Ashok Leyland Commercial Vehicle Maintenance Manual

Preventive Maintenance, Inspection, Troubleshooting, and Service Record Guide

1. Purpose and Scope

This maintenance manual provides practical guidance for routine inspection, preventive maintenance, safe operation, and basic troubleshooting of Ashok Leyland commercial vehicles, including trucks, buses, and light commercial vehicles. It is intended for fleet owners, drivers, workshop supervisors, maintenance technicians, and operations teams responsible for keeping vehicles safe, reliable, and available for service.

The procedures in this manual are general in nature and should be used along with the official operator's manual, model-specific service literature, warranty requirements, and instructions from authorized Ashok Leyland service centers. For critical repairs, electronic diagnostics, warranty work, emission-system repairs, and safety-related components, always consult an authorized service facility.

2. Vehicle Identification and Maintenance Records

Before beginning maintenance, record the vehicle model, registration number, chassis number, engine number, odometer reading, date of inspection, operating route, load profile, and driver name. Accurate records help identify recurring defects, plan parts inventory, track warranty compliance, and reduce unexpected downtime.

Record Field	Details to Enter
Vehicle Model	Example: Dost, Bada Dost, Partner, Boss, AVTR, Viking, or other model
Registration Number	State registration and fleet code
Chassis / VIN	As stamped on chassis and registration documents
Engine Number	As per vehicle documents
Current Odometer	Kilometres at time of service
Service Type	Daily check, scheduled service, breakdown repair, or major overhaul

3. Safety Precautions

- Park the vehicle on level ground, apply the parking brake, switch off the engine, and place wheel chocks before inspection.
- Allow hot components such as the engine, radiator, turbocharger, exhaust system, and transmission to cool before touching them.
- Wear personal protective equipment including gloves, safety shoes, eye protection, and high-visibility clothing.
- Do not work beneath a raised vehicle unless it is supported by approved stands. Never rely only on a hydraulic jack.
- Disconnect the battery before electrical repairs, welding, or work near the starter motor and alternator.
- Keep fuel, oil, grease, coolant, and brake fluid away from open flames and dispose of used fluids responsibly.
- After every repair, conduct a controlled road test only when brakes, steering, lighting, and tyres have been verified as safe.

4. Daily Driver Inspection

Daily inspection is the first line of preventive maintenance. It should be completed before the vehicle leaves the yard and again at the end of the shift. Any safety-related defect must be reported immediately and the vehicle should not be operated until corrective action is taken.

Area	Daily Check	Action if Defect Found
Engine Bay	Engine oil level, coolant level, leaks, belts, hoses	Top up approved fluid, report leaks, replace damaged belts or hoses
Tyres and Wheels	Pressure, tread, cuts, uneven wear, wheel nuts	Inflate, repair, rotate, or replace as required
Brakes	Air pressure build-up, brake pedal feel, parking brake operation	Do not operate if air pressure or braking performance is abnormal
Lights and Electrical	Headlamps, indicators, brake lamps, reverse lamp, horn, wipers	Replace bulbs, check fuse, or repair wiring
Cabin and Controls	Mirrors, seat belt, gauges, warning lamps, steering free play	Report dashboard warnings and unsafe steering immediately

Body and Load	Load security, tailgate, doors, body damage, reflectors	Secure load and repair unsafe body fittings before dispatch

5. Preventive Maintenance Schedule

Maintenance intervals vary by model, duty cycle, operating environment, load, fuel quality, road condition, and regulatory requirements. Use the manufacturer's latest service schedule for the exact model. The table below provides a practical fleet-level planning guide for commercial vehicles operating in mixed urban and highway conditions.

Interval	**Key Maintenance Activities**
Daily / Before Trip	Fluid levels, tyres, wheel nuts, brakes, lights, horn, wipers, leaks, warning lamps
Weekly	Battery terminals, air filter restriction indicator, fuel-water separator, chassis grease points, body fasteners
5,000 km	Brake inspection, tyre wear check, steering linkage, suspension fasteners, leak inspection
10,000–15,000 km	Engine oil and filter change where applicable, fuel filter inspection/replacement, air filter cleaning or replacement, clutch and transmission checks
20,000 km	Suspension inspection, propeller shaft, differential oil level, wheel bearing play, cooling system inspection
40,000 km	Cooling system service, transmission and axle oil check or replacement as specified, brake system deep inspection
Annually	Fitness and compliance inspection, corrosion protection, calibration checks, full electrical inspection, body and chassis inspection

6. Engine and Lubrication System

The engine is the most critical component in vehicle uptime and operating cost. Check engine oil on level ground after allowing sufficient time for oil to drain back into the sump. Maintain oil between the minimum and maximum marks on the dipstick. Use only the grade recommended for the vehicle model and emission standard. Do not overfill, mix incompatible oils, or continue operation if oil pressure warning appears.

