CONSTRUCTION & FIELD OPS HEAVY EQUIPMENT TEMPLATE

Heavy Equipment Inspection Checklist

Inspect structure, restraints, tyres or tracks, fluids, hydraulics, brakes, steering, alarms, visibility, attachments, operational behavior, defects, repairs, and return to service.

PROJECT / LOCATION	INSPECTION DATE	EQUIPMENT / ASSET ID	INSPECTOR / APPROVER

1. Inspection setup, asset identity, operator, and equipment scope

1 **Confirm the project, work area, inspection date, equipment type, make, model, asset or serial number, hour meter, owner, operator, inspector, and approver.** HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Record the exact machine and configuration so findings stay traceable.

2 **Define the equipment configuration and attachments included in the inspection, such as excavator, loader, bulldozer, grader, compactor, off-highway truck, telehandler, or similar heavy equipment.** CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Heavy-equipment checks should include the attachment currently installed.

3 **Verify the operator is trained, authorized, familiar with the equipment, and permitted to operate the specific machine and attachment configuration.** HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Operator authorization should match the exact equipment category.

4 **Confirm the current operator manual, manufacturer warnings, site equipment rules, inspection criteria, and any required load or capacity information are available.** CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Use the current manual and site rules rather than generic equipment instructions.

5 **Review previous defects, breakdowns, collisions, overloads, structural damage, hydraulic failures, alarm failures, safety-device issues, and open maintenance actions.** HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Repeat defects often indicate a maintenance or operating-system problem.

6 **Record equipment status at the start of inspection, including parked location, engine state, attachment position, isolation condition, and whether the equipment is already restricted from service.** HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Know whether the machine is already restricted before beginning the inspection.

2. Documentation, maintenance, modifications, and inspection history

7 **Verify required pre-use, shift, periodic, maintenance, repair, and statutory inspection records are current and traceable to the exact equipment.** HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Use the asset number or serial number on every inspection record.

8 **Confirm scheduled maintenance is not overdue and review unresolved maintenance recommendations that could affect safe operation.** CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Overdue maintenance can affect safety-critical components before visible failure occurs.

9 **Check repairs, structural welding, modifications, counterweight changes, attachment changes, or safety-system alterations have been approved and documented where required.** HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Modifications and structural repairs may require formal engineering or manufacturer approval.

10 **Verify rated capacities, load charts, operating limits, warning decals, identification plates, and manufacturer labels remain legible and match the current equipment configuration.** CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Capacity and warning information must match the current configuration.

11 **Confirm safety-critical parts replaced during maintenance are correct for the machine and that post-repair testing or inspection has been completed where required.** HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Post-repair testing is especially important for brakes, steering, hydraulics, and structural work.

12 **Prevent equipment release where required documentation, maintenance status, capacity information, inspection history, or modification approval is missing or unreliable.** HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Do not release equipment on undocumented assumptions.

3. Structure, cab, access, ROPS/FOPS, seat belts, and guarding

13 **Inspect the main frame, chassis, boom, stick, loader arms, blade structures, articulation points, welds, pins, brackets, and visible load-bearing components for cracks, deformation, damage, or abnormal movement.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Inspect welds and highly loaded pin or articulation areas carefully.

14 **Check cab structure, ROPS or FOPS where provided, mounting points, doors, windows, safety glass, mirrors, steps, ladders, handholds, platforms, and access surfaces for secure condition.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: ROPS, FOPS, cab access, and seat restraints are safety systems, not comfort items.

15 **Verify the operator seat, seat adjustment, seat belt or restraint system, buckle, webbing, anchorage, and warning systems are serviceable and used as required.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: OSHA requires seat belts on covered earthmoving equipment subject to listed exceptions.

16 **Inspect guards, shields, covers, engine panels, fan guards, hot-surface protection, pinch-point protection, and moving-part guarding for secure installation.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Missing guards can expose workers to hot, rotating, or pinch-point hazards.

17 **Confirm windows, windscreen, wipers, washers, mirrors, cameras, and visibility aids provide a clear field of view without damage or distortion that could affect safe operation.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Damaged cab glass or visibility aids can create struck-by risk.

18 **Remove equipment from service when structural damage, compromised ROPS/FOPS, failed restraint systems, unsafe access, missing guards, or visibility defects create serious risk.**

HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Serious structural or restraint defects require removal from service.

4. Tyres, wheels, tracks, undercarriage, outriggers, and stability components

19 **Inspect tyres for cuts, exposed cords, sidewall damage, abnormal wear, embedded objects, incorrect inflation, loose valve components, or other conditions that could cause failure.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Inspect the full tyre or track system, not only obvious tread wear.

20 **Check wheels, rims, wheel nuts, hubs, studs, axles, suspension components, and visible bearings for damage, looseness, leakage, overheating, or missing hardware.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Loose wheel hardware can quickly become a catastrophic defect.

