Leafy Greens Spinner Construction Manual

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Materials list:

Base and Armature

- Approximately 8'- 1"PVC cut into sections
  - 3- 22.5"
  - 2-7"
  - 2-4"
  - 1-2"
  - 2-1.5"
- Approximately 5'-2" PVC cut into sections
  - 2-3"
  - 1-4"
  - 1-4.25"
  - 1-5"
  - 1-12.5"
  - 2-14.25"
- 6- 1" 90° Elbow joints
- 2- 1" 90° T joints
- 5- 1.5" 90° T joints
- 1- 1.5" repair coupling
- 1- 2" repair coupling
- 1- 5/6" nylon washer
- 1- 5/6" nylon bolt
- 1- 5/6"x 2 ½"nylon hex bolt (half-threaded)
- 2- ¼"- 20x50mm connecting bolts
- 2- ¼ - 20-12mm connecting cap nuts
- 1- ½"x3" universal clevis pin & grip clip

Handle

- ¾" PVC end cap (female non-threaded)
- ¾" PVC cut to a length of 3½"
- 1" PVC coupler
- 2- ¾" PVC elbows
- ¾" PVC cut to a length of 6"
- 1½" T joint
- 2- 1½" x 1" reducer bushing (non-threaded)
- ¾" PVC cut to a length of 4½"
- 1" x ½" reducer bushing (non-threaded)
- ½" PVC cut to a length of 1"
- ½" coupler (threaded on one side)
- ½" male threaded end cap
- 2 round rubber washers 1"
- 1" PVC cut to a length of 1/8"

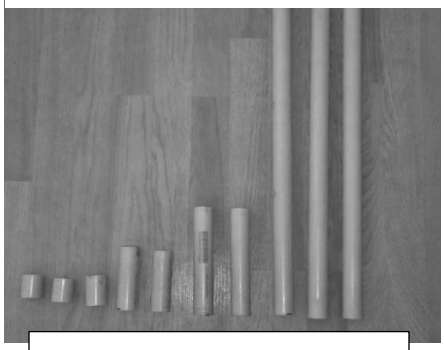
Tools Needed:

- Power drill with drill bits
  - ¼" bit
  - ½" bit
  - ¾" bit
- Dremel with following attachments
  - Saw bit (round, flat head used for cutting)
  - Pointed sandpaper bit (used for sanding down holes and small areas
  - Round sandpaper bit (coarse and used to sand down insides of pipes)
  - PVC cutter (ratcheting or clamp style)
  - Hacksaw
  - Coarse Sandpaper
  - Measuring tape
  - Sharpie or permanent marker
  - 2 Allen wrenches (to fit connecting bolts)
  - PVC purple primer
  - PVC cement

Measure and cut all PVC to the correct lengths using PVC cutter (if a lip remains around the end use sand paper to sand it off)

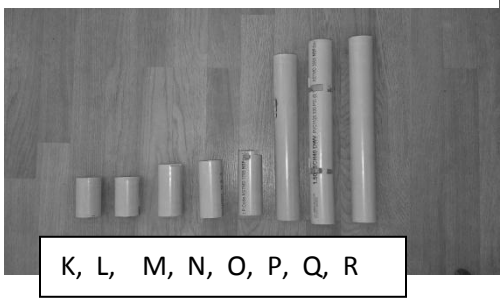
Reference Figure 1 and Figure 2

Figure 1, 1" PVC Pipe 2-1.5" (A&B), 1-2"(C), 2-4" (D&E), 2-7" (F&G), 3- 22.5" (H, I&J)



A, B, C, D, E, F, G, H, I, J

Figure 2, 1.5" PVC Pipe 2-3" (K&L), 1- 4" (M), 1- 4.25" (N), 1-5" (O), 1- 12.5" (P), 2- 14.25" (Q&R)



K, L, M, N, O, P, Q, R

Section 1- The base

1. Align all pieces in a rectangle shape (Figure 3) push all pieces together to assemble. (Note: assemble all sections first and then cement together- Figure 4)

