

# Raindance Systems

Incendiary technology for the future

## R2 Aerial Incendiary Device Peristaltic Roller Change Out

***\*This only affects R2 devices. R3 devices are not affected\****

We have discovered that due to the lower dosing of many R2 Aerial Incendiary Devices, Raindance Purple Catalyst may not achieve a 100% ignition rate in Incendiary Capsules marked with a purple label. Due to additional additives in Purple Catalyst that improve burn performance and burn longevity, the existing dosing delivers a border line quantity of reactant. In order to address this, we have developed a new roller to replace the existing roller which increases the dosing of Purple Catalyst. The following document describes the method to change out your roller, so that the added benefits of using Purple Catalyst can be utilised. It should be noted that due to the increased volume of fluid, the use of ethylene glycol after the roller change could result in poor ignition from flooding.

### Tools required:

9/64<sup>th</sup> T-bar (or standard) Allen Key

#2 Phillips head screwdriver

Scribe or similar

***NOTE: read through this instruction thoroughly before undertaking to familiarise yourself. The bearing on the main drive is clutched type, therefore you MUST NOT allow the Drive Pin to roll past the ten o'clock position, as it will only roll forward. If this happens the Drive Pin will have to be removed entirely, the Needle Carriage to Con Rod bolt and bush removed and then the Hand Crank Post used to reset the Drive Pin/Peristaltic Roller position. If the Drive Pin rolls too far forward, then it engages the Carousel and can clash with the Capsule Guard and seize. If this happens, then it will become necessary to strip the R2 to release the Drive Pin.***



Peristaltic Roller Comparison

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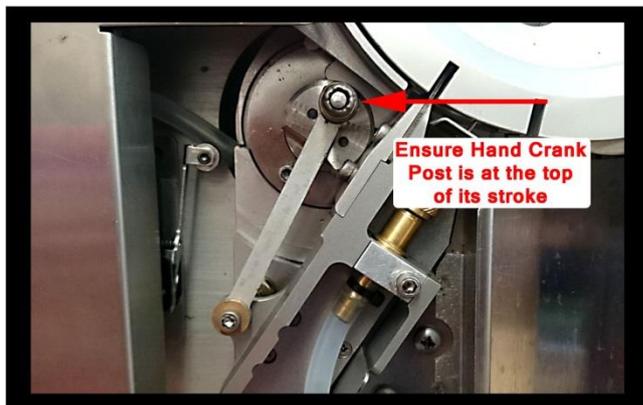
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### Direction:

1. Ensure that the Hand Crank Post is at the top of its stroke. This will facilitate easier removal of the Splash Guard.
2. Remove 4 screws from Splash Cover as indicated.

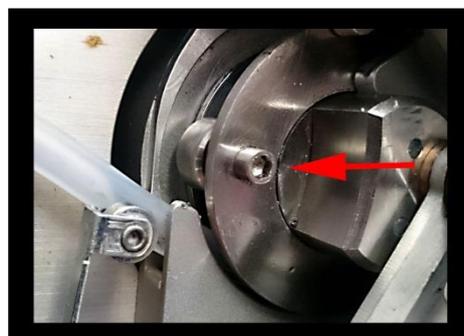


1.



2.

3. Rotate Hand Crank Post to a position that will place the Drive Pin in position that will allow it to be accessed easily. This means that the Hand crank will be in approximately the 3 o'clock position.



3. Drive Pin Position

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4. Undo the Drive pin to release the Peristaltic Roller, taking care not to rotate the main drive in the process. *Tip: use a finger against the Cam Plate to stop the main drive from rotating.*



4.

5. Remove the existing Peristaltic Roller from the channel with a scribe or similar, without puncturing the Fluid Delivery Line.
6. Insert the new Peristaltic Roller. Use a scribe to hold the Roller in place, matching the hole in the Peristaltic Roller with the Drive Pin screw hole, while screwing the Drive Pin back into place **gently** to avoid the main drive moving. *Tip: use a finger against the Cam Plate to stop the main drive from rotating.*



6.

7. Tighten the Drive Pin securely while holding the Cam Plate to stop it rotating.
8. Rotate the Hand Crank Post so that it is again at the top of its stroke.

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9. Insert the top of the Splash Guard first. Then, slide left to align with mounting screw holes in hinge.



9.

10. Refasten 4x M4 screws into Splash Guard.

Due to the new Peristaltic Roller being larger, it is necessary to use a silicone lubricating fluid in the channel that the roller and Fluid Delivery Line sit in. This should be done prior to every operation and regularly during extended periods of use. Silicone lubricating fluid will also extend the life of your Fluid Delivery Lines. This should also be applied to the Cam Plate to ensure smooth running of your Aerial Incendiary Device.



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## Products Affected:



**Aerial Incendiary Capsules bearing purple warning label**



**Purple Catalyst**

## Raindance Aerial Incendiary Capsules:

Only boxes affixed with a purple label bearing “Warning: Only Raindance Systems Purple Catalyst to be used with these capsules” are effected. Boxes **without** these labels are unaffected and can safely be used with standard ethylene glycol. If standard ethylene glycol is used with the purple labelled capsule boxes, it will result in a very rapid (5 to 10 seconds) ignition. Purple Catalyst must be used with these to extend the ignition time to approximately 30 to 45 seconds.

## Raindance Systems Purple Catalyst

Purple Catalyst is a direct replacement for standard ethylene glycol and results in a safe (approximate) ignition time of 30 to 45 seconds when used with purple labelled Incendiary Capsule boxes. It also has the added benefits of a longer flare time and hotter ignition. However, the dosing requirement is slightly higher than that of standard ethylene glycol. This means that R2 Aerial Incendiary Devices will need to inject more fluid (0.25mL compared to the 0.16mL they currently dose). Use of Purple Catalyst with older Incendiary Capsule stock (with no purple label affixed), will result in long ignition times (several minutes) and a poor ignition percentage.

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