

Bruksanvisning Directions for use

LPKB 125 B/B-r, LPKB 160 K/K-r, LPKB 200 B/B-r, LPKB 200 K/K-r
LPKBI 125 B/B-r, LPKBI 160 K/K-r, LPKBI 200 B/B-r, LPKBI 200 K/K-r



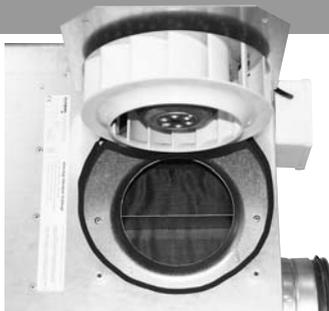
This directions for use contains following products:
LPKB 125 B/B-r, LPKB 160 K/K-r, LPKB 200 B/B-r, LPKB 200 K/K-r
and
LPKBI 125 B/B-r, LPKBI 160 K/K-r, LPKBI 200 B/B-r, LPKBI 200 K/K-r

DESCRIPTION

LPKB and LPKBI are low profile duct fans with backward curved impellers and swing-out design.

The fans are manufactured from galvanized steel sheet.

LPKB and LPKBI has the same benefits, but LPKBI is equipped with an in-built silencer and extended.



APPLICATION

- The fan is used for transportation of “clean” air, meaning not intended for fire-dangerous substances, explosives, grinding dust, soot, etc.
- The fan is equipped with an asynchronous external rotor induction motor with maintenance-free sealed ball-bearings.
- The capacitor has finite lifetime and should be exchanged after 45.000 operation hours (about 5 years of operation) to secure maximum function. Defective capacitor can cause damage.
- Reduced speed is received through a capacitor cut-

over (see wiring diagram page 12). This must be done by an authorized electrician.

- To achieve maximum life time for installations in damp or cold environments, the fan should be operating continuously.
- The fan can be installed outside or in damp environments. Make sure that the fan-house is equipped with drainage.
- The fan is intended to be used at the highest voltage and frequency that's stated on the label on the fan.
- The fan can be installed in any position.

INSTALLATION

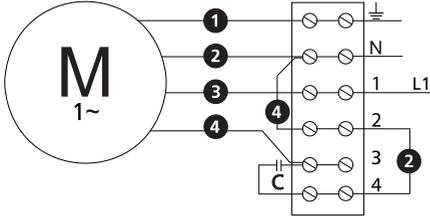
- The fan must be installed according to the air direction label on the fan.
- The fan must be connected to duct or equipped with a safety grille.
- The fan should be installed in a safe way and make sure that no foreign objects are left behind.
- The fan should be installed in a way that makes service and maintenance easy. N.B.! Consider the weight and size of the fan.
- The fan should be installed in a way that vibrations not can be transfused to duct or building. To provide this, use for example a duct clamp.
- To regulate the speed, a transformer, a speed controller or a frequency converter can be connected.

- A wiring diagram is applied on the inside of the junction box. Connection according to wiring diagram 4040140 is standard. For reduced speed see wiring diagram 4040137.
- The fan is grounded, installed and connected electrically in the right way.
- The motor has a built-in thermo-contact.
- Electrical installations must be made by an authorized electrician.
- Electrical installations must be connected to a locally situated tension free switcher or by a lockable head switcher.

