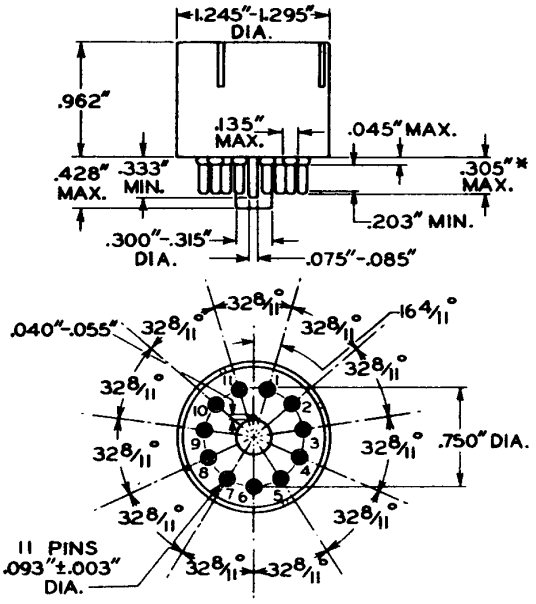
SMALL-SHELL NEOSUBMAGNAL 11-PIN

Pin Dimensions and Orientation



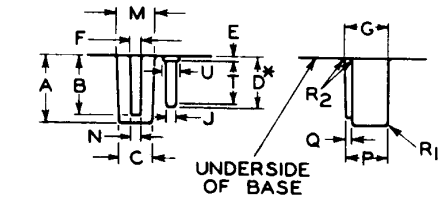
JEDEC No. B11-104
RCA No. 11442

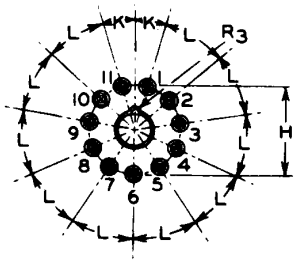
Base-pin positions are held to tolerances such that entire length of pins will enter flat-plate gauge (JEDEC Group 2, No. GB11-2) having thickness of 1/4" and eleven holes with diameters of 0.1030" ± 0.0005" so located on a 0.7500" ± 0.0005" diameter circle that the distance along the chord between any two adjacent hole centers is 0.213" ± 0.0005".

Pin fit in gauge is such that gauge together with supplementary weight totaling 3 pounds will not be lifted when pins are withdrawn.

* Add 0.030" for solder on finished tube.

"SUBMAGNAL"
PIN DIMENSIONS AND ORIENTATION AND INDEX GUIDE





	Min.	*Center*	*Max.*		*Min.*	*Center*	*Max.*
A	.550"	.560"	.570"	L	–	32-8/11°	–
B	.490"	.500"	.510"	M	.305"	.312"	.317"
C	.300"	.308"	.315"	N	.075"	.080"	.085"
D	.427"	.437"	.447"	P	.343"	.353"	.363"
E	–	–	.050"	Q	.040"	.047"	.055"
F	.085"	.090"	.095"	R_1	–	.031"	–
G	.352"	.362"	.372"	R_2	–	–	.050"
H	–	.750"	–	R_3	–	.040"	–
J	.090"	.093"	.096"	T	.340"	–	–
K	–	16-4/11°	–	U	–	–	.135"

Base-pin positions are held to tolerances such that entire length of pins will enter flat-plate gauge (JETEC No.GB11-2) having thickness of 1/4" and eleven holes with diameters of 0.1030" ±0.0005" so located on a 0.7500" ±0.0005" diameter circle that the distance along the chord between any two adjacent hole centers is 0.2113" ± 0.0005".

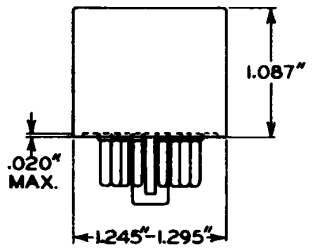
Pin fit in gauge is such that gauge together with supplementary weight totaling 3 pounds will not be lifted when pins are withdrawn.

* Add 0.030" for solder on finished tube.

BASES

11-PIN TYPES

SMALL-SHELL SUBMAGNAL



No. of Pins	*Pins*	*JETEC No.*	*RCA No.*
11-Pin	1,2,3,4,5,6,7,8,9,10,11	B11-88	11344

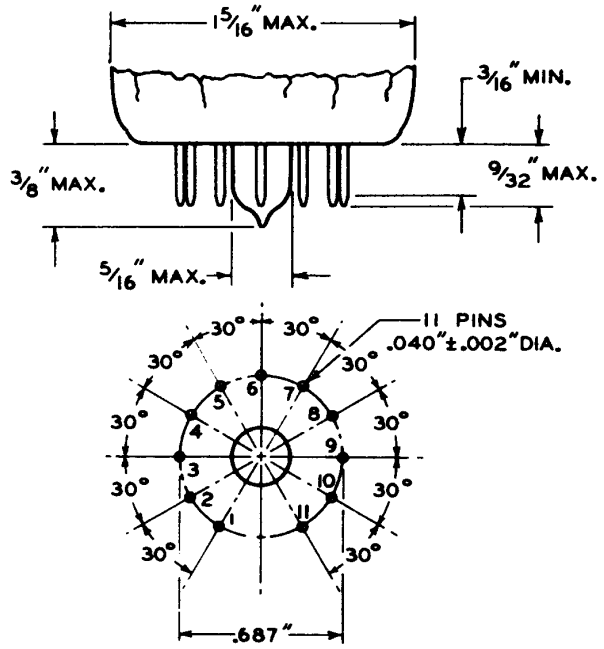
For other dimensions, see first page of the "Submagnal" series

TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

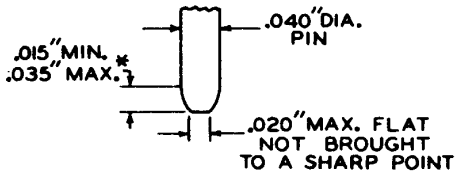
BASES

11-PIN TYPES

SMALL-BUTTON UNIDEKAR 11-PIN



Unidekar Base Pin Contour



JETEC No. E11-22
RCA No. FSB6019

Base-pin positions are held to tolerances such that entire length of pins will without undue force pass into and disengage from flat-plate gauge having thickness of 1/4" and twelve holes with diameters of 0.0520" ± 0.0005" so located on a 0.6870" ± 0.0005" diameter circle that the distance along the chord between any two adjacent hole centers is 0.1778" ± 0.0005". Gauge is also provided with a hole 0.3750" ± 0.0100" concentric with the pin circle.

* This dimension around the periphery of any individual pin may vary within the limits shown.

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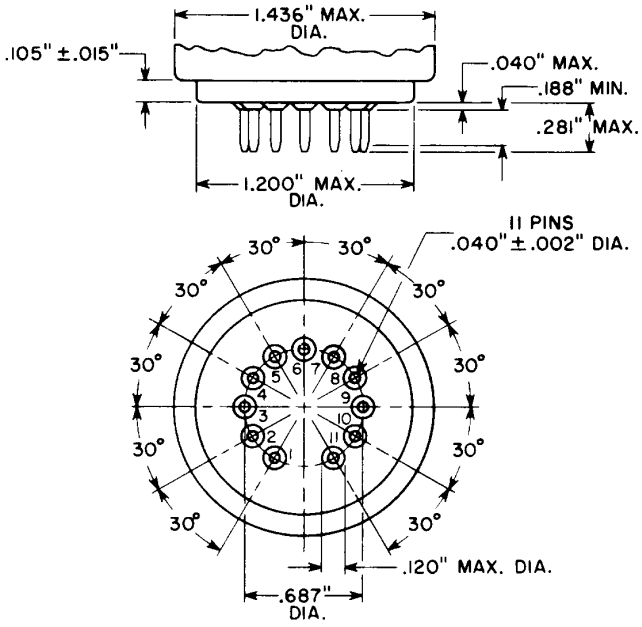
SMALL-BUTTON UNIDEKAR 11-PIN (CONT'D)

The design of the socket should be such that circuit wiring can not impress lateral strains through the socket contacts on the base pins. The point of bearing of the contacts on the base pins should not be closer than 1/8" from the bottom of the seated tube.

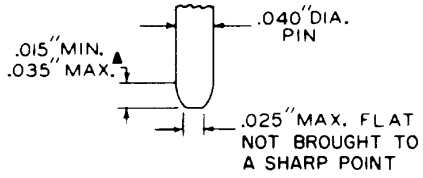
TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

LARGE-WAFER ELEVENAR 11-PIN WITH RING

Pin Dimensions and Orientation



Elevenar-Base-Pin Contour



JEDEC No. E11-81

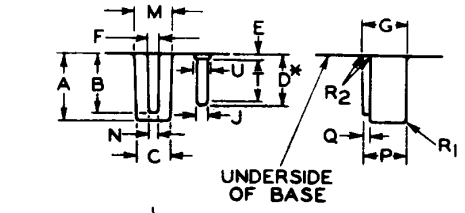
Base-pin positions are held to tolerances such that entire length of pins will, without undue force, pass into and disengage from flat-plate gauge (JEDEC No. GE11-1) having a thickness of 0.250" and twelve holes with diameters of 0.0520" ± 0.0005" so located on a 0.6870" ± 0.0005" diameter circle that the distance along the chord between any two adjacent hole centers is 0.1778" ± 0.0005". Gauge is also provided with a hole 0.3750" ± 0.0005" diameter concentric with the pin circle.

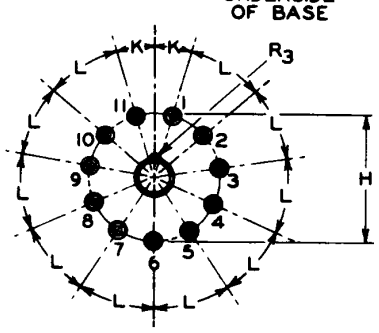
▲ This dimension around the periphery of any individual pin may vary within the limits shown. The surface of the pin is convex or conical in shape and not brought to a sharp point.

BASES

11-PIN TYPES

"MAGNAL"
PIN DIMENSIONS AND ORIENTATION AND INDEX GUIDE





	Min.	Center	Max.		Min.	Center	Max.
A	.550"	.560"	.570"	L	–	32-8/11°	–
B	.490"	.500"	.510"	M	.305"	.312"	.317"
C	.300"	.308"	.315"	N	.075"	.080"	.085"
D	.427"	.437"	.447"	P	.343"	.353"	.363"
E	–	–	.050"	Q	.040"	.047"	.055"
F	.085"	.090"	.095"	R_1	–	.031"	–
G	.352"	.362"	.372"	R_2	–	–	.050"
H	–	1.063"	–	R_3	–	.040"	–
J	.090"	.093"	.096"	T	.340"	–	–
K	–	16-4/11°	–	U	–	–	.135"

Base-pin positions are held to tolerances such that entire length of pins will enter flat-plate gauge (JETEC No. GB11-1) having thickness of 1/4" and eleven holes with diameters of 0.1030" ± 0.0005" so located on a 1.0630" ± 0.0005" diameter circle that the distance along the chord between any two adjacent hole centers is 0.2995" ± 0.0005".

