TECHNOLOGIES
PAVING INNOVATION

Joint Heater

Operating Manual

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PAVING INNOVATION

Kratbjerg 214 - DK 3480 Fredensborg - Denmark - Phone: +45 48 48 26 33 - Email: sales@tf-technologies.com
www.tf-technologies.com

About Joint Heater Operating Manual

Content and structure

This Operating Manual for Joint heaters covers specific part numbers *S-50418, S-50462 and S-50463* has been developed to the operator to provide necessary information to operate the Joint Heaters.

The Operating Manual is a practical guide for the operation of Joint Heater. This manual has been diveded into colour-coded sections, enabling the user easily look up the potential subject of interest.

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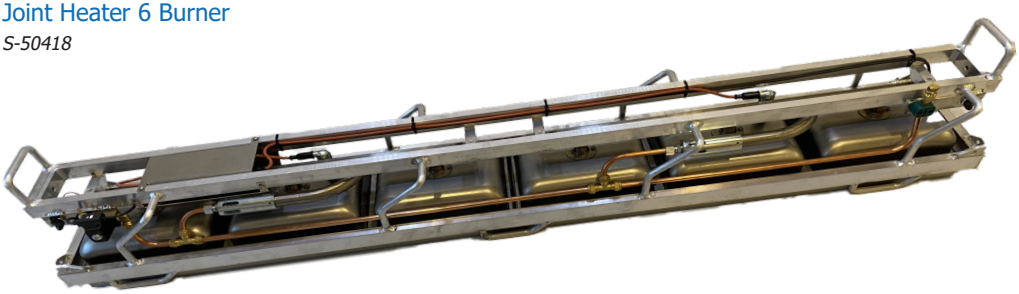
Joint Heater 6 Burner

S-50418



Joint Heater

The Joint Heater and all related products contain a model number/name, serial number and part number, so that each unit is easily identified and traceable. The cables for Joint Heater are also provided with part numbers. All relevant numbers should be stated, when contacting TF-Technologies regarding your product:

Example

Model number/name:	Joint Heater
Serial number:	TF-12345
Part number:	S-50418
	S-50462
	S-50463

Contact information

TF-Technologies A/S
Kratbjerg 214
3480 Fredensborg
Denmark
T: +45 4848 2633
E: sales@tf-technologies.com

Safety manual information

Document name:	Joint Heater Operation Manual
Document number:	G701103
Publication date:	31 January 2022

Symbol overview

This safety manual uses a range of symbols and warning notifications throughout the manual to make the operator aware of important safety measures or information regarding operation. The following symbols are used in this manual:

Warning!

Indicates important information the operator must be aware of to avoid dangerous situations that can result in death or serious personal injury

Step-by-step instructions

Indicates a step-by-step instruction, where a particular order of actions is required or recommended.

Operating The Joint Heater

System components

The Joint Heater comprises an aluminium frame with 4 or 6 burner heads, and an electrical circuit that will open the gas flow and ignite the gas in the burners when power is applied to the circuit.

The built in spark plugs will produce sparks continuously during operation to re-ignite on flame blow out. Please note that there is no flame monitoring built into this circuit so the operator should at all time monitor the Joint Heater to prevent gas spillage.

A 6 burner Joint Heater can be upgraded with a 4 burner extension kit to a total of 10 burner heads (figure 1)

Table 1 lists the different types of Joint Heaters and extensions.

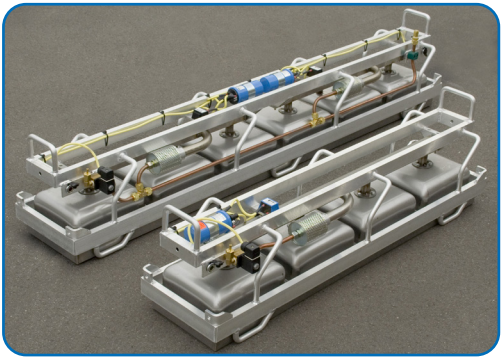


Fig. 1 - Joint Heater, 12/24V, 4, 6 burner (S-50462/S-50463, S-50418)

Installation

The Joint Heater will generate a lot of heat when in operation so on installation the user must take great care in installing it in such a way that it will not be a hazard to the paver, the surroundings and the people working in the area.

