

(Translation).

30th January, 1934.

Messrs. Swan, Hunter & Wigham
Richardson, Ltd.,
Neptune Works Walker,
NEWCASTLE ON TYNE.

Dear Sirs,

Bauer Wach Exhaust Turbine Installation.

In reply to your letter of the 23rd instant
I have wired you as follows :

"Your letter 23rd consider your two designs too complicated and expensive. Recommend improved taper design copy of which posting to-day".

Our view is that the rather few cases of
one coupling of shafts which have given rise to difficulties
do not justify giving up this construction altogether.

Of the 200 exhaust turbine installations which
have so far been put into service, some of which have now been
running for 7 years, only about $\frac{1}{2}$ dozen have shown the symptoms
referred to. This is a proof that the original design was in
principle correct.

At the same time, we consider that in view of
the incidents which have brought about this correspondence,
a small alteration of the cone design and a strengthening
of same, above all where practicable, is indicated.

The enclosed drawing Bl.No.3609 shows the cone
design, which we should like to suggest to you for Type No.10.

- 1.) It will be of particular importance that the inside shaft, where the cone begins, be first of all fitted tightly for a certain distance (on the enclosed drawing 150 mm) in the hollow shaft. The transversal forces to which this shaft end is subjected, will then no longer tend to loosen the cone, so that it will be protected from the harmful influences of these forces.

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2.

2. This measure also renders it unnecessary to make the cone thicker, which adds to its strength.
3. It is advisable to choose a smaller conicity, i.e. to make the cone more slender, in order that its thickness at the end is not too small.
4. It is preferable to make it in one piece, as it is easier to be fitted than two.
5. As you will see from the drawing, we have made the intermediate part in which the cone is held fast, very strong, whereby a much tighter fit is obtained. When fitting the cone in the intermediate part it is of course necessary, as when fitting the propeller on its cone, to take care that the thick end of the cone fits well, in order that the turning moment is transmitted by the thick end and not by the thin end.
6. For the same reason we shall no longer make the key run over the whole length of the coupling, but only over the greater part of same at the thick cone end. Through the absence of any key groove in the rear end of the coupling, an unnecessary weakening of the rear part of the muff coupling, which is already subjected to greater stresses, ~~is obtained~~, as well as of the weaker shaft end, is avoided.

Yours etc.



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