WIRING DIAGRAMS

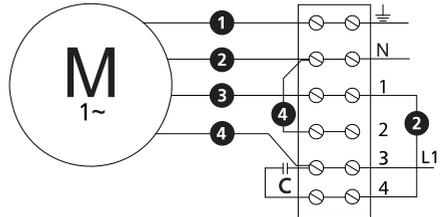
4040140

Single phase, 230V



4040137

Single phase, 230 V, for reduced speed



(M1) = Fan Motor

- 1 = Yellow/Green
- 2 = Black
- 3 = Blue
- 4 = Brown

TECHNICAL DATA

	Voltage V/Hz	Current A	Input W	Speed rpm	Weight kg	Wiring diagram	Capacitor µF	Insulation class, motor	Motor protection
LPKB 125 B	230/50	0,25	57	2550	6,5	4040140	2	F	IP 44
LPKB 125 B-r	230/50	0,18	39	1830	6,5	4040137	2	F	IP 44
LPKB 160 K	230/50	0,25	58	2540	7,5	4040140	2	F	IP 44
LPKB 160 K-r	230/50	0,18	40	1790	7,5	4040137	2	F	IP 44
LPKB 200 B	230/50	0,47	106	2490	8,5	4040140	3	F	IP 44
LPKB 200 B-r	230/50	0,29	65	1450	8,5	4040137	3	F	IP 44
LPKB 200 K	230/50	0,60	139	2420	8,5	4040140	5	F	IP 44
LPKB 200 K-r	230/50	0,45	98	1620	8,5	4040137	5	F	IP 44
LPKBI 125 B	230/50	0,25	58	2550	8,5	4040140	2	F	IP 44
LPKBI 125 B-r	230/50	0,18	40	1810	8,5	4040137	2	F	IP 44
LPKBI 160 K	230/50	0,25	58	2520	9,0	4040140	2	F	IP 44
LPKBI 160 K-r	230/50	0,18	40	1730	9,0	4040137	2	F	IP 44
LPKBI 200 B	230/50	0,47	108	2460	11,0	4040140	3	F	IP 44
LPKBI 200 B-r	230/50	0,29	65	1420	11,0	4040137	3	F	IP 44
LPKBI 200 K	230/50	0,60	140	2410	11,0	4040140	5	F	IP 44
LPKBI 200 K-r	230/50	0,45	100	1600	11,0	4040137	5	F	IP 44

SOUND DATA

The sound data have been compiled by means of sound measurements methods as follows:

Pressure and drop: SS-ISO 5801.

Determination of acoustic sound level in duct: SS-EN ISO 5136.

Determination of acoustic sound level in reverberation room: SS-EN ISO 3741.

DESIGNATIONS

L_{wA}^{Tot} : Total A-weighted sound power level dB(A) (ref $10^{-12}W$)= the sum of the sound power level in the octave ranges.

L_{wA} : A-weighted sound power level in octave range dB(A)(ref $10^{-12}W$).

L_{pA} : A-weighted sound pressure level in dB(A) according to normed A-weighting correction and relating to an effective absorption area of 20 m² with half spherical translation at a distance of 3 metres.

LPKB 125 B, 75 l/s 180 Pa	L_{pA}	L_{wA}^{tot} dB (A)	63	125	250	500	1K	2K	4K	8K
Environment	52	59	27	34	57	51	47	43	36	29
Inlet		68	48	59	62	65	56	51	52	45
Outlet		71	53	60	67	67	63	58	55	48
LPKB 125 B-r, 50 l/s 90 Pa										
Environment	40	47	22	28	44	43	39	35	28	25
Inlet		63	43	53	60	57	48	43	42	32
Outlet		66	47	54	64	58	54	49	45	35
LPKB 160 K, 75 l/s 175 Pa										
Environment	50	57	26	34	53	52	46	42	36	30
Inlet		69	51	60	65	64	57	54	53	48
Outlet		71	55	62	67	67	62	58	55	48
LPKB 160 K-r, 55 l/s 80 Pa										
Environment	41	48	23	28	43	44	37	34	27	25
Inlet		61	43	53	57	56	48	45	41	34
Outlet		64	48	53	61	57	52	49	44	34
LPKB 200 B, 120 l/s 250 Pa										
Environment	52	59	26	39	51	57	47	47	40	31
Inlet		72	54	62	66	69	59	58	58	49
Outlet		75	56	62	67	71	64	66	62	51
LPKB 200 B-r, 60 l/s 100 Pa										
Environment	38	45	23	32	40	42	35	34	27	26
Inlet		60	46	54	54	55	47	43	40	28
Outlet		62	48	54	57	57	50	51	43	30
LPKB 200 K, 135 l/s 250 Pa										
Environment	55	62	30	41	51	61	50	48	43	36
Inlet		74	54	64	64	73	61	59	60	56
Outlet		78	59	65	67	75	68	67	64	58
LPKB 200 K-r, 100 l/s 100 Pa										
Environment	44	51	27	40	47	47	40	38	32	27
Inlet		66	50	60	59	62	51	49	50	43
Outlet		68	53	59	62	64	57	57	53	45