The Joint Heater is mounted on the side of the asphalt paver extended in forward direction from the side arm of the screed. To achieve the optimum temperature in the joint the Joint Heater must be mounted in such a way that the distance between the burners and the surface can be adjusted.

The distance will vary depending on different factors such as surface temperature, wind-chill, paver speed, number of burner heads and gas pressure.

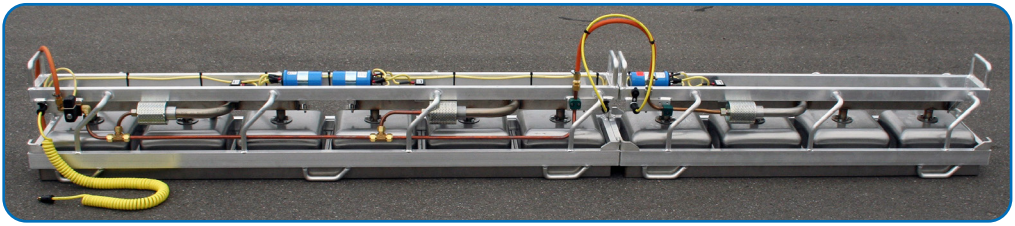


Fig. 2 - Joint Heater Extention, Connection of 4 burner and 6 burner version for a 10 burner Joint Heater

The Joint Heater is suspended on chains from the Joint Heater Mounting arms, mounted on the machine. The Joint Heater Mountings make it easy to attach, adjust and detach the Joint Heater. The Joint Heater Mountings are sold separately. Figure 3 and 4 show the Joint Heater mounted on the mounting arms on a machine.

Fig. 3 - Joint Heater Mounted on mounting arms on a maschine

The Joint Heaters must be supplied with propane-butane gas at a working pressure of 0.5-1.5 bar. The gas is supplied from the source to the gas inlet flange on the Joint Heater via an approved and heat resistant gas hose (figure 5, A). Make sure that working pressure is correct and there is no leakage from the hose.

The Joint Heaters electrical circuit is powered by 12/24VDC depending on Joint Heater type (table 1 in appendix). Power is supplied from the machine to the power socket on the frame of the Joint Heater using the coiled power cable supplied with the Joint Heater (figure 5, B).

Fig. 4 - Joint Heater Mounted on mounting arms on a maschine

When powered up the Joint Heaters solenoid valve will open for gas to the burners and the spark plugs will start igniting.

Please note there is no on/off switch on the Joint Heater so it has to be switched on/off from the machine or by removing/inserting the cable in the power socket on the frame.

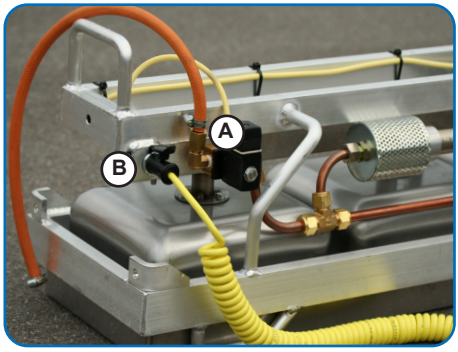


Fig. 5 - Joint Heater Power supply

Step by step Daily operations

1.
2.
3.

1. Install the Joint Heater as described in the previous chapter
2. Adjust the gas pressure to 0.5-1.5 bar on the tank regulator
3. Connect the power and monitor that the gas burners ignites as intended
4. Never leave an ignited Joint Heater unattended and always monitor that the joint is not overheated. Adjust the distance between burner and joint to achieve the right temperature.
5. If the paver is temporarily stopped disconnect power to the Joint Heater to avoid overheating of the joint. If the asphalt is subjected to excessive heat it will be permanently damaged
6. Before dismounting the Joint Heater shut off the gas tank valve and allow the gas to burn out of lines before disconnecting the power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Safty Instruction

Use extreme caution at all times operating the Joint Heater. You are using an intense open flame burning at temperatures up to 2.000°C. Disregard of safe practices can result in severe fire damages, serious personal injury or death

Propane-butane gas has a distinct odour. If you smell it, immediately discontinue work, extinguish all flames, and check for gas leakage in the system. Using soapy water, check all connections and fittings for leaks. DO NOT use a match or open flame!

