



STANDARD MAINTENANCE SCHEDULE & COMPLIANCE PROTOCOL

Vehicle class: LCV (N1)

Transport refrigeration unit:

Conventional technology – for connoisseurs
of detailed paperwork obligations.



Rules are rules. This much maintenance simply has to be.



I. OPERATING AND MAINTENANCE REGULATIONS (WORKSHOP EFFORT)



Preventive filter drier replacement

Interval: Every 24 months / Mandatory after every system opening

Scheduled replacement of the drier unit to absorb moisture in the system. An immediate replacement is also mandatory after every repair-related opening of the refrigeration circuit, to prevent the material from becoming saturated by ambient air. Fleet risk: a delayed replacement leads to acid formation in the refrigerant, followed by undetected pitting corrosion and irreversible compressor damage (a total economic write-off).



Main mechanical inspection

Interval: Every 1,500 operating hours

Comprehensive disassembly and inspection of power-transmission components (drive belts and V-belt pulleys) for wear, tension, and cracking, in accordance with manufacturer specifications, to prevent total failure mid-tour.



External service-provider management

As needed / Ongoing

Operator's obligation to schedule, coordinate, and contractually engage certified specialist personnel (qualified persons under the German Chemicals Climate Protection Ordinance / refrigeration system technicians). Work carried out by in-house workshop staff without specific Category I certification is prohibited by law.

II. LEGAL COMPLIANCE & DOCUMENTATION OBLIGATIONS



Statutory recurring inspection

Interval: Based on fill quantity / Minimum interval 12 months

Mandatory, recurring leak-tightness testing of the system by certified inspection bodies, as required under the EU F-Gas Regulation. Non-compliance or missing the deadline results in immediate revocation of the operating permit for the refrigerated vehicle.



Event-based record-keeping obligation

Interval: Immediately upon every service intervention

Obligation to fully document every refrigerant movement (additions and removals during repairs, leaks, recycling). The operator bears full liability for incomplete, incorrect, or missing logbook entries from third-party workshops. Failure to keep records is subject to fines.



“Just muddling through the status quo.
That's how we've always done it.”



Statutory retention period

Duration: 5 years

Obligation to keep complete archives of all F-gas logs for a period of at least 60 months. Documents must be available on demand — in original form or as verified digital copies — for unannounced government inspections and audits.

III. RISK ASSESSMENT & FUTURE OPERATING RESTRICTIONS



Stranded-asset risk

Total devaluation of fleet capital

Acute risk of premature devaluation and effective total loss of the operating-asset investment due to the legally mandated phase-out. The gradual, drastic reduction of F-gas supply on the European market leads to unpredictable operating costs and makes legacy systems unsellable on the secondary market.



Future service and operating bans

PFAS regulation

Foreseeable restrictions on regular operation, acute spare-parts shortages, and the looming threat of regulatory shutdown of existing systems, resulting from the expected restrictions and bans on per- and polyfluoroalkyl substances (PFAS) in conventional refrigerants.

IV. ECONOMIC REVIEW & EVALUATION OF ALTERNATIVES



Total cost of ownership (TCO) review

To avert regulatory risk and unpredictable follow-on workshop costs, an immediate cost-effectiveness review is strongly recommended.

So much for decades of established practice.

Best to turn the page right now and find out how you can cross cooling-system maintenance off your list from now on – completely stress-free.





Time to upgrade to stress-free cooling and zero-downtime peace of mind. Time to meet ecos M24

- ✓ **Hermetically sealed refrigeration circuit**

The system architecture follows the same design principle as modern refrigerators. The unit is fully charged and hermetically sealed at the factory. By eliminating flexible hose connections and mechanical shaft seals, gradual refrigerant loss is technically ruled out — which means scheduled maintenance intervals become unnecessary.
- ✓ **Sustainable refrigeration technology (GWP < 3)**

Operation relies exclusively on future-proof, natural refrigerants. The system is therefore fully exempt from the restrictions of the European F-Gas Regulation (EU phase-down) as well as from anticipated PFAS bans, guaranteeing unrestricted legal certainty and investment protection well beyond the year 2050.
- ✓ **Modular plug-and-play integration**

The system consists of factory-prefabricated indoor and outdoor units. Installation can be carried out by any qualified body-building or vehicle-conversion workshop, independent of manufacturer, in under 4 hours. No intervention in the refrigeration circuit and no presence of a certified refrigeration technician is required during installation.
- ✓ **Independence from the drivetrain and free choice of workshop**

The cooling system is powered purely electrically, preferably from the vehicle's 12V on-board electrical system, and is mechanically fully decoupled from the base vehicle's drivetrain (engine and belt drive). This means fleet operators avoid complex mounting kits, additional mechanical belt connections, and dependence on the expensive exclusive workshops of dominant system providers. For regular servicing, the vehicle can be maintained at any independent workshop, with no risk of having to intervene in an integrated cooling system.



Uptime up, TCO down.

Cost factor	Conventional refrigeration unit	Estimate	ecos M24
Acquisition	One-time investment	€	One-time investment
Leak-tightness testing	Annual costs + admin overhead	€	[0,00 €]
Refrigerant top-up	At least 1×/year	€	[0,00 €]
Filter drier replacement	Regular mandatory replacement	€	[0,00 €]
Certified specialists	Refrigeration technician	€	Not required
Workshop stops	Must be regularly scheduled	€	0 days
Compliance (F-gas/PFAS)	High risk (stranded assets)	€	100% future-proof 2050+
YOUR CHOICE	A lifetime money pit	€	Purchase price = TCO

MOVING THERMAL LOGISTICS

Ready for a new standard?

Congratulations! You've just read your last refrigerant regulation.

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