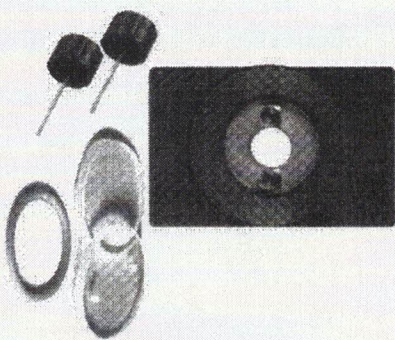
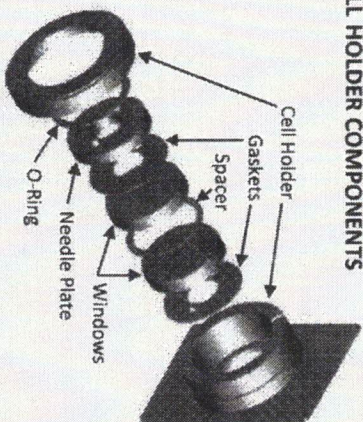


## INSTRUCTIONS



The demountable liquid cell contains the following components: Standard 2" x 3" slide mount, two Teflon gaskets, Teflon O-ring, aluminum plate with Luer-Lok fittings, stoppers, alignment posts, one complete set of pathlength spacers and the end cap (IR windows, one plain and one drilled must be ordered separately). Two Teflon alignment posts are also supplied with this accessory. The cell assembly and its individual components are illustrated below.

### CELL HOLDER COMPONENTS



### ASSEMBLY PROCEDURE

1. Place the slide mount cell holder flat on the table, with the retaining well facing upwards.
2. Position one Teflon gasket at the bottom of the well.
3. Place the first IR window (plain) on top of the gasket.
4. Place the pathlength spacer on the window.
5. Insert alignment caps in the needle plate holes, twist the caps until the tools are locked in place.

6. Place the second Teflon gasket on the needle plate using protruding Teflon posts as guides.
7. Position the second (drilled) window on top of this assembly utilizing alignment post guides again.
8. Tilt the previously assembled holder with components to approximately 60° and insert the needle plate with the gasket and the window into the well (match the position of the key with the notch on the well wall).
9. Place the cell flat on the table again, position a Teflon O-ring on top of the needle plate and screw on the end cap finger-tight. Remove alignment tools.

Fill the cell using a syringe. Mount in the spectrometer's slide holder for data collection.

### PACKING LIST

Part No.	Description	Qty
162-1100	Demountable Liquid Cell Holder	1
<i>Including:</i>		
	End Cap	1
	Slide Mount, 2" x 3"	1
	Aluminum Needle Plate	1
	Nylon Luer Caps	2
	Nylon Stoppers	2
	Luer Alignment Caps	2
	Teflon Spacers, assortment	14
	Teflon Gaskets	2
	Teflon O-Ring	1

**NOTE:** Many IR windows are made of hygroscopic materials. Use lint-free gloves or finger cots when handling them. Do not expose windows to "wet" solvents. Store them in a desiccated environment.

### SELECTED WINDOW MATERIALS\* AND COMPONENTS FOR DEMOUNTABLE CELLS

Part No.	Description
160-1147	Baf. 32 mm x 3 mm Plain Window
160-1146	Baf. 32 mm x 3 mm Drilled Window
160-1132	KBr 32 mm x 3 mm Plain Window
160-1131	KBr 32 mm x 3 mm Drilled Window
160-1122	NaCl 32 mm x 3 mm Plain Window
160-1121	NaCl 32 mm x 3 mm Drilled Window
162-1210	0.015 mm Teflon Spacer, 12 pcs
162-1220	0.025 mm Teflon Spacer, 12 pcs
162-1230	0.05 mm Teflon Spacer, 12 pcs
162-1240	0.1 mm Teflon Spacer, 12 pcs
162-1250	0.2 mm Teflon Spacer, 12 pcs
162-1260	0.5 mm Teflon Spacer, 12 pcs
162-1270	1.0 mm Teflon Spacer, 12 pcs
161-0521	Glass Syringe, 2 ml

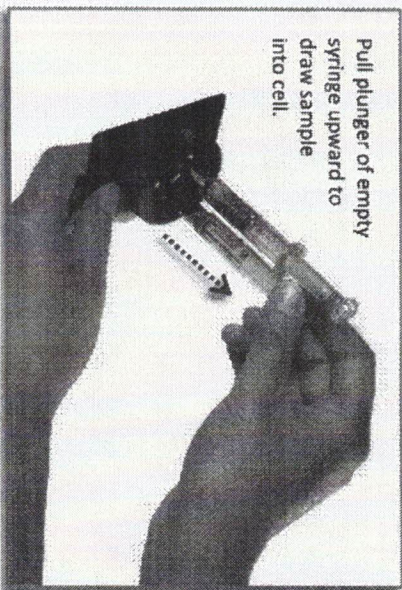
## TRANSMISSION CELL PRECAUTIONS

The sealed and demountable cells have been used for analysis of liquid samples by Infrared spectroscopy for decades. The original cell design consisted of two rectangular IR windows (typically KBr or NaCl). The cells were mounted between two metal plates, one of them equipped with two injection ports made from hypodermic needles.

The new generation of FTIR Liquid Cells utilizes the same design principles. The main exceptions include the circular shape of the cell and attached manifold plate with syringe (Luer) ports.

Cells also feature a few inherent disadvantages. One of them is gradual deterioration of the window materials (especially the most popular but unfortunately hygroscopic KBr). They do have a tendency to leak, and they are relatively expensive. Window deterioration can be minimized (and/or totally eliminated) by careful selection of the IR material. Liquid cells are now available with ZnSe, AMTIR, Ge and other IR windows, some of which can be used with aqueous or even acidic samples.

In most cases following proper filling procedures can prevent cell leakage. It is important to remember, that temperature extremes and mechanical shock may damage the cell. This happens often when a relatively viscous sample is injected to a short pathlength cell. To protect the cell, it is recommended that vacuum, instead of pressure, is used for sample introduction. This can be simply done by employing two syringes for cell filling. In such a case, one of the syringes needs to be filled with a sufficient amount of sample. The second syringe should remain empty, with the plunger located at the bottom.



The sample is introduced by pulling the plunger of the empty syringe until the sample shows at its bottom. At this point, a few seconds pause to allow for pressure equilibration is recommended. Then, the cell should be placed in the vertical position, syringes removed and luer locks plugged with stoppers. With the proper selection of IR windows, gentle cell handling and appropriate filling technique, the IR cell is still one of the better tools for analyzing liquids by traditional transmission methods.

## REPLACEMENT PARTS

Part No.	Description
162-1104	Aluminum Needle Plate
162-1112	Nylon Luer Caps (2)
162-1108	Teflon Stoppers
162-1109	Nylon Stoppers (2)
162-1310	Teflon Gaskets (12)
162-1320	Teflon O-Ring (12)
162-1113	Alignment Caps

## DEMOUNTABLE LIQUID CELLS - VOLUMES

Pathlength (mm)	0.015	0.025	0.05	0.1	0.2	0.5	1.0
Volume (ml)	0.01	0.02	0.04	0.08	0.16	0.40	0.80