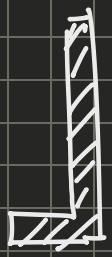
Lezione 7 – Exhaustive Recap

The second shaft is not connected to anything, what we can see through is that in section A-A, there are two ducts. The ducts are not for lubrications since they would also reach the shaft with spin the gears.



→ sliding bearings

G more convenient when smaller diameter needed, ball bearing would be more bulky.

This is a gear pump which moves liquid by the motion of two rotating gears.

The fluid doesn't go through the center but through the sides along the wall. This allows us to know exactly how much fluid is moved.

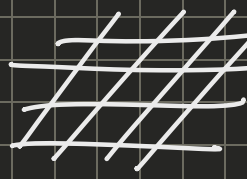
The clearance between gear teeth and wall so fluid doesn't escape, needs to be smaller for lower viscosity fluids.

This is probably an oil pump since there is nothing that lubricates, so there the fluid is naturally good at lubricating.

The first shaft is separate from the gear since producing one single piece would be more and is less convenient, otherwise in making one piece in the second shaft would be less and reduce the coupling.

(14) is threaded, it is simply for inspection, or help remove air bubbles.

 → planar faces.

(13) is a seal, diamond shape  , for sintetic materials or rubber.

↳ Needed since threads don't prevent leakage.

The first shaft is considered significantly long to not cause leakage. Also bolts are tight enough.

Additionally we say it's oil, so we don't generally need more.

If it were alcohol we use lip seals since the speed is not high, if the speed were higher we would use non-rubbing seals, like labyrinth ones

↳ For the sides we would probably use an o-ring

(8) are pin dowels

The roller bearing are smaller at their bottom so we don't overload the contact surfaces.

Glicine → dock

(8) is oil seal, it is outermost Bearing to keep dirt out.
Since the upper part doesn't have a seal it might indicate that it is already in another case, and this would explain the difference.

There are ways to improve the design to reduce the wasted space (and material).

We use tapered bearings, implying the gears are helical