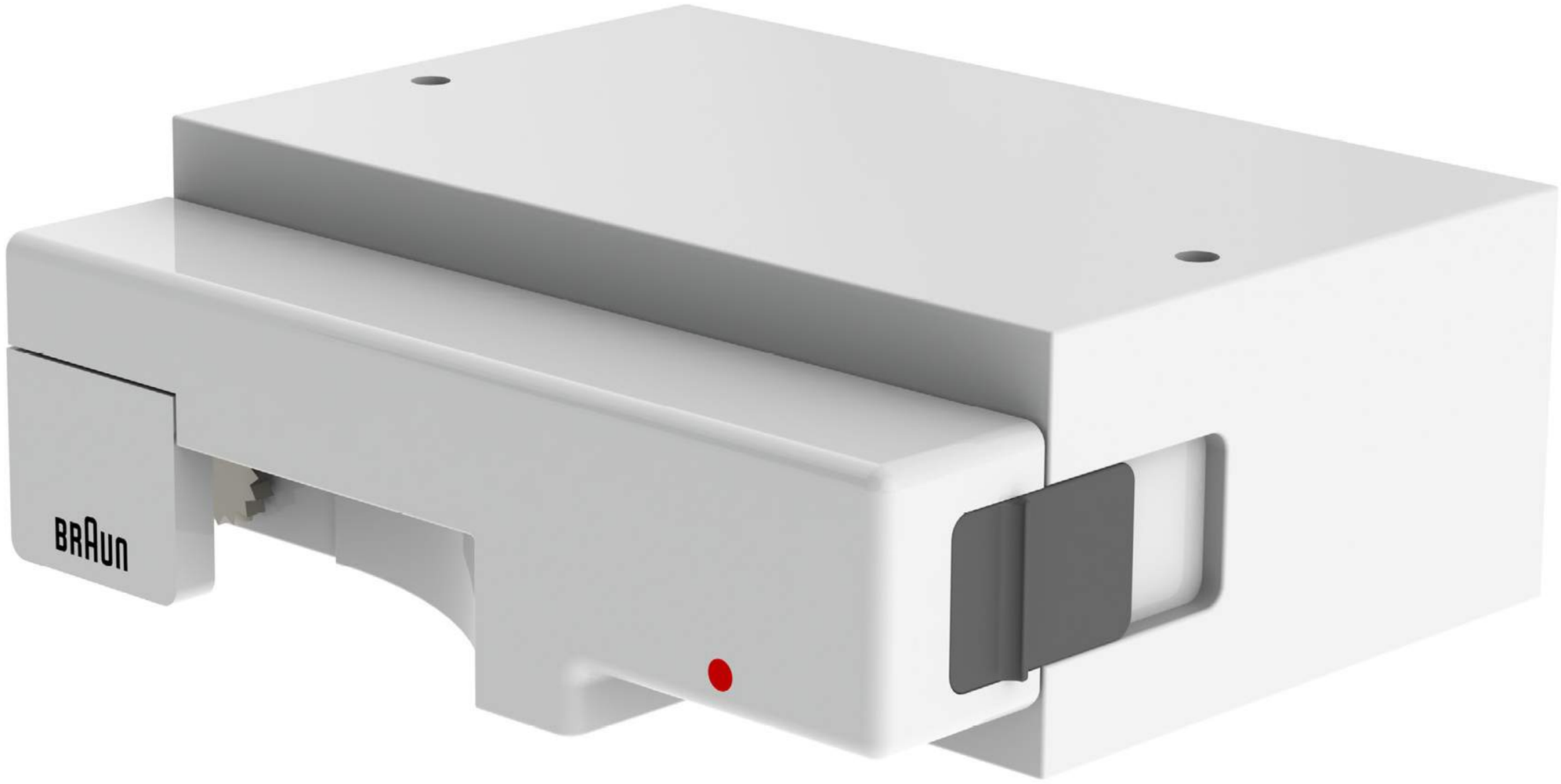


Can Opener Project

Open PDF

Identity 3

Designing a Braun electric can Opener.

DIGITAL HAND IN EDITION
This version is a concise summary of the whole design journal, most of the development sketches have been left out, as most were not scanned in before the hand in deadline.

Tom Lever

“I imagine our current situation will cause future generations to shudder at the thoughtlessness in the way in which we today fill our homes, our cities and our landscape with a chaos of assorted junk. What a fatalistic apathy we have towards the effect of such things. What atrocities we have to tolerate. Yet we are only half aware of them.”

Dieter Rams

December 1976
Head of Design at
Braun & Vitsoe

Introduction

Braun is a company and brand with a long, complex history of over 90 years. There have been philosophical changes, new product lines, product lines removed, and huge variation in the company structure over the years. The corporate structure has moved & evolved from a family owned manufacturing business, to a subsidiary of an international conglomerate, with many changes along the way. Alongside (and perhaps due to) these changes, there has been subtle changes in corporate philosophy. It was only in the early 1950's, due mainly to the progressive ideas of Erwin Braun, that the company began to implement a more design driven approach.

This holistic design driven approach, which manifested itself in not only products but in graphic communication, showrooms, trade stands and advertising, is what defined the company (at least superficially) from this time onward. From the Ulm School years, where a significant amount of design was handled by external contractors such as Hans Gugelot, through most of Dieter Ram's tenure as head of design, where design was handled internally, a clear design language can be seen throughout. A remarkable achievement for such a long 40 year period.

The philosophies of these years have been summarised by Rams in his 10 principles, and products from these years have been held up by institutions such as the MoMA as extremely important to the history of design in general. However, it was concluded in Identity 2 that these strong ideas have perhaps fallen dormant under the leadership of Proctor & Gamble and Gillette, who in general are companies with interests in a wide variety of industries and may have a more marketing-led approach to product sales, relying on *latent ideas* of 'Good Design' and 'German engineering' to keep the brand afloat.

The discussion is however more nuanced than was presented. A 2012 document produced by Oliver Grabes, current head of design at Braun, *says* a lot about bringing back the original values of 'functionality, aesthetics and order', and recent products such as the Multiquick 5 juicer do seem to, at least aesthetically, comply with the majority of the principles of Rams and the rest of the late 20th century design team.

Only time will tell whether this movement is a genuine attempt at a 'Resurrected' Braun, or merely a trend-based marketing tactic from higher up in the corporate hierarchy. In any case, the (perhaps) anti-consumer, marketing driven, Made In China hegemony of P&G seems far removed from the rather utopian values once held by the Braun brothers.

With this in mind, I feel that a critical commentary could be made out of this project, focusing on the Braun of today. However, I think I will learn more from attempting to channel the optimism and considerate mind set of the earlier Braun. Therefore, in this project, I will focus on the brand philosophies of the 'Golden Years' between 1950 and 1975, but also attempt to interpret these ideas with thought for current technology and perhaps adjustment to fit slightly different attitudes in today's society.

It is this 'version' of Braun which I will refer to throughout the rest of this document.

Brand Characteristics

What *is* Braun?

Innovative

Braun products are made with a forward-thinking view, the designers are not afraid of radically changing the market-accepted form of a product (HL1 desk fan), nor are they afraid to bring new material combinations to products (SK4/5/6 Phonosuper) when clear gains can be made in other areas. Designs tend to be made to fit into an optimistic future world view, rather than to be merely distinctive in the current marketplace.

Sincere

Braun products are Honest, Useful, Understandable, and Unobtrusive. The form of the object has been designed to fit into the life and into the environment of the user, not to grab attention on the shelf. The form of the product also does not betray it's internal mechanisms in order to seem more powerful or of higher value than it is, that is, it is not manipulative. Insincere products distress a user over time, which could lead both unfaithful customers and an excessive amount of environmental waste.

Thorough

Braun products have been highly considered, both in terms of engineering, and user interaction. Through engineering means efficient mechanics and tightly controlled manufacture , which means the products will still be working in years to come. This is the Braun approach to environmental conservation. User interaction has been thoroughly considered too, ergonomic and psychological aspects of the design have been carefully planned. Coloured buttons have been painstakingly arranged in order to get the most out of the user.

Holistic

Braun products are Monotheistic, that is, the entire range of products conveys the same message. This differentiates Braun from some other 'Good Design' companies like Alessi, who sell multiple products which, alone, may be well designed, but don't try to fit in philosophically with the rest of the company catalogue. In addition to this, the entire company is strictly conformative to an idea of German Modernism, from the advertisements in magazines, to the way the designers decorate their own homes.

Design Driven

Braun as a company sees design as a strong enough principle to guide corporate activity in a wider sense. Dieter Rams had an influence on company policy at board level, this makes it more likely that compromises in other areas would be made in the pursuit of good design. Design as a mentality at a higher corporate level means more focus on innovation, and investment in the longer term. This contrasts sharply with the kind of short-termism which can arise when a company's interest is in other areas such as finance and marketing.

HL1 Desk Fan
1961
Reinhold Weiss

> SK61 Phonosuper
1954
Hans Gugelot/
Dieter Rams

Sketch, Interior
1955
Dieter Rams

PS1000, Detail
1965
Dieter Rams

> Programme Poster
1962
Wolfgang Schmittel

User Expectations

What do customers expect?

Ease of Use

A great focus of the design team for Braun in years gone by was clearly human interaction. The customer assumes, looking at any Braun product, that the form that Braun decided upon is the optimum. For example, the T1000 receiver , despite it's visual complexity, seduces us with it's confident rectilinear arrangement. Buyers of Braun expect maximum ease of use, and for product interaction to be an almost religious experience.

Precision

Being primarily a brand attached to manufacture of shaving products, precision in the engineering and manufacture of the product is consistently sought by consumers, who are targeted in this fashion by the marketing team. The idea of precision is carried throughout the range of Braun products, even where it does not much apply. Buyers of Braun expect a product which will enhance their own performances during daily usage by being consistently competent at the task.

Longevity

Consumers expect Braun products to last a long amount of time. Online reviewers are often replacing an old Braun product which has been in service for a great many years, and they are buying Braun because they expect the same again. Longevity also formed a crucial part of Rams' argument against a throwaway society. Buyers of Braun feel they are making an investment in the future by buying something that will not become faulty or unfashionable in the years to come.

German-ness

A message perpetuated by Braun marketing is some idea that the Germans are better at making things than any other nation. Historically, Braun products were made, designed, and engineered in Germany, and it is this idea of German-ness that is maintained by the marketers. Products, licensed by the Italians and made in China, sit proudly on the shelf, tagged 'Engineered in Germany'. Buyers of Braun feel they are buying products with heritage, and the German association promises ethical working conditions, reliability and efficiency.

Social Status

In the middle classes, buying 'Good Design' Is seen as a way to achieve social status, especially for items that are often 'on display'. 38 years since the release of the ET 33 calculator, a very similar calculator is still being sold, in an age when the technology is absolutely obsolete. Such an object can only be a seen as a statue in the age of the iPhone. Buyers of such Braun products, especially in design circles, are buying in part to project a favorable impression upon themselves.

T1000 Receiver
1963
Dieter Rams

ET 66 Calculator
1987
Dieter Rams

Clockwise from top left:
BN0035 Watch
Travel Alarm Clock
MQ500 Blender
Thermoscan 5

> Amazon Reviews
BN0035 Watch
Travel Alarm Clock
MQ500 Blender
Thermoscan 5
Travel Alarm Clock

★★★★★ **Great Piece of Product Design!**
By RogMax on 5 Feb. 2013

Colour Name: Black
Just got this watch and love it already! I was already a fan of the watch's designer, Dieter Rams, one of the 20th Century's top product designers. Everything about the watch smacks of good design - simplicity, ergonomics and quality of finish. If there is a slight downside it might be argued that the date window is a little on the small side; certainly it's one of the smallest I've encountered but, having said that, it fits in well with the look of the watch face. I would rate it alongside the Swiss Railway Watch as an iconic timepiece. If you're wavering about buying it I would just say 'go ahead you'll not regret it' and at Amazon's price of just over £60 with free postage it's a real bargain.

★★★★☆ **Nice neat clock**
By STAPLEWIZARD on 19 Sept. 2011

Verified Purchase
This is a small neat looking clock. It has German movement written on it but not where it was made; which is not the same thing as made in Germany. The clock makes a moderately loud tock, tock sound:not a tick tock sound and is not silent unless you're hard of hearing. I guess it is a modern day copy of the original Braun clock which costs quite a bit more than this clock second hand as a collectors item, but which probably was of a better construction quality. It is easy to set up and the alarm is easy to operate but as far as I can make out doesn't have a snooz mode. The alarm itself is of a rising crescendo and fairly pleasant. The clock is small enough to take on holiday or travelling but it doesn't come with any kind of protective case so be carefull how you pack it. It doesn't illuminate at night.

★★★★☆ **Braun Blends Beautifully!**
By Norman Cheeseworthy on 26 Jun. 2014

Vine Customer Review of Free Product (What's this?)
Compact and quiet, the Multiquick hand blender is a perfect example of the Braun quality you'd expect. It feels light but well made in the hand, and the stainless steel blades make blending a wide range of food stuffs a breeze. Comes with a plastic mixing vase too. Just two speeds keeps things simple, allowing you to concentrate on the important task of blending.

The cord is about the right length – not too short, not too long – but a wireless version would have been even more attractive, though probably more expensive still.

It's maybe a bit pricy for a hand blender, but it's a Braun so you know its money well spent.

★★★★☆ **Great as you would expect from Braun, but I still prefer its predecessor**
By K. Z. Sobol TOP 500 REVIEWER VINE VOICE on 26 Oct. 2014

Vine Customer Review of Free Product (What's this?)
There is no two ways about it, Braun produce the ear thermometers that all of the GPs I know use and I have always found them to be accurate and reliable. I still have my Braun ThermoScan 5 IRT4520 Ear Thermometer, of which this is the updated version and the comparison is interesting.

Other than the slight change of colour and shape, the main noticeable differences seem to me to be:

1.This model can store 1 previously recorded temperature - the 4520 model would store the previous 8 readings.
2. This model has a cap which fits over the detector part of the thermometer, but it cannot be placed on with a lens filter in place - the old model had a case, which not only allowed for there to be a lens filter in place, but also gave you somewhere to store a box of replacement filters.
3. This model has a trigger device which allows you to fire off the lens filter without touching it - the old model did not have this features.

Other than that, there doesn't seem to be much of a difference in terms of the technology, but that's perhaps because it wasn't broken, so they haven't needed to fix it.
I'm not entirely convinced by the changes - but I would suggest that Braun have proven their ear thermometers to be very reliable and long-lasting. The two-year guarantee is a testament to their confidence in their product, but you will probably find that it lasts much longer than this. Our old model is over 8 years old and is still as accurate as ever.
If you want something more revolutionary, then have a look at Braun's forehead thermometer, which doesn't need lens filters or to be poked in the ear - you don't even need to make contact with the patient, just point it at the forehead, between the eyebrows and you get the same brilliant Braun accuracy without having to ever wake a sleeping child or bother someone who doesn't like things stuck in their ear!Braun NTF3000 No Touch Plus Forehead Digital Thermometer

★☆☆☆☆ **Braun Square Travel Alarm Clock, Black**
By Warren on 5 Jan. 2012

Having owned one of the originals for over 22 years which unfortunatly gave up on me , i really wanted to get another of the same because it had been so reliable.
Unfortunatly these new ones are a poor imitation of the original quality travel clock . They are made by Zeon under license and they seem to have messed up here .
In low light levels it it's difficult to read the time due to the size of the numbers , i think it makes it worse because the the face is to far back also . This might sound strange but when you wake up and your eyes don't want to work right you want to be able to see the time easily . (The numbers are only slightly smaller than the originals but it does make a big difference).

