

Assembly and Operating Manual

GE

English

The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification.

It must be remembered that our products are subject to a natural process of wear and aging.

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The picture on the cover shows an example configuration. The product supplied may therefore differ from the illustration.

The original manual has been produced in the German language.

Information updated: print 16.06.2015
We reserve the right to make changes

Assembly and Operating Manual

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EC Declaration of Conformity

As required by EC Directive



Environmentally friendly design „Eco-design“ energy-related products - EC Directive 2009/125/EC

The manufacturer **ruck Ventilatoren GmbH**
Max-Planck-Strasse 5
D-97944 Boxberg
Tel.: +49 (0)7930 9211-100

declares hereby that the following designated product, due to the efficiency degree of the corresponding fan type specified in the technical documentation and the measurement or efficiency category, established by Regulation (EU) No. 327/2011 of the Commission, in accordance with Annex I, Section 2, meets the ecodesign requirements.

Product designation: **Centrifugal fan**
Type designation: **GD, GE**
Product number: see nameplate
Year of manufacture: see nameplate

CE Declaration of Incorporation

according to Machinery Directive 2006/42 EC-Annex II Part 1.B

The manufacturer **ruck Ventilatoren GmbH**
Max-Planck-Strasse 5
D-97944 Boxberg
Tel.: +49 (0)7930 9211-100

herewith declares that the following product:

Product designation: **Centrifugal fan**
Type designation: **GD, GE**

complies with the basic requirements of the Machinery Directive (2006/42/EC), Annex I, Sections 1.1.2, 1.1.3, 1.1.5, 1.2.1, 1.3.1, 1.3.2, 1.3.4. and 1.5.1.

The partly completed machine also complies with all requirements of the Low Voltage Directive (2006/95/EC) and the Electromagnetic Compatibility Directive (2004/108/EC).

The partly completed machine shall only be taken into service when it has been established that the machine in which the partly completed machine is to be installed complies with the requirements of the Machinery Directive (2006/42/EC).

The following harmonised standards were used:

DIN EN 12100-1 Safety of machinery. Basic concepts, general principles for design. Part 1: Basic terminology, methodology.

DIN EN 12100-2 Safety of machinery. Basic concepts, general principles for design. Part 2: Technical principles.

DIN EN 60204-1 Safety of Machinery - Electrical Equipment of Machines, Part 1: General requirements.

The manufacturer undertakes to send the special documentation for the partly completed machine electronically to the relevant authority in an individual state on request. The special technical documentation to Annex VII Part B, which belongs to the machine, has been prepared.

Responsibility for this declarations rests with:
ruck Ventilatoren GmbH
Max-Planck-Strasse 5
D-97944 Boxberg

Boxberg, 17.11.2014



Andreas Seth
(Technical Director)

1. Important information

This manual contains important information on the safe and appropriate assembly, transport, commissioning, operation, maintenance, disassembly and simple troubleshooting of the product.

The product has been manufactured according to the accepted rules of current technology. Nevertheless, there is a risk of injury or damage if you do not observe the following basic safety instructions and warnings in this manual..

- **Read these instructions completely and thoroughly before working with the product.**
- **Keep these instructions in a location where they are accessible to all users at all times.**
- **Always include the operating instructions when you pass the product on to third parties.**



1.1. Rules and regulations

Also observe the generally applicable, legal or otherwise binding regulations of the European or national legislation and the rules for the prevention of accidents and for environmental protection applicable in your country.

1.2. Guarantee and liability

ruck products are made to the highest technical standards in accordance with the generally recognized rules of the profession. They are subject to constant quality control and meet the relevant requirements when delivered. Because the products are being constantly developed, we reserve the right to make changes to the products at any time and without prior announcement. We do not accept any liability for the correctness or completeness of this installation and operating manual.

The warranty only applies to the delivered configuration. The warranty will not apply if the product is incorrectly assembled or handled or not used as intended.

2. General safety instructions

Planners, plant engineers and operators are responsible for ensuring that the product is installed and operated correctly.

- Exclusively use ruck Ventilatoren in good technical order and condition.
- Check the product for visible defects, for example cracks in the housing or missing rivet, screws and covers.
- Only use the product within the performance range provided in the technical data.
- Protection against contact and being sucked in and safety distances should be provided in accordance with DIN EN ISO 13857.
- Generally prescribed electrical and mechanical protection devices are to be provided by the client.
- Safety components must not be bypassed or put out of operation.
- Thermostatic switches installed into the winding or PTC thermistors are working as motor protection and must be connected!
- In case of motors without thermostatic switch , a motor protection switch must be used.
- The product may be operated by personnel with limited physical, sensory or mental capacities only if they are supervised or have been instructed by responsible personnel.
- Children must be kept away from the product.



2.1. Intended use

The ruck fan is a component in terms of the machine directive 2006/42/EC (partly completed machinery). The product is a not ready-for-use machine in terms of the machine directive. It is intended exclusively for installation in a machine or in ventilation equipment and installations or for combination with other components to form a machinery or installation. The product may be commissioned only if its integrated in the machinery/system for which it is designed and the machinery/system fully complies with the EC machinery directive.

