HB series type selection example:

Steps	Specification	Symbol	Calculate parameter
1	Driven machine factor	f1	See P05 f1 table
2	Factor for prime mover	f2	Factor for prime mover: f_2 Electric motors, hydraulic motors, turbines: 1.0 Piston engines 4 - 6 cylinders cyclic variation 1 : 100 to 1 : 200: 1.25 Piston engines 1 - 3 cylinders cyclic variation up to 1 : 100: 1.5
3	Permissible input speed	n1	≤1500
4	Position of input and output	H、B	H:Parallel shaft, B: Right-angled shaft.
5	Determine ration	i	i=n1/n2
6	Efficiency	η	sigle stage:98%, 2-stage:96%, 3-stage:94%, 四级4-stage:92%
7	Determine input power	P1	P1=T2 · n1/(9550 · i · η) or P1=P2/ η
8	By calculation, defermine type in reference to transmission table	T2N、P1N	T2N≥T2 · f1 · f2 (or) P1N≥P1 · f1 · f2 If not meet: 3.33 · P1 ≥ P1N please consult us.
9	Determine output mode		Output mode & mounting position
10	Check for maximum torque	TA	$P_{1N} \geq T_A \cdot n1 \cdot f3/9550$

f3	Load peaks per hour			
	1–5	6–30	31–100	> 100
Steady direction of load	0.5	0.65	0.7	0.85
Altemating direction of load	0.7	0.95	1.10	1.25

11	Verify intensity of shaft	Fr、Fa	See P05	
12	Determine lubrication method and lubrication oil(see attachment)		Horizontal: Immersion, splash, forced lubrication.	Vertical: A: immersion B: Pump-forced lubrication
13	Cooling method		1 Adequate for gear units without auxiliary cooling, if: P1≤PG1 × f4 × f6 × f8 × f9 2 Adequate for gear units with fan cooling, if: P1≤PG2 × f4 × f6 × f8 × f10 3 Adequate for gear units with fitted cooling coil, if: P1≤PG3 × f5 × f7 × f8 × f11 4 Adequate for gear units with cooling coil and fan, if: P1≤PG4 × f5 × f7 × f8 × f12 5 For higher thermal capacities, cooling by external oil cooler on request.: (f4、f5、f6、f7、f8、f9、f10、f11、f12 refer to P213,214)	

* Peak torque: Maximum torque is maximum starting torque, maximum braking torque.

Selection example

Given condition:

Driving machine:

Pm=75KW

n1=1500rpm

TA=720N・m

Driven machine(belt conveyor):

P2=66KW

n2=26rpm

service duration: 12h/day

Start-up: 10times/hour

Working circle ED=100% per hour

Ambient temperature: 30℃

installed in open field

Altitude: 500m

Right-angled shaft

Mounting mode: Horizontal

Shaft amangement: C

Selecting steps:

1.Calculate ratio:

i=n1/n2=1500/26=57.7　　iN=56

2.Determine nominal power:

$P1N \geqslant P1 \cdot f1 \cdot f2 = P2 \cdot f1 \cdot f2/\eta$

$=66 \times 1.3 \times 1/0.94=91.3kW$

Choose B3, size: 9, P1N: 96kW

Verify: $3.33 \times P1 \geqslant P1N$

$3.33 \times P1=3.33 \times P2/\eta=3.33 \times 66/0.94$

$= 233.8\ kW > P1N$

3.Verify peak torque:

$P_{IN} \geqslant T_A \cdot n1 \cdot f3/9550$

$=720 \times 1500 \times 0.65/9550=73.5kW$

P1N=96kW>73.5kW　　Meet requirement.

4.Verify thermal capacity:

$PG1 \times f4 \times f6 \times f8 \times f9$

$=70.7kW \times 0.88 \times 1 \times 1 \times (1.23-2.80 \times 0.085 \times 0.15)$

$=74.3kW$

$P1=P2/\eta=66kW/0.94=70.2 < 74.3kW$

So auxiliary cooling devece is unnecessary.

TYPE: B3SH9-56-C