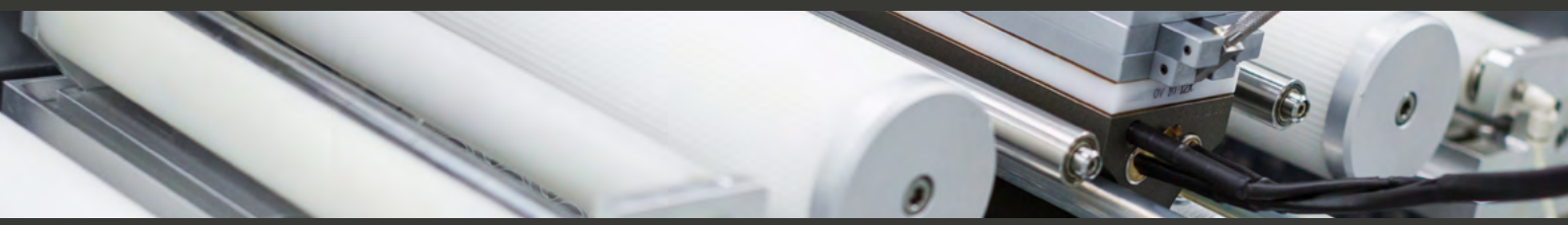
Lidering
SAFE INDUSTRY



Paper Industry

Fabrication process

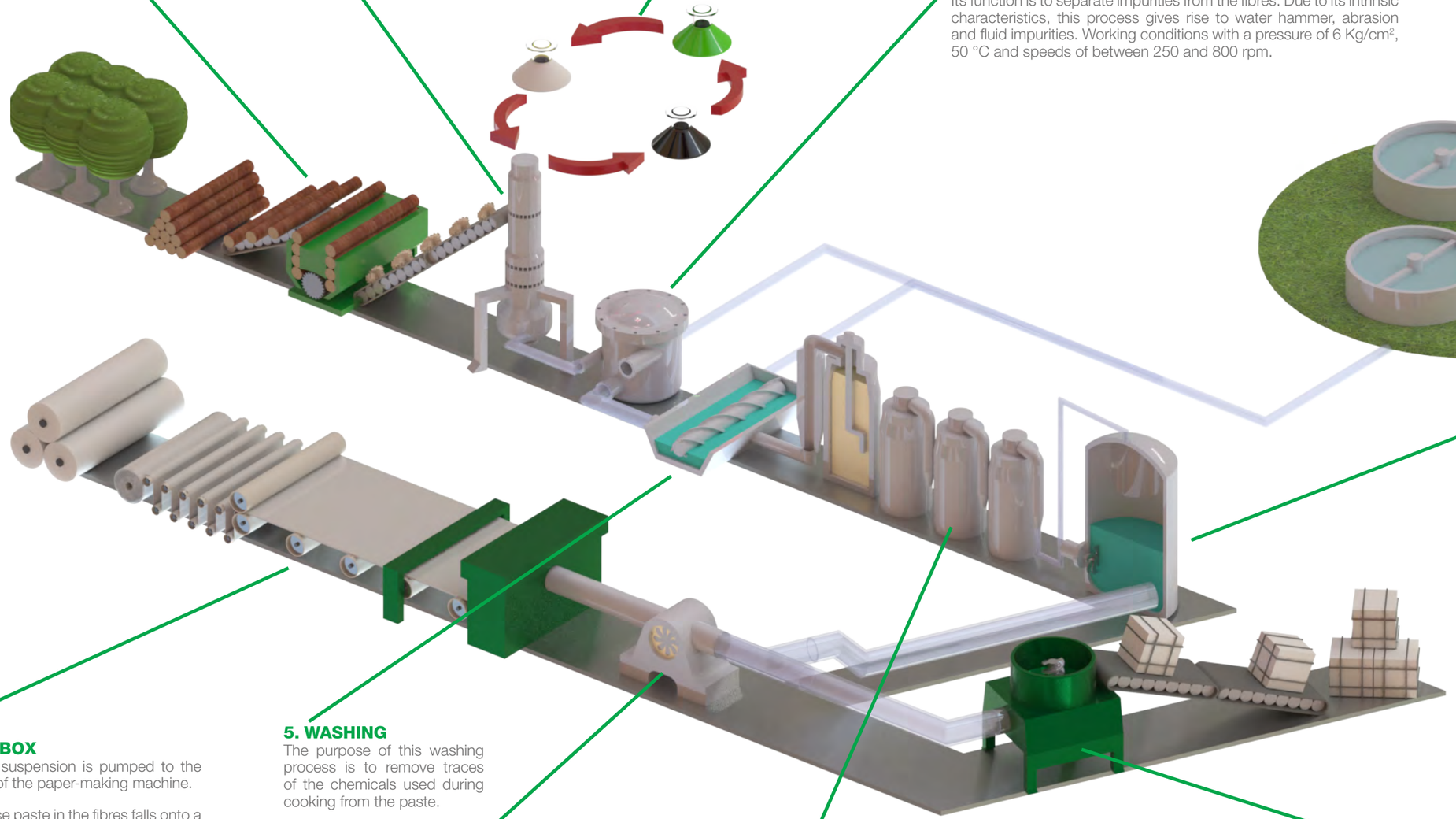
1. GRINDER
Converts wood into tiny pieces called “chips”.

