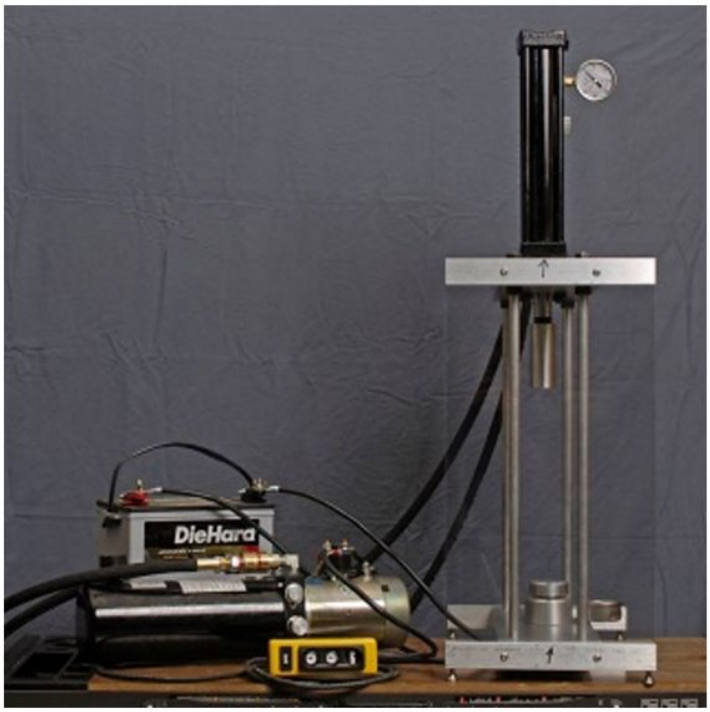
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DIY All-Thread Hydraulic Press with Power Pack

A walk-through of the design and build of an all-thread hydraulic press with a power pack, made for pressing rocket motors, 4″ x 4″ star plates and other pyro items.





If you, like me and many of us, are constrained to making stars at an event rather than being able to purchase them, one option is to use a hydraulic press with star plates. While it's possible to purchase an appropriate commercial hydraulic press, you can also build one yourself.

This article is a summary of the design and building process for an all-thread hydraulic press with a power pack. It was built to press small- to medium-sized rocket motors, smaller (4″ x 4″) star plates and other pyro items.

At the time, I didn't have much practical experience with mechanical systems or hydraulics, so building this press was a great learning experience. It gave me the opportunity to dive into the engineering problems of making a useful and reasonably safe powered hydraulic press. Of course, one can buy a press similar to this, but what fun would that be?

It is my hope this article will inspire others to take the plunge and build their own powered press. But don't be misled: it is very likely your DIY press will end up costing about the same as or more than a commercially available model. Not only do you have to consider the materials costs, but also all the time required. After you have done the engineering, you must source all the parts, get the frame fabricated (I don't have a mill big enough for this and had to use a fabricator) and then do the assembly.

When I did this project a few years ago, most commercial presses were not very portable (but that is different now; see Caleb's small press at Woodysrocks.com) and I wanted to learn about hydraulics. The extra cost was chalked up to education for me.

Topics

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- Initial Design Considerations
- Design Process
- Hydraulic Design
- The Press as Built
- Review and Conclusions

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