

Brain Chamber Technologies Pvt Ltd.
Kolhapur.

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Spring Operated Satellite Boom

What's Inside

- 1) Material specifications.
- 2) Design
- 3) Picture Place
- 4) Processes, diagrams



- **Annexure:- 1**

- **Final Product Details (it's for lab model)**

Event no.	Particular	Qty	Material specification
1	Upper cover	1	MS Steel
2	Lower cover	1	MS Steel
3	Centre chassis support	1	Plastic die mould
4	Supporting conical flask	1	MS Steel
5	Support roller 1	1	AL
6	Support roller 2	1	Al
7	Spring Support Assembly	1	Brass (mould)
8	Springs	4	F42 Iron
9	Motor Gear Seal	1	Plastic Moulding
10	Lock nut	3	MS
11	Main Roller	1	316 MS
12	Spring Chassis (1)	1	Plastic
13	Spring Chassis (2)	1	Plastic
14	Spring Rods	4	Steel
15	Bearings	5	4 SKF, one way single
16	Spring Gear	1	Brass
17	Gear (1)	1	Brass
18	Gear (2)	1	Brass
19	Gear (3)	1	Brass
20	Roller Gear	1	Brass
21	Left side outer, support	1	Plastic
22	Right outer, support	1	Plastic
23	Side Gear (1)	1	Brass
24	Side Gear (2)	1	Brass



25	Side gear pin	1	MS
26	Side gear plate	1	MS
27	Cone ring inner	1	Al
28	Cone ring Outward	1	Al
29	Chassis holder stud	1	Al
30	Roller (1) Stud	1	MS
31	Main Roller Stud	1	MS
32	Right Pulley	1	Al
33	Left Pulley	1	Al
34	Boom Support	1	Acrylic
35	Cover (1)	1	Fibre
36	Main Roller Support	1	Aluminium alloy
37	Base Plate	1	Aluminium alloy
38	Gear Shaft	1	MS
39	Cover 2	1	MS
40	Spring Gear	1	Plastic
41	Gear & spring holder	1	Plastic
42	Main roller with gear	1	MS
43	Main roller with gear(1)	1	MS
44	Main roller with gear(2)	1	MS
45	Spring slow deplorer rubber	1	Rubber
46	Middle gear	1	Plastic
47	Gear with Shaft	1	Plastic
48	Cover 1&2 washer	1	MS
49	Spring Key	1	MS
50	Centre roller upper assy	2	Plastic die moulding
51	Centre roller lower assy	2	Plastic die moulding



52	Machining Charges	-----	-----
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- **Annexure:- 2**
- **Follow Up, Trial and Error, Research and Development processes**

1	Upper cover die (male/female)	1	Hard steel, shrinkage eliminator, trials, finishing, Powder coating, analysis, Chamfering.
2	Lower cover die (male/female)	1	Annealing process, shrinkage eliminator, trials, finishing, Powder coating, analysis, chamfering,
3	Centre Chassis die (male/female)	1	Injection moulding, shrinkage eliminator, trials, finishing, Powder coating, analysis, Buffing.
4	Right Pulley Die	1	Hard steel, shrinkage eliminator, trials, finishing, Powder coating, analysis.
5	Left Pulley Die	1	Hard steel, shrinkage eliminator, trials, finishing, Powder coating, analysis.
6	Spring Gear	1	Jig & fixture, Extra material, SPM tool, Trials, grinding, surface finishing
7	Gear (1)	1	Jig & fixture, Extra material, SPM tool, Trials, grinding, surface finishing
8	Gear (2)	1	Jig & fixture, Extra material, SPM tool, Trials, grinding, surface finishing
9	Gear (3)		Jig & fixture, Extra material, SPM tool, Trials, grinding, surface finishing



10	Roller Gear		Jig & fixture, Extra material, SPM tool, Trials, grinding, surface finishing
11	Left side inner, outer		Injection Moulding
12	Right side inner, outer		Injection Moulding
13	Side Gear (1)	1	Jig & fixture, Extra material, SPM tool, Trials, grinding, surface finishing
14	Side Gear (2)	1	Jig & fixture, Extra material, SPM tool, Trials, grinding, surface finishing
15	Side Gear (3)	1	Jig & fixture, Extra material, SPM tool, Trials, grinding, surface finishing
16	Main Roller	1	EDM process, milling, Internal finishing, grinding, slot cutting, extra material.
17	Cover (1)	1	Die work- 2 dies, Injection Moulding Process. Trials.
18	Main Roller Support	1	Machining bore process, Press fit.
19	Base Plate	1	Die work- 2 Dies, Press, Boring, Milling, threading, tapping.
20	Gear shaft	1	Turning, slotting, wire cutting. finishing



