An introduction general equipment servicing
Two reasons for servicing

• Preventative maintenance
• Breakdown repairs.
Does it really need servicing or repairing?

Do not take things apart because you are bored, you may end up with faults where you had none to start with.
Do you know what you are doing?

If you do not, then think very careful before you do anything.
Do you have the tools and instructions?

• Instructions are helpful, read if you have them.
• Gather the tools you think you will need.
Do you have any spares?

• If you have, good.
• If not there may be no point in going on unless you can safely improvise or cannibalise.
Do you know anyone who does know how to repair it?

• If you really do not know what you are doing and feel it is quite beyond you, see if there is someone else who can do it for you, learn from them.

• Ask for assistance from non medical organisations.
Maintenance and servicing tips.

• Work on a large clean table.
• Clean the floor underneath your table.
• Think before you take anything apart.
• Do you know what is going to happen next?
• Can you re-assemble it?
Afterwards.

• When you have finished, check it is working correctly, do not assume.
• If you have *any* doubts check again.
• Take as long as you need to satisfy yourself all is well.
• Return any settings to normal values.
• Make sure the user is happy with the equipment.
Things to remember

- Logical approach
- Safety
- Electrical
- Mechanical, knobs and switches
- Don’t work alone
- Beware sharps and glass
- Static
- Earth
- Fuses
- Previous history
- Politics

- Manuals
- Parts
- People and rules
- Physical damage
- Sunlight
- Over-pressure
- Leads
- Tape

