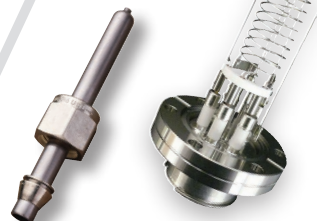




Fil-Tech



Quality & Savings From Stock



SCAN FOR OUR FULL CATALOG



800-743-1743 • 617-227-1133



paula@filtech.com



www.filtech.com Online Ordering



Liquid Plating Crystals

1" Diameter 5MHz polished, plano/plano crystals for measurements in gas or liquid

Fil-Tech		ELECTRODE		SRS		INFICON	
QM1001	\$30 each	Cr/Au		0100RX1	\$395/10	149273-1	\$61 each
QM1003	35	Ti/Au		0100RX3	395/10	149257-1	51
QM1003-1	40	Ti/Ti		0100RX4	595/10	149274-1	67
QM1004	40	Ti/Pt					
QM1005	35	Ti/Al2O3					
QM1007	40	Cr/Au/Ni					
QM1008	30	Stress Relieving Alloy					
QM1010	40	Cr/Au/Mo					
QM1011	40	Ti/Mo					
QM1012	40	Cr/Au/Cu					
QM1013	40	Cr/Au/Zn					
QM1015	40	Cr/Au/SiO2					
QM1018	35	Cr/Au/Cr					

Fil-Tech Crystals

.550" Diameter 4.95MHz polished, plano/plano.

Comparable to Q-SENSE

Fil-Tech		ELECTRODE		Q-SENSE	
QXS0301	\$50 each	Au		QXS 301	\$295/5
QXS0303	50	SiO2		QXS 303	450/5
QXS0304	50	SS		QXS 304	N/A
QXS0309	50	Al			
QXS0310	50	Ti			
QXS0313	50	Cu			
QXS0314	80	Pt		QXS 314	450/5



Extreme Temperature Crystals

Stable in the 200°C range with fewer rate spikes caused by high temperature processes. These crystals can be used with standard film monitors and controllers. Ideal for processes utilizing excessive heat, including VD, OVPD, and ALD.

Fil-Tech		ELECTRODE		FREQUENCY		OPERATING RANGE
QXT8010	\$175	Gold		6MHz		20° — 200°C
QXT8008	175	Stress Relieving Alloy		6MHz		20° — 200°C
QXT8009	175	Silver		6MHz		20° — 200°C



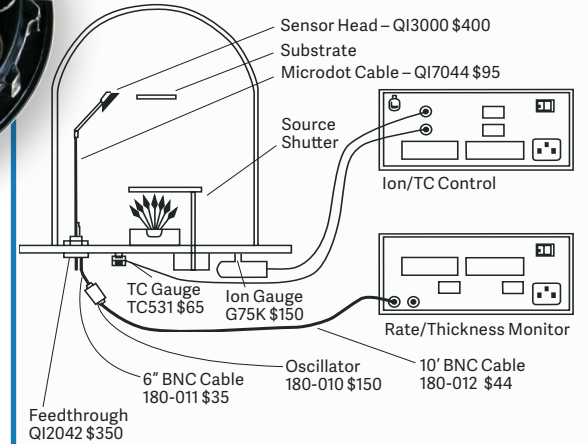
Quality Crystals®

In 6MHz and 5MHz in Gold, Stress-Relieving Alloy®, Longer Life Gold®, Silver and Advanced Adhesion Alloy®. The metal used for the contact electrode on the crystal has an effect on the crystal's ability to measure film thickness. Choose the best electrode for your coating process.



Fil-Tech		INFICON STYLE		FREQUENCY & P/N
QI8010	\$48	Gold		6MHz 008-010-G10
QI8012	48	Longer Life Gold®		6MHz
QI8008	48	Stress Relieving Alloy®		6MHz 750-769-G1
QI8014	48	Advanced Adhesion Alloy®		6MHz
QI8009	48	Silver		6MHz 008-009-G10
QB104G	\$55	Gold		5MHz B489-025-T
QB104GL	55	Longer Life Gold®		5MHz
QB104A	55	Stress Relieving Alloy®		5MHz
QB104S	55	Silver		5MHz BN845-104-T
QS3952	\$52	Gold		5MHz 103952
QS3952GL	52	Longer Life Gold®		5MHz
QS3954	52	Stress Relieving Alloy®		5MHz
QS3950	52	Silver		5MHz 103950
QI8010F	\$48	Gold		6MHz SN66NG
QI8012F	48	Longer Life Gold®		6MHz
QI8008F	48	Stress Relieving Alloy®		6MHz
QI8009F	48	Silver		6MHz SN66NS

Typical System



Monitor/Controller Options

SQM-160	Rate/thickness monitor	\$1,700
STM-2XM	Rate/thickness monitor	1,890
XTC/3	Deposition Controller	3,910
SQC-310	Deposition Controller	3,005
IC6	Deposition Controller	POR

Components Required for a Complete System

180-010	Remote analog oscillator	\$150
180-011	6" BNC cable M/F	35
180-012	10' BNC cable M/M	44
QI3000	Sensor head single sensor	400
QI7044	30" Microdot cable	95
QI2042	Feedthrough 1" bolt	350
TC531	Thermocouple gauge	65
G75K	Ion gauge, 3/4" kovar, iridium	150

INFICON Multi-Film Rate/Thickness Monitors and Controllers

Fil-Tech is an authorized distributor for INFICON® products. Choose your INFICON monitor or controller, or call 617-227-1133 with your application requests and for best pricing.



authorized distributor



SQM-160 Multi-Film Rate/Thickness Monitor

Has 2 sensor inputs standard and 4 additional sensor inputs optional with 2 recorder outputs to provide analog rate and thickness signals. Sensor inputs can be assigned to different materials, averaged for accurate deposition, or configured for a dual sensor. Rate displays of 0.1Å/sec or 0.01Å/sec and frequency or mass display can be selected. Four relay outputs allow control of the source of sensor shutters, signal time and thickness setpoints, and signal crystal failure.

\$1,700



STM-2XM 2 Channel Rate/Thickness Monitor

Combines high accuracy with flexible programming and easy operation at an affordable price. Has 8 programmable digital inputs, 8 programmable digital outputs, and 4 analog outputs. It manages complicated co-deposition with an independent mode allowing it to operate as 2 completely separate monitors with temporal averaging for superior accuracy. Programmable features include shutter delay, time/power monitoring, and rate sampling.

\$1,890



XTC/3 Thin Film Deposition Controller

INFICON's deposition controller for single and multiple-layer processes. The XTC/3 has patented ModeLock that provides mode hop prevention for consistent quality. Offers highly accurate control of deposition rate and thickness, the capacity for virtually any number of layers, easy installation, and extremely high reliability to ensure productivity.

XTC/3S \$3,910
XTC/3M \$6,790



SQC-310 Thin Film Deposition Controller

Offers advanced electronics, improved display and an affordable price. Choose SQC-310 for sequential deposition or the SCQ-310C for codeposition. SQC-310 comes standard RS-232 and USB, a "Quick Setup" menu, Windows® program, is accurate with ±0.03 Hz resolution at 10 reading/second and storage capacity for up to 100 processes, 1,000 layers and 50 films. Available in English or Chinese.

SQC-310 \$3,005
SQC-310C \$5,535



IC6 Thin Film Deposition Controller

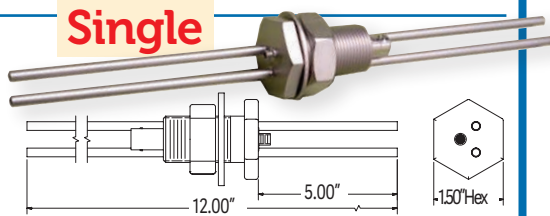
Provides exceptional value by combining the proven performance of INFICON thin film controllers with unique features, all designed to achieve the most from your deposition process. The IC6 uses the ModeLock frequency measurement system to provide stable, high-resolution rate and thickness measurement with an industry-leading rate resolution of 0.0043 Å/s every 1/10 second.

