

Precision Microwave Tuners for Dielectric Resonator

These precise tuners provide fine, stable adjustments to microwave components such as cavities, DRO's, wave guides and filters. Applications as diverse as space telemetry to supermarket door openers use these products. The self-locking slots in the threads together with the fine pitch provide reliable permanent settings. They eliminate the loose fits and low resolution of standard threads. Tuning is smooth with controlled torque and no noise.

Bushings, rotors and dielectric rods may be purchased separately.

The DRO tuners are sealed either with an O-ring or by a true hermetic solder seal. The many versions of screw tuners are either entirely metallic or with dielectric rods of sapphire, alumina, or quartz.

THE LINE IS EXPANDING WITH NEW PARTS ADDED CONTINUALLY. IF YOU CAN'T FIND THE PERFECT PART FOR YOUR APPLICATION, CALL US AND WE WILL DESIGN IT.



SELECTION GUIDE	
Style	Designation
DRO tuners	D & DK
DRO hermetically sealed tuners	D-HS
Metallic tuning elements	MT
Metallic rotors	MR
Dielectric tuning elements	DT
Dielectric rotors	DR
LC tuning elements	LCT
Tuning element Taps	VT

NOTE: Drawing tolerances where not specified XXX ± .005 XX ± .016

TUNING ELEMENT TAPS

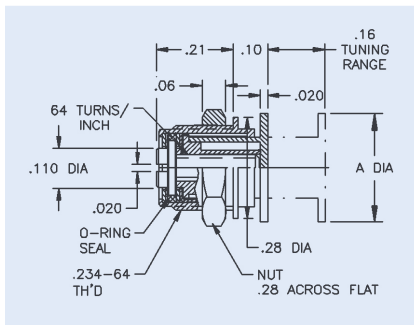
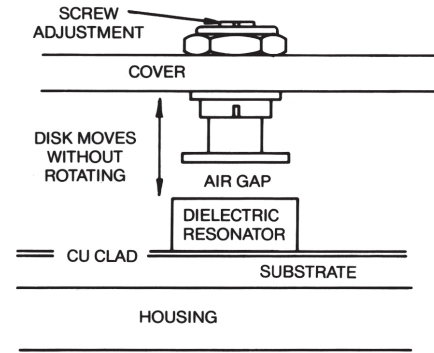
Voltronics offers fluted taps for each part because the thread sizes are fine and non-standard.

Part Number	Thread Size	For Series	Hole Size
VT-0	1.7MM-0.2MM	DR067	.0591
VT-1	.094-80	MR094, MT067	.0827
VT-2	.120-80	MT094	.1078
VT-3	.156-64	MR156, V7119	.1400
VT-4	.190-64	MT156, MR190, DR190, DK1A	.1747
VT-5	.234-64	MT190, MR190, D1A, D1AHS	.2187
VT-6	.250-64	LCT-1, LCT-2	.2347

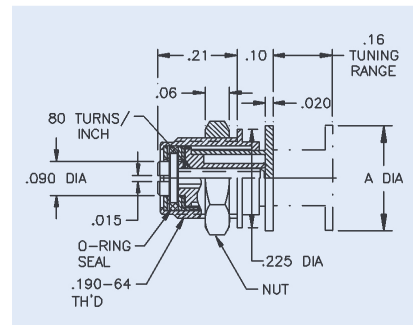
Oscillators and Microwave Cavities

DRO TUNERS

The Voltronics DRO Tuner design is based upon the proven tuning mechanisms of its trimmer capacitors. The parts have O-ring sealed front ends, long life, positive stops and low loss. The tuners have up to 10 full turns of resolution. The disk diameter ("A" Dim.) can be modified to meet your requirements. The hermetically sealed parts have high temperature solder joints. When soldered into your case, there is a hermetic barrier to the inside of your cavity. The part's O-ring seal keeps moisture and other contaminants from getting inside the tuner.