Never leave a Joint Heater in operation unattended. Always monitor that the burners are working correctly and they are not doing damage to the surroundings

Always have fire extinguishing equipment on site

Heat resistant gloves should be used when handling the Joint Heater. Long sleeves, long pants, and boots are recommended when working near the burners

Always disconnect the Joint Heater when the paver is not in forward movement to prevent overheating the surface below the burners

Be certain to comply with all safety guidelines and local ordinances regarding the use of open flames.

Upgrading with a 4 burner Extension

A 6-burner Joint Heater can be upgraded with a 4-burner extension and connector kit. The components of the connector kit are listed in table 2 in appendix.

To upgrade follow these steps:

1.
2.
3.

1 Locate the pipe stopper on the gaspipe opposite to the gas inlet on the main Joint Heater. Replace the stopper with the gas flange from the connector kit (figure 6, A). Make sure the connection is tight and without leakage

2 Align the Joint Heater and the extension as shown on figure 6 and bolt them together with the M8x30/70 screws at the positions marked with white circles on the figure

3 Connect the two gas flanges (figure 6, A and B) with the gas hose and tighten with the quick release hose clamps. Make sure the connection is tight and without leakage

4 Connect the power cable to the two sockets on the Joint Heater and its extension and strip the cable to the gas hose (figure 6, C)

