

Manufacturing and maintenance guide

Review hazards and checks for each example, then prepare an assessment and work documents for your actual site.

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01 Local documents and scope

Use the Risk Assessment (RA) to identify hazards and controls, then describe the work sequence in a Safe Work Procedure (SWP). Communicate the plan at the Toolbox Meeting. Select a Permit to Work (PTW) after checking the activity, workplace and applicable rules; it is not automatically required for every task. Keep the RA, SWP and current site checks consistent.

Risk Assessment (RA)

Safe Work Procedure (SWP)

Permit to Work (PTW)

Toolbox Meeting

Safety Inspection Checklist

This is a planning reference. Verify numerical limits, permits and qualifications for the jurisdiction, sector and equipment. Record fresh site measurements, people and signatures for each job.

02 From example to site use

1 Define the job

Identify equipment, location, sequence, people, nearby activities and access. Separate preparation, execution and close-out, and record hazards observed at the site.

2 Match controls to each step

Consider elimination, substitution and engineering controls first, then procedures and PPE. Assign an owner, a verification method and stop-work conditions for each control.

3 Connect documents and site checks

Choose the local assessment, procedure and applicable permits, then brief the crew. Add drawings and checklists, reassess changes and retain the output for this job.

MANUF-01**Plating Tank Chemical Replenishment and Metal Surface Pickling****Potential hazards**

Asphyxiation from acid gas, chemical burns from splashing

Checks to verify and specify on site

- Check the SDS, compatibility, containment, extraction, leak isolation and emergency response. Select test targets, limits and respiratory protection for the actual substances and exposure.

MANUF-02**Injection Molding Nozzle De-clogging and Carbon Cleaning****Potential hazards**

Burns from hot resin ejection, body crushing during unit movement

Checks to verify and specify on site

- Check manufacturer procedures, guards, energy isolation and release of stored energy; account for people and tools before restart.
- Isolate, release and verify pressure and contents before opening. Use the design code and approved procedure for test pressure, medium and sequence; define exclusion and stop criteria.

MANUF-03**Logs Cutting and Processing Using Industrial Circular Saws****Potential hazards**

Gloves caught in rotating blades, timber kickback impact

Checks to verify and specify on site

- Check manufacturer procedures, guards, energy isolation and release of stored energy; account for people and tools before restart.

MANUF-04**Production Line Conveyor Belt Drive Unit Regular Maintenance****Potential hazards**

Finger caught between rollers, crushing due to unexpected startup

Checks to verify and specify on site

- Check manufacturer procedures, guards, energy isolation and release of stored energy; account for people and tools before restart.

MANUF-05

Melting Furnace Raw Material Charging and Molten Metal Casting

Potential hazards

Steam explosion (splash) on moisture entry, radiant heat burns

Checks to verify and specify on site

- Verify task-specific training, qualifications and procedures. Record process and equipment protections, exposure controls, emergency arrangements and the responsible person's checks in the work plan.

MANUF-06

Spot Welding Robot Maintenance and Tip Replacement

Potential hazards

Collisions from robot malfunction, burns from hot tip contact

Checks to verify and specify on site

- Check manufacturer procedures, guards, energy isolation and release of stored energy; account for people and tools before restart.
- Equipment, circuits, supplies, backfeed, induced voltage and stored energy; Disconnection, prevention of re-energisation, locks and tags; Voltage detector, functional check, absence-of-voltage result and tester; Earthing/short-circuiting where required; adjacent live-part protection and boundaries; Completion, personnel clearance, lock removal and re-energisation authority.

MANUF-07

Press Die Change and Setup in Manufacturing Process

Potential hazards

Crushing between beds during die descent, collision during lifting

Checks to verify and specify on site

- Verify weight, centre of gravity, lifting points, rated capacity and sling angles. Define ground conditions, route, exclusion zone and signals; follow the lift plan.
- Check manufacturer procedures, guards, energy isolation and release of stored energy; account for people and tools before restart.

MANUF-08

SMT Production Line Operation and Reflow Oven Maintenance

Potential hazards

Burns from hot heater contact, lead/flux poisoning in solder

Checks to verify and specify on site

- Check manufacturer procedures, guards, energy isolation and release of stored energy; account for people and tools before restart.
- Check the SDS, compatibility, containment, extraction, leak isolation and emergency response. Select test targets, limits and respiratory protection for the actual substances and exposure.

MANUF-09

Internal Precision Cleaning and Disinfection of Large Food Mixers

Potential hazards

Oxygen deficiency in tanks, crushing from unexpected blade rotation

Checks to verify and specify on site

- Space identification, need for entry, access and escape routes; Entrants, outside attendant, person in charge and communication; Atmospheric test targets, acceptance criteria and repeat/continuous monitoring; Isolation of incoming substances and energy; locks and stored-energy checks; Ventilation, respiratory protection, contaminant controls and failure response; Site rescue method, people, equipment, communication and readiness.
- Check manufacturer procedures, guards, energy isolation and release of stored energy; account for people and tools before restart.

MANUF-10

Large Offset Printer Roller Inspection and Solvent Cleaning

Potential hazards

Finger crushing at nip points, fire from solvent vapors

Checks to verify and specify on site

- Check manufacturer procedures, guards, energy isolation and release of stored energy; account for people and tools before restart.
- Check the SDS, compatibility, containment, extraction, leak isolation and emergency response. Select test targets, limits and respiratory protection for the actual substances and exposure.

04 Fresh site records

Record date, location, equipment ID, responsible people, crew, permit references, measurements, times, testers, inspections and changes. Do not reuse previous signatures or readings.

05 Official references

These sources support local terminology and scope. The examples are editorial planning prompts from Smart JSA Bridge, not official forms.

- [MOM · Risk management ↗](#)
- [MOM · Safety and health management systems ↗](#)
- [Singapore Statutes Online · Risk Management Regulations, regulation 5 ↗](#)
- [MOM · When to review risk assessments ↗](#)
- [WSH Council · Code of Practice on Risk Management ↗](#)
- [MOM · Permit-to-Work systems \(OPEC guidance\) ↗](#)

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