

FREE MANUFACTURING AUDIT TEMPLATE

Machinery and Equipment Audit Checklist

Use this 60-point checklist to audit machinery governance, structural condition, guarding, controls, energy systems, LOTO, maintenance, mobile equipment, operator readiness, records, and corrective-action closure.

Facility / area

Audit date

Auditor / reviewer

Machine / equipment scope

Internal manufacturing audit template. Apply applicable OSHA requirements, machine-specific standards, manufacturer instructions, approved risk assessments, engineering requirements, and site procedures.

1. Machinery governance, asset register, risk classification, and audit readiness

1

Confirm the site maintains a current register of production machines, fixed equipment, mobile equipment, auxiliary systems, and safety-critical attachments within the audit scope.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
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Execution tip: Start with the complete machinery register and risk profile. Sample high-risk, modified, frequently failing, and overdue assets rather than only...

2

Verify each machine or equipment item has a unique asset ID linked to location, manufacturer, model, serial number, owner, status, and maintenance history.

MACHINERY

Record / item	Current status	Owner	Evidence	Action
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Execution tip: Start with the complete machinery register and risk profile. Sample high-risk, modified, frequently failing, and overdue assets rather than only...

3

Confirm machinery risks are assessed for intended use, foreseeable misuse, setup, production, cleaning, jam clearing, maintenance, troubleshooting, and decommissioning activities.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Start with the complete machinery register and risk profile. Sample high-risk, modified, frequently failing, and overdue assets rather than only...

4

Verify machines are classified by risk or criticality so inspection, maintenance, verification, spare-parts, and escalation priorities reflect potential safety and operational consequences.

MACHINERY

Record / item	Current status	Owner	Evidence	Action
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Execution tip: Start with the complete machinery register and risk profile. Sample high-risk, modified, frequently failing, and overdue assets rather than only...

5

Check applicable legal requirements, manufacturer instructions, engineering specifications, approved SOPs, risk assessments, and machine-specific standards are identified and accessible.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Start with the complete machinery register and risk profile. Sample high-risk, modified, frequently failing, and overdue assets rather than only...

6

Review previous incidents, near misses, breakdowns, repeated defects, overdue actions, safeguarding issues, unauthorized modifications, and audit findings before selecting the audit sample.

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Start with the complete machinery register and risk profile. Sample high-risk, modified, frequently failing, and overdue assets rather than only...

2. Installation, structural condition, access, workspace, and environmental suitability

7 Confirm machinery and fixed equipment are securely anchored, supported, level, stable, and free from movement or vibration that could create a hazard. **CRITICAL** MACHINERY

Compliant

Needs action

Critical

[LIVE PHOTO](#) | [Add](#)

Execution tip: Walk around and under the equipment where safe. Look for movement, corrosion, loose supports, blocked access, leaks, poor lighting, heat,...

8 Inspect frames, bases, platforms, housings, doors, covers, supports, fasteners, welds, and structural members for damage, corrosion, cracking, looseness, or deformation. MACHINERY

Compliant

Needs action

Critical

[LIVE PHOTO](#) | [Add](#)

Execution tip: Walk around and under the equipment where safe. Look for movement, corrosion, loose supports, blocked access, leaks, poor lighting, heat,...

9 Verify safe access is provided to normal operating, inspection, lubrication, cleaning, adjustment, and maintenance points without requiring unsafe climbing, reaching, or body positioning. **CRITICAL** MACHINERY

Compliant

Needs action

Critical

[LIVE PHOTO](#) | [Add](#)

Execution tip: Walk around and under the equipment where safe. Look for movement, corrosion, loose supports, blocked access, leaks, poor lighting, heat,...

10 Check working space, aisles, ladders, platforms, handrails, floor surfaces, and clearances around machinery are suitable and kept free from stored materials or trip hazards. MACHINERY

Compliant

Needs action

Critical

[LIVE PHOTO](#) | [Add](#)

Execution tip: Walk around and under the equipment where safe. Look for movement, corrosion, loose supports, blocked access, leaks, poor lighting, heat,...

