

Critical appliance - Extending product lifespan through critical design

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Critical Appliance :

extending product lifespan through critical design

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Critical Appliance :
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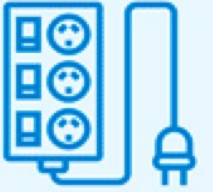
**There are professions more harmful than
industrial design, but only a few of them.'**

(Papaneck, 1971)



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1.4 million tonnes = 160 million tonnes CO² (wrap 2014)



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OUTLINE OF A CIRCULAR ECONOMY

PRINCIPLE

1

Preserve and enhance natural capital by controlling finite stocks and balancing renewable resource flows
ReSOLVE levers: regenerate, virtualise, exchange



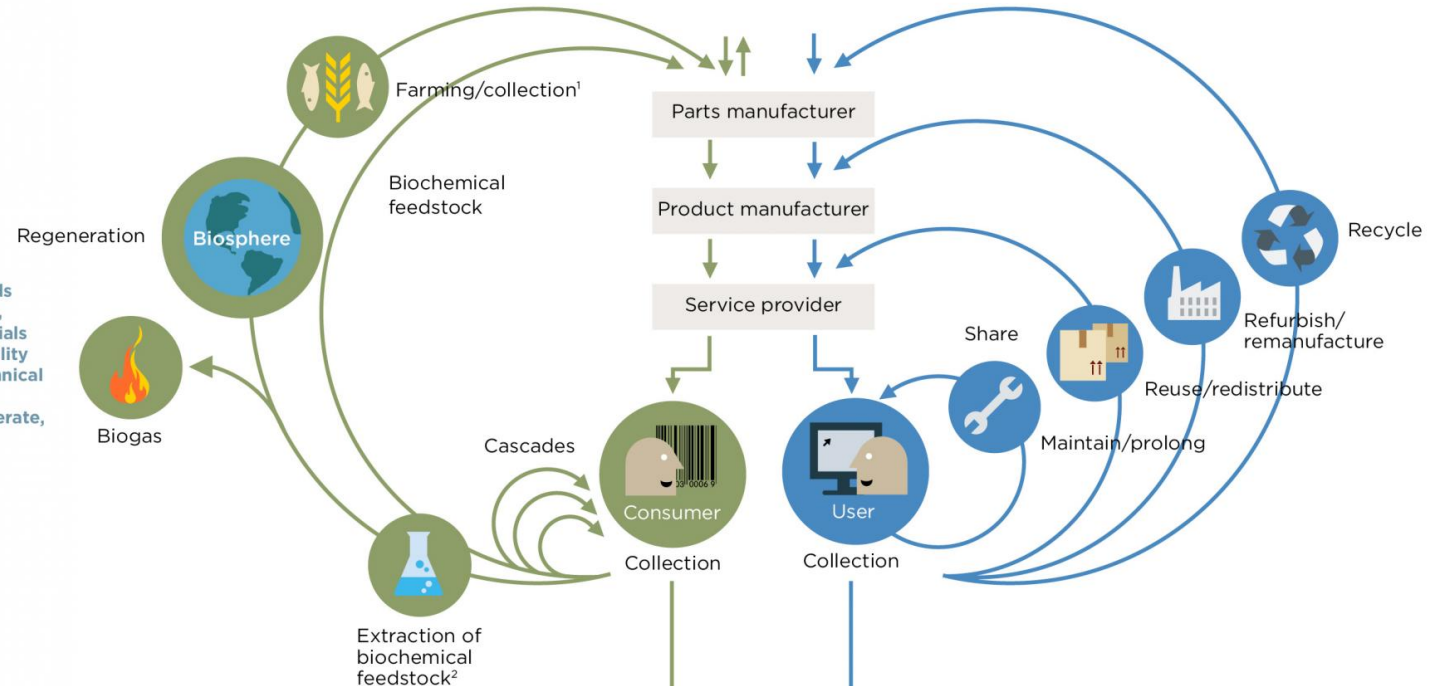
Renewables flow management

Stock management

PRINCIPLE

2

Optimise resource yields by circulating products, components and materials in use at the highest utility at all times in both technical and biological cycles
ReSOLVE levers: regenerate, share, optimise, loop



PRINCIPLE

3

Foster system effectiveness by revealing and designing out negative externalities
All ReSOLVE levers

Minimise systematic leakage and negative externalities

1. Hunting and fishing
2. Can take both post-harvest and post-consumer waste as an input
Source: Ellen MacArthur Foundation, SUN, and McKinsey Center for Business and Environment; Drawing from Braungart & McDonough, Cradle to Cradle (C2C).