Historical Context

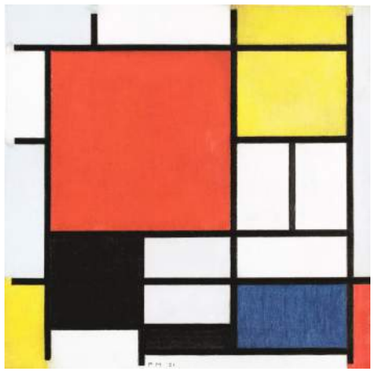
Influence

Braun's Design philosophy is majorly inspired by the Deutscher Werkbund and Bauhaus schools of thought. Both pioneered German modernism, and shared prominent members. Peter Behrens for AEG was first to introduce design philosophy across a whole company. Traditional Japanese architecture has had a significant impact on modernism, early modernists were inspired by it's calm clarity. The colors and rectilinear forms of the De Stijl movement have influenced Rams, who uses primary color to create visual impact and function. The international typographic style has had a major impact on design at Braun, who's products are punctuated with clear and helpful Swiss typography.

Peter Behrens
AEG
Electric Clock
Deutscher Werkbund
1909

Dieter Rams' garden, Kronberg, showing clear japanese influence, with multiple bonsai trees.

Ludwig Mies van Der Rohe
Barcelona Chair & Pavilion
Deutscher Werkbund Bauhaus
1929



Piet Mondrain
Composition
1921
De Stijl

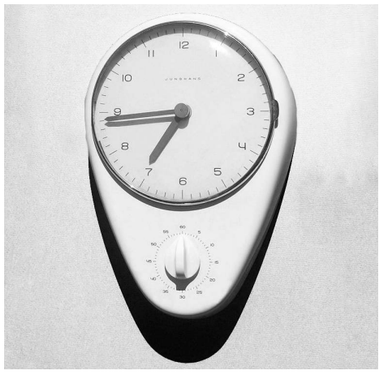
Walter Gropius
Window Handle
Deutscher Werkbund Bauhaus
1923

Otl Aicher
Olympic Pictogram
1972
International Style HfG Ulm

Siblings

After the Nazis had attempted to eradicate it, West Germany went back to the idea of German modernism, which was re-intruduced by schools such as the HfG Ulm. The core philosophies of Braun from the 1950's onward were shared with many other European companies, and other prominent designers.

Max Bill
Jughans
Wall Clock
HfG Ulm
1956



Gerd A. Muller
LAMY
cp1 Fountain Pen
1974

Dieter Rams
Vitsoe
606 Shelving System
1960

Legacy

Dieter Ram's work has had a phenomenal impact on design today. Post-Modernism rejected the cleanliness of the mid-century period, but since the turn of the century, modernist thought has re-emerged and had an influence on some of the best selling products today, the most notable being from Apple.

Jasper Morrison
MUJI
Wall Clock
2007

Jony Ive
Apple
Powermac G5
2003

Naoto Fukasawa
Plus Minus Zero
Coffee and Tea Maker
2003

Braun DS1

Braun’s 1972 can opener

Braun have already made an electrical can opener, the Braun DS1, first issued in 1972. The can opener surprised me, as it wasn’t mentioned in the mainstream books about design at Braun, and it didn’t make the same ventures from convention that Braun were famous for. In fact, the can opener is almost identical to the one I dissected in Identity 1.

The Interesting features of this can opener are the flared base with the feet, the chrome handle with the foldaway magnet, and the way the cables bundle at the back. The overall form is more restrained than the generic ones in production now, but it’s operating principle seems exactly the same.

I got into email contact with Dr Peter Kapos, of dasprogramm.com for some insight:

> **“The DS 1 was the only can opener design put into production by Braun. It was first issued in 1972. I’m afraid that I don’t know when it was withdrawn. I would imagine some time mid-late ‘80s … The most interesting thing about the design is that it’s a late re-working of an unrealised can opener prototype designed by Reinhold Weiss in 1964”**

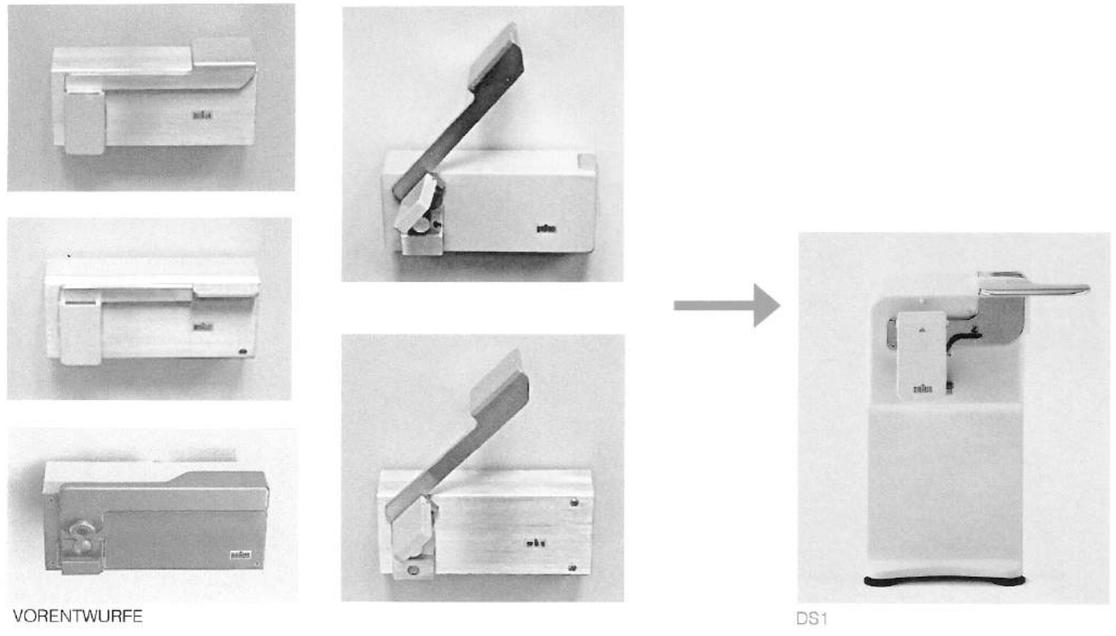
The 1964 design prototypes showed an extremely compact wall mounted design, with plate metal handle and the same folding magnet. This lead to the most interesting insight:

> **“However, it’s also conceivable that by the early ‘70s the earlier design was considered too discrete. Braun Design was beginning to lose it’s sense of purpose around this time, following the company’s acquisition by Gillette. They began a serious effort to cut production costs and began to make use of market research. Result: an end to the interesting, speculative design project of the 1960s.”**

On the basis that I am attempting to make a design true to the purest of Braun values, I will be attempting to realise these unadulterated values in the design of a different can opener.

Braun DS1
1972
Unknown designer

Opener Prototypes
1968
Reinhold Weiss

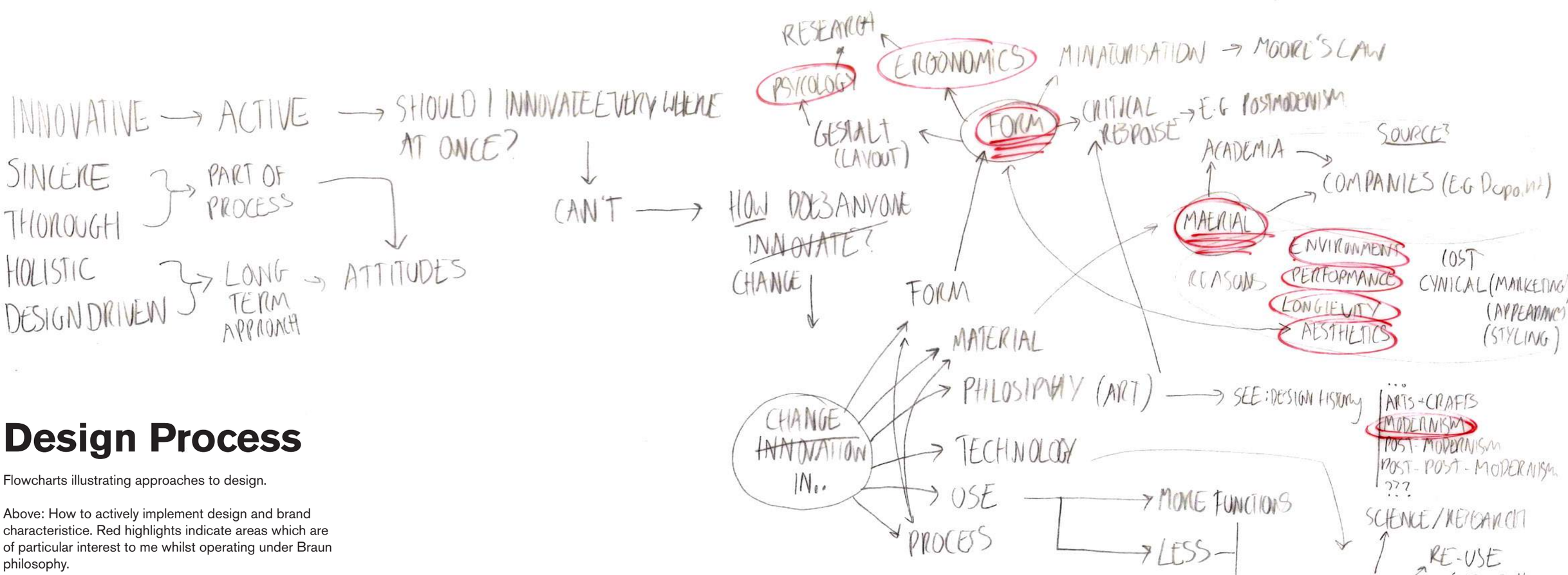


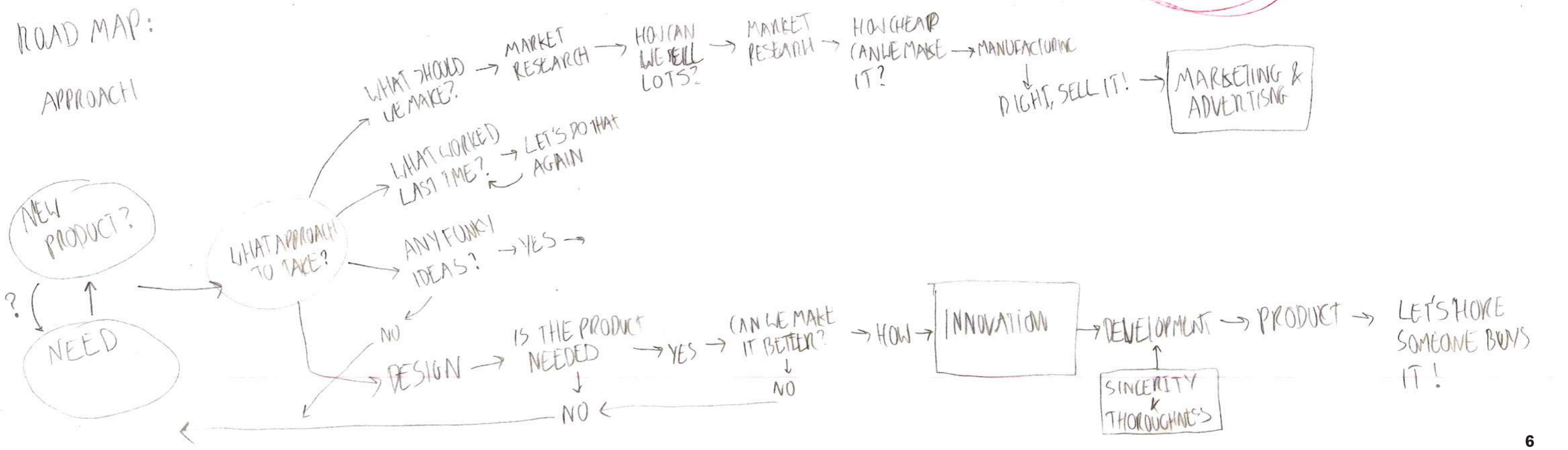
Design Process

Flowcharts illustrating approaches to design.

Above: How to actively implement design and brand characteristice. Red highlights indicate areas which are of particular interest to me whilst operating under Braun philosophy.

Below: The process of creating a new product, different approaches.





Design at Braun

“Each new project began with an in-depth look at every aspect relevant to the design: the market, available technology, the needs of potential users and so on. the first designs were made in soft pencil on rolls of tracing paper so that the sheets could be overlapped and variation in detail explored. Many models were made, to check form and answer questions, such as how best to accommodate motors and ventilation and where to place switches.”

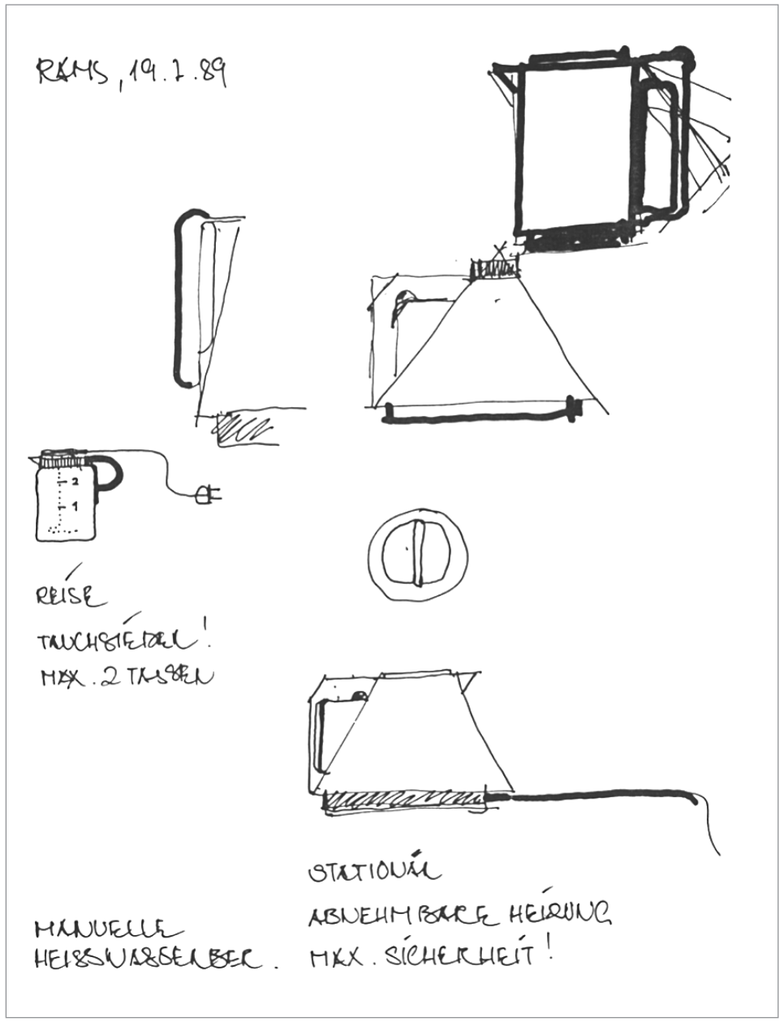
Dieter Rams : As little Design as Possible
Sophie Lovell
2011

