

D.O.S
26th, April 1962

Mngr.....	Engr.....
Sec.....	Asst. Sec.....
Asst. Sec.....	Para. Supt.....
Ch. Acct.....	Supply Sales.....
3 - MAY 1962	
Stores.....	Init.....
Ans'd.....	

FR
6/33

AUSTRALIAN MISSION
S.N.E.C.M.A
70, bld Kellermann

COMMONWEALTH AIRCRAFT CORPORATION PTY.LTD.
BOX 779 H P.O.
Elizabeth st.

MELBOURNE
Australia

PARIS 13e
France

CIRCULATION / COPIES	
E.F. MNGR	FCT. ADM. SUPT.
DSGN. ENGR	MC. SHOP. SUPT.
DEV. ENGR	PRODUCN. SUPT.
SRV. ENGR	ASSY. SUPT.
QUAL. ENGR	FOUNDRY SUPT.
PROD. ENGR	METCAL. SUPT.
MATL. ENGR	PROCESS SUPT.
CH. TL. DSGR	TOOL. PROD. SUPT.
CH. INSP. E.F.	TOOL. ROOM. SUPT.
Asst. Manager	SUPT. INSPECTION

Attention : the MANAGER.

Subject : Heat treatment of locking ring wire bands.

Dear Sir,

These bands are part of the compressor rotor assembly. They are circular bands, shaped in the softened condition from steel wire to specification 60 SC 7 or 45 SCD 6, and later heat treated to a spring temper by a 890° C salt bath treatment followed by oil quenching and tempering.

The part numbers involved, and ring dimension in each case, are as follows :

Part n°	Int. diam.	
	mm.	ins.
501.108.080	390	15.35
" " 081	424	16.7
" " 082	457	18
" " 083	485	19.1
" " 084	512.2	20.16
" " 085	536	21.1

SNECMA assemble these rings, 15 at a time, on a ring type holding fixture for the salt bath treatment at 890° C and oil quenching. A test piece of wire, about 8 inches long and taken from the same coil that the rings were made from, is attached to each fixture load being heat treated. This test piece is later sent to the laboratory for tensile testing.

THESE WIRE RINGS ARE BEING
PURCHASED AS FINISHED PARTS
UP TO PRESENT 15 ENG 41. 6/33

...

NOTED
CNPS

It is not unusual to have to heat treat these rings two or three times in order to meet the tensile requirements. If the requirements cannot be met after the third heat treatment, the batch is rejected. To assist in meeting the requirements, it is essential that the oil quenching bath be located as close as possible to the salt bath in order to keep the time of transferring from the salt to oil bath to the minimum.

The SNECMA salt bath for carrying out this heat treatment is an immersed electrode type having an oval shaped salt pot. The working dimensions are 19 3/4"x 23 5/8"x 24" deep. with the largest rings assembled on a holding fixture the maximum working dimensions of this bath are required.

Based on the C.A.C salt bath working dimension information that is available here as being 15" diameter, it will not be possible to heat treat these parts by this method at C.A.C. This subject has been discussed with the Heat treatment section at Kellermann, who have suggested the following :

a) a larger salt bath be installed.

or

b) the rings be copper plated and heat treated in an open furnace.

SNECMA have not had experience with heat treating these parts in the copper plated condition ex. an open furnace, but see no reason why it would not be satisfactory.

Recommendations :

Unless there are reasons not here known, it is recommended that C.A.C heat treat these parts in the copper plated condition ex an open atmosphere furnace.

Yours faithfully,

G.H. Foster

G.H. FOSTER

26th, April 1962

RECEIVED

- 3 MAY 1962

A 501.108.080/085

Tolerances DT 05-16.

Silver plate . Variation coat per face + 0.010
+ 0.006

M 4 - P E (DT 03-95)

Material 60 SC 7 or 45 SCD 6

TR R $\gg$ 160, HB $\gg$ 470

Wire diam. 2.5 mm.

Heat treat

Preheat 500° C 1 hour.

Increase to 890° C in salt

540 + 12 of C 3

Time : 6 mn 60 SC 7

12 mn 45 SCD 6.

Oil quench

Treat the test sample the same as part in accordance with MCL 02.

Raise to 450° C 1 hour 45 SCD 6.

Air cool

or 425° C 15 mn 60 SC 7

Air cool

R $\gg$ 160 HB $\gg$ 470

~ Silver plate.