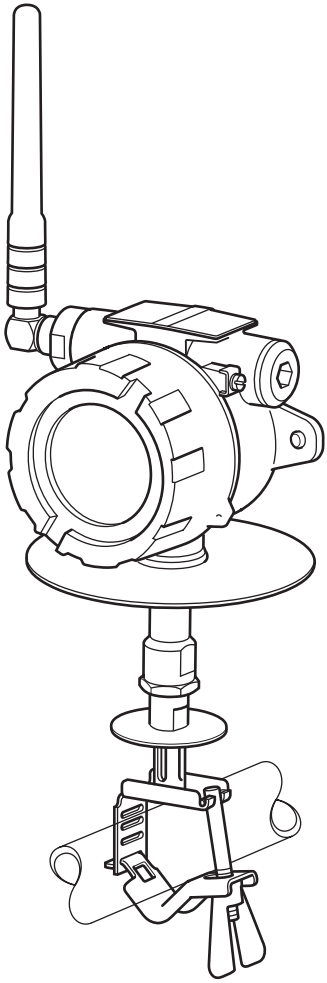
IM-P014-27
MI Issue 1

Heat Shield for STAPS ISA100.11a Head

Installation and Maintenance Instructions



1. Safety information

Safe operation of this unit can only be guaranteed if it is properly installed, commissioned and maintained by a qualified person (see Section 1.11) in compliance with the operating instructions. General installation and safety instructions for pipeline and plant construction, as well as the proper use of tools and safety equipment must also be complied with.

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Charlton House,
Charlton Kings,
Cheltenham,
Gloucestershire,
UK,
GL53 8ER

The product is designed and constructed to withstand the forces encountered during normal use.

Use of the product for any other purpose, or failure to install the product in accordance with these Installation and Maintenance Instructions, could cause damage to the product, will invalidate the CE marking, and may cause injury or fatality to personnel.

1.1 Intended use

Referring to the Installation and Maintenance Instructions, name-plate and Technical Information Sheet, check that the product is suitable for the intended use / application.

i) **The product has been specifically designed for use on saturated steam systems.**

ii) **Check material suitability, pressure and temperature and their maximum and minimum values.**

iii) **Determine the correct installation situation and direction of fluid flow.**

iv) **Spirax Sarco products are not intended to withstand external stresses that may be induced by any system to which they are fitted. It is the responsibility of the installer to consider these stresses and take adequate precautions to minimise them.**

1.2 Access

Ensure safe access and if necessary a safe working platform (suitably guarded) before attempting to work on the product. Arrange suitable lifting gear if required.

1.3 Lighting

Ensure adequate lighting, particularly where detailed or intricate work is required.

1.4 Hazardous liquids or gases in the pipeline

Consider what is in the pipeline or what may have been in the pipeline at some previous time. Consider: flammable materials, substances hazardous to health, extremes of temperature.

1.5 Hazardous environment around the product

Consider: explosion risk areas, lack of oxygen (e.g. tanks, pits), dangerous gases, extremes of temperature, hot surfaces, fire hazard (e.g. during welding), excessive noise, moving machinery.

1.6 The system

Consider the effect on the complete system of the work proposed. Will any proposed action (e.g. closing isolation valves, electrical isolation) put any other part of the system or any personnel at risk?
Dangers might include isolation of vents or protective devices or the rendering ineffective of controls or alarms. Ensure isolation valves are turned on and off in a gradual way to avoid system shocks.

1.7 Pressure systems

Ensure that any pressure is isolated and safely vented to atmospheric pressure. Consider double isolation (double block and bleed) and the locking or labelling of closed valves. Do not assume that the system has depressurised even when the pressure gauge indicates zero.

1.8 Temperature

Allow time for temperature to normalise after isolation to avoid the danger of burns and consider whether protective clothing (including safety glasses) is required.

1.9 Tools and consumables

Before starting work ensure that you have suitable tools and/or consumables available. Use only genuine Spirax Sarco replacement parts.

