Flat Belts - Technical Data①

■ Friction Coefficient Table

Belt Part Number	Representative Transfer Objects	Slippery ◀ Steel ▶ Non-slippery	Slippery ◀ Plastic ▶ Non-slippery	Slippery ◀ Wood ▶ Non-slippery	Slippery ◀ Cardboard ▶ Non-slippery
HBLTDSG GBLG HFHBDSG GBLDSG HFHBW HBLTDSW GBLW HFHBDSW GBLDSW HFHBGN HBLTDS GBLGSN HFHBGDSN GBLGSDSN HFHBWN HBLTGDN GBLGDN HFHBWDSN HBLTGSDSN GBLGDSN BHFHBWN HBLBN GBLWN BHFHBWDSN HBLBDSN GBLWDSN KBLW HBLYGN OHBLTG KBLDSW HBLYGDSN OHBLTDSG KBLT SHBLTDSG OHBLTGN KBLTDSB OHBLTDS KBLWSN SHBLTDSW OHBLTW KBLWSDSN OHBLTDSW KBLWDN SHBLTDS OHBLGN KBLWDSN OHBLGDSN KBLWT YSBLGN NSHBLTS KBLWDST YSBLGDSN NSHBLTDS PHBLB YSBLWN NSHB PHBLDSB YSBLWDSN NSHDSB PHBLBN LHBLTDSG NSHBLG PHBLBDSN NSHBLGDS PHBLWN LHBLTDSW NSHBWN PHBLWDSN NSHBWDSN DHBLTS LHBLWN NSHBN DHBLTDS LHBLWDSN NSHBDSN DHBLGN NSHBLGN DHBLGDSN NSHBLGDSN HFHBG	Canvas surface	0.5 1.0 1.5 2.0 2.5	0.5 1.0 1.5 2.0 2.5	0.5 1.0 1.5 2.0 2.5	0.5 1.0 1.5 2.0 2.5
	Grain (fine)				
	Grain (thick)				
	Flat surface				
	Vertical groove				
HBLTGCN HBLTGCDSN HBLTWCN HBLTWCDSN HBLGT HBLGDST HBLWT HBLWDST HBTDST HBTDSTN LHBLYAN LHBLYADSN LHBLGASN LHBLGDSN LHBLGAN LHBLGADSN LHBLGTN LHBLGTDSN LHBLYTN LHBLYTDSN LHBLGYN LHBLGYDSN LHBLYFN LHBLYFDSN	Canvas surface				
	Grain (fine)				
	Basket-weave				
	Rough top				
	Deep groove				
	Herringbone				
	Flat surface				
	Vertical groove				

It is necessary to handle the above figures with care as the friction coefficient greatly varies with the surface condition (surface roughness), and, liquids such as water or adhesion degree of dust.

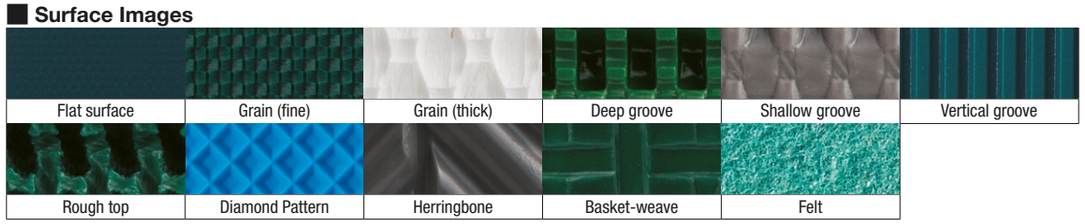
■ Max. Incline Angle

Unit (degree)

Load shape / Surface Shape	Bulk goods: Powdered Objects	Bulk goods: Granulated Substances: Angulate	Bulk goods: Granulated Substances: Round	Bulk goods: Solid	Box: Cardboard: Empty	Box: Cardboard: 5kg	Bags: Paper	Bags: Plastic Bag
Flat surface	15	10	-	5	10 (20)	15 (25)	15 (25)	15 (15)
Canvas surface	15	10	-	5	10 (10)	10 (10)	10 (10)	10 (10)
Grain (fine)	20	15	-	5	25 (35)	30 (35)	25 (35)	25 (35)
Grain (thick)	25	15	5	5	30 (35)	30 (40)	30 (35)	30 (30)
Deep groove	30*	15	10	5	30 (40)	30 (40)	25 (40)	25 (45)
Shallow groove	30*	15	5	5	30 (40)	30 (40)	30 (35)	25 (25)
Vertical groove	20*	15	-	5	25 (40)	25 (40)	25 (40)	20 (35)
Rough top	30*	15	10	5	35 (40)	35 (40)	30 (40)	30 (30)
Diamond	20	15	-	5	10 (20)	15 (25)	15 (25)	10 (15)
Herringbone	30*	15	10	5	40 (50)	40 (50)	30 (40)	30 (30)
Basket-weave	20	15	-	5	25 (40)	25 (40)	25 (40)	20 (35)

* Data is presented on the assumption that belt surface is soiled with dust, etc.
For reference, data in case of clean belt surface is presented in ( ).
* Instances of being used for transfer of powdered objects are less, but are given for reference.

