

(E) 減速機水平輸送場合符號說明及傳動公式 (DESCRIPTION AND TRANSMISSION)

輸送速度(r/min) TRANSMISSION SPEED	V	輸送帶摩擦係數 BELT FRICTION COEFFICIENT	μ
滾輪直徑(MM) ROLLER DIAMETER	D	鏈輪傳動效率(%) Chain drive efficiency	η_1
載重量(KG) LOAD	W	減速機傳動效率(%) REDUCER TRANSMISSION EFFICIENCY	$\eta_2=0.9$
出力軸主動鏈輪齒數 OUTPUT SHAFT TEETH	t1	輸送機被動鏈輪齒數 CONVEYOR PASSIVE SPROCKET TEETH	t2
輸送帶所需扭力(KG-M) BELT TORQUE	T1	減速機減速比 REDUCER RATIO	I
減速機扭力(KG-M) REDUCER TORQUE	T2	減速機出力軸迴轉速(r/min) REDUCER OUTPUT SHAFT ROTATION SPEED	N2
荷重係數 SERVICE FACTOR	F (查4-13 表(B)) F (FIND 4-13 TABLE(B))		

輸送機迴轉速(r/min) TRANSMISSION SPEED	$N1 = V / \pi D$
減速機出力軸迴轉速(r/min) REDUCER OUTPUT SHAFT ROTATION SPEED	$N2 = N1 \times (t2 / t1)$
減速機減速比(I) REDUCER RATIO	50hz I=1500/N2 60hz I=1800/N2
輸送帶所需扭力(KG-M) BELT TORQUE	$T1 = W \times D / 2 \times \mu / \eta_1$
減速機所需扭力(KG-M) REDUCER TORQUE	$T2 = T1 \times (t1 / t2) / \eta_2$
考慮荷重係數減速馬達扭力 GEAR MOTOR TORQUE (SERVICE FACTOR BE CONSIDER)	$T3 = T2 \times F$
馬力(HP) CAPACITY	$HP = T3 \times N2 / 746$

(C)符號說明(CODE DETAILS)

V=速度 SPEED (M/MIN)	E=效率 EFFICIENCY(%)	1 INCH = 2.54 CM
I=減速比RATIO	N ₂ =出力軸轉速(RPM) OUTPUT SHAFT SPEED	1 FOOT = 12 INCH
T=輸出扭力 (KG-M) OUTPUT TORQUE	D=滾輪直徑 (MM) ROLLER DIAMETER	1 KW = 1000W 1 KW = 1.34 HP
K=連結係數 CONNECTING FACTOR	R=滾輪半徑(MM) ROLLER RADIUS	1 KG-M = 7.233 FT-LB 1 KG-M = 86.8 IN-LB
F=荷重係數 SERVICE FACTOR	KW1(HP1)=入力馬力 INPUT CAPACITY	1 KG = 2.2 LB 1 LB = 0.4536 KG
W=荷重(KG) LOAD	KW2(HP2)=輸出馬力 OUTPUT CAPACITY	N ₁ = 入力迴轉速 (r/min) INPUT SHAFT ROTATION SPEED

(D)基本傳動公式(BASIC FORMULAR)

減速比 RATIO	$I = N_2 / N_1$
迴轉速度 ROTATION SPEED (r / min)	$N_1 = V / \pi D$
輸出扭矩 OUTPUT TORQUE (KG-M)	$T = W \times R \times K$
輸入馬力 INPUT HORSEPOWER (公制 KW)	$KW1 = N_1 \times T / 974$
輸入馬力 INPUT HORSEPOWER (英制 HP)	$HP1 = N_1 \times T / 727$
輸出馬力 OUTPUT HORSEPOWER (公制 KW)	$KW2 = KW1 \times F / E$
輸出馬力 OUTPUT HORSEPOWER (英制 HP)	$HP2 = HP1 \times F / E$

(A) 連結係數表 (CONNECTION FACTOR)

鏈輪 SPROCKET	1.00
齒輪 GEAR	1.25
三角皮帶 BELT	1.50
平皮帶 FLAT BELT	2.50

(B) 荷重係數表 (SERVICE FACTOR)

減速機負載等級 LOAD GRADE	每日運轉時間 (HRS) DAILY OPERATING HOURS			
	1-2	3-8	9-15	16-24
均一負載 UNIFORM LOAD	0.80	0.90	1.20	1.30
中級衝擊負載 MEDIUM IMPACT LOAD	1.00	1.20	1.30	1.50
重級衝擊負載 HEAVY IMPACT LOAD	1.20	1.50	1.75	2.00