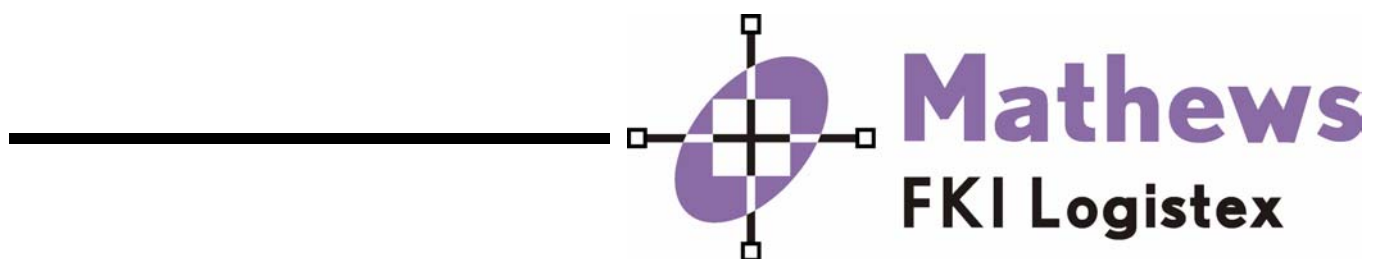


Belt Conveyor



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Engineering Data

Introduction

A belt conveyor is a conveyor in which the product rides directly on the belt. The belt is supported by either a roller bed conveyor section or a slider bed conveyor section. This manual will explain the various types of Mathews' belt conveyors.

This manual describes the following types of belt conveyors:

1. Horizontal Belt Conveyors
2. Heavy Duty Horizontal Belt Conveyors
3. Incline/Decline Belt Conveyors
4. Belt Curves
5. Telescoping Belt Conveyors

In this manual, we are depicting standard units, illustrating the components from which they are assembled, as well as offering a description of these various components. Also included are descriptions of supports and accessories for each type of conveyor.

Engineering Data

There are several product features that will determine the conveyor specifications:

Product Width - Straight Conveyor

The conveyor width (W) should be approximately 3" wider than the widest product to be conveyed, with the belt being approximately the width of the product. Our standard widths are 15", 21", 27", 33" and 39" Between Frames for most of our product line and the standard belt width is W - 3".

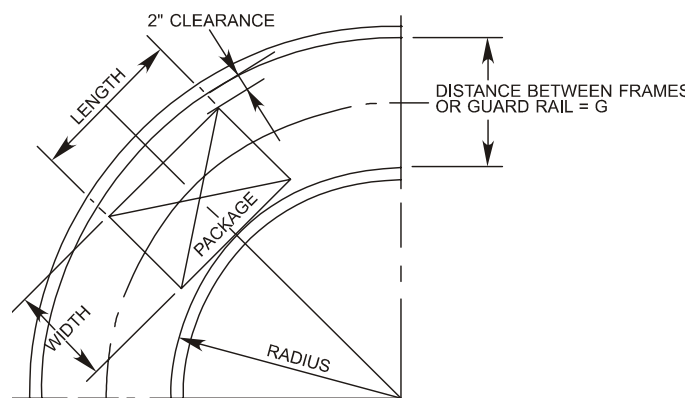
Example: 23" wide product + 3" = 26"

Next larger standard is 27" Between Frames

Product Width - Curves

Many times curves in a system will dictate the width of the conveyor for the entire system, in that the product may require "additional space" to negotiate the turn. This "additional space" depends upon the width and length of the product.

As a general rule, the inside radius of the curve should be greater than the length of the product. Due to the many combinations of belt width and radius, the following formula should be used to determine distance between frames or guard rails.



HB826FKI001a

$$G = \sqrt{(Radius + PackageWidth)^2 + \left(\frac{PackageLength}{2}\right)^2} - (Radius - 2)$$

Product Length - Horizontal Conveyor

It is good practice, for horizontal belt conveyors with a roller bed, to have a minimum of two rollers under the product at all times. To determine roller spacing, take the length of the shortest carton, divide by 2 and choose the standard roller spacing required. The standard roller centers are 3", 4-1/2", 6", 9" or 12".

Example: $\frac{10" \text{ long carton}}{2} = 5"$

The closest standard roller spacing is 4-1/2" centers.

Product Length - Incline/Decline Conveyor

It is good practice, for incline/decline conveyors with a roller bed, to have a minimum of three rollers under the product at all times. To determine roller spacing, take the length of the shortest carton, divide by 3 and choose the standard roller spacing required. The standard roller centers are 3", 4-1/2", 6", 9" or 12".

Example: $\frac{10" \text{ long carton}}{3} = 3.33"$

The closest standard roller spacing is 3" centers.

Product Weight

The power required to pull a belt and its product over a slider bed section is six times greater than if a roller section had been utilized. For this reason, roller sections are generally preferred. Slider bed sections are used to convey light products that have small irregular bases, where smooth travel is required.

For roller sections, a check should be made to ensure that the capacity of the roller is not exceeded. Divide the various carton weights by the number of rollers under the product and compare the weight per roller with the rated capacity of the roller for that width.

1.90" dia. x .065" Steel Roll		
Between Frames Dimension	Roller Weight w/o Axle	Roller Capacity w/ B1020
15"	2.0#	310#
21"	2.6#	310#
27"	3.3#	310#
33"	3.9#	306#
39"	4.5#	272#

2.50" dia. x .120" Roller		
Between Frames Dimension	Roller Weight w/o Axle	Roller* Capacity
27"	8.1#	610#
33"	9.6#	610#
39"	11.1#	610#
45"	12.6#	597#
51"	14.2#	596#
57"	15.7#	586#

*Basic Dynamic Capacity for 1 Million Revolution Life. Design loading should be significantly less for extended life. See CEMA Standard #401.

Product Loading

The maximum load that the conveyor will encounter (live load) is a major factor in determining the drive and motor requirements. The conveyor loading, expressed in pounds per foot, can be obtained by any of the following methods:

1. Divide the total maximum load on the conveyor by the conveyor length.

$$\frac{\text{Total Load on Conveyor (lbs)}}{\text{Conveyor Length (ft)}} = \text{Conveyor Loading (lbs/ft)}$$

2. When the product is introduced to the conveyor at a given rate, the conveyor loading is a function of product weight, product rate and conveyor speed.

$$\frac{\text{Product Weight (lbs/ctn)} \times \text{Product Rate (ctns/min)}}{\text{Conveyor Speed (ft/min)}} = \text{Conveyor Loading (lbs/ft)}$$

3. When the product is back to back on the conveyor, the conveyor loading is a function of product weight and product length.

$$\frac{\text{Product Weight (lbs)}}{\text{Product Length (ft)}} = \text{Conveyor Loading (lbs/ft)}$$

4. When the product is introduced to the conveyor at an uneven rate, the conveyor loading can be determined by taking the maximum weight that the conveyor must handle in one minute and divide by the conveyor speed.

$$\frac{\text{Product Weight (lbs/min)}}{\text{Conveyor Speed (ft/min)}} = \text{Conveyor Loading (lbs/ft)}$$

Always consider the worst loading condition that the conveyor will be subject to in order to determine conveyor loading.

As stated earlier, product loading is a major factor in determining the drive and motor requirements. In order to simplify this selection, the live load capacity for various units are shown in the tables for both roller bed and slider bed. As stated earlier and as shown in the tables, roller bed conveyors have greater total live load capacity.

End Drive - Roller Bed - Horizontal Belt Conveyor Live Load Capacity @ 70 FPM						
Variable Length	1/2 HP		3/4 HP		1 HP	
	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total
13'-0"	100	1300	100	1300	100	1300
18'-0"	100	1800	100	1800	100	1800
23'-0"	91	2110	100	2300	100	2300
28'-0"	73	2058	100	2800	100	2800
33'-0"	60	2007	100	3300	100	3300
38'-0"	51	1954	89	3394	100	3800
43'-0"	44	1903	77	3343	100	4300

End Drive - Slider Bed - Horizontal Belt Conveyor Live Load Capacity @ 70 FPM						
Variable Length	1/2 HP		3/4 HP		1 HP	
	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total
13'-0"	17	225	35	465	52	678
18'-0"	11	203	24	443	36	656
23'-0"	7	182	18	422	27	635
28'-0"	5	159	14	399	21	612
33'-0"	4	137	11	377	17	590
38'-0"	3	116	9	356	14	569
43'-0"	2	93	7	333	12	546

Intermediate Drive - Roller Bed - Horizontal Belt Conveyor Live Load Capacity @ 70 FPM										
Variable Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP		2 HP	
	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total
12'-0"	100	1200	100	1200	100	1200	100	1200	100	1200
17'-0"	100	1700	100	1700	100	1700	100	1700	100	1700
22'-0"	96	2122	100	2200	100	2200	100	2200	100	2200
27'-0"	76	2070	100	2700	100	2700	100	2700	100	2700
32'-0"	63	2018	100	3200	100	3200	100	3200	100	3200
37'-0"	53	1966	92	3406	100	3700	100	3700	100	3700
42'-0"	45	1914	79	3354	100	4200	100	4200	100	4200
47'-0"	39	1862	70	3302	97	4582	100	4700	100	4700
52'-0"	34	1810	62	3250	87	4530	100	5200	100	5200
62'-0"	27	1706	50	3146	71	4426	100	6200	100	6200
72'-0"	22	1602	42	3042	60	4322	100	7200	100	7200
82'-0"	18	1498	35	2938	51	4218	100	8200	100	8200
92'-0"	15	1394	30	2834	44	4144	93	8634	100	9200
102'-0"	12	1290	26	2730	39	4010	83	8530	100	10200

Intermediate Drive - Slider Bed - Horizontal Belt Conveyor Live Load Capacity @ 70 FPM										
Variable Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP		2 HP	
	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total
12'-0"	19	231	39	471	57	684	100	1200	100	1200
17'-0"	12	209	26	449	38	662	83	1416	100	1700
22'-0"	8	187	19	427	29	640	63	1394	87	1934
27'-0"	6	165	15	405	22	618	50	1372	70	1912
32'-0"	4	143	11	383	18	596	42	1350	59	1890
37'-0"	3	121	9	361	15	574	35	1328	50	1868
42'-0"	2	99	8	339	13	552	31	1306	43	1846
47'-0"	1	77	6	317	11	530	27	1284	38	1824
52'-0"	1	55	5	295	9	508	24	1262	34	1802
62'-0"			4	251	7	464	19	1218	28	1758
72'-0"			2	207	5	420	16	1174	23	1714
82'-0"			1	163	4	376	13	1130	20	1670
92'-0"			1	119	3	332	11	1086	17	1626
102'-0"					2	288	10	1042	15	1582

Intermediate Drive - Roller Bed - 13° Incline Belt Conveyor Live Load Capacity @ 70 FPM										
"L" Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP		2 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft	Total
11'-0"	35	392	59	650	79	878	100	1100	100	1100
16'-0"	23	382	39	639	54	867	100	1600	100	1600
21'-0"	17	371	29	628	40	857	79	1664	100	2100
26'-0"	13	357	23	614	32	842	63	1650	85	2228
31'-0"	11	346	19	603	26	832	52	1639	71	2217
36'-0"	9	335	16	592	22	821	45	1628	61	2207
41'-0"	7	325	14	582	19	810	39	1617	53	2196
46'-0"	6	314	12	571	17	800	34	1607	47	2185
51'-0"	5	303	10	560	15	789	31	1596	42	2175

Intermediate Drive - Slider Bed - 13° Incline Belt Conveyor Live Load Capacity @ 70 FPM										
"L" Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP		2 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft	Total
11'-0"	10	118	23	254	34	375	72	801	100	1100
16'-0"	6	101	14	237	22	358	49	784	68	1090
21'-0"	3	83	10	218	16	339	36	766	51	1071
26'-0"	2	66	7	201	12	322	28	749	40	1054
31'-0"	1	47	5	183	9	303	23	730	33	1035
36'-0"			4	164	7	284	19	711	28	1016
41'-0"			3	147	6	267	16	694	24	1000
46'-0"			2	128	5	249	14	675	21	981
51'-0"			2	111	4	232	12	658	18	964

Intermediate Drive - Roller Bed - 20° Incline Belt Conveyor Live Load Capacity @ 70 FPM										
"L" Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP		2 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft	Total
11'-0"	25	282	42	466	57	630	100	1100	100	1100
16'-0"	17	274	28	458	38	623	75	1202	100	1600
21'-0"	12	266	21	451	29	615	56	1194	76	1610
26'-0"	9	256	16	441	23	605	45	1184	61	1600
31'-0"	8	248	13	433	19	597	37	1176	51	1592
36'-0"	6	241	11	425	16	589	32	1169	44	1584
41'-0"	5	233	10	417	14	582	28	1161	38	1576

Intermediate Drive - Slider Bed - 20° Incline Belt Conveyor Live Load Capacity @ 70 FPM										
"L" Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP		2 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft	Total
11'-0"	8	98	19	210	28	310	60	664	83	917
16'-0"	5	84	12	196	18	296	40	650	56	903
21'-0"	3	68	8	181	13	281	30	634	42	887
26'-0"	2	54	6	167	10	267	23	620	33	873
31'-0"	1	39	4	151	8	251	19	604	27	857
36'-0"			3	135	6	235	16	589	23	842
41'-0"			2	121	5	221	14	575	20	828

Intermediate Drive - Roller Bed - 26° Incline Belt Conveyor Live Load Capacity @ 70 FPM										
"L" Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP		2 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft	Total
11'-0"	20	224	33	371	45	502	87	963	100	1100
16'-0"	13	218	22	365	30	495	59	957	80	1287
21'-0"	10	212	17	359	23	489	45	951	61	1281
26'-0"	7	204	13	351	18	481	36	942	48	1273
31'-0"	6	197	11	344	15	475	30	936	40	1267

Intermediate Drive - Slider Bed - 26° Incline Belt Conveyor Live Load Capacity @ 70 FPM										
"L" Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP		2 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft	Total
11'-0"	7	85	16	182	24	268	52	574	72	793
16'-0"	4	72	10	170	16	256	35	562	48	781
21'-0"	2	59	7	156	11	243	26	548	36	767
26'-0"	1	47	5	144	8	231	20	536	29	755
31'-0"	1	33	4	131	7	217	16	522	23	741

Intermediate Drive - Roller Bed - Horizontal Heavy Duty Belt Conveyor Live Load Capacity @ 70 FPM								
Variable Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total
12'-0"	135	1620	200	2400	200	2400	200	2400
22'-0"	60	1320	125	2760	183	4040	200	4400
32'-0"	31	1020	76	2460	116	3740	200	6400
42'-0"	17	720	51	2160	81	3440	189	7960
52'-0'	8	420	35	1860	60	3140	147	7660
62'-0"	2	120	25	1560	45	2840	118	7360
72'-0"			17	1260	35	2540	98	7060
82'-0"			11	960	27	2240	82	6760
92'-0"			7	660	21	1940	70	6460
102'-0"			3	360	16	1640	60	6160

Intermediate Drive - Roller Bed - Horizontal Heavy Duty Belt Conveyor Live Load Capacity @ 70 FPM						
Variable Length	2 HP		3 HP		5 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total
12'-0"	200	2400	200	2400	200	2400
22'-0"	200	4400	200	4400	200	4400
32'-0"	200	6400	200	6400	200	6400
42'-0"	200	8400	200	8400	200	8400
52'-0'	200	10400	200	10400	200	10400
62'-0"	170	10600	200	12400	200	12400
72'-0"	143	10300	191	13760	200	14400
82'-0"	121	10000	164	13460	200	16400
92'-0"	105	9700	143	13160	200	18400
102'-0"	92	9400	126	12860	200	20400

The capacities listed above are based on the specified speeds. If other speeds are required, the live load capacity is inversely proportional to the speed change and can be calculated as follows:

Example: Intermediate Drive
 Roller Bed
 Horizontal Belt
 42'-0" in length
 1-1/2 HP
 Speed required - 90 FPM

$$\frac{70\text{FPM}(\text{Std})}{90\text{FPM}(\text{Req})} \times 4200 \text{ lbs (Live Load Cap at 70 FPM)} = 3266 \text{ lbs Live Load Cap at 90 FPM}$$

The capacities listed are calculated using a procedure that makes assumptions that result in a conservative figure for live load capacity.

In order to determine actual belt pull, HP requirements and belt width, use the following procedure.

Belt Pull, Horsepower and Belt Width Calculations

Belt Pull Calculations

Live Load (A)

The total weight of the product being conveyed is normally expressed in pounds per foot (lbs./ft.). For various formulas to determine loading see the Product Loading topic in this section.

$$\text{Live Load (lbs./ft.)} \times \text{Conveyor Length} = \text{Total Live Load (lbs.)}$$

Dead Load (B)

When power is applied to a roller bed belt conveyor, all carrying rollers, return idler rollers and all pulleys are turning and therefore must be used in our calculations. The same is true for slider bed construction except there are no carrying rollers. This dead load is a combination of two parts.

1. The first part is the weight of all rollers and belting and is expressed in lbs./ft. This weight has been calculated for the various roller centers (roller bed only), widths and types of belt conveyor.

$$\text{Dead Load (Part 1)} \times \text{Conveyor Length} = DL_1 \text{ (lbs.)}$$

2. The second part is the weight of all drive pulleys and end rollers and is expressed in lbs. This weight has been calculated for you for the various widths and types of belt conveyor. This weight is constant and is not dependent on conveyor length.

$$\text{Dead Load (Part 2)} = DL_2 \text{ (lbs.)}$$

Dead Loads Belt Conveyor - Roller Bed						
	Carrying Roller Centers	15" W lbs./ft.	21" W lbs./ft.	27" W lbs./ft.	33" W lbs./ft.	39" W lbs./ft.
Part 1	3"	9.6	12.8	16.4	19.6	22.8
	4-1/2"	6.9	9.3	12.0	14.4	16.8
	6"	5.6	7.6	9.8	11.8	13.8
	9"	4.5	5.9	7.6	9.2	10.8
	12"	3.6	5.0	6.5	7.9	9.3
Part 2	Drives & End Assemblies	80#	110#	140#	170#	200#
	Power Feed Assemblies	75#	100#	125#	150#	175#

Dead Loads Belt Conveyor - Slider Bed						
		15" W lbs./ft.	21" W lbs./ft.	27" W lbs./ft.	33" W lbs./ft.	39" W lbs./ft.
Part 1		1.6	2.4	3.2	4.0	4.8
Part 2	Drives & End Assemblies	80#	110#	140#	170#	200#
	Power Feed Assemblies	75#	100#	125#	150#	175#

Dead Loads Heavy Duty Belt Conveyor - Roller Bed							
		27" W lbs./ft.	33" W lbs./ft.	39" W lbs./ft.	45" W lbs./ft.	51" W lbs./ft.	57" W lbs./ft.
Part 1	Carrying Roller Centers						
	3"	35.6	42.4	49.2	56.0	63.2	70.0
	4-1/2"	24.8	29.6	34.4	39.2	44.3	49.1
	6"	19.4	23.2	27.0	340.8	34.8	38.6
	9"	14.0	16.8	129.6	22.4	25.3	28.1
	12"	11.3	13.6	15.9	18.2	20.6	22.9
Part 2	Drives & End Assemblies	250#	300#	350#	400#	450#	500#
	Power Feed Assemblies	210#	250#	290#	330#	370#	140#

$$DL1 + DL2 = B \text{ (Total Dead Load)}$$

Belt Pull (C)

Belt pull is the force required to start and maintain the movement of all rollers, pulleys, belting and live load and is obtained by multiplying the total live load plus dead load by the coefficient of friction, which varies with the type of conveyor.

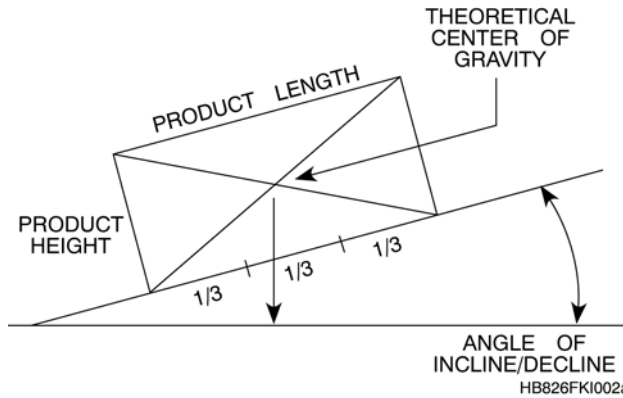
	Coefficient of Friction
Roller Bed Belt Conveyor	.05
Slider Bed Belt Conveyor	.30

$$(A + B) \times \text{Coefficient of Friction} = C \text{ (Belt Pull in lbs.)}$$

Inclines/Declines (D)

There are a number of methods used to determine whether a solidly packed, uniformly loaded product will negotiate a given angle of incline or decline without tumbling.

1. One method is to set the angle of incline/decline so that a vertical line drawn through the center of gravity, falls within the middle 1/3 of the package length.



- Draw a scale diagram of the product at the set angle of incline/decline.
 - Draw intersecting lines from corner to corner of the product.
 - Divide the base of the product into three equal parts.
 - A vertical line drawn through the center of gravity should
2. The maximum degree of incline/decline can be calculated using the following formula:

$$\text{Tangent of the Angle} = 33 \times \frac{\text{Product Length}}{\text{Product Height}}$$

Then find the maximum angle of incline/decline from the following chart:

Tangent For Various Angles					
Angle	Tangent	Angle	Tangent	Angle	Tangent
4°	.07	12°	.21	20°	.36
6°	.11	14°	.25	22°	.40
8°	.14	16°	.29	24°	.45
10°	.18	18°	.32	26°	.49

Example: Product Length = 32"
Product Height = 30"

$$\text{Tangent of the Angle} = 33 \times \frac{32}{30} = 0.35$$

Maximum degree of incline/decline = 19°

The table on the following page is based on the same formula.

Note: There are numerous factors that affect products being transported on incline/decline belt conveyors: product height vs. length, number of rollers under the belt, speed, starts and stops, product center of gravity, etc. These conditions should be taken into consideration before the selection process of a unit is completed.

Additional belt pull is generated by elevating the product and must be added to the belt pull already calculated. This additional belt pull can be determined two ways.

1. Total Live Load on Incline (lbs.) x Sine of Angle = Additional Belt Pull (lbs.)

Sines For Various Angles					
Angle	Sine	Angle	Sine	Angle	Sine
4°	.07	42°	.24	24°	.41
6°	.10	16°	.28	26°	.44
8°	.14	18°	.31	28°	.47
10°	.17	20°	.34	30°	.50
12°	.21	22°	.37		

2. This second method can be used for uniformly loaded conveyors.

$$\text{Average Live Load (lbs./ft.)} \times \text{Rise in Elevation (ft.)} = \text{Additional Belt Pull (lbs.)}$$

The increase in belt pull generated by an incline is not affected by the coefficient of friction. The same forces act on a decline belt conveyor as they do on an incline. However, on a decline belt conveyor, the motor must resist the forces which require practically the same horsepower as the incline unit.

Deflectors (E)

Deflecting a product off of a belt conveyor is not recommended and deflecting off a rough top belt should never be attempted. Due to the many variables that could affect the performance, requirements for deflecting products weighing more than 10 lbs. off a belt conveyor should be referred to the home office.

Where applied, deflectors add to the belt pull due to the force required to slide the product off the belt. For each deflector, add 30% of the weight of the heaviest product being deflected, to the belt pull.

$$\text{Number of Deflectors} \times \text{Heaviest Product (lbs.)} \times .30 = \text{Additional Belt Pull (lbs.)}$$

Transition Points (F)

Additional belt pull is generated on an inclined belt conveyor when using two pulley or three roller device. To calculate this additional belt pull, use the following formula:

$$\text{Total Live Load Preceding the Device (lbs.)} \times .05 = \text{Additional Belt Pull (lbs.)}$$

Effective Belt Pull

For effective belt pull, add 25% to the total belt pull for belt flexing, drive chain flexing and bearing friction losses in the end rollers, take-up and drive.

$$\text{Total Belt Pull (C + D + E + F)} \times 1.25 = \text{Eff. Belt Pull (lbs.)}$$

Horsepower Calculations

The required drive horsepower may be calculated as follows:

$$\frac{\text{Effective Belt Pull}(lbs) \times \text{Conveyor Speed}(FPM)}{33,000 \times \text{ReducerEfficiency} \times 0.9} = HP$$

Reducers have inherent inefficiencies, due to design. These inefficiencies vary and the output horsepower from the reducer is less than the input horsepower of the motor.

Use the Horsepower calculation and select the next highest standard horsepower motor for the RPM output required from the Motor Horsepower table below.

Motor / Reducer Horsepower Output							
Motor HP	Reducer RPM						
	22	29	43	58	69	86	115
1/2	.330	.330	.354	.377	.361	.381	.411
3/4	.509	.525	.552	.593	.620	.623	.601
1	.674	.729	.750	.797	.826	.847	.856
1-1/2	1.037	1.076	1.178	1.241	1.244	1.280	1.316
*2	1.312	1.478	1.570	1.636	1.690	1.732	1.764
*3	1.968	2.217	2.397	2.448	2.556	2.628	2.691
*5	---	3.600	3.920	4.170	4.335	4.420	4.465

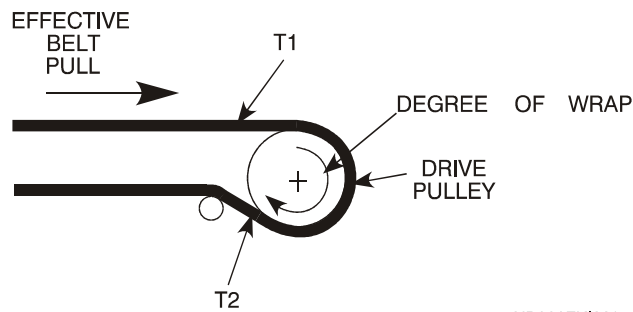
*2 HP Maximum for End Drive

3 HP Maximum for C1743 Int. Drive with Sprocket and Chain

5 HP for Heavy Duty or Timing Belt Drives

Belt Width Calculations

Belt tension is commonly referred to as T_1 and T_2 .



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T_1 and T_2 affect only the strength of the belt and shafting and do not affect the horsepower required. T_1 is the belt tension on the tight side or pulling side of the belt and T_2 is the belt tension on the slack side of the belt. To calculate T_1 and T_2 , multiply the effective belt pull by the appropriate factor selected from the Pulley Table of Factors (shown below).

$$\text{Effective Belt Pull (lbs.)} \times T_1 \text{ Factor} = T_1 \text{ (lbs.)}$$

$$\text{Effective Belt Pull (lbs.)} \times T_2 \text{ Factor} = T_2 \text{ (lbs.)}$$

Belt width is based on belt tension, which is always greatest on the T_1 side, and belt strength is normally expressed in pounds per inch of width. A standard belt is 90 PVC which means it has 90 lbs. of strength per inch of width.

$$\frac{T_1 \text{ (lbs)}}{\text{Belt Strength (lbs/in of Belt Width)}} = \text{Minimum Belt Width (in)}$$

Pulley Table of Factors				
Component Pulley Wrap			Belt Tension	
Component Identification Number	Description	Degree of Wrap	T_1 Factor	T_2 Factor
C1743	Intermediate Drive	210° Lagged	1.38	.38
C1716	End Drive	200° Lagged	1.42	.42
C1721	Low Elevation End Drive	200° Lagged	1.42	.42
C1700	Low Profile Intermediate Drive	225° Lagged	1.34	.34
C1292	Heavy Duty Intermediate Drive	235° Lagged	1.31	.31

Example: Effective Belt Pull using a C1743 Intermediate Drive = 790 lbs.

$$790 \text{ lbs.} \times 1.38 = T_1$$

$$T_1 = 1090 \text{ lbs.}$$

$$\frac{1090 \text{ lbs}}{90 \text{ lbs/inch}} = 12'' \text{ Minimum Belt Width}$$

The standard belt widths are Between Frames dimensions minus 3". As can be seen from the above example, most belt widths for belt conveyors are determined by conveyor width (W) as opposed to belt strength.

Conveyor Belting

There are many types of belting available, some of which are more popular than others. The most widely used types are described below.

Conveyor belts are usually manufactured of polyester, nylon, cotton, rubber, elastomers, and plastics in 100% pure form or in some combination. The resulting product is flexible and if designed, manufactured, slit and laced properly will go where directed by the conveyor system as designed and built.

