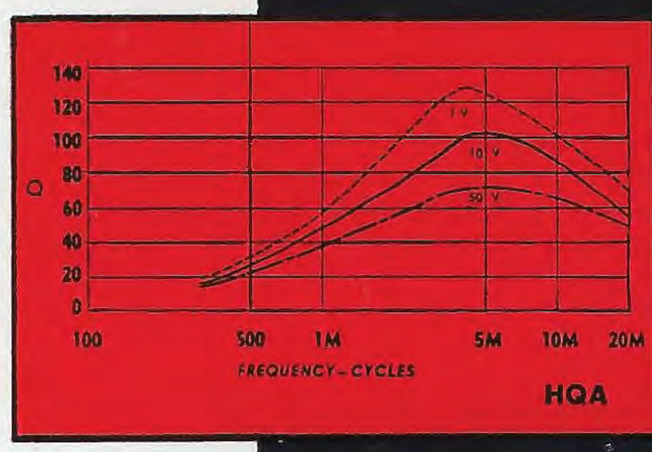
for High Q Inductors...

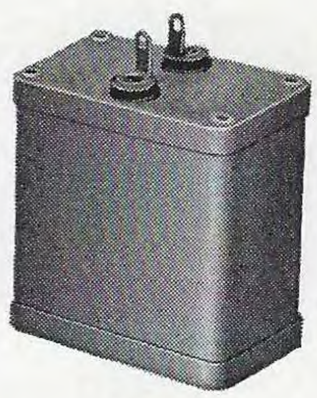
For Maximum Stability... Permalloy Dust Toroids

The UTC type HQ permalloy dust toroids are ideal for all audio, carrier and supersonic applications. HQA coils have Q over 100 at 5,000 cycles . . . HQB coils Q over 200 at 4,000 cycles . . . HQC coils Q over 200 at 30KC . . . HQD coils Q over 200 at 60 KC. The toroid dust core provides very low hum pickup . . . excellent stability with voltage change . . . negligible inductance change with temperature, etc. Precision adjusted to 1% tolerance.

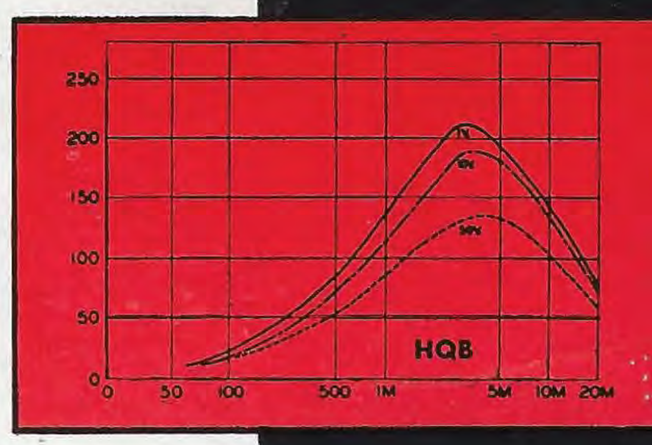
Inductance Value	Type No.	Net Price	Inductance Value	Type No.	Net Price
5 mhy.	HQA-1	$7.00	70 mhy.	HQB-3	$16.00
12.5 mhy.	HQA-2	7.00	120 mhy.	HQB-4	17.00
20 mhy.	HQA-3	7.50	.5 hy.	HQB-5	17.00
30 mhy.	HQA-4	7.50	1 hy.	HQB-6	18.00
50 mhy.	HQA-5	8.00	2 hy.	HQB-7	19.00
80 mhy.	HQA-6	8.00	3.5 hy.	HQB-8	20.00
125 mhy.	HQA-7	9.00	7.5 hy.	HQB-9	21.00
200 mhy.	HQA-8	9.00	12 hy.	HQB-10	22.00
300 mhy.	HQA-9	10.00	18 hy.	HQB-11	23.00
.5 hy.	HQA-10	10.00	25 hy.	HQB-12	24.00
.75 hy.	HQA-11	10.00	1 mhy.	HQC-1	13.00
1.25 hy.	HQA-12	11.00	2.5 mhy.	HQC-2	13.00
2 hy.	HQA-13	11.00	5 mhy.	HQC-3	13.00
3 hy.	HQA-14	13.00	10 mhy.	HQC-4	13.00
5 hy.	HQA-15	14.00	20 mhy.	HQC-5	13.00
7.5 hy.	HQA-16	15.00	.4 mhy.	HQD-1	15.00
10 hy.	HQA-17	16.00	1 mhy.	HQD-2	15.00
15 hy.	HQA-18	17.00	2.5 mhy.	HQD-3	15.00
10 mhy.	HQB-1	16.00	5 mhy.	HQD-4	15.00
30 mhy.	HQB-2	16.00	15 mhy.	HQD-5	15.00

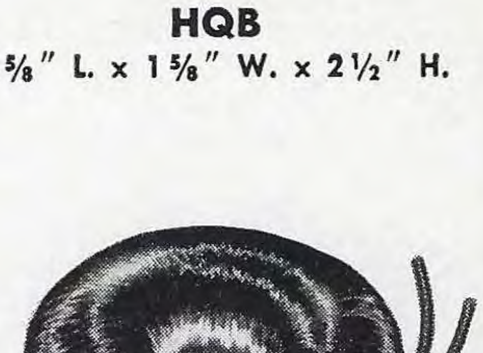
HQA, C, D
$1\frac{13}{16}$" Dia. x $1\frac{3}{16}$" High.



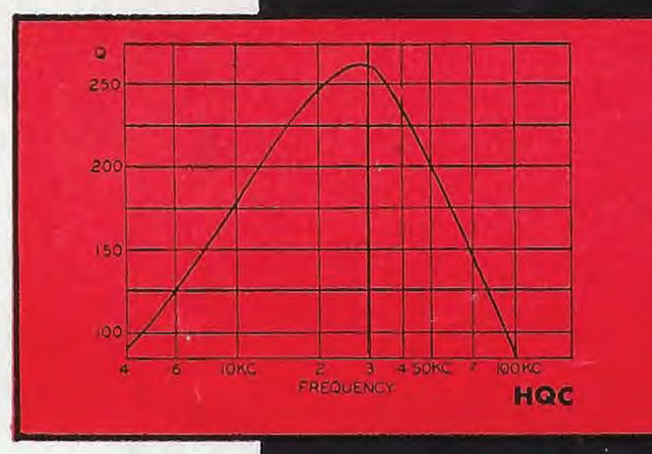


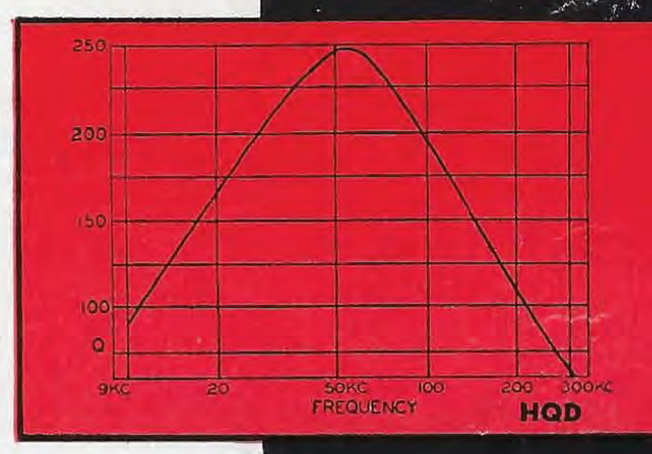
HQB
$2\frac{5}{8}$" L. x $1\frac{5}{8}$" W. x $2\frac{1}{2}$" H.





UNCASED TOROIDS
(Deduct $1.50 for uncased units)

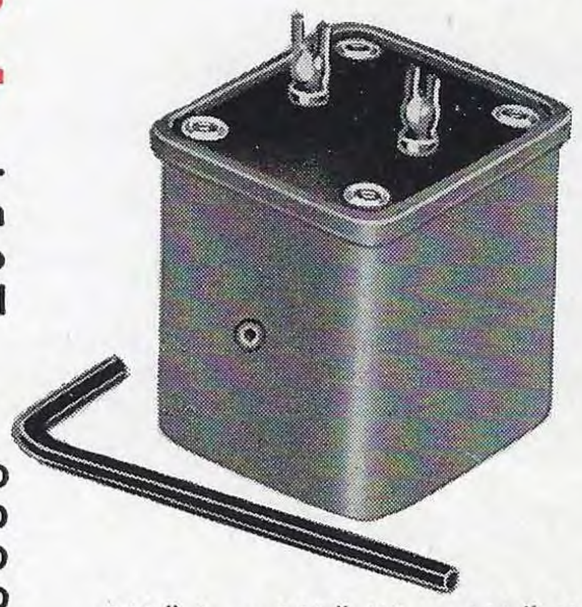




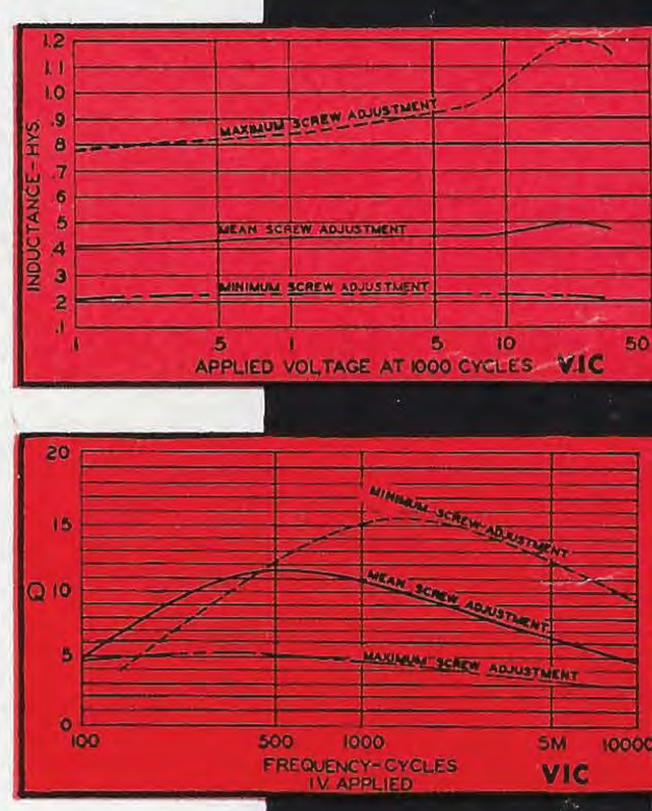
For Maximum Flexibility... The VIC Variable Inductor

The set screw on VIC units permits positive adjustment of inductance to plus 90% minus 50% from rated value. Revolutionary approach for tuned audio circuits. Q and L vs. screw adjustment for a typical coil are illustrated.

Type	Mean Hys.	List Price	Type	Mean Hys.	List Price
VIC-1	.0085	$11.00	VIC-11	.85	$14.00
VIC-2	.013	11.00	VIC-12	1.3	14.00
VIC-3	.021	11.00	VIC-13	2.2	14.00
VIC-4	.034	11.00	VIC-14	3.4	14.00
VIC-5	.053	11.00	VIC-15	5.4	16.50
VIC-6	.084	11.00	VIC-16	8.5	16.50
VIC-7	.13	14.00	VIC-17	13	16.50
VIC-8	.21	14.00	VIC-18	21	16.50
VIC-9	.34	14.00	VIC-19	33	16.50
VIC-10	.54	14.00	VIC-20	52	16.50
			VIC-21	83	17.50



$1\frac{3}{8}$" L. x $1\frac{1}{4}$" W. x $1\frac{1}{2}$" H.



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Write for catalog PS-408

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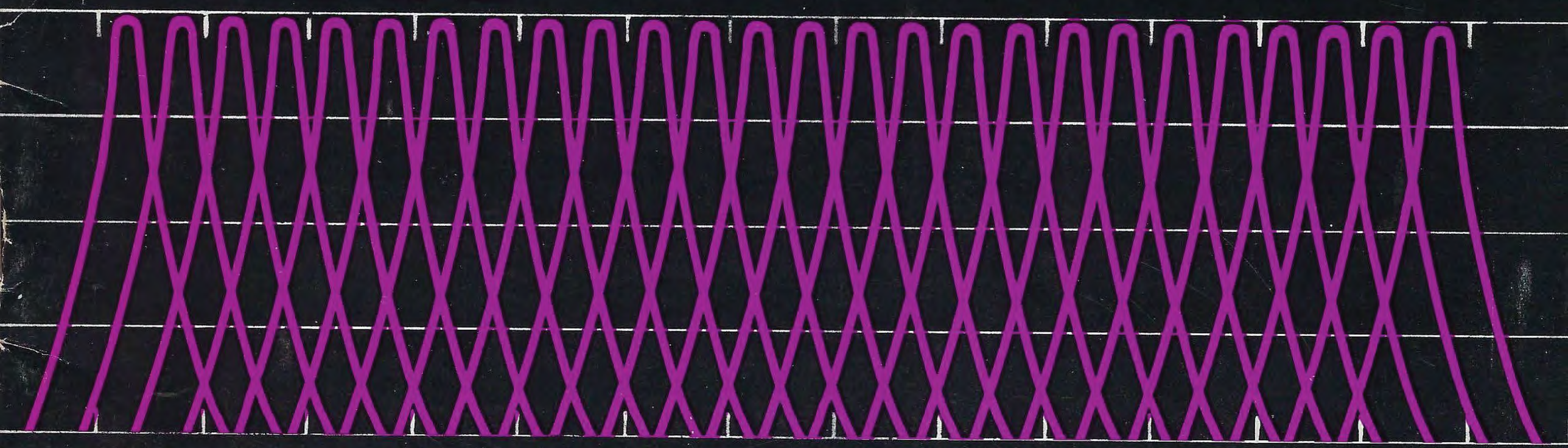
FILTERS

AND RELATED NETWORKS

HIGH Q COILS

TOROID / VARIABLE / TAPPED



F1959/60

UNITED TRANSFORMER CORPORATION · 150 VARICK STREET · NEW YORK 13, N. Y.

PACIFIC MANUFACTURING DIVISION · 4008 WEST JEFFERSON BOULEVARD · LOS ANGELES, CALIFORNIA

SPECIALISTS IN FILTERS AND HIGH Q COILS

Precision Q meter measurements

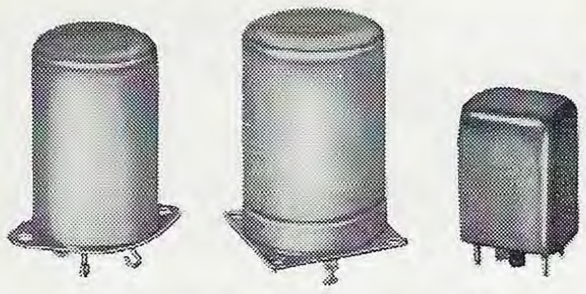
Filter development laboratory

UTC has specialized in filters and high Q coils for over 25 years . . . producing a million permalloy dust toroids before others reached the state of ability to enter this field. This pioneering has continued into present UTC products, resulting in unique toroid winding equipment for higher Q . . . superior stabilization techniques for toroid and laminated structures . . . higher reliability of both L and C filter elements . . . extreme miniaturization . . . variable and saturable inductors, etc.

This catalogue covers the most complete line of stock filters and high Q coils for electronic applications. Since the bulk of our production in these areas is to customer's specifications, numerous illustrations of special products are also included.

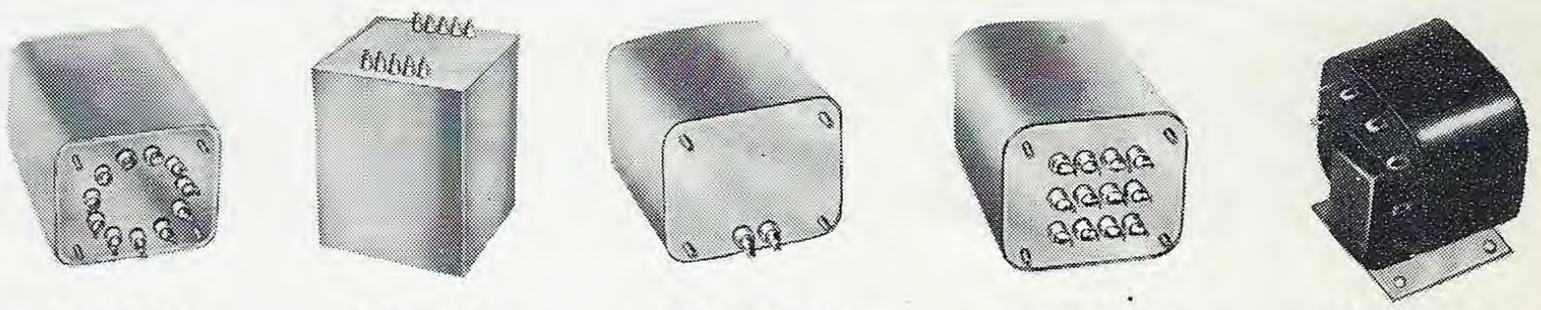
For other stock UTC products, some of which are illustrated below, write for Catalogue G.

HERMETIC AUDIOS



FOR TUBE, TRANSISTOR, CHOPPER, AND MATCHING SERVICE. .8 to 12 OZ.

HERMETIC POWER COMPONENTS *Military, Industrial*



POWER TO 1200 VCT.

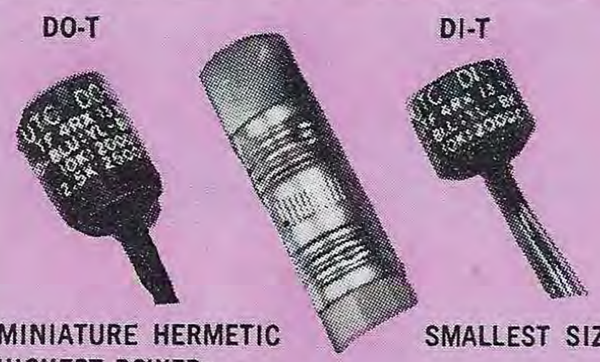
PLATE TO 6 KV CT.

