Technical leadership starts with ideas.

Operating Instruction

for KONVEKTA

air conditioning units

KL60 up to KL85T

with Thermotronic

R134a

24V

Version:

- **Return Air**

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- Maintenance Schedule WP07050618

Introduction

These operating instructions have been written for drivers, operators and the maintenance staff of your air conditioning unit.

In this context, we refer implicitly to the compliance with our general installation guidelines. These can be obtained from the KONVEKTA technical after sales service: TKD@konvekta.com.

Please observe our valid safety instructions, available under www.konvekta.de/asv.html. In case of order placement or any other conclusion of contract the safety instructions get integral part of the contract.

These operating instructions have to be read carefully and made use of before the first start-up and after that regularly by each person who is involved in handling the machine:

- Operation including troubleshooting and waste disposal of fuels and auxiliary agents.
- Servicing, inspection, repair
- Transport

This facilitates the handling and avoids trouble caused by improper operation. Working in compliance with these operating instructions increases operation reliability and service life of the air conditioning unit and reduces life cycle costs.

⚠ **Please complete these instructions by adding the national provisions for prevention of accidents and environmental protection.**

⚠ **These instructions are part of the air conditioning unit. Always have a copy at hand in the driver's cabin.**

You will certainly understand that we will not recognize any warranty claims due to improper handling, inadequate maintenance, applications that do not correspond with the determined use, utilization of none-admitted fuels or the non-observance of safety provisions. KONVEKTA will annul without prior notice all obligations concerning guarantee, service contracts etc. regardless if granted by KONVEKTA or its distributors in case other than original KONVEKTA spare parts or parts bought from KONVEKTA AG have been used for maintenance and repair.
These operating instructions contain all necessary information to operate your air conditioning unit. In case you need more explanations, please contact the next KONVEKTA service station.①

① On our website www.konvekta.com in category *>service<* you will find a survey of contact details of all our service partners close to your location.

Information on the operating instructions

These operating instructions are valid for the air conditioning unit's type:

- **KL60** • **KL60T** • **KL65** • **KL65T** • **KL70T** • **KL75T** • **KL80T** • **KL85T**

☞ When taking the unit into operation we recommend adding the following data. This will also be important for your orders of spare parts, and in case of warranty.

Serial number of the unit:	.....	
Order No.:	.....	
Year of construction:	.....	(MM/JJ)
Date of first operation:	.....	(TT/MM/JJ)

The machine is in accordance with the EC machinery directive 2006/42/EC.

The unit contains or needs fluorinated greenhouse gas for operation and is subject to identification requirements in accordance with F-Gas Regulation 517/2014.

Due to the fact that scope of supply depends on the order, equipment of your product may differ in some parts of description.
In case your product is equipped with details not shown or described in the operating instruction, your KONVEKTA -Service-Station will always be at disposal for informing you about correct operation.
In the course of further developments we reserve the right to technical modifications without prenotice. Guarantee and liability conditions of **KONVEKTA AG**'s general business conditions are not enlarged by the above notes.
Indications and photos should neither be copied and circulated nor used for competitor's purposes.
All rights according to the copyright remain expressly reserved.

Manufacturer: KONVEKTA AG, P.O. Box 2280, D-34607 Schwalmstadt

1. Technical data

Important!
In vehicles that are equipped with an a/c unit with heating function the heating medium has to consist of water/glycol – antifreeze protection (conform the mixing ratio to manufacturers` instructions). This is absolutely necessary to prevent the heaters from frost damage!
(The prevalent antifreeze filling of the vehicle manufacturers goes down to -40°C)

1.1. Air conditioning units type KL60(T), KL65(T), KL70T, KL75T, KL80T, KL85T

Type		KL60	KL60T	KL65	KL65T	KL70T	KL75T	KL80T	KL85T
Operating voltage	[V]	24	24	24	24	24	24	24	24
Refrigerant	Typ	R134a	R134a	R134a	R134a	R134a	R134a	R134a	R134a
- quantity approx.	[kg]	10	11			12	12	12,5	12,5
Current consumption	[A]	78	95	78	87	95	95	95	95
Cooling capacity at +50°C	[W]	25.800	28.200	26.200	30.000	33.000	33.000	38.000	38.000
Heater output Q=100	[W]	35.400	35.400	35.400	35.400	45.000	/	/	/
Air volume	[m3/h]	6.600	6.600	6.600	6.600	6.600	6.600	6.600	6.600
Measurements:									
- length	[mm]	3.675	4.175	4.175	4.175	4.545	4.545	4.545	4.545
- width	[mm]	1.352	1.352	1.892	1.892	1.352	1.892	1.352	1.892
- hight	[mm]	185	185	185	185	185	185	185	185
Weight of unit approx.:									
- Return Air	[kg]	155	175			190	220	200	220
- Fresh Air	[kg]	160	182			200	220	210	220
- heating	[kg]	170	190			205	/	/	/

1.2. Compressors

Important to avoid leakages at the shaft seal of the compressor:
The compressor should be started every 4 weeks for approx. 15 minutes!
This also applies when the vehicle is not into operation for a longer period or when the air conditioning unit is not used!

