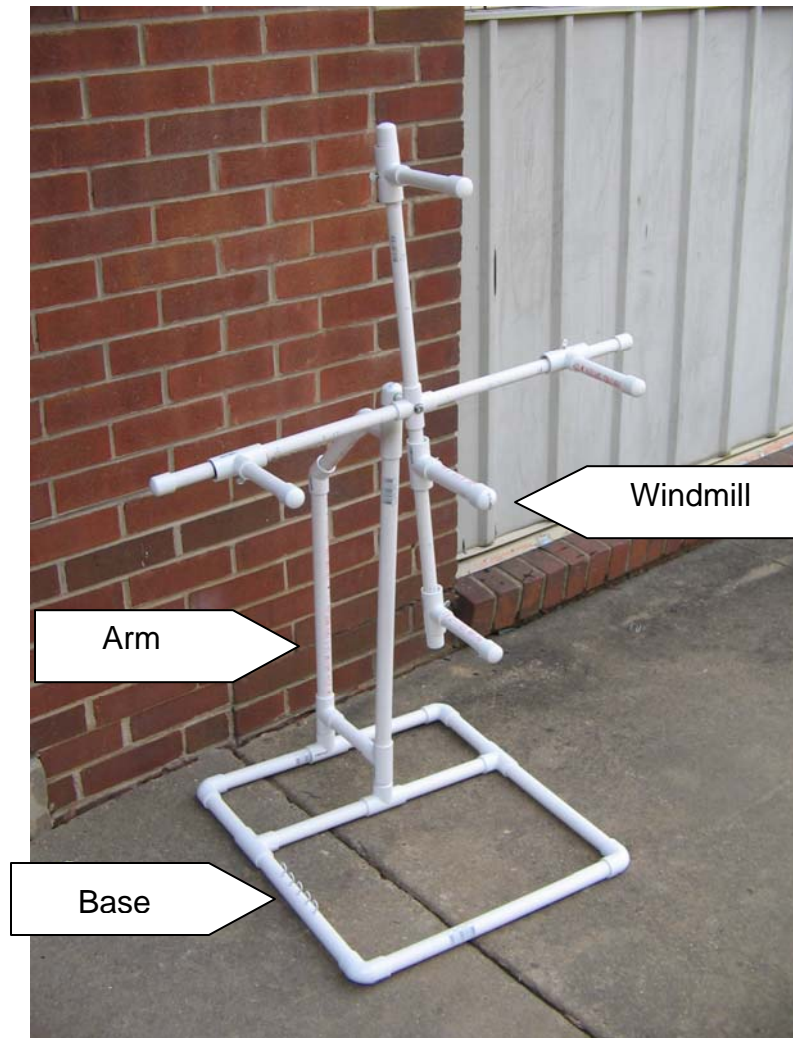


PVC Swift/Skeiner Tutorial



The swift/skeiner is assembled in 3 pieces: the base, the arm, and the windmill. The three pieces can be taken apart so that the swift/skeiner can be stored flat. It will accommodate up to a 2-yd skein.

All required materials can be purchased at Home Depot or similar home improvement stores. I personally only spent about \$10. What a bargain!

Materials required:

(#) number in parentheses denotes quantity used

1/2" pipes

- 90 inches of 1/2" pipe to be cut into:
 - (4) 15" long 1/2" pipe
 - (5) 6" long 1/2" pipe
- (9) 1/2" cap
- (1) 1/2" X-join
- (5) 3/4"/1/2" T-join*

*These T-joins are 3/4" diameter in the horizontal part and 1/2" diameter in the vertical part

3/4" pipes

- 147 inches of 3/4" pipe to be cut into:
 - (1) 23" long 3/4" pipe
 - (2) 18" long 3/4" pipe
 - (2) 12" long 3/4" pipe
 - (4) 8 1/2" long 3/4" pipe
 - (4) 6" long 3/4" pipe
 - (4) 2" long 3/4" pipe
- (7) 3/4" T-join
- (2) 3/4" 45° join
- (4) 3/4" elbow join
- (1) 3/4" cap

