GX Screw Conveyor

Description

GX type screw conveyor feed materials along the tube of a fixed chassis by a rotating spiral. Head and tail bearing can move outside the body, hanging bearings use sliding bearings with dust-proof sealing device. Bearing shell commonly adopts powder metallurgy, transporting cement uses blanket bearing, hanging shaft and screw are linked by slider. When removing the screw, you don't need to move driving device, when disassembling hanging bearing, you don't need to move the screw shaft and when lubricating hanging bearings, you don't need to remove the cover .

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Application

Screw conveyor is widely used in chemical, building materials, electricity, metallurgy, coal, grain etc. It is suitable for horizontal or inclined conveying powder, granular and small block materials, and not suitable for transporting perishable, viscous and easy to agglomerate material.

The ambient temperature for screw conveyor is -20~50℃ ; material temperature is less than 200 , the inclination angle β≤20 ℃ ; convey length is generally less than 40m and maximum not more than 70m.

Features

1. Large carrying capacity, safe and reliable.

2. Strong adaptability, easy installation and maintenance, long service life.

3. Small volume and high speed, rapid and uniform delivery.

4. The cleaning device installed on discharge end, low noise and strong adaptable, flexible layout for input and output .

5. Well sealing, the shell is made of seamless steel pipe.

6. Good rigidity, end part connects with flange.

Technical parameter

GX screw conveyor specification and technical parameter are shown in Table 1, the length from 3.5 m to 80 m, standard interval 0.5 m of a file. two types of driving device, single-ended drive- screw conveyor length is less than 35 m, double-ended drive- screw conveyor length greater than 35 m.

Table1 Technical Parameter

GX model	100	160	200	250	315	400
Screw diameter D(mm)	100	160	200	250	315	400
Pitch S(mm)	100	160	200	250	315	355
Speed n(r/min)	140	120	90	90	75	75
Capacity Q(ϕ=0.33m³/h)	2.2	7.6	11	22	36.4	66.1
Speed n(r/min)	120	90	75	75	60	60
Capacity Q(ϕ=0.33m³/h)	1.9	5.7	9.3	18	29.1	52.9
Speed n(r/min)	90	75	60	60	45	45
Capacity Q (ϕ=0.33m³/h)	1.4	4.8	7.4	15	21.8	39.6
Speed n(r/min)	75	60	45	45	35	35
Capacity Q (ϕ=0.33m³/h)	1.2	3.8	5.6	11	17	31.7

Note: Power in the table are level layout, cement λ= 1.9, bulk density of 1.13 t/m³ (or loose coal λ = 3.4, bulk density of 0.61 t/m)

Choose the model

1.Capacity Q = 47 β * Ψ * ρ *D²*S*n (t / h)

Where: β - inclined coefficients in Table 2; Ψ- material filling coefficient; ρ - Material density (t / m³), shown in Table 3; D- screw diameter (m), S- pitch (m), n- speed (r / min), see Table 1.

Filling coefficient Ψ is generally 0.45 when material is powder with good fluidity, mild abrasive and fine granular materials (such as grain), 0.33 when material is general mobility, moderate abrasive materials (such as coal, ash, cement), and 0.15 when material with greatly abrasive (such as slag, river sand).

2.Screw diameter

The minimum screw diameter is determined by speed and capacity, and should meet the following conditions: spiral diameter D should be at least 10 times the maximum particle length when transport bulk materials; If the content of large particles is small, You can use a smaller spiral diameter, but it should be at least 4 times the maximum particle length.

3.Speed

The speed of motor can't be too fast, otherwise the conveyed material will be effected by strong centrifugal force, affecting the transport process. Reference JB / T7679-95 "Screw conveyor" criteria, there are four kinds of each specification for the selection of the speed shown in Table 1.

4.Motor power

P=0.9 [Q(λ*L+H)/367 +D*L/20]

N=K*P

Where: P- power (KW), Q- Capacity (t / h), λ- running resistance coefficient (see Table 3), L- spiral length (m), H- spiral inclined height (m), N- motor power (KW), K- power coefficient, the relationship P and K are shown in Table 4.

Table 2 Inclined coefficient table

Inclined angle	0	≤5	5< β ≤10	10 <β ≤15	15< β ≤20
β	1	0.9	0.8	0.7	0.65

Table 3 Material parameter

Mate-rial	Wheat	Cone	Dry bulk coal <12mm	Dry bulk coal<75mm	Wet bulk coal<12 mm	Wet bulk coal<75 mm	Fly ash	Flue dust	flour	cement	Slag dry	River sand
P(kg/ m³)	670	720	640	610	770	770	610	850	590	1130	1010	1360
Ψ	0.45	0.45	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.15	0.15
λ	0.7	0.5	4.1	3.4	3.4	4.1	2.7	4.7	0.8	1.9	3	2.7

Table 4 Power table

P(kw)	≥5	4	3	2	1	0.6	0.4	0.2	0.1
k	1	1.2	1.4	1.6	2	2.4	2.6	3	4