

STRAIGHT BELT ENGINEERING PROGRAM

Belt selection	
Series	1750
Style	Flush Grid
Material	Low Moisture Abrasion Resistant
Color	Black
Rod material selected	Stainless Steel
Nominal belt width	48 in
Actual belt width	47.7 in

Application conditions	
Belt speed	120 ft/min
Loading type	Weight per time
Weight per time	200000 lbf/h
Belt temperature at drive	90 °F
Belt to carryway friction	0.3
Is product backed up?	no

Shaft configuration	
Drive shaft journal diameter	2.375 in
Shaft material	Stainless Steel 303
Number of center bearings on drive shaft	0
Number of center bearings on idle shaft	0
Frequent starts	no
Drive type	End drive
Infeed configuration	Sprockets
Outfeed configuration	End drive
Unique infeed shaft?	no

Conveyor configuration	
Define conveyor by	length and elevation
Conveyor length	50 ft
Elevation Δ	25 ft
Calculated conveyor angle	30°
Calculated horizontal run	43.3 ft

Sprocket selection	
Sprocket size	10.6 in (269 mm) PD, 22T
Sprocket material	POLYURETHANE BLACK
Define custom bore size?	no
Bore description	2 1/2" square
Sprocket part description	SERIES 1750 10.6" (22T) BLACK ULTRA ABRASION RESISTANT POLYURETHANE SPLIT SPROCKET WITH 2.5" SQUARE BORE

Dimensions	
Approximate overall belt length	105 ft
Thermal expansion in width	0.04 in
Thermal expansion in length	1.03 in
Links wide	47.5

Loading	
Rated belt strength	1800 lbf/ft
Allowable belt strength	1470 lbf/ft
Belt pull	441 lbf/ft
Adjusted belt pull	705 lbf/ft
Allowable belt strength utilized	47.8 %
Equivalent product loading	6.993 lbf/ft ²
Service factor	1.6
Strength factor	1
Temperature factor	0.819
Belt weight	6.73 lbf/ft ²
Total line pressure	0 lbf

Drive	
Running shaft power	10.2 hp
Drive shaft torque	14800 in lbf
Total drive shaft load	2890 lbf
Drive shaft deflection	0.0688 in
Infeed shaft deflection	0.013 in
Shaft speed	43.3 rpm

Sprockets	
Minimum number of drive sprockets	24
Minimum number of idle sprockets	24
Bore size selected	2.5 in
Bore shape selected	SQUARE
Pitch diameter selected	10.6 in
Number of teeth selected	22