Pin fit in gauge is such that gauge together with supplementary weight totaling 3 pounds will not be lifted when pins are withdrawn.

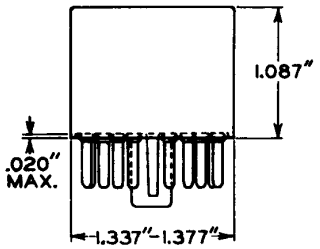
* Add 0.030" for solder on finished tube.

TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

BASES

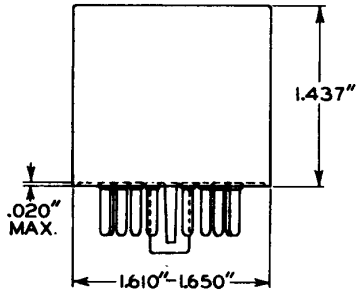
11-PIN TYPES

SMALL-SHELL MAGNAL



No. of Pins	*Pins*	*JETEC No.*	*RCA No.*
11-Pin	1,2,3,4,5,6,7,8,9,10,11	B11-33	11247

MEDIUM-SHELL MAGNAL

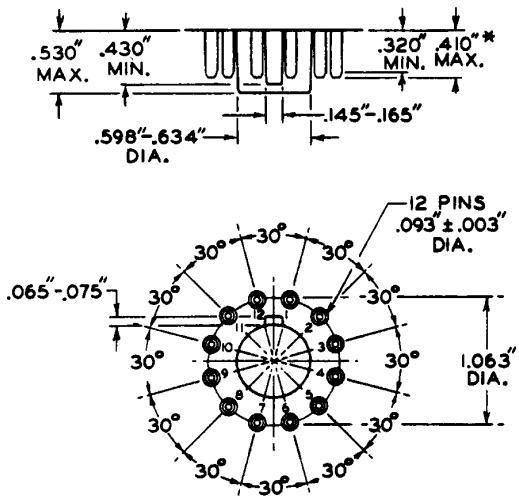


No. of Pins	*Pins*	*JETEC No.*	*RCA No.*
11-Pin	1,2,3,4,5,6,7,8,9,10,11	B11-66	11248

For other dimensions of above bases, see first page of the "Magnal" series

TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

"DUODECAL"
PIN DIMENSIONS AND ORIENTATION AND INDEX GUIDE



Base-pin positions are held to tolerances such that entire length of pins will enter flat-plate gauge (JETEC No. GB12-1) having thickness of 1/4" and twelve holes with diameters of 0.1030" ± 0.0005" so located on a 1.0630" ± 0.0005" diameter circle that the distance along the chord between any two adjacent hole centers is 0.2751" ± 0.0005".

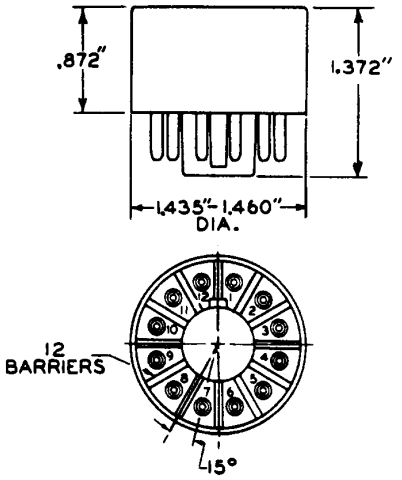
Pin fit in gauge is such that gauge together with supplementary weight totaling 3 pounds will not be lifted when pins are withdrawn.

* Add 0.030" for solder on finished tube.

BASES

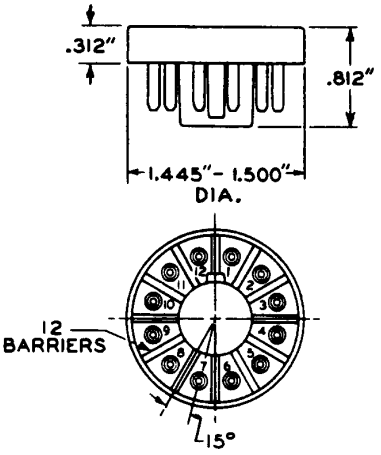
12-PIN TYPES

DWARF-SHELL DUODECAL



No. of Pins	*Pins*	*JETEC No.*	*RCA No.*
12-Pin	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	B12-157	12263
6-Pin	1, 2, 3, 10, 11, 12	B6-158	6263

ULTRASHORT SMALL-SHELL DUODECAL



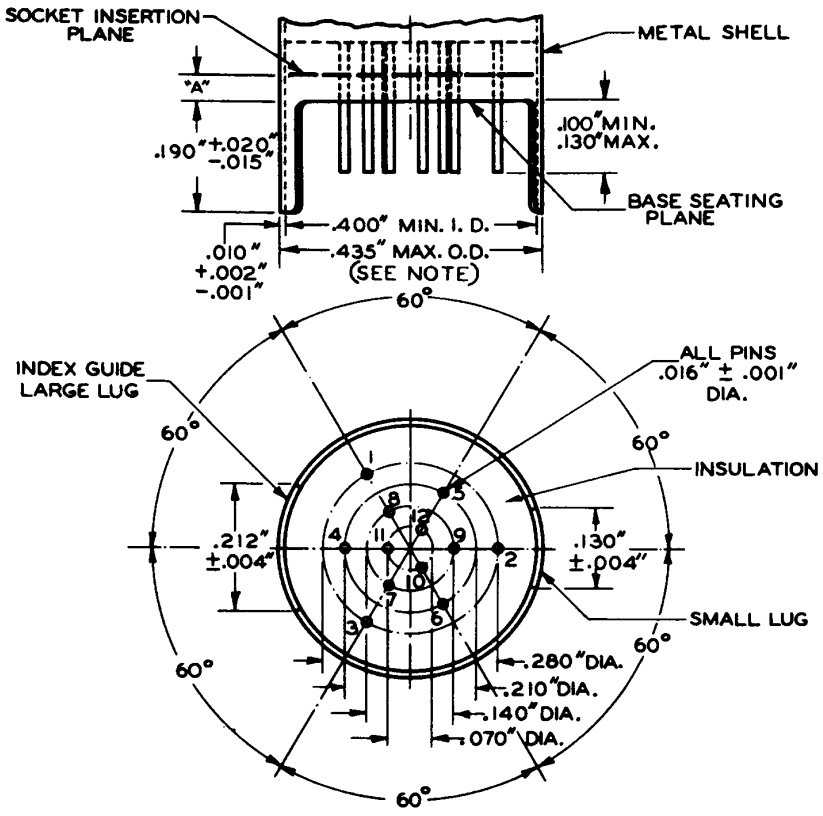
No. of Pins	*Pins*	*JETEC No.*	*RCA No.*
12-Pin	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12,	B12-186	12261

