



miniQV[®]-X Addendum

Foreword:

Thank you for purchasing the miniQV-X viscometer-part of the popular CANNON minAV family. This ADDENDUM to the current miniAV-X Instruction & Operational Manual is intended to provide the operator with information on the few operational differences between the miniAV-X and the miniQV[®]-X. **Please note the following sections of the miniAV-X manual where users of the miniQV-X will need to refer to this addendum.**

- Section 1 Introduction
- Section 1 Specifications
- Section 2 Testing Samples
- Section 5 Viscometer Tubes
- Section 5 Replacement Components
- Section 14 Replacement Parts List



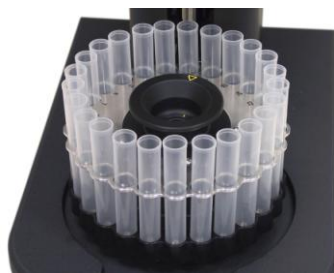
SECTION 1:

miniQV[®]-X Function:

The miniQV[®]-X is a fully automated kinematic viscometer specially designed to handle the unique needs of oil analysis laboratories for rapid viscosity determination of used oils for predictive maintenance purposes. The miniQV[®]-X offers a unique blend of fast throughput and near ASTM D445 precision. At the core of the instrument resides the miniAV-X instrument-providing a familiar system and software user interface. The miniQV-X differs from the miniAV-X in three unique ways:

- High-speed 25 position automatic sample carousel
- Specially designed single-determination fast-run viscometer tube
- Fast wash cycle with low solvent consumption

Carousel



The high-speed 25 position sample carousel replaces the miniAV-X standard 10-position carousel (P81.2509). The new carousel was designed to work with industry standard 17 x 100 mm polyethylene sample vials. The HDPE sample vials offer the least expensive option for applications where vial disposal is a must yet consumable expense must be kept at an absolute minimum.

INSTRUMENT SPECIFICATIONS		
Instrument Model	miniAV-X	miniQV-X
Dimensions	254 mm wide x 437 mm deep x 526 mm high (10 x 17.25 x 20.7 in)	254 mm wide x 437 mm deep x 598 mm high (10 x 17.25 x 23.5 in)
Weight	18 kg (40 lbs) bath unit	27 kg (45 lbs) bath unit
Shipping Weight	57 kg (125 lbs)	68 kg (130 lbs)
Operating Conditions	15°C-30°C, 10%-90% RH non-condensing; Installation category II Pollution degree 2	
Fuse Rating	115V & 100V UNITS: M250V 8A, 1.25 x 0.25"; 230V Unit: M250V 4A, 1.25 X 0.25"	
Compliance	CE Mark: EMC directive (89/336/EEC); Low voltage directive (73/23/EEC); HI-POT (1900 VDC, 60 sec.)	
Computer Requirements	Computer not included, Please contact CANNON for specifications	
Catalog Number/ Electrical Requirements	miniAV-X	miniQV-X
	9725-A85 115V AC 50/60 Hz, 1000 watts	9725-A89 115V AC 50/60 Hz, 500 watts
	9725-A86 230V AC 50/60 Hz, 1000 watts	9725-A90 230V AC 50/60 Hz, 500 watts

SECTION 2:

Filling the sample vials

The minimum amount of sample required for testing can be as low as 4 to 5 ml. For best results, the sample vials should be filled approximately 2/3 full. Do not overfill the sample vials! If the sample vial is filled too full, the sample may overflow when the vial is raised up to the viscometer tip.

SECTION 5:

Viscometer Tubes

The miniQV-X has a specially designed single-determination fast run tube and washing system which allows for typical sample-to-sample cycle times of 2-1/2 minutes and solvent consumption of less than 8mL per sample. The normal flow times for each bulb are 15-25 seconds. Each tube has a tenfold measurement range. The upper viscosity limit is up to 10 times the lower viscosity limit, depending on the tube type.

Timing bulb determination

miniAV Bulb Selection Parameters		
Timing Bulb 2	Timing	Bulb 1
1-2.75 x lower cSt limit	>2.75 x lower cSt limit	

NOTE The numbers listed in this table are approximations, not absolute values.

Replacement Components

P81.2549 Install kit

The installation kit contains all parts required for assembly/installation of the miniQV-X. Kit replacements may be purchased from **CANNON**[®] (part #P81.2549).