Observe the operating conditions and performance limits specified in the technical data.

ruck ventilation products can be used to provide:

- Clean, dry air (no condensation) and non-aggressive gases with a maximum density of 1.3 kg/m³.
- The medium and room temperatures and the humidity range given in the technical data and on the rating plate.

Intended use includes having read and understood these instructions, especially chapter 2

“General safety instructions”.



2.2. Improper use

Any use of the product other than described in chapter "Intended use" is considered as improper. Also note the following points, which are improper and dangerous:

- Delivery of explosive and flammable media or operation in potentially explosive atmospheres.
- Delivery of aggressive and abrasive media.
- Delivery of media containing dust or grease.
- Operation with completely or partially dismantled or manipulated protection devices
- Device operation with unbalance
- Furthermore, all application possibilities not mentioned in the list of intended use

2.3. Personnel qualifications

Assembly, commissioning and operation, disassembly and service (including maintenance and repair) require basic mechanical and electrical knowledge, as well as knowledge of the appropriate technical terms.

In order to ensure operating safety, these activities may therefore only be carried out by qualified technical personnel or a person under the direction and supervision of qualified personnel. Qualified personnel are those who can recognize possible hazards and institute the appropriate safety measures due to their professional training, knowledge, and experience, as well as their understanding of the relevant conditions pertaining to the work to be done. Qualified personnel must observe the rules relevant to the subject area.







2.4. Warnings and symbols

In this manual, there are safety instructions before the steps whenever there is a danger of personal injury or damage to the equipment. The measures described to avoid these hazards must be observed.

Safety instructions are set out as follows:

Safety sign (warning triangle)	
• Type of risk	- Draws attention to the risk
» Consequences not complied	- Identifies the type or source of the hazard.
→ Precautions	- Describes what occurs when the safety instructions are with.
	- States how the hazard can be avoided.

Safety sign (warning triangle)	Denotation
	General warning! Indicates possible hazardous situations. Failure to observe the warnings may result in personal injury and / or damage to property.
	Electricity warning (hazardous voltage)! Indicates possible hazards due to electricity. Failure to observe the warnings may result in death, injury and/or damage to property.
	Hot surface warning! Indicates possible hazards due to high surface temperatures. Failure to observe the warnings may result in personal injury and/or damage to property.
	Crushing of fingers warning! Indicates possible hazards due to moving and rotating parts. Failure to observe the warnings may result in personal injury.
	Important instructions follow! Instructions for safe, optimum use of the product.



2.5. Adhere to the following instructions

2.5.1. General instructions

- Observe the provisions for accident prevention and environmental protection for the country where the product is used and at the workplace.
- Persons who assemble, operate, disassemble or maintain ruck products must not consume any alcohol, drugs or pharmaceuticals that may affect their ability to respond.
- Responsibilities for the operation, maintenance and regulation of the product should be clearly determined and observed so that there can be no unclear areas of responsibility with regard to safety.
- Never overload the product. Never use it as a handle or step. Do not place anything on it.
- The warranty only applies to the delivered configuration.
- The warranty will not apply if the product is incorrectly assembled or handled or not used as intended.

2.5.2. Installation

- Disconnect all of the product's poles from the mains before installing the product or connecting or removing plugs. Make sure that the product cannot be switched back on again.
- Lay cables and lines so that they cannot be damaged and no one can trip over them.
- Before commissioning, make sure that all gaskets and seals in the plug-in connections are correctly fitted and undamaged in order to prevent fluids and foreign matter getting into the product.
- Information signs must not be changed or removed.

2.5.3. Commissioning

- Make sure that all electrical connections are either used or covered. Commission the product only if it is installed completely.

2.5.4. During operation

- Only authorized personnel may operate mechanisms of the components and parts in the context of the intended use of the device.
- In an emergency, or if there is a fault, or other irregularities, switch the equipment off and make sure it cannot be switched back on again.
- The technical data indicated on the nameplate is not allowed to be exceeded.

2.5.5. Cleaning

- Never use solvents or aggressive detergents. Only clean the product using a slightly damp, lint-free cloth. Only use water to do this and, if necessary, a mild detergent.
- Do not use a high-pressure cleaner for cleaning.
- After cleaning, make sure that the product is working correctly again.

2.5.6. Maintenance and repair

- If operated correctly, ruck products only require a minimum amount of maintenance. Please follow all of the instructions given in section 10 in this respect.
- Make sure that no connections or components are loosened unless the device is disconnected from the mains. Make sure that the equipment cannot be switched back on again.
- Individual components must not be interchanged. For example, the components intended for one product may not be used for other products.

2.5.7. Disposal

- Dispose the product in accordance with the currently applicable national regulations in your country.



3. Note to ErP Directive

The aim of the ErP (Energy-related Products) Directive 2009 / 125EC is to reduce the energy consumption of these products by implementing an environmentally compatible design. For this purpose, EU-wide standards were set for each product group. For fans with input power between 125 W and 500 kW the Commission Regulation 327/2011 is applicable.

The company ruck **Ventilatoren GmbH** points out that, because of this Regulation, within the EU, the range of application of certain fans is bound to certain requirements. Only if the requirements of the ErP directive for the fan are met, can it be used within the EU.

