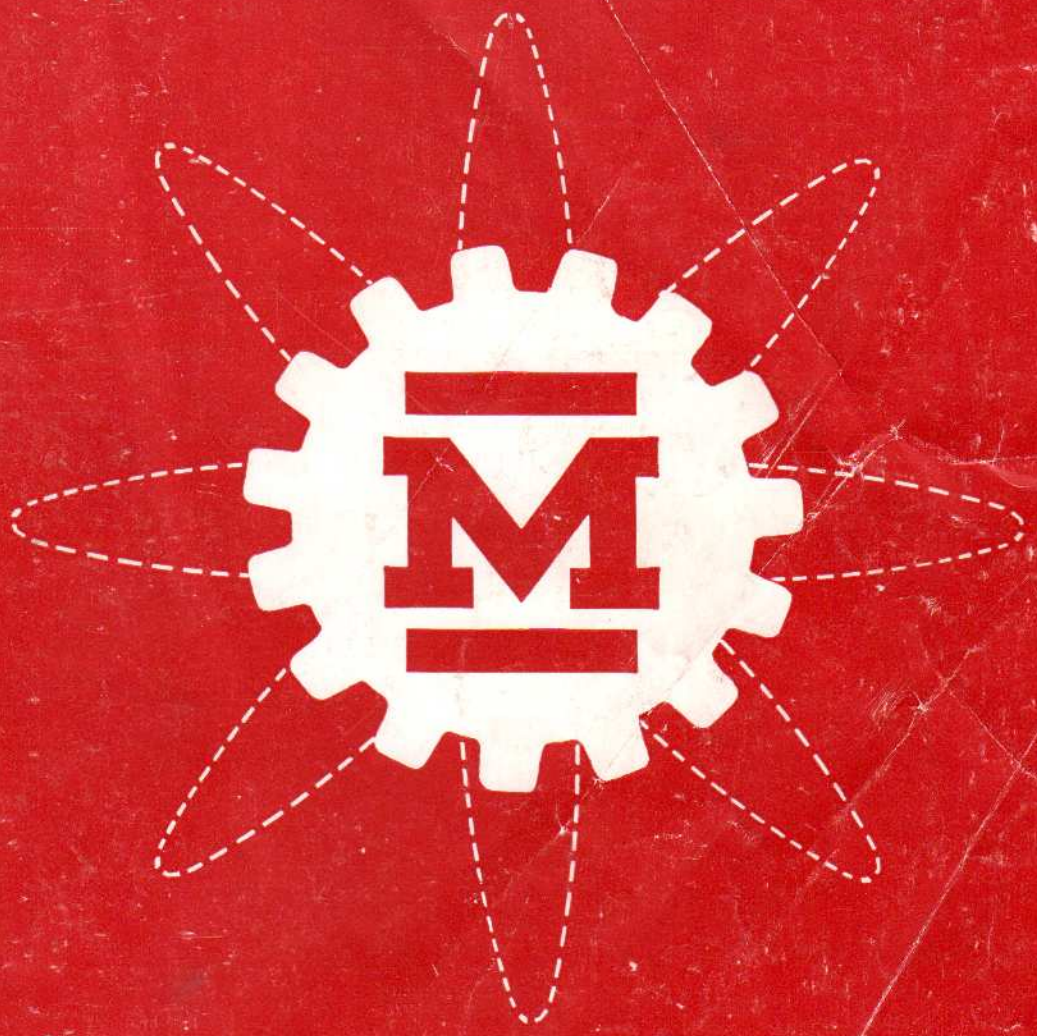


MANUFACTURING
COMPANY, INC.

JAMES MILLLEN

radio engineers and manufacturers



Condensed General Catalog

156

"Designed for Performance"®



MILLEN NO. 90651 GRID DIP METER

The No. 90651 MILLEN GRID DIP METER is compact and completely self contained. The AC power supply is of the "transformer" type. The drum dial has seven calibrated uniform length scales from 1.7 MC to 300 MC with generous over laps plus an arbitrary scale for use with special application inductors. Internal terminal strip permits battery operation for antenna measurement.

No. 90651, with tube and carrying case.....

No. 90651-C—Case only.....

Additional Inductors for Lower Frequencies

No. 46702—925 to 2000 KC.....

No. 46703—500 to 1050 KC.....

No. 46704—325 to 600 KC.....

No. 46705—220 to 350 KC.....



90751



92200



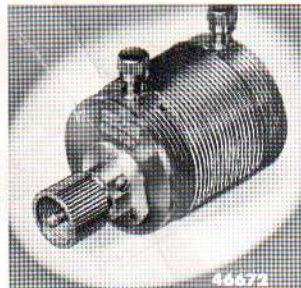
90281



90201



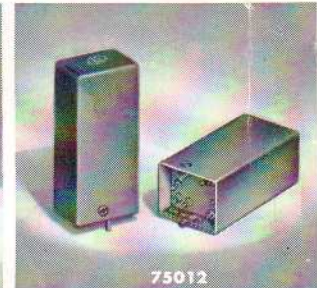
90672



46672



90811



75012

TONE MODULATOR — The No. 90751 Tone Modulator is a small package containing a transistor audio oscillator and its mercury battery, which plugs into the phone jack of a Grid Dip Meter to modulate the signal at approximately 800 cycles for applications requiring a modulated signal. Dimensions: only $2\frac{3}{4} \times 1\frac{1}{8} \times 1\frac{1}{8}$ in.

No. 90751, less battery

TRANSMATCH — The No. 92200 is a 2 KW band-switching adjustable r.f. transformer with a reflectometer as the indicator. Inserted between a transmitter with unbalanced output and a coaxial line, it will convert the impedance of any 10 to 300 ohm coaxial fed antenna to 50 ohms.