21 **For tracked equipment, inspect track shoes, links, pins, rollers, sprockets, idlers, tension, guards, and undercarriage for wear, cracks, missing parts, or abnormal looseness.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Undercarriage wear can affect tracking, stability, and travel control.

22 **Inspect stabilizers, outriggers, pads, jacks, locking devices, articulation locks, oscillation controls, and other stability systems for condition and correct operation.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Outriggers and stabilizers should lock and bear correctly.

23 **Confirm counterweights, ballast, removable weights, and machine configuration match the approved arrangement for the equipment and attachment in use.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Counterweight configuration affects rated capacity and stability.

24 **Restrict operation where tyre, wheel, track, undercarriage, outrigger, counterweight, or stability defects could affect steering, braking, travel, lifting, or rollover resistance.**

HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Treat stability-component failures as safety-critical.

5. Engine, fuel, cooling, fluids, hydraulics, batteries, and energy systems

25 **Inspect engine oil, coolant, fuel, transmission, brake, hydraulic, differential, and other required fluid levels against manufacturer limits before operation.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Use the manufacturer level-check method and temperature condition where specified.

26 **Check for active leaks, damaged hoses, cracked pipes, loose fittings, worn clamps, chafing, bulging, seepage, or contamination around hydraulic, fuel, cooling, and lubrication systems.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: High-pressure hydraulic leaks can be difficult to see and extremely hazardous.

27 **Inspect hydraulic cylinders, rods, seals, pumps, motors, valves, accumulators, hose routing, protection, and attachment circuits for damage or abnormal leakage.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Inspect cylinder rods for scoring, bending, and contamination.

28 **Check battery condition, mounting, terminals, cables, covers, charging connections, isolation switches, and visible electrical wiring for damage, corrosion, or insecure routing.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Battery isolation and secure cable routing reduce electrical and fire hazards.

29 **Verify radiator, cooling package, air intake, filters, exhaust system, after-treatment components, and engine compartment are free from unsafe damage, excessive debris, or fire risk.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Debris around exhaust and cooling systems can increase fire risk.

30 **Remove equipment from service for fuel leaks, high-pressure hydraulic defects, damaged energy-storage components, severe overheating, electrical hazards, or other failures with serious release potential.**

HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Fuel and high-pressure hydraulic defects generally justify immediate restriction.

6. Brakes, steering, travel controls, operating controls, and instrumentation

31 **Test service brakes, parking brake, emergency stopping system where provided, and related warning indicators for reliable stopping and holding performance.**

CRITICAL | HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: For OSHA-covered construction vehicles, beginning-of-shift checks include brakes, steering, controls, seat belts, and safety devices.

32 **Check steering response, articulation steering, travel levers, pedals, direction controls, transmission selection, and differential or drive controls for smooth and predictable operation.**

CRITICAL | HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Test steering and travel in a controlled area before productive work.

33 **Verify joysticks, implement controls, boom or arm controls, blade controls, auxiliary hydraulics, travel controls, and safety lockout levers return and respond correctly.**

CRITICAL | HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Control levers should respond predictably without sticking or unintended movement.

34 **Inspect gauges, hour meter, warning lights, display panels, fault codes, temperature, pressure, fuel, DEF or emissions indicators, and audible warnings for correct operation.**

CRITICAL | HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Warning lights and fault codes should not be ignored or reset without diagnosis.

35 **Confirm emergency stops, hydraulic lockouts, control interlocks, neutral-start systems, travel locks, parking systems, and other control-related safety devices function as intended.**

CRITICAL | HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Interlocks should be tested, not assumed to work.

36 **Do not place equipment in service when brakes, steering, controls, interlocks, operating indicators, or other safety-critical control functions are defective.**

HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Critical brake or steering defects must be corrected before service.

7. Alarms, horn, lights, visibility, cameras, and protective safety systems

37 **Verify the horn is operational and distinguishable from surrounding noise and is available for use when the equipment is moving.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: OSHA requires horns on covered bidirectional earthmoving machines.

38 **Check reverse alarm operation on equipment with obstructed rear visibility or confirm an approved signaling arrangement is provided where applicable.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Obstructed rear visibility requires a reverse alarm or a signal person under OSHA 1926.602.

39 **Inspect headlights, work lights, brake lights, tail lights, beacons, reflectors, direction indicators, and other required lighting for condition and visibility.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Lighting and reflectors should match actual visibility conditions.

40 **Verify cameras, proximity detection, object-detection sensors, mirrors, radar, or other installed visibility systems are clean, aligned, powered, and functioning.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Clean cameras and sensors before judging whether they function.

41 **Check fire extinguisher, suppression system, emergency egress, warning labels, backup steering, emergency lowering, alarms, or other installed protective systems as applicable.**

CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Emergency and fire systems should be checked as part of equipment readiness.