REACTORS TO 1.25A.

FILAMENT TO 5V 60A.

FILAMENT 400 CYCLE.

TRANSISTOR AUDIO



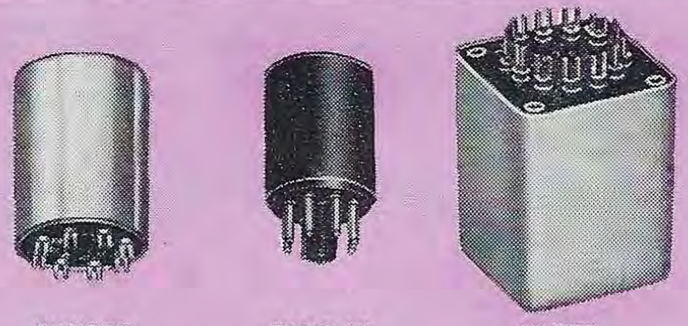
DO-T

DI-T

MINIATURE HERMETIC HIGHEST POWER

SMALLEST SIZE

COMPACT WIDE RANGE

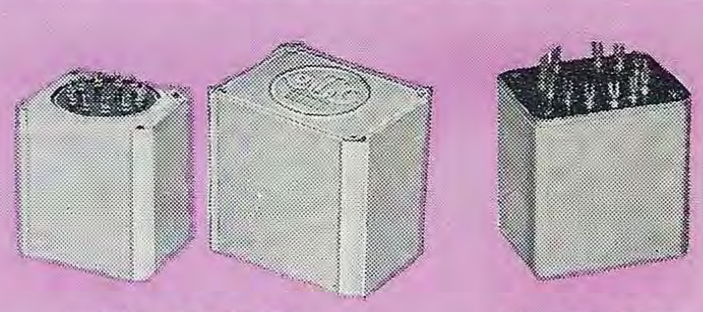


OUNCER

PLUG-IN

ULTRA COMPACT

HIGHEST FIDELITY



LINEAR STANDARD BROADCAST AND HI-FI FAVORITES

HIPERMALLOY FAVORITES

TRANSISTOR POWER

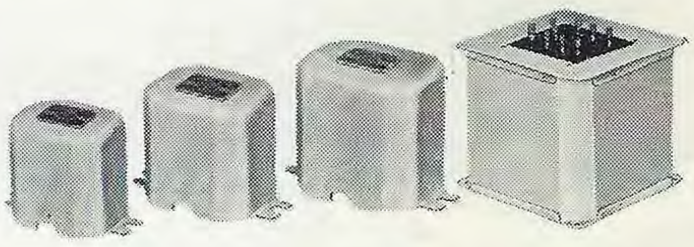
INVERTERS TO 550V .2A FROM BATTERY

TRANSISTOR SUPPLY TO 50V 7.5A

COMMERCIAL GRADE

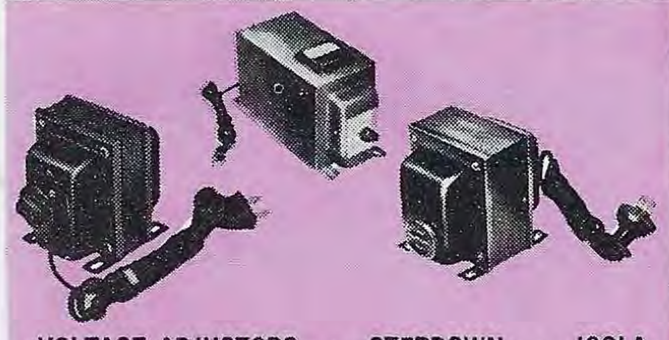
A COMPLETE LINE OF AUDIO AND POWER UNITS FOR COMMERCIAL EQUIPMENT.

AMATEUR SERIES



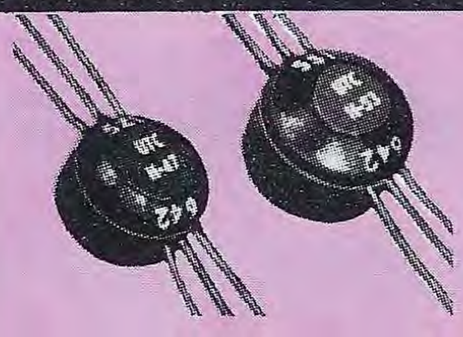
COMPLETE LINE OF AUDIO AND POWER FOR HAM, MARINE, ETC. COMMUNICATIONS.

LINE ADAPTORS

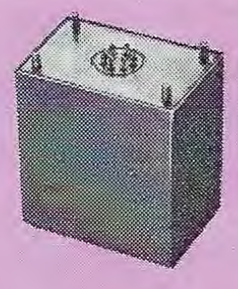


VOLTAGE ADJUSTORS . . . STEPDOWN . . . ISOLATION UNITS TO 2500 W.

PULSE MAGN. AMPS.

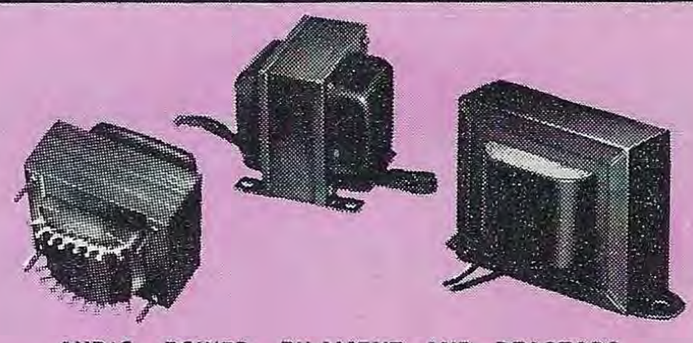


MINIATURE, WOUND CORE, .05 TO 25 uSec.



FOR SERVO MOTORS 2 TO 18 WATTS.

REPLACEMENT TYPES



AUDIO, POWER, FILAMENT AND REACTORS TO 200 MA.

INDEX AND NET PRICE LIST

FILTERS

EQUALIZERS and SOUND EFFECTS FILTERS

Type	Page	Net
3A	7	$180.00
3AX	7	270.00
4C	7	240.00

INTERSTAGE and LINE FILTERS

Type	Page	Net
Special freq.		48.00
BMI-60	5	27.00
BMI-100	5	27.00
BMI-120	5	27.00
BMI-400	5	27.00
BMI-500	5	27.00
BMI-750	5	27.00
BMI-1000	5	27.00
BMI-1500	5	27.00
BMI-2000	5	27.00
BMI-3000	5	27.00
BMI-4000	5	27.00
BMI-5000	5	27.00
BMI-10000	5	27.00
BTI-60	5	27.00
BTI-100	5	27.00
BTI-120	5	27.00
HMI-200	5	30.00
HMI-400	5	30.00
HMI-500	5	30.00
HMI-800	5	30.00
HMI-1000	5	30.00
HMI-2000	5	30.00
HMI-3000	5	30.00
LMI-200	5	30.00
LMI-400	5	30.00
LMI-500	5	30.00
LMI-800	5	30.00
LMI-1000	5	30.00
LMI-1500	5	30.00
LMI-2000	5	30.00
LMI-2500	5	30.00
LMI-3000	5	30.00
LMI-4000	5	30.00
LMI-5000	5	30.00
LMI-10000	5	30.00
BML-400	5	27.00
BML-1000	5	27.00
HML-200	5	33.00
HML-300	5	33.00
HML-500	5	33.00
HML-1000	5	33.00
LML-1000	5	30.00
LML-1500	5	30.00
LML-2000	5	30.00
LML-2500	5	30.00
LML-4000	5	30.00
LML-8000	5	30.00
LML-10000	5	30.00
LML-12000	5	30.00

MINIATURE FILTERS

Type	Page	Net
Special freq.		48.00
BPM-400	6	27.00
BPM-750	6	27.00
BPM-1000	6	27.00
BPM-1500	6	27.00
BPM-2000	6	27.00
BPM-10000	6	27.00
HPM-500	6	30.00
HPM-1000	6	30.00
LPM-200	6	$30.00
LPM-500	6	30.00
LPM-1000	6	30.00
LPM-2000	6	30.00
LPM-3000	6	30.00
LPM-5000	6	30.00

TELEGRAPH RECEIVING FILTERS

Type	Page	Net
TGR-425	7	66.00
TGR-595	7	66.00
TGR-765	7	66.00
TGR-935	7	66.00
TGR-1105	7	63.00
TGR-1275	7	63.00
TGR-1445	7	63.00
TGR-1615	7	63.00
TGR-1785	7	60.00
TGR-1955	7	60.00
TGR-2125	7	60.00
TGR-2295	7	60.00
TGR-2465	7	57.00
TGR-2635	7	57.00
TGR-2805	7	57.00
TGR-2975	7	57.00

TELEGRAPH TRANSMITTING FILTERS

Type	Page	Net
TGT-425	7	39.00
TGT-595	7	39.00
TGT-765	7	39.00
TGT-935	7	39.00
TGT-1105	7	36.00
TGT-1275	7	36.00
TGT-1445	7	36.00
TGT-1615	7	36.00
TGT-1785	7	33.00
TGT-1955	7	33.00
TGT-2125	7	33.00
TGT-2295	7	33.00
TGT-2465	7	30.00
TGT-2635	7	30.00
TGT-2805	7	30.00
TGT-2975	7	30.00

TELEMETERING FILTERS

Type	Page	Net
TMN-.4	6	39.00
TMN-.56	6	39.00
TMN-.73	6	39.00
TMN-.96	6	39.00
TMN-1.3	6	39.00
TMN-1.7	6	39.00
TMN-2.3	6	39.00
TMN-3.0	6	39.00
TMN-3.9	6	39.00
TMN-5.4	6	39.00
TMN-7.35	6	39.00
TMN-10.5	6	36.00
TMN-14.5	6	36.00
TMN-22	6	36.00
TMN-30	6	36.00
TMN-40	6	36.00
TMN-52.5	6	36.00
TMN-70	6	36.00
TMW-22	6	36.00
TMW-30	6	36.00
TMW-40	6	36.00
TMW-52.5	6	36.00
TMW-70	6	36.00

HIGH Q COILS

DECADE INDUCTORS

Type	Page	Net
DI-1	12	$42.00
DI-2	12	45.00
DI-3	12	51.00
DI-4	12	66.00

HQ TOROIDS

Type	Page	Net
HQA-1	9	7.50
HQA-2	9	7.80
HQA-3	9	8.10
HQA-4	9	8.40
HQA-5	9	8.70
HQA-6	9	9.00
HQA-7	9	9.00
HQA-8	9	9.60
HQA-9	9	9.60
HQA-10	9	9.90
HQA-11	9	9.90
HQA-12	9	10.80
HQA-13	9	11.40
HQA-14	9	12.90
HQA-15	9	13.80
HQA-16	9	15.00
HQA-17	9	15.90
HQA-18	9	16.80
HQB-1	9	15.00
HQB-2	9	15.30
HQB-3	9	15.90
HQB-4	9	16.80
HQB-5	9	17.40
HQB-6	9	18.00
HQB-7	9	18.90
HQB-8	9	19.80
HQB-9	9	21.00
HQB-10	9	21.90
HQB-11	9	22.80
HQB-12	9	24.00
HQC-1	9	15.60
HQC-2	9	16.80
HQC-3	9	18.00
HQC-4	9	19.80
HQC-5	9	24.00
HQD-1	9	15.60
HQD-2	9	16.80
HQD-3	9	18.00
HQD-4	9	19.80
HQD-5	9	24.00
HQE-1	9	7.80
HQE-2	9	7.80
HQE-3	9	8.10
HQE-4	9	8.40
HQE-5	9	8.70

HVC VARIDUCTORS

Type	Page	Net
HVC-1	11	9.00
HVC-2	11	9.00
HVC-3	11	9.00
HVC-4	11	9.00
HVC-5	11	9.00
HVC-6	11	9.00
HVC-7	11	9.60
HVC-8	11	9.60
HVC-9	11	9.60
HVC-10	11	9.90
HVC-11	11	10.80
HVC-12	11	12.00

MINIDUCTORS

Type	Page	Net
MH-1	9	6.00
MH-2	9	6.00
MH-3	9	6.30
MH-4	9	$6.60
ML-1	9	7.20
ML-2	9	7.20
ML-3	9	7.20
ML-4	9	7.50
ML-5	9	7.50
ML-6	9	7.50
ML-7	9	7.50
ML-8	9	7.50
ML-9	9	7.80
ML-10	9	8.10
MM-1	9	6.00
MM-2	9	6.00
MM-3	9	6.30
MM-4	9	6.60

MQ TOROIDS

Type	Page	Net
MQA-1	10	7.50
MQA-2	10	7.80
MQA-3	10	8.10
MQA-4	10	8.40
MQA-5	10	8.70
MQA-6	10	9.00
MQA-7	10	9.30
MQA-8	10	9.60
MQA-9	10	9.90
MQA-10	10	10.20
MQA-11	10	10.50
MQA-12	10	10.80
MQA-13	10	11.10
MQA-14	10	11.40
MQA-15	10	12.00
MQA-16	10	12.90
MQA-17	10	13.80
MQA-18	10	15.00
MQA-19	10	18.00
MQB-1	10	12.90
MQB-2	10	13.20
MQB-3	10	13.50
MQB-4	10	13.80
MQB-5	10	14.10
MQB-6	10	14.40
MQB-7	10	14.70
MQB-8	10	15.00
MQB-9	10	15.90
MQB-10	10	16.80
MQB-11	10	18.00
MQB-12	10	19.20
MQD-1	10	15.00
MQD-2	10	15.60
MQD-3	10	16.20
MQD-4	10	16.80
MQD-5	10	18.00
MQD-6	10	21.00
MQE-1	10	7.20
MQE-2	10	7.50
MQE-3	10	7.80
MQE-4	10	7.80
MQE-5	10	8.10
MQE-6	10	8.40
MQE-7	10	8.40
MQE-8	10	8.70
MQE-9	10	8.70
MQE-10	10	9.00
MQE-11	10	9.00
MQE-12	10	9.30
MQE-13	10	9.90
MQE-14	10	10.80
MQE-15	10	12.00

LOW FREQU. COILS

Type	Page	Net
MQL-0	12	24.00
MQL-1	12	24.00
MQL-2	12	24.00
MQL-3	12	$25.50
MQL-4	12	27.00
MQL-5	12	28.50

TAPPED TOROIDS

Type	Page	Net
TQA-1	10	9.00
TQA-2	10	9.30
TQA-3	10	9.60
TQA-4	10	9.90
TQA-5	10	10.20
TQA-6	10	10.50
TQA-7	10	10.80
TQA-8	10	11.10
TQA-9	10	11.40
TQA-10	10	11.70
TQA-11	10	12.00
TQA-12	10	12.30
TQA-13	10	12.60
TQA-14	10	12.90
TQA-15	10	13.50
TQA-16	10	14.70
TQA-17	10	15.90
TQA-18	10	17.40
TQA-19	10	21.00

TAPPED VARIDUCTORS

Type	Page	Net
TVC-1	11	11.10
TVC-2	11	11.10
TVC-3	11	11.10
TVC-4	11	11.10
TVC-5	11	11.10
TVC-6	11	11.10
TVC-7	11	11.70
TVC-8	11	11.70
TVC-9	11	11.70
TVC-10	11	12.90
TVC-11	11	14.10
TVC-12	11	15.30

VIC VARIDUCTORS

Type	Page	Net
VIC-1	11	6.60
VIC-2	11	6.60
VIC-3	11	6.60
VIC-4	11	6.60
VIC-5	11	6.60
VIC-6	11	6.60
VIC-7	11	6.60
VIC-8	11	6.90
VIC-9	11	6.90
VIC-10	11	6.90
VIC-11	11	6.90
VIC-12	11	7.20
VIC-13	11	7.20
VIC-14	11	7.20
VIC-15	11	7.50
VIC-16	11	7.50
VIC-17	11	7.50
VIC-18	11	7.80
VIC-19	11	7.80
VIC-20	11	8.40
VIC-21	11	9.00
VIC-22	11	12.00

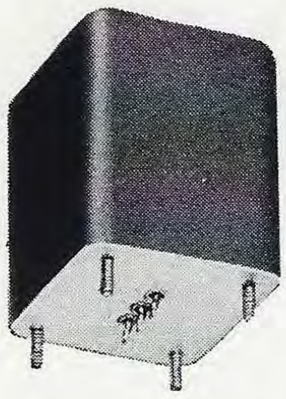
VOLTAGE ADJUSTERS

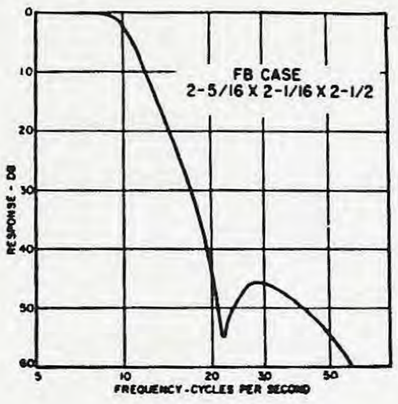
Type	Page	Net
V-1	42	20.00
V-1-M	42	35.00

Printed in U.S.A.