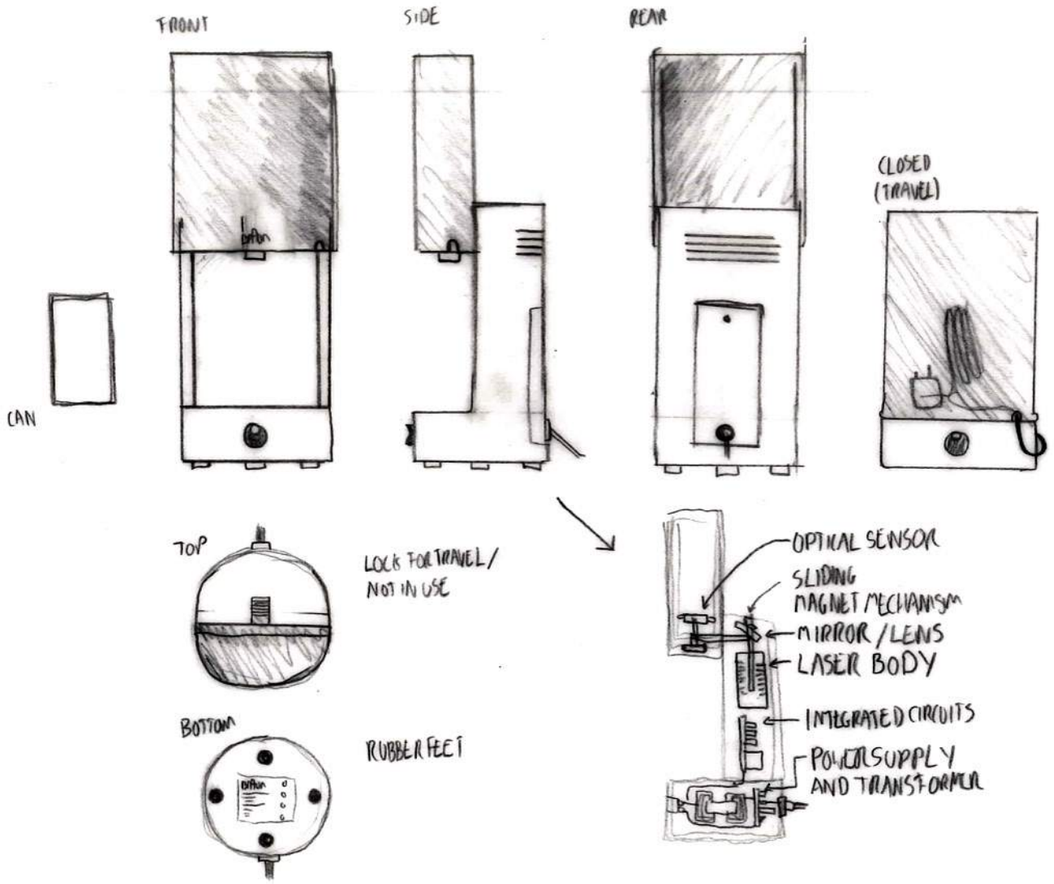
As part of Identity 3, in addition to designing something that I believe is faithful to the Braun design team, I will attempt to simulate the *design process* used by Braun.

I will do this by attempting to think less about the visual appeal of any drawings I produce, as pretentious drawings will only lead to me feeling attached to ideas for reasons other than functional appeal. Drawings will be done primarily on tracing paper, as mentioned above. I will also attempt to get into solid prototyping as early as possible.

I am mirroring the design process both to learn a new approach to my own techniques, and in order to gain a close connection to design at Braun, as part of the project.

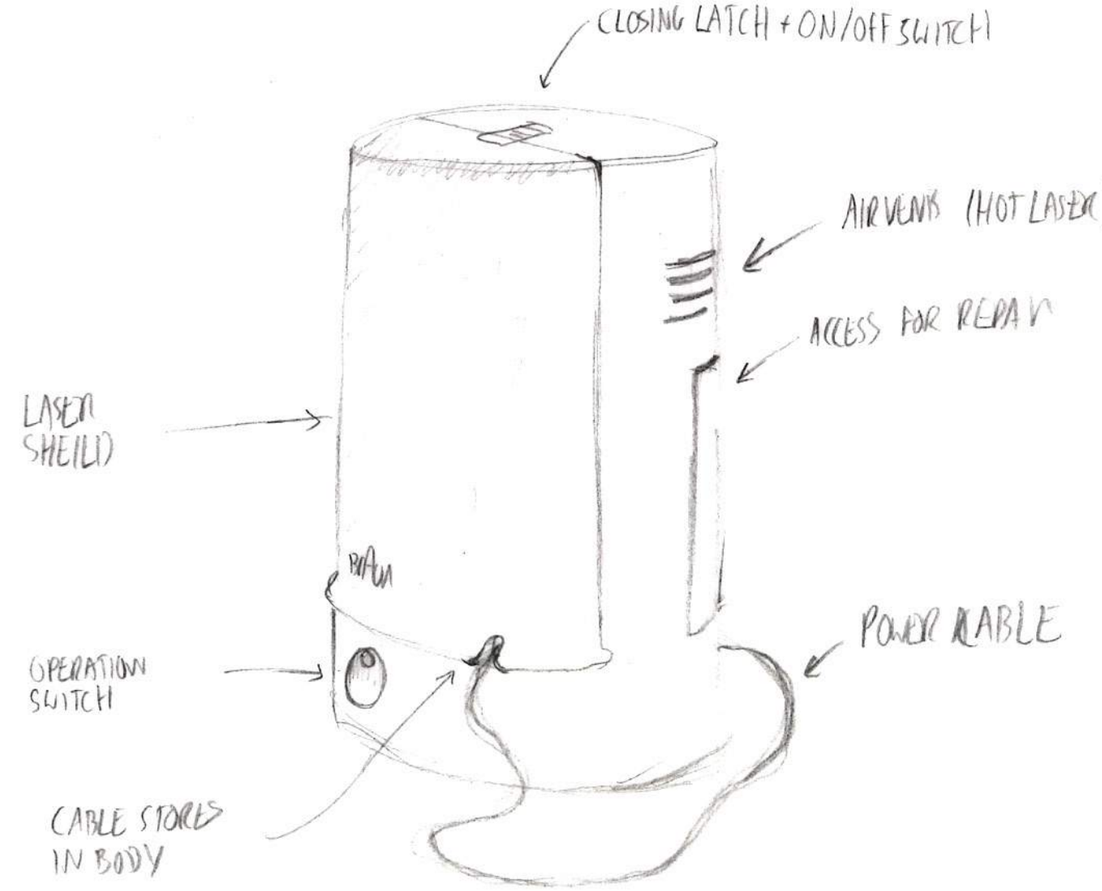
Sketch, Kettle
1989
Dieter Rams



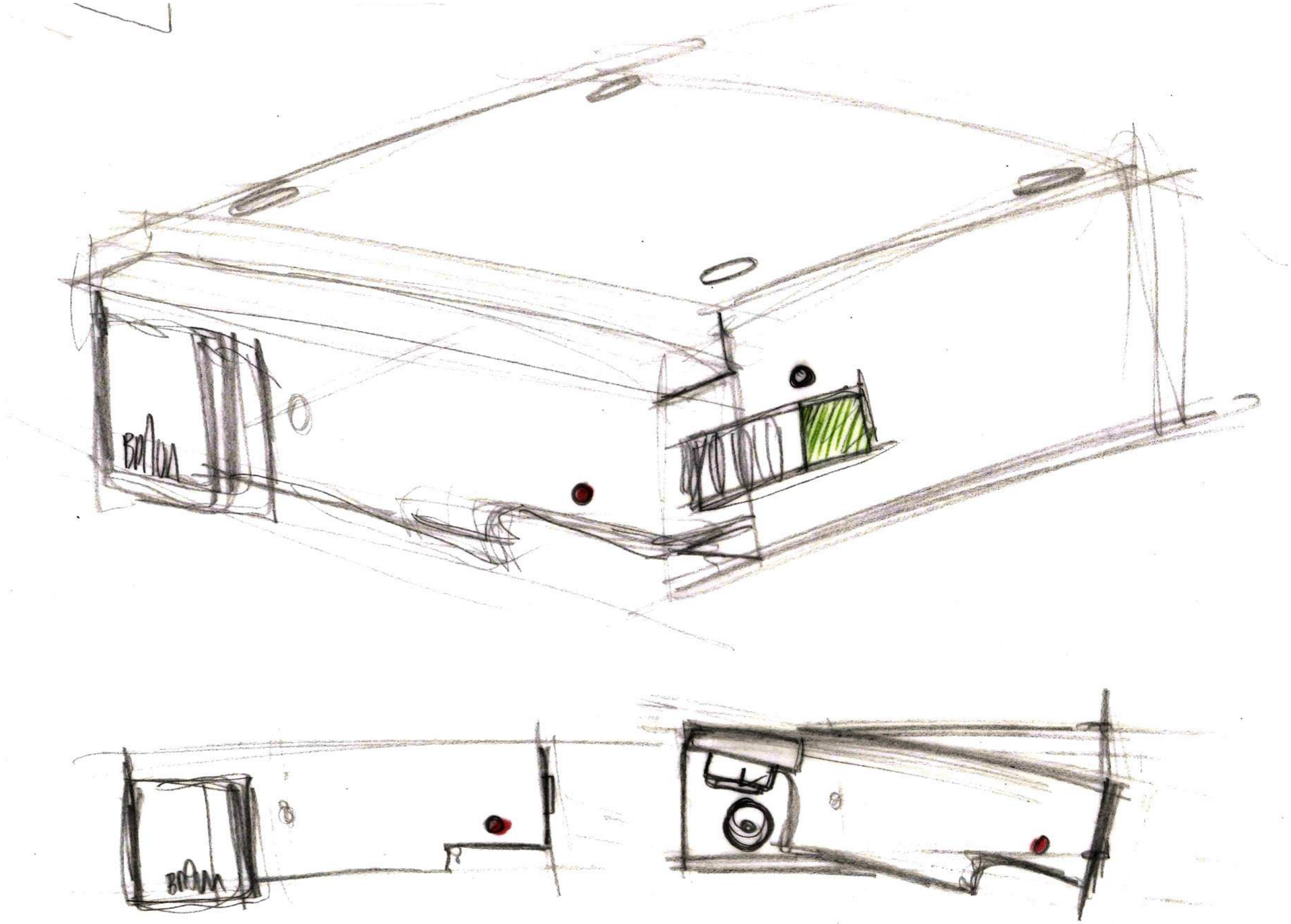


Braun Lazer Can Opener (2015)

- Lazer Cuts can lid Clean off when Slide is lowered.
- Slide locks in place during use to protect eyes
- Sliding Magnet mechanism Slides with Slider to collect lid
- Optical Sensor reads size of Can.
- Programmed Mirror Reflects Laser Path to cut edge of can



Idea One - Laser Can Opener



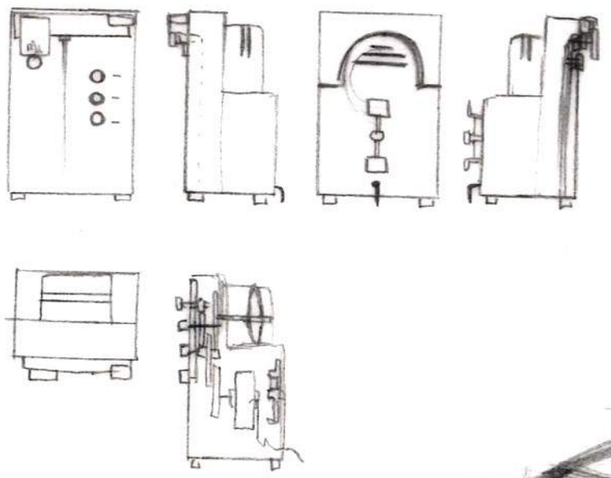
The wall mounted can opener can be mounted on a wall or a shelf and features a latch and handle mechanism.

The latch holds the handle in place and keeps the device turned off, when the handle is pushed anticlockwise and the can placed at the wheel, the device opens cans in an almost identical fasion to the freestanding can opener.

It also features a foldaway magnet, as seen on the Braun DS1 can opener.

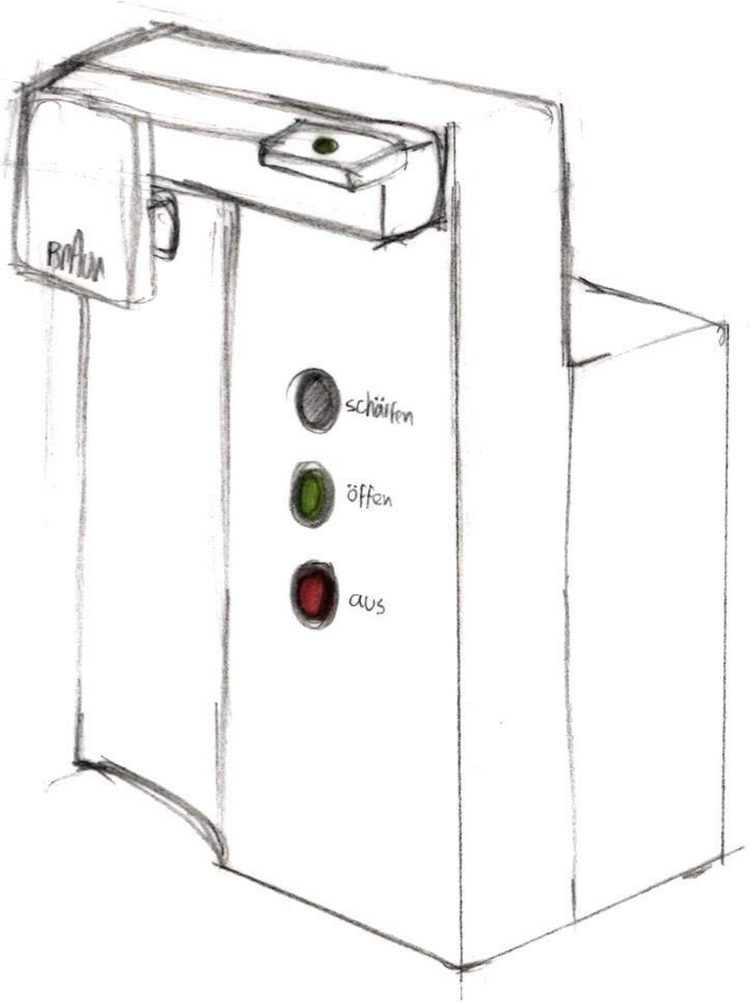
NOTE: This page is not the same as the page on the physical design journal, there is a more detailed explanation therein.