For other dimensions of above bases, see first page of the "Duodecal" series

ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

MEDIUM CERAMIC-WAFER TWELVAR BASE

Pin Dimensions and Orientation and Index Guide



NOTE: MAXIMUM OUTSIDE DIAMETER OF 0.440" IS PERMITTED ALONG THE 0.190" LUG LENGTH.

No. of Pins	*Pins*	*Dimension "A" Max.*	*JEDEC No.*	*RCA No.*
12 - Pin	1,2,3,4,5,6,7,8,9,10,11,12	0.040"	E12-64	-
7 - Pin[a]	1,2, 4, 6,7, 10, 12	0.040"	E7-83	-
7 - Pin[b]	1, 3, 5,6,7, 10, 12	0.020"	E7-77	-
5 - Pin[c]	2, 4, 8, 10, 12	0.040"	E5-79	-
5 - Pin[d]	2, 4, 8, 10, 12	0.040"	E5-65	-

[a] Pins 3,5,8,9 are of a length such that their ends do not touch the socket insertion plane. Pin 11 is omitted.

[b] Pins 2,4,8,9 are of a length such that their ends do not touch the socket insertion plane. Pin 11 is omitted.

[c] Pin 7 is of a length such that its end does not touch the socket insertion plane. Pins 1,3,5,6,9,11 are omitted.

[d] Pins 1,3,5,6,7,9 are of a length such that their ends do not touch the socket insertion plane. Pin 11 is omitted.

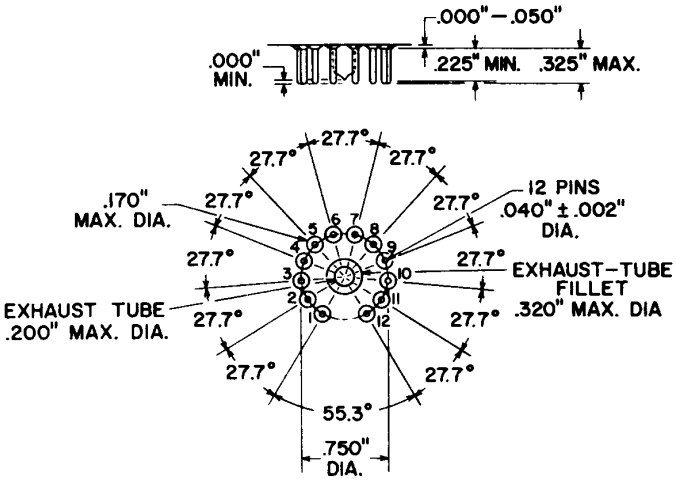
Bases

12-Pin Types

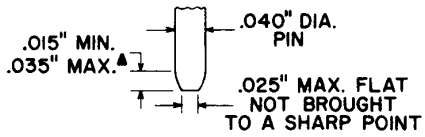
Base-pin positions and lug positions shall be held to tolerances such that entire length of pins and lugs will without undue force pass into and disengage from flat-plate gauge (JEDEC No.GE12-5) having thickness of 0.250" and twelve holes of 0.0350" ± 0.0005" diameter located on four concentric circles as follows: Three holes located on 0.2800" ± 0.0005", three holes located on 0.2100" ± 0.0005", three holes located on 0.1400" ± 0.0005", three holes located on 0.0700" ± 0.0005" diameter circles at specified angles with a tolerance of ± 0.08° for each angle. In addition, gauge provides for two curved slots with chordal lengths of 0.2270" ± 0.0005" and 0.1450" ± 0.0005" located on 0.4200" ± 0.0005" diameter circle concentric with pin circles at 180° ± 0.08° and having a width of 0.0230" ± 0.0005".

DUODECAR 12-PIN

Pin Dimensions and Orientation



Duodecar-Base-Pin Contour



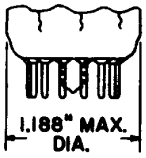
Base-pin positions are held to tolerances such that entire length of pins will, without undue force, pass into and disengage from flat-plate gauge having a thickness of 0.250" and thirteen holes with diameters of 0.0520" ± 0.0005" so located on a 0.7500" ± 0.0005" diameter circle that the distance along the chord between any two adjacent hole centers is 0.1795" ± 0.0005". Gauge is also provided with a hole 0.375" + 0.005" – 0.000" diameter concentric with the pin circle.

▲ This dimension around the periphery of any individual pin may vary within the limits shown. The surface of the pin is convex or conical in shape and not brought to a sharp point.

