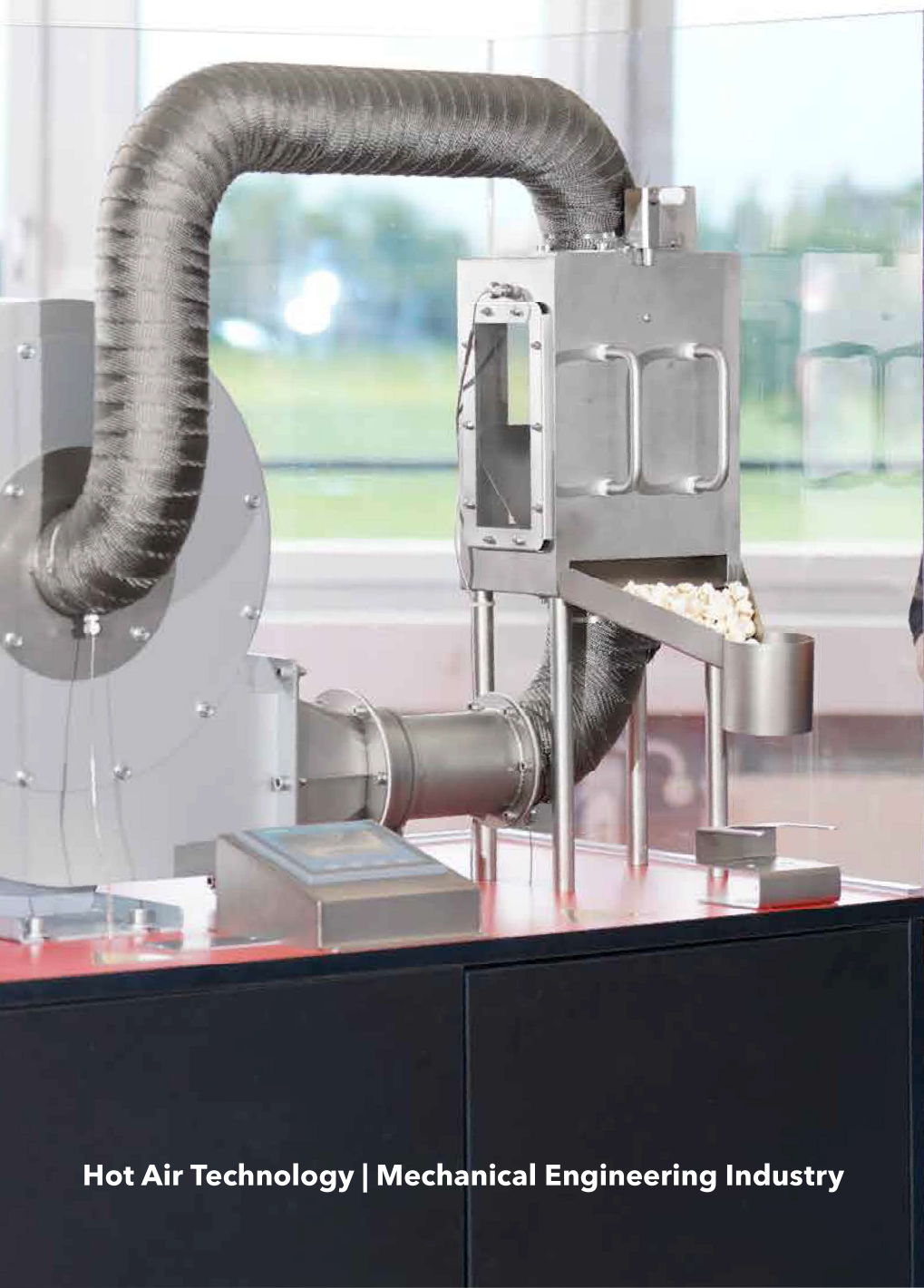




Hot Air Recycling? Leister.

