

## Hodgins Extractor



The Hodgins Extractor was designed specifically for the pre-extraction of sugars prior to pulping. The extractor, designed and built by Keith Hodgins, consists of four electrically heated vessels that are rotated 360 degrees for mixing. In usual practice, two vessels are used for extraction and two for collecting the hot extract. When the extraction time and temperature conditions are reached, the extracted liquor is removed from the extracting vessels by pressure through screens, cooled and collected in the receiving vessels. The extract is then further cooled and pumped out for additional processing. The pressure limit for these vessels is 180 psig.

Each of the vessels will hold about 60 liters of liquid. Biomass capacity is very dependent on the material's density and the liquor charge. For wood chips used for pulping at normal liquor charges, each vessel will hold about 7 OD kg (15.4 OD lbs) of fresh chips. This will produce about 21 liters (5.5 gal) of extract. If these chips are further processed for pulping, about 3 kg (6.6 lbs) of unbleached pulp will be produced for bleaching. For experiments with only extraction, four vessels can be processed in one day, producing about 84 liters of extract daily. When pulping is required, only two vessels per day can be processed.

The extractor has been used for pre-pulping extraction, pulping and extraction of nonwood biomass.

The Hodgins Reactor was funded by a NSF/EPSCoR grant. The reactor was first used in the Jenness Hall Pilot Plant and has been moved to TRC.