

# Pro 30 Series

- The Pro 30 Oxygen Concentrator is built into a **Powder Coated Aluminum Cabinet**, complete with a **Kydex™ (Acrylic Polyvinyl Chloride Thermoplastic) Lid**, to ensure adequate protection to the vital circuitry, compressors, and other integral components of the machine. Cabinet meets both **NEMA 1 Protection Guidelines** and is **IPX-1 Water Ingress Certified**.
- Cabinet is mounted on **Four Polyurethane 4-inch diameter Casters** and comes with **Two Mounted Aluminum Handles** for easy portability and arranging.
- Dimensions of the machine (L x W x H): **21 x 24 x 45 Inches; 53.4 x 61 x 114.3 Centimeters**.
- Weight of the Unit, fully assembled and with Sieve Columns filled: **250 lbs. (Pounds) or 113 kg. (Kilograms)**.
- The Pro 30 Liter Machine is available in a **230 Volt** Configuration, with **either 50 or 60 Hertz** frequency.
- Average Power consumption of a Pro 30 is **2100 Watts** for the **50 Hertz Setup**, and **2000 Watts** for the **60 Hertz Setup**.
- This device makes use of **two (2) 27-inch Aluminum Sieve Module Tubes**, filled with **20 lbs. of a Lithium/Sodium Molecular Sieve Blend** in each of the Sieve Beds; The Modules are fitted with an **Exhaust Gas Valve** to aid in the removal of the unwanted atmospheric gases, and an **Exhaust Silencer** to dampen the sound of Exhaust Gas Venting.
- The Pro 30 unit is capable of producing between **2 – 30 Liters per Minute (LPM)** of **Purified Oxygen [90.0% (+ 5.5 / - 3.)]**, at an output pressure of **50 Pounds per Square Inch (PSI)**. Device reaches its pre-determined purity level in 5 minutes.
- Dew Point of the machine is **-60 degrees Fahrenheit (F), or -51.1 degrees Celsius (C)**. This is achieved via a **2 Part Gas Drying Process**: The First step is through **Refrigerant Gas Drying**, in which the compressed air is moved through a heat exchanger, which rapidly drops the overall temperature of the gas, and allows for any gaseous water vapor to condense out and drain via a wick in the bottom of the Heat Exchanger. The second step is **Desiccant Gas Drying**, which picks up after the gas leaves the Moisture Separator and is passed through the molecular sieve in the module beds, where any excess water vapor is removed from the final product.
- The Pro 30 machine makes use of a simplified mode of operation, via an interactive **Human Machine Interface (HMI)**; The HMI is a touch screen 4-inch **Thin Film Transistor Liquid Crystal Display (TFT LCD)** that makes use of **12 Light Emitting Diodes (LEDs)** to effectively provide backlight for the display, as well as color. The panel has just **two screen types** (a Home screen and a Utility screen), **5 buttons** located on the bottom of the panel, and a **two-color setup** to show the status and details of the running machine.
- This device uses a **Programmable Logic Computer (PLC)** to control all aspects of the machine, and also has an **Oxygen Concentration Status Indicator (OCSI)** that is attached to a circuit board, and implemented into the machine. Product gas (in this case, high purity Oxygen) from the sieve beds flows through the sensor, which uses ultrasonic frequencies to vibrate the oxygen molecule to effectively determine purity level.
- Unit has **one resettable 15-amp main circuit breaker** that provides electrical protection to the overall machine; Each of the **four compressors have a 5-amp Circuit Breaker**, as well as the module, bringing the total for the **whole unit to 6 circuit breakers**.
- The Pro 30 incorporates **3 56-stroke Thomas Compressors**, which are spring-mounted to dampen the sound, and secured to slide out plates to allow for easy serviceability. The machine also uses **1 additional 44-stroke Thomas WOB-L Piston Compressor** to boost the output pressure to **50 pounds per square inch (PSI)/ 3.45 Bar/ 3.40 ATM**.

- Uses a **1/8-inch Stainless Steel NPT Male Insert fitting** as the oxygen outlet connection, which allows for a better overall connection to the oxygen, while also not risking the chance of corrosion on the fitting itself.
- To increase not only the comprehensive shelf-life of both the sieve and the machine as a whole, **regular cleaning of the filters is a must**. A dirty filter requires the compressor to work harder to overcome the air flow obstruction, which wears out the internals faster, increases the overall temperature of the machine, which risks damaging the components, cause an unplanned change in pressure and oxygen purity, and increases the chance of water vapor and foreign particles entering the machine, which can cause the compressor to corrode and cause the molecular sieve to clump and lose porosity.
  - The Pro 30 has **3 external filters on the sides** of the unit; these can be popped out and washed in warm water to remove any debris. Allow to dry, and then place back into machine.
  - **Each of the 3 56-stroke compressors also have a secondary air filter** attached to a fitting that is mounted on one of the compressor's ports; A service technician should **change these air filters every 15,000 hours, or 3 years**, depending on which milestone is achieved first. The filter has specialized element designed for the circular apparatus that holds it, which can be ordered.
  - A tertiary filter exists on the machine, but is not visible from the exterior. A **0.3 µm (micrometer) filter is placed before the oxygen outlet fitting**, allowing for no particles to be introduced into the purified Oxygen stream. This filter should be inspected by the Service Technician to guarantee optimal performance.
- **Safety Features found on the Pro 30:** The Pro 30 Machine makes use of both auditory (sound) and Visual (sight) alarms, to bring attention to a certain aspect of the machine. The interactive control panel makes use of the color "red" when something is wrong, and uses "green" to denote everything is operating normally. Some of the specific safety features include:
  - **Loss-of-Power Alarm:** Triggers an auditory alarm when the **machine has turned off unexpectedly** (Loss of Power or Accidental Unplugging of Machine are examples of this)
  - **Low-Pressure Alarm:** In the event that the **outlet pressure of the machine begins to drop** into unacceptable levels, an auditory alarm will sound, the interactive display will change its color to "red", and current pressure reading will be displayed.
  - **High-Pressure Alarm:** Unlike the Low-Pressure Alarm setting, the high-pressure alarm does not generate an auditory sound; rather, it changes the color of the screen to "red", and displays the current pressure reading on screen.
  - **Oxygen Concentration Alarm:** If the **Oxygen Purity level drops beneath a certain point (in this case, an Oxygen Purity Content below 87.0%)**, then an auditory alarm will sound, the display panel will change to "red", and a current purity reading will be displayed.
- The Pro 30, like all of Pro O2's machine types, has a **One (1) Year Warranty**, which covers **parts and servicing/maintenance** during that one year.