Dunedin Engineering | Robotics visits Polypack

OCTOBER 24, 2023

Manufacturing Month and BAMA

- Polypack participates with BAMA offering a tour of their facility.
- Thank you to Nicolas Cerf | Sales Director Polypack for hosting and to Beth Galic | Bay Area Manufacturers Association and Michael McCullough | CTE Pinellas Schools for coordinating this amazing tour

TAMPA BAY AUTOMOBILE MUSEUM

CTE Programs
Middle and High Schools
pcs

What is Polypack secondary packaging

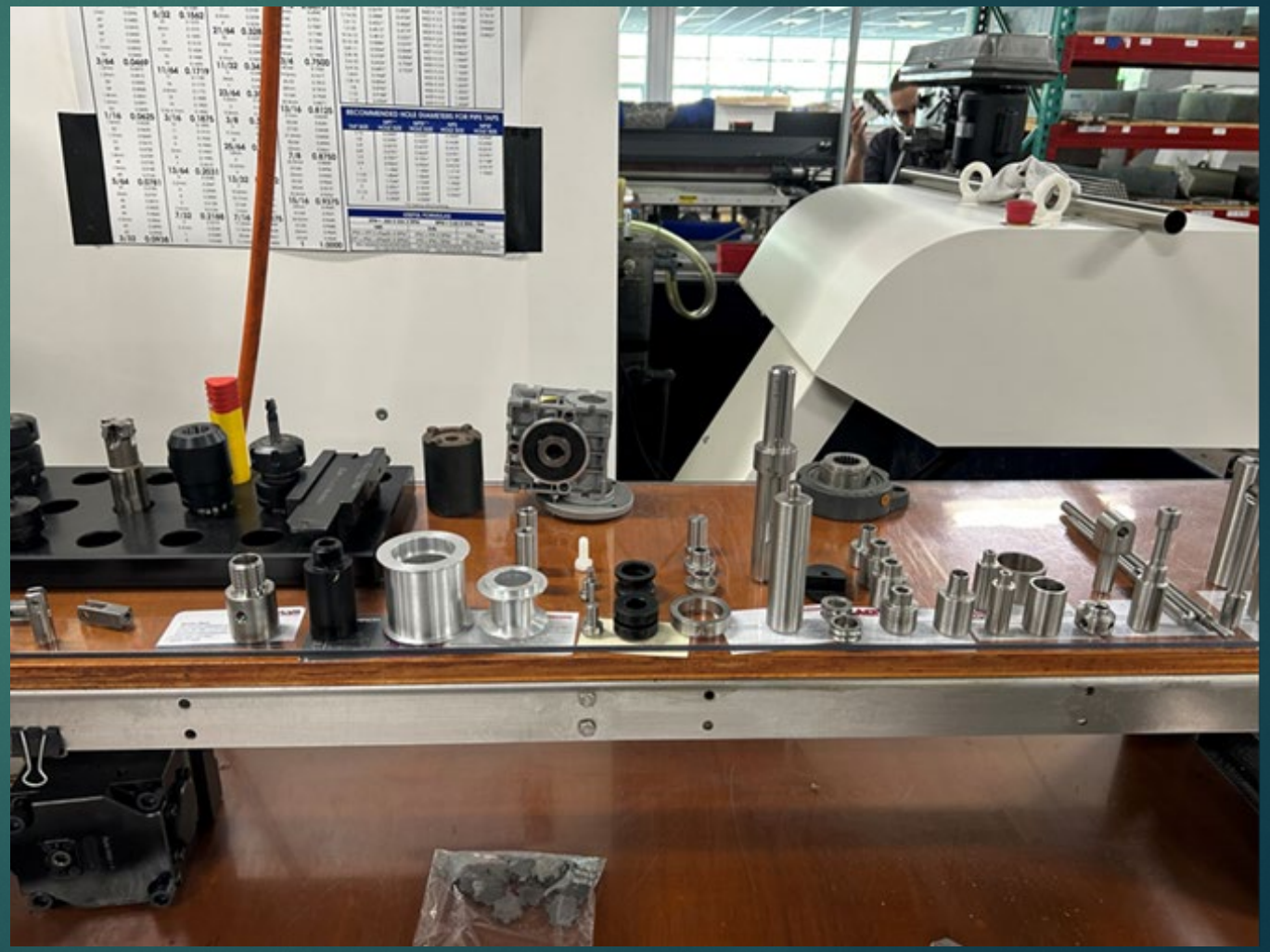
Stephan