11 Confirm ventilation, extraction, drainage, temperature, dust control, lighting, and other environmental conditions are suitable for the equipment and process. MACHINERY

C

PC

NC

NA

Execution tip: Walk around and under the equipment where safe. Look for movement, corrosion, loose supports, blocked access, leaks, poor lighting, heat,...

12 Verify leaks, unusual heat, smoke, odor, noise, vibration, contamination, damaged insulation, or other abnormal conditions are identified, reported, and corrected before they create greater risk. **CRITICAL** MACHINERY

Compliant

Needs action

Critical

[LIVE PHOTO](#) | [Add](#)

Execution tip: Walk around and under the equipment where safe. Look for movement, corrosion, loose supports, blocked access, leaks, poor lighting, heat,...

3. Machine guarding, point-of-operation protection, and power-transmission safeguards

13

Confirm one or more effective guarding methods protect operators and nearby employees from point-of-operation hazards, ingoing nip points, rotating parts, flying material, chips, sparks, and similar machine hazards.

CRITICAL

MACHINERY

Compliant

Needs action

Critical

LIVE PHOTO | Add

Execution tip: Observe the actual hazard zone during normal production. Guards should protect the operator and nearby employees without creating new...

14

Verify guards are secure, durable, correctly positioned, and designed so employees cannot readily reach over, under, around, or through them into hazardous areas.

CRITICAL

MACHINERY

Compliant

Needs action

Critical

LIVE PHOTO | Add

Execution tip: Observe the actual hazard zone during normal production. Guards should protect the operator and nearby employees without creating new...

15

Check belts, pulleys, chains, sprockets, gears, shafts, couplings, flywheels, fan blades, and other power-transmission components are guarded where employee contact could occur.

CRITICAL

MACHINERY

Compliant

Needs action

Critical

LIVE PHOTO | Add

Execution tip: Observe the actual hazard zone during normal production. Guards should protect the operator and nearby employees without creating new...

16

Confirm fixed, adjustable, self-adjusting, interlocked, presence-sensing, two-hand, or other safeguarding methods are suitable for the specific machine and task.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Observe the actual hazard zone during normal production. Guards should protect the operator and nearby employees without creating new...

17

Verify guards and safeguarding devices do not introduce sharp edges, pinch points, ejection hazards, visibility problems, or other new risks.

MACHINERY

Compliant

Needs action

Critical

LIVE PHOTO | Add

Execution tip: Observe the actual hazard zone during normal production. Guards should protect the operator and nearby employees without creating new...

18

Check removed, damaged, defeated, bridged, taped, overridden, or otherwise bypassed safeguards result in immediate containment and controlled restoration before normal production resumes.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Observe the actual hazard zone during normal production. Guards should protect the operator and nearby employees without creating new...

4. Operating controls, emergency stops, interlocks, and safety-related control functions

19

Confirm start, stop, selector, reset, jog, hold-to-run, speed, and mode controls are clearly identified, accessible, functional, and protected from unintended activation where required.

CRITICAL

MACHINERY

C

PC

NC

NA

Execution tip: Test controls under an approved safe test method. Confirm stop functions, interlocks, resets, and mode changes behave as intended and...

20

Verify emergency-stop devices are readily accessible from relevant operating positions, clearly identifiable, functional, and do not create an automatic restart when reset.

CRITICAL

MACHINERY

Compliant

Needs action

Critical

[LIVE PHOTO](#) | [Add](#)

Execution tip: Test controls under an approved safe test method. Confirm stop functions, interlocks, resets, and mode changes behave as intended and...

21

Test interlocked guards, gates, doors, access panels, light curtains, scanners, mats, two-hand controls, and similar protective devices using an approved verification method.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
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Execution tip: Test controls under an approved safe test method. Confirm stop functions, interlocks, resets, and mode changes behave as intended and...

22

Confirm safety-related control functions are appropriate to the identified machine risk and changes to safety PLCs, relays, logic, parameters, sensors, or wiring are controlled and verified.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Test controls under an approved safe test method. Confirm stop functions, interlocks, resets, and mode changes behave as intended and...

