Video Camera Stabilizer

Professional camera stabilizers or “steadicams” use a complex system of springs and counterweights to capture smooth looking video, even when the camera and camera operator are in motion. The camera operator can walk (or even jog) over uneven ground, through doorways, and climb up and down stairs without shaking the camera.

Whether you’re an aspiring filmmaker, a videographer, the family documentarian, or you just want more utility out of your video camera, you’ll appreciate this simple video camera stabilizer.

**Tools**
- ¼” drill bit
- Electric drill
- Pliers
- Screwdriver
- Hammer
- Stationary vise

**Materials**
- ½” diameter galvanized steel pipe, 24” long
- ½” diameter galvanized steel pipes, 6” long (2)
- ½” diameter T-joint
- ½” diameter end caps (2)
- Machine screw, ¼”-20, 1½” long
- ¼” lock washer (2)
- ¼” nut
- ¼” wing nut
- Fender washer, 1½” diameter w/ ¼” hole
- 1” nut, to thread onto steel pipe
- 2.5 lb. Barbell weight with a 1¼”-diameter hole
- Washer, 2½” diameter w/ 1” hole
- Bicycle handle grip, ID ½”
- Plastic handle, ID 5/8” (to slide freely on ½” pipe)

**Estimated Cost:**
$25 depending on your ability to find spare parts.

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Before you begin:
You may find it necessary to modify these instructions, depending on what materials and tools you have at hand, and any improvements you might want to make in the design. Go ahead and customize the project and make it your own!

Step 1. Make the handle
Attach the T-joint to the 24”-long pipe to form the junction for the camera and the handle.

Screw the remaining two pipes into the T-joint of the handle and tighten securely. Also, place the bicycle grip on the handle (or horizontal) section of pipe.

Step 2. Drill a hole in one of the end caps
After securing the cap in a vise, drill a ¼” hole in its center.

Step 3. Assemble the mounting for the camera
The camera is attached to the stabilizer with a ¼”-20 screw, bolted through the end cap. Put a lock washer on the bolt and put it through the end cap so the bolt comes out the top of the cap. Add a second lock washer and a nut. Tighten securely.
Step 4. Assemble the counterweight
You’ll need a 1” nut, the barbell weight, a large washer, and an end cap. First, slide the plastic handle onto the pipe. You’ll want the handle to slide freely on the pipe. Then thread the nut onto the end of the pipe.

Next slide the weight onto the pipe, and then add a washer to keep the weight in place. Lastly, screw on the end cap and tighten it using your hands or a wrench.

You can tighten these parts as much as you like. Either give them a good hand-tightening or use a vise and pliers to tighten. It should be noted that the lengths of the pipes and the weight of the barbell can be varied to your liking.

Step 5. Attach the camera to the stabilizer
Screw the wing nut on the bolt that’s attached to the end cap, with the wings down. Add the fender washer between the wing nut and the camera.

Note: If you have a heavier camera, you may want to slightly bend the washer by putting it in the vise and tapping it with a hammer. The bend in the washer will act like a spring to securely hold your camera.

With the stabilizer in the vise, carefully screw the camera onto the bolt. Then turn the wing nut until it’s snug against the washer.
Your camera stabilizer is done! Take it out and shoot some video.

Resources:

For additional information on building your own Video Camera Stabilizer, visit:
http://www.cs.cmu.edu/~johnny/steadycam/

TELL US HOW YOUR CAMERA STABILIZER WORKS!
LEAVE A COMMENT UNDER THE VIDEO FOR THIS PROJECT AT http://www.makezine.tv

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