Polypack specializes in designing and building shrink wrap and cardboard packaging equipment tailored to the needs of your application. Polypack offers a wide array of product collation modules designed to meet the packaging requirements of all industries. All Polypack end-of-line packaging machines are built with the best materials and components available, including stainless steel, to offer a long life span, superior performance, durability, and reliability.

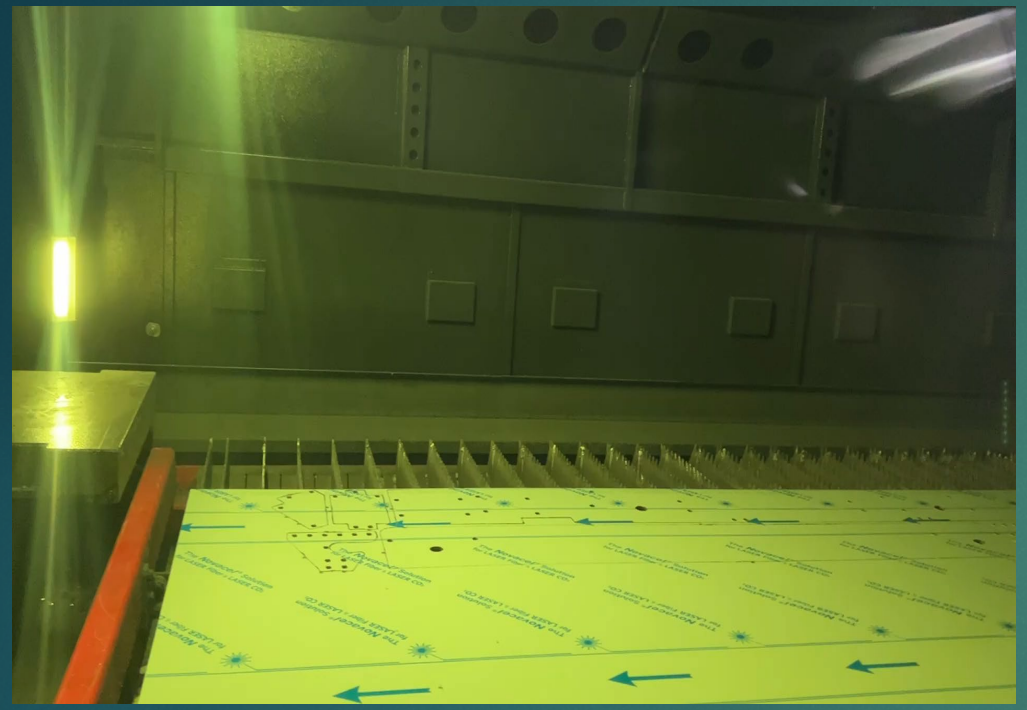

ECKŌ

Fabrication

- Stainless steel, aluminum and plastic parts
- Fusion 360/SolidWorks 3D model
- CNC and milling machines