If the fan should not have a CE mark, then the use of this product is not permitted within the EU.



4. Transport and storage

Transport and storage should only be performed by specialist personnel in accordance with the installation and operating manual and regulations in force.

The following points should be noted and followed:

- Check the delivery according to the delivery note to ensure it is complete and correct and check for any damage. Any missing quantities or damage incurred during transport should be confirmed by the carrier. No liability is accepted if this is not observed.
- Do not step under suspended loads.
- Do not transport using the connection cable.
- Avoid damage or deformation of the housing.
- The product must be stored in a dry area and protected from the weather in the original packaging.
- Storage temperature between $-10\text{ }^{\circ}\text{C}$ and $+40\text{ }^{\circ}\text{C}$. Avoid severe temperature fluctuations.
- Avoid storage for long periods (we recommend max. one year). Prior to installation verify the proper function of the motor bearings.



5. Installation

Assembly work may only be performed by specialist personnel in accordance with the installation and operating manual and the regulations and standards in force.

It is the responsibility of the system or plant manufacturer that installation-specific mounting and safety instructions are in compliance with the applicable standards and regulations (DIN EN ISO 12100/13857).

The following points should be noted and followed:

- The unit should only be installed with authorized and suitable fastening materials at all fastening points.
- Do not distort the unit when installing.
- No holes should be made in the housing, or any screws screwed into it.
- Type GD/GE: mounting, depending on the casing design, on flanges or mounting brackets. Fitting with suitable locking screws.
- Type TD/TE/RE: for mounting on fixed motor flange using screws with tightening class 8.8 equipped with suitable locking. Observe permitted tightening torques. Ensure a uniform gap between the nozzle and impeller, a friction of the impeller can lead to fan failure.
- The motors can be, depending on the model, equipped with thermal contacts internally prewired, externally wired thermal contacts or without thermal protection.
- For internally prewired thermal contacts no external connection is possible nor is it necessary.
Warning: thermal contact triggers due to high temperature and automatically resets after cooling.



6. Electrical connection

- **Electricity warning (hazardous voltage)**
- » **Failure to observe the hazard may result in death, injury or damage to property.**
- **Before performing any work on conductive parts, always disconnect the unit completely from the electricity supply and make sure that it cannot be switched back on again.**



The electrical installation must be carried out by a qualified electrician in accordance with the installation and operating instructions and the applicable national regulations, norms and guidelines:

- ISO, EN, DIN and VDE specifications, including all safety requirements.
- Technical connection conditions
- Safety at work and accident prevention requirements.

This list does not claim to be complete.

Requirements should be applied under one's own personal responsibility.

The following points should be noted and followed:

- Always install one ground conductor first and check it.
- The electrical connection must be carried out in accordance with the attached wiring diagrams!
- The type of cable, size of cable and method of laying should be determined by an authorized electrician.
- Low and extra-low voltage cables should be laid separately.
- An all-pole mains disconnection device with at least 3 mm contact gap must be provided in the supply line.
- Use a separate cable inlet for each cable.
- Any cable inlets that are not used must be sealed so that it is airtight.
- All cable inlets must have strain relief.
- Create equipotential bonding between the unit and the duct system.
- Check all protective measures after the electrical connection work (earthing resistance, etc.).
- The fan is a built-in component and features no electrically isolating switch. Connect the device only to circuits that can be switched off with an all-pole disconnecting switch.
- Water infiltrations at the client end of the cable can damage the fan. The cable end must be connected in a dry environment.

7. Commissioning

- **Electricity warning (hazardous voltage)**
 - » Failure to observe the hazard may result in death, injury or damage to property.
 - Before performing any work on conductive parts, always disconnect the unit completely from the electricity supply and make sure that it cannot be switched back on again.

- **Never reach into the impeller or other rotating or moving parts.**
 - » Failure to observe the hazard may lead to serious injury.
 - Work may only be performed once the impeller has come to a complete halt.

- **Caution! Burning hazard.**
 - » Failure to observe the hazard may result in personal injury and/or damage to property.
 - Do not touch the surface until the motor and heater have cooled.

Commissioning by trained technical personnel may only be performed when any risk has been ruled out. The following checks should be performed in accordance with the installation and operating manual and the regulations in force:

- Correctly sealed installation of the unit and duct system.
- Duct system, device and medium lines, if present, must be inspected for foreign objects which, if existent, should be removed!
- The intake opening and inflow into the unit must be clear.
- Check all mechanical and electrical protection measures (e.g. earthing).
- Voltage, frequency and type of current must correspond with the rating plate.
- Check all electrical connections and wiring!
- Check any electrical, switching, safety and control devices connected.
- The motor current is to be measured at operating speed and to be compared with the nominal current!
- Check the fan for excessive vibrations and noise generation.
- The impeller must not be rubbing against the inlet nozzle or other fittings.
- Check rotation and air flow directions.

8. Maintenance and repair

8.1. Important notes

- **Electricity warning (hazardous voltage)**
 - » Failure to observe the hazard may result in death, injury or damage to property.
 - Before performing any work on conductive parts, always disconnect the unit completely from the electricity supply and make sure that it cannot be switched back on again.



