

FMI PULSE DAMPENER PD-60-LF

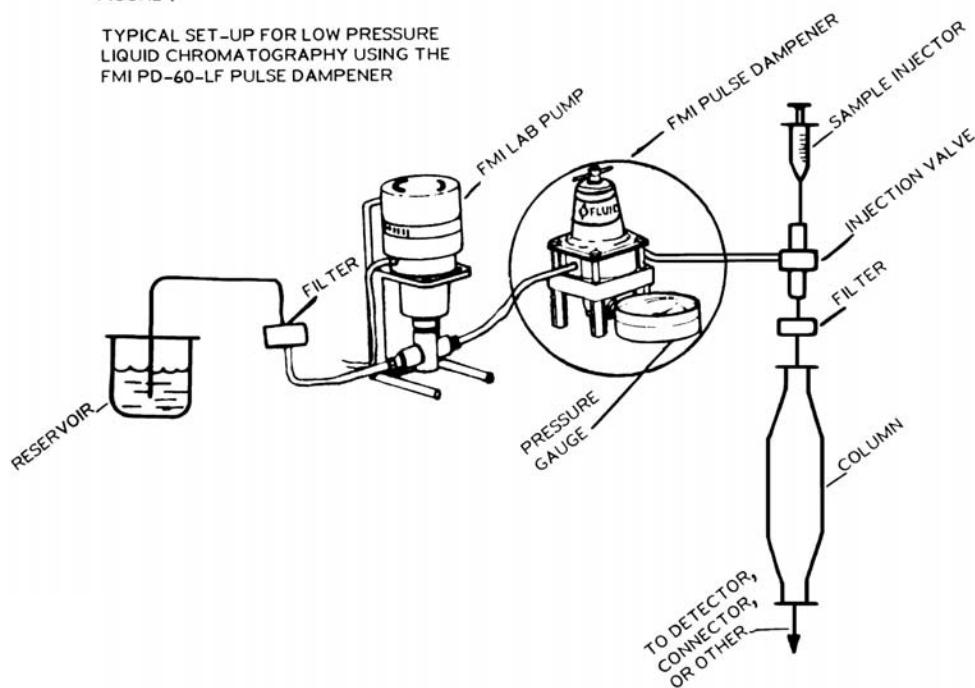
INSTALLATION & OPERATION INSTRUCTIONS

The FMI steady flow accessory is designed to effectively suppress approximately 90% of the pulse magnitude generated by piston type metering pumps operating at flow rates up to 50 ml/min and stroke rates up to 150 per minute against head pressures of 10 to 65 psig. It features low internal volume, isolated pressure gauge, corrosion resistant wetted parts of type 316 stainless steel and TFE, flow-through (self purging) design, excellent reduction of base line drift and noise in feeding low-pressure liquid chromatographic systems, all in a small (2.7" X 5" X 6" high), lightweight (1.6 pounds net) package arranged to accept standard 1/4-28 tubing accessories.

1. **CIRCUIT LOCATION:** The FMI PD-60-LF Pulse Dampener is designed for flow-through installation in the tubing line between a pulse source (pump) and a system load (chromatography column, spray nozzle or other). Figure 1 illustrates a typical liquid chromatography circuit employing the FMI PD-60-LF Pulse Dampener.
2. **CONNECTION:** The FMI PD-60-LF Pulse Dampener is threaded to accept standard (1/4-28 thread) fittings for small bore laboratory tubing. Care should be taken to avoid damage to the fine threads in the Dampener Body when applying fittings. Fittings should be screwed into the threaded holes of the Dampener Body finger tight plus 1/4 turn wrench tight.
3. **PREPARATION:** Before operating an FMI PD-60-LF Pulse Dampener in a circuit application, it is advisable to flush interior fluid passages of the dampener for a few minutes with system fluid to remove fluid residues that may remain from earlier usage or factory test.
4. **TUNING:** The FMI PD-60-LF Pulse Dampener is tuned to system operating conditions by turning the handle clockwise (down) to stop position and, with the pump running, permitting the pressure to build up to a level of consistent sequential pulses as will be noted in repeated fluctuation of the pressure gauge needle. The handle is then turned slowly in the counterclockwise (up) direction until the gauge needle fluctuations suddenly diminish in magnitude. At that point, pulse suppression is roughly adequate for most system applications. Fine tuning for critical applications may be accomplished by carefully turning the handle up and down in small increments from that first point of pulse suppression until the point at which the smallest gauge needle fluctuation is found: this is the optimum adjustment position for the specific circuit hook-up involved.
5. **STORAGE:** When and FMI PD-60-LF Pulse Dampener is to be stored, it is recommended that the control handle be turned counterclockwise (up) until loose in its threads. This relieves spring pressure on the diaphragms (the best storage condition) and permits low pressure flush cleaning, which should be done before storage.