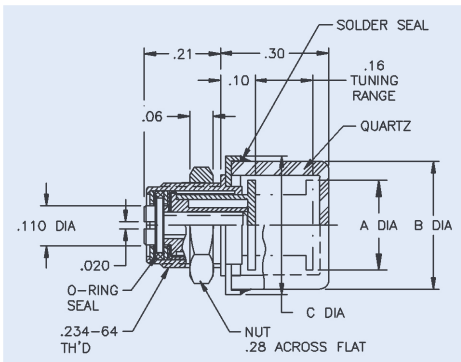


Part No.	A
D1A15	.168
D1A20	.20
D1A25	.25
D1A30	.30
D1A35	.35
D1A63	.63

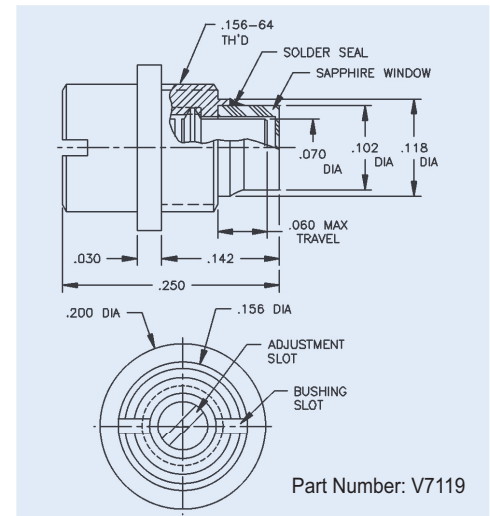


Part No.	A
DK1A15	.15
DK1A20	.20
DK1A25	.25
DK1A30	.30

HERMETICALLY SEALED DRO TUNERS



Part No.	A	B	C
D1A15HS	.150	.275	.306
D1A20HS	.200	.315	.345
D1A25HS	.250	.354	.385
D1A50HS	.500	.610	.640



NEW DESIGNS

Voltronics continues to develop new products for microwave tuning. Sizes and materials can be modified on most of the parts shown here. Call the factory with your requirements.

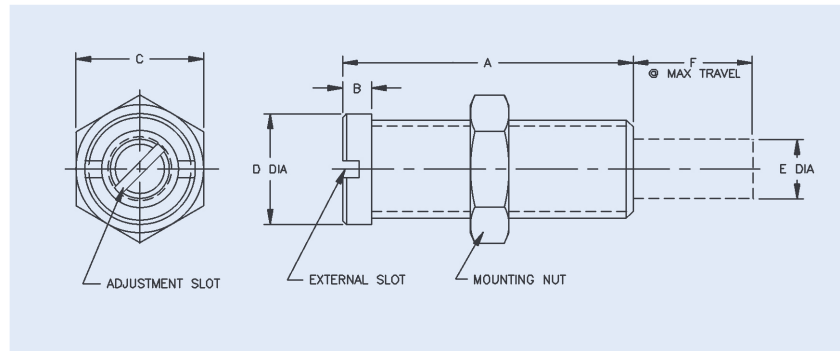
IN	0.015	0.020	0.030	0.060	0.062	0.070	0.083	0.090	0.100	0.102	0.108	0.118	0.120	0.140	0.142	0.150
MM	0.38	0.51	0.76	1.52	1.57	1.78	2.10	2.29	2.54	2.59	2.74	3.00	3.05	3.56	3.61	3.81
IN	0.156	0.160	0.168	0.175	0.190	0.200	0.210	0.219	0.225	0.234	0.235	0.250	0.275	0.280	0.300	0.306
MM	3.96	4.06	4.27	4.44	4.83	5.08	5.33	5.55	5.72	5.94	5.96	6.35	6.99	7.11	7.62	7.77
IN	0.315	0.345	0.350	0.354	0.385	0.500	0.610	0.630	0.640							
MM	8.00	8.76	8.89	8.99	9.78	12.70	15.49	16.00	16.26							

