



Efficient Tube Welding

FOCUS | Reliable Plastic Tube Welding with Hot Air

Hot Air Technology | Mechanical Engineering Industry



Hot Air Technology from Leister for the Mechanical Engineering Industry

Hot Air Solutions in Mechanical Engineering for the Tube Packing Industry

Leister Technologies AG has been a market leader in the development, production and distribution of electric heat guns and air heaters for industry and commerce for decades. As an experienced and reliable partner, Leister offers you perfect solutions for machines for filling and welding tubes.

Leister. We know how.

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Fastest Way to Weld Tubes

Plastic tubes are in demand worldwide as safe and practical packaging for a range of products in the cosmetics, food and pharmaceutical industries. And the demand continues to rise. Safe and fast welding of filled tubes is therefore essential. Leister air heaters are used for this all over the world.

Leister air heaters are used all over the world in machines for filling and welding tubes because they offer the perfect solution. Why? Because welding tubes with hot air from Leister is exceptionally fast. Leister air heaters heat the tube walls in 0.2 seconds. Then the weld is airtight and perfectly formed.

“We have been using Leister air heaters since 15 years. The quality of the products is only bested by their prompt service and technical expertise.”

Aakash Thakkar

Director
Pacmac



Sustainability and Process Safety

Leister air heaters and accessories e.g. various nozzles are perfectly suited to the high quality requirements of the cosmetics industry. They also keep operating costs down because recirculating hot air drastically cuts energy consumption. This reduces Total Cost of Ownership (TCO) and is good for the environment.

Simplified Assembly thanks to Coordinated Components

Leister air heaters are designed to be integrated into any system easily, safely and independently of the machine concept. The integrated heating elements in the air heater are designed to meet your high quality and durability requirements. The ceramic heating elements reach temperatures of up to 650 °C and can be set to the nearest degree. Perfectly adapted blowers generate and control the airflow required for the specific product.

Your Benefits when Tube Welding with Hot Air

- All popular tube materials can be welded with hot air.
- Even tubes made of new materials such as coated cardboard and bio plastics can be welded with hot air easily, quickly and accurately.
- Welding seam optics meet your high demands and quality requirements.
- Leister air heaters can weld up to 100 tubes a minute per heating station.
- Recycle the generated heat and insert it back into the process again. That way you can achieve your sustainability goals faster.
- Hot air recycling halves your energy costs.



**Request a free
expertise now**



Blowers instead of Compressed Air

Air heaters are often connected to the compressed air system. Even though operating costs for compressed air-driven machines are considerably higher than when blowers are used. So our advice to all machine operators: Take a closer look at your operating costs.

Operating Cost Comparison

Power	[W]	2000	3300
Operating temperature	[°C]	450	450
Device flow rate	[l/min]	230	380
	[m ³ /h]	13.8	22.8
Flow rate @ 50 Hz	[m ³ /min]	0.49	0.49
	[m ³ /h]	29.4	29.4
Motor output	[kW]	4	4
Energy consumption/m ³ compressed air	[kWh/m ³]	0.136	0.136
Blower	[kW]	0.25	0.25
Energy costs	[EUR/kWh]	0.2	0.2
Compressed air costs	[EUR/m ³]	0.027	0.027
Appliance operation costs compressed air	[EUR/h]	0.38	0.62
Appliance operation costs blower	[EUR/h]	0.05	0.05
Cost factor compressed air/blower	[-]	7.6	12.4

Set up a consultation
with experts



Lower your CO₂ Footprint

After welding the tubes, the hot air generated for the process often escapes unused into the atmosphere. Too bad, because wasting resources is bad for the environment and costs a lot of money. Leister air recycling and temperature-resistant air heaters and blowers return hot air up to 350°C back into the air heater.

You can cut your energy consumption by turning off the compressed air and recirculating the hot air back into the air heater. This way you save money and resources.