TRANSMATCH JUNIOR — No. 92201. Same as above except for 300 watts peak, 5 to 300 ohms for mobile or fixed use.

ANTENNA BRIDGE — The Millem 90672 Antenna Bridge is an accurate and sensitive bridge for measuring impedances in the range of 5 to 500 ohms (or 20 to 2000 ohms with balun) at radio frequencies up to 140 mc. The variable element is an especially designed differential variable capacitor capable of high accuracy and permanency of calibration. Readily driven by No. 90651 Grid Dipper.

No. 90672

BALUNS — The No. 46672 (1 for each amateur band) wound Balun is an accurate 2 to 1 turns ratio, high Q auto transformer with the residual reactances tuned out and with very tight coupling between the two halves of the total winding. The points of series and parallel resonance are selected so that each Balun provides an accurate 4 to 1 impedance ratio over the entire band of frequencies for which it was designed. Suitable for use with the No. 90672 Antenna Bridge or medium power transmitters.

No. 46672-80/40/20/15/10

HIGH VOLTAGE POWER SUPPLY — The No. 90281 high voltage power supply has a d.c. output of 700 volts, with maximum current of 235 ma. In addition, a.c. filament power of 6.3 volts at 4 amperes is also available so that this power supply is an ideal unit for use with transmitters, such as the Millem No. 90801, as well as general laboratory purposes. The power supply uses two No. 816 rectifiers. The panel is standard $8\frac{3}{4} \times 19$ rack mounting.

No. 90281, less tubes

REGULATED POWER SUPPLY — A compact, uncased, regulated power supply, either for table use in the laboratory or for incorporation as an integral part of larger equipment. 250 v.d.c. unregulated at 115 ma. 105 v.d.c. regulated at 35 ma. Minus 105 v.d.c. regulated bias at 4 ma. 6.3 v. a.c. at 4.2 amps.

No. 90201, with tubes

HIGH FREQUENCY RF AMPLIFIER — A physically small unit capable of a power output of 70 to 85 watts on Phone or 87 to 110 watts on C-W on 20, 15, 10, 6 or 2 meter amateur bands. Provision is made for quick band shift by means of the No. 48000 series VHF plug-in coils. The No. 90811 unit uses either an 829-B or 3E29.

No. 90811 with 10 meter band coils, less tube

PHASE-SHIFT NETWORK — A complete and laboratory aligned pair of phase-shift networks in a single compact $2\frac{1}{2} \times 1\frac{1}{8} \times 4$ case with characteristics so as to provide a phase shift between the two networks of $90^\circ \pm 1.3^\circ$ over a frequency range of 225 cycles to 2750 cycles. Well adapted for use in either single sideband transmitter or receiver. Possible to obtain a 40 db suppression of the unwanted sideband. The No. 75012 precision adjusted phase-shift network eliminates necessity of complicated lab equipment for network adjustment.

No. 75012

JAMES MILLEN

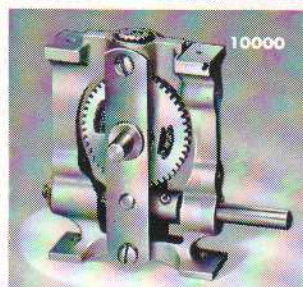
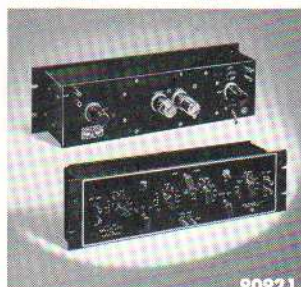
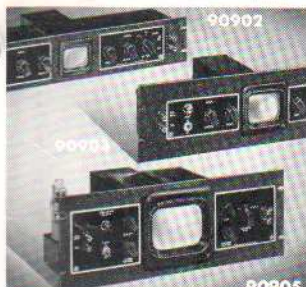
MALDEN · MASSACHUSETTS

The No. 90923 oscilloscope is an extremely compact (3½ inches high) rack panel general purpose oscilloscope utilizing the type 3XP — 3 x 1½ inch rectangular face tube. The No. 90923 is complete with vertical and horizontal amplifiers for balanced deflection and a very linear sweep generator.

Miniature input terminals are on both the front panel and the rear for vertical amplifier input, horizontal amplifier input and synchronizing input. The linear sweep generator covers two cycles per second to 30 kcs. per second in seven overlapping ranges. The trace is unusually sharp and bright due to 2040 volts accelerating potential.

The No. 90923 is ideally suited for many applications, and in particular, for production test. Its small panel uses up very little space in a test rack and the mu-metal shield around the cathode ray tube shields it against magnetic fields so that the oscilloscope may be used accurately in locations with strong stray magnetic fields. The cathode ray tube is of the mono-accelerator type in which the electron beam is accelerated at the electron gun so that field distortions are minimized and excellent deflection linearity is achieved as well as a very uniform spot size over the entire area which the beam scans.

MILLEN NO. 90923 RACK MOUNTED OSCILLOSCOPE



MILLEN ONE INCH MODULE OSCILLOSCOPES — Miniaturized, packaged panel mounting cathode ray oscilloscope designed for use in instrumentation in place of the conventional "pointer type" moving coil meters uses the 1" tube. Panel bezel matches in size and type the standard 2" square meters. Magnitude, phase displacement, wave shape, etc. are constantly visible on scope.

