

Multi-Channel Gel Loading Syringe

Congratulations! You have purchased the finest quality precision fluid measuring device 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, the Multi-Channel Gel Loading Syringe 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.

The Hamilton Multi-Channel Gel Loading Syringe (MCGLS) easily and accurately transfers 8 or 12 DNA samples to sequencing gels for electrophoresis, to another microwell plate for duplicate analysis, or to nylon membranes for visualization. Samples can be easily transferred by microwell plate column using the 8-channel pipette, or by row using the 12-channel pipette. A single DNA Syringe is also available for individual transfers.

Three different needle specifications allow either loading of samples into thin sequencing gel wells that are 0.2 mm (.008 in), 0.3 mm (.012 in) or 0.4 mm (.016 in) or larger, or directly onto the top of the sequencing gel. The standard needle spacing of 9 mm (.354 in) allows spotting between the gel plates using most square or sharktooth combs with a microwell format. An adjustable stop collar on the MCGLS allows you to pre-set the volume anywhere between 0.2 to 10 μL .

Operating Instructions

The Multi-Channel Gel Loading Syringe is shipped fully assembled and ready for use; however, the following steps will optimize the performance of the MCGLS.

The 8-channel MCGLS was chosen for display purposes (Figure 1), although the operation and functioning of the parts are identical for all MCGLS models. Numbers in parentheses in the following text refer to part numbers in Figure 1.

1. Pre-rinse and lubricate the syringe barrels and plunger tips by completely filling and dispensing the syringes several times with deionized water or solvent (i.e. acetone).
2. If a reproducible, set volume is desired, adjust the two stop collars (4) using the Allen key provided. Loosen the stop collar set screws (6), and withdraw the plungers to the desired volume. Position the stop collars against the bottom of the barrel holder (2) and tighten the set screws.
3. When aspirating samples, draw the plungers up slowly to prevent formation of air bubbles.

Note: If you have purchased an MCGLS with the 0.2 mm (.008 in) needle dimension, special care must be taken in handling the needles. The only replacement option for these or any other needle dimension on the MCGLS is to replace the entire syringe barrel.

Cleaning and Maintaining the MCGLS

The life of your MCGLS is directly related to its cleanliness and proper care and handling. Following are recommended procedures for cleaning and maintaining your MCGLS.

1. Prior to cleaning the MCGLS, ensure that the stop collars are set to allow full travel of the plungers to the 10 μL volume of the syringe. Avoid separating the plungers from the syringe barrels by disengaging the two halves of the MCGLS. In doing so, you risk bending the plungers.
2. After each use, rinse all the syringes with deionized water or solvent by filling and dispensing the MCGLS several times. It is best to use solvents known to be effective in solvating the sample and preferably that are non-alkaline, non-phosphate and non-detergent based. A biodegradable, non-phosphate, organic Cleaning

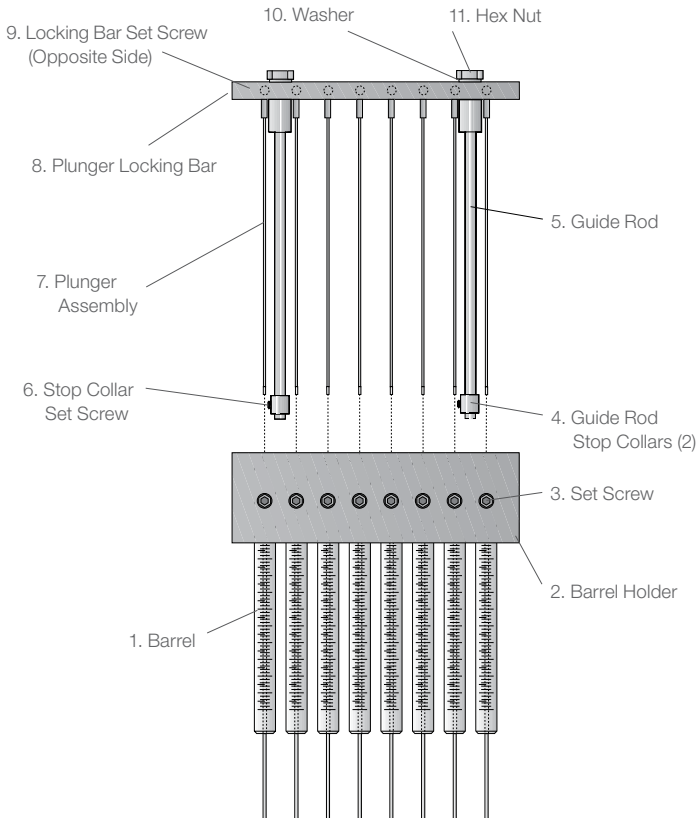
Solution Concentrate is available from Hamilton; order part number 18311. If sterilization is necessary, use cold sterilization techniques. Do not subject the MCGLS to temperatures above 50°C (122°F).

