

<http://Dremeltingpotes.free.fr/>

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WIP Two Point Balisong : Full Tang Pins, and ball bearing.



Caution: The realization of your butterfly knife will require to resort to tools being capable to cause serious wounds. I invite you to use them with the greatest precaution and to discover their operating modes by reading manufacturers notes. You will have also to handle a heat source in order to carry out the heat treatment. I invite you to take all the precautions necessary not to wound your entourage or you even. Insulate, and warn the people neighborhood whom you will handle possibly dangerous tools. I also invite you to wear gloves, masks and glasses. Perhaps you will be like an alien, but that will avoid you possible nuisances.

The author of this text do not can in no case to be held for person in charge for the possible incidents who would occur at the time of the realization of this tutorial.

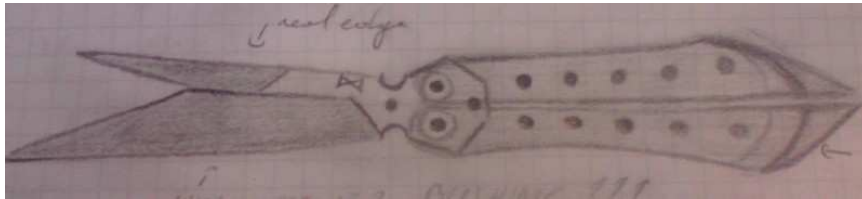
[Balisong done for the Halloween JerzeeDevil Build Off 2012](#)

Cardoso Build Off 2012 ; Devil Tongue Balisong

The draw i did during a meeting at my work 😊.

I think that will be my balisong project for that build off.

For the blade i think of niolox (stainless steel with niobium) , titanium handle black anodized and ball bearing 😊



Day 1 1H



Some ink, and the scheme a bit longer than the picture i posted.
The niolox plate.



The scheme is reported on the plate



With the bandsaw i cut the point



After 20 good minute of cutting.



After some cleaning with a ceramic 60 grit belt



The various thing to mark the point for the pivot and tang pins.



3,8mm hole.



The pivots are reamed, but i don't ream the tang pin hole to put 4mm pins hardened in force.



The choil has been done at the beginning of the blade. The blade is Ok to be grind 😊.

That will be for the next stage.

Day Two 1h30 - 1h30 for the hardening - 1h30 for the tempering



My Homemade grind wise 😊.



As i though, that is



After a grit 240



A fast filework without file



In the hardening foil



I do my best to put away the air, but i'm not used to heat treat stainless steel now



My enamel kiln with the controller i did. The oven is from the begin of 80'. He is as old as i'm 🤖. I need to drill the back in the to put my probe . The probe in the door is not really cool to open 😊



1040°C during 20mn and 2x45mn to 170 😊



Ho do you enjoy your piece of steel? Well done?



When i say that i'm not use to put away the air of the hardening foil....





After a bit of cleaning with a 240 belt.... With that heat treat that is a pain X5 to grind and polish.... I discover the pleasure of the stainless steel....

The next step will be to make the second grind.... I think i should have maybe done before heat treatment 😊. (i have ceramic belt to work but i think it will be a bit longer than i thought 🤖) And to clean the main edge. I think i will keep all the other part with the chromium oxydation and burned oil 😊. In order to have a bit of contrast. I'm not sure 🤖

Day 3 : 1h30 of work

Today nothing spectacular but niolox is really a pain to grind.



I put my grind wise with the angle i want.

The ceramic belt did the job, but that was long, very long....

After grit 120 (zirconium), that was harder.... The grit 240 and the 500 (aluminium oxyde) slid almost on the blade without scratch really the steel....





I will keep the chrome oxydation mark on the blade, just for the fun and the look,
i polished a bit too much, i would have enjoy to keep more 🇩🇪

Next step, the handle.... That project is long 😊

Day 4 1h30 of work. The handle



I ink the 3mm Titanium plate (GR5-TA6V4), cut my scheme.. The blade is longer that the one on the scheme, i have to adapt a bit the handle size



I marked the cut line with the tungsten carbide point and check with the blade



Nothing to do with the topic but i received today my strong bloc of aluminium in order to be able to quench my niolox steel between 😊COOOOOOOLLLL



Band saw work





First test with two piece



4 handle piece



titanium dust 😊



I draw the point of the pivot



Automatic punch



Drill bit to center the hole



3,3mm hole



I check the thickness of each plate



I counterbore the bearing raceway.