Unit handling belt is usually made of one or more plies of a textile fabric impregnated with an elastomer coupled with appropriate covers. One of the most widely used types now is a PVC belting. It is made of a single ply, all polyester fiber woven in either a straight wrap or solid woven configuration and is saturated and covered with a (polyvinyl chloride) PVC elastomer. This belt construction does not have “covers” in the conventional sense, rather the manufacturing process results in a solid block of PVC elastomer with a reinforcing textile (polyester) fabric running through it.

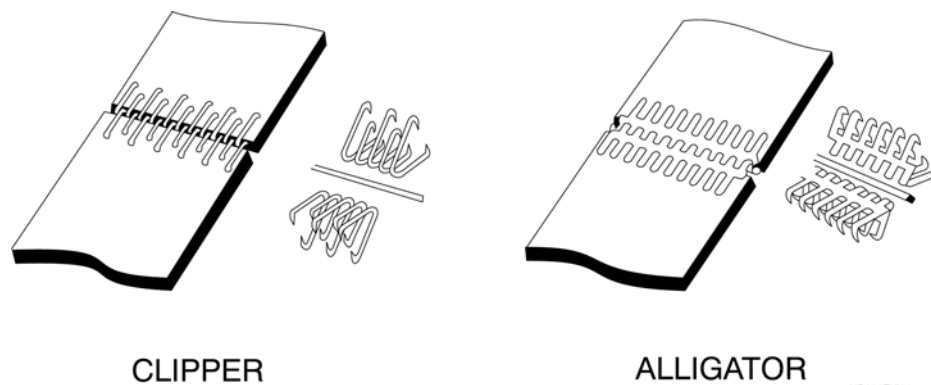
Belt Fasteners

Endless splices are occasionally used on unit handling conveyors. However, by far the most common method of joining belt ends is the metal fastener such as the “clipper” type wire lace or the “alligator” type steel hinges.

The “clipper” wire lace type of fastener consists of many wires pressed into the belt forming a series of wire loops extending beyond the ends of the belt. The belt ends, each containing one-half of the fastener, are meshed together and the pin inserted like a door hinge. A lacing machine must be used for proper installation of the fastener into the belt.

The “alligator” steel hinge type of lace can be applied with a hammer. The belt is simply laid down on a flat surface and the ends of the prongs driven into the belt. The two belt ends are now meshed together and a steel hinge pin is used in a manner similar to that above.

The size of the fastener used is governed by the thickness of the belt and the diameter of the smallest pulley involved. The metal fastener manufacturer’s instructions should be used to install and connect the fasteners used.



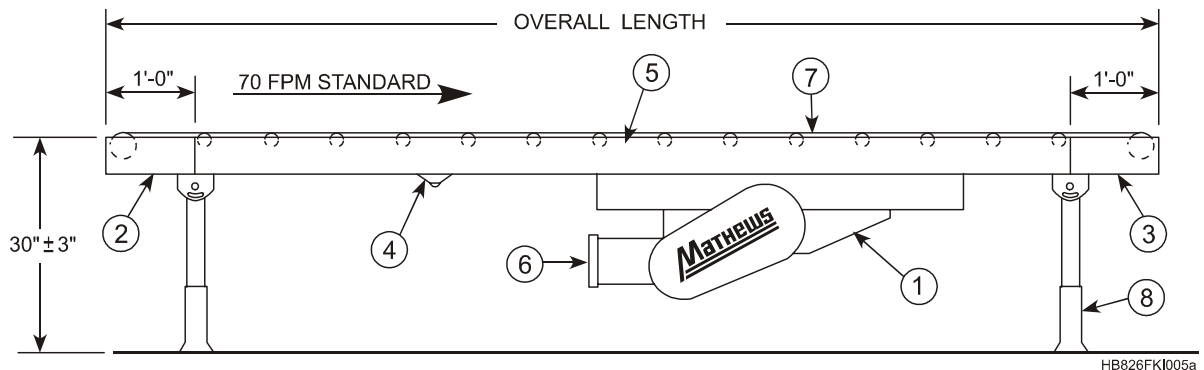
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Unit Conveyors

Horizontal Belt Conveyor - Intermediate Drive - Model BHC

HOW TO ORDER

Quantity	Model No.	W	Variable Length	HP	Options
1	BHC	27"	42'-0"	1	---



Components Included in Basic Unit (Assembly Instructions Included)	
1	SA2000 Drive and Take-Up - 8.25" diameter
2	C1239 End Roller - 3-1/2" diameter
3	C1626 End Roller - 3-1/2" diameter
4	C1244 Idler Roller - 1.90" diameter
5	C1237 Roller Section - 1.90" diameter
6	Motor/Reducer - 1/2 HP @ 43 RPM, totally enclosed, 70 FPM, 230/460 volt, 3 phase, 60 hertz
7	Belting - Black 120 P.I.W. FS
8	C1231 Floor Supports for 27" minimum to 33" top of belt (Knee Braces optional)

CONVEYOR WIDTH	Standard - 15", 21", 27", 33" and 39" Between Frames only.
DRIVE	Standard - 8.25" finished dia. lagged straight face pulley with 1-11/16" dia. shaft. 3.50" dia. machine crowned take-up roller with 10" adjustment. Option - Timing belt drive (TB) available (see Components section).
END ROLLER TAKE-UP	Standard - 3.50" dia. machine crowned roller with 1-1/16" hex axle.
CARRYING ROLLERS	Standard - 1.90" dia. x .065" (16 ga.) steel roller with grease packed bearings and 7/16" hex spring loaded axles on 6" centers. Rollers are 3/8" high.
IDLER ROLLER	Standard - 1.90" dia. x .065" (16 ga.) steel rollers with grease packed bearings and 7/16" hex axles on maximum 10'-0" centers.
SUPPORTS	Standard - Floor type on maximum 10'-0" centers for conveying height of 27" to 33" (1500# capacity). Option - Other supports, hanger on floor type, are available (see Supports section).
ROLLER SECTION	Standard - 5" x 1-1/2" x .120" (11 ga.) formed steel channel with welded butt couplings. Option - Roller sections available with rollers on 3", 6", 9" or 12" centers. 14 ga. slider bed sections also available.
BELT	Standard - 120 P.I.W. FS. Width is 3" less than the Between Frames dimension.
MOTOR / REDUCER (For 70 FPM)	Standard - 43 RPM right angle reducer, 3 phase, 60 hertz, 230/460 volt, totally enclosed motor. Option - Other motor/reducer combinations are available as load and speeds change. See tables on the following page or Components section).
SIDE GUARDS	Option - Standard angle, channel or adjustable guards available (see the Accessories section).
LENGTHS	Option - Intermediate lengths available (in 3" increments).
ELECTRICAL CONTROLS	Option - As required (see Controls section).

Intermediate Drive - Roller Bed Live Load Capacity @ 70 FPM										
Variable Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP		2 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft	Total
12'-0"	100	1200	100	1200	100	1200	100	1200	100	1200
17'-0"	100	1700	100	1700	100	1700	100	1700	100	1700
22'-0"	96	2122	100	2200	100	2200	100	2200	100	2200
27'-0"	76	2070	100	2700	100	2700	100	2700	100	2700
32'-0"	63	2018	100	3200	100	3200	100	3200	100	3200
37'-0"	53	1966	92	3406	100	3700	100	3700	100	3700
42'-0"	45	1914	79	3354	100	4200	100	4200	100	4200
47'-0"	39	1862	70	3302	97	4582	100	4700	100	4700
52'-0'	34	1810	62	3250	87	4530	100	5200	100	5200
62'-0"	27	1706	50	3146	71	4426	100	6200	100	6200
72'-0"	22	1602	42	3042	60	4322	100	7200	100	7200
82'-0"	18	1498	35	2938	51	4218	100	8200	100	8200
92'-0"	15	1394	30	2834	44	4144	93	8634	100	9200
102'-0"	12	1290	26	2730	39	4010	83	8530	100	10200

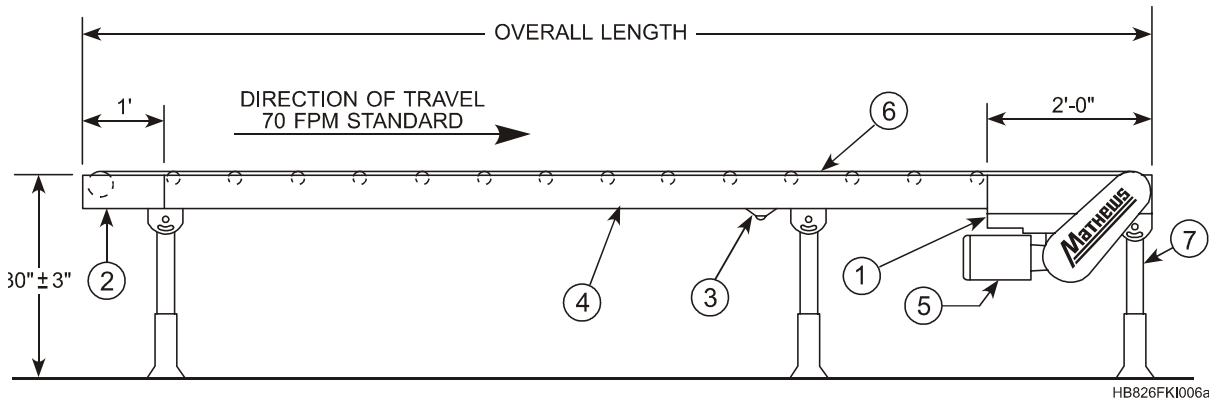
Intermediate Drive - Slider Bed Live Load Capacity @ 70 FPM										
Variable Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP		2 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft	Total
12'-0"	19	231	39	471	57	684	100	1200	100	1200
17'-0"	12	209	26	449	38	662	83	1416	100	1700
22'-0"	8	187	19	427	29	640	63	1394	87	1934
27'-0"	6	165	15	405	22	618	50	1372	70	1912
32'-0"	4	143	11	383	18	596	42	1350	59	1890
37'-0"	3	121	9	361	15	574	35	1328	50	1868
42'-0"	2	99	8	339	13	552	31	1306	43	1846
47'-0"	1	77	6	317	11	530	27	1284	38	1824
52'-0'	1	55	5	295	9	508	24	1262	34	1802
62'-0"			4	251	7	464	19	1218	28	1758
72'-0"			2	207	5	420	16	1174	23	1714
82'-0"			1	163	4	376	13	1130	20	1670
92'-0"			1	119	3	332	11	1086	17	1626
102'-0"					2	288	10	1042	15	1582

Horizontal Belt Conveyor - End Drive - Model BHE

HOW TO ORDER

Quantity	Model No.	W	Variable Length	HP	Options
1	BHE	27"	43'-0"	1	---

Note: Please list options.



Components Included in Basic Unit (Assembly Instructions Included)	
1	C1716 Drive - 4" diameter crowned
2	C1239 End Roller - 3-1/2" diameter
3	C1244 Idler Roller - 1.90" diameter
4	C1237 Roller Section - 1.90" (16 ga.) rollers on 6" centers
5	Motor/Reducer - 1/2 HP @ 58 RPM, totally enclosed, 70 F.).M., 230/460 volts, 3 phase, 60 hertz
6	Belting - Black 120 PIW FS
7	C1231 Floor Supports for 27" minimum to 33" top of belt (Knee Braces optional)

CONVEYOR WIDTH	Standard - 15", 21", 27", 33" and 39" Between Frame only.
DRIVE	Standard - 4" dia. crowned pulley with 1-3/16" dia. shaft and take-up. Option - Available without take-up (NT). See the table on the next page for recommended maximum lengths without take-up (assumes nominal take-up in end roller unit). Available with timing belt drive (TB), see Components section.
END ROLLER TAKE-UP	Standard - 3.50" dia. machine crowned roller with 1-1/16" hex axle.
CARRYING ROLLERS	Standard - 1.90" dia. x .065" (16 ga.) steel rollers with grease packed bearings and 7/16" hex spring loaded axles on 6" centers. Rollers are 3/8" high.
IDLER ROLLER	1.90" dia. x .065" (16 ga.) steel rollers with grease packed bearings and 7/16" hex axle on maximum 10'-0" centers.
SUPPORTS	Standard - Floor type on maximum 10'-0" centers for conveying height of 27" to 33" 91500# capacity. Option - Other supports, hanger or floor type, are available (see Supports section).
ROLLER SECTION	Standard - 5" x 1-1/2" x .120" (11 ga.) formed steel channel with welded butt couplings. Option - roller sections available with rollers on 3", 6", 9" or 12" centers. 14 ga. slider bed sections are also available.
BELT	Standard - 120 P.I.W. FS. width is 3" less than the Between Frame dimension.
MOTOR / REDUCER (For 70 FPM)	Standard - 58 RPM right angle reducer, 3 phase, 60 hertz, 230/460 volt, totally enclosed motor. Option - Other motor/reducer combinations are available as load and speeds change. See the tables on the following page or Components section.
SIDE GUARDS	Option - Standard angle, channel or adjustable guards available (see Accessories section).
LENGTHS	Option - Intermediate lengths available (in 3" increments).
ELECTRICAL CONTROLS	Option - As required (see Controls section).

End Drive - Roller Bed Live Load Capacity @ 70 FPM						
Variable Length	1/2 HP		3/4 HP		1 HP	
	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total
13'-0"	100	1300	100	1300	100	1300
18'-0"	100	1800	100	1800	100	1800
23'-0"	91	2110	100	2300	100	2300
28'-0"	73	2058	100	2800	100	2800
33'-0"	60	2007	100	3300	100	3300
38'-0"	51	1954	89	3394	100	3800
43'-0"	44	1903	77	3343	100	4300

End Drive - Slider Bed Live Load Capacity @ 70 FPM						
Variable Length	1/2 HP		3/4 HP		1 HP	
	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total
13'-0"	17	225	35	465	52	678
18'-0"	11	203	24	443	36	656
23'-0"	7	182	18	422	27	635
28'-0"	5	159	14	399	21	612
33'-0"	4	137	11	377	17	590
38'-0"	3	116	9	356	14	569
43'-0"	2	93	7	333	12	546

Maximum Recommended Conveyor Length with "NT" Option					
W	15" W	21" W	27" W	33" W	39" W
Length	13'-0"	20'-0"	28'-0"	33'-0"	38'-0"

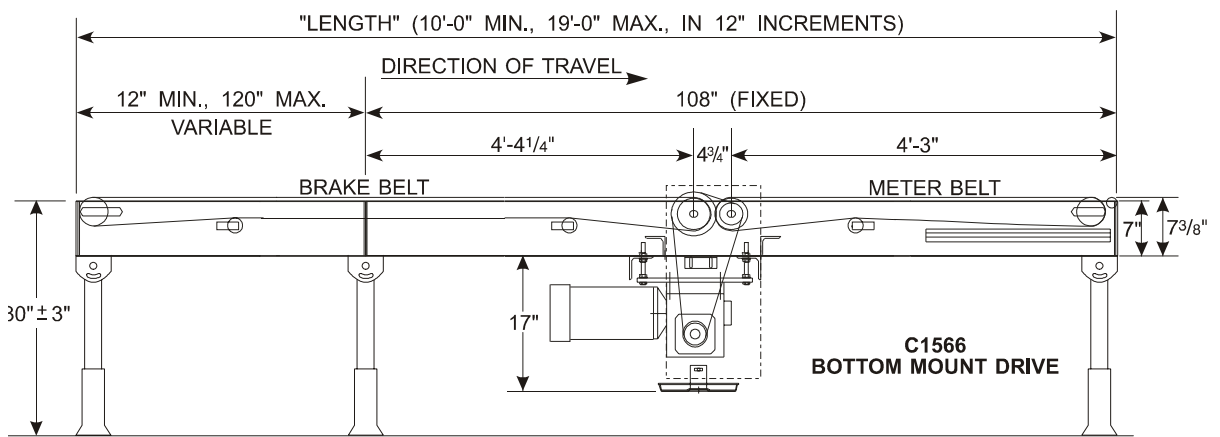
Standard Duty - Brake/Meter Belt - Model BMB

Drive Mounted Above - C1565 - Drive Mounted Below - C1566

HOW TO ORDER

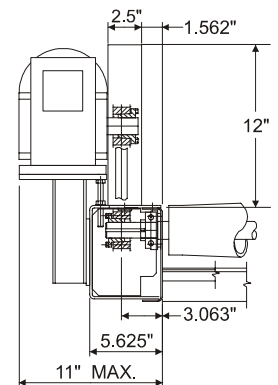
Quantity	Model No.	W	Overall Length	Meter Belt Speed	Ratio	HP	Motor	Options
1	C1566	27"	10'-0"	150	2.0:1	1	Std.	RG

Note: Please list options.



HB826FKI007a

AVAILABLE WITH
TOP MOUNT DRIVE
SPECIFY C1565



HB826FKI008a

CONVEYOR WIDTH	Standard - 15" through 39" in 3" increments
CONVEYOR LENGTH	Standard - 120" through 228" in 12" increments
DRIVE	Standard - Timing belt driven 4" dia. machine crowned pulleys.
METER SPEEDS	Standard - 70, 90, 100, 120, and 150 through 400 in 25 FPM increments.
HORSEPOWER	Standard - 1 and 2 HP. (2 HP not available on speeds less than 150 FPM.
MORO/REDUCER	For 70 FPM Standard - Brakemotor mounted on right angle reducer, 3 phase, 60 hertz, 230/460 volt. Option - Eurodrive helical-bevel right angle gearmotor with brake (specify "EU"). 3 phase, 60 hertz, 230/460 or 575 volt or single phase, 60 hertz, 115 volt.
METER/BRACKE RATIOS	Standard - 1.21:1, 1.43:1, 1.57:1, 1.71:1 and 2:1.
BELT	Standard - 90 P.I.W. grooved. Belt width is 3' less than the Between Frame dimension.
END ROLLERS	Standard - 3.5" dia. crowned face roller with 1-1/16" hex axle. Option - Regreaseable bearings (specify "RG" under Options in How To Order).
FRAME	Standard - 7" x 1-1/2" x .120" (11 ga.) formed steel channels with welded butt couplings and 14 ga. steel slider beds. Unistrut provided on discharge end for photoeye mounting.
SUPPORTS	Standard - Floor type for 27" to 33" top of belt elevation (1500# capacity each). Option - Higher and lower floor supports and ceiling hanger supports are available (see Supports section).
GUARD RAILS	Option - Angle, channel or adjustable outrigger guards available (see Accessories section).
ELECTRICAL CONTROL	Option - Manual and magnetic starters with remote pushbutton stations (see Controls section).

Assumptions: 39" W 1.21:1 Ratio 80% Reducer Efficiency

C1565 and C1566 Brake/Meter Belt - 1 HP															
Live Load Capacity in lb./ft.															
Overall Length (ft.)	Speed														
	70	90	100	120	150	175	200	225	250	275	300	325	350	375	400
10	100.6	76.5	68.0	55.3	42.7	35.4	30.0	25.8	22.4	19.6	17.3	15.4	13.7	12.2	11.0
11	93.7	71.1	63.2	51.4	39.6	32.8	27.7	23.8	20.6	18.0	15.9	14.1	12.5	11.2	10.0
12	87.5	66.4	59.0	47.9	36.8	30.5	25.7	22.0	19.1	16.7	14.6	12.9	11.5	10.2	9.1
13	82.2	62.3	55.3	44.9	34.4	28.5	24.0	20.5	17.7	15.4	13.5	11.9	10.6	9.4	8.3
14	77.4	58.6	52.0	42.1	32.3	26.7	22.4	19.1	16.5	14.4	12.6	11.0	9.7	8.6	7.6
15	73.1	55.3	49.1	39.7	30.4	25.0	21.0	17.9	15.4	13.4	11.7	10.3	9.0	8.0	7.0
16	69.2	52.3	46.4	37.5	28.7	23.6	19.8	16.8	14.5	12.5	10.9	9.5	8.4	7.4	6.5
17	65.7	49.6	44.0	35.5	27.1	22.3	18.6	15.8	13.6	11.7	10.2	8.9	7.8	6.8	6.0
18	62.6	47.2	41.8	33.7	25.7	21.1	17.6	14.9	12.8	11.0	9.5	8.3	7.2	6.3	5.5
19	59.7	45.0	39.8	32.1	24.4	20.0	16.7	14.1	12.0	10.4	9.0	7.8	6.8	5.9	5.1

C1565 and C1566 Brake/Meter Belt - 2 HP											
Live Load Capacity in lb./ft.											
Overall Length (ft.)	Speed										
	150	175	200	225	250	275	300	325	350	375	400
10	93.4	78.9	68.0	59.6	52.8	47.3	42.7	38.8	35.4	32.5	30.0
11	86.9	73.4	63.2	55.3	49.0	43.9	39.6	35.9	32.8	30.1	27.7
12	81.2	68.5	59.0	51.6	45.7	40.9	36.8	33.4	30.5	28.0	25.7
13	76.2	64.3	55.3	48.3	42.8	38.2	34.4	31.2	28.5	26.1	24.0
14	71.7	60.5	52.0	45.4	40.2	35.9	32.3	29.3	26.7	24.4	22.4
15	67.7	57.1	49.1	42.8	37.8	33.8	30.4	27.5	25.0	22.9	21.0
16	64.2	54.0	46.4	40.5	35.8	31.9	28.7	25.9	23.6	21.6	19.8
17	60.9	51.2	44.0	38.4	33.9	30.2	27.1	24.5	22.3	20.3	18.6
18	58.0	48.7	41.8	36.4	32.1	28.6	25.7	23.2	21.1	19.2	17.6
19	55.3	46.4	39.8	34.7	30.6	27.2	24.4	22.0	20.0	18.2	16.7

General Description

The BMB Unit has two slider bed sections driven by a common timing belt drive. High friction rougtop belting is provided for both sections and the unit is floor supported with three 1500 lb. capacity supports.

Application

The primary function of a brake/meter belt is two-fold. First, the brake/meter belt must be able to stop and hold products on the brake portion. Secondly, the brake/meter belt, meters products onto a discharge conveyor.

Brake Belt Considerations

A brake belt can only resist upstream line pressure less than (Product Weight on Brake Belt x Coefficient of Friction Product to Belt). An Approximate coefficient of friction between the belt and cardboard is 0.8. Plastic totes on belt have reduced friction values.

Products accumulating on the upstream conveyor often impact and try to push products through the brake belt. Since the holding force is dependent upon the weight of the product on the brake belt, then force is brake belt length dependent. The maximum standard belt brake length is 15 ft. and the minimum is 6 ft.

Meter Belt

The meter belt receives product from the brake belt and discharges onto the downstream conveyor. A brake/meter belt working together can create gaps between products if the meter belt is running faster than the brake belt. Gaps can be achieved by speed ratios and by starting and stopping. Meter length is a constant 48".

The speed of the meter belt is generally the same as the downstream conveyor and by dividing that by the ratio of the P.T.O., you have the speed of the brake belt.

The ratio to select is determined by the carton length and the required gap between them. For example, if you have 18" long cartons, and you require a 6" gap between them,

$$the\ ratio = \frac{Required\ Gap}{Carton\ Length} + 1$$

OR $6 \div 18 + 1 = 1.33$

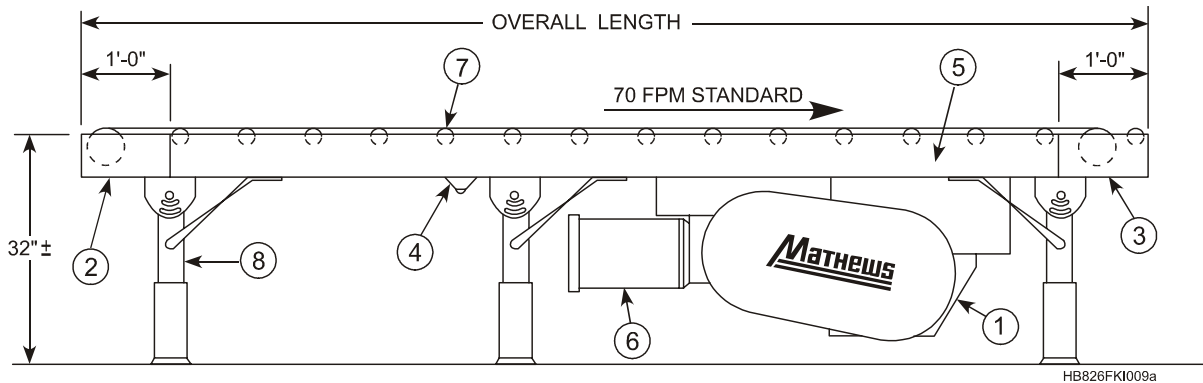
Select the next higher standard ratio, 1.43 to 1. The unit is normally driven by a right angle motor/reducer with a brake, which assists in holding back the accumulating cartons. The brakemotor is suitable for normal system applications where the unit is not required to start and stop more than 60 times per minute. In situations where 6 to 30 start-stops per minute are required, the use of an Eurodrive brakemotor is recommended. In situations where more than 30 start-stops per minute are required, consult the factory.

Heavy Duty Horizontal Belt Conveyor - Intermediate Drive - Model HBC

HOW TO ORDER

Quantity	Model No.	W	Variable Length	HP	Options
1	HBC	39"	72'-0"	1-1/2	---

Note: Please list options.



Components Included in Basic Unit (Assembly Instructions Included)	
1	C1292 Drive and Take-Up - 13-1/4" diameter
2	C1300 End Roller - 6" diameter
3	C1301 End Roller - 6" diameter
4	C1404 Idler Roller - 1.90" diameter
5	C1298 Roller Section - 2.50" x .120" (11 ga.) rollers on 6" centers in 6" channel frame
6	Motor/Reducer - HP as required @ 35 RPM, totally enclosed, 70 FPM, 230/460 volt, 3 phase, 60 hertz
7	Belting - Black 120 P.I.W. FS
8	C695 Floor Supports on 5'-0" centers for 31" to 34" top of belt (Knee Braces included)

CONVEYOR WIDTH	27", 33", 39", 45", 51" and 57" Between Frames only.
DRIVE	Standard - 13.25" finished dia. lagged straight face pulley with 2-7/16" dia. shaft. 5.0" dia. machine crowned take-up roller with 12" adjustment.
END ROLLER TAKE-UP	Standard - 6.0" dia. machine crowned roller with 1-7/16" dia. shaft.
CARRYING ROLLERS	Standard - 2.50" dia. x .120" (11 ga.) steel rollers with grease packed bearings and 11/16" hex axles on 6" centers. Rollers are 3/8" high.
IDLER ROLLER	Standard - 1.90" dia. x .065" (16 ga.) steel rollers with grease packed bearings and 7/16" hex axles on maximum 10'-0" centers.
SUPPORTS	Standard - Floor type on maximum 10'-0" centers for conveying height of 31" to 34" (3000# capacity). Option - Other elevation floor supports are available (see Supports section).
ROLLER SECTION	Standard - 6" x 2" x .180" (3/16") formed steel channel with welded butt couplings. Option - Roller sections available with rollers on 6", 9" or 12" centers
BELT	Standard - 120 P.I.W. FS. Width is 3 less than the Between Frames dimension.
MOTOR / REDUCER (For 70 FPM)	Standard - 35 RPM right angle reducer, 3 phase, 60 hertz, 230/460 volt, totally enclosed motor. Option - Other motor/reducer combinations are available as load and speeds change. See table on the following page or the Components section.
SIDE GUARDS	Option - Standard angle or channel guards available (see the Accessories section).
LENGTHS	Option - Intermediate lengths available (in 3" increments).
ELECTRICAL CONTROLS	Option - As required (see the Controls section).