Bases

12-Pin Types

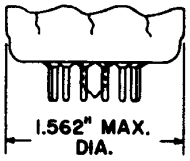
SMALL-BUTTON DUODECAR 12-PIN



JEDEC No. E12-70

Fits Gauge JEDEC No. GE12-3

LARGE-BUTTON DUODECAR 12-PIN



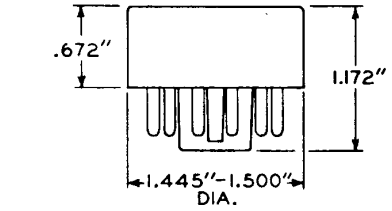
JEDEC No. E12-74

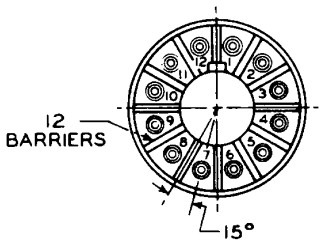
Fits Gauge JEDEC No. GE12-4

BASES

12-PIN TYPES

SHORT SMALL-SHELL DUODECAL





No. of Pins	*Pins*	*JETEC No.*	*RCA No.*
12-Pin	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	B12-207	12267
6-Pin	1, 2, 6, 10, 11, 12	B6-203	6267

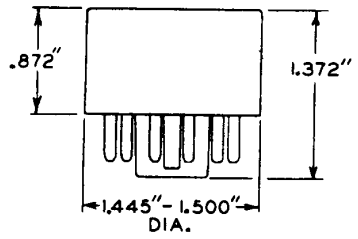
For other dimensions, see first page of the "Duodecal" series

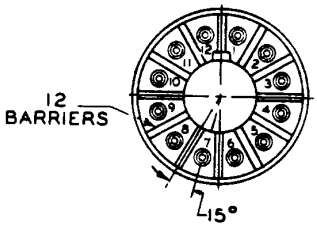
ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

BASES

12-PIN TYPES

SMALL-SHELL DUODECAL





No. of Pins	*Pins*	*JETEC No.*	*RCA No.*
12-Pin	1,2,3,4,5,6,7,8,9,10,11,12	B12-43	12253
10-Pin	1,2,3,4, 6,7,8,9,10, 12	B10-75	10253
7-Pin■	1,2, 6,7, 10,11,12	B7-51	7253
7-Pin▲	1,2,3, 6, 10,11,12	B7-179	-
6-Pin■	1,2, 6, 10,11,12	B6-63	6253
6-Pin▲	4,5,6,7,8, 12	B6-180	-
5-Pin	1,2, 10,11,12	B5-57	5253

For other dimensions, see first page of the "Duodecal" series

■ Arrangement 1.
▲ Arrangement 2.

ELECTRON TUBE DIVISION
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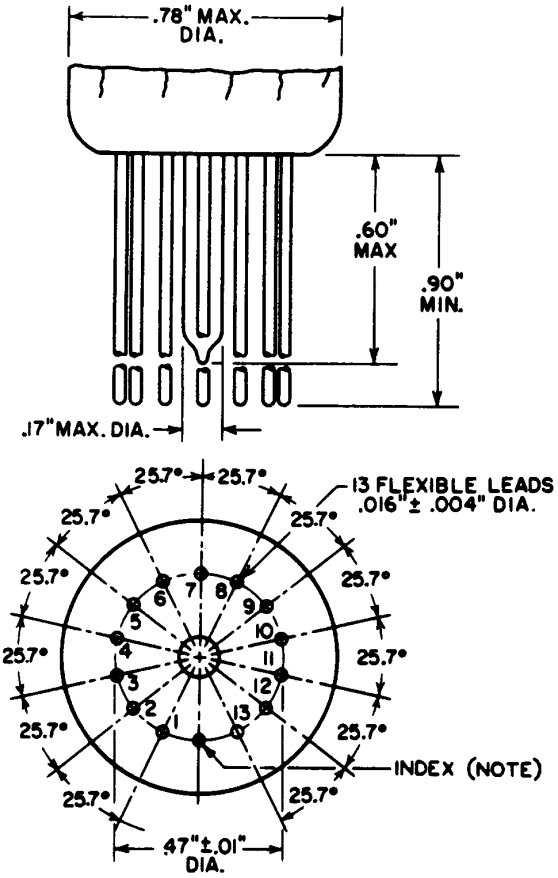
SMALL-BUTTON THIRTEENAR



NOTE: LEAD IS CUT OFF WITHIN 0.04 INCH FROM THE GLASS BUTTON.

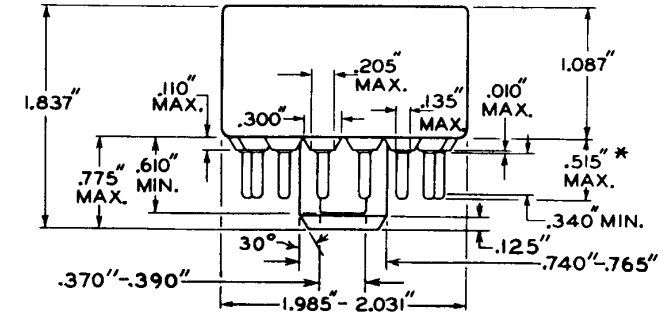
No. of Leads	*Leads*	*JEDEC No.*	*RCA No.*
13-Lead▲	1,2,3,4,5,6,7,8,9,10,11,12,13	E13-71	-
12-Lead	1,2,3,4,5,6,7,8,9,10,11,12,	E12-72	-

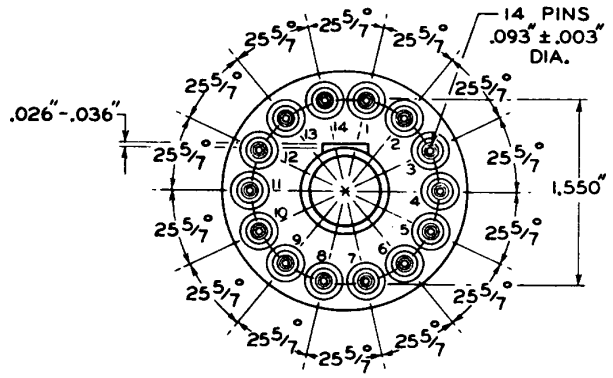
▲ Lead 13 is cut off within 0.04 inch from the glass button.

