



# Ashcroftmakers 3D CSM Component and Assembly Photographs

Edition 2, November 2021

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### **Disclaimer ~**

Any errors are mine and mine alone.

Names of products are copyright of their respective owners.

### **Target audience:**

Self Builders of the Ashcroftmakers 3D CSM Kit.

### **Getting Help:**

To reach the builder of Ashcroftmakers 3D CSM kits and maker of retail machines, email

[csmkit.support@ashcroftmakers.com](mailto:csmkit.support@ashcroftmakers.com) ~ emails are answered in UK business hours and we will try to resolve any problems you may have in making, assembling and getting the machine working.

### **Update History:**

Second Edition November 2021, revision 2.0

If you spot any errors or omissions please let us know at [csmkit.support@ashcroftmakers.com](mailto:csmkit.support@ashcroftmakers.com)



# Contents:

- The fixing kit components
- Fitting nuts to the CSM Knobs
- Inserting the captive bolt for the row counter
- Fitting the counter switch
- Assembling the Bracket to the Housing
- Fitting the Pinion Axle and Pinion
- Assembling the Tension Unit
- Fitting the Counter Arm and Bracket
- The Modified Tension Unit
- Needles – cutting, cleaning, preparing and degreasing



The Ashcroft CSM in Ruby, ‘exploded’ and ready for assembly



Cam and  
Counter Bolts



Bracket  
Countersunk  
Screws



Pinion fixings – left to right:  
Handle bolt  
Pinion screw, bearings and nuts  
Handle screws



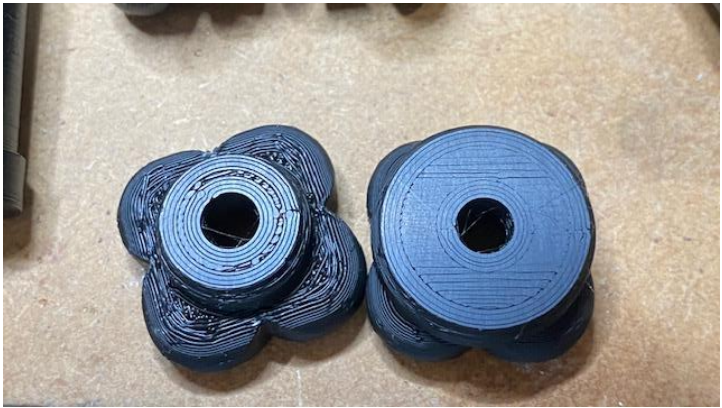
Self tapping screws from top  
clockwise:  
Counter Carrier Pivot  
Counter Switch and Counter  
Screw eye for Caston Bonnet  
countersunk screw for bracket  
spigot  
Cylinder screws  
Cam lift system screws