No. 90901, 1CP1, less tube No. 90911, 1EP1, less tube

FLAT FACE OSCILLOSCOPE — 90905-B 5-inch Rack Mounting Basic Oscilloscope features include: balanced deflection, front panel input terminals, rear panel input terminals, astigmatism control, blanking input terminals, flat face precision tolerance Dumont 5ADP1 tube.

BASIC OSCILLOSCOPES — The No. 90902, No. 90903 and No. 90905 Rack Panel Oscilloscopes, for two, three and five inch tubes, respectively, are inexpensive basic units comprising power supply, brilliancy and centering controls, safety features, magnetic shielding, switches, etc. As a transmitter monitor, no additional equipment or accessories are required. By the addition of such units as sweeps, pulse generators, amplifiers, servo sweeps, etc., all of which can be constructed on companion rack panels, the "scope unit may be expanded to serve any conceivable industrial or laboratory application.

'SCOPE AMPLIFIER — SWEEP UNIT — Vertical and horizontal amplifiers along with hardtube, saw tooth sweep generator. Complete with power supply mounted on a standard 5¼" rack panel. No. 90921, with tubes

POWER SUPPLY FOR OSCILLOSCOPE — 750 volts d.c. at 3 ma. and 6.3 volts a.c. at 600 ma. 117 volts 50-60 cycle input. Designed especially for use with No. 90901 and No. 90911 one inch instrumentation oscilloscopes. 4⅞ in. high x 1⅞ x 2⅞. Octal plug for input and output. Entire assembly including rectifier is encapsulated. No. 90202, Power Supply (complete)

BEZELS FOR CATHODE RAY TUBES — Standard types are of satin finish black plastic. 5" size has neoprene support cushion and green lucite filter. 3" and 2" sizes have integral cushioning. No. 80075 (5") 80073 (3") 80072 (2") 80071 (1")

WORM DRIVE UNIT — Cast aluminum frame may be panel or base mounted. Spring loaded split gears to minimize back lash. Standard ratio 16/1. Also in 48/1 on request.

No. 10000 — (state ratio)

RIGHT ANGLE DRIVE — Extremely compact, with provisions for many methods of mounting. Ideal for operating potentiometers, switches, etc., that must be located, for short leads, in remote parts of chassis. No. 10012

AMATEUR BAND MONITOR OSCILLOSCOPE

- A-M or SSB ● 3.5 to 54 Mc.
- Blanks out on Standby
- Individual coil for each band

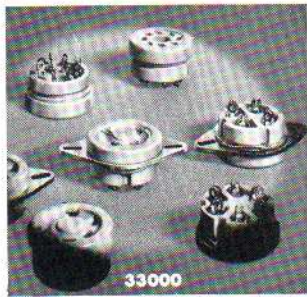
SCOPE — No. 90932 is a complete oscilloscope for monitoring the modulated r-f output of a transmitter. Built-in link-coupled tuned circuits cover all amateur bands 3.5 to 54 mc. All circuits and accessories are built-in. The monitor will display the r-f envelope and/or the trapezoidal monitoring pattern of single side band transmitters or amplitude modulated transmitters. It shows the linearity or non-linearity of Class-B r-f amplifiers, the parasitic oscillation, neutralization, and r-f output.



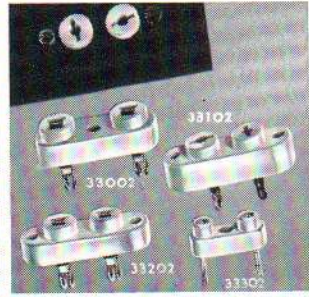
2" round tube

JAMES MILLEN

MALDEN · MASSACHUSETTS



33000



33102
33002
33202
33302



33409 33407
33307
33305



33991

TUBE SOCKETS DESIGNED FOR APPLICATION — MODERN SOCKETS FOR MODERN TUBES! Long Flashover path to chassis permits use with transmitting tubes, 866 rectifiers, etc. Long leakage path between contacts. Contacts are type proven by hundreds of millions already in government, commercial and broadcast service, to be extremely dependable. Sockets may be mounted either with or without metal flange. Mounts in standard size chassis hole. All types have barrier between contacts and chassis. All but octal and crystal sockets also have barriers between individual contacts in addition.

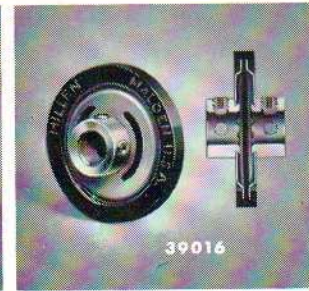
Voltage regulator dual contact bayonet socket, 33991 black phenolic insulation and 33992 with low loss mica filled phenolic insulation.

MILLEN TUBE SOCKETS

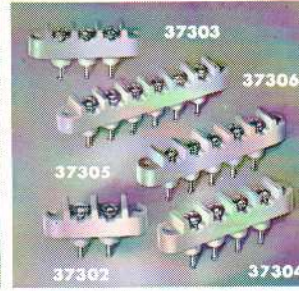
No.	Description	No.	Description
33002	Crystal Socket 3/4" x .125"	33004	4 Pin Tube Socket
33102	Crystal Socket .487" x .095"	33005	5 Pin Tube Socket
33202	Crystal Socket 1/2" x .125"	33006	6 Pin Tube Socket
33302	Crystal Socket .487" x .050"	33008	8 Pin Tube Socket
33407	Miniature Socket only, ceramic	33991	Socket for 991
33409	Naval Socket only, ceramic	33992	Socket for 991
33307	Miniature Socket, Shield, ceramic	33207	829 Socket
33309	Naval Socket, Shield, ceramic	33305	Acorn Socket
33405	5 Pin Socket Eimac		