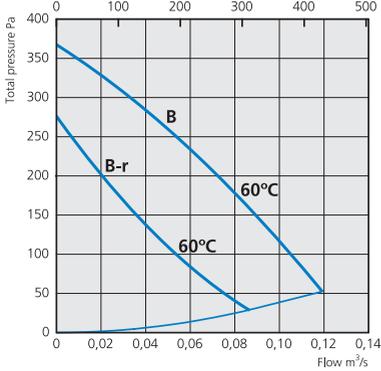
LPKBI 125 B, 75 l/s 180 Pa	L_{pA}	L_{wA} tot dB (A)	63	125	250	500	1K	2K	4K	8K
Environment	47	54	27	34	52	50	43	41	33	27
Inlet		54	43	51	49	39	27	23	23	25
Outlet		71	53	60	67	67	63	58	55	48
LPKBI 125 B-r, 50 l/s 90 Pa										
Environment	38	45	22	28	41	41	34	31	26	25
Inlet		49	36	45	46	32	19	13	12	13
Outlet		66	47	54	64	58	54	49	45	35
LPKBI 160 K, 75 l/s 175 Pa										
Environment	45	52	26	24	49	48	41	38	32	27
Inlet		57	44	56	51	38	24	25	28	28
Outlet		71	55	62	67	67	62	58	55	48
LPKBI 160 K-r, 55 l/s 80 Pa										
Environment	37	44	23	28	41	39	33	30	26	25
Inlet		50	37	47	47	30	17	16	16	14
Outlet		64	48	53	61	57	52	49	44	34
LPKBI 200 B, 120 l/s 250 Pa										
Environment	49	56	26	38	51	52	45	45	39	29
Inlet		61	49	57	57	46	32	32	37	29
Outlet		75	56	62	67	71	64	66	62	51
LPKBI 200 B-r, 60 l/s 100 Pa										
Environment	36	43	23	32	39	38	30	30	26	26
Inlet		52	42	50	47	33	18	17	19	11
Outlet		62	48	54	57	57	50	51	43	30
LPKBI 200 K, 135 l/s 250 Pa										
Environment	52	59	30	40	51	56	48	46	40	34
Inlet		63	50	61	58	50	37	34	41	36
Outlet		78	59	65	67	75	68	67	64	58
LPKBI 200 K-r, 100 l/s 100 Pa										
Environment	43	50	27	40	46	44	36	35	30	27
Inlet		57	47	55	50	38	22	23	29	21
Outlet		68	53	59	62	64	57	57	53	45

*r = Wiring diagram for reduced speed (rpm)

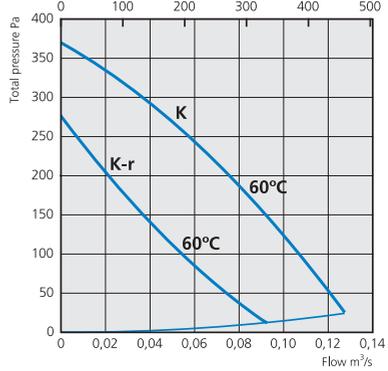
PRESSURE AND FLOW DIAGRAMS

PRESSURE / FLOW

LPKB 125 B/B-r*

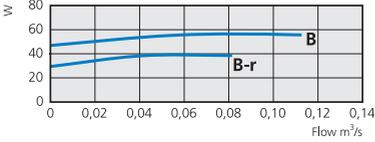


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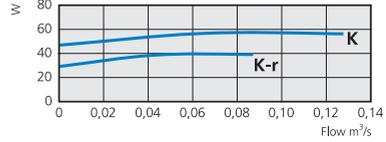