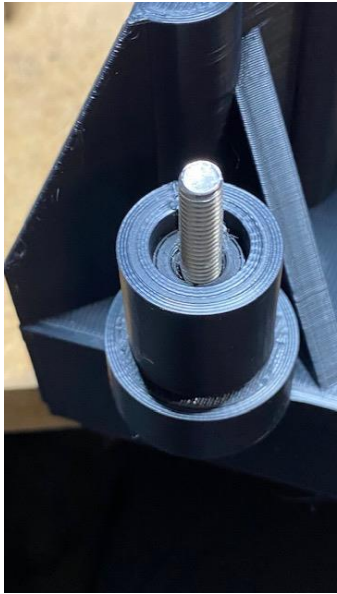




Clearing the hole  
in  
the long knob

Fitting the nuts to the Knobs, Part 12 A through 12 E





Captive bolt for  
Counter Carrier



Installing countersunk screws into Bracket





Counter switch



Tunnel for cable



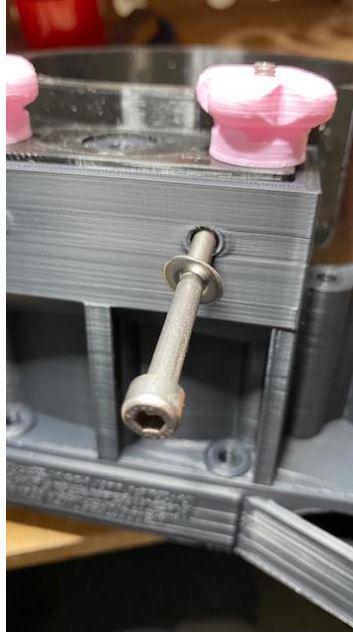
Switch fitted to bracket



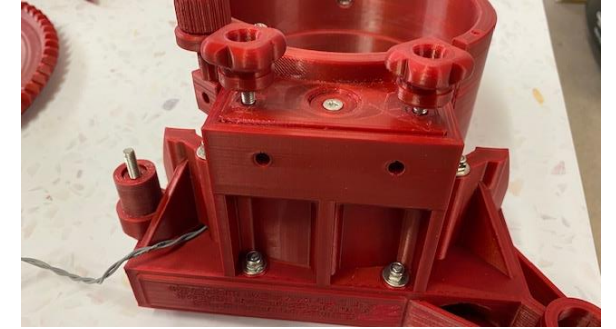
Bracket to  
housing bolt –  
as shipped in  
the kit



Bracket to  
housing bolt –  
as shipped in  
the kit ~ pair



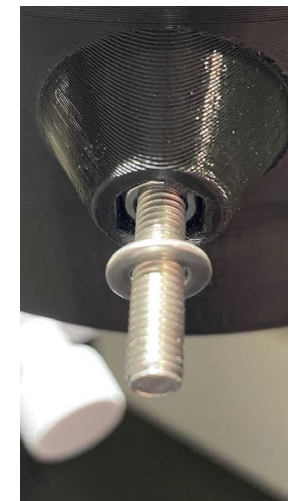
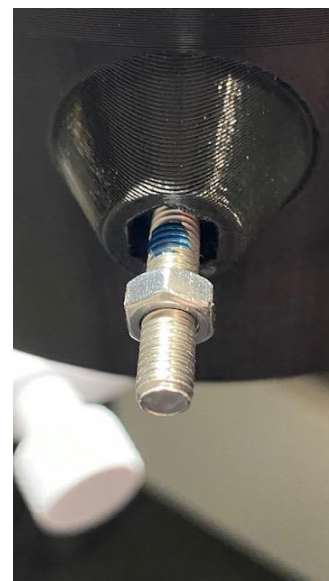
Fitting the  
bracket to  
housing bolt



The completed assembly – Part 1 to Part 2







Installing the pinion axle



Fixing the Pinion to the Axle



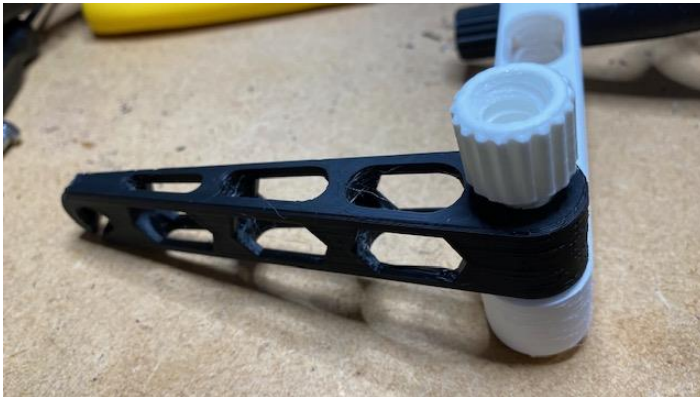
Foot and peg as  
printed



Foot and peg  
assembled

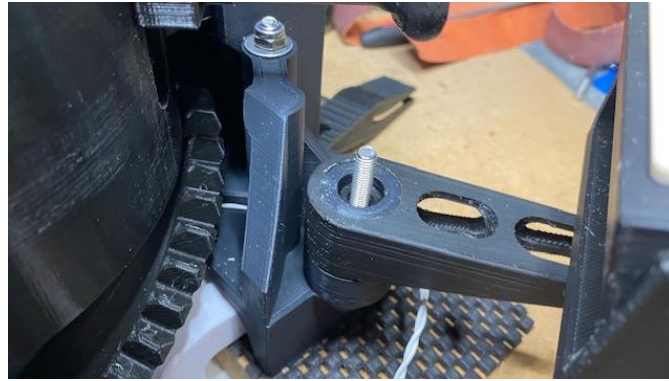
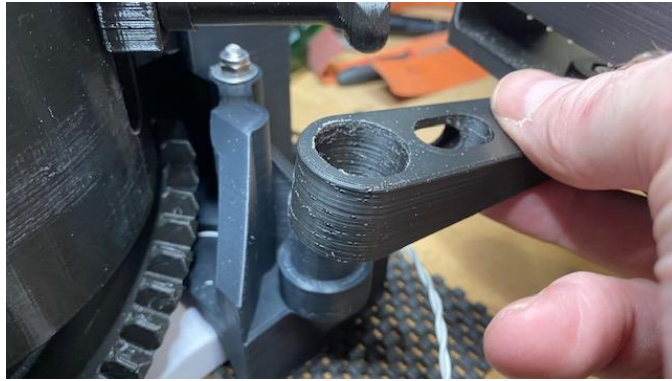


