

Kevin McKinney

Mechanical Product Designer

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Kevin McKinney
MAKER OF STUFF

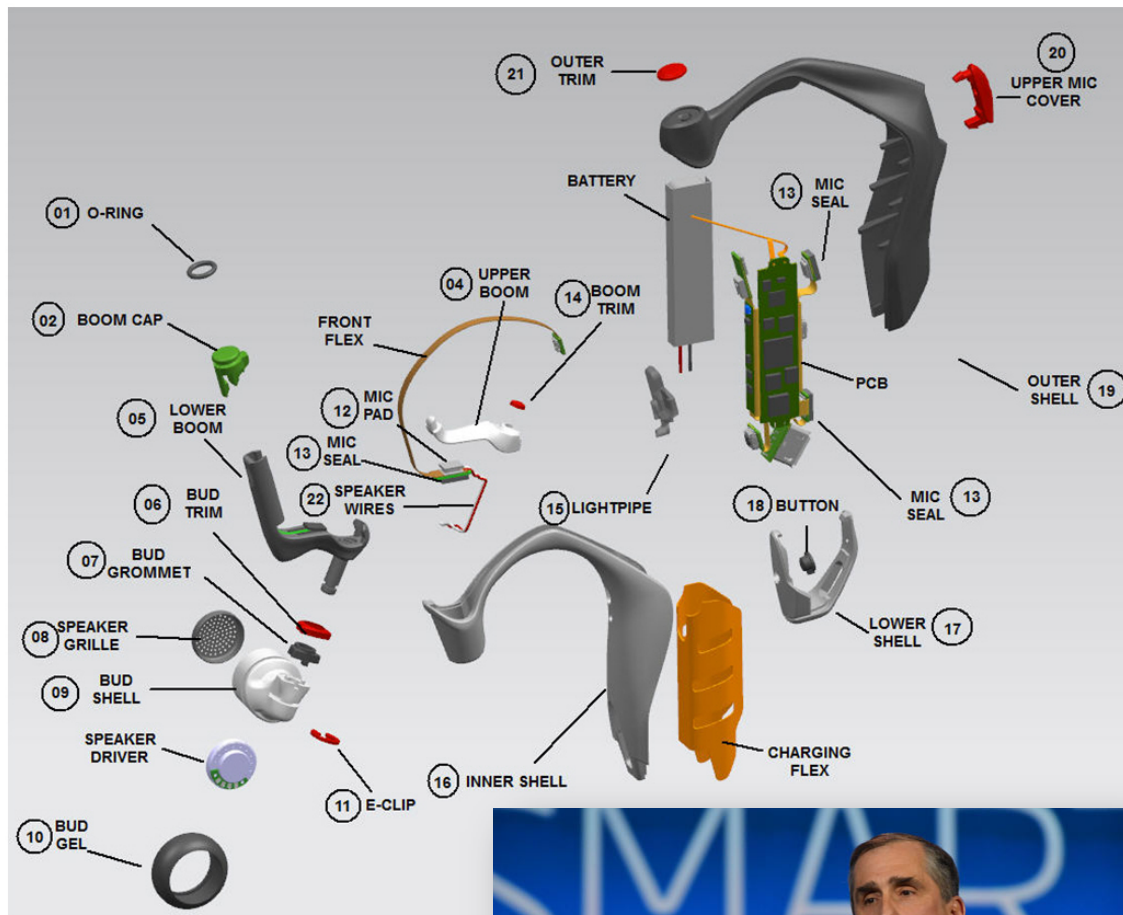
Jarvis Smart Headset

U.S. Patent #D754634

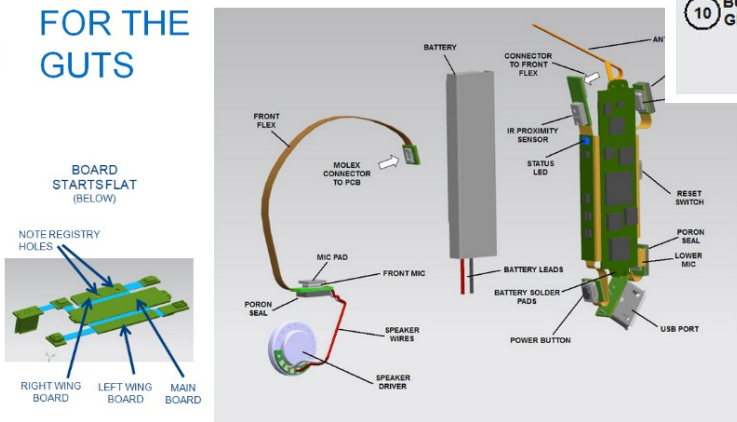
Inductively charged smart headset.

My first task at Intel was to take an executive concept and deliver 10 fully functional, cosmetically perfect prototypes to CEO Brian Krzanich to use on stage at CES in under 10 weeks.

I was given an SP1 build circuit board, and an excellent team...



NOMENCLATURE FOR THE GUTS



Delivered: Intel CEO Brian Krzanich shows Jarvis at CES 2014 keynote address.



Wireless Charging Bowl

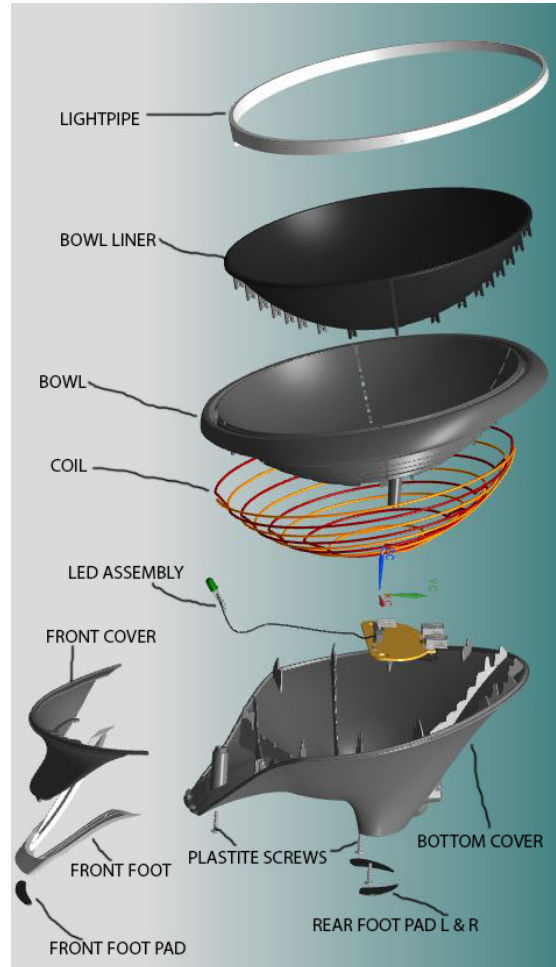
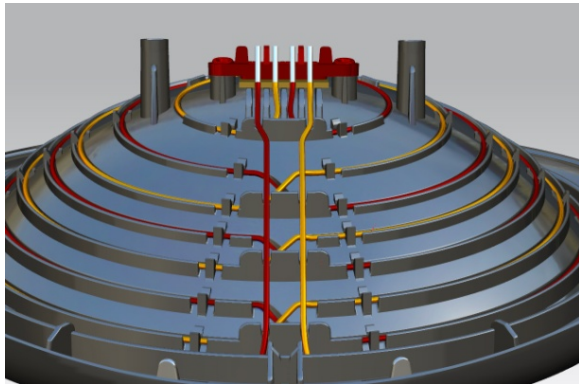
*Wireless inductive type charger.
Manufactured in Fremont, CA.*

CEO Brian Krzanich at the CES 2014 keynote declares a wireless charging bowl will be for sale in stores “within the year”.

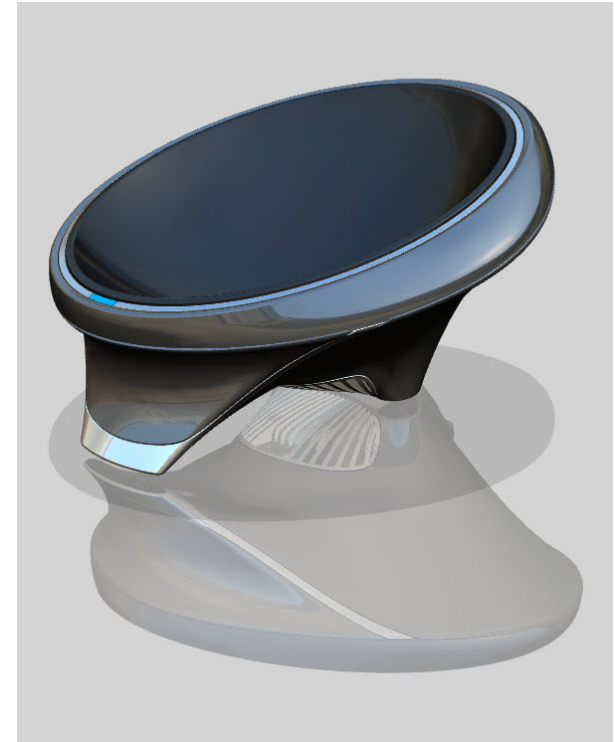


Delivered:

1000 devices in retail packaging
6:00 pm, December 24, 2014.