Intermediate Drive - Roller Bed - Horizontal Heavy Duty Belt Conveyor Live Load Capacity @ 70 FPM								
Variable Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total
12'-0"	135	1620	200	2400	200	2400	200	2400
22'-0"	60	1320	125	2760	183	4040	200	4400
32'-0"	31	1020	76	2460	116	3740	200	6400
42'-0"	17	720	51	2160	81	3440	189	7960
52'-0'	8	420	35	1860	60	3140	147	7660
62'-0"	2	120	25	1560	45	2840	118	7360
72'-0"			17	1260	35	2540	98	7060
82'-0"			11	960	27	2240	82	6760
92'-0"			7	660	21	1940	70	6460
102'-0"			3	360	16	1640	60	6160

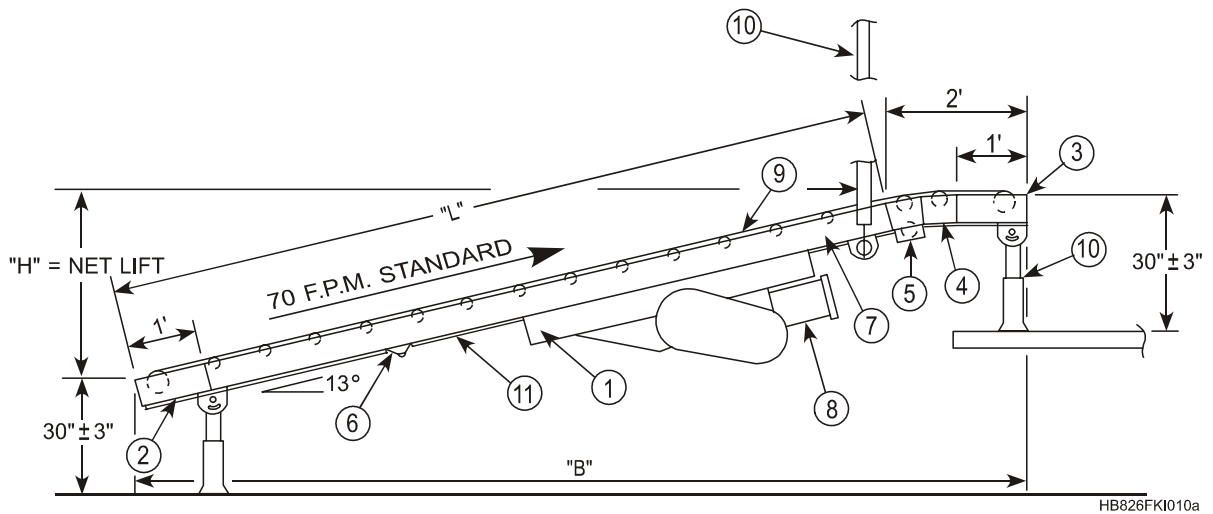
Intermediate Drive - Roller Bed - Horizontal Heavy Duty Belt Conveyor Live Load Capacity @ 70 FPM						
Variable Length	2 HP		3 HP		5 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total
12'-0"	200	2400	200	2400	200	2400
22'-0"	200	4400	200	4400	200	4400
32'-0"	200	6400	200	6400	200	6400
42'-0"	200	8400	200	8400	200	8400
52'-0'	200	10400	200	10400	200	10400
62'-0"	170	10600	200	12400	200	12400
72'-0"	143	10300	191	13760	200	14400
82'-0"	121	10000	164	13460	200	16400
92'-0"	105	9700	143	13160	200	18400
102'-0"	92	9400	126	12860	200	20400

13° Inclined Belt Conveyor - Model BIC-13

HOW TO ORDER

Quantity	Model No.	W	"L" Length	HP	Options
1	BIC-13	27"	31'-0"	1/2	---

Note: Please list options.



HB826FKI010a

Components Included in Basic Unit (Assembly Instructions Included)	
1	SA2000 Drive and Take-Up - 8.25" diameter
2	C1239 End Roller - 3-1/2" diameter
3	C1626 End Roller - 3-1/2" diameter
4	C1267 (2) Vertical Bends - 13°
5	C1245 Snub Roller - 2-1/2" diameter
6	C1244 Idler Roller - 1.90" diameter
7	C1237 Roller Section - 1.90" diameter (16 ga.) rollers on 6" centers
8	Motor/Reducer - 1/2 HP @ 43 RPM, totally enclosed, 70 FPM, 230/460 volt, 3 phase, 60 hertz
9	Belting - Roughtop, 120 P.I.W. RT
10	C1231 Floor Supports at feed and discharge end. C1275 Hanger Supports at each conveyor section joint.
11	Bottom Closure (D10374) included for incline up to 8'-0" elevation

13° Incline		
"L" Length	"B" Length	"H" Net Lift
11'-0"	12'-8-5/8"	2'-7-1/4"
16'-0"	17'-7-1/8"	3'-8-3/4"
21'-0"	22'-5-1/2"	4'-10-1/4"
26'-0"	27'-4"	5'-11-3/4"
31'-0"	32'-2-1/2"	7'-1-1/4"
36'-0"	37'-1"	8'-2-3/4"
41'-0"	41'-11-3/8"	9'-4-1/4"
46'-0"	46'-9-7/8"	10'-5-3/4"
51'-0"	51'-8-3/8"	11'-7-1/4"

CONVEYOR WIDTH	15", 21", 27", 33" and 39" Between Frames only.
DRIVE	Standard 8.25" finished dia. lagged straight face pulley with 1-11/16" dia. shaft. 3.50" dia. machine crowned take-up roller with 10" adjustment. Option - Timing belt drive (TB) available (see the Components section).
END ROLLER TAKE-UP	Standard - 3.50" dia. machine crowned roller with 1-1/16" hex axle.
CARRYING ROLLERS	Standard - 1.90" dia. x .065" (16 ga.) steel rollers with grease packed bearings and 7/16" hex spring loaded axles on 6" centers. Rollers are 3/8" high.
IDLER ROLLER	Standard - 1.90" dia. x .065" (16 ga.) steel rollers with grease packed bearings and 7/16" hex axles on maximum 10'-0" centers.
SNUB ROLLER	Standard - 2.50" dia. x .120" (11 ga.) steel roller with grease packed bearings and 11/16" hex axles.
SUPPORTS	Standard - For receive and discharge ends, adjustable floor supports from 27" to 33" elevation. All other supports 10'-0" long hanger type (1500# capacity). Option - Other supports are available (see the Supports section).
ROLLER SECTION	Standard - 5" x 1-1/2" x .120" (11 ga.) formed steel channel with welded butt couplings. Option - Roller sections available with rollers on 3", 6", 9" or 12" centers. 14 ga. slider bed sections also available.
BELT	Standard - Roughtop. Width is 3" less than the Between Frames dimension.
MOTOR / REDUCER (For 70 FPM)	(For 70 FPM) Standard - 43 RPM right angle reducer, 3 phase, 60 hertz, 230/460 volt, totally enclosed motor. Option - Other motor/reducer combinations are available as load and speeds change. See the tables on the next page or the Components section.
SIDE GUARDS	Option - Standard angle, channel or adjustable guards available (see the Accessories section).
LENGTHS	Option - Intermediate lengths available (in 3" increments).
POWER FEEDER	Level feeder sections with a two-pulley PTO and PVC 90 FS belting are recommended for reversible operation. Feeder sections with a three roller device are available for non-reversing operation (see the Power Feeder topic in this section).
ELECTRICAL CONTROLS	Option - As required (see the Controls section).

Intermediate Drive - Roller Bed - 13° Incline Live Load Capacity @ 70 FPM										
"L" Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP		2 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft	Total
11'-0"	35	392	59	650	79	878	100	1100	100	1100
16'-0"	23	382	39	639	54	867	100	1600	100	1600
21'-0"	17	371	29	628	40	857	79	1664	100	2100
26'-0"	13	357	23	614	32	842	63	1650	85	2228
31'-0"	11	346	19	603	26	832	52	1639	71	2217
36'-0"	9	335	16	592	22	821	45	1628	61	2207
41'-0"	7	325	14	582	19	810	39	1617	53	2196
46'-0"	6	314	12	571	17	800	34	1607	47	2185
51'-0"	5	303	10	560	15	789	31	1596	42	2175

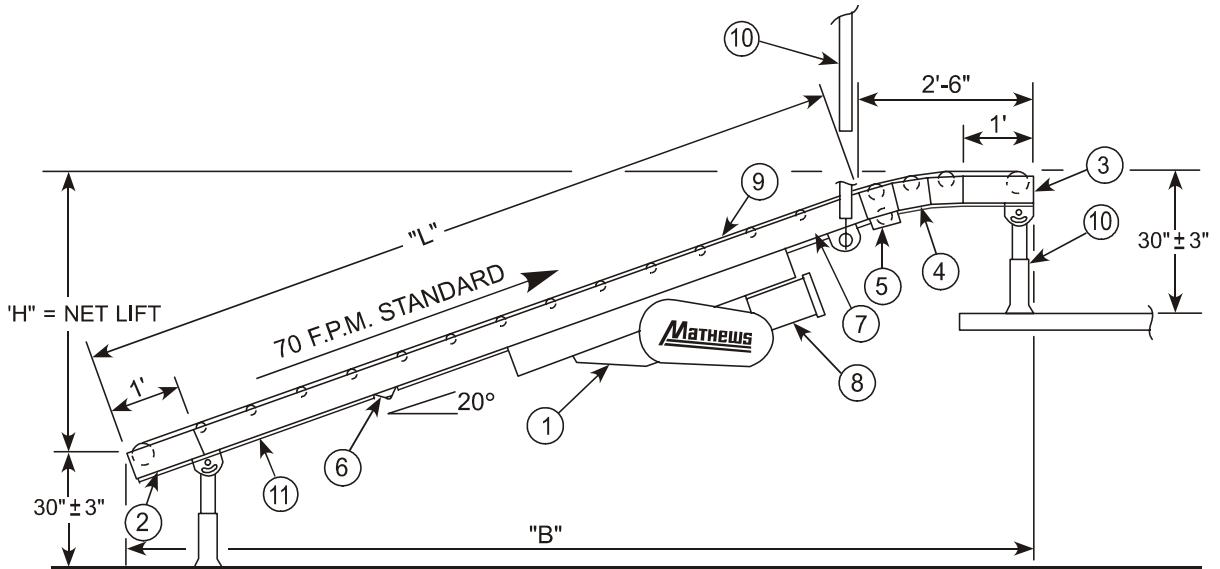
Intermediate Drive - Slider Bed - 13° Incline Live Load Capacity @ 70 FPM										
"L" Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP		2 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft	Total
11'-0"	10	118	23	254	34	375	72	801	100	1100
16'-0"	6	101	14	237	22	358	49	784	68	1090
21'-0"	3	83	10	218	16	339	36	766	51	1071
26'-0"	2	66	7	201	12	322	28	749	40	1054
31'-0"	1	47	5	183	9	303	23	730	33	1035
36'-0"			4	164	7	284	19	711	28	1016
41'-0"			3	147	6	267	16	694	24	1000
46'-0"			2	128	5	249	14	675	21	981
51'-0"			2	111	4	232	12	658	18	964

20° Inclined Belt Conveyor - Model BIC-20

HOW TO ORDER

Quantity	Model No.	W	"L" Length	HP	Options
1	BIC-20	27"	31'-0"	1/2	---

Note: Please list options.



HB826FKI011a

Components Included in Basic Unit (Assembly Instructions Included)

1	SA2000 Drive and Take-Up - 8.25" diameter
2	C1239 End Roller - 3-1/2" diameter
3	C1626 End Roller - 3-1/2" diameter
4	C1267 (2) Vertical Bends - 20°
5	C1245 Snub Roller - 2-1/2" diameter
6	C1244 Idler Roller - 1.90" diameter
7	C1237 Roller Section - 1.90" diameter (16 ga.) rollers on 6" centers
8	Motor/Reducer - 1/2 HP @ 43 RPM, totally enclosed, 70 FPM, 230/460 volt, 3 phase, 60 hertz
9	Belting - Roughtop, 120 P.I.W. RT
10	C1231 Floor Supports at feed and discharge end. C1275 Hanger Supports at each conveyor section joint.
11	Bottom Closure (D10374) included for incline up to 8'-0" elevation

20° Incline		
"L" Length	"B" Length	"H" Net Lift
11'-0"	12'-10-3/8"	3'-11"
16'-0"	17'-7"	5'-7-1/8"
21'-0"	22'-3-1/2"	7'-3-1/8"
26'-0"	27'-1/8"	8'-11-1/8"
31'-0"	31'-8-5/8"	10'-7-1/8"
36'-0"	36'-5-1/4"	12'-3-1/4"
41'-0"	41'-1-3/4"	13'-11-1/4"

CONVEYOR WIDTH	15", 21", 27", 33" and 39" Between Frames only.
DRIVE	Standard 8.25" finished dia. lagged straight face pulley with 1-11/16" dia. shaft. 3.50" dia. machine crowned take-up roller with 10" adjustment. Option - Timing belt drive (TB) available (see the Components section).
END ROLLER TAKE-UP	Standard - 3.50" dia. machine crowned roller with 1-1/16" hex axle.
CARRYING ROLLERS	Standard - 1.90" dia. x .065" (16 ga.) steel rollers with grease packed bearings and 7/16" hex spring loaded axles on 6" centers. Rollers are 3/8" high.
IDLER ROLLER	Standard - 1.90" dia. x .065" (16 ga.) steel rollers with grease packed bearings and 7/16" hex axles on maximum 10'-0" centers.
SNUB ROLLER	Standard - 2.50" dia. x .120" (11 ga.) steel roller with grease packed bearings and 11/16" hex axles.
SUPPORTS	Standard - For receive and discharge ends, adjustable floor supports from 27" to 33" elevation. All other supports 10'-0" long hanger type (1500# capacity). Option - Other supports are available (see the Supports section).
ROLLER SECTION	Standard - 5" x 1-1/2" x .120" (11 ga.) formed steel channel with welded butt couplings. Option - Roller sections available with rollers on 3", 6", 9" or 12" centers. 14 ga. slider bed sections also available.
BELT	Standard - Roughtop. Width is 3" less than the Between Frames dimension.
MOTOR / REDUCER (For 70 FPM)	(For 70 FPM) Standard - 43 RPM right angle reducer, 3 phase, 60 hertz, 230/460 volt, totally enclosed motor. Option - Other motor/reducer combinations are available as load and speeds change. See the tables on the next page or the Components section.
SIDE GUARDS	Option - Standard angle, channel or adjustable guards available (see the Accessories section).
LENGTHS	Option - Intermediate lengths available (in 3" increments).
POWER FEEDER	Level feeder sections with a two-pulley PTO and PVC-90 FS belting are recommended for reversible operation. Feeder sections with a three roller device are available for non-reversing operation (see the Power Feeder topic in this section).
ELECTRICAL CONTROLS	Option - As required (see the Controls section).

Intermediate Drive - Roller Bed - 20° Incline Live Load Capacity @ 70 FPM										
"L" Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP		2 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft	Total
11'-0"	25	282	42	466	57	630	100	1100	100	1100
16'-0"	17	274	28	458	38	623	75	1202	100	1600
21'-0"	12	266	21	451	29	615	56	1194	76	1610
26'-0"	9	256	16	441	23	605	45	1184	61	1600
31'-0"	8	248	13	433	19	597	37	1176	51	1592
36'-0"	6	241	11	425	16	589	32	1169	44	1584
41'-0"	5	233	10	417	14	582	28	1161	38	1576

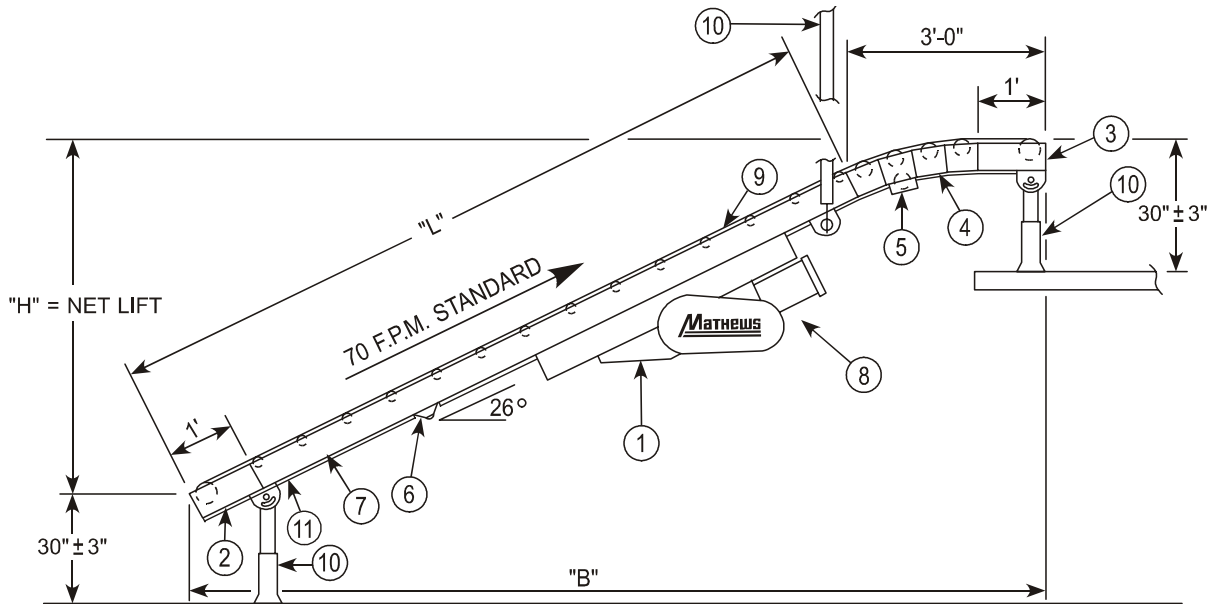
Intermediate Drive - Slider Bed - 20° Incline Live Load Capacity @ 70 FPM										
"L" Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP		2 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft	Total
11'-0"	8	98	19	210	28	310	60	664	83	917
16'-0"	5	84	12	196	18	296	40	650	56	903
21'-0"	3	68	8	181	13	281	30	634	42	887
26'-0"	2	54	6	167	10	267	23	620	33	873
31'-0"	1	39	4	151	8	251	19	604	27	857
36'-0"			3	135	6	235	16	589	23	842
41'-0"			2	121	5	221	14	575	20	828

26° Inclined Belt Conveyor - Model BIC-26

HOW TO ORDER

Quantity	Model No.	W	"L" Length	HP	Options
1	BIC-26	27"	31'-0"	1/2	---

Note: Please list options.



Components Included in Basic Unit (Assembly Instructions Included)

1	SA2000 Drive and Take-Up - 8.25" diameter
2	C1239 End Roller - 3-1/2" diameter
3	C1626 End Roller - 3-1/2" diameter
4	C1267 (2) Vertical Bends - 20°
5	C1245 Snub Roller - 2-1/2" diameter
6	C1244 Idler Roller - 1.90" diameter
7	C1237 Roller Section - 1.90" diameter (16 ga.) rollers on 6" centers
8	Motor/Reducer - 1/2 HP @ 43 RPM, totally enclosed, 70 FPM, 230/460 volt, 3 phase, 60 hertz
9	Belting - Roughtop, 120 P.I.W. RT
10	C1231 Floor Supports at feed and discharge end. C1275 Hanger Supports at each conveyor section joint.
11	Bottom Closure (D10374) included for incline up to 8'-0" elevation

26° Incline		
"L" Length	"B" Length	"H" Net Lift
11'-0"	12'-10-5/8"	5'-3-3/8"
16'-0"	17'-4-5/8"	7'-5-5/8"
21'-0"	21'-10-1/2"	9'-8"
26'-0"	26'-4-3/8"	11'-10-1/4"
31'-0"	30'-10-3/8"	14'-5/8"

CONVEYOR WIDTH	15", 21", 27", 33" and 39" Between Frames only.
DRIVE	Standard 8.25" finished dia. lagged straight face pulley with 1-11/16" dia. shaft. 3.50" dia. machine crowned take-up roller with 10" adjustment. Option - Timing belt drive (TB) available (see the Components section).
END ROLLER TAKE-UP CARRYING ROLLERS	Standard - 3.50" dia. machine crowned roller with 1-1/16" hex axle. Standard - 1.90" dia. x .065" (16 ga.) steel rollers with grease packed bearings and 7/16" hex spring loaded axles on 6" centers. Rollers are 3/8" high.
IDLER ROLLER	Standard - 1.90" dia. x .065" (16 ga.) steel rollers with grease packed bearings and 7/16" hex axles on maximum 10'-0" centers.
SNUB ROLLER	Standard - 2.50" dia. x .120" (11 ga.) steel roller with grease packed bearings and 11/16" hex axles.
SUPPORTS	Standard - For receive and discharge ends, adjustable floor supports from 27" to 33" elevation. All other supports 10'-0" long hanger type (1500# capacity). Option - Other supports are available (see the Supports section).
ROLLER SECTION	Standard - 5" x 1-1/2" x .120" (11 ga.) formed steel channel with welded butt couplings. Option - Roller sections available with rollers on 3", 6", 9" or 12" centers. 14 ga. slider bed sections also available.
BELT	Standard - Sure Grip Roughtop. Width is 3" less than the Between Frames dimension.
MOTOR / REDUCER (For 70 FPM)	(For 70 FPM) Standard - 43 RPM right angle reducer, 3 phase, 60 hertz, 230/460 volt, totally enclosed motor. Option - Other motor/reducer combinations are available as load and speeds change. See the tables on the next page or the Components section.
SIDE GUARDS	Option - Standard angle, channel or adjustable guards available (see the Accessories section).
LENGTHS	Option - Intermediate lengths available (in 3" increments).
POWER FEEDER	Level feeder sections with a two-pulley PTO and PVC 90 FS belting are recommended for reversible operation. Feeder sections with a three roller device are available for non-reversing operation (see the Power Feeder topic in this section).
ELECTRICAL CONTROLS	Option - As required (see the Controls section).

Intermediate Drive - Roller Bed - 26° Incline Live Load Capacity @ 70 FPM										
"L" Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP		2 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft	Total
11'-0"	20	224	33	371	45	502	87	963	100	1100
16'-0"	13	218	22	365	30	495	59	957	80	1287
21'-0"	10	212	17	359	23	489	45	951	61	1281
26'-0"	7	204	13	351	18	481	36	942	48	1273
31'-0"	6	197	11	344	15	475	30	936	40	1267

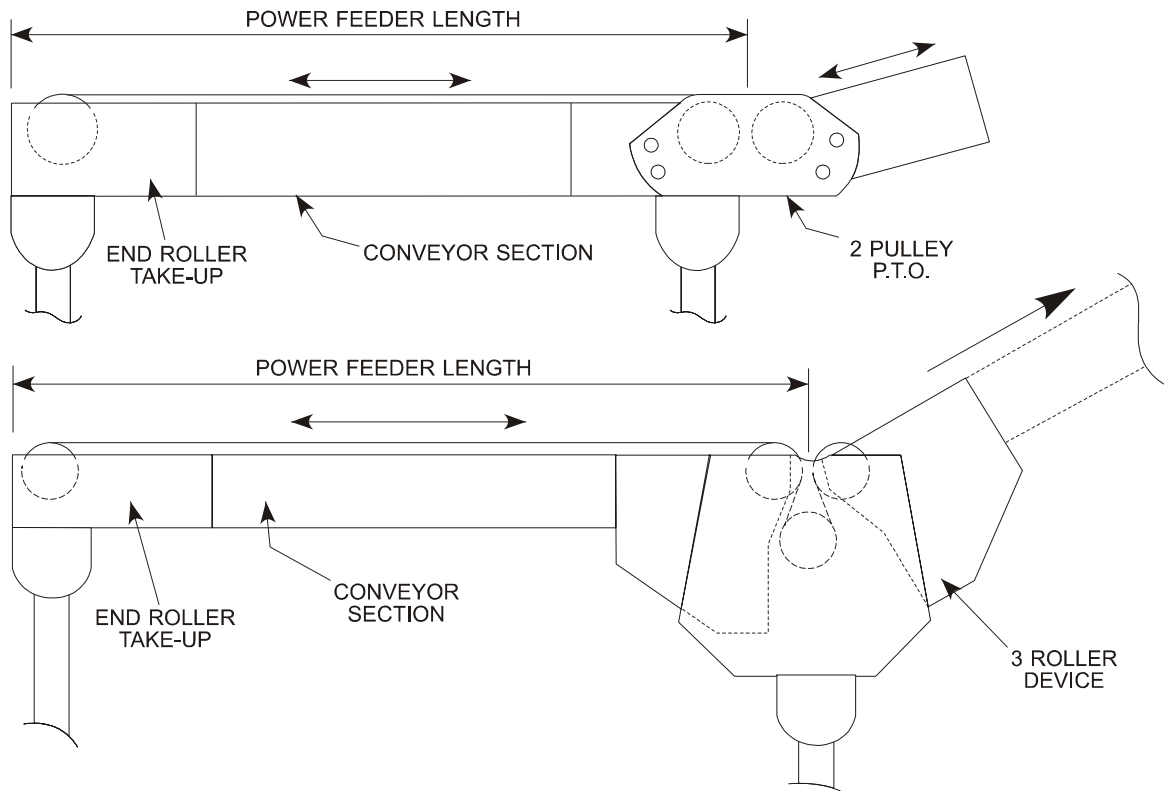
Intermediate Drive - Slider Bed - 26° Incline Live Load Capacity @ 70 FPM										
"L" Length	1/2 HP		3/4 HP		1 HP		1-1/2 HP		2 HP	
	lbs./ft	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft.	Total	lbs./ft	Total
11'-0"	7	85	16	182	24	268	52	574	72	793
16'-0"	4	72	10	170	16	256	35	562	48	781
21'-0"	2	59	7	156	11	243	26	548	36	767
26'-0"	1	47	5	144	8	231	20	536	29	755
31'-0"	1	33	4	131	7	217	16	522	23	741

Note: 26° Inclined units are not recommended for use with very light or empty totes. Consult Factory.

Power Feeders

Lengths in the following table are minimum recommended lengths for the various width belts. Shorter units could cause belt tracking problems.

Style and length must be listed under Options, i.e. "with 2 Pulley P.T.O. Power Feeder 7'-0" long with type 2 sprocket ratio".



HB826FKI013a

Between Frame (W)	15"	21"	27"	33"	39"
Belt Width	12"	18"	24"	30"	36"
Power Feeder Minimum Lengths					
2 Pulley P.T.O.					
One Way Travel	3'-0"	5'-0"	6'-0"	8'-0"	9'-0"
Reversible Travel	5'-0"	7'-0"	10'-0"	12'-0"	12'-0"
3 Roller Device					
One Way Travel	3'-0"	4'-0"	5'-0"	5'-0"	5'-0"

C1252 2 Pulley P.T.O.

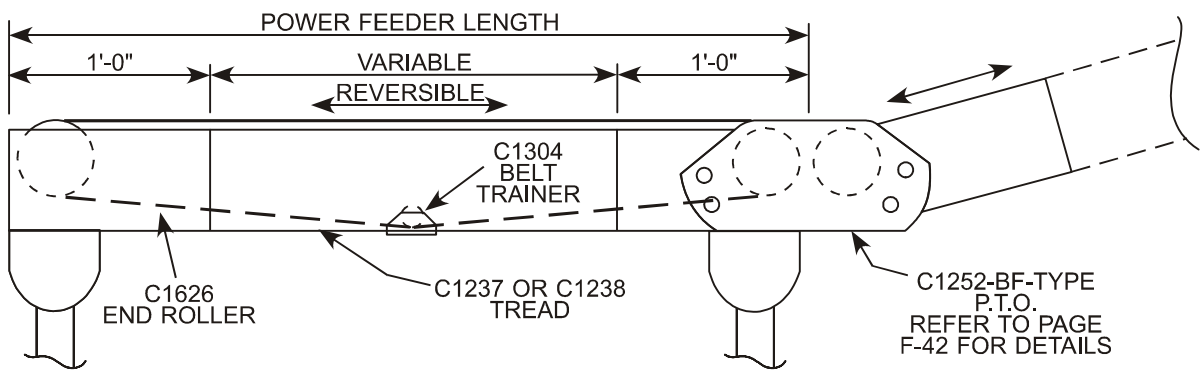
This unit recommended when a speed change is required between the horizontal and inclined portion of the conveyor or the conveyor is used in a reversing operation. In the case of reversing operation it is also recommended that PVC 120 FS belting be used on the level portion and that the length of the feeder section be at least five times the width of the belting.

For one way travel the length of the feeder section may be at least three times the belt width.

Feeder section speeds may run faster, slower or the same as the incline conveyor and may be specified by type 1, 2 or 3 as shown in the table below.

Power feeders are ordered as options to incline conveyors, i.e., "with Two Pulley P.T.O. 7'-0" long with type 2 sprocket ratio".