- Never reach into the impeller or other rotating or moving parts.
- » Failure to observe the hazard may lead to serious injury.
- Work may only be performed once the impeller has come to a complete halt.



- Caution! Burning hazard.
- » Failure to observe the hazard may result in personal injury and/or damage to property.
- Do not touch the surface until the motor and heater have cooled.



Maintenance and repairs may only be performed by specialist personnel in accordance with this installation and operating manual and the regulations in force.

Defective or damaged equipment must not be self-repaired, the damage or malfunction should be reported to the manufacturer in writing.



- Unauthorized repairs may cause personal injury and / or damage to property, in which case the manufacturer's guarantee or warranty will not apply.



8.2. Cleaning and care

Servicing, troubleshooting and cleaning may only be performed by specialist personnel in accordance with this installation and operating manual and the regulations in force.

If operated correctly, ruck products only require a small amount of maintenance.

The following work should be performed at regular intervals, in accordance with health and safety regulations:

- The function of the control and safety devices must be checked.
- Check electrical connections and wiring for damage.
- Remove any dirt from the fan impeller or impellers and from inside the fan housing in order to prevent any unbalance or reduction in output.
 - » Do not use aggressive or easily flammable products for cleaning (impellers/housing). Preferably only water (not flowing water) or mild suds should be used.
 - » The impeller should be cleaned with a cloth or brush.
 - » Never use a high-pressure cleaner.
 - » Do not remove or shift balancing weights.
 - » The impeller and fittings must not be damaged in any way.
- Check the operation of the bearing with a visual inspection and by checking running noise.



9. Expansion and reconfiguration

The unit must not be reconfigured.

ruck Ventilatoren's warranty only applies for the configuration delivered. The warranty will cease to apply after any reconfiguration or expansion.



10. Possible operating faults.

Do not perform any repairs on your device. Send the unit in for repair or replacement to ruck Ventilatoren.

Faults	Possible causes	Fault correction
Fan does not run.	<ul style="list-style-type: none"> • Unit not switched on. • No electricity supply • Supply lead not connected. • Thermal contact has opened. 	<ul style="list-style-type: none"> • Switch unit on. • Check fuse / supply • Have the supply lead connected by an electrician. • Allow fan motor to cool.
Fan does not run.	<ul style="list-style-type: none"> • Fan speed set to slow. 	<ul style="list-style-type: none"> • Clean the device. If the imbalance is still present after cleaning, replace the device. When cleaning please make sure no balancing weights are moved or removed.

Specifications

Units / Model			GE 120 2A 100249	GE 120 2A 100251	GE 120 2B 100252	GE 120 2B 100253	GE 120 2B 100433	GE 120 2B 100435	GE 120 2B 109762	GE 120 2B 100434	GE 120 2B 101397	GE 120 2C 100436
Length	<i>L</i>	mm	175	173	170	171	171	171	170	171	170	170
Width	<i>B 1</i>	mm	82,5	82,5	81	81	81	81	81	81	81	101
	<i>B 2</i>	mm	99,5	99,5	102	102	102	102	102	102	102	122
Height	<i>H</i>	mm	174	174	180	180	180	180	180	180	180	180
Outlet flange			x	-	-	x	x	x	-	x	-	-
Direction of rotation			right	right	right	right	right	right	right	left	left	right
Weight		kg	2,1	2,0	1,9	2,2	2,0	2,1	1,5	2,0	1,9	2,0
Operating voltage		V	230V ~	230V ~	230V ~	230V ~	230V ~	230V ~	230V ~	230V ~	230V ~	230V ~
Rated frequency		Hz	50	50	50	50	50	50	50	50	50	50
Max. operating current		A	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,5
Max. medium temp.		°C	80	80	80	80	80	80	80	80	80	70
Power consumption		W	68	68	80	80	80	80	80	85	85	93
Max. air volume		m ³ /h	220	220	300	300	300	300	300	330	330	370
RPM		1/min	2440	2440	2090	2090	2090	2090	2090	2100	2100	1860
Min. pressure		Pa	0	0	0	0	0	0	0	0	0	0
Max. pressure		Pa	265	265	350	350	350	350	350	400	400	380
Sound intake air	<i>L_{WA5}</i>	dB(A)	68	68	69	69	69	69	69	66	66	67
Sound outlet air	<i>L_{WA6}</i>	dB(A)	68	68	69	69	69	69	69	66	66	67
Wiring diagram No.			118218	118218	118218	118218	122038	118218	116471	118794	118794	118794

