






beworth design/lab

CASE STUDY ERGONOMICS
'MUJI ELECTRIC KETTLE'



SUMMARY BOARD ERGONOMICS

MUJI WATER KETTLE

	Design Purpose of the product is clear.	Clearly identifiable shape. GOOD	Design suggests big capacity water.
	Misconceptions Product should function as expected for relevant consumers	Easily recognizable features. GOOD	Open/Close lever on lit confusing for Caucasians. Should slit on top be open or closed when boiling water?
	Physical Ergonomics (Almost) all people can use this product.	GOOD	
	Frustration Daily use should not cause frustration		Water leakage after use if kettle 100% filled.
	Material, finishing Product is easy to clean/ materials fit its purpose	GOOD	
	Safety – Not considered		

INTRODUCTION

We studied the overall ergonomics of the product, a Muji Electric Water Kettle, without packaging. We verified the design, use, non-use, overall usability and physical ergonomics.

All tests conducted at normal, daily use, under normal circumstances.

This study is conducted independently and serves as a showcase for our ergonomic services.

OVERALL DESIGN EXPERIENCE

The shape is minimalistic in design which makes the function easy to understand for users: a big cylindrical volume in the centre, a big handle on one side, a clearly identifiable spout on the other side and finally a small lever at the bottom. This minimalistic easy recognizable design results in an overall calm impression.



DESIGN MISCONCEPTIONS

The water kettle is voluminous in shape but can only contain 0.5L of water. This is just enough water for two, two-and-a-half cup of tea. This compared to standard 1.5-1.7L water kettles is quite disappointing, especially if you believed you bought a big water kettle.

The pouring spout is very big and gives again a misconception that it pours out the water in a wide stream of water. The reality is the opposite, the water stream is minimal and slow.



CAUCASIAN / **ASIAN** ?

There is a lever on top of the lit which can be positioned up or down.

We asked three persons to see if they understood the function of this mechanism (see top pictures). All three test persons believed the lever should be placed in downward position to pour the water. Investigation of other products, revealed this opposite logic is perhaps more common in Asia(n) products. Our test subjects were all Caucasian. The red warning color makes it even more confusing for our test subjects to understand this function.