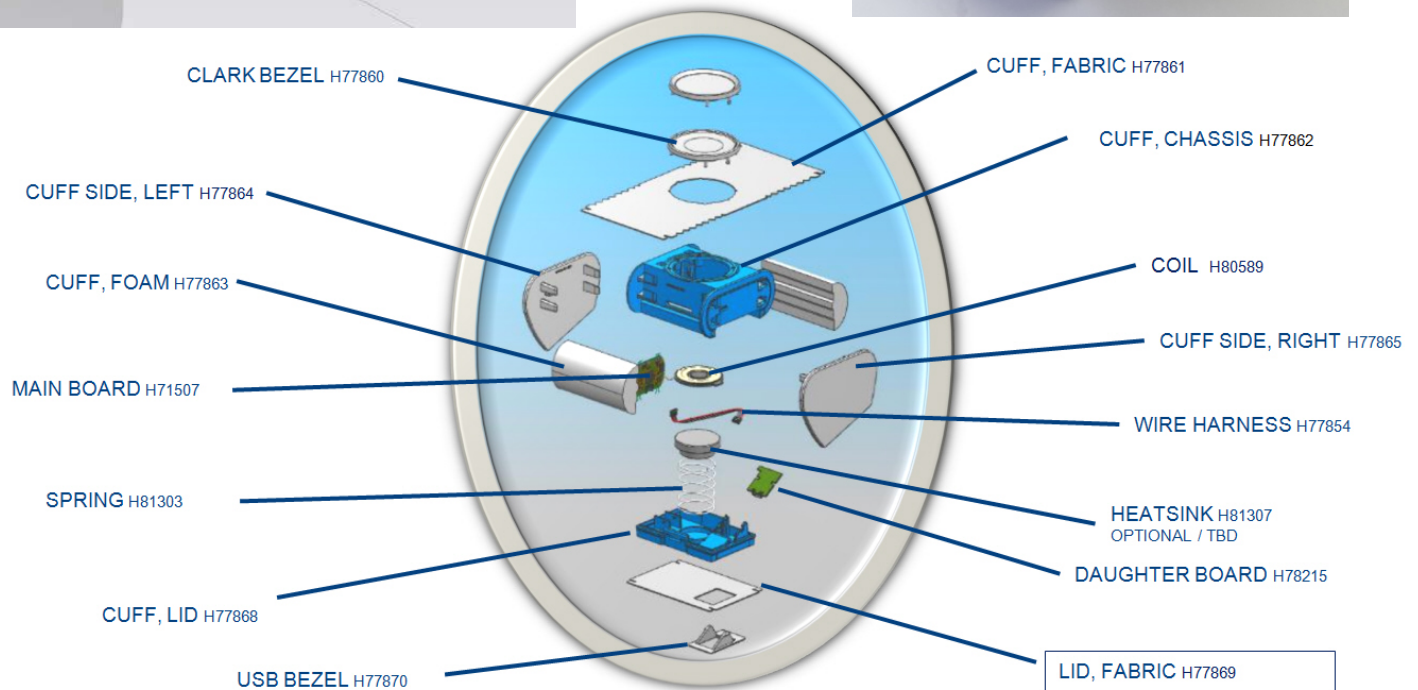


U.S. Patent #D748575



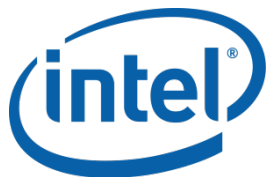
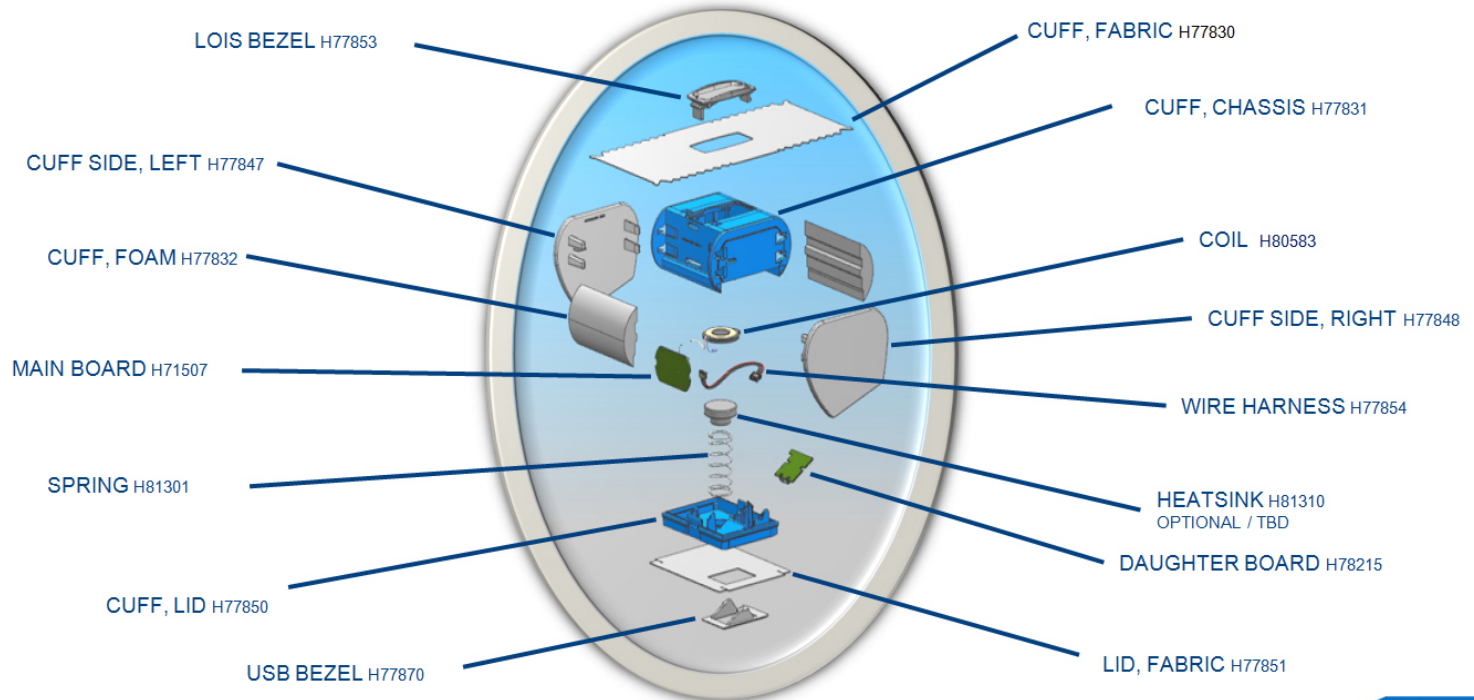
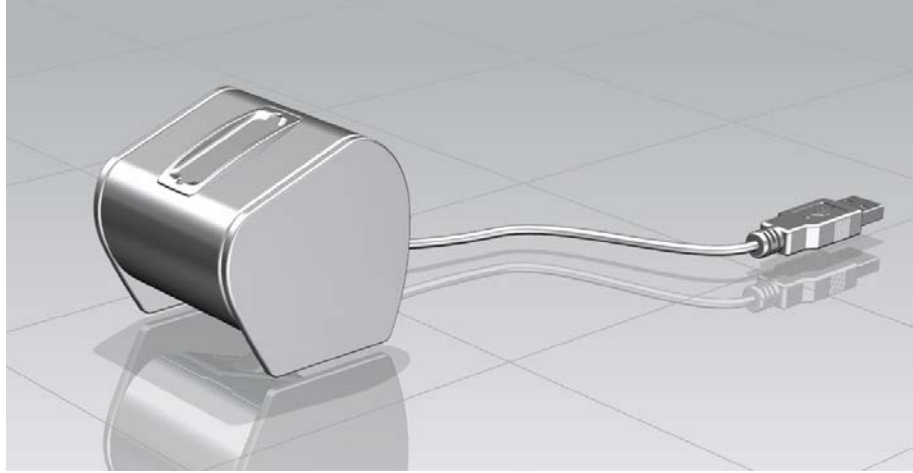
Charger for Fossil® Smartwatch

Wireless inductive type charger is designed into fabric covered, foam padded, watch display "cuff".
80K manufactured in China.



Charger for Fossil® Fitness Tracker Bands

Wireless inductive type charger.
50K manufactured in China.

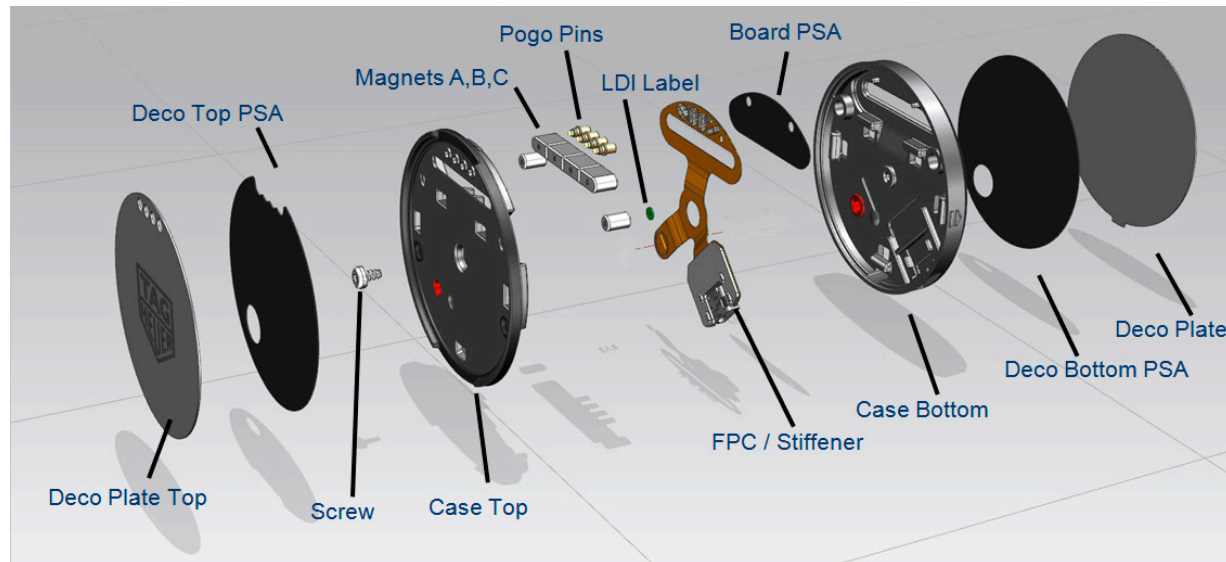
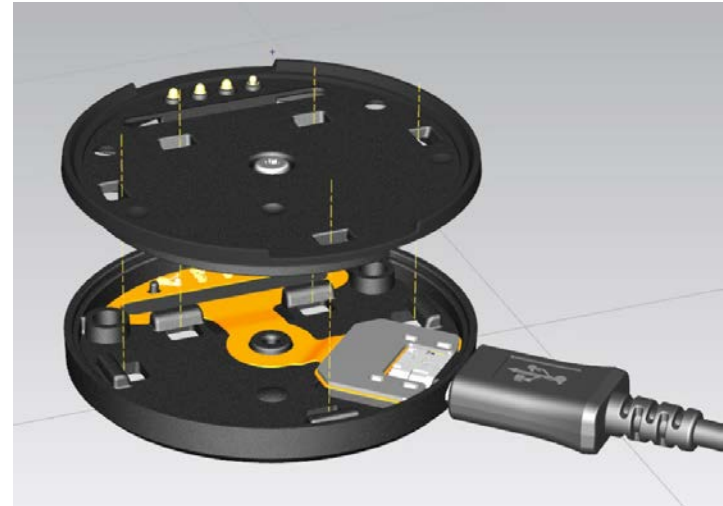


Charger for Tag Heuer[®] Smartwatch

Spring contact type charger.

Manufactured in Penang, Malaysia.

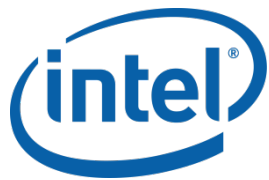
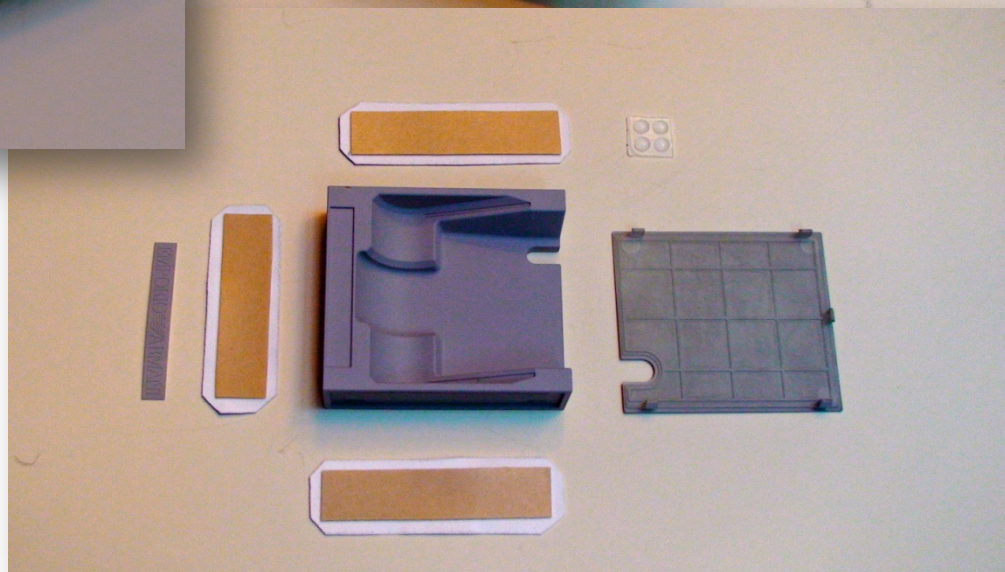
Several hundred thousand manufactured in men's and women's watch sizes. Also rebranded as Hublot.



Charger for Emporio Armani Smartwatch

Wireless inductive type charger.

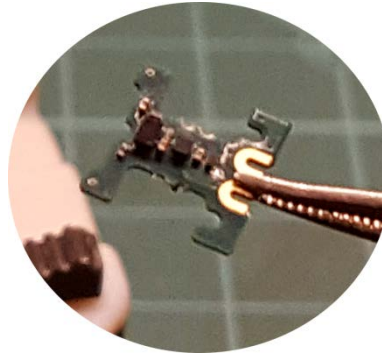
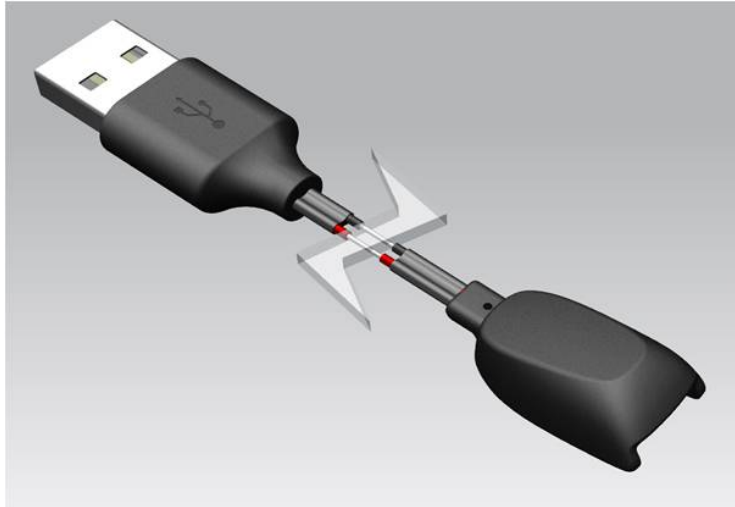
Shown is the final iteration of a working, cosmetic prototype model.



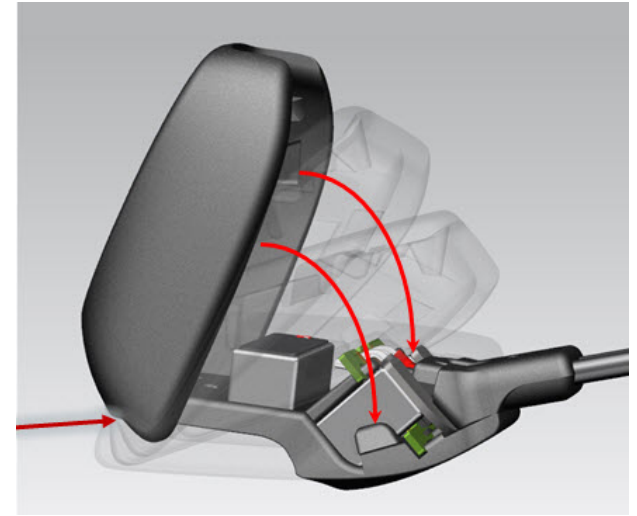
Charger for Vaunt Augmented Reality Glasses

Wireless inductive type charger.

