



#Engineering heroes

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Spirax-Sarco Engineering plc



Activity Pack

# Spirax-Sarco Engineering (SSE) plc, helping to shape the world one person at a time!

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# What is an engineer?

Someone who solves problems to make the world a better place.

How?

- Products
- Machines
- Systems
- Structures

Engineers want to know how and why things work.



# What qualities do Engineers possess?

Cut out the pieces below to find out!

Wants to help people

Good at explaining

Open minded

Curious

Creative

Adaptable

Good listener

Friendly

Thoughtful

Asks lots of questions

Likes puzzles

Enjoys finding out new things

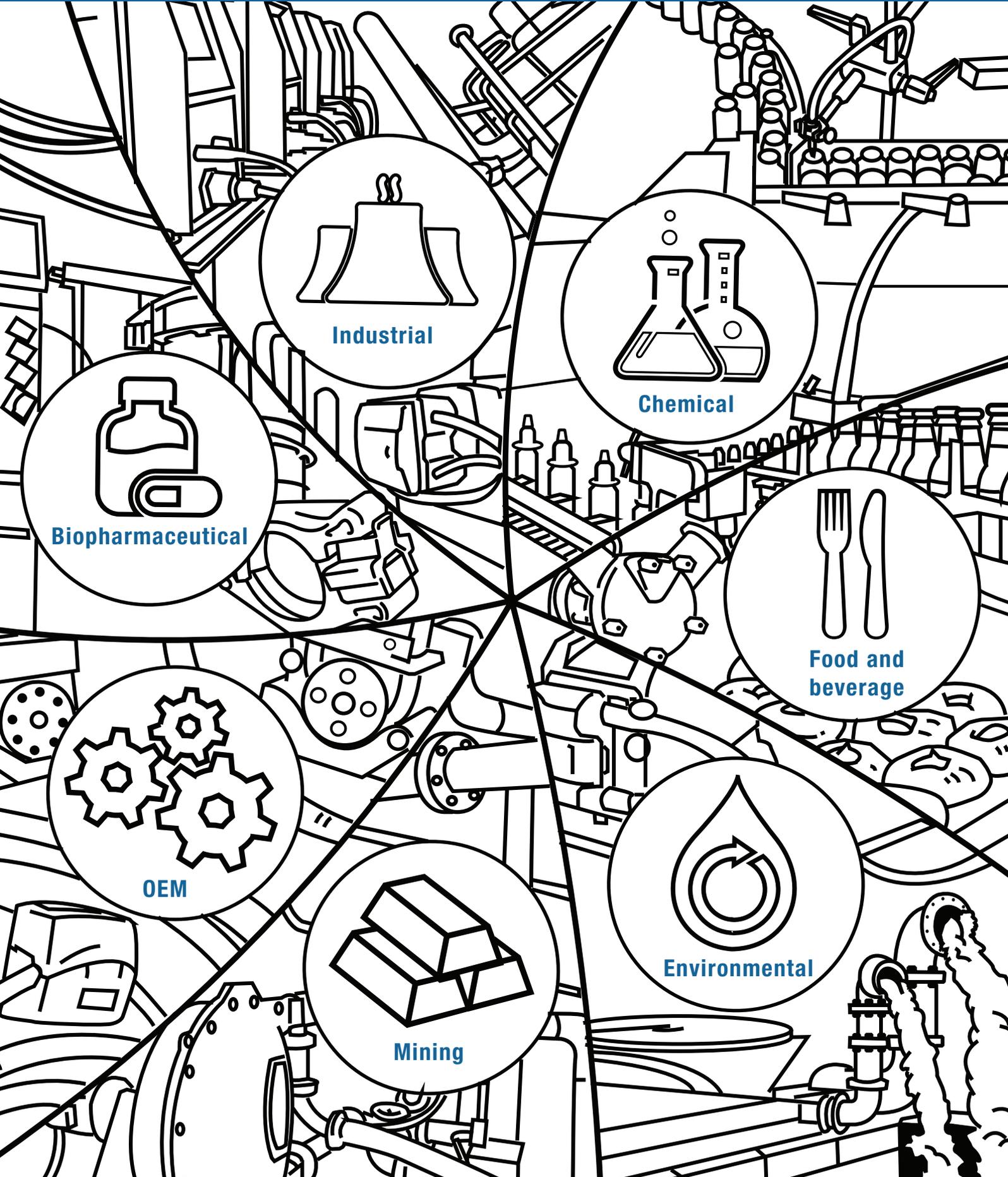
Enthusiastic

Organised

Team player

Good at communicating

# Colouring in: SSE industries



**Industrial**



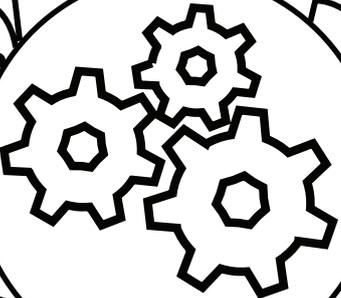
