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Pillow block bearings are easy to install. They can be mounted to the most stable surfaces using a supported type of fastener. Fasteners are driven through the pillow block bearing's sides and into the surface. This type of block helps us with the alignment of our system.

- f) **Inverter:** An inverter controls the frequency of power supplied to an AC motor to control the rotation speed of the motor. Without an inverter, the AC motor would operate at full speed as soon as the power supply was turned ON. The use of an inverter to adjust the speed and acceleration of an AC motor increases the range of applications of the motor compared with a motor that operates at a constant speed. The acceleration rate is given as the change in speed over a specific period of time. We choose the Inverter Chnt NVF5-1.5.

## 5. Conclusion

It is the most important phase in any realization project, every element in the project is not randomly picked, and there are some processes, we went through to obtain a better solution and to act sustainably.

We started by setting the kinematic chain, and after that, we started the designing and sizing of our elements. For the shaft, we used the torsion, and flexion verifications. The results are satisfying. The motor and the reducer were chosen based on our needs and also based on the power and the general torque.

For the V-belt, we went through the whole process of sizing to obtain its length, number, and type of it. For the coupling, we mention the diameter of the pulley so we can set the wanted speed in the receiver (input speed of the reducer).

Finally, we had given an introduction about bearings and the type that we will be using also a small part about the inverter.

The logical continuation of this work is in [8].

## 6. References

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