Hardware and Tools

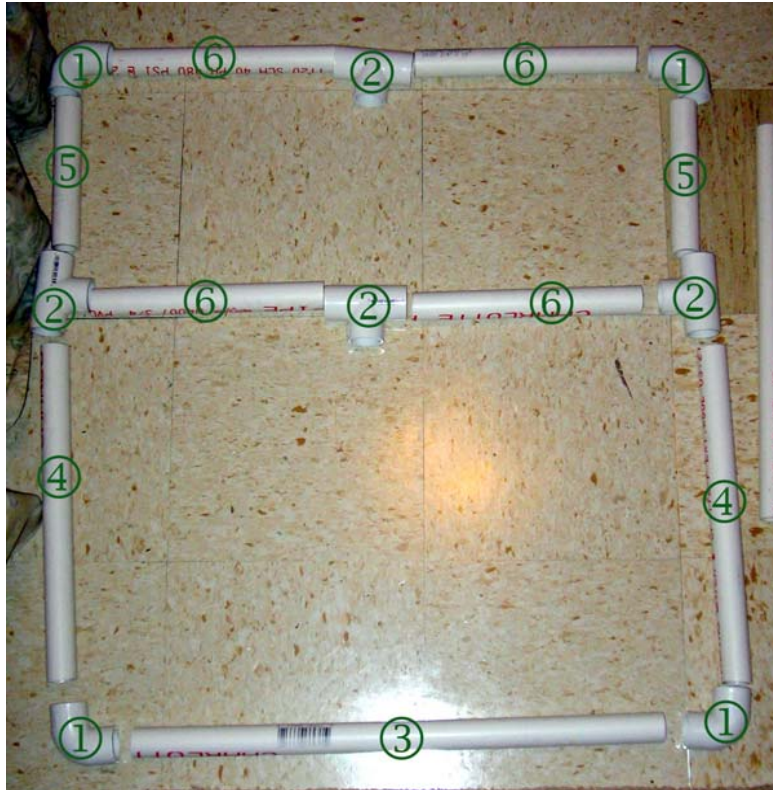
- (1) 4" long 1/4" bolt with 1 nut, 4 washers, and a 1" long spacer
- (5) thumb screws
- PVC glue & brushes (optional)
(our PVC glue canister actually had a brush in it. We bought add'l brushes since we didn't know that)
- 5 screw on cup hooks (optional)
- Drill & drill bits, PVC cutter or saw (to cut apart PVC pipes), and wrench (optional)



Base assembly

Materials used in this section:

- ① (4) ¾" elbow join
- ② (4) ¾" T-join
- ③ (1) 18" long ¾" pipe
- ④ (2) 12" long ¾" pipe
- ⑤ (2) 6" long ¾" pipe
- ⑥ (4) 8½" long ¾" pipe