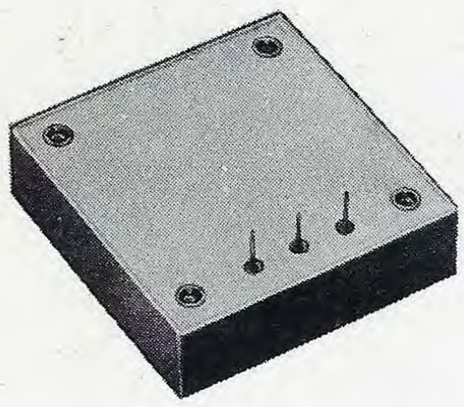
FILTERS TO SPECIFICATIONS

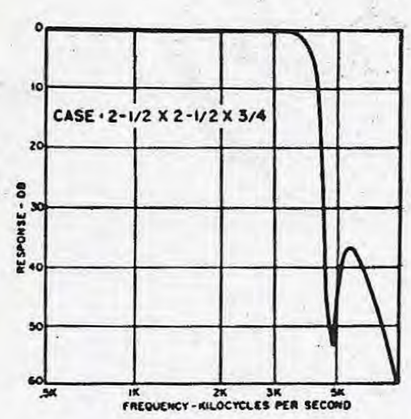
Since the bulk of UTC filters employ toroids and so do many saturable and precision units, these latter items are produced by our filter division. The illustrations below are intended to show some of the thousands of special units produced by UTC and to provide the equipment engineer with a concept of the possibilities in present special component design.



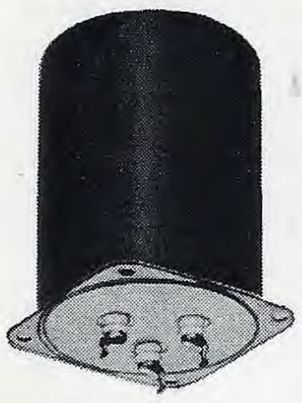


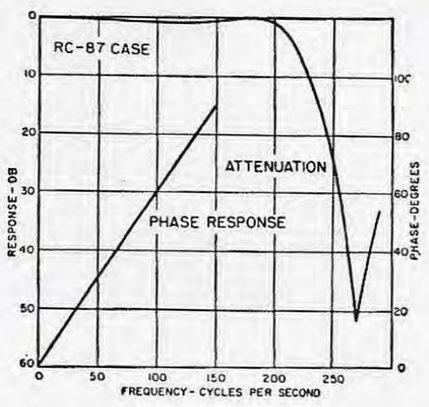
Ten cycles low pass filter. 100K to 200K. Attenuation less than 3 db to 10 cycles, greater than 40 db beyond 2nd harmonic. MIL-T-27A; 1.3 lbs.



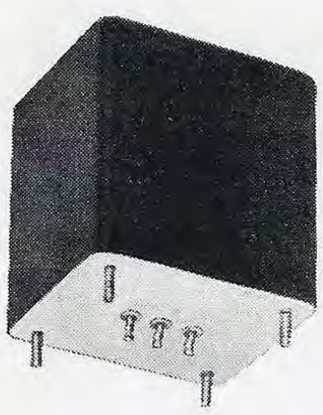


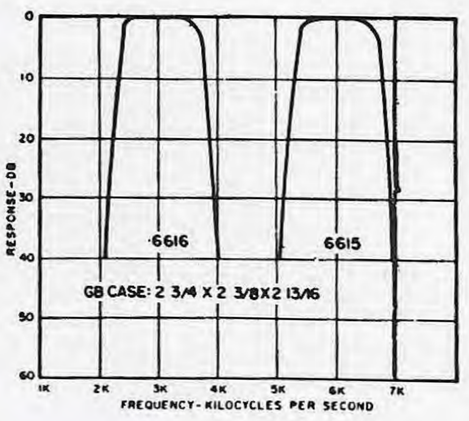
Miniaturized 3500 cycle low pass filter for printed circuitry. 6K to 6K. MIL-T-27A; .5 lbs.



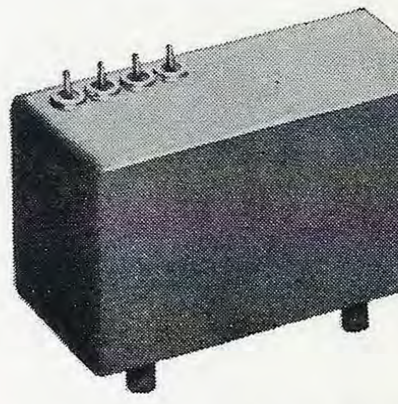


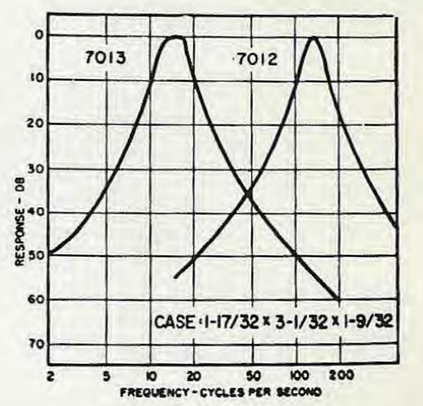
Linear phase slope low pass filter. Within 1 db to 150 cycles, greater than 20 db at 250 cycles. Phase linear to ± 2°. 300 ohms to 15K. MIL-T-27A; 1.5 lbs.



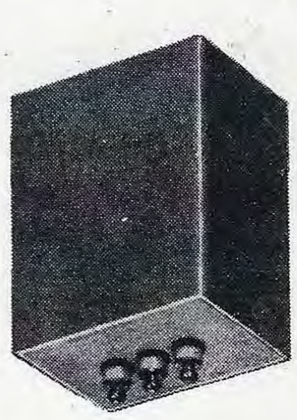


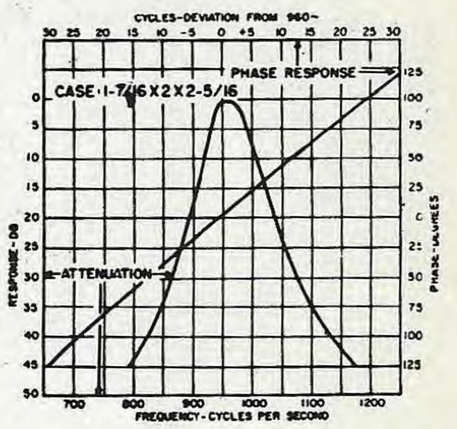
Three KC and 6 KC flat top band pass filters. 400 ohms to 20K. MIL-T-27A; each filter 1.7 lbs.



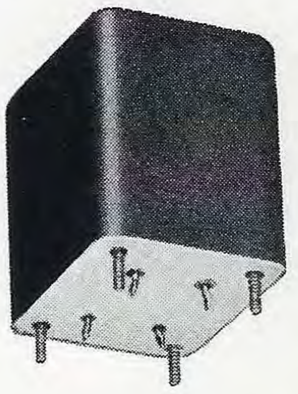


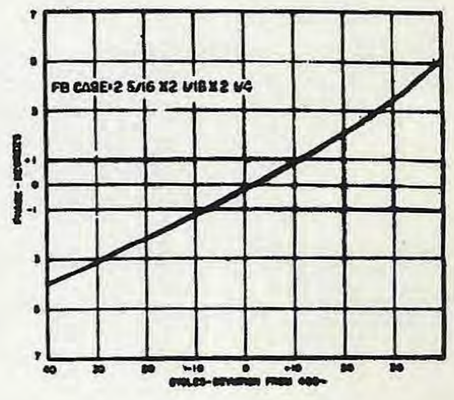
Fifteen cycle and 135 cycle filters for Tacan. 600 ohms to high impedance. Extreme stability —55°C. to +100°C. MIL-T-27A; .75 lbs. Precise 30 cycle transformer for omni-range also supplied.



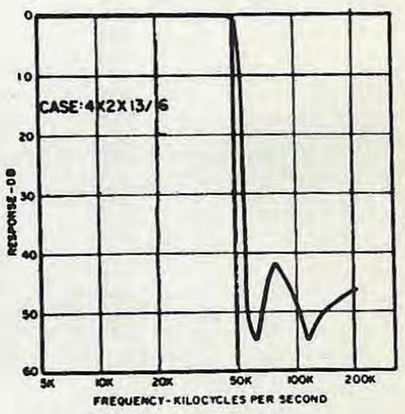


Linear phase slope 960 cycle band pass filter. 10K to grid. Center frequency within 2 cycles 0°C. to 60°C. MIL-T-27A; .7 lbs.



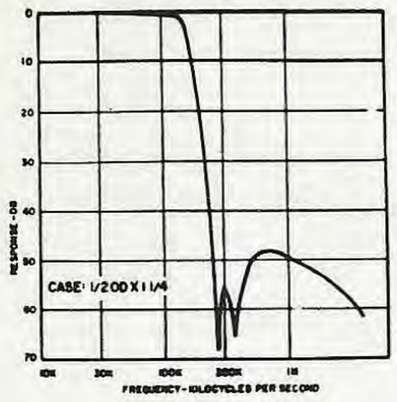


Minimum phase shift 400 cycle band pass filter. Within ± 1.5 db 370 to 430 cycles, greater than 45 db beyond 1100 cycles. 1K to 100K. MIL-T-27A; 1 lb.

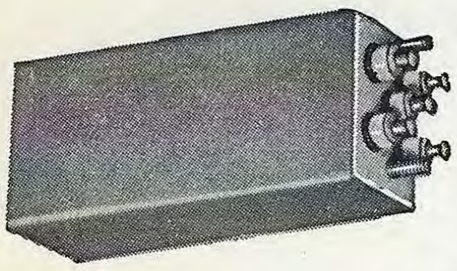


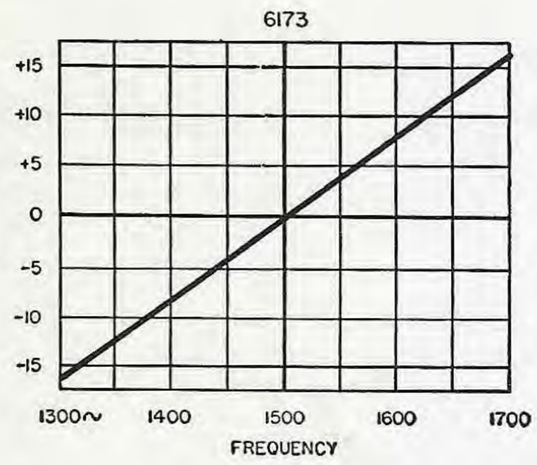
Sharp cutoff 49 KC low pass filter. Stable to .1 db in pass band from 0°C. to 85°C. Within 1 db 5 KC to 49 KC, over 40 db at 56 KC. MIL-T-27A; .6 lbs.

FILTERS TO SPECIFICATIONS

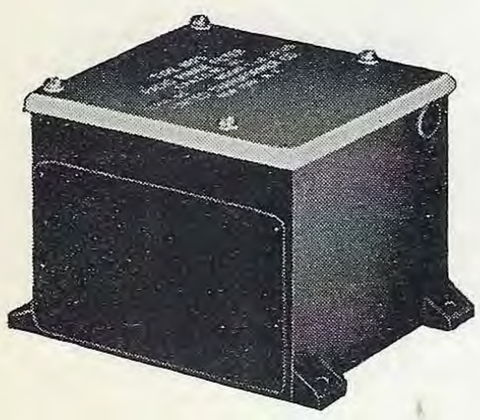


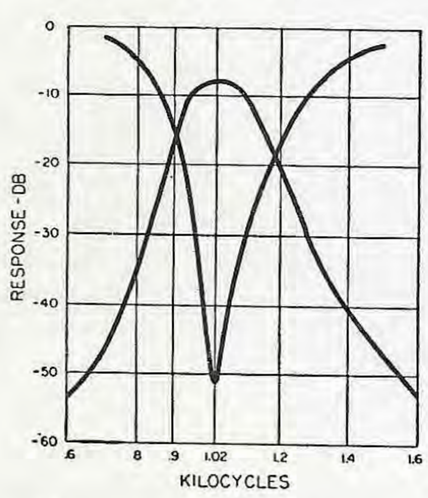
Miniature, molded, 150 KC low pass filter. Within ½ db to 100 KC, 3 db to 150 KC, over 45 db beyond 250 KC. 1500 ohms. MIL-T-27A; .33 oz.





UTC high Q discriminators provide exceptional amplification and linearity. Typical characteristics available are illustrated. Y axis values are volts. 1 1/16" x 1 3/8" x 3".

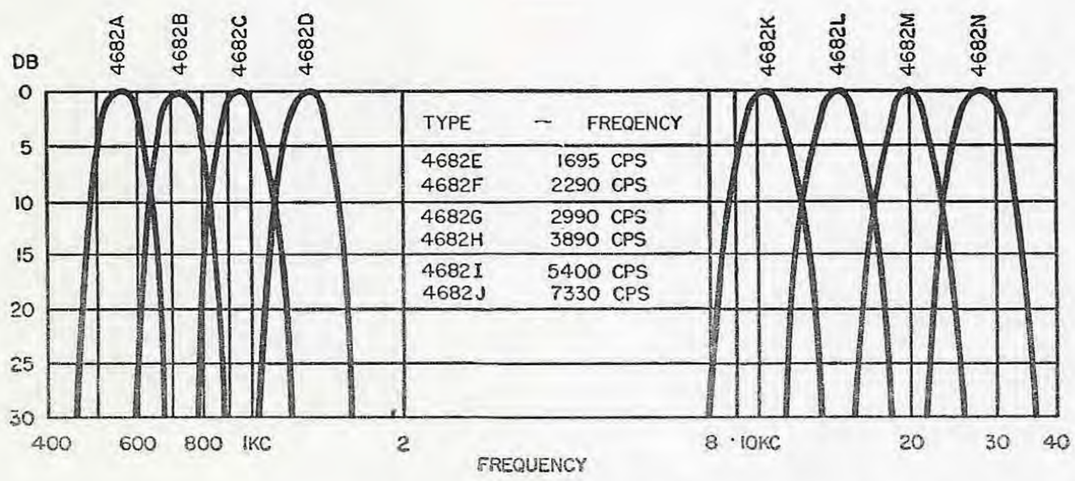


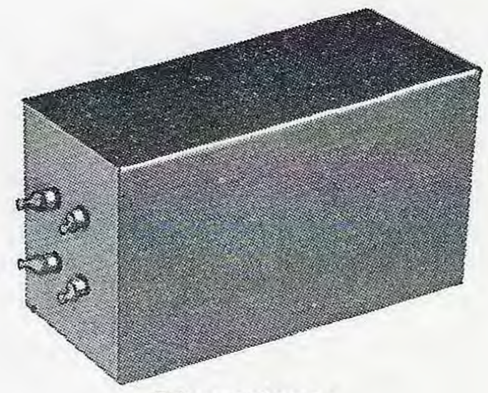


CAA approved RRF-5 aircraft filter serves to separate radio range signals from aural communication.

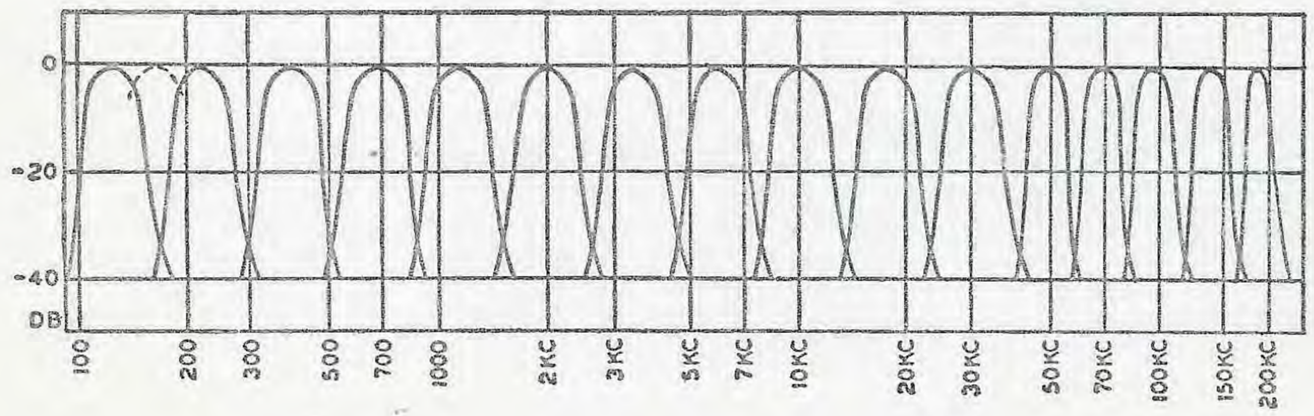
TELEMETERING FILTERS

UTC manufactures a wide variety of band pass filters for multi-channel telemetering. Illustrated are a group of filters supplied for 400 cycle to 40 KC service. Miniaturized units have been made for many applications. For example a group of 4 cubic inch units which provide 50 channels between 4 KC and 100 KC.

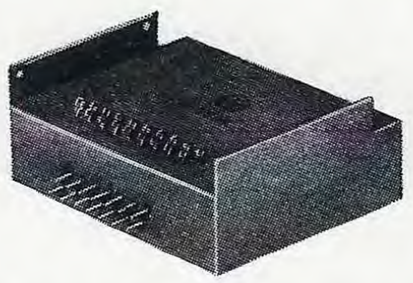


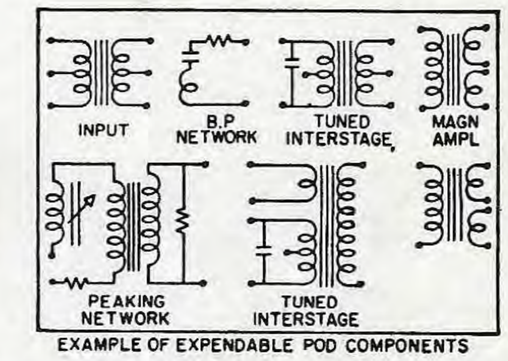


Dimensions:
(4682A) 2½ x 3⅛ x 5½".