IC6 — Call for pricing

FEEDTHROUGHS

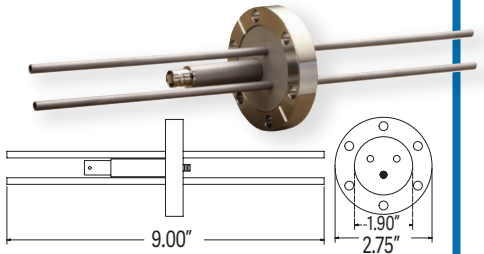
Single 1" Bolt QI2042

\$350
For Single
Sensors



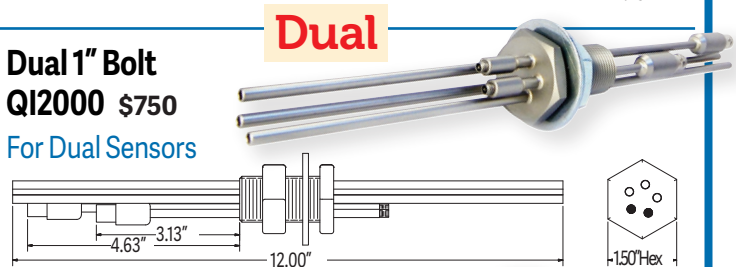
Single 2 3/4" Flange QI2043

\$400
For Single Sensors



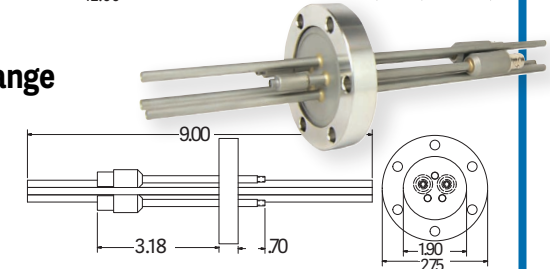
Dual 1" Bolt QI2000

\$750
For Dual Sensors



Dual 2 3/4" Flange QI2080

\$800
For Dual
Sensors



All feedthrough lines 3/16" OD steel tubing.
Custom feedthroughs available.

Sensor Head Parts, Oscillators and Cables

PART	INFICON	Fil-Tech
Ceramic Retainer	007-023	QI7023 \$65
Finger Spring	750-171-P1	QI0171 20
Crystal Holder	750-172-G1	QI0172 65
Crystal Holder	Fil-Tech Style	QI3010 75
Oscillator	783-500-013	180-010 150

CABLES	INFICON	Fil-Tech
Coaxial 30"	007-044	QI7044 \$95
Special Length		QI7044X 115
Right Angle		QI7045 95

Cables have an extra layer of Teflon to protect the shielded cable from deposition material, insuring longer life.

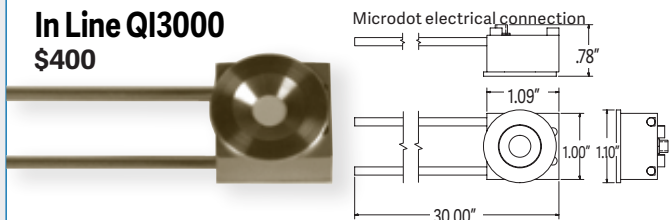
CABLES	PHelps	Fil-Tech
Unsheathed 8"	Pe16016	QP16016 \$100
Unsheathed 36"	Pe16018	QP16018 100
Unsheathed 48"	Pe16020	QP16020 100

Cables have exposed metal sheath.

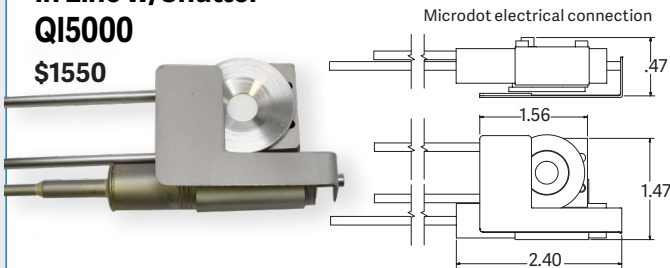
SENSOR HEADS

Single

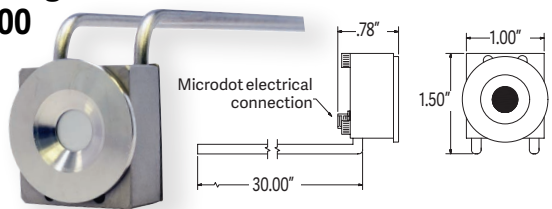
In Line QI3000 \$400



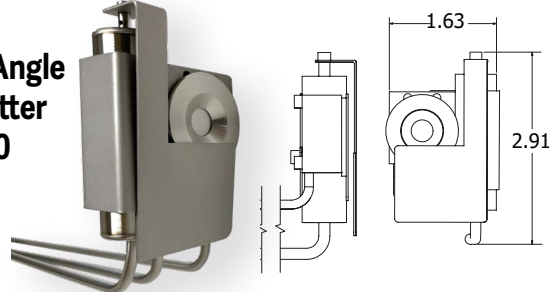
In Line w/Shutter QI5000 \$1550



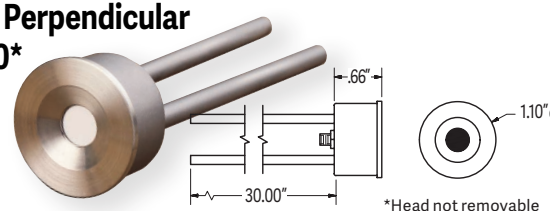
Right Angle QI4000 \$400



Right Angle w/Shutter QI4050 \$1550



Round Perpendicular QI3500* \$450



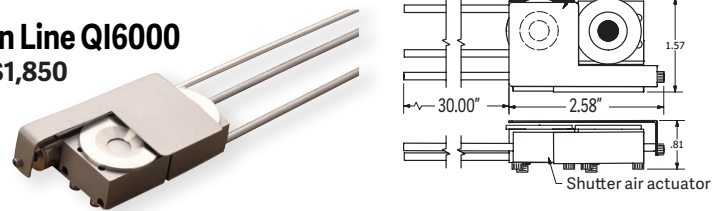
Custom sensor heads, feedthroughs and
assemblies available.

All sensor lines 1/8" OD stainless tubing except
QI3600 with 3/16".

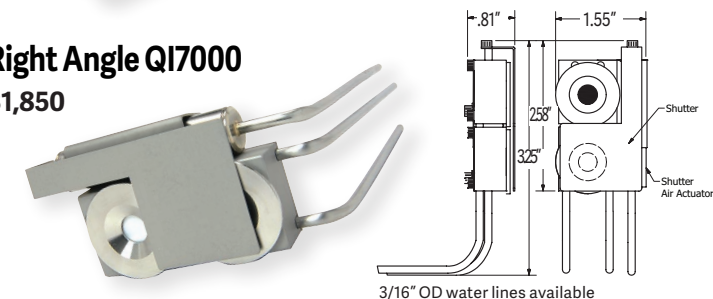
WELD FREE | NO WATER LEAKS | REMOVABLE FROM WATER LINES | SPECIAL ORDER SENSORS AVAILABLE