Type	1	2	3
Ratio	1.16:1	1:1	1.5:1

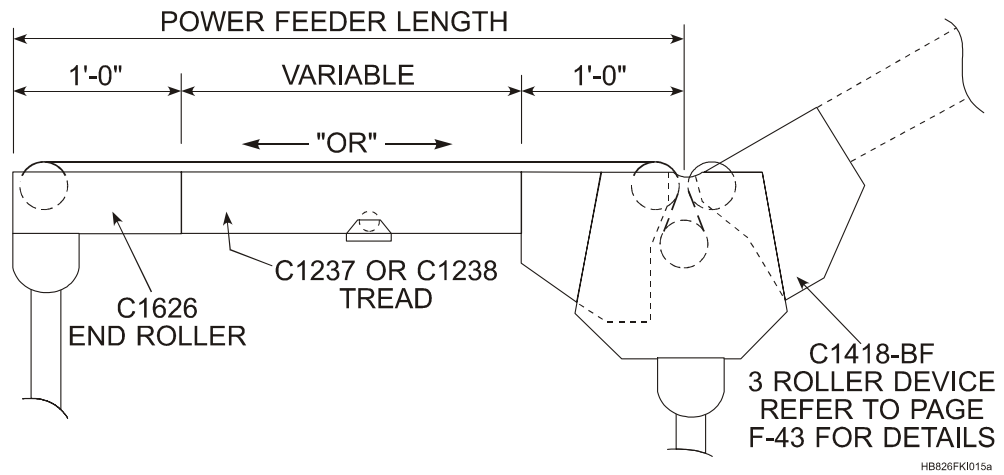


HB826FKI014a

C1418 Three Roller Device

This unit may be used when a simple change in angle from level to incline is required. The same belt runs through both inclined and level portions and the speed is constant. It is recommended for one way travel, either incline or decline, and the length of the level portion is at least three times the width of the belting.

The unit would be ordered as an option to an inclined belt conveyor, i.e., "with Three Pulley Power Feeder 5'-0" long".



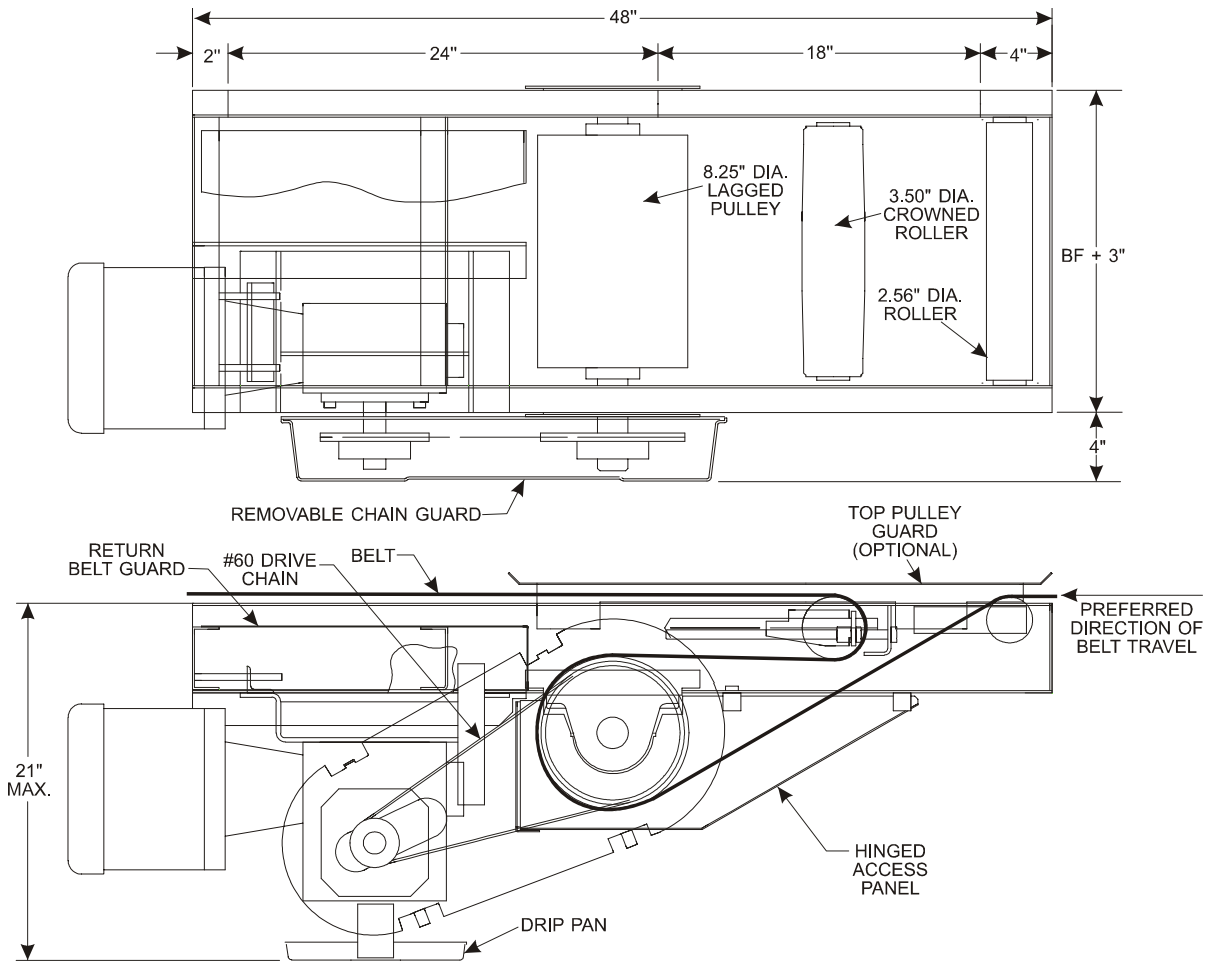
Components

SA2000 Intermediate Drive

HOW TO ORDER

Quantity	Code No.	W	Speed	HP	Reducer	Voltage	Options
1	SA2000	27"	60 FPM	1	GB	230	---

Note: Please list options.



HB826FKI016a

CONVEYOR WIDTH	Standard - 15" - 39" W, in 3" increments. For trash removal conveyor only 15" - 45" W, in 3" increments.
CAPACITY	Standard - 900# maximum effective belt pull.
SPEED	Series 400, 600, and 800 End Drives - 30, 45, 60, 75, 90, 120, 150*, 180, 200, 250, 300, 350, and 400 FPM. Note: *150 FpM maximum for Series 400. Chain Drive - 30, 45, 60, 75, 90, 105, 120, 135, 150, 165, and 180 FPM. Time Belt Drive - 30, 45, 60, 75, 90, 105, 120, 135, 150, 165, 180, 200, 225, 250, 275, 300, 325, 350, 375, 400, 425, 450, 475 and 500 FPM.
CHAIN DRIVE	Series 400, 600, and 800 - RC50, RC60, RC80 and RC100 (all speeds). RC60 (up to 180 FPM).
CHAIN SPROCKETS	Series 400 - RC50, bored and keyed Type B hub, hardened teeth Series 600 and 800 - RC60, RC80, and RC100, keyed Taper-Lock hubs. hardened teeth or bored and keyed Type B hubs depending on speed/horsepower requirements. RC60, keyed Taper-Lock hubs, hardened.
DRIVE	Standard - Furnished as shown for position of motor/reducer, unless specified "opposite hand". #60 chain drive available 1/2 HP through 7.5 HP. All driver sprockets have hardened teeth. Option - Timing belt (TB) drives are available 1/2 HP through 5 HP.
MOTOR	Standard - 230/460VAC - 3PH - 60 HZ. Optional - 575VAC - 3PH - 60HZ and 115VAC - 1PH - 60HZ. 1/2 through 7-1/2 HP - C-Face TEFC (Baldor or Reliance). Chain Drive - 1/2, 3/4, 1, 1-1/2, 2 and 3 HP (Baldor or Reliance) Timing Belt Drive - 1/2, 3/4, 1, 1-1/2, 2, 3, 5, and 7-1/2 HP (Baldor or Reliance) Solenoid actuated brake motor supplied on all incline/decline conveyors.
REDUCER	Standard - Right Angle worm Gear 5:1 to 60:1 ratios.
DRIVE PULLEY	Standard - 8-1/4" dia. straight faced lagged pulley with 1-11/16" dia. shaft and pre-lubricated pillow block bearings.
TAKE-UP ROLLER	Standard - 3-1/2" dia. crowned roller with 10" adjustment (20" belt), 1-1/16" hex axle and B1160 bearings.
SNUB ROLLER	Standard - 2-9/16" dia. rollers with 11/16" hex axle and B1150 bearings.
BELT	Standard - Width is 3" less than the Between Frames dimension. Belt length required is 33".
SAFETY GUARDING	Standard - Sprockets, chain and return belt are totally enclosed for safety. Drive and Take-up Pulleys are guarded below. Option - For guards above the drive and take-up pulleys, specify "PG" in the How to Order.

MOUNTING

Standard - The Intermediate Drives must be bolted to the bottom flanges of an Intermediate Section.
 For horizontal conveyors they should be mounted so that the return run of the belt is "pulled" around the drive pulley first.
 For incline/decline conveyors they should be mounted so that the motor is located on the "uphill" side of the reducer. This is opposite the preferred "level" position but is necessary to ensure proper reducer lubrication.

BEARINGS

Standard - All bearings are grease packed.

Standard Options for How To Order		Call Up
1	Opposite hand for location of motor/reducer	OPP
2	Regreaseable Bearings	RG
3	Pulley Guard	PG
4	Brakemotor	B
5	Timing Belt	TB

Grove - #60 Chain Drive Table (Standard)

Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	No. of Teeth in Reducer Sprocket
	HP				
30	0.5	361	60:1	.691	16
	0.75	546		.697	
	1	728		.697	
	1.5	900		.717	
45	0.5	241	60:1	.691	23
	0.75	364		.697	
	1	485		.697	
	1.5	749		.717	
60	0.5	193	40:1	.738	21
	0.75	293		.748	
	1	402		.769	
	1.5	612		.781	
	2	837		.801	
	3	900		.801	
75	0.5	154	40:1	.738	25
	0.75	235		.748	
	1	322		.769	
	1.5	490		.781	
	2	669		.801	
	3	900		.801	
90	0.5	137	30:1	.788	23
	0.75	208		.795	
	1	277		.795	
	1.5	428		.818	
	2	569		.817	
	3	900		.836	
105	0.5	123	25:1	.825	22
	0.75	185		.825	
	1	247		.827	
	1.5	378		.844	
	2	503		.842	
	3	777		.867	

Grove - #60 Chain Drive Table (Standard)

Nominal Belt speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	No. of Teeth in Reducer Sprocket
	HP				
120	0.5	110	20:1	.845	20
	0.75	166		.845	
	1	221		.845	
	1.5	334		.852	
	2	449		.86	
	3	685		.873	
135	0.5	98	20:1	.845	23
	0.75	147		.845	
	1	196		.845	
	1.5	297		.852	
	2	399		.86	
150	0.5	91	15:1	.875	19
	0.75	137		.875	
	1	183		.875	
	1.5	276		.881	
	2	375		.896	
165	0.5	83	15:1	.875	21
	0.75	125		.875	
	1	166		.875	
	1.5	251		.881	
	2	341		.896	
180	0.5	76	15:1	.875	23
	0.75	114		.875	
	1	152		.875	
	1.5	230		.881	
	2	312		.896	
	3	466	.892		

Grove - Timing Belt Drive Table (Optional)								
Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP						Belt Pitch (mm)	Belt Width (mm)
30	1/2	371	50	.711	32	80	8	21
	3/4	574	50	.733	32	80	8	36
	1	776	60	.742	28	56	14	37
	1-1/2	900	60	.742	28	56	14	37
45	1/2	261	40	.748	40	80	8	21
	3/4	391	40	.748	40	80	8	21
	1	536	40	.769	40	80	8	36
	1-1/2	837	40	.801	28	56	14	37
60	1/2	208	30	.795	40	80	8	21
	3/4	312	30	.795	40	80	8	21
	1	428	30	.818	40	80	8	36
	1-1/2	655	30	.836	28	56	14	37
	2	900	30	.836	28	56	14	37
75	1/2	173	25	.827	40	80	8	21
	3/4	259	25	.827	40	80	8	21
	1	346	25	.827	40	80	8	21
	1-1/2	534	25	.852	40	80	8	36
	2	725	25	.867	28	56	14	37
	3	900	25	.867	28	56	14	37
90	1/2	147	20	.845	38	80	8	21
	3/4	221	20	.845	38	80	8	21
	1	297	20	.852	38	80	8	21
	1-1/2	445	20	.852	38	80	8	36
	2	617	20	.886	28	56	14	37
	3	900	20	.886	28	56	14	37
105	1/2	131	15	.875	34	80	8	21
	3/4	197	15	.881	34	80	8	21
	1	263	15	.881	34	80	8	21
	1-1/2	394	15	.881	34	80	8	21
	2	532	15	.892	34	80	8	36
	3	793	20	.886	31	56	14	37
	5	900	20	.886	31	56	14	37
120	1/2	114	15	.875	38	80	8	21
	3/4	171	15	.875	38	80	8	21
	1	229	15	.875	38	80	8	21
	1-1/2	351	15	.896	38	80	8	21
	2	468	15	.895	38	80	8	36
	3	711	15	.907	28	56	14	37
	5	900	15	.907	28	56	14	37
135	1/2	102	15	.875	42	80	8	21
	3/4	152	15	.875	42	80	8	21
	1	204	15	.881	42	80	8	21
	1-1/2	307	15	.881	42	80	8	21
	2	416	15	.896	42	80	8	36
	3	624	15	.895	30	56	14	37
	5	900	15	.907	30	56	14	37

Grove - Timing Belt Drive Table (Optional)								
Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP						Belt Pitch (mm)	Belt Width (mm)
150	1/2	95	10	.906	32	80	8	21
	3/4	142	10	.906	32	80	8	21
	1	189	10	.906	32	80	8	21
	1-1/2	286	10	.911	32	80	8	21
	2	381	10	.911	32	80	8	36
	3	561	15	.895	34	56	14	37
	5	900	15	.907	32	53	14	37
165	1/2	86	10	.906	36	80	8	21
	3/4	129	10	.906	36	80	8	21
	1	172	10	.906	36	80	8	21
	1-1/2	260	10	.911	36	80	8	21
	2	346	10	.911	36	80	8	36
	3	510	15	.895	35	53	14	37
	5	900	15	.907	35	53	8	37
180	1/2	79	10	.906	38	80	8	21
	3/4	118	10	.906	38	80	8	21
	1	158	10	.906	38	80	8	21
	1-1/2	239	10	.916	38	80	8	21
	2	319	10	.916	38	80	8	21
	3	480	10	.918	38	80	8	36
	5	789	15	.907	36	50	14	37
	7-1/2	900	15	.907	36	50	14	37
200	1/2	72	7.5	.917	32	80	8	21
	3/4	108	7.5	.917	32	80	8	21
	1	144	7.5	.917	32	80	8	21
	1-1/2	217	7.5	.922	32	80	8	21
	2	289	7.5	.922	32	80	8	21
	3	436	7.5	.927	32	80	14	36
	5	731	10	.933	30	56	14	37
	7-1/2	900	10	.933	30	56	8	37
225	1/2	64	7.5	.917	36	80	8	21
	3/4	96	7.5	.917	36	80	8	21
	1	128	7.5	.917	36	80	8	21
	1-1/2	193	7.5	.922	36	80	8	21
	2	257	7.5	.922	36	80	8	21
	3	387	7.5	.927	36	80	8	36
	5	644	10	.925	34	56	14	37
	7-1/2	900	10	.933	32	53	14	37
250	1/2	58	7.5	.917	38	80	8	21
	3/4	86	7.5	.917	38	80	8	21
	1	115	7.5	.917	38	80	8	21
	1-1/2	173	7.5	.917	38	80	8	21
	2	231	7.5	.922	40	80	8	21
	3	349	7.5	.927	40	80	8	21
	5	585	10	.933	35	53	14	37
	7-1/2	900	10	.933	35	53	14	37

Grove - Timing Belt Drive Table (Optional)								
Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP						Belt Pitch (mm)	Belt Width (mm)
275	1/2	53	5	.925	30	80	8	21
	3/4	79	5	.925	30	80	8	21
	1	106	5	.925	30	80	8	21
	1-1/2	158	5	.925	30	80	8	21
	2	211	7.5	.927	38	71	8	21
	3	317	7.5	.927	38	71	8	21
	5	532	7.5	.933	31	56	14	37
300	1/2	48	5	.925	32	80	8	21
	3/4	73	5	.925	32	80	8	21
	1	97	5	.925	32	80	8	21
	1-1/2	145	5	.925	32	80	8	21
	2	195	5	.933	32	80	8	21
	3	292	5	.933	32	80	8	21
	5	469	5	.898	32	80	8	36
325	1/2	45	5	.925	36	80	8	21
	3/4	67	5	.925	34	80	8	21
	1	89	5	.925	34	80	8	21
	1-1/2	134	5	.925	34	80	8	21
	2	179	5	.925	34	80	8	21
	3	270	5	.933	34	80	8	21
	5	433	5	.898	34	80	8	21
350	1/2	41	5	.925	38	80	8	21
	3/4	62	5	.925	38	80	8	21
	1	83	5	.925	38	80	8	21
	1-1/2	124	5	.925	38	80	8	21
	2	166	5	.925	38	80	8	21
	3	251	5	.933	38	80	8	21
	5	402	5	.898	38	80	8	21
375	1/2	39	5	.925	38	75	8	21
	3/4	58	5	.925	40	80	8	21
	1	77	5	.925	40	80	8	21
	1-1/2	116	5	.925	40	80	8	21
	2	155	5	.925	40	80	8	21
	3	234	5	.933	40	80	8	21
	5	375	5	.898	40	80	8	21
7-1/2	590	7.5	.941	37	50	14	37	

Grove - Timing Belt Drive Table (Optional)								
Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP						Belt Pitch (mm)	Belt Width (mm)
400	1/2	36	5	.925	42	80	8	21
	3/4	54	5	.925	42	80	8	21
	1	73	5	.925	42	80	8	21
	1-1/2	109	5	.925	42	80	8	21
	2	145	5	.925	42	80	8	21
	3	219	5	.933	42	80	8	21
	5	352	5	.898	42	80	8	21
	7-1/2	557	5	.948	30	56	14	37
425	1/2	34	5	.925	45	80	8	21
	3/4	51	5	.925	45	80	8	21
	1	68	5	.925	45	80	8	21
	1-1/2	102	5	.925	45	80	8	21
	2	138	5	.933	45	80	8	21
	3	206	5	.933	45	80	8	21
	5	331	5	.898	45	80	8	21
	7-1/2	525	5	.948	32	56	14	37
450	1/2	32	5	.925	48	80	8	21
	3/4	48	5	.925	48	80	8	21
	1	64	5	.925	48	80	8	21
	1-1/2	97	5	.925	48	80	8	21
	2	129	5	.925	48	80	8	21
	3	195	5	.933	48	80	8	21
	5	313	5	.898	48	80	8	21
	7-1/2	496	5	.948	32	53	14	37
475	1/2	31	5	.925	50	80	8	21
	3/4	46	5	.925	50	80	8	21
	1	61	5	.925	50	80	8	21
	1-1/2	92	5	.925	50	80	8	21
	2	122	5	.925	50	80	8	21
	3	185	5	.933	50	80	8	21
	5	296	5	.898	50	80	8	21
	7-1/2	469	5	.948	33	53	14	37
500	1/2	29	5	.925	48	71	8	21
	3/4	44	5	.925	48	71	8	21
	1	58	5	.925	48	71	8	21
	1-1/2	87	5	.925	48	71	8	21
	2	116	5	.925	48	71	8	21
	3	176	5	.936	48	71	8	21
	5	281	5	.898	48	71	8	36
	7-1/2	446	5	.948	35	53	14	37

Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	No. of Teeth in Reducer Sprocket
	HP				
30	0.5	327	60:1	.625	16
	0.75	508		.648	
	1	677		.648	
45	0.5	218	60:1	.625	23
	0.75	339		.648	
	1	451		.648	
	1.5	715	50:1	.684	19
60	0.5	172	40:1	.657	20
	0.75	272		.693	
	1	375		.718	
	1.5	563		.718	
	2	821	30:1	.786	16
75	0.5	137	40:1	.657	25
	0.75	217		.693	
	1	300		.718	
	1.5	450		.718	
	2	657	30:1	.786	19
90	0.5	131	25:1	.755	19
	0.75	197		.755	
	1	281		.808	
	1.5	422		.808	
105	2	562		.807	
	0.5	113	25:1	.755	22
	0.75	169		.755	
	1	241		.808	
	1.5	362		.808	
2	482		.807		
3	744	20:1	.831	18	

Nominal Belt speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	No. of Teeth in Reducer Sprocket
	HP				
120	0.5	103	20:1	.787	20
	0.75	154		.787	
	1	219		.84	
	1.5	329		.84	
	2	434		.831	
135	3	651		.831	
	0.5	91	20:1	.787	23
	0.75	137		.787	
	1	195		.84	
	1.5	293		.84	
	2	386		.831	
3	579	.831			
150	0.5	87	15:1	.828	19
	0.75	130		.828	
	1	173		.828	
	1.5	267		.853	
	2	357		.853	
	3	544		.867	
165	0.5	79	15:1	.828	21
	0.75	118		.828	
	1	157		.828	
	1.5	243		.853	
	2	324		.853	
180	3	494		.867	
	0.5	72	15:1	.828	23
	0.75	108		.828	
	1	144		.828	
	1.5	223		.853	
	2	297		.853	
3	453	.867			

Dodge - Timing Belt Drive Table (Optional)								
Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP						Belt Pitch (mm)	Belt Width (mm)
30	1/2	343	50	.656	32	80	8	21
	3/4	514	50	.656	32	80	8	36
	1	678	60	.649	28	56	14	37
45	1/2	229	40	.657	38	80	8	21
	3/4	362	40	.693	38	80	8	21
	1	499	40	.716	38	80	8	36
	1-1/2	748	40	.716	28	56	14	37
60	1/2	182	30	.696	38	80	8	21
	3/4	299	30	.763	38	80	8	21
	1	399	30	.763	38	80	8	21
	1-1/2	612	30	.781	28	56	14	37
	2	816	30	.781	28	56	14	37
75	1/2	161	25	.772	40	80	8	21
	3/4	242	25	.772	40	80	8	21
	1	336	25	.803	40	80	8	21
	1-1/2	503	25	.803	40	80	8	36
	2	671	25	.803	40	80	8	36
90	1/2	137	20	.784	38	80	8	21
	3/4	205	20	.784	38	80	8	21
	1	291	20	.836	38	80	8	21
	1-1/2	437	20	.836	38	80	8	36
	2	577	20	.828	28	56	14	37
	3	900	20	.828	28	56	14	37
105	1/2	124	15	.827	34	80	8	21
	3/4	185	15	.827	34	80	8	21
	1	247	15	.827	34	80	8	21
	1-1/2	382	15	.853	34	80	8	21
	2	509	15	.853	34	80	8	36
	3	742	20	.828	32	56	14	37
120	1/2	108	15	.827	38	80	8	21
	3/4	162	15	.827	38	80	8	21
	1	216	15	.827	38	80	8	21
	1-1/2	334	15	.853	38	80	8	21
	2	446	15	.853	38	80	8	36
	3	679	15	.867	28	56	14	37
135	1/2	96	15	.827	42	80	8	21
	3/4	144	15	.827	42	80	8	21
	1	192	15	.827	42	80	8	21
	1-1/2	297	15	.853	42	80	8	21
	2	396	15	.853	42	80	8	36
	3	604	15	.867	28	56	14	37

Dodge - Timing Belt Drive Table (Optional)								
Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP						Belt Pitch (mm)	Belt Width (mm)
150	1/2	91	10	.87	32	80	8	21
	3/4	136	10	.87	32	80	8	21
	1	182	10	.87	32	80	8	21
	1-1/2	273	10	.87	32	80	8	21
	2	371	10	.886	32	80	8	36
	3	543	15	.867	34	56	14	37
165	1/2	83	10	.87	36	80	8	21
	3/4	124	10	.87	36	80	8	21
	1	165	10	.87	36	80	8	21
	1-1/2	248	10	.87	36	80	8	21
	2	337	10	.886	36	80	8	21
	3	494	15	.867	34	56	14	37
180	1/2	76	10	.87	38	80	8	21
	3/4	114	10	.87	38	80	8	21
	1	152	10	.87	38	80	8	21
	1-1/2	227	10	.87	38	80	8	21
	2	309	10	.886	38	80	8	21
	3	463	10	.886	38	80	8	36
	5	783	10	.899	28	56	14	37
200	1/2	70	7.5	.888	32	80	8	21
	3/4	104	7.5	.888	32	80	8	21
	1	139	7.5	.888	32	80	8	21
	1-1/2	209	7.5	.888	32	80	8	21
	2	284	7.5	.905	32	80	8	21
	3	426	7.5	.905	32	80	8	36
	5	705	10	.899	30	56	14	37
225	1/2	62	7.5	.888	36	80	8	21
	3/4	93	7.5	.888	36	80	8	21
	1	124	7.5	.888	36	80	8	21
	1-1/2	186	7.5	.888	36	80	8	21
	2	252	7.5	.905	36	80	8	21
	3	378	7.5	.905	36	80	8	36
	5	626	10	.899	34	56	14	37
250	1/2	56	7.5	.888	38	75	8	21
	3/4	84	7.5	.888	38	75	8	21
	1	111	7.5	.888	38	75	8	21
	1-1/2	167	7.5	.888	38	75	8	21
	2	227	7.5	.905	38	75	8	21
	3	341	7.5	.905	38	75	8	36
	5	564	10	.899	34	53	14	37

Dodge - Timing Belt Drive Table (Optional)								
Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP						Belt Pitch (mm)	Belt Width (mm)
275	1/2	52	5	.916	30	80	8	21
	3/4	78	5	.916	30	80	8	21
	1	104	5	.916	30	80	8	21
	1-1/2	157	5	.916	30	80	8	21
	2	206	7.5	.905	38	71	8	21
	3	310	7.5	.905	38	71	8	21
	5	513	10	.899	36	50	14	37
300	1/2	48	5	.916	32	80	8	21
	3/4	72	5	.916	32	80	8	21
	1	96	5	.916	32	80	8	21
	1-1/2	144	5	.916	32	80	8	21
	2	191	5	.916	32	80	8	21
	3	291	5	.928	32	80	8	21
	5	470	10	.899	40	50	14	37
325	1/2	44	5	.916	34	80	8	21
	3/4	66	5	.916	34	80	8	21
	1	88	5	.916	34	80	8	21
	1-1/2	132	5	.916	34	80	8	21
	2	177	5	.916	34	80	8	21
	3	269	5	.928	34	80	8	21
	5	449	5	.931	34	80	8	36
350	1/2	41	5	.916	38	80	8	21
	3/4	62	5	.916	38	80	8	21
	1	82	5	.916	38	80	8	21
	1-1/2	123	5	.916	38	80	8	21
	2	164	5	.916	38	80	8	21
	3	249	5	.928	38	80	8	21
	5	417	5	.931	38	80	8	36
375	1/2	38	5	.916	38	75	8	21
	3/4	57	5	.916	38	75	8	21
	1	77	5	.916	38	75	8	21
	1-1/2	115	5	.916	38	75	8	21
	2	153	5	.916	38	75	8	21
	3	233	5	.928	38	75	8	21
	5	389	5	.931	40	80	8	36