Early builds were prepared in China up to DVT.

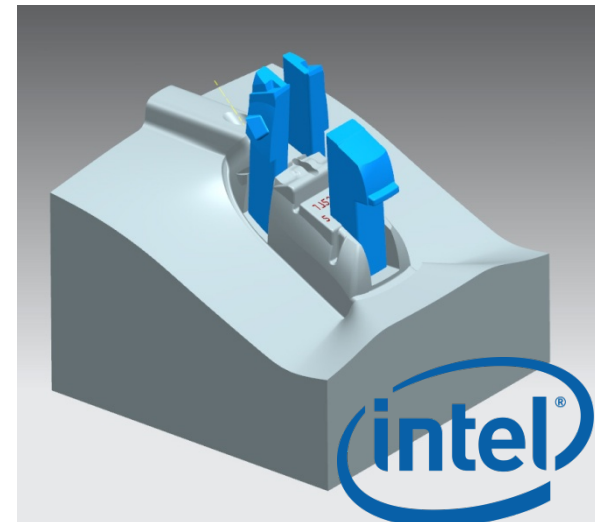
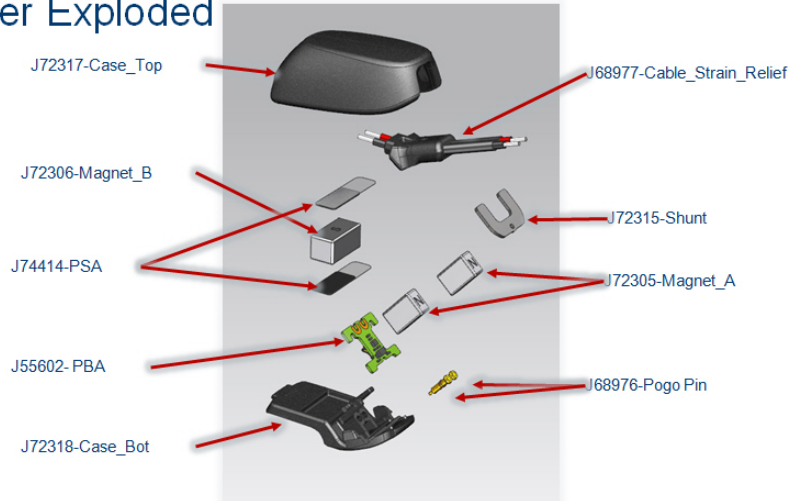


Tiny waterproof PCB



Below: I don't just design the parts. I design and deliver the mold solids that provide a solid Moldability plan. These give the toolmaker a head start into the design, shortening DFM and tool design time.

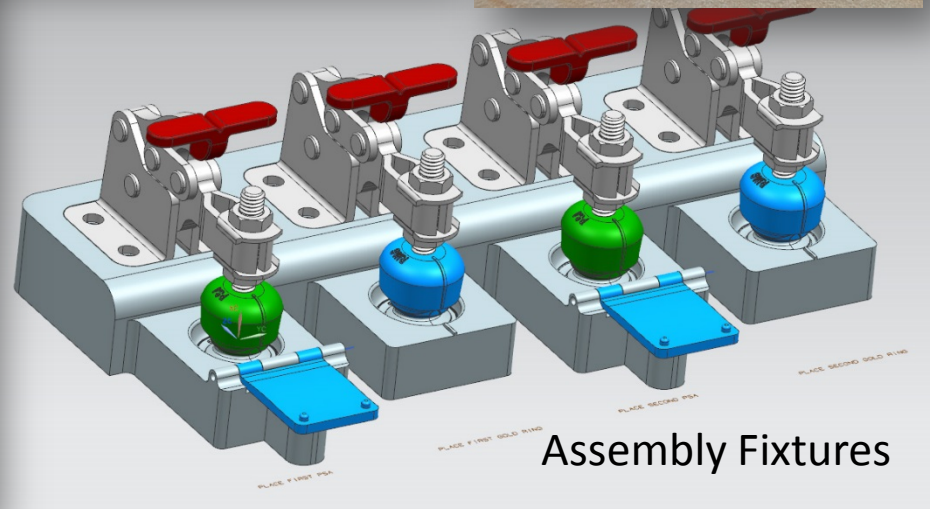
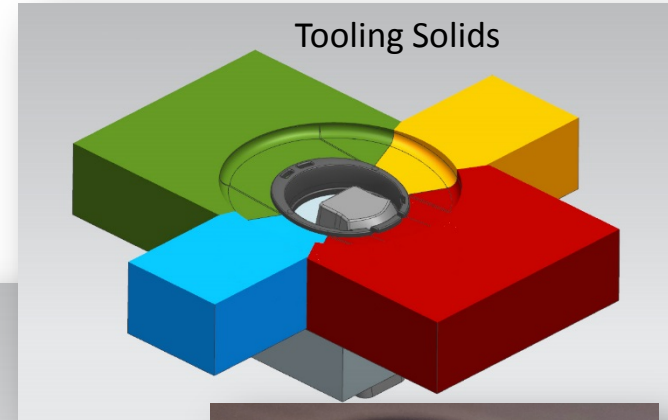
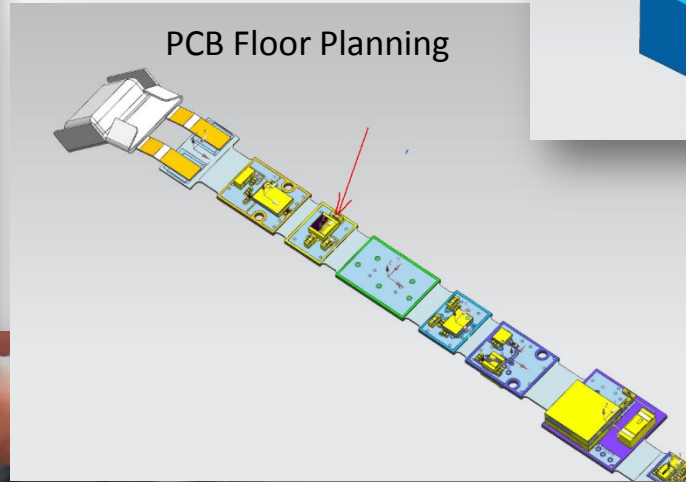
SL3 Charger Exploded



Smart Ring

Fitness tracker/heart monitor ring.

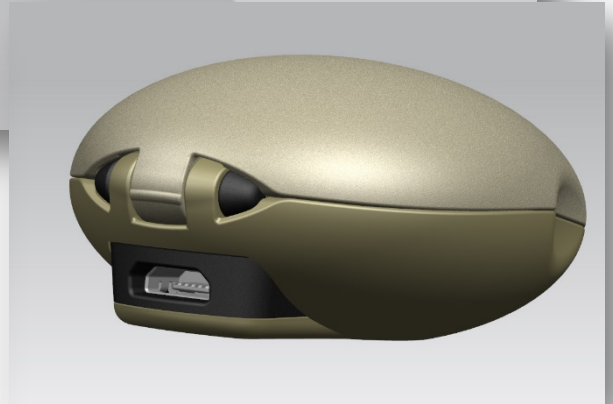
Fully functional, wearable, injection molded and stamped metal prototype.



Smart Ring Charger Case

Charger case for heart monitor ring.

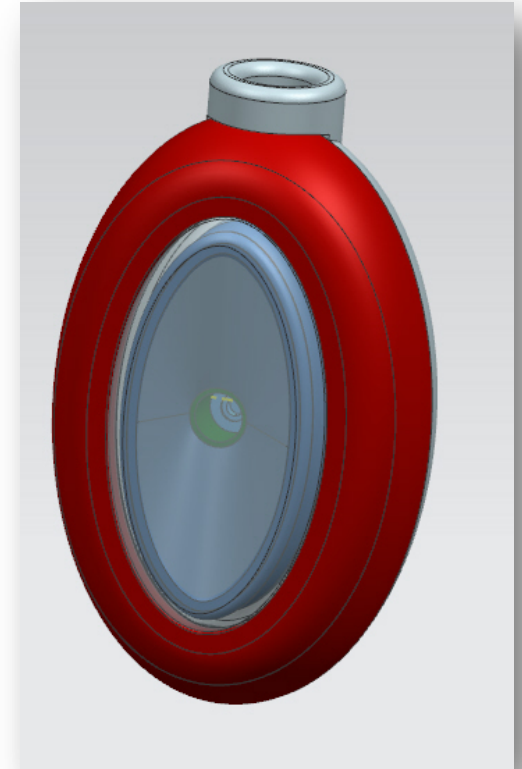
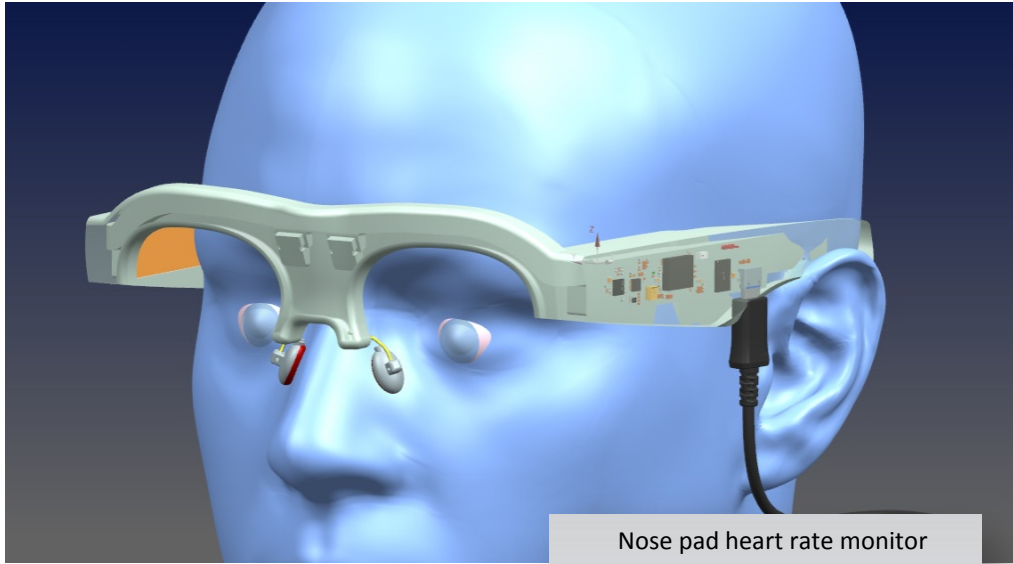
Fully functional 3D printed prototype.



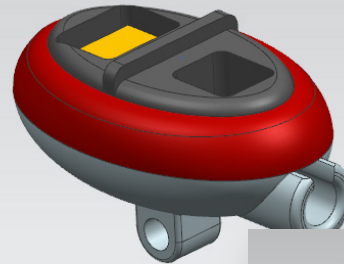
Head Mounted Electronics Test Platform

EEG, heart rate, breathing rate monitor in head-worn test platform.

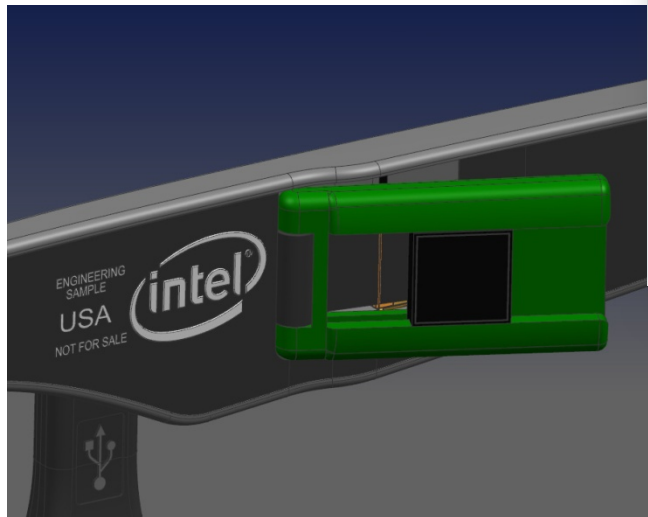
Functional prototype for study of hands-free EEG control of electronic devices.



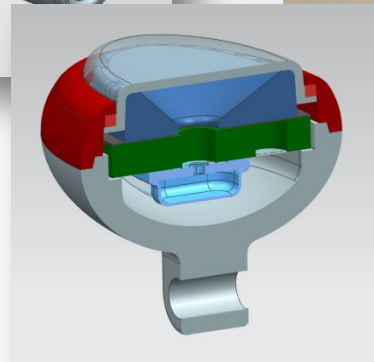
Nose pad heart rate monitor



Perhaps the smallest working stethoscope ever made, built into nose pad for detecting breathing rate.

