

pieces of stalloy comprising the core are in four different sizes instead of two, and the assembling is different.

Cutting of stalloy strips is usually carried out by the home constructor with a pair of snips, and this process unfortunately puts a slight curve in the end of every piece, which necessitates tapping the ends flat on an iron surface. The size is easily gauged by holding a piece of the required size on the long strip, and cutting close against the end of the gauge. In both Auckland and Wellington there are firms which supply stalloy cut to sizes ready for assembly. If the stalloy is not coated with insulation, it must be thinly coated with shellac dissolved in

overlapping edges on the outside makes a good protective covering.

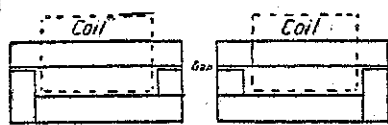
Double cotton-covered wire is used only when it is important that the self-capacity of the coils should be kept down, but this is not usually an important point, so enamelled wire is used on account of the great saving in space thereby effected. In very thin sizes of wire the double cotton-covering increases the total cross-section to several times that of the same gauge of enamelled, so that on account of the great increase in bulk, its use would in many cases be impossible. Reference to the table on page 57 of the "Guide" shows that 27,389 turns of 38's enamelled wire will occupy a square inch, only 5,625 turns of the same gauge can be put into that space if the wire is double cotton-covered. This table will be found particularly useful in the construction of chokes, as by its aid the space to be occupied by any number of turns can be decided.

Supposing that the window of a choke core measures two inches by half an inch, its area is one square inch. Deduction must then be made for space occupied by spool ends, for insulation round the core and outside, and for the fact that the turns will not pack as closely as the mathematical reckoning indicates. It would be safe to deduct 30 per cent. and reckon 2-3 square inch available for the wire. Then this space wound with enamelled wire would take 5000 turns of 32's, 6700 34's, 10,000 36's and so on. In most cases the window size will be decided after the winding has been carried out, so that the table will be used to determine the dimensions of the spool, especially with the object of preventing the length from being too short. From 1½ to 2 inches is the usual length, in proportion to the thickness of wire. For 30's and larger, the length may be over 2in. if the number of turns is large.

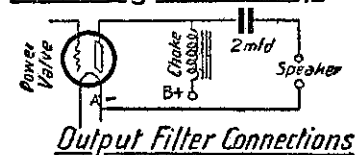
IN spite of the advantages to be gained by the use of a choke-condenser output filter following the last valve of a receiver, a great many listeners still neglect to instal this comparatively small and inexpensive addition to the circuit. Its use on a short-wave receiver cuts out quite an amount of capacity and other trouble. Several good makes can be purchased ready made, but constructors can easily make the coil and purchase the 2mfd. condenser, which should be of high test to stand up to the plate voltage of the power valve.

A neat 20-henry choke to suit the average receiver with power-valve is made with a core ½in. square, spool 2in. long inside, and wound with 8000 turns of 36's enamelled wire. Window, 2½ x 1in. Gap each end, thin card in each. One dozen 3ft. strips of stalloy required. This will have a direct current resistance of about 700 ohms.

Space does not permit of further treatment of this subject, but the article will be concluded next week, when two useful tables of chokes with and without gaps will be included.



Even Layers Odd Layers
Assembling Core with Gap



Output Filter Connections

Output Filter

methylated spirits and applied with a brush, each piece being treated separately after cutting.

A set of very useful stalloy stampings is now available for constructors at Thos. Ballinger's, Wellington. These stampings consist of T's and U's which fit together, each pair forming a complete layer. They can be assembled brick-wise without gap, or all one way, which leaves three gaps. A diagram is given of these stampings, showing the dimensions. They have the usual insulating composition on one side and oxide on the other, and require no shellac coating. They are absolutely flat and truly cut, and pack together very snugly. Besides being very suitable for eliminator chokes, they will also make good transformers—a matter which will very shortly be dealt with in these pages.

A diagram shows the appearance of a home-built choke coil, whether with or without gap. A pair of wooden clamps of suitable thickness secures the laminations at either end of the spool by means of brass or iron bolts of correct length. Threaded brass rod is handy for bolting, as it can be cut with a hack-saw to any length. The actual construction of spools to hold the winding, and the process of winding is fully dealt with on page 57 of the "Listeners' Guide."

In the case of a choke coil there is only one winding, usually of enamelled wire, which is wound on without much insulation of various portions, in fact the winding appears about the same as that upon the spools containing the wire when purchased.

A layer of adhesive tape wound with

IF one of the joints in a crystal detector is suspected of being imperfect (for instance, the joint between the outer terminal and the cat's-whisker), a distinct improvement will often be noticed if a flexible lead is soldered between these points.

AN American station is planning to include novel sound effects in a series of programmes for dogs and cats. Quite a stir is expected along canine row when whines and barks and meows begin to emanate from loud-speakers.

RADIO DIRECTORY

What to Buy and Where

CITIES

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| AERIAL MASTS | Domestic Radio Co., Ltd.,
Strand Arcade, Auckland. |
| ALTONA & HAMMARLUND-ROBERTS SETS. | Johns, Ltd.
Chancery Street, Auckland. |
| ATWATER-KENT RADIO ... | Frank Wiseman, Ltd.
170-172 Queen Street, Auckland. |
| BREMER-TULLY RADIO | Superadio, Ltd.,
147 Queen Street, Auckland. |
| BURGESS RADIO BATTERIES, | All Radio Dealers. |
| CROSLEY RADIO | Abel, Smeeton, Ltd.,
27-29 Customs St. E., Auckland. |
| FERRANTI RADIO COMPONENTS | A. D. Riley & Co., Ltd.,
Anzac Avenue, Auckland, and all leading Dealers. |
| CROSLEY SETS | Lewis Eady, Ltd.,
Queen Street, Auckland. |
| GREBE RADIO | Howie's,
Dilworth Building, Custom st., Auckland. |
| LOUDSPEAKER AND TRANSFORMER REPAIRS | A. E. Strange,
404 Worcester Street, Christchurch. |
| MULLARD VALVES | All Radio Dealers. |
| RADIOLA RECEIVERS | Chas. Bennett, Ltd.,
619 Colombo Street, Christchurch. |
| RADIOLA RECEIVERS and Expert Radiola Service. | Farmers' Trading Co., Ltd.,
Hobson Street, Auckland. |
| RADIO REPAIRS AND SERVICE | E. G. Shipley,
185 Manchester Street, Christchurch. |
| 'RELIABLE' DRY BATTERIES | Royds-Howard Co.,
Christchurch, Distributors. |
| SELECTRA RADIO RECEIVER | Selectra Radio Limited,
Mercantile Chambers, Customs St., Auckland. |
| T.C.C. CONDENSERS | A. D. Riley and Co., Ltd. Anzac Ave., Auckland, and all leading dealers. |

COUNTRY TOWNS

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| CROSLEY RADIO | J. C. Davidson,
Main Street, Pahiatua. |
| CROSLEY SETS | F. H. Jellyman, Ltd.,
Devon Street, New Plymouth. |
| CROSLEY RADIO | D. A. Morrison & Co.,
Victoria Avenue, Wanganui. |
| MAJESTIC, ATWATER-KENT AND APEX ELECTRICAL SETS. Also Bremer-Tully, Radiola and Browning-Drake | Radio House, Hamilton.
G. S. Anchor, Manager. |
| PHILIPS VALVES AND APPARATUS | All Good Radio Dealers. |

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Mullard
THE MASTER VALVE