⇨ Compressor type depending on scope of delivery, see identification plate at compressor.

1.2.1. Type KVX40

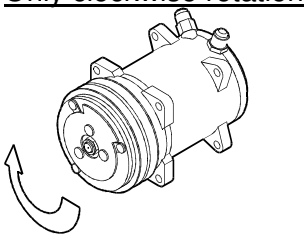
Compressor Type	KVX40/470	KVX40/560	KVX40/655
Weight [1)]	35 kg	35 kg	35 kg
Oil brand / quantity (litres)	Esteröl SE55/2	Esteröl SE55/2	Esteröl SE55/2
Magnetic clutch[2)]	24V DC	24V DC	24V DC

1.2.2. Type SD7H15 / HDC 33

Compressor Type	SD7H15	HDC 33
Weight	7,5 kg	15,5 kg
Oil brand / quantity	PAG / corresponding to version[3)]	ZXL 100PG/500cm³
Magnetic clutch[2)]	24V DC	24V DC

[1)] Weight without Electro-magnetic clutch (witch clutch app. + 10kg).
[2)] ø depending on vehicle type
[3)] List is attached to compressor,(Instruction no: TD00031A)

Attention for SD7H15:
Only clockwise rotation



2. Intended use

The **KONVEKTA** air conditioning unit is an air conditioning system that works with the ozone friendly refrigerant R134a and which creates a pleasant and individually adjustable room temperature by means of forced convection. The determined use includes also the observance of the operating instructions as well as the proof of regular inspections.

2.1. General information A/C unit

Attention in case of roof top a/c units: Never switch on the a/c unit during car-wash!

- The a/c unit is operational with running engine only.
- At cooling operation the humidity inside the vehicle is decreased, which avoids steamed up windows.
- The a/c unit works most effectively with windows and doors shut. If, however, the interior of the standing vehicle has been heated up severely by exposure to sunlight, short-time opening of windows and doors may accelerate the cooling down process.
- At high outside temperature and humidity condensate might drip off the evaporator and make a puddle under the vehicle. This is quite normal and no sign for a leakage.
- The filter in the return air grid (optional) retains pollution. If the external air is contaminated with gas switch over to return air operation. The filter should be cleaned or replaced respectively on a regular basis so that the capacity of the a/c unit is not affected.
- **If you think that the a/c unit is damaged, switch it off immediately.** To avoid further damage have it check at a KONVEKTA Service Station[①]. Only after that you can take unit into operation.

[①] *On our website www.konvekta.com in category >service< you will find a survey of contact details of all our service partners close to your location*

2.2. Operating Conditions

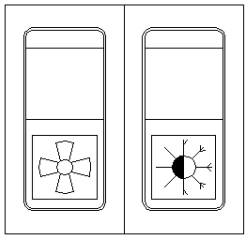
NOTE: KONVEKTA uses components made of copper and aluminium, which last a whole unit lifetime under normal environmental conditions. Should the units be operated under aggressive environmental conditions, i.e. air containing salt-, phosphate- or ammoniac extremely, a corrosion of the cupper- and aluminium components cannot be ruled out. The cupper- and aluminium components of the KONVEKTA systems are not suitable for such extreme application conditions. We indicate emphatically, that corrosion is not subject to warranties for defects. KONVEKTA does not take over any warranties for defect, neither for corrosion nor for consequential damage resulting there from, nor for damages caused by cleaning the systems with highly compressed or corrosion advancing substances.

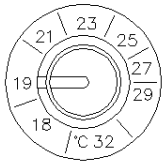
3. Operation

Danger of accident!
- Focussing your attention on the road traffic is of top priority
- Only operate your air conditioning unit when the traffic situation allows it
- Make sure you can clearly recognize and read all operation- and display-elements at any time

3.1. Function of the keys

Operating elements are placed on dashboard:





S1 **S2** **Potentiometer**

S1	Switch ventilation	Position **II** - ventilation fast Position **0** - OFF Position **I** - ventilation slow
S2	Switch A/C on/off	Position **0** - OFF Position **I** - ON
Potentiometer	Temperature control	Room temperature

3.2. Operation of a/c system

- Start vehicle engine (refer to orig. operating instruction of the vehicle).
- The air conditioner is switched on by means of switch **„ S1- ventilation“** and **„ S2- A/C“.**
- Adjust air volume by means of switch **„ S1- ventilation“ “** Position **„I“** resp. **„II“.**
- If only ventilation is requested, use **„ S1- ventilation“**
- By means of the ***„Potentiometer“*** the required room temperature can be pre-chosen.

Note: The compressor can only operate, if switch **„ S2- A/C“.**is in position **„I“**. If the desired temperature is higher than the existing temperature or adjusted temperature is reached, compressor switches off and condenser blowers stop running. If the desired temperature is lower than the existing temperature the compressor switches on.

3.3. Temperature adjustment

– The desired temperature is adjusted by means of the ***„Potentiometer“***.