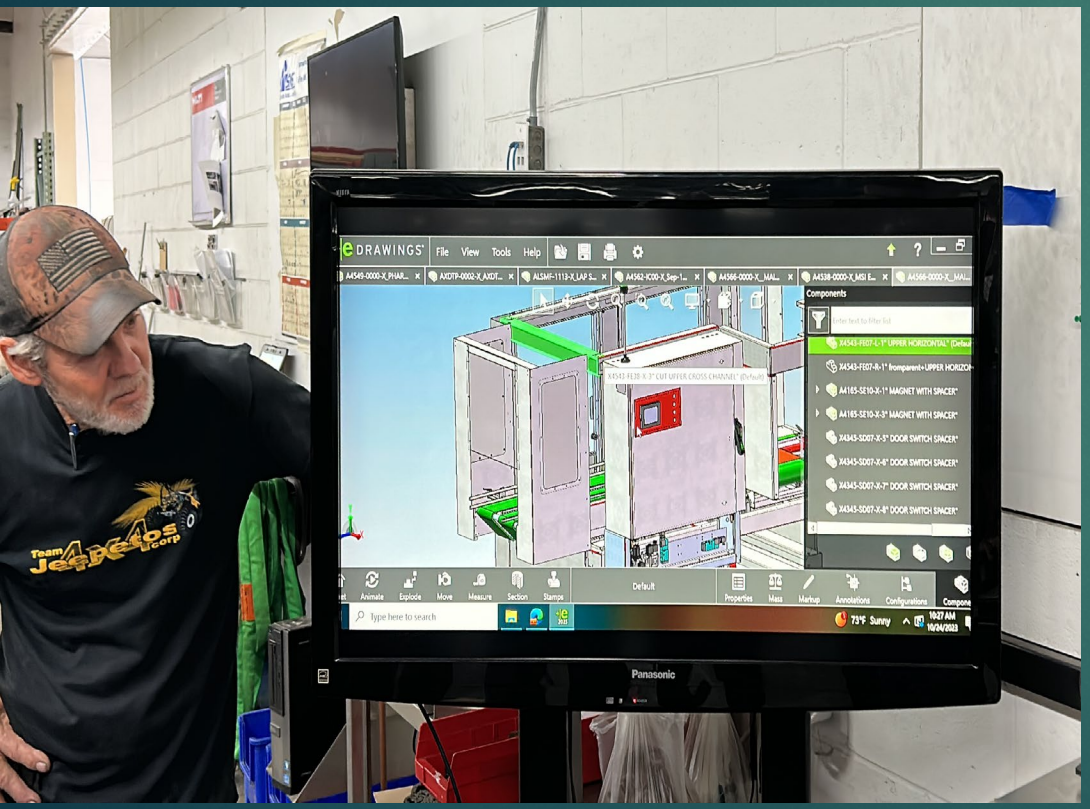


Erving



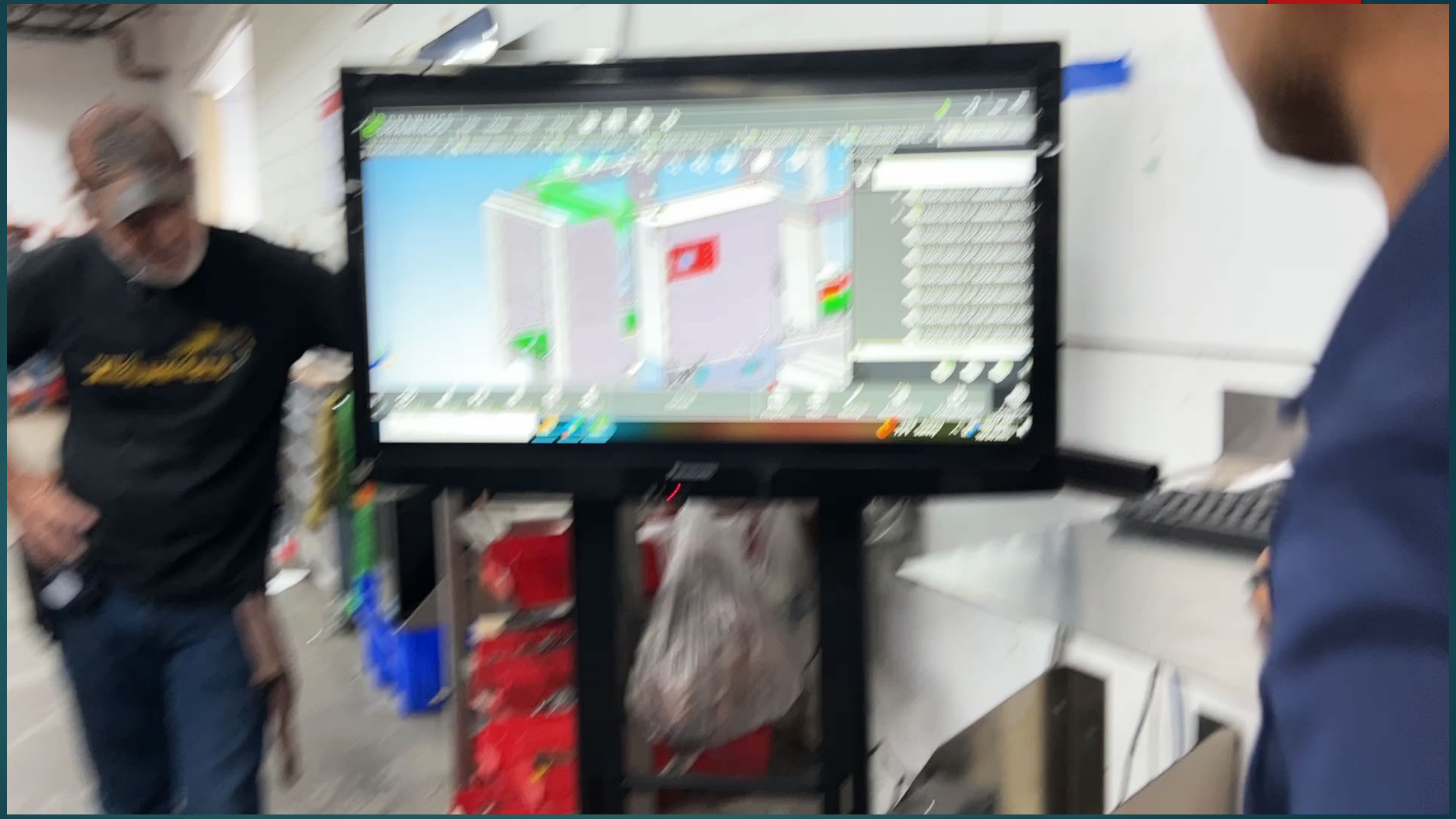
"Engineering is the most transferable skill system, the universal knowledge of humanity and makes something useful" *Arturo*

