

# DYNABOX XL SELECTION

## START/STOP SERVICE S5

Calculate **torque S5** on gearbox output :

$$\text{Torque S5} = T_{\max} \times F1 \times F2$$

GEARBOX RUNNING TIME DURING 1 CYCLE				
	10 %	30 %	50 %	60 %
F1	0,7	0,85	1	1,15

over 60 %, go to CONTINUOUS SERVICE selection

NUMBER OF CYCLES/HOUR					
	1000	2000	3000	5000	10000
F2	1	1,35	1,45	1,6	1,9

Pre-select the gearbox size :  
in the column **Torque S5**, at  $N_{\max}$  input speed

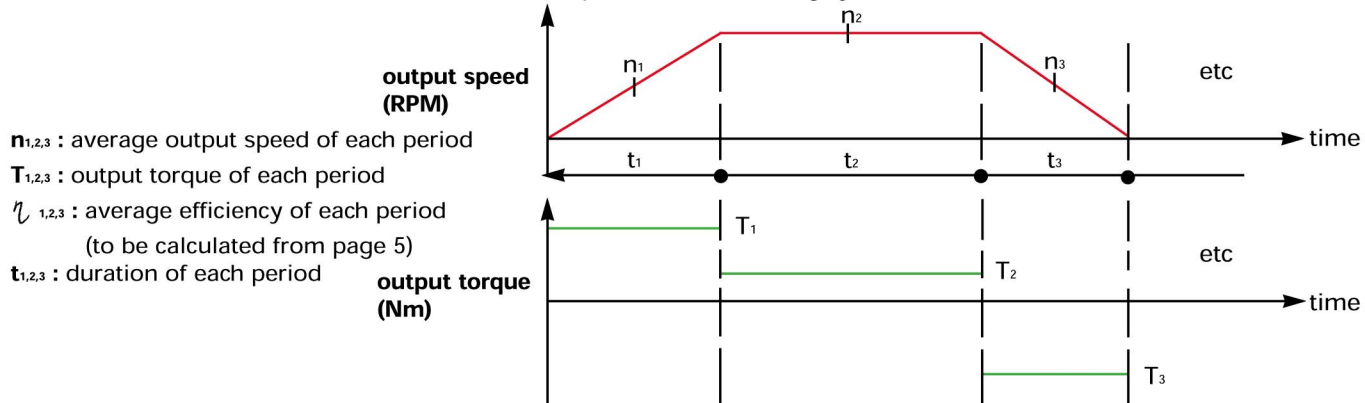
## CONTINUOUS SERVICE S1

Calculate **torque S1** on gearbox output :

$$\text{Torque S1} = T_{\max}$$

Pre-select the gearbox size :  
in the column **Torque S1**, at  $N_{\max}$  input speed

Calculate the power **Pth** lost during cycle :



$$P_{th} = 0,105 \times \sqrt[3]{\frac{t_1 \left( \frac{100 - \eta_1}{\eta_1} \times n_1 T_1 \right)^3 + t_2 \left( \frac{100 - \eta_2}{\eta_2} \times n_2 T_2 \right)^3 + t_3 \left( \frac{100 - \eta_3}{\eta_3} \times n_3 T_3 \right)^3 + \dots}{t_1 + t_2 + t_3 + \dots}}$$

**Pth** must be lower than the thermal capacity of the pre-selected gearbox size, otherwise select a larger gearbox.

Thermal capacities :	<b>DYNABOX XL 125</b>	<b>1652W</b>
	<b>DYNABOX XL 160</b>	<b>2479W</b>
	<b>DYNABOX XL 200</b>	<b>4210W</b>

### LEGEND

- T<sub>max</sub>** (Nm) : maximum output torque during operating cycle / continuous operation.
- N<sub>max</sub>** (RPM) : maximum input speed achieved during operating cycle.
- E-stop** (Nm) : gearbox output emergency torque (2 seconds maximum duration, maximum of 25000 times).
- i** : exact gear ratio.
- ig** (kg×cm<sup>2</sup>) : polar moment of inertia on input, without coupling (see coupling inertia page 10).
- η** (%) : gearbox efficiency.
- Fr** (N) : maximum radial load applicable at the middle of the output shaft, without any axial load.
- Fa** (N) : maximum axial load applicable on output shaft, without any radial load.