

▶ Belt Conveyor with Waved Guard Side

Principle

“Guard machine” or “high inclination angle belt conveyor” for short, with the advantages of simple structure, reliable operation, and convenient maintenance of general conveyor, and the features of high inclination angle conveying, compact structure, less land occupation, is the ideal equipment for high inclination angle conveying (even for vertical conveying). It is widely used in the fields of coal, metallurgy, building, food, chemical, power, etc., and is also applied to the underground mining, open-pit mining, large self-unloading ship, etc.



Features

With high conveying angle, which can be up to 90°, it is the ideal equipment of the high inclination angle conveying and vertical ascension, which saves land occupation, equipment investment and construction cost, thus obtains good comprehensive economic benefit.

Simple structure. The main components are available for general belt conveyor, which is convenient for operation and maintenance.

Reliable operation. Avoid the chain-block, chain-floatation, chain-scission of buried scraper conveyor and skid, bucket-off of bucket elevator.

Stable operation and less noise.

As there is no digging resistance of loading and internal friction of running, the energy consumption is low.

Horizontal conveying section of any length can be set at the start and end part of vertical guard machine, which is convenient for the connection with other equipment.

Conveying capacity Qv under various parameters while belt speed is 1m/s

Belt Width (mm)		500								650						800							
Guard Side Height (mm)		80		120		160		80		120		160		120		160		200					
Baffle Distance (mm)		126	252	126	252	378	252	378	126	252	126	252	378	252	378	126	252	378	252	378	504		
Dip Angle (β)	30°	39	21	—	52	34	65	45	59	32	—	78	52	105	73	—	99	65	136	94	—	148	113
	40°	31	16	—	40	26	52	34	47	24	—	60	40	85	56	—	76	50	110	72	—	114	87
	50°	25	13	60	32	—	42	27	37	19	90	48	—	68	45	113	60	—	88	58	139	91	—
	60°	20	11	50	26	—	34	23	31	16	75	39	—	55	36	95	49	—	72	47	113	74	—
	70°	17	—	41	21	—	28	18	25	—	62	32	—	45	30	77	40	—	58	38	92	61	—
90°	10	—	25	—	—	17	—	15	—	38	—	—	—	28	—	47	—	—	36	—	57	37	—
Belt Width (mm)		1000								1200													
Guard Side Height (mm)		160		200		240		160		200		240		300									
Baffle Distance (mm)		252	378	252	378	504	252	378	504	252	378	252	378	504	252	378	504	336	504				
Dip Angle (β)	30°	186	129	—	207	159	—	283	229	223	154	—	250	191	—	342	278	410	350				
	40°	150	99	—	160	122	—	231	176	180	118	—	193	147	—	280	213	352	276				
	50°	120	79	195	128	—	—	185	141	144	95	235	154	—	—	224	170	290	221				
	60°	98	64	159	105	—	229	151	—	117	77	191	126	—	278	183	—	237	180				
	70°	80	52	130	85	—	187	123	—	96	63	156	103	—	226	149	—	193	147				
90°	49	—	80	52	—	115	76	—	59	—	96	63	—	139	91	—	118	90					
Belt Width (mm)		1400								1600													
Guard Side Height (mm)		200		240		300		400		200		240		300		400							
Baffle Distance (mm)		252	378	504	252	378	504	336	504	420	504	252	378	504	252	378	504	336	504	420	504		
Dip Angle (β)	30°	—	299	229	—	422	342	512	437	780	707	—	355	272	—	501	406	614	525	940	852		
	40°	281	231	175	—	345	262	440	345	709	614	—	274	208	—	410	311	527	413	855	740		
	50°	229	185	—	—	276	210	363	276	634	515	334	220	—	—	328	249	436	331	764	621		
	60°	151	—	342	225	—	296	225	549	420	272	179	—	406	267	—	355	270	662	507			
	70°	187	123	—	279	184	—	241	183	451	343	222	146	—	331	218	—	289	220	543	413		
90°	115	75	—	171	113	—	148	112	277	210	136	90	—	203	134	—	178	135	333	253			

Allowable Max. Size and Max. Velocity with Different Belt Widths, Guard Side Heights and Dip Angles

Belt Width (mm)		500			650			800			1000		
Guard Side Height (mm)		80	120	160	80	120	160	120	160	200	160	200	240
Dip Angle (β)	30°	2.0	2.0	2.0	1.6	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5
		100	120	120	100	140	160	140	180	200	180	250	280
	40°	2.0	2.0	2.0	1.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5
		100	120	120	100	140	160	140	180	200	180	250	280
	50°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.0
		80	120	140	80	120	140	120	140	180	140	180	220
	60°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
		80	120	140	80	120	140	120	140	180	140	180	220
	70°	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.6	1.6	1.6	1.6	1.6
		50	60	100	50	60	100	120	100	140	100	140	180
	90°	1.0	1.0	1.0	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
		50	60	80	50	60	80	60	80	100	80	100	140
Belt Width (mm)		1200				1400				1600			
Guard Side Height (mm)		160	200	240	300	200	240	300	400	200	240	300	400
Dip Angle (β)	30°	2.5	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15
		160	250	280	310	250	280	350	350	250	280	350	350
	40°	2.5	2.5	3.15	3.15	2.5	3.15	3.15	3.15	2.5	3.15	3.15	3.15
		200	250	280	310	250	280	350	350	250	280	350	350
	50°	1.6	2.0	2.5	2.5	2.0	2.5	2.5	2.5	2.0	2.5	2.5	2.5
		140	180	220	280	180	220	280	320	180	220	280	320
	60°	1.6	1.6	1.6	2.0	1.6	1.6	2.0	2.0	1.6	1.6	2.0	2.0
		140	180	220	280	180	220	280	320	180	220	280	320
	70°	1.6	1.6	1.6	2.0	1.6	1.6	2.0	2.0	1.6	1.6	2.0	2.0
		100	140	180	200	140	180	200	250	140	180	200	250
	90°	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
		80	100	140	160	100	140	160	200	100	140	160	200

Note: The upper part of the form is v_{max}(m/s), and the lower part is a_{max} (mm).