23

Verify restoration of power, reset after a trip, mode changes, or clearing a fault does not initiate unexpected startup or hazardous movement without a deliberate start command.

CRITICAL

MACHINERY

C

PC

NC

NA

Execution tip: Test controls under an approved safe test method. Confirm stop functions, interlocks, resets, and mode changes behave as intended and...

24

Review recurrent nuisance trips, bypasses, fault codes, reset behavior, intermittent interlock failures, and control-system alarms for unresolved safety or reliability issues.

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Test controls under an approved safe test method. Confirm stop functions, interlocks, resets, and mode changes behave as intended and...

5. Electrical, hydraulic, pneumatic, thermal, and stored-energy systems

25

Inspect electrical enclosures, disconnects, cables, plugs, conduit, junction boxes, grounding, bonding, covers, labels, and exposed live-part protection for condition and suitability.

CRITICAL

MACHINERY

Compliant

Needs action

Critical

LIVE PHOTO | Add

Execution tip: Inspect every energy source, not only electrical power. Pressure, gravity, springs, capacitors, elevated loads, heat, vacuum, and rotating...

26

Verify hydraulic and pneumatic hoses, pipes, fittings, cylinders, accumulators, regulators, valves, gauges, guards, and supports are free from leakage, damage, abrasion, or insecure connections.

CRITICAL

MACHINERY

Compliant

Needs action

Critical

LIVE PHOTO | Add

Execution tip: Inspect every energy source, not only electrical power. Pressure, gravity, springs, capacitors, elevated loads, heat, vacuum, and rotating...

27

Confirm pressure-relief, overpressure, temperature-limit, level, flow, and other protective devices are installed, set, maintained, and protected from unauthorized adjustment as required.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Inspect every energy source, not only electrical power. Pressure, gravity, springs, capacitors, elevated loads, heat, vacuum, and rotating...

28

Verify stored or residual energy from springs, counterweights, gravity, flywheels, capacitors, hydraulic accumulators, pneumatic pressure, thermal sources, or elevated components can be safely controlled.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Inspect every energy source, not only electrical power. Pressure, gravity, springs, capacitors, elevated loads, heat, vacuum, and rotating...

29

Check hot surfaces, steam, chilled surfaces, cryogenic hazards, heated tooling, ovens, furnaces, and other thermal sources are insulated, guarded, labeled, or otherwise controlled where contact is possible.

MACHINERY

Compliant

Needs action

Critical

LIVE PHOTO | Add

Execution tip: Inspect every energy source, not only electrical power. Pressure, gravity, springs, capacitors, elevated loads, heat, vacuum, and rotating...

30

Confirm damaged energy-system components or conditions capable of causing shock, fire, hose whip, injection injury, uncontrolled motion, or pressure release trigger immediate removal from unsafe use.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Inspect every energy source, not only electrical power. Pressure, gravity, springs, capacitors, elevated loads, heat, vacuum, and rotating...

6. Hazardous-energy control, lockout/tagout, and servicing activities

31

Confirm documented machine-specific energy-control procedures identify all hazardous energy sources, isolation devices, shutdown steps, lockout/tagout steps, stored-energy controls, verification, and restart requirements.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Choose a real servicing task and walk through the full isolation. Verify every energy source, isolation point, lock, release of stored energy,...

32

Verify authorized employees apply personal locks or approved equivalent controls to each required energy-isolating device before covered servicing or maintenance begins.

CRITICAL

MACHINERY

Compliant

Needs action

Critical

LIVE PHOTO | Add

Execution tip: Choose a real servicing task and walk through the full isolation. Verify every energy source, isolation point, lock, release of stored energy,...

33

Confirm stored and residual energy is relieved, disconnected, restrained, blocked, bled, discharged, or otherwise rendered safe before work starts.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Choose a real servicing task and walk through the full isolation. Verify every energy source, isolation point, lock, release of stored energy,...

34

Verify isolation effectiveness is tested or otherwise verified before employees begin work on machinery or equipment.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Choose a real servicing task and walk through the full isolation. Verify every energy source, isolation point, lock, release of stored energy,...