1.10 Protective clothing

Consider whether you and/or others in the vicinity require any protective clothing to protect against the hazards of, for example, chemicals, high / low temperature, radiation, noise, falling objects, and dangers to eyes and face.

1.11 Permits to work

All work must be carried out or be supervised by a suitably competent person. Installation and operating personnel should be trained in the correct use of the product according to the Installation and Maintenance Instructions.
Where a formal 'permit to work' system is in force it must be complied with. Where there is no such system, it is recommended that a responsible person should know what work is going on and, where necessary, arrange to have an assistant whose primary responsibility is safety.
Post 'warning notices' if necessary.

1.12 Handling

Manual handling of large and / or heavy products may present a risk of injury. Lifting, pushing, pulling, carrying or supporting a load by bodily force can cause injury particularly to the back. You are advised to assess the risks taking into account the task, the individual, the load and the working environment and use the appropriate handling method depending on the circumstances of the work being done.

1.13 Residual hazards

In normal use the external surface of the product may be very hot. If used at the maximum permitted operating conditions the surface temperature of some products may reach temperatures of 427 °C (800 °F).
Many products are not self-draining. Take due care when dismantling or removing the product from an installation (refer to 'Maintenance instructions').

1.14 Freezing

This product does not contain fluid that will freeze, however lower temperatures will affect the product performance. Do not subject the product to temperatures below the stated minimum.

1.15 Disposal

Unless otherwise stated in the Installation and Maintenance Instructions, this product is recyclable and no ecological hazard is anticipated with its disposal providing due care is taken. The product should be recycled in line with local legislation. Special attention should be paid to the battery, see section 1.17.

1.16 Returning products

Customers and stockists are reminded that under EC Health, Safety and Environment Law, when returning products to Spirax Sarco they must provide information on any hazards and the precautions to be taken due to contamination residues or mechanical damage which may present a health, safety or environmental risk. This information must be provided in writing including Health and Safety data sheets relating to any substances identified as hazardous or potentially hazardous.

2. Installation of heat shield

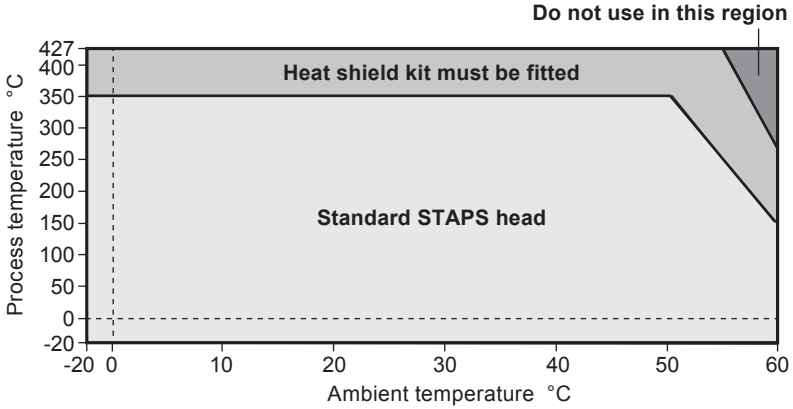
These instructions should be read in conjunction with IM-P014-23 that is supplied with the STAPS head.

2.1 Fitting the heat shields

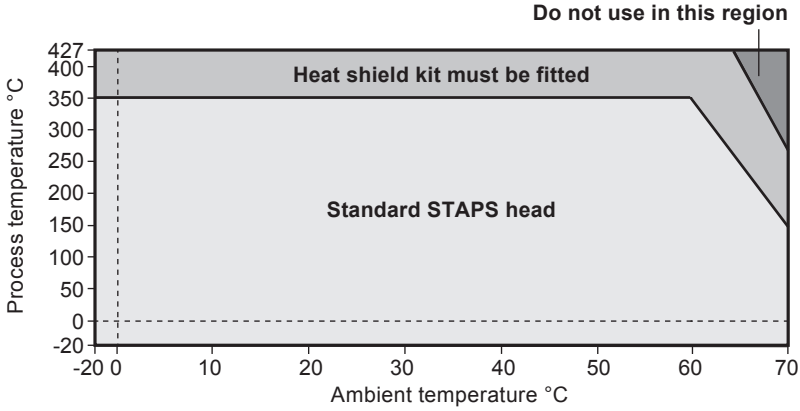
Where process and ambient temperatures exceed the limits of the standard head unit, heat shields must be fitted. See the chart below.