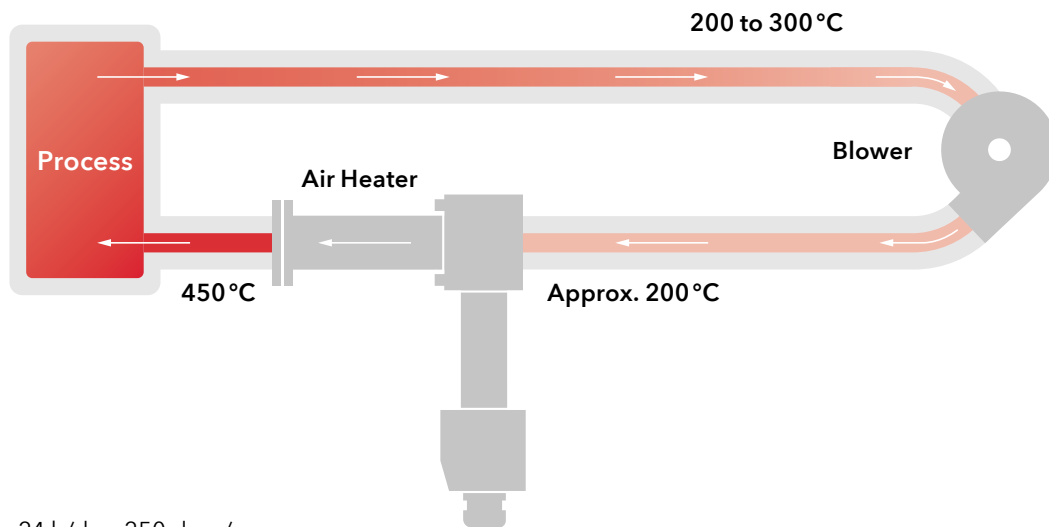
Compressed Air is 12 times more Expensive than Blowers

In the table on the left, you can see that working with compressed air compared to a blower coordinated with the air heater is up to 12 times more expensive, depending on power and required airflow.

Hot Air Recycling Saves more Energy

If you use Leister air heaters LHS 210 SF-R or LHS 210 DF-R, you can return the hot air back into the process through hot air recirculation. This way you can save up to 42% on your energy costs and also reduce your CO₂ footprint.

Hot Air Recycling with Air Heaters and Blowers from Leister



Requirements

Machine activity: 24 h/day, 250 days/year
Air flow: 380 l/min

	Required Power	Energy Consumption per Year	Savings
no Recirculation			
T1: 20°C			
T2: 450°C	3.3 kW	19 772 kWh/year	
with Recirculation			
T1: 200°C			
T2: 450°C	1.9 kW	11 495 kWh/year	Difference: 8277 kWh Price per kWh*: EUR 0.15 Savings: EUR 1241.45

* The electricity price for 1 kWh for industrial applications is subject to wide fluctuations.



Air heater

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LHS 21S CLASSIC



The LHS 21S CLASSIC is available in 1-2 kW power. It features heating element and appliance overheating detection with alarm contact. It can be perfectly integrated within the closed loop using a PWM signal via SSR.

LHS 21L CLASSIC



The LHS 21L CLASSIC has the same features as the LHS 21S CLASSIC. However, it is designed for a higher power (3.3 kW) and has a longer heating tube.

Technical Data

Phases	1x	
Current	17.0 A	
Max. air outlet temperature	650 °C	1202 °F
Min. airflow	160 l/min	5.65 cfm
Max. air inlet temperature	65 °C	149 °F
Max. ambient temperature	65 °C	149 °F
Overheating protection	No	
Alarm output	Normally open contact	
Max. inlet pressure	100 kPa	14.5 psi
Nozzle connection ø	36.5 mm / 1.45 in	
Display	No	
Length	236.0 mm	9.29 in
Width	67.0 mm	2.63 in
Height	66.0 mm	2.59 in
Weight	0.55 kg	1.21 lb
Approvals	CE; S+; UKCA	
Protection class	II	

Technical Data

Phases	1x	
Current	14.0 A	
Max. air outlet temperature	650 °C	1202 °F
Min. airflow	260 l/min	9.18 cfm
Max. air inlet temperature	65 °C	149 °F
Max. ambient temperature	65 °C	149 °F
Overheating protection	No	
Alarm output	Normally open contact	
Max. inlet pressure	100 kPa	14.5 psi
Nozzle connection ø	36.5 mm / 1.45 in	
Display	No	
Length	266.0 mm	10.47 in
Width	67.0 mm	2.63 in
Height	66.0 mm	2.59 in
Weight	0.65 kg	1.43 lb
Approvals	CE; EAC; S+; UKCA	
Protection class	II	

Product Articles

LHS 21S CLASSIC, 120 V/2 kW

139.870

Product Articles

LHS 21L CLASSIC, 230 V/3.3 kW

139.872



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LHS 21S PREMIUM



The LHS 21S PREMIUM is available in a 1-2 kW power. It features heating element and appliance overheating protection. Heating output adjustment is continuously variable using a potentiometer on the appliance.

LHS 21L PREMIUM



The LHS 21L PREMIUM has the same features as the LHS 21S PREMIUM. However, it is designed for a higher power (3.3 kW) and has a longer heating tube.