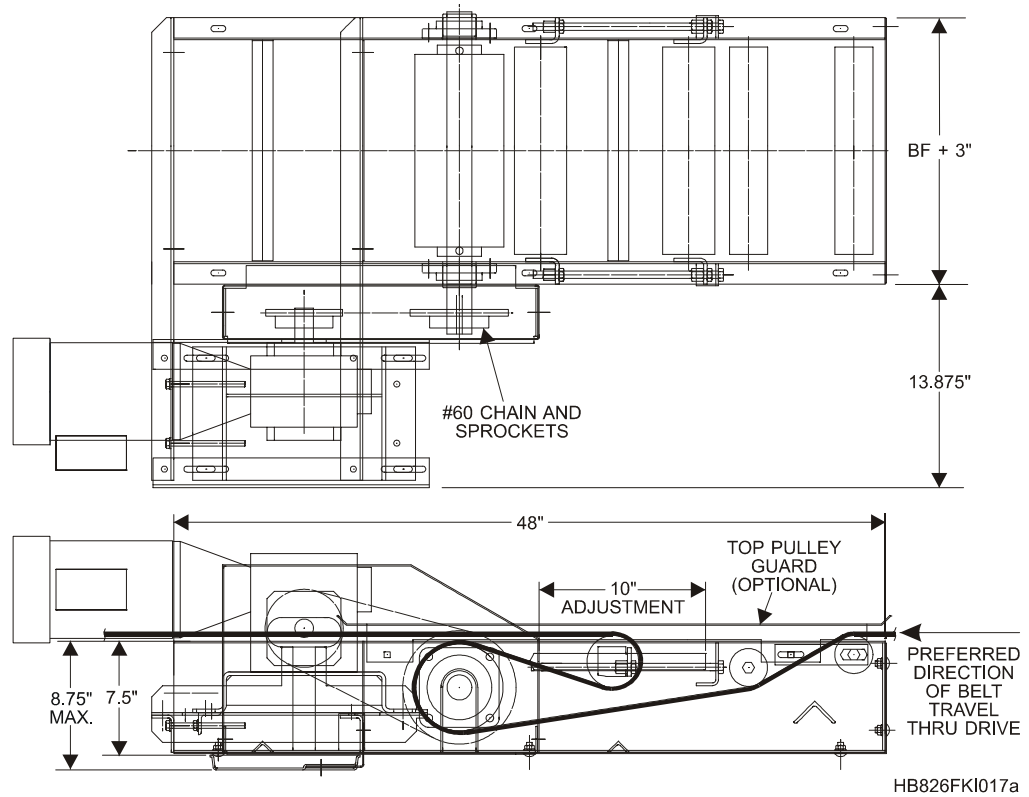
Dodge - Timing Belt Drive Table (Optional)								
Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP						Belt Pitch (mm)	Belt Width (mm)
400	1/2	36	5	.916	42	80	8	21
	3/4	54	5	.916	42	80	8	21
	1	72	5	.916	42	80	8	21
	1-1/2	108	5	.916	42	80	8	21
	2	144	5	.916	42	80	8	21
	3	218	5	.928	42	80	8	21
	5	365	5	.931	42	80	8	21
425	1/2	34	5	.916	45	80	8	21
	3/4	51	5	.916	45	80	8	21
	1	68	5	.916	45	80	8	21
	1-1/2	101	5	.916	45	80	8	21
	2	135	5	.916	45	80	8	21
	3	205	5	.928	45	80	8	21
	5	343	5	.931	45	80	8	21
450	1/2	32	5	.916	48	80	8	21
	3/4	48	5	.916	48	80	8	21
	1	64	5	.916	48	80	8	21
	1-1/2	96	5	.916	48	80	8	21
	2	128	5	.916	48	80	8	21
	3	194	5	.928	48	80	8	21
	5	324	5	.931	48	80	8	37
475	1/2	30	5	.916	50	80	8	21
	3/4	45	5	.916	50	80	8	21
	1	60	5	.916	50	80	8	21
	1-1/2	91	5	.916	50	80	8	21
	2	121	5	.916	50	80	8	21
	3	184	5	.928	50	80	8	21
	5	307	5	.931	50	80	8	21
500	1/2	29	5	.916	48	71	8	21
	3/4	43	5	.916	48	71	8	21
	1	57	5	.916	48	71	8	21
	1-1/2	86	5	.916	48	71	8	21
	2	115	5	.916	48	71	8	21
	3	175	5	.928	48	71	8	21
	5	292	5	.931	48	71	8	21

SA2001 Low Profile Intermediate Drive

HOW TO ORDER

Quantity	Code No.	W	Speed	HP	Voltage	Options
1	SA2001	27	60 FPM	1	230	---

Note: Please list options



CONVEYOR WIDTH	Standard - 15" - 39" W, in 3" increments. For trash removal conveyor only 15" - 45" W, in 3" increments.
CAPACITY	Standard - 800# maximum effective belt pull.
SPEED	Series 400, 600, and 800 End Drives - 30,45, 60, 75, 90, 120, 150*, 180, 200, 250, 300, 350 and 400 FPM. Note: *150 FPM maximum for Series 400. Chain Drive - 30, 45, 60, 75, 90, 105 120, 135, 150, 165 and 180 FPM. Timing Belt - 30, 45, 60, 75, 90, 105, 120, 135, 150, 165, 180, 200, 225, 250, 275, 300, 325, 350, 375, 400, 425, 450, 475 and 500 FPM.
CHAIN DRIVE	Series 400, 600, and 800 - RC50, RC60, RC80 and RC100 (all speeds). RC60 (up to 180 FPM).
CHAIN SPROCKETS	Series 400 - RC50, bored and keyed Type B hub, hardened teeth Series 600 and 800 - RC60, RC80, and RC100, keyed Taper-Lock hubs. hardened teeth or bored and keyed Type B hubs depending on speed/horsepower requirements. RC60, keyed Taper-Lock hubs, hardened.
DRIVE	Standard - 230/460VAC - 3PH - 60 HZ. Optional - 575VAC - 3PH - 60HZ and 115VAC - 1PH - 60HZ. 1/2 through 7-1/2 HP - C-Face TEFC (Baldor or Reliance). Chain Drive - 1/2, 3/4, 1, 1-1/2, 2 and 3 HP (Baldor or Reliance) Timing Belt Drive - 1/2, 3/4, 1, 1-1/2, 2, 3, 5, and 7-1/2 HP (Baldor or Reliance). Solenoid actuated brake motor supplied on all incline/decline conveyors.
MOTOR	1/2 through 7-1/2 HP - C-Face TEFC (Baldor or Reliance). Chain Drive - 1/2, 3/4, 1, 1-1/2, 2 and 3 HP (Baldor or Reliance). Timing Belt - 1/2, 3/4, 1, 1-1/2, 2, 3, 5, and 7-1/2 HP (Baldor or Reliance). Standard - 3 PH / 60 HZ / 230-460 VAC TEFC Option - 3 PH/60 HZ/575 VAC or 1 PH/60 HZ/115 VAC.
REDUCER	Standard - Right Angle Worm Gear 5:1 to 50:1 ratios.
DRIVE PULLEY	Standard - 5-7/8" dia. straight faced lagged pulley with 1-11/16' dia. shaft and flange bearings.
TAKE-UP ROLLER	Standard - 3-1/2" dia. crowned roller with 10" adjustment (20" belt), 1-1/16" hex axle and B1160 bearings.
SNUB ROLLER	Standard - 2-9/16" dia. rollers with 11/16" hex axle and B1150 bearings.
BELT	Standard - Width is 3" less than the Between Frames dimension. Belt length required is 30".
SAFETY GUARDING	Standard - Sprockets, chain and return belt are totally enclosed for safety. Drive and Take-up Pulleys are guarded below. Option - For guards above the drive and take-up pulleys, specify "PG" in the How to Order.

MOUNTING

Intermediate Drives must be bolted to the bottom flanges of an Intermediate Section.

For horizontal conveyors they should be mounted so that the return run of the belt is “pulled” around the drive pulley first.

For incline/decline conveyors they should be mounted so that motor is located on the “uphill” side of the reducer. This is opposite the preferred “level” position but is necessary to ensure proper reducer lubrication.

BEARINGS

All bearings are grease packed.

Standard Options for How To Order		Call Up
1	Opposite hand for location of motor/reducer	OPP
2	Regreaseable Bearings	RG
3	Pulley Guard	PG
4	Brakemotor	B
5	Timing Belt	TB

Grove - #60 Chain Drive Table (Standard)						Grove - #60 Chain Drive Table (Standard)					
Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	No. of Teeth in Reducer Sprocket	Nominal Belt speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	No. of Teeth in Reducer Sprocket
	HP						HP				
30	0.5	371	50:1	.711	16	120	0.5	114	15:1	.875	18
	0.75	577		.736			0.75	171		.875	
	1	766		.733			1	229		.875	
40	0.5	267	40:1	.738	17		1.5	345		.881	
	0.75	391		.748			2	468		.896	
	1	536		.769			3	800		.892	
	1.5	800		.781		135	0.5	102	.875	20	
60	0.5	193	40:1	.738	0.75		152	.875			
	0.75	293		.748	1		203	.875			
	1	102		.769	1.5		307	.881			
	1.5	612		.781	2		416	.898			
2	800	.801	3	621	.892						
75	0.5	165	32:1	.788	22	160	0.5	91	15:1	.875	22
	0.75	249		.795			0.75	137		.875	
	1	332		.795			1	183		.875	
	1.5	513		.818			1.5	276		.881	
	2	683		.817			2	375		.896	
	3	800		.836			3	559		.892	
90	0.5	144	25:1	.825	22	165	0.5	83	15:1	.875	23
	0.75	216		.825			0.75	126		.875	
	1	288		.827			1	166		.875	
	1.5	441		.844			1.5	251		.881	
	2	587		.842			2	341		.898	
	3	800		.867			3	508		.892	
105	0.5	131	15:1	.875	15	180	0.5	79	10:1	.906	17
	0.75	196		.875			0.75	118		.906	
	1	261		.875			1	158		.906	
	1.5	394		.881			1.5	237		.906	
	2	535		.896			2	317		.911	
	3	800		.892			3	479		.916	

Grove - Timing Belt Drive Table (Optional)								
Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP						Belt Pitch (mm)	Belt Width (mm)
30	1/2	371	50	.711	36	63	8	21
	3/4	574	50	.733	36	63	8	36
	1	728	60	.697	33	48	14	37
45	1/2	257	40	.738	42	63	8	21
	3/4	391	40	.748	42	63	8	21
	1	536	40	.769	42	63	8	36
	1-1/2	800	50	.748	40	48	14	37
60	1/2	215	25	.825	36	63	8	21
	3/4	324	25	.827	36	63	8	21
	1	432	25	.827	36	63	8	21
	1-1/2	568	25	.852	36	63	8	36
	2	800	30	.817	34	48	14	37
75	1/2	177	20	.845	36	63	8	21
	3/4	265	20	.845	36	63	8	21
	1	356	20	.852	36	63	8	21
	1-1/2	539	20	.860	36	63	8	36
	2	730	20	.873	36	63	8	36
	3	800	25	.867	34	48	14	37
90	1/2	152	15	.875	32	63	8	21
	3/4	229	15	.875	32	63	8	21
	1	307	15	.881	32	63	8	21
	1-1/2	460	15	.881	32	63	8	21
	2	599	20	.860	42	60	8	36
	3	800	20	.873	33	48	14	37
105	1/2	131	15	.875	38	63	8	21
	3/4	196	15	.875	38	63	8	21
	1	261	15	.875	38	63	8	21
	1-1/2	394	15	.881	38	63	8	21
	2	532	15	.892	38	63	8	36
	3	800	20	.873	38	48	14	37
120	1/2	114	15	.875	42	63	8	21
	3/4	171	15	.875	42	63	8	21
	1	229	15	.875	42	63	8	21
	1-1/2	345	15	.881	42	63	8	21
	2	468	15	.896	42	63	8	36
	3	702	15	.896	42	63	8	36
	5	800	15	.907	33	48	14	37
135	1/2	105	10	.906	32	63	8	21
	3/4	158	10	.906	32	63	8	21
	1	210	10	.906	32	63	8	21
	1-1/2	317	10	.911	32	63	8	21
	2	423	10	.911	32	63	8	21
	3	521	15	.892	42	63	8	21
	5	800	15	.907	37	48	14	37

Grove - Timing Belt Drive Table (Optional)								
Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP						Belt Pitch (mm)	Belt Width (mm)
150	1/2	95	10	.906	36	63	8	21
	3/4	142	10	.906	36	63	8	21
	1	189	10	.906	36	63	8	21
	1-1/2	286	10	.911	36	63	8	21
	2	381	10	.911	36	63	8	21
	3	576	10	.918	36	63	8	36
	5	800	10	.925	20	48	14	37
165	1/2	86	10	.906	40	63	8	21
	3/4	129	10	.906	40	63	8	21
	1	172	10	.906	40	63	8	21
	1-1/2	258	10	.906	40	63	8	21
	2	346	10	.911	40	63	8	21
	3	523	10	.918	40	63	8	36
	5	800	10	.925	30	48	14	37
180	1/2	80	7.5	.917	32	63	8	21
	3/4	120	7.5	.917	32	63	8	21
	1	160	7.5	.917	32	63	8	21
	1-1/2	240	7.5	.917	32	63	8	21
	2	321	7.5	.922	32	63	8	21
	3	484	7.5	.927	32	63	8	36
	5	800	10	.925	33	48	14	37
200	1/2	72	7.5	.917	36	63	8	21
	3/4	108	7.5	.917	36	63	8	21
	1	144	7.5	.917	36	63	8	21
	1-1/2	216	7.5	.917	36	63	8	21
	2	289	7.5	.922	36	63	8	21
	3	436	7.5	.927	36	63	8	36
	5	731	10	.933	36	63	8	37
	7-1/2	800		.925	36	48	14	21
225	1/2	64	7.5	.917	40	63	8	21
	3/4	96	7.5	.917	40	63	8	21
	1	128	7.5	.917	40	63	8	21
	1-1/2	192	7.5	.917	40	63	8	21
	2	257	7.5	.922	40	63	8	21
	3	357	7.5	.927	40	63	8	36
	5	650	7.5	.933	40	63	8	37
	7-1/2	800	10	.925	40	48	14	21
250	1/2	58	7.5	.917	45	63	8	21
	3/4	86	7.5	.917	45	63	8	21
	1	115	7.5	.917	45	63	8	21
	1-1/2	173	7.5	.917	45	63	8	21
	2	231	7.5	.922	45	63	8	21
	3	349	7.5	.927	45	63	8	36
	5	585	7.5	.933	42	63	8	37
	7-1/2	800	7.5	.941	34	48	14	21

Grove - Timing Belt Drive Table (Optional)								
Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP						Belt Pitch (mm)	Belt Width (mm)
275	1/2	53	5	.925	34	63	8	21
	3/4	79	5	.925	34	63	8	21
	1	106	5	.925	34	63	8	21
	1-1/2	158	5	.925	34	63	8	21
	2	211	5	.925	34	63	8	21
	3	319	5	.933	34	63	8	21
	5	512	5	.898	34	63	8	36
300	7-1/2	800	7.5	.941	37	48	14	37
	1/2	48	5	.925	36	63	8	21
	3/4	73	5	.925	36	63	8	21
	1	97	5	.925	36	63	8	21
	1-1/2	145	5	.925	36	63	8	21
	2	193	5	.925	36	63	8	21
	3	292	5	.933	36	63	8	21
325	5	469	7.5	.898	36	63	8	36
	7-1/2	738		.941	38	45	14	37
	1/2	45	5	.925	38	63	8	21
	3/4	67	5	.925	38	63	8	21
	1	89	5	.925	38	63	8	21
	1-1/2	134	5	.925	38	63	8	21
	2	179	5	.925	38	63	8	21
350	3	270	5	.933	38	63	8	21
	5	433	5	.898	38	63	8	36
	7-1/2	686	5	.948	30	48	14	37
	1/2	41	5	.925	42	63	8	21
	3/4	62	5	.925	42	63	8	21
	1	83	5	.925	42	63	8	21
	1-1/2	124	5	.925	42	63	8	21
375	2	166	5	.925	42	63	8	21
	3	251	5	.933	42	63	8	21
	5	402	5	.898	42	63	8	21
	7-1/2	637	5	.948	42	63	8	36
	1/2	39	5	.925	45	63	8	21
	3/4	58	5	.925	45	63	8	21
	1	77	5	.925	45	63	8	21
375	1-1/2	116	5	.925	45	63	8	21
	2	155	5	.925	45	63	8	21
	3	234	5	.933	45	63	8	21
	5	375	5	.898	42	60	8	21
	7-1/2	595	5	.948	42	60	8	36

Grove - Timing Belt Drive Table (Optional)								
Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP						Belt Pitch (mm)	Belt Width (mm)
400	1/2	36	5	.925	45	60	8	21
	3/4	54	5	.925	45	60	8	21
	1	73	5	.925	45	60	8	21
	1-1/2	109	5	.925	45	60	8	21
	2	145	5	.925	45	60	8	21
	3	219	5	.933	45	60	8	21
	5	352	5	.898	45	60	8	21
	7-1/2	557	5	.948	45	60	8	36
425	1/2	34	5	.925	45	56	8	21
	3/4	51	5	.925	45	56	8	21
	1	68	5	.925	45	56	8	21
	1-1/2	102	5	.925	45	56	8	21
	2	137	5	.925	45	56	8	21
	3	206	5	.933	45	56	8	21
	5	331	5	.898	45	56	8	21
	7-1/2	525	5	.948	45	56	8	36
450	1/2	32	5	.925	48	56	8	21
	3/4	48	5	.925	48	56	8	21
	1	64	5	.925	48	56	8	21
	1-1/2	97	5	.925	48	56	8	21
	2	129	5	.925	48	56	8	21
	3	195	5	.933	48	56	8	21
	5	313	5	.898	48	56	8	21
	7-1/2	496	5	.948	48	56	8	36
475	1/2	31	5	.925	45	50	8	21
	3/4	46	5	.925	45	50	8	21
	1	61	5	.925	45	50	8	21
	1-1/2	92	5	.925	45	50	8	21
	2	122	5	.925	45	50	8	21
	3	185	5	.933	45	50	8	21
	5	296	5	.898	45	50	8	21
	7-1/2	469	5	.948	45	50	8	36
500	1/2	29	5	.925	38	40	8	21
	3/4	44	5	.925	38	40	8	21
	1	58	5	.925	38	40	8	21
	1-1/2	87	5	.925	38	40	8	21
	2	116	5	.925	38	40	8	21
	3	175	5	.933	38	40	8	21
	5	281	5	.898	38	40	8	21
	7-1/2	446	5	.948	38	40	14	37

Dodge - #60 Chain Drive Table (Standard)

Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	No. of Teeth in Reducer Sprocket
	HP				
30	0.5	342	50	.655	15
	0.75	513		.655	
	1	715		.684	
45	0.5	229	40	.657	17
	0.75	362		.693	
	1	500		.718	
	1.5	750		.718	
60	0.5	183	30	.699	17
	0.75	298		.761	
	1	398		.761	
	1.5	616		.786	
	2	800		.786	
75	0.5	158	25	.755	18
	0.75	237		.755	
	1	338		.808	
	1.5	507		.808	
	2	675		.807	
90	0.5	137	20	.787	17
	0.75	206		.787	
	1	293		.84	
	1.5	439		.84	
	2	579		.831	
105	0.5	124	15	.828	15
	0.75	185		.828	
	1	247		.828	
	1.5	382		.853	
	2	509		.853	
	3	800		.867	

Dodge - #60 Chain Drive Table (Standard)

Nominal Belt speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	No. of Teeth in Reducer Sprocket
	HP				
120	0.5	108	15	.828	18
	0.75	162		.828	
	1	216		.828	
	1.5	334		.853	
	2	446		.853	
135	0.5	96	15	.828	20
	0.75	144		.828	
	1	192		.828	
	1.5	297		.853	
	2	396		.853	
	3	604		.867	
150	0.5	87	15	.828	22
	0.75	130		.828	
	1	173		.828	
	1.5	267		.853	
	2	357		.853	
	3	544		.867	
165	0.5	79	15	.828	23
	0.75	118		.828	
	1	157		.828	
	1.5	243		.853	
	2	324		.853	
	3	494		.867	
180	0.5	76	10	.870	17
	0.75	114		.870	
	1	152		.870	
	1.5	227		.870	
	2	310		.891	
	3	466		.891	

Dodge - Timing Belt Drive Table (Optional)								
Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP						Belt Pitch (mm)	Belt Width (mm)
30	1/2	342	50	.655	36	63	8	21
	3/4	513	50	.655	36	63	8	36
	1	677	60	.648	33	48	14	37
45	1/2	229	40	.657	42	63	8	21
	3/4	362	40	.693	42	63	8	21
	1	500	40	.718	42	63	8	36
60	1-1/2	715	50	.684	40	48	14	37
	1/2	197	25	.755	36	63	8	21
	3/4	296	25	.755	36	63	8	21
75	1	422	25	.808	36	63	8	21
	1-1/2	633	25	.808	36	63	8	36
	2	800	30	.786	34	48	14	37
	1/2	164	20	.787	36	63	8	21
	3/4	247	20	.787	36	63	8	21
90	1	351	20	.840	36	63	8	21
	1-1/2	527	20	.840	36	63	8	36
	2	695	20	.831	36	63	8	36
	3	800	20	.831	28	48	14	37
	1/2	144	15	.828	32	63	8	21
	3/4	216	15	.828	32	63	8	21
105	1	268	15	.828	32	63	8	21
	1-1/2	446	15	.853	32	63	8	21
	2	579	20	.831	42	60	8	36
	3	800	20	.831	33	48	14	37
	1/2	124	15	.828	38	63	8	21
	3/4	185	15	.828	38	63	8	21
120	1	247	15	.828	38	63	8	21
	1-1/2	382	15	.853	38	63	8	21
	2	509	15	.853	38	63	8	36
	3	744	20	.831	38	48	14	37
	1/2	108	15	.828	42	63	8	21
	3/4	162	15	.828	42	63	8	21
135	1	216	15	.828	42	63	8	21
	1-1/2	334	15	.853	42	63	8	21
	2	446	15	.853	42	63	8	21
	3	680	15	.867	42	63	8	36
	1/2	101	10	.870	32	63	8	21
	3/4	152	10	.870	32	63	8	21
135	1	202	10	.870	32	63	8	21
	1-1/2	303	10	.870	32	63	8	21
	2	414	10	.891	32	63	8	21
135	3	604	15	.867	42	56	8	36

Dodge - Timing Belt Drive Table (Optional)								
Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP						Belt Pitch (mm)	Belt Width (mm)
150	1/2	91	10	.870	36	63	8	21
	3/4	136	10	.870	36	63	8	21
	1	182	10	.870	36	63	8	21
	1-1/2	273	10	.870	36	63	8	21
	2	372	10	.891	36	63	8	21
	3	559	10	.891	36	63	8	36
	5	800	10	.902	28	48	14	37
165	1/2	83	10	.870	40	63	8	21
	3/4	124	10	.870	40	63	8	21
	1	165	10	.870	40	63	8	21
	1-1/2	248	10	.870	40	63	8	21
	2	339	10	.891	40	63	8	21
	3	508	10	.891	40	63	14	36
	5	800	10	.902	30	48	8	37
180	1/2	77	7.5	.888	32	63	8	21
	3/4	116	7.5	.888	32	63	8	21
	1	155	7.5	.888	32	63	8	21
	1-1/2	232	7.5	.888	32	63	8	21
	2	316	7.5	.906	32	63	8	21
	3	473	7.5	.906	32	63	8	36
	5	800	10	.902	33	48	14	37
200	1/2	70	7.5	.888	36	63	8	21
	3/4	104	7.5	.888	36	63	8	21
	1	139	7.5	.888	36	63	8	21
	1-1/2	209	7.5	.888	36	63	8	21
	2	284	7.5	.906	36	63	8	21
	3	426	7.5	.906	36	63	8	21
	5	707	10	.902	36	48	14	37
225	1/2	62	7.5	.888	40	63	8	21
	3/4	93	7.5	.888	40	63	8	21
	1	124	7.5	.888	40	63	8	21
	1-1/2	186	7.5	.888	40	63	8	21
	2	252	7.5	.906	40	63	8	21
	3	379	7.5	.906	40	63	8	21
	5	628	10	.902	40	45	14	37
250	1/2	56	7.5	.888	45	63	8	21
	3/4	84	7.5	.888	45	63	8	21
	1	111	7.5	.888	45	63	8	21
	1-1/2	167	7.5	.888	45	63	8	21
	2	227	7.5	.906	45	63	8	21
	3	341	7.5	.906	45	63	8	21
	5	566	10	.902	38	40	14	37

Dodge - Timing Belt Drive Table (Optional)								
Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP						Belt Pitch (mm)	Belt Width (mm)
275	1/2	52	5	.916	34	63	8	21
	3/4	78	5	.916	34	63	8	21
	1	104	5	.916	34	63	8	21
	1-1/2	157	5	.916	34	63	8	21
	2	209	5	.916	34	63	8	21
	3	315	5	.922	34	63	8	21
	5	530	5	.929	34	63	14	36
300	1/2	48	5	.916	36	63	8	21
	3/4	72	5	.916	36	63	8	21
	1	96	5	.916	36	63	8	21
	1-1/2	144	5	.916	36	63	8	21
	2	191	5	.916	36	63	8	21
	3	289	5	.922	36	63	8	21
	5	485	5	.929	36	63	8	36
325	1/2	44	5	.916	38	63	8	21
	3/4	66	5	.916	38	63	8	21
	1	88	5	.916	38	63	8	21
	1-1/2	133	5	.916	38	63	8	21
	2	177	5	.916	38	63	8	21
	3	267	5	.922	38	63	8	21
	5	405	5	.929	38	63	8	36
350	1/2	41	5	.916	42	63	8	21
	3/4	62	5	.916	42	63	8	21
	1	82	5	.916	42	63	8	21
	1-1/2	123	5	.916	42	63	8	21
	2	164	5	.916	42	63	8	21
	3	248	5	.922	42	63	8	21
	5	416	5	.929	42	63	8	36
375	1/2	38	5	.916	45	63	8	21
	3/4	57	5	.916	45	63	8	21
	1	77	5	.916	45	63	8	21
	1-1/2	115	5	.916	45	63	8	21
	2	153	5	.916	45	63	8	21
	3	231	5	.922	45	63	8	21
	5	388	5	.929	42	60	8	36

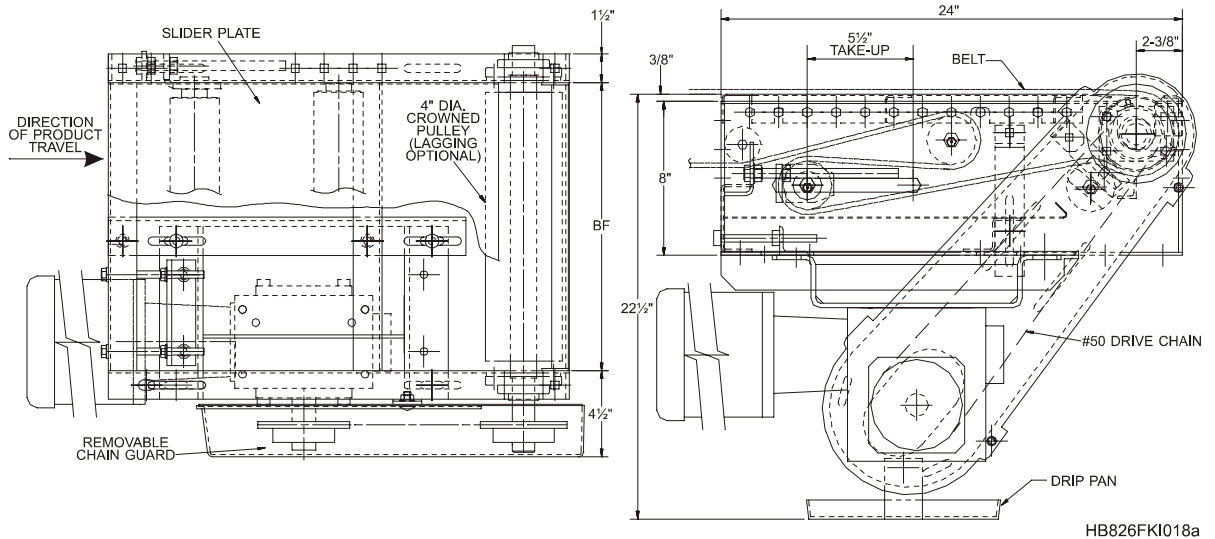
Dodge - Timing Belt Drive Table (Optional)								
Nominal Belt Speed (FPM)	Motor	Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP						Belt Pitch (mm)	Belt Width (mm)
400	1/2	36	5	.916	45	60	8	21
	3/4	54	5	.916	45	60	8	21
	1	72	5	.916	45	60	8	21
	1-1/2	108	5	.916	45	60	8	21
	2	144	5	.916	45	60	8	21
	3	217	5	.922	45	60	8	21
	5	364	5	.929	45	60	8	36
425	1/2	34	5	.916	45	56	8	21
	3/4	51	5	.916	45	56	8	21
	1	68	5	.916	45	56	8	21
	1-1/2	101	5	.916	45	56	8	21
	2	135	5	.916	45	56	8	21
	3	204	5	.922	45	56	8	21
	5	343	5	.929	45	56	8	36
450	1/2	32	5	.916	48	56	8	21
	3/4	48	5	.916	48	56	8	21
	1	64	5	.916	48	56	8	21
	1-1/2	96	5	.916	48	56	8	21
	2	128	5	.916	48	56	8	21
	3	193	5	.922	48	56	8	21
	5	324	5	.929	48	56	8	21
475	1/2	30	5	.916	45	50	8	21
	3/4	45	5	.916	45	50	8	21
	1	60	5	.916	45	50	8	21
	1-1/2	91	5	.916	45	50	8	21
	2	121	5	.916	45	50	8	21
	3	183	5	.922	45	50	8	21
	5	307	5	.929	45	50	8	36
500	1/2	29	5	.916	38	40	8	21
	3/4	43	5	.916	38	40	8	21
	1	57	5	.916	38	40	8	21
	1-1/2	86	5	.916	38	40	8	21
	2	115	5	.916	38	40	8	21
	3	173	5	.922	38	40	8	21
	5	291	5	.929	38	40	8	36

C1716 End Drive

HOW TO ORDER

Quantity	Code No.	W	Speed	HP	Voltage	Options
1	C1716	21"	70	3/4	230	NT

Note: Please list options



Standard Options for How To Order		Call Up
1	Opposite hand for location of motor/reducer	OPP
2	Regreaseable Bearings	RG
3	Brakemotor	B
4	Lagged Pulley	LP
5	Without Take-Up	NT
6	Timing Belt Drive	TB

CONVEYOR WIDTH	Standard - 15", 21", 27", 33" and 39" Between Frames.
CAPACITY	Standard - 400# effective belt pull.
SPEED	Standard - 70 FPM nominal with 58 RPM reducer. Reducer has a 22 tooth sprocket, pulley has a 19 tooth sprocket. All driver sprockets have hardened teeth. Option - See Motor/Reducer Selection Table on the following page. For speeds other than 70 FPM, the reducer RPM and sprocket combination must be specified under Options on How To Order.
DRIVE	Standard - Furnished as shown for position of motor/reducer, unless specified "opposite hand". #50 chain driver available 1/2 HP through 3 HP. The drive chain is totally enclosed for safety. 5.5" of take-up adjustment provided. It is recommended that this drive be used for single direction application and placed at the discharge end of the conveyor. Option - Available without take-up (NT). See table for recommended maximum lengths without take-up (assumes nominal take-up in end roller unit). Timing belt (TB) drives available 1/2 HP through 5 HP.
PULLEY	Standard - 4" dia. crowned pulley with pre-lubricated outboard flanged block bearings and 1-3/16" dia. shaft. Option - Lagged pulley is available.
BELT	Standard - Width is 3" less than the Between Frames dimension. Belt length required is 66" with take-up roller or 50" without take-up.
BEARINGS	Standard - All bearings are greased packed.