Assembly

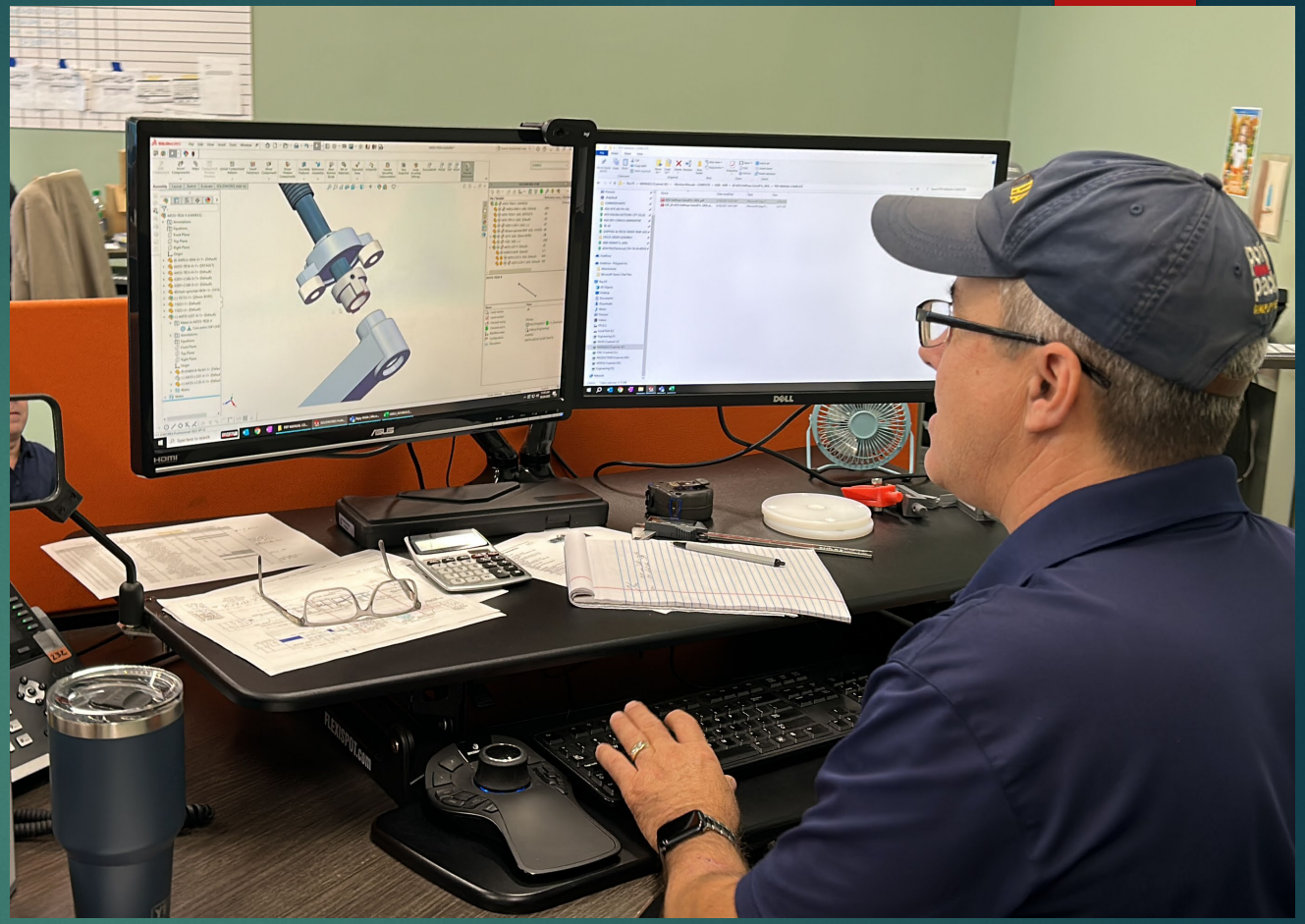


Andy

Building from the 3D model, similar to putting together a robotics kit



Mechanical Engineering



- Solid Works
- Professional problem solvers
- Polypack: Design and Manufacturing

Abraham

Sales | Electrical | Programming | Mechanical | Manufacturing | Industrial

"Each car has its own engineering story" Alan

TAMPA BAY AUTOMOBILE MUSEUM

Gazogène (Wood Gas Generator)

The Gazogène system provides flammable gas, which is obtained by the distillation of a material containing carbon, for use in an automobile engine.

Origin

At the end of the 18th century, French engineer Philippe Lebon applied for a patent to produce gas by the distillation of small pieces of wood which were contained in a small closed container exposed to the heat of a fire. The gas was then burned, emitting light. The name of the lighting apparatus was "thermolampe." Philippe Lebon demonstrated his system in Paris in his house as well as in his garden. The gas was hydrogen carbon mixed with many other products as tar.

The next development occurred in England, when William Murdoch decided to replace the wood with coal. With the help of James Watt, they made a system to light the Watt's plant and later, in 1813, the Westminster bridge in London. At first all systems received the gas from an installation dedicated to each project, but soon, around the same epoch, distribution was done via conduits underneath the streets. The gas light was adopted in many countries, with gas plants located everywhere. In the mid 20th century the gas distilled from the coal was replaced by natural gas. As the hydrogen carbon mixed with pure hydrogen was very light, it was also used to inflate balloons.

