

## Building a Syringe assembly (1002258)

### Parts

- Main parts

| Item                            | Description                                       |
|---------------------------------|---------------------------------------------------|
| Syringe Body                    | Drawing 1002258-001                               |
| Syringe Motor Mount             | Drawing 1002258-002                               |
| Syringe Motor Bracket           | Drawing 1002258-003                               |
| Syringe Shoulder Screw Slider   | Drawing 1002258-004                               |
| Syringe Car                     | Drawing 1002258-005                               |
| Syringe Mouning Bracket - Long  | Drawing 1002258-007 plus mod. for Collection      |
| Syringe Mouning Bracket - Short | Drawing 1002258-008                               |
| Syringe                         | 2.5mL, 10mL or 25mL                               |
| Rotary Valve Assembly           | Drawing 1002562, 4 or 8 port                      |
| Motor                           | Maxon 286268 or 305844                            |
| Nook 6 x 2 mm Ball-screw assm.  | Drawing 1002098-1                                 |
| ABS-A7-40 (x2)                  | Nordex 4mm bearing                                |
| LWL12C1R150B                    | Linear slide with cart modified (to what length?) |
| W7C 15-3mm-3mm                  | Helical shaft coupler                             |
| Hall Sensor                     |                                                   |

- Small parts

| Qty | Size                 | Item                    |
|-----|----------------------|-------------------------|
| 4   | SS1-104              | W.M. Berg shaft spacers |
| 1   | M3.5x6               | Knurled Thumb screw     |
| 1   | #8-32 x 3/16" x 1/4" | Shoulder screw          |
| 4   | #8-32 x 7/16"        | Socket Head Cap Screw   |
| 4   | #8                   | Split ring lockwasher   |
| 13  | #5-40 x 3/8"         | Socket Head Cap Screw   |
| 2   | #5-40 x 1/2"         | Socket Head Cap Screw   |
| 15  | #5                   | Split ring lockwasher   |
| 4   | M2 x 5               | Socket setscrew         |
| 4   | M3 x 8               | Socket Head Cap Screw   |
| 4   | M3                   | Split ring lockwasher   |
|     | Thin & thick?        | Syringe washer          |
|     |                      | Sample Syringe adapter  |

### Tools

- Hex keys—sizes:

|        |
|--------|
| 1.5 mm |
|--------|

|        |
|--------|
| 2.5 mm |
| 3/32"  |
| 9/64"  |

## ***Assembly***

1. Using #8-32 x 7/16" SHCS w/ lock washers, install the short syringe mounting bracket onto the syringe body.



2. Using #8-32 x 7/16" SHCS w/ lock washers, install the long syringe mounting bracket onto the syringe body. If building a Collection syringe assembly, use the modified long bracket.



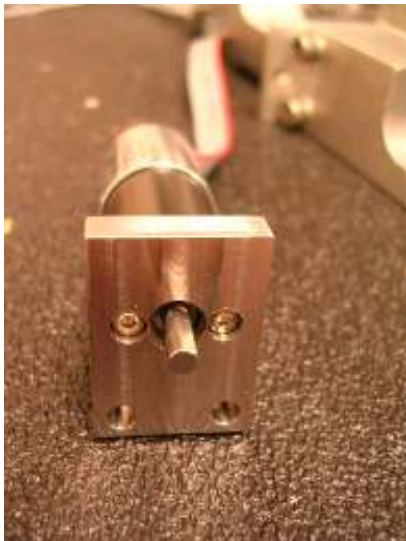
3. Using #5-40 x 3/8" SHCS , install the modified linear track onto the syringe body.



4. Press a 4mm bearing into the syringe body from the bottom.
5. Press another 4mm bearing into the syringe motor bracket.



6. Attach the motor to the syringe motor mount using 2 M2x 5 SHCS. If you are building a Sampling syringe assembly use a 286268 motor, otherwise for both Collection and Processing syringe assemblies, use a 305844 motor.



7. Loosely fit one end of the flexible coupler onto the motor shaft.



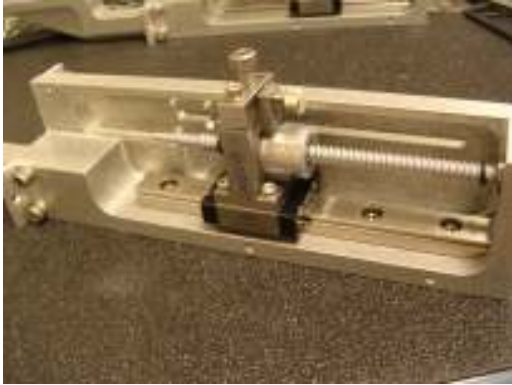
8. Using #5-40 x 3/8" SHCS attach the syringe motor mount to the syringe motor bracket.



9. Screw the Nook 6 x 2mm ball screw assembly into the syringe car.



10. Attach the syringe slider screw holder to the syringe car using #5-40 x 1/2" SHCS with lockwashers. Install the M3.5 knurled thumbscrew and the #8-32 shoulder screw. Place the assembly on the linear track and install using M3 x 8 SHCS with lockwashers. Place a SS1-104 shim on the ballscrew shaft and slide the shaft into the 4mm bearing at the top of the assy.



11. Carefully install the motor assembly onto the other end of the ball screw, and attach using #5-40 x 3/8" SCHS with lockwashers. Adjust the flexible coupler and tighten the two setscrews to lock in place.
12. Install the Hall sensor board on the outside of the syringe body using #5-40 x 3/8" SCHS with lockwashers.
13. Install a Syringe onto a rotary valve. Use a 25 mL syringe for sampling. Use a 10 mL syringe for Processing. Use a 2.5 mL syringe for Collection. Install syringe adapters and seals as needed into the center hole of the rotary valve and then lightly screw in the syringe.
14. Attach the syringe to the syringe body by first removing the shoulder screw from the syringe slider screw holder, sliding it thru the hole in the top of the syringe plunger, and then replacing it in the syringe slider screw holder.
15. Finally, attach the rotary valve to the syringe body using ???