42 **Restrict operation when required alarms, lighting, visibility aids, protective devices, or emergency systems are missing or defective and the hazard cannot be otherwise controlled.**

HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Do not substitute operator caution for missing required safety devices.

8. Attachments, couplers, buckets, blades, forks, lifting points, and rated capacity

43 **Inspect buckets, blades, forks, rippers, grapples, breakers, augers, compaction attachments, quick couplers, pins, locking devices, and attachment structures for cracks, wear, distortion, or missing components.**

CRITICAL | HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Attachment condition can change machine stability and capacity.

44 **Confirm attachment pins, keepers, coupler locks, hydraulic locks, mechanical locks, retainers, and safety indicators are fully engaged and function correctly.**

CRITICAL | HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Quick-coupler locking should be physically verified before use.

45 **Verify the attachment is approved for the carrier machine and the current equipment configuration, counterweight, hydraulic system, and operating limits.**

CRITICAL | HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Do not assume an attachment is approved because it physically fits the carrier.

46 **Check forks, lifting eyes, hooks, lifting points, rated-capacity plates, load charts, or attachment capacity markings where the equipment is used for material handling or lifting.**

CRITICAL | HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Rated-capacity information should be visible when the equipment is used for lifting or material handling.

47 **Confirm hoses, auxiliary circuits, electrical connections, guards, tool retainers, and attachment controls are connected and routed to avoid damage, unintended movement, or disconnection.**

CRITICAL | HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Protect hydraulic hoses at articulation and pinch points.

48 **Stop operation when an attachment, coupler, pin, fork, lifting point, capacity marking, or locking system cannot be verified as secure and suitable for the intended task.**

HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Unverified couplers or locking systems require immediate stop-use.

9. Operational test, travel route, work zone, power lines, and safe machine behavior

49 **Conduct a controlled low-risk operational test to verify engine response, travel, steering, braking, implements, hydraulics, alarms, controls, and stopping behavior before productive work.**

CRITICAL | HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Functional testing should be controlled and away from workers.

50 **Observe abnormal noise, vibration, drift, hesitation, overheating, smoke, warning codes, control lag, hydraulic creep, unstable movement, or unexpected behavior during the test.**

CRITICAL | HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Unusual drift, creep, noise, or vibration can indicate serious developing defects.

51 **Verify access roads, haul routes, slopes, ramps, berms, ground bearing conditions, edge distances, excavations, overhead restrictions, and turning areas can safely accommodate the equipment.**

CRITICAL | HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: OSHA requires access roadways and grades to safely accommodate the equipment using them.

52 **Confirm pedestrians are separated from heavy-equipment travel and swing zones using barriers, exclusion zones, spotters, communication, or other suitable controls.**

CRITICAL | HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Heavy equipment needs clearly controlled pedestrian and swing zones.

53 **Check equipment operation near overhead power lines or energized conductors follows the required clearance, de-energization, grounding, or barrier controls applicable to the work.**

CRITICAL | HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: OSHA 1926.600 contains clearance rules for equipment operating near energized power lines.

54 **Stop the equipment immediately when the functional test, route, ground condition, power-line exposure, visibility, or surrounding work creates uncontrolled struck-by, rollover, collision, or electrical risk.**

HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Stop when site conditions make safe machine operation uncertain.

10. Parking, isolation, maintenance safety, defects, return to service, and sign-off

55 **Verify parked equipment is secured with the parking brake set, attachments lowered or safely supported, controls neutralized, engine stopped where appropriate, and wheels chocked on inclines where required.** CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: OSHA requires parking brakes to be set and wheels chocked on inclines.

56 **Before maintenance under raised equipment or attachments, confirm blades, buckets, dump bodies, booms, or other elevated components are fully lowered or substantially blocked or cribbed against movement.** CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Raised blades, buckets, and dump bodies must be lowered or safely blocked before workers go under them.

57 **Classify each defect by severity and clearly identify equipment that is safe to operate, restricted, awaiting repair, or out of service.** CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Use a clear out-of-service status so another operator cannot take the machine.

58 **Assign every defect an owner, priority, repair action, due date, isolation or restriction, required parts, verification method, and closure evidence requirement.** CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Every repair should have a verification rule, not only a completion date.

59 **After repair, verify safety-critical functions are retested and any required competent, qualified, maintenance, or third-party inspection is complete before release.** CRITICAL HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Retest the function affected by the repair before release.

60 **Record the final heavy-equipment status, remaining restrictions, repairs completed, functional-test result, next inspection or maintenance date, operator, inspector, maintenance reviewer, approver, date, time, and sign-off.** HEAVY EQUIP.

Compliant | Needs attention | Out of service | N/A

Execution tip: Final sign-off should clearly state whether the equipment is released, restricted, or out of service.