39005 39003
39001
39002 39006



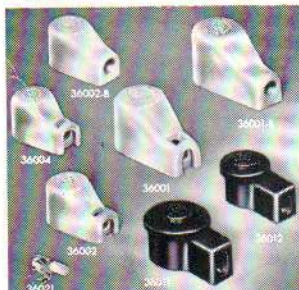
39016



37303
37306
37305
37302 37304



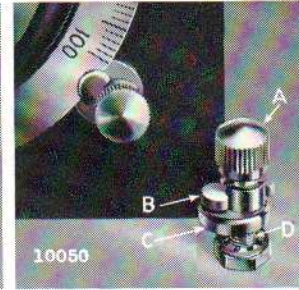
37204 37201
37212
37213 37202



36002-B 36001-B
36004 36001
36002 36012
36021 36011



37001



10050



33087

FLEXIBLE COUPLINGS — The No. 39000 series of Millen "Designed for Application" flexible coupling units include, in addition to improved versions of the conventional types, also such exclusive original designs as the No. 39001 insulated universal joint and the No. 39006 "slide-action" coupling (in both steatite and bakelite insulation). The No. 39006 "slide-action" coupling permits longitudinal shaft motion, eccentric shaft motion and out-of-line operation, as well as angular drive without backlash.

The No. 39005 and 39005-B (high torque) are similar to the No. 39001, but are not insulated. The steatite insulated No. 39001 has a special anti-backlash pivot and socket grip feature. All of the above illustrated units are for 1/4" shaft and are standard production type units. The No. 39016 incorporates features which have long been desired in a flexible coupling. No Backlash — Higher Flexibility — Higher Breakdown Voltage — Smaller Diameter — Shorter Length — Higher Alignment Accuracy — Higher Resistance to Mechanical Shock — Solid Insulating Barrier Diaphragm — Molded as a Single Unit.

CERAMIC PLATE OR GRID CAPS — Soldering lug and contact one-piece. Lug ears annealed and solder dipped to facilitate each combination "mechanical plus soldered" connection of cable.

No. 36001—3/16" No. 36002—3/8" No. 36004—1/4"

SAFETY TERMINAL — Combination high voltage terminal and thru-bushing tapered contact pin fits firmly into conical socket providing large area, low resistance connection. Pin is swivel mounted in cap to prevent twisting of lead wire.

No. 37001, Black or Red No. 37501, Low loss

STEATITE TERMINAL STRIPS — Terminal and lug are one piece. Lugs are turret type and are free floating so as not to strain L4 ceramic on wide temperature variations. Easy to mount with series of round holes. 1400 volt and 3500 volt series.

POSTS, PLATES, AND PLUGS — The No. 37200 series, including both insulated and non-insulated binding posts with associated plates and plugs, provide various combinations to meet most requirements. The posts have captive heads and keyed mounting.

The No. 37291 and No. 37223 are standard in black or red with other colors on special order. No. 37201, No. 37202, and No. 37204 and No. 37222 are available in black, red, or low loss. The No. 37202 is also available in steatite.

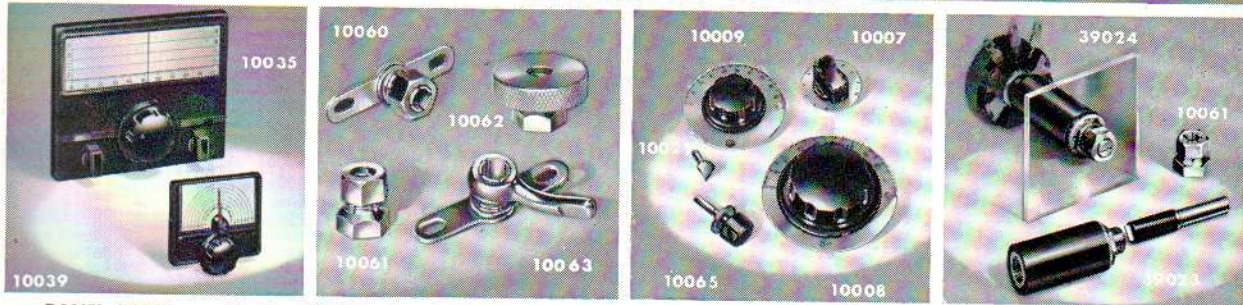
No.	Description	No.	Description
37201	Single plates, pr.....	37212	Dual plug.....
37291	Single plates (tapered), pr.....	37222	Non-insulated binding post
37202	Dual plates, pr.....	37223	Insulated binding posts.....
37204	Double dual plates, pr.....		

DIAL LOCK — Compact, easy to mount, positive in action, does not alter dial setting in operation! Rotation of knob "A" depresses finger "B" and "C" without imparting any rotary motion to Dial. Single hole mounted.

No. 10050.....

TUBE CLAMP — No. 33087 is easy to use, easy to install, effective in function. Available in special sizes for all types of tubes. Single hole mounting. Spring steel, cadmium plated.