Dual with Shutter

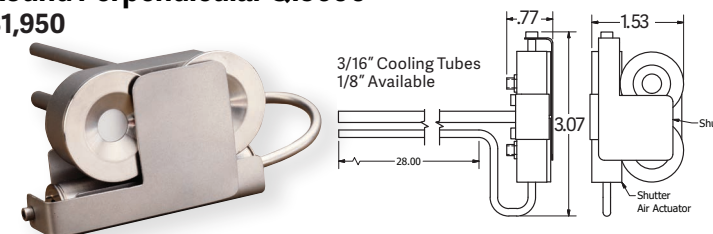
In Line QI6000 \$1,850



Right Angle QI7000 \$1,850

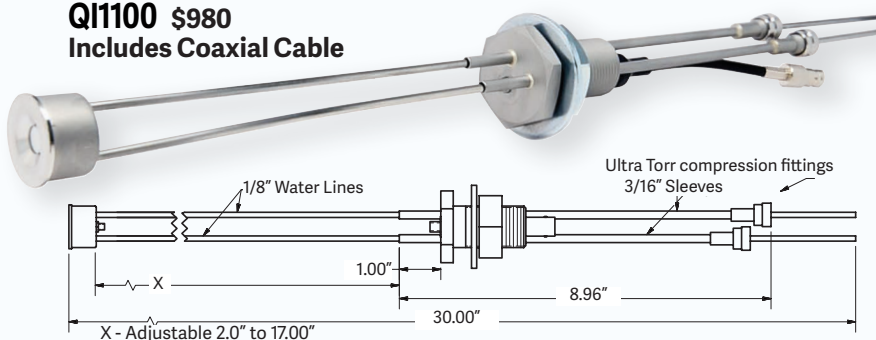


Round Perpendicular QI3600 \$1,950



Positional Sensor Heads

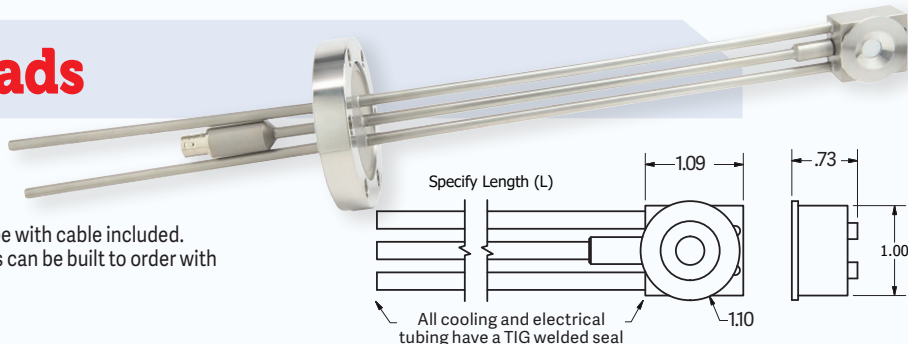
QI1100 \$980 Includes Coaxial Cable



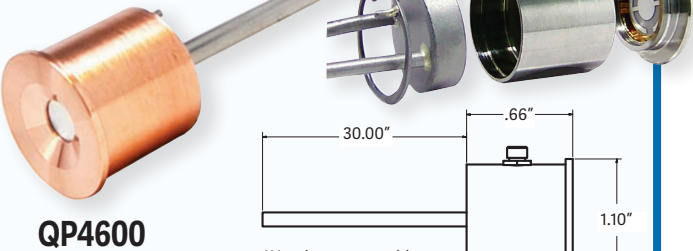
Bakeable Sensor Heads

Our Bakeable Sensor Heads are used for UHV and High Temp processes up to 300° C. The QI1200 is TIG welded to a rotatable conflat flange. A 1" baseplate bolt is available but the Viton O-ring will limit the temp to 205°C. The coaxial connection is sealed inside a rigid 3/16" OD stainless steel tube with cable included. Cooling tubes are 3/16" OD to maximize cooling. Sensor heads can be built to order with your choice of feedthrough type and length.

QI1200 \$995 Includes Coaxial Cable



Sensor Head With Internal Oscillator & Deep Water Pocket



Features

- Stainless steel construction
- Internal oscillator for 5MHz and 6MHz
- Removable from water lines for easy repair
- Deep water pocket for superior cooling
- Copper construction option for superior cooling

Sputter Head, SS	QP4500	\$525
Sputter Head Cap, SS	QP4501	65
Sputter Head, Copper	QP4600	575
Sputter Head Cap, Copper	QP4601	80

Specify crystal diameter for correct crystal holder style

12 Crystal Sensor Head

Holds 12 crystals and
allows continuous
monitoring without
process interruption

Features

- Small footprint
- Easy installation and reload
- Precise, reliable, pneumatically driven stepper motor
- Compatible with Fil-Tech and INFICON monitors