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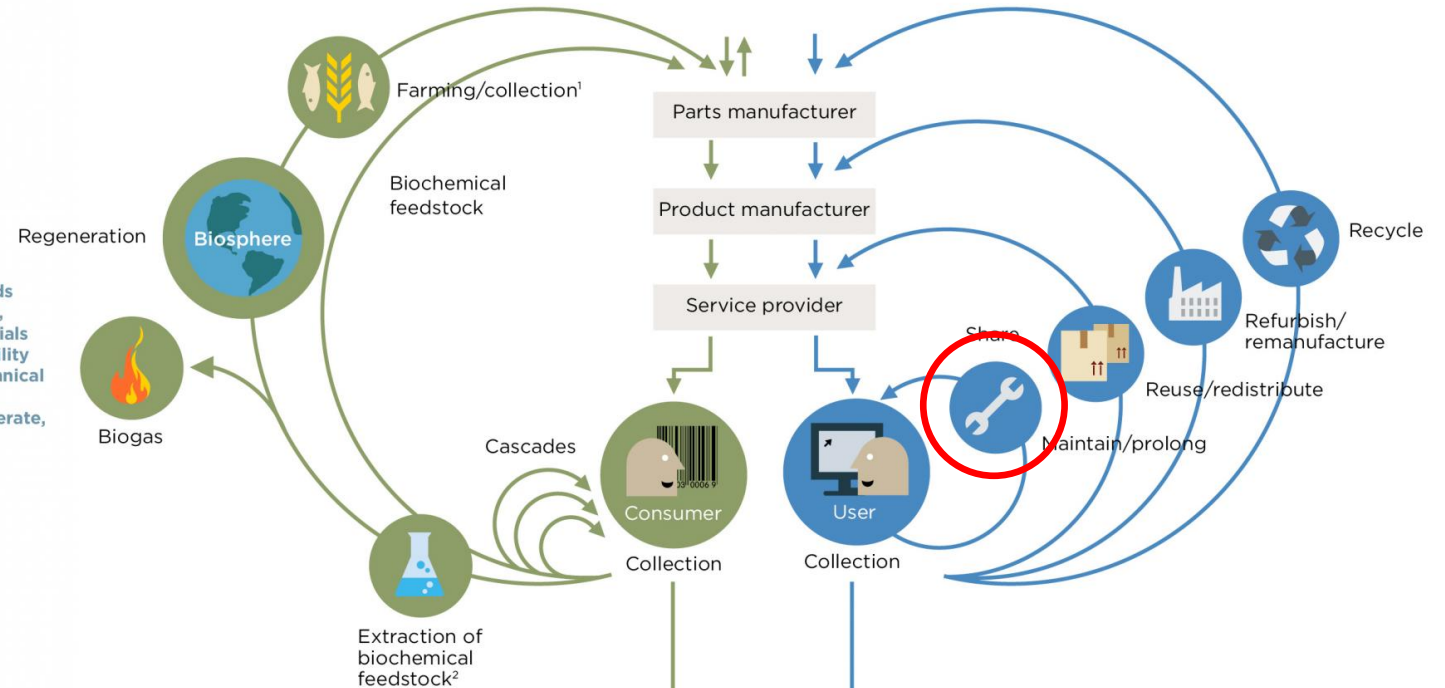
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‘Increasing the lifetime of lower-end products to match the current market average would save 150,000 tonnes of resources and almost 750,000 tonnes of CO2 per year.’ (WRAP, 2012)

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Design for Product Attachment and Trust

Creating products that will be loved, liked or trusted longer

Design for Product Durability