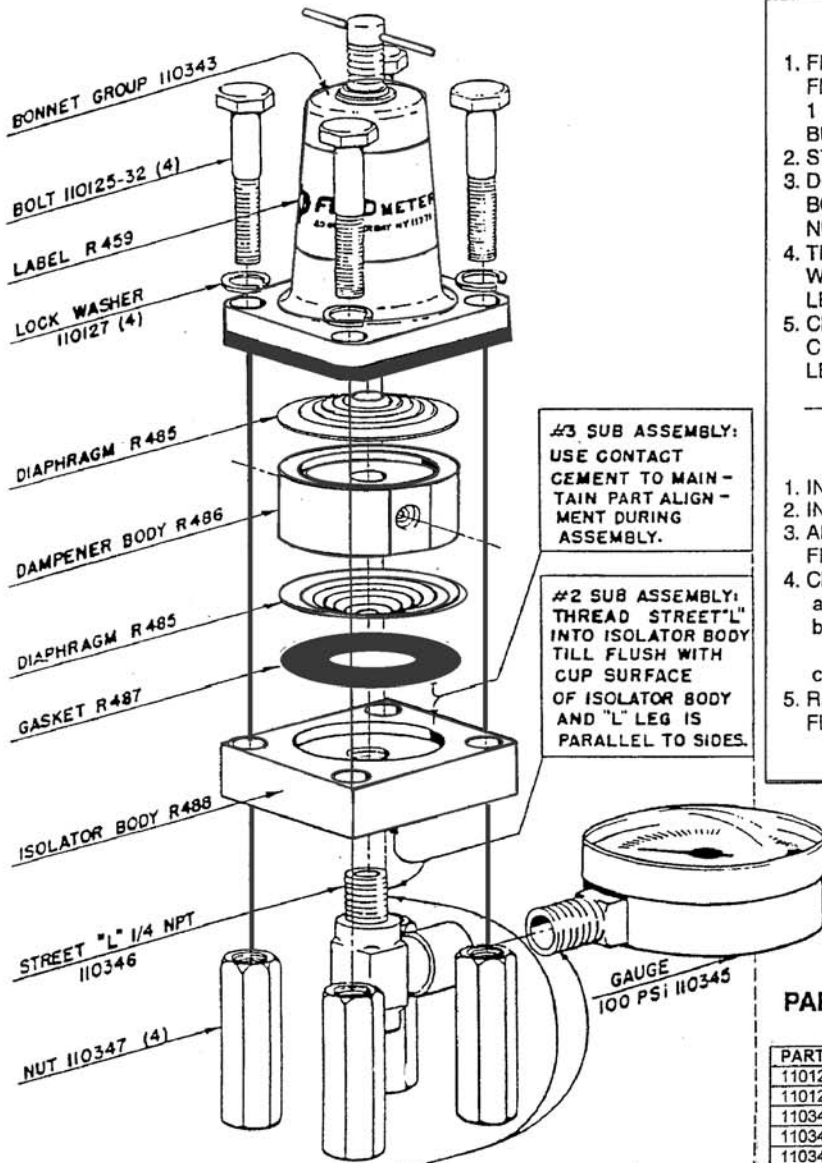
FIGURE 1

TYPICAL SET-UP FOR LOW PRESSURE LIQUID CHROMATOGRAPHY USING THE FMI PD-60-LF PULSE DAMPENER



FMI STEADY FLOW ACCESSORY - PULSE DAMPENER MODEL PD-60-LF

SERVICE & ASSEMBLY INSTRUCTIONS



#1 SUB ASSEMBLY:
APPLY 2 TO 4 LAYERS
TEFLON THREAD TAPE TO
EXTERNAL THREADS OF
PARTS 110345 & 110346.
THREAD GAUGE INTO "L"
WRENCH TIGHT TO POSI-
TION AS SHOWN.

BASE ASSEMBLY CONSISTS OF
SUB ASSEMBLIES #1, #2 & #3

#3 SUB ASSEMBLY:
USE CONTACT
CEMENT TO MAIN-
TAIN PART ALIGN-
MENT DURING
ASSEMBLY.

#2 SUB ASSEMBLY:
THREAD STREET "L"
INTO ISOLATOR BODY
TILL FLUSH WITH
CUP SURFACE
OF ISOLATOR BODY
AND "L" LEG IS
PARALLEL TO SIDES.

- ### REASSEMBLY INSTRUCTIONS
1. FILL BASE ASSEMBLY TO OVERFLOW WITH FMI ALCOHOL SOLUTION (2 PARTS WATER, 1 PART ETHYL ALCOHOL). TAP TO RELEASE BUBBLES.
 2. STACK COMPONENTS AS SHOWN.
 3. DROP 4 BOLTS THROUGH WASHERS, BONNET & ISOLATION BODY. THREAD ONE NUT ON EACH BOLT TO FINGER TIGHT.
 4. TIGHTEN NUTS EVENLY TO COMPRESS WASHERS & MAKE A COMMON NUT BOTTOM LEVEL. DO NOT OVER TIGHTEN.
 5. CHECK FOR GENERAL APPEARANCE: GAUGE CENTERED ON LEGS, EXTERIOR CLEAN, LEGS LEVEL, GAUGE AT ZERO.
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- ### TEST INSTRUCTIONS
1. INSTALL 1/4-28 PLUG IN ONE PORT.
 2. INSTALL 1/4-28 TEST FITTING IN OTHER PORT.
 3. APPLY 80 PSIG TEST PRESSURE TO TEST FITTING.
 4. CHECK AT THAT PRESSURE:
 - a. DAMPENER GAUGE READS 80 ± 7 PSIG
 - b. ZERO LEAKAGE AT SUB ASSEMBLIES 1, 2, 3 & AT EDGES OF DAMPENER BODY
 - c. GENERAL APPEARANCE
 5. REMOVE PLUG & TEST FITTING. BLOW OUT FLUID & INSERT PORT SHIELDS

MODEL PD-60-LF \$280

PARTS IDENTIFICATION & PRICE LIST

PART NO.	DESCRIPTION	QUAN	EACH
110125-32	1/4-20 x 2 BOLT	4	.75
110127	1/2 LOCK WASHER	4	.15
110343	BONNET GROUP	1	36.00
110344	GASKET - UPPER	1	6.50
110345	GAUGE - 100 PSIG	1	120.00
110346	STREET "L" 1/4 NPT	1	43.50
110347	NUT, 1/4-20 x 1-1/2	4	3.00
R485	DIAPHRAGM - TFE	2	3.00
R486	DAMPENER BODY	1	62.00
R487	GASKET - DAMPENER	1	1.25
R488	ISOLATOR BODY	1	27.00

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