#60 Chain Drive Table (Standard)							#60 Chain Drive Table (Standard)						
Nominal Belt Speed (FPM)	Motor		Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	No. of Teeth in Reducer Sprocket	Nominal Belt speed (FPM)	Motor		Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	No. of Teeth in Reducer Sprocket
	HP	Frame						HP	Frame				
33	0.5	56C	342	50:1	.719	17	110	0.5	56C	125	15:1	.876	17
	.075		400		.713			187		.876			
40	0.5	56C	288	40:1	.736	17		1		250		.876	
	0.75		400		.736			374		.876			
50	0.5	56C	248	30:1	.791	17	2	400	.882				
	0.75		372		.791		102	.876					
	1		400		.797			153	.876				
60	0.5	56C	207	30:1	.791	19	1	56C	203	15:1	.876	21	
	0.75		310		.791		305	.876					
	1		400		.797		400	.882					
70	0.5	56C	177	30:1	.791	22	0.5	56C	92	10:1	.910	16	
	0.75		266		.791		138		.910				
	1		357		.797		184		.910				
	1.5		400		.827		276		.910				
80	0.5	56C	166	20:1	.846	17	2	56C	368	10:1	.910	18	
	0.75		249		.846		400		.916				
	1		332		.846		182TC		400		.910		
	1.5		400		.853				82		.910		
90	0.5	56C	147	20:1	.846	19	0.75	56C	122	10:1	.910	18	
	0.75		221		.846		163		.910				
	1		295		.846		245		.910				
	175		2		182TC		400		10:1		326		.910
			3				400				.916		

Maximum Recommended Conveyor Length With "NT" Option					
Between Frames (W)	15" W	21" W	27" W	33" W	39" W
Length	13'-0"	20'-0"	28'-0"	33'-0"	38'-0"

Timing Belt Drive Table (Optional)									
Nominal Belt Speed (FPM)	Motor		Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP	Frame						Belt Pitch (mm)	Belt Width (mm)
33	1/2	56C	356	40	.750	32	48	8	35
	3/4		400	40	.750	32	48	8	35
40	1/2	56C	310	30	.791	32	48	8	35
	3/4		400	30	.797	32	48	8	35
50	1/2	56C	259	25	.826	34	48	8	35
	3/4		390	25	.829	34	48	8	35
	1		400	25	.829	34	48	8	35
60	1/2	56C	221	20	.846	32	48	8	35
	3/4		332	20	.846	32	48	8	35
	1		400	20	.853	32	48	8	35
70	1/2	56C	189	20	.846	32	40	8	35
	3/4		284	20	.846	32	40	8	35
	1		382	20	.853	32	40	8	35
	1-1/2		400	20	.853	32	40	8	35
80	1/2	56C	172	15	.876	32	48	8	35
	3/4		257	15	.876	32	48	8	35
	1		343	15	.876	32	48	8	35
	1-1/2		400	15	.882	32	48	8	35
90	1/2	56C	153	15	.876	34	44	8	35
	3/4		229	15	.876	34	44	8	35
	1		305	15	.876	34	44	8	35
	1-1/2		400	15	.882	34	44	8	35
110	1/2	56C	125	15	.876	32	36	8	35
	3/4		187	15	.876	32	36	8	35
	1		250	15	.876	32	36	8	35
	1-1/2		383	15	.897	32	36	8	35
	2		400	15	.897	32	36	8	35
135	1/2	56C	106	10	.910	34	44	8	35
	3/4		158	10	.910	34	44	8	35
	1		211	10	.910	34	44	8	35
	1-1/2		317	10	.910	34	44	8	35
	2		400	10	.912	34	44	8	35
155	1/2	56C	92	10	.910	32	38	8	35
	3/4		138	10	.910	32	38	8	35
	1		184	10	.910	32	38	8	35
	1-1/2		276	10	.910	32	38	8	35
	2		369	10	.910	32	38	8	35
	3	182TC	400	10	.916	32	38	8	35

Timing Belt Drive Table (Optional)

Nominal Belt Speed (FPM)	Motor		Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP	Frame						Belt Pitch (mm)	Belt Width (mm)
175	1/2	56C	82	7.5	.918	32	44	8	35
	3/4		123	7.5	.918	32	44	8	35
	1		164	7.5	.918	32	44	8	35
	1-1/2		247	7.5	.918	32	44	8	35
	2		331	7.5	.923	32	44	8	35
	3	182TC	400	7.5	.927	32	44	8	35
200	1/2	56C	72	7.5	.918	32	38	8	35
	3/4		108	7.5	.918	32	38	8	35
	1		144	7.5	.918	32	38	8	35
	1-1/2		216	7.5	.918	32	38	8	35
	2		289	7.5	.923	32	38	8	35
	3	182TC	400	7.5	.927	32	38	8	35
225	1/2	56C	64	7.5	.918	44	48	8	35
	3/4		96	7.5	.918	44	48	8	35
	1		128	7.5	.918	44	48	8	35
	1-1/2		192	7.5	.918	44	48	8	35
	2		256	7.5	.918	44	48	8	35
	3	182TC	387	7.5	.927	44	48	8	35
250	1/2	56C	58	5	.928	34	48	8	35
	3/4		87	5	.928	34	48	8	35
	1		116	5	.928	34	48	8	35
	1-1/2		175	5	.928	34	48	8	35
	2		233	5	.928	34	48	8	35
	3	182TC	353	5	.939	34	48	8	35
	5	182TC	400	5	.939	34	48	8	42
275	1/2	56C	53	5	.928	34	44	8	35
	3/4		79	5	.928	34	44	8	35
	1		106	5	.928	34	44	8	35
	1-1/2		159	5	.928	34	44	8	35
	2		212	5	.928	34	44	8	35
	3	182TC	321	5	.939	34	44	8	35
	5	182TC	400	5	.939	34	44	8	42
300	1/2	56C	48	5	.928	32	38	8	35
	3/4		73	5	.928	32	38	8	35
	1		97	5	.928	32	38	8	35
	1-1/2		145	5	.928	32	38	8	35
	2		194	5	.928	32	38	8	35
	3	182TC	294	5	.939	32	38	8	35
	5	182TC	400	5	.939	32	38	8	35

Timing Belt Drive Table (Optional)

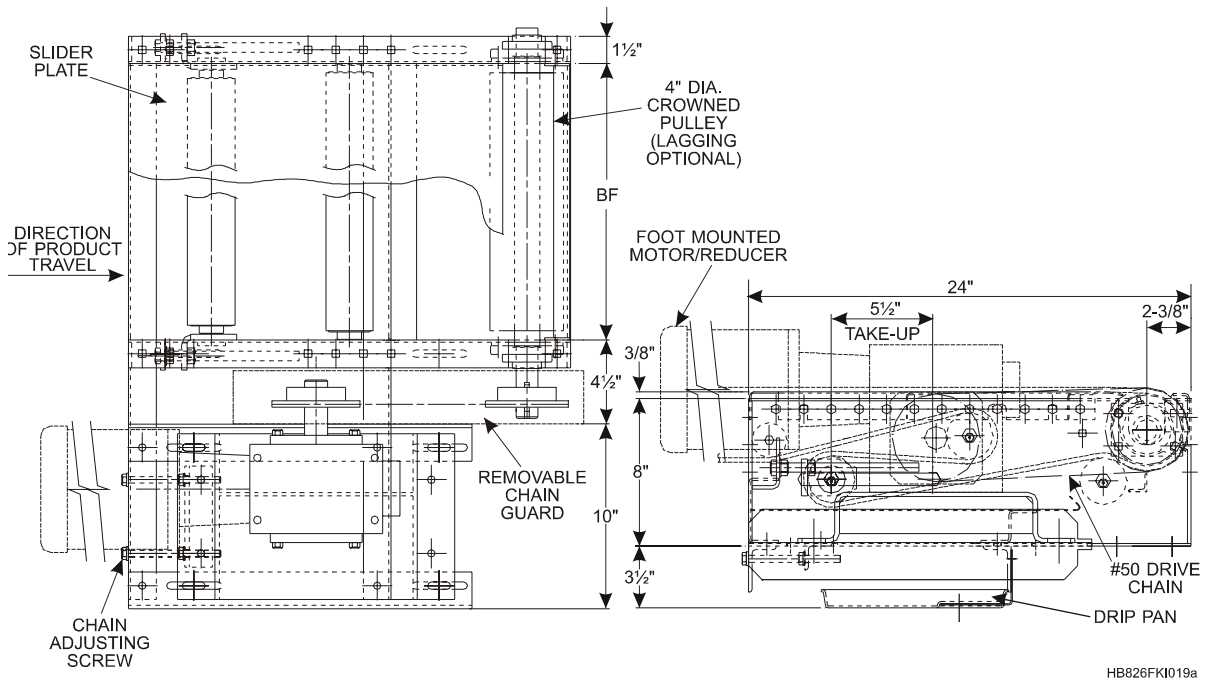
Nominal Belt Speed (FPM)	Motor		Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP	Frame						Belt Pitch (mm)	Belt Width (mm)
325	1/2	56C	45	5	.928	34	38	8	35
	3/4		67	5	.928	34	38	8	35
	1		90	5	.928	34	38	8	35
	1-1/2		134	5	.928	34	38	8	35
	2		179	5	.928	34	38	8	35
	3	182TC	272	5	.939	34	38	8	35
	5	182TC	400	5	.939	34	38	8	35
350	1/2	56C	42	5	.928	38	38	8	35
	3/4		62	5	.928	38	38	8	35
	1		83	5	.928	38	38	8	35
	1-1/2		125	5	.928	38	38	8	35
	2		166	5	.928	38	38	8	35
	3	182TC	252	5	.939	38	38	8	35
	5	182TC	400	5	.939	38	38	8	35
375	1/2	56C	39	5	.928	40	38	8	35
	3/4		58	5	.928	40	38	8	35
	1		78	5	.928	40	38	8	35
	1-1/2		116	5	.928	40	38	8	35
	2		155	5	.928	40	38	8	35
	3	182TC	236	5	.939	40	38	8	35
	5	182TC	393	5	.939	40	38	8	35
400	1/2	56C	36	5	.928	44	40	8	35
	3/4		55	5	.928	44	40	8	35
	1		73	5	.928	44	40	8	35
	1-1/2		109	5	.928	44	40	8	35
	2		145	5	.928	44	40	8	35
	3	182TC	221	5	.939	44	40	8	35
	5	182TC	368	5	.939	44	40	8	35

C1721 Low Profile End Drive

HOW TO ORDER

Quantity	Code No.	W	Speed	HP	Voltage	Options
1	C1721	21"	70	3/4	230	NT

Note: Please list options



Standard Options for How To Order		Call Up
1	Opposite hand for location of motor/reducer	OPP
2	Regreaseable Bearings	RG
3	Brakemotor	B
4	Lagged Pulley	LP
5	Without Take-Up	NT
6	Timing Belt Drive	TB

CONVEYOR WIDTH	Standard - 15", 21", 27", 33" and 39" Between Frames.
CAPACITY	Standard - 400# effective belt pull.
SPEED	Standard - 70 FPM nominal with 58 RPM reducer. Reducer has a 22 tooth sprocket, pulley has a 19 tooth sprocket. All driver sprockets have hardened teeth. Option - See Motor/Reducer Selection Table on the following page. For speeds other than 70 FPM, the reducer RPM and sprocket combination must be specified under Options on How To Order.
DRIVE	Standard - Furnished as shown for position of motor/reducer, unless specified "opposite hand". #50 chain driver available 1/2 HP through 3 HP. The drive chain is totally enclosed for safety. 5.5" of take-up adjustment provided. It is recommended that this drive be used for single direction application and placed at the discharge end of the conveyor. Option - Available without take-up (NT). See table for recommended maximum lengths without take-up (assumes nominal take-up in end roller unit). Timing belt (TB) drives available 1/2 HP through 5 HP.
PULLEY	Standard - 4" dia. crowned pulley with pre-lubricated outboard flanged block bearings and 1-3/16" dia. shaft. Option - Lagged pulley is available.
BELT	Standard - Width is 3" less than the Between Frames dimension. Belt length required is 66" with take-up roller or 50" without take-up.
BEARINGS	Standard - All bearings are greased packed.

#60 Chain Drive Table (Standard)							#60 Chain Drive Table (Standard)						
Nominal Belt Speed (FPM)	Motor		Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	No. of Teeth in Reducer Sprocket	Nominal Belt speed (FPM)	Motor		Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	No. of Teeth in Reducer Sprocket
	HP	Frame						HP	Frame				
33	0.5	56C	342	50:1	.719	17	110	0.5	56C	125	15:1	.876	17
	.75		400		.713			0.75		187		.876	
40	0.5	56C	288	40:1	.736	17		1		250		.876	
	0.75		400		.736			1.5		374		.876	
50	0.5	56C	248	30:1	.791	17		2		400		.882	
	0.75		372		.791			135		0.5		56C	
	1		400		.797		0.75		153	.876			
60	0.5	56C	207	30:1	.791	19	1	203	.876				
	0.75		310		.791		1.5	305	.876				
	1		400		.797		2	400	.882				

#60 Chain Drive Table (Standard)							#60 Chain Drive Table (Standard)									
Nominal Belt Speed (FPM)	Motor		Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	No. of Teeth in Reducer Sprocket	Nominal Belt speed (FPM)	Motor		Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	No. of Teeth in Reducer Sprocket			
	HP	Frame						HP	Frame							
70	0.5	56C	177	30:1	.791	22	155	0.5	56C	92	10:1	.910	16			
	0.75		266		.791			138		.910						
	1		357		.797			184		.910						
	1.5		400		.827			276		.910						
80	0.5	56C	166	20:1	.846	175		0.5		56C		82		10:1	.910	18
	0.75		249		.846			122				.910				
	1		332		.846		163	.910								
	1.5		400		.853		245	.910								
90	0.5	56C	147	20:1	.846		2	326	.910							
	0.75		221		.846	182TC	400	.916								
	1		295		.846											
	1.5		400		.853											

Maximum Recommended Conveyor Length With "NT" Option					
Between Frames (W)	15" W	21" W	27" W	33" W	39" W
Length	13'-0"	20'-0"	28'-0"	33'-0"	38'-0"

Timing Belt Drive Table (Optional)

Nominal Belt Speed (FPM)	Motor		Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP	Frame						Belt Pitch (mm)	Belt Width (mm)
33	1/2	56C	356	40	.750	32	48	8	35
	3/4		400	40	.750	32	48	8	35
40	1/2	56C	310	30	.791	32	48	8	35
	3/4		400	30	.797	32	48	8	35
50	1/2	56C	259	25	.826	34	48	8	35
	3/4		390	25	.829	34	48	8	35
	1		400	25	.829	34	48	8	35
60	1/2	56C	221	20	.846	32	48	8	35
	3/4		332	20	.846	32	48	8	35
	1		400	20	.853	32	48	8	35
70	1/2	56C	189	20	.846	32	40	8	35
	3/4		284	20	.846	32	40	8	35
	1		382	20	.853	32	40	8	35
	1-1/2		400	20	.853	32	40	8	35
80	1/2	56C	172	15	.876	32	48	8	35
	3/4		257	15	.876	32	48	8	35
	1		343	15	.876	32	48	8	35
	1-1/2		400	15	.882	32	48	8	35
90	1/2	56C	153	15	.876	34	44	8	35
	3/4		229	15	.876	34	44	8	35
	1		305	15	.876	34	44	8	35
	1-1/2		400	15	.882	34	44	8	35
110	1/2	56C	125	15	.876	32	36	8	35
	3/4		187	15	.876	32	36	8	35
	1		250	15	.876	32	36	8	35
	1-1/2		383	15	.897	32	36	8	35
	2		400	15	.897	32	36	8	35
135	1/2	56C	106	10	.910	34	44	8	35
	3/4		158	10	.910	34	44	8	35
	1		211	10	.910	34	44	8	35
	1-1/2		317	10	.910	34	44	8	35
	2		400	10	.912	34	44	8	35
155	1/2	56C	92	10	.910	32	38	8	35
	3/4		138	10	.910	32	38	8	35
	1		184	10	.910	32	38	8	35
	1-1/2		276	10	.910	32	38	8	35
	2		369	10	.910	32	38	8	35
	3	182TC	400	10	.916	32	38	8	35

Timing Belt Drive Table (Optional)

Nominal Belt Speed (FPM)	Motor		Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP	Frame						Belt Pitch (mm)	Belt Width (mm)
175	1/2	56C	82	7.5	.918	32	44	8	35
	3/4		123	7.5	.918	32	44	8	35
	1		164	7.5	.918	32	44	8	35
	1-1/2		247	7.5	.918	32	44	8	35
	2		331	7.5	.923	32	44	8	35
	3	182TC	400	7.5	.927	32	44	8	35
200	1/2	56C	72	7.5	.918	32	38	8	35
	3/4		108	7.5	.918	32	38	8	35
	1		144	7.5	.918	32	38	8	35
	1-1/2		216	7.5	.918	32	38	8	35
	2		289	7.5	.923	32	38	8	35
	3	182TC	400	7.5	.927	32	38	8	35
225	1/2	56C	64	7.5	.918	44	48	8	35
	3/4		96	7.5	.918	44	48	8	35
	1		128	7.5	.918	44	48	8	35
	1-1/2		192	7.5	.918	44	48	8	35
	2		256	7.5	.918	44	48	8	35
	3	182TC	387	7.5	.927	44	48	8	35
250	1/2	56C	58	5	.928	34	48	8	35
	3/4		87	5	.928	34	48	8	35
	1		116	5	.928	34	48	8	35
	1-1/2		175	5	.928	34	48	8	35
	2		233	5	.928	34	48	8	35
	3	182TC	353	5	.939	34	48	8	35
	5	182TC	400	5	.939	34	48	8	35
275	1/2	56C	53	5	.928	34	44	8	35
	3/4		79	5	.928	34	44	8	35
	1		106	5	.928	34	44	8	35
	1-1/2		159	5	.928	34	44	8	35
	2		212	5	.928	34	44	8	35
	3	182TC	321	5	.939	34	44	8	35
	5	182TC	400	5	.939	34	44	8	42
300	1/2	56C	48	5	.928	32	38	8	35
	3/4		73	5	.928	32	38	8	35
	1		97	5	.928	32	38	8	35
	1-1/2		145	5	.928	32	38	8	35
	2		194	5	.928	32	38	8	35
	3	182TC	294	5	.939	32	38	8	35
	5	182TC	400	5	.939	32	38	8	35

Timing Belt Drive Table (Optional)

Nominal Belt Speed (FPM)	Motor		Effective Belt Pull (lb.)	Reducer Gear Ratio	Reducer Efficiency	Reducer Sprocket No. Teeth	Pulley Sprocket No. Teeth	Drive Belt	
	HP	Frame						Belt Pitch (mm)	Belt Width (mm)
325	1/2	56C	45	5	.928	34	38	8	35
	3/4		67	5	.928	34	38	8	35
	1		90	5	.928	34	38	8	35
	1-1/2		134	5	.928	34	38	8	35
	2		179	5	.928	34	38	8	35
	3	182TC	272	5	.939	34	38	8	35
	5	182TC	400	5	.939	34	38	8	35
350	1/2	56C	42	5	.928	38	38	8	35
	3/4		62	5	.928	38	38	8	35
	1		83	5	.928	38	38	8	35
	1-1/2		125	5	.928	38	38	8	35
	2		166	5	.928	38	38	8	35
	3	182TC	252	5	.939	38	38	8	35
	5	182TC	400	5	.939	38	38	8	35
375	1/2	56C	39	5	.928	40	38	8	35
	3/4		58	5	.928	40	38	8	35
	1		78	5	.928	40	38	8	35
	1-1/2		116	5	.928	40	38	8	35
	2		155	5	.928	40	38	8	35
	3	182TC	236	5	.939	40	38	8	35
	5	182TC	393	5	.939	40	38	8	35
400	1/2	56C	36	5	.928	44	40	8	35
	3/4		55	5	.928	44	40	8	35
	1		73	5	.928	44	40	8	35
	1-1/2		109	5	.928	44	40	8	35
	2		145	5	.928	44	40	8	35
	3	182TC	221	5	.939	44	40	8	35
	5	182TC	368	5	.939	44	40	8	35

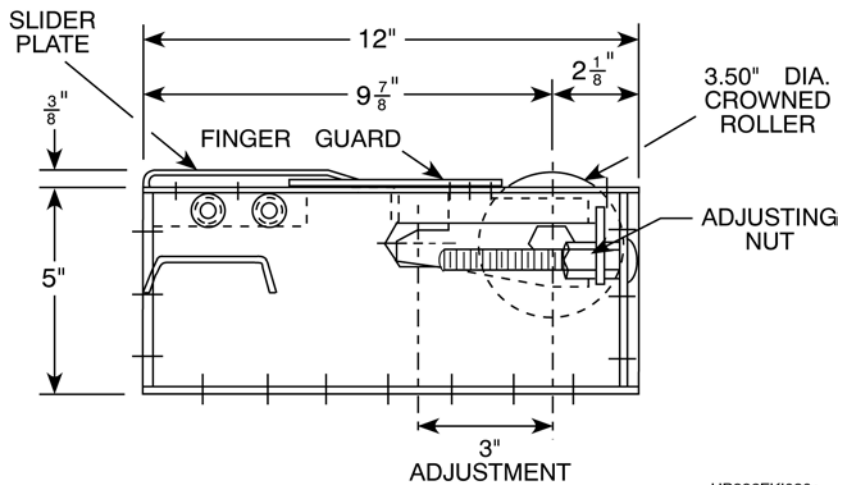
C1239 End Roller / Take-Up Unit

C1626 End Roller Unit

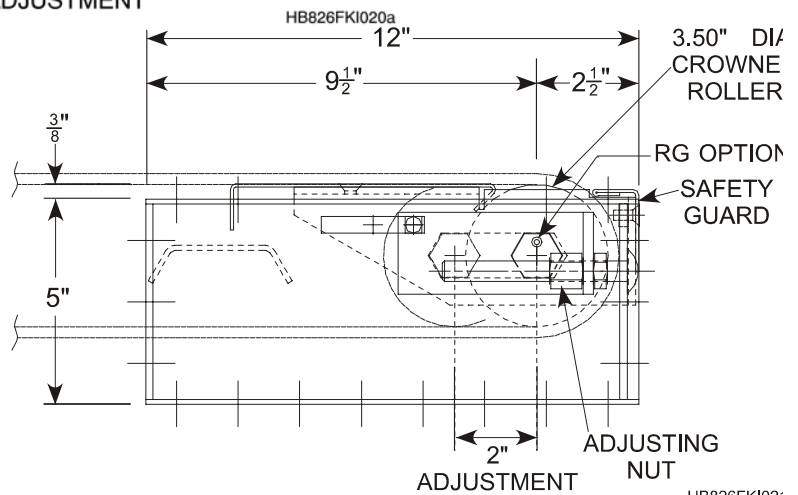
HOW TO ORDER

Quantity	Code No.	W	Options
1	C1239	21"	RG

Note: Please list options



For Use at Entrance End



For Use at Discharge End

CONVEYOR WIDTH	Standard - 15", 21", 27", 33" and 39" Between Frames.
CAPACITY	Standard - 900# effective belt pull.
END ROLLER	Standard - 3.50" dia. machine crowned roller with 1-1/16" hex axle and B1161-2 power service grease packed bearings. Option - Regreaseable end roller bearings are optional (add "RG" on How To Order).
SAFETY ROLLER	Standard - 1.90" dia. x .065" (16 ga.) steel roller with B1020-2 grease packed bearings and 7/16" hex axle.
BELT	Standard - Width is 3" less than the Between Frames dimension. For C1239 belt length required is 22". For C1626 belt length required is 22".
COUPLINGS	Standard - Welded butt couplings.

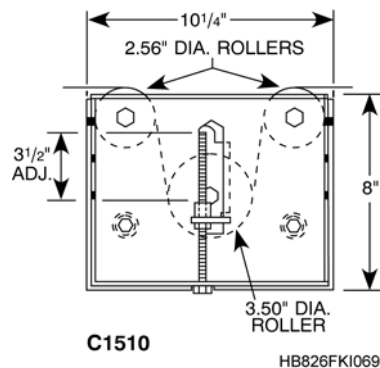
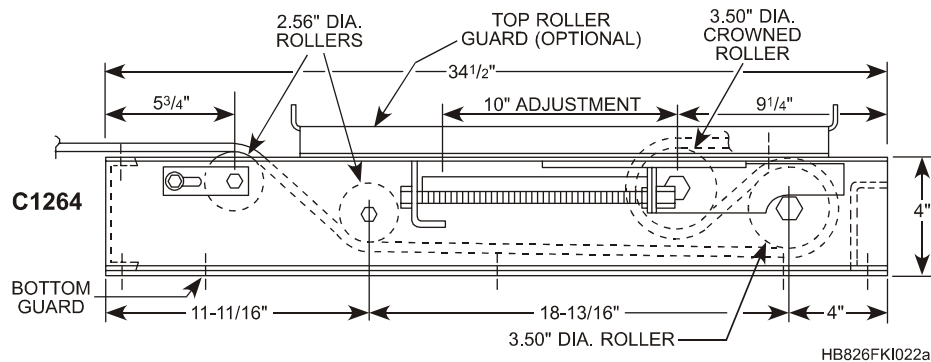
C1264 Intermediate Take-Up

C1510 Vertical Take-Up

HOW TO ORDER

Quantity	Code No.	W	Options
1	C1264	21"	---

Note: Please list options



CONVEYOR WIDTH	Standard - 15", 21", 27", 33" and 39" Between Frames.
CAPACITY	Standard - 900# effective belt pull.
TAKE-UP ROLLER	Standard - 3.50" dia. machine crowned roller with 1-1/16" hex axle and B1161-2 power service grease packed bearings. Sides and bottom totally enclosed for safety. Option - Optional roller guard for C1264 only if take-up is accessible to personnel (add "PG" on How To Order).
BELT	Standard - Width is 3" less than the Between Frame dimension. For C1264 belt length required is 29". For C1510 belt length required is 5".
BEARINGS	Option - Regreaseable bearings are option (add "RG" on How To Order).