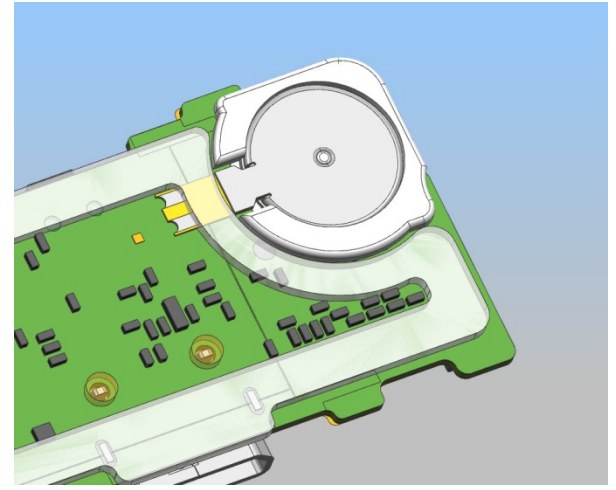
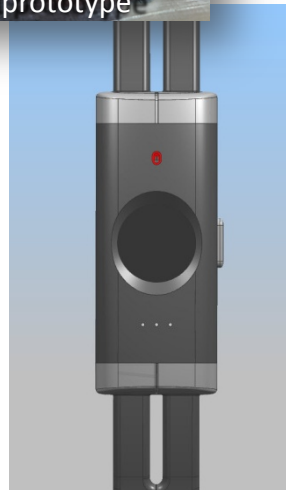
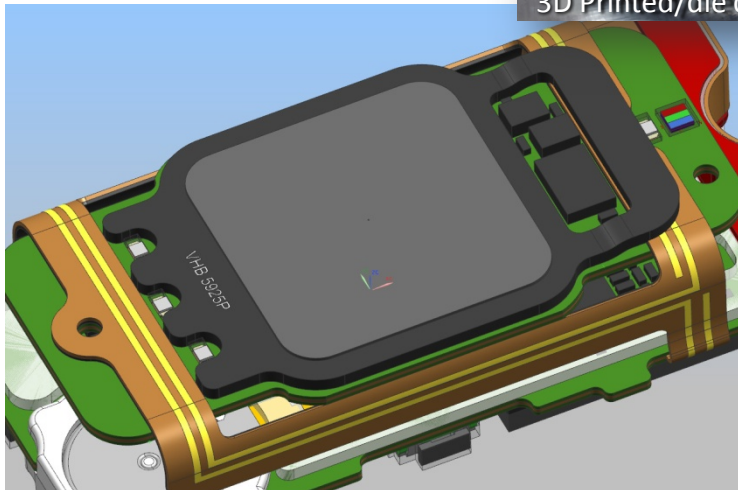
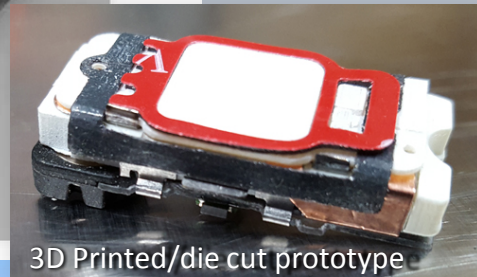
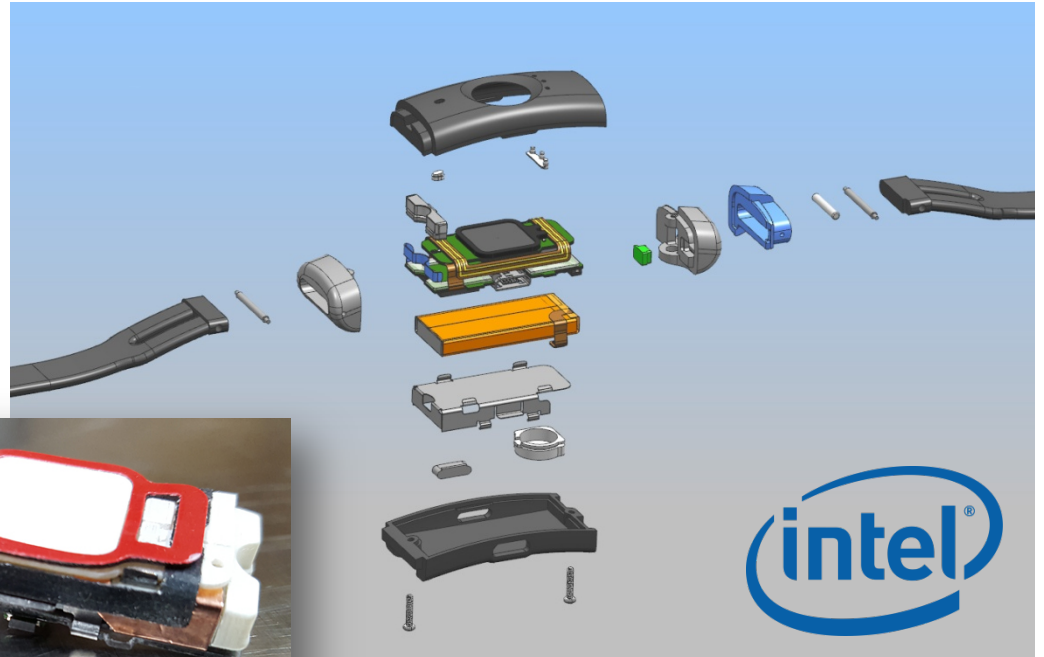


EEG sensors press against temples by spring loaded doors.



Wrist Worn Password Management Bracelet

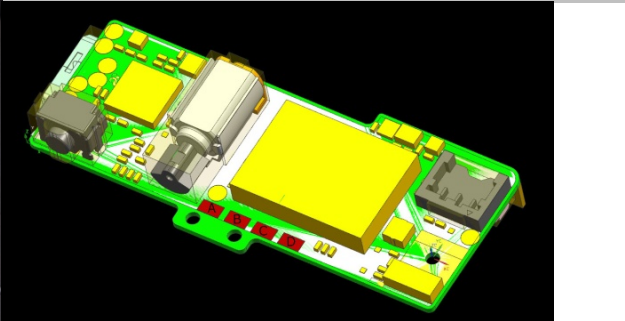
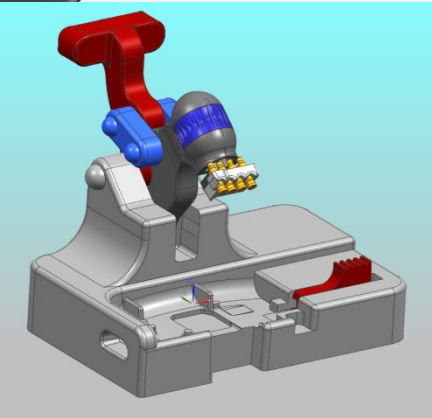
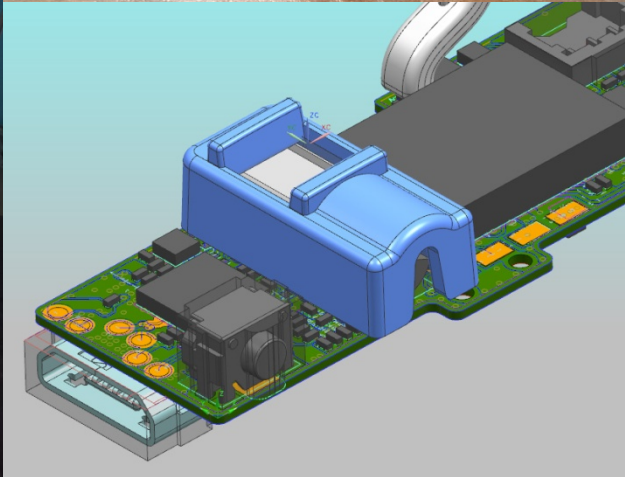
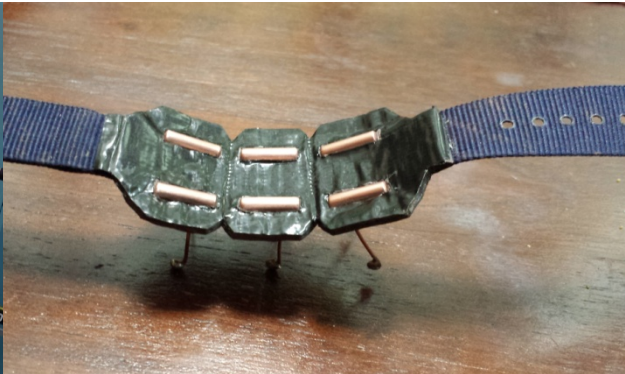
Fingerprint authentication bracelet uses BTLE to unlock computers and to replace door access badges. Many design iterations for testing and antenna development.



Liveness Detection Research

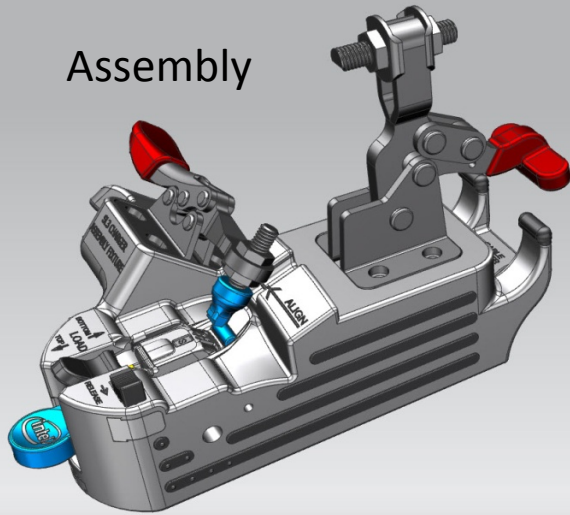


ME support including mockups and working prototypes for wrist worn liveness detection.
I made many small builds of devices for researcher and UX testing.

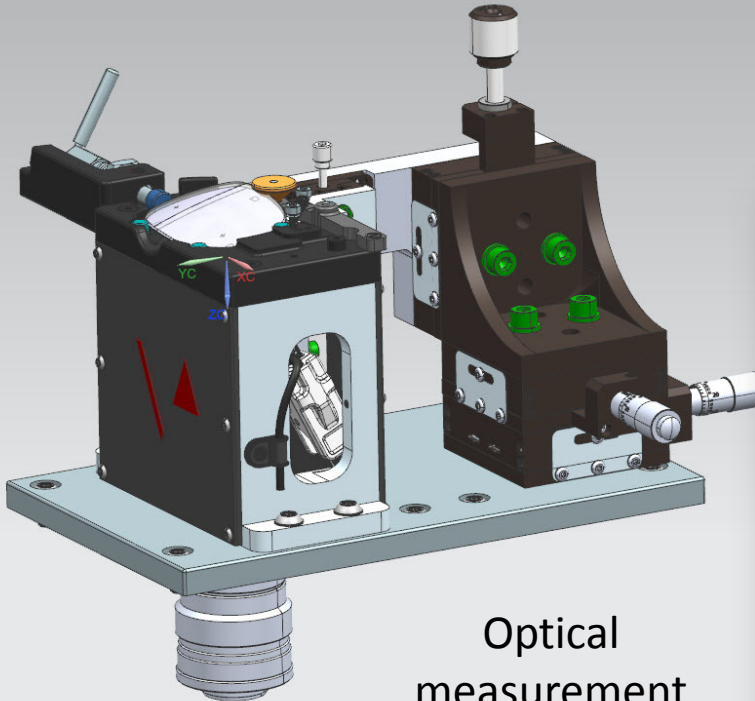
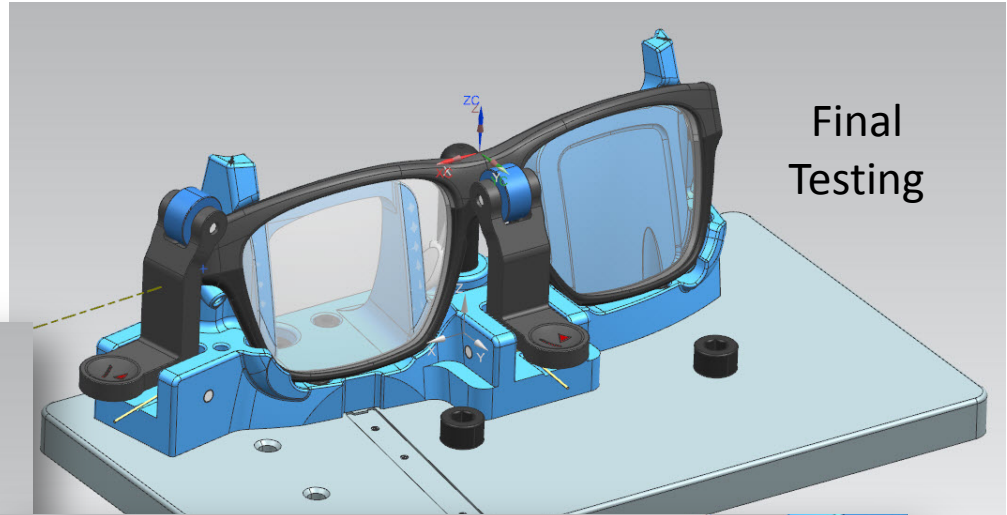