Developing products that can take wear and tear without breaking down

Design for Standardization & Compatibility

Creating products with parts or interfaces that fit other products as well

Design for Ease of Maintenance and Repair

Enabling products to be maintained in tip-top condition

Design for Upgradability & Adaptability

Allowing for future expansion and modification

Design for Dis- and Re-assembly

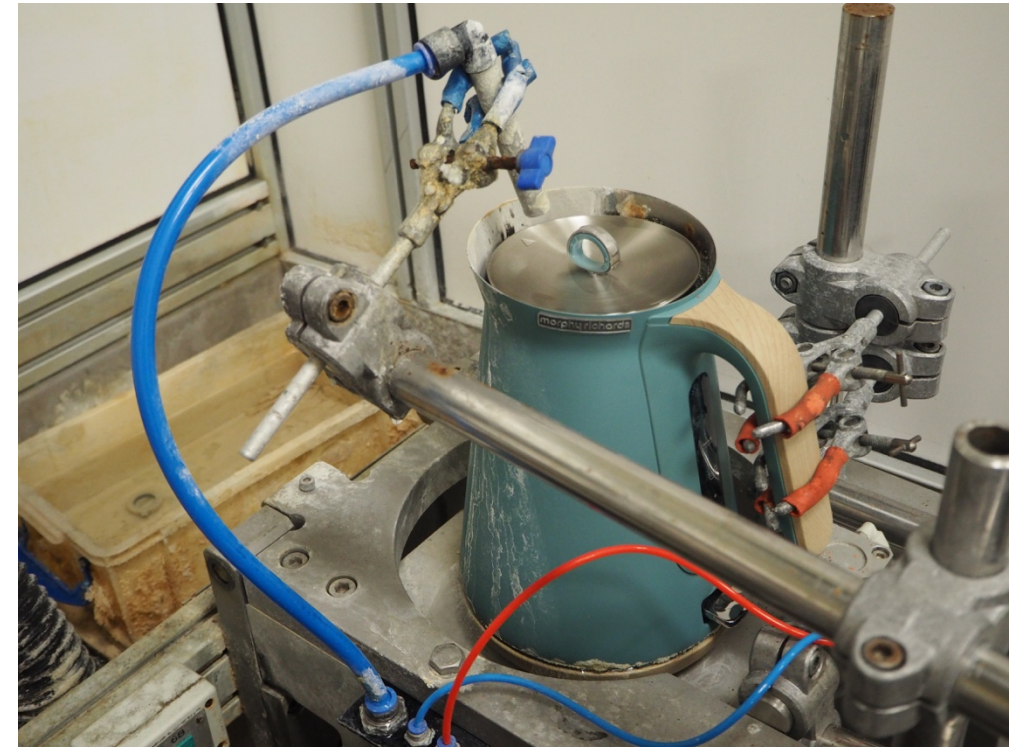
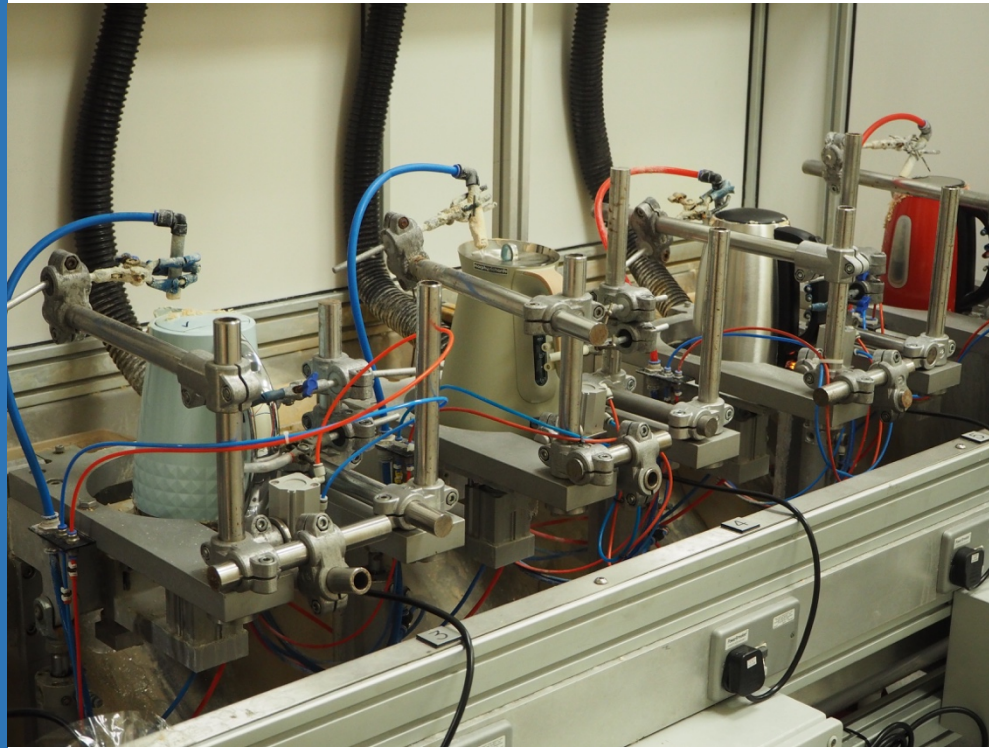
Ensuring products and parts can be separated and reassembled easily