21	Cover (2)	1	Turning, boring, wire cutting
22	Spring gear	1	Die work- 2 dies, Injection Moulding Process. Trials.
23	Gear & spring holder	1	Die work- 2 dies, Injection Moulding Process. Trials.
24	Main roller with gear	1	Turning, boring, wire cutting
25	Main roller with gear (1)	1	Die work- 2 dies, Injection Moulding Process. Trials.
26	Main roller with gear (2)	1	Die work- 2 dies, Injection Moulding Process. Trials.
27	Spring slow deplore rubber	1	Die work- 2 dies, Injection Moulding process, milling, Internal finishing, grinding, slot cutting, extra material, Constant temp heater process, excess material. Material analysis.
28	Middle gear	1	Die work- 2 dies, Injection Moulding Process. Trials. Extra material.
29	Gear with shaft	1	Die work- 2 dies, Injection Moulding Process. Trials. Extra material.
30	Cover 1&2 washer	1	Turning, boring, wire cutting
31	Spring key	1	Internal sloughing, Turning, boring,
32	Boom	1	Trial and error, Spring steel material, Constant temp heater process, excess material. Material analysis.
33	Constant temperature ceramic heater coil	1	Designed and built up.
34	Accessories	----	Nuts and Bolts, gears, Alenkeys, springs,
35	Centre roller upper assy.	2	Injection Moulding
36	Centre roller upper assy.	2	Injection Moulding
37	Machining charges		All Parts



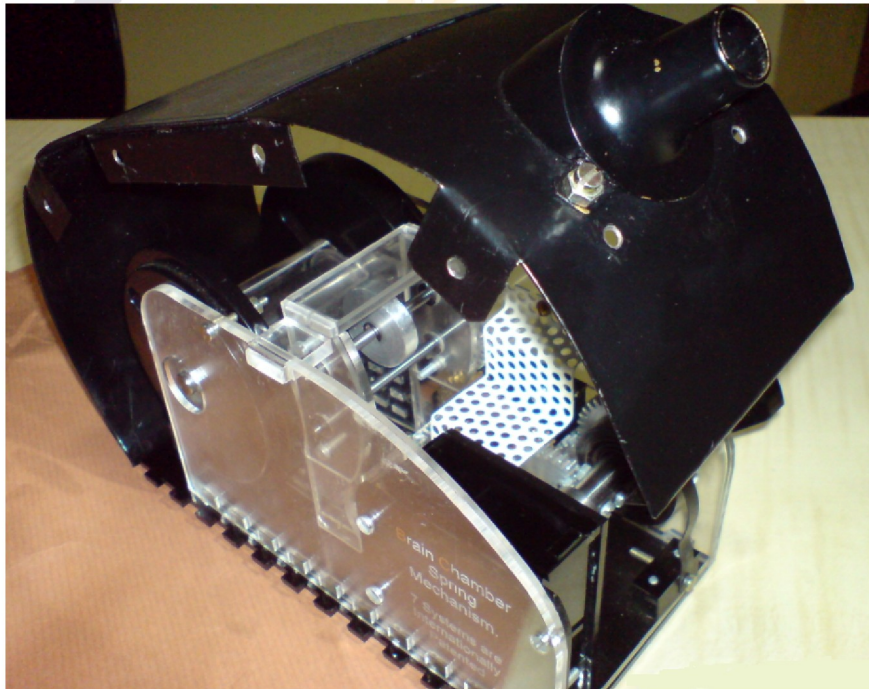
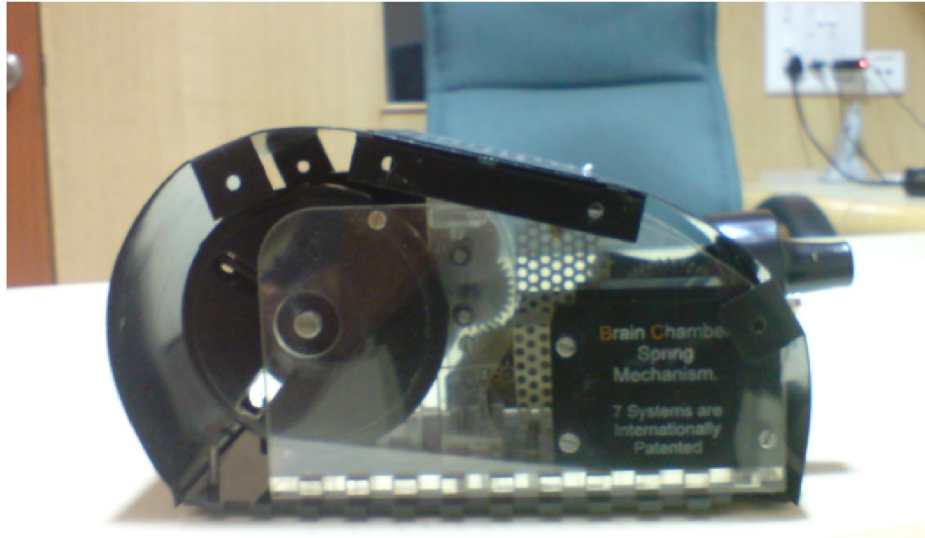
- **Annexure:- 3**
- **Designing And Consultation Includes**