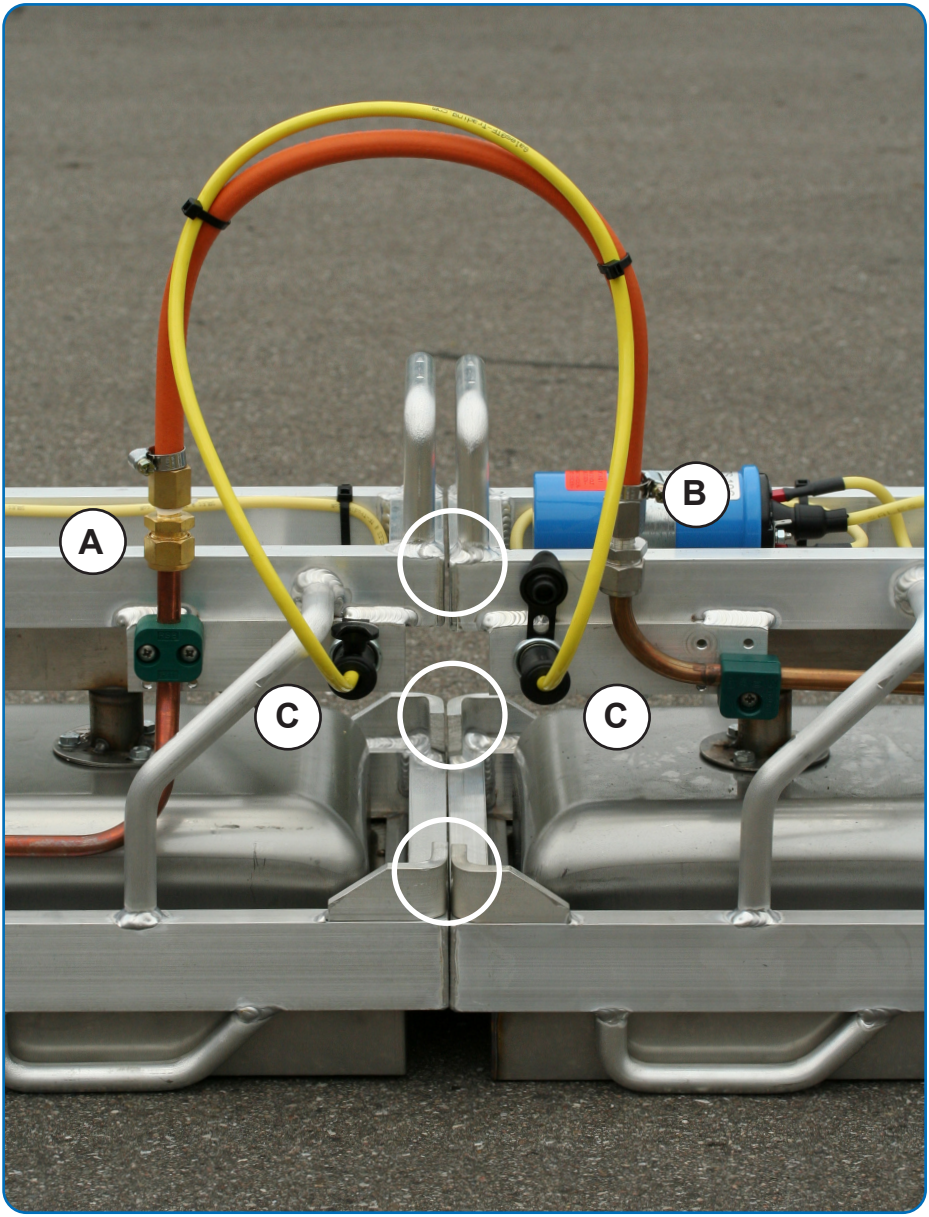

Fig. 6 - Joint Heater Udgrading, Connection of 4 burner and 6 burner version for a 10 burner Joint Heater

Tables

Table 1, Joint Heater Types

Part No.	Product	Burner Heads	Power Suppy	Output	Dimensions (LxWxH)
S-50418	Joint Heater	6	12/24VDC	~40kW at 1.5 bar	180x30x40 cm
S-50462	Joint Heater	4	12VDC	~25kW at 1.5 bar	120x30x40 cm
S-50463	Joint Heater	4	24VDC	~25kW at 1.5 bar	120x30x40 cm

Table 2, Connector Kit includes:

Contents		
1x 12V interconnecting cable	2x PVC cable binder	1x M8x70 Cap Screw
1x Gas hose, 0,4 m	1x Hose flange	
2x Quick release hose clam	2x M8x30 Cap Screw w. nut	

Table 3, Spare parts

		S-50418	S-50462	S-50463
Power cable, 2x male c.S-50420/4,0	S-50420/4,0	X	X	X
Ignition box TF-1B-24V	S-50112			X
Ignition box TF-1B-24V	S-50111		X	
FCB24 Ignition Box	S-50540	X		
Spark plug cap	S-50150	X	X	X
Spark plug, 100 mm	S-50009	X	X	X
Solenoid valve 12V	S-50016		X	
Solenoid valve 24V	S-50017/6			X
Solenoid valve 12/24V	S-50083	X		

DG Type Examination Certificate

Certificate No. DG-3990 rev.0
File No. PB10235
2014-12-11
Sheet 1 of 2

DG TYPE EXAMINATION CERTIFICATE

No.
DG-3990

This is to certify that:

Danish Institute of Fire and Security Technology, specified as a "notified body" under the terms of the Danish Safety Technology Authority, did undertake the relevant type approval procedures for the equipment identified below which was found to be in compliance with the Danish Gas Regulations, Section C-2, subject to any conditions in the description attached hereto.

Applicant	TF-Technologies A/S
Address	Kratbjerg 214, DK-3480 Fredensborg, Denmark
Type of Appliance	Burner for asphalt paving
Trade Mark	Joint Heater
Type/Model	S-50416 (12VDC)/S-50418 (24 VDC), S-50462 (12 VDC)/S-50463 (24 VDC)
Specified Standards	-

The attached (*description of type approval*) forms part of this certificate.
This certificate remains valid unless cancelled or revoked, provided the conditions in the attached schedule are complied with and the equipment remains satisfactory in service.

Date of issue 2014-12-11 Issued by Danish Institute of Fire and Security Technology
Notified Body No. **0845**

Signed

Name Ken Olesen

Note:

This certificate will not be valid if the manufacturer makes any changes or modifications to the approved equipment, which have not been notified to, and agreed with the notified body named on this certificate.

- XXXX

Subject to compliance with the conditions in the annex "Description of Type Approval", which forms part of this certificate, and those of the Regulations, the Manufacturer is allowed to affix the "Mark of Conformity" to the product described herein.

xxxx DG approval number

This certificate is issued under the authority of the Danish Safety Technology Authority.