(Bakker, C. de Hollander, M. Hinte, Ed van, Zijlstra, Y. 2014)

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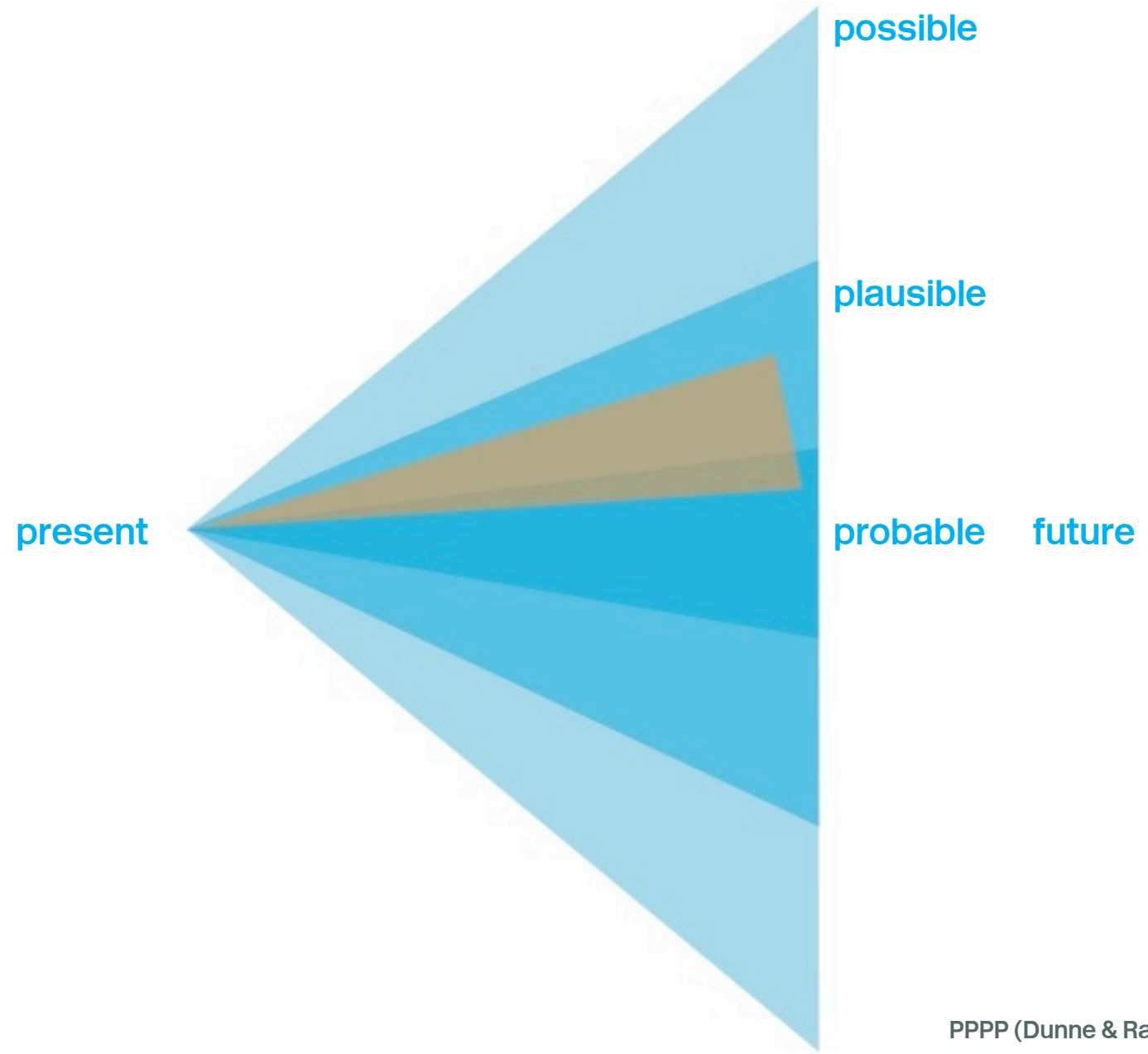
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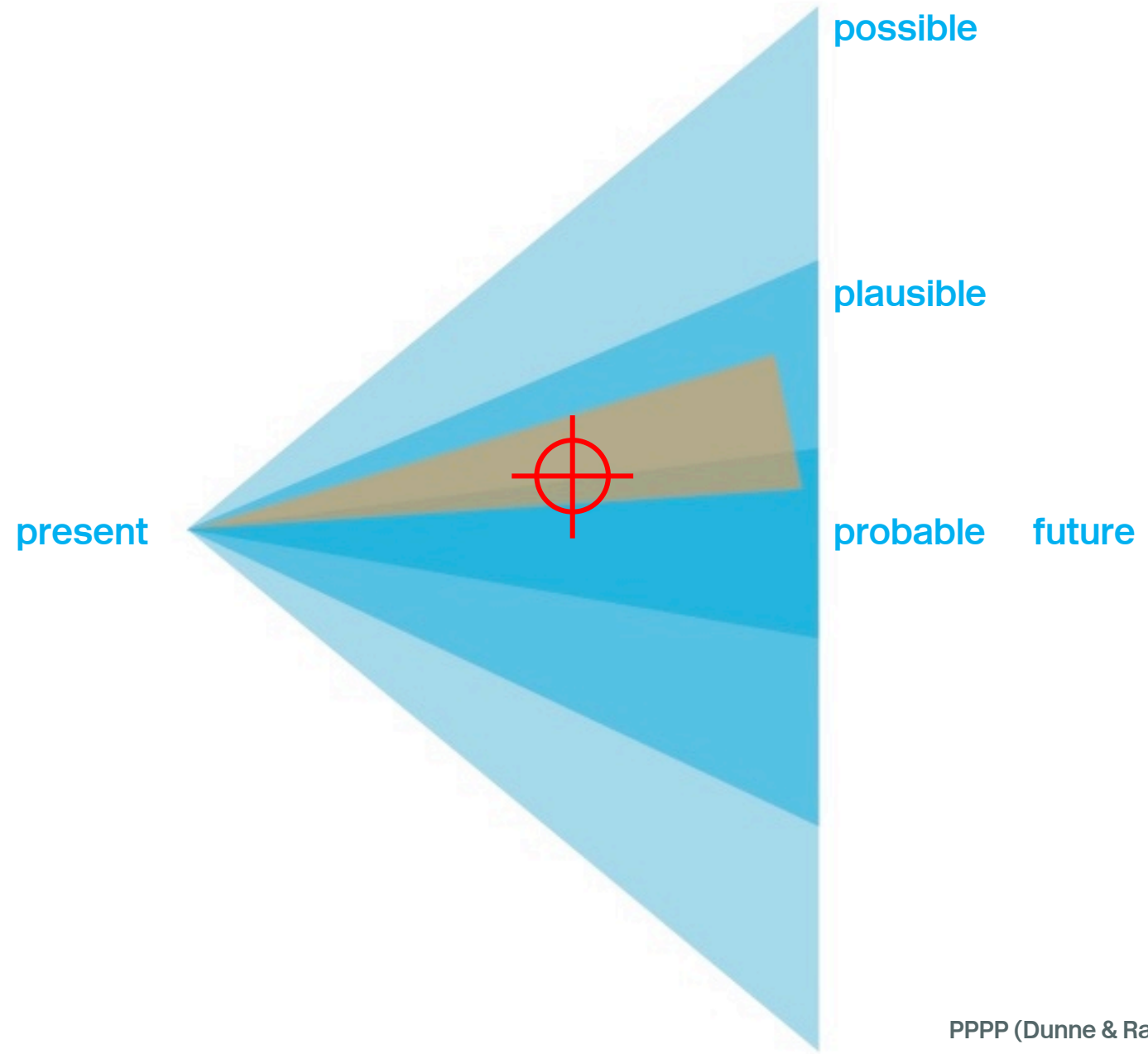
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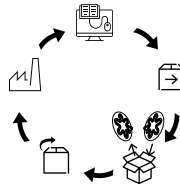


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KETTLE

supporting a circular economy

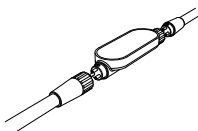


Replacement parts can be ordered online and will be delivered with return packaging to allow faulty parts to be refurbished and reused, or processed and the materials/components reclaimed.


This product and service model represents a shift in the relationship between the consumer and manufacturer.

CON001

safe to access



Cable connectors are waterproof power couplings allowing safe, simple and fast disconnection of key components for maintenance, repair or upgrade.





Designed to never allow contact with live power cables, the 'live' end always terminates in a female connector ensuring user safety when disconnecting components.

