Field Repairable Oxygen Concentrator

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PURDUE UNIVERSITY | The Data Mine

inogen

Introduction

High Level Overview: Inogen assigned the task of creating a website for future builders and users of the oxygen concentrator to easily access.

About Inogen: A medical technology company that specializes in Portable Oxygen Concentrators (POC) that improve quality of life for patients all over the world.

What is a field-repairable oxygen concentrator: A medical device that supplies oxygen to people by filtering nitrogen out of the air, leaving behind oxygen-enriched air.

Methodology

FIGMA: Website mockup tool
Fusion 360: Auto CAD Software
MatLab: Numeric computing environement
SPLINE: 3-D Deisgn Tool

Technical Skills

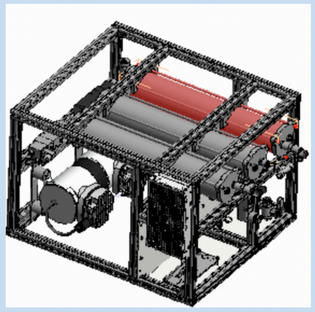
- Gained hands-on experience setting up frames and layout grids to ensure design adapts across desktop, tablet, and mobile screens.
- Built reusable UI elements like buttons and navigation bars to maintain consistency and speed up the design process.
- Applied key design concepts such as visual hierarchy, spacing, and alignment to enhance the overall user experience.
- Focused on aligning frames with actual screen sizes to ensure the layout functions properly on different devices.

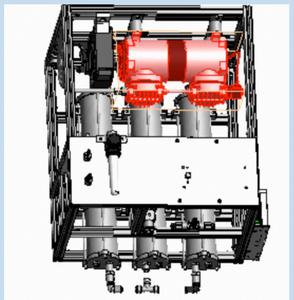
BUILD AND REPAIR INSTRUCTIONS

STRUCTURAL BUILD INSTRUCTIONS

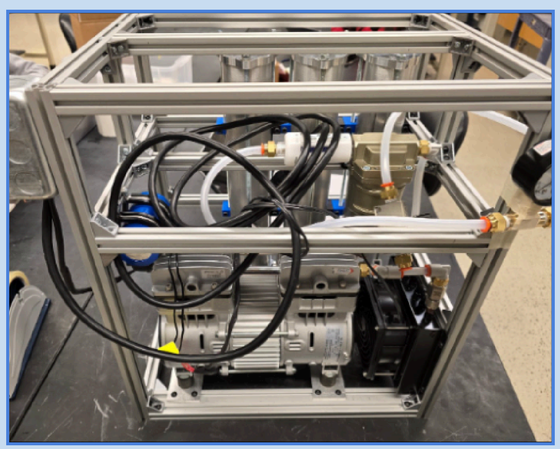
Found on pages 3-6 of website repair guide

1. Frame assembly
2. Building of absorption beds
3. Oxygen tank assembly
4. Install beds and tank into frame



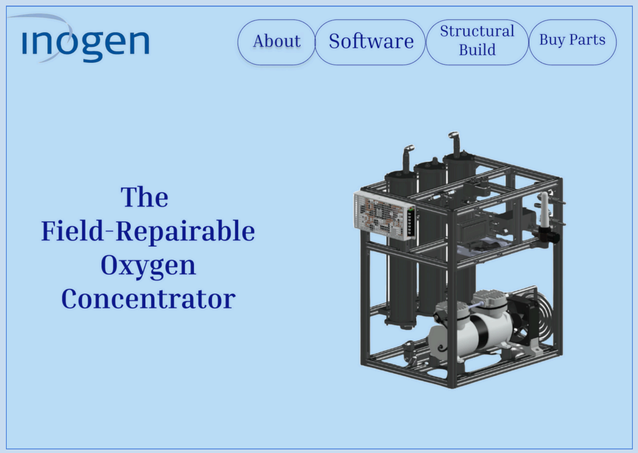


Users have the ability to hover around the concentrator and select a specific part to gain better understanding



USER FRIENDLY ACCESS PORTAL

- Created a website mockup so that future oxygen concentrator users can navigate
- Website can be easily accessed and used by builders/users of the oxygen concentrator



- Users have the ability to access third-party links to buy specific parts needed to build and fix oxygen concentrator
- Users have access to 24/7 help in the forms of AI, company contact, and typical problems/solutions that were found when creating the field-repairable concentrator and guide.

MILESTONES

- Designed and developed a 3D model of the concentrator to support accurate visualization and prototyping.
- Finalized a user-friendly website mockup providing step-by-step instructions for building and repairing the concentrator

Future Plans

- Integrate the 3D model and the mockup for to make it more accessible
- Work on an AI chatbot in order to help users with particular steps of the building or repairing
- More in-depth data collection and analysis to optimize concentration of oxygen
- Utilize real world testing to understand potential shortcomings and to create an FAQ section

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