■ Surface Images

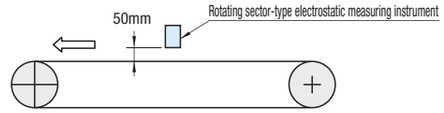


Flat Belts - Technical Data②

■ Antistatic Performance Chart

Electrostatic Charge Tendency

Small	←	Electrostatic Voltage	→	Large
Small	↓	Tensile Strength of Belt	→	Large
Small	↓	Belt Speed	→	Large
Large	↓	Atmospheric humidity	→	Small



[Measurement Method]
Surface Resistance: ISO284 Compliant
Running Belt Electrostatic Voltage: ISO21179 Compliant

Item	Part Number	Surface Resistivity (Ω)	Running Belt Electrostatic Voltage (V) (Absolute value)
General Use Belts	HBLTDS	10^{12}~10^{14}	1000 or less
Antistatic Type Belts	DHBLTDS DHBLGN DHBLGDSN	10^{7} or less	50 or less
Other Belts	HBLTGCN HBLTGCDSN HBLTWCN HBLTWCDSN HBLGT HBLGDST HBLWT HBLWDST HBTDST HBTDSTN LHBLYAN LHBLYADSN LHBLGAN LHBLGADSN LHBLGYN LHBLGYDSN LHBLGTN LHBLGTDSN LHBLGASN LHBLGDSN LHBLYTN LHBLYTDSN	10^{12}~10^{14}	1000 or less

• DHBLT

Item		Unit	DHBLT
Electrical Resistance of Surface		Ω	10^{4}~10^{5}
Triboelectrical Voltage	* Test Condition A	V	10~20
	* Test Condition B		5~10

* Test Conditions
A: Belt Speed: 220m/min, Temperature: 21±0.5°C, Humidity: 70±1%
B: Belt Speed: 20m/min, Temperature: 18±0.5°C, Humidity: 50±1%
Listed values are not guaranteed values but an example set of measured values.

■ Minimum Pulley Diameter Selection Table

Minimum Pulley Dia., Driving Pulley Dia.

Identify the relevant pulley diameters by reading the width and length of the belt from the table below, and determine the smaller value as "minimum pulley diameter" and larger value as "drive pulley diameter".

[Table 1]
Minimum Pulley Diameter Selection Table (Belt Width)

Belt Width (mm)	Min. Pulley Dia. (Ømm): HBLT, HBLTWH SHBLTG, SHBLT DHBLT, FHBLT OHBLT, NSHBLT	LHBLT LHBLTWH	HHBLT
Less than 100	25	30	75
100~190	50	55	75
200~400	50	55	100
410~500	75	80	100

(Ex.) When the width is 150mm and the length is 5.00mm
Select from Width: 50 ··· Small Value ↑ Min. Pulley Dia.
Select from Length: 75 ··· Large Value ↑ Min. Driving Pulley Dia.

[Table 2]
Minimum Pulley Diameter Selection Table (Belt Length)

Belt Length (m)	Min. Pulley Dia. (Ømm): HBLT, HBLTWH SHBLTG, SHBLT DHBLT, FHBLT OHBLT, NSHBLT	LHBLT LHBLTWH	HHBLT
Less than 1.00	25	30	75
1.00~ 1.99	50	55	75
2.00~ 4.00	50	55	100
4.01~ 7.00	75	80	100
7.01~10.00	100	105	125
10.01~20.00	100	105	150

■ Flat Belt Tolerance Chart

Width tolerance

Width	Tolerance
~400	±2
401~500	±3

Thickness tolerance

Thickness	Tolerance	Joint tolerance
~1.0	±0.1	±0.3
1.1~1.5	±0.2	
1.6~2.0		
2.1~5.5	±0.4	

Length tolerance

Length	Tolerance
~ 2000	±10
2001~ 7000	±20
7001~10000	± 0.3%
10001~	± 0.3%

Permanent elongation of the belt is up to 1% for the overall length. (Reference value)