# Assembly Instructions

The points mentioned here are part of the contract and must be strictly adhered to. Otherwise, any warranty claim (if contractually established) will become void. Exceptions are only permissible with written agreement.

If you have **any questions**, please contact our **customer service**:


🌐 *Web Form :* fair-motors.com/complaint (recommended)
📧 customerservice@fair-motors.com
📞Tel: (9-12 h ) +49 33769 849496


## KEY POINTS:

## - Verify TIMING SETTINGS

## - Replace all SEALS

*Including seals where it is not necessary to remove marked screws, such as oil pan seals, valve cover seals, and control module seals.*

## - Inspect PERIPHERAL COMPONENTS

*Including oil coolers, turbochargers, injectors.*

## - Replace the TIMING SYSTEM

*Only for used engines.*

# General Notes

## 1. Professional Installation by a Workshop

The installation must verifiably be carried out by a professional workshop according to the installer's guidelines and established technical standards. Proof of proper installation requires an **invoice** from the workshop, including evidence of the current mileage.

## 2. Comprehensive Documentation of All Work

All carried-out work must be meticulously documented. This documentation should include a **detailed list of all activities on the invoice**, as well as photos/videos of the performed work. This facilitates efficient clarification in the event of a later warranty claim due to suspected installation errors.

## 3. Necessary Diagnostics Before Installation

Before you begin installing the purchased engine, we strongly recommend **conducting diagnostics** to determine the **cause of your old engine's defect**, as this could lead to **repeated damage to the replaced engine**, e.g., due to foreign objects, metal shavings in the oil circuit, defective peripheral parts, etc.
If the previous damage was due to one of the mentioned causes, a **flushing of the respective system** before the installation of the purchased engine is mandatory and must be proven in case of a warranty claim. This is because engine damage is often the result of uncleaned or faulty peripheral parts.

## 4. Prohibition of (Self-)Opening the Engine

Without prior consultation and our written consent, you may **not open the engine or the marked screws** (valve covers [not fixed camshafts], oil pans, and timing housing covers are generally exempt). Failure to comply will void any warranty claim.

# Assembly

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To effectively exclude damage factors from a previous defect, the following parts **must be renewed** (if present, even if included in the scope of delivery):

- Timing drive (see point 8)
- Oil cooler/heat exchanger
- Oil control valve
- Oil filter housing
- Injectors
- Spark plugs
- All operating fluids and filters

## 6. Inspection and Cleaning of Peripheral Parts

All other peripheral parts must be **properly inspected and cleaned** before reuse. These include, for example: Turbochargers, intercooler, intake, injectors, ignition coils, high-pressure pump, EGR system, etc.

Note: Pay particular attention to the entire turbocharger circuit, the oil and EGR cooler, and the fuel system (in case of failure, the invoice for these parts/components may be requested). Have these parts professionally checked with a test report. In case of doubt, the relevant part must be replaced.
Peripheral parts delivered by us are provided free of charge without warranty and must also be checked by you for functionality and, if necessary, replaced/purchased new.

## 7. Inspection of Intake Channels and Connections
Before installing the engine, ensure that the intake channels and connections are free of foreign objects to exclude contamination caused by transport.

## 8. Renewal of the Timing Drive
Only in the case of used engines: Renew the **timing chain set/timing belt set with tensioners and guides**. We recommend carefully checking all peripheral parts driven by the timing drive and renewing them if necessary (e.g., water pump, oil pump, diesel pump, vacuum pump, etc.). No marked screws may be loosened without prior agreement for any work.
In the case of overhauled engines: Since we only renew the internal timing chains, you **must renew the external timing drives**!

## 9. Verification and Adjustment of Timing
**Check the timing settings** (even for overhauled engines!), as these may shift due to various storage and transport factors.
Adjust them if necessary according to the manufacturer's specifications.

## 10. Inspection and Replacement of Oil Pan and Valve Cover
Due to the numerous engine variants, the supplied oil pan and valve cover may not fit and are commonly used only as transport protection. Inspect these and, if necessary, use parts from your old engine or renew them. If your engine has a **crankcase ventilation integrated into the valve cover**, this must be renewed.

## 11. Cleaning and Preparation of Sealing Surfaces
All sealing surfaces must be cleaned and prepared according to usual standards before assembly to ensure reliable sealing.