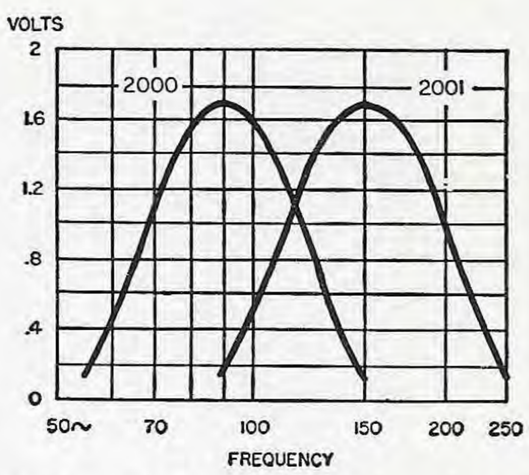
The curve illustrated shows a group of filters affording sixteen separate bands in the audio and supersonic region with 35 db attenuation at the cross-over points. These have also been supplied spaced further apart (40 db cross-over), with intermediate bands, permitting flat top band pass action for any selected range from 100 cycles to 200 KC.





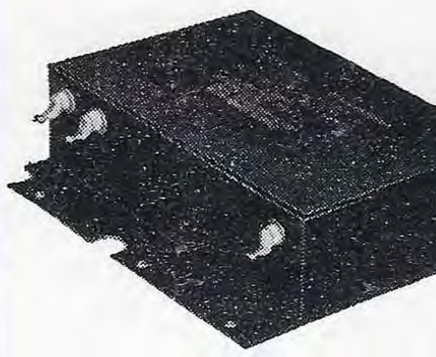
EXAMPLE OF EXPENDABLE POD COMPONENTS

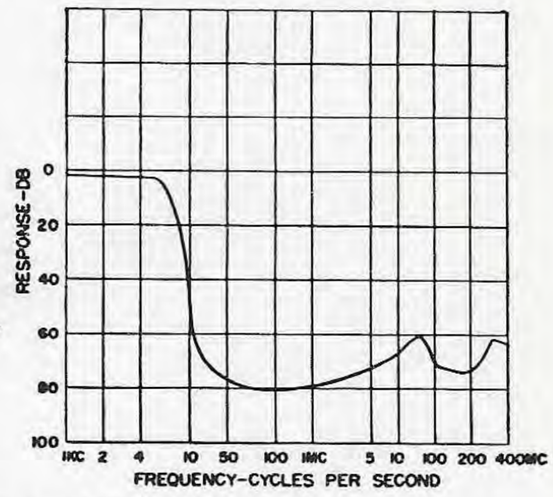
Example of extreme miniaturization by combining (and interconnecting) circuit elements in one case. All eight circuit groups in 3" x 4" x 1¼" case, 1.5 lbs.



UTC has produced the bulk of filters used in aircraft equipment.

Curves of our miniaturized 90 and 150 cycle filters for glide path systems. 1¼" x 1¾" x 1⅝".





Power line filter from sources of 50 to 400 cycles . . . noise attenuation is from 14 KC to 400 MC . . . 29 cubic inches.

INTERSTAGE and LINE FILTERS

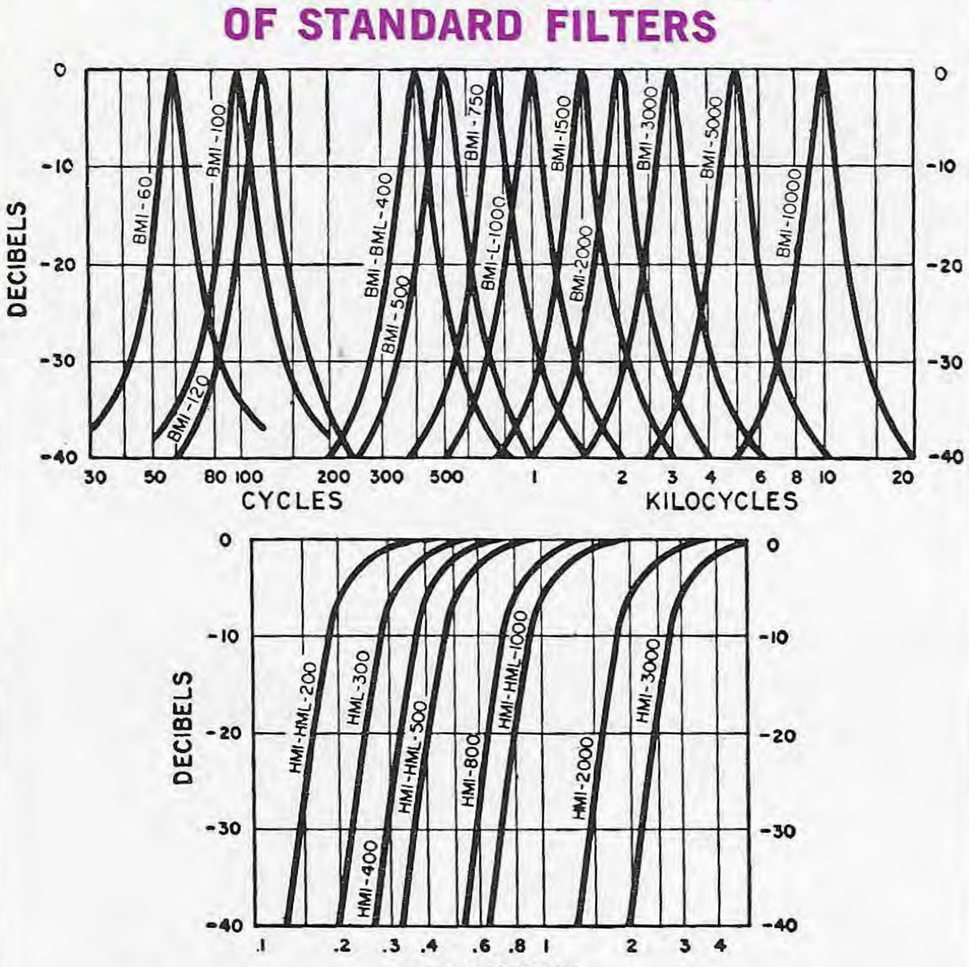
Hermetically sealed to MIL-T-27A and MIL-F-18327 Specs., see back cover.

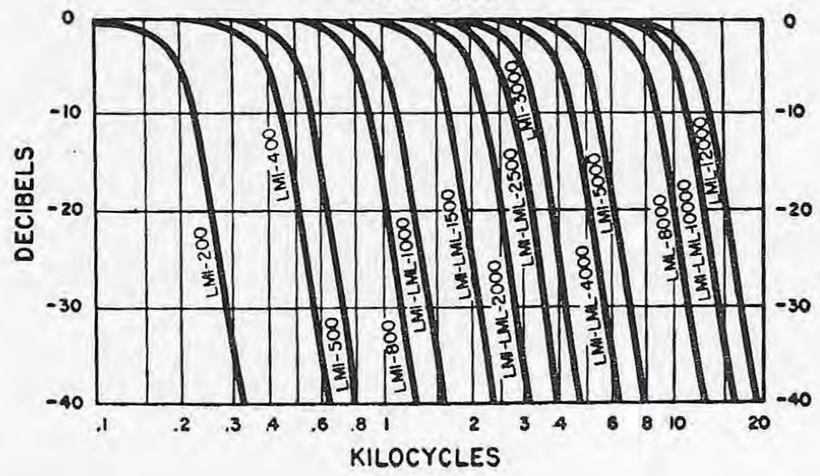
UTC standardized filters have been developed to cover the more common mid-range frequency filter requirements with stock units. All of these standard filters are in compact drawn hermetically sealed cases shielded to reduce hum pick-up. They are divided into six basic types.

The BMI filters are band pass interstage units designed to operate between a vacuum tube plate (or 10,000 ohms) and a grid. They provide a gain of 2 at center frequency. BTI units are same as BMI, but 10,000 ohms output.
BML band pass filters, similarly, work into a grid, but have an input impedance of 500/600 ohms. They provide a gain of 9.
HMI filters are high pass interstage units.
LMI filters are low pass interstage units.
HML filters are high pass with input and output impedance of 500/600 ohms.
LML filters are low pass filters with input and output impedance of 500/600 ohms.

In addition to the stock filters listed, any of the six types are available as special units. BMI, BML, HMI, and HML special filters can be obtained for any frequency from 60 to 12,000 cycles. LMI specials are available from 140 to 12,000 cycles. LML filters are available from 500 to 12,000 cycles. These items are ordered as type followed by frequency, for example, LMI-2800 would designate a low pass interstage filter with 2800 cycle cut-off frequency. These special units are priced at $48.00 net.

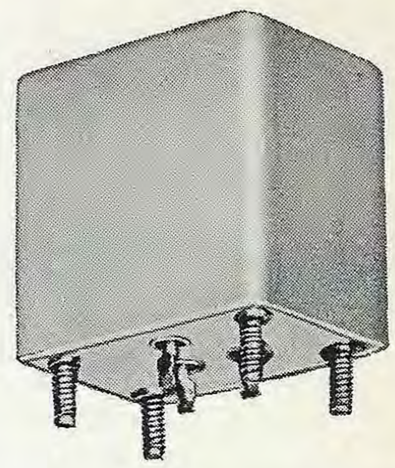
TYPICAL RESPONSE CURVES OF STANDARD FILTERS





FILTER CASE M

Base	1 3/16 x 1 11/16"
Mtg.	3/4 x 1 1/4"
Mtg. Studs (stainless)	6-32
Cutout	7/8" dia.
Height, BMI, LMI, BML	1 5/8"
Height, HMI, HML, LML	2 1/2"
Weight	6 oz. and 9 oz.



STANDARD FILTERS . . . STOCK FREQUENCIES

BMI units (Band Pass) have 2:1 gain. They are sharply peaked, having approximately 2 db attenuation at plus or minus 3% from center frequency and attenuation of 40 db per octave as shown. Input 10,000 ohms, output to grid.

BTI are same as BMI but with 10,000 ohms output for transistor applications.

HMI units (High Pass) have a loss of less than 6 db at cutoff frequency, and an attenuation of 35 db at .67 cutoff frequency. Input and output 10,000 ohms.

LMI units (Low Pass) have a loss of less than 6 db at cutoff frequency, and an attenuation of 35 db at 1.5 cutoff frequency. Input and output 10,000 ohms.

HML (High Pass) and LML (Low Pass) filters are similar to the interstage filters, in all characteristics, except that they are intended for an input and output impedance of 500/600 ohms.

BML (Band Pass) have input of 500/600 ohms, output to grid.

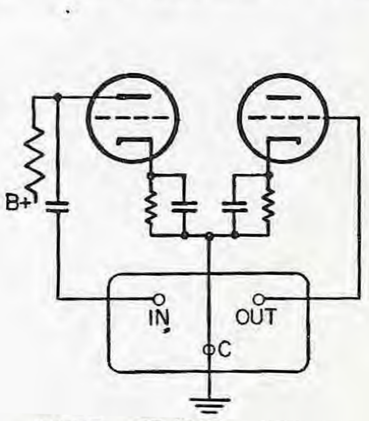
BMI-60	BTI-60	LMI-500	HML-200
BMI-100	BTI-100	LMI-800	HML-300
BMI-120	BTI-120	LMI-1000	HML-500
BMI-400	HMI-200	LMI-1500	HML-1000
BMI-500	HMI-400	LMI-2000	LML-1000
BMI-750	HMI-500	LMI-2500	LML-1500
BMI-1000	HMI-800	LMI-3000	LML-2000
BMI-1500	HMI-1000	LMI-4000	LML-2500
BMI-2000	HMI-2000	LMI-5000	LML-4000
BMI-3000	HMI-3000	LMI-10000	LML-8000
BMI-4000	LMI-200	BML-400	LML-10000
BMI-5000	LMI-400	BML-1000	LML-12000
BMI-10000			

FILTER TESTS

LMI and LML Filters are tested as per Fig. 1 with R equal to 10,000 ohms for LMI and 500/600 ohms for LML. E_G is held constant and E_L obtained at 1/5th cut-off frequency is used as zero on curve. E_L at other frequencies is then plotted in db.

HMI and HML Filters are tested as per Fig. 1 with R equal to 10,000 ohms for HMI and 500/600 ohms for HML. E_G is held constant and E_L obtained at five times cut-off frequency is used as zero on curve. E_L at other frequencies is then plotted in db.

BMI and BML are tested as per Fig. 2 with R equal to 10,000 ohms for BMI and 500/600 ohms for BML. Output is to unloaded grid. E_G is held constant and E_L obtained at center frequency is used as zero on curve (this is twice E_G for BMI's, nine times E_G for BML's). E_L at other frequencies is then plotted on db.



INTER STAGE FILTER CONNECTIONS

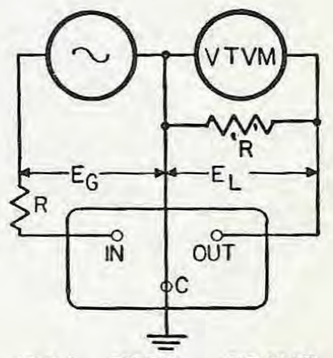


FIG. 1 TEST CIRCUIT LP AND HP FILTERS

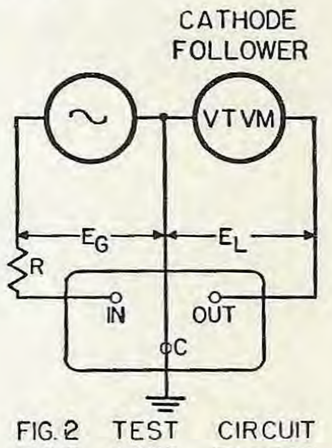


FIG. 2 TEST CIRCUIT BAND PASS FILTERS

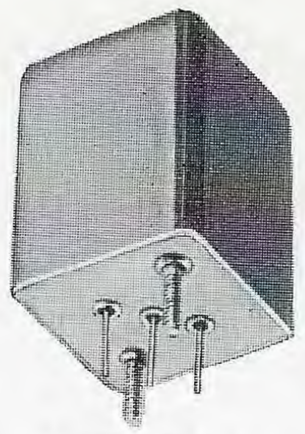
MINIFILTERS / *Hermetically sealed to MIL-T-27A and MIL-F-18327 Specs., see back cover.*

The UTC stock interstage filters on the opposite page have been an industry standard for over a decade. The new UTC miniature filters provide almost the same characteristics in an extremely miniaturized package. Attenuation of these miniature filters is only slightly less than their larger counterparts, as is operating level. Special filters can be supplied for any frequency above the minimum shown for each group, at $48.00 net. Straight pin terminals are provided for printed or standard circuits.

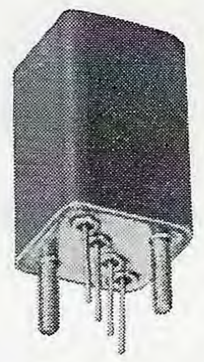
BPM units (band pass) have 2:1 gain. Attenuation is approximately 2 db ± 3% from center frequency, and 35 db per octave as shown. Input 10,000 ohms, output to grid, tapped for 10,000 ohms output to provide flexibility in transistor circuits. For tube circuits continuity is on grid side, for transistor use continuity is on input side.

HPM units (high pass) have a loss of less than 6 db at cutoff frequency, and an attenuation of 30 db at .67 cutoff frequency, 40 db at .6 cutoff frequency. Input and output 10,000 ohms.

LPM units (low pass) have a loss of less than 6 db at cutoff frequency, and an attenuation of 30 db at 1.5 cutoff frequency, 40 db at 1.65 cutoff frequency. Input and output 10,000 ohms.



HPM and LPM case (MIL AG)
1 x 1 x 1⅜"
Weight.....2¼ oz.

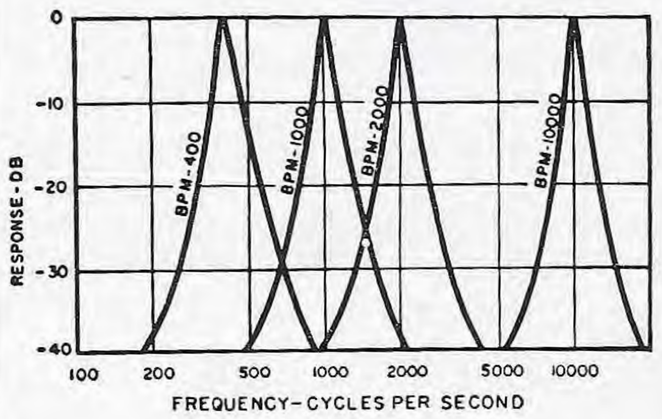


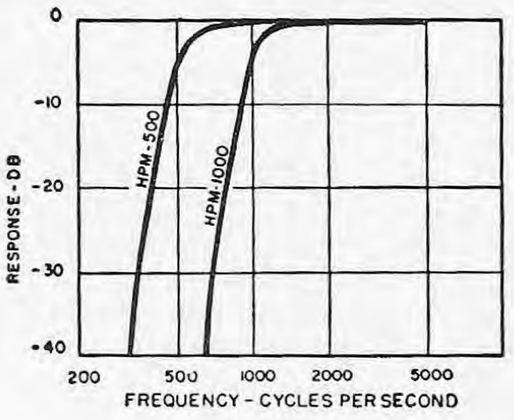
BPM case (MIL AF)
¾ x ¾ x 1⅛"
Weight.....1 oz.