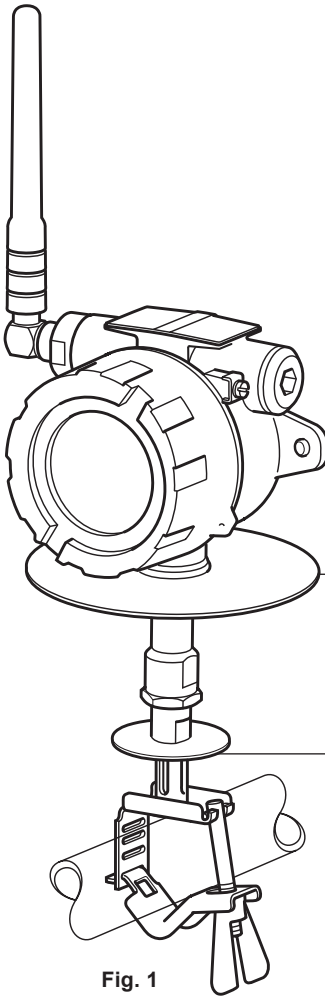
Refer to Section 2.1.1 for the correct installation of the heat shields, taking particular notice of the orientation shown in Figure 12.

Temperature Graph for STAPS ISA100 version with SAFT LS33600 3.6 V battery.



Temperature Graph for STAPS ISA100 version with Tadiran SL-2880 battery





Upper (larger) heat shield

The heat shield kit consists of two individual heat shields, upper and lower. Both heat shields must be fitted to achieve the optimum heat dissipation.

Lower (smaller) heat shield

Fig. 1

Note: The pictures below shows the STAPS head with the standard clamp used for small pipe sizes. The retaining nut arrangement is the same for all other types of clamp too.

2.1.1 How to install the heat shields

Remove the fixing clamp retaining nut, ensure the sensor stem does not rotate by using a 16 mm spanner on the flats provided as per Figure 2 and remove the nut as per Figure 3. Failure to do so may affect the factory set loading of the sensor.