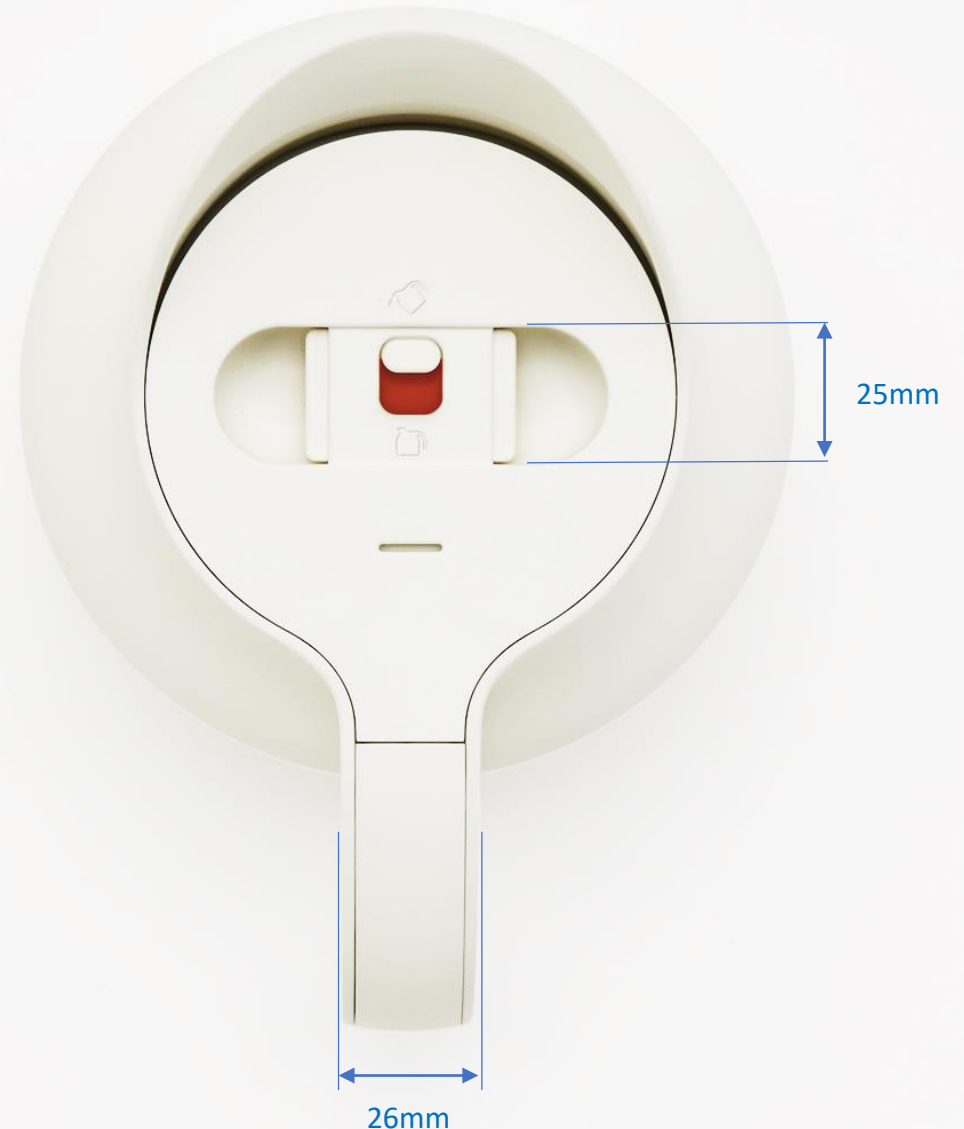


PHYSICAL ERGONOMICS

The lit on top can be removed by pressing two buttons towards each other by pinching them between thumb and (index)finger. This action requires little force, which is good.

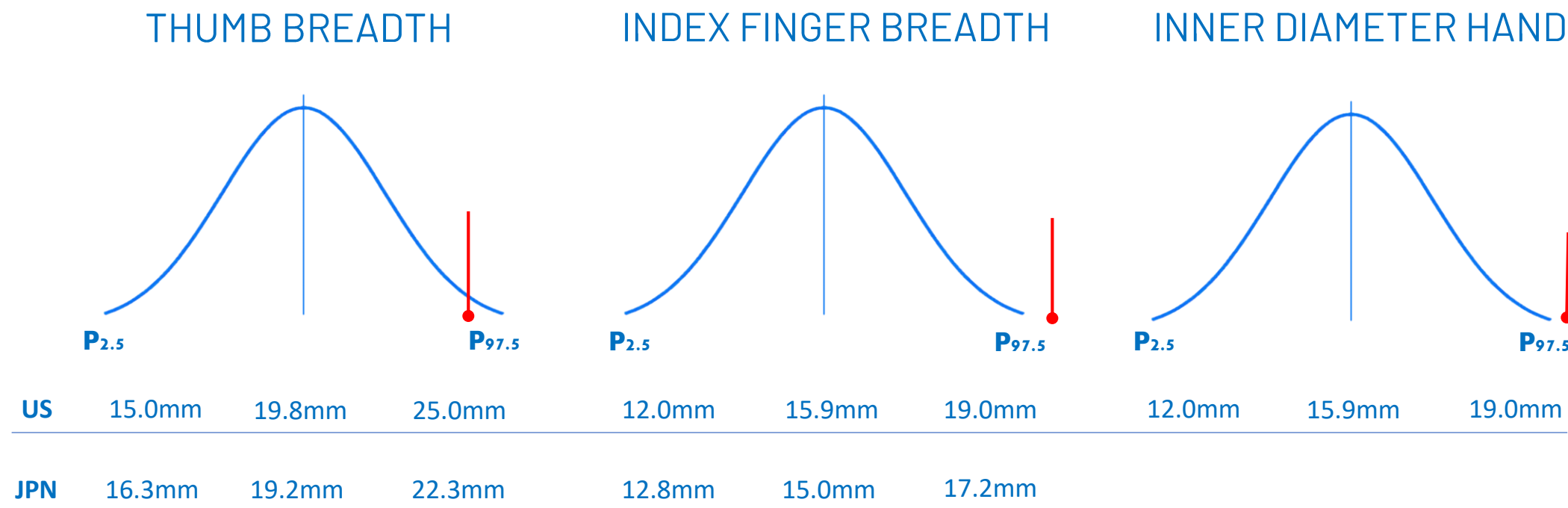
The gaps on top of the lit, giving access to the earlier mentioned buttons, are big enough for big thumbs and fingers. Good.

The handle has an overall good diameter and gives enough space to put fingers in between handle and the water kettle itself.



DATA PHYSICAL ERGONOMICS

We consider Japanese and American consumers hand-dimensions here as being the main markets for Muji water kettles (Japan being the home country for Muji and US as main export country).



US Data - https://www.researchgate.net/figure/The-means-and-ranges-of-the-digit-dimensions-measured-of-the-24-participants_tbl1_7413233

JPN Data - <https://unit.aist.go.jp/hiri/dhrg/ja/dhdb/hand/data/list.html>

CHARGING POD

The charging pod has a clean design and looks easy to clean. Good. The cable can be rolled up under it. Good.

The cable is too stiff however so when the thermos can is not on its pod the cable pushes the very up.

When the thermos-can is filled and the water is boiling, the ventilation slit accidentally spits out water, leaking from the thermos can downwards to the charging pod. This creates quite a mess which requires cleaning regularly.

Again I don't know if the pouring canal should be in open or in closed position when heating the water.



MATERIALS, TEXTURE & FINISHING

The surface is smooth with a fine texture, which makes it overall easy to clean. Good.
The handle grip is textured enough to be able to put in your hands without sliding out. Good.
There are no sharp corners, only a few parting lines between plastic parts for dirt to nest in. Good.

NOT CONSIDERED

This report is limited in that it mainly focuses on physical ergonomics.

We did not consider safety features like 'boil-dry protection', generated heat nor did we consider technical parameters such as power consumption or the use of water filters.

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(CONSUMERS) MARKET AS WELL?

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