The thickness after milling is 2,05mm it's ok 0,95 deep for my 1/16" ball.



3,8 mm hole



I reamed to 4mm



I marked the spacer place, and drill it to 3mm



There are some piece now

Day 5 : 3 hour of work



I began to grind the handle by set in order to shape it 🧐



The flat side of the handle

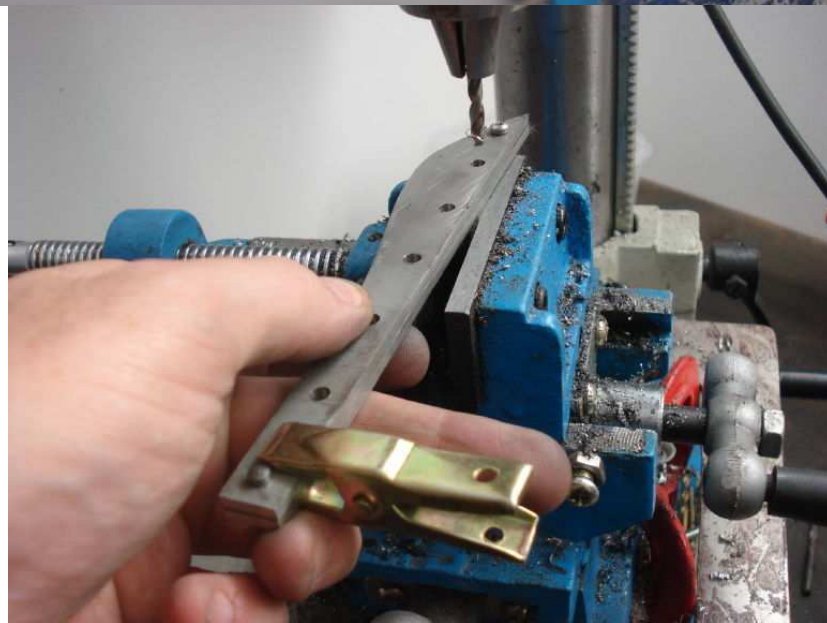


After to shaped by pair, i adjusted the 4 piece together.