Before



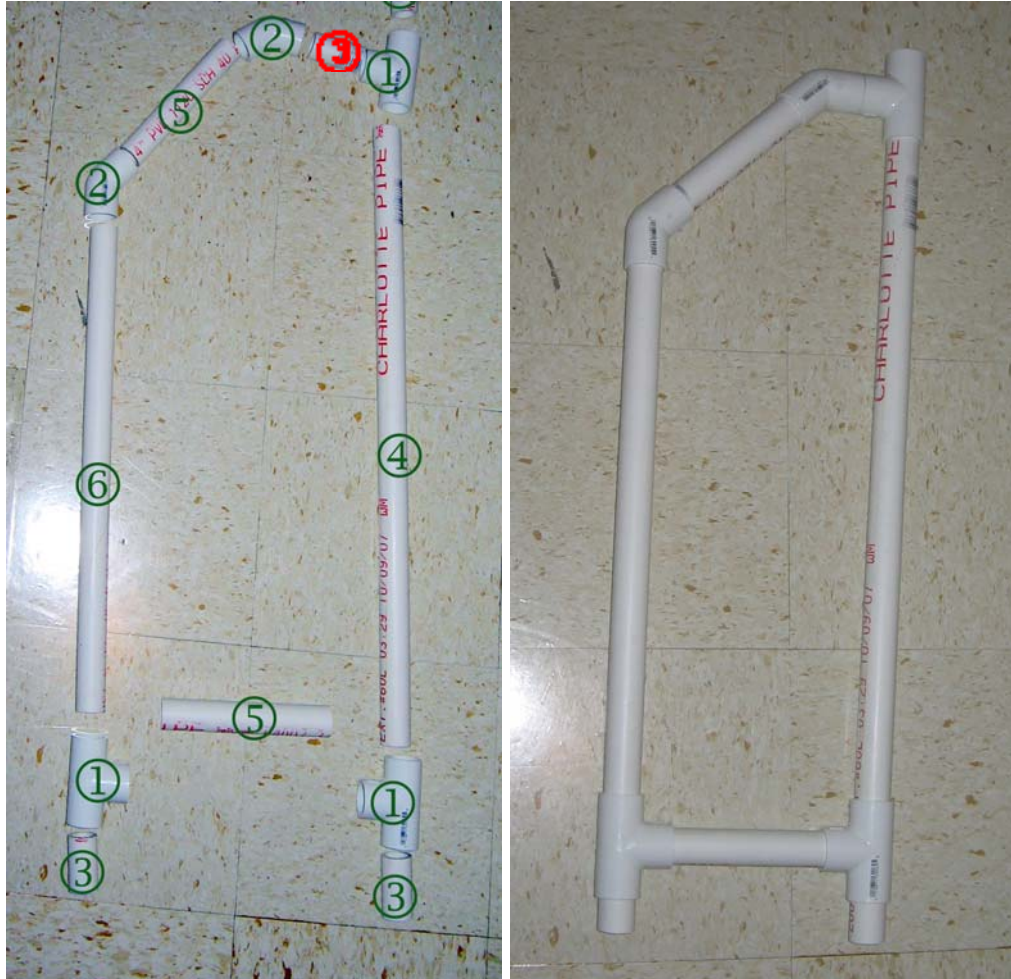
After

Assemble as pictured, pushing firmly.
The 2 T-joints with an open end should face up when the base is placed on the ground.
If desired, glue joins to pipes with PVC glue.

Arm Assembly

Materials used in this section:

- | | | |
|------------------------|-----------------------|------------------------|
| ① (3) ¾" T-join | ② (2) ¾" 45° join | ③ (3) 2" long ¾" pipe |
| ④ (1) 23" long ¾" pipe | ⑤ (2) 6" long ¾" pipe | ⑥ (1) 18" long ¾" pipe |



Before

After

Assemble as pictured, pushing firmly.

If desired, glue joins to pipes with PVC glue.

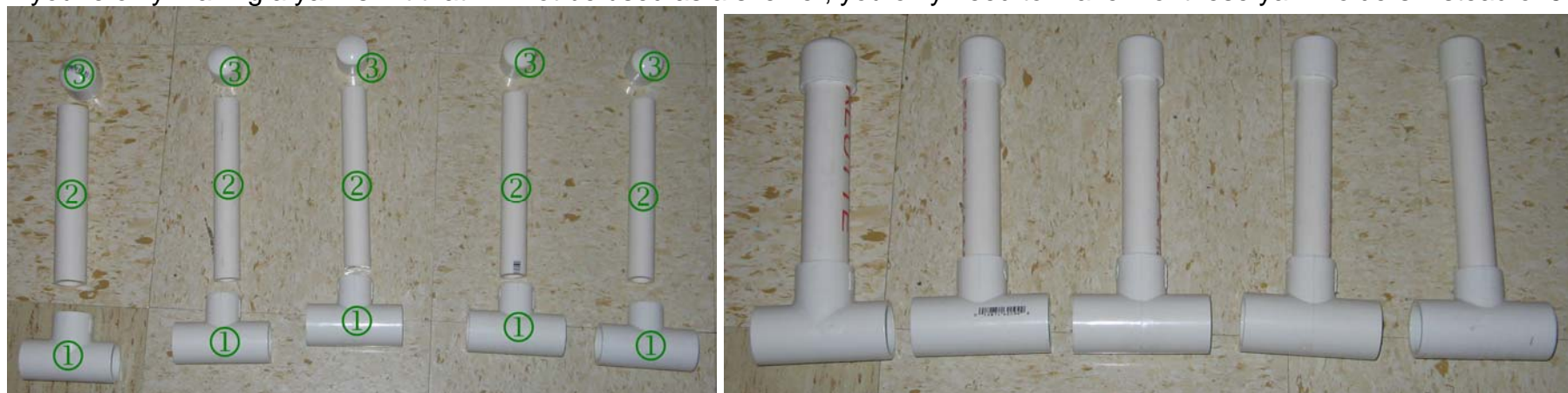
Windmill Assembly

This assembly consist of 3 parts: the yarn holders, the windmill, and the connection