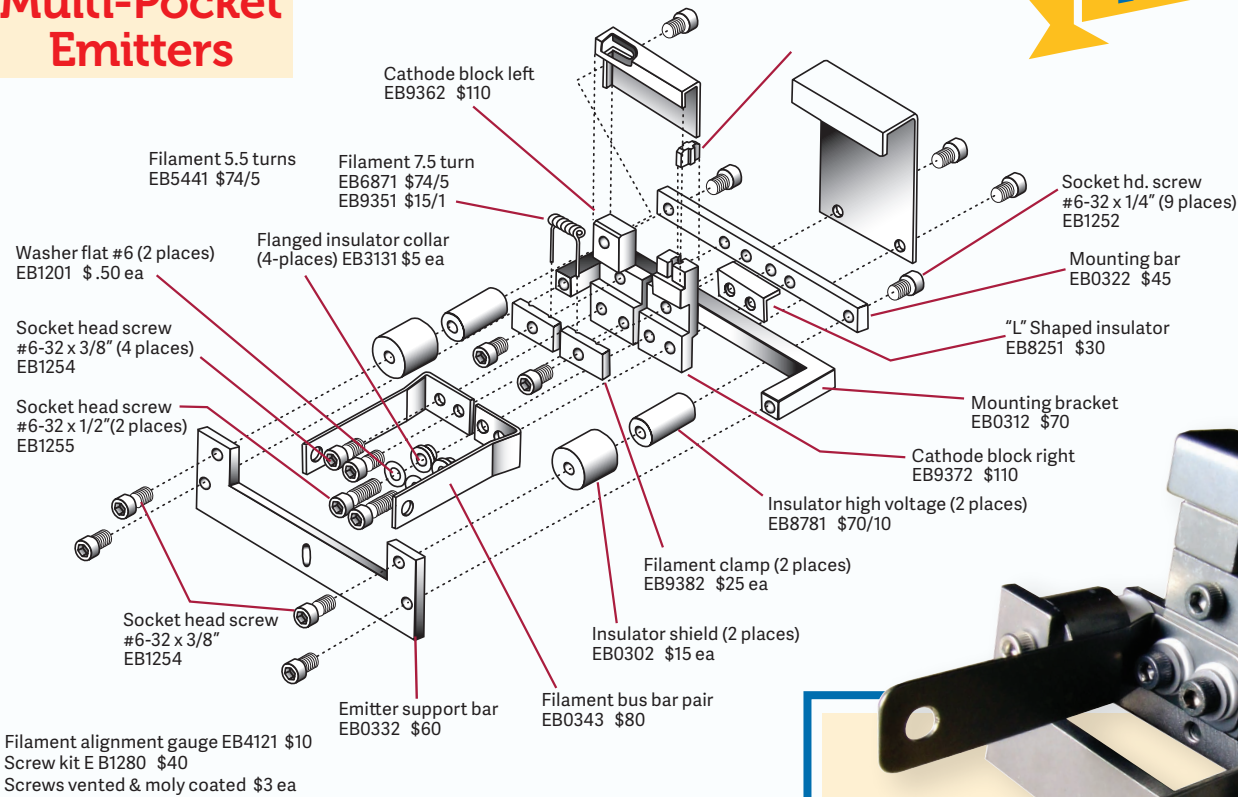
12QC Includes Coaxial Cable

ELECTRON BEAM GUN PARTS

ALL ITEMS
IN STOCK

Temescal • Satisloh • Telemark | Filaments • Insulators • Emitters

Multi-Pocket
Emitters



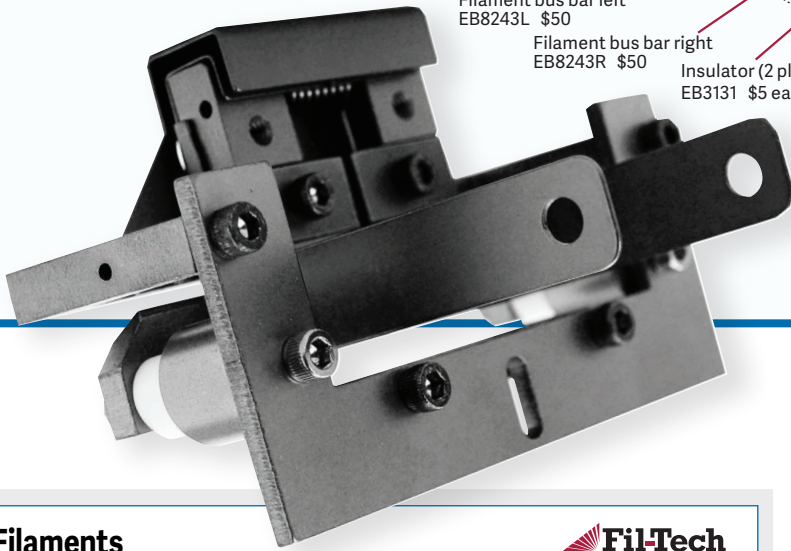
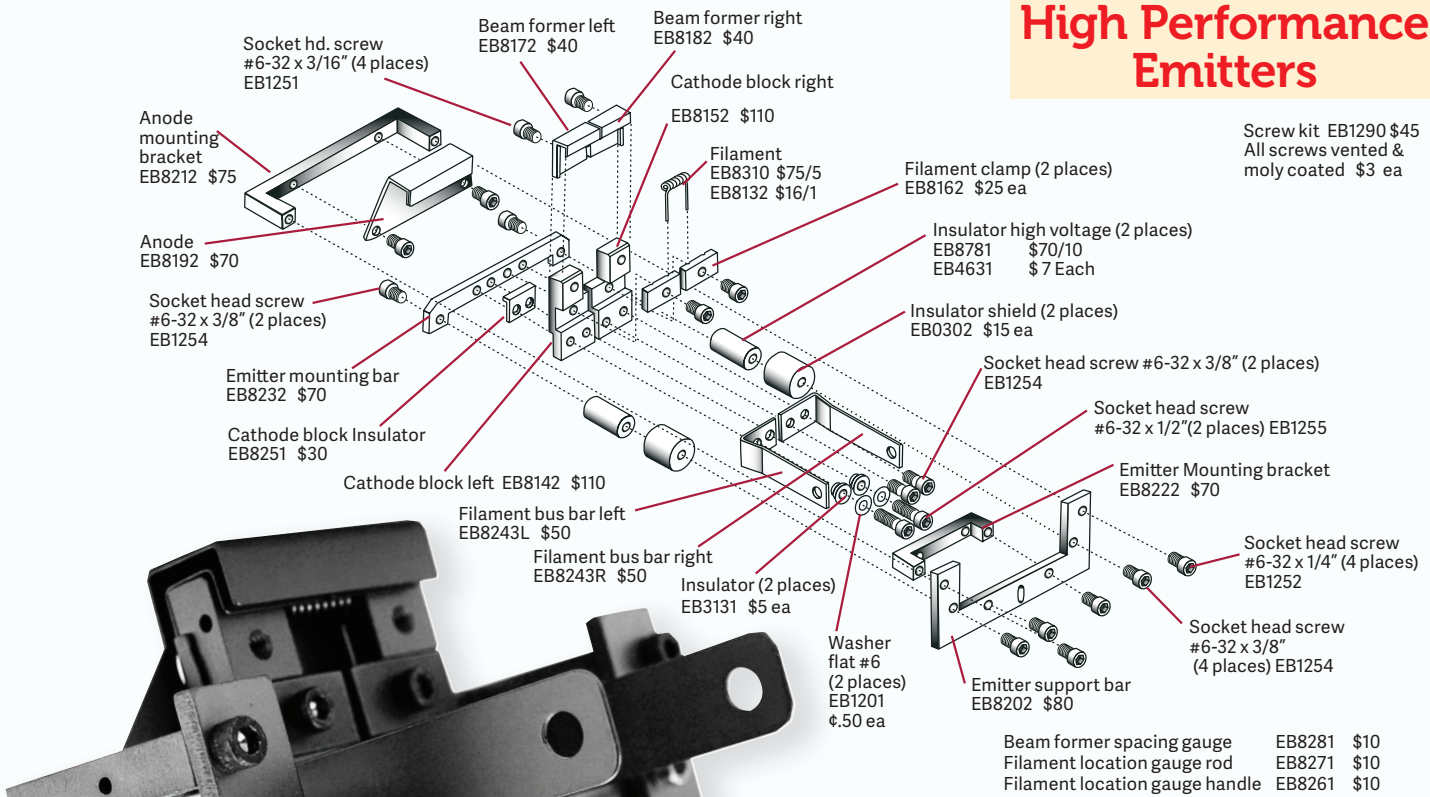
Fil-Tech supplies electron beam gun replacement parts for your Multi-Pocket and High Performance emitters from Temescal, Telemark, Thermionics, Satisloh, MeiVac, Sloan, and Leybold. Our insulators, filaments, metal parts and electromagnetic coils are drop-in replacements for the listed OEM parts. We can also rebuild your emitters.

Multi-Pocket Emitter Parts	TEMESCAL	TELEMARK	Fil-Tech	
Anode	0204-0292-0	273-0003-1	EB0292	\$70
Beam Former	0415-1822-0	273-0004-2	EB1822	35
Beam Former, Tantalum	0303-9392-0	N/A	EB9392	50
Cathode Block, Left	0303-9362-0	273-0031-1	EB9362	110
Cathode Block, Right	0303-9372-0	273-0032-1	EB9372	110
Emitter Support Bar	0204-0332-0	273-0018-1	EB0332	60
Filament Clamp	0303-9382-0	273-0033-3/273-0033-4	EB9382	25
Filament Bus Bar Set	0204-0343-0	273-0035-1/273-0036-1	EB0343	80
Insulator Shield	0204-0302-0	273-0011-1	EB0302	15
Mounting Bar	0204-0322-0	273-0017-1	EB0322	45
Mounting Bracket	0204-0312-0	273-0019-1	EB0312	70
Seal, Quad Ring	2108-0215-0	N/A	EB0215	2
Seal, RL Gasket	0020-4811-2	N/A	EB4811	6
Emitter Assembly	0204-0284-0	273-0150-1	EB0284	700

Emitter Assemblies	TEMESCAL	TELEMARK	Fil-Tech	
Multi Pocket	0204-0284-0	273-0150-1	EB0284 Temescal EB0150M Telemark	\$700
Single Pocket	0304-1914-0	253-0150-1	EB1914	700
High Performance	0916-8294-0	N/A	EB8294	800
Emitter Rebuilding Service*	N/A	N/A	EBREBLD	350

*Includes glass beading and chemically cleaning all metal parts, replacing filament, screws (all vented), insulators, and reassembling. Metal parts not included.

High Performance
Emitters



Filaments

TEMESCAL	SuperSource®	0317-6871-0	EB6871	\$74
		0303-9351-0	EB9351	15/1
TELEMARK	High Performance®	0515-5441-0	EB5441	74
		0916-8310-0	EB8310	75
THERMIONICS	Multi Pocket	0916-8132-0	EB8132	16/1
		273-0001-1	EB0001	74
SLOAN	Multi Pocket	273-0002-1	EB0002	74
		A112153	EB6871	74
JEOL	SuperSource	A7500823P-122M	EB6871	74
		A7500823P-005M	EB6871-1	80
SLOAN	S Type	A7500336J-003M	EB8483-5	290/20
		126-710	EB7910	150
LEVBOLD	Hooked Ends	10-094-226	EB4226	190/10
		84830-005	EB8483-5	290/20
JEOL	S Type	812180313	EB0313	65
		Half moon		

All filaments 5 per box except otherwise indicated.

High-Performance
Emitter Parts

TEMESCAL	TELEMARK	Fil-Tech	
Anode	0916-8192-0	EB8192	\$75
Anode Mounting Bracket	0916-8212-0	EB8212	75
Beam Former, left	0916-8172-0	EB8172	40
Beam Former, Right	0916-8182-0	EB8182	40
Beam Former Spacing Gauge	0916-8281-0	EB8281	10
Cathode Block Insulator	0916-8251-0	EB8251	30
Cathode Block, Left	0916-8142-0	EB8142	110
Cathode Block, Right	0916-8152-0	EB8152	110
Emitter Mounting Bar	0916-8232-0	EB8232	70
Emitter Mounting Bracket	0916-8222-0	EB8222	70
Emitter Support Bar	0916-8202-0	EB8202	80
Filament Bus Bar, Left	0916-8243-1	EB8243L	50
Filament Bus Bar, Right	0916-8243-2	EB8243R	50
Filament Clamp	0916-8162-0	EB8162	25
Emitter Assembly	0916-8294-0	EB8294	800

Electromagnetic
Coil

TEMESCAL	Fil-Tech	
0312-6923-0	EB6923	\$1,450

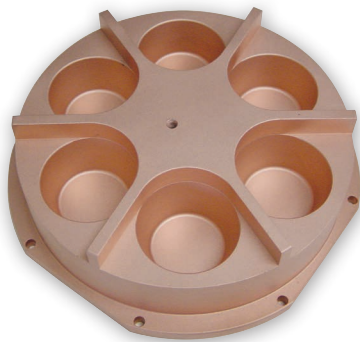


Telemark and Temescal parts are interchangeable.

Telemark parts can be ordered using Temescal part numbers.

Crucibles

All Crucibles and Covers are OFHC for Temescal and Telemark electron beam guns.



SIZE	TEMESCAL		Fil-Tech	
4x15cc Pockets	0715-8444-0	\$1,540	EB8444	\$1,450
6x15cc Pockets	0715-8504-0	1,965	EB8504	1,800
4x25cc Pockets	0715-8454-0	1,540	EB8454	1,500
SIZE	TELEMARK		Fil-Tech	
6x15cc Pockets	271-0255-3	\$2,000	EB0255-3	\$1,800
4x25cc Pockets	271-0220-3	1,750	EB0220-3	1,550
6x25cc Pockets	271-0257-3	2,000	EB0257-3	1,800

All high water flow

Crucible Covers

SIZE	TEMESCAL		Fil-Tech	
4 Pockets	0715-8143-0	\$640	EB8143	\$600
6 Pockets	0715-8153-0	745	EB8153	650
SIZE	TELEMARK		Fil-Tech	
4 Pockets	271-0073-1		EB0073	\$475
6 Pockets	271-0074-1		EB0074	475

Silicon Dioxide

High purity SiO2 specifically designed for electron beam evaporation.