Figure 3 Parts: D, E, F, G, H, I, 4- 1" 90° Elbow joints, 2- 1" 90° T Joints

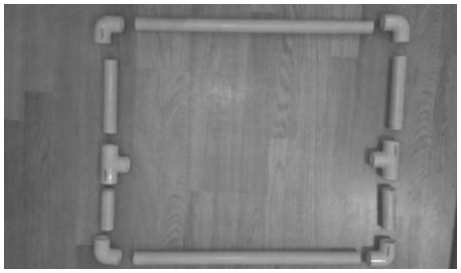
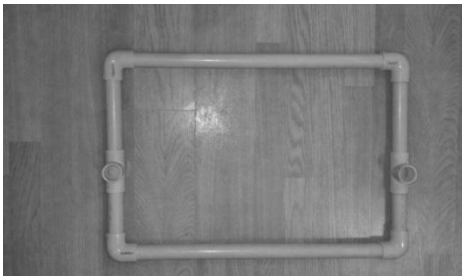
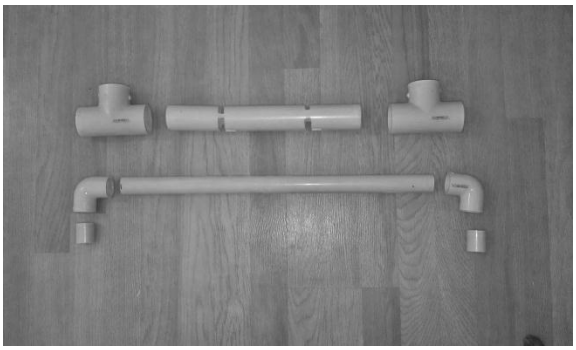


Figure 4



Section 2 – Rotation piece

Figure 5 Parts: A, B, J, Q, 2- 1" 90° Elbow joints, 2- 1.5" 90° T joints



1. Using a dremel with a saw bit cut the sections in the 1.5" PVC pipe. The T cuts should be approximately 6"-8" apart from one another. T cuts should be ½" thick. (Figure 6)
2. Slide 1" PVC into the 1.5" PVC that has just been cut. Using a sharpie, mark the spot directly in the middle of the T cut on both sides.
3. Pull out the 1"PVC and drill holes on the marked spots. Use a ½" drill bit.
4. Slide the piece back into 1.5" PVC and slide connecting screws through the holes and put on cap (the two pieces should be now held together- Figure 7)

Figure 6

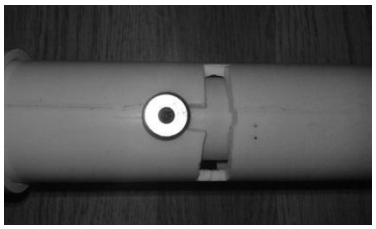
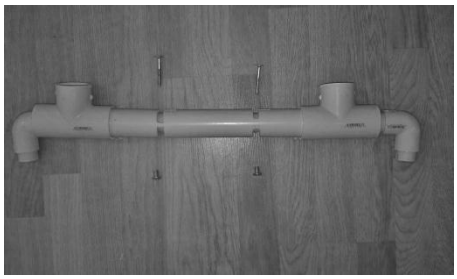
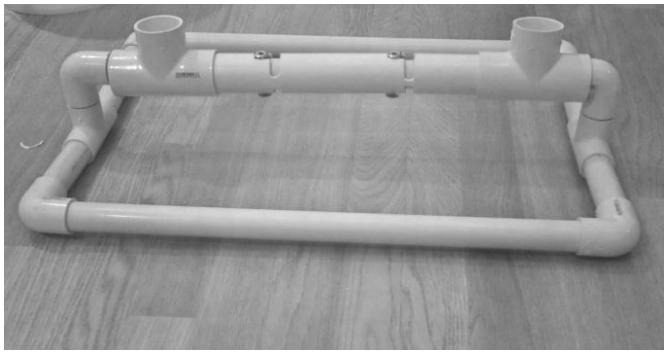


Figure 7



5. Connect both T joints to the end of the 1.5" PVC.
6. To the 1" PVC, connect both 1" 90° elbow joints facing downwards and the connecting 1" PVC pieces. Attach to base. (Figure 8)

Figure 8



Section 3 – Top of armature

Figure 9 Parts: K, L, N, P, R, 3- 1.5” 90° T Joints

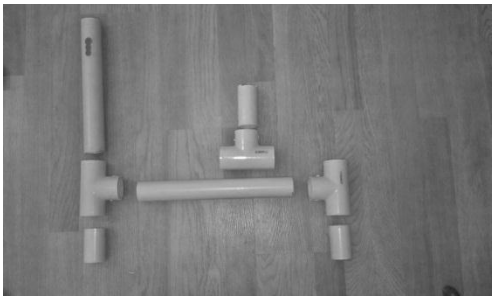
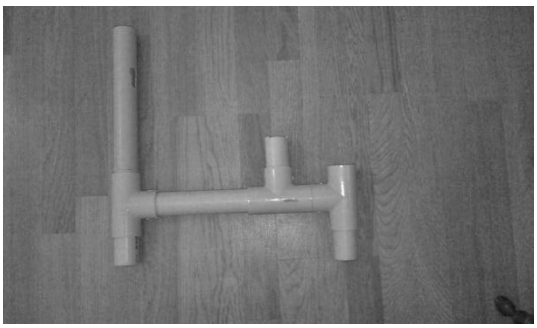


