

H. TRACY HALL, INCORPORATED

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PROVO, UTAH 84601

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April 27, 1977

Board of Directors
DBT Company
275 West 2230 North
Provo, Utah 84601

Gentleman:

In response to your request we are submitting a PRELIMINARY PROPOSAL for the manufacture of a 1000 ton cubic press. As you know we have been active as high pressure equipment manufacturers for several years. The following proposal combines the best features of all the presses we have ever designed or built. If you require additional features we will be happy to include them. Included in this proposal are some new features that you may be interested in. After consideration of this proposal we suggest that we meet to set exact specifications and to come to an agreement on a formal proposal.

PROPOSAL

To build DBT Company of Provo, Utah a cubic press rated at 1000 tons with some or all of the following features.

1. (6) piston-cylinder sets converging on a cube: U.S. Patent #3,159,876 by H.Tracy Hall, issued Dec. 8, 1964.
2. Anvil guide system to insure alignment of (6) anvils. Patent # 3,182,353 by H. Tracy Hall, issued May 11, 1965.
3. Anvil guide retraction.*
4. Inverted Ram design. Cylinder moves, piston is fixed, anvil guides held by cylinder head.*

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5. Left and Right hand threaded tie bars which connect directly into bases.*
6. Spacer behind piston to allow replacement of piston seal without removal of piston-cylinder assembly. This feature is included on the most recent 300 ton press built by H.T.H. Inc..*
7. Fixed end guide pin to provide for easier removal of guide pin seals and wipers. This feature has been included on several other presses designed by H.T.H. including the most recent press manufactured by MC.
8. Cylinder head porting: This system uses 6 anvil guides for cylinder retraction and the other 6 for hydraulic connection to cylinders. Piloted valves are built into cylinder head which allow large flow for retraction through one or more ports. Another piloted port allows high pressure to enter cylinders or anvil guide for high pressure advance or retraction. This system eliminates hydraulic connections on the bases and provides high speed capability for production.*
9. If desired we can also provide hydraulic connection through the tie bars with headers on each base. This system was included on most recent 300 ton press built by H.T.H. Inc..*
10. Disk type carbide back up blocks.*
11. To provide for better cooling of anvils we will manufacture aluminum binding rings if desired.
12. Carbide anvils will be supplied to any design desired. We will supply 12 anvils and binding rings and 6 carbide back up blocks with press.
13. One complete set of spare seals will be included with press.
14. The press will be constructed with the following materials:
 - A. Bases: AQ4340 forgings RC-30
 - B. Tie bars: 6 inch diameter, AQ4340 forgings, RC-30
 - C. Cylinders: AQ4340 RC-30
 - D. Piston and Cylinder heads: Ductile Iron
 - E. Anvil guides: Tough core surface hardened and chrome plated steel.
15. 10,000 p.s.i. max. operating pressure.

*Items designed and developed by H.T.H. Inc.. Proprietary design features of H.T.H. Inc..

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PRICE AND TERMS

1. Delivery; 9 months after receipt of official order and deposit. Press will be delivered completely operational to DBT plant in Provo, Utah.
2. Purchase price; \$250,000.00 with 15% down and balance due 30 days after delivery. H.T.H. will pay \$25,000 royalty.
3. Lease price; \$4200.00/month for period of seven years. Two months payment in advance. Lease term begins on delivery of press. H.T.H. Inc. will transfer investment credit to DBT worth \$25,000.00 . H.T.H. will pay \$25,000.00 Royalty.

A cost analysis comparing leasing from us versus building yourself is included for your benefit. Please contact us at my home or at our company shop if you are interested.

Sincerely yours,

H Tracy Hall

H. Tracy Hall
President

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COST ANALYSIS OF BUILDING PRESS YOURSELF

General assumptions: (1) Capital cost \$140,000.00. (2) Royalties are paid as product (diamond) is produced. (3) Internal machine shop plus BYU machine shop used to manufacture press. (4) Must purchase all material and wait six weeks for delivery of material. (5) Must compete with H.T.H. Inc. and design presses yourself. (6) Projects related to maintenance and production equipment and controls must take longer since internal shop and personnel must devote time to manufacture of press. (7) \$140,000.00 to be financed by a debt on press at 10% over seven years. (8) St. line depreciation is used. (9) DBT is profitable over seven year period.

YEAR	INV. CREDIT	DEPRECIATION	INTEREST	PAYMENT	D+I/2	COST	PRESENT VALUE OF COST
1977							
1978	14,000	20,000	13,400	27,660	16,700	-3,040	-2,700
1979		20,000	11,900	27,660	15,900	11,380	9,400
1980		20,000	10,200	27,660	15,100	12,230	9,200
1981		20,000	8,410	27,660	14,200	13,130	8,970
1982		20,000	6,410	27,660	13,700	14,120	8,820
1983		20,000	4,100	27,660	12,050	15,280	8,620
1984		20,000	1,700	27,660	10,850	16,480	8,460
			TOTAL PRESENT VALUE OF COST				50,770

Because internal personnel must be used to design, build and test the press and also manufacture the controls and the hydraulic system, we estimate that it would take at least one year to complete the system. The opportunity cost due to internal personnel having to concentrate on press manufacture rather than production and maintenance is hard to estimate but could be greater than the present value of the press itself.

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COST ANALYSIS OF LEASING PRESS FROM H.T.H. INC.

General assumptions: (1) Lease cost per month for seven years \$4200.00. (2) Royalties paid by H.T.H. Inc. \$25,000.00. (3) Investment credit transfered to DBT, \$25,000.00. (3) H.T.H. Inc. uses its own shop and assets to manufacture press. Net worth of H.T.H. Inc. is \$250,000.00. (4) H.T.H. Inc. designs press and uses material which is currently in inventory. (5) Delivery is within 9 months. (6) DBT is profitable over seven year period. (7) Finance cost is 10%. (8) DBT internal personnel concentrate on hydraulic system and electrical controls plus production and maintenance problems as they arise. Therefore, several production opportunities are not lost to DBT.

<u>YEAR</u>	<u>INV. CREDIT</u>	<u>LEASE PAYMENT</u>	<u>PRE-paid ROYALTIES</u>	<u>COST</u>	<u>P.V.COST</u>
1977					
1978	25,000	50,400	-5,000	-4,800	-4,400
1979		50,400	-10,000	15,200	12,600
1980		50,400	-10,000	15,200	11,400
1981		50,400		25,200	17,200
1982		50,400		25,200	15,600
1983		50,400		25,200	14,200
1984		50,400		25,200	12,900
TOTAL PRESENT VALUE OF COST					79,500

Leasing a press from H.T.H. Inc. will cost \$28,730.00 more than building it at DBT if hidden costs such as the cost of time and lost production etc. are not considered. At the most, DBT will pay approximately \$30,000 for the services of H.T.H. Inc.

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