$$\text{Torque}\ [Nm] = \frac{P \cdot 1000}{\frac{RPM}{60} \cdot 2\,Pi()}$$

OUT

$$PMF = \frac{Torque \cdot 10^{-5} \cdot 4\,Pi()}{capacity \cdot 10^{-6}}$$

[cc]

$$PMF = 4 \cdot Pi() \cdot \frac{FLHV}{(capacity \cdot 10^{6})} \cdot \frac{FC^{3/4}}{\left(3600 \cdot \frac{RPM}{60} \cdot 2 \cdot Pi()\right)} \cdot 10^{-5}$$

$$Cm = \frac{RPM}{60} \cdot 2 \cdot \frac{stroke}{1000}$$

[mm]

DATA PRE PROCESS

→ column 1

$RPM = RPM_{haws} \cdot (N_{nom} - N_{idle}) + N_{idle}$

$P = P_{haws} \cdot P_{max}$ → column 2

$FC = FC_{haws} \cdot P_{max}$ → column 3

Inputs

P_{max} = scalar [kW]

N_{nom} = —"— [RPM]

N_{idle} = —"— [RPM]

$FLHV$ gas or diesel

$FLHV$ = 43000 for gasoline [kJ/kg]
42700 for diesel

Stroke = scalar [mm]

Capacity = scalar [cc]

INP. VECTORS

Power (kW), RPM, FC (g/h)