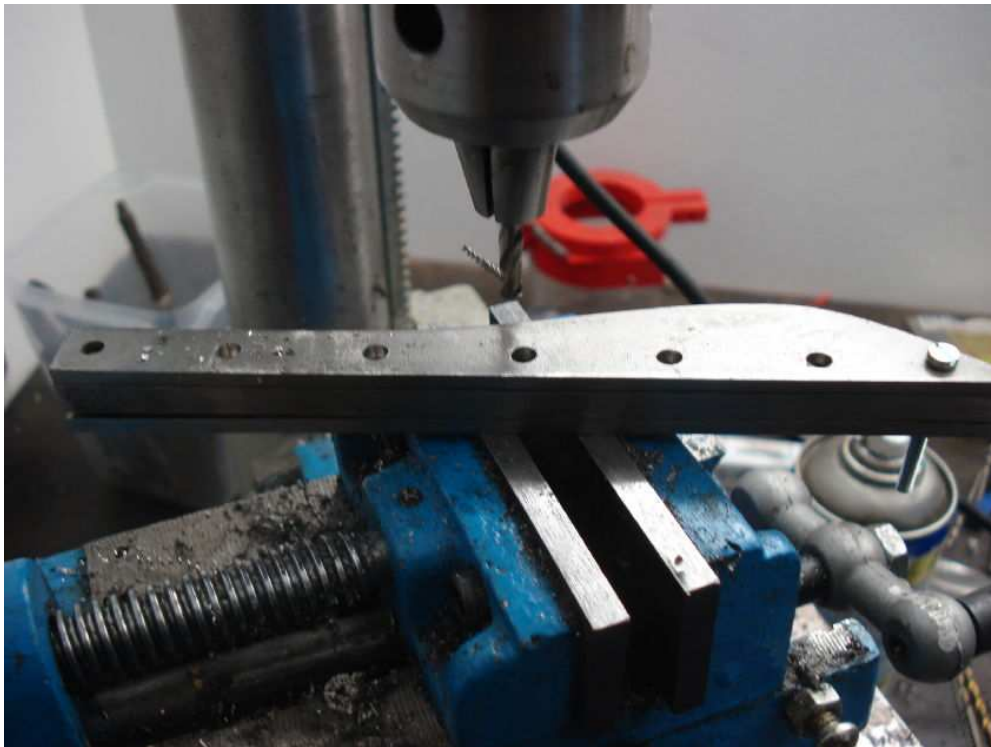


I drawn and punched the 5 futur hole

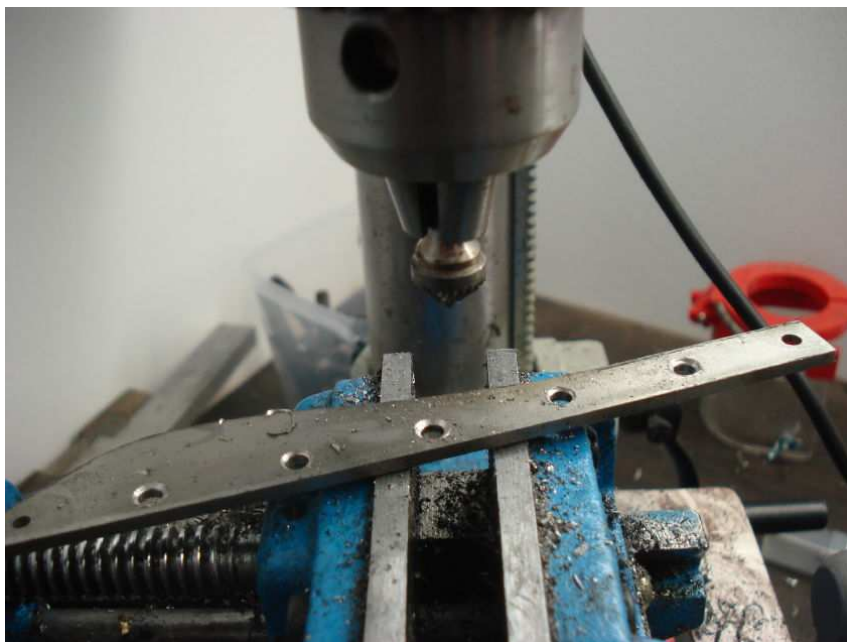




After to have pre drilled the hole, i drilled to 4,2mm



I make a pair and pre drilled the hole between the first handle piece.
And i drilled it to 4,2mm.



I countersink each side of the 4 pieces.



I cleaned the handle piece



I round the head by pair.



First pre build.



I make a cone with the tang pin.



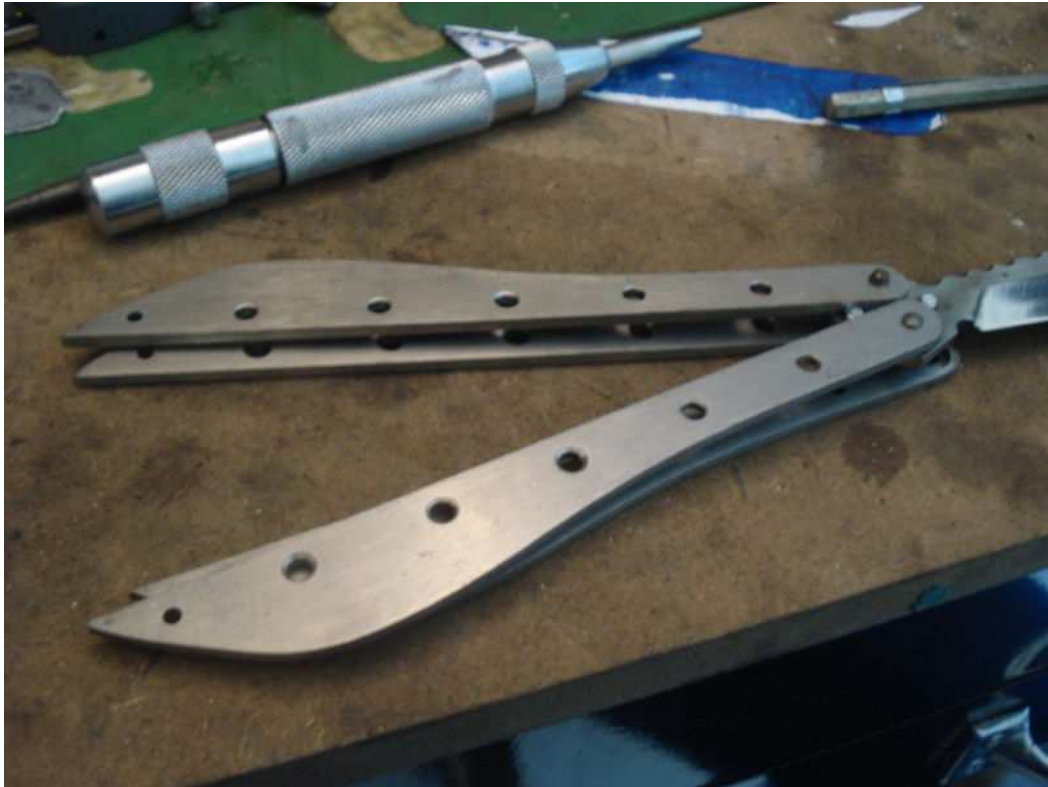
I put the hardened tang in force.