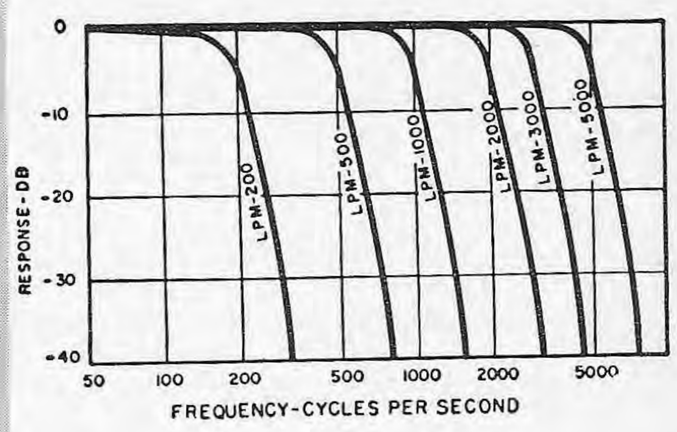
STANDARD FILTERS STOCK FREQUENCIES

BPM—400	BPM—10000	LPM—1000
BPM—750	HPM—500	LPM—2000
BPM—1000	HPM—1000	LPM—3000
BPM—1500	LPM—200	LPM—5000
BPM—2000	LPM—500	

TYPICAL RESPONSE CURVES OF MINIATURE FILTERS



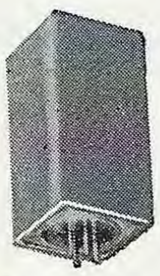




TELEMETERING BAND PASS FILTERS

Hermetically sealed to MIL-T-27A and MIL-F-18327 Specs., see back cover.

TMN-.4 thru TMN-1.7
1⅛ x 1³⁄₃₂ x 2"
Weight.....3.5 oz.



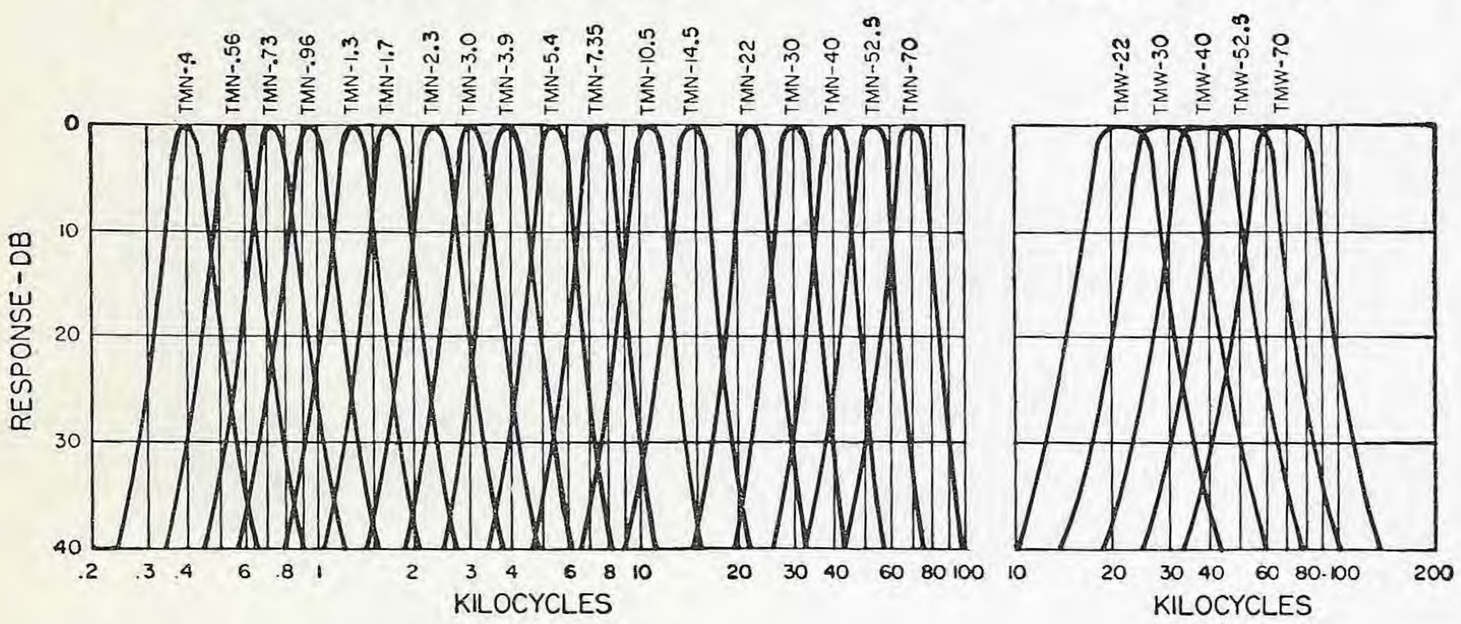
TMN-2.3 thru TMW-70
²³⁄₃₂ x ²³⁄₃₂ x 1⅜"
Weight.....1.2 oz.

UTC manufactures a wide variety of special filters for channel separation. One special group of noise analysis filters, for example, provides 50 channels between 4 KC and 100 KC in a total volume of 200 cubic inches. The standard group of UTC telemetering filters described below incorporates extreme miniaturization with maximum stability, a complete set of 18 filters taking a volume of approximately 19 cubic inches. Both TMN and TMW types are designed for 100K input and output impedance and have an insertion loss of less than 6 db. Four pin hermetic header matches small Winchester socket.

TMN filters are down less than 3 db at ± 7.5% of center frequency. They are down more than 18 db at ± 25% of center frequency. Attenuation is greater than 40 db beyond 1.75 F_c and .58 F_c.

TMW filters are down less than 3 db at ± 15% of center frequency. They are down more than 20 db at ± 50% of center frequency. Attenuation is greater than 40 db beyond 2.5 F_c and .4 F_c.

TYPICAL RESPONSE CURVES OF STANDARD TM FILTERS



Type No.	Center Frequ'cy KC	Band Width ±
TMN- .4	.4	7½%
TMN- .56	.56	7½%
TMN- .73	.73	7½%
TMN- .96	.96	7½%
TMN-1.3	1.3	7½%
TMN-1.7	1.7	7½%
TMN-2.3	2.3	7½%
TMN-3.0	3.0	7½%
TMN- 3.9	3.9	7½%
TMN- 5.4	5.4	7½%
TMN- 7.35	7.35	7½%
TMN-10.5	10.5	7½%
TMN-14.5	14.5	7½%
TMN-22	22	7½%
TMN-30	30	7½%
TMN-40	40	7½%
TMN-52.5	52.5	7½%
TMN-70	70	7½%
TMW-22	22	15%
TMW-30	30	15%
TMW-40	40	15%
TMW-52.5	52.5	15%
TMW-70	70	15%

TELEGRAPH TONE CHANNEL FILTERS

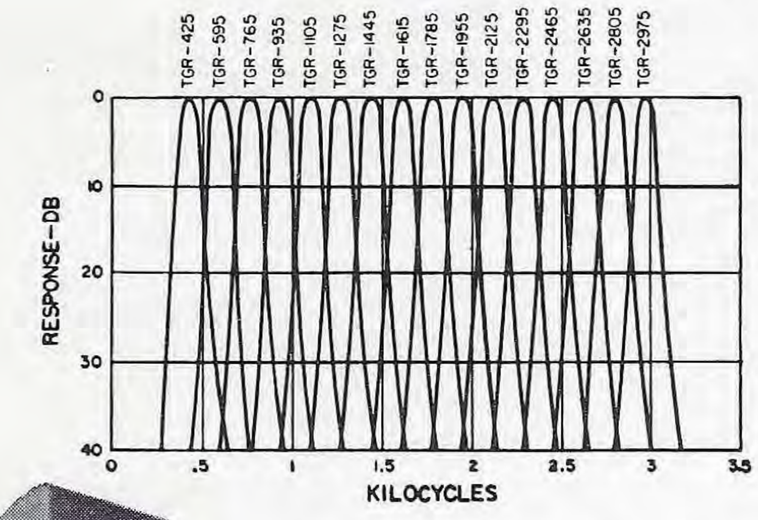
Hermetically sealed to MIL-T-27A and MIL-F-18327 Specs., see back cover.

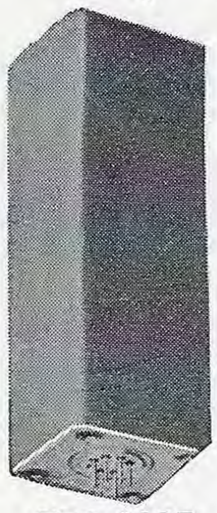
UTC band pass filters for multiplex transmitting and receiving provide maximum stability in miniature sizes. Stock filters cover all standard transmit and receive bands. All units employ 7 terminal header matching subminiature 7 pin socket.

TGR (receiving) filters are 600 ohms in and out. They are down less than 3 db at ± 42.5 cycles from center frequency and down more than 30 db at ± 170 cycles. Attenuation is greater than 15 db at adjacent channel crossover.

TGT (transmitting) filters are 600 ohms in and out. They are down less than 3 db at ± 42.5 cycles from center frequency and down more than 16 db at ± 170 cycles. Attenuation is greater than 7.5 db at adjacent channel crossover.

TYPICAL RESPONSE CURVES OF STANDARD TG FILTERS

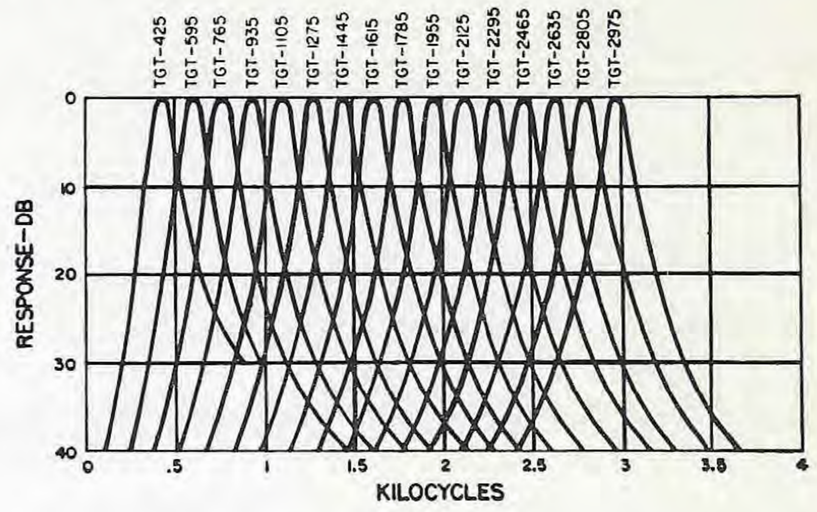


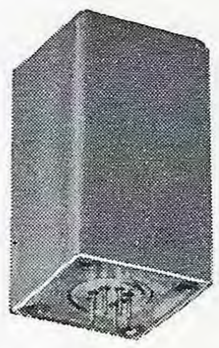


TGR CASE
1½ x 1½ x 4¼"
Mtg.....1⁄16 x 1⁄16"
Screws 6-32
Weight.....15 oz.

RECEIVING FILTERS

Type No.	Center Frequency (Cyc.)	Type No.	Center Frequency (Cyc.)
TGR-425	425	**TGR-1785**	1785
TGR-595	595	**TGR-1955**	1955
TGR-765	765	**TGR-2125**	2125
TGR-935	935	**TGR-2295**	2295
TGR-1105	1105	**TGR-2465**	2465
TGR-1275	1275	**TGR-2635**	2635
TGR-1445	1445	**TGR-2805**	2805
TGR-1615	1615	**TGR-2975**	2975





TGT CASE
1½ x 1½ x 2½"
Mtg.....1⁄16 x 1⁄16"
Screws 6-32
Weight.....8 oz.

TRANSMITTING FILTERS

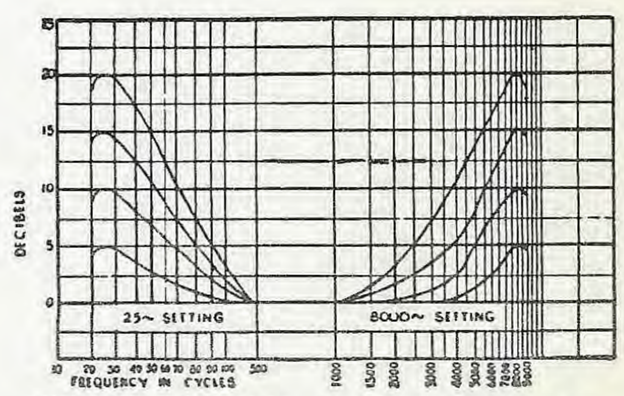
Type No.	Center Frequency (Cyc.)	Type No.	Center Frequency (Cyc.)
TGT-425	425	**TGT-1785**	1785
TGT-595	595	**TGT-1955**	1955
TGT-765	765	**TGT-2125**	2125
TGT-935	935	**TGT-2295**	2295
TGT-1105	1105	**TGT-2465**	2465
TGT-1275	1275	**TGT-2635**	2635
TGT-1445	1445	**TGT-2805**	2805
TGT-1615	1615	**TGT-2975**	2975

BROADCAST and RECORDING EQUALIZERS and FILTERS

500/600 ohms

3AX UNIVERSAL EQUALIZER. The universal characteristics of the UTC 3AX equalizer have made it the most popular item for broadcast and recording equalization. This unique unit, with which most communication engineers are already familiar, is an accurately calibrated, quickly adjustable, combined low and high frequency equalizer. The low frequency controls include a switch for adjusting the maximum equalization frequency to 25, 50, or 100 cycles and a calibrated T-pad for exact adjustment of the amount of equalization. The high frequency portion of this unit includes a switch to set maximum equalization point at 4000, 6000, 8000, 10,000 or 15,000 cycles, and a similar calibrated control reading directly in db. Equalization up to 25 db available at any frequency selected.

Through a unique arrangement of compensating pads, changes in adjustment of the 3AX equalizer do not affect the apparent aural level. The construction is of the depressed chassis, etched panel, rack mount type. Thoroughly shielded against inductive pickup with UTC Trialloy Shielding. Dimensions of panel 3½" x 19". Depth 7½". Weight 15 lbs.

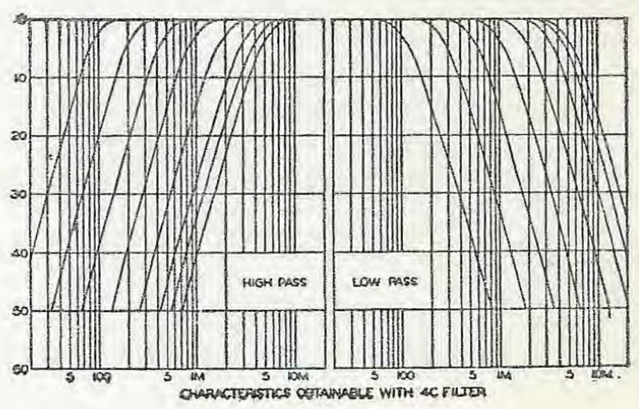


TYPICAL CURVES OBTAINABLE WITH 3A OR 3AX EQUALIZER

3A UNIVERSAL EQUALIZER. The 3A equalizer is identical to the 3AX described above, except that it does not incorporate the compensating pads for constant insertion loss. The insertion loss is roughly proportional to the amount of equalization employed. All other characteristics identical with the 3AX unit, this item weighs 10 lbs.

4C SOUND EFFECTS FILTER. The use of filters to obtain unusual sound effects has found wide application in broadcast technique. The Model 4C Filter was originally developed for one of the large broadcasting chains, and is now used extensively by many broadcast stations. Two controls are provided on the 5¼" x 19" panel, which is similar in appearance to the 3AX unit. The weight of the 4C unit is 20 lbs.

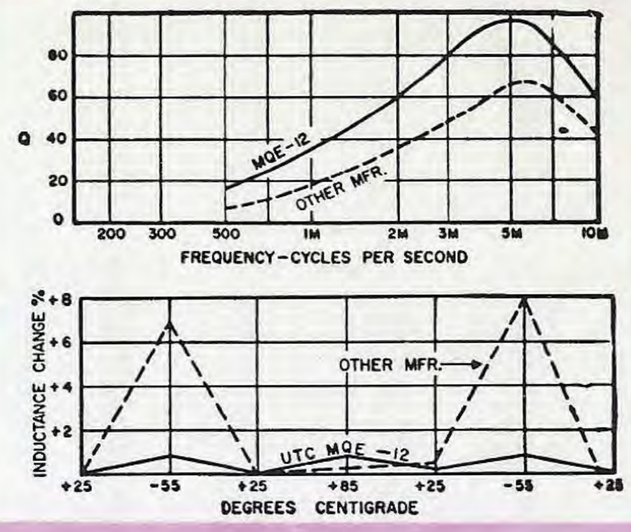
The low pass switch can be set for cutoff frequencies of 100, 250, 500, 1000, 2000, 3000, 4000, or 5000 cycles. The high pass switch has identical frequency points. The great number of cutoff frequencies provides for a wide latitude of tone control. Though not normally necessary, external potentiometers may be inserted in the circuit for attenuation control.

