Mill Trashplate Setting (Hugot)

Trashplate clearances at the toe, middle, heel and tip from the feed opening, Hugot's proportions (Table 13.9), the empty settings and the trashplate angle rule.

Method: Hugot; Handbook of Cane Sugar Engineering; ...

Input parameters

Unit system: SI

Parameter	Value	Unit
Working feed opening	79.000	mm
Empty feed opening	61.000	mm
Top roller angle	70.000	°
Roller diameter	0.91400	m

Calculated results

Parameter	Value	Unit
Clearance at the toe (feed side), working	118.50	mm
Clearance at the middle, working	138.25	mm
Clearance at the heel, working	150.10	mm
Clearance at the tip (delivery side)	63.200	mm
Toe clearance, empty	96.900	mm
Middle clearance, empty	115.75	mm
Heel clearance, empty	128.50	mm
Trashplate angle α/6	11.667	°
Offset 0.00145 D α (α in degrees)	92.771	mm

Notes for this case

- Hugot's example: E_A = 79 mm and E_0 = 61 mm give about A 118, M 138, Z 150, T 63 mm working and A_0 96, M_0 115, Z_0 128 mm empty.

Formula and method

$$A = 1.50E_A,\ M = 1.75E_A,\ Z = 1.90E_A,\ T = 0.80E_A$$

$$A_0 = A - 1.2\Delta E,\ M_0 = M - 1.25\Delta E,\ Z_0 = Z - 1.2\Delta E,\ \beta = \frac{\alpha}{6},\ MB = 0.00145\,D\,\alpha$$

Variables

E_A	Working feed opening	m
E_0	Empty feed opening	m
α	Top roller angle	rad
D	Roller diameter	m
A	Clearance at the toe (feed side), working	m
M	Clearance at the middle, working	m
Z	Clearance at the heel, working	m
T	Clearance at the tip (delivery side)	m
A_0	Toe clearance, empty	m
M_0	Middle clearance, empty	m
Z_0	Heel clearance, empty	m

β	Trashplate angle α/6	rad
MB	Offset 0.00145 D α (α in degrees)	m

Method and standards

Hugot's proportions per 100 of feed opening.

Assumptions and limits

- Hugot's proportions for normal 3-roller mills.
- In MB = 0.00145 D α the roller diameter D is in metres and α in degrees, giving MB in metres (93 mm for the default).
- Empty clearances that would come out negative are rejected.

References

- Hugot
- Handbook of Cane Sugar Engineering
- 3rd ed. (Elsevier, 1986)
- ch. 13
- eqns 13.11–13.12 and Table 13.9
- pp. 217–222

Report details

Report reference	FCC-Z1Q0-2X01 (the same inputs always give the same reference)
Generated	17 November 2026, 19:48 UTC
Calculator	Mill Trashplate Setting (Hugot)
Method last reviewed	13 November 2026
Software release	FireCAD Calc, release of 17 November 2026
Release checks	2 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/sugar-ethanol/milling/mill-trashplate-setting

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.