**Chemical**



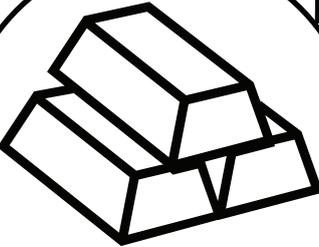
**Biopharmaceutical**



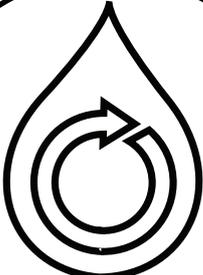
**Food and beverage**



**OEM**



**Mining**



**Environmental**

# Spirax-Sarco Engineering PLC Companies Wordsearch

W C X Z E A D F M E G J D S  
V A S G H R E Y A I P O N E  
N S T E W E T C S X S F H L  
A E F S B C H R O M A L O X  
R P F T O Q E P S N L O K D  
X C Z R S N R H I T R W A B  
M O H A S D M T N U I S T I  
S F T N M B O A E D X M E O  
D S A E N M C K R I T A H P  
F L E X I C O N U L V R E U  
A E B M N J A L P Q O T O R  
D C A F L E X E S R R W I E  
A E W D G L O J U F S C G X  
D G U E A R T B R E D E L K



Aflex  
Asepco  
Biopure  
Bredel  
Chromalox  
Flexicon

Flowsmart  
Gestra  
Masosine  
Thermocoax  
Watson Marlow

# Draw a picture of your # ENGINEERING HERO

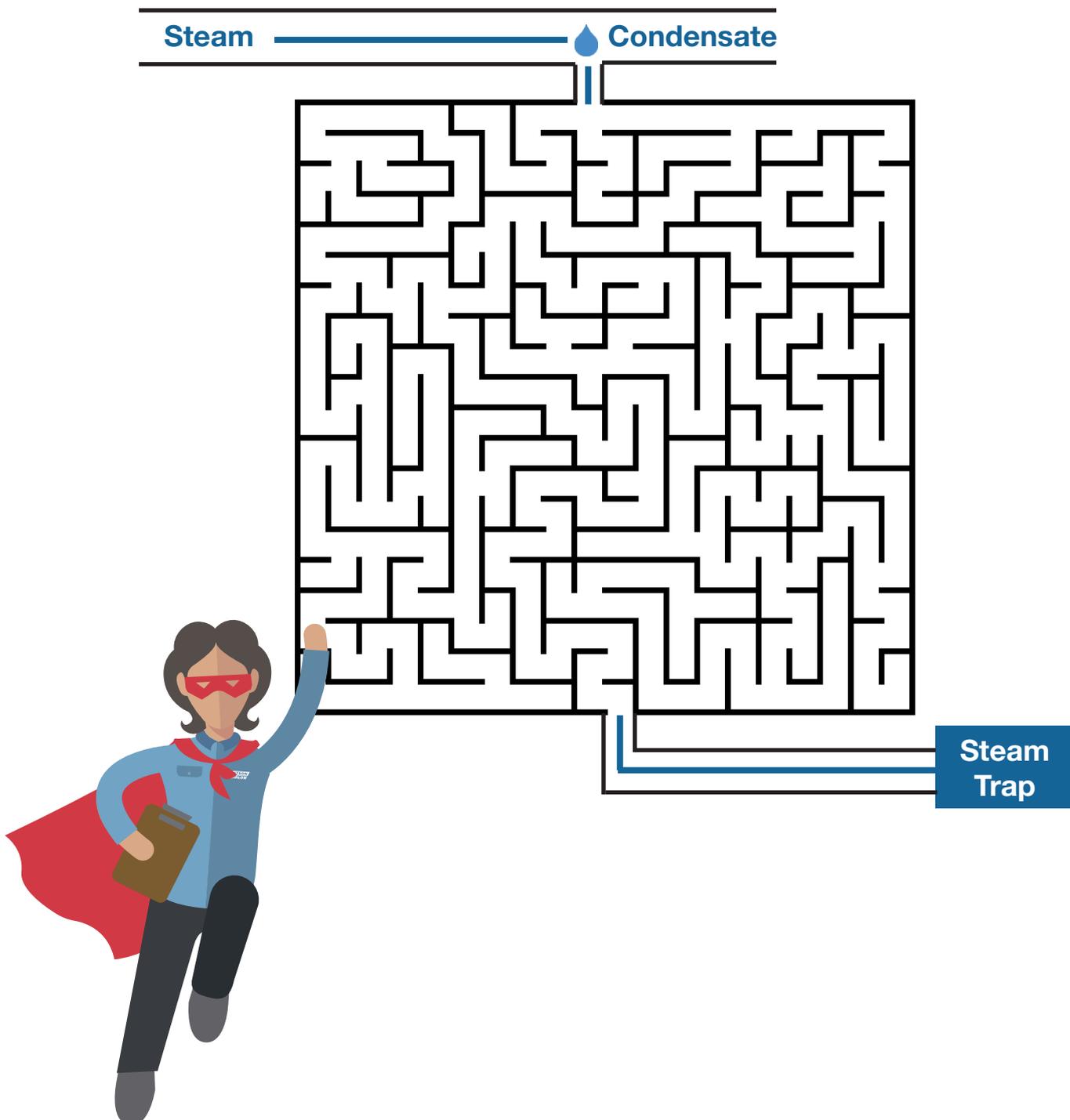
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Who is it? Why are they your engineering hero?