Clamp for Tension Unit fitting into  
Parallel Arm



Tapered Pigtail Fitting to Parallel Arm –  
contrasting colours used for clarity 😊





Fitting the Counter Arm to the Bracket



Cable routing from the bracket to the counter



Modified Sewing Machine  
Tension Unit



Replace Conical Spring with 8mm  
diameter spring made from 0.8mm  
wire, four turns with end 6mm  
bent at 90 degrees to prevent  
rotation at each end of the spring.

N.B. The rotating tension of the fine spring is adjustable by loosening the small screw at the rear of the tensioner and then turning the shaft anticlockwise. This spring does not generally need to be adjusted and the tension applied by the spring should be minimal.

Too Much Tension on the Yarn as it enters the CSM is a BAD THING, watch the instructional videos about CSM's – its all about the Yarn and the Yarn Tension when successfully using ANY CSM!





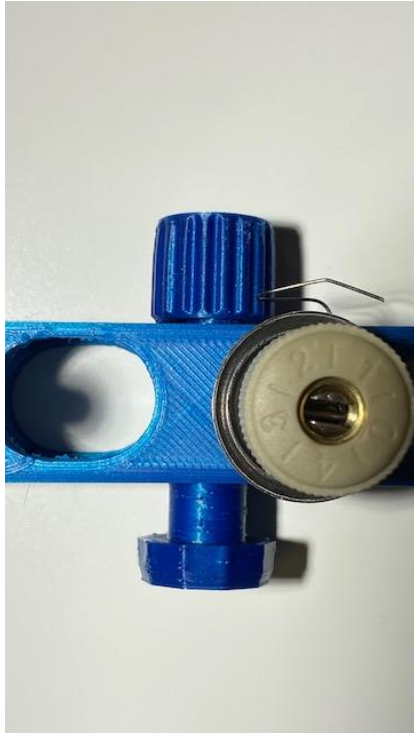
Grip Screw and Nut with Tension Unit, note 'scoop' from Grip Screw



Grip Screw inserted into through hole in the parallel arm, the 'scoop' is aligned with the socket for the Tension Unit



Grip Screw and nut aligned for insertion of the parallel cylinder on the back of the Tension Unit

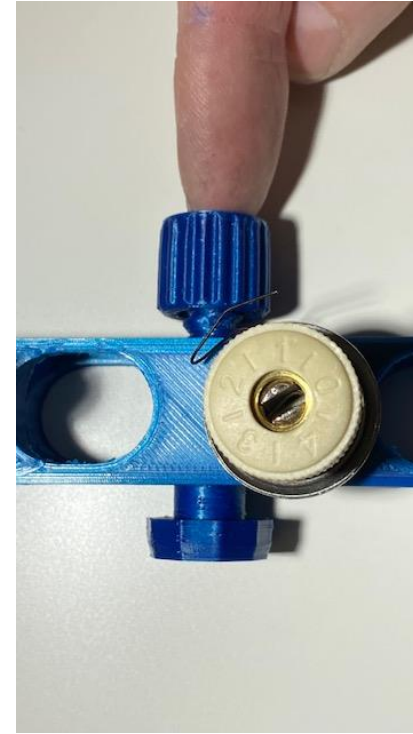


Grip Screw and Nut with Tension Unit assembled, nut released



Grip Screw and Nut with Tension Unit, grip screw pushed up to engage on the tension unit, before tightening the nut.