Technical Data

Phases	1x	
Current	17.0 A	
Max. air outlet temperature	650 °C	1202 °F
Min. airflow	160 l/min	5.65 cfm
Max. air inlet temperature	65 °C	149 °F
Max. ambient temperature	65 °C	149 °F
Air temperature control	Open loop	
Overheating protection	Yes	
Alarm output	Normally open contact	
Max. inlet pressure	100 kPa	14.5 psi
Nozzle connection ø	36.5 mm / 1.45 in	
Display	No	
Length	236.0 mm	9.29 in
Width	67.0 mm	2.63 in
Height	71.0 mm	2.79 in
Weight	0.55 kg	1.21 lb
Approvals	CE; EAC; S+; UKCA	
Protection class	II	

Technical Data

Phases	1x	
Current	14.0 A	
Max. air outlet temperature	650 °C	1202 °F
Min. airflow	260 l/min	9.18 cfm
Max. air inlet temperature	65 °C	149 °F
Max. ambient temperature	65 °C	149 °F
Air temperature control	Open loop	
Overheating protection	Yes	
Alarm output	Normally open contact	
Max. inlet pressure	100 kPa	14.5 psi
Nozzle connection ø	36.5 mm / 1.45 in	
Display	No	
Length	266.0 mm	10.47 in
Width	67.0 mm	2.63 in
Height	71.0 mm	2.79 in
Weight	0.65 kg	1.43 lb
Approvals	CE; EAC; S+; UKCA	
Protection class	II	

Product Articles

LHS 21S PREMIUM, 120 V/2 kW

140.456

Product Articles

LHS 21L PREMIUM, 230 V/3.3 kW

140.457



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LHS 21S SYSTEM



The LHS 21S SYSTEM is available in 1-2 kW power. It features a display for the target/current temperature in control operation, remote control interface and heating element and appliance overheating protection.

LHS 21L SYSTEM



The LHS 21L SYSTEM has the same features as the LHS 21S SYSTEM. However, it is designed for a higher power (3.3 kW) and has a longer heating tube.

Technical Data

Phases	1x	
Current	17.0 A	
Max. air outlet temperature	650 °C	1202 °F
Min. airflow	160 l/min	5.65 cfm
Max. air inlet temperature	65 °C	149 °F
Max. ambient temperature	65 °C	149 °F
Air temperature control	Closed loop	
Overheating protection	Yes	
Alarm output	Normally open contact	
Max. inlet pressure	100 kPa	14.5 psi
Nozzle connection ø	36.5 mm / 1.45 in	
Display	Yes	
Interfaces	0-10V; 4-20mA	
Length	236.0 mm	9.29 in
Width	67.0 mm	2.63 in
Height	71.0 mm	2.79 in
Weight	0.55 kg	1.21 lb
Approvals	CE; EAC; S+; UKCA	
Protection class	II	

Technical Data

Phases	1x	
Current	14.0 A	
Max. air outlet temperature	650 °C	1202 °F
Min. airflow	260 l/min	9.18 cfm
Max. air inlet temperature	65 °C	149 °F
Max. ambient temperature	65 °C	149 °F
Air temperature control	Closed loop	
Overheating protection	Yes	
Alarm output	Normally open contact	
Max. inlet pressure	100 kPa	14.5 psi
Nozzle connection ø	36.5 mm / 1.45 in	
Display	Yes	
Interfaces	0-10V; 4-20mA	
Length	266.0 mm	10.47 in
Width	67.0 mm	2.63 in
Height	71.0 mm	2.79 in
Weight	0.65 kg	1.43 lb
Approvals	CE; EAC; S+; UKCA	
Protection class	II	

Product Articles

LHS 21S SYSTEM, 120 V/2 kW

140.460

Product Articles

LHS 21L SYSTEM, 230 V/3.3 kW

140.461



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LHS 210 SF



LHS 210 SF are compact air heaters and compatible with a range of nozzles (ø 36.5 mm) and accessories. They can be perfectly integrated within a closed loop using a PWM signal via SSR.

LHS 210 SF-R



The LHS 210 SF-R air heater has the same features as the LHS 210 SF and can also recycle hot air. It is suitable for many industrial processes where hot air recirculation is required.