# Can you help the condensate to escape through the steam trap?

Inside a factory's boiler, water is heated to create steam, just like in our kettles at home. The heat from steam is then used to make all sorts of products - like food, clothes, car tyres and more. Once the heat has been used, the steam turns back into water. We call this water condensate. We remove the condensate but we want to keep the useful steam in the pipes. To do this we use a piece of equipment called a Steam Trap!



# Draw a picture of a product to help the world

## # SUSTAINABLE FUTURE

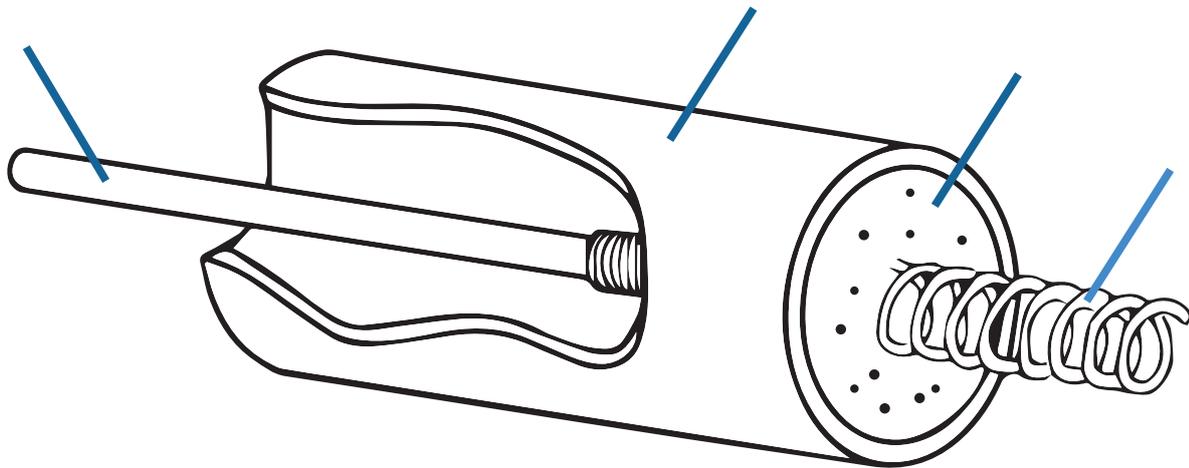
What is it? What does it do? Why is it sustainable?



# How does a Heating Element work?

Elements are the backbone of electric heating and work by running electricity through a coiled wire inside a metal casing. Heating elements are used in buildings, ovens, dishwashers, space shuttles and your favourite glazed donut shop.

