Linkage play--your technique for consistency?

Posted by dgriff - 25 Feb 2012 14:28

Not mentioned much, if ever, is the effect of axial arm/paddle play and linkage play on the angle. Using the Angle Cube one can see fully a 1.5° angle change on my WEPS depending on how one holds the paddle.

The variation is the sum of the paddle and linkage play when you push the paddle in or pull the paddle out at the bottom. I think the best method is to push in, because it takes less effort, and if you relax your concentration, your hands will naturally fall inward.

When I want to check the nominal angle symmetry during setup--knife edge centered--I let the paddle drop all the way down so the link snuggles into the paddle's concave recess. This becomes my nominal angle, but likely not the exact angle depending on how I handle the handle....

How do others *handle* this? (no pun intended)

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Re: Linkage play--your technique for consistency?

Posted by Billabong - 24 Nov 2012 22:16

Well I can't post any more here about this as I have been threatened with a ban.

So, I understand what you are saying and appreciate your view.

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Re: Linkage play--your technique for consistency?

Posted by JerryStephenson - 24 Nov 2012 23:29

I have now used my replaced arms (see post previous page) for several months with great success. The improvements I made are:

1. Diameter better matches the holes through the stones.

2. Thickness of flat section matches the inside dimension of the u-joint.

3. Hole in flat exactly matches the pin.

4. My arms are perhaps 1/2" longer. No big deal. One member requested them 2" longer.

I have recieved some private messages and made sets for other members. If you are interested, drop me a note.

--Jerry

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Re: Linkage play--your technique for consistency?

Posted by Billabong - 24 Nov 2012 23:47

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JerryStephenson wrote:

Took me about an hour using a collet block to get the faces parallel.

--Jerry

Hi Jerry, that's the bit I still have an issue with.

It's great to see you sorted it out.

This thread is a great read and shows how a community all pitched in to deal with it.

JerryStephenson wrote:

I have now used my replaced arms (see post previous page) for several months with great success. The improvements I made are:

1. Diameter better matches the holes through the stones.

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I have recieved some private messages and made sets for other members. If you are interested, drop me a note.

--Jerry

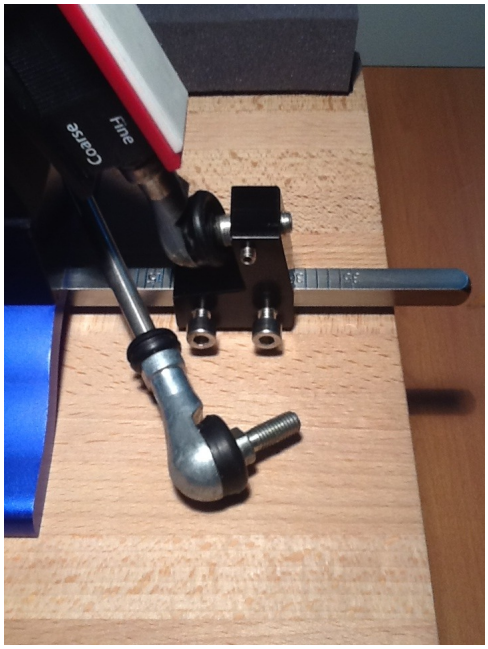
Thanks Jerry, I wonder if going a touch thicker than 1/4" for the rod is possible?

I guess it would not be a shelf item.

I would like to get hold of some longer arms also.

I'm now using the upgraded ball joint kit and am very happy with that.

I swapped the ball joint for a covered version.



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Re: Linkage play--your technique for consistency?

Posted by JerryStephenson - 25 Nov 2012 00:25

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Very nice ball joint adaptation.

As for the larger diameter rods, I did a quick search for metric and decimal sizes in the .255" range and found nothing. The .250 seems to work pretty well. If you can find the stock I can make arms out of it.

Taking 5/16 and turning it down to .255 would be a lot of work and difficult because the rod isn't that stiff over the full length.

--Jerry

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Re: Linkage play--your technique for consistency?

Posted by Billabong - 25 Nov 2012 00:32

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JerryStephenson wrote:

Very nice ball joint adaptation.

As for the larger diameter rods, I did a quick search for metric and decimal sizes in the .255" range and found nothing. The .250 seems to work pretty well. If you can find the stock I can make arms out of it.

Taking 5/16 and turning it down to .255 would be a lot of work and difficult because the rod isn't that stiff over the full length.

--Jerry

The 1/4" (.250) rods do work well, it's just when the stones slide higher and the amount of rod left inside the paddle is minimal, things get wobbly.

That's why I want to try longer arms, is there any reason why they are the current length?

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Re: Linkage play--your technique for consistency?
Posted by xuzme720 - 25 Nov 2012 00:33

JerryStephenson wrote:

Taking 5/16 and turning it down to .255 would be a lot of work and difficult because the rod isn't that stiff over the full length.

--Jerry

About the only way I can think of to do it without bending would entail drawing it through a die, not very cost effective as a solution...or if you have a 2 chuck metal lathe where you could work just a small portion of the rod, but that throws a bunch of other issues into the mix...

I don't see anything simple or anything nearly as elegant as Chris's ball mod is.

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Re: Linkage play--your technique for consistency?
Posted by JerryStephenson - 25 Nov 2012 00:54

You can use a steady rest to support the rod but the setup time means it better be something you really want to machine. --Jerry

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Re: Linkage play--your technique for consistency?
Posted by xuzme720 - 25 Nov 2012 01:28

I know there's options on a metal lathe I don't have on a wood lathe so I will leave it to the experts and stop playing armchair machinist. lol

I guess my point was only to reiterate effort versus reward and diminishing return. I can understand if you're stacking tolerances but with the new arms that five thousandths is really the only slack and that is mitigated by the rod length so until you are almost completely off the rod, it's maybe half that or less? So,

in reality, what are we talking degree-wise?

That's a real question, I'm trying to see where it becomes completely cost prohibitive for that last .1 degree...

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Re: Linkage play--your technique for consistency?
Posted by Billabong - 25 Nov 2012 01:40

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I'm more interested in a bit more length as I posted above.

If it causes other problems, it would be nice to know before I try it.

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Re: Linkage play--your technique for consistency?
Posted by xuzme720 - 25 Nov 2012 01:46

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Billabong wrote:

I'm more interested in a bit more length as I posted above.

If it causes other problems, it would be nice to know before I try it.I personally think more length should help, not hurt. It might create a small issue with technique as you'll need to make sure the rod ends don't hit each other on alternating strokes, but other than that I see a longer rod eliminating some of the play since you'll always have more rod left in the paddle than you have now. Less chance for rocking moment.

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