FOCUS | Hot Air Recirculation for Industrial Processes



Hot Air Technology | Mechanical Engineering Industry



Hot Air Technology from Leister for the Mechanical Engineering Industry

Hot Air Recirculation for Energy-Efficient Industrial Processes

Leister Technologies AG has been a market leader in the development, production and distribution of electric heat guns, air heaters and blowers for industry and commerce for decades. As an experienced and reliable partner, Leister offers you perfect hot air recycling solutions for energy-efficient and economical processes.

Leister. We know how.

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Save 70 % Energy

Recirculating the hot exhaust air in industrial hot-air processes means potential energy savings of up to 70 %. The smaller the temperature difference between inlet and process temperature, the higher the savings. This is why energy-efficient Leister solutions are in high demand worldwide.

As a machine operator, you are particularly affected by high energy costs and legal requirements for CO₂ reduction. This is why it is worthwhile for you to retrofit your existing machines with hot air recirculation from Leister. The costs are quickly recouped.

To ensure that you meet the requirements of your clients and remain competitive as a machine builder, we recommend that you equip your machines with recirculating air heaters and blowers from Leister.



Sustainability and Process Safety

Recirculation-enabled air heaters and blowers, including accessories such as temperature probes and controllers, are perfect for equipping existing or new industrial plants with hot air recirculation. This significantly reduces operating costs as hot air recycling reduces energy consumption by up to 70 %. This reduces Total Cost of Ownership (TCO) and is good for the environment.

Simply Installed or Retrofitted

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 900 °C/1652 °F and can be set to the nearest degree. Perfectly adapted blowers generate and control the airflow required for the specific product.

Benefits of Hot Air Recycling for you

- Save up to 70% energy
- Air outlet temperature of the air heater up to 900 °C/1652 °F
- Air inlet temperature of blower and air heater up to 350 °C/662 °F
- Reliability and long service life due to ceramic insulation of the heating element
- Various air heaters, blowers and accessories for a variety of applications