SEN004
ELE003

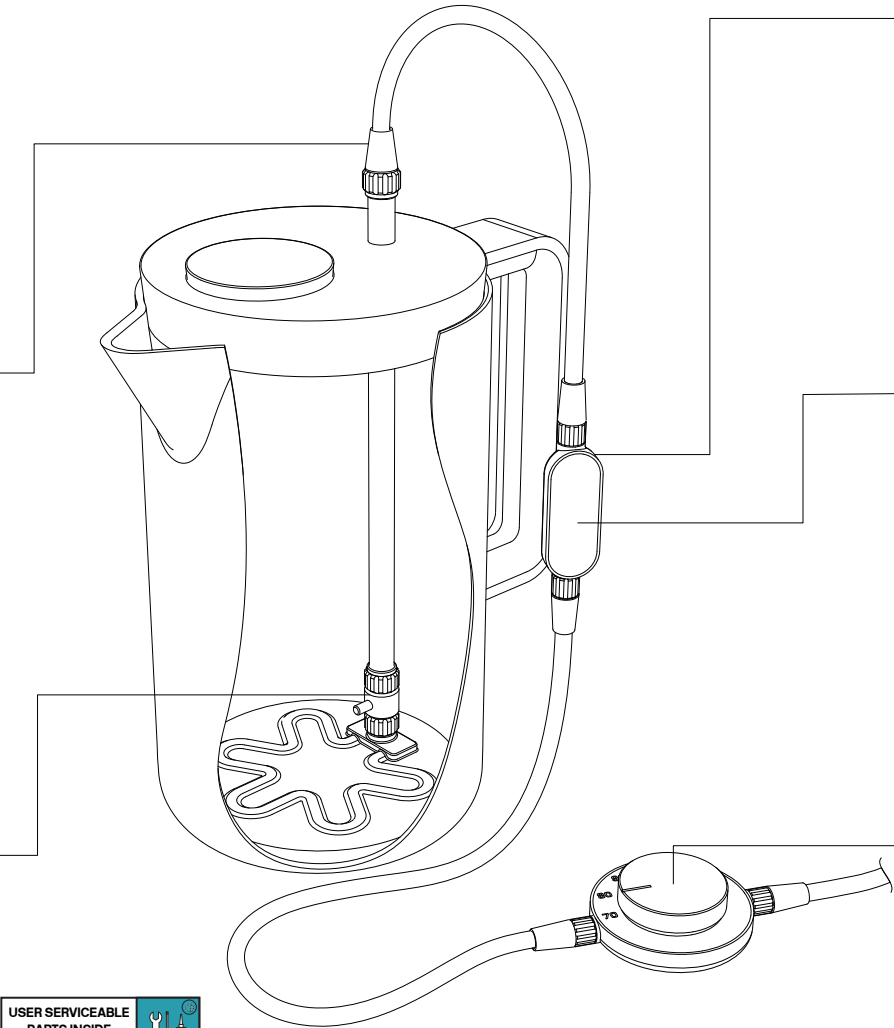
maintenance encouraged

SEN004 - thermistor represents a significant upgrade on steam sensors facilitating variable temperature heating and rapid switch-off helps save energy.





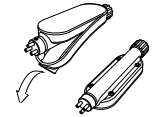
ELE003 - flat plate element featuring a large surface area for rapid and efficient transfer of heat, easily removed for de-scaling solution when prompted by the service indicator.



USER SERVICEABLE
PARTS INSIDE
safe to open, no risk of shock

SERV002


easy access repairable parts



Access to the internal components for the purposes of repair and upgrade quick and easy


Outer casings peel away to give access to the electronic components.

Screen, switch and circuit components can be replaced or upgraded.





SERV002


Maintenance prompts




Icons are displayed to prompt maintenance or repair when necessary triggered by sensors or the use counter at set service intervals.

 thermistor


 element

 control

 power supply


SW003


energy saving upgrades




The part number, SW003, signifies that this is the third generation switch incorporating new features and technology to enhance the durability and efficiency of the component.

Variable temperature setting, allows desired water temperature selection, saving energy during use and extending the life span of the element.





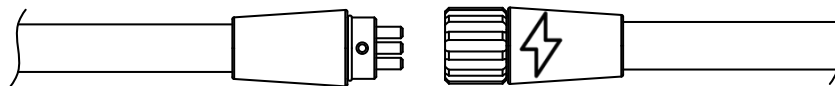
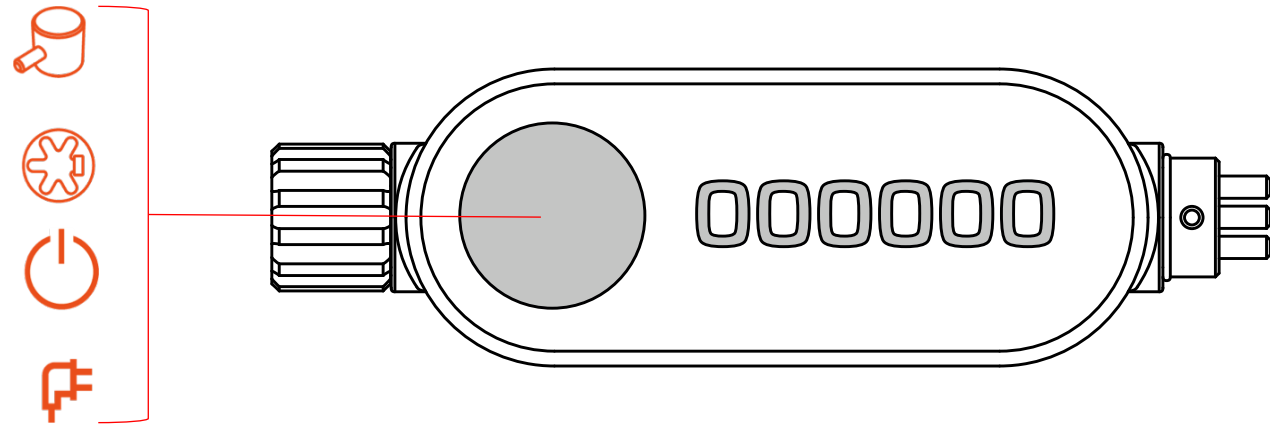


