

DYNABOX® SELECTION

START/STOP SERVICE S5

CONTINUOUS SERVICE S1

- Calculate acceleration torque on gearbox output :

$$C2acc = C1acc \times i \times \eta \times F1 \times F2$$



F1 and **F2** : correction factors as per following chart.

GEARBOX RUNNING TIME DURING 1 FULL CYCLE					
	10 %	30 %	50 %	70 %	90 %
F1	0,7	0,85	1	1,11	1,2

NUMBER OF STARTS PER HOUR				
	1000 to 2000	2000 to 3000	3000 to 5000	5000 to 10000
F2	1 to 1,35	1,35 to 1,45	1,45 to 1,6	1,6 to 1,9

Intermediates values
To be interpolated



- Select the gearbox size in the column **Torque S5** :

Torque S5 > C2acc

- Calculate nominal torque on gearbox output

$$C2nom = C1nom \times i \times \eta$$



- Select the gearbox size in the column **Torque S1** :

Torque S1 > C2nom

LEGEND

C1acc (N.m) : motor acceleration torque
C1nom (N.m) : nominal motor torque
C2acc (N.m) : gearbox output acceleration torque
C2nom (N.m) : Gearbox output nominal torque
E-stop (N.m) : gearbox output emergency torque (2 seconds duration maximum, applied a maximum of 25000 times over the gearbox life)
C1f (N.m) : starting input friction torque (without any load on output)
N1 : maximum input RPM to be achieved during a full cycle (S5 service) or input nominal RPM (S1 service)
i : exact gear ratio
Et (N.m/minute) : Torsional stiffness on output
ig (kg.m²) : polar moment of inertia on input (to be added to coupling inertia, see page 10)
 η (%) : gearbox efficiency at considered input RPM
Fr (N) : permissible radial load on output shaft (applied at the middle of the shaft)
Fa (N) : permissible axial load on output shaft

REVERSIBILITY CLASSES

1	Total reversibility
2	Uncertain reversibility
3	Self-locking at N _i =0

Notes : self-locking units can become reversible under vibrations.
Indicated efficiency values are achieved after a 24 hours full load operation