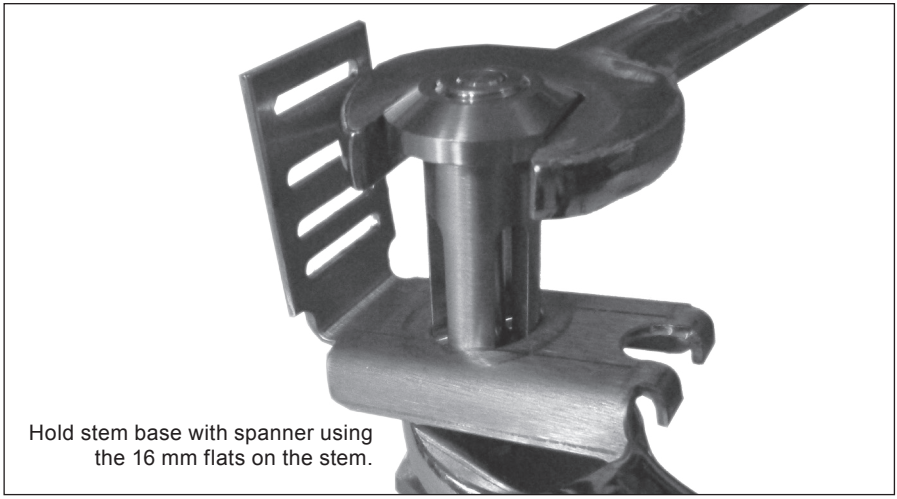


Fig. 2

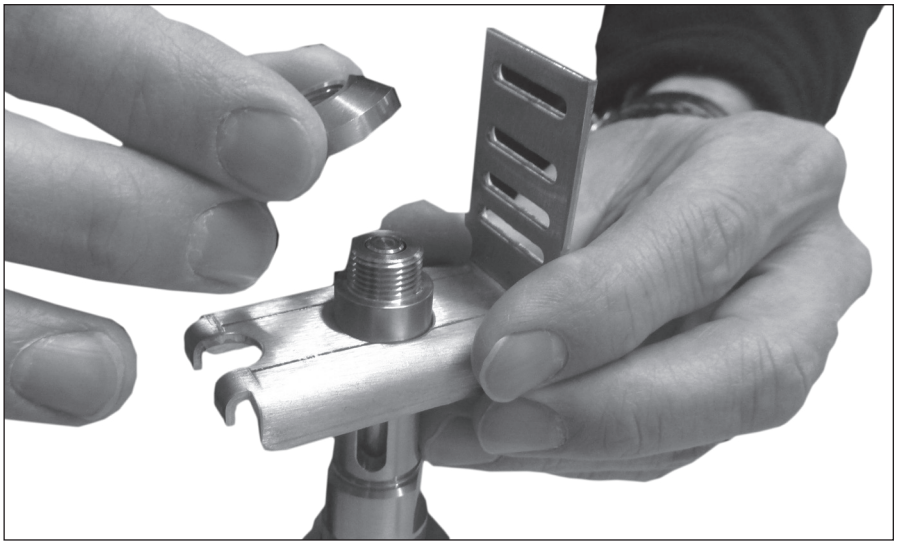


Fig. 3

- Slide the upper heat shield (larger one) over the sensor stem.

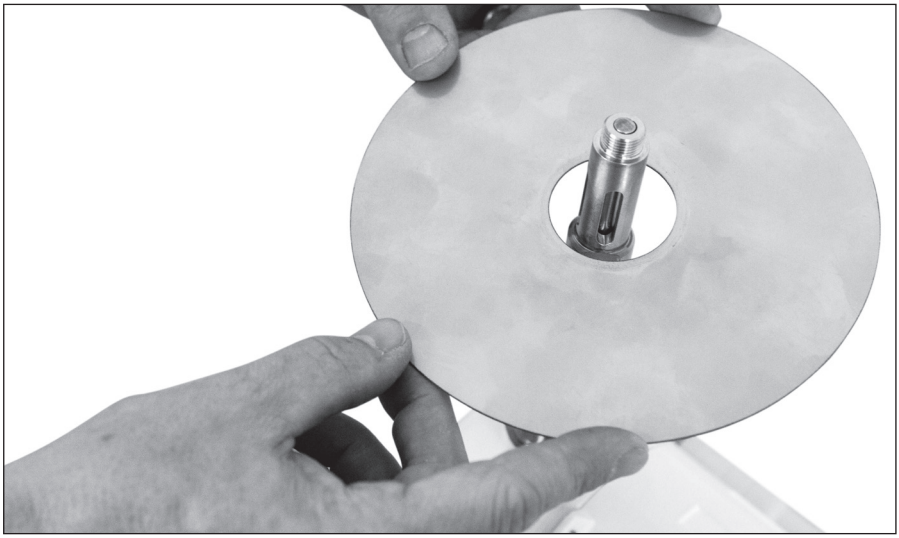


Fig. 4

- Slide larger circlip over sensor stem.

Fig. 5

- Using circlip pliers spread circlip and insert into groove, thus retaining heat shield.
- Repeat procedure for the lower (smaller) heat shield.