SPECIFICATIONS

Purity	99.99%	Melting point	1713°C
Form	Granular	Refractive index	n/d 1.46 @500 nm

ORDERING INFORMATION

EM0024-5	2-4 Granular size (mm)	\$100 (500g)
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ALL ITEMS
IN STOCK

order online:
www.filtech.com

Crucible Liners

Fil-Tech supplies 4cc, 7cc, 15cc, 25cc, 30cc and 40cc crucible liners for Temescal and Telemark electron beam gun crucibles. Available in Graphite, Tungsten, Molybdenum, Aluminum Oxide, Boron Nitride, Copper, Intermetallic, Tantalum, and Vitreous Carbon. We can also fabricate custom liners for your e-beam guns.



	SIZE	REMARKS	TEMESCAL	TELEMARK	Fil-Tech	
GRAPHITE	7CC		0627-6172-1	271-7007-1	EC0007-1	\$40
	15CC		0627-6172-3	271-7015-1	EC0015-1	50
	25CC	4 Pocket	0627-6172-5	271-7025-1	EC4025-1	60
	25CC	6 Pocket	N/A	271-7025-2	EC6025-1	65
	30CC	W/Web	N/A	271-7030-1	ECW030-1	75
	30CC	W/O Web	N/A	271-7030-2	EC0030-1	75
	40CC		0627-6172-7	271-7040-1	EC0040-1	80
TUNGSTEN	7CC		0627-6152-1	271-7008-9	EC0007-2	\$150
	15CC		0627-6152-3	271-7016-9	EC0015-2	155
	25CC	4 Pocket	0627-6152-5	271-7026-9	EC4025-2	225
	25CC	6 Pocket	0627-6152-6	271-7027-9	EC6025-2	250
	30CC	W/Web	N/A	N/A	ECW030-2	165
	30CC	W/O Web	N/A	N/A	EC0030-2	275
	40CC		0627-6152-7	271-7041-9	EC0040-2	375
MOLYBDENUM	7CC		0627-6162-1	271-7007-3	EC0007-3	\$110
	15CC		0627-6162-3	271-7015-3	EC0015-3	100
	25CC	4 Pocket	0627-6162-5	271-7025-3	EC4025-3	145
	25CC	6 Pocket	N/A	271-7025-4	EC6025-3	180
	30CC	W/Web	N/A	271-7030-3	ECW030-3	185
	30CC	W/O Web	N/A	271-7030-4	EC0030-3	180
	40CC		0627-6162-7	271-7040-3	EC0040-3	170

Cathode Tip & Keeper

	VEECO		Fil-Tech	
MARK II Cathode Tip	B17968/SP	\$380	IS17968	\$310
MARK II Keeper	A17973	\$157	IS17973	\$70

ION SOURCE PARTS

- Veeco Mark I & Mark II • Ion Tech
- Satisloh • Kaufman & Robinson

Filaments

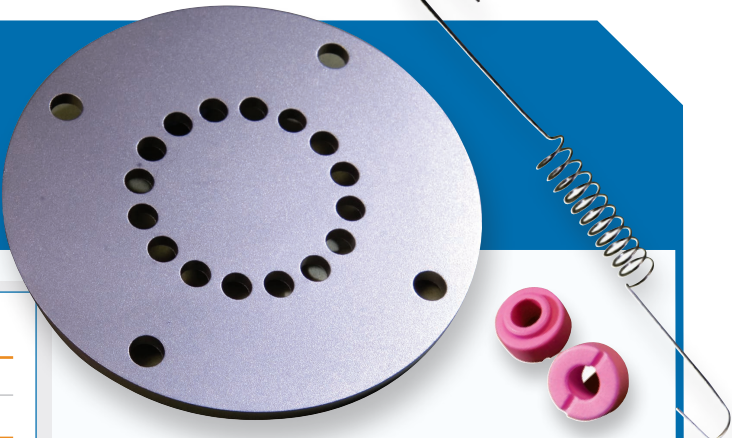
	VEECO	SATISLOH	Fil-Tech	
MARK I	A30274	\$7.28	A7500800Q-131M	IS30274 \$6
MARK II	A16962	6	A7500800Q-101M	IS16962 5
VEECO / ION TECH			Fil-Tech	
3&5cm Cathode	0503-107	\$50	IS3107	\$12
3cm Neutralizer	0503-063		IS3063	12
5cm Neutralizer	0505-001-003	64	IS1003	6
KAUFMAN & ROBINSON			Fil-Tech	
EH1000	HFL-A01		ISKRLA01	3.50
EH200 & EH400	HFM-A01		ISKRMA01	3

Insulators

	VEECO	SATISLOH	Fil-Tech	
MARK I	1451001	\$ 7.82	A7500800Q-136M	IS1001 \$6
MARK I & II	10-32M		A7500800Q-167M	IS1032 6.50
	10-32F		A7500800Q-134M	IS1032F 10
	6-32F			IS0632F 12
	6-32M			IS0632M 8
	6-MS	8.50		IS06MS 8
	1/4-20M	15.00		IS2520M 12
	1/4-20F	15.00		IS2520F 12
VEECO/ION TECH 3 & 5CM			Fil-Tech	
	0500-035 M	\$7.35		IS0035 \$6
	0500-036 F	9.80		IS0036 7
	0500-037 M	8.50		IS0037 7
KAUFMAN & ROBINSON			Fil-Tech	
INSULATORS	10-32M	Insulator	IS1032	\$6.50
	10-32M-2	Insulator	IS0035	8
	6-32M	Insulator	IS0632M	8
	1/3-20m-1	Insulator	IS2520M	12
REFLECTOR	ISKR1012G	Graphite Reflector	EH10-12-CG	75

Gas Distributors

	VEECO	SATISLOH	Fil-Tech	
MARK I	B18005-1 Graphite	\$356	A7500800Q-134M	IS18005G \$100
	B18005-3 Stainless	75	A7500800Q-135M	IS18005S 75
	B18005-5 Titanium	455		IS18005T 100
MARK I MODIFIED HOLES	B18005-1A Graphite			IS18005G-1 100
	B18005-2A Stainless			IS18005S-1 90
	B18005T-1 Titanium			IS18005T-1 100
MARK II	B16931-1 Graphite	554	A7500800Q-174M	IS16931G 240
	B16931-2 Stainless	109	A7500800Q-154M	IS16931S 65
	B16931-5 Titanium	209	A7500800Q-202M	IS16931T 100



Replacement parts for Veeco Mark I and II, Ion Tech, Satisloh and Kaufman & Robinson ion source equipment. Filaments, insulators, anodes, gas distributors, cathode tips, keepers and other parts are drop-in replacements for the competitive parts listed and offered from stock at competitive pricing.

Anodes

	VEECO	SATISLOH	Fil-Tech	
MARK I	B18003-1 Graphite	\$74	A7500800Q-132M	IS18003G \$65
	B18003-2 Stainless	55	A7500800Q-133M	IS18003S 55
MARK II	B16933-1 Graphite	196	A7500800Q-175M	IS16933G 160
	B16933-2 Stainless	144	A7500800Q-166M	IS16933S 85

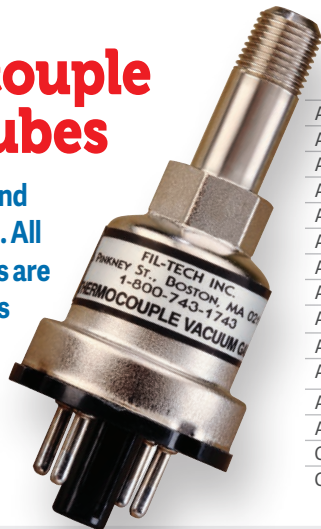
Mark II Parts

Mark II	Description	Fil-Tech	
B16923	Pole Piece, Outer	IS16923	\$202
B16927	Alnico-5 Magnet	IS16927	67
B16928	Support Plate	IS16928	361
B16929	Baffle	IS16929	26
B16930	Spacer	IS16930	28/3
B16932	Support, Back Anode	IS16932	185
B16934	Support, Front Anode	IS16934	198
B16935	Tie Rod, Short	IS16935	38/2
B16936	Tie Rod, Long	IS16936	38/2
B16937	Cathode Connection	IS16937	105/2
B16938	Anode Connection	IS16938	19
B16939	Support, Cathode	IS16939	122/2
B16940	Knob, Hold Down	IS16940	50/2
B16944	Retainer, Cable	IS16944	106/3
B16946	Cover, Empty Socket	IS16946	70
B16947	Work Station	IS16947	100
B29958	Pin, Alignment	IS29958	42/2
B29959	Screw, Hold Down	IS29959	72/2
B29960	Socket	IS29960	298
B29961	Plug	IS29961	395

Call 800-743-1743 For a complete listing of Mark I, I+, II and II+ parts.