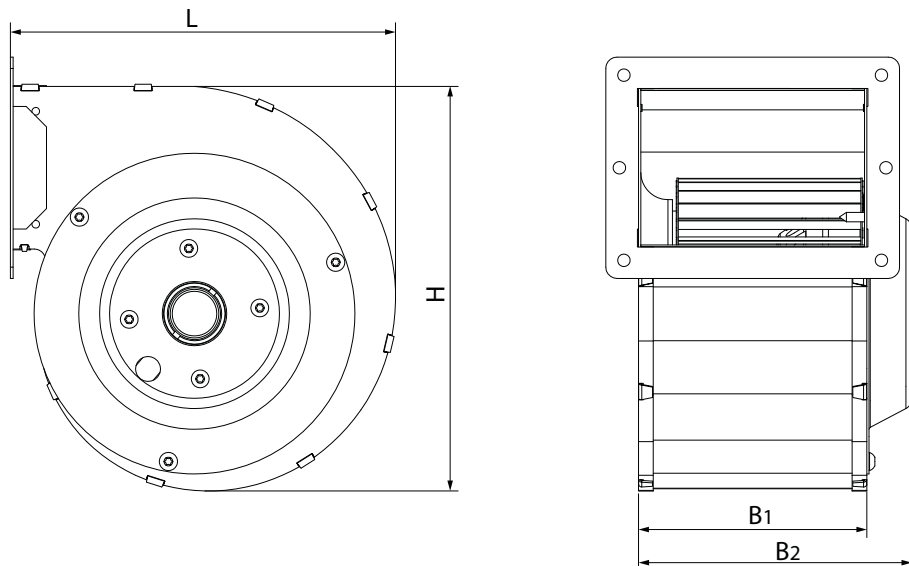
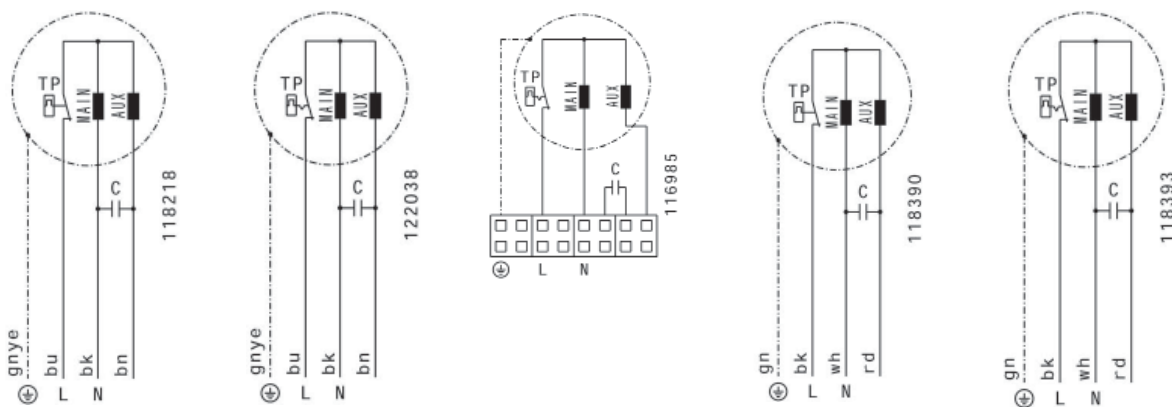


Fig. Direction of rotation right

Specifications			GE 120 2C 100437	GE 140 2B 100440	GE 140 2B 100441	GE 140 2D 100442	GE 140 2D 100443	GE 140 2E 100447	GE 140 2E 100448	GE 140 2E 118467	GE 140 2E 103290	GE 140 2E 103289
Units / Model			100437	100440	100441	100442	100443	100447	100448	118467	103290	103289
Length	L	mm	171	226	225	226	225	226	225	226	225	226
Width	B 1	mm	101	100	100	100	100	100	100	100	100	100
	B 2	mm	122	102	102	102	102	102	102	102	102	102
Height	H	mm	180	249	249	249	249	249	249	249	129	129
Outlet flange			x	x	-	x	-	x	-	x	-	x
Direction of rotation			right	right	right	right	right	right	right	right	right	right
Weight		kg	2,1	2,6	2,5	3,0	2,9	3,7	3,6			3,4
Operating voltage		V	230V ~	230V ~	230V ~	230V ~	230V ~	230V ~	230V ~	230V ~	230V ~	230V ~
Rated frequency		Hz	50	50	50	50	50	50	50	50	50	50
Max. operating current		A	0,5	0,5	0,5	0,7	0,7	0,8	0,8	0,8	0,8	0,8
Max. medium temp.		°C	70	50	50	60	60	65	65	65	65	65
Power consumption		W	93	103	103	154	154	156	156	156	156	156
Max. air volume		m³/h	370	380	380	510	510	500	500	500	500	500
RPM		1/min	1860	1380	1380	2050	2050	2180	2180	2180	2180	2180
Min. pressure		Pa	0	0	0	0	0	0	0	0	0	0
Max. pressure		Pa	380	380	380	390	390	360	360	360	360	360
Sound intake air	L _{WA 5}	dB(A)	67	64	64	72	72	74	74	74	74	74
Sound outlet air	L _{WA 6}	dB(A)	67	64	64	72	72	74	74	74	74	74
Wiring diagram No.			118794	118794	118794	118218	118218	118218	118218	122038	118218	118218