Gas purification is very sophisticated with an extensive system to clean and purify the gas. Today, the gas obtained from coal is called [illegible] and modern production plants, including TECO in Tampa, generate electricity with turbines run by syngas.

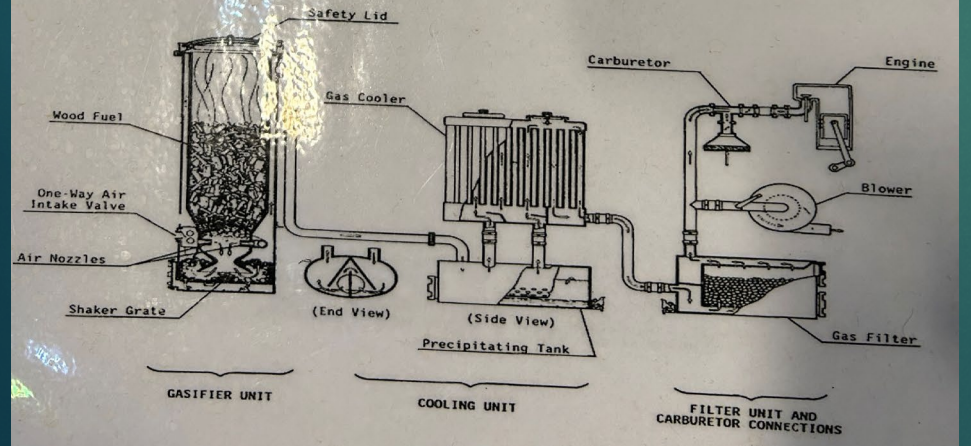
Automobile Applications

At the end of the 19th century there was some experimentation with modifications to the system. The heat necessary for the distillation or gasification is provided by the partial combustion of the wood or of the charcoal. The system is simpler and the tar is burned by the combustion process. The gas is mainly composed of hydrogen and carbon monoxide, which are both highly flammable gases.

Another Frenchman in the early 1920, Georges Imbert, patented a gazogène system for automobiles. The coal, wood or charcoal (which is the choice material) is placed in an enclosed container with only a tiny aperture to let in a small amount of oxygen for partial combustion. The gas is cooled, and in the process, the water is eliminated. A filter, generally made of textiles, catches the solid particles which could hurt the engine. The gas is then directed to a second carburetor, in parallel with the original carburetor for gasoline. A flap provides the means of switching between gasoline and hydrogen gas. Starting the system normally takes between 10 to 20 minutes; a small electrical fan creates an air draft in the furnace, which helps begin the partial combustion.

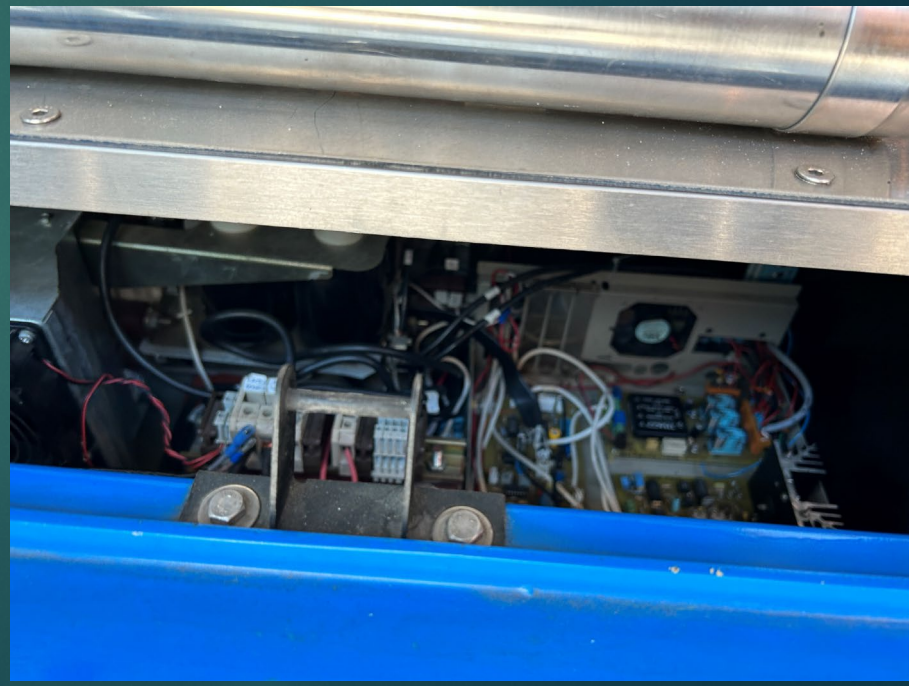
During the late 30s and into the 40s when gasoline was not available due to the war, hundreds of thousands of vehicles (automobiles, trucks, buses, etc.) were running all over Europe using the gazogène system. In France at least 480 suppliers of gazogène were registered. Charcoal was the prime material. The hydrogen gas has less calories than the gasoline and the subsequent power loss was 25 to 30%. On some trucks, such as the Berliet from Lyon, the capacity of the engines was increased to compensate for the combustion qualities of hydrogen. Charcoal had to be added every 100 or 150 miles. One pound of charcoal translated to one HP. Many cars and trucks would use 30 to 40 pounds per hour. The system was efficient but needed regular cleaning maintenance, such as removing the ashes. By the 1950s, all gazogènes were removed from Europe.