"Designed for Application"®

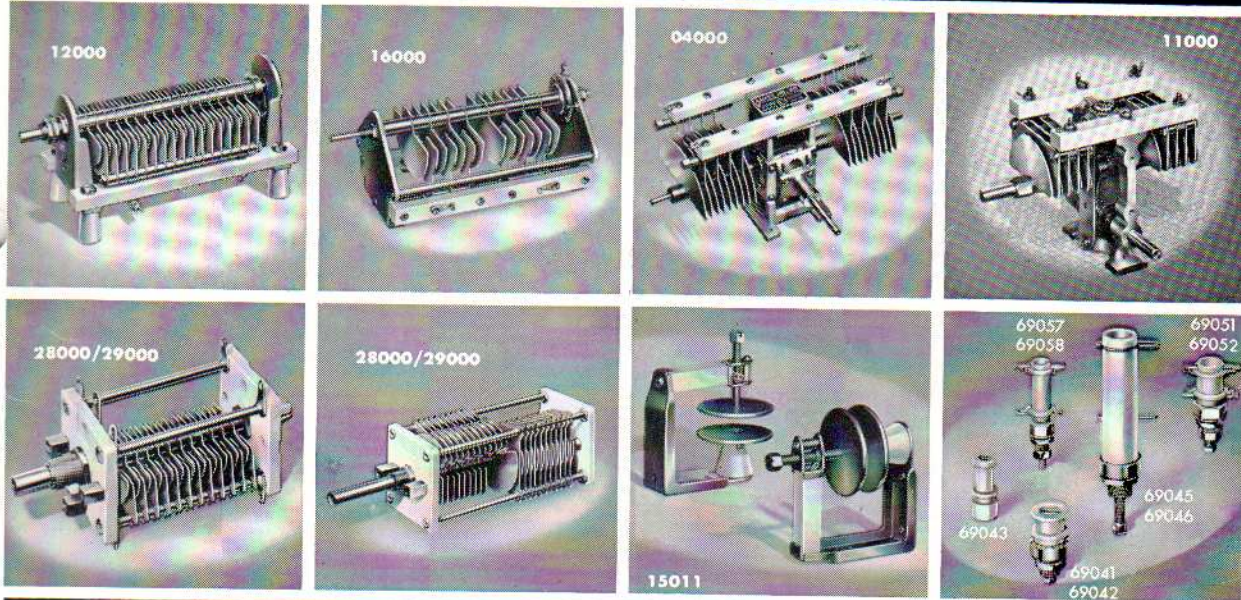


PANEL DIALS — The No. 10035 illuminated panel dial has 12 to 1 ratio; size, 8½" x 6½". Small No. 10039 has 8 to 1 ratio; size, 4" x 3¼". Both are of compact mechanical design, easy to mount and have totally self-contained mechanism, thus eliminating back of panel interference. Provision for mounting and marking auxiliary controls, such as switches, potentiometers, etc., provided on the No. 10035. Standard finish, either size, flat black art metal.

SHAFT LOCKS — In addition to the original No. 10060 and No. 10061 "DESIGNED FOR APPLICATION" shaft locks, we can also furnish such variations as the No. 10062 and No. 10063 for easy thumb operation as illustrated above. The No. 10061 instantly converts any plain ¼" shaft" volume control, condenser, etc. from "plain" to "shaft locked" type. Easy to mount.

DIALS AND KNOBS — Just a few of the many stock types of small dials and knobs are illustrated herewith. 10007 is 1½" diameter, 10009 is 2¾" and 10008 is 3½".

HIGH VOLTAGE INSULATED SHAFT EXTENSION — No. 10061 shaft locks and the No. 39023 insulated high voltage potentiometer extension mountings are available as a single integrated unit — the No. 39024. The proper shaft length is independent of the panel thickness. The standard shaft has provision for screw driver adjustment. Special shaft arrangements are available for industrial applications. Extension shaft and insulated coupling are molded as a single unit to provide accuracy of alignment and ease of installation. No. 39023, non locking type No. 39024, locking type



12000 and 16000 SERIES TRANSMITTING CONDENSERS

— Rigid heavy channeled aluminum end plates. Isolantite insulation, polished or plain edges. One piece rotor contact spring and connection lug. Compact, easy to mount with connector lugs in convenient locations. Same plate sizes as 11000 series above. The 16000 series has same plate sizes as 04000 series. Also has constant impedance, heavy current, multiple finger rotor contactor of new design. Both 12000 and 16000 series available in single and double sections and many capacities and plate spacing.

28000-29000 SERIES VARIABLE AIR CAPACITORS

— "Designed for Application," double bearings, steatite end plates, cadmium or silver plated brass plates. Single or double section .022" or .066" air gap. End plate size: 1½" x 1½". Rotor plate radius: ¾". Shaft lock, rear shaft extension, special mounting brackets, etc., to meet your requirements. The 28000 series has semi-circular rotor plate shape. The 29000 series has approximately straight frequency line rotor plate shape. Prices quoted on request. Many stock sizes.

NEUTRALIZING CAPACITOR — Designed originally for use in our own No. 90881 Power Amplifier, the No. 15011 disc neutralizing capacitor has such unique features as rigid channel frame, horizontal or vertical mounting, fine thread over-size lead screw with stop to prevent shorting and rotor lock. Heavy rounded-end polished aluminum plates are 2" diameter. Glazed steatite insulation. No. 15011.....

04000 and 11000 SERIES TRANSMITTING CONDENSERS

— Another member of the "Designed for Application" series of transmitting variable air capacitors is the 04000 series with peak voltage ratings of 3000, 6000, and 9000 volts. Right angle drive, 1-1 ratio. Adjustable drive shaft angle for either vertical or sloping panels. Sturdy construction, thick, round-edged, polished aluminum plates with 1¾" radius. Constant impedance, heavy current, multiple finger rotor contactor of new design. Available in all normal capacities.

The 11000 series has 16/1 ratio center drive and fixed angle drive shaft.

PERMEABILITY TUNED CERAMIC FORMS

— In addition to the popular shielded plug-in permeability tuned forms, 74000 series, the 69040 series of ceramic permeability tuned unshielded forms are available as standard stock items. Winding diameters available from 3/8" to 1/2" and winding space from 1/32" to 1/2".

