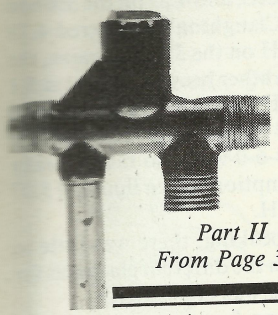
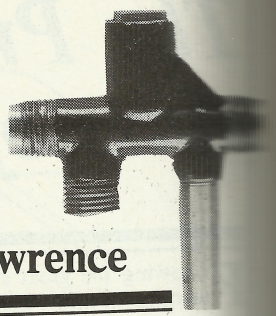


Laurie's Standard Live Steam Injectors



by D. E. Lawrence

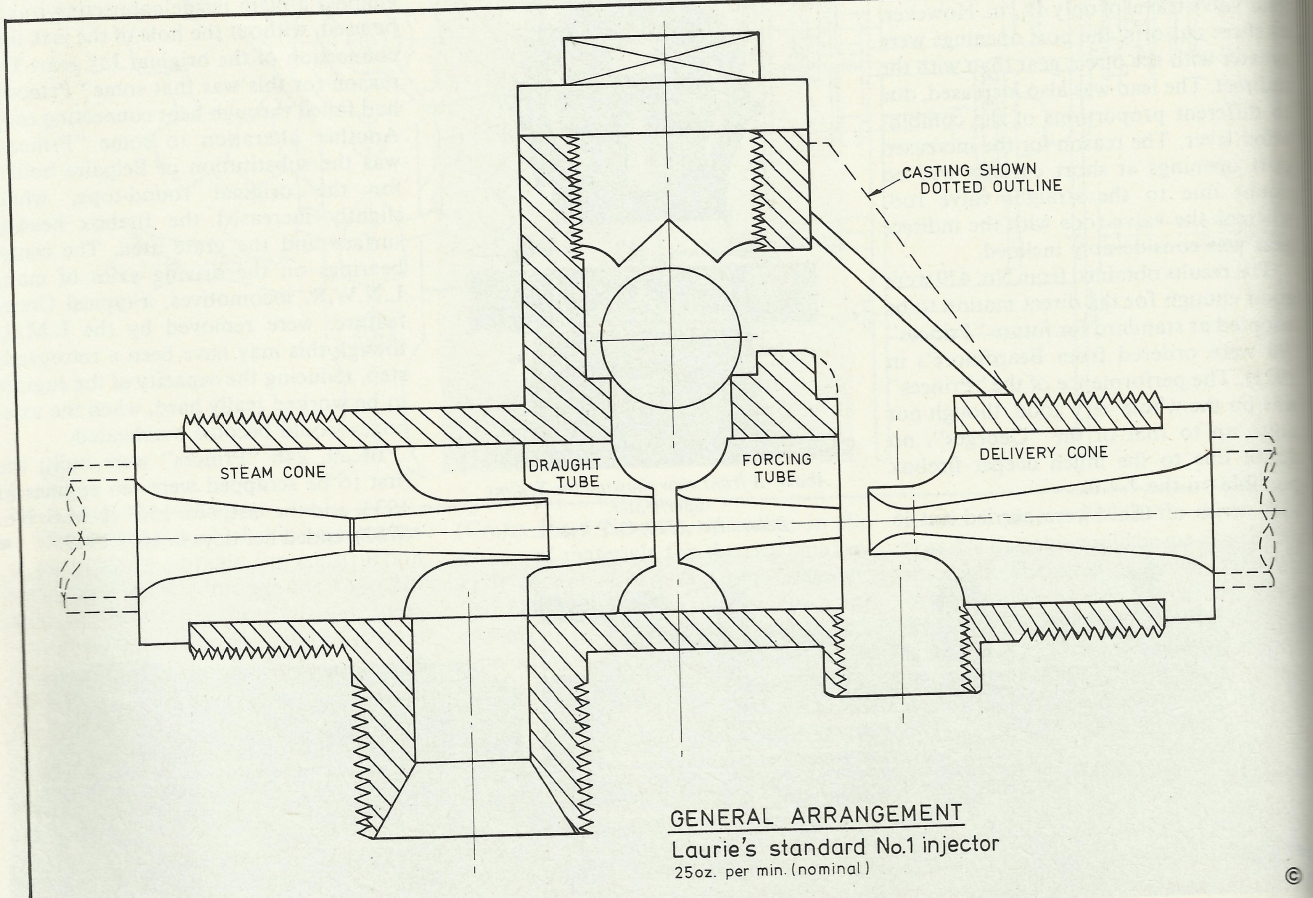
Part II

From Page 371

Bill has an injector test rig and we had a couple of highly enjoyable sessions putting the injectors he had made and one of my own through their paces. As Bill has actually made *Laurie's Standard No. 1 and 1A* as he calls them, (I might add with his usual impeccable workmanship), and as they tested OK you can be sure of good results. Bill kindly agreed to give instructions for making his testing valve which allows an injector to be tested whilst delivering against boiler pressure, but the feed water to go to waste instead of filling the boiler. This saves frequent blowing down of the boiler and gives better control of the pressure range over which an injector is tested. (See *Model Engineer* 1 November 1974).

In addition to Bill Carter's generous and extensive co-operation, I thought it reasonable to try out these instructions on a couple of "guinea pigs" first before publication. I am not used to writing "do this, do that" articles and I wanted to make sure that the instructions were clear and could be followed by model engineers of varied skill. Derek Pring and the late Bertie Green allowed themselves to be persuaded to act as guinea pigs. Also Ken Cribb modified the casing (or body) of a redundant commercial injector to my instructions and Bill kindly made and fitted *Standard No. 1* cones in it. I am indebted to Bertie and Derek for their most useful co-operation and for comments and suggestions as to where clarification was needed in these instructions. Odd how one takes things for granted; I thought my notes were complete, yet still holes appeared! Lessons learned from their experience in following these notes are in the section entitled *Inq*... which also includes test results of the injectors.

So that readers can understand the need for the various parts of an injector, it would be best if I explained, in my usual lightweight fashion, what they are and their purpose. The injector consists of five basic parts: The body or casing; The steam cone; The combining cone; The delivery cone; The overflow with non-return valve in the body. In American parlance the cones are often called tubes. In the type of injector described here, the combining cone is in two parts — the draught tube and forcing tube; the latter



GENERAL ARRANGEMENT
Laurie's standard No.1 injector
25oz. per min. (nominal)