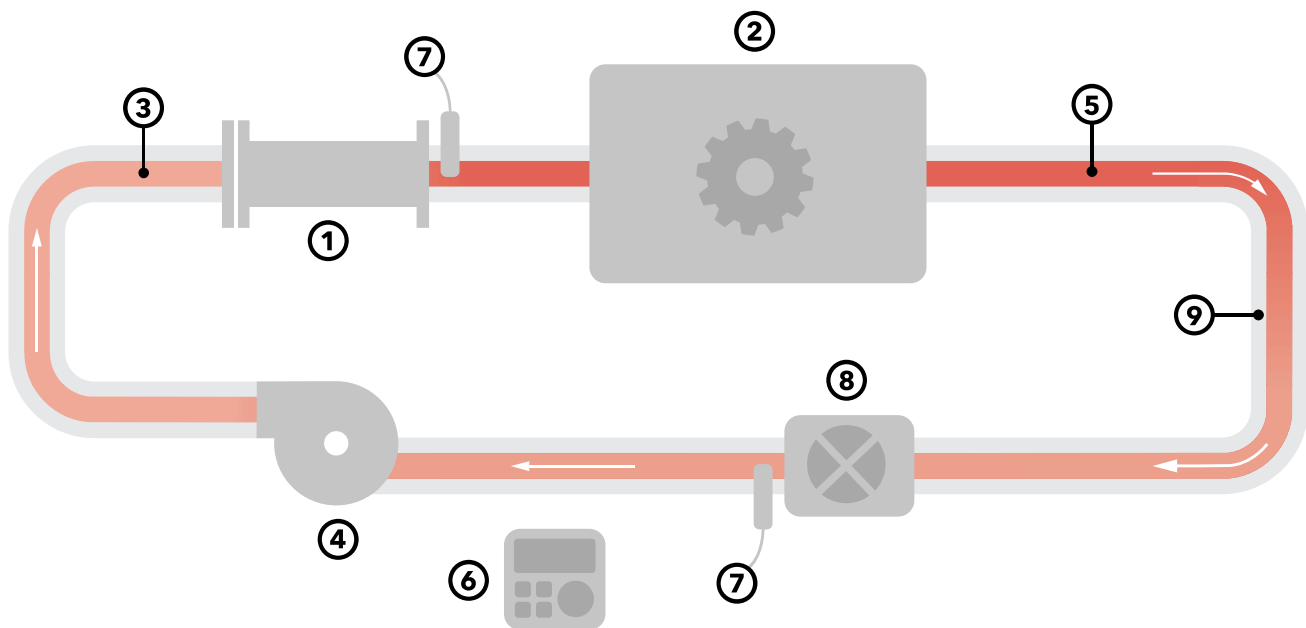


**Request a free
expertise now**



Few Components - Big Effect

In the following sketch you can see which components are needed for a closed recirculation circuit. These components are perfectly matched and can be easily integrated into your industrial hot air process.



- ① Double-flange air heaters
- ② Heating process: There are countless industrial and process technology applications where hot air is required. For example, heating, drying, activating, shrinking, baking, forming, sterilizing, etc.
- ③ Supply: air hoses or fixed lines/pipes
- ④ High temperature blower
- ⑤ Return: air hoses or fixed lines/pipes
- ⑥ Controllers
- ⑦ Temperature probe
- ⑧ Air treatment systems: e. g. filter, separator, bypass or four-way mixing valve
- ⑨ Insulation

**Set up a consultation
with experts**



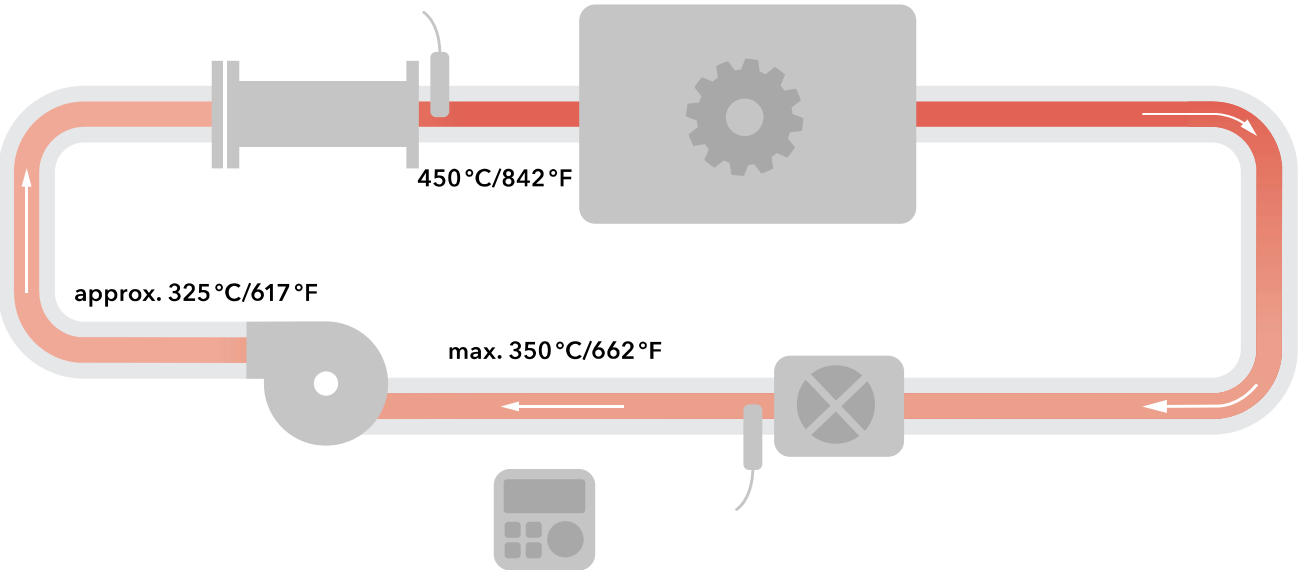
Lower Your Carbon Footprint

The hot air required in industrial processes often escapes unused into the atmosphere. That’s 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/662 °F back into the air heater.

