Operating Instructions
Model 7012, 9012, 3012 Loop Filler Port
Model 9013, 3013 Needle Port

1.0 DESCRIPTION

Loop Filler Ports (Models 7012, 9012, 3012) and Needle Ports (Models 9013, 3013) are accessories for sample injection valves. The ports use conventional syringes to load the sample loop. Needle Ports are designed for minimal sample waste and are used when there is access to the stator end of the sample injector. PEEK Models 9012, 3012, 9013, and 3013 can be used in analyses requiring biocompatibility, with no metal contact in the fluid stream.

Figure 1 shows an exploded view of Models 7012, 9012 and 3012. The Teflon[1] liner tube of the needle port fitting in Models 7012 and 9012 butts against the end of the connecting tube. Models 7012 and 9012 accommodate #22 gauge [0.7 mm (0.028") OD] syringe needles, but the fittings can tighten to accommodate #26 gauge [0.5 mm (0.018") OD] syringe needles.

The needle port fitting of Model 3012 accommodates #16 gauge [1.6 mm (0.062") OD] syringe needles, but the fittings can accommodate needles up to 1.6 mm (0.065") OD.

Models 7012, 9012, and 3012 require square cut needles (90° point style), with or without electrotaper, that are at least 31.3 mm (1.25") long. The open end of the needle port fitting can be attached to the luer tip of syringes without a needle (luer-slip or luer-lok). The needle port fitting on Models 7012 and 9012 also accept the tip of a Needle Port Cleaner (P/N 7125-054).

Model 9013 consists of three parts: 33 mm, 10-32, 1/16" RheFlex® PEEK nut and ferrule set and Teflon liner tube. Model 9013 accommodates #22 gauge [0.7 mm (0.028") OD] syringe needles, but the adjustable seal can accommodate #26 gauge [0.5 mm (0.018") OD] syringe needles.

Model 3013 consists of three parts: 5/16 -24, 1/8" RheFlex PEEK nut and ferrule set and Teflon liner tube. Model 3013 accommodates #16 gauge [1.6 mm (0.062") OD] syringe needles, but the adjustable seal can accommodate needles up to 1.6 mm (0.065") OD.

Both Models 9013 and 3013 require square cut needles (90° point style) that are at least 43.8 mm (1.75") long.

2.0 SUPPLIED WITH LOOP FILLER PORTS

2.1 Model 7012

- RheFlex Stainless Steel Fittings set
- 0.3 mm (0.012") ID Connecting Tube
- Needle Port Cleaner

2.2 Model 9012

- RheFlex PEEK Fittings set
- 0.3 mm (0.010") ID Connecting Tube
- 0.5 mm (0.020") ID Connecting Tube to rapidly load large sample volumes without high flow resistance
- Needle Port Cleaner

2.3 Model 3012

- RheFlex PEEK Fittings set.
- 1.6 mm (0.062") ID Connecting Tube.

3.0 SPECIFICATIONS

• Wetted Surfaces: **Model 7012** - stainless steel and Teflon; **Model 9012, 3012, 9013, 3013** - PEEK and Teflon

4.0 IMPORTANT SAFETY NOTICES

4.1 Warning (For Models 7012, 9012, and 3012): The luer tip of a glass syringe breaks easily. The supplied Needle Port Cleaner can help prevent breaks. Push the Needle Port Cleaner onto the syringe tip (not luer-lok). The Teflon tip of the Needle Port Cleaner can now be pushed into the luer opening of the Loop Filler Port for flushing or suction loading.

4.2 Caution: When using a PEEK valve, use only RheFlex PEEK fittings. Metal fittings can cause irreparable damage to the PEEK stator.

5.0 INSTALLATION

5.1 MODELS 7012, 9012, 3012

Models 7012, 9012, and 3012 can each be mounted on a panel [4.0 mm (0.160") maximum panel thickness] as illustrated in Figure 2. Rheodyne offers two panels with pre-drilled holes: Mounting Panel (P/N 7160) and Valve Angle Bracket (P/N 7160-010).

To panel mount, refer to Figures 1 and 2, and proceed as follows:

a) Remove the needle port fitting and the junction (with the connecting tube attached) from the panel bushing.

b) Insert the panel bushing through the panel hole and tighten in place with the spacer and the junction screwed in fingertight on the opposite side of the panel.

c) Attach the open end of the connecting tube to the appropriate valve port.

d) Use the RheFlex nut and ferrule supplied to make this connection leak-tight.

e) Reinstall the needle port fitting into the panel bushing.

f) Adjust the tightness of the needle port fitting to your syringe needle. Insert your syringe needle and tighten the fittings into the valve port until you feel an increased resistance during the insertion of the syringe needle. Do not overtighten the fittings.

Note: If the loading method is suction loading, described in Section 6.2, you may attach the Loop Filler Port directly to the luer tip of the suction syringe without mounting to a panel. See **Warning 4.1**.

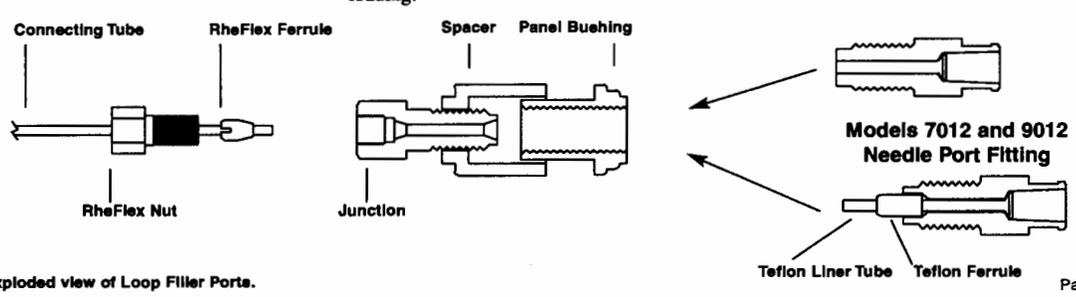

Fig. 1. Exploded view of Loop Filler Ports.