Wiring diagrams



Specifications												
Units / Model			GE 160 2E 132032	GE 160 2E 132033	GE 160 2E 132035	GE 160 4A 100471	GE 160 4A 100472	GE 160 4A 109927	GE 160 4A 110423	GE 180 4A 103315	GE 180 4A 103314	GE 180 4G 100479
Length	<i>L</i>	<i>mm</i>	226	225	226	226	225	226	226	260	261	287
Width	<i>B 1</i>	<i>mm</i>	100	100	100	100	100	100	100	110	110	129
	<i>B 2</i>	<i>mm</i>	102	102	102	102	102	102	102	112	112	136
Height	<i>H</i>	<i>mm</i>	249	249	249	249	249	249	249	283	283	330
Outlet flange			x	-	x	x	-	x	x	-	x	x
Direction of rotation			right	right	right	right	right	right	right	right	right	right
Weight		<i>kg</i>	3,8	3,8	4,6	3,0	1,7	3,0	1,7	2,3	3,9	4,8
Operating voltage		<i>V</i>	230V ~	230V ~	230V ~	230V ~	230V ~	230V ~	230V ~	230V ~	230V ~	230V ~
Rated frequency		<i>Hz</i>	50	50	50	50	50	50	50	50	50	50
Max. operating current		<i>A</i>	1,6	1,6	1,6	0,4	0,4	0,4	0,4	0,5	0,5	0,8
Max. medium temp.		<i>°C</i>	45	45	45	40	40	40	40	50	50	60
Power consumption		<i>W</i>	339	339	339	69	69	69	69	105	105	160
Max. air volume		<i>m³/h</i>	680	680	680	420	420	420	420	640	640	950
RPM		<i>1/min</i>	2200	2200	2200	1200	1200	1200	1200	1180	1180	1250
Min. pressure		<i>Pa</i>	200	200	200	0	0	0	0	0	0	0
Max. pressure		<i>Pa</i>				160	160	160	160	215	215	240
Sound intake air	<i>L_{WA5}</i>	<i>dB(A)</i>				61	61	61	61	64	64	65
Sound outlet air	<i>L_{WA6}</i>	<i>dB(A)</i>				60	60	60	60	63	63	66
Wiring diagram No.			118218	118218	116985	118218	118218	118218	118218	118390	118390	118218

Specifications										
Units / Model			GE 180 4G 108279	GE 180 4B 103334	GE 180 4B 103333	GE 180 4B 108227	GE 180 4F 103325	GE 180 4F 103324		
			108279	103334	103333	108227	103325	103324		
Length	<i>L</i>	<i>mm</i>	286	286	287	287	260	261		
Width	<i>B 1</i>	<i>mm</i>	129	129	129	129	127	127		
	<i>B 2</i>	<i>mm</i>	136	136	136	136	129	129		
Height	<i>H</i>	<i>mm</i>	330	330	330	330	283	283		
Outlet flange			-	-	x	x	-	x		
Direction of rotation			right	right	right	right	right	right		
Weight	<i>kg</i>		4,7	2,6	2,7	2,6				
Operating voltage	<i>V</i>		230V ~	230V ~	230V ~	230V ~	230V ~	230V ~		
Rated frequency	<i>Hz</i>		50	50	50	50	50	50		
Max. operating current	<i>A</i>		0,8	0,8	0,8	0,8	0,8	0,8		
Max. medium temp.	<i>°C</i>		60	45	45	45	40	40		
Power consumption	<i>W</i>		160	167	167	167	153	153		
Max. air volume	<i>m³/h</i>		950	940	940	940	810	810		
RPM	<i>1/min</i>		1215	1190	1190	1190	1305	1305		
Min. pressure	<i>Pa</i>		0	0	0	0	0	0		
Max. pressure	<i>Pa</i>		240	250	250	250	210	210		
Sound intake air	<i>L_{WA 5} dB(A)</i>		65	66	66	66				
Sound outlet air	<i>L_{WA 6} dB(A)</i>		66	66	66	66				
Wiring diagram No.			118218	118393	118393	118393	118393	118393		