Can you label the Heating Element using the words below:



1. Terminal pin
2. Metal covering
3. Insulation powder
4. Resistor wire

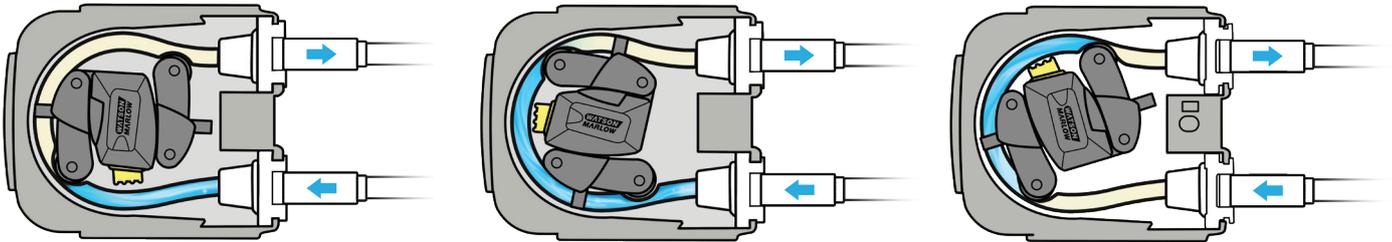
**Current (Amps) = Voltage (V) ÷ Resistance (Ohms)**

If a heater is rated at 240V and has a resistance of 8 Ohms, can you work out how many amps the heater will draw?



# Did you know...?

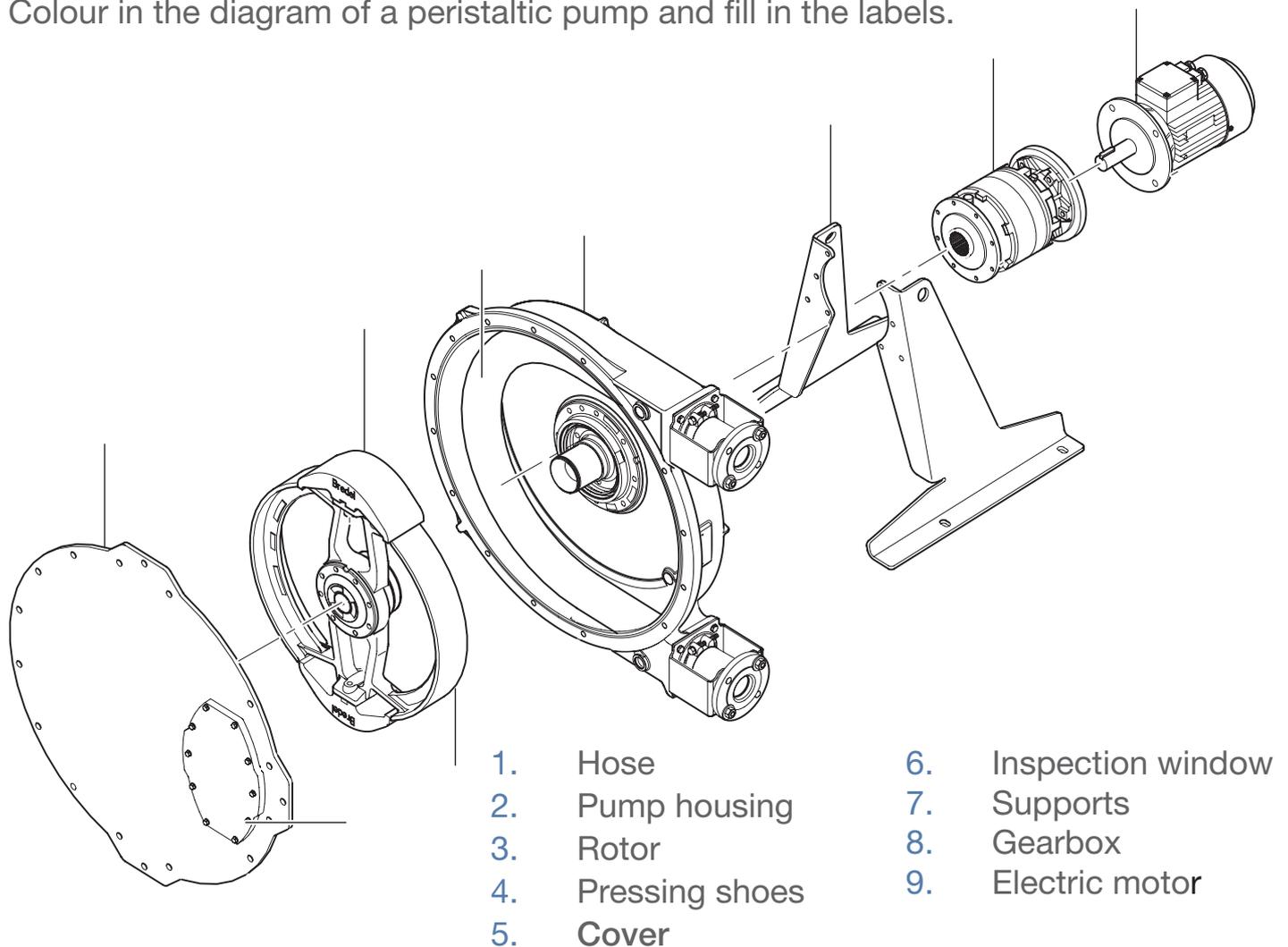
Peristaltic pump rollers squeeze a flexible tube as they rotate around the pump track. When the tube is squeezed, fluid inside it is forced forward and a vacuum is formed which then pulls more fluid into the tube for the next roller pass.



