Gemini G42 RA flexible joint exchange

To have access to the joint, remove the following, in this order, from left to right.

Remove the motor cover.

Release the motor side setscrew on the joint (M3 allen setscrew, 1,5mm allen key or 1/24” size allen key must be used, the second if the 1,5mm one turns over in the cavity)

Now you can pull the motor with the bracket still attached to the right, taking care not to strap the motor and PEC sensor cables.

Fix the removed motor group to the mount (with tape or a piece of wire) so that its weight is not tensioning the cables. Just in case, take a photo of the cables to be able to re-solder them if needed.

Further elements of the worm unit are identified below.
The worm side setscrew is accessible via a bore on the bottom side of the worm bearing block (see above). This is visible when the motor bracked is removed.

Insert the allen key into the bore and rotate the worm until you feel the presence of the setscrew. Insert the key into the setscrew and remove it completely before pulling the joint off the worm.

Note: Loctite 243 thread lock product was used on these setscrews which may render removing them more difficult than usual.

After the old joint was removed from the worm, it is NOT necessary to remove the worm from the bearing.

Identify the flat part on the worm shaft (where the setscrew must lock) and make a mark on a well visible part of the worm at the same position angle. This way you can make sure the joint is oriented correctly before tightening the setscrew.

The joint must face the worm bearing with the small pin. This pin enters a hole in the spring and helps keeping PE profile synced to the worm.

Before tightening the setscrew, push the joint against the spring with about 5N force to pre-tension it. The other end of the worm must be supported at the same time.

The illustration below shows the parts installed on the RA worm.
When the new joint is in place, re-assemble the parts in reverse order compared to disassembly.

Tighten the motor side setscrews (m4) and glue the PEC magnet onto the cylinder of the joint, as it was placed on the original joint. A quick setting bi-component epoxy glue is perfect for this job.

Use professional quality allen keys for this job. Cheap ones will break or bend when forced and you will definitely need to force them.

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