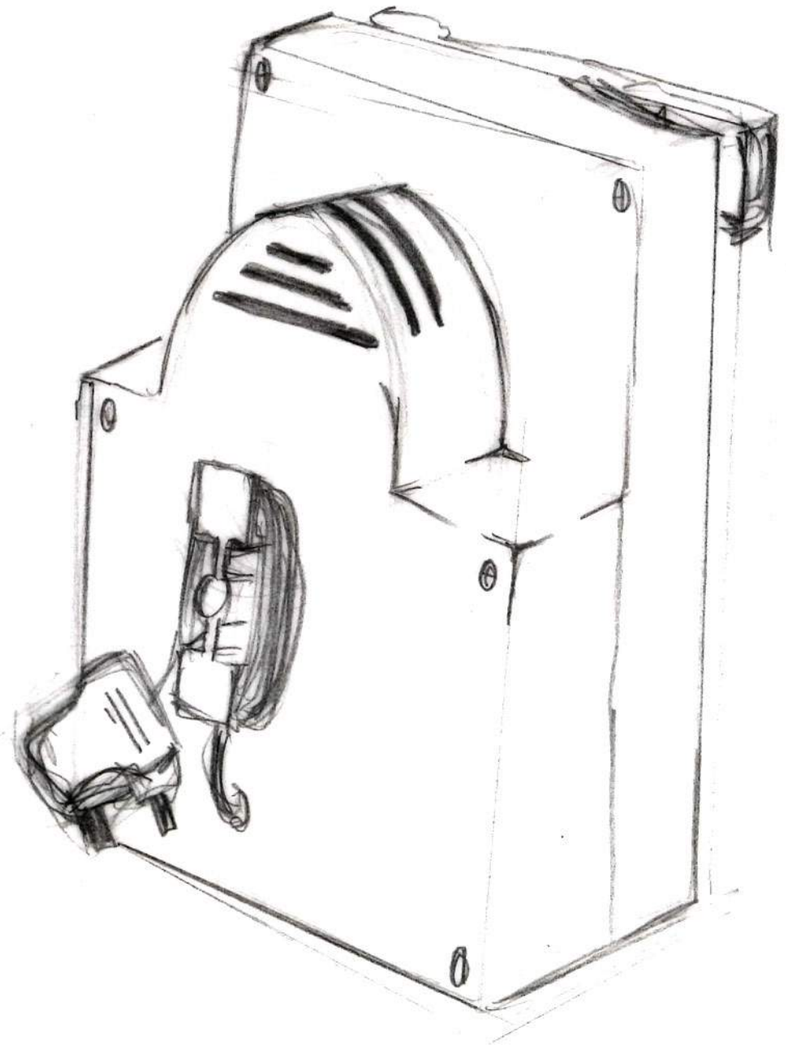
Idea Two - Wall mounted can opener



BRAUN free-standing can opener (2015)

- No modification to original can opener principle
- Fold away magnet stolen from 1972 model
- Mechanical sharpener returns from UDICO model
- Radio button selection of function
- Pull-out cable holder
- Clear product typography + color coding





Idea Three - Standing Can Opener

Idea Selection

	Usability (x2)	Originality	Longievity	Plausibility	Helpfulness (x2)	Cost / £	Rating	+Benefit/+Cost
Morrisons Can Opener	10	5	5	10	10	8	40	1.00
OXO Manual Opener	10	4	9	10	6	10	39	-0.50
1. Laser Can Opener	14	10	3	5	16	120	48	0.07
2. Mounted Can Opener	14	8	5	8	18	14	53	2.17
3. Standing Can Opener	14	6	6	9	12	14	47	1.17

	Usability	Originality	Longievity	Plausibility	Helpfulness	Cost
Morrisons Can Opener			Familiar > repairable	In production		£8.00
	Fiddly to attach can	Unchanged since 50's	needless adornment			
OXO Manual Opener	Very Familiar	small differences from norm	Low complexity	In production		
	Requires Strength		Blade may blunt		Fairly involved use cycle	£10.00
1. Laser Can Opener	3 easy stages	Completely new system	Timeless form	Reasonably do-able	Should open quickest	
			Complex mechanism	Requires R&D	Bulky Form	New components; R&D Expense
2. Mounted Can Opener	Useful visually	New Form	Replacable parts	same principle	Much less obtrusive	Same Components
	Fiddly latch	Same components	More complex	Slight R&D required	no performance upgrade	New tooling required
3. Standing Can Opener	More useful visually	New Visually	Familiar > repairable	Could be made today	Features like cable holder.	Easy to manufacture
	No real upgrade	Same Principle			no performance upgrade; Bulky	needs better materials

My process selection process aims to rationalise the selection of a product for further development.

Below, I have charted the pros and cons of each design, in order to inform the rating of each product. I have also added to the process the original can opener and the OXO Good Grips manual can opener, their inclusion will allow me to compare my designs to what is already available.

The products have been rated numerically on 5 criteria:

Usability The extent to which the design is understandable and easy to use. A strong design is easy to use without any experience. Designs which use already existing behavior patterns also do well on this metric.

Originality The extent to which the design uses novel and new features. This is a slightly cynical metric, but the need to keep up the impression that Braun can innovate has formed part of my decision.

Longevity The extent to which the design is long lasting. A strong design is one which is maintainable and unlikely to be critically affected by wear by design.

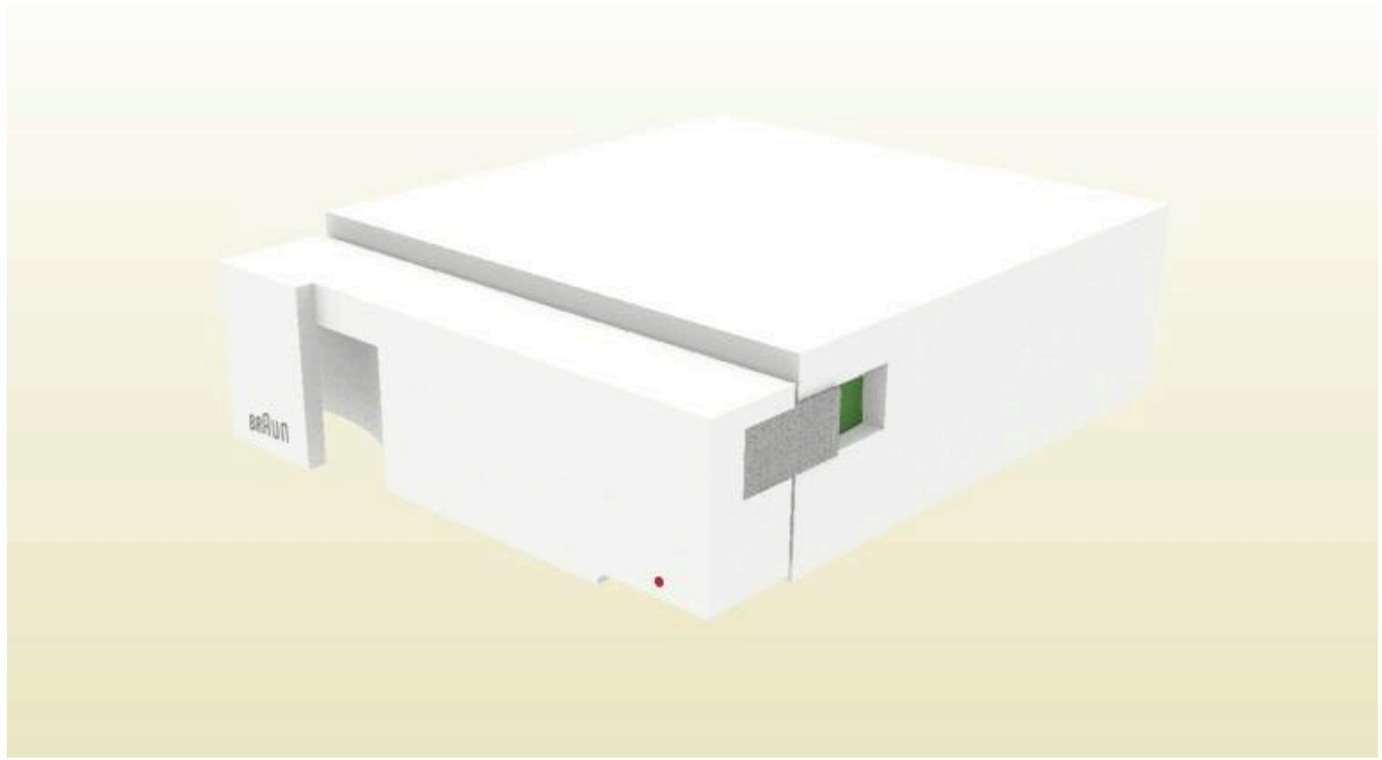
Plausibility The extent to which the design is ready to manufacture. A strong design could be made in large numbers in the near future. I do not believe that this metric should ***lead*** the design process, but it is important to keep ideas in check.

Helpfulness The extent to which the design enables a good meta-usage-cycle. A strong design is unobtrusive while not in operation, and requires little maintenance.

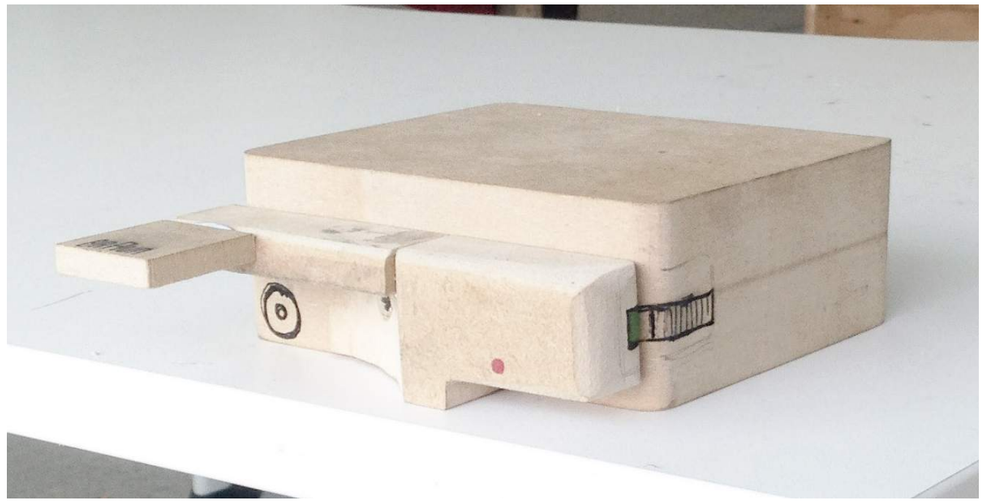
Of these categories, Usability and Helpfulness ratings have both been multiplied by two, because these are both positives, and most related to the core values of Braun.

The final rating metric, **+Benefit/+Cost**, is based on the difference between the idea and the generic, in terms of rating, and the price which would be paid my the consumer over the generic. It gives us an idea of the **value added per pound**, and is a very important principle, as Braun sell products based on value added, and not as in the case of others; value for money, which is the domain of supermarket basics, or ultimate value, which is the domain of the ultra - luxury market.

3D Prototyping



Mounted Can Opener
developed on
Rhinoceros for Mac
details on Photoshop



Mounted Can Opener
Made in workshop from
MDF. Details in pen.

3D CAD

In order to learn more about a new program (and because I was at home, with no access to solidworks), I decided to attempt my first modeling in Rhino. As the product is simple it is was easy to get used to.

The 3D modeling session forced me to think about the actual geometric realities, as when drawing it can be very easy to avoid the specifics. It also gave me a road-map to how I was going to approach the physical modeling.

Workshop

In order to test the form of the product, to see if it was of a sensible, human size, and had the correct geometry which could actually open a can, I created a workshop prototype of the mounted can opener.

The prototype is made with glued MDF, and features a working hinge mechanism.

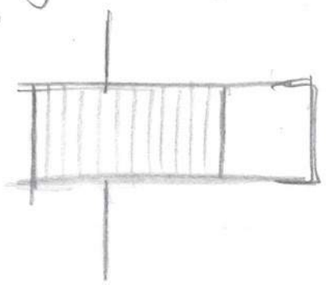
The prototype was helpful because it verified what i was looking for, namely that the new geometry, with it's curved entrance, is helpful for locating normal sized cans. It is less useful for locating tiny cans (pilchards), but it does allow for a wide range of can sizes, including tuna (wider) and rice pudding (taller).

The prototype prompted me to think about the way the edges of the product are rounded. Each individual edge needs it's own radius, and therefore any number of combinations can be created. It is here where it becomes very hard to apply formal logic and restraint.

Later on in the project, when modeling, the prototype was extremely useful in letting be visualise details in the design by '3D sketching'.

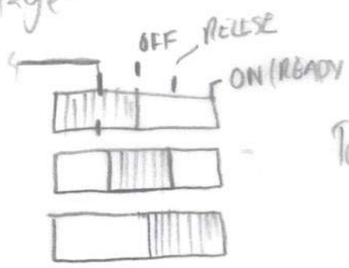
Side Switch

Original



- → ON & RELEASE
- ← LOCK BRACKET
- TEXTURE GRIP

→ 3 Stage?



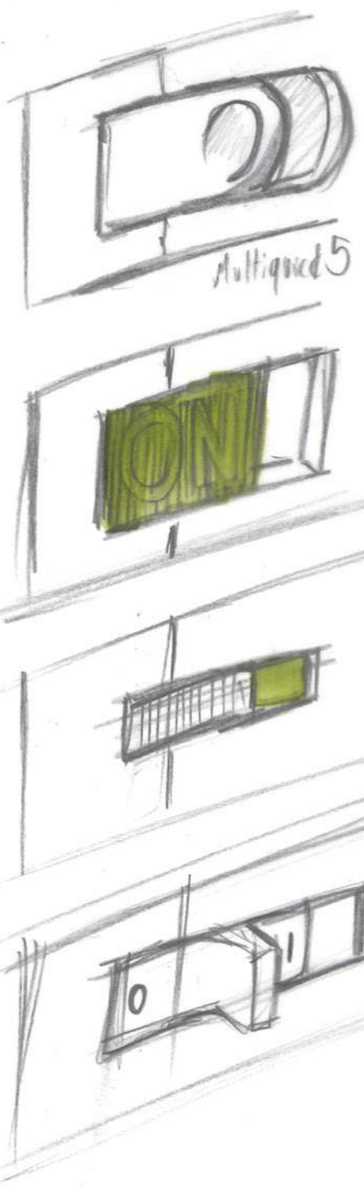
Too Complex? → UNNECESSARY, IF SWITCH CONTROL ON BRACKET IS RELIABLE.

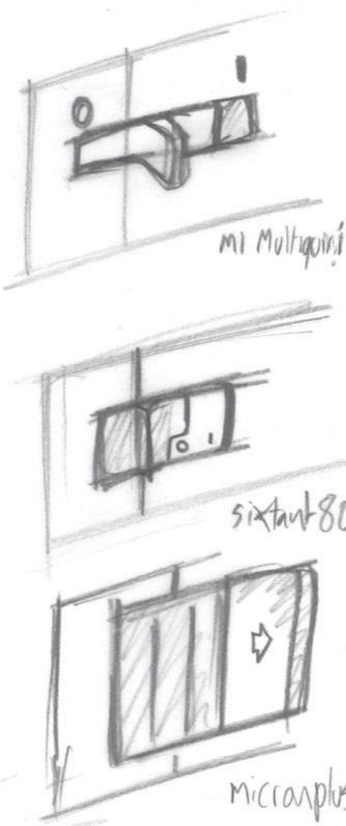
IS THIS BEST? { WET HANDS? ARTHRITIS? WEAK PEOPLE?

Size?