Hot Air Recycling Saves More Energy

If you use the recycling-enabled Leister air heaters such as LHS 210/410 SF, DF, HT or LE 5000/10000 DF, HT, each as the recyclable R version, you can feed the hot exhaust air back into the process via hot air recirculation. This way you can save up to 70% on your energy costs and also reduce your carbon footprint.

Hot Air Recycling with Air Heaters and Blowers from Leister



Requirements
Machine activity: 24 h/day, 250 days/year
Air flow: 1265 l/min (44.70 cfm)

	Required Power	Energy Consumption per Year	Savings
no Recirculation			
T1: 20 °C/68 °F			
T2: 450 °C/842 °F	11 kW	66 000 kWh/year	
with Recirculation			
T1: 325 °C/617 °F			Difference: 46 800 kWh
T2: 450 °C/842 °F	3.2 kW	19 200 kWh/year	Price per kWh*: 0.25 EUR
			Savings: 11 700 EUR

* The electricity price for 1 kWh for industrial applications is subject to wide fluctuations. As of 07/01/2023, it amounts to 0.4 euros per kWh in the EU.





Air heater

LHS 210 SF-R	10
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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.

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	1×	
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	

Technical Data

Phases	1×	
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
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 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

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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LHS 410 SF-R



The compact LHS 410 SF-R air heater is equipped with a higher air flow rate than the LHS 210 SF-R is easy to integrate. It's suitable for many industrial processes, including hot air recycling.

LHS 410 DF-R



The compact LHS 410 DF-R tubular air heater offers more air volume than the LHS 210 DF-R. It's easily integrated into industrial piping systems, it's suitable for various industrial processes and recycling hot air.

Technical Data

Phases	1×	
Current	5.0-19.5 A	
Max. air outlet temperature	650 °C	1202 °F
Min. airflow	160-420 l/min	5.65-14.83 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	50 mm / 2 in	
Display	No	
Length	178.0 mm	7.0 in
Width	81.0 mm	3.18 in
Height	293.0 mm	11.53 in
Weight	1.89 kg	4.16 lb
Approvals	CE; S+; UKCA; cURus	
Protection class	I	

Technical Data

Phases	1×	
Current	5.0-19.5 A	
Max. air outlet temperature	650 °C	1202 °F
Min. airflow	160-420 l/min	5.65-14.83 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	81.0 mm	3.18 in
Height	293.0 mm	11.53 in
Weight	1.99 kg	4.38 lb
Approvals	CE; S+; UKCA; cURus	
Protection class	I	

Product Articles

LHS 410 SF-R, 120 V/2 kW	170.913
LHS 410 SF-R, 230 V/2 kW	170.914
LHS 410 SF-R, 230 V/3.6 kW	170.915
LHS 410 SF-R, 230 V/4.4 kW	170.916
LHS 410 SF-R, 400 V/2 kW	170.917
LHS 410 SF-R, 400 V/4.4 kW	170.918
LHS 410 SF-R, 400 V/5.5 kW	170.919

Product Articles

LHS 410 DF-R, 120 V/2 kW	170.935
LHS 410 DF-R, 230 V/2 kW	170.936
LHS 410 DF-R, 230 V/3.6 kW	170.937
LHS 410 DF-R, 230 V/4.4 kW	170.938
LHS 410 DF-R, 400 V/2 kW	170.939
LHS 410 DF-R, 400 V/4.4 kW	170.940
LHS 410 DF-R, 400 V/5.5 kW	170.941



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LHS 210 SF-R HT



The LHS 210 SF-R HT is a compact high temperature single flange air heater that is hot air recyclable. It reaches a max. air outlet temperature of 900 °C/1652 °F with an air inlet temperature of 350 °C/662 °F.