Figure 10



1. Use a dremel with a sandpaper bit to sand down the inside of the center T Joint until it slides freely on the 1.5” PVC pipe. Slide on to PVC. Connect top PVC piece. Connect both T joints to the connecting 1.5” PVC piece. Attach the bottom connecting pieces to the bottom of both T joints. Attach to top of the armature already on the base. (Figure 10)
2. Take the top piece of 1.5” PVC and ¾ of the way up the piece, drill ½” holes (using a power drill) on both sides of the tube (lined up and opposite of each other). Insert this piece into the top of the left T joint.

Section 4- Support Base for Bucket (optional)

1. Take the 2” repair coupling and cut groves on either side to fit lip of bucket. Slide the 1.5” repair coupling inside the 2” piece. Fasten together securely with extra pieces of PVC (dremeled down to fit- Figure 12)

Figure 11 Parts: 2” repair coupling, 1.5” repair coupling

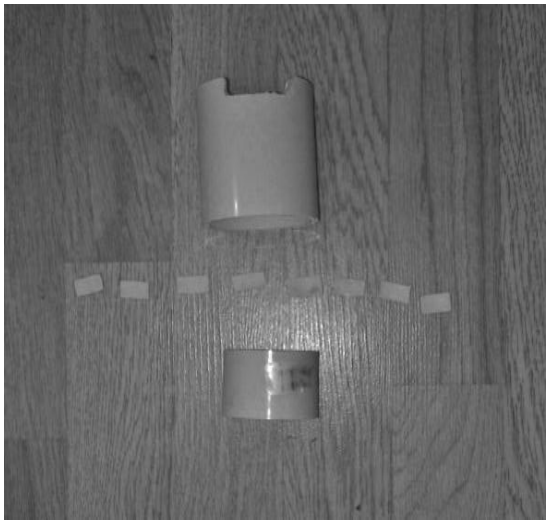


Figure 12

Section 5- Base for handle

Figure 13 Parts: C, M, O, 1.5" to 1" reducer bushing, clip bolt & clip, extra small sliver PVC

Figure 14

1. Take the top piece of 1.5" PVC and on one side cut a notch, approximately 1" long and ¼" deep.
2. Next, on the same side the notch was cut, drill 2- ½" holes (directly across from one another). The holes should be on either side of the notch and ½" from the end of the pipe.
3. Take the 1" PVC and slide it into the larger 1 ½" piece. Mark where the holes are on the far end. The markings should be ½" from the end of the tube. Drill 2- ½" holes directly across from one another where the markings are.
4. Slide the 1" PVC back in to the 1.5" PVC and align the holes. Insert clevis bolt through both sets of holes and lock in place using clip.
5. Next, take the bottom piece and using a dremel with a sand paper bit, sand down the inside of the PVC until the 1.5" to 1" reducer bushing slides in a sits flush with the bottom piece of 1.5" PVC.
6. Insert the other end of the 1" PVC into the opposite end of the reducer bushing. Approximately ¼"should be showing of the 1" piece. (If more is showing, sand the inside of the reducer bushing with the dremel until it fits in more. If less is showing, a small piece of PVC (shown in picture) can be cemented to the top lip of the reducer bushing as a spacer)
7. Attach the other end of the PVC with the bushing inserted into the right side of the armature top. The "hinge" should open outwards. (Figure 14)

Section 6- The bucket

Following the picture and using a ¼" drill bit, draw and drill holes throughout the base, sides, and lid of the bucket. The holes should be approximately 1" apart.(Figure 15) In the bottom of the bucket, drill a ½" hole. (Figure 16)

1. To attach bucket to armature, insert a 5/6”x 2.5” half threaded nylon hex bolt through both holes in the top of the 1.5” PVC located on the left side.
2. Next slide bucket onto bolt and faster with a nylon washer and nut, both 5/6”.