- 1) Designing :-
- 2) Consultations for prototype modelling (Over Heads):-
- 3) Analysis:-
- 4) Patented System (Energy diversification systems):-

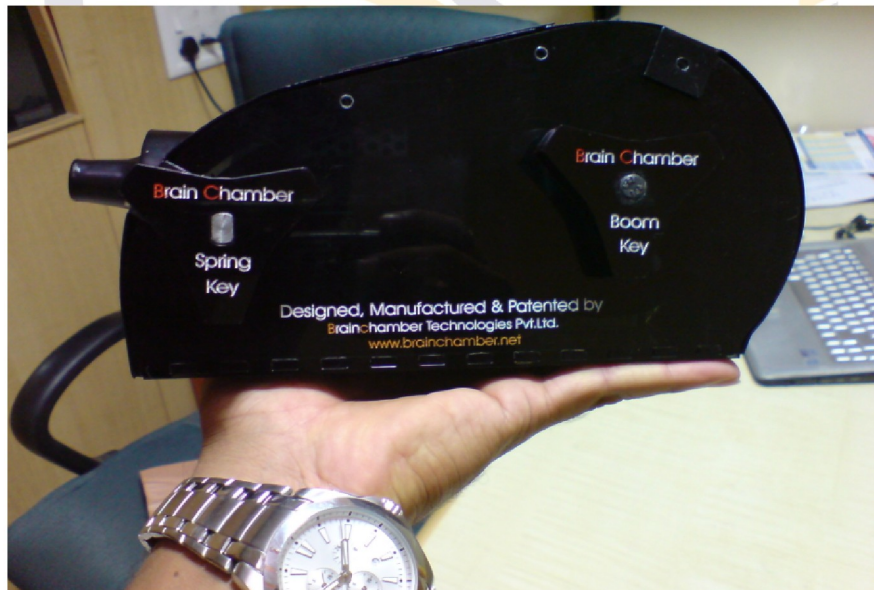


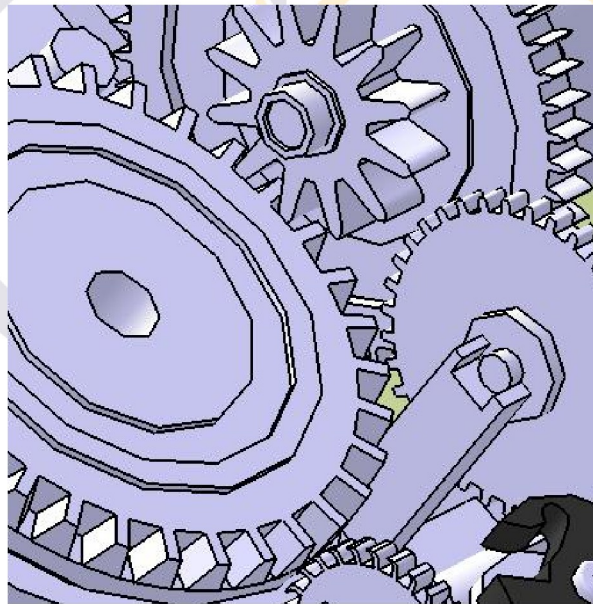












Energy diversification system is patented by Brain Chamber. The only unique solution of energised gear release system without any loss and constant energy flow. Brain Chamber has registered 7 international patents on the said above system with boom conscription.