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Catching Mechanism Assembly Instructions

Parts List:

- Netting
- 1 PVC Large Catch Ring
- 1 PVC Medium Catch Ring
- 1 PVC Small Catch Ring
- 1 PVC Trap Door
- 1 Trap Door Hinge
- 8 Framing Support Beams, labelled 1-8
- 4 4-40* $\frac{1}{2}$ " Screws
- 4 4-40 Hex Nuts
- 12 $\frac{1}{4}$ -20 Screws
- 12 $\frac{1}{4}$ -20 Hex Nuts
- 24 $\frac{1}{4}$ -20 Washers (Possibly not needed)
- 4 Adjustable Mounting Clamps

Assembly Instructions:

1. Attach trap door hinge to small catch ring with two 4-40 screws/nuts using pre-drilled holes, with spring facing up and overhanging the catch ring. Use 3/32 hex key.
2. Attach trap door to trap door hinge with two 4-40 screws/nuts using pre-drilled holes, aligning with small catch ring. Use 3/32 hex key.
3. Attach labelled support bar end 1A to corresponding catch ring hole and fasten in place using $\frac{1}{4}$ -20 screws and nuts.
4. Repeat step 3 15 times until all support bar pieces are mounted to catch rings. Note: Connections to the middle ring must include two support bar pieces for each hole/screw.
5. Pull netting around assembled catch frame until loosely in place
6. Using zip ties, fasten netting to catch frame. Use as many as needed to securely fasten netting.
7. While holding catch frame in proper position on wheelchair, use 4 adjustable clamps to mount frame on wheelchair. 2 clamps will attach to the small bottom ring, while 2 clamps will attach to the large front ring. The rings have tabs that stick out to provide a surface for the clamps. Note: This step may require two people, one to hold the catch frame in place while the other mounts it to the frame.
8. Ensure that the bottom ring is positioned properly to transfer a ball to the throwing mechanism without interfering with the throwing arm motion. Adjust positioning if necessary.

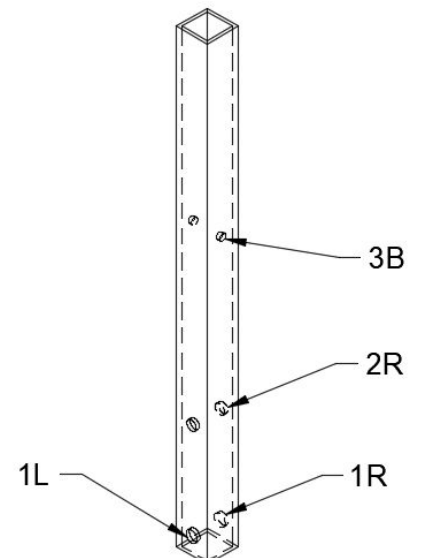
9. If necessary, reposition or adjust the catch frame to ensure that user is properly protected from incoming ball. The outer ring should be XX inches from the seat back of the wheelchair and roughly at the same height as the user's head.

Launching Device Assembly Instructions

Purchased Parts	Manufactured Parts
<ul style="list-style-type: none">• 6x Bolt• 6x Nut• 2x Clamp Bolt• 2x Clamp Nut• 2x Clamp• 3x Spacer• 2x Rubber Spacer• 1x Set Screw• 6x Oil Bearing• 6x E-ring• 1x Spring Pin• 1x Ball Bearing• 1x Pulley• 1x Spring• 1x DC Gearmotor• 2x Contact Switches• 1x Battery• X in of Wire• Y in of String	<ul style="list-style-type: none">• 1x Right Plate• 1x Left Plate• 1x Cam• 1x Launch Arm• 1x Drive Shaft• 1x Pivot Shaft• 1x Cam Contact Shaft

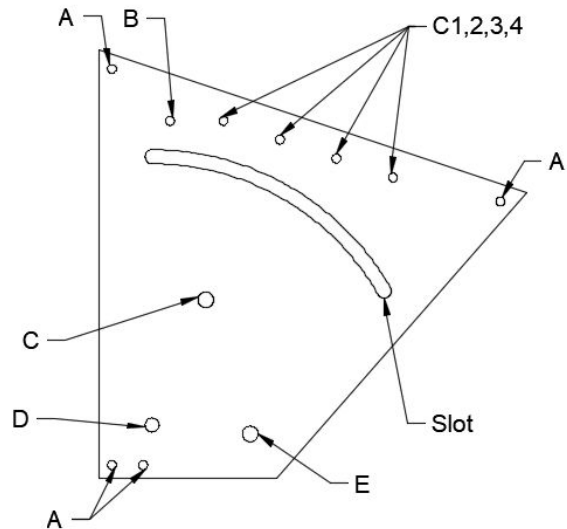
Launching Arm Assembly:

1. Press an Oil Bearing in holes 1L and 1R of the Launch Arm.
2. Press the Cam Contact Shaft with through hole 2R, with the shaft's non chamfered side flush against the right side of the Launch Arm.
3. Insert the Ball Bearing on the Cam Contact Shaft and place an E-ring in the slot of the shaft to keep the bearing in place.



Full Assembly:

1. Press an Oil Bearing to holes C and E of the Left and Right Plate such that the flanges are on the outside. An Arbor press might have to be use to push the bearings in so that its flange touches the plate surface.
2. Insert the a Clamp Bolt through the inside of each Clamp.
3. Insert each bolted Clamp through the hole D and through the Slot of the Left Plate.
4. Secure the Clamps by screwing a Clamp Nut on each of the bolted Clamps.
5. Hold the Left Plate up right on a flat surface and insert a Bolt into holes A, B, and C1.
6. Insert Spacers in the Bolts placed in the holes A.
7. Insert the two Rubber Spacers in the Bolt placed in hole C1.
8. Insert the Pulley in the Bolte placed in the hole B.
9. Place the Spring hook around the Bolt placed in hole D.
10. Tie the string around the free hook of the Spring.
11. Place an E-ring on the slot of the Drive Shaft near its the chamfered end.
12. Insert the Drive Shaft with its non chamfer side into the bearing in hole C so that the E-ring is in contact with the bearing.
13. Insert the Cam in the Drive shaft through its non chamfered side until the cam is touching the bearing. The Cam should be oriented with its flat profile facing down towards hole D.
14. Screw and secure the Set Screw in the hole of the Cam's flat profile. The Cam should not be able to move along the shaft.
15. Insert the Pivot Shaft of the Launch Arm Assembly into the bearing in hole E. Once the slot in the Pivot Shaft is completely through, place and E-ring on it and pull it against the bearing.
16. Align the holes in Right Plate with the bolts and shafts and bring them together.
17. Place a nuts on all the Bolt ends and an E-ring on the Pivot and Drive Shaft slots.
18. Insert Spring Pin through the Launch Arm hole 3B.
19. Pull the String through the Pulley and knot it through the hole in the Spring Pin.
20. Insert the Motor's shaft in the Drive Shaft hole.
21. Secure the motor to the Right Plate with the nuts that come with it.
22. (Placement of the battery)
23. (Placement of the switches)
24. (Wiring of the battery)



25. (Wiring of the switches)