Daten gemäß ErP Richtlinie laut EU-Verordnung 327/2011 Data in accordance with ErP Directive 327/2011 of the European Parliament											
Gerätetyp Units / Model	GE 120 2A 100249	GE 120 2A 100251	GE 120 2B 100252	GE 120 2B 100253	GE 120 2B 100433	GE 120 2B 100435	GE 120 2B 109762	GE 120 2B 100434	GE 120 2B 101397	GE 120 2C 100436	GE 120 2C 100437
ID-Nummer ID-number	100249	100251	100252	100253	100433	100435	109762	100434	101397	100436	100437
ErP-Konform ErP-conformity	2015 **		2015 **				2015 **		2015 **		
Gesamteffizienz Overall efficiency	η_{es} [%]										
Messkategorie Measurement category											
Effizienzklasse Efficiency category											
Effizienzgrad am Energieeffizienzoptimum Efficiency grade at optimum energy efficiency point	N										
Drehzahlregelung Speed control											
Herstellungsjahr Year of manufacture	siehe Typenschild see nameplate										
Amtliche Registriernummer Commercial registration number	Amtsgericht Mannheim HRB 560366 Local District Court Mannheim HRB 560367										
Niederlassungsort des Herstellers Site of manufacturer	ruck Ventilatoren GmbH, Deutschland ruck Ventilatoren GmbH, Germany										
Nennmotoreingangsleistung am Energieeffizienzoptimum Nominal motor power input at optimum energy efficiency point	P_e [kW]										
Volumenstrom am Energieeffizienzoptimum Volumetric flow at optimum energy efficiency point	q_v [m ³ /h]										
Statischer Druck am Energieeffizienzoptimum Static pressure at optimum energy efficiency point	p_{st} [Pa]										
Umdrehungen pro Minute am Energieeffizienzoptimum Rotations per minute at the optimum energy efficiency point	n [1/min]										
Spezifisches Verhältnis The specific ratio	Spezifisches Verhältnis liegt nahe bei 1 und deutlich unter 1,11. The specific ratio is close to 1 and significantly below 1.11.										
Informationen zur Demontage, Recycling und Entsorgung Information on dismantling, recycling and disposal	Bitte beachten Sie die Bedienungsanleitung des Produktes. Observe the user manual of this product.										
Optimale Lebensdauer Optimal life	Bitte beachten Sie die Bedienungsanleitung des Produktes. Observe the user manual of this product.										
Beschreibung weiterer bei der Ermittlung der Energieeffizienz von Ventilatoren genutzter Gegenstände wie Rohrleitungen, die nicht in der Messkategorie beschrieben und nicht mit dem Ventilator geliefert werden. Description of additional items used when determining the fan energy efficiency, such as ducts, that are not described in the measurement category and not supplied with the fan.	Für die Ermittlung der Energieeffizienz wurden keine besonderen Gegenstände außer den gemäß der Messkategorie verlangten Anschlusskomponenten eingesetzt. No special items have been used for determining the fan energy efficiency, except the required connection components according to the measurement category.										

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Not ErP compliant, can be sold only as a spare part for identical fans defined by the regulation (EC) 327/2011 or outside the E.C..

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Compliant to the ErP-regulation (EC) 327/2011, the power consumption at optimum efficiency is < 125W.

*** ErP-konform gemäß EU-Verordnung 327/2011, da die maximale Leistungsaufnahme der Dunstabzugshaube < 280W ist. /
Compliant to the ErP-regulation (EC) 327/2011, the maximum power consumption of the kitchen hood is < 280W.

Daten gemäß ErP Richtlinie laut EU-Verordnung 327/2011
Data in accordance with ErP Directive 327/2011 of the European Parliament

Gerätetyp Units / Model	GE 140 2B 100440	GE 140 2B 100441	GE 140 2D 100442	GE 140 2D 100443	GE 140 2E 100447	GE 140 2E 100448	GE 140 2E 118467	GE 140 2E 103290	GE 140 2E 103289
ID-Nummer ID-number	100440	100441	100442	100443	100447	100448	118467	103290	103289
ErP-Konform ErP-conformity	2015 **		2015 **		2015 **		2015 **		
Gesamteffizienz Overall efficiency	η_{es} [%]								
Messkategorie Measurement category									
Effizienzklasse Efficiency category									
Effizienzgrad am Energieeffizienzoptimum Efficiency grade at optimum energy efficiency point	N								
Drehzahlregelung Speed control									
Herstellungsjahr Year of manufacture	siehe Typenschild see nameplate								
Amtliche Registriernummer Commercial registration number	Amtsgericht Mannheim HRB 560366 Local District Court Mannheim HRB 560367								
Niederlassungsort des Herstellers Site of manufacturer	ruck Ventilatoren GmbH, Deutschland ruck Ventilatoren GmbH, Germany								
Nennmotoreingangsleistung am Energieeffizienzoptimum Nominal motor power input at optimum energy efficiency point	P_e [kW]								
Volumenstrom am Energieeffizienzoptimum Volumetric flow at optimum energy efficiency point	q_v [m³/h]								
Statischer Druck am Energieeffizienzoptimum Static pressure at optimum energy efficiency point	p_{st} [Pa]								
Umdrehungen pro Minute am Energieeffizienzoptimum Rotations per minute at the optimum energy efficiency point	n [1/min]								
Spezifisches Verhältnis The specific ratio	Spezifisches Verhältnis liegt nahe bei 1 und deutlich unter 1,11. The specific ratio is close to 1 and significantly below 1.11.								
Informationen zur Demontage, Recycling und Entsorgung Information on dismantling, recycling and disposal	Bitte beachten Sie die Bedienungsanleitung des Produktes. Observe the user manual of this product.								
Optimale Lebensdauer Optimal life	Bitte beachten Sie die Bedienungsanleitung des Produktes. Observe the user manual of this product.								
Beschreibung weiterer bei der Ermittlung der Energieeffizienz von Ventilatoren genutzter Gegenstände wie Rohrleitungen, die nicht in der Messkategorie beschrieben und nicht mit dem Ventilator geliefert werden. Description of additional items used when determining the fan energy efficiency, such as ducts, that are not described in the measurement category and not supplied with the fan.	Für die Ermittlung der Energieeffizienz wurden keine besonderen Gegenstände außer den gemäß der Messkategorie verlangten Anschlusskomponenten eingesetzt. No special items have been used for determining the fan energy efficiency, except the required connection components according to the measurement category.								

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*** ErP-konform gemäß EU-Verordnung 327/2011, da die maximale Leistungsaufnahme der Dunstabzugshaube < 280W ist. / Compliant to the ErP-regulation (EC) 327/2011, the maximum power consumption of the kitchen hood is < 280W.