LHS 210 DF-R HT



The LHS 210 DF-R HT is a high-temperature double-flange air heater suitable for hot air recycling up to 900 °C/1652 °F with maximum air inlet temperature of 350 °C/662 °F.

Technical Data		
Phases	1×	
Current	14.5 A	
Max. air outlet temperature	900 °C	1652 °F
Min. airflow	260 l/min	9.19 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	278.0 mm	10.94 in
Width	67.0 mm	2.63 in
Height	282.0 mm	11.1 in
Weight	1.78 kg	3.92 lb
Approvals	CE; S+; UKCA; cURus	
Protection class	I	

Technical Data		
Phases	1×	
Current	14.5 A	
Max. air outlet temperature	900 °C	1652 °F
Min. airflow	260 l/min	9.19 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	268.0 mm	10.55 in
Width	67.0 mm	2.63 in
Height	282.0 mm	11.1 in
Weight	1.86 kg	4.1 lb
Approvals	CE; S+; UKCA; cURus	
Protection class	I	

Product Articles		
LHS 210 SF-R HT, 230 V/3.3 kW	176.894	

Product Articles		
LHS 210 DF-R HT, 230V/3.3kW	176.900	



LHS 410 SF-R HT



The LHS 410 SF-R HT medium air heater offers an even larger air volume than the LHS 210 DF-R HT. Easily integrated into various hot air applications, it is suitable for industrial processes and hot air recycling.

LHS 410 DF-R HT



The medium sized tubular air heater LHS 410 DF-R HT offers high air volumes, a max. air inlet temperature of 350 °C/662 °F as well as up to 900 °C/1652 °F outlet temperature. It can be easily integrated into industrial piping systems.

Technical Data

Phases	1×	
Current	14.0-19.5 A	
Max. air outlet temperature	900 °C	1652 °F
Min. airflow	350-420 l/min	12.37-14.84 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	50 mm / 2 in	
Display	No	
Length	278.0 mm	10.94 in
Width	81.0 mm	3.18 in
Height	293.0 mm	11.53 in
Weight	2.31 kg	5.09 lb
Approvals	CE; S+; UKCA; cURus	
Protection class	I	

Technical Data

Phases	1×	
Current	14.0-19.5 A	
Max. air outlet temperature	900 °C	1652 °F
Min. airflow	350-420 l/min	12.37-14.84 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	268.0 mm	10.55 in
Width	81.0 mm	3.18 in
Height	293.0 mm	11.53 in
Weight	2.42 kg	5.33 lb
Approvals	CE; S+; UKCA; cURus	
Protection class	I	

Product Articles

LHS 410 SF-R HT, 230 V/4.4 kW	176.895
LHS 410 SF-R HT, 400 V/5.5 kW	176.896

Product Articles

LHS 410 DF-R HT, 230 V/4.4 kW	176.901
LHS 410 DF-R HT, 400 V/5.5 kW	176.902



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LE 5000 DF-R



The LE 5000 DF-R air heater is even more durable than the DF. It works reliably and without any wear, even at particularly hot air inlet temperatures (up to 350 °C/662 °F) and in ambient temperatures up to 200 °C/392 °F.

Technical Data

Phases	3×	
Current	6.5-20.0 A	
Max. air outlet temperature	700 °C	1292 °F
Min. airflow	320-550 l/min	11.3-19.42 cfm
Max. air inlet temperature	350 °C	662 °F
Max. ambient temperature	200 °C	392 °F
Overheating protection	No	
Max. inlet pressure	100 kPa	14.5 psi
Display	No	
Length	184.0 mm	7.24 in
Width	116.0 mm	4.56 in
Height	116.0 mm	4.56 in
Weight	2.0 kg	4.4 lb
Approvals	CE; UKCA	
Protection class	I	

Product Articles

LE 5000 DF-R, 3×230 V/8 kW	146.793
LE 5000 DF-R, 3×400 V/4.5 kW	146.480
LE 5000 DF-R, 3×400 V/6.5 kW	146.794
LE 5000 DF-R, 3×400 V/7.5 kW	146.795



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LE 10000 DF-R



Save money and protect the environment when using the double flange air heater LE 10000 DF-R: Depending on the air inlet and air outlet temperature, air efficiency is increased in the recirculation process.