3. If syringe needles become plugged, it may be possible to clear obstructions with Needle Cleaning Wires available from Hamilton (see Replacement Parts list). Do not force liquid under pressure to clear the needles, and do not heat needles with open flame.

Disassembly and Installation of MCGLS Assembly Parts

1. With the plungers fully engaged into the syringes, loosen the plunger locking bar set screw (9) for the syringe requiring replacement (if replacing plunger only, remove plunger from syringe barrel by drawing out through plunger locking bar and proceed to number 5).
2. Loosen the barrel holder set screw (3) for the syringe requiring replacement.
3. Remove the syringe with the plunger inserted and then withdraw the plunger from the syringe barrel.
4. Install the replacement barrel assembly (1) into the barrel holder from the bottom of the barrel holder (2). Align the needle tips against a flat surface and tighten the barrel holder set screw (to avoid cracking the glass barrel, do not over-tighten).
5. Wet the plunger tip with deionized water or solvent and install the replacement plunger assembly (7) through the top of the plunger locking bar (8). As you insert the plunger into the syringe barrel, run the plunger back and forth in the syringe barrel in short strokes to ensure smooth plunger action, taking care not to bend the plunger. Align the plunger tips at the zero graduation mark. Tighten the set screw (9) sufficiently to maintain the plunger position.

Figure 1: Multi-Channel Gel Loading Syringe Diagram.



Replacement Parts

Due to similarities in Hamilton's Multi-Channel Gel Loading Syringes, only the 8-channel GLS is shown in Figure 1. Installation of replacement parts is identical for all MCGLS models. Please note that DNA syringe parts are not compatible as replacement parts for the MCGLS.

MCGLS Part Numbers

Description	Part Number
MCGLS 12-channel for 0.4 mm (.016 in) gels	84500
MCGLS 12-channel for 0.3 mm (.012 in) gels	84502
MCGLS 8-channel for 0.4 mm (.016 in) gels	84502
MCGLS 8-channel for 0.3 mm (.012 in) gels	84503
MCGLS 8-channel for 0.2 mm (.008 in) gels	84511

MCGLS Replacement Parts

Description	Part Number
MCGLS Replacement Syringes for 0.4 mm (.016 in) gels (includes barrel and plunger assembly)	80021
MCGLS Replacement Syringes for 0.3 mm (.012 in) gels (includes barrel and plunger assembly)	80022
MCGLS Replacement Syringes for 0.2 mm (.008 in) gels (includes barrel and plunger assembly)	80023
1. MCGLS 10 μ L Barrel 0.4 mm (.016 in) gels	10395
1. MCGLS 10 μ L Barrel 0.3 mm (.012 in) gels	10396
1. MCGLS 10 μ L Barrel 0.2 mm (.008 in) gels	10398
2. 12-channel Barrel Holder	15193
2. 8-channel Barrel Holder	15197
3. Barrel Holder Set Screw	19150
4. Guide Rod Stop Collar, 2/pk	1993-01
5. Guide Rod	15194
6. Guide Rod Stop Collar Set Screw	1992-01
7. MCGLS 1701 Plunger Assembly	15948
8. 12-channel Plunger Locking Bar	15192
8. 8-channel Plunger Locking Bar	15198
9. Locking Bar Set Screw	16685
10. Guide Rod Washer	16457
11. Guide Rod Nut	16460
Allen Key	2389-01
Needle Cleaning Wires 0.4, 0.3 mm (.016, .012 in)	18302
Needle Cleaning Wires 0.2 mm (.008 in)	18306

Single DNA Syringes are also available for individual sample transfers. DNA syringes and replacement parts are not interchangeable with the MCGLS.

DNA Syringe Part Numbers

Description	Part Number
DNA 1701 N 10 μ L Syringe gels 0.4 mm (.016 in)	84504
DNA 1701 N 10 μ L Syringe gels 0.9 mm (.012 in)	84505
DNA 1701 N 10 μ L Syringe gels 0.2 mm (.008 in)	80081

DNA Syringe Replacement Parts

Description	Part Number
DNA 1701 N 10 μ L Barrel 0.2 mm gels (.008 in)	2065-01
DNA 1701 N Plunger Assembly	15949

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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