C1641 Intermediate Section - Trash Removal Conveyor

C1640 End Section - Trash Removal Conveyor

HOW TO ORDER

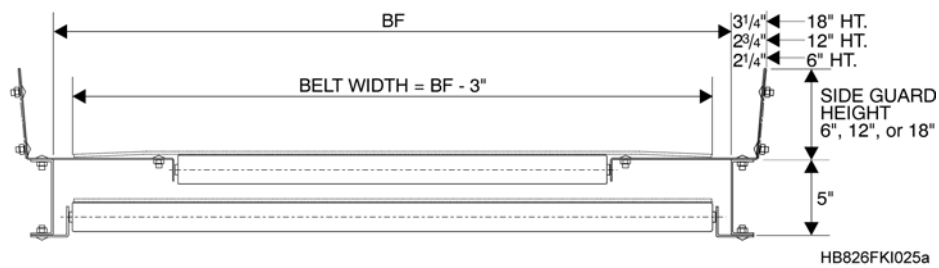
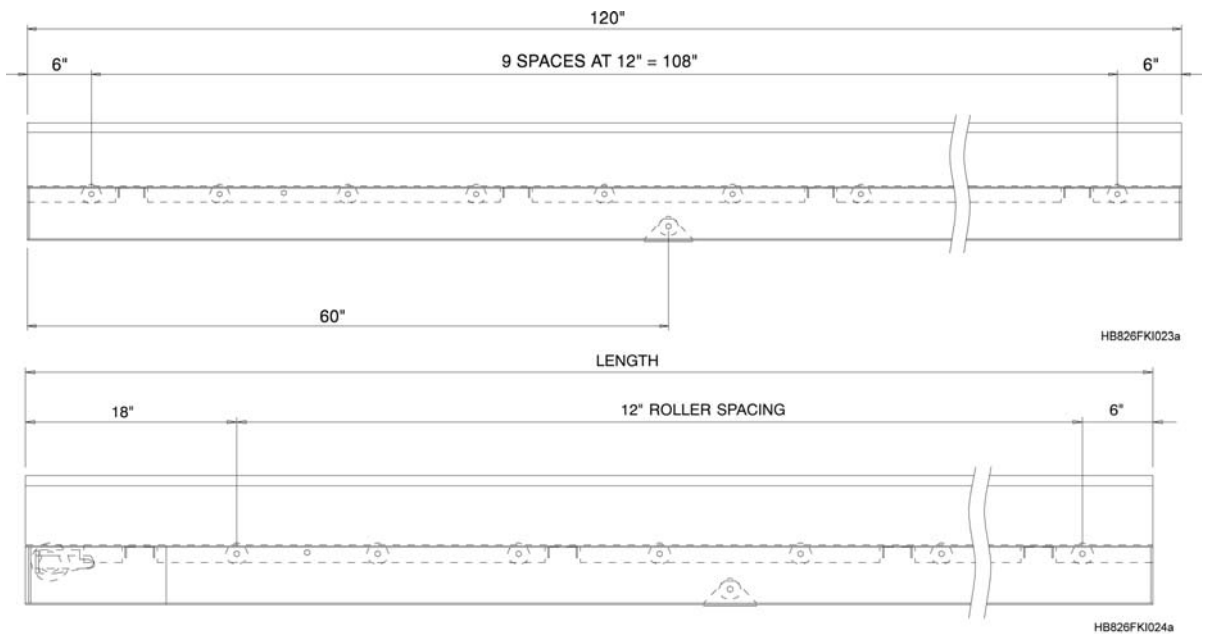
Quantity	Code No.	W	Side Guard Height	Options
1	C1641	27"	18"	---

Note: Please list options

HOW TO ORDER

Quantity	Code No.	W	Side Guard Height	Options
1	C1640	27"	108"	---

Note: Please list options

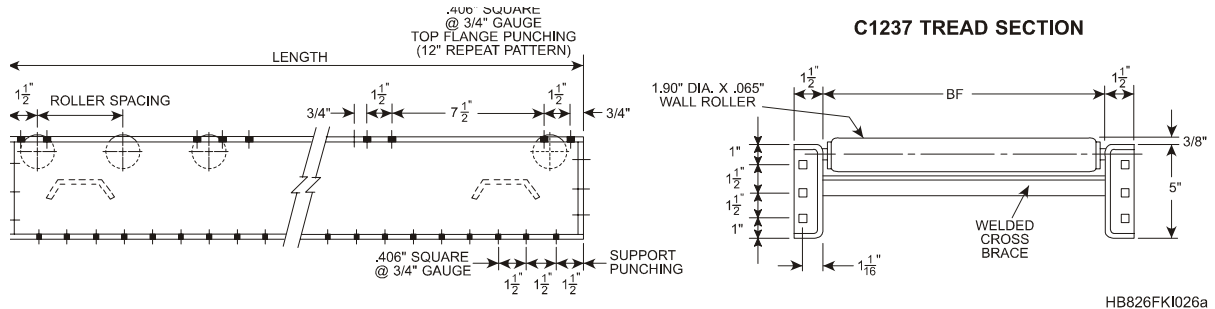


CONVEYOR WIDTH	Standard - 27" through 45" Between Frames in 3" increments.
LENGTHS	Standard - 10'-0" lengths. Option - End units 3'-0" through 10'-0" lengths, available in 1'-0" increments.
END ROLLER TAKE-UP	Standard - 3.50" dia. machine crowned roller with 1-1/16" hex axle.
CARRYING ROLLERS	Standard 1.90" dia. x .065" (16 ga.) steel rollers with B1020-2 grease packed bearings and 7/16" hex spring-loaded axles on 12" centers.
IDLER ROLLERS	Standard - 1.90" dia. x .065" (16 ga.) steel rollers with grease packed bearings and 7/16" hex axles. Note: Idler rollers are designed into the frame rail of the trash removal conveyor. All intermediate sections and end sections over 5'-0" long have idler rollers.
BELT	Standard - PVC 120 FS x FS. Width is 3" less than the Between Frames dimension. Belt length required is twice the conveyor length.
SIDE GUARDS	Standard - Guards come in three standard heights: 6", 12", and 18".

C1237 Conveyor Section

HOW TO ORDER

Quantity	Code No.	W	Length	Roller Spacing
1	C1237	21"	120"	6"

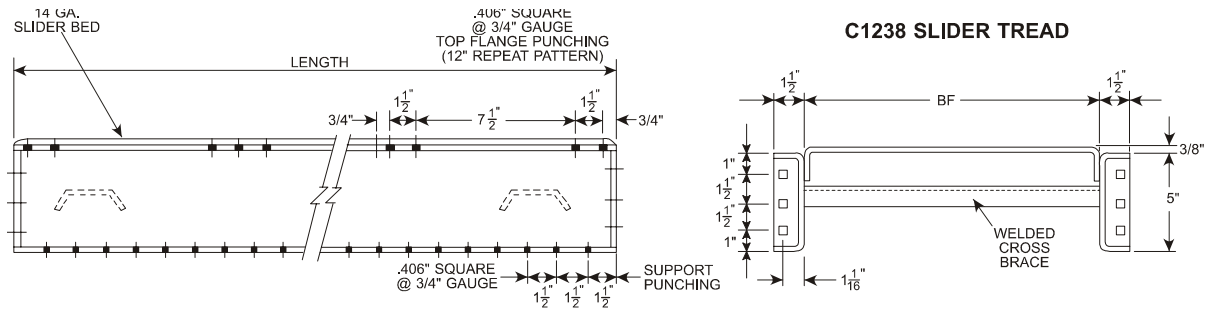


- | | |
|----------------|--|
| FRAME | Standard - "PR" rail - 5" x 1-1/2" x .120" (11 ga.) formed steel channel. |
| WIDTHS | Standard - 15", 21", 27", 33" and 39" Between Frames. |
| LENGTHS | Standard - 12" through 120" in 3" increments only. |
| CAPACITY | Standard - 1000# per 10'-0" section. |
| ROLLERS | Standard - 1.90" dia. x .065" (16 ga.) steel with B1020-2 grease packed bearings and 7/16" hex axles. Rollers are mounted 3/8" high. |
| ROLLER SPACING | Standard - 3", 6", 9" or 12" for carrying rollers. |
| BELT | Standard - Width is 3" less than the Between Frames dimension. Belt length required is twice the conveyor section length. |
| COUPLINGS | Standard - Welded butt. |

C1238 Slider Bed Sections

HOW TO ORDER

Quantity	Code No.	W	Length
1	C1238	21"	120"

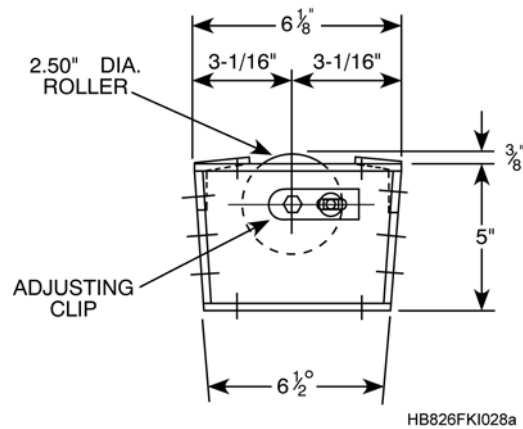


FRAME	Standard - "PR" rail - 5" x 1-1/2" x .120" (11 ga.) formed steel channel.
WIDTHS	Standard - 15", 21", 27", 33" and 39" Between Frames.
LENGTHS	Standard - 12" through 120" in 3" increments only.
CAPACITY	1000# per 10'-0" section.
SLIDER BED	Standard - 14 ga. hot rolled steel.
BELT	Standard - Width is 3" less than the Between Frames dimension. Belt length required is twice the conveyor section length.
COUPLINGS	Standard - Welded butt.

C1267 Vertical Bend

HOW TO ORDER

Quantity	Code No.	W	Option
1	C1267	21"	---

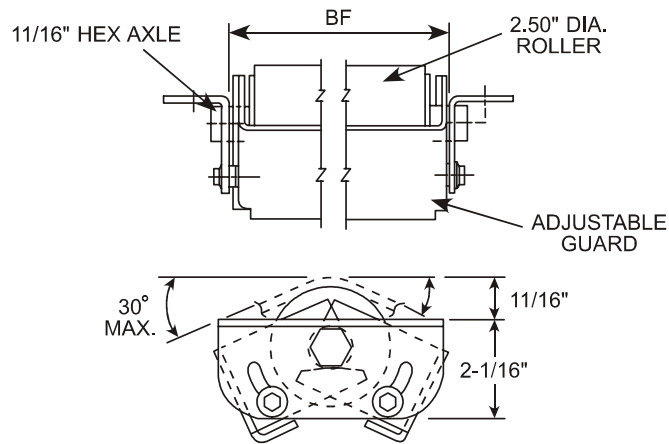


FRAME	Standard - 5" x 1-1/2" x .120" (11 ga.) formed steel channel.
WIDTHS	Standard - 15", 21", 27", 33" and 39" Between Frames.
ROLLER	Standard - 2.50" dia. x .120" (11 ga.) steel with B1064-2 grease packed bearings and 11/16" hex axle. Option - Regreaseable bearings are optional (add ("TG" on How To Order).
BELT	Standard - Width is 3" less than the Between Frames dimension. Belt length required is 12" per unit. Note: 1 unit = 6-1/2°. For greater degrees, additional units are required. Use two for 13°, three for 20°, four for 26°.
COUPLINGS	Standard - Welded butt.

C1245 - Snub Roller

HOW TO ORDER

Quantity	Code No.	W	Option
1	C1245	21"	---



HB826FKI029a

CONVEYOR WIDTHS
ROLLER

Standard - 12", 15", 21", 27", 33" and 39" Between Frames.

Standard - 2.50" dia. x .120" (11 ga.) steel with B1064-2 grease packed bearings and 11/16" hex axle.

Option - Regreaseable bearings are optional (add "RG" on How to Order).

SNUB ROLLER

Standard - A snub roller is used to carry a return belt that is snubbed over 10°, but not more than 30°.

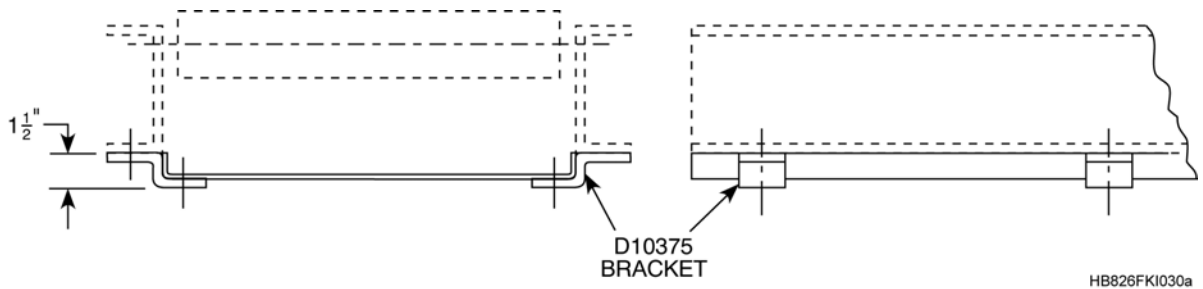
BELT

Standard - Maximum belt width is 3" less than the Between Frames dimension.

D10374 Bottom Closure

HOW TO ORDER

Quantity	Code No.	W	Length
2	D10374	21"	117"

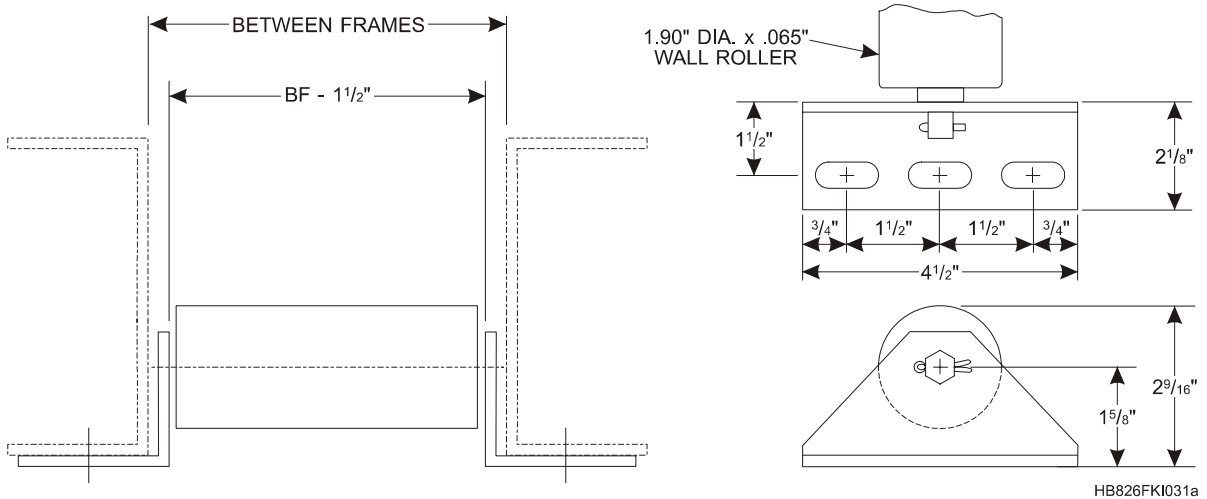


LENGTH	Standard - 10'-0". Option - 12" through 120" (in 3" increments).
MATERIAL	Standard - 14 ga. sheet metal.
ASSEMBLY	Standard - D10375 brackets with hardware provided on 24" centers.

C1304 Belt Trainer Roller

HOW TO ORDER

Quantity	Code No.	W
1	C1304	27"



WIDTHS

Standard - 15", 21", 27", 33" and 39" Between Frames.

ROLLER

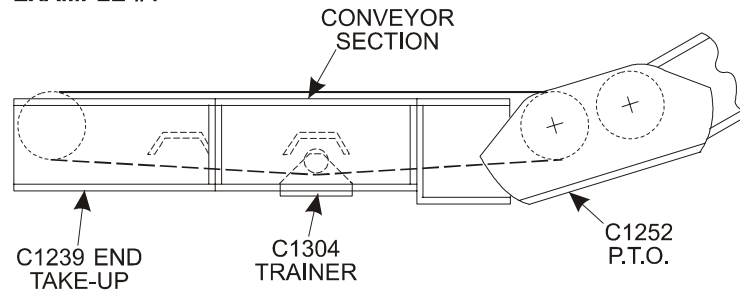
Standard - 1.90" dia. x .065" (16 ga.) steel with B1020-2 grease packed bearings and 7/16" hex axle.

BELT

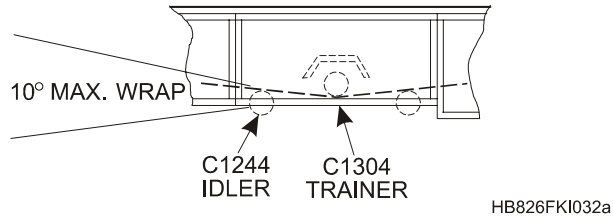
Standard - Maximum belt width is 3" less than the Between Frames dimension.

This assembly can be used to help track the belt on a short power feeder section of the belt conveyor per the examples.

EXAMPLE #1



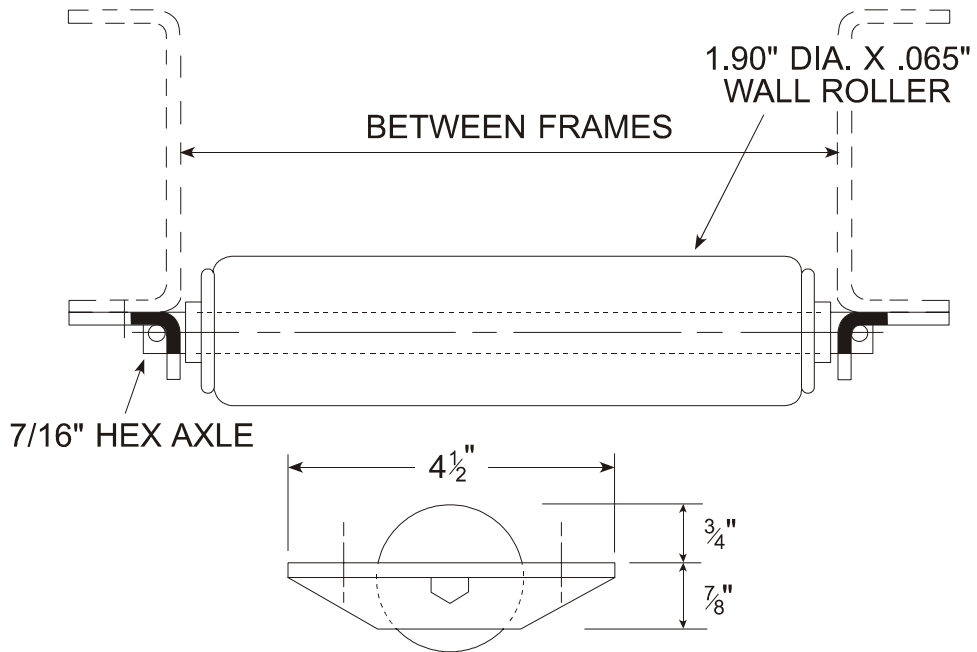
EXAMPLE #2



C1304 Belt Trainer Roller

HOW TO ORDER

Quantity	Code No.	W
1	C1244	21"



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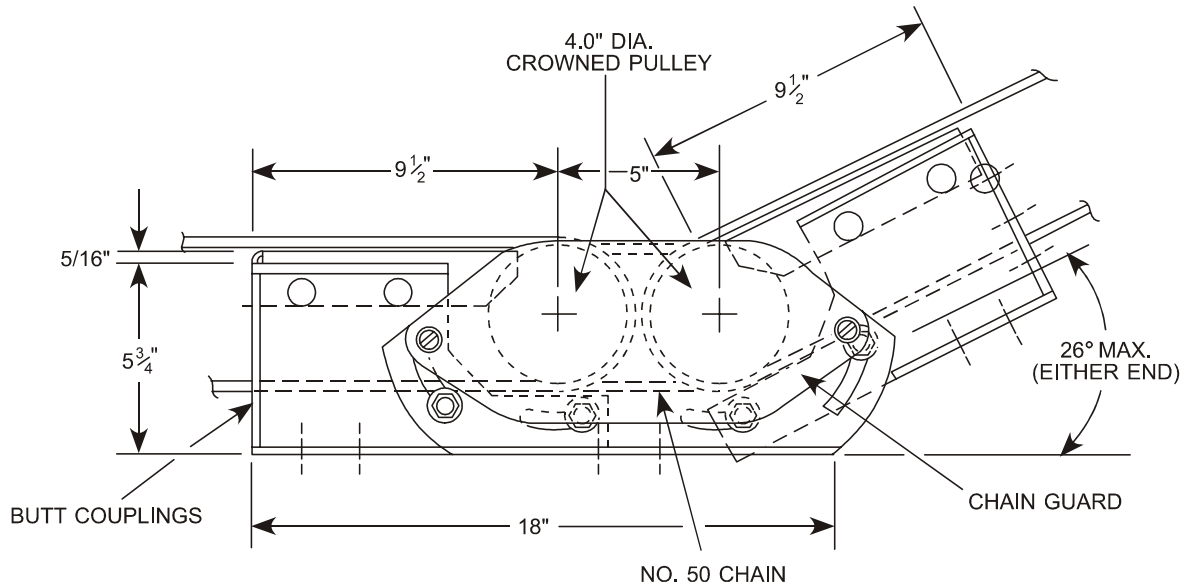
WIDTHS	Standard - 15", 21", 27", 33" and 39" Between Frames.
ROLLER	Standard - 1.90" dia. x .065" (16 ga.) steel with B1020-2 grease packed bearings and 7/16" hex axle.
IDLER ROLLER	Standard - Idler roller used to carry a straight return belt snubbed no more than 10°. Idler roller spacing should not exceed 10'-0" centers.
BELT	Standard - Maximum belt width is 3" less than the Between Frames dimension.

C1252 Two Pulley P.T.O.

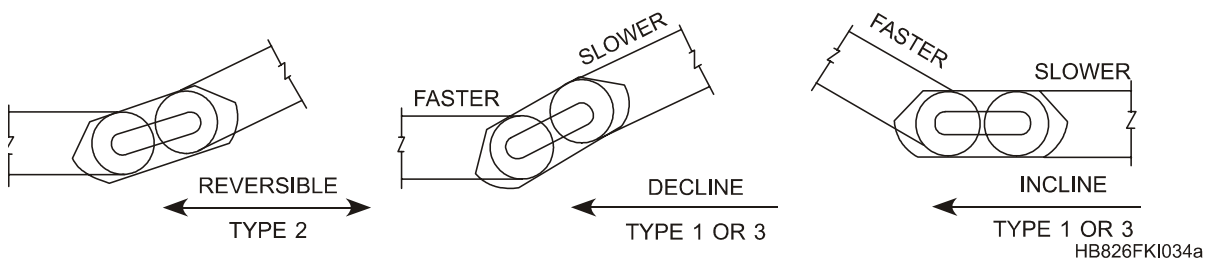
HOW TO ORDER

Quantity	Code No.	W	Sprocket Type	Options
1	C1252	21"	1	---

Note: Please list options.



TYPICAL APPLICATIONS



Sprocket Combination Table

Type	Sprockets	Bore	Ratio
1	50BH16/50GH14	1" dia.	1.14 to 1
2	50BH16/50BH16	1" dia.	1 to 1
3	50BH20/50BH14	1" dia.	1.43 to 1

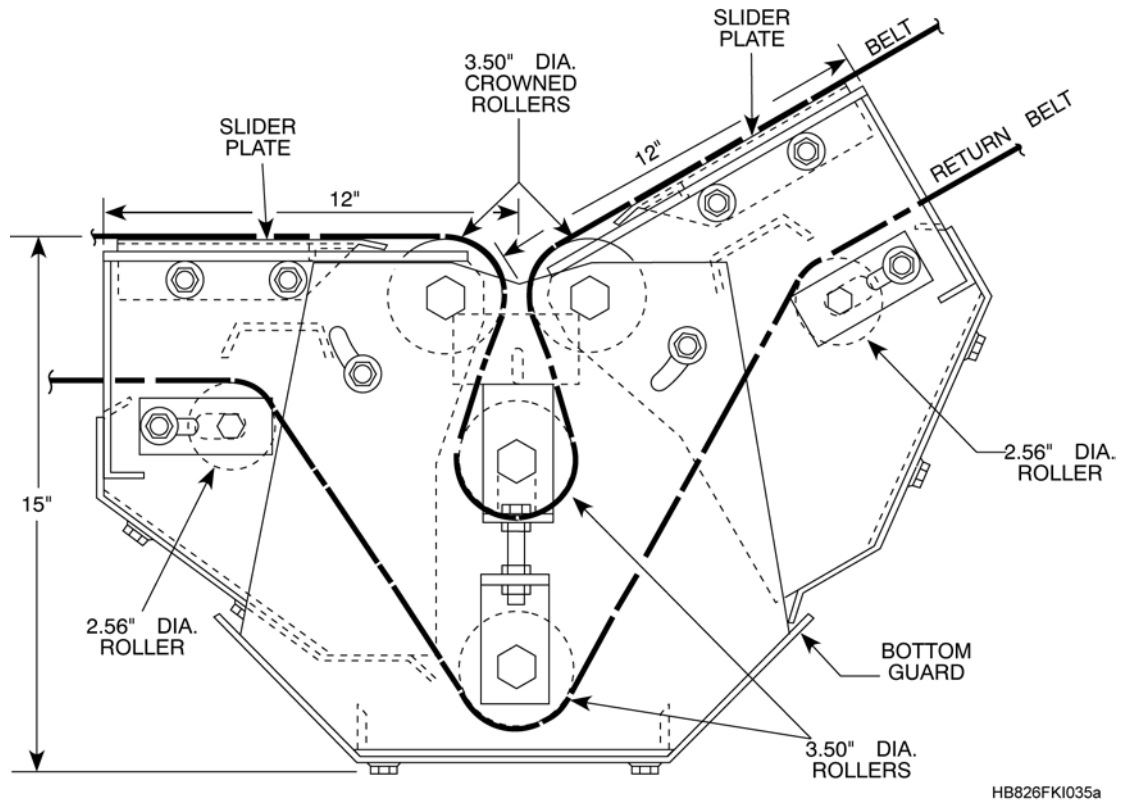
WIDTHS	Standard - 15", 21", 27", 33" and 39" Between Frames.
CAPACITY	Standard - 275# effective belt pull.
BELT	Standard - Width is 3" less than the Between Frames dimension. Belt length required is 25-1/2" each pulley Note: Due to possible belt tracking problems, it is recommended that the minimum length of the level power feeder unit be three times the belt width for one way travel and five times the belt width for reversing service.
COUPLINGS	Standard - Welded butt.
PULLEY	Standard - 4.0" dia. crowned roller with pre-lubricated outboard flanged block bearings and 1-3/16" dia. shaft. The P.T.O. chain is totally enclosed for safety. The P.T.O. is furnished as shown for position of chain (near side). This unit is recommended for reversible operation. This unit may be used for incline or horizontal conveyors. Option - Opposite hand (add "OPP" on How To Order). Regreaseable flanged block bearings are optional (add "RG" on How To Order). Sprocket combination must be specified by type.

C1418 Three Roller Device

HOW TO ORDER

Quantity	Code No.	W	Options
1	C1418	21"	---

Note: Please list options.



Note: This unit is used for Incline or Decline Conveyors only.

WIDTHS	Standard - 15", 21", 27", 33" and 39" Between Frames.
CAPACITY	Standard - 900# effective belt pull.
ROLLERS	Standard - 3.50" dia. x .300" wall with power service grease packed bearings and 1-1/16" hex axle.
BELT	Standard - Width is 3" less than the Between Frames dimension. Belt length required is 76". Option - Regreaseable bearings are optional 9add "RG" on How To Order).
COUPLINGS	Standard - Welded butt.