Cross section of a 520 pumphead showing the peristaltic principle

**In this diagram you can see each component that makes a Bredel pump**

Colour in the diagram of a peristaltic pump and fill in the labels.



# What are our Products used for?

**Steam Solutions:** used for heating, cooking, cleaning, sterilising

**Electric Thermal solutions:** Electrical heating products

**Fluid Technology group:** pumps used for medicine, chocolate sauce, chicken, ice cream, soap doses.

## What do we do?

### Chromalox helps:

Make Doughnuts

Keep NASA space shuttles warm

Create satellites

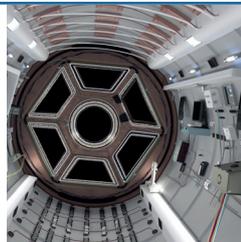


### Thermocoax has:

Sensors used in the international space station

Sensors in Helicopters

Semiconductor plates in smartphones/tablets



### Steam Specialties helps to:

Treat waste water

Refine sugar

Reduce breweries carbon emissions



### Watson-Marlow helps to:

Treat drinking water

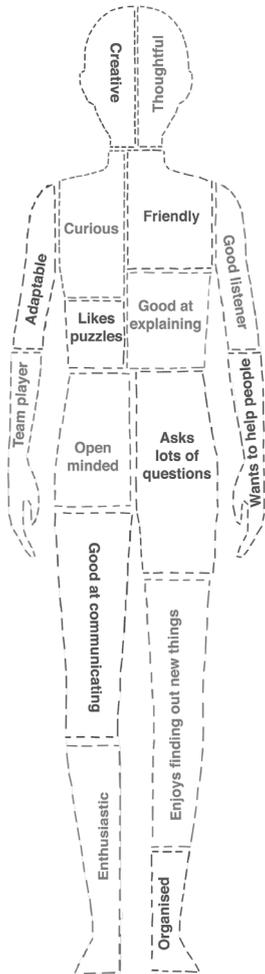
Transport Ice Cream

Make Chocolate spread



# Solutions

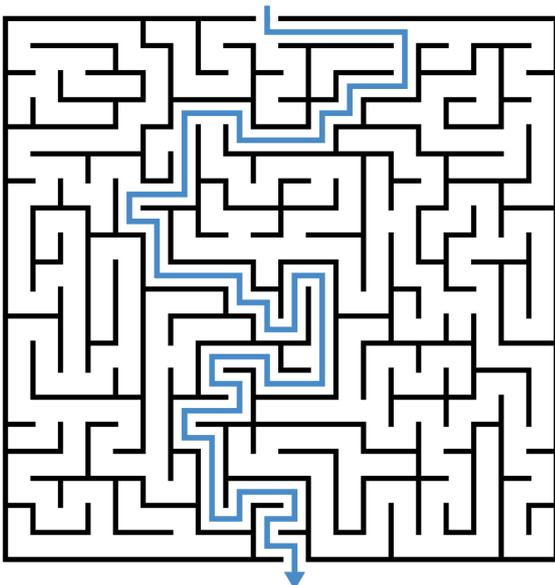
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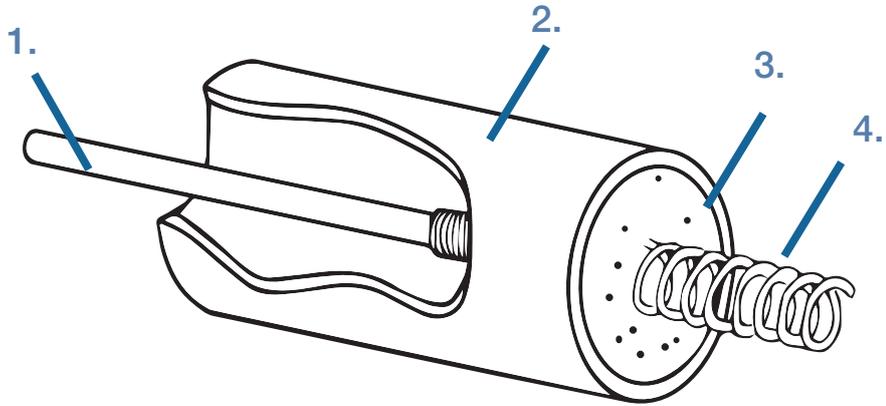
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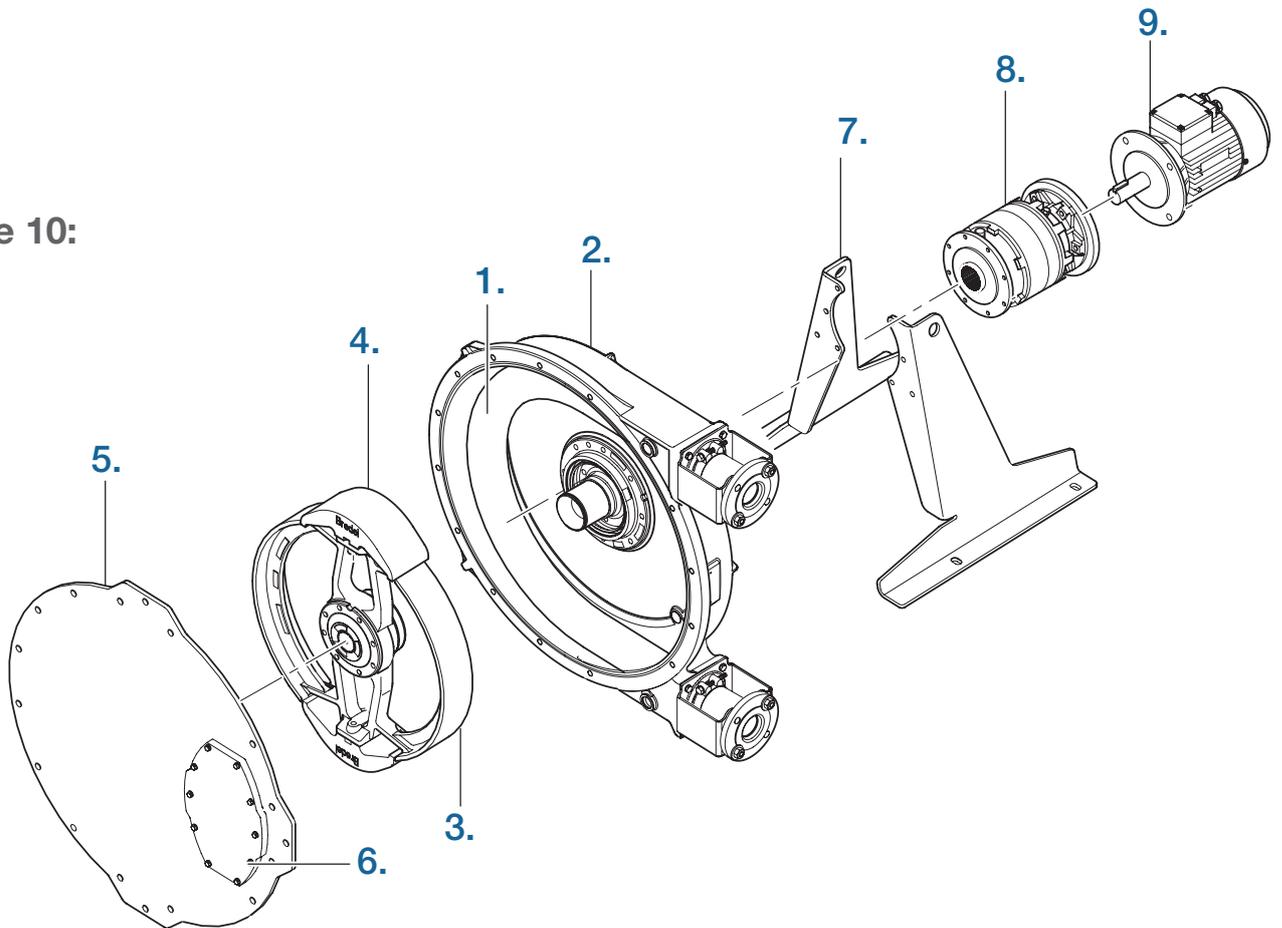