- Inspect for oil leaks around the sump, filter, turbocharger oil lines, valve cover, and crankcase breather.

- Replace engine oil and oil filter at the prescribed interval or earlier for severe-duty operation.
- Keep the air intake system clean. Dust ingestion can cause rapid engine wear.
- Listen for abnormal knocking, excessive smoke, rough idle, loss of power, or unusual vibration.
- Record oil consumption trends because sudden increases may indicate leakage, piston-ring wear, or turbocharger issues.

7. Fuel, Air Intake, and Exhaust System

Clean fuel and unrestricted airflow are essential for fuel efficiency, emissions compliance, and engine life. Drain the fuel-water separator as required, especially during monsoon operations or when fuel quality is uncertain. Replace fuel filters according to the service schedule and prime the system only as recommended for the model.

- Use clean, approved diesel or specified alternate fuel for the model.
- Keep the fuel tank cap sealed to prevent dust and water entry.
- Inspect fuel hoses, clamps, return lines, and injector connections for leakage.
- Clean or replace the air filter when restriction is indicated or at the scheduled interval.
- Inspect the exhaust system for loose mounts, cracks, excessive smoke, and leakage near the turbocharger or after-treatment system.

8. Cooling System

The cooling system prevents overheating and protects the engine from corrosion and cavitation. Check coolant level only when the engine is cool unless the model provides a safe remote reservoir. Use the recommended coolant mixture and never fill with untreated water for regular operation.

- Inspect radiator fins for mud, dust, insects, and blockage. Clean carefully without damaging fins.
- Check hoses for swelling, cracks, softness, hardening, leakage, and loose clamps.
- Verify fan belt condition and tension where applicable.
- Monitor temperature gauge during operation, especially on gradients, in traffic, and under heavy load.
- If overheating occurs, stop safely, allow the engine to cool, check coolant level, inspect leaks, and do not remove the pressure cap while hot.

9. Transmission, Clutch, Propeller Shaft, and Axles

Smooth power transmission depends on correct lubricant level, proper clutch adjustment, and secure driveline components. Check gearbox and axle oil levels at scheduled intervals and inspect for leakage around oil seals, drain plugs, filler plugs, and breathers. Use only approved lubricants and avoid mixing grades.

- Report clutch slipping, difficult gear shifting, clutch judder, or abnormal noise immediately.
- Inspect propeller shaft universal joints, centre bearing, flange bolts, and grease points.
- Check axle breathers to prevent pressure build-up and oil seal failure.
- Do not overload the vehicle, as overloading accelerates clutch, gearbox, axle, tyre, and suspension wear.

10. Brake System

The brake system is safety-critical and must be inspected regularly. For air brake systems, check compressor build-up time, air pressure warning function, leakage, drain valves, brake chambers, slack adjusters, hoses, and parking brake operation. For hydraulic systems, check fluid level, pedal travel, leakage, and brake response.

- Do not dispatch a vehicle with brake warning lamps, slow air build-up, low brake fluid, excessive pedal travel, or uneven braking.
- Inspect brake linings, drums or discs, brake chambers, pipes, hoses, and mounting hardware.
- Drain air tanks as recommended to remove moisture and prevent corrosion.
- After brake repair, perform a static brake test followed by a controlled road test in a safe area.

11. Steering, Suspension, Tyres, and Wheels

Steering, suspension, tyres, and wheels directly affect safety, ride quality, tyre life, and fuel efficiency. Inspect steering free play, power steering fluid level, tie-rod ends, drag links, kingpins, shock absorbers, leaf springs, U-bolts, bushes, and wheel bearings. Any abnormal looseness, vibration, pull, or uneven tyre wear should be investigated promptly.

- Maintain tyre pressure according to load and manufacturer specification.
- Rotate tyres as per fleet policy and vehicle usage pattern.
- Check dual tyres for stones, mismatched diameters, and sidewall damage.
- Retighten wheel nuts after wheel removal according to specified torque practice.