→ MORE SIZE → EASIER TO FIND
→ MORE 'UNDERSTANDABLE'
- VISIBLE - DEFINES START

→ LESS SIZE → EXAGGERATED FORM
→ INDICATES DIRECTION
MORE CLEAR



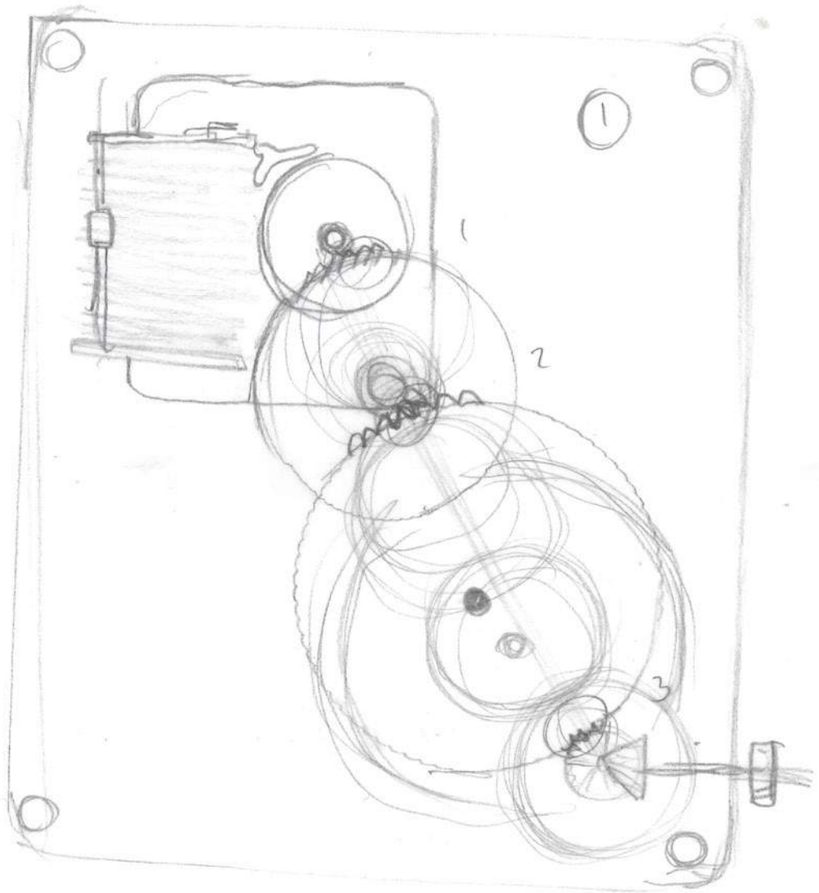


Switch Design

In this second phase of the project, I began by developing several different designs for switches. The switch is a critical part of the device, it must turn on the device, hold up the bracket, and give back enough resistance to the user.

The user must be able to apply force through the switch, with wet or dry hands, so it is important that the switch provides either grip or mechanical advantage (e.g a bump) or both.
It must also be extremely easy to pick up the function of the switch, it must be self explanatory.

Packaging.



ORIGINAL CAN OPENER

→ 7.2 ÷ 10.29 → GEAR RATIO 73.73

10.29 7.2

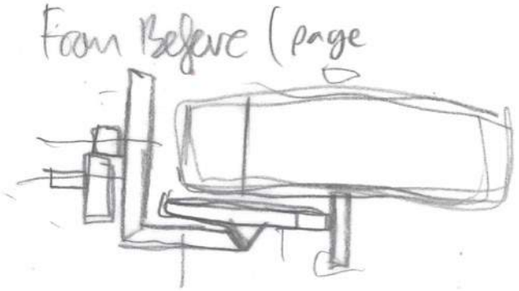
7.165

7 → 72 5.58 20

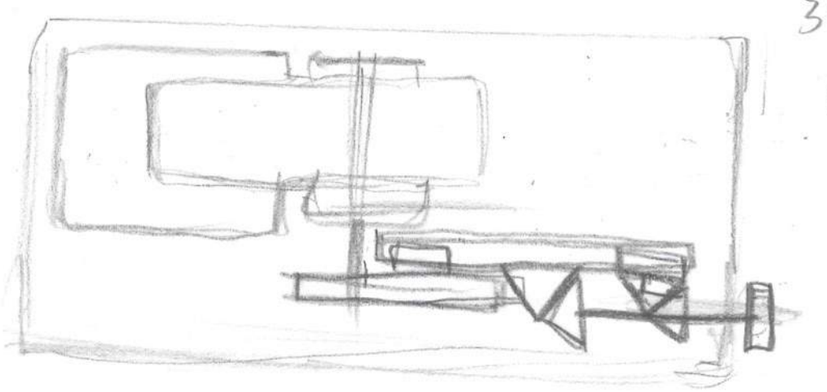
10.29 3.58 3.58

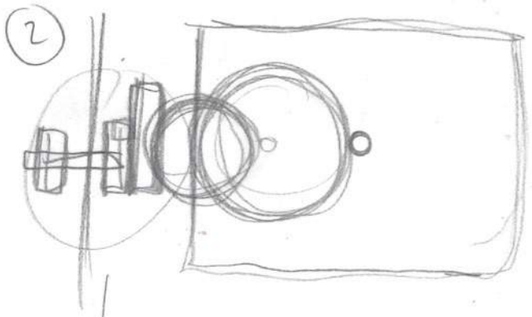
- Not sure.

From Before (page



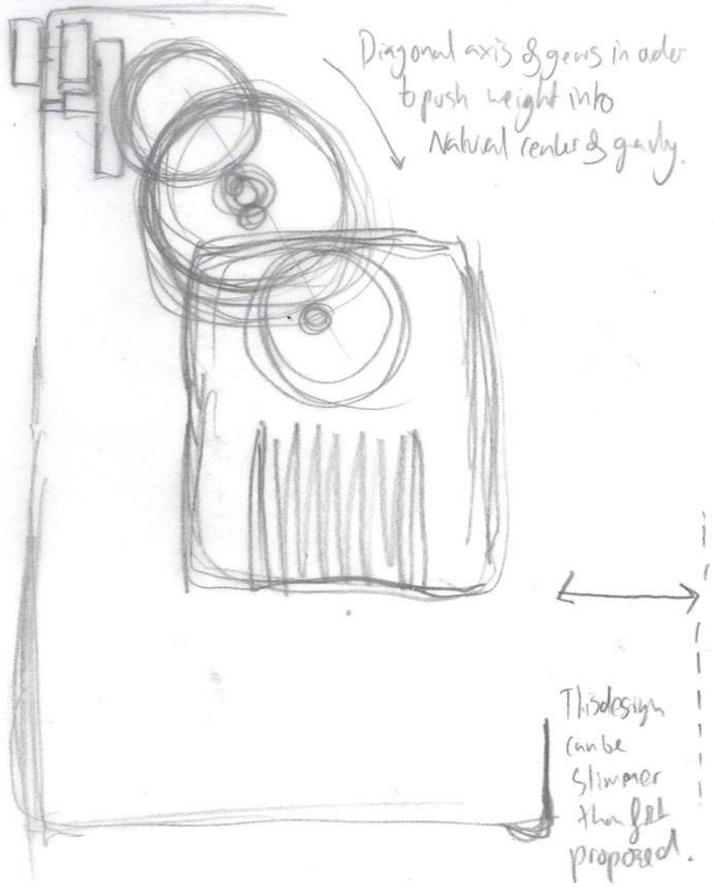
30←10|30←30|30←10|80←10





THIS KIND OF SYSTEM IS PRETTY MUCH NECCECARY. (LANCE FLAT GEARS DONT FIT INTO CANDTS

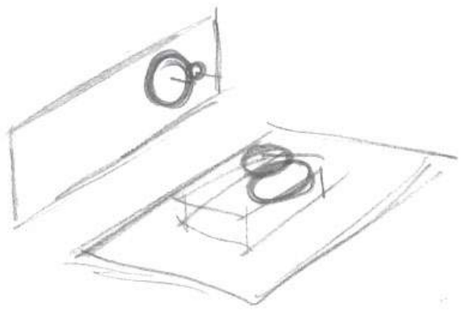
Modify ② To fit in corner



Gear Configuration

The configuration of the internal gear mechanism is an important step because it will inform the shape of the final product. I have attempted to match the gear ratio of the morrisons can opener.

Gears on 2 axes

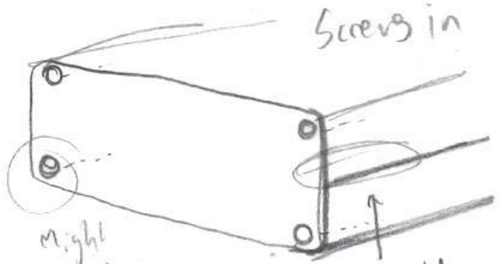


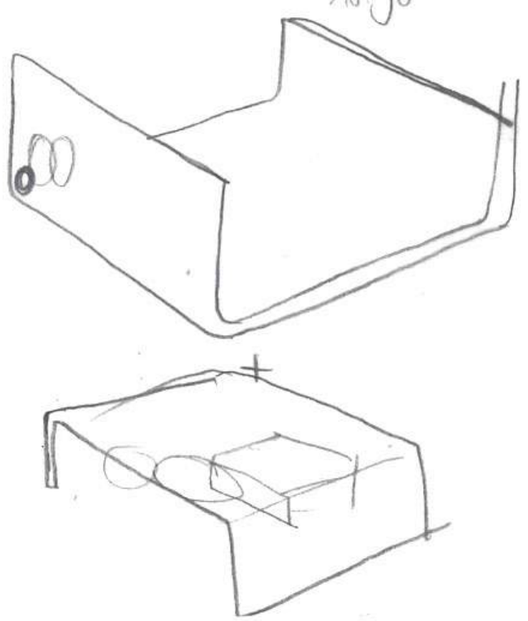
Would imply 3 stage construction:

Are there any other possibilities? ~~Not in this timeframe.~~

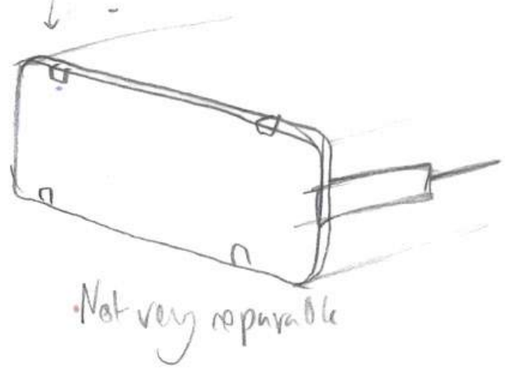
Product Form

Screws in

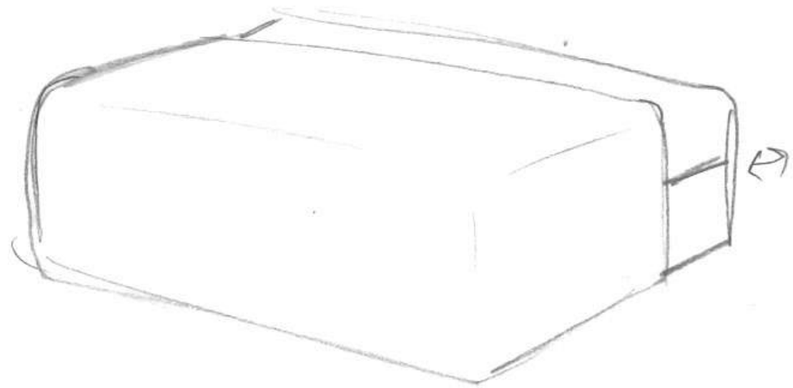




Clicks in with tabs



Long seamless form (deep drawn)

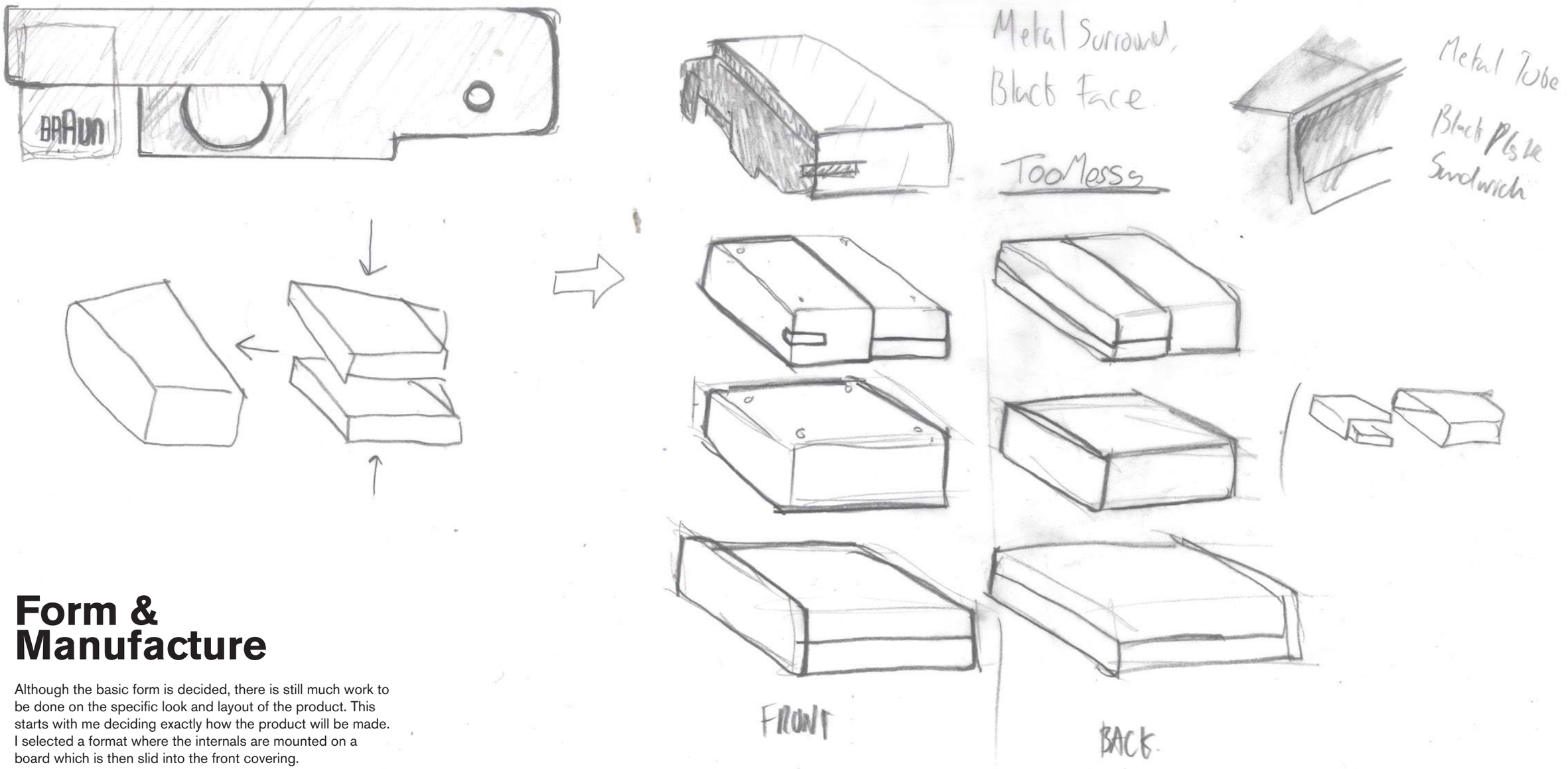


Colors

White → "Modern" → Seen as "Basic Appliance Color" → Do brown care?

Black → "Powerful" → May not fit into all kitchens

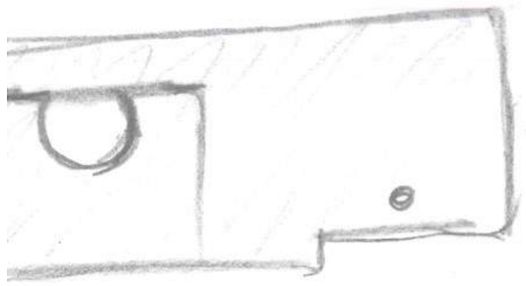
Silver → "Premium" → Would be dishonest unless all parts metal.