- Go slowly
- Pictures on phone
### 6.3 Troubleshooting Chart

<table>
<thead>
<tr>
<th>Problem</th>
<th>Probable Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit does not run. Constant audio alarm with I/O power switch in “I” position.</strong></td>
<td>No power to unit from electrical outlet. Unit circuit breaker tripped/faulty. Faulty electrical connections. Faulty I/O power switch. Faulty circuit board.</td>
<td>Check/restore power to outlet. Reset or replace circuit breaker. Check electrical connections. Replace I/O power switch. Replace circuit board.</td>
</tr>
<tr>
<td><strong>Compressor runs and shuts down periodically.</strong></td>
<td>Restricted air flow. Unit overheating due to improper location. Compressor thermally cut off due to excessive heat. <strong>NOTE:</strong> It will not restart until it cools down. Faulty high temperature switch. Faulty cabinet fan.</td>
<td>Remove obstruction. Locate unit away from heating source, providing adequate ventilation on all sides. (Do not run multiple units next to each other). Replace high temperature switch. Replace cabinet fan.</td>
</tr>
<tr>
<td>Problem</td>
<td>Probable Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>-----------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Compressor runs with intermittent high pressure alarm and low oxygen concentration.</td>
<td>Restriction in exhaust muffler.</td>
<td>Replace or clean muffler.</td>
</tr>
<tr>
<td></td>
<td>Faulty solenoid valve.</td>
<td>Repair or replace solenoid valve.</td>
</tr>
<tr>
<td></td>
<td>Faulty circuit board.</td>
<td>Replace circuit board.</td>
</tr>
<tr>
<td></td>
<td>Contaminated sieve beds.</td>
<td>Replace sieve beds.</td>
</tr>
<tr>
<td>Compressor relief valve releases (popping sound)</td>
<td>Faulty electrical connection at waste valve.</td>
<td>Repair electrical connection.</td>
</tr>
<tr>
<td></td>
<td>Faulty solenoid valve coil. (Refer to section 5.4.2 for acceptable ohm ratings)</td>
<td>Replace valve coil. (Use of an ohmmeter can be a helpful tool to easily determine a faulty coil).</td>
</tr>
<tr>
<td></td>
<td>Faulty relief valve.</td>
<td>Replace relief valve or compressor.</td>
</tr>
<tr>
<td></td>
<td>Faulty circuit board.</td>
<td>Replace circuit board.</td>
</tr>
<tr>
<td></td>
<td>Contaminated sieve beds.</td>
<td>Replace sieve beds.</td>
</tr>
<tr>
<td>Constant alarm with I/O power switch in &quot;I&quot; position. Circuit breaker repeatedly trips.</td>
<td>Faulty electrical connection.</td>
<td>Repair electrical connection.</td>
</tr>
<tr>
<td></td>
<td>Faulty capacitor.</td>
<td>Replace capacitor.</td>
</tr>
<tr>
<td></td>
<td>Faulty circuit breaker.</td>
<td>Replace circuit breaker.</td>
</tr>
<tr>
<td></td>
<td>Faulty circuit board.</td>
<td>Replace circuit board.</td>
</tr>
<tr>
<td></td>
<td>Faulty compressor.</td>
<td>Replace compressor.</td>
</tr>
<tr>
<td>Alarm does not sound.</td>
<td>Incorrectly installed battery.</td>
<td>Reinstall battery with correct polarity.</td>
</tr>
<tr>
<td></td>
<td>Faulty electrical connection.</td>
<td>Repair electrical connection.</td>
</tr>
<tr>
<td></td>
<td>Dead battery.</td>
<td>Replace battery.</td>
</tr>
<tr>
<td></td>
<td>Faulty buzzer.</td>
<td>Replace buzzer.</td>
</tr>
<tr>
<td></td>
<td>Faulty I/O power switch.</td>
<td>Replace I/O power switch.</td>
</tr>
<tr>
<td></td>
<td>Faulty circuit board.</td>
<td>Replace circuit board.</td>
</tr>
<tr>
<td>Flowmeter fluctuates.</td>
<td>Leak.</td>
<td>Leak test and repair leak.</td>
</tr>
<tr>
<td></td>
<td>Reduced air intake (suction).</td>
<td>Check compressor intake path for obstruction. Clean/remove obstruction.</td>
</tr>
<tr>
<td></td>
<td>Improperly set or faulty product regulator.</td>
<td>Check regulator setting. Repair or replace regulator.</td>
</tr>
<tr>
<td></td>
<td>Faulty flowmeter.</td>
<td>Replace flowmeter.</td>
</tr>
<tr>
<td></td>
<td>Worn compressor.</td>
<td>Replace compressor.</td>
</tr>
<tr>
<td></td>
<td>Faulty circuit board.</td>
<td>Replace circuit board.</td>
</tr>
<tr>
<td>Problem</td>
<td>Probable Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| *Cabinet fan does not turn.*  | Faulty electrical connections.  
Faulty cabinet fan.                                                               | Check electrical connections.  
Replace cabinet fan.                                                          |
|                               | Restriction in humidifier/tubing.  
Product regulator set too low.  
Leak.  
Reduced air intake (suction).  
Faulty solenoid valve.  
Restriction in product tank.  
Faulty circuit board.  
Weak compressor. | Replace humidifier or tubing.  
Adjust regulator setting.  
Leak test and repair leak.  
Check compressor intake path for obstruction. Clean/remove obstruction.  
Repair or replace solenoid valve.  
Replace product tank.  
Replace circuit board.  
Check system pressure, and rebuild or exchange compressor. |
| *Limited or low flow*          |                                                                               |                                                                          |
|                               | Outlet pressure not set to 20 psig.  
Leak.  
Ambient or unit’s temperature is too high. Unit operating above temperature range specifications.  
Obstructed air intake or exhaust.  
Reduced air intake (suction).  
Restriction in exhaust muffler.  
Faulty solenoid valve.  
Faulty circuit board.  
Contaminated sieve beds.  
Weak compressor. | Reset outlet pressure.  
Leak test and repair leak.  
Locate unit away from heating source, providing adequate ventilation on all sides. (Do not run multiple units next to each other).  
Replace cabinet fan.  
Check compressor intake path for obstruction. Clean/remove obstruction.  
Replace or clean exhaust muffler.  
Replace or replace solenoid valve.  
Replace circuit board.  
Replace sieve beds.  
Check system pressure, and rebuild or exchange compressor. |