Thermocouple Gauge Tubes

For semiconductor and vacuum applications. All of our thermocouples are drop-in replacements for the OEM gauges offered at a savings.



COMPETITION		Fil-Tech	
Agilent	F0472301	TC531	\$ 68
Agilent	F0472310	TC531VCR	135
AMAT	F2518001	TC004V	52
AMAT	3310-01012	TC531	70
AMAT	3310-01074	TC531VCR	135
AMAT	3310-00236	TC6M	68
AMAT	3310-01071	TC6MVCR	135
Axcelis	3300008	TC004V	52
Axcelis	33001330	TC004KF16	135
Axcelis	33000002	TC002	110
Axcelis	33001009	TC3309	68
Axcelis	7435-0001-0001	TC7435-1	85
Axcelis	7435-0003-0001	TC7435-3	90
CVC	GTC-004	TC004	52
CVC	GTC-036	TC036	60

COMPETITION		Fil-Tech	
Hastings	DV-6M	TC6M	\$68
Hastings	DV-6-VCR	TC6MVCR	135
Hastings	DV-6-KF16	TC6MKF16	135
Hastings	DV-6-KF25	TC6MKF25	155
Hastings	DV-4D	TC4D	85
MKS	270006	TC6M	68
MKS	8112105	TC6MVCR	135
MRC	405052	TC520	105
Novellus	60-00180-00	TC6M	68
Novellus	60-00005-00	TC6MKF25	155
Temescal	6920-4263-0	TC6M	68
Thermionics	6343-004M	TC004V	52



InstruTech® Convection Gauges

We offer the complete InstruTech line of low cost, drop-in plug compatible replacements for Convector® gauges. Call for pricing.

FITTING	HORNET400	Fil-Tech	HORNET 401	Fil-Tech	HORNET 402	Fil-Tech
NW16KF	IGM400TBX	\$715	IGM401TBD	\$870	IGM402TBD	\$970
NW25KF	IGM400TCX	725	IGM401TCD	890	IGM402TCD	995
NW40KF	IGM400TDX	735	IGM401TDD	898	IGM402TDD	1,005
2 3/4CF	IGM400TFX	745	IGM401TFD	910	IGM402TFD	1,005
1/2" Cajon 8VCR	IGM400THX	735	IGM401THD	902	IGM402THD	1,005

*275071: Novellus 27-229979
**275203: Axcelis 3300317
***275185: AMAT 275262
Novellus/Lam 77-1090453-001
Novellus 60-00055-00

FITTING	WORKER BEE	MKS	Fil-Tech	SUPER BEE	MKS	Fil-Tech	STINGER	MKS	Fil-Tech
1/8" NPT	CVG101GA	275071*	\$115	CVM201GAA	275850	\$440	CVM211GAA	275800	\$305
NW16KF	CVG101GB	275203**	135	CVM201GBA	275865	460	CVM211GBA	275806	320
NW25KF	CVG101GC	275196	150	CVM201GCA	275867	475	CVM211GCA	275807	320
NW40KF	CVG101GD	275316	160	CVM201GDA	275858	485	CVM211GDA	275808	340
1/4"VCR	CVG101GG	275185***	150	CVM201GGA	275851	475	CVM211GGA	275801	330

Thermocouple Controllers

DIGITAL PANEL MOUNT Fil-Tech		
TC801	TC531 Tube	\$570
TC215H	TC6M Tube	675

DIGITAL PANEL MOUNT SINGLE STATION		
TC101D	TC531 Tube	370
TC201D	TC6M Tube	370

DIGITAL CABINET MOUNT SINGLE STATION		
TC101DC	TC531 Tube	435
TC101DC	TC6M Tube	435



MG15 Multi Gauge Ion Controller

Supports 4 Active & up to 3 Passive Gauge

Our MG15 ion gauge controller can support up to 4 active gauges and 3 passive gauges, extending the measurement range to 2 x 10-12 mbar. The MG15 supports all Bayard Alpert style gauges, Baratron, UHV nude gauges and others. It can be remotely controlled by one of its available interfaces and has 10 individually programmable set points with threshold and hysteresis functions. The MG15 can support four active gauges and up to three passive gauges. Price varies with 1, 2 or 3 passive gauges.

POR

Ion Implantation

AXCELIS	DESCRIPTION	Fil-Tech	
3300002	3/4" Glass, Twin Tungsten	G75PT	\$130
7631-0001-0002	3/4" Kova.r, Twin Tungsten	G75KT	140
3300008	Thermocouple Gauge	TC004V	52

AMAT			
5300019	1" Glass, Twin Tungsten	G100PT	\$130
K7360301	1" Glass, Twin Tungsten	G100PT	130
4053050	1" Kovar, Twin Tungsten, 2 3/4" Flange	G100KTF	170
3310-90003	1" Glass, Twin Tungsten	G100PT	130
3310-01014	1" Kovar, Iridium, Pt Coated	G100KC	170
F2518001	Thermocouple Gauge	TC004V	52
3310-00236	Thermocouple Gauge	TC6M	68
3310-01071	Thermocouple Gauge VCR	TC6MVCR	135
3310-01012	Thermocouple Gauge	TC531	70
3310-01074	Thermocouple Gauge VCR	TC531VCR	135

LAM/NOVELLUS			
27-229-700-00	1" Glass, Iridium, PT Coated, Broad Range	G8136P/1	185
60-00005-00	Thermocouple Gauge	TC6M	68
60-00180-00	Thermocouple Gauge VCR	TC6MVCR	135

SEN			
33S0298	3/4" Glass, Twin Tungsten	G75PT-02S	130

Vacuum Applications

AGILENT	DESCRIPTION	PRICE		
K2466301	1" Glass, Iridium, Pt Coated	\$252	G100PC	\$160
K2466302	1" Kovar, Iridium, Pt Coated	289	G100KC	170
K2466303	1" Kovar, Iridium, Pt Coated, 2 3/4" Flange	324	G100KCF	220
K2466304	3/4" Glass, Iridium, Pt Coated	265	G75PC	160
K2466305	3/4" Kovar, Iridium, Pt Coated	275	G75KC	170
K2471301	1" Glass, Iridium	191	G100P	145
K2471302	1" Kovar, Iridium	214	G100K	150
K2471303	1" Kovar, Iridium, 2 3/4" Flange	270	G100KF	195
K2471304	3/4" Glass, Iridium	182	G75P	140
K2471305	3/4" Kovar, Iridium	204	G75K	150
K7360301	1" Glass, Twin Tungsten	155	G100PT	130
K7360302	1" Kovar, Twin Tungsten	183	G100KT	140
K7360303	3/4" Glass, Twin Tungsten	155	G75PT	130
K7360304	3/4" Kovar, Twin Tungsten	183	G75KT	140
K7360307	1" Kovar, Twin Tungsten, 2 3/4" Flange	229	G100KTF	170
K2500301	1" Glass, Iridium, Pt Coated, Broad Range	264	G8136P/1	170
K2500302	1" Kovar, Iridium, Pt Coated, Broad Range	292	G8136K/1	185
K2500303	1" Kovar, Iridium, Pt Coated, 2 3/4" Flange, BR	334	G8136F	215

MKS				
274002	3/4" Glass, Iridium	\$155	G75P	140
274003	3/4" Kovar, Iridium	170	G75K	150
274005	1" Glass, Iridium	165	G100P	145
274006	1" Kovar, Iridium	260	G100K	150
274007	3/4" Kovar, Iridium, 2 3/4" Flange	265	G75KF	195
274008	1" Kovar, Iridium, 2 3/4" Flange	265	G100KF	195
274012	3/4" Glass, Twin Tungsten	140	G75PT	130
274013	3/4" Kovar, Twin Tungsten	160	G75KT	140
274015	1" Glass, Twin Tungsten	155	G100PT	130
274016	1" Kovar, Twin Tungsten	170	G100KT	140
274032	1"Kovar, Iridium, KF25 Flange	300	G100KF25	195