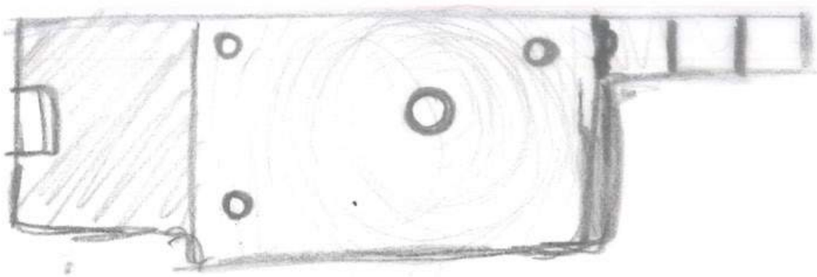


Form & Manufacture

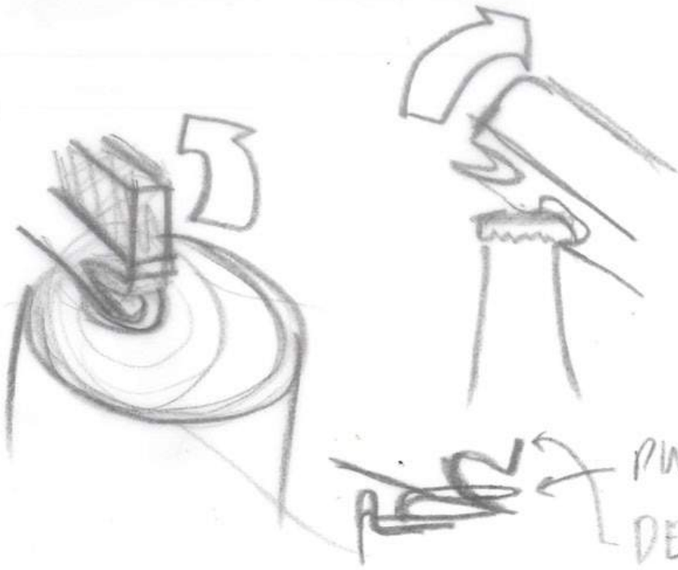
Although the basic form is decided, there is still much work to be done on the specific look and layout of the product. This starts with me deciding exactly how the product will be made. I selected a format where the internals are mounted on a board which is then slid into the front covering.

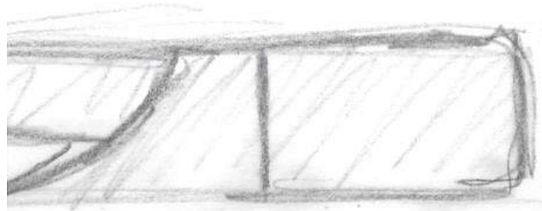
There is much to deliberate over colour too, White is signature early modernism, but has lately become the domain of supermarket basics. I juggled with the idea of including black plastic or stainless steel covering. I think white, despite (or perhaps because of) it's cheap image, makes its use in a new Braun product both confident and provocative.





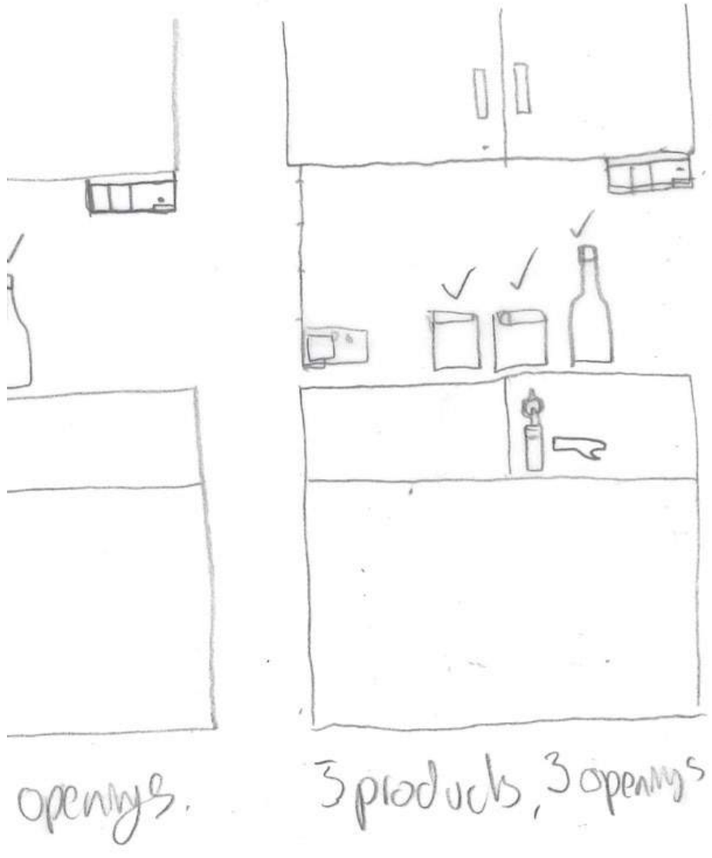
EXAMPLE OF HANDLE SYSTEM WITH INTEGRATED BOTTLE OPENER + RING PULL OPENER.



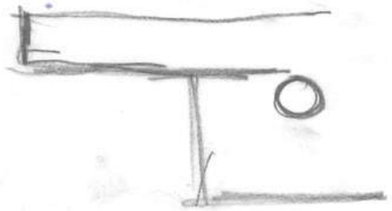


THIS IS A SEMI-CLEAN SOLUTION, BUT IS LESS BETTER IN THIS CASE?

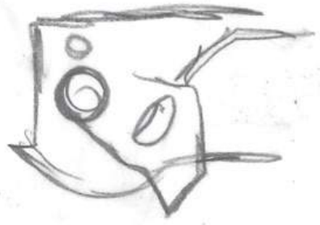
KITCHEN TWO

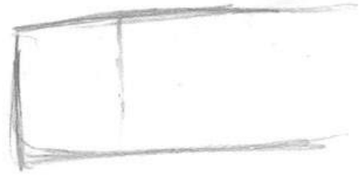


INITIAL DESIGN

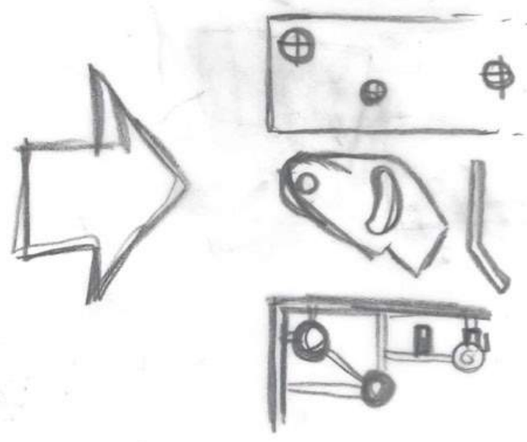


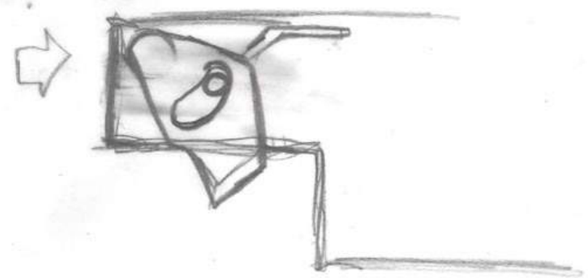
MORRISONS BLADE:





WILL NEED TO THICKEN TOP PART





Blade Mechanism

The geometry of the blade bracket will have to be adjusted in order to accommodate a blade mechanism similar to the one found on the morrissons can opener.

Braun DS2

Final rendering of
solidworks 3d model

Product Design Specification

Braun DS2 Dosenoffer (Can Opener)

Performance
The product must be resistant to slight rough handling, but in it's mounted form it will not require much impact resistance.

Environment
The product must be splash resistant as is used in kitchens.
The handle of the device must not be affected by water - it must be washed frequently, and the metal must not corrode.
The product must operate in temp. -20°C to 50°C

Life in Service
A life of 20 years minimum, 30 is desirable in order to maintain the brand image.

Maintenance
The product must be easy to repair by a consumer - for longevity.
The only required maintenance is the washing and inspection of the handle.

Cost
The base SKU must be able to retail for roughly twice times the basic freestanding can opener.
This would place it at around £16-&18 in the UK

Competition
Basic Brand (freestanding) - Morrisons - £8
Premium Brand (freestanding) - Kenwood - £14
Black and Decker Spacemaker (mounted) - $39.99

Shipping / Transport
Product must be easily packaged in square box.
Transport will be internationally by boat and truck/train

Manufacturing
To be manufactured in the EU , most likely Frankfurt
Production limited to basic processes (e.g Injection Moulding, Casting, Assembly) CNC machining not viable for this quantity

Human Factors
The product must be easy to operate - Users are likely to have arthritis.
Attachment system must be versatile to allow for emergent usage cycles.

Size
No width constraint, sensible would be around 100 - 200 mm
Max 170mm deep (to be mounted on shelf)
Max 100mm tall (need room for access under shelf)

Weight
No real user constraint for weight, should easily be supported by shelf.
Weight of product could be around 0.5 - 1 kg for perceived quality.

Aesthetics
Back to purity, back to simplicity
References to previous Braun products are permitted, but should be made only with restraint, where they make sense.

Materials
The materials used must be noble and unpretentious.
Materials must enable long use of the product.
Probable materials include Plastic, Low cost metals and leather.

Life on Market
A basic shelf life of 25 years plus is advised, this will be achieved by the use of a restrained visual appearance.
Minor revisions to the product will come when needed, perhaps in 3 - 5 years.

Customer
The customer will likely be 25 - 50 yrs and employed professionally, earning above average.
Customers will possibly have an conscious interest in the creative industries.

Safety
The product must be safe to use, cutting elements will present a risk to the user, which can be managed through a combination of good design and adequate warnings.

Market Constraints
The device will be marketed internationally, mainly in developed economies.

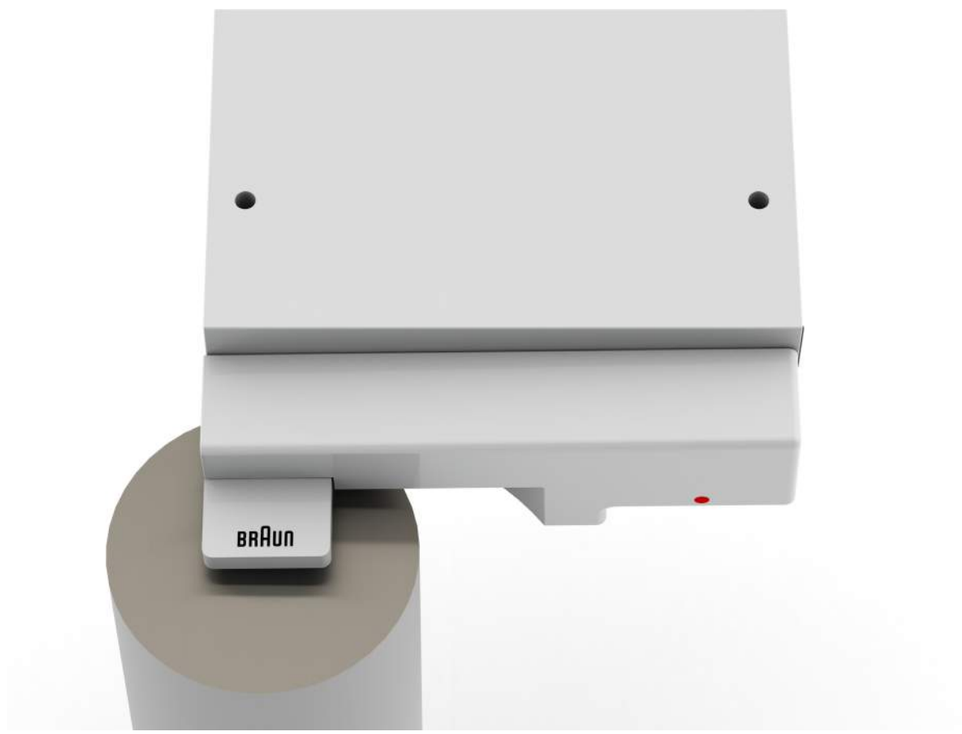
Social / Political Concerns
The device will be manufactured in house, in the EU, to ensure adequate ethical employment of manufacturing staff
Effects of waste and pollution must at least comply with local laws.

Environmental Concerns
Longevity of the product should ensure less waste.
Braun will actively encourage repair and refurbishing of products.
Toxins in materials and electronics will be kept to a minimum

Installation
Instillation will require tools, perhaps experience.
Specific tools for mounting will be offered optionally, but for free.

Disposal
Recycling will be encouraged, with a send-back scheme.
Components will be labeled for easy dismantling/recycling.

Braun DS2



< Flap lifts up to display magnet, which holds onto can lid when opened. Cafeful attention has been paid to the radii of the handle; softer 2.5mm radii are used on parts which come into contact with the user, drawing them in.

Rear of device showing the vents and the power inlet. Form mirrors classic Braun here, edging into parody.

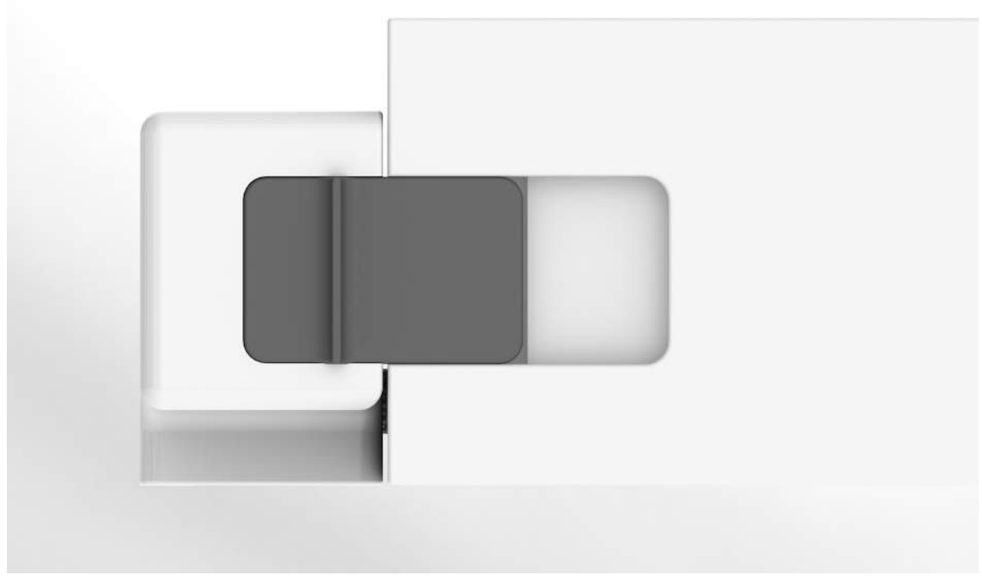
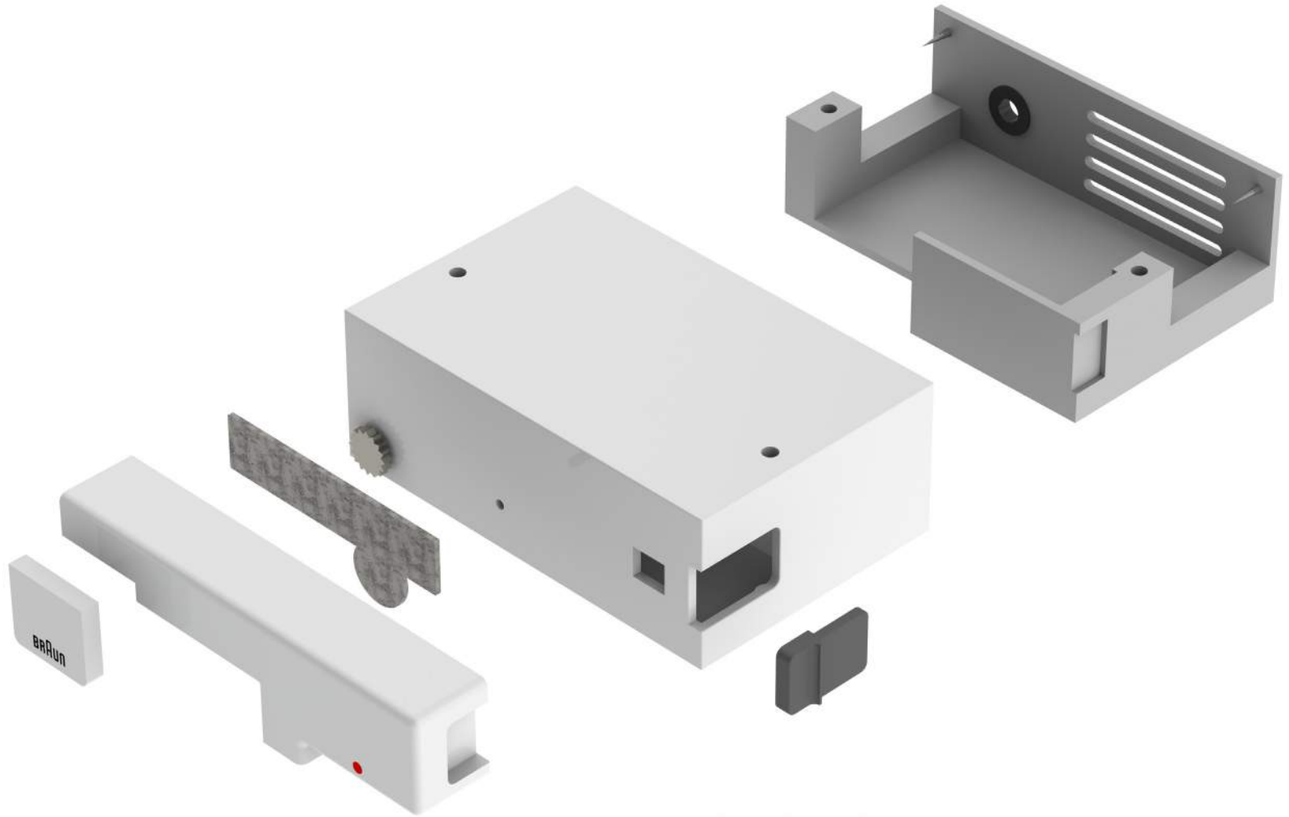


