gas line has to be on the analyzer (not on the gas sampling system).
 - ▶ Fireproof breakthrough in the wall:
 - Fit a plate on both sides of the wall and feed the sample gas line through in the middle, hang it up, if required.
- 2 Connect the sample gas line with Swagelock fitting.

2.4

Electrical installation

► Electrical connection



! Risk of overheating.
 ► Only install one PT100 (PT 100 I) per heating circuit.
 The 2nd heating circuit (PT100 II) serves as reserve.

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3 Repairs

Repairs

3.1

Repair of connecting piece**Repair of a turned connecting piece**

Tools required	
Pipe cutter	
2 mm hexagon socket screwdriver	

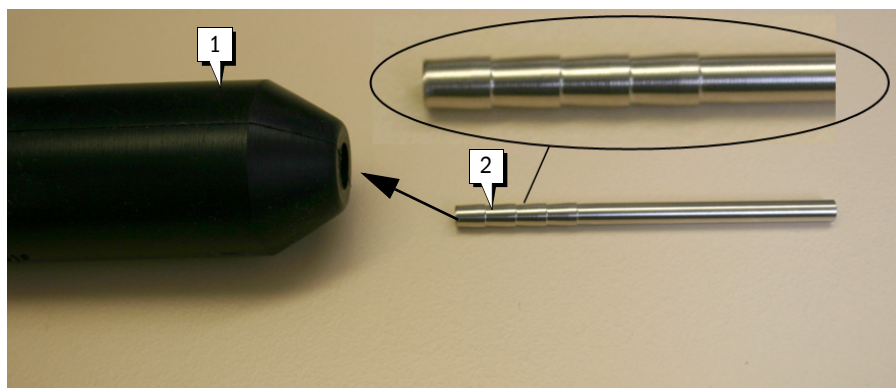
Spare part	Part No.
Sample gas line NW6 repair set	5326217

Index	Description
1	Silicon cap
2	Plug-in RSL fitting
3	Fixing ring with threaded pin
4	Cap nut
5	Rear clamping ring
6	Front clamping ring

- 1 Remove turned connecting piece
- 2 Insert the plug-in RSL fitting with 2 to 3 teeth into the inside Teflon pipe.