## 12. Renewal of All Seals
In any case, **all seals must be renewed** for which no marked screws need to be loosened (including valve cover, oil pan, front cover, housing cover, crankshaft seal(s), camshaft seal(s), etc.). There is no warranty on seals.

## 13. Replacement of Operating Fluids and Filters
Renew the **coolant, oil**, and **oil, air, and fuel filters** according to the manufacturer's specifications. Note that, depending on your specific engine, there may be manufacturer instructions for **adding oil** through a specific **borehole in the cylinder head or oil filter housing**. These must also be taken into account.

## 14. Adherence to Manufacturer Guidelines During Assembly
Assemble the engine and any peripheral parts according to the manufacturer's assembly instructions and **specified torque**. Unmarked screws must be checked and tightened if necessary. Any calibration and settings (e.g., injector learning or valve clearance adjustment) must also be carried out according to the manufacturer's specifications.

## 15. Oil Pressure Build-Up Check Before First Engine Start
Before the first start of the engine, the **spark plugs/injectors should be removed**. To build up and check the oil pressure, the engine should be **turned over (cranking) without ignition** for a while so that no compression occurs in the cylinders.
This way, the engine turns at a higher speed and the oil can reach all lubricating components of the engine without strong friction.
If there are specific **manufacturer guidelines** on this matter, they must also be followed.
Particularly observe the following notes regarding **engine cranking**:

- Ensure that the **fuel pump is disconnected/deactivated**.
- Turn/start the engine long enough until you are sure that the oil has reached all lubricating components

!! **Only proceed with the subsequent steps** after the prescribed **oil pressure value** has been **reached**. In case of a warranty claim, proof of this can also be requested, so it is recommended to make a video recording of the first start.

## 16. Deleting Error Codes Before Start
Delete all engine-related error codes before starting the engine.

## 17. Idle Operation
After completing the assembly, start the engine and let it idle (approx. **5-10 minutes until operating temperature**). Avoid high speeds.

## 18. Error Code Reading After First Start
After the first start, read the engine-related error codes again and pay attention to any irregularities.

## 19. Leak Test
Check all seals and lines. Then proceed with the test drive. Let the engine idle for a while under observation before beginning the test drive.

## 20. Test Drive
Proceed slowly: drive with **low to medium speeds** and do not put too much load on the engine (pay attention to the throttle position). The vehicle should also not be excessively loaded with weight.

## 21. RPM Limitation
For overhauled engines: Do not rev the engine above **3500 RPM** for the first **1000 km** to ensure that the various bearings and clearances are run in properly.

## 22. Oil and Filter Change After the First 1,000 km
Change the oil and oil filter after the **first 1,000 km**. **Proof** of this may be requested if necessary.

## 23. Regular Monitoring of Oil and Coolant Levels
From the beginning, regularly check the oil and coolant levels.

## 24. Reporting Operational Irregularities
If irregularities occur (e.g., warning light, rough running, oil consumption, etc.), they must be reported **immediately**.

# Fair-Motors

# Return Instructions

## for the Collection of Your Old or Complained Engine

**Pour l'envoi de la palette, vous avez besoin du matériel suivant :**
**Palette euro - Film plastique - Eventuel bac de rétention - Sangles ou matériel de fixation**

1. **Drain all fluids from the engine** and ensure that **all openings are resealed**. This eliminates potential contamination.

2. **Wrap** the engine with (bubble) **wrap** to **protect it** and prevent any remaining **fluids from leaking.**

3. Place the **catch tray** or **foil** on the **pallet**.

4. Position the engine on the pallet and, if necessary, **support it** so that it sits horizontally. The engine should **not overhang or be able to topple over** to avoid damage.

5. **Secure** the engine with **tension straps** to prevent it from shifting, ensuring it is safely stabilized for transport.

6. If possible, apply an **additional layer of foil** after securing to reliably **prevent** the **removal** of the tension straps.

7. This way, the **recipient** can use the tension straps **again for the return shipping**.
Contributing to safe return transport and receiving your **securing materials back**.

**Important: Costs for cleaning and damages (e.g., if oil leaks in the truck) are borne by the customer!**

**Important: Secure the engine on the pallet first and then place it into the shipping box!**

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