



SUBJECT SETTING SINGLE HELICAL COILS ON
 MANDREL - By Annealing in Hydrogen

SUPERSEDED DATE 7/19/46

Supersedes former 14-3-12, p. 1

Purpose of setting coils is to hold them to the specified sizes respective of length, T.P.I. etc., and also to minimize waviness after winding.

1. EQUIPMENT

a. Hydrogen Annealing Furnace -

24" Muffle Furnace Model 780F capable of reaching temperature of 1700°C. Furnace should be equipped with a cone shaped entrance with opening of 1/4". * The exit tube should be at least 12" long, x 2-1/8" diam., and have an opening of 1/4".

b. Winding Head -

For Standard 3 3/4 I.D., steel rims and capable of producing speed from 5 - 50 mts/min.

c. Unwinding Head -

To accommodate 3 3/4" I.D. steel rims.

→ **d. Optical Pyrometer

2. ANNEALING SCHEDULES

a. <u>Size</u> (mils)	<u>Mandrel</u>	<u>Speed</u> (Mts./Min.)	<u>Volts</u> (Approx.)	<u>Temperature</u> (Deg.Centigrade)
2.5-10.0	Steel	8-10	90	1050
10-25.0	Brass	"	70	700
3.0-10.0	Molybdenum	"	120	1400

b. Rate of hydrogen flow should be 3-5 cu. ft./hr. (Flame length about 3/4").

c. Temperature and speed should be sufficient to produce coils as straight and uniform in size as possible without stretching or making mandrel brittle.

→ ** d. Check temperature of furnace using an optical pyrometer when furnace temperature has reached equilibrium after each setting change of the annealing furnace and before each shift's operation.

ENGINEERING SECTION
 STANDARDIZING

*Exit tube is not water-cooled

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