The installation kit contains the following components:

DC Power Cable • AC Power Cord • (12') 1/8" solvent tubing • (2) solvent filters • (2) bottle caps • (16') VAC waste line (6 mm) • (2') 1/8" air line • 6 mm tubing for waste b union • RS-232 cable • 9(F)-24(M) cable adapter • bath fluid • 1200 sample vials • selected viscosity standards • Bath Fill Cap Assembly • 3"-4" vent coupling adapter • tubing cutter

P81.2417 Spare parts kit

The spare parts kit contains a variety of tools used to accomplish minor service and replacement procedures. Refer to your packing list for a description of kit components. Kit replacements may be purchased from **CANNON**[®] (part #P81.2417).

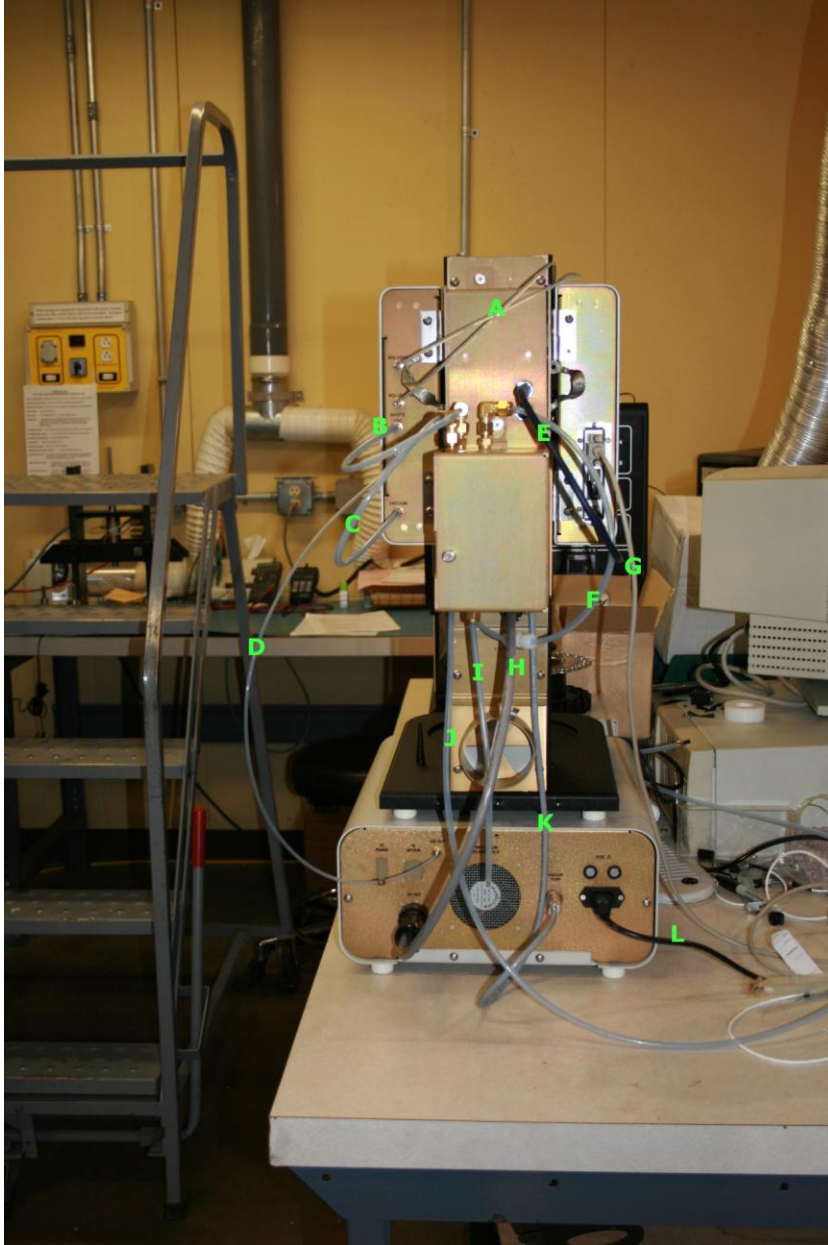
The spare parts kit contains the following components:

(4) fuses (8A for 115V, 4A for 230V unit) • (2) 6mm SMC fittings • drive belt • 3/16" hex key for drain • (2') drain tubing • 7/64 Hex key for elevate sensor

SECTION 14:

Replacement Parts:

P81.2513 Valve control unit (ears)
P81.2526 Carousel motor
P81.2509 Carousel
P81.2548 Sample vials
P81.2507 Concentric tube fitting



- A. *Solvent lines*
- B. *Waste Vacuum*
- C. *Vacuum*
- D. *Pressure In*
- E. *Video Cable*
- F. *Drain line*
- G. *Computer Cable*
- H. *DC Voltage Cable*
- I. *Tube to Waste Container*
- J. *Vacuum In*
- K. *Multi Unit Waste Receiver*
- L. *Power Supply Cable*