LE 10000 DF-R HT



The LE 10000 DF-R HT high-performance air heater is particularly economical thanks to incoming hot air of 350 °C/662 °F at a maximum working temperature of 900 °C/1652 °F - for efficient use in hot air recovery systems.

Technical Data

Phases	3×	
Current	8.0-25.0 A	
Max. air outlet temperature	650 °C	1202 °F
Min. airflow	420-1300 l/min	14.83-45.9 cfm
Max. air inlet temperature	350 °C	662 °F
Max. ambient temperature	200 °C	392 °F
Overheating protection	No	
Max. inlet pressure	100 kPa	14.5 psi
Display	No	
Length	167.0 mm	6.57 in
Width	146.0 mm	5.74 in
Height	146.0 mm	5.74 in
Weight	2.7-3.5 kg	5.95-7.71 lb
Approvals	CE; UKCA	
Protection class	I	

Technical Data

Phases	3×	
Current	22.0 A	
Max. air outlet temperature	900 °C	1652 °F
Min. airflow	800 l/min	28.25 cfm
Max. air inlet temperature	350 °C	662 °F
Max. ambient temperature	200 °C	392 °F
Overheating protection	No	
Max. inlet pressure	100 kPa	14.5 psi
Display	No	
Length	261.0 mm	10.27 in
Width	146.0 mm	5.74 in
Height	146.0 mm	5.74 in
Weight	3.3 kg	7.27 lb
Approvals	CE	
Protection class	I	

Product Articles

LE 10000 DF-R, 3×400 V/5.5 kW	146.796
LE 10000 DF-R, 3×400 V/11 kW	146.479
LE 10000 DF-R, 3×400 V/17 kW	146.797
LE 10000 DF-R, 3×480 V/8 kW	146.942
LE 10000 DF-R, 3×480 V/16 kW	146.946

Product Articles

LE 10000 DF-R HT, 3×400 V/15 kW	146.850
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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	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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RBR



The RBR medium pressure blower (RADIAL BLOWER RECIRCULATION) is designed for air inlet temperatures up to 350 °C/662 °F. Once installed into hot air systems, it recycles the air, saving energy and money.

Technical Data

Blower type	Radial blower	
Phases	3×	
Frequency	50/60 Hz	
Airflow (20 °C) at 50 Hz	16800 l/min	593.28 cfm
Airflow (20 °C) at 60 Hz	20000 l/min	706.28 cfm
Static pressure at 50 Hz	1750 Pa	0.25 psi
Static pressure at 60 Hz	2500 Pa	0.36 psi
Max. air inlet temperature	350 °C	662 °F
Max. ambient temperature	60 °C	140 °F
Noise emission level	61 dB (A)	
Air inlet (outer diameter)	90.0 mm	3.54 in
Air outlet (outer diameter)	90.0 mm	3.54 in
Length	615.0 mm	24.21 in
Width	375.0 mm	14.76 in
Height	613.0 mm	24.13 in
Weight	19.0 kg	41.88 lb
Approvals	CE	
Protection class (IEC 60529)	IP54	
Protection class	I	

Product Articles

RBR, 3×230/400 V 50 Hz, 3×277/480 V 60 Hz 156.049



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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.

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.

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; N; PT100; S	
Output signals	4-20mA; PWM	
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	

Product Articles

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

Product Articles

E5CC temperature controller, 100-240 V	137.720
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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×; 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

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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Further Accessories

High temperature air hoses



Hose clips



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Contents

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Leister

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