Precision Microwave Tuners

METALLIC TUNING ELEMENTS

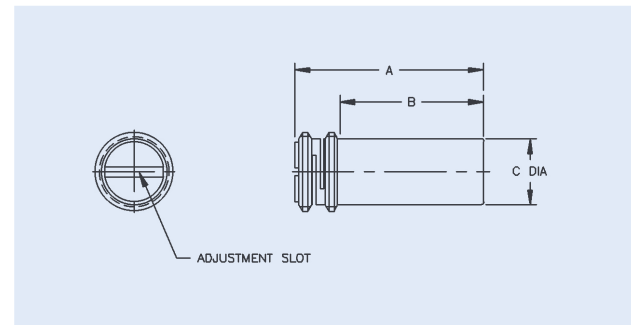
Part Number	A	B	C	D	E	F	Thread UNS-2
MT067-1*	0.145	--	0.114	--	0.054	0.060	.094-80
MT094-1	0.120	0.035	0.156	0.135	0.072	0.030	.120-80
MT094-2	0.120	0.035	0.156	0.135	0.072	0.075	.120-80
MT094-3	0.240	0.035	0.156	0.135	0.072	0.075	.120-80
MT094-4	0.240	0.035	0.156	0.135	0.072	0.148	.120-80
MT156-1	0.125	0.037	0.220	0.210	0.125	0.023	.190-64
MT156-2	0.250	0.037	0.220	0.210	0.125	0.148	.190-64
MT190-1	0.130	0.035	0.280	0.267	0.160	0.025	.234-64
MT190-2	0.187	0.031	0.280	0.267	0.160	0.106	.234-64
MT190-3	0.210	0.035	0.280	0.267	0.160	0.106	.234-64
MT190-4	0.210	0.035	0.280	0.267	0.160	0.180	.234-64
MT190-5	0.360	0.145	0.280	0.267	0.160	0.255	.234-64
MT190-6	0.450	0.240	0.280	0.267	0.160	0.340	.234-64

*Nut is .114 diameter by .070 thick and threaded bushing is slotted.



METALLIC ROTORS

Part Number	A	B	C	Thread UNS-2
MR094-1	0.122	0.030	0.072	.094-80
MR094-2	0.167	0.075	0.072	.094-80
MR094-3	0.240	0.148	0.072	.094-80
MR156-1	0.125	0.023	0.125	.156-64
MR156-2	0.250	0.148	0.125	.156-64
MR190-1	0.210	0.106	0.160	.190-64
MR190-2	0.359	0.255	0.160	.190-64
MR190-3	0.449	0.345	0.160	.190-64
MR190-4	0.554	0.450	0.160	.190-64



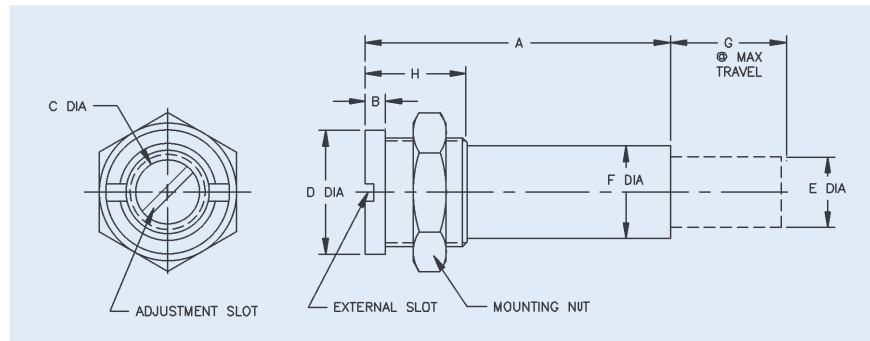
IN	0.009	0.010	0.023	0.025	0.030	0.031	0.035	0.037	0.047	0.054	0.060	0.062	0.072	0.075	0.094	0.100	0.106	0.114	0.120	0.122	0.125	0.130	0.135	0.144	0.145	0.148
MM	0.23	0.25	0.58	0.64	0.76	0.79	0.89	0.94	1.19	1.37	1.52	1.57	1.83	1.91	2.39	2.54	2.69	2.90	3.05	3.10	3.18	3.30	3.43	3.66	3.68	3.76

IN	0.152	0.156	0.160	0.167	0.180	0.187	0.190	0.195	0.210	0.220	0.232	0.234	0.240	0.250	0.255	0.267	0.270	0.280	0.281	0.300	0.312	0.340	0.345	0.354	0.359	0.360
MM	3.86	3.96	4.06	4.24	4.57	4.75	4.83	4.95	5.33	5.59	5.89	5.94	6.10	6.35	6.48	6.78	6.86	7.11	7.14	7.62	7.92	8.64	8.76	8.99	9.12	9.14