BASES

14-PIN TYPES

SMALL-SHELL NEODIHEPTAL





No. of Pins	*Pins*	*JETEC No.*	*RCA No.*
14-Pin	1,2,3,4,5,6,7,8,9,10,11,12,13,14	B14-130	14560
12-Pin	1,2,3,4,5,6,7, 9, 11,12,13,14	B12-131	12560

Base-pin positions are held to tolerances such that entire length of pins will enter flat-plate gauge (JETEC No.GB14-2) having thickness of 1/4" and fourteen holes with diameters of 0.1030" ± 0.0005" so located on a 1.5500" ± 0.0005" diameter circle that the distance along the chord between any two adjacent hole centers is 0.3449" ± 0.0005".

Pin fit in gauge is such that gauge together with supplementary weight totaling 3 pounds will not be lifted when pins are withdrawn.

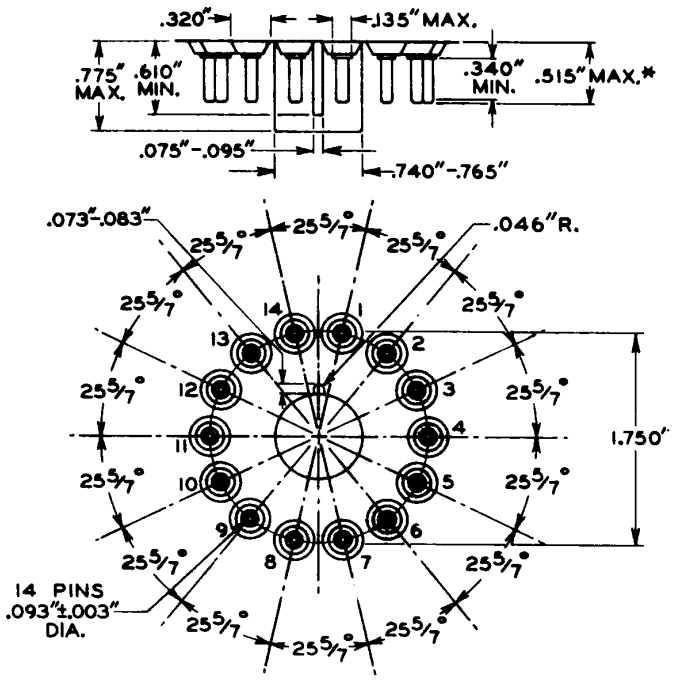
* Add 0.030" for solder on finished tube.

ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

BASES

14-PIN TYPES

"DIHEPTAL"
PIN DIMENSIONS AND ORIENTATION AND INDEX GUIDE



Base-pin positions are held to tolerances such that entire length of pins will enter flat-plate gauge (JETEC No.GB14-1) having thickness of 1/4" and fourteen holes with diameters of 0.1030" ± 0.0005" so located on a 1.750" ± 0.0005" diameter circle that the distance along the chord between any two hole centers is 0.3895" ± 0.0005".

Pin fit in gauge is such that gauge together with supplementary weight totaling 3 pounds will not be lifted when pins are withdrawn.

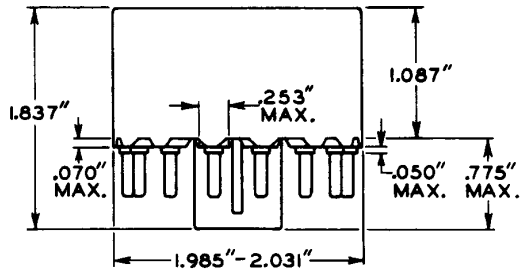
* Add 0.030" for solder on finished tube.

TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

BASES

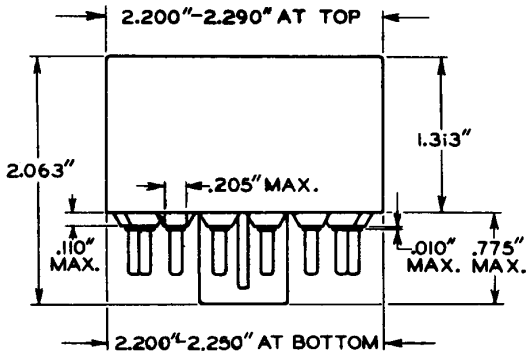
14-PIN TYPES

SMALL-SHELL DIHEPTAL



No. of Pins	*Pins*	*JETEC No.*	*RCA No.*
14-Pin	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14	B14-45	14151
12-Pin	1, 2, 3, 4, 5, 6, 7, 9, 11, 12, 13, 14	B12-105	12151

MEDIUM-SHELL DIHEPTAL



No. of Pins	*Pins*	*JETEC No.*	*RCA No.*
14-Pin	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14	B14-38	14146
12-Pin	1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 14	B12-37	12146