- | | |
|------------------------------|------------------------------|
| No. 69041—(Copper Slug)..... | No. 69052—(Iron Core)..... |
| No. 69042—(Iron Core)..... | No. 69054—(Iron Core)..... |
| No. 69043—(Copper Slug)..... | No. 69055—(Copper Slug)..... |
| No. 69044—(Iron Core)..... | No. 69056—(Iron Core)..... |
| No. 69045—(Copper Slug)..... | No. 69057—(Copper Slug)..... |
| No. 69046—(Iron Core)..... | No. 69058—(Iron Core)..... |
| No. 69047—(Copper Slug)..... | No. 69061—(Copper Slug)..... |
| No. 69048—(Iron Core)..... | No. 69062—(Iron Core)..... |
| No. 69051—(Copper Slug)..... | |

"Designed for Application"®

MINIATURIZED HIGH RELIABILITY VARIABLE CAPACITORS



NO. 25000 SERIES

MACHINED FROM SOLID BARS OF EXTRUDED BRASS

Modern demands for miniature precision, high Q variable air dielectric capacitors with high reliability require that all of the stator plates be machined from a solid block of brass and that all of the rotor plates be machined from a solid block of brass. Staked, soldered, or washer-spaced types of construction are adequate for larger capacitors with wider air gaps but are entirely inadequate for miniature high reliability capacitors for use at high frequencies. The stator terminal is an integral part of the stator. This results from extruding the exact shape required. The rotor shaft is an integral part of the rotor, thus alignment of shaft with rotor is perfect and there are no pins or press fits.

Special capacitors which can be manufactured using all or part of the tooling for standard capacitors are designed and manufactured to order.



TRANSMITTING TANK COILS — A full line — all popular wattages for all bands. Send for special catalog sheet.
Nos. 42000, 43000, 44000, 48000.....

TUNABLE COIL FORM — Standard octal base of low loss mica-filled bakelite, polystyrene 1/2" diameter coil form, heavy aluminum shield, iron tuning slug of high frequency type, suitable for use up to 35 mc. Adjusting screw protrudes through center hole of standard octal socket.
No. 74001, with iron core.....
No. 74002, less iron core.....

RF CHOKES — Many have copied, few have equalled, and none have surpassed the genuine original design Millen Designed for Application series of midjet RF Chokes. The more popular styles now in constant production are illustrated herewith. Special styles and variations to meet unusual requirements quickly furnished.

No. 34100 — 2.5 mh., 250 ma.....	No. 34105 — 1.0 mh., 300 ma.....
No. 34101 — 2.5 mh., 250 ma.....	No. 34106 — 1.0 mh., 300 ma.....
No. 34102 — 2.5 mh., 250 ma.....	No. 34107 — 1.0 mh., 300 ma.....
No. 34103 — 2.5 mh., 250 ma.....	No. 34108 — 1.0 mh., 300 ma.....
No. 34104 — 2.5 mh., 250 ma.....	No. 34109 — 1.0 mh., 300 ma.....

MILLEN COIL FORMS — Made of low loss mica filled brown bakelite. Guide funnel makes for easy threading of leads through pins.
No. 45000.....
No. 45004.....
No. 45005.....

SPECIAL RF CHOKES — Figures 1 and 4 illustrate special types of RF chokes available on order. The popular 34300 and 34200 series are shown in figures 2 and 3 respectively.

OCTAL BASE AND SHIELD — Low loss phenolic base with octal socket plug and aluminum shield can 1 7/16 x 1 7/8 x 3 1/16".
No. 74400.....

MINIATURE POWDERED IRON CORE RF INDUCTANCES — The No. J300 — Miniature powdered iron core inductances. 0.107 in dia. x 3/8 in. long. Inductances from 3.3 microhenries to 2.5 millihenries ±5%. EIA standard values plus 25, 50, 150, 250, 350, 500, and 2500 microhenries. Three layer solenoids from 39 to 350 microhenries. 1/4 in. wide single pi from 360 to 2500 microhenries. Special coils on order.