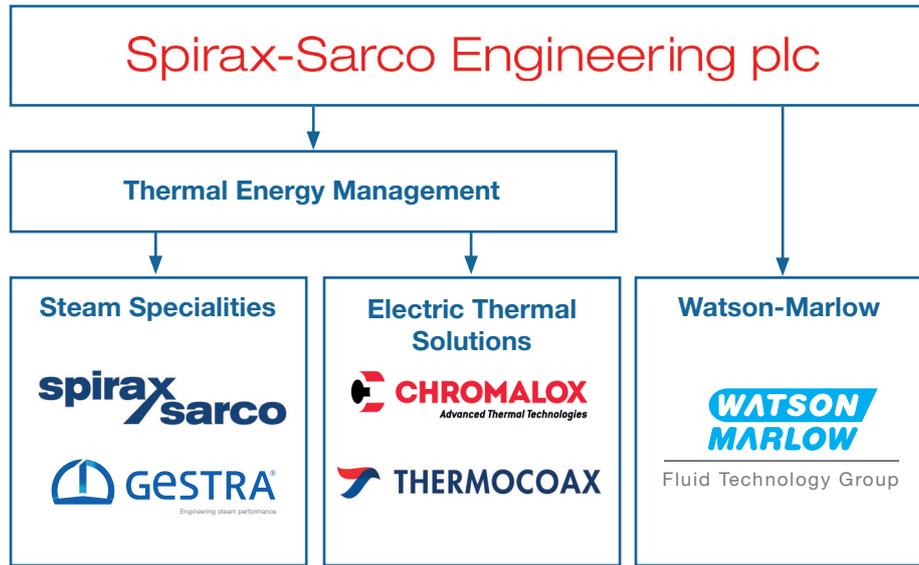
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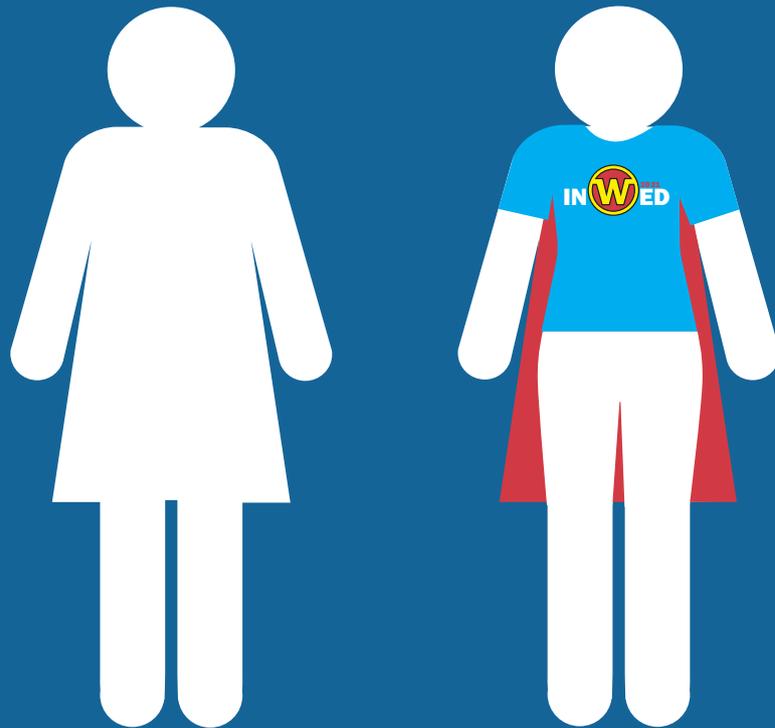
AMPS = 30

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Pssst...



It was never a dress