

1 PURPOSE

This Standard Operating Procedure (SOP) establishes the minimum requirements for the safe operation, inspection, maintenance, and shutdown of SFM's **90 Litre 3.0 HP Belt Driven Electric Air Compressor**.

The objectives of this procedure are to:

- Prevent injury to personnel.
- Prevent damage to equipment.
- Minimise the risk of hose failures and uncontrolled release of compressed air.
- Ensure the safe operation of pneumatic tools.
- Comply with the Work Health and Safety Act 2020 (WA) and Work Health and Safety (General) Regulations 2022 (WA).

2 SCOPE

This procedure applies to:

- Employees
- Contractors
- Workers

It applies whenever SFM's **90 Litre 3.0 HP Belt Driven Electric Air Compressor** is operated within the workplace, including workshops, maintenance yards, marinas and vessel maintenance facilities.

3 REFERENCES

Legislation

- Work Health and Safety Act 2020 (WA)
- Work Health and Safety (General) Regulations 2022 (WA)

Standards

- AS/NZS 3760 – In-service safety inspection and testing of electrical equipment
- Manufacturer's Operating Manual

4 RESPONSIBILITIES

Management

Management shall:

- Provide suitable equipment.
- Ensure scheduled maintenance is completed.

- Ensure electrical testing is current where applicable.
- Ensure operators are trained and competent.

Supervisors

Supervisors shall:

- Ensure pre-start inspections are completed.
- Remove defective equipment from service.
- Monitor safe work practices.

Operators

Operators shall:

- Follow this SOP.
- Conduct a pre-start inspection.
- Wear the required PPE.
- Report defects immediately.
- Never modify or bypass safety devices.

5 REQUIRED PERSONAL PROTECTIVE EQUIPMENT (PPE)

Operators shall wear:

- Safety glasses
- Hearing protection (where appropriate)
- Gloves (where appropriate)

Additional PPE may include:

- Face shield
- Dust mask or respirator
- Protective clothing appropriate to the task

6 HAZARDS

Potential hazards include:

- High-pressure air injection injuries
- Hose whip
- Flying debris
- Rotating belts and pulleys
- Pinch points
- Hot compressor components
- Electric shock
- Excessive noise
- Manual handling injuries due to the weight of the 90 L compressor

- Slips from oil or condensate
- Fire resulting from electrical faults

7 PRE-START INSPECTION

Before operating the compressor inspect the following.

Electrical

- Power cord
- Plug
- Extension leads (if used)
- Test and tag status (where applicable)

Compressor

- Receiver tank free from damage
- Tank certification plate legible (where fitted)
- Belt guard secure
- Belts correctly tensioned
- Air filter clean
- Oil level correct (oil lubricated models)
- Pressure gauges operational
- Safety relief valve serviceable
- Pressure switch functioning
- Cooling fins unobstructed
- No oil or air leaks
- Drain valve closed

Air Hoses

Inspect for:

- Cuts
- Abrasion
- Cracks
- Bulges
- Loose fittings
- Damaged couplings
- Kinks

Replace damaged hoses immediately.

Work Area

Ensure:

- Good ventilation
- Adequate lighting
- Stable level surface
- No trip hazards
- No combustible materials near the compressor
- Sufficient clearance (minimum 300 mm) around the compressor for ventilation

8 SAFE OPERATING PROCEDURE

Step 1 – Position the Compressor

- Place the compressor on a firm, level surface capable of supporting its weight.
- Ensure the 90 L receiver tank is stable and cannot move during operation.
- Maintain at least 300 mm clearance around the compressor for ventilation.
- Ensure adequate access to the drain valve.
- Keep the compressor away from flammable materials.

Step 2 – Connect the Power Supply

- Ensure the ON/OFF switch is in the OFF position.
- Connect to an appropriate electrical outlet.
- Avoid overloading electrical circuits.
- Use an RCD-protected outlet where required.

Step 3 – Connect Air Hose

- Confirm fittings are compatible.
- Secure all couplings.
- Ensure connected pneumatic tools are switched off before connection.

Step 4 – Start the Compressor

Switch the compressor ON.

Allow the receiver tank to build pressure.

Adjust the regulator to the desired pressure.

The larger **90 L receiver tank may take longer to reach operating pressure**. Do not leave the compressor unattended while it is pressurising.

Monitor:

- Pressure gauge
- Air leaks
- Oil leaks
- Unusual vibration
- Excessive noise

Stop the compressor immediately if abnormal conditions are observed.

Step 5 – Operating Pneumatic Tools

Always:

- Use the correct operating pressure.
- Secure the workpiece where practicable.
- Maintain a firm grip on tools.
- Keep hoses clear of walkways.
- Direct tool exhaust away from personnel.

Never:

- Point compressed air at any person.
- Use compressed air to clean clothing or skin.
- Disconnect pressurised hoses.
- Exceed tool pressure ratings.

9 SAFE WORK PRACTICES

Operators shall not:

- Remove belt guards.
- Operate damaged equipment.
- Leave the compressor running unattended.
- Block cooling airflow.
- Operate in explosive atmospheres.
- Tamper with safety valves or pressure switches.

Maintain good housekeeping at all times.

10 SHUTDOWN PROCEDURE

1. Turn the compressor OFF.
2. Disconnect the power supply.
3. Isolate the air supply.
4. Release pressure from connected air lines.
5. Disconnect hoses safely.
6. Slowly open the receiver tank drain valve.
7. Completely drain accumulated condensate from the **90 L receiver tank** after each day's use, or more frequently in humid conditions.
8. Close the drain valve.
9. Coil hoses neatly.
10. Clean the work area.

11 MAINTENANCE

Maintenance shall only be undertaken by competent persons with the compressor isolated from the power supply.

Daily

- Check compressor oil level.
- Drain condensate from the receiver tank.
- Inspect belts.
- Inspect hoses.
- Check fittings.
- Inspect for air or oil leaks.

Weekly

- Clean the air filter.
- Inspect belt condition and tension.
- Inspect pulley alignment.
- Test the safety relief valve.
- Check mounting bolts.

Monthly

- Inspect the receiver tank for corrosion or damage.
- Inspect electrical connections.
- Check vibration mounts.
- Inspect pressure switch operation.
- Inspect cooling fins.

12 EMERGENCY PROCEDURES

Immediately stop using the compressor if:

- A hose bursts.
- The safety valve fails.
- An electrical fault occurs.
- Fire develops.
- Excessive vibration occurs.
- Oil leakage develops.
- Pressure exceeds the normal operating range.

Isolate the compressor.

Tag the equipment **OUT OF SERVICE**.

Report the fault immediately.

13 ENVIRONMENTAL CONTROLS

- Drain condensate into a suitable collection container.
- Condensate may contain traces of oil and shall be disposed of in accordance with site environmental procedures.
- Do not discharge oily condensate to stormwater drains or waterways.
- Clean oil spills immediately using approved absorbent materials.
- Dispose of waste oil, oily rags and filters through approved waste streams.
- Minimise noise impacts on nearby workers where practicable.

14 RECORDS

Maintain records of:

- Maintenance
- Electrical testing
- Repairs
- Incidents and near misses

15 REVIEW

This SOP shall be reviewed:

- Every two years.
- Following an incident or near miss.
- Following equipment modification.
- Following changes to legislation or manufacturer recommendations.