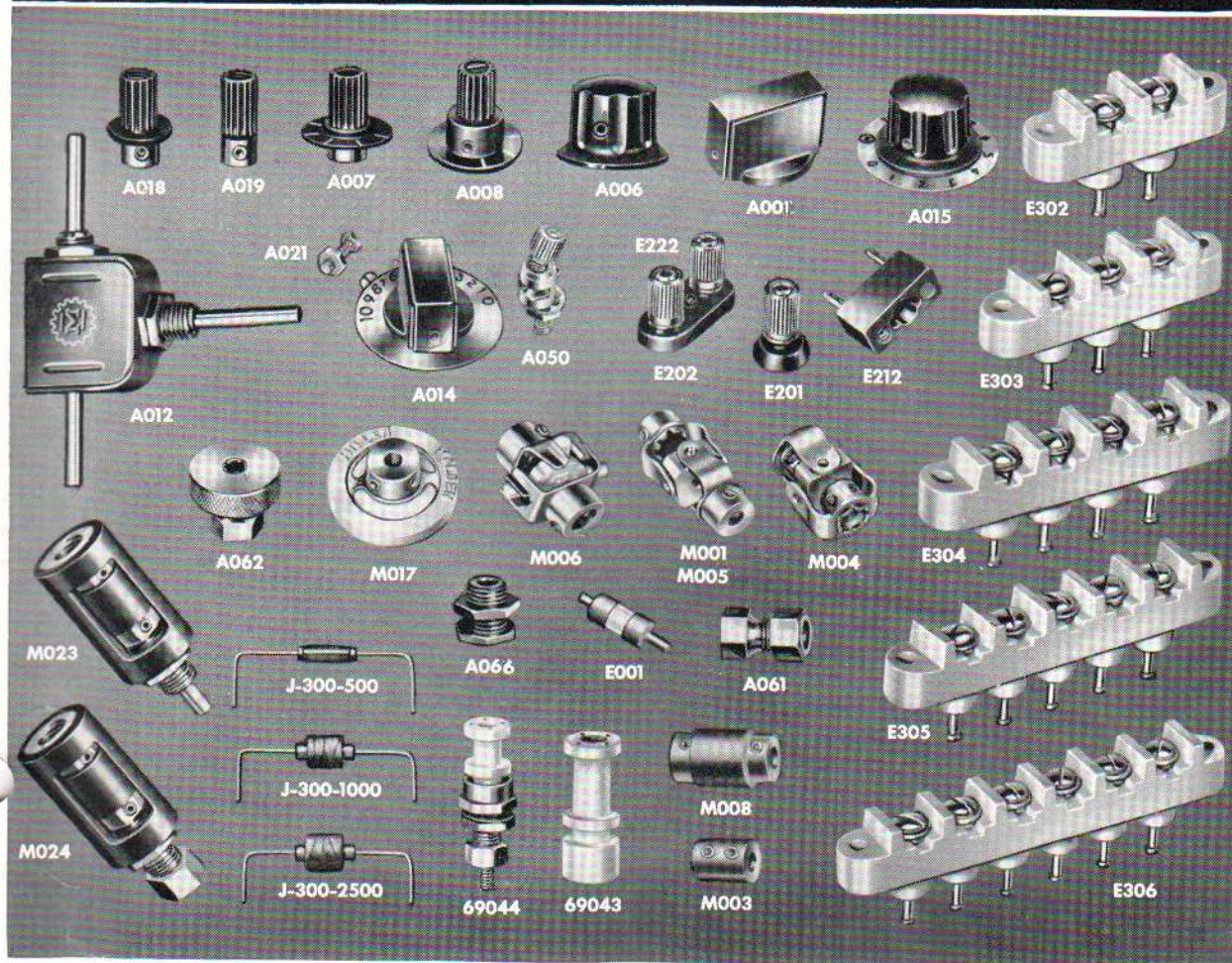
PHENOLIC FORM RF INDUCTANCES — The No. 34300 Inductances — Phenolic coil form with axial leads. Inductances from 0.15 microhenry to 2.5 millihenries ±5%. EIA standard values plus 25, 50, 150, 250, 350, 500, and 2500 microhenries. Solenoids from 0.15 to 16 microhenries. Single pi from 18 to 300 microhenries. Multiple pi for higher inductances. Forms 7/32" dia. x 7/16 in. long, 3/16" x 3/8", 1/4" x 3/4", and 1/4" x 1". Special coils on order.

MINIATURE IF TRANSFORMERS — Extremely high Q — approximately 200 — Variable Coupling — (under, critical, and over) with all adjustments on top. Small size 1 1/16" x 1 1/16" x 1 7/8" Molded terminal base. Air capacitor tuned. Coils completely enclosed in cup cores. Tapped primary and secondary. Rugged construction. High electrical stability.

No. 61455, 455 kc. Universal Trans.....
No. 61453, 455 kc. BFO.....
No. 61160, 1600 kc. Universal Trans.....
No. 61163, 1600 kc. BFO.....

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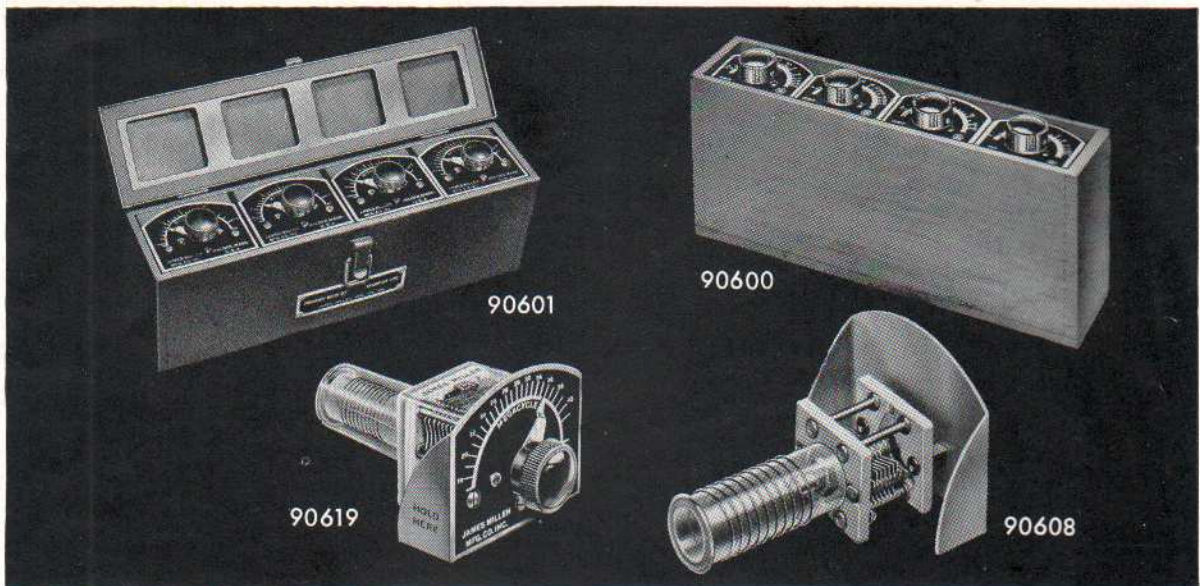


MINIATURIZED COMPONENTS

DESIGNED for APPLICATION miniaturized components developed for use in our own equipment such as the 90901 Oscilloscope, are now available for separate sale. Many of these parts are similar, in most details except size, to their equivalents in our standard component parts group. In certain devices where complete miniaturization is not paramount, a combination of standard and miniature components may possibly be used to advantage. For convenience, we have also listed on this page the extremely small sized coil forms from our standard catalog.