For other dimensions of above bases, see first page of the "Diheptal" series

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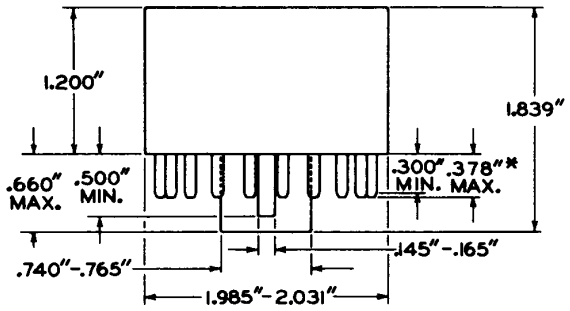
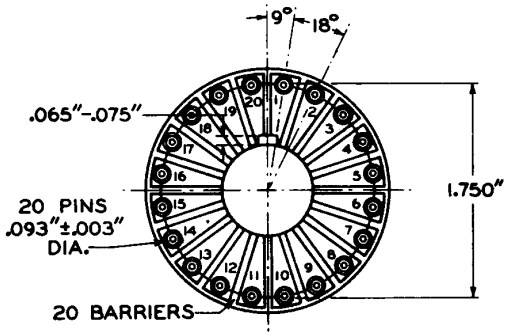
BASES

20-PIN TYPES

SMALL-SHELL BIDECAL





No. of Pins	*Pins*	*JETEC No.*	*RCA No.*
20-Pin	1 through 20	B20-102	20158

Base-pin positions are held to tolerances such that entire length of pins will enter flat-plate gauge (JETEC No. GB20-1) having thickness of 1/4" and twenty holes with diameters of 0.1030" ± 0.0005" so located on a 1.7500" ± 0.0005" diameter circle that the distance along the chord between any two adjacent hole centers is 0.2738" ± 0.0005".

Pin fit in gauge is such that gauge together with supplementary weight totaling 3 pounds will not be lifted when pins are withdrawn.

* Add 0.030" for solder on finished tube.

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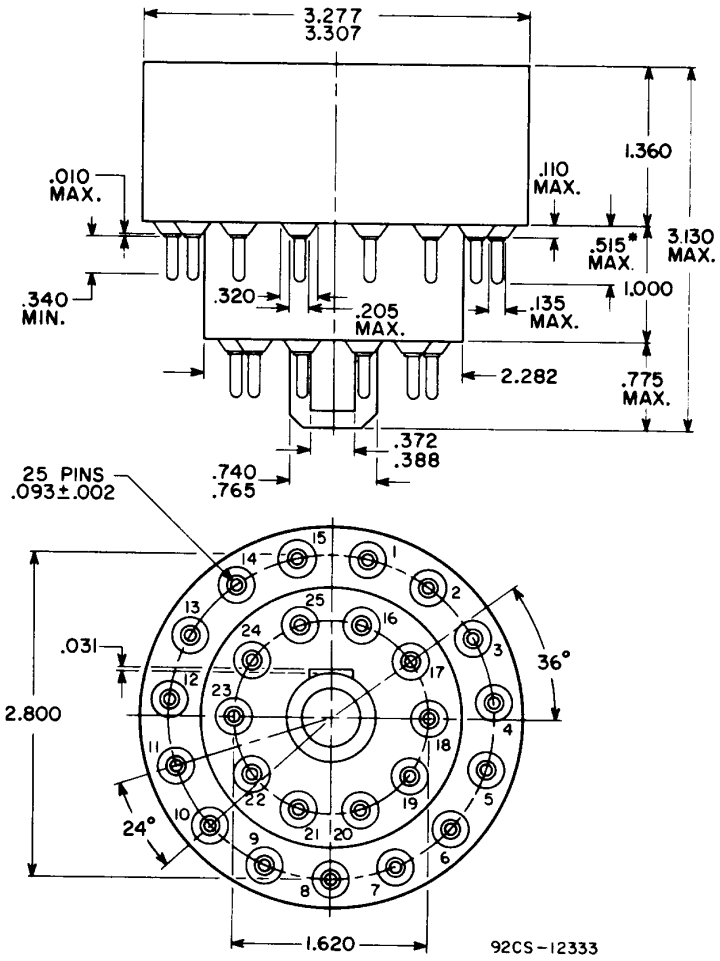
JEDEC No. B25-216



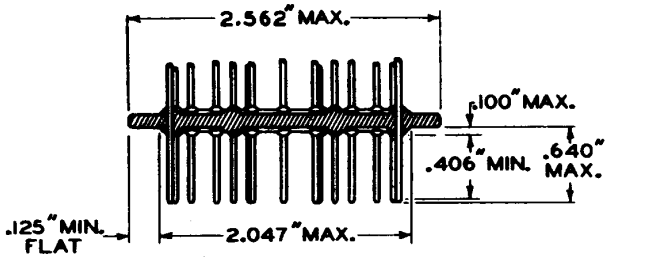
DIMENSIONS IN INCHES

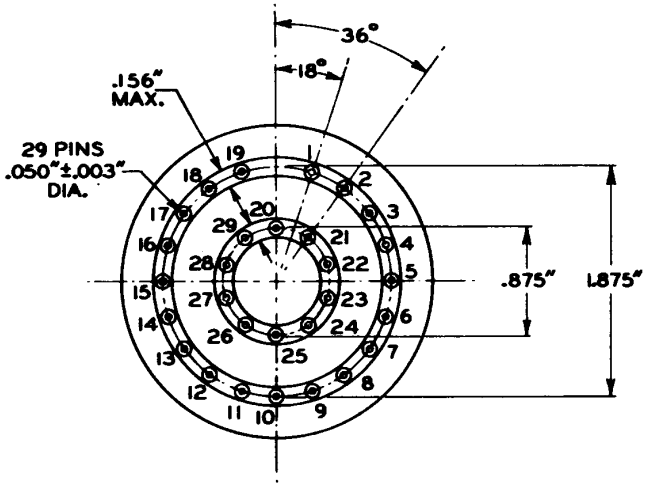
* Add 0.030 inch for solder.