Image of bottom shows the cutting mechanism and the mounting holes. Holes go though whole device and long slender screws used for mounting.

< The multifunction switch is a hugely important part of the design. Pushing the switch towards the body releases the handle for use, and readies the motor circuit for use. I decided to use a large flat switch with ridge, mainly inspired by Sixtant razors.

Braun DS2

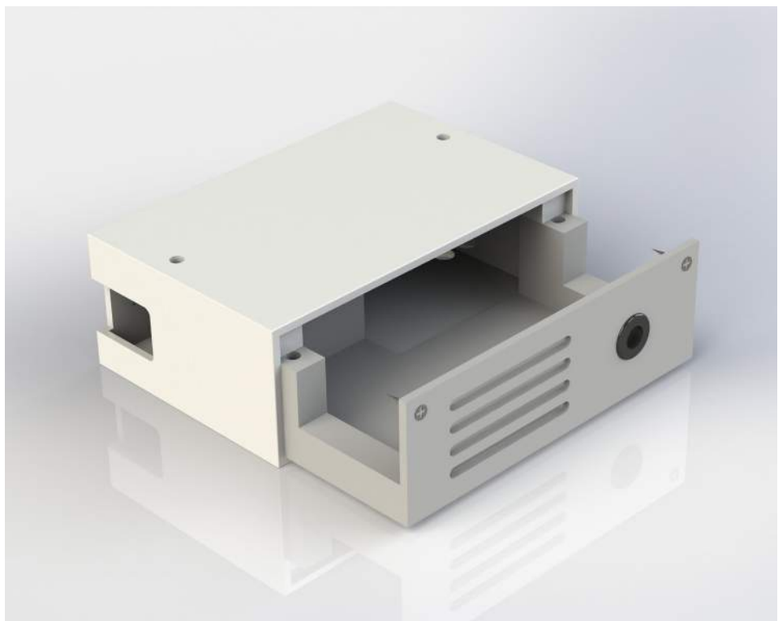


Exploded View

Assembly

The main body of the DS2 is a combination of two parts, the body and the drawer. The draw has the horizontal gears and the shaded pole motor mounted upon it, and the body holds the opening mechanism, vertical gears, and also the blade bracket switch (not shown) . the drawer simply slides into the body and is screwed in.

The side switch is then clipped onto the drawer through the exterior shell, and the Handle can be inserted and removed freely.



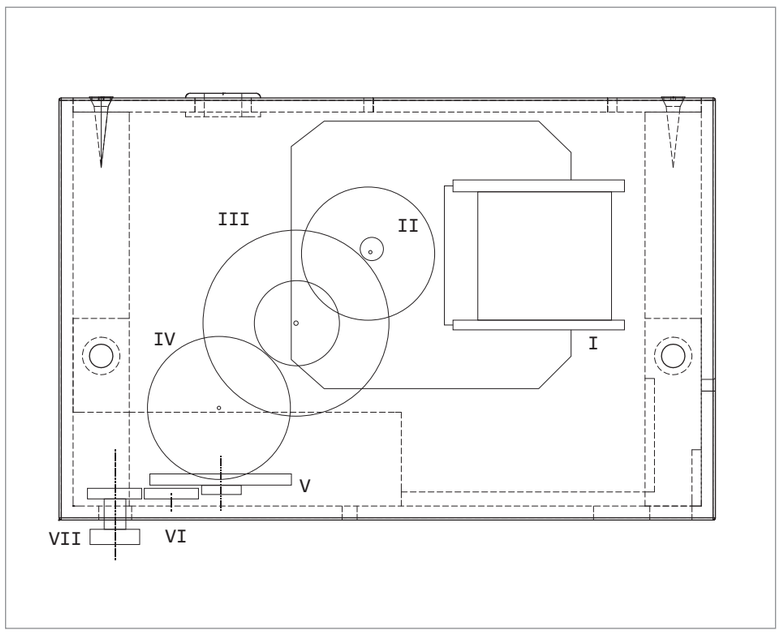
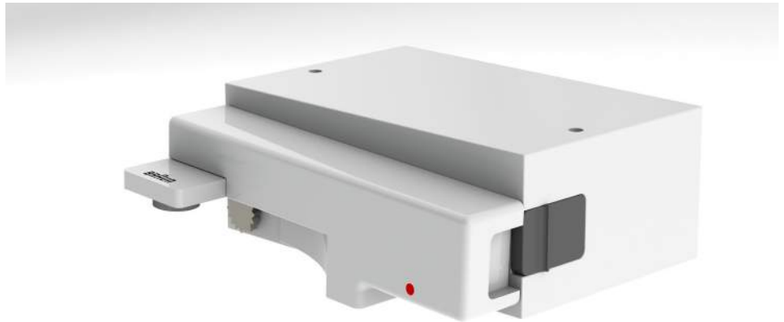
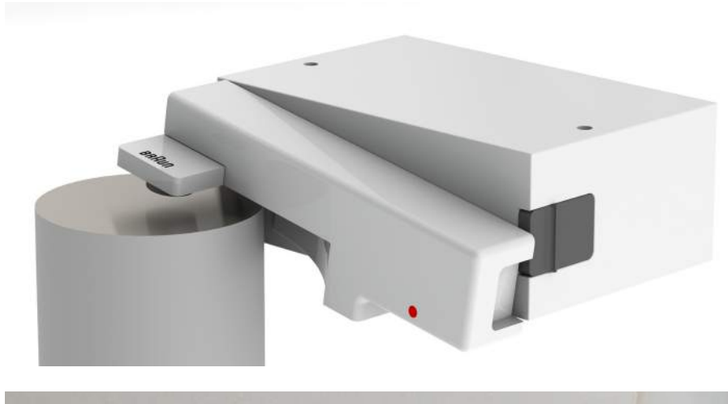


Diagram of interior workings

< Assembly of product

Use Cycle





Read from top left, left to right, the four stages, Readying the magnet, Opening the switch, placing the can, and cutting.

Opening

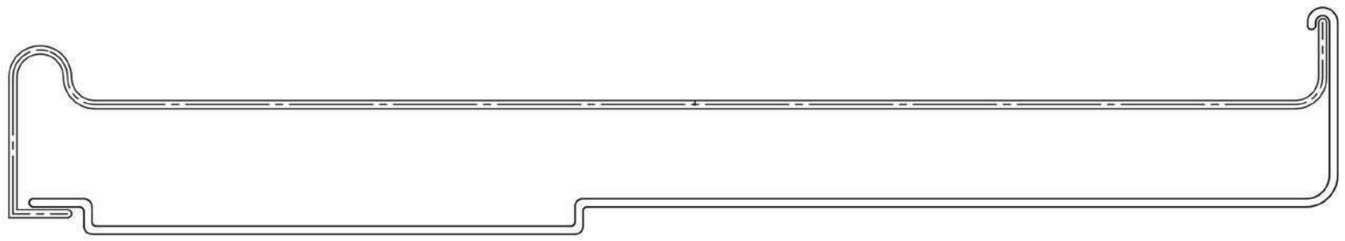
The magnet is fist flipped up, then the side switch engaged, releasing the handle. The can can then be placed on the gear, and shutting the handle activates the turning motor.

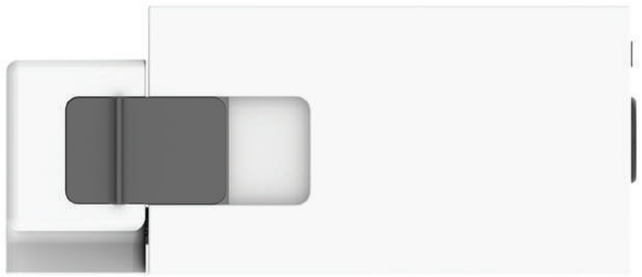
The device separates can and lid, holding both until the user comes to remove them.

Washing

The handle is easily removed, and can be washed under running water, as all metal components are stainless.

Braun DS2 + VITSŒ 606





DS2 + 606 Mounting Kit

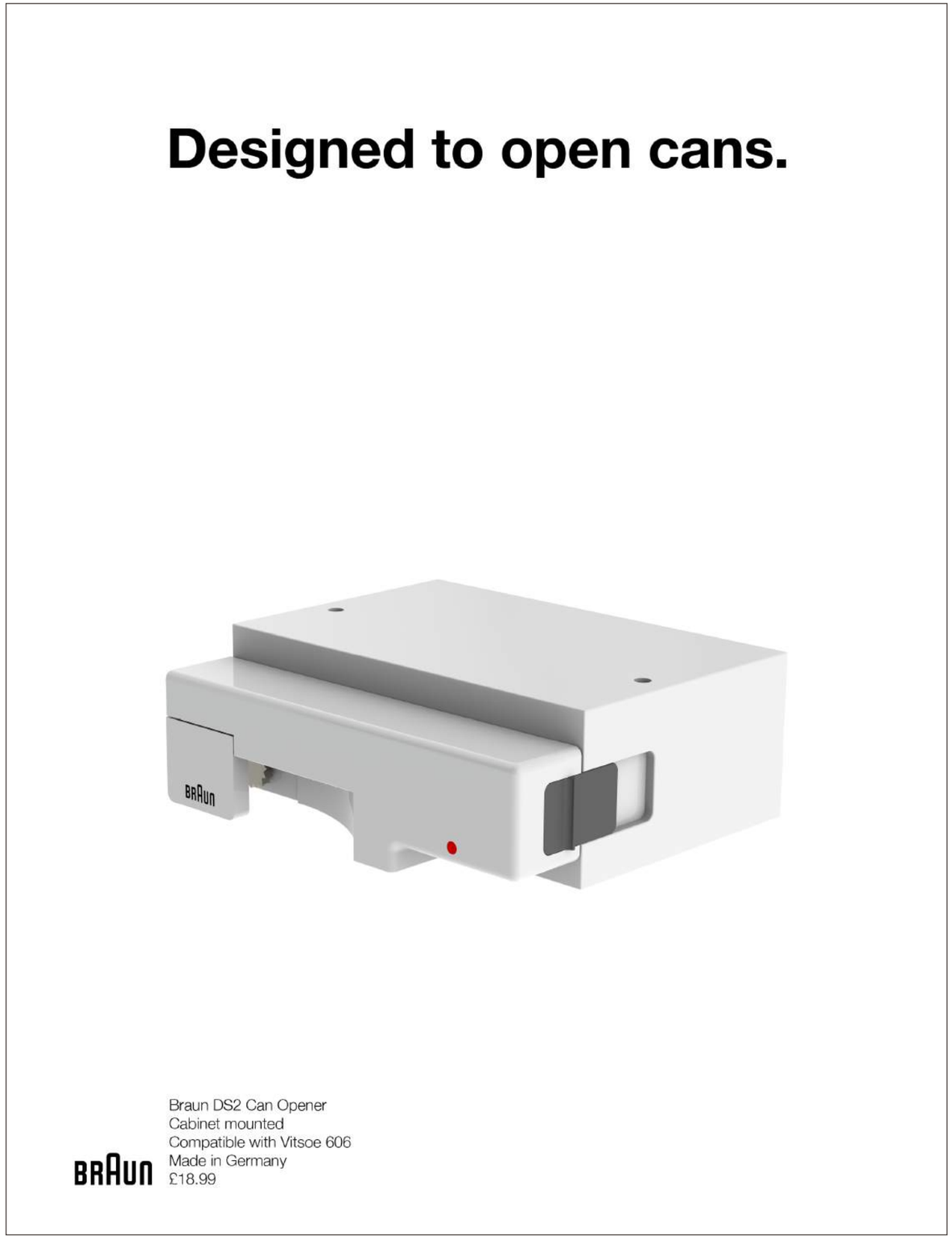
System Design

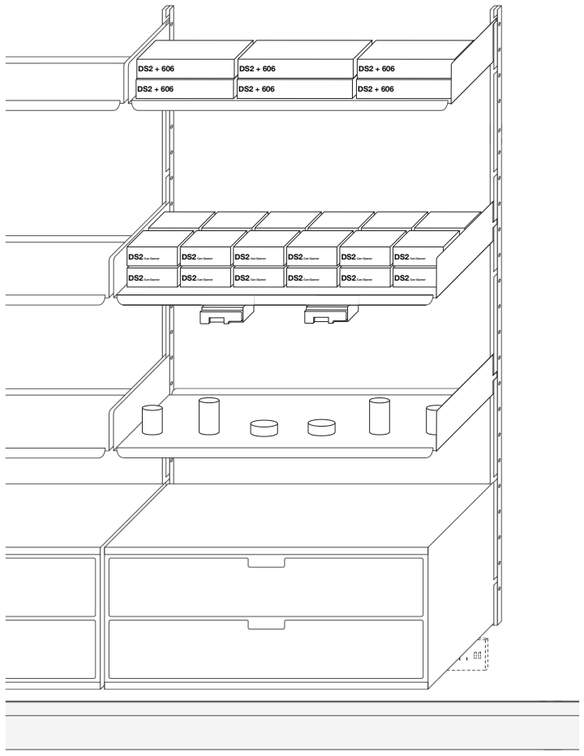
Modular systems define a huge part of Dieter Rams' work at Vitsoe and Braun. The goal of modularity is to increase both adaptability and longevity of a product by designing a system as a system of parts. The parts can then combine in novel ways, and broken parts can be readily replaced.

