Earthquake Shaking Table

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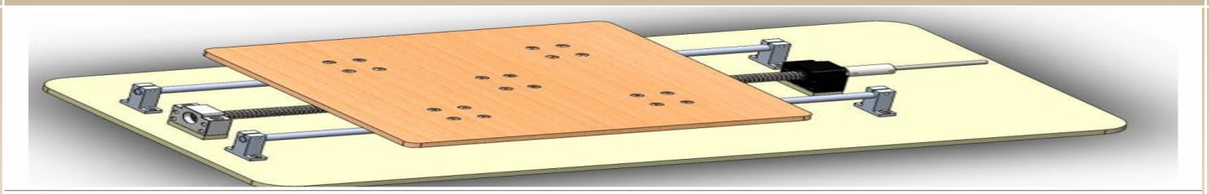
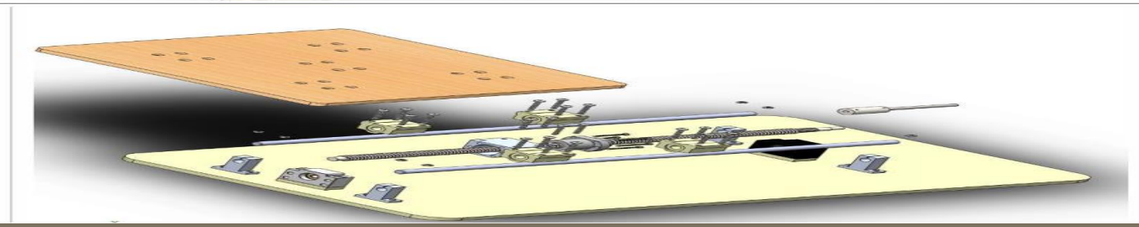
SUMMERY

- A single-axis shaking table simulates earthquake tremors in one direction, enabling researchers to test structures, materials, and equipment.
- It moves forward and back with adjustable speed, strength, and distance based on real earthquake data.
- While they can't fully replicate real earthquakes, these tables are valuable for understanding and improving earthquake resistance.

PROJECT FIGURES





COST

Id	Components	cost
1.	Accelerometer sensor	170.00 EGP
2.	LVDT sensor	مستخدم من قسم مدني
3.	Arduino nano shield	180.00 EGP
4.	Motor DC(24v)	1300.00 EGP
5.	Lead screw/500mm	1500.00 EGP
6.	linear guide(1 Meter)	800.00 EGP
7.	Linear motion ball bearing	1200.00 EGP
8.	Nuts(one price)	20.00 EGP
9.	Washer(one price)	10.00 EGP
10.	Lead screw housing nut	90.00 EGP
11.	Arduino uno(2)	1500.00 EGP.
12.	Limit switch(2)	100.00 EGP
13.	Base plate	300.00 EGP
14.	plate	450.00 EGP
15.	Pwm DC motor speed control	300.00EGP
16.	Power supply(24v,15A)	900.00 EGP
17.	Usb موزع	180.00 EGP
18.	Relay module shield 4 channel	850.00 EGP
19.	Arduino usb cable(2)	80.00 EGP
20.	LCD2004 blue(2)	750.00 EGP
21.	Stands (3Dprinter)	650.00 EGP.
22.	Motor stand	150.00 EGP
23.	pins	50.00 EGP.
24.	wires	100.00 EGP
TOTAL		11630EGP

PROJECT OBJECTIVES

- Simulate horizontal earthquake motions to test structural models and components, analyzing their seismic performance and material behavior.
- Provide data on structural responses and contribute to developing safer, more resilient structures.
- Promote cost-effective research capabilities in earthquake simulations, advancing earthquake

RESULTS

CONCLUSIONS

Single-axis shaking tables provide valuable insights into structural and material behavior under simulated earthquakes. They help identify weaknesses and assess damage potential, crucial for developing stronger, more resilient structures. These tables offer a cost-effective tool for earthquake engineering research and development, despite their limitation of only simulating single-directional