I shorted the tang

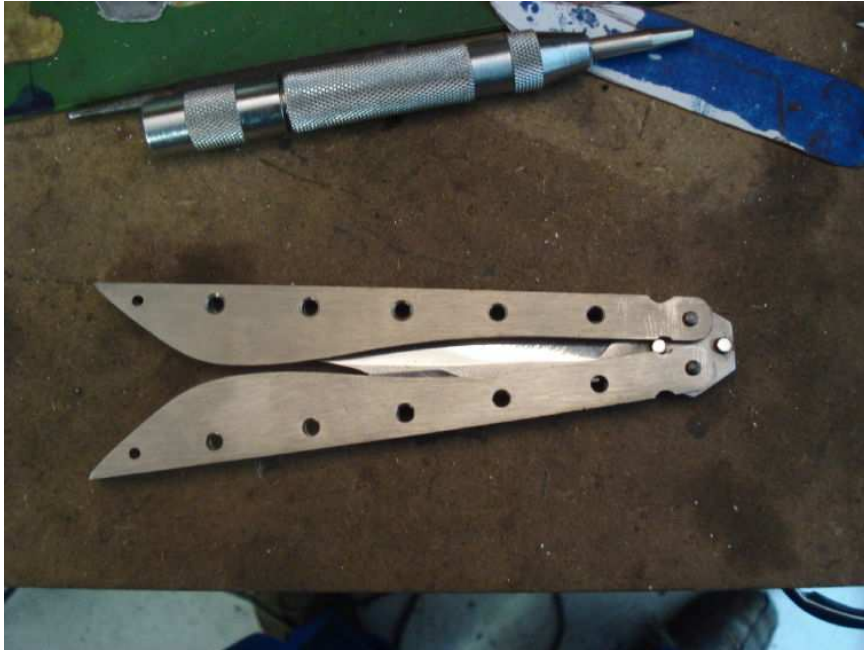


I buffered the tang



I marked the tang cup





After to have grind a bit



In Hand



Some bearing grease and some 1/16 hardened ball.





Prebuild



2 day of work dust 🚮

Day 6 : 2 hours of work

I take the space between the two part of the handle at the pivot.



I cut the spacer more or less at the good size.



I filed a bit (i used a strong piece of steel reamed to the size of the pivot to be sure to have something straight. After i polished the filed part.