Technical Data

Phases	1x	
Current	4.5-17.0 A	
Max. air outlet temperature	650 °C	1202 °F
Min. airflow	80-250 l/min	2.82-8.82 cfm
Max. air inlet temperature	100 °C	212 °F
Max. ambient temperature	65 °C	149 °F
Overheating protection	No	
Max. inlet pressure	100 kPa	14.5 psi
Nozzle connection ø	36.5 mm / 1.45 in	
Display	No	
Length	178.0 mm	7.0 in
Width	67.0 mm	2.63 in
Height	175.0 mm	6.88 in
Weight	1.19 kg	2.62 lb
Approvals	CE; S+; UKCA; cURus	
Protection class	I	

Technical Data

Phases	1x	
Current	4.5-17.0 A	
Max. air outlet temperature	650 °C	1202 °F
Min. airflow	80-250 l/min	2.82-8.82 cfm
Max. air inlet temperature	350 °C	662 °F
Max. ambient temperature	65 °C	149 °F
Overheating protection	No	
Max. inlet pressure	100 kPa	14.5 psi
Nozzle connection ø	36.5 mm / 1.45 in	
Display	No	
Length	178.0 mm	7.0 in
Width	67.0 mm	2.63 in
Height	282.0 mm	11.1 in
Weight	1.51 kg	3.32 lb
Approvals	CE; S+; UKCA; cURus	
Protection class	I	

Product Articles

LHS 210 SF, 120 V/2 kW	170.898
LHS 210 SF, 230 V/1 kW	170.899
LHS 210 SF, 230 V/2 kW	170.900
LHS 210 SF, 230 V/3.3 kW	170.901

Product Articles

LHS 210 SF-R, 120 V/2 kW	170.909
LHS 210 SF-R, 230 V/1 kW	170.910
LHS 210 SF-R, 230 V/2 kW	170.911
LHS 210 SF-R, 230 V/3.3 kW	170.912



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LHS 210 DF



LHS 210 DF are compact air heaters. Flanges on both sides mean they can easily be integrated in pipe systems. The appliance can be perfectly integrated within a closed loop using a PWM signal via SSR.

LHS 210 DF-R



The LHS 210 DF-R air heater has the same features as the LHS 210 DF and can also recycle hot air. It is suitable for many industrial processes where hot air recirculation is required.

Technical Data

Phases	1x	
Current	4.5-17.0 A	
Max. air outlet temperature	650 °C	1202 °F
Min. airflow	80-250 l/min	2.82-8.82 cfm
Max. air inlet temperature	100 °C	212 °F
Max. ambient temperature	65 °C	149 °F
Overheating protection	No	
Max. inlet pressure	100 kPa	14.5 psi
Display	No	
Length	168.0 mm	6.61 in
Width	67.0 mm	2.63 in
Height	175.0 mm	6.88 in
Weight	1.25 kg	2.75 lb
Approvals	CE; S+; UKCA; cURus	
Protection class	I	

Technical Data

Phases	1x	
Current	4.5-17.0 A	
Max. air outlet temperature	650 °C	1202 °F
Min. airflow	80-160 l/min	2.82-5.65 cfm
Max. air inlet temperature	350 °C	662 °F
Max. ambient temperature	65 °C	149 °F
Overheating protection	No	
Max. inlet pressure	100 kPa	14.5 psi
Display	No	
Length	168.0 mm	6.61 in
Width	67.0 mm	2.63 in
Height	282.0 mm	11.1 in
Weight	1.57 kg	3.46 lb
Approvals	CE; S+; UKCA; cURus	
Protection class	I	

Product Articles

LHS 210 DF, 120 V/2 kW	170.920
LHS 210 DF, 230 V/1 kW	170.921
LHS 210 DF, 230 V/2 kW	170.922
LHS 210 DF, 230 V/3.3 kW	170.923

Product Articles

LHS 210 DF-R, 120 V/2 kW	170.931
LHS 210 DF-R, 230 V/1 kW	170.932
LHS 210 DF-R, 230 V/2 kW	170.933
LHS 210 DF-R, 230 V/3.3 kW	170.934



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ROBUST



The ROBUST blower is built in a very compact design, and is quiet and versatile. It is suitable for installation in industrial production facilities and is durable, even in extreme operating conditions and in continuous use.

CHINOOK



The CHINOOK high pressure blower is designed for air inlet temperatures up to 350 °C/662 °F. Installed in hot air systems, it recirculates hot air, saving users energy and costs.