35

Check group lockout, shift changes, contractor work, multiple energy sources, temporary energization for testing, and removal of another employee's lock are controlled by approved procedures.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Choose a real servicing task and walk through the full isolation. Verify every energy source, isolation point, lock, release of stored energy,...

36

Confirm periodic inspections of energy-control procedures are completed and deficiencies in procedures, knowledge, authorization, or field practice are corrected.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Choose a real servicing task and walk through the full isolation. Verify every energy source, isolation point, lock, release of stored energy,...

7. Maintenance, lubrication, condition monitoring, and defect management

37

Confirm preventive maintenance tasks and frequencies are defined for safety-critical and reliability-critical machinery using manufacturer guidance, risk, use severity, condition, and failure history.

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Compare the maintenance plan with actual condition and history. Repeated emergency repairs, temporary fixes, leakage, vibration, or...

38

Verify lubrication points, lubricants, quantities, intervals, contamination controls, and safe access methods are defined and consistently followed.

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Compare the maintenance plan with actual condition and history. Repeated emergency repairs, temporary fixes, leakage, vibration, or...

39

Review vibration, temperature, oil condition, current, pressure, wear, alignment, backlash, or other condition-monitoring data for abnormal trends and timely action.

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Compare the maintenance plan with actual condition and history. Repeated emergency repairs, temporary fixes, leakage, vibration, or...

40

Check bearings, belts, chains, couplings, gears, seals, brakes, clutches, fasteners, guides, tooling interfaces, and wear components for condition and timely replacement.

MACHINERY

Compliant

Needs action

Critical

LIVE PHOTO | Add

Execution tip: Compare the maintenance plan with actual condition and history. Repeated emergency repairs, temporary fixes, leakage, vibration, or...

41

Confirm defects are classified by risk and critical defects result in clear equipment status, safe isolation or restriction, named ownership, due dates, and repair verification.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Compare the maintenance plan with actual condition and history. Repeated emergency repairs, temporary fixes, leakage, vibration, or...

42

Verify temporary repairs, bypasses, shims, welded fixes, taped cables, makeshift guards, leaks, and other temporary conditions are formally controlled, time-limited, and replaced with permanent corrective action.

CRITICAL

MACHINERY

Compliant

Needs action

Critical

LIVE PHOTO | Add

Execution tip: Compare the maintenance plan with actual condition and history. Repeated emergency repairs, temporary fixes, leakage, vibration, or...

8. Mobile, lifting, material-handling, and specialized equipment controls

43

Confirm powered industrial trucks and other mobile equipment are examined before being placed in service and unsafe conditions result in removal from service until corrected.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Apply only the checks relevant to the site's equipment mix. For mobile and lifting equipment, focus on pre-use condition, rated capacity,...

44

Inspect brakes, steering, tires, wheels, forks, mast, chains, hydraulics, lights, alarms, horns, seat restraints, guards, and attachments on sampled mobile equipment where applicable.

CRITICAL

MACHINERY

Compliant

Needs action

Critical

LIVE PHOTO | Add

Execution tip: Apply only the checks relevant to the site's equipment mix. For mobile and lifting equipment, focus on pre-use condition, rated capacity,...

45

Verify lifting equipment, hoists, cranes, lifting accessories, slings, hooks, chains, and rated-capacity information are identified, inspected, maintained, and used within approved limits where applicable.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
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Execution tip: Apply only the checks relevant to the site's equipment mix. For mobile and lifting equipment, focus on pre-use condition, rated capacity,...

46

Confirm equipment attachments, tooling, fixtures, dies, molds, chucks, clamps, and workholding devices are compatible, securely installed, and free from defects that could cause release or ejection.

CRITICAL

MACHINERY

Compliant

Needs action

Critical

LIVE PHOTO | Add

Execution tip: Apply only the checks relevant to the site's equipment mix. For mobile and lifting equipment, focus on pre-use condition, rated capacity,...

47

Check charging, fueling, battery handling, compressed-gas, or other energy-replenishment activities are performed in designated areas with appropriate controls and authorized personnel.