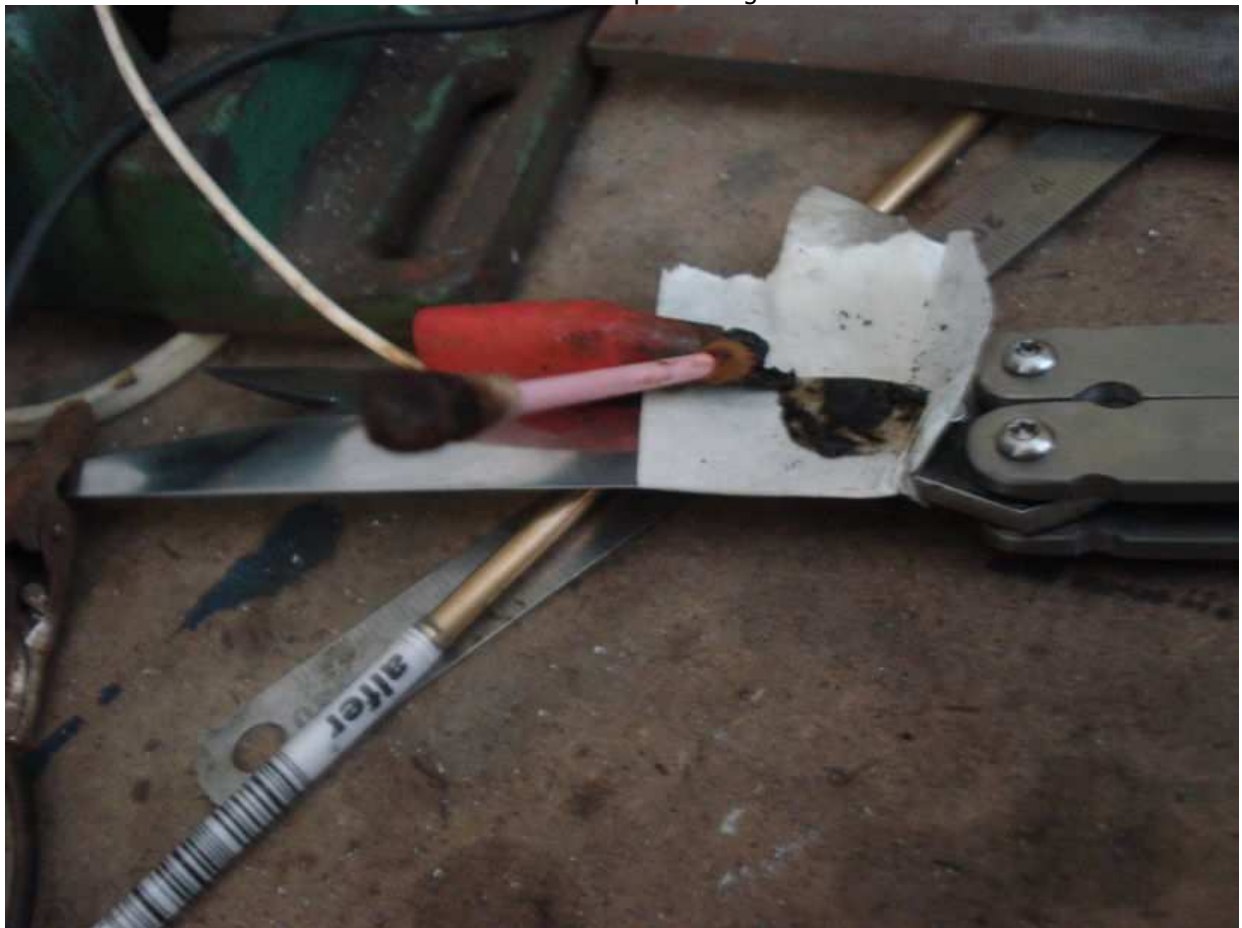
It's at the good size



With a paint mask adhesive, i protect the blade, i draw my logo.



I cut with a scalpel the logo



I electro etched the steel with a salted solution



Second pre build



I sharpened the main edge



I sharpened the second edge



Buffer 😊

That is almost done 😊





I think i will name it Devilish ScissorHand Balisong or if you have better idea 🤖



My blade is wrapped.... I didn't succeed to solve now the problem.... A The top of the point strike the handle I will try to solve it with a bit larger spacer. Maybe with 3-4/10 longer one that will be ok 😊

I'm hesitating to burn the handle in the oven at 1000°C in order to see the color that I would have 😊.

There will be a better picture of that one soon when I will have Loctited everything and when the cold rolling of the bearing will be ok 🚗

For now a small video 😊 it flip really better than I would have thought.

The weight is 160g 🚗

The Devil Tongue Balisong

16 cm closed, 5 cm width to the heel. 1 cm thick and 1,4 cm to the pivot.

3mm niolox blade, 1040°c during 20 mn and 200°c tempering 30 mn 2 time.

29 cm long, 12 cm sharp for the main edge and 5,6 cm for the second edge. Ball bearing system.