BASES

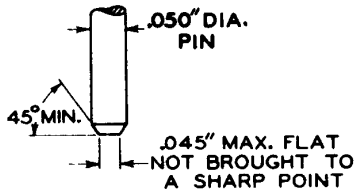
29-PIN TYPES

SMALL-BUTTON TWENTYNINAR





Twentyninar Base Pin Contour



No. of Pins	*Pins*	*JETEC No.*	*RCA No.*
29-Pin	1 through 29	E29-17	-
22-Pin	1 through 19,21,25,28	E22-16	FSB693
8-Pin	2,6,10,14,18,21,25,28	E8-19	FSB693A

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SMALL-BUTTON TWENTYNINAR (CONT'D)

Base-pin positions are held to tolerances such that entire length of pins will enter flat-plate gauge having thickness of 3/8" and twenty-nine holes with diameters of 0.0700" ± 0.0005", nineteen of which are located with hole centers corresponding to the specified location of pin centers on a 1.8750" ± 0.0005" diameter circle, and ten of which are located with hole centers corresponding to the specified location of pin centers on a 0.8750" ± 0.0005" diameter circle concentric with the 1.8750" circle.

Pin fit in gauge is such that entire length of pins will, without undue force, enter into and disengage from the gauge.

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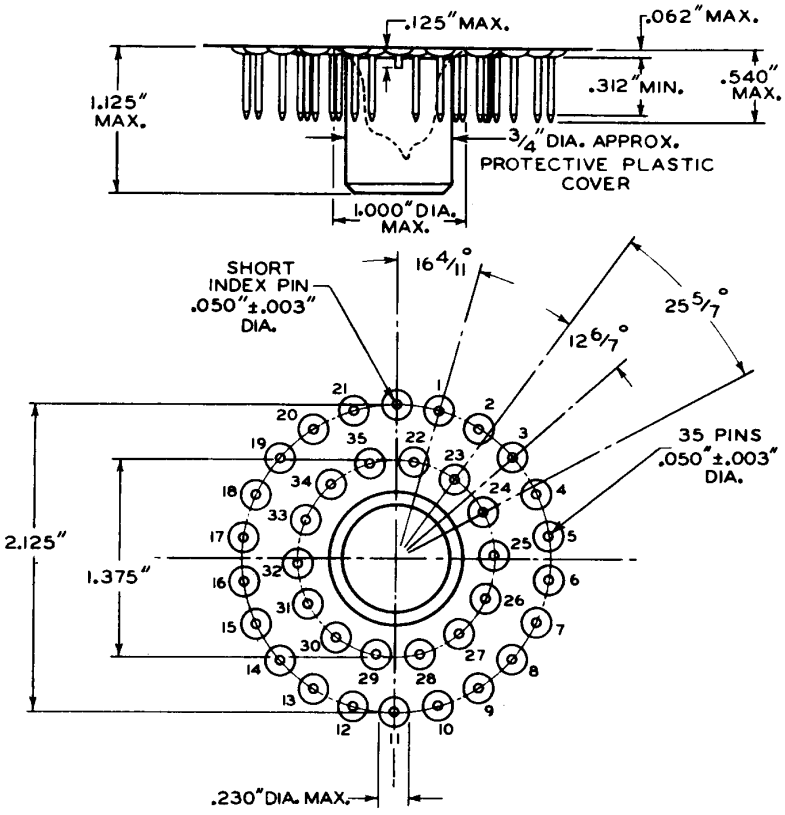
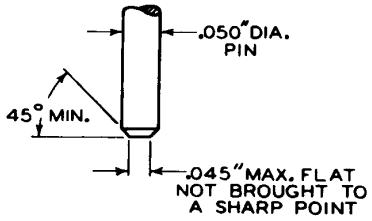
"THIRTYFIVAR"
PIN DIMENSIONS AND ORIENTATION



Thirtyfivar-Base Pin Contour



Base-pin positions are held to tolerances such that entire length of pins will enter flat-plate gauge having thickness of 3/8" and thirty-six holes with diameters of 0.0700" ± 0.0005", twenty-two of which are located with hole centers corresponding to the specified location of

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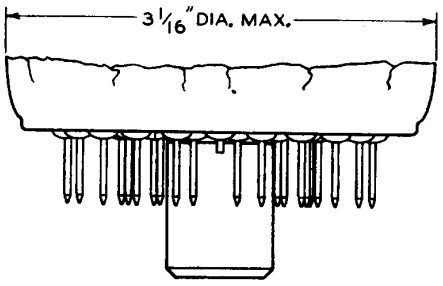
THIRTYFIVAR (CONT'D)

pin centers on a 2.1250" ± 0.0005" diameter circle, and fourteen of which are located with hole centers corresponding to the specified location of pin centers on a 1.3750" ± 0.0005" diameter circle concentric with the 2.1250" circle.

Pin fit in gauge is such that entire length of pins will, without undue force, enter into and disengage from the gauge. Gauge is also provided with a hole 1.000" diameter minimum concentric with pin circles.

SMALL-BUTTON THIRTYFIVAR



No. of Pins	*Pins*	*JETEC No.*	*RCA No.*
35-Pin	1 through 35	E35-28	-
33-Pin	Omit pins 24 and 30	E33-29	-
31-Pin	Omit pins 24 and 30; pins 23 and 31 are trimmed to same dimension as index pin.	E31-36	-
21-Pin	1 through 21	E21-40	-

For other dimensions of above base, see first page of the "Thirtyfivar" series

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