MACHINERY

Compliant

Needs action

Critical

LIVE PHOTO | Add

Execution tip: Apply only the checks relevant to the site's equipment mix. For mobile and lifting equipment, focus on pre-use condition, rated capacity,...

48

Verify specialized machines such as presses, grinders, saws, robots, conveyors, mixers, or automated cells receive the additional machine-specific safeguards and inspections applicable to their hazards.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Apply only the checks relevant to the site's equipment mix. For mobile and lifting equipment, focus on pre-use condition, rated capacity,...

9. Operating procedures, inspections, competence, and change management

49

Confirm current operating procedures define normal startup, operation, shutdown, cleaning, setup, changeover, jam clearing, fault response, prohibited practices, and escalation requirements.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Ask operators and maintainers to demonstrate key checks. Compare what people actually do with the approved procedure, training record,...

50

Verify required pre-start, pre-use, shift, daily, or periodic operator inspections are completed at the defined frequency and defects are reported before continued operation.

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Ask operators and maintainers to demonstrate key checks. Compare what people actually do with the approved procedure, training record,...

51

Confirm operators, setters, maintenance employees, cleaners, and other exposed employees are trained and competent for the machinery, hazards, safeguards, controls, and tasks they perform.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Ask operators and maintainers to demonstrate key checks. Compare what people actually do with the approved procedure, training record,...

52

Check unauthorized employees cannot operate, adjust, bypass, repair, or enter restricted machine areas without the required authorization and supervision.

CRITICAL

MACHINERY

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PC

NC

NA

Execution tip: Ask operators and maintainers to demonstrate key checks. Compare what people actually do with the approved procedure, training record,...

53

Verify machinery modifications, relocations, new tooling, control changes, software changes, speed increases, process changes, or new products trigger technical review and risk reassessment before release.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Ask operators and maintainers to demonstrate key checks. Compare what people actually do with the approved procedure, training record,...

54

Confirm new or significantly modified machinery is commissioned with documented safety checks, functional testing, training, approved documentation, and controlled handover to operations.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Ask operators and maintainers to demonstrate key checks. Compare what people actually do with the approved procedure, training record,...

10. Records, incidents, corrective actions, verification, and management sign-off

55

Confirm machinery inspection, maintenance, test, calibration, safeguarding, LOTO, training, modification, commissioning, and repair records are current, legible, protected, and retrievable.

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Keep machinery findings open until objective evidence shows the hazard is controlled and the equipment can be safely returned to service...

56

Verify machine-related incidents, injuries, near misses, unexpected startups, guard failures, ejections, breakdowns, and significant defects are investigated to determine causes and systemic weaknesses.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Keep machinery findings open until objective evidence shows the hazard is controlled and the equipment can be safely returned to service...

57

Assign every audit finding to a named owner with risk level, due date, interim control, required evidence, escalation route, and affected machine or equipment clearly identified.

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Keep machinery findings open until objective evidence shows the hazard is controlled and the equipment can be safely returned to service...

58

Verify repaired or corrected machinery is released through appropriate functional testing, safeguard verification, isolation removal, housekeeping, documentation, and authorized approval.

CRITICAL

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Keep machinery findings open until objective evidence shows the hazard is controlled and the equipment can be safely returned to service...

59

Review recurring defects, repeat safeguarding failures, overdue maintenance, equipment downtime, unsafe bypasses, LOTO deviations, and overdue actions during management review.

MACHINERY

Record / item	Current status	Owner	Evidence	Action
---------------	----------------	-------	----------	--------

Execution tip: Keep machinery findings open until objective evidence shows the hazard is controlled and the equipment can be safely returned to service...

60

Record final audit status, unresolved critical machinery risks, equipment restrictions, required follow-up, next audit date, auditor, reviewer, date, and management approval.

CRITICAL

MACHINERY

FINAL STATUS | Enter

REVIEWER | Enter

APPROVAL | Enter

Execution tip: Keep machinery findings open until objective evidence shows the hazard is controlled and the equipment can be safely returned to service...