ANELVA			
33-437-0025/UDG-1S	15mm Glass, Twin Tungsten	G59PT	190
BRG-1B	15mm Glass, Iridium	G59P	180

MRC			
4050300	.709" Glass, Twin Tungsten	G71PT	145

ULVAC			
WIT-18	18mm Glass, Tungsten, Triode	GT18T	115
WIT-18IR	18mm Glass, Iridium, Triode	GT18IR	165

Ionization & Thermocouple Gauge Tubes



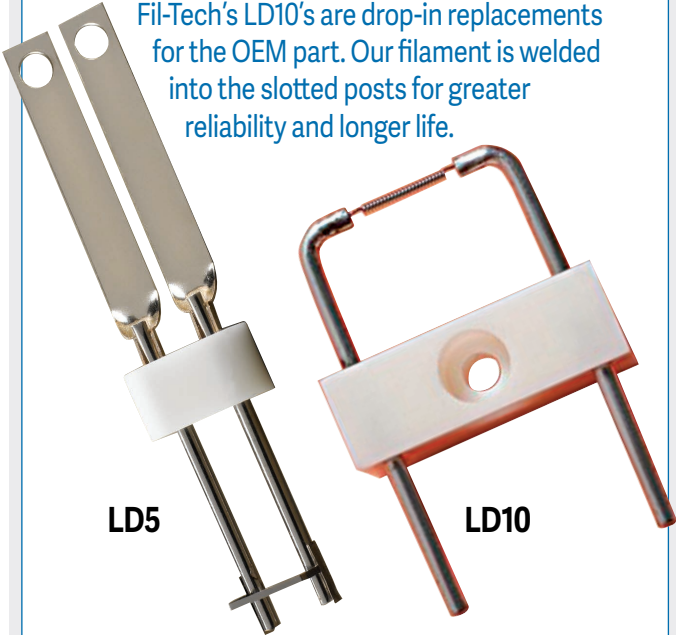
All Fil-Tech ionization gauge tubes are identical or functionally equivalent to the competitive tubes listed. They are all manufactured by two companies and privately labeled. See comparative prices for savings.



order online:
www.filtech.com

Leak Detector Filaments

Fil-Tech's LD10's are drop-in replacements for the OEM part. Our filament is welded into the slotted posts for greater reliability and longer life.



FILAMENT	ALCATEL	Fil-Tech
Filament	053146	LD10
Collector Single	083485	LD11
Collector Double	101127	LD12

FILAMENT	VEECO	Fil-Tech
Tungsten	0103-141-01	LD5
Iridium	N/A	LD5-1
Iridium Rebuild	N/A	LD5IRR

FILAMENT	AGILENT	NEW	Fil-Tech
Tungsten	82850301	LD7	LD7RE
Iridium	82850302	LD8	LD8RE

CALIBRATED HELIUM LEAKS

	NEW	Fil-Tech	RECALIBRATION
CL7	10-7ccHe/sec	\$500	Certification \$350
CL8	10-8ccHe/sec	500	NIST Traceable Certification

Fil-Tech Fluid vs Torrlube

Fil-Tech Fluid dramatically increases bearing life in vacuum and semiconductor processes by reducing friction. It has exceptional lubricating properties for sliding and rotating applications to 10-8 torr. Fil-Tech Fluid functions in a wide temperature range (-20°C to 260°C) and is chemically inert in the presence of most semiconductor gases such as fluorine at 200°C and trifluoride at 50°C.



ITEM #	SIZE	TORRLUBE®	FLUID™
FTF001	1 cc Syringe	\$112	\$100
FTF003	3 cc Syringe	N/A	275
FTF100	2-50 cc Bottles	1,280	1,100

Nude Gauges & Filaments

Visit www.filtech.com for a complete listing of our nude gauges and replacement filaments.

AGILENT • AMAT • MKS

Bayard Alpert Gauges/Pin Guards

Flange 2 3/4" • Header Ceramic to Metal Seal • Degas E-Beam Only

MKS		AMAT	DESCRIPTION	Fil-Tech
274028	\$525		Iridium Single	GB20IR
274043	595	3310-01081	Iridium Single With Pin Guard	GB43IR

UHV Gauges/Pin Guards

Flange 2 3/4" • Header Ceramic to Metal Seal • Degas E-Beam Only

MKS		DESCRIPTION	Fil-Tech
274022	\$525	Tungsten Dual	GU21T
274023	565	Iridium Dual	GU21IR
274050	535	Tungsten Dual, NW40KF	GU50T
274041	595	Tungsten Dual With Pin Guard	GU41T
274042	625	Iridium Dual With Pin Guard	GU42IR
274057	610	Tungsten Dual, NW40KF w/Pin Guard	GU57T

AGILENT

9715008	485	Iridium Dual	GU24IR	495
9715007	555	Tungsten Dual	GU24T	450

Replacement Filaments

AGILENT		DESCRIPTION	Fil-Tech
9710018	\$ 99	Tungsten Dual	GF18
9710028	193	Iridium Dual	GF28
74024	180	Tungsten Dual	GF24

MKS

274025	210	Tungsten Dual	GF25	70
274029	180	Iridium Single	GF29	75

One filament per box



Diffusion Pump Silicones

All Fil-Tech's fluids are the functional equivalent to Dow Corning's DC702, DC704, and DC705, respectively. They can be mixed and/or reprocessed together in any portion with their respective counterpart. Fil-Tech sells silicones!

FIL-TECH FT702, FT704 AND FT705 SILICONES REPLACE THE NO-LONGER-AVAILABLE DOW CORNING DC702, DC704 AND DC705 SILICONES

FT702 Phenylmethylsiloxane

is an economical general purpose silicone fluid for pumping large gas loads with thermal stability and oxidation resistance. Vacuum 10-5 to 10-7 torr.

FT704 Tetramethyltetraphenyltrisiloxane

is a single component fluid extensively used for applicators requiring rapid pump down of large gas loads. For performance and economics, your best choice. Vacuum 10-5 to 10-8 torr.

FT705 Pentaphenyltrimethyltrisiloxane

is a single component fluid for ultra high and ultra clean vacuums. For lowest ultimate pressure, your best choice. Higher resistance to crystallization. Vacuum 10-5 to 10-10 torr.

FT702	REPROCEESSING
1 Gallon	\$380
5 Gallon	1,700

FT704

500 cc	\$80	
1 Gallon	480	180
5 Gallon	2,200	

FT705

500 cc	\$125	
1 Gallon	750	185
5 Gallon	3,600	



Call Fil-Tech at 800-743-1743 for a free DOT approved pail to collect your used fluid for remanufacture.

TRADEMARKS

Fil-Tech®

OTHER TRADEMARK OWNERS

- Agilent® Agilent Technologies, Inc.
- Alcatel® Alcatel Vacuum Technology
- AMAT® Applied Materials, Inc.
- Axcelis® Axcelis Technologies, Inc.
- Chemours® The Chemours Company
- Convectron® MKS Instruments
- Dow Corning® Dow Corning Corp.
- CTI/Brooks® Brooks Automation, Inc.
- Hastings® Teledyne Technologies, Inc.
- High Performance® Ferrotec Corp.
- INFICON®
- INFICON® Advanced Adhesion Alloy®
- Longer Life Gold®
- Quality Crystals®
- Stress Relieving Alloy®
- InstruTech® InstruTech
- Intellectrics® Intellevation Ltd.
- Ion Tech® Veeco Instruments, Inc.
- Kaufman & Robinson® Kaufman & Robinson
- Krytox® The Chemours Company FC, LLC
- Lam® Lam Research Corporation
- Leybold® Oerlikon Leybold Vacuum
- Maxtek® INFICON
- MKS® MKS Instruments
- Novellus® Novellus Systems, Inc.
- Phelps® Phelps Electronic, Inc.
- Q-Sense® Biolin Scientific Holding, AB
- Santovac® Arch Technology Holding, LLC
- Satisloh® Satisloh GmbH
- Sloan® Veeco Instruments, Inc.
- SuperSource® Ferrotec Corp.
- Telemark® Telemark
- Temescal® Ferrotec Corp.
- Thermionics® TLI Enterprises, Inc.
- TorrLube® The Torr Lube Company, LLC
- ULVAC® ULVAC Technologies, Inc.
- Umicore® Umicore
- Unaxis® OC Oerlikon Corp., AG
- Veeco® Veeco Instruments, Inc.
- Windows® Microsoft, Inc.