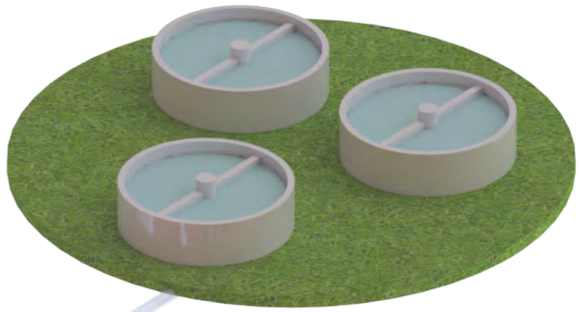
2. DIGESTER
The digester eliminates lignin. White liquor (NaOH + Na_2S) is used for this purpose, at temperatures of between 165-170 °C and a pressure of 7 Kg/cm^2. The end result is pulp and traces of lignin dissolved in water.

3. RECOVERY OF CHEMICALS
This process, also known as kraft pulping, gives rise to a subproduct, black liquor, which contains the used chemicals and dissolved lignin.

Black liquor is concentrated by evaporation and burned in a recovery boiler to generate high pressure steam.

4. SCREEN
Its function is to separate impurities from the fibres. Due to its intrinsic characteristics, this process gives rise to water hammer, abrasion and fluid impurities. Working conditions with a pressure of 6 Kg/cm^2, 50 °C and speeds of between 250 and 800 rpm.





5. WASHING
The purpose of this washing process is to remove traces of the chemicals used during cooking from the paste.

6. UNBLEACHED PULP TANKS OR STORAGE TOWERS
The processed pulp is stored in tall storage towers. These towers contain large product volumes and have stirrers to ensure the homogeneity of the material. Large amounts of steam are generated by the hot material and the pumping process shakes the surface.

7. BLEACHING TOWERS
At this point, the cellulose paste enters the bleaching towers and chemicals are added to bleach it; oxygen, CO^2, H^2O^2, NaOH or ozone, at temperatures of up to +95 °C. This will make the paper whiter.

8. FAN PUMP
Its mission is to mix the pulp with water and send this mixture to the Head Box of the paper-making machine. It requires a very stable flow rate and pressure, with no variations.

9. HEAD BOX
The paper suspension is pumped to the Head Box of the paper-making machine.

The cellulose paste in the fibres falls onto a moving cloth on which the sheet is formed by the intercrossing of the fibres.

The surplus water in the cellulose paste is eliminated. The paper sheet passes through presses which eliminate some of the paper by pressing and suctioning.

The wet paper sheet passes through different drying cylinder lines that apply heat and dry it.

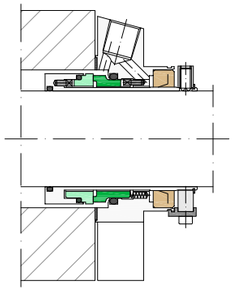
The paper is rolled up and then put on reels and/or cut to the required size

10. PULPER
The pulp or recycled paper is taken to the pulper and dissolved in water. A high speed cutting device separates the fibres. The pulper operating conditions are difficult due to the falling of the bundles, the formation of vortexes and high abrasion.

Mechanical seals with special designs, for working with pastes and in chemically aggressive conditions. Variable requirements, depending on the machinery used: high pressures and speeds, high temperatures and vibrations.

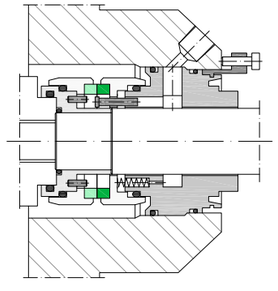
In paper manufacturing, the cellulose fibres are mixed with water, giving rise to dense mixtures and products that often require a seal with a design that favours the lubrication of the contact surfaces, or facilitates special assemblies (API 52, 54).