Yarn Holders materials:

- ① (5) $\frac{3}{4}$ "/ $\frac{1}{2}$ " T-join* ② (5) 6" long $\frac{1}{2}$ " pipe ③ (5) $\frac{1}{2}$ " cap
*These T-joins are $\frac{3}{4}$ " diameter in the horizontal part and $\frac{1}{2}$ " diameter in the vertical part

If you're only making a yarn swift that will not be used as a skeiner, you only need to make 4 of these yarn holders instead of 5.



Assemble as pictured, pushing firmly. If desired, glue joins to pipes with PVC glue.

Connection materials:



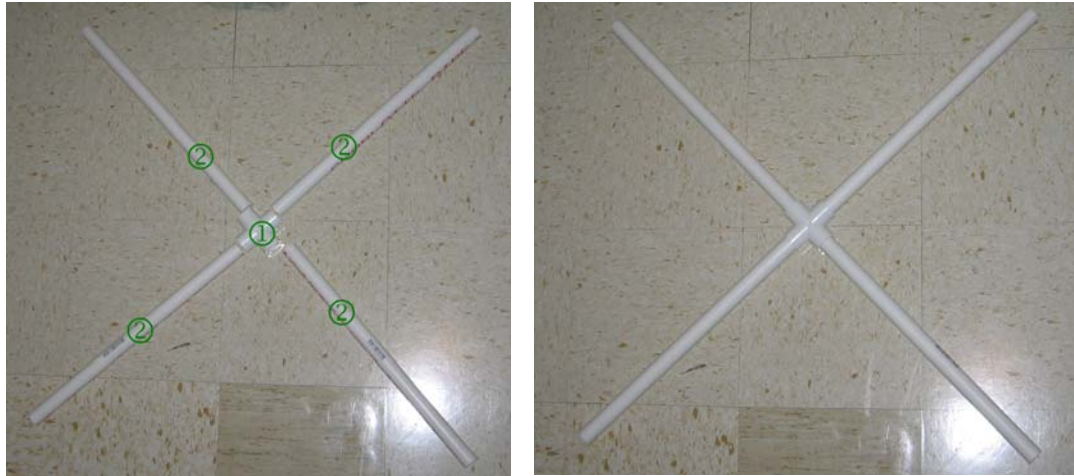
- ① (1) 2" long $\frac{3}{4}$ " pipe ② (1) $\frac{3}{4}$ " cap

Assemble pipe and cap together, pushing firmly. If desired, glue the join and pipe together with PVC glue.

Windmill materials:

① (1) ½" X-join

② (4) 15" long ½" pipe



Assemble X-join to pipes as pictured, pushing firmly. If desired, glue joins to pipes with PVC glue. (This gluing step is optional, but I highly recommend it for the windmill, since mine had a tendency to come apart during high-speed swifiting before I glued it together.)

Drilling:

Now comes the slightly harder part – drilling holes!



For the Yarn Holders:

Materials needed in this section:
(5) thumb screws

Using a drill, drill a hole into the side of the T-joints. The holes should be sized appropriately for your thumb screws.