IN	0.369	0.394	0.420	0.430	0.449	0.450	0.475	0.494	0.495	0.500	0.550	0.554	0.625	0.674	0.700	0.750	0.874	0.884	1.000
MM	9.37	10.01	10.67	10.92	11.40	11.43	12.07	12.55	12.57	12.70	13.97	14.07	15.88	17.12	17.78	19.05	22.20	22.45	25.40

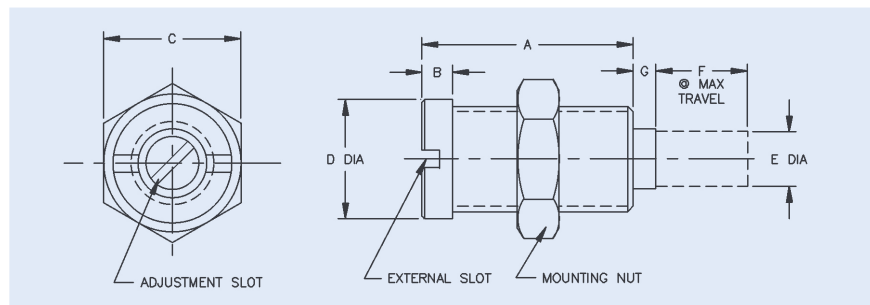
LC TUNING ELEMENTS

Part Number	A	B	C	D	E	F	G	H	Thread UNS-2
LCT-1	0.700	0.047	0.145	0.281	0.160	0.210	0.250	0.232	.250-64
LCT-2	1.000	0.047	0.145	0.281	0.160	0.210	0.375	0.232	.250-64



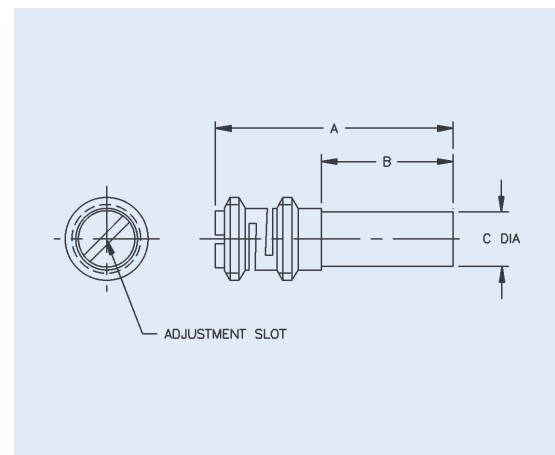
DIELECTRIC TUNING ELEMENTS

Part Number	A	B	C	D	E	F	G	Thread UNS-2	Dielectric Material
DT190-1	0.210	0.035	0.280	0.267	0.152	0.106	0.009	.234-64	Sapphire
DT190-2	0.359	0.144	0.280	0.267	0.152	0.010	0.010	.234-64	Sapphire
DT190-3	0.359	0.144	0.280	0.267	0.152	0.270	0.270	.234-64	Alumina



DIELECTRIC ROTORS

Part Number	A	B	C	Thread UNS-2	Dielectric Material
DR067-1	0.494	0.394	0.030	1.7mm-0.2mm*	Sapphire
DR067-2	0.494	0.394	0.030	1.7mm-0.2mm*	Alumina
DR067-3	0.494	0.394	0.030	1.7mm-0.2mm*	Quartz
DR190-1	0.369	0.195	0.062	.190-64	Alumina
DR190-2	0.674	0.500	0.062	.190-64	Alumina
DR190-3	0.874	0.700	0.062	.190-64	Sapphire
DR190-4	0.375	0.220	0.152	.190-64	Alumina
DR190-5	0.439	0.300	0.152	.190-64	Alumina
DR190-6	0.503	0.345	0.152	.190-64	Alumina
DR190-7	0.567	0.420	0.152	.190-64	Alumina
DR190-8	0.649	0.495	0.152	.190-64	Alumina
DR190-9	0.904	0.750	0.152	.190-64	Alumina



*Threads are metric.