

High Energy Efficiency

Gesto drum motors operate with 97% mechanical efficiency and with 83% total efficiency which means with respect to the 3 types of conventional system, Gesto drum motors consumes less energy (from 10% to 27%). This situation leads to a significant reduction in operation costs.

Energy and Cost Saving Analysis

Gesto Drum Motors

Conventional Drive System

In conventional multi equipment drive systems, conveyor is driven by 3 different methods.

- The calculated needed power to drive belt
[For this sample it is assumed to be 5.5 Kw] = $P(Kw)$
- Calculated system efficiency for 3 options above = η_{system}
- Input power for selected option=
Input Power = $IP = P/\eta_{system}$
- 10 hours in a shift, 2 shifts in a day, 7 days in a week 52 weeks
in a year, total working hours = $t = 2 \times 10 \times 7 \times 52 = 7280$ (hours/year)
- Total energy consumption in a year = $E = IP \times t$ (Kwh/year)
- Average unit electricity price for industry in Euro Zone
(by year 2016) = $C = 0.12$ (EUR/Year)
- Systems total energy cost in a year = $E_{EUR} = C \times E$ (EUR/year)

1 $\eta_{system} = 0.555$, $IP = 5.5 / 0.555 = 9.91$ Kw
 $E = 9.91 \times 7280 = 72144$ Kws/Year
 $E_{EUR} = 0.12 \times 72144 = 8657$ Eur / Year

2 $\eta_{system} = 0.619$, $IP = 8.89$ Kw, $E = 64719$ Kws/yr, $E_{EUR} = 7766$ Eur / yr

3 $\eta_{system} = 0.726$, $IP = 7.58$ Kw, $E = 55182$ Kws/yr, $E_{EUR} = 6621$ Eur / yr

G $\eta_{system} = 0.834$, $IP = 6.59$ Kw, $E = 47975$ Kws/yr, $E_{EUR} = 5757$ Eur / yr

RESULT: WHEN COMPARED WITH 3 CONVENTIONAL DRIVE SYSTEM METHODS, BY ITS ENERGY COST SAVING BETWEEN **864 - 2900** EUR/Year, GESTO DRUM MOTOR DEMONSTRATES ITS EXTREME SUPERIORITY.