Manufacturing Jigs and Fixtures

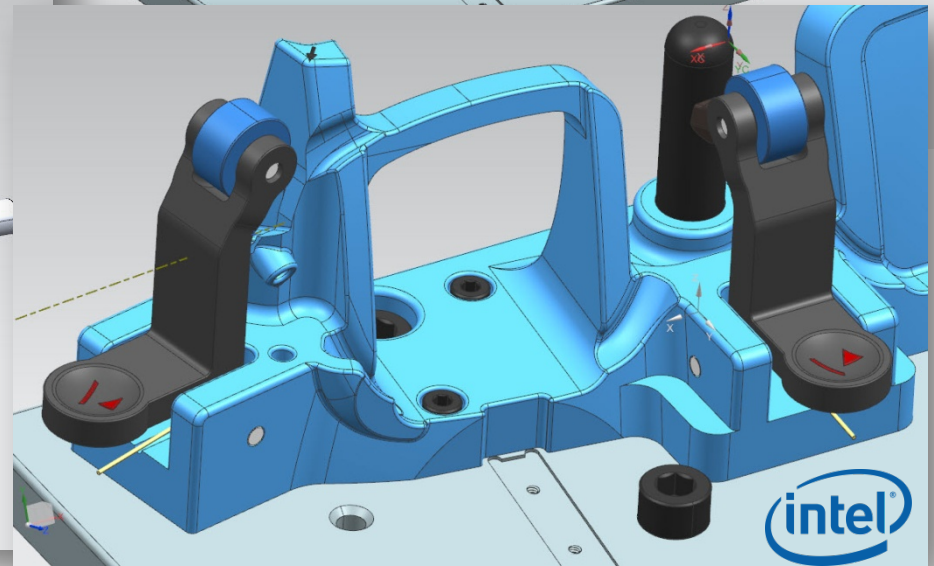
Assembly



Final
Testing



Optical
measurement



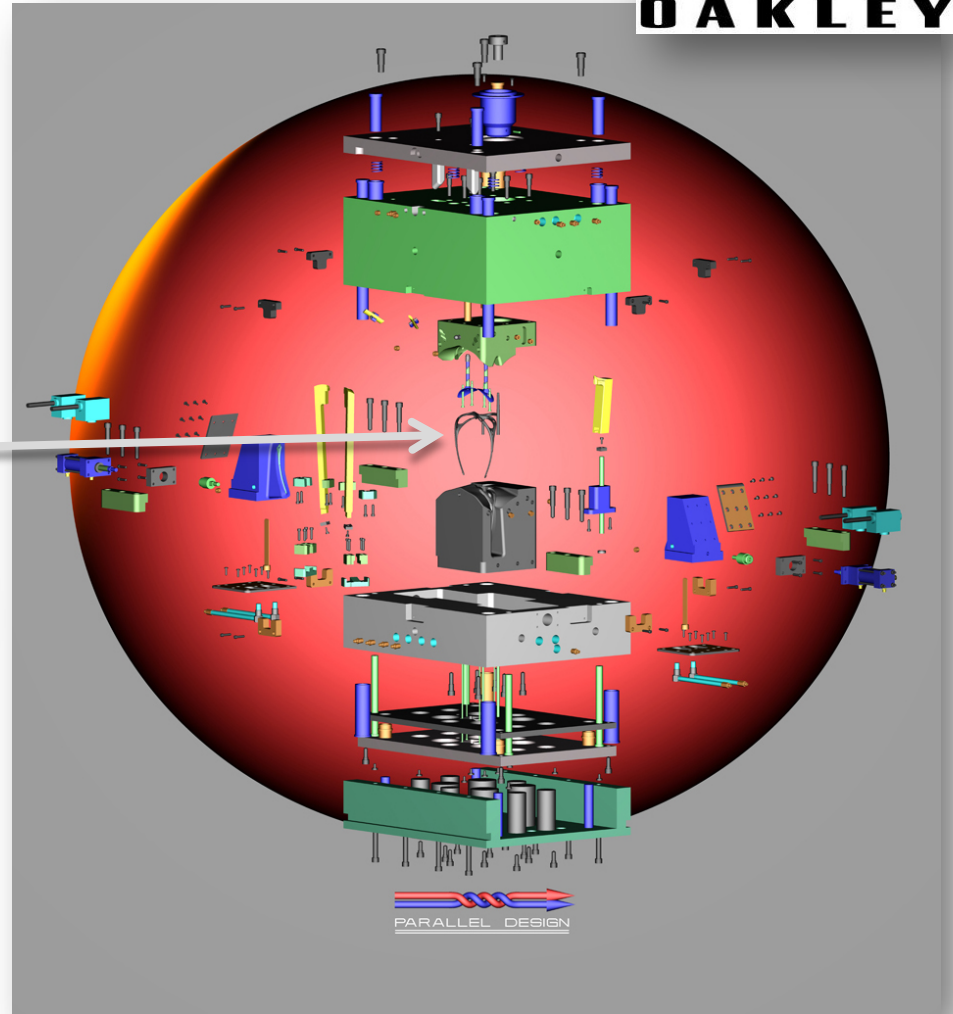
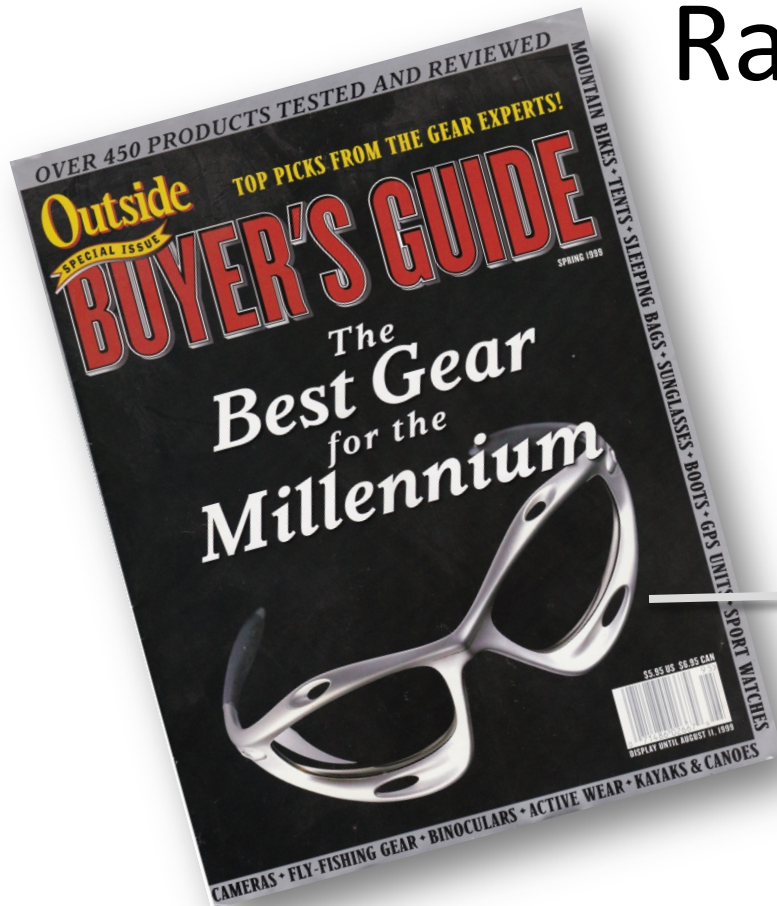
PARALLEL DESIGN



From deep within a giant redwood forest in the Santa Cruz Mountains, I designed injection molds and parts for Oakley sunglasses and many more companies for 16 years doing business as Parallel Design.



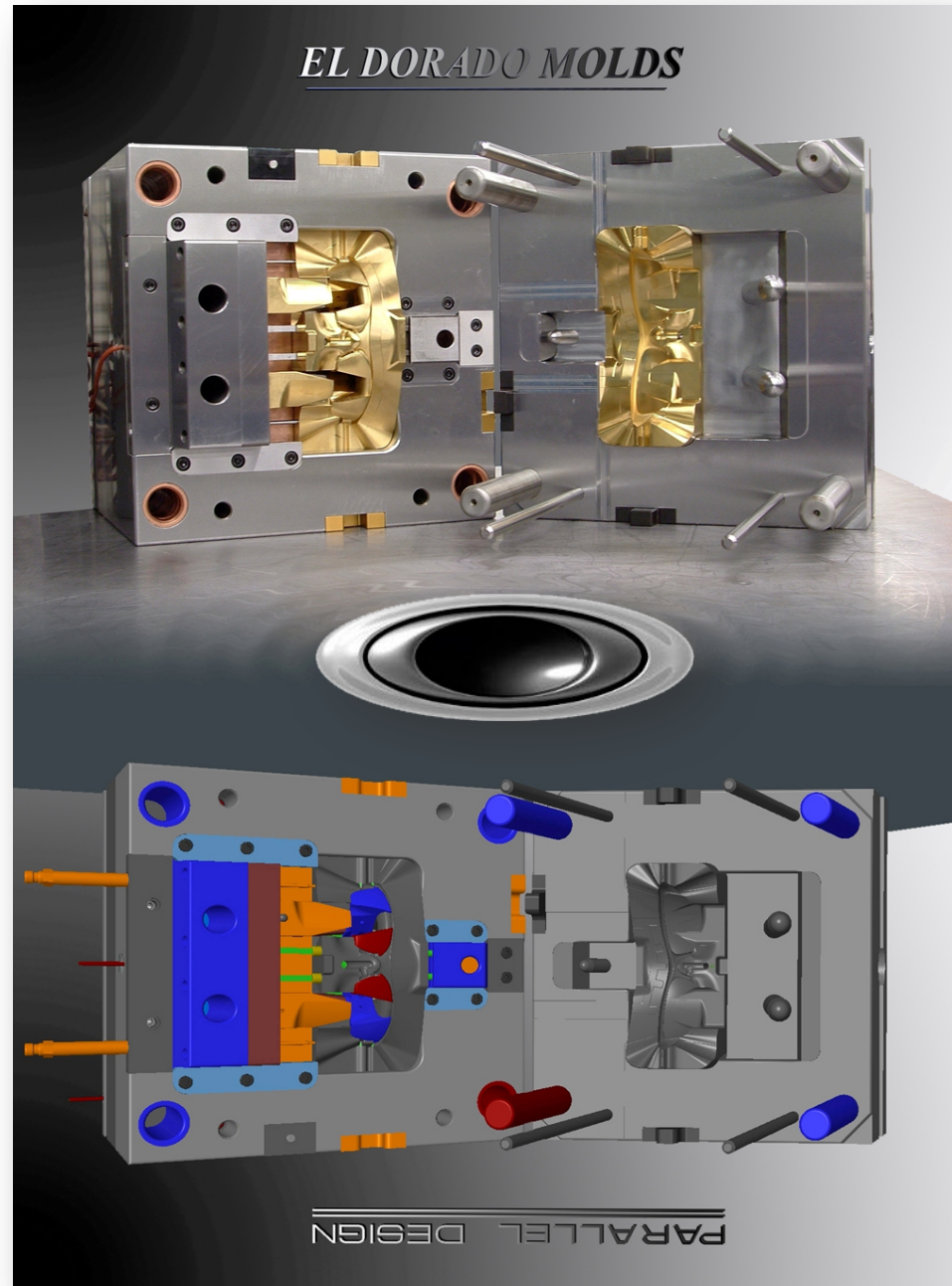
Best Gear for the Millennium Racing Jacket



As Parallel Design, I collaborated with Oakley ID and engineering from concept to completion to create a one piece, aerodynamic, non-fogging, indestructible, hingeless sunglass frame. The tooling was designed in parallel with the part design to be certain it could be done... a frequently repeated technique thereafter... and Parallel Design was born.

Oakley Flak Jacket, Art and Science

Chances are strong
you've already seen my work,
directly reflected in the
perfection and quality
of every pair of Oakley glasses
Made in the USA,
1988 to 2012.





Flak Jacket Tool Parts

“Rotolifters” are an original molding mechanism that I invented. Rotolifters relieve spherical undercuts, molding the lens grooves.



