

CHROM. 7578

Note

A syringe holder modification to the Hewlett-Packard 7671A Autosampler to allow the use of more robust syringes

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(Received May 13th, 1974)

A problem which has been experienced with the Hewlett-Packard Model 7671A Autosampler is the tendency for syringe needles and/or plungers to be bent during operation. This can be due to a variety of causes, including incorrect alignment of the injection unit, a too viscous sample, a too rapid plunger speed and a dirty syringe needle or barrel. After attempting the remedies suggested in the appropriate manual¹ without success, it was decided to modify the syringe holder assembly to take Scientific Glass Engineering (S.G.E., Melbourne, Australia) Type A 5- or 10- μ l fixed needle syringes. These have stronger plungers and needles than the syringes normally supplied with the Autosampler.

The modified syringe holder is shown in Fig. 1. The body of the holder is made from brass tubing, 62 mm \times 11 mm O.D. \times 8.5 mm I.D. A 30-mm length of brass

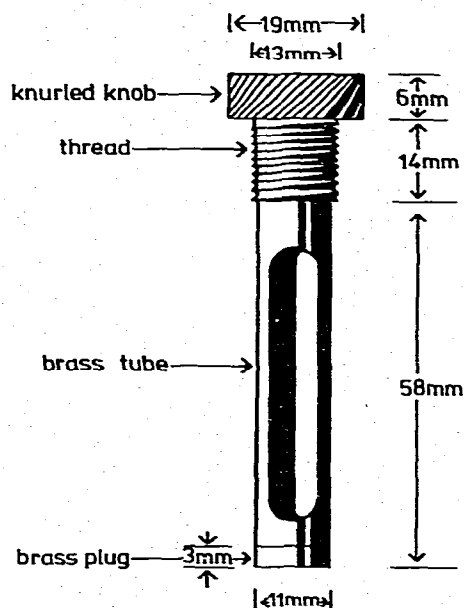


Fig. 1. Modified syringe holder.

rod of 20 mm diameter was turned on a lathe to provide the knurled knob at the top and the threaded portion was drilled out to 8.5 mm I.D. The lower 7 mm was then drilled out to 11 mm to take the brass tubing and the two pieces were sweated together.

A brass plug with a 1-mm hole in the centre was then fitted to the bottom of the brass tube as shown. Finally, a section of the brass tube was cut out to enable the graduations on the syringe to be read once placed in the holder.

To instal the modified holder in the Autosampler requires expansion of the hole in the syringe casting (Part 07671-20160, Fig. 6-7, ref. 1). This was easily accomplished with a 1-cm circular file. The holder is then held in place with a washer and hexagonal brass nut.

The syringe is held firm in the holder by inverting the syringe bracket (Part 07670-20650), placing a rubber or asbestos washer on top of the syringe and screwing the bracket down tightly.

To enable the plunger to reach the zero mark on the syringe once clamped in the plunger holder, the top 1 cm of the syringe must be broken off. This is easily accomplished with a triangular file and glass-blowing torch.

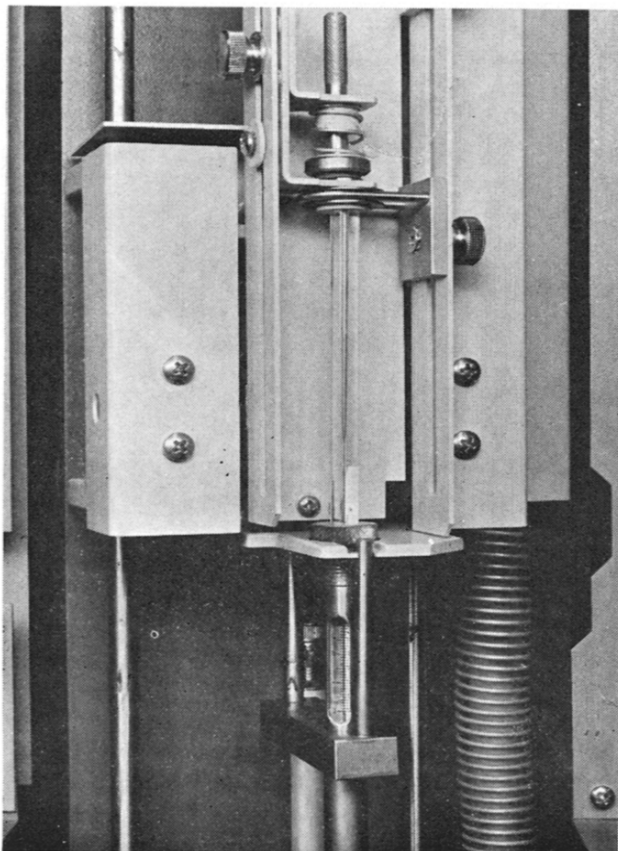


Fig. 2. Modified syringe holder and S.G.E. 10- μ l syringe installed in a Hewlett-Packard Model 7671 Autosampler.

The modified syringe holder and syringe are shown installed in the Hewlett-Packard 7671 Autosampler in Fig. 2.

Since this modified syringe holder has been in use with S.G.E. 10- μ l syringes (about 4 months) we have had no bent or broken plungers or needles.

S.G.E. have recently developed a series of syringes (0.4-5- μ l plunger-in-needle and 10- μ l removable needle) designed for use with the Hewlett-Packard 7670 and 7671 Autosamplers using the 1- μ l adaptor supplied with the sampler. We have tried one of these (a 5- μ l No. 5BL-FV23 kindly donated by S.G.E.) with satisfactory results, but we feel that the modification described in this paper offers greater support for the syringe and needle than when the 1- μ l adaptor is used and also allows the use of cheaper syringes, thus offsetting the cost of the modification.

REFERENCE

- 1 *Operating and Service Manual, Automatic Samplers, 7670A/71A*. Hewlett-Packard, Avondale, Pa., U.S.A.