Fig. 6

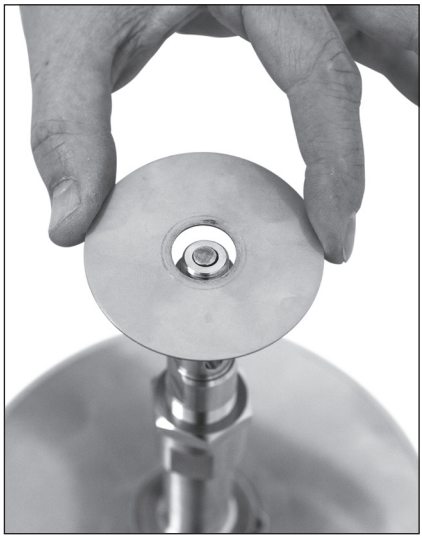


Fig. 7

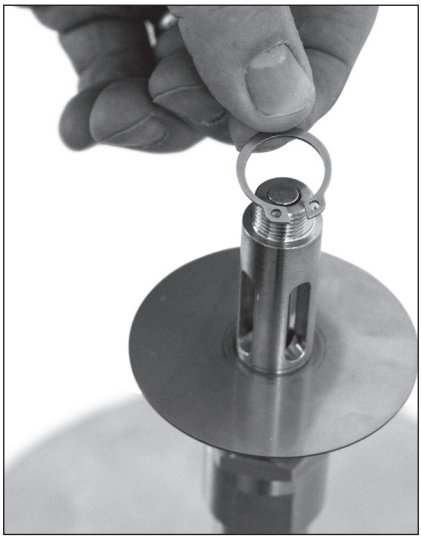


Fig. 8

Fig. 9

- Replace fixing clamp and retaining nut.

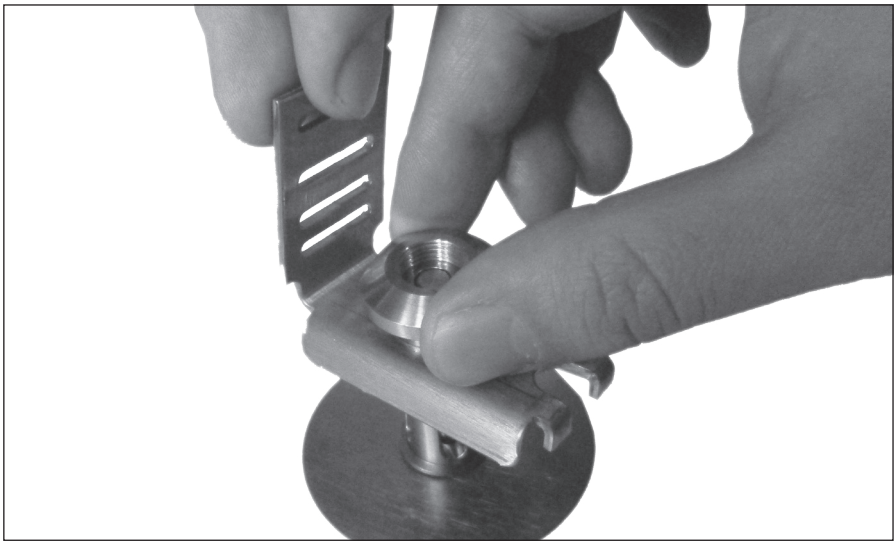


Fig. 10

- Tighten fixing clamp nut to 16 - 18 N m carefully, ensure the sensor stem does not rotate by using a 16 mm spanner on the flats provided as per Figure 11. Failure to do so may affect the factory set loading of the sensor.