EL DORADO MOLDS
PLASTIC MOLD SPECIALISTS

Rotolifters

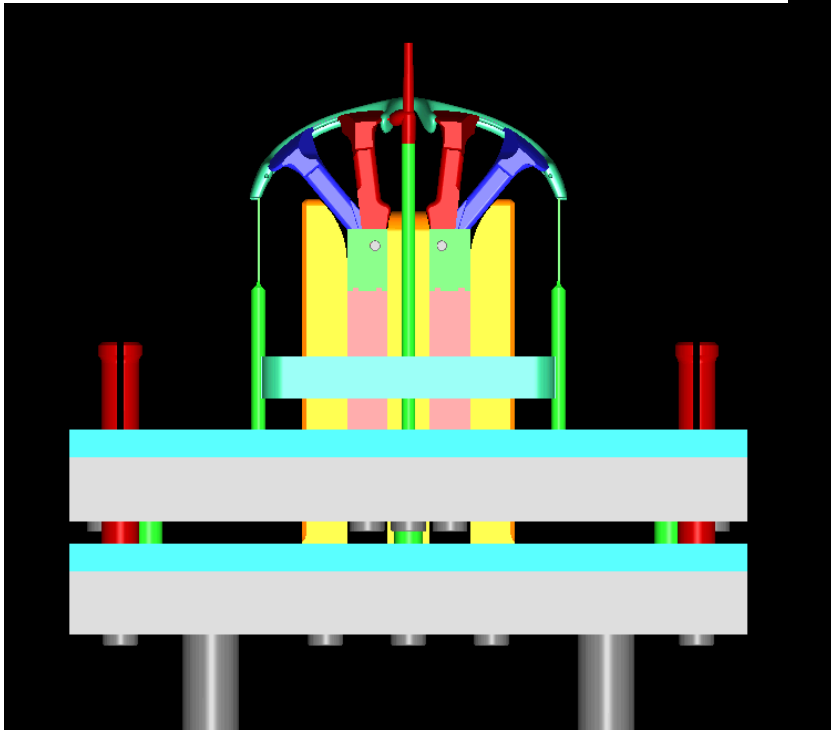




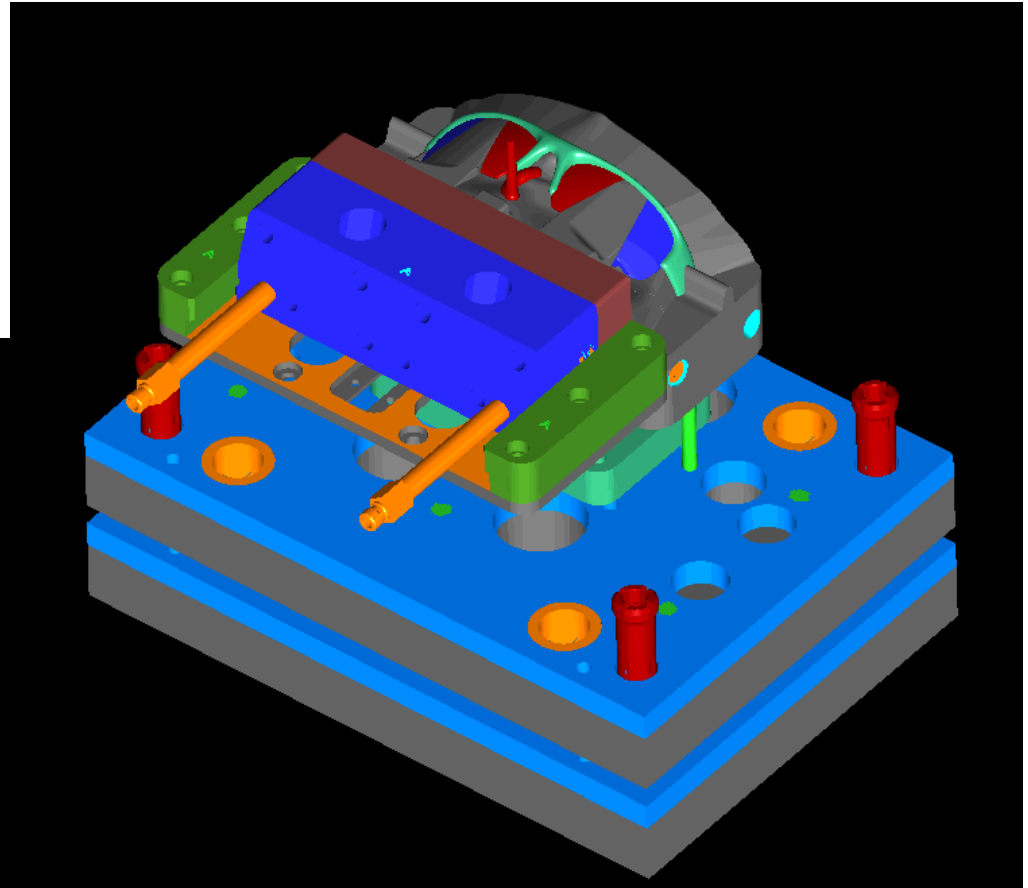
Rotolifter Designs

Many subsequent iterations of this Rotolifter design ran millions of parts for Oakley.

At any given time several million dollars of my tool designs were under construction for 16 years.



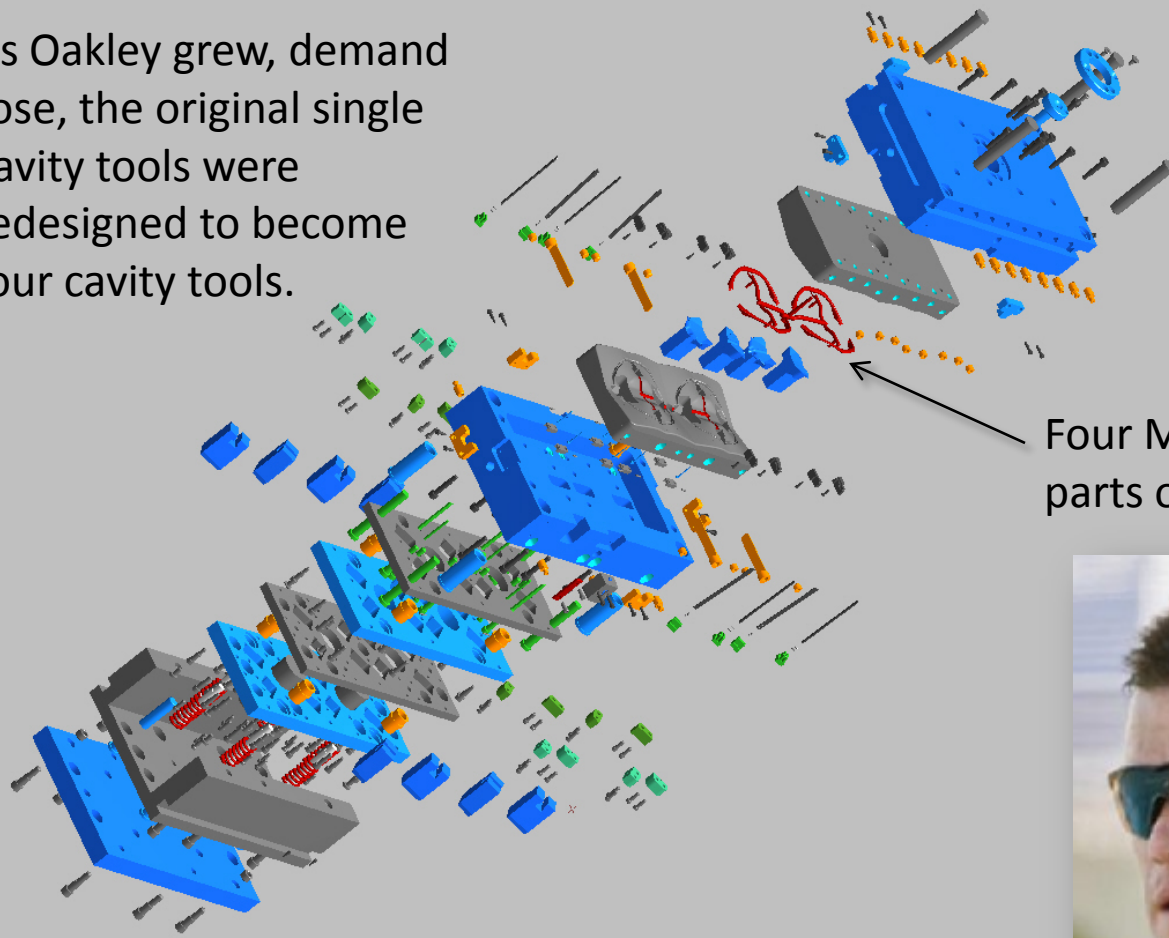
(Animated in PowerPoint)



The Rotolifter concept originated whilst sitting on a Hawaii beach, pondering the physics of a crab leg...

Oakley M-Frame Four Cavity Injection Mold

As Oakley grew, demand rose, the original single cavity tools were redesigned to become four cavity tools.

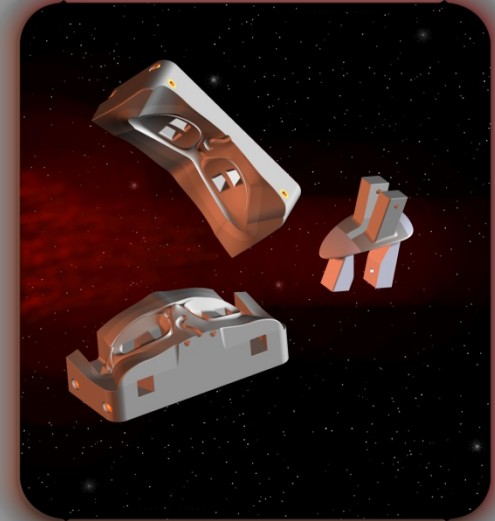
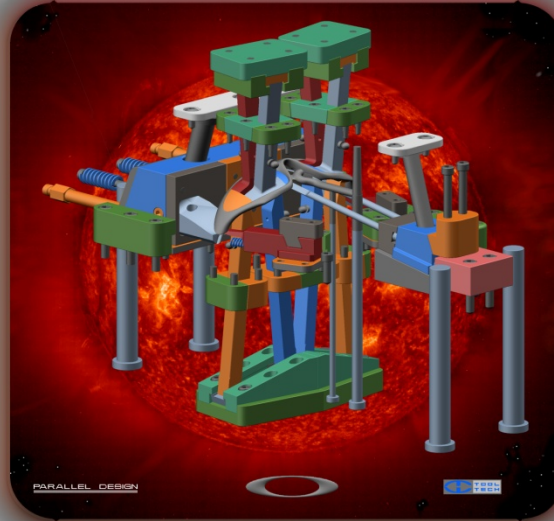


Four M-Frame parts on runner.



Oakley Scar Injection Mold

A complex injection mold with intermeshing A and B side lifters.



421 PARTS
127 CONTROL SURFACES
18 MOLDING SURFACES WITHDRAWAL ALONG 12 VECTORS
543 POUNDS OF STEEL

This poster sized image was created to answer a question.

“Why is this mold going to be so expensive to build?”

Answer: You’ve designed a part that requires:
18 molding surfaces withdrawing along 12 vectors.
421 parts in the injection mold.

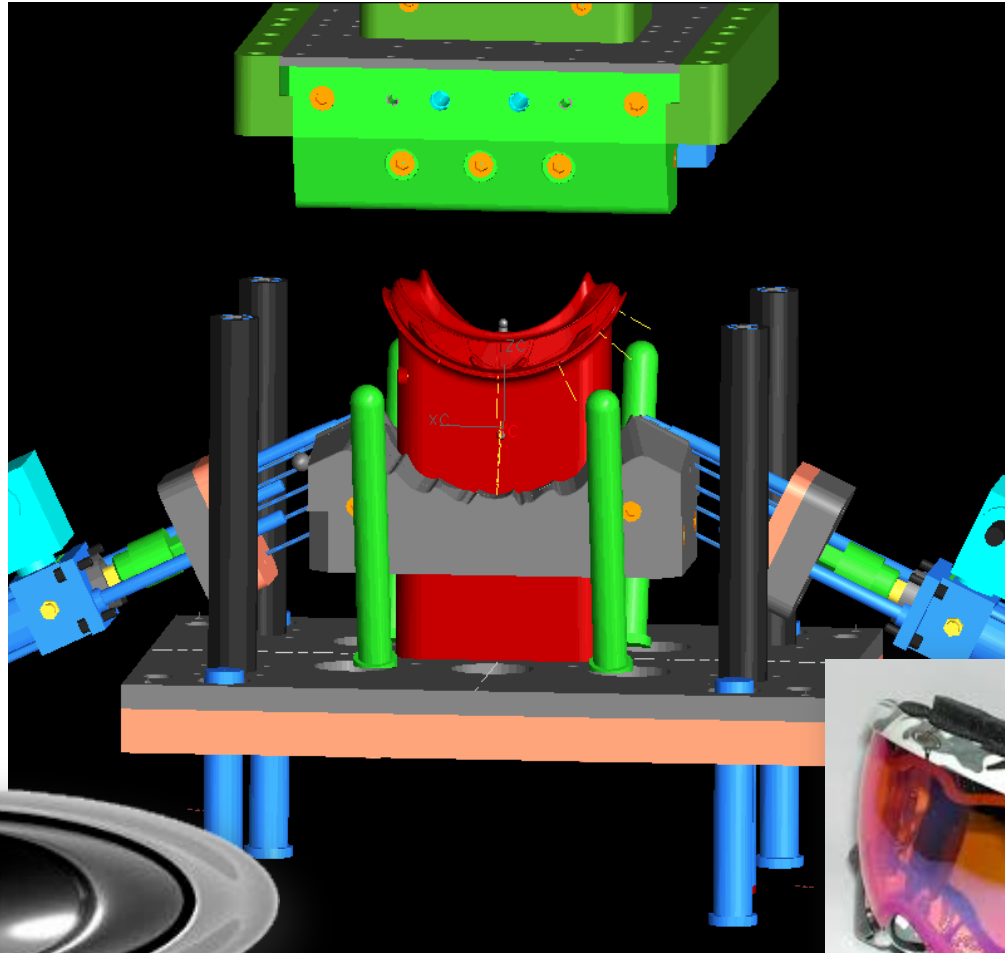
127 control surfaces so all those parts come together perfectly and stay that way.
543 pounds of steel.



