

PROBLEM 1-11

Statement: A fledgling, non-profit, recycling organization collects paper, cardboard, plastics, and metals from consumers in a rural county. After sorting plastics by grades 1 and 2, they are transported to a plastics recycler in a major city 150 miles away. In order to maximize the weight of the plastics that can be put into their trailer the organization desires to compact the plastic containers for transport. Consider this problem and write a goal statement and a set of at least 10 task specifications that you would apply to its solution. Then suggest 3 possible concepts to achieve the goal. Make annotated, freehand sketches of the concepts.

Solution:

Goal Statement: *Create a means to compact individual plastic containers of various sizes and shapes.*

Task Specifications:

1. Cost no more than \$200 for parts.
2. No special tools required for assembly.
3. Deposit crushed containers into plastic trash bags.
4. Provide no threat of injury to user in normal use.
5. Operate from a 110 V, 60 Hz, 20 amp circuit.
6. Require no more than 1 person to use.
7. Be rugged and reliable with minimal maintenance required.
8. Operate at ambient temperatures ranging from 40F to 100F.
9. Crush and bag a minimum of 1200 containers per hour.
10. Be simple to use with minimal written instructions necessary.

Concepts and sketches are left to the student. There are an infinity of possibilities.