Daten gemäß ErP Richtlinie laut EU-Verordnung 327/2011 Data in accordance with ErP Directive 327/2011 of the European Parliament									
Gerätetyp Units / Model	GE 160 2E 132032	GE 160 2E 132033	GE 160 2E 132035	GE 160 4A 100471	GE 180 4G 108279	GE 180 4G 108279	GE 180 4G 108279	GE 180 4A 103315	GE 180 4A 103314
ID-Nummer ID-number	132032	132033	132035	100471	100472	109927	110423	103315	109927
ErP-Konform ErP-conformity	2015			2015 **			2015 **		
Gesamteffizienz Overall efficiency	η_{es} [%]			32,1					
Messkategorie Measurement category	A								
Effizienzklasse Efficiency category	statisch								
Effizienzgrad am Energieeffizienzoptimum Efficiency grade at optimum energy efficiency point	N			44					
Drehzahlregelung Speed control	ohne								
Herstellungsjahr Year of manufacture	siehe Typenschild see nameplate								
Amtliche Registriernummer Commercial registration number	Amtsgericht Mannheim HRB 560366 Local District Court Mannheim HRB 560367								
Niederlassungsort des Herstellers Site of manufacturer	ruck Ventilatoren GmbH, Deutschland ruck Ventilatoren GmbH, Germany								
Nennmotoreingangsleistung am Energieeffizienzoptimum Nominal motor power input at optimum energy efficiency point	P_e [kW]			0,17					
Volumenstrom am Energieeffizienzoptimum Volumetric flow at optimum energy efficiency point	q_v [m³/h]			395					
Statischer Druck am Energieeffizienzoptimum Static pressure at optimum energy efficiency point	p_{st} [Pa]			527					
Umdrehungen pro Minute am Energieeffizienzoptimum Rotations per minute at the optimum energy efficiency point	n [1/min]			2754					
Spezifisches Verhältnis The specific ratio	Spezifisches Verhältnis liegt nahe bei 1 und deutlich unter 1,11. The specific ratio is close to 1 and significantly below 1.11.								
Informationen zur Demontage, Recycling und Entsorgung Information on dismantling, recycling and disposal	Bitte beachten Sie die Bedienungsanleitung des Produktes. Observe the user manual of this product.								
Optimale Lebensdauer Optimal life	Bitte beachten Sie die Bedienungsanleitung des Produktes. Observe the user manual of this product.								
Beschreibung weiterer bei der Ermittlung der Energieeffizienz von Ventilatoren genutzter Gegenstände wie Rohrleitungen, die nicht in der Messkategorie beschrieben und nicht mit dem Ventilator geliefert werden. Description of additional items used when determining the fan energy efficiency, such as ducts, that are not described in the measurement category and not supplied with the fan.	Für die Ermittlung der Energieeffizienz wurden keine besonderen Gegenstände außer den gemäß der Messkategorie verlangten Anschlusskomponenten eingesetzt. No special items have been used for determining the fan energy efficiency, except the required connection components according to the measurement category.								

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Daten gemäß ErP Richtlinie laut EU-Verordnung 327/2011 Data in accordance with ErP Directive 327/2011 of the European Parliament							
Gerätetyp Units / Model	GE 180 4G 100479	GE 180 4G 108279	GE 180 4B 103334	GE 180 4B 103333	GE 180 4B 108227	GE 180 4F 103325	GE 180 4F 103324
ID-Nummer ID-number	100479	108279	103334	103333	108227	103325	103324
ErP-Konform ErP-conformity	2015 **		2015 **				
Gesamteffizienz Overall efficiency	$\eta_{es} [\%]$						
Messkategorie Measurement category							
Effizienzklasse Efficiency category							
Effizienzgrad am Energieeffizienzoptimum Efficiency grade at optimum energy efficiency point	N						
Drehzahlregelung Speed control							
Herstellungsjahr Year of manufacture	siehe Typenschild see nameplate						
Amtliche Registriernummer Commercial registration number	Amtsgericht Mannheim HRB 560366 Local District Court Mannheim HRB 560367						
Niederlassungsort des Herstellers Site of manufacturer	ruck Ventilatoren GmbH, Deutschland ruck Ventilatoren GmbH, Germany						
Nennmotoreingangsleistung am Energieeffizienzoptimum Nominal motor power input at optimum energy efficiency point	$P_e [kW]$						
Volumenstrom am Energieeffizienzoptimum Volumetric flow at optimum energy efficiency point	$q_v [m^3/h]$						
Statischer Druck am Energieeffizienzoptimum Static pressure at optimum energy efficiency point	$p_{st} [Pa]$						
Umdrehungen pro Minute am Energieeffizienzoptimum Rotations per minute at the optimum energy efficiency point	$n [1/min]$						
Spezifisches Verhältnis The specific ratio	Spezifisches Verhältnis liegt nahe bei 1 und deutlich unter 1,11. The specific ratio is close to 1 and significantly below 1.11.						
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Notes:

A series of horizontal dotted lines spanning the width of the page, intended for taking notes.

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