The display remains illuminated to indicate water temperature as it cools, this may prevent unnecessary re-heating

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PARTS INSIDE**

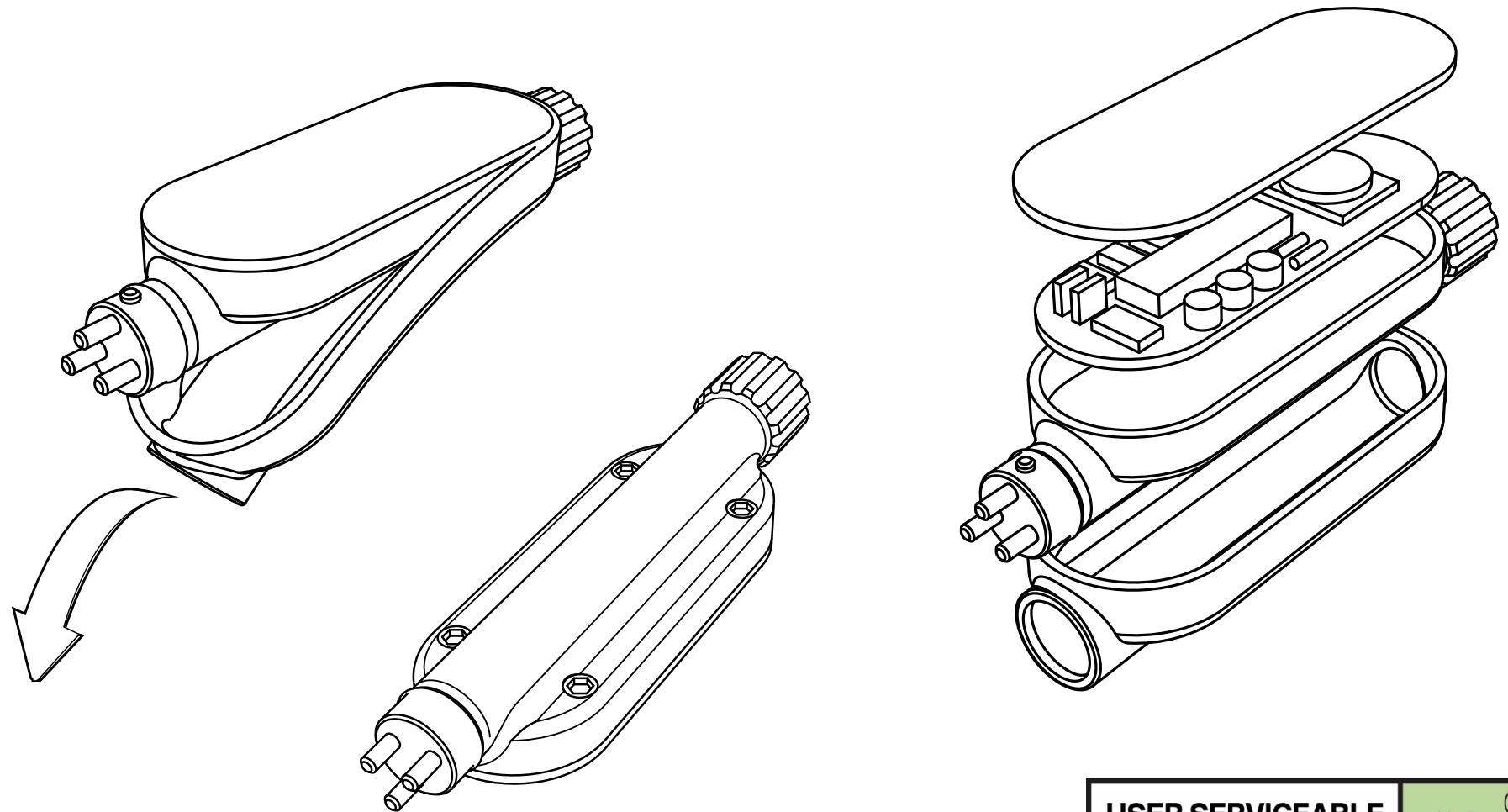
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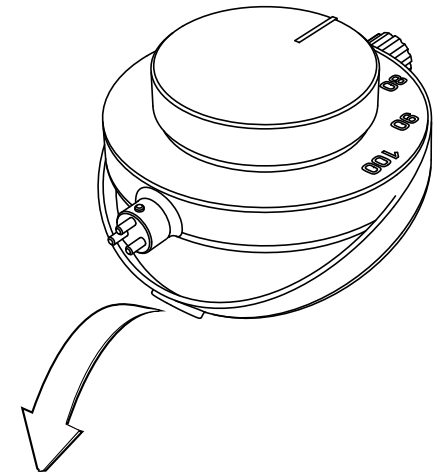
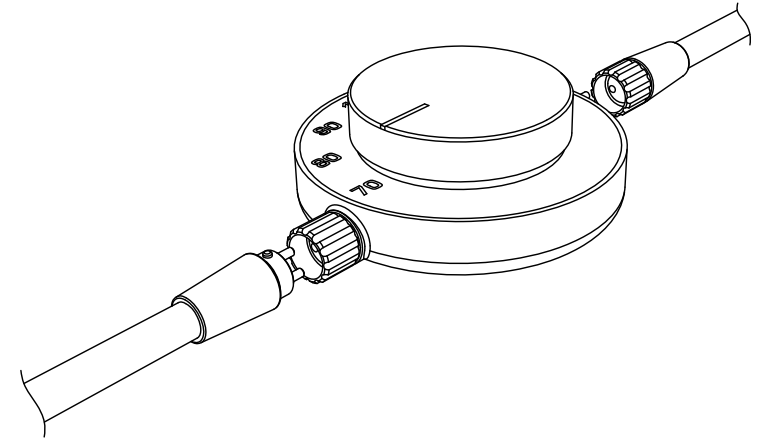
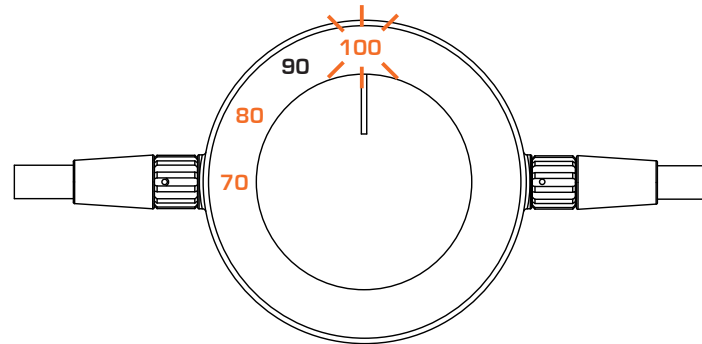
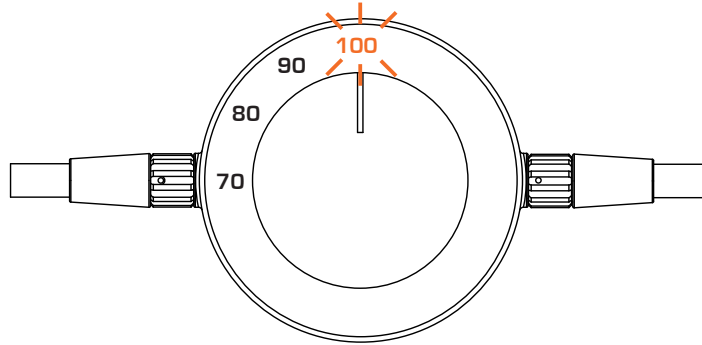
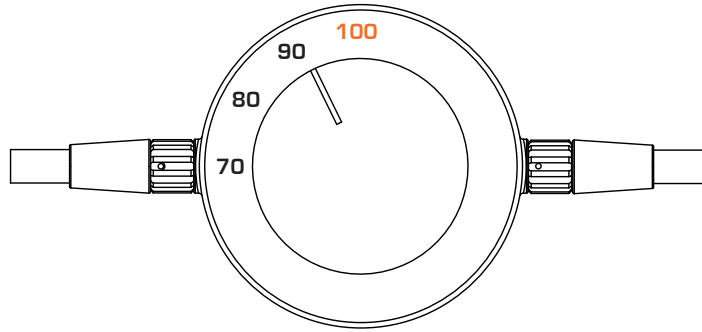