MECHANICAL SEALS



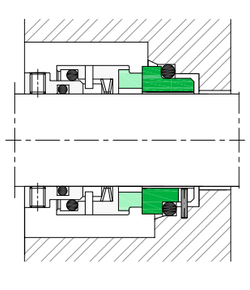
LSC40-FQ

Quench system, to ensure permanent lubrication and cooling of the contact surfaces. Applications: digester, pulper, vacuum pumps, etc.



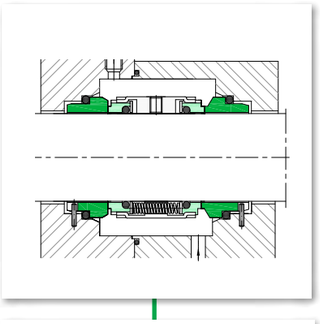
LSC90

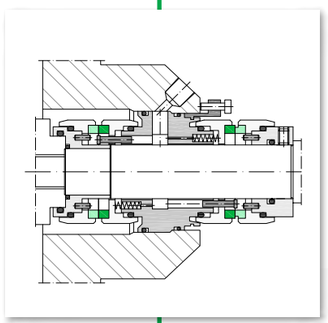
Single cartridge, specifically for paste-like products. Applications: digester, stock, pumps, vacuum pumps.



LWS30/LWS30A

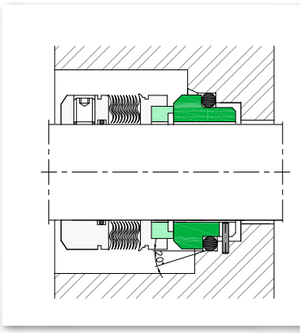
Wave spring mechanical seal with protection against paste-like products. Applications: condensate pumps, mixers, separators.





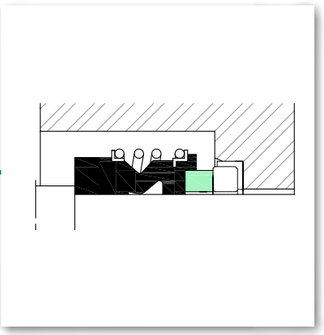
LMS10D/LDC90

Double cartridge seal, specifically for paste-like products. Applications: bleaching towers, pulp, vacuum pumps, digester pumps.



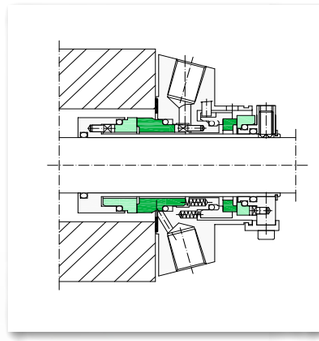
LMB85

Metal bellow mechanical seal resistant to different chemicals such as H202 and, NaOH, which may be present in bleaching towers.



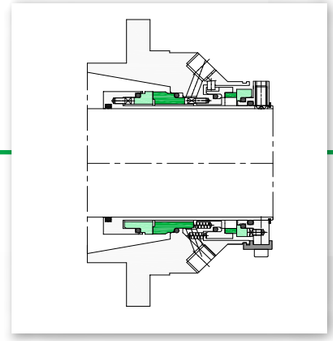
LRB17

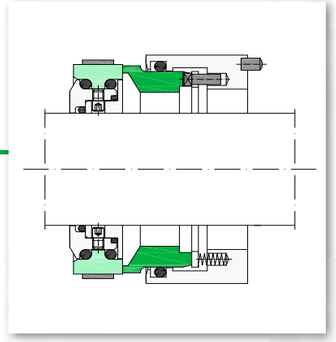
Rubber bellow mechanical seal for simple applications in different pumps that transfer fluids between processes.



LDC40-F/ LDC40C

Variants of model LDC40 that guarantee the high recirculation of the production fluid through a flush or with a cone-shaped flange.





LMS24

Specially designed for fan pumps, in which water and pulp form a mixture that requires a special structure.

BRAIDED PACKING

Different types depending on the application: aramid fibers for abrasive or products with particles, with PTFE and lubricated and resistant to high temperatures such as those that may occur in areas such as the digester.

ROTATING JOINTS

Used in areas such as the Headbox, calenders and drying areas with for the purposes of eliminating condensates and steam.

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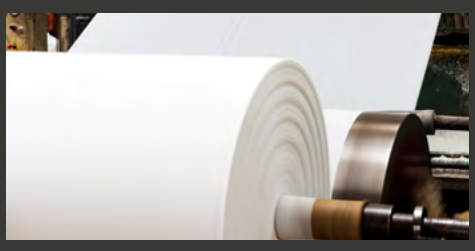

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