EFFECT / FLOW

LPKB 125 B/B-r*

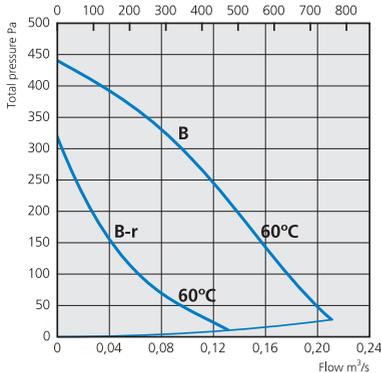


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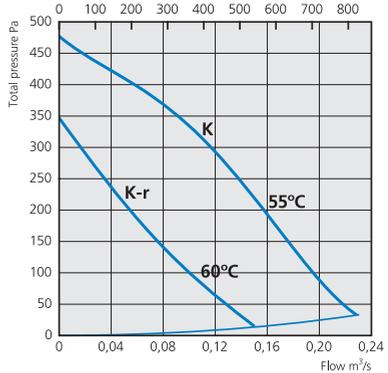


PRESSURE / FLOW

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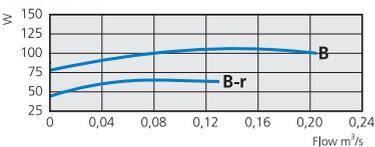


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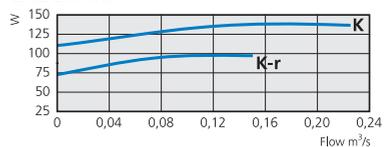


EFFECT / FLOW

LPKB 200 B/B-r*



LPKB 200 K/K-r*

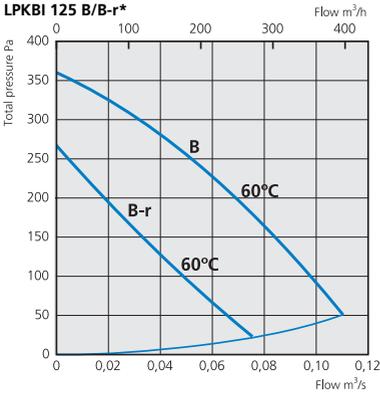


*r = Wiring diagram for reduced speed (rpm)

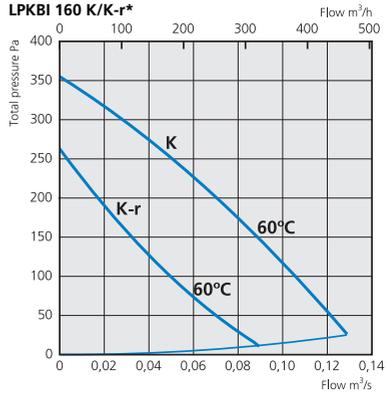
PRESSURE AND FLOW DIAGRAMS

PRESSURE / FLOW

LPKBI 125 B/B-r*

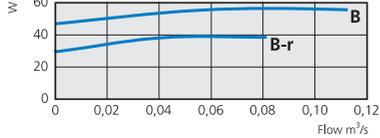


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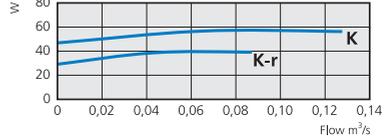