Our car, a Ford model A from 1929, received a gazogène system manufactured in Spain in 1939. The Ford was running in the island of Palma de Mallorca close to Barcelona. It is one of very few survivors, and it still runs great with the charcoal purchased from Home Depot.




HYDROGEN FUEL CELL
1971 C.G.E.
GRÉGOIRE


TOYOTA
Let's Go Places
Hydrogen
MIRAI




POLYDOR
POLYDOR
GUY BERRY
ODEON
DRESSAGE
GROUPE
NUMÉRO UNIQ

Internship or career

poly pack | WE GOT IT COVERED

INDUSTRIES SOLUTIONS MACHINES SHRINK FILM SERVICE COMPANY CONTACT QUOTE

JOIN OUR POLYPACK TEAM!

Polypack is an international packaging machinery OEM headquartered in Pinellas Park, Florida, USA. Polypack offers competitive pay and great benefits including:

- 100% Paid Health Insurance for Employees
- Vision, Dental & Short Term Disability and Life Insurance
- Competitive Vacation Package
- Traditional or Roth 401(K) plans with company matching

As a part of our continued effort under the Affordable Care Act, for more transparency and honesty, click here to know the pricing of healthcare and medical bills.

Click here to view current job openings.

APPLY HR INQUIRIES

CALL US

+1 727.578.5000

EMAIL US

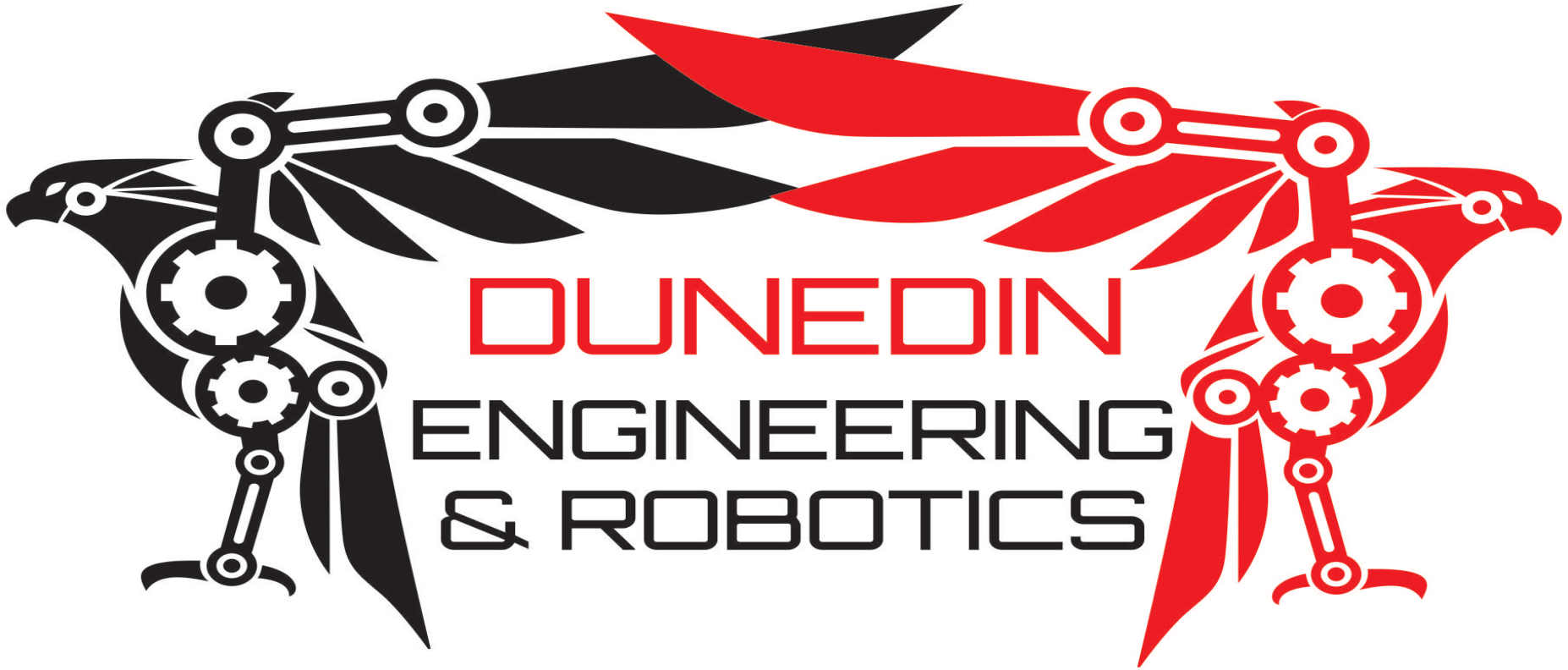
info@polypack.com

QUOTE

Contact us today for additional information


Happy
Halloween
Happy

Thank you.....



Distribution and packaging, $200,000,000,000 industry
Fabrication: cut, measure, program, inspect – TEAM
Aluminum and stainless steel – no rust- food and medical