- Carry out wheel alignment and balancing when uneven wear, steering pull, or vibration is observed.

12. Electrical System and Battery

Electrical reliability depends on clean connections, correct battery condition, sound wiring, and functioning charging systems. Inspect battery terminals for corrosion and tightness. Secure the battery firmly and keep vent areas clear where applicable. Confirm alternator charging performance if lamps dim, cranking is slow, or repeated battery discharge occurs.

- Check headlamps, tail lamps, indicators, brake lamps, reverse lamps, hazard lamps, cabin lamps, horn, wipers, and dashboard warning lamps.
- Inspect wiring harnesses for rubbing, loose clips, heat damage, water entry, and unauthorized modifications.
- Use the correct fuse rating and never bypass a fuse with wire or foil.
- Disconnect batteries before welding and protect electronic control units as per model-specific instructions.

13. Body, Cabin, and Accessories

Body and cabin maintenance improves safety, driver comfort, and vehicle life. Inspect the cabin mounts, seat belts, mirrors, glass, doors, locks, hinges, wipers, washer system, dashboard controls, fire extinguisher, reflective triangle, first-aid kit, tool kit, and load-body structure. For buses, include passenger doors, emergency exits, seats, handrails, stop signals, and interior lighting.

For tippers, tankers, refrigerated bodies, school buses, ambulances, and other special applications, maintain additional equipment according to the body builder’s instructions. Hydraulic systems, pumps, PTO drives, tail lifts, refrigeration units, and safety interlocks require trained inspection and proper isolation before service.

14. Troubleshooting Guide

Symptom	Likely Causes	Recommended Action
Engine cranks but does not start	Low fuel, air in fuel system, weak battery, clogged fuel filter, sensor fault	Check fuel level, battery, fuel filter, and seek diagnostic support if warning lamp remains

Engine overheats	Low coolant, blocked radiator, fan belt issue, thermostat or water pump fault	Stop safely, cool engine, check coolant and leaks, clean radiator, refer to workshop
Excessive smoke	Dirty air filter, injector issue, turbocharger fault, poor fuel quality, engine wear	Inspect air filter and fuel quality, schedule diagnostic inspection
Poor braking	Air leak, worn linings, low fluid, contaminated brake parts, adjustment issue	Do not operate until brake system is inspected and repaired
Vehicle pulls to one side	Uneven tyre pressure, brake drag, wheel alignment, suspension wear	Check tyre pressure, brakes, alignment, and suspension components
Battery repeatedly discharges	Loose terminals, weak battery, alternator fault, parasitic load	Clean terminals, test battery and charging system, inspect wiring

15. Service Documentation and Workshop Control

Every maintenance activity should be documented in a service register or fleet management system. Records should include date, odometer reading, technician name, defects reported, work completed, parts replaced, lubricant quantity, next service due, and supervisor approval. Good documentation supports warranty claims, audit readiness, cost control, and resale value.

Date	Odometer	Work Performed	Parts / Fluids Used	Technician	Next Service Due

16. Recommended Fleet Maintenance Practices

- Use genuine or approved spare parts and lubricants to maintain reliability and warranty compliance.
- Train drivers to report abnormal noise, smoke, smell, vibration, warning lamps, and braking changes immediately.
- Plan services during low-demand periods to reduce operational disruption.
- Maintain critical spares such as filters, belts, bulbs, fuses, hoses, clamps, and approved fluids.
- Use diagnostic tools for vehicles with electronic control systems and emission after-treatment systems.

- Review breakdown history monthly to identify repeat failures and improve preventive maintenance planning.
- Escalate recurring or safety-critical defects to an authorized Ashok Leyland workshop.

17. Final Inspection Before Release

Before releasing the vehicle from maintenance, verify that all tools are removed, fluid caps are secured, leaks are corrected, wheel nuts are tightened, tyre pressure is set, brakes are tested, lights function correctly, warning lamps are cleared, and the road test is satisfactory. The supervisor should sign off only after the vehicle is safe, clean, and ready for operation.

18. Disclaimer

This manual is a general maintenance guide and does not replace the official Ashok Leyland owner’s manual, model-specific workshop manual, statutory inspection requirements, or professional diagnosis by trained technicians. Specifications, service intervals, lubricants, torque values, and diagnostic procedures must be confirmed from the latest official documentation for the specific vehicle model and configuration.