Remote pad. Power is
mechanical or used in conjunction with
a battery. Battery can
be replaced by pad. Power is
connected on continuity
in the pad. No internal battery backup system.

- Take to pad (secret bath)
- Use long tubing from oxygen concentrator
- Use room temp oxygen in humidifier
- Connect tubing to sidestream
- Check to keep away from heateas or
tobacco/chemicals
- Shorten tubing to floor (port on
moisture condensation in tubing)

Pressure Sensing System

directed to IT tube
- Continuous machine until 50" the air
to time (90 sec)
- Cycles on pressure issue ends according
to time sequence system

O2D - Oxygen Sensing Device

Crossroads
Holiday Inn

Crossroads
Holiday Inn
Problem

2 liters of air press 6 atm
- at 8,000 feet
+ Approximate 15 minutes of operation
- 200 samples but ignores 10 liters for the

Look for initial pressure
- testing constant after batch is
- pressure is too much
- increases chances of above running for
- some more time longer
- to fill after time
- concentration
- at this approx. 5-10 min. for 02 tech
- machine will still keep running

690% - Aldehyde + Acid
550% - Yellow / light + acid

\[
\text{Wetness} = 85.96 - \frac{9.11 \times \text{light weight}}{128} 
\]

CROSSROADS

Holiday Inn

CROSSROADS

Holiday Inn
For use only by models 30522

Cost = $7500

True Score

Output = 120 VAC, 60 Hz

Max. = External

MDC # XP1100

Power Inveter

110 - 3000 - 303 (Port #)
Cap. for Port B (Power Fail Alarm)

CROSSROADS
Holiday Inn

(heavy value) = bad 0 - voltage is value assembled

Cross port voltage techspec

-cantidad: reparar techspec for conventions

Rx Richmond

La mediclq, Reparar

bad (no or cuny) voltag = bad board

Proper voltage = good PCE

Solution:

Voltag connector

The direction of voltag on the board

The pump doesn't cycle properly, it's either

1.5 WPC
- Change every 3 months
- Pre-filter (external)

35,000 hrs.
- Change every 5 years or
- Compressor HEPA Filter (internal)

exceed 8760 hrs.
- Change as necessary, not to
- Inspect 1500 hrs.
- Intake Filter (external)

- Change every 2 years
- Final Bathroom Filter (internal)
O2 Concentrators

- designed to remove Nitrogen from room air and give pt. almost pure O2 while at home so they aren't constantly on an O2 tank
- room air has 21% O2, 78% Nitrogen, 1% misc. gases
- concentrator removes all the Nitrogen, leaving 99% O2 + 1% misc. gases
- max. length of tubing allowed between concentrator and pt. is 50', including the cannula
- when you first turn on the machine, turn off the flow meter & allow 5-10 minutes for O2 to collect in the collector tank
- pressure stays pretty constant after it gets to initial pressure level, even during use
- runs on AC power - no battery backup for operation
- power failure alarm runs off a cap. on PCB
- can hook a humidifier to flowmeter if pt. needs humidity, or can just run tubing to pt.
- adult flowmeter can be swapped out for a peds. flowmeter, or used in conjunction w/ a remote flowmeter
Pm/performance test

- Check power cord condition, plug in
- Turn off flow through flow meter
- While allowing concentrator to run & build up O2 in tank, check hours on meter & condition of external gross particle filter as well as intake filter
- Check timing of solenoid that switches flow between sieve beds
- Sieve beds are pressurized for 9.4 sec., then valve switches to other side w/ a 1.2 sec. delay in center of valve assembly where pressure is equalized between beds.
- While 1 sieve bed is pressurized, the other is being exhausted (exhaustion phase allows nitrogen & water vapor to go out to room air)
- Too much moisture in sieve bed keeps it from removing nitrogen effectively
- Hook mini ox oxygen monitor w/ oxygen sensor to flow meter after calibration (21% for room air flow limit)
- Turn on flow meter, check level of O2 output (takes a few minutes of running flow)
- Acceptable output is 93% ± 3%
  - 3% of 93% = 2.79
  - Range = 90.21% to 95.79%
filter replacement

final bacteria filter (internal)
- change every 2 years

intake filter (external)
- inspect 1 x a year
- change as necessary, not to exceed 8760 hrs.