Technical Specifications (data sheets)

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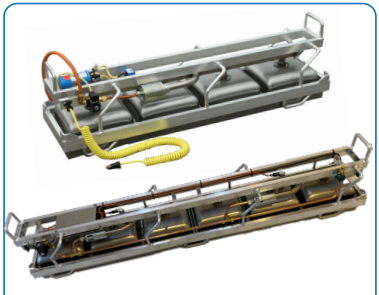
Joint Heater
For heating of longitudinal joints

The Joint Heater is an infrared propane/butane gas burner used on asphalt pavers, assisting in the construction of longitudinal joints.

The joint heater will preheat the edge of the previously laid cold lane just prior to placing the new hot mix lane next to it. This approach ensures optimal conditions for a consistent continuous weld of the fresh and previously laid mats, preventing premature cracking of the joint.

The joint heater comprises an aluminium frame with four or six burner heads, and an electrical circuit that will open the gas flow and ignite the gas in the burners when power is applied to the circuit.

The built in spark plugs will produce sparks continuously during operation to re-ignite the gas on flame blow out.



The four and six burner versions

Joint heater specifications		
Application	Joint heating, 6 burner	Joint heating, 4 burner
Part Number	S-50418 (12/24VDC)	S-50462 (12VDC) / S-50463 (24VDC)
Dimensions (LxWxH)	180x30x40 cm	120x30x40 cm
Weight	30kg	20kg
Output	~40kW at 1.5 bar	~25kW at 1.5 bar
Number of burner heads	6 heads	4 heads
Supply pressure	0.5-1.5 bar	0.5-1.5 bar
Included accessories	Powerlead and gashose	Powerlead and gashose

Underside of burner

v. H800403

TF-Technologies A/S
Kratbjerg 214

DK-3480 Fredensborg
Phone: +45 4848 2633

www.tf-technologies.com
sales@tf-technologies.com

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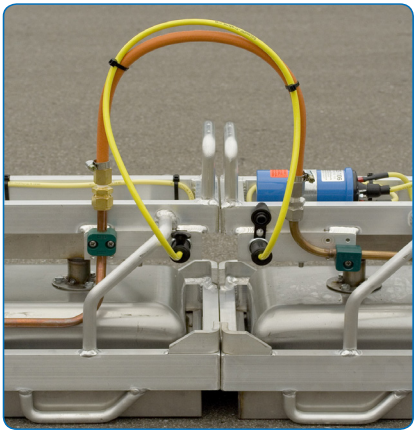
Joint Heater Extension Kit

Joint Heater Extension Kit	
Part number	K-24111
Contents	1x 12V interconnecting cable 1x Gas hose, 0.4m 2x Quick release hose clamp 2x PVC cable binder 1x Hose flange 2x M8x30 Cap Screw w. nut 1x M8x70 Cap Screw



TF-Technologies A/S
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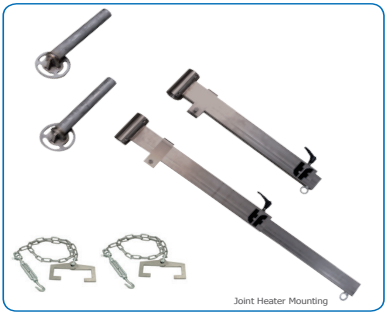
Joint Heater Mounting

The complete Joint Heater Mounting makes it easy to attach and detach the Joint Heater. The Joint Heater Mounting Hooks have a locking mechanism that gives a firm grip on the Joint Heater and locks it in a fixed position. The adjustable arms make it easy to change the position of the Joint Heater whenever required.

The height for the Joint Heater is adjustable by changing the length of the chain.

The Joint Heater Mouting is made of robust materials, ideal for the rough working conditions on a paver.



Joint Heater Mounting

Joint Heater Mouting Specifications	
Part Number	S-50791 (Complete set) S-50785 (Mounting Hooks) S-50786 (Mounting Arms)
Application	Mounting arms, hooks and chains for Joint Heater
Dimensions (L)	Arms: 1.3m / 4.3ft Standard chain lenght: 1m / 3.3ft
Weight	37.8kg / 84.5lbs
Material	Stainless steel

v. H813503

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