This image explained it, Oakley approved it, we built it, and it successfully ran hundreds of thousands of parts for Oakley.

Wisdom Snow Goggle Tool

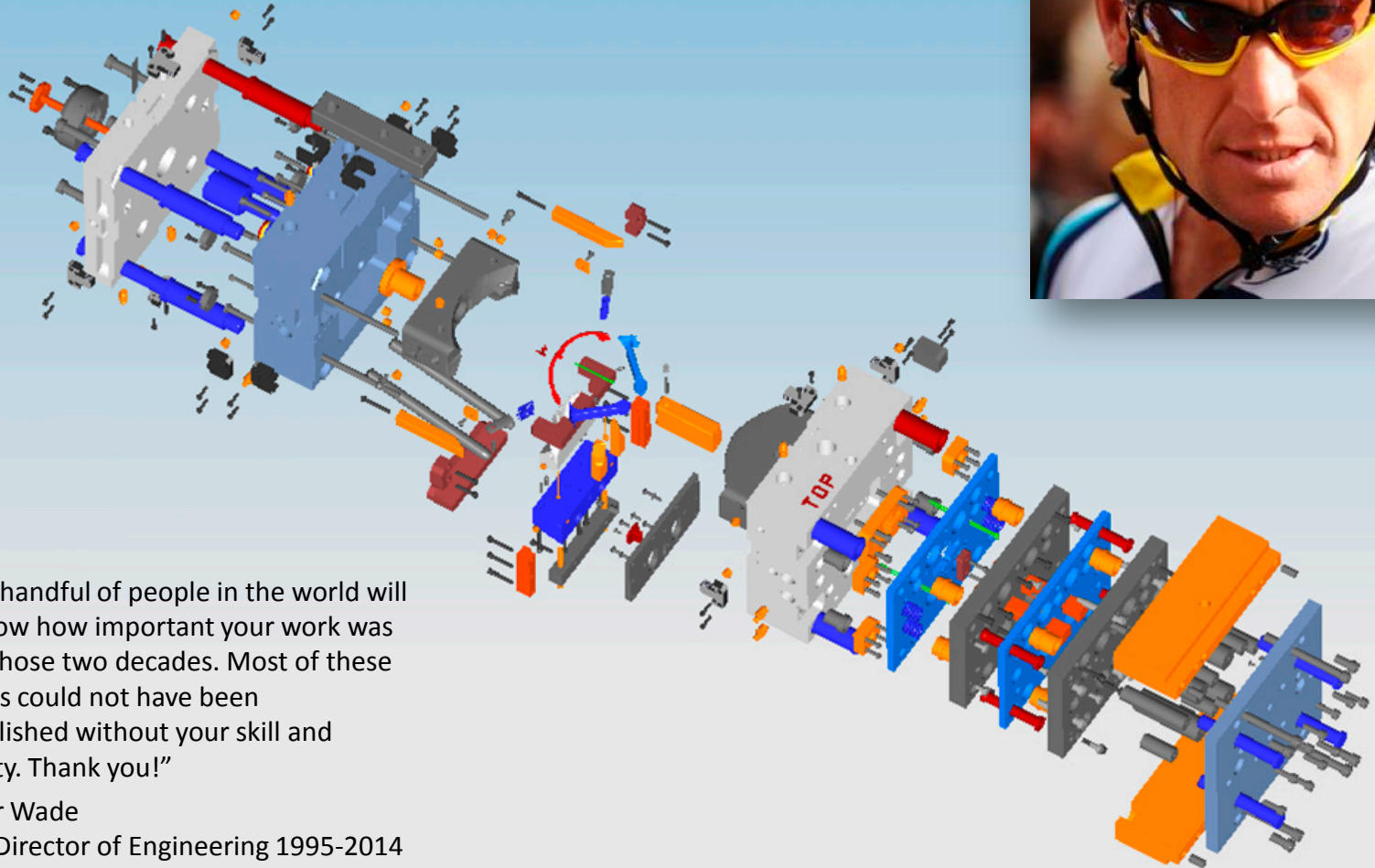
Just one of many goggles I worked on, but “Wisdom” is a favorite due to the difficulty of the part and tool design.





Jawbone Tool

OAKLEY

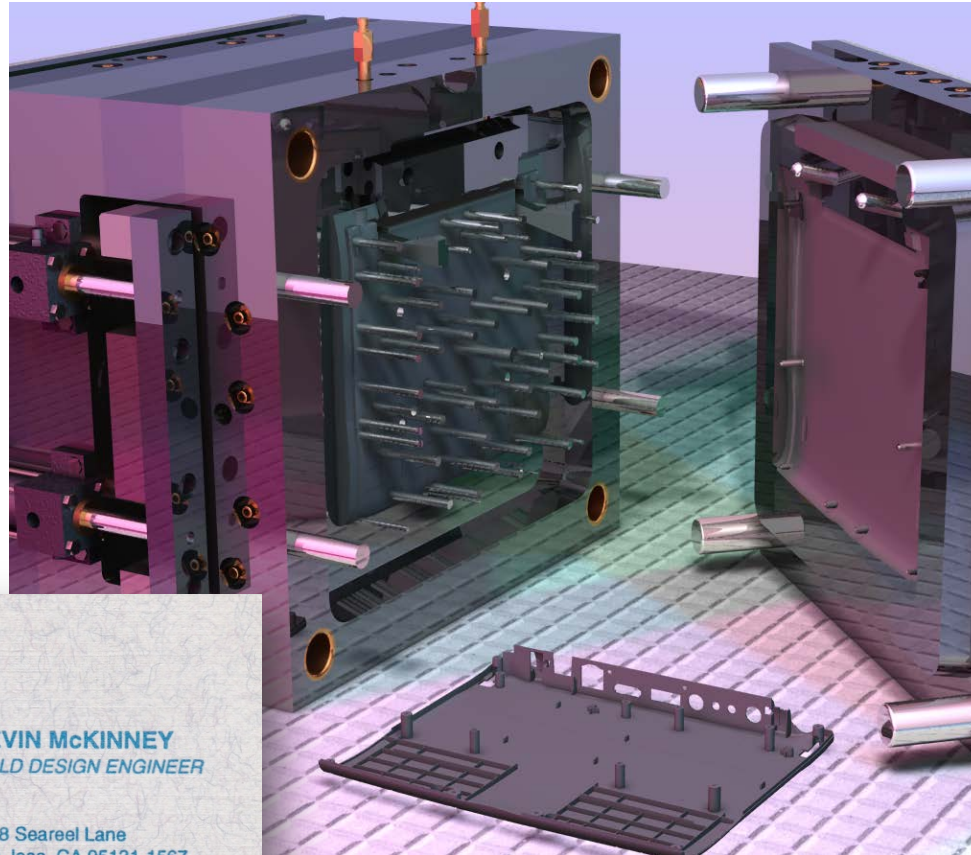


“Only a handful of people in the world will ever know how important your work was during those two decades. Most of these products could not have been accomplished without your skill and ingenuity. Thank you!”

Gardner Wade
Oakley Director of Engineering 1995-2014

Tool Tech and Trend Plastics

Part DFM, part redesign for Moldability, and injection mold design for Apple, Sun, Silicon Graphics, Motorola, 3Com, Estes, NUMMI, US Robotics, Harman Kardon, Megahertz, Hughes, Cisco, Norand, Dragon Optical, Oakley, and more.



This is the injection mold for the very first Apple Powerbook, project "Blackbird".

This is one of the very first injection molds ever modeled in 3D "Solid Modeling", as featured in the 1995 Unigraphics Calendar.