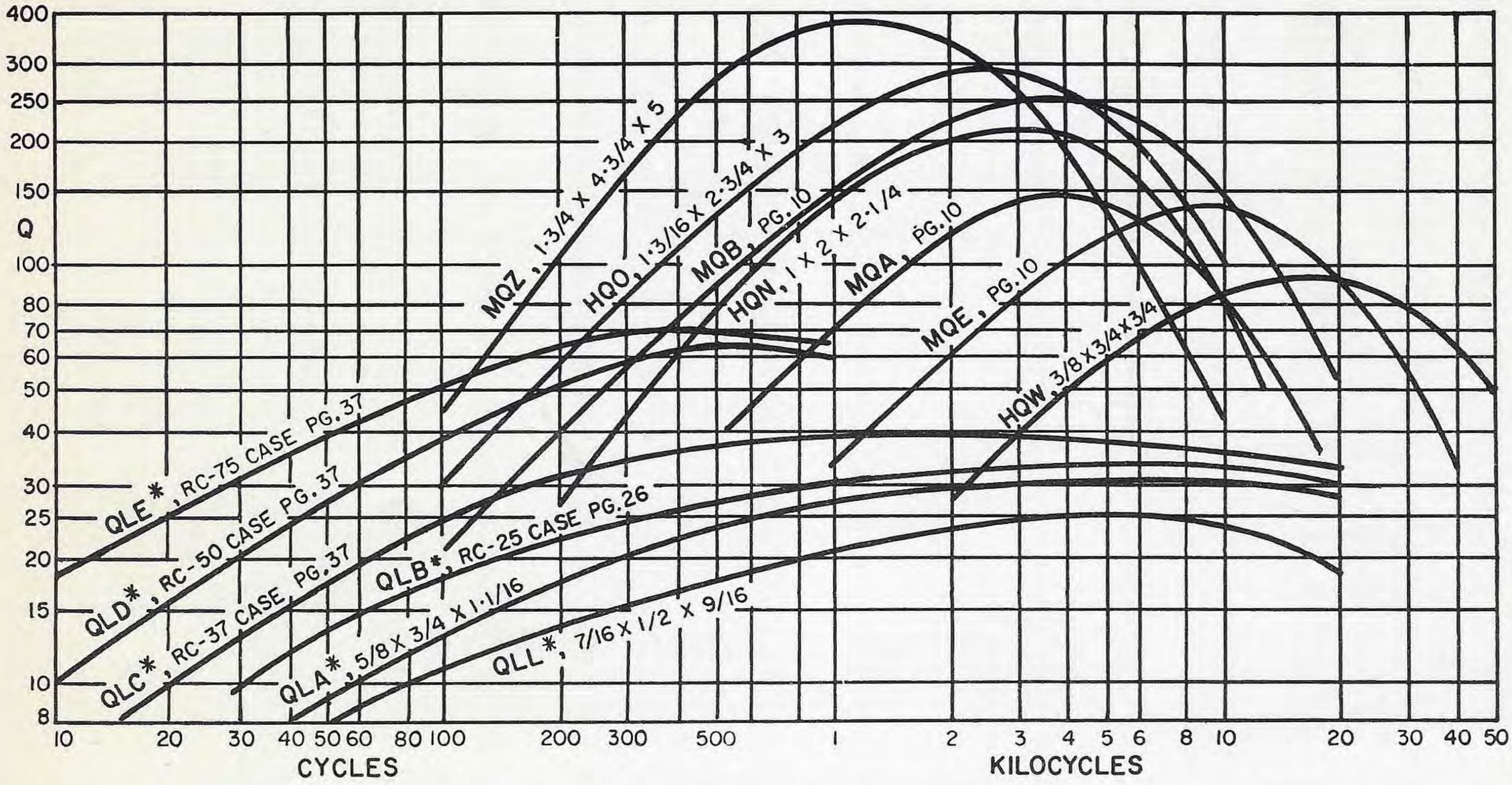


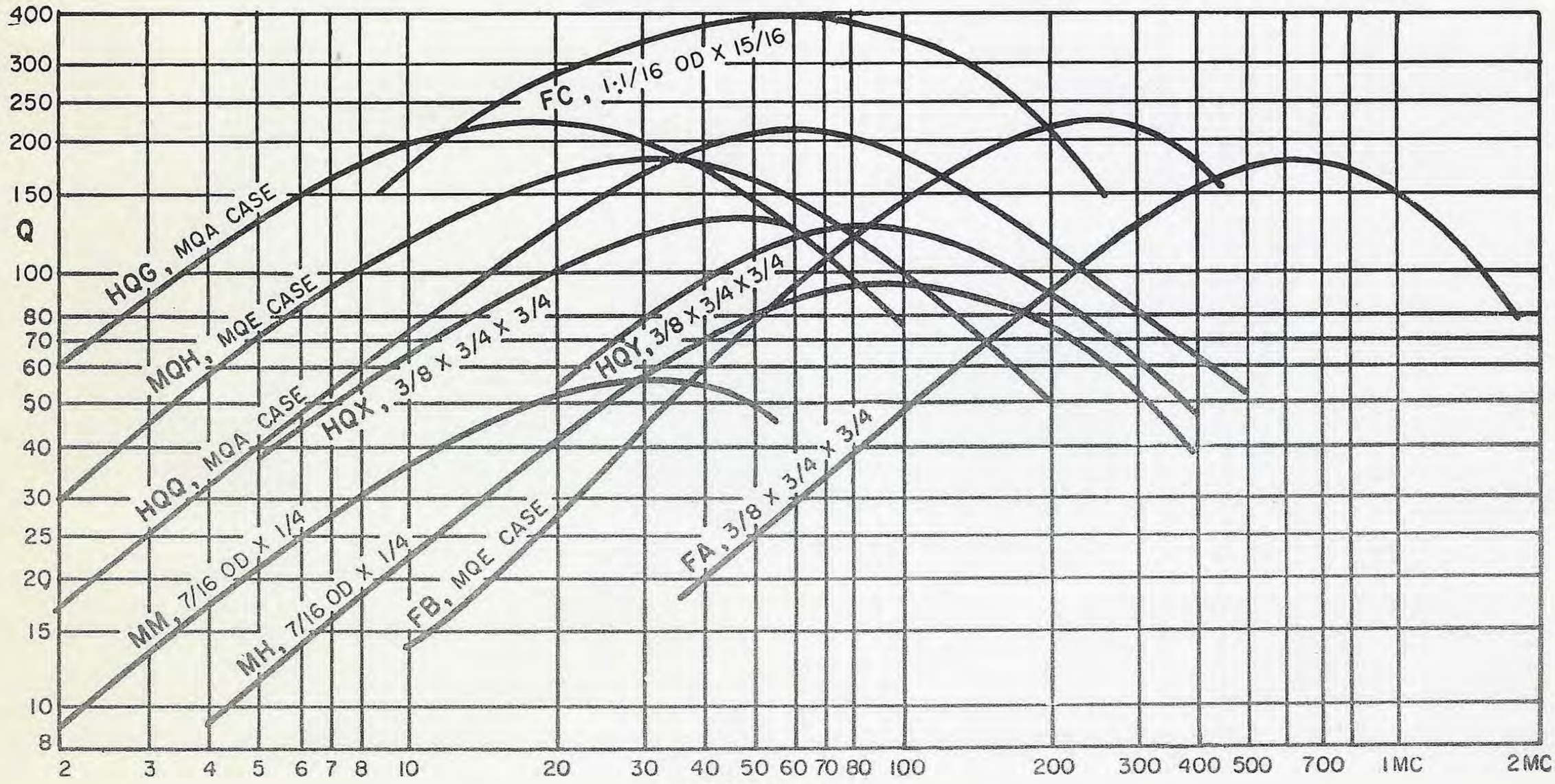
CHARACTERISTICS OBTAINABLE WITH 4C FILTER

FOR SUPERIOR HIGH Q COILS

Twenty-five years of specialization in high Q coils are reflected in the permalloy dust toroid, ferrite, and laminated structures produced by UTC today.
Special winding machines and stabilization methods have resulted in coils of superior performance and stability. For example, the curves at the right show the performance of a stock UTC MQE unit compared to an "equivalent" employing same type permalloy dust core.
While this catalog lists 200 stock high Q coils, a large portion of our production is on special coils to customers requirements. The curves below illustrate the capabilities of a few structures among the many permalloy dust, ferrite and laminate types produced by UTC. Dimensions shown are cased. Curves of QL* items indicate Q obtainable by designing for that frequency . . . i.e. If QLC is designed for maximum Q at 60 cycles (19), it will have a Q of 14 at 400 cycles. Similarly, if designed for maximum Q at 400 cycles (36), it will have a Q of 9 at 60 cycles.







NEW "M" TYPE TOROIDS

Hermetically sealed to MIL-T-27A Specs., . . . all units MIL type TF4RX20YY

MAXIMUM Q MINIMUM SIZE

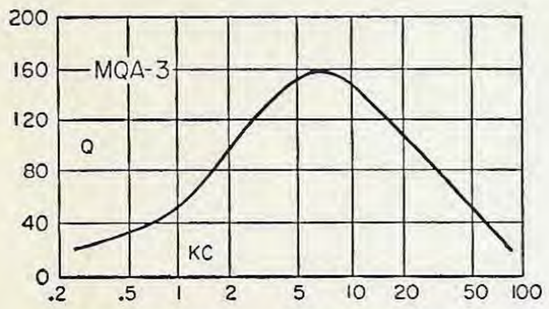
UTC Permalloy Dust Toroids have been the standard of the industry for 20 years. The MQ series of coils provide the highest Q factor in their class (see curves below) with miniaturized dimensions. All units are hermetically sealed to MIL-T-27A Specifications . . . laboratory adjusted to 1% tolerance—O DC. Uncased and molded toroids available on production orders.

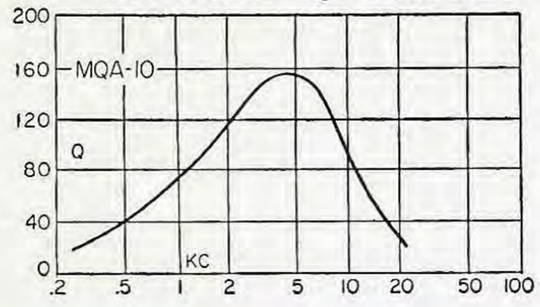
The stability is excellent. For the MQE-7 the inductance change is less than 1% for voltages from .1 to 3 volts. The MQA-13 change is less than 1% for applied voltages from .1 to 20 volts. The MQB-5 change is less than 1% for applied voltages from .1 to 50 volts. DC is permissible through the coil (values listed below). Inductance is virtually independent of frequency, temperature and vibration.

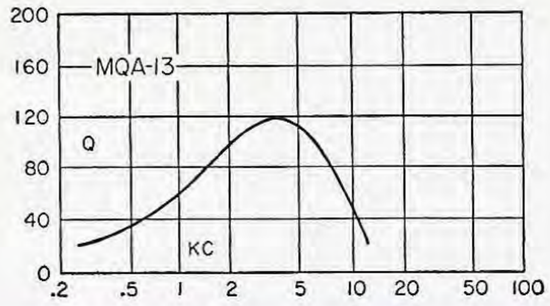
Hum pickup is extremely low due to the toroidal winding structure, with windings uniformly spread over the core. The case is of high permeability, affording additional shielding such that close spacing of units can be effected, the coupling attenuation being approximately 80 db.

TQA units are similar to MQA but centertapped for oscillator applications, etc. They employ an extremely stabilized structure for wide temperature range. Q is slightly lower than MQA.

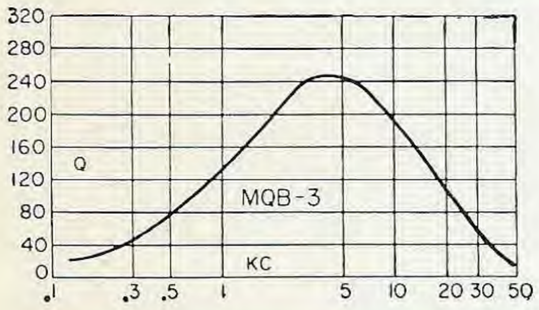
TYPICAL Q CURVES

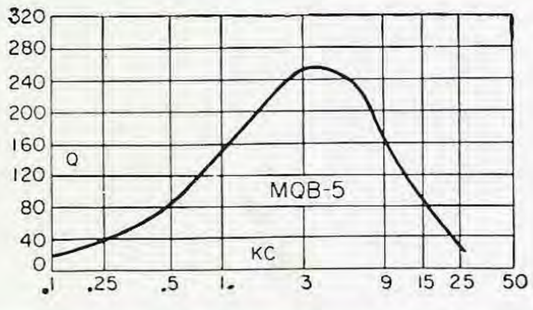


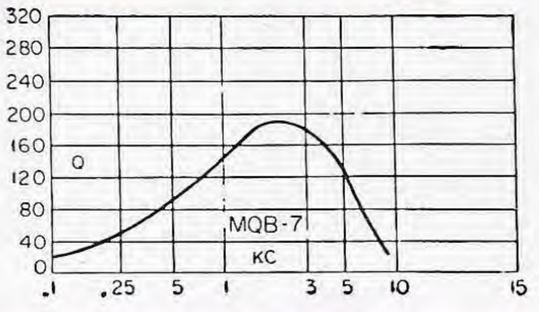




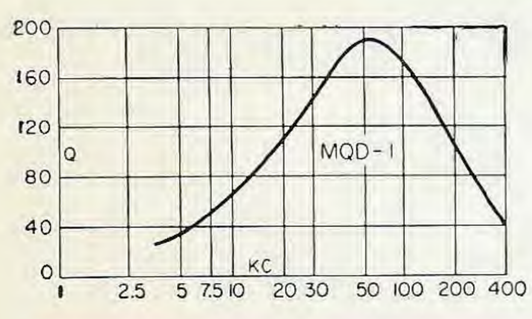
MQA

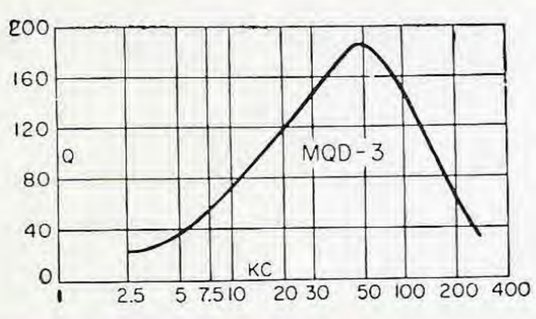


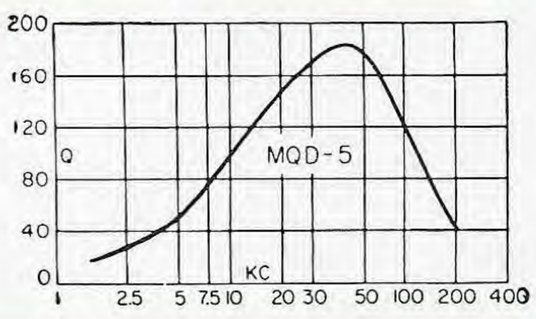




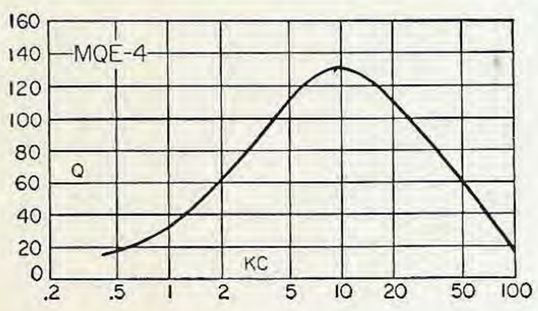
MQB

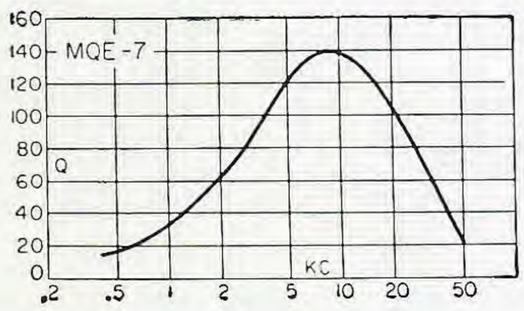


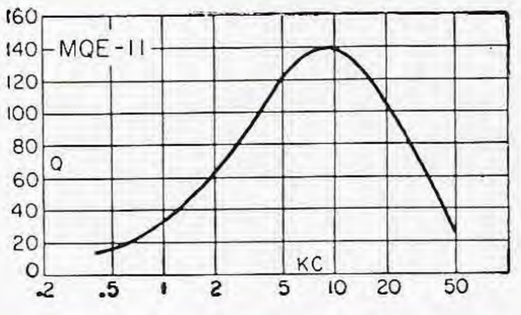




MQD







MQE

MQA and TQA TYPES

Type No.	Inductance (0 DC)	DC MA Max.	Center Tapped Type No.
MQA-1	7 mhy.	250	TQA-1
MQA-2	12 mhy.	200	TQA-2
MQA-3	20 mhy.	150	TQA-3
MQA-4	30 mhy.	125	TQA-4
MQA-5	50 mhy.	100	TQA-5
MQA-6	70 mhy.	80	TQA-6
MQA-7	120 mhy.	60	TQA-7
MQA-8	.2 hy.	50	TQA-8
MQA-9	.3 hy.	40	TQA-9
MQA-10	.5 hy.	30	TQA-10
MQA-11	.7 hy.	25	TQA-11
MQA-12	1 hy.	20	TQA-12
MQA-13	1.5 hy.	17	TQA-13
MQA-14	2.5 hy.	13	TQA-14
MQA-15	4 hy.	10	TQA-15
MQA-16	6 hy.	9	TQA-16
MQA-17	10 hy.	7	TQA-17
MQA-18	15 hy.	5	TQA-18
MQA-19	22 hy.	4	TQA-19

MQB TYPES

Type No.	Inductance (0 DC)	DC MA Max.
MQB-1	10 mhy.	400
MQB-2	30 mhy.	250
MQB-3	70 mhy.	170
MQB-4	120 mhy.	120
MQB-5	.5 hy.	60
MQB-6	1 hy.	40
MQB-7	2 hy.	30
MQB-8	3.5 hy.	22
MQB-9	7.5 hy.	16
MQB-10	12 hy.	11
MQB-11	18 hy.	9
MQB-12	25 hy.	8

MQE TYPES

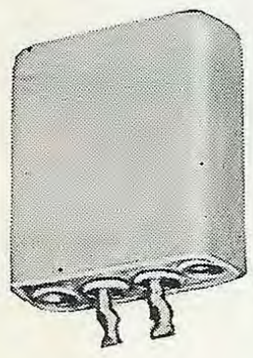
Type No.	Inductance (0 DC)	DC MA Max.
MQE-1	7 mhy.	135
MQE-2	12 mhy.	100
MQE-3	20 mhy.	80
MQE-4	30 mhy.	65
MQE-5	50 mhy.	50
MQE-6	70 mhy.	40
MQE-7	100 mhy.	35
MQE-8	150 mhy.	30
MQE-9	.25 hy.	22
MQE-10	.4 hy.	17
MQE-11	.6 hy.	14
MQE-12	.9 hy.	12
MQE-13	1.5 hy.	9
MQE-14	2 hy.	8
MQE-15	2.8 hy.	7.2

MQD TYPES

These high frequency coils are extremely stabilized type for temperature range from —40° C to +85° C.