The Vitsoe 606 shelving system is the crowning achievement of this approach, a few types of equipment can be combined in an infinite amount of ways to produce a customized system.

Braun products of the past have been developed to fix with the 606 system, and as it's place is in the kitchen, the Braun DS2 has also been designed to fit. The optional +606 mounting kit is the most seamless way to mount the DS2, and comes in three colors to match exactly with the 606 at the user's home.

Packaging and Presentation

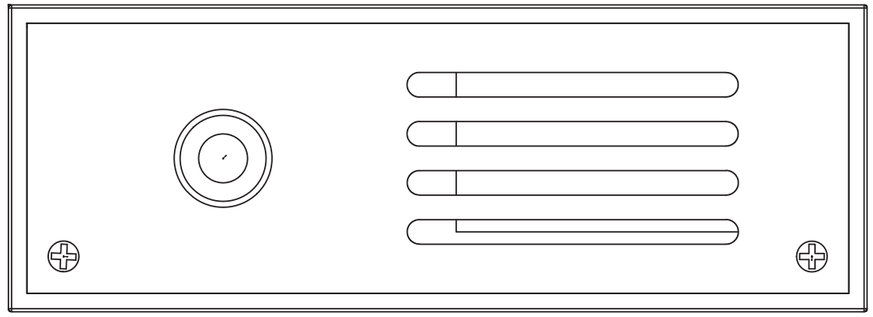


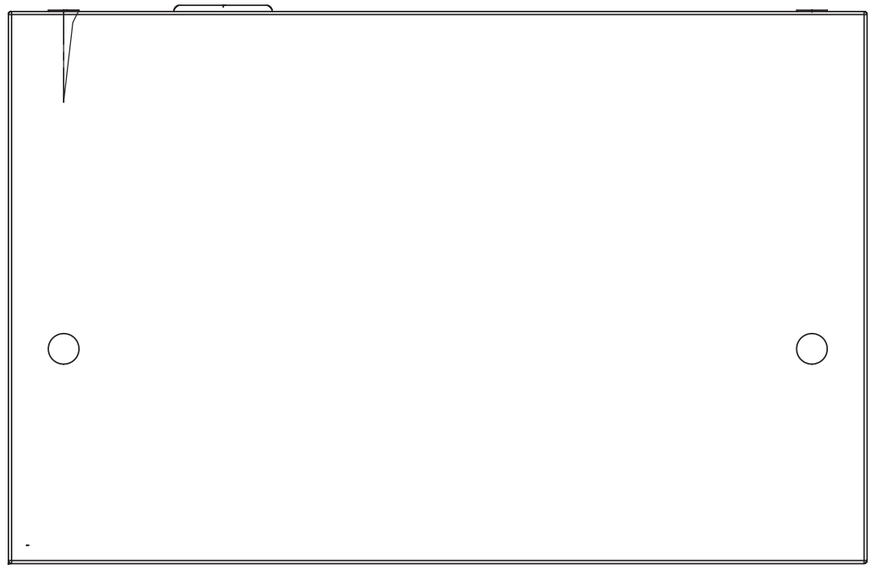


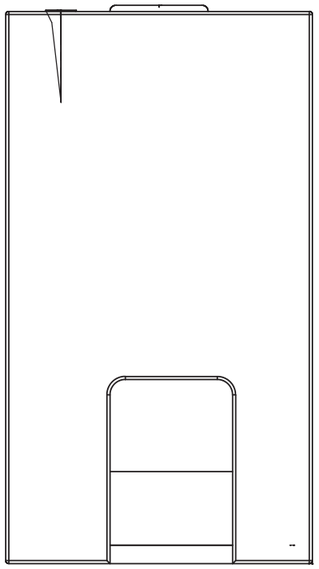
Far Left:
Advertisement for DS2 Can Opener, set in Helvetica.

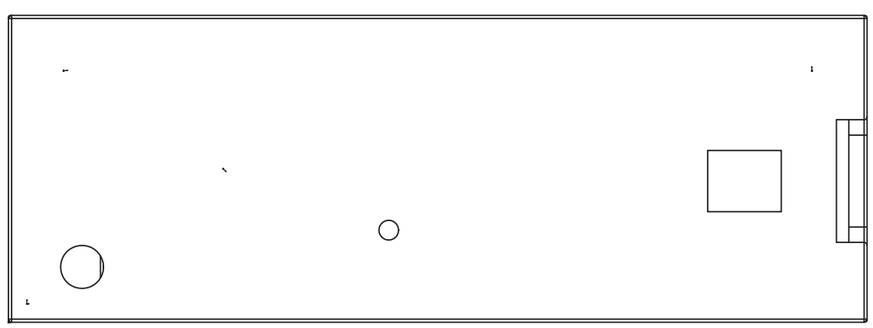
Near Left:
Shelf layout presentation for the DS2 Can opener, and the DS2 + 606 Mounting kit. Devices and dummy cans are presented in order to allow customers to try out the device - a sure sign of confidence in the product, and a less manipulative marketing tactic when compared with flashy, wasteful packaging / advertising.

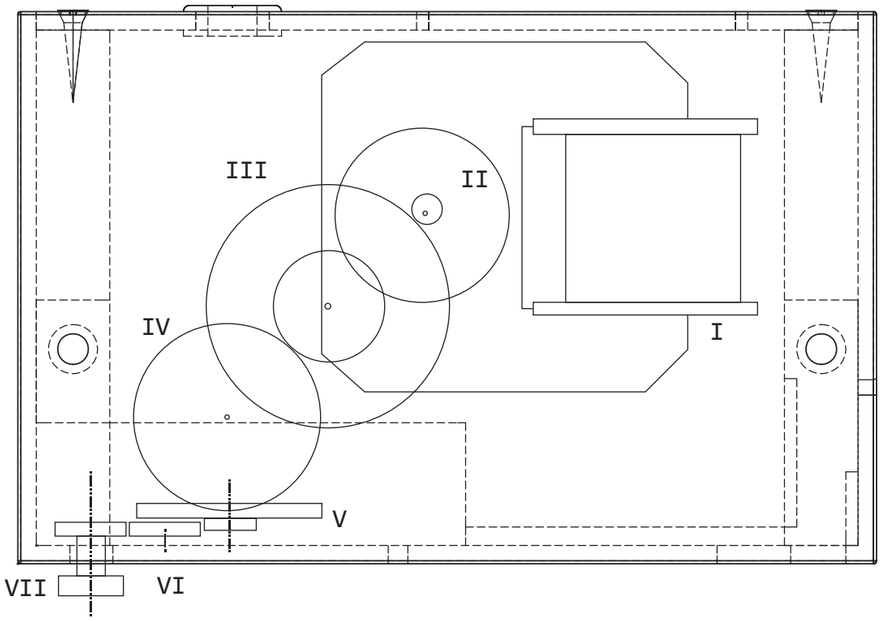
Below:
Concept for packaging. The photo is subtle and restrained, and the leading face on the shelf contains only words. This is an honest approach, as the photograph is used only for clarification, not coercion.











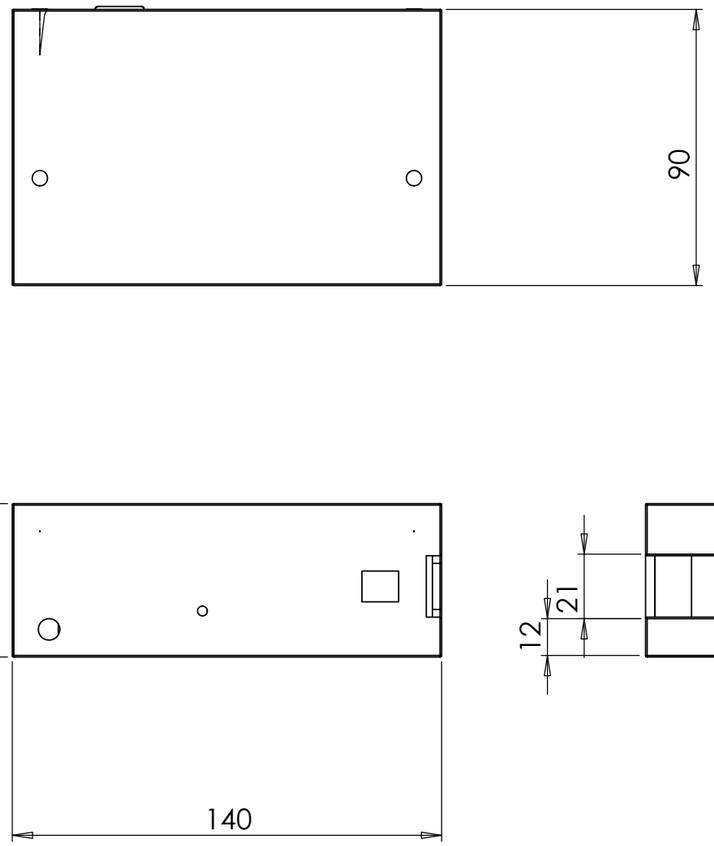
Body Assembly, showing rear.

Above: Showing fit of interior part

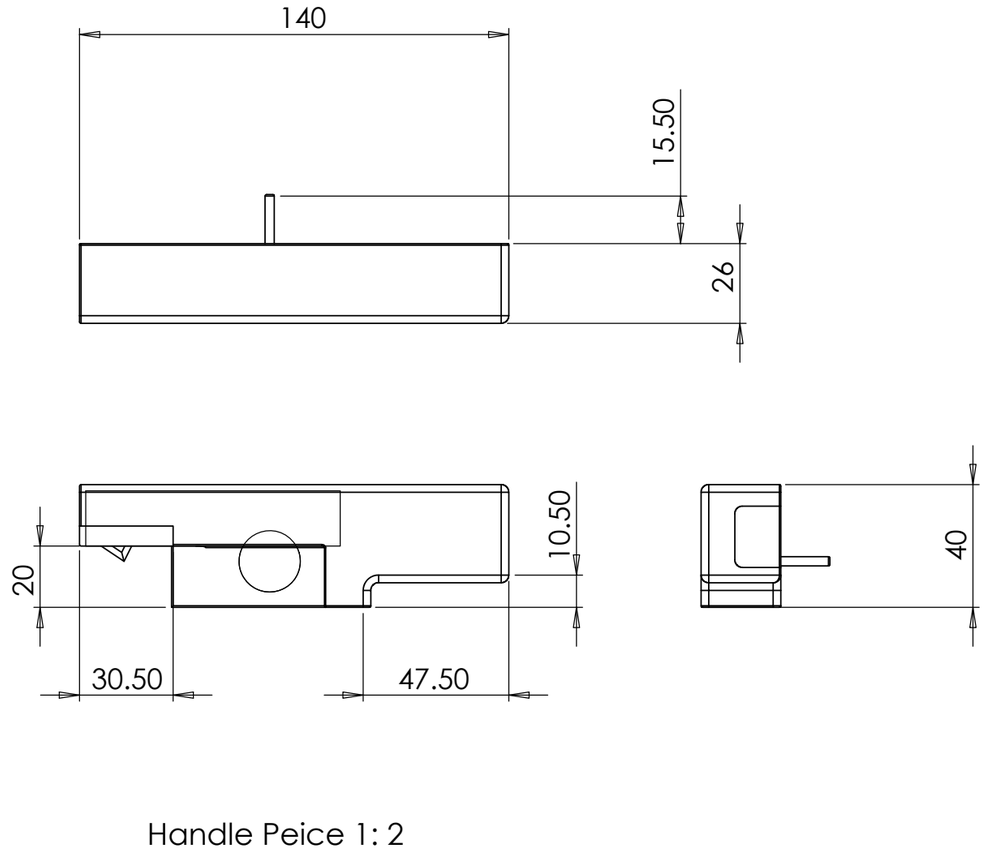
1:1

I Shaded pole motor
II Rotor with 10t outpout shaft
III Gear - 80t in 10t out
IV Gear - 30t
V Gear - 30t input 10t out
VI Gear - 30t
VII Gear - 30t to Opening mechanism

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:			DEBUR AND BREAK SHARP EDGES	DO NOT SCALE DRAWING	REVISION
	NAME	SIGNATURE	DATE			TITLE:	
DRAWN							
CHK'D							
APPV'D							
MFG							
Q.A				MATERIAL:		DWG NO. Body Assembly	A3
				WEIGHT:		SCALE:1:1	SHEET 1 OF 1



Main Body Peice 1: 2



Handle Peice 1: 2

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:			DEBUR AND BREAK SHARP EDGES	DO NOT SCALE DRAWING	REVISION
	NAME	SIGNATURE	DATE			TITLE:	
DRAWN							
CHK'D							
APPV'D							
MFG							
Q.A				MATERIAL:		DWG NO.	A3
						Final aseembly Play Around	
				WEIGHT:		SCALE:1:2	SHEET 1 OF 1

Bibliography

Reading

Dieter Rams: As little Design as Possible Sophie Lovell

Less and More: The Design Ethos of Dieter Rams Klaus Klemp

Braun + Design Collection Jo Klatt & Gunter Staeffler

Braun: Fifty Years of Design and Innovation Bernd Polster

Great Designs DK

dasprogramm.com Peter Kapos

Product Design Paul Rodgers and Alex Milton

Cult Objects Deyan Sujic

B is for Bauhaus Deyan Sujic

The Design of Everyday Things Donald Norman

Design for the Real World Victor Papanek

Images

HL1 http://p2.la-img.com/369/57355/28099859_1_x.jpg

SK61 http://www.dasprogramm.org/images/t1_product_1369403789.jpg

interior sketch http://blog.archpaper.com/2011/05/a-dieter-rams-design-stays-designed/

Program Poster http://www.dasprogramm.org/electrical/artwork-and-literature/das-braun-programm-poster.html

Braun PS1000 http://www.maksimarbuzov.com/new-blog/2014/1/8/made-by-dieter-rams

Powermac G5 Wikimedia

+/-0 Coffemaker http://www.designcurial.com/uploads/directories/wp-content/uploads/2009/08/plus-minus-zero-coffee-tea-w-twentytwentyone.jpg

LAMY CP1 http://www.minimallyminimal.com/blog/lamy-cp1-pilot-iroshizuku-ink

Behrens Clock Wikimedia

Bracelona Chair http://www.interioteka.pl/index/blog/id/6/modernizm-i-sztuka-wspolczesna-barcelona.html

Jasper Morrison Clock http://www.jaspermorrison.com/html/40657857.html

Gropius Window Handle http://www.architonic.com/pmsht/walter-gropius-tecnoline/1223302

BNOO35 Watch http://www.watches2u.com/watches/braun/bn0035bkbkg-mens-chronograph-all-black-watch.html

Travel Alarm Clock http://www.amazon.co.uk/Braun-Square-Travel-Alarm-Clock/dp/B004XK1L7Y

Thermoscan 5 http://www.amazon.co.uk/Braun-ThermoScan-5-IRT6020-Ear-Thermometer/dp/B00M35Y2MC/ref=cm_cr_pr_product_top/280-5544672-6803546

MQ 500 Blender http://www.amazon.co.uk/Braun-MQ500-Hand-Blender-White/dp/B00KL5UCOS

Otl Aicher Pictogram http://www.telegraph.co.uk/culture/3675496/Otl-Aicher.html?image=4

Piet Mondrain Composition Wikimedia

DS1 Can opener Courtesy of Peter Kapos - dasprogramm.com

ET66

T1000 Receiver

Garden

Sketch, Kettle As Little Design As Possible - Sophie Lovell

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