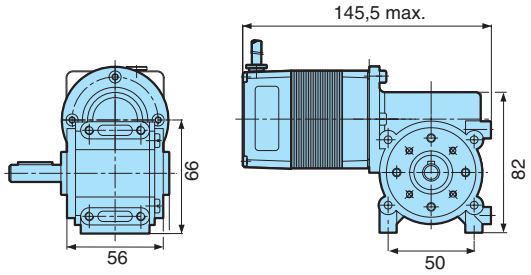
Guide to selecting Brushless D. C. motors

Right angle gearbox

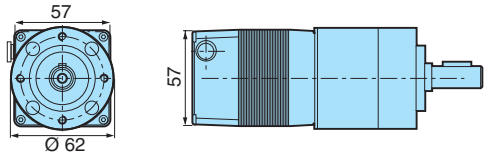
Gearbox	Max. torque (Nm)	0.6	1	1.7
		30 W		



Motors direct drive (Nm)							
Usable Power (W)	Nominal torque (Nm)	Nominal speed (rpm)	Supply voltage (V)	Motor type dimensions (mm)			
30	140	2200	24	▶p.76 80 140 57x57	▶p.80 80 141 440 rpm	▶p.80 80 141 220 rpm	▶p.80 80 141 110 rpm
80	240	3250	24	▶p.78 80 180 57x57		▶p.82 80 181 650 rpm	▶p.82 80 181 325 rpm

Planetary gearbox

Gearbox	Max. torque (Nm)	0.8	1	4.5
		30 W		



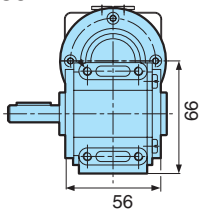
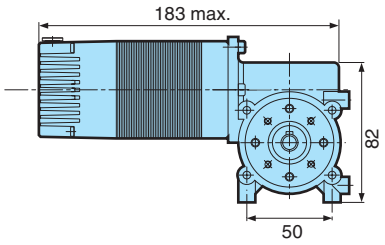
Motors direct drive (Nm)							
Usable Power (W)	Nominal torque (Nm)	Nominal speed (rpm)	Supply voltage (V)	Motor type dimensions (mm)			
30	140	2200	24	▶p.76 80 140 57x57	▶p.81 80 149 Ø 62 316 rpm		
80	240	3250	24	▶p.78 80 180 57x57		▶p.83/84 80 189 Ø 81 650 rpm	▶p.83/84 80 189 Ø 81 120 rpm

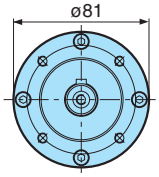
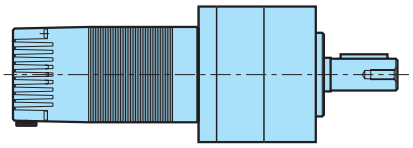
Choice of gearbox according to mechanical criteria

Right angle	Perpendicular output Silence (<53 dB) Non-reversible from R = 30
Planetary	Output in shaft Increased efficiency Reversible

Choice of power according to available torque and electronic performance

Electronics 30 watts	Speed regulation 1-channel encoder (12 points/rev) NPN type outputs
Electronics 80 Watt	Speed and torque regulation 2-channel encoder (12 points/rev + direction) PNP type output

2	2.1	2.9	3.4	3.5
80 W				
				
▶p.80 80 141  44 rpm	▶p.80 80 141  74 rpm			
		▶p.82 80 181  163 rpm	▶p.82 80 181  65 rpm	▶p.82 80 181  108 rpm

5	20	30
80 W		
		
▶p.81 80 149 Ø 62  48 rpm		▶p.81 80 149 Ø 62  48 rpm
	▶p.83/84 80 189 Ø 81  23 rpm	

Selection of a geared motor

A geared motor is selected according to the required usable power output.

$$\underset{(W)}{\text{UsablePower}} = \frac{2\pi}{60}\underset{(Nm)}{C} \cdot \underset{(rpm)}{n}$$

A geared motor must have usable power equal to or greater than the power required to rotate the load. It is selected by checking that the point corresponding to the required operating conditions (torque and speed output) is higher than the nominal torque versus speed curve of the geared motor. The required torque output of a geared motor must be within its maximum recommended torque for continuous duty.