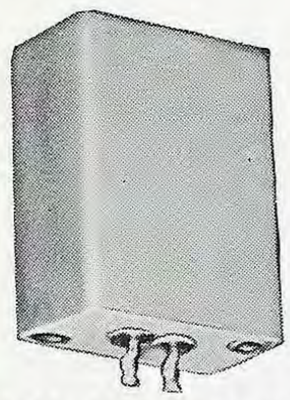
	Inductance (0 DC)	
MQD-1	2	mhy.
MQD-2	3	mhy.
MQD-3	5	mhy.
MQD-4	7	mhy.
MQD-5	12	mhy.
MQD-6	20	mhy.

The DC MA Max. shown will drop the coil inductance slightly.



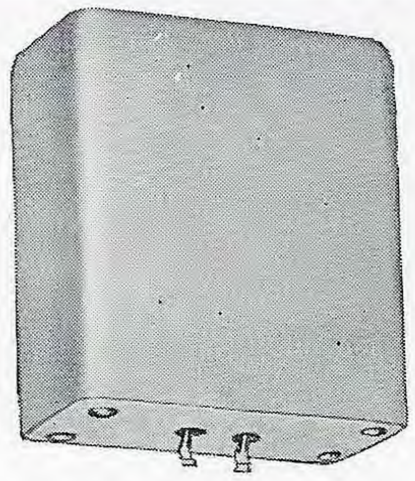
MQE CASE

Length .....1 1/16"
Width .....1/2"
Height .....1 7/32"
Mounting .....3/4"
Screws 4-40
Cutout .....5/16 x 1/2"
Unit Weight .....1.5 oz.



MQA, MQD, TQA CASE

Length .....1 9/32"
Width .....1 1/16"
Height .....1 23/32"
Mounting .....7/8 x 9/32"
Screws 4-40
Cutout .....5/16 x 1/2" (TQA, 5/16 x 3/4")
Unit Weight .....4 oz.



MQB CASE

Length .....2 9/16"
Width .....1 3/16"
Height .....2 13/16"
Mounting .....2 1/16 x 1 1/16"
Screws 6-32
Cutout .....7/8 x 1/2"
Unit Weight .....14 oz.

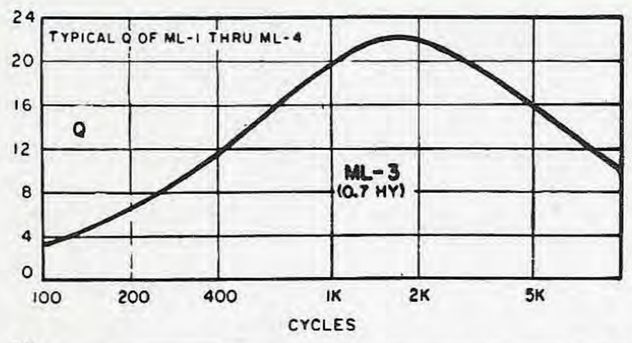
MINIDUCTORS / *Hermetically sealed to MIL-T-27A Specs., see back cover . . . all units MIL type TF5RX20ZZ*

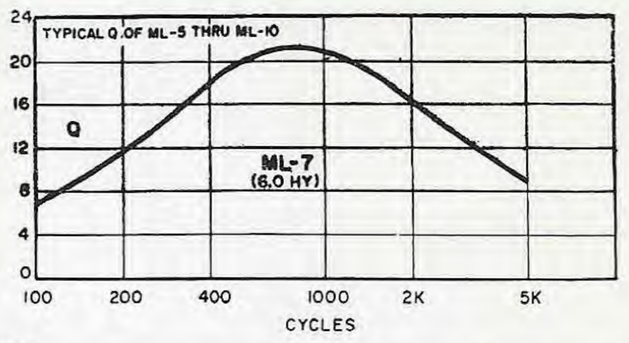
UTC Miniductors are ideal for transistor and printed circuit applications, providing high Q in miniature form. The ML-1 to 4 units are for medium low frequencies, adjusted to ± 3% at 1 V. 1 KC. The ML-5 thru 10 series are for lower frequencies, adjusted to ± 3% at 1 V. 400 cycles. The MM and MH units are for medium and high frequencies, adjusted to a tolerance of ± 2%.

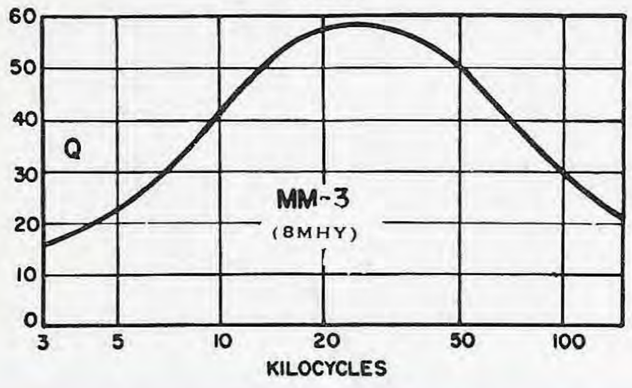
Temperature stability is excellent on all Miniductors, from —55° C. to + 100° C. The ML units are in a Hipermalloy shield case . . . the MM and MH coils are symmetrical toroids . . . for high coupling attenuation and low hum pickup. The DCMA MAX. shown is for approximately 5% drop in inductance.

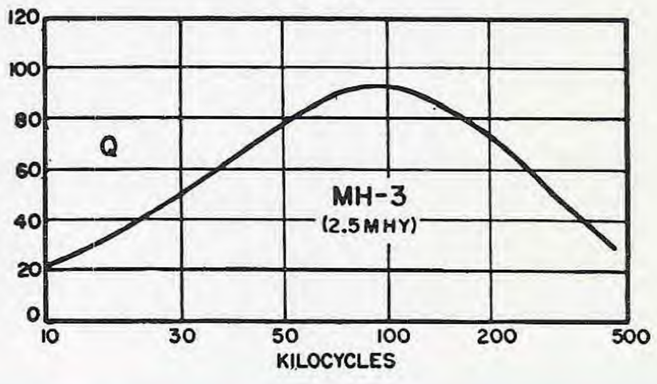
ML CASE
13/32 x 15/32 x 9/16" high

MM, MH CASE
7/16" Dia. x 1/4" high

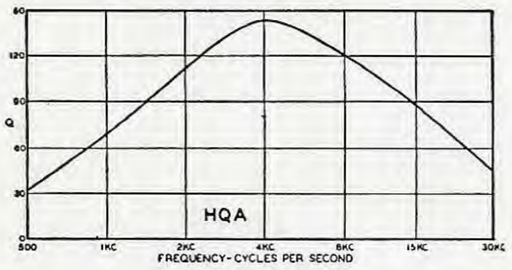


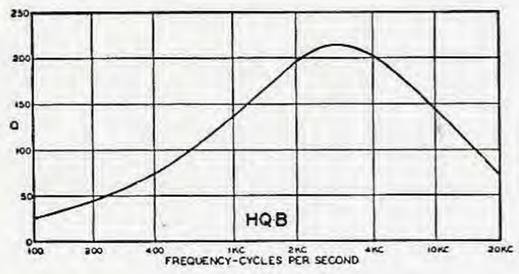


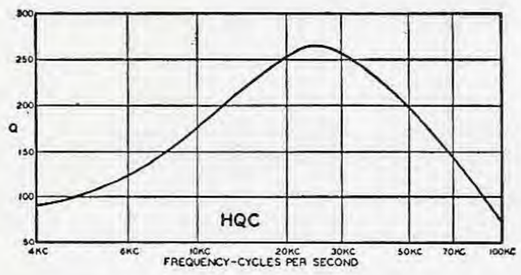


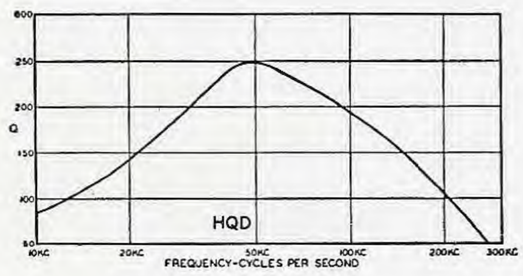


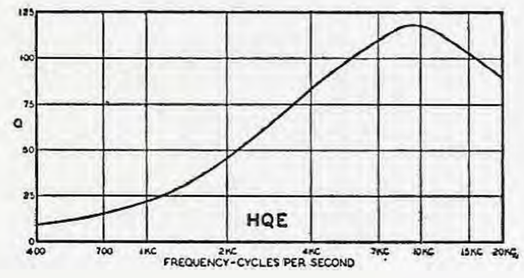
Type No.	Induct'ce (O DC)		DC MA Max.
ML-1	.25	Hy.	9
ML-2	.4	Hy.	7
ML-3	.7	Hy.	5
ML-4	1.4	Hy.	3
ML-5	2.5	Hy.	1
ML-6	4.0	Hy.	.7
ML-7	6.0	Hy.	.6
ML-8	10	Hy.	.5
ML-9	25	Hy.	.3
ML-10	60	Hy.	.2
MM-1	3	Mhy.	50
MM-2	5	Mhy.	40
MM-3	8	Mhy.	30
MM-4	12.5	Mhy.	25
MH-1	.6	Mhy.	75
MH-2	1.5	Mhy.	37
MH-3	2.5	Mhy.	28
MH-4	6	Mhy.	23







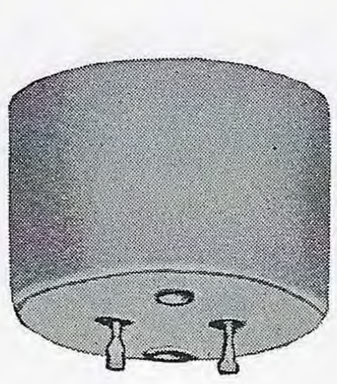




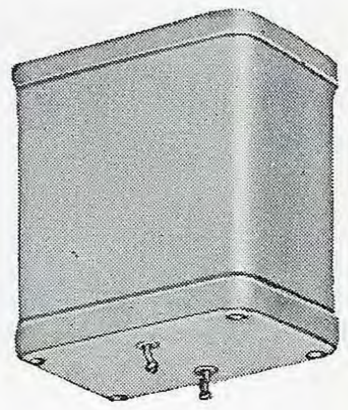
HIGH Q TOROID INDUCTORS

Hermetically sealed to MIL-T-27A Specs., see back cover . . . all units MIL type TF4RX20YY

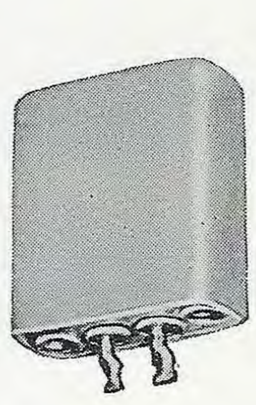
Favorites for over fifteen years, UTC HQ Toroids are only excelled by the preferred new "M" series on opposite page. As typical Q curves show, HQ coils are available for applications from 100 cycles to 300 KC. Adjusted to 1%, the inductance is virtually independent of frequency, temperature, and vibration. Voltage stability is excellent, and shielding case assures 80 db coupling attenuation.



HQA, HQC, HQD CASE
Diameter .....1 13/16"
Height .....1 3/16"
Mounting .....1 1/8"
Screws 6-32
Cutout .....9/16 x 1 3/16"
Weight .....5 oz.



HQB CASE
Length .....2 5/8"
Width .....1 5/8"
Height .....2 5/8"
Mounting .. 1 11/64 x 2 11/64"
Screws 6-32
Cutout .....9/16 x 1 1/8"
Weight .....14 oz.



HQE CASE
Length .....1 1/16"
Width .....1/2"
Height .....1 7/32"
Mounting .....3/4"
Screws 4-40
Cutout .....5/16 x 1/2"
Weight .....1.5 oz.

Type No.	Inductance (O DC)		DC MA Max.
HQA-1	5	mhy.	400
HQA-2	12.5	mhy.	260
HQA-3	20	mhy.	200
HQA-4	30	mhy.	160
HQA-5	50	mhy.	130
HQA-6	80	mhy.	100
HQA-7	125	mhy.	85
HQA-8	200	mhy.	65
HQA-9	300	mhy.	50
HQA-10	.5	hy.	40
HQA-11	.75	hy.	35
HQA-12	1.25	hy.	26
HQA-13	2	hy.	20
HQA-14	3	hy.	16
HQA-15	5	hy.	13
HQA-16	7.5	hy.	10
HQA-17	10	hy.	9
HQA-18	15	hy.	8
HQB-1	10	mhy.	410
HQB-2	30	mhy.	240
HQB-3	70	mhy.	170
HQB-4	120	mhy.	120
HQB-5	.5	hy.	60
HQB-6	1	hy.	41
HQB-7	2	hy.	30
HQB-8	3.5	hy.	22
HQB-9	7.5	hy.	16
HQB-10	12	hy.	11
HQB-11	18	hy.	9
HQB-12	25	hy.	8
HQE-1	5	mhy.	
HQE-2	10	mhy.	
HQE-3	50	mhy.	
HQE-4	100	mhy.	
HQE-5	200	mhy.	
HQC-1	1	mhy.	
HQC-2	2.5	mhy.	
HQC-3	5	mhy.	
HQC-4	10	mhy.	
HQC-5	20	mhy.	
HQD-1	.4	mhy.	
HQD-2	1	mhy.	
HQD-3	2.5	mhy.	
HQD-4	5	mhy.	
HQD-5	15	mhy.	

The DC MA Max. shown will drop coil inductance slightly.

VARIDUCTORS

HVC AND TVC HERMETIC VARIDUCTORS

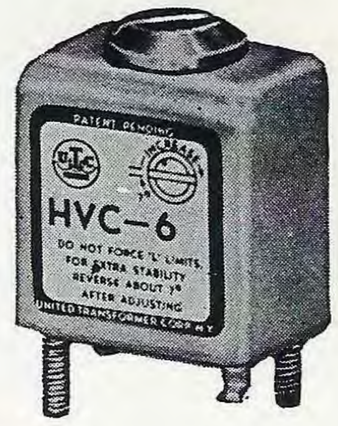
Variable inductors hermetically sealed to MIL-T-27A Specs., see back cover . . . all units MIL type TF4RX20YY.

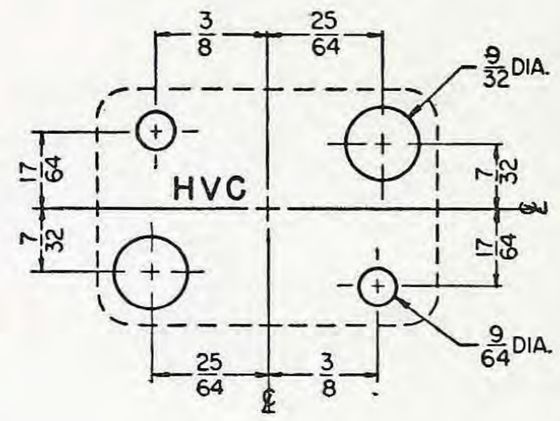
UTC Variductors have served as a simple solution to tuned circuit problems for over 15 years . . . for oscillators, equalizers, filters, etc.

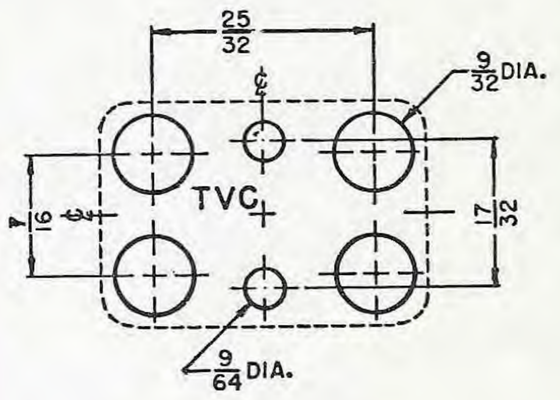
HVC Inductors are hermetically sealed to MIL-T-27A and provide exceptionally wide inductance range with high Q in an extremely compact unit. HVC units are usable over a wide frequency range and have high stability with temperature and voltage change.

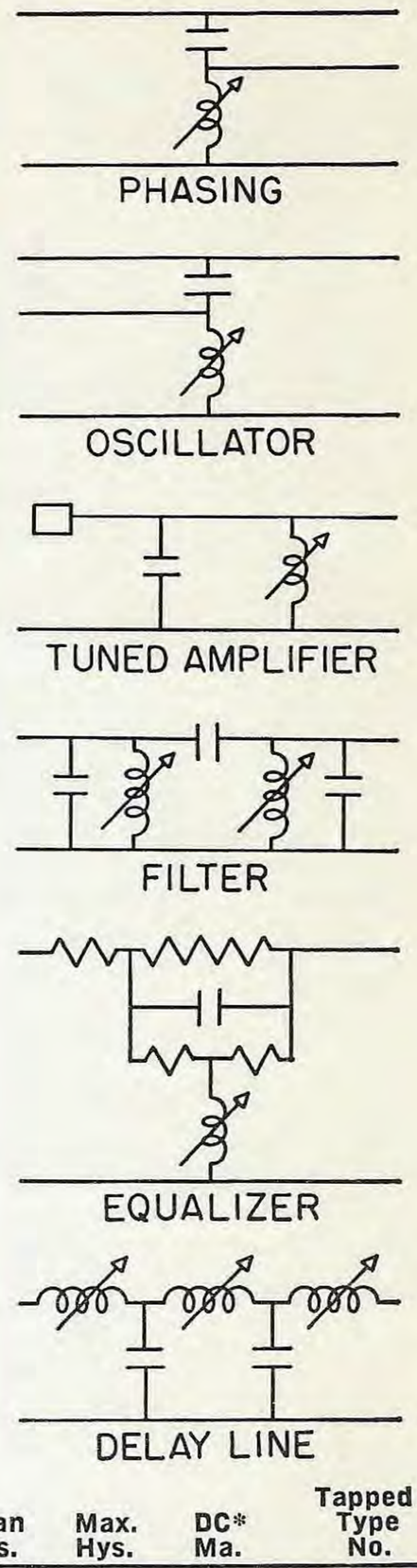
TVC Inductors are identical to the HVC units but provide taps at 30% and 50% of total turns. They are ideal for oscillator circuits, impedance matching, and phase inversion where high Q and adjustable inductance are required.

