

## Gear Units Service Factor

Table 1		Factor for driven machine			f <sub>1</sub>					
Driven machines		Effective daily operating period under load in hours			Driven machines		Effective daily operating period under load in hours			
		≤0.5h	0.5-10h	>10h			≤0.5h	0.5-10h	>10h	
Waste water treatment	Thickeners(central drive)	-	-	1.2	Metal working mills	Reversing slabbing mills	-	2.5	2.5	
	Filter presses	1.0	1.3	1.5		Reversing wire mills	-	1.8	1.8	
	Flocculation apparatus	0.8	1.0	1.3		Reversing sheet mills	-	2.0	2.0	
	Aerators	-	1.8	2.0		Reversing plate mills	-	1.8	1.8	
	Raking equipment	1.0	1.2	1.3		Roll adjustment drives	0.9	1.0	-	
	Combined longitudinal and rotary rakes	1.0	1.3	1.5	Conveyors	Bucket conveyors	-	1.2	1.5	
	Pre-thickeners	-	1.1	1.3		Hauling winches	1.4	1.6	1.6	
	Screw pumps	-	1.3	1.5		Hoists	-	1.5	1.8	
	Water turbines	-	-	2.0		Belt conveyors <150 kw	1.0	1.2	1.3	
	Centrifugal pumps	1.0	1.2	1.3		Belt conveyors >150 kw	1.1	1.3	1.5	
	1piston positive-displacement pumps	1.3	1.4	1.8		Goods lifts *	-	1.2	1.5	
	>1piston positive-displacement pumps	1.2	1.4	1.5		Passenger lifts *	-	1.5	1.8	
Dredgers	Bucket conveyors	-	1.6	1.6		Apron conveyors	-	1.2	1.5	
	Dumping devices	-	1.3	1.5		Escalators	-	1.2	1.4	
	Caterpillar travelling gears	1.2	1.6	1.8		Rail travelling gears	-	1.5	-	
	Bucket wheel excavators as pick-up	-	1.7	1.7	Frequency converters	-	1.8	2.0		
	Bucket wheel excavators for primitive material	-	2.2	2.2	Reciprocating compressors	-	1.8	1.9		
	Cutter heads	-	2.2	2.2	Cranes	Slewing gears	2.5	2.5	3.0	
	Traversing gears *	-	1.4	1.8		Luffing gears	2.5	2.5	3.0	
Plate bending machines *	-	1.0	1.0	Travelling gears		2.5	3.0	3.0		
Chemical industry	Extruders	-	-	1.6		Hoisting gears	2.5	2.5	3.0	
	Dough mills	-	1.8	1.8		Derricking jib cranes	2.5	2.5	3.0	
	Rubber calenders	-	1.5	1.5	Cooling towers	Cooling tower fans	-	-	2.0	
	Cooling drums	-	1.3	1.4		Blowers(axial and radial)	-	1.4	1.5	
	Mixers for uniform media	1.0	1.3	1.4	Cane sugar production	Cane knives *	-	-	1.7	
	Mixers for non-uniform media	1.4	1.6	1.7		Cane mills	-	-	1.7	
	Agitators for media with uniform density	1.0	1.3	1.5	Beet sugar production	Beet cassettes macerators	-	-	1.2	
	Agitators for media with non-uniform density	1.2	1.4	1.6		Extraction plants, Mechanical refrigerators, Juice boilers,	-	-	1.4	
	Agitators for media with non-uniform gas absorption	1.4	1.6	1.8		Sugar beet washing machines	-	-	1.5	
	Toasters	1.0	1.3	1.5		Sugar beet cutters	-	-	1.5	
	Centrifuges	1.0	1.2	1.3	Paper machines	Of all-kind **	-	1.8	2.0	
	Plate tilters	1.0	1.0	1.2		Pulper drives	2.0	2.0	2.0	
	Metal working mills	Ingot pushers	1.0	1.2	1.2	Cableways	Centrifugal compressors	-	1.4	1.5
		Winding machines	-	1.6	1.6		Material ropeways	-	1.3	1.4
		Cooling bed transfer frames	-	1.5	1.5		To-and fro system aerial ropeways	-	1.6	1.8
Roller straighteners		-	1.6	1.6	T-bar lifts		-	1.3	1.4	
Roller tables continuous		-	1.5	1.5	Continuous ropeways		-	1.4	1.6	
Roller tables intermittent		-	2.0	2.0	Cement industry	Concrete mixers	-	1.5	1.5	
Roller tables Reversing tube mills		-	1.8	1.8		Breakers *	-	1.2	1.4	
Shears continuous *		-	1.5	1.5		Rotary kilns	-	-	2.0	
Shears crank type *		1.0	1.0	1.0		Tube mills	-	-	2.0	
Continuous casting drivers		-	1.4	1.4		Separators	-	1.6	1.6	
Reversing blooming mills		-	2.5	2.5		Roll crushers	-	-	2.0	

Design for power rating of driven machine P<sub>2</sub>    \*)Designed power corresponding to max.torque.

\*\*\*)A check for thermal capacity is absolutely essential.

Table 2	Factor for prime mover	f <sub>2</sub>
Electric motors,hydraulic motors,turbines	1.0	1.0
Piston engines 4-6 cylinders	1.25	1.25
Piston engines 1-3 cylinders	1.5	1.5

Table 3	Start factor	f <sub>3</sub>			
f <sub>3</sub>	f <sub>1</sub> × f <sub>2</sub>	1	1.25 -1.75	2- 2.75	>3
Starts per hour					
≤ 5	1	1	1	1	1
6-25	1.2	1.12	1.06	1	1
26-60	1.3	1.2	1.12	1.06	1.06
61-180	1.5	1.3	1.2	1.12	1.12
>180	1.7	1.5	1.3	1.2	1.2