[1] Teflon is a trademark of E.I. DuPont

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5.2 MODELS 9013 AND 3013

a) Screw the Needle Port into an appropriate valve port for sample loading. Figure 3 shows Model 9013 Needle Port connected to an injector. Model 3012 connects to an injector the same way. Ensure the Teflon tube is bottomed in the valve port as shown in Figure 4.

b) Adjust the tightness of the Needle Port to your syringe needle. Insert your syringe needle and tighten the fittings into the valve port until you feel an increased resistance during the insertion of the syringe needle. Do not overtighten the fittings.

6.0 OPERATION

Using an excess of sample to load the sample loop of sample injectors ensures that the sample loop completely displaces the mobile phase in the sample loop. As sample flows into the loop, the sample/mobile phase boundary becomes diffuse, requiring two to five sample loop volumes before the loop contains only undiluted sample.

Models 7012 , 9012, and 3012 can use two loading methods to load the sample loop in excess: pressure loading and suction loading. Suction loading is used with PEEK valves and accessories for analyses that must avoid metal contact.

Models 9013 and 3013 are conveniently designed for minimal sample waste during syringe loading of the sample loop. The only volume between the syringe needle and the loop is contained in the injector stator.

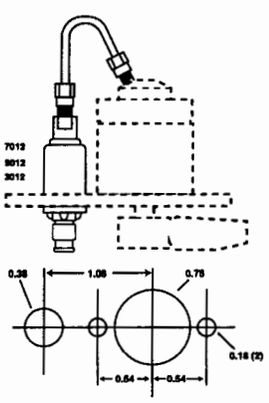

Fig. 2. Panel mounting holes for mounting Model 7012, 9012 or 3012 Loop Filler Port with a Rheodyne sample injector.

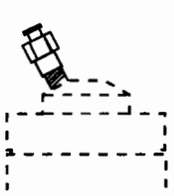

Fig. 3. Model 9013 connected to a Rheodyne sample injector.

Fig. 4. Models 9013 and 3013 Needle Ports bottomed in Rheodyne sample injectors.

6.1 PRESSURE LOADING (FOR LOOP FILLER PORTS ONLY)

To load the sample loop using pressure loading, insert the syringe needle into Model 7012, 9012, or 3012 and dispense two to five sample loop volumes to completely fill the sample loop with pure sample. Figure 5 is a schematic diagram of pressure loading a sample injector with a Loop Filler Port.

6.2 SUCTION LOADING (FOR LOOP FILLER PORTS ONLY)

Suction loading method is used when the analysis must avoid metal contact. To load the sample loop using suction loading, use the syringe and Model 9012 or 3012 to suck the sample from a sample vial into the sample loop through a dip tube attached to an appropriate valve port (see Figure 6). Keep the dip tube length as short as possible to minimize sample waste.

The female luer port of Model 3012 accepts a luer tip syringe. The syringe used in suction loading can be used multiple times before emptying becomes necessary. After each injection, ensure that the dip tube is wiped or rinsed clean.

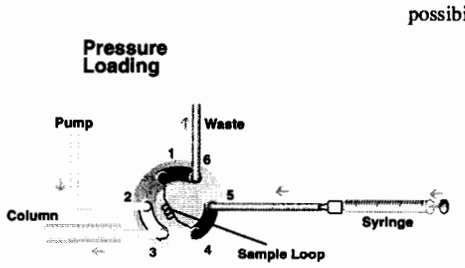

Fig. 5. Using a Loop Filler Port to fill the loop by pressure loading.

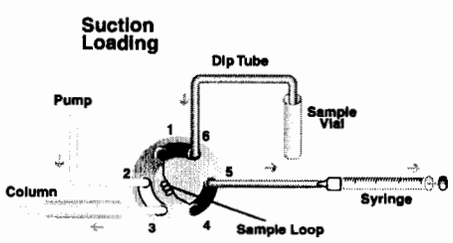

Fig. 6. Using a Loop Filler Port to fill the loop by suction loading. In suction loading sample is sucked from a vial into the loop using a dip tube.

6.3 DIRECT LOADING (FOR NEEDLE PORTS ONLY)

Using Models 9013 and 3013 to load the sample loop, insert the syringe needle into Model 9013 or 3013 connected to a sample injector, and dispense two to five sample loop volumes of sample (see Figure 3).

7.0 WARRANTY

All Rheodyne products are warranted against defects in materials and workmanship for a period of one year following the date of shipment by Rheodyne. Rheodyne will repair or replace any Rheodyne product that fails during the warranty period due to a defect in materials or workmanship at no charge to the customer. The product must be returned to Rheodyne's factory in original packaging or equivalent, transportation prepaid. Damage occurring in transit is not covered by the warranty. This limited warranty is Rheodyne's sole warranty of its products, and all other warranties of merchantability or fitness for any particular purpose are hereby disclaimed. Under no circumstances will Rheodyne be liable for any consequential or incidental damages attributable to a claimed failure of a Rheodyne product, even if Rheodyne has been placed on notice of possibility of such damages.

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