SANTOVAC 5

Polyphenyl Ether Diffusion Pump Fluid

SANTOVAC® 5 will provide vacuums in the 10-10 torr range with exceptionally low vapor pressure and backstreaming. It is excellent for applications that must be free of silicones or those requiring ultra high, clean vacuums.

SANT5-006	65 cc	\$190
SANT5-01	100 cc	260
SANT5-05	500 cc	1,025
SANT5-1	1 Gallon	7,450



order online: www.filtech.com



MECHANICAL PUMP FLUIDS

FT19

Molecularly distilled hydrocarbon fluid for non-corrosive applications. FT19 works well for all mechanical pumps.

SPECIFICATIONS		SIZES	PRICE
Vapor Pressure @ 25°C	1 x 10-5 torr	1 Gallon	\$35
Viscosity @ 40°C	54 cst (251 SUS)	5 Gallon	100
Viscosity @100°C	8 cst (52.7 SUS)	55 Gallon	890

FT20

Doubly distilled hydrocarbon fluid for corrosive or reactive applications. Ideal for direct drive and belt driven mechanical pumps and also suitable for diffusion pump applications.

SPECIFICATIONS		SIZES	PRICE
Vapor Pressure @ 25°C	1 x 10-6 torr	1 Gallon	\$60
Viscosity @ 40°C	58 cst (269 SUS)	5 Gallon	225
Viscosity @100°C	8.5 cst (54.1 SUS)	55 Gallon	1,750

FT70

High grade oil with temperature resistance and wear protection with extreme load-carrying capability. FT70 is safe for yellow metals in single stage pumps that run hot.

SPECIFICATIONS		SIZES	PRICE
Vapor Pressure @ 25°C	1 x 10-4 torr	1 Gallon	\$45
Viscosity @ 40°C	75 cst (350 SUS)	5 Gallon	160
Viscosity @100°C	9.4 cst (58 SUS)	55 Gallon	1,125

FT77

Molecularly distilled hydrocarbon fluid for rotary piston pump in non-corrosive applications. It has the high viscosity required for the proper lubrication of piston pumps.

SPECIFICATIONS		SIZES	PRICE
Vapor Pressure @ 25°C	1 x 10-4 torr	1 Gallon	\$35
Viscosity @ 40°C	90 cst (418 SUS)	5 Gallon	125
Viscosity @100°C	10 cst (58.8 SUS)	55 Gallon	1,000

FT87

Molecularly distilled hydrocarbon for large rotary piston pumps and roots blowers in non-corrosive applications requiring higher viscosity fluids.

SPECIFICATIONS		SIZES	PRICE
Vapor Pressure @ 25°C	4 x 10-4 torr	1 Gallon	\$40
Viscosity @ 40°C	175 cst (800 SUS)	5 Gallon	145
Viscosity @100°C	20 cst (97 SUS)	55 Gallon	945



Fil-Tech stocks hydrocarbon oils for mechanical vacuum pumps in 1, 5 and 55 gallon sizes. Our oils are drop-in replacements for the industry standard fluids for roots blowers, rotary piston, and mechanical vacuum pumps used in corrosive or non-corrosive applications.

Call if you have questions regarding a cross-reference oil for your application.

FT97

Molecularly distilled hydrocarbon for large rotary piston pumps and roots blowers in non-corrosive applications requiring highest viscosity fluids.

SPECIFICATIONS		SIZES	PRICE
Vapor Pressure @ 25°C	4 x 10-4 torr	1 Gallon	\$45
Viscosity @ 40°C	205 cst (950 SUS)	5 Gallon	160
Viscosity @100°C	18 cst (85 SUS)	55 Gallon	1,090

FTTW

TECHNICAL WHITE

Molecularly distilled hydrocarbon fluid containing no additives. Specifically recommended for mechanical pumps exposed to reactive or corrosive gases. FTTW is the longest lasting hydrocarbon fluid.

SPECIFICATIONS		SIZES	PRICE
Vapor Pressure @ 25°C	<1 x 10-6 torr	1 Gallon	\$60
Viscosity @ 40°C	56 cst (260 SUS)	5 Gallon	225
Viscosity @100°C	9 cst (55.4 SUS)	55 Gallon	1,800

KRYTOX VACUUM PUMP FLUIDS

Krytox® Fluid

Chemours Krytox fluids are totally perfluorinated polyether fluids (PFPE) that are suitable for the harsh environments associated with semiconductor processes. The fluids are chemically inert, thermally stable, oxygen resistant and nonflammable. Available with controlled low vapor pressures and viscosities. Applications include plasma etching, LPCVP and 100% oxygen service.

Remanufacturing Service

Fil-Tech's remanufacturing service restores your contaminated KRYTOX or other PFPE fluids to their original properties at high recovery yields. The cost is a fraction of the price of new fluid. Call for pricing.



Authorized Distributor of Krytox™, a Brand of The Chemours Company

1506	\$335/kg
1514	335/kg
1525	335/kg
1514XP	360/kg
1525XP	360/kg
XP Rust preventative fluid	
PFPE SOLVENT	
KXSOLV-1	\$500/gallon

Contact us for quantity discounts.

Call Fil-Tech for a free DOT approved pail to collect your used fluid for remanufacture. 800-743-1743

KRYTOX VACUUM GREASES

Chemours has a series of Krytox (PFPE) vacuum greases suitable for various applications. Your viscosity, temperature and vapor pressure requirements will determine your choice of grease. All Krytox greases are inert and suitable for applications requiring high temperature stability and low vapor pressure. They show excellent resistance to the aggressive environments inherent in the semiconductor industry. Krytox greases are oxygen compatible and hydrocarbon free.

SPECIFICATIONS		2 oz	8 oz	Kg	TEMPERATURE RANGE	VISCOSITY AT 40°C	VAPOR PRESSURE AT 40°C
Electronic Grade EG Greases	EG2000	\$110	\$440	\$2,010	-34°/288°C	240 cSt	2 x 10-8 torr
	EG3000	110	440	2,010	-29°/316°C	440 cSt	6 x 10-9 torr
Aerospace 240 Greases (milspec)	240AB	225	780	2,485	-40°/232°C	78 cSt	5 x 10-6 torr
	240AC	225	780	2,485	-34°/288°C	270 cSt	8 x 10-8 torr
	240AD	225	780	2,485	-29°/316°C	500 cSt	6 x 10-9 torr
Low Vapor Pressure Grease	LVP	112	408	1,640	15°/300°C	740 cSt	1 x 10-13 torr
General Purpose Greases	GPL202	50	160	555	-63°/132°C	15 cSt	Standard Grade
	GPL203	48	155	540	-60°/154°C	30 cSt	Standard Grade
	GPL205	48	155	540	-36°/204°C	160 cSt	Standard Grade
	GPL206	48	155	540	-36°/260°C	243 cSt	Standard Grade
	GPL207	48	155	540	-30°/288°C	450 cSt	Standard Grade
	GPL224	48	155	540	-51°/179°C	60 cSt	Anti Corrosion
	GPL226	48	155	540	-36°/260°C	160 cSt	Anti Corrosion
	GPL227	48	155	540	-30°/288°C	440 cSt	Anti Corrosion

KRYTOX GENERAL PURPOSE OILS

Krytox GPL oils are clear, colorless, fluorinated synthetic oils that are non reactive, nonflammable, safe in chemical and oxygen service, and long-lasting.

	Kg	TEMPERATURE RANGE	VISCOSITY AT 40°C
GPL101	\$565	-70°/104°C	7.8 cSt
GPL102	545	-63°/132°C	15 cSt
GPL103	545	-60°/154°C	30 cSt
GPL104	545	-51°/179°C	60 cSt
GPL105	545	-36°/204°C	160 cSt
GPL106	545	-36°/260°C	243 cSt
GPL107	545	-30°/288°C	450 cSt

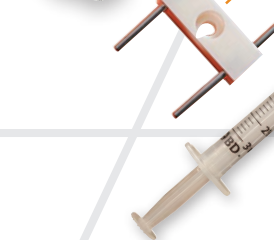


Fil-Tech

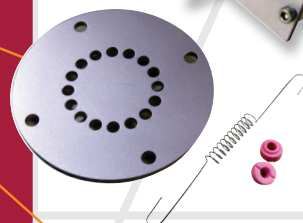
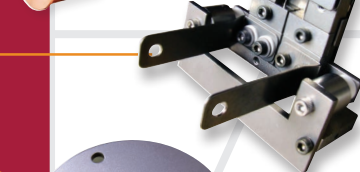
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