Manual solution of the Gyratory crusher problem

Base case design

Step 1.

Crusher Design Feed rate = 2877 mtph = 3171 stph

Open Side Setting/ product size (OSS) = 178 mm = 7”

Based on below, I would select 60”x90” even though the max throughput is 2900 stph for 60”x90”. These crushers are supposed to be **choke fed (industry term)** and often have some inherent design capacity buffer. Also the next size is 72”x112” which is almost twice the cost of 60”x90”.

A close-up of a document

AI-generated content may be incorrect.

Now going to the cost table, 60x90 is $7.4 MM (2015 $), with 30% escalation to bring it to 2025 $$, $7.4\*1.3 = So use that in the excel spreadsheet for a **TIC of $45.1 MM** (cell B29)

A screenshot of a computer

AI-generated content may be incorrect.

2. Consider if we can relax the OSS to 8”, per the sizing table, will go with 54”x75”.

On the cost table 54”x75” is $4.3 MM (2015 $) = $5.6 MM (2025 $) leading to TIC of **$25.9 MM.**

**This choice of size of crusher is also consistent with another source:-**

https://drive.google.com/file/d/1qePOSHCFIMBLVG6\_gQ8dsqny\_8QEkhtl/view?usp=sharing