EFFECT / FLOW

LPKBI 125 B/B-r*

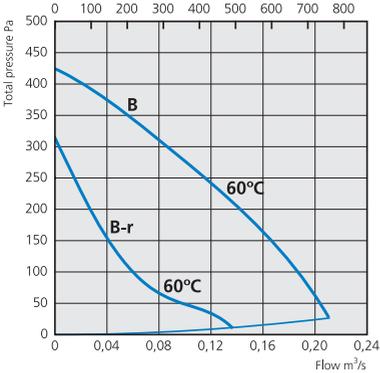


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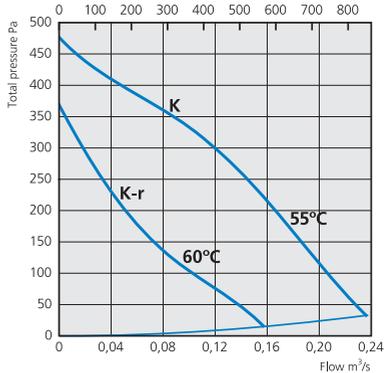


PRESSURE / FLOW

LPKBI 200 B/B-r*

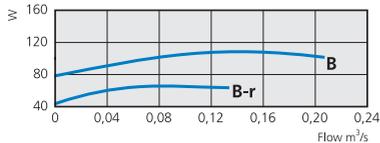


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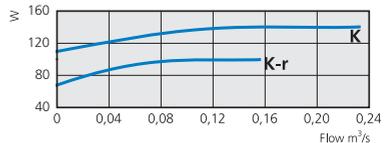


EFFECT / FLOW

LPKBI 200 B/B-r*



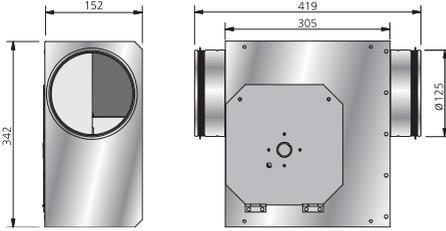
LPKBI 200 K/K-r*



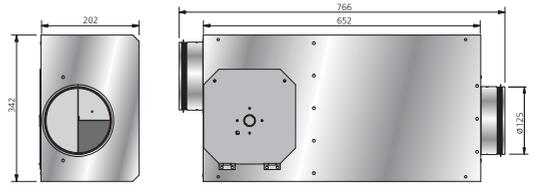
*r = Wiring diagram for reduced speed (rpm)

DIMENSIONS

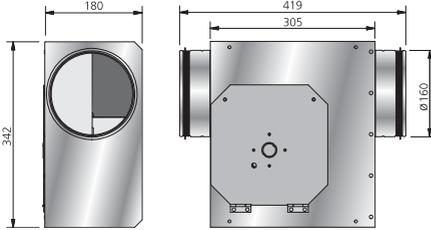
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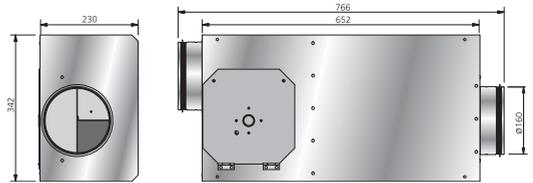
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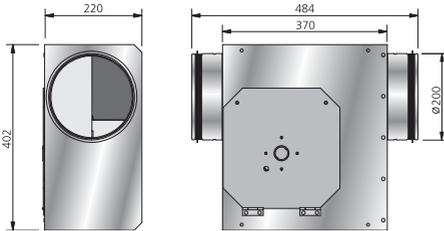
LPKB 160 B/B-r*



