

# Maintenance Schedule

**WP07050643**

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Title:

**Maintenance Schedule KONVEKTA a/c units KL20**

Date: 20.09.2021

Valid for:

**Operators and maintenance staff**

File: WP07050643-R01 WP KL20\_englisch

Pos.	Maintenance- / Repair Features for bus air-conditioning	Test parameter / settings - Comments	Maintenance Intervals / Maintenance Works				
			Quarterly	Half-yearly	Yearly	Every 3 years or 5000 hours of operation	When opening the system
WK							
1.	Check all air filters for fouling	Visual inspection, if necessary cleans, or rather renew them	✓ <sup>1</sup>				
2.	Check condition and tension of v-belt at the compressor	Visual and functional inspection		✓			
3.	Check screwed connections at compressor and bracket on tight fit			✓			
4.	Check proper function of the magnetic clutch	Visual and functional inspection			✓		
5.	Check refrigerant liquid level of the climate system (at sight glass)	After 2 min. operation time no bubbles should be visible in the sight glass any more			✓		
6.	In case point 5 is not okay, check the refrigerant lines for leaks	Visual inspection			✓		
7.	Exchange filter drier and refrigerant receiver	Visual inspection for corrosion and mechanical damages			✓		
8.	Check condenser and evaporator heat exchangers for dirt	Visual inspection, if necessary clean and align the fins			✓		
9.	Check function of high (HP) and low pressure switch (LP)	Standard KONVEKTA: Depending on the model the settings can deviate among different manufacturers			✓		
10.	Check electrical wires, connections, sensors and fuses	Visual inspection for corrosion and chafes. Check plug connections and electrical connections for tight fit.			✓		
11.	Functional test (heating – cooling) with diagnosis. Read-out fault memory. Functional check of fans and blowers, as well as flaps and valves (incl. front box)	Functional test of the complete system			✓		
12.	Check all air-conditioning conduits for fit and impermeability	Visual inspection			✓		

<sup>1</sup> **Every 2 weeks** in countries with temperatures predominantly >40°C.

**Monthly** in tropical countries with predominantly high humidity

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Maintenance and repair features cabin air conditioning		Maintenance intervals			
in refrigeration circuit and components		500 hours max. quarterly	1000 hours max. half yearly	2000 hours max. yearly	When opening the system
<p>The following works relate to normal operating conditions. In difficult conditions such as large amounts of dust, extremely salty humidity etc., the intervals specified should be shortened accordingly. In the event of queries, please contact the KONVEKTA AG Technical Customer Service department. Tel.: 0049-6691-760 or by email at <a href="mailto:tkd@konvekta.com">tkd@konvekta.com</a>.</p>					
<b>WK01</b> How?	<u>Check the refrigerant level (R 134a)</u> With ambient / outside temperatures of around 20-28°C, use the sight glass to check the refrigerant level. Turn on the engine and the air conditioning for this. An exact measurement can only be determined using the net weight.		✓		
<b>WK02</b> How?	<u>Perform leak testing with nitrogen</u> Fill with nitrogen via the pressure and intake side. Monitor drops in pressure. Monitor the screw joints with leak detection spray. The combined pressure switch can also be tested in this way. Slowly release the pressure via the intake side to dry the system.	<u>Warning: Do not exceed the maximum pressure of 14 bar on the intake side.</u> See the compressor manufacturer's specification.			✓
<b>WK03</b>	<u>Clean the evaporator</u> Blow out with compressed air. Check the fins for damage and align.			✓	
<b>WK04</b>	<u>Clean the condenser battery</u> With compressed air from inside to outside. Check and align the fins.	More often depending on degree of soiling		✓	
<b>WK05</b>	<u>Check the dryer /receiver for corrosion. Change if necessary.</u>			✓	
<b>WK06</b>	<u>Change the dryer /receiver combination.</u>			✓	✓
<b>WK07</b> How?	<u>Check the high pressure switch.</u> The shut-down pressure must be tested during the service after 2000 operating hours. Stop the airflow (disconnect and cover the electrical connection of the fan) and monitor the high pressure until the compressor shuts down.			✓	✓
<b>WK08</b> How?	<u>Check that the anti-icing thermostat is fitted tightly and is not damaged.</u> Warning: Capillaries can be damaged by bending.			✓	

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<b>WK09</b>	<b>Check that the compressor and bracket are fitted tightly.</b>			✓		
<b>Maintenance and repair features cabin air conditioning</b>		<b>Maintenance intervals</b>				
<b>in refrigeration circuit and components</b>			<b>500 hours max. quarterly</b>	<b>1000 hours max. half yearly</b>	<b>2000 hours max. yearly</b>	<b>When opening the system</b>
<b>WK10</b>	<b>Check the refrigerant lines for abrasion and damage.</b>			✓		
<b>WK11</b>	<b>Clean or replace the air circulation filter and fresh air filter.</b> Depending on use, the interval should be increased in order to guarantee adequate air flow to the evaporator.		✓			
<b>WK12</b>	<b>Check the refrigeration capacity</b> Measure the intake and outlet difference. Motor speed: 1200 – 1500 rpm	Mean value: 6 – 8 K			✓	
<b><u>Electrical equipment cabin air conditioning</u></b>			<b>500 hours max. quarterly</b>	<b>1000 hours max. half yearly</b>	<b>2000 hours max. yearly</b>	<b>When opening the system</b>
<b>WE01</b>	<b>Anti-icing thermostat function.</b> Check whether the compressor clutch shuts down when the thermostat is adjusted. This can be tested with cold spray.				✓	
<b>WE02</b>	<b>Test the control function.</b> Cooling, variable fan speed 1-2-3 Test basic setting values if available.				✓	
<b>WE03</b>	<b>Check the high pressure switch function.</b> <u>Stop the airflow to the condenser (disconnect and cover the electrical connection of the fan) and monitor the high pressure until the compressor shuts down.</u>	See WK07			✓	
<b>WE04</b>	<b>Visual inspection of the electrical wires for abrasion.</b>				✓	
<b>WE05</b>	<b>Check that the electrical connections are tightly fitted and that there is no corrosion.</b>				✓	

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**WE06** Check the fuses for the currents specified.

✓

Date	Operating hours	Tasks performed	KONVEKTA- Service Centre

Created by: O. Aubel / A. Knierim TA	Technical check by: B. Kern TA	Conformity check by: QMB	Approved by:	Rev.01: vom: 20.09.2021
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Signature	Signature	Signature	Date, Signature	
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