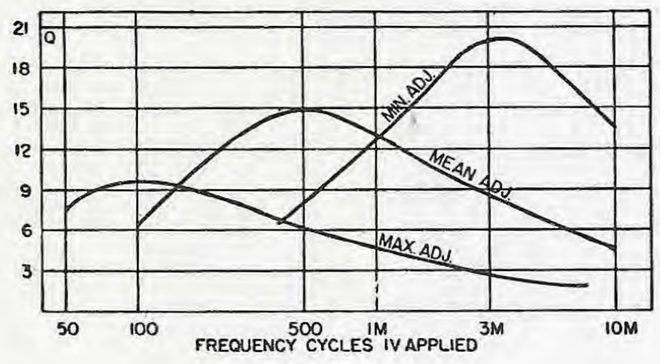
Inductance range is + 200%, —70% of nominal value through adjusting screw on top of case. Range is covered in 900° rotation. Setting is positive. Effective Q over a wide frequency range and variation of inductance with applied AC voltage are illustrated for a typical HVC unit. Case dimensions are 1⅛" long, $\frac{25}{32}$" wide, 1$\frac{17}{32}$" high . . . weight 2 ounces. Chassis cut-out dimensions for HVC and TVC units are illustrated, $\frac{9}{64}$" dia. holes are to clear the 4-40 stainless mounting studs.

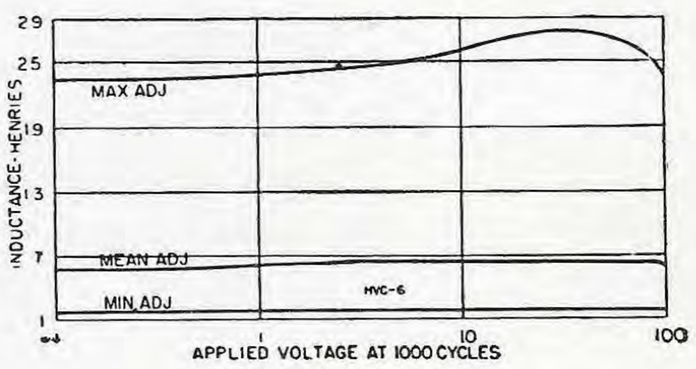












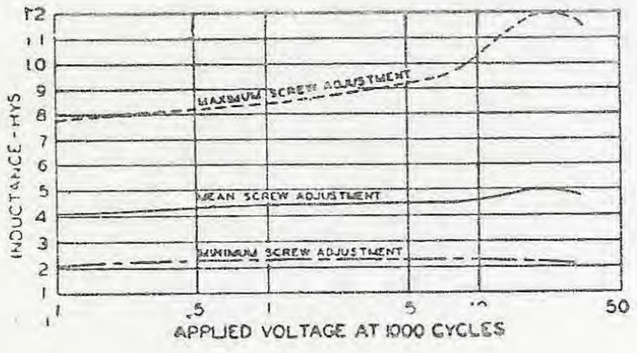
Type No.	Min. Hys.	Mean Hys.	Max. Hys.	DC* Ma.	Tapped Type No.
HVC-1	.002	.006	.02	100	TVC-1
HVC-2	.005	.015	.05	60	TVC-2
HVC-3	.011	.040	.11	40	TVC-3
HVC-4	.03	.1	.3	30	TVC-4
HVC-5	.07	.25	.7	20	TCV-5
HVC-6	.2	.6	2	15	TVC-6
HVC-7	.5	1.5	5	10	TVC-7
HVC-8	1.1	4	11	7	TVC-8
HVC-9	3	10	30	5	TVC-9
HVC-10	7	25	70	3.5	TVC-10
HVC-11	20	60	200	2	TVC-11
HVC-12	50	150	500	1.5	TVC-12

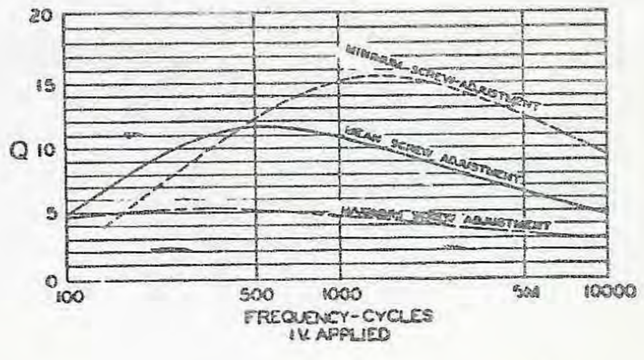
Choosing Type No.: If frequency is above 100 cycles, use type providing required inductance between mean and min. values.

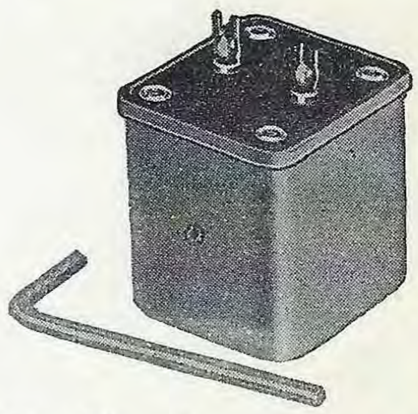
VIC STANDARD VARIDUCTORS

UTC type VIC variable inductors offer a convenient approach to the problem of tuned audio circuits. By adjusting a set screw in the side of the case, an inductance value of +85%, —45% from mean value is obtainable. Range is covered in 600° rotation. Setting is positive. Effective Q for a wide frequency range and variation of inductance with applied AC voltage are shown on the illustrated curves, for a typical VIC unit.

The VIC inductor is housed in a rugged die cast case 1-11/32" long, 1¼" wide and 1-7/16" high with mounting centers on terminal board side 13/16" by 29/32", tapped for 4-40 screw. Weight is 5½ oz.







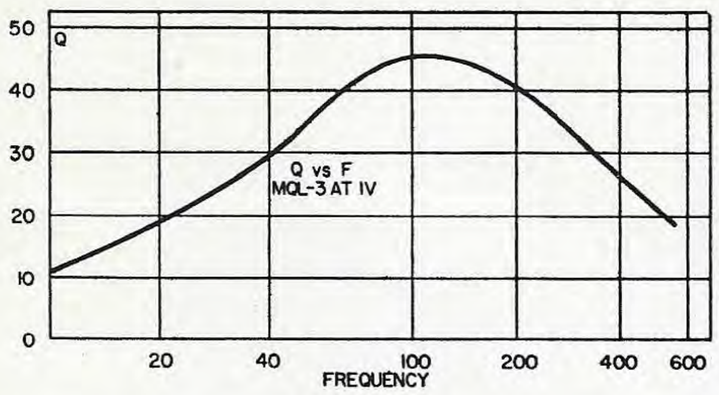
Type	Mean Hys.	DC Ma*	Type	Mean Hys.	DC Ma*
VIC-1	.0085	75	VIC-12	1.3	10
VIC-2	.013	60	VIC-13	2.2	8
VIC-3	.021	50	VIC-14	3.4	7
VIC-4	.034	40	VIC-15	5.4	6
VIC-5	.053	35	VIC-16	8.5	5
VIC-6	.084	30	VIC-17	13	4
VIC-7	.13	25	VIC-18	21	3.5
VIC-8	.21	21	VIC-19	33	3
VIC-9	.34	18	VIC-20	52	2
VIC-10	.54	15	VIC-21	83	1.5
VIC-11	.85	12	VIC-22	130	1

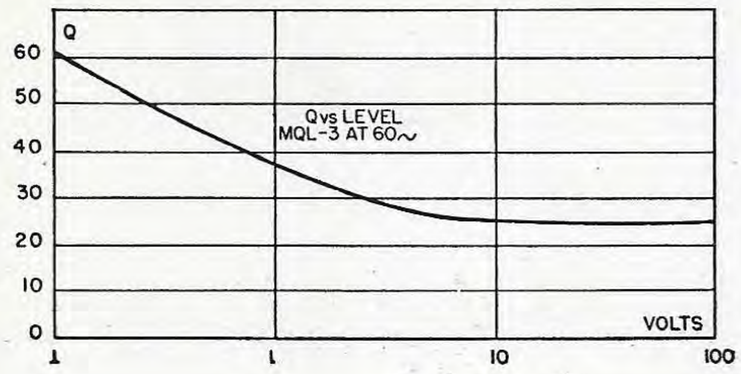
*DC MA shown is maximum recommended . . . will effect some reduction in inductance and Q.

LOW FREQUENCY HIGH Q COILS

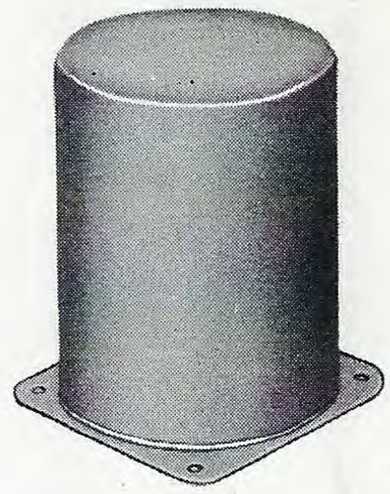
Hermetically sealed to MIL-T-27A Specs., see back cover . . . all units MIL type TF4RX20YY

Permalloy dust toroids are not suited to providing high Q at low frequencies. The MQL series of laminated Hipermalloy coils were specifically designed for this class of service. The unique structure employed provides exceptional Q and stability. Inductance values are laboratory adjusted to 2% tolerance at 1 volt, 60 cycles. Stability with voltage is excellent, for MQL-3 inductance variation is less than 1% from .1 V. to 1 V. 60 cycles. Temperature stability is exceptional, total inductance swing being less than 3.5% for the wide range of —55°C to +85°C. A hum reducing lamination structure plus heavy Hipermalloy shielding provide very low hum pickup . . . 240 microvolts/gauss for MQL-3 series connected. Two identical windings brought out to four terminals permit series, parallel, center tapped, or transformer type connections.





Type No.	Series Henries (0 DC)	Parallel Henries (0 DC)
MQL-0	1	.25
MQL-1	10	2.5
MQL-2	20	5
MQL-3	200	50
MQL-4	400	100
MQL-5 (For 60 cycles and lower)	2500	625



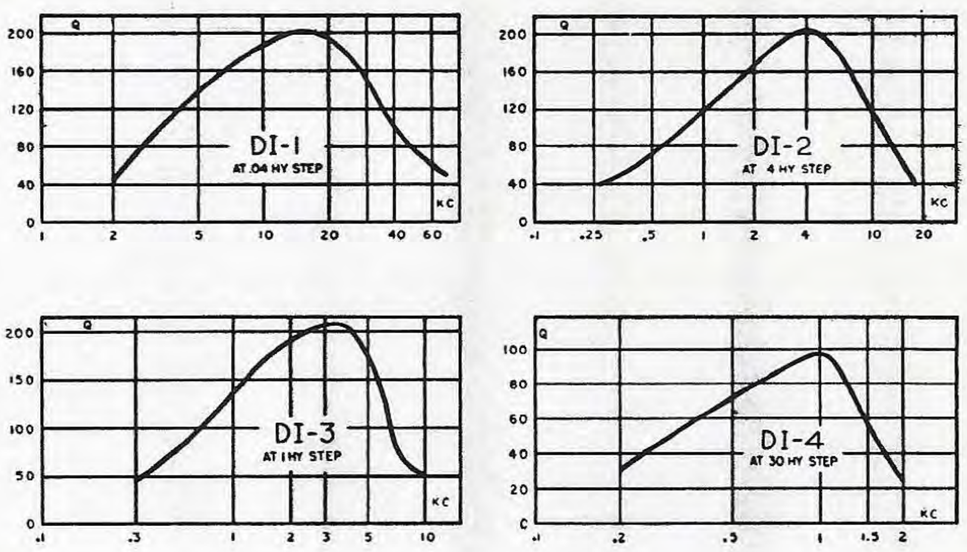
MQL CASE

Diameter ..... 1 13/16"
Height ..... 2½"
Mounting ..... 1½ x 1½"
Screw 6-32
Cutout ..... 1½" dia.
Weight ..... 1 lb.

HIGH Q PRECISION INDUCTANCE DECADES

UTC DI inductance decades are invaluable instruments for design and experimental work with tuned circuits, wave filters, and equalizers. They set new standards of Q, stability, frequency range, and convenience. The low hum pickup toroid coils employ a new permalloy dust core which, combined with special winding methods, provides very high Q, excellent voltage and temperature stability, and high self resonance frequency. The switch employed is a new low capacity type which lab tests have proven for low contact resistance after 100,000 operations. The inductance values are laboratory adjusted to better than 1% precision, with calibration noted on base.

DI inductance decades are housed in a compact, rugged, die cast case with control on a sloping panel, ideally suiting these units to laboratory use.



DI CASE

Length ..... 4½"
Width ..... 4⅜"
Height ..... 2⅜"
Weight ..... 2 lbs.

Type No.	Induct. Henries	Optimum Range	Max. Q	Max. ACMA	Ins. Test Volts RMS
DI-1	10 x .01	2-60 KC	200	500	500
DI-2	10 x .1	.25-20 KC	200	150	500
DI-3	10 x 1	.25-10 KC	200	50	500
DI-4	10 x 10	.2-1.5 KC	100	15	500

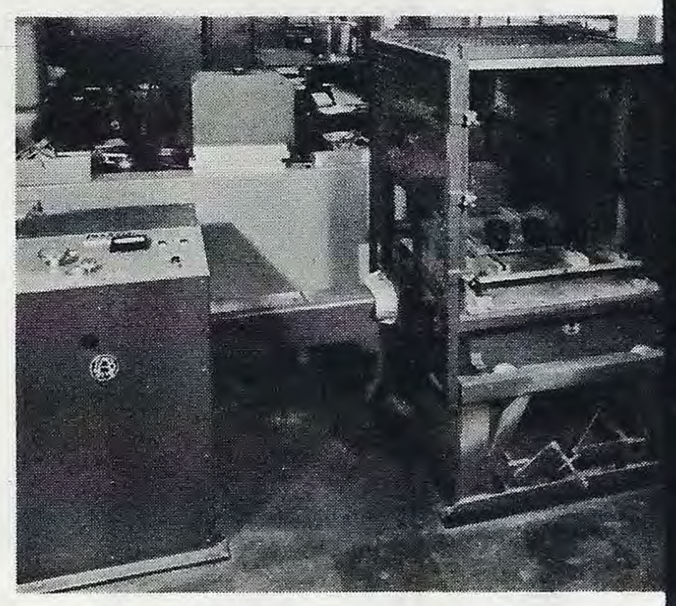
FOR MILITARY COMPONENTS

OUR 14 MILLIONTH MILITARY UNIT SHIPPED THIS YEAR

The UTC Laboratories include complete facilities for testing to MIL-T-27A. These facilities are employed for continuous quality control of production as well as for proving new items. Virtually all hermetic items in this catalog have been proved to meet MIL-T-27A or are in process of proving tests. By using a catalog UTC item both costs and delays of initial testing to MIL-T-27A are consequently eliminated.

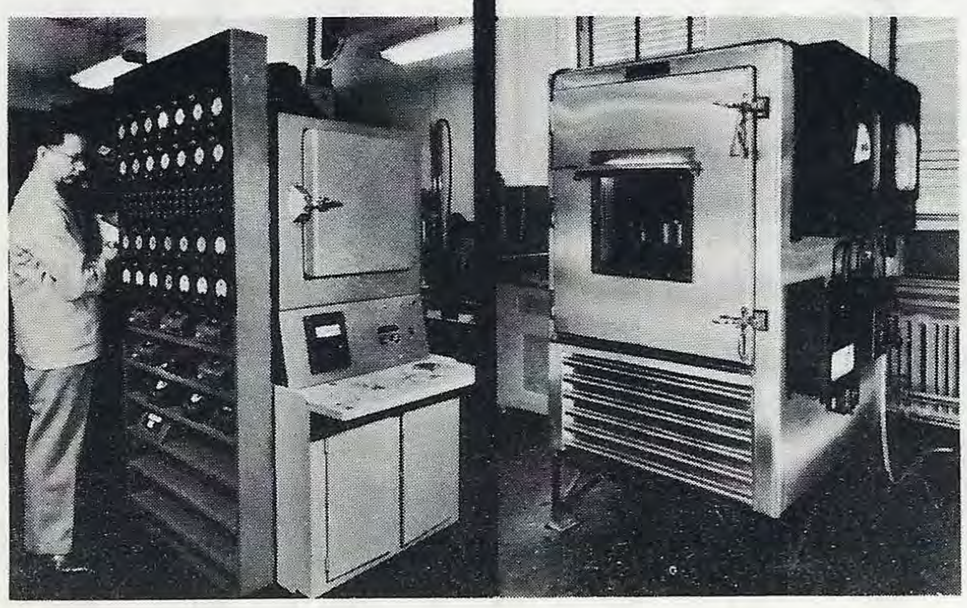
Shock Testing

Altitude Test and High Frequency Vibration for Airborne Units



Automatic Programmed MIL-T-27A Vibration Test

Primary Standard Instrument Calibration



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