Note the fine spring alignment on the tension unit is horizontal with the point facing towards the CSM

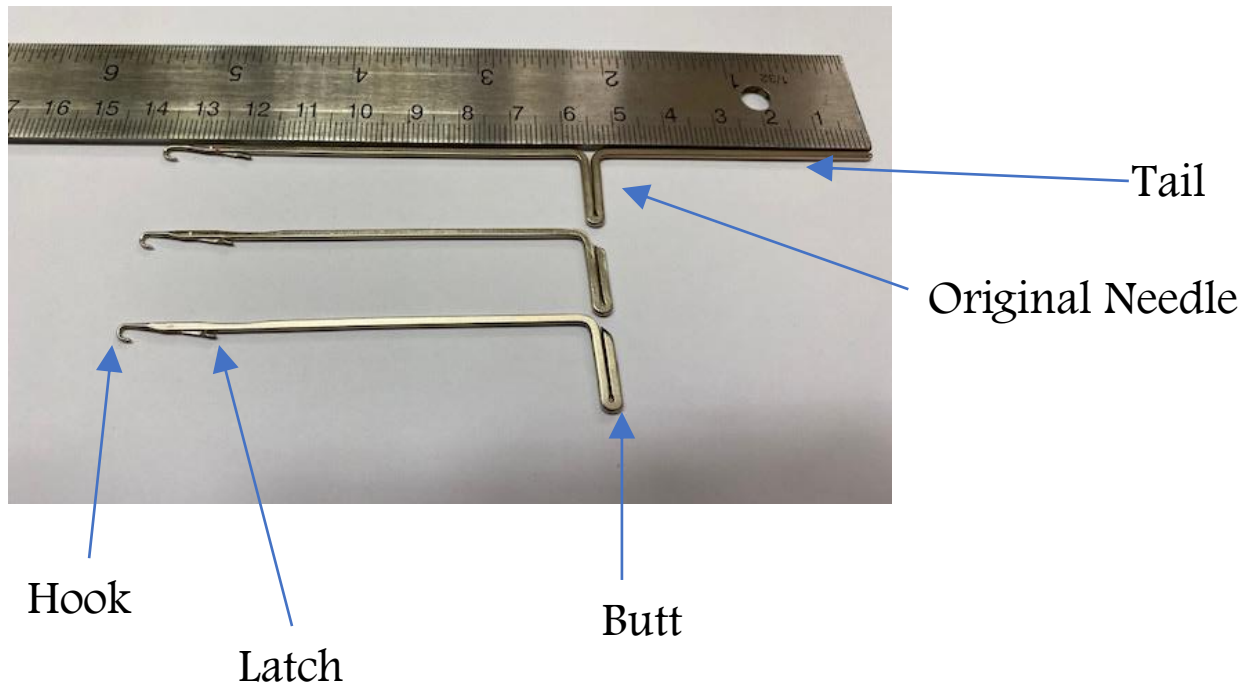


To release the Tension Unit, undo the nut a turn or two and push down on the grip screw. The Tension Unit should drop out.



# Anatomy of a Sock Machine Needle – How to modify a Brother Flat Bed Needle

The needle used in an Ashcroft CSM is a Brother flat bed needle with the tail removed and the cut end finished smooth.