CODE	DESCRIPTION
A001	Bar knob for 1/8" shaft. 1/2" high by 3/4" long.
A006	Fluted black plastic knob with brass insert for 1/8" shaft. 1/2" high by 3/4" diameter.
A007	1/4" black plastic dial knob with brass insert for 1/8" shaft. 3/8" diameter dial. 3/8" high.
A008	1/4" black plastic knob. Same as no. A007 except for style.
A012	Right angle drive for 1/8" shafts. Single hole mounting.
A014	1" bar dial for 1/8" shaft. 1/2" high. 180° or 280° dials for clockwise or counter-clockwise rotation.
A015	1" fluted knob dial for 1/8" shaft. 1/2" high. Same dial plates as no. A014.
A017	1 1/8" diameter fluted black plastic knob for 1/8" shaft.
A018	Knob, same as no. A007 except with 3/8" diameter skirt.
A019	Knob, same as no. A007, but without dial.
A021	Miniature metal index for miniature dials.
A050	Miniature dial lock.
A061	Shaft lock for 1/8" diameter shaft. 1/4"-32 bushing. Nickel plated brass.
A062	Shaft lock with knurled locking nut.
A066	Shaft bearing for 1/8" diameter shafts. Nickel plated brass. Fits 1 1/4" diameter hole.

CODE	DESCRIPTION
E001	Stearite ceramic standoff or tie-point. Integral mounting eyelet. 0.205" overall diameter.
E021	Black or red plastic binding post plates for No. E222.
E022	Black or red plastic plates for two binding posts spaced 1/2".
E212	Black or red plastic plug for two binding posts spaced 1/2".
E222	Metal binding post with jack top.
E302A	to E306A Stearite ceramic terminal strips. 3/8" wide. Terminals spaced 3/8" on centers. Screw type or solder type thru-terminals.
J300-3.3	to J300-2500 Complete line of miniature inductances 3.3 to 2500 microhenries. 3/8" long. Diameter 0.115" to 0.297".
M001	Insulated universal joint style flexible coupling for 1/8" dia. shafts.
M003	Solid coupling for 1/8" dia. shafts. Nickel plated brass.
M004	Universal joint style flexible coupling for 1/8" diameter shafts. Inverted hubs for short length. Not insulated.
M005	Universal joint style flexible coupling for 1/8" diameter shafts. External hub for maximum flexibility. Not insulated.
M006	Universal joint style flexible coupling for 1/8" diameter shafts. Spring finger. Stearite ceramic insulation.
M008	Plastic insulated coupling with nickel plated brass inserts for 1/8" diameter shafts.
M017	Plastic insulated flexible coupling for 1/8" diameter shafts. 1 1/2" long by 1 3/8" diameter. Bronze yoke.
M023	Insulated shaft extension for 1/4"-32 bushing and 1/8" shaft. For mounting sub-miniature potentiometer.
M024	Locking insulated shaft extension similar to no. M023.
69043	Stearite ceramic coil form. Adjustable core. Winding space 1/4" diameter by 1 3/2" long. Mounting 4-40 hole.
69044	Stearite ceramic coil form. Adjustable core. Winding space 0.187" diameter by 3/8" long. No. 10-32 mounting.



Midget Absorption Frequency Meters

Many amateurs and experimenters do not realize that one of the most useful "tools" of the commercial transmitter designer is a series of very small absorption type frequency meters. These handy instruments can be poked into small shield compartments, coil cans, corners of chassis, etc., to check harmonics; parasitics; oscillator-doubler, etc., tank tuning; and a host of other such applications. Quickly enables the design engineer to find out what is really "going on" in a circuit.

Types 90604 thru 90610 are extremely small and designed primarily for engineering laboratory use where they will be handled

with reasonable care. The most useful combination being the group of four under code No. 90600 and covering the total range of from 3.0 to 140 megacycles. When purchased in sets of four under code No. 90600 a convenient carrying and storage case is included. Series 90601 are slightly larger and very much more rugged. They are further protected by a contour fitting transparent polystyrene case to protect against damage and dirt. This latter series is designed primarily for field use and are not quite as convenient for laboratory use as the 90605 thru 90608 types. All types have dials directly calibrated in frequency.

Code	Description	Net Price
90604	Range 160 to 210 mc.	
90605	Range 3.0 to 10 mc.	
90606	Range 9.0 to 23 mc.	
90607	Range 23 to 60 mc.	
90608	Range 50 to 140 mc.	
90609	Range 130 to 170 mc.	
90610	Range 105 to 150 mc.	
90611	Range 1.5 to 3.5 mc.	
90612	Range 3.5 to 8 mc.	
90613	Range 8 to 18.5 mc.	
90614	Range 18 to 41 mc.	
90619	Range 0.35 to 1.0 mc.—Neon Indicator	
90620	Range 0.15 to 0.35 mc.—Neon Indicator	
90625	Range 2 to 6 mc.—Neon Indicator	
90626	Range 5.5 to 15 mc.—Neon Indicator	
90600	Complete set of 90605 thru 90608, in case	
90601	Complete set Field type Frequency Meters in metal carrying case 1.5 to 40 mc.	

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Port Washington
Long Island, N. Y.

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L. D. Lowery, Inc.
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