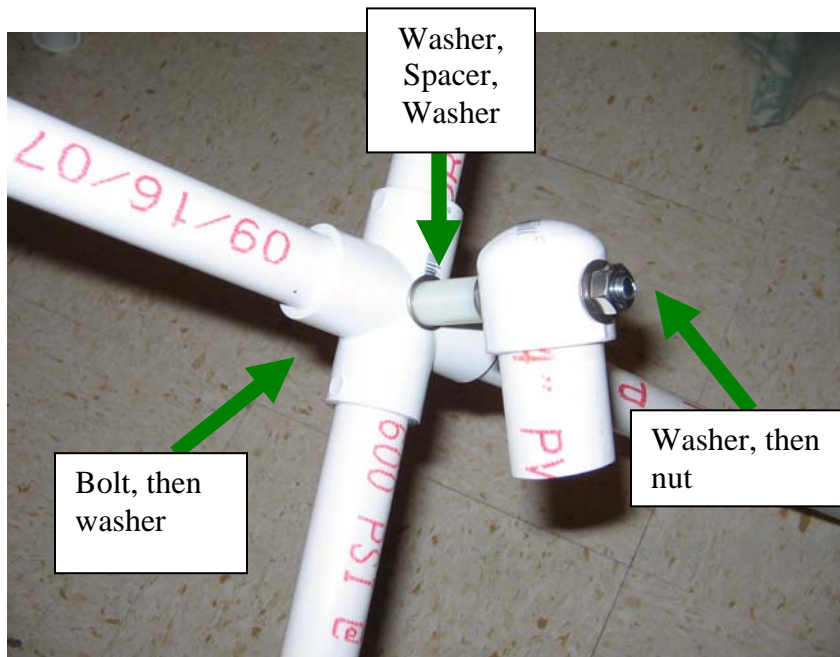
Insert thumb screw and turn several times around with a wrench until they are loose enough to be comfortable for hand turning. When we did that, we covered up the surface of the thumb screw with a towel so the wrench won't marr the surface.

For the Windmill and Connection:

Materials needed in this section:

(1) 4" long $\frac{1}{4}$ " bolt with 1 nut, 4 washers, and a 1" long spacer

Using a drill, drill a hole all the way through the cap and the middle of the X-join. The holes should be sized appropriately for your bolt.



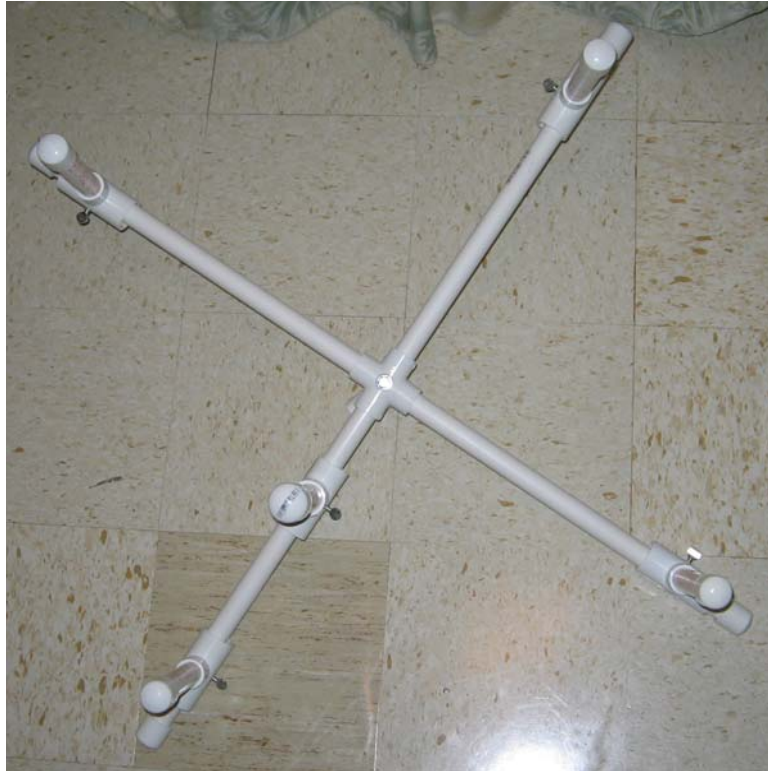
Put a washer on the bolt, then put the bolt through the windmill. On the other side, put a washer, then the spacer, and then another washer. Put the bolt through the connection. Finally, put a washer and a nut to finish it off.

To be safe, we superglued the nut in place.

To complete the windmill assembly:

Materials needed in this section:

(4) ½" cap



Loosen the thumb screws on the yarn holders just enough so you can slide them onto the windmill. I did one on each arm, with one arm getting an additional yarn holder to function as a handle when I crank it as a skeiner. If you're only going to use it as a swift, just do one yarn holder on each arm.

Tighten the screws just enough so that they won't flop around.

Finish off each arm of the windmill with a ½" cap. DO NOT glue these down! In fact, try not to push too hard on them so that they'd be removable later. When I use this as a swift, I remove the additional yarn holder to give it better weight distribution. The cap has to come off before I can slide the additional arm off.

Final assembly!

