

STRUCK RAMP CLUTCH REVISITED

By Dave Mitchell

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At one of our recent club meetings, Dan Driscoll demonstrated a wonderfully simple and effective prop clutch, which was originally designed by Henry Struck. A variation on the basic ramp-style clutch that is now molded into virtually every plastic prop in the universe, Struck added a couple of bearing sleeves to the arrangement to create a low profile mechanism that is ideal for small models and airplanes with spinners.

Use concentric brass or aluminum bearings of whatever size meets your needs, keeping in mind that this method is best suited for smaller diameter prop shaft wire — heavier wire becomes difficult to bend sharply at the ramp end, which makes the ramp clutch less reliable.

The inner bearing (spacer) runs free on the prop shaft; the outer bearing is glued into the prop hub.

It is not strictly necessary to bush the prop with the outer bearing, though doing so will be more durable and will allow freer prop rotation during the freewheel.

If you choose to bush the prop, use a file to create a ramp in the prop bearing, rather than relying on the plastic prop ramp. The brass bearing ramp will be more durable. Also, try to slightly undercut the ramp, so as to hold the bent prop shaft in place more securely during clutch engagement.

The most critical issue is that the inner bearing (spacer) be longer than the outer (prop) bearing, so that in the freewheel mode, as the wind pushes the prop back against the thrust button, the bent prop shaft will run clear of the ramp.

After winding the motor, hold the prop forward, to engage the clutch. As long as you avoid pushing the prop back, the clutch will hold. This clutch works beautifully on braided motors, as the inner bearing holds the bent prop shaft free of the ramp when freewheeling, even when there is still tension left in the rubber motor.

Try it, you'll like it. Great for dimers. So far, my only complaint is that if you want to change props, you have to bend up a new prop shaft. Also, I guess if you have a midair and lead with your prop you'll slip your clutch and lose your winds....but in that case, you deserve it.

Comments by the MaxFax editor.....

Of course you can't make a sharp right angle bend in the wire. There will be a bend radius. If you file a flat on the side of the wire that hits the ramp to create a surface rather than a line contact, the holding power will be greatly enhanced and you don't need to modify the plastic prop ramp very much if at all. I find the face of a Dremel cut off disc does this job wonderfully well and will also allow you to easily cut the prop shaft arm short to fit under a small spinner. I keep a battery powered Dremel tool in my flight tool box to enable me to readily change prop shafts in the field if the need arises.