Technical Data

Blower type	Side channel blower	
Phases	1×; 3×	
Frequency	50 Hz; 50/60 Hz	
Airflow (20 °C) at 50 Hz	1200 l/min	42.37 cfm
Airflow (20 °C) at 60 Hz	1300 l/min	45.90 cfm
Static pressure at 50 Hz	8000 Pa	1.16 psi
Static pressure at 60 Hz	10500 Pa	1.52 psi
Max. ambient temperature	60 °C	140 °F
Max. air inlet temperature	60 °C	140 °F
Noise emission level	62 dB (A)	
Air inlet (outer diameter)	38.0 mm	1.49 in
Air outlet (outer diameter)	38.0 mm	1.49 in
Length	257.0 mm	10.11 in
Width	227.0 mm	8.93 in
Height	221.0 mm	8.70 in
Weight	8.0 kg	17.63 lb
Approvals	CE; EAC; UKCA	
Protection class (IEC 60529)	IP54	
Protection class	I	

Product Articles

ROBUST, 1×110 V/250 W, 50Hz	103.434
ROBUST, 1×230 V/250 W, 50 Hz, EU plug	103.432
ROBUST, 3×230/400 V, 50Hz; 3×265/460 V, 60Hz	103.429

Technical Data

Blower type	Side channel blower	
Phases	3×	
Frequency	50/60 Hz	
Airflow (20 °C) at 50 Hz	1600 l/min	56.5 cfm
Airflow (20 °C) at 60 Hz	1900 l/min	67.09 cfm
Static pressure at 50 Hz	14500 Pa	2.1 psi
Static pressure at 60 Hz	15000 Pa	2.17 psi
Min. air inlet temperature	60 °C	140 °F
Max. air inlet temperature	350 °C	662 °F
Max. ambient temperature	60 °C	140 °F
Noise emission level	58 dB (A)	
Air inlet (outer diameter)	38.0 mm	1.49 in
Air outlet (outer diameter)	38.0 mm	1.49 in
Length	285.0 mm	11.22 in
Width	267.0 mm	10.51 in
Height	271.0 mm	10.66 in
Weight	14.85 kg	32.73 lb
Approvals	CE	
Protection class (IEC 60529)	IP55	
Protection class	I	

Product Articles

CHINOOK, 3×230/400 V 50Hz, 3×275/480V 60Hz	177.073
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Frequency converter



The Frequency converters C200-012 and C200-034 optimize hot air processes, because they let the blowers rotate faster than the mains frequency, thus reducing system costs. Can be combined with various Leister hot air blowers.

CSS



The CSS temperature controller can be used anywhere and provides precise control for the air temperature of air heaters and hot air blowers such as LHS SYSTEM and LE MINI SENSOR.

Technical Data

Phases	1×; 3×	
Current	10 A	
Frequency	50/60 Hz	
Length	160.0-226.0 mm	6.29-8.89 in
Width	75.0-160.0 mm	2.95-6.29 in
Height	90.0-130.0 mm	3.54-5.11 in
Weight	0.7-1.4 kg	1.54-3.08 lb
Approvals	CE; UL; UKCA	
Protection class	I	

Technical Data

Phases	1×	
Frequency	50/60 Hz	
Temperature sensor Type	K; S; PT100	
Output signals	0-10 V; PWM; 4-20 mA; 24 VDC	
Control behaviour	PID	
Length	109.0 mm	4.29 in
Width	48.0 mm	1.88 in
Height	48.0 mm	1.88 in
Weight	0.2 kg	0.44 lb
Plug	without plug	
Approvals	CE; UL	
Protection class	II	

Product Articles

Frequency converter C200-012, 230 V	153.358
Frequency converter C200-034, 3×380-480 V	153.474

Product Articles

CSS	123.039
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E5CC Temperature Controller



The E5CC temperature controller can be used universally. In conjunction with an SSR, it optimally and precisely controls the air temperature of air heaters, e.g. LE 5000/10000 DF and LHS Classic.

Solid state relay (SSR)



Depending on the model, the three-phase and single-phase solid-state relays (SSR) are suitable for controlling various Leister air heaters.

Technical Data

Phases	1×	
Frequency	50/60 Hz	
Temperature sensor Type	K; N; S; PT100	
Output signals	PWM; 4-20 mA	
Control behaviour	PID	
Length	66.0 mm	2.59 in
Width	48.0 mm	1.88 in
Height	48.0 mm	1.88 in
Weight	0.1 kg	0.22 lb
Plug	without plug	
Approvals	CE; UL	
Protection class	II	

Technical Data

Phases	1×; 3×	
Current	20-40 A	
Frequency	50/60 Hz	
Interfaces	PWM	
Length	110.0 mm	4.33 in
Width	17.8-72.0 mm	0.70-2.83 in
Height	103.0-125.5 mm	4.05-4.94 in
Weight	0.26-0.92 kg	0.57-2.02 lb
Approvals	CE; UL; EAC	

Product Articles

E5CC temperature controller, 100-240 V 137.720

Product Articles

Solid state relay (SSR), 600 V/20 A 173.257
 Solid state relay (SSR), 3×600 V/40 A 159.220



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Spare parts

Heating elements



Mica tubes



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