

Stamping Press

Name(s): _____

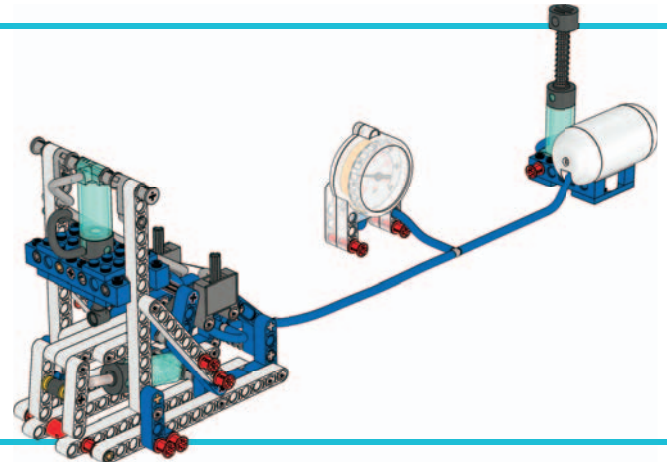
Build the Stamping Press and investigate how energy efficient it is. Let's find out!



Build the Stamping Press.

(All of book 3A and book 3B to page 14, step 12)

- Pump air into the system and use the manometer to detect whether there is an air leak
- Try all valve settings and test if the Stamping Press can do all four possible strokes; press down, press up, ejector down and ejector up. Make sure all moving parts move freely
- Then move the press up, the ejector forward and empty the air tank



How energy efficient is your press?

One complete work cycle is four 'strokes' in sequence; press down, press up, ejector down and ejector up. Find out how repeated work cycles affect loss of pressure.

First, predict how repeated work cycles affect the loss of pressure when working with empty Stamping Press A.

Then, test how Stamping Press A's repeated work cycles actually affect the loss of pressure. Start with 2.5 bars of pressure.

Next, follow the same procedure for Stamping Presses B and C.

Test several times to make sure your results are consistent. Record your result on graph paper.

| | A | B | C |
|----|---|---|---|
| 1 | | | |
| 3 | | | |
| 5 | | | |
| 7 | | | |
| 9 | | | |
| 11 | | | |
| 13 | | | |
| 15 | | | |
| 17 | | | |

Explain your findings:

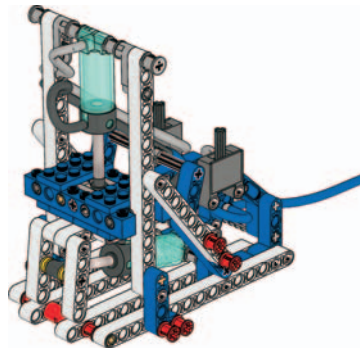
How good of a press operator are you?

The faster you can operate the empty Stamping Press, the more cost efficient it will be. Find out how many complete work cycles you can finish in 30 seconds.

First, predict how many complete work cycles you can finish in 30 seconds when using an empty Stamping Press. Record your predictions on the worksheet.

Then, test how many complete work cycles you actually finished. Record your findings on the worksheet.

Next, try pressing different objects of your own choice and compare the number of complete work cycles you are able to finish.



| | My prediction | My findings |
|--------|---------------|-------------|
| Test 1 | | |
| Test 2 | | |
| Test 3 | | |

Optional: My Amazing Pneumatic _____ !

Invent a new and useful machine that uses the same mechanisms as the Stamping Press but does a different job. Sketch it and explain the three most important features.

Optional: Further Research

Describe some of the industries and jobs the Stamping Press is used for and what some of its limitations might be.