

GIARDINI

1 Oct 1975
180 Lanier Court
Athens, Ga. 30601

Dr. H. Tracy Hall
Chemistry Dept.
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40004755

Dear Tracy:

I have a consultation client to whom I've suggested that they buy one of your cube pressure units. At present the situation is just in the possibility stage, but they have requested that I obtain for them information on cost and delivery time. The unit should have a routine operational range for diamond and borazon syntheses, say 65 kb with temperature.

The thrust capability of the unit has not been discussed. I would imagine it would be related to cost. Could you provide me with fairly specific cost and time estimates for say units with a $\frac{5}{8}$ " $\frac{3}{4}$ " and 1" cube-edge face, respectively?

How are the Indians making out with their unit?

Warmest regards,
Al Giardino

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A. A. Giardini
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 Athens, Ga. 30601

Dear Al:

Thanks for your letter of October first. I appreciate your interest.

I have a cubic unit under construction (about 50% complete) for 5/8 inch on edge anvils & pyrophyllite cube is about .78 inch on edge). Its hydraulic rams have a thrust of 300 tons each. This will give about 65 kbar at full load. This unit is scheduled for completion by April 1976. It is more elaborate, prettier, and better than the Indian unit. Also, the Indian unit only has 200 ton hydraulic rams. This new press will have automatic oil pressure control (to ± 10 psi). Temperature will be manually set with SCR control but will not have automatic regulation. I do not have all the costs together but think it will have to sell for about \$106,000.00.

I would recommend a 600 ton press for 3/4 inch on edge anvils. It would cost about \$210,000.00 and require about 18 months for construction.

For 1 inch on edge anvils, I would recommend a 1000 ton unit. It would cost around \$325,000.00 and require two years for construction.

On reading your letter again, I think that you were specifying the size of the pyrophyllite cube face and I have been giving the length of the edge on the square faced anvil. If this is the case, a 200 ton press would have 1/2 inch on edge square faced anvils and would use pyrophyllite cubes of 5/8 inch on edge. This machine would cost around \$80,000.00 and could be built in about twelve months time.

J. Martin Neil is working with Hewlett-Packard on programmable controls for our presses. They will be available next year and will make it possible to program pressure and temperature in most any desired manner. Such a system will add about \$50,000.00 to the cost of a press.

I'm leaving for India on October 17th. Agarwalla has had the press since May but has not had a place to set it up until now. He is supposed to wait for my arrival to assemble it but I think he has been trying to put it together in advance of my coming. Let's hope they haven't wrecked it.

Best regards.

Tracy

400-4750

P.S. A photo of the 200 ton, inverted ram, anvil guided INDIAN unit is enclosed.