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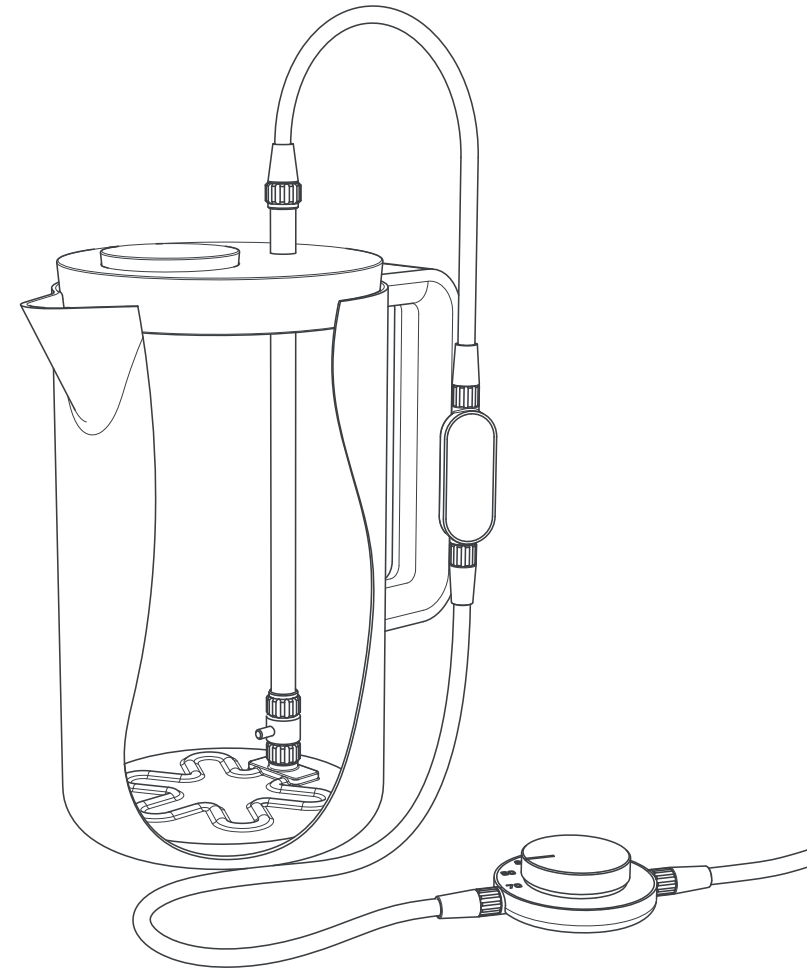
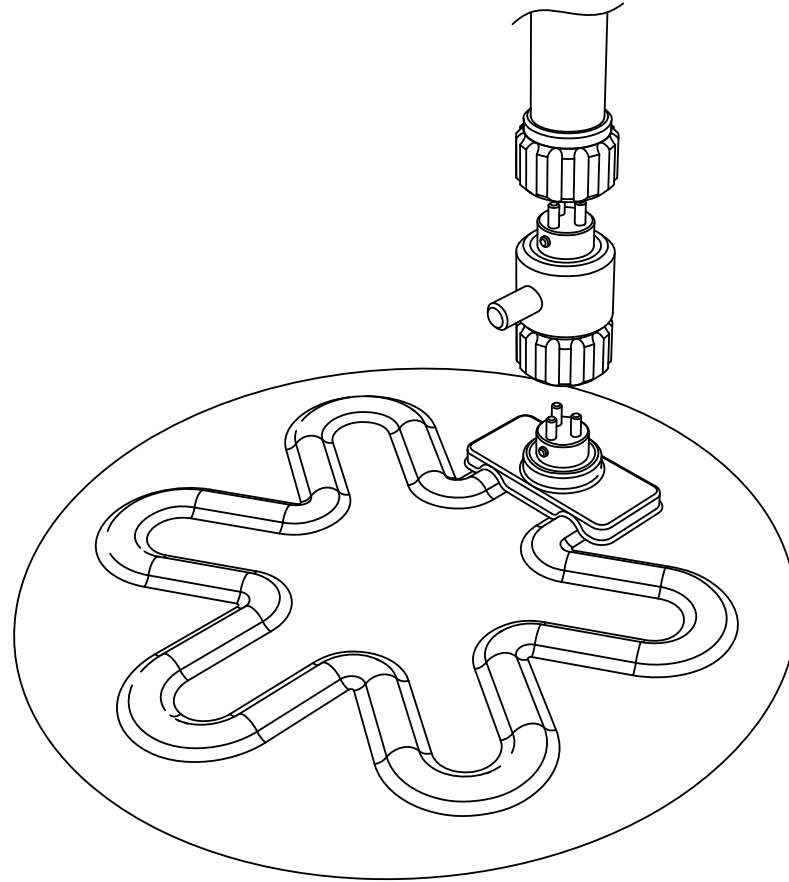
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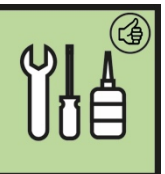
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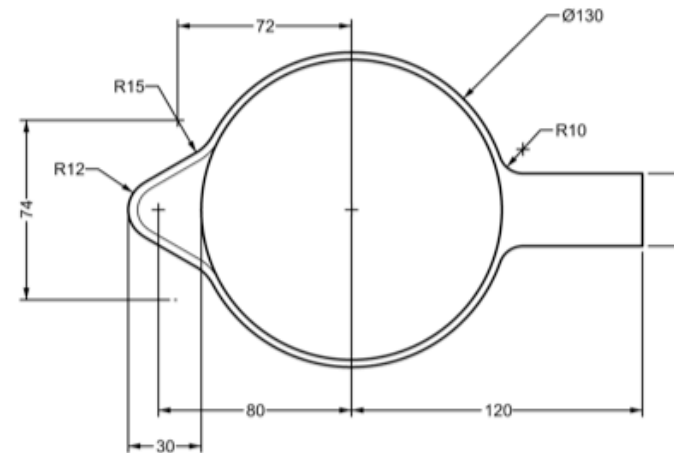
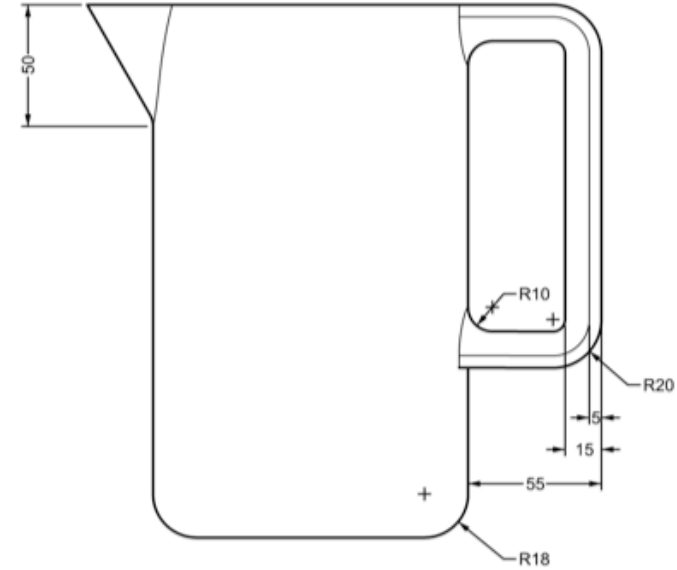
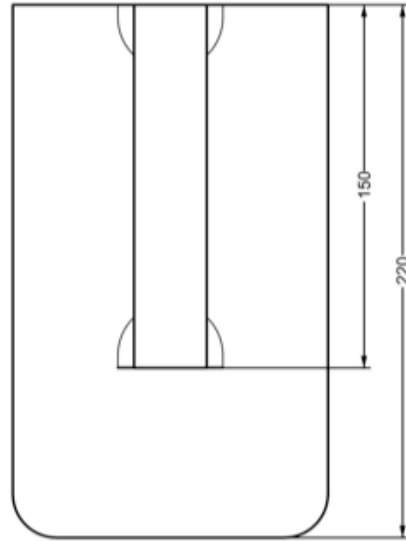
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Standard Kettle Jug

Version 2_1 (non-tapered)

Scale 2:1 All dimensions in mm

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extend product lifespan

facilitating maintenance & repair

democratise repair

safety for the consumer

modularised system

facilitates upgrade

clear semantics

helps to understand

integrated prompts

ensures timely care & diagnosis

materials and forms

promoting long life



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