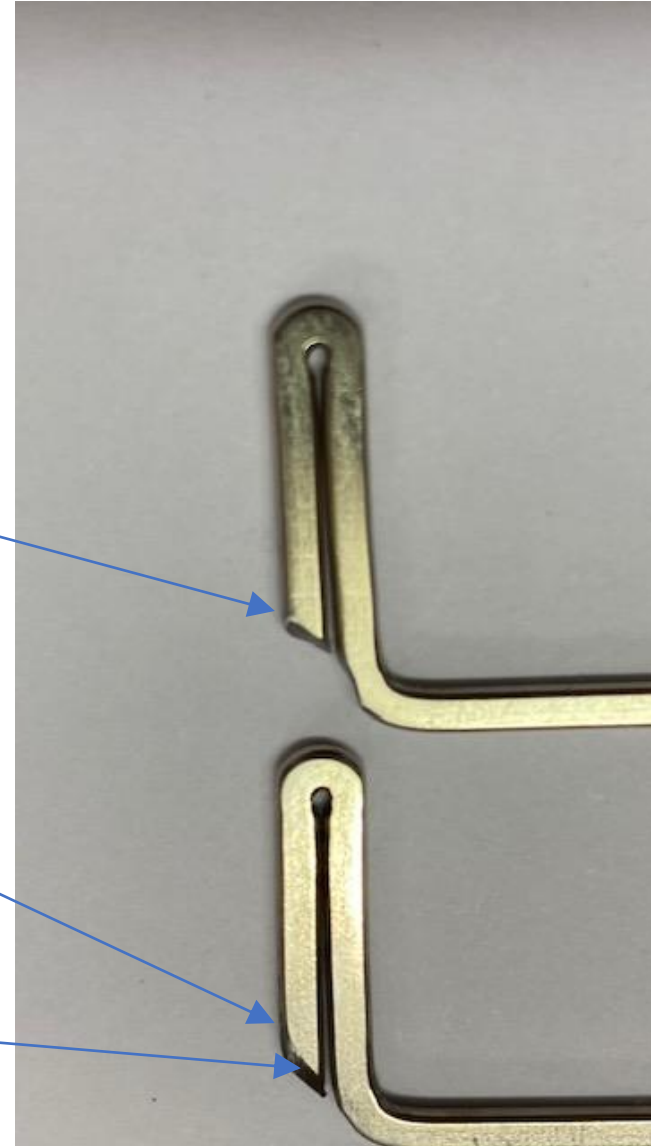


# Anatomy of a Sock Machine Needle – and how to modify a Brother Flat Bed Needle

Needle as cut with a cutoff disc

Needle edges finished on smooth wheel leaves  
sharp corners and sometimes a burr

Small burr on corner must be removed





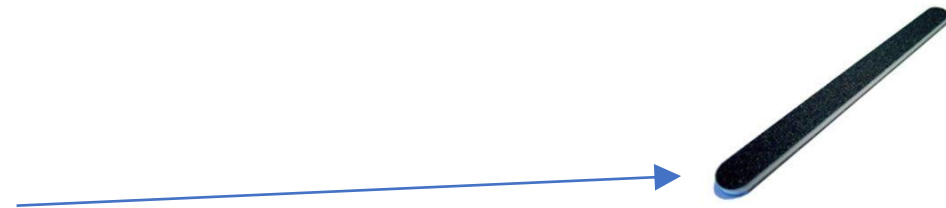
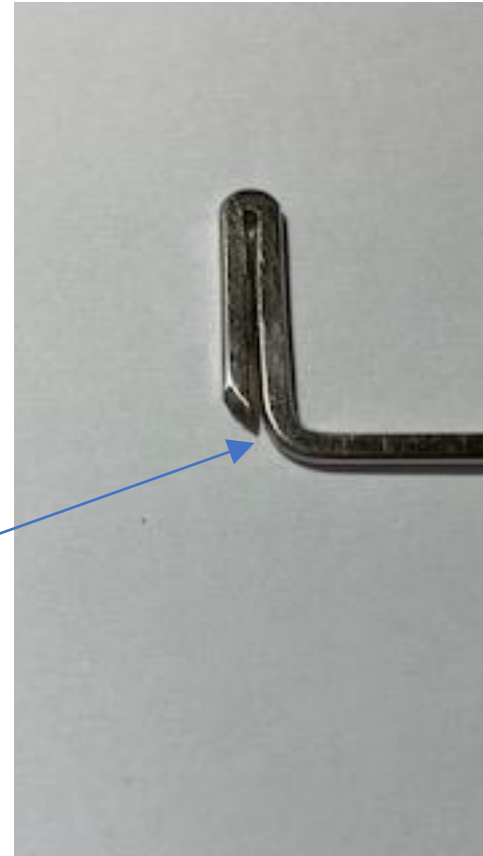
Needle edges finished on smooth wheel leaves sharp corners and sometimes a burr,

Sharp edges and burr removed by polishing with 600 grit wet or dry, or polishing stick, like this one, these are double side, 400 / 600. One will last you a lot of needles!

<https://www.axminstertools.com/micro-mesh-flexi-file-2-way-100-150mx-502797>

OR

<https://gcabrasives.co.uk/product/micro-mesh-mx-buffer-handi-file/>



# Cleaning Needles

The final stage of needle preparation is to remove the manufacturers' lubricant:

Dunking in acetone and leaving to soak for a while, remove each needle in turn and ensure the latch opens when the needle is hook side up and closes when the needle hook is facing down.

The lubricant gets into the hinge, so working the latch open and closed should free up a sticky latch, repeat the process if the needle doesn't pass the turn test.

Alternatively, if you have one available, is a heated Ultrasonic cleaner, set to 60 deg C, using a commercial degreasing agent intended for ultrasonic cleaning, one tank full of cleaning solution will clean about 200 needles but they will need drying in an electric oven set to 50 degrees after a hot wash rinse to remove the solution.

**The latch test should be conducted as a final test before using in the machine – if the latch doesn't open and close easily the result is dropped stitches – ALWAYS!**



Happy Knitting!