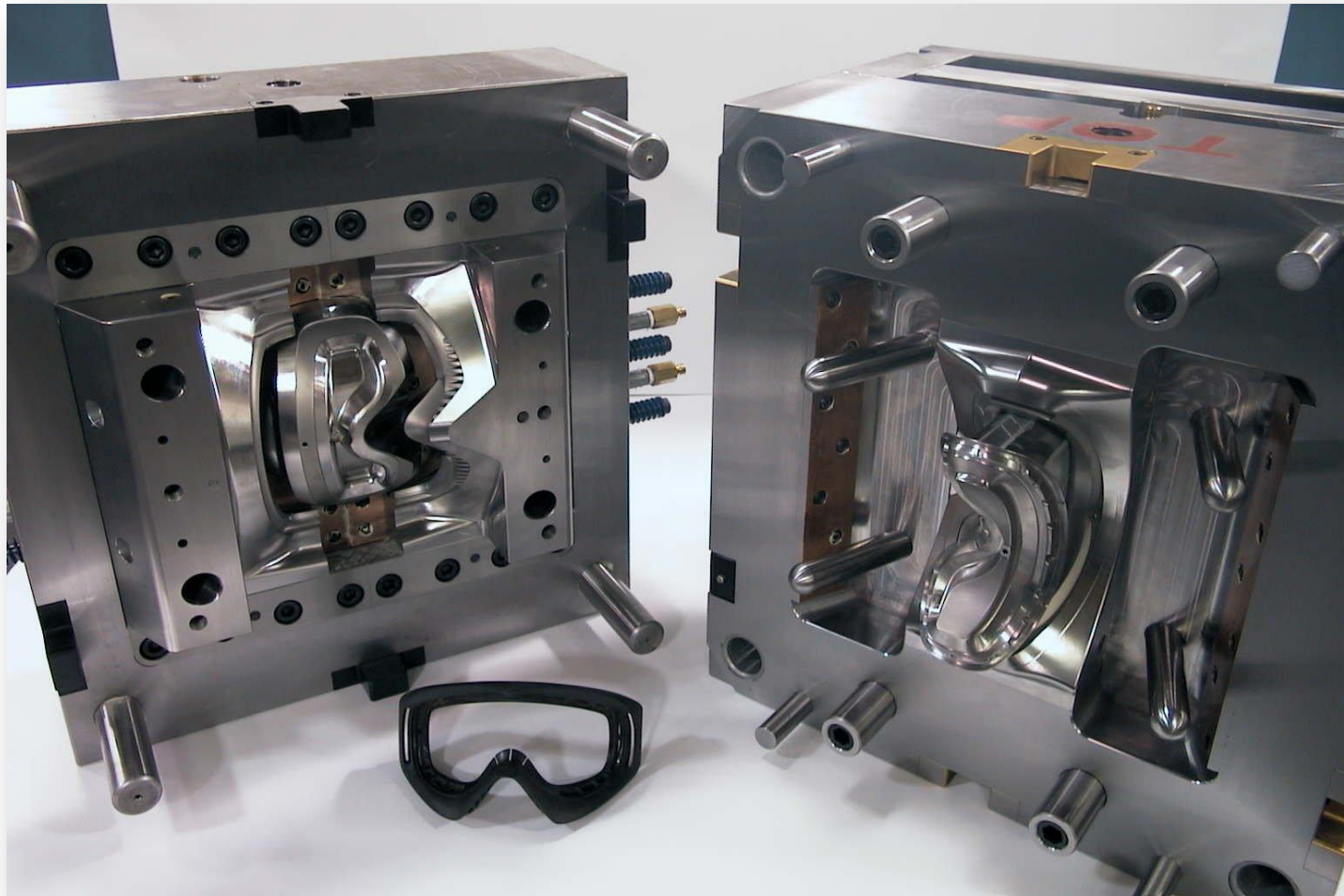
KEVIN McKINNEY
MOLD DESIGN ENGINEER

1488 Seareel Lane
San Jose, CA 95131-1567
Phone (408) 434-1044
Fax (408) 434-1035
Modem (408) 434-0667

trend
TECHNOLOGIES

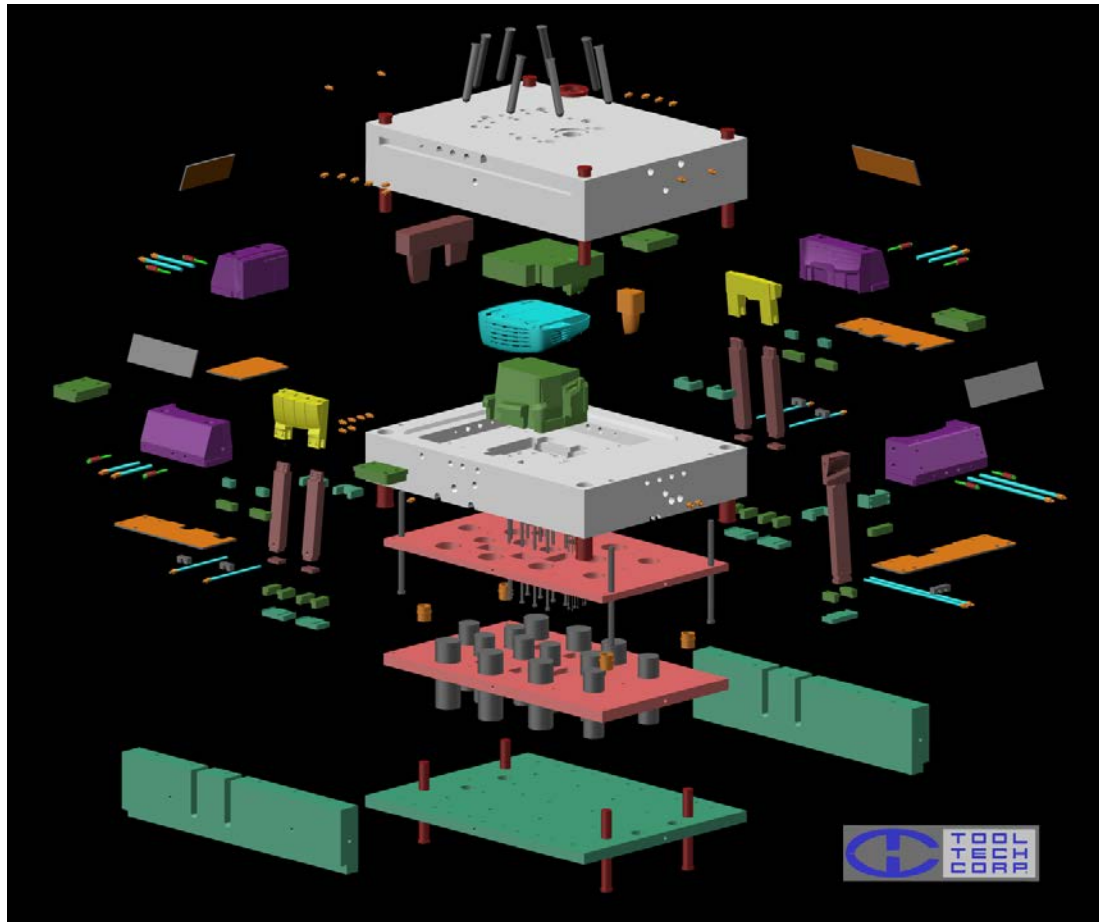


U.S. Patent #D478610



Multi-Sport Dragon Goggle
Tool by Tool Tech

sgi O2 Housing



I'll never forget my boss saying ,
"Are you sure you can do this?...
Because if you can't..."

I was.

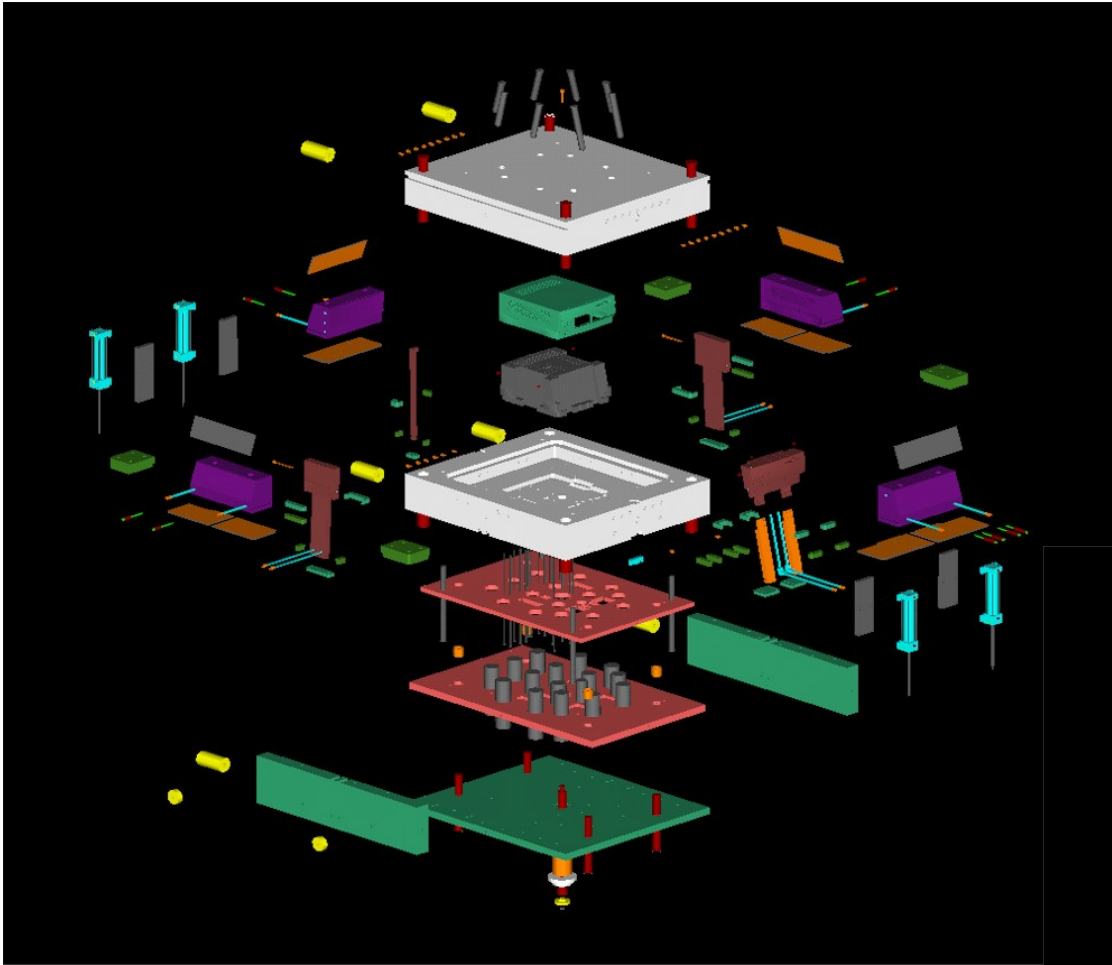
We did.

Silicon Graphics was the first client to bring us a totally freeform product to mold from a 3D CAD model. It was this curvaceous product and the tooling for it that gave Oakley, and the Tool Tech team, the confidence to try eyewear.

The rest is history!

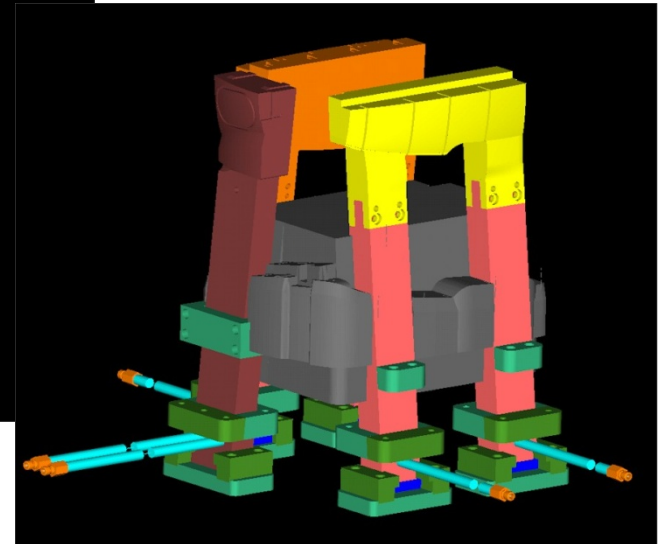
This type of thing is commonplace now. It was a groundbreaking exploration into the impossible in 1995.

Apple Desktop Case Tool

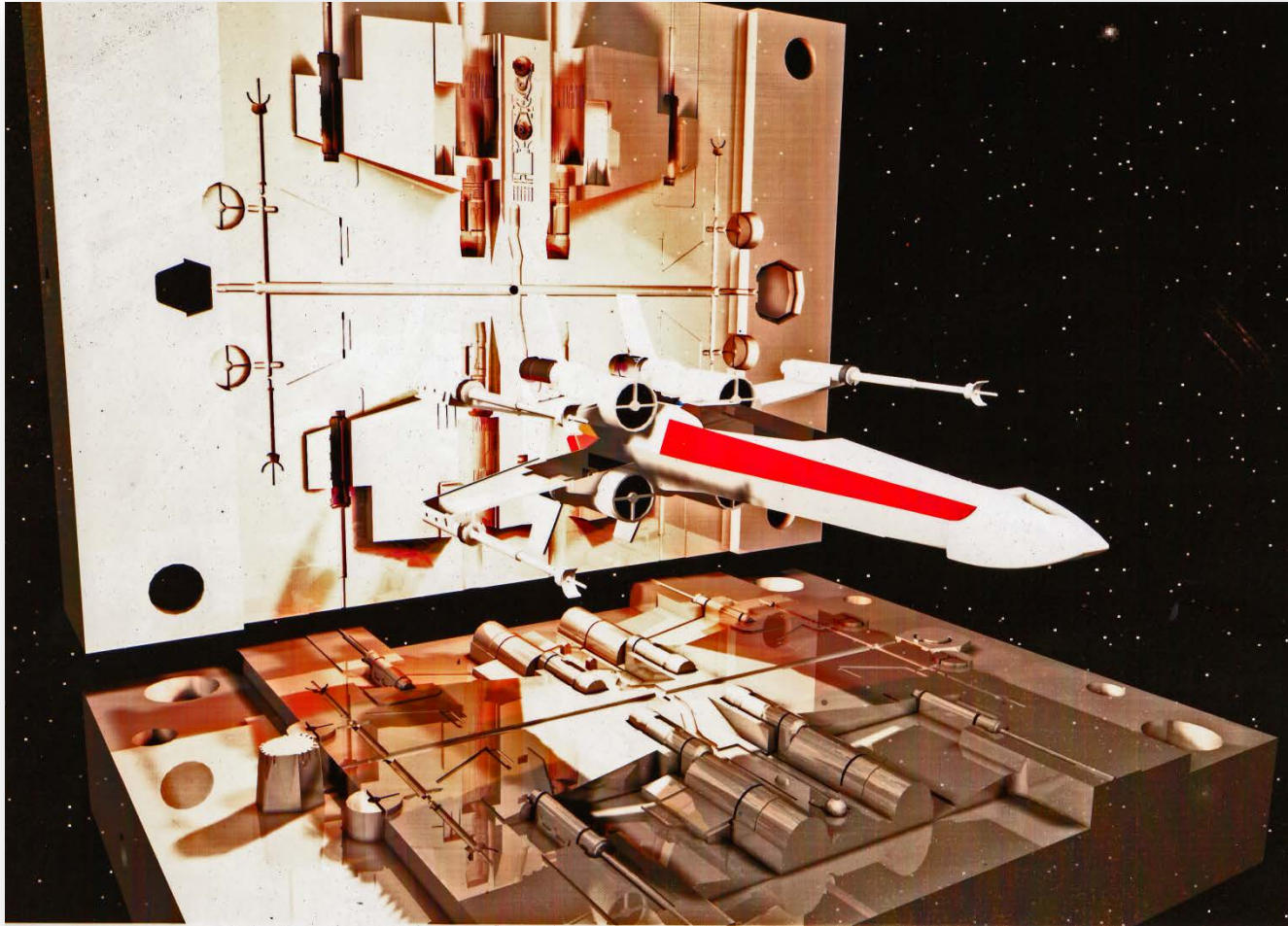


Designed in 1993, this represents ground breaking work for both CAD and computing power. At the time this was so unusual that I was asked to present it before a packed house in the then brand new Apple theater. Everyone was amazed that this was now possible.

It's just ordinary average CAD now. At the time, however, computers could barely do it. You had to wait minutes after each command for the \$50K Unix workstation to make the last move. Undo had not been invented yet. I wore a threadbare track in my office carpet waiting for it.



Estes® Rockets



Part and tool design for X-Wing fighter model rocket

Because some designs are just more fun...

*I've designed parts,
assemblies, or tooling for:*

**Wearable Electronics
and Chargers:**

Intel
Vaunt
Fossil
Michael Kors
Tag Heuer
Hublot
Emporio Armani
Opening Ceremony

Eyewear:

Oakley
ESS safety/military
Fox Head/Fox Racing
Dragon Optical
Revo
Universal Studios
Liquid Eyewear

Medical:

Stryker
Proteus
Trivascular
Vigilent
Vitalitec
Cyan
Cepheid
Opterna
Neuralieive
Incumedx
Propel
Agilent
eNeura
Aptus
Sonoma Orthopedic
Spinal Modulation
Caymus

Maker of Stuff

Kevin McKinney

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23409 Deerfield Road

Los Gatos, CA 95033

How can my skills help your team
accomplish your companies goals?

Computers and tech:

Intel
Apple
Motorola
Microsoft
Sun Microsystems
Silicon Graphics
JDSU
Palm
3Com
Hewlett Packard
General Electric
Harman Kardon
Megahertz
Hughes Networks
Cisco Systems
Norand
Asyst
Tandem
Grid
Synoptics
US Robotics
Teal Electronics

Sports:

Coleman
Aerobie
Estes Rockets
O'Neill wetsuits

Automotive:

NUMMI (Toyota)

Ag/Industrial:

Bowsmith
Parker Hannifin

Others:

C Crane Co.
AeroPress Coffee
Antser

Making My Own Stuff