Whew! You're almost done! This is the part where you put it all together.



Put the base on the floor.

Push the arm assembly into the open t-joints in the base.

Put the connection of the windmill assembly into the arm assembly.

Viola – your skeiner/swift is finished!

To store flat: When I'm not feeling lazy, I will take the windmill, arm, and base assemblies apart into 3 pieces to store them flat. The windmill assembly can be made flat by loosening the thumb screws and turning the arms to the side.

To use: Just reassemble and turn the yarn holders back to the correct position.

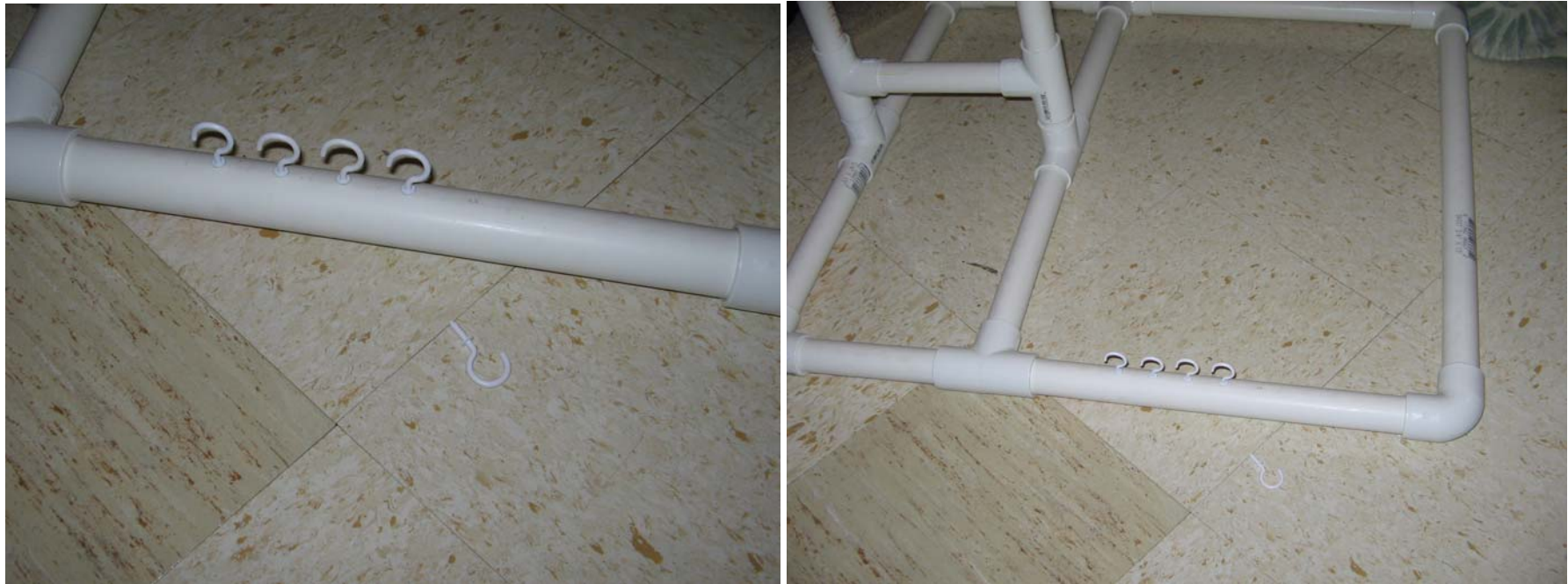
If using it as a skeiner, adjust the yarn holders to the appropriate length and wind by cranking the middle handle.

If using it as a swift, remove the additional yarn holder. Adjust the remaining yarn holders to be the appropriate length.

Try to make them all about equidistance from the center. The better the weight distribution, the better it spins.

(Hint: use some WD-40 on the bolt if it doesn't spin as smoothly as you'd like it to. It worked wonders for me).

Optional skeiner yarn guide



I added these cup hooks to the base of the skeiner when I was skeining a cone of yarn. These help guide the yarn onto the skeiner so you don't have to. I purchased these cup hooks from Target, but you can probably buy them anywhere. I just drilled a small hole (3/32") through the part of the pipe where I want them, then screwed them on. When skeining yarn, I'll just periodically change hooks so it winds on fairly evenly.