4. Maintenance / Service

Please arrange regular dates for maintenance works and services with a KONVEKTA service station, as indicated in maintenance schedule bus no. WP07050618.

- Only qualified staff is allowed to carry out these works! -

For general instructions on repair – and maintenance works please contact via email:
TKD@konvekta.com

Danger of accidents!
Qualified staff in charge of installation and maintenance have to be trained in accordance with EN 378-Part 4 and (EG) No.307 / 2008 and must strictly follow the legal provisions.
Any works or modifications at the air conditioner which are carried out improperly can lead to malfunction and so endanger operational reliability. We recommend having all works and modifications carried out at an authorized KONVEKTA Service Station[①].
Before carrying out any maintenance works at your air conditioning unit, carefully read the KONVKETA safety provisions (TD00052A[②]) in order to avoid any dangers and accidents!

① *On our website www.konvekta.com in category >service< you will find a survey of contact details of all our service partners close to your location*
② *Source of supply:* ***KONVEKTA AG****, P.O. Box 2280, D-34607 Schwalmstadt*

4.1. Compressor type KVX

Reference to maintenance Schedule Bus No.: WP07050618 Item WK15:

First oil change at the first maintenance of the vehicle! Then approx. every 3 years. At every oil change the oil suction strainer has to be cleaned. Observe the oil quantity according to the compressor type (see chapter: “Technical data compressor”).

4.2. Condenser coil

Reference to Maintenance Schedule Bus No.: WP07050618 Item WK10:

Always keep condenser coil fins clean. Severe soiling cause’s excess pressure within the a/c-unit system and it automatically stops working.

Attention: The condenser coil fins have to be cleaned with compressed air at least once a year, in case of severe soiling more often.

4.3. Trouble shooting

Only qualified staff is allowed to carry out these works!

Trouble	Cause	Repair *by authorized Service Station① only*
A/c is not running	Thermostat open	Check inside temperature ② Re-adjust thermostat ②
	Electric connections disconnected	Check electric connections at switchboard
	Relay defective	Check relay, replace if necessary
	Defrost thermostat has switched off	Check evaporator blower,replace if necessary
	Outside temperature too low (possible icing of evaporator)	Switch on "ventilation" only
	Evaporator coil dirty	Clean evaporator coil with compressed air
	Excess pressure caused by high outside temperature	Run unit until pressure has stabilized②
	Leakage in a/c unit, lack of refrigerant	Check a/c unit for leakages, refill refrigerant
	Excess pressure (pressure too high)	Check axial fans Check fuses at switchboard Clean condenser coil with compressed air
	Low pressure, dryer clogged	Replace dryer
	Low pressure, screen of expansion valve clogged	Clean screen; replace dryer
	Magnetic clutch	Check connections at magnetic clutch
	Compressor does not compess	Check high and low pressure, replace compressor if necessary
Loud noise at compressor	Defective bearing at compressor	Replace either bearing or entire compressor
	Slack V-belt	Check V-belt at compressor drive

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② By operator

5. Warranty Conditions

The current „General Warranty Conditions" KONVEKTA AG" will apply. A copy will be furnished by the warranty department. Please contact gwl@konvekta.com

6. Waste disposal in accordance with legal provisions

After the phase of use the last proprietor is responsible for the adequate waste management. The environmental regulations in the exporting country must be observed.

The following list contains the most important regulating literature, valid for the *Federal Rep. of Germany*:

- Resolution for dangerous substances
- Law for waste circulation (KRW/AfgG))
- Resolution for the proofs of utilization and removal
- Criminal Code (StGB) 28th section „criminal acts against the environment" §326 – Environment jeopardizing waste management
- Law of chemicals § 27 – penal prescripttions
- Resolution for used oil
- Law of water balance
- Resolution for the waste management of old cars and the adaptation of road prescriptions
- Resolution (EC) No. 2037/2000 of the European Parliament and of the Council for materials that affect the ozone layer
- Resolution to prohibit certain ozone destroying halogen hydrocarbons.

The used refrigerant endangers the environment. When dealing with refrigerants the existing prescriptions and regulations are to be followed . **Only qualified staff is allowed to carry out these works!**

Water endangering substances - acc. to §§19g-19l - are solid, liquid, and gaseous substances. e.g.: mineral and tar oils (cooling oils), halogen containing organic combinations (refrigerants).

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[3] Source of supply:
- Bundesanzeiger
- Beuth Verlag
- dtv (Deutscher Taschenbuch Verlag

7. History of modification

version	date	name	remark	file
A01	27.05.04	Pfluger	Added unit KL70T-B	BAKL60T12AD
A02	04.10.04	Pfluger	Added unit KL85T, changed name from KL70T-B to KL75T	BAKL60T12AD
A03	28.11.05	Pfluger	Updated Item 4. / 5.	BAKL60T12AD
A04	22.10.2007	B.Keßler	Delete KL50(T), HKL5CT-HKL7CT and item 1.2 and 1.3.1; updated item 1.3; added item 2.2	BAKL60T12AD
A06	18.07.2017	B.Keßler	File completely updated	BAKL60T12AD