Group list, engineer, diameter size
Material availability
Metrics v. standard
CNC machine, Fusion 360, Solid Works
Steel v. Stainless steel – Fe (iron), US 300 series: 303 and 304
Stainless steel coated in chromium nickel, less iron cleaner however loses magnetic ability
Milling machine, drill up and down – 3D model
Mcode, gcode
Tolerance, more time/more expensive work with customer x+epsilon
Sheet metal – stainless
Assembly compare to robotics kit
Schneider programming
Secondary packaging
UHMC plastic – like cutting board
"universal knowledge of humanity and making something useful"
Final inspection, PLC – brain, servos, honing
Engineering – most transferable skill system
Each car has its own engineering story and there are 17 one of a kinds
Engineering: professional problem solvers, mechanical, electrical, physics, mathematics, communication, design

Design – quantify, substantiate
Analysis – simulation, verification
Manufacturing – prototype, production
Sales engineering: space, product, speed, sales drawing
Electrical engineering: power, pneumatics, sensors
Programming, mechanical, packaging
Manufacturing engineering:Router, cnc, mill
Industrial engineering
Sales – shipment
R and D Unpacker, pull plastic
Ladder logic, parallel, industrial machines
Micro controller , series
Qualit, speed, cost
Gcode cnc
Solid works
Aazar@polypack.com
Nicolas Cerf <ncerf@polypack.com>;
Candace Watkins <cwatkins@polypack.com>
Beth Galic <beth@bama-fl.org>