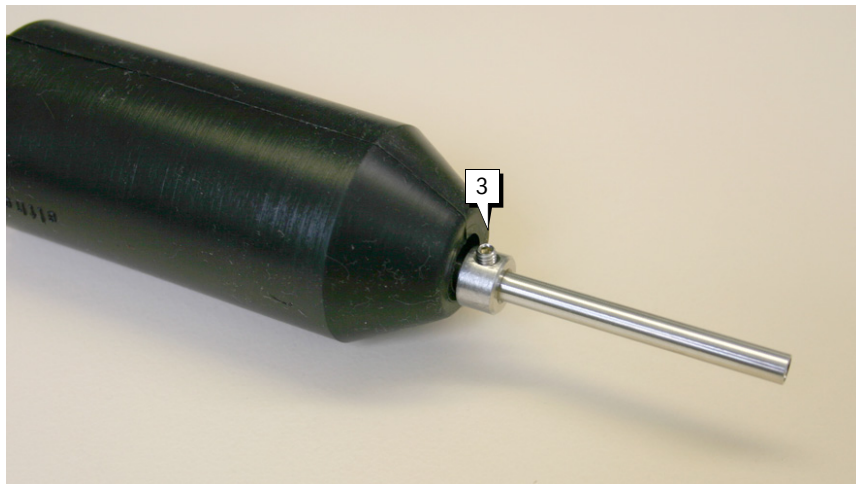
Figure 1

Plug-in RSL fitting



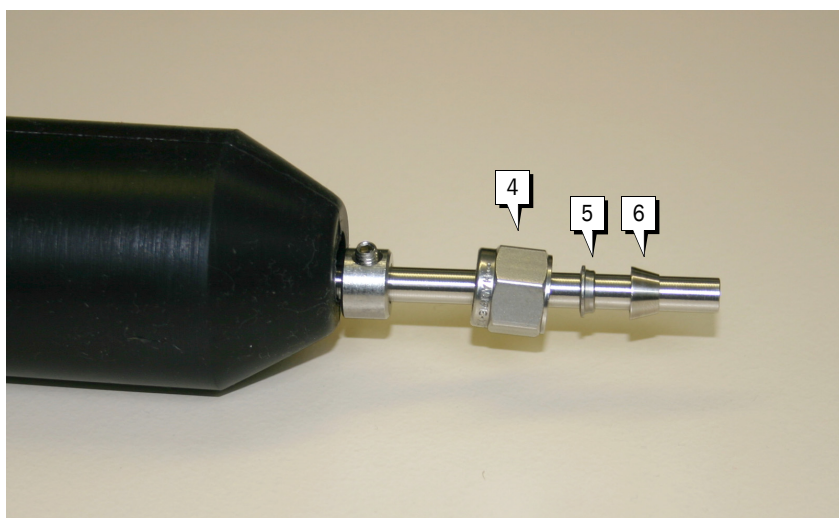
- 3 Push the fixing ring up to the silicon cap and screw the threaded pin tight.

Figure 2 Fixing ring with threaded pin



- 4 To avoid thermal bridges: Shorten the plug-in RSL fitting with a stainless steel pipe cutter to the previous connection length and deburr it with a countersink.
- 5 Remove all cutting residues from the pipe.
- 6 Push on cap nut, rear and front clamping ring.

Figure 3 Completed connecting piece



- 7 Carry out a suitable leak test.
- 8 Reconnect the sample gas line.

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4 Technical Data

Technical Data

4.1 **Technical Data**

Technical Data	
Operating conditions	<ul style="list-style-type: none"> - Ambient temperature above -20 °C - Relative humidity max. 80%, without condensation.
Connection	- 6 or 8 mm Swagelok
Hose diameter	<ul style="list-style-type: none"> - 42 mm (length up to 25 m) - 48 mm (length over 25 m)
Heating output	- 90 VA/m
Supply voltage	- 230 V / 115 V (dependent on sample gas line)
Length	<ul style="list-style-type: none"> - Max. 25 m with 1 heating circuit - When the hoses are longer than 20, use a 2nd heating circuit
Min. ambient temperature	- -20 °C
Max. operating temperature	- +200 °C
Max. surface temperature	- +55 °C
Longitudinal expansion	<ul style="list-style-type: none"> - 50 °C: 0.9% - 100 °C: 1.6% - 200 °C: 3.8%
Minimum bending radius	- 300 mm
Storage conditions	<ul style="list-style-type: none"> - Ambient temperature -20 °C to +80 °C, - Relative humidity max. 80%, without condensation.

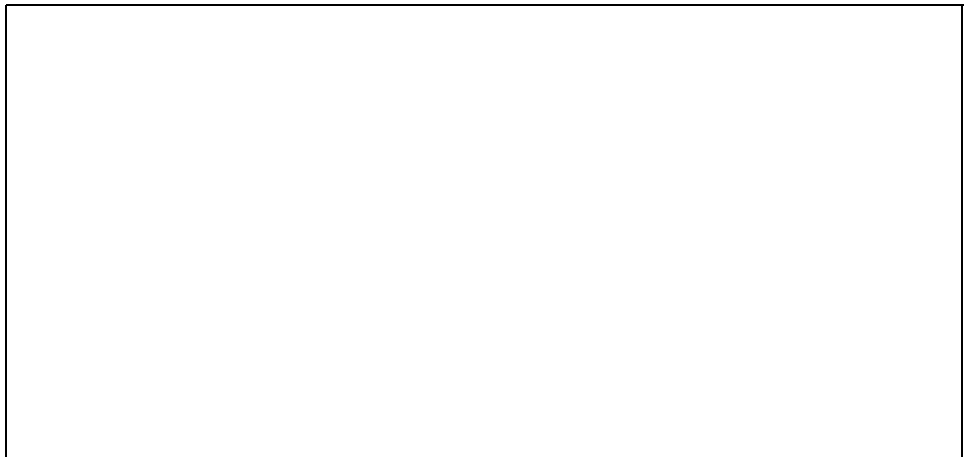
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