HAMILTON

FUSED SILICA NEEDLE SYRINGES FOR ON-COLUMN INJECTION

Congratulations! You have purchased the finest quality precision syringe available today. We combine top quality materials with skilled workmanship, ensuring the highest possible performance level of every precision fluid device we manufacture. With proper care and handling, fused silica needle syringes will provide unsurpassed performance in precision liquid handling year after year.

Syringes and needles manufactured by Hamilton Company are intended for scientific research and laboratory use only and are not intended for human *in vivo* use.

Hamilton Company's on-column syringes use external polyamide-coated, fused silica needles. Needles are available with 0.17 mm (.007 in) or 0.23 mm (.009 in) outer diameter (O.D.). The standard needle length is 10 cm (3.9 in), but optional lengths can be fabricated on site by purchasing the fused silica material in 1 meter (39.4 in) lengths. The 0.17 mm (.007 in) O.D. needle is recommended for capillary columns with 0.20 mm (.008 in) to 0.25 mm (.010 in) inner diameter (I.D.); the 0.23 mm (.009 in) needle is for 0.28 mm (.011 in) to .35 mm (.014 in) I.D. capillary columns. The maximum operating temperature for the fused silica needle is 360°C (680°F). An optional spacer with sleeve is used to sheath 7.6 cm (3.0 in) of the standard 10 cm (3.9 in) length, providing stability.

A choice of Microliter™ 700, 800, or 900 series or Gastight® 1700 and 1800 series syringes provides you with a variety of products for most applications. Use the Gastight® 1700 and 1800 series syringes for totally inert sample handling.

Note: Syringes for on-column injection are also available with stainless steel needles. Part numbers are provided in this document.

Installing a Fused Silica Needle

1. Unscrew the RN Nut (5), fused silica needle (4), and spacer (3) if used.
2. Insert the needle ferrule (2), cone-shaped end first, into the spacer (3).
3. Pass the needle through the hole in the spacer (3).
4. Position the plunger tip at about half the syringe volume.
5. Install the assembled needle, ferrule, and spacer into the syringe. Install the RN Nut (5) loosely enough that the needle will slide freely into the syringe barrel.
6. Gently feed the needle into the syringe barrel. Slowly push the plunger forward to meet the needle. Continue to push the plunger forward until the plunger stops at zero.
7. Without disturbing the position of the needle, tighten the knurled hub finger tight. Carefully test to see if the needle will move. If it does, re-tighten the knurled nut. Make sure the needle is inserted far enough to come in contact with the plunger tip.

Note: Do not over-tighten the knurled hub. Tighten it firmly enough to hold the needle in place. Over-tightening may damage the syringe or the fused silica needle.

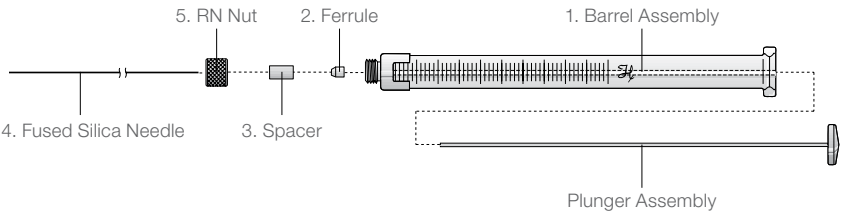
Maintaining the Fused Silica Needle Syringe

All Hamilton RN syringes can be field-repaired. A list of replacement parts is provided. Maintenance of the Microliter™ RN syringes is limited to the replacement of the fused silica needle, ferrule (or stainless steel needle and ferrule) spacer. The Gastight® RN syringes allow replacement of the syringe glass barrel, plunger assembly, fused silica needle, ferrule, and spacer.

Syringes and Replacement Parts

Numbers in parentheses refer to part numbers in Figure 1.

Figure 1: 700 Series Microliter™ RN Syringe with Fused Silica Needle



700/800 Series Microliter™ RN Syringe

Description	P/N
701 RN 10 µL (0.17 mm (.007 in) / 10 cm (3.9 in))	87402
701 RN 10 µL (0.17 mm (.007 in) / 11.5 cm (4.5 in))	80331

1700/1800 Series Gastight® RN Syringe

Description	P/N
1701 RN 10 µL (0.17 mm (.007 in) / 10 cm (3.9 in))	87404
1801 RN 10 µL (0.17 mm (.007 in) / 10 cm (3.9 in))	87405

700 Series Microliter™ Syringe with Stainless Steel Needle

Description	P/N
701 N 10 µL (32 ga / 7.5 cm (2.9 in))	80351
701 RN 10 µL (32 ga / 12.5 cm (4.9 in))	80386

7000 Modified Microliter™ Syringe with Stainless Steel Needle

Description	P/N
7000.5 KH 5 µL (0.23 mm (.009 in) / 10 cm (3.9 in))	86257

Replacement Parts for RN Syringes

Description	P/N
(5) RN Nut	30902
(4) RN Fused Silica Needle (0.17 mm (.007 in) x 10 cm (3.9 in)) / 3	17737
(4) RN Fused Silica Needle (0.17 mm (.007 in) x 11.5 cm (4.5 in)) / 3	17076
(4) Fused Silica Needle (0.17 mm (.007 in) x 1 m (39.4 in))	0133410
(4) Fused Silica Needle (0.23 (.009 in) x 10 cm (3.9 in))	17739
(2) Ferrule for 0.17 mm (.007 in) Fused Silica Needle	30947
(2) Ferrule for 0.23 mm (.009 in) Fused Silica Needle	30949
(3) Spacer for 0.17 mm (.007 in) and 0.23 mm (.009 in) Fused Silica Needle	30946
701 RN 10 µL Syringe w/o Needle	0139010
1701 Plunger Assembly N, RN, LT, LTN	13205
801 RN 10 µL Barrel / Plunger Assembly w/o Needle	32129
1801 RN 10 µL Barrel w/o Needle	32187
1801 Plunger Assembly N, RN	32193
7000.5 OC, Repair Kit Point Style 3	265478

RN Syringe Specifications

Syringe

- Deactivated fused silica tubing with a polyimide-coated exterior; no interior coating.
- RN syringes can be autoclaved when disassembled.

Fused Silica Needle

- Stock 0.17 mm (.007 in) O.D. x 10 cm (3.9 in) (standard length) needle suitable for capillary columns with 0.20 mm (.008 in)—0.25 mm (.010 in) I.D.'s.
- Optional 0.23 mm (.009 in) O.D. x 10 cm (3.9 in) (standard length) needle suitable for capillary columns with 0.28 mm (.011 in)—35 mm (1.38 in) I.D.'s.
- Maximum operable temperature for the fused silica needle is 360°C (680°F). Syringe specifications may vary from this.

WARRANTY STATEMENT

Hamilton Company unconditionally guarantees its products to be free of defects in materials and workmanship. Any product that fails due to such a defect will be repaired or replaced at our discretion without cost, provided the device is returned on a Return Materials Authorization (RMA). It is the responsibility of the purchaser to determine the suitability of application and material compatibility of the product based on the published specifications of the product.

RETURN OF GOODS

Hamilton Company's return and repair policy is written to protect its employees from potentially hazardous materials (e.g., serum, radioactive materials, carcinogenic chemicals, etc.) or any substance that may cause them partial or permanent disability during the inspection or repair process. In returning a product, the customer acknowledges that the product is free from any hazardous materials. Furthermore, the customer assumes responsibility should the returned product prove to be hazardous.

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