compressor HEPA filter (internal)
- change every 5 years or 25,000 hours

felt pre-filter (external)
- change every 3 months

- some models have an oxygen sensing device (OSD) that tells you when O₂ is not reaching proper concentration in collection tank
  - DS has OSD
  - DZ doesn't
- we have the 515 DZ model
- performance test is required every 3 months on models w/ out OSD to ensure that proper O₂ concentration is being produced
NORMAL OPERATING SEQUENCE

Note: When the concentrator is turned "On", the following normal operating sequence should be observed when pressure gauges are attached to the sieve bed test points.

1. The four-way valve is quickly cycled back and forth several times to prevent a static condition in the compressor. This rapid cycling only happens on start-up.

2. The PC board applies 7 or 15 VDC to the right solenoid for approximately 9.4 seconds. The left sieve bed pressurizes*** while the right sieve bed is depressurized to approximately 2 PSI. (See Note)

3. The DC Voltage is removed from the right solenoid. No voltage is applied to either solenoid for approximately 1.2 seconds. The spool goes to its rest position. Both beds are pressurized with neither having a path to exhaust.

4. The DC Voltage is applied to the left solenoid for approximately 9.4 seconds. The right sieve bed pressurizes*** while the left bed is depressurized to approximately 2 PSI.

5. The DC Voltage is then removed from the left solenoid. No voltage is applied to either solenoid as described in step 3. Then this sequence repeats from step 2 on.

*** Approximate Sieve Bed Pressures
@Sea level  ---------28 PSI
@2500 Ft---------26 PSI
@5000 Ft---------23 PSI

Concentration Specification: @1-5 LPM --------- 93%±3%

Note: On units with Short-Tube OSD only, (Serial #H20000DS and higher) the right sieve bed will pressurize first and the solenoid voltage is 7.5 VDC.
Only O2 passes through the beds to be stored in the accumulator tank.

As each bed is pressurized, N is held and released when depressurized.

The compressed air is directed to one of two sieve beds.

Room Air
78% N
21% O2
Model 515 Features

- Thomas Q2 compressor with 5 year warranty
- Dual solenoid 3 position valve with lifetime warranty
- Oxysiv 5 sieve beds
- SMART Track module and modem capability on OSD model (ext. modem)
- Pressure compensated flow meter - tells you what a.m.t. is reaching pt.
- Fixed humidifier port and recessed humidifier pocket

Model 515 Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery rate</td>
<td>1-5 Liters per minute</td>
</tr>
<tr>
<td>Oxygen %</td>
<td>± 3%</td>
</tr>
<tr>
<td>Operating system</td>
<td>Timed cycle</td>
</tr>
<tr>
<td>Sound level</td>
<td>50 dBA</td>
</tr>
<tr>
<td>Power consumption</td>
<td>400 Watts average</td>
</tr>
<tr>
<td>Weight</td>
<td>52 lbs.</td>
</tr>
</tbody>
</table>
SIEVE BED OPERATION

Nitrogen Attracted (Adsorbed)

Effect of Moisture Absorption

Moisture Absorbed

High concentration of O₂

Low concentration of water

Particle

Room Air: 78% N + 21% O₂ - 1% Trace Elements

Oxy 5, 7, Type 5A Synthetic Zeolite Compound

78% Nit 21% O₂

78% Nit 21% O₂
SIEVE BED CONSTRUCTION
Model 515 Features

- Thomas Q2 compressor with 5 year warranty
- Dual solenoid 3 position valve with lifetime warranty
- Oxysiv 5 sieve beds
- SMART Track module and modem capability on OSD model (ext. modem)
- Pressure compensated flow meter - tells you what arm is reaching pt.
- Fixed humidifier port and recessed humidifier pocket

Model 515 Specifications

Delivery rate: 1-5 Liters per minute
Oxygen %: $\pm 3\%$
Operating system: Timed cycle
Sound level: 50 dBA
Power consumption: 400 Watts average
Weight: 52 lbs.