Thermo Thermo E Thermo S Thermo plus Thermo E+

Maintenance plan



Rev. 12/2024 Id.No. 9008722E-001



Periodic heater maintenance

The heater

1) should be operated for 10 minutes at least once a month and

2) checked by a professional according to the maintenance plan at the start of the heating season at the latest.

Observe the following maintenance intervals. These apply

to normal applications of Spheros heaters.

The vehicle manufacturer's regulations and the relevant regulations of the Federal Railway Authority (EBA) and its technical service also apply.

The relevant workshop manual must be used to carry out the work. If the devices are used in other vehicles or applications, the intervals may be shortened or extended. Please contact your responsible Spheros partner in such cases.

Address of the operator		Date of Vehicle		enance		
Heater data						
Type of heater: Ident. no.:	Operating/ control device data acc. to diagnosis DTT (Diagnose Thermo Test)			Date of commision		
Serial no.:						
Fuel Diesel fuel	Biodiesel	Heating oil EL		Paraffir	nic fuels	
Check / Maintenance		Important notes	Check OK	r esult not OK	Measured values, accomplished repairs	
 Electrical connections a) Examine electrical plug connections and the for visible damages, replace as required. 	he wiring harness					
 2. Heat exchanger a) Check for external damage, discoloration heating and leaks. b) Clean the heat exchanger inside and outs and debris. 	-	Determine overheating cause as needed (e.g. water circulation sys- tem), check overheat protection.				

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Subject to modification. For translations the german version is binding. Latest version of this document is provided for download on **www.spheros.com**.

Maintenance plan for heaters of type Thermo, Thermo E, Thermo S, Thermo plus and Thermo E+ in buses and railway vehicles



c) Fuel pump / fuel hoses or FAME is used/ Replace the fuel pump or FAME is used/ Replace the fuel pump or FAME is used/ Image: Comparison of thiode- servery 8, the fuel hoses every 8, the fuel hoses is shortened Image: Comparison of thiode- servery 8, the fuel hoses every 8, the fuel hoses is shortened Image: Comparison of thiode- servery 8, the fuel hoses is shortened Image: Comparison of thiode- servery 8, the fuel hoses every 8, the fuel hoses is shortened Image: Comparison of the fuel parts. 4. Eurner head a) Inspect conduction of manage. D Depending on the variance: - Check the dust protection tube of the fame guard or replace them. Replace damaged parts. Image: Comparison of the fuel parts. Image: Comparison of the fuel parts. 9. Replace domiser nozzle. 0. Check the dust protection tube of the fame guard or replace them. Activate combustion air motor using the diago- not value must be tight? Image: Comparison of the fuel parts. Image: Comparison of the fuel parts. 9. Replace atomiser nozzle. 0. Check the dust protection tube. 0. C	Check / Maintenance	Important notes	Check	result	Measured values,
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Thermo E+ 200 9.5 ±0.5					
	Thermo E+ 320	10 ±0.5			

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Maintenance plan for heaters of type Thermo, Thermo E, Thermo S, Thermo plus and Thermo E+ in buses and railway vehicles



Check / Maintenance	Important notes	Check	result	Measured values,
		OK	not OK	accomplished repairs
CO ₂ (ppm) at 19V Rail versions Smoke spot number acc. to Bacharach (all devices) Fuel pump pressure according to Workshop Manual Thermo, Thermo S Thermo E 200, Thermo Plus Thermo E 320 Thermo E+	<1000 <u><</u> 4 10 bar 8 +1 bar 9 +1 bar 9 +0.5 bar			
 6. Water system a) If available, inspect, clean as needed or replace water filter insert. 				
 7. Functional check (1x per month) a) If available, open shut-off valve of the fuel return line and water line. b) Check fault memory, clear it as needed using the diagnostic tool (DTT). c) Check heater functionality. Attention: During the maintenance, check all screw connections for tightness (for corresponding torque values see Workshop Manual). 	after at least 10 min heater operation			

memos	



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