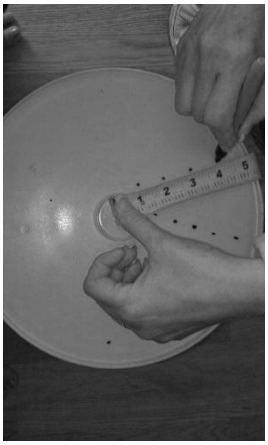


Figure 15

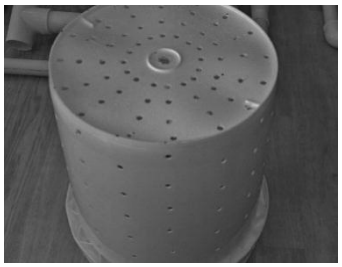


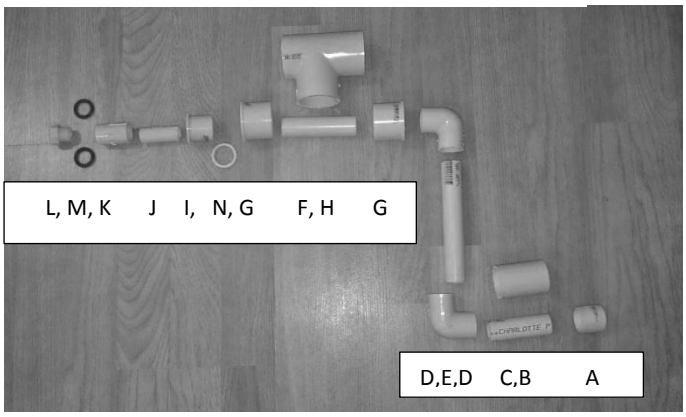
Figure 16

Section 7- Handle and bucket lid

Parts:

A. ¾” PVC end cap (female non-threaded)
B. ¾” PVC cut to a length of 3½”
C. 1” PVC coupler (optional)
D. 2- ¾” PVC elbows
E. ¾” PVC cut to a length of 6”
F. 1½” T joint
G. 2- 1½” x 1” reducer bushing (non-threaded)
H. ¾” PVC cut to a length of 4½”
I. 1” x ½” reducer bushing (non-threaded)
J. ½” PVC cut to a length of 1”
K. ½” coupler (threaded on one side)
L. ½” male threaded end cap
M. 2 round rubber washers 1”
N. 1” PVC cut to a length of 1/8”

Figure 17



Steps to assemble handle crank (Refer to Figures 17, 18, 19 & 20 for assistance)

1. Start with part K and trim ¼” from both sides. Cement non-threaded side to part J.
2. Cement exposed side of part J inside part I. Lip of part I should sit flesh with part K. (part J is not exposed)
3. Cement part N inside of part G (with lip facing up part N should be inside at the base opposite of lip)
4. Cement part I inside of part G (slide in until flesh with part N)
5. Cement part H to backside of part G. Set combined parts aside and allow cement to set. (All parts combined = section 1.)

6. Take part F and trim ¾” from one of the lateral sides. Then, using a dremel with a sandpaper bit, sand down interior diameter of both lateral sides. (should be sanded down approximately 1/16”) Set aside.
7. Sand down first ¼” of exterior diameter of part A (the area around the open end). Cement to part B.
8. Sand down interior diameter of part C. (should be sanded down approximately 1/16”). Slide part C over part B.
9. Attach free end of part B into part D. Make sure part C can spin freely over part B.
10. Cement part E to other end of part D. At opposite end of part E cement part D-piece 2 (should be facing the opposite direction of part D-piece 1).
11. Cement free end of part D –piece 2 in to lip end of part G- piece 2. (All parts combined= section 2.)
12. Insert section 1 part G into trimmed end of part F. Insert section 2 part G into opposite lateral end of part F.
13. Cement part H to inside of part G-piece 2. Allow to set. Make sure part F can spin freely over section 1 and section 2 (both sections now fused together by part H.)
14. Trim part L by ¼” on threaded end. Slide 1 rubber washer on threaded end.
15. Insert through bottom of bucket lid and place 2nd rubber washer on threading on the top of the lid. (hole in bucket lid should be ¾”)
16. Screw threading of part L into threaded end of part K (make sure to tighten threading.) Spinning the end of the handle should rotate lid.
17. Attach the handle and lid to the top of the handle base already attached to the base.
18. Fastening the lid to the end of the bucket lid and spinning handle should make entire bucket spin.

Figure 18

Figure 19

Figure 20

Finishing touches

Take both basins, and mirroring each other, cut sections for both arms and the spinner. Use a hacksaw (Figure 21)

Figure 21

How to Use

1. Place one basin on either side, fill one with water and one with vinegar solution.
2. Place greens in bucket, snap on lid and use.
3. Should be used by flipping bucket to one side (rotate bucket base to one side) and spin in water for 1 minute, then flip to other side and spin in vinegar solution for 2 minutes, finish by doing a final rinse in fresh water again for 1 minute. Position upright, and spin greens dry.
4. To unload position bucket base upright to rest bucket lip. Unsnap lid and empty greens.