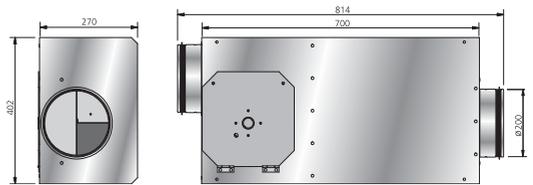
LPKBI 160 B/B-r*



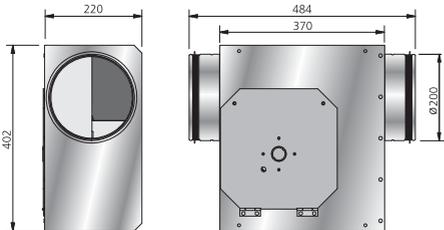
LPKB 200 B/B-r*



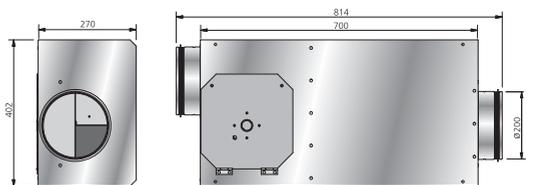
LPKBI 200 B/B-r*



LPKB 200 K/K-r*



LPKBI 200 K/K-r*



OPERATION

Before starting, make sure that:

- the current does not exceed more than +5% of what is stated on the label.
- the connecting voltage is in between +6% to -10% of the rated voltage.
- no noise appears when starting the fan.

HOW TO HANDLE

- The fan must be transported in its packing until installation. This prevents transport damages, scratches and the fan from getting dirty.
- Attention, look out for sharp edges and corners.

MAINTENANCE

- Before service, maintenance or repair begins, the fan must be tension free and the impeller must have stopped.
- Considering the weight of the fan when removing or opening larger fans to avoid jamming and contusions.
- The fan must be cleaned when needed, at least once per year to maintain the capacity and to avoid unbalance which may cause unnecessary damages on the bearings.
- The fan bearings are maintenance-free and should be renewed only when necessary.
- When cleaning the fan, high-pressure cleaning or strong dissolvent must not be used.
- Cleaning should be done without dislodging or damaging the impeller.
- Make sure that there is no noise from the fan.

FAULT DETECTION

1. Make sure that there is tension to the fan.
2. Cut the tension and verify that the impeller is not blocked.
3. Check the thermo-contact. If it is disconnected the cause of overheating must be taken care of, not to be repeated. To restore the manual thermo-contact the tension will be cut for a couple of minutes. Larger motors than 1,6 A may have manual resetting on the motor. If it has automatic thermo-contact the resetting will be done automatically when the motor is cold.
4. Make sure that the capacitor is connected according to the wiring diagram.
5. If the fan still does not work, the first thing to do is to change the capacitor.
6. If nothing of this works, contact your fan supplier.
7. If the fan is returned to the supplier, it must be cleaned, the motor cable undamaged and a detailed nonconformity report enclosed.

WARRANTY

The warranty is only valid under condition that the fan is used according to this "Directions for use" and a regular maintenance has been record.

EC DECLARATION OF CONFORMITY

We hereby confirm that our products comply with the requirements in the following EU-directives and harmonised standards.

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VAT No SE556301-2201



Products: Duct fans LPKB, LPKBI

Low Voltage Directive (LVD) 2006/95/EG

Harmonised standards:

- EN 60335-1:2002 "Household and similar electrical appliances - Part 1: General requirements"
- EN 60335-2-80:2003 "Household and similar electrical appliances - Part 2-80: Particular requirements for fans"

Directive for Electromagnetic Compatibility (EMC) 2004/108/EG

Harmonised standards:

- SS-EN 61000-6-1:2007 "Electromagnetic compatibility (EMC). Generic standards. Immunity for residential, commercial and light-industrial environments"
- SS-EN 61000-6-2:2005 "Electromagnetic compatibility (EMC). Generic standards - Immunity for industrial environments"
- SS-EN 61000-6-3:2007 "Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments"
- SS-EN 61000-6-4:2007 "Electromagnetic compatibility (EMC). Generic standards - Emission standard for industrial environments"

Machinery Directive (MD) 2006/42/EG as defined in appendix 2A

Risk analysis is performed.

Installation must be done in accordance with the attached "Directions for use".

Avesta 2010-05-18



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Product Development Manager



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