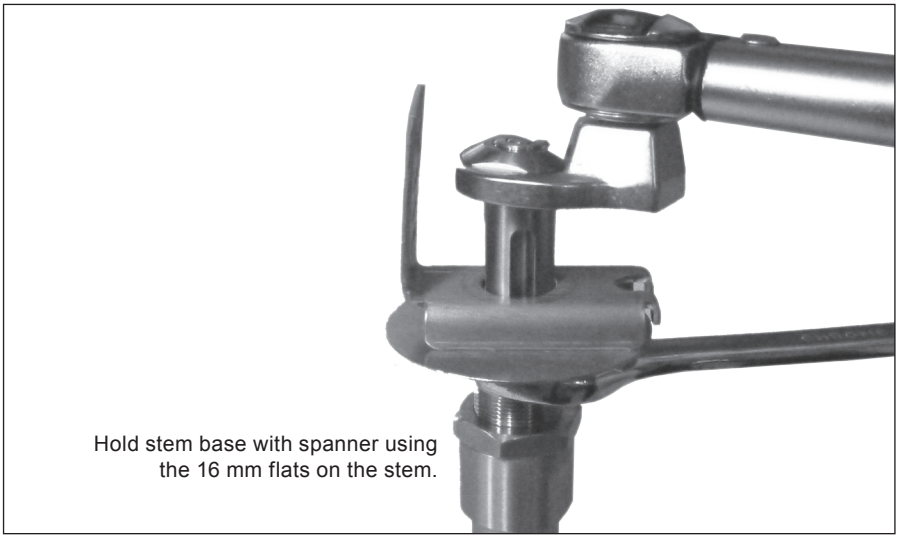


Fig. 11

2.2 Mounting the head unit

The STAPS head should be installed on top of the pipe. It can be angled up to 45° from vertical (90°).

Where the heat shields are required, the head must be fitted at an angle between 0° and 45°. See Figure 12.

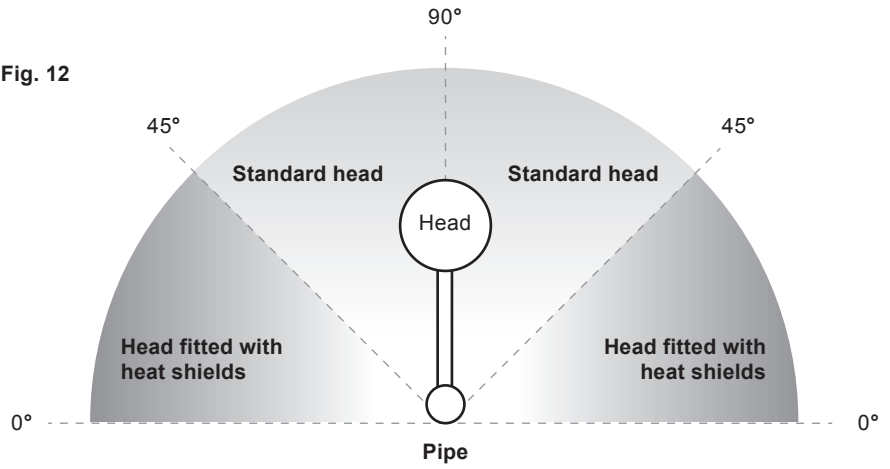
Ambient temperature	Maximum process temperature	Heat deflector	Orientation
-20 °C to 55 °C	427 °C	Yes	0 to 45°
-20 °C to 60 °C	270 °C	Yes	0 to 45°
-20 °C to 60 °C	150 °C	No	45° to 90°
-20 °C to 55 °C	250 °C	No	45° to 90°
-20 °C to 50 °C	350 °C	No	45° to 90°

Table 1 Heat Shields for STAPS ISA100 head version with SAFT LS 33600 3.6 V.

Ambient temperature	Maximum process temperature	Heat deflector	Orientation
-20 °C to 65 °C	427 °C	Yes	0° to 45°
-20 °C to 70 °C	270 °C	Yes	0° to 45°
-20 °C to 70 °C	150 °C	No	45° to 90°
-20 °C to 65 °C	250 °C	No	45° to 90°
-20 °C to 60 °C	350 °C	No	45° to 90°

Table 2 Heat Shields for STAPS ISA100 version with Tadiran SL-2880 battery

Fig. 12



Refer to IM-P014-23 for full installation instructions for the STAPS head unit.