Note: Due to possible belt tracking problems, the following minimum power feeder lengths are recommended.

B.F.	15"	21"	27"	33"	39"
Belt Width	12"	18"	24"	30"	36"
Length	3'-0"	4'-0"	5'-0"	5'-0"	5'-0"

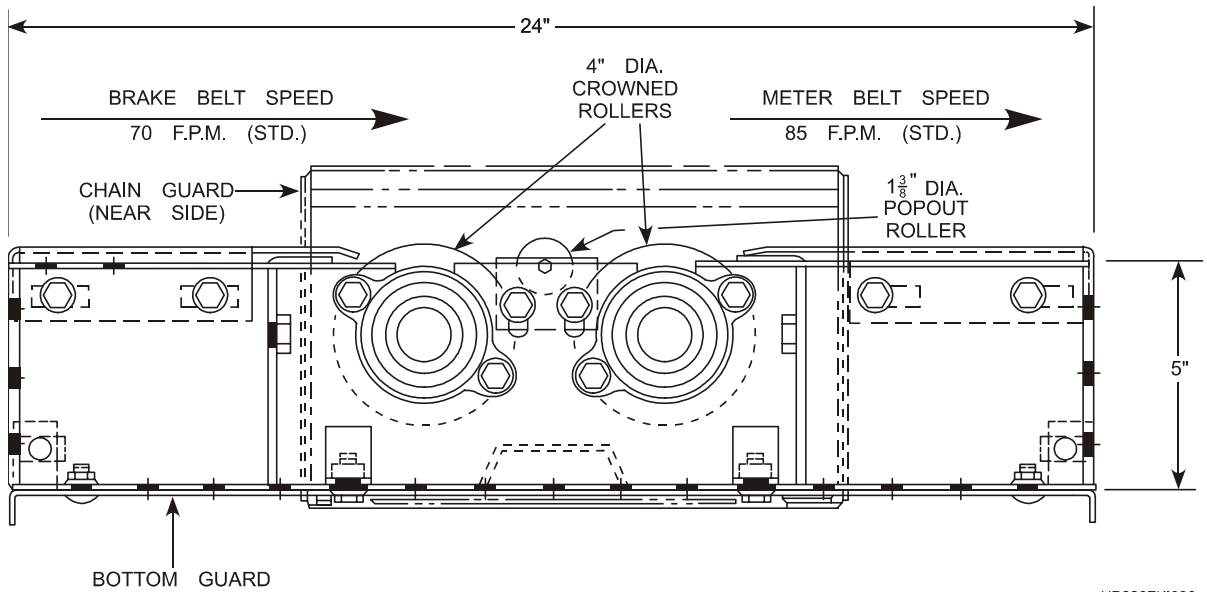
Note: Not recommended for reversible operations.

C1504 Power Take-Off

HOW TO ORDER

Quantity	Code No.	W	Ratio	Options
1	C1504	21"	1.25"1	---

Note: Please list options.



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Note: For use with Level Belt Conveyors only.

WIDTHS	Standard - 15", 21", 27", 33" and 39" Between Frames.
CAPACITY	Standard - 275# effective belt pull.
PULLEY	Standard - 4.0" dia. machine crowned roller with pre-lubricated flange block bearings and 1-3/16" dia. shaft. The P.T.O. chain is totally enclosed for safety. The P.T.O. is furnished as shown with sprockets near side. Option - Opposite hand (add "OPP" on How To Order). Regreaseable bearings are optional (add "RG" on How To Order).
BELT	Standard - Width is 3" less than the Between Frames dimension. Belt length required is 52", (26" each side).
COUPLINGS	Standard - Welded butt.

Standard speed ratios are shown in the table below. For other speed ratios consult the factory.

Sprocket Combination Table (Nominal)		
Sprockets	Bore	Ratio
50GH14/50GH14	1" dia.	1:1
50BH14/50BH17 (Std.)	1" dia.	1.25:1
50BH14/50BH21	1" dia.	1.50:1
50BH14/50BH22	1" dia.	1.60:1
50BH14/50BH25	1" dia.	1.80:1
50BH14/50BH28	1" dia.	2:1

Note: Due to possible belt tracking problems the length of the metering belt conveyor should be five or more times the width of the belting. Also, for units with less than a seven-to-one length to width ratio, it is recommended that the slider bed is used, and belting specifications be considered.

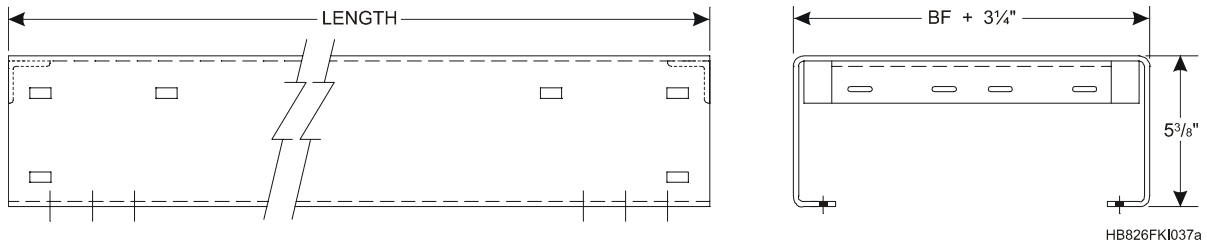
C1286 Slider Bed - Box Type Slider Tread

Note: Assembles with standard drives, end rolls and supports.

HOW TO ORDER

Quantity	Code No.	W	Length	Options
1	C1286	27"	120"	C

Note: Please list options.

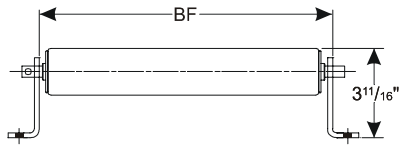


FRAME	Standard - 11 ga. (.120") formed steel with formed angle cross braces.
WIDTHS	Standard - 15", 21", 27", 33" and 39" Between Frames. Overall width is Between Frames + 3-1/4".
LENGTH	Standard - 12" through 120" in 3" increments.
CAPACITY	Standard - 1000 lbs. per 10'-0" maximum load.
BELT	Standard - Maximum belt width is 3" less than the Between Frames dimension. Belt length required is twice the conveyor section length.
COUPLINGS	Standard - Formed angle couplings and cross brace. Option - For hardware to attach end drive or end roller unit (order option "C" on How To Order) (Includes one pair formed angle couplings.)

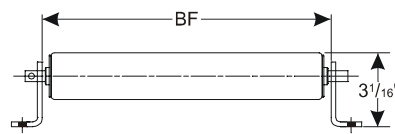
Return Rollers - For Box Type Slider Bed

HOW TO ORDER

Quantity	Code No.	W
1	C1284	27"



C1283
Required with End Roll Units
1.90" dia. x 16 ga. roller with
B1020-2 bearings and 7/16" hex axle

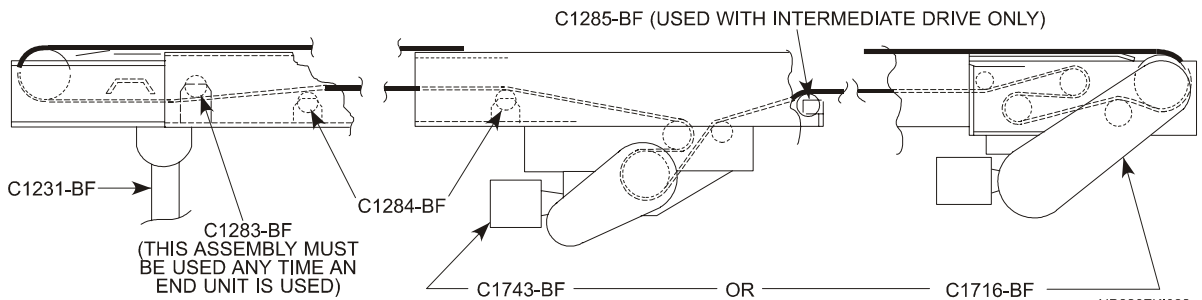


C1284
Required on 10'-0" Centers
1.90" dia. x 16 ga. roller with
B1020-2 bearings and 7/16" hex axle



C1285
Required with int. drive
2.56" dia. x .180" roller with power
service bearings and 1 1/16" hex axle

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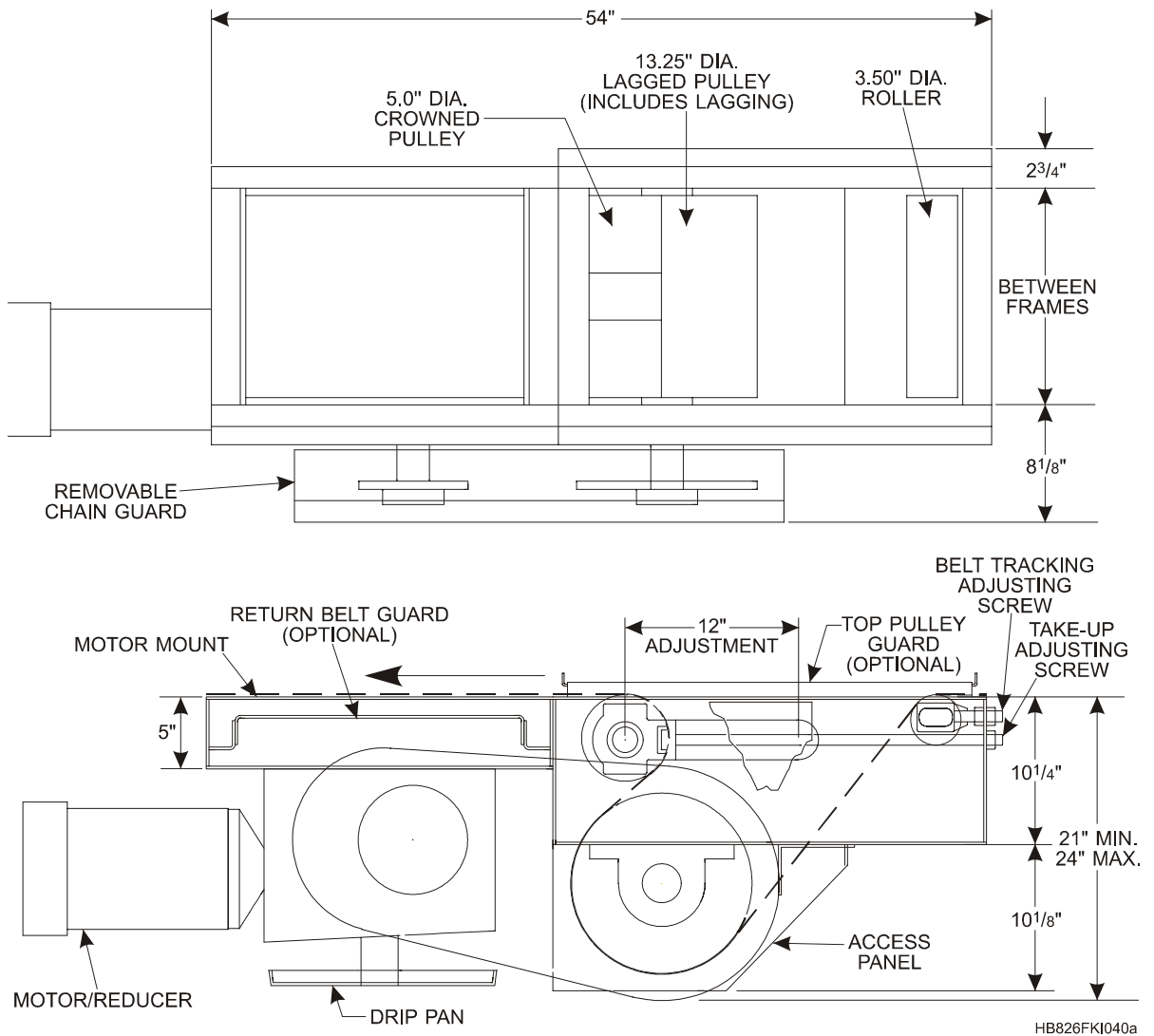
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C1292 Intermediate Drive - Heavy Duty

HOW TO ORDER

Quantity	Code No.	W	Speed	HP	Voltage	Options
1	C1292	33"	70	2	230	---

Note: Please list options.



CONVEYOR WIDTH	Standard - 27", 33", 39", 45", 51" and 57" Between Frames.
CAPACITY	Standard - 1500# effective belt pull, (5 HP maximum).
SPEED	Standard - 70 FPM standard with 35 R.P.M reducer. Reducer has a 19H tooth sprocket, pulley has a 32 tooth sprocket. All driver sprockets have hardened teeth. See Motor/Reducer Selection Table on the next page for other standard speeds and horsepower requirements. Option - Other speeds available, consult factory.
DRIVE	Standard - Furnished as shown for position of motor/reducer, unless specified opposite hand. This drive may be mounted under a level or inclined heavy duty conveyor and should be positioned so that the belt is "pulled" around the drive pulley first. The drive pulley and chain are totally enclosed for safety. Option - The top pulley guard is optional.
PULLEY	Standard - 13.25" finished dia. straight faced lagged pulley with pre-lubricated outboard pillow block bearings and 2-7/16" dia. shaft.
BELT	Standard - Width is 3" less than the Between Frames dimension. Belt length required is 42". Option - Return belt guard that fits over the reducer mount is available.
BEARINGS	Standard - All bearings are grease packed.

Standard Options for How To Order		Call Up
1	Opposite hand for location of motor/reducer	OPP
2	Regreaseable Bearings	RG
3	Brakemotor	B
4	Return belt guard for bottom guarding total drive assembly	BG
5	Top Pulley Guard	PG

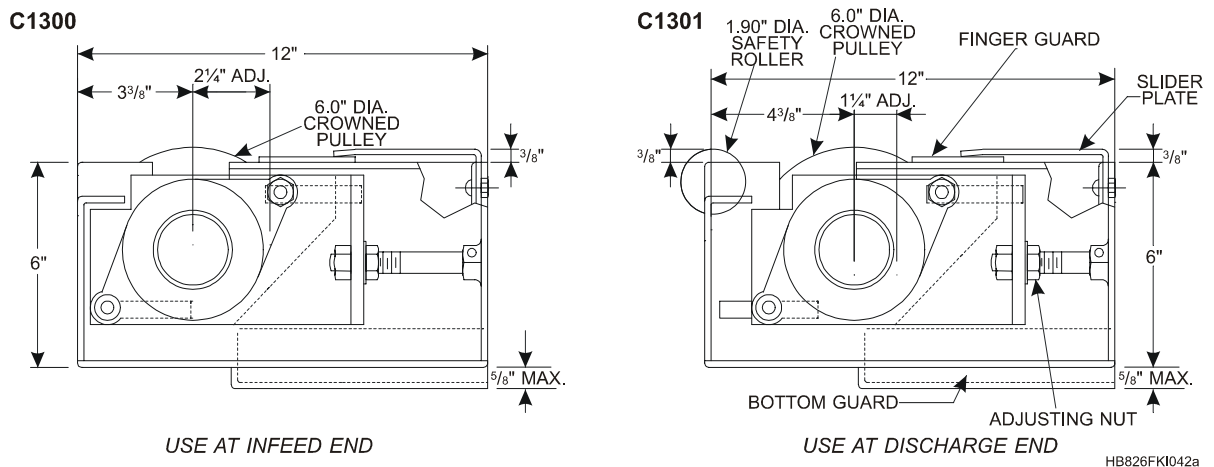
Motor/Reducer Selection Table					
Nominal Belt Speed (FPM)	Belt Pull (lbs.)	H.P. Required	Nominal Reducer Output (RPM)	Number of Teeth in Reducer Sprocket	Chain Size
33	760	1	22	15H	60
	1145	1-1/2			60
	1500	2			80
40	630	1	22	17H	60
	955	1-1/2			60
	1270	2			80
	1500	3			100
50	520	1	29	16H	60
	780	1-1/2			60
	1040	2			80
	1500	3			100
60	440	1	29	19H	60
	655	1-1/2			60
	875	2			80
	1355	3			100
70	565	1-1/2	35	19H	60
	750	2			80
	1135	3			80
	1500	5			100
80	495	1-1/2	35	22H	60
	665	2			80
	1000	3			80
	1500	5			100
110	520	2	58	18H	80
	775	3			80
	1305	5			100

C1300 and C1301 End Roll - Heavy Duty

HOW TO ORDER

Quantity	Code No.	W	Options
1	C1300	39"	---

Note: Please list options.



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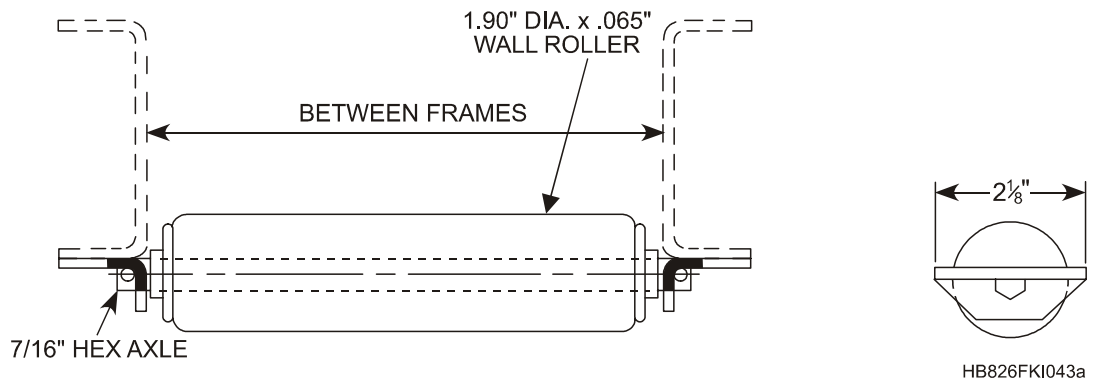
CONVEYOR WIDTH	Standard 27", 33", 39", 45", 51" and 57" Between Frames.
CAPACITY	Standard - 1500# effective belt pull.
SAFETY ROLLER	Standard - 1.90" dia. x .065" (16 ga.) steel roller with B1020-2 grease packed bearings and 7/16" hex axle. Option - Regreaseable flange block bearings are optional (add "RG" on How To Order).
PULLEY	Standard - 6'-0" dia. crowned pulley with pre-lubricated outboard flanged bearings and 1-11/16" dia. shaft.
BELT	Standard - Width is 3" less than the Between Frames dimension. For C1300, belt length required is 27". For C1301, belt length required is 25".
COUPLINGS	Standard - Welded butt couplings.

C1404 Idler Roller - (For Heavy Duty Tread Section)

HOW TO ORDER

Quantity	Code No.	W
1	C1404	39"

Note: Please list options.



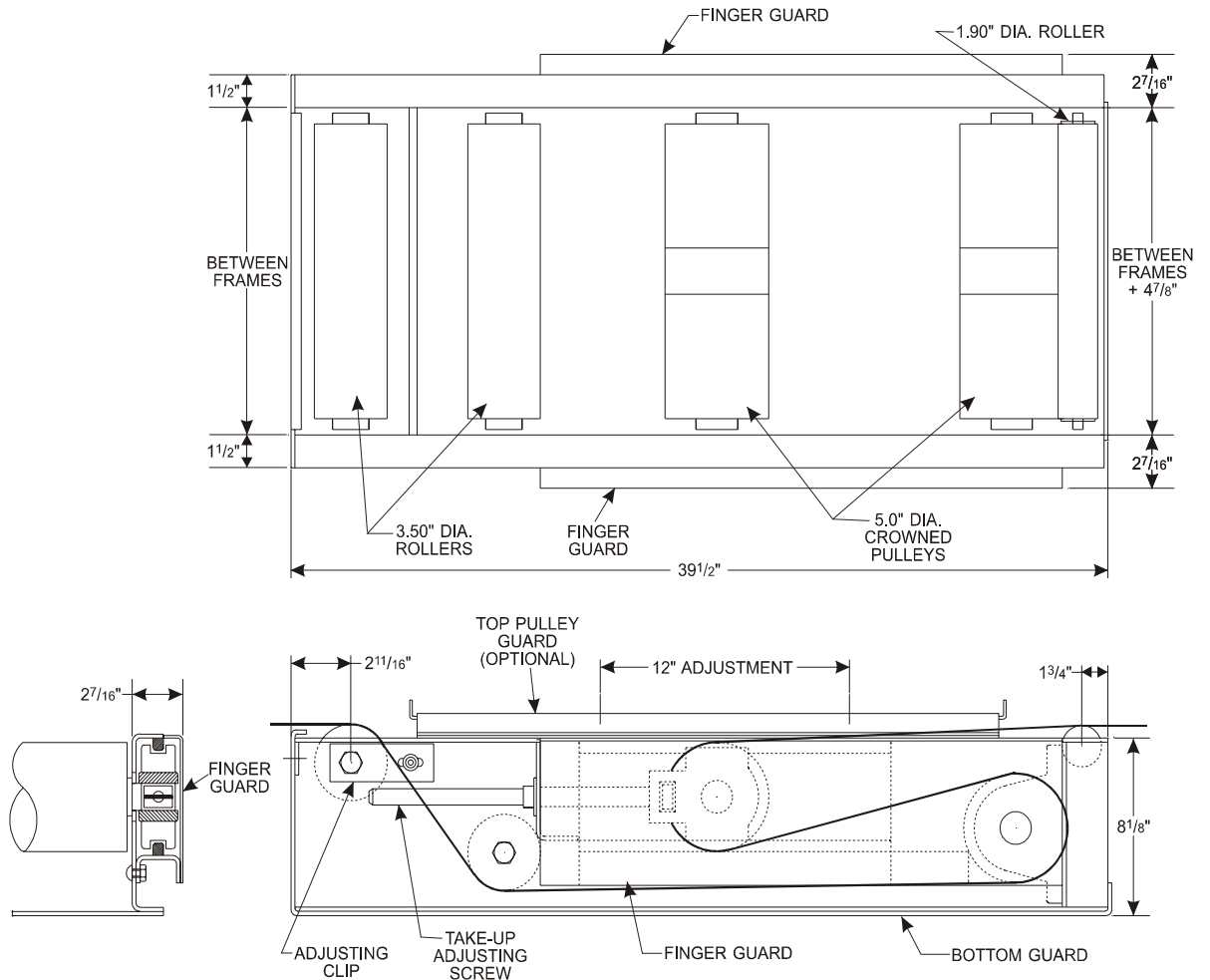
WIDTHS	Standard - 27", 33", 39", 45", 51" and 57" Between Frames.
ROLLER	Standard - 1.90" dia. x .065" (16 ga.) steel roller with B1020-2 grease packed bearings and 7/16" hex axle.
IDLER ROLLER	Standard - Idler roller used to carry a straight return belt snubbed no more than 10°. Idler roller spacing should not exceed 10'-0" centers.
BELT	Standard - Width is 3" less than the Between Frames dimension.

C1291 Intermediate Take-Up - Heavy Duty

HOW TO ORDER

Quantity	Code No.	W	Options
1	C1291	33"	---

Note: Please list options.

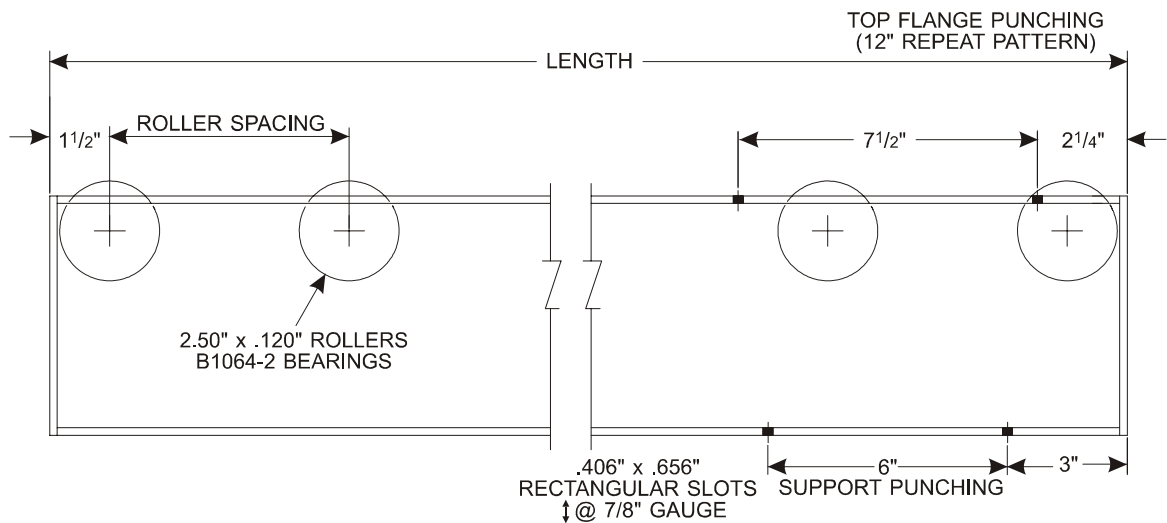


CONVEYOR WIDTHS	Standard - 27", 33", 39", 45", 51" and 57" Between Frames.
CAPACITY	Standard - 1500# effective belt pull.
TAKE-UP ROLLER	Standard - 5'-0" dia. machine crowned roller with pre-lubricated outboard bearings and 1-11/16' dia. shaft. Sides and bottom totally enclosed for safety.
PULLEY GUARD	Option - Pulley guard on top is available if take-up is accessible to personnel (add "PG" on How To Order).
BELT	Standard - Width is 3" less than the Between Frames dimension. Belt length required is 39".
BEARINGS	Option - Regreaseable bearings are optional (add "RG" on How To Order.)

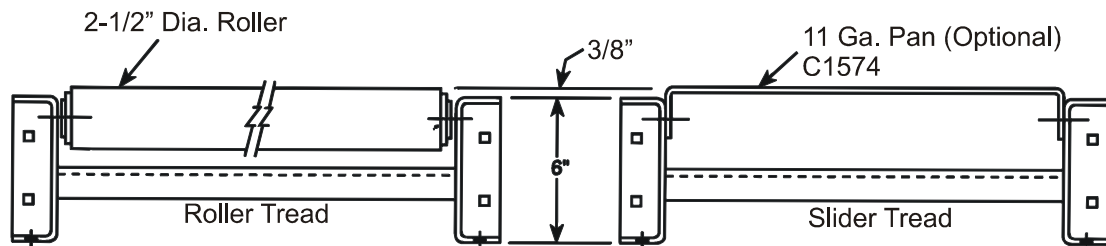
C1298 Conveyor Section - Heavy Duty

HOW TO ORDER

Quantity	Code No.	W	Length	Roller Spacing
1	C1298	33"	120"	6"



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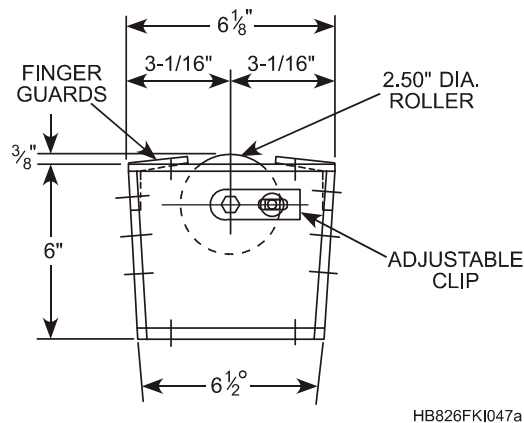
FRAME	Standard - 6" x 2" x .180" (7 ga.) formed steel channel.
WIDTHS	Standard - 27", 33", 39", 45", 51" and 57" Between Frames.
LENGTHS	Standard - 24" through 120" in 12" increments only.
CAPACITY	Standard - Maximum load is 2000 lbs. per 10'-0" section.
ROLLERS	Standard - 2.50" dia. x .120" (11 ga.) steel with B1064-2 grease packed bearings and 11/16" hex axles. Rollers are mounted 3/8" high.
ROLLER SPACING	Standard - 6", 9" or 12" for carrying rollers.
BELT	Standard - Width is 3" less than the Between Frame dimension. Belt length required is twice the conveyor section length.
COUPLINGS	Standard - Welded butt.

C1297 - Vertical Bend - Heavy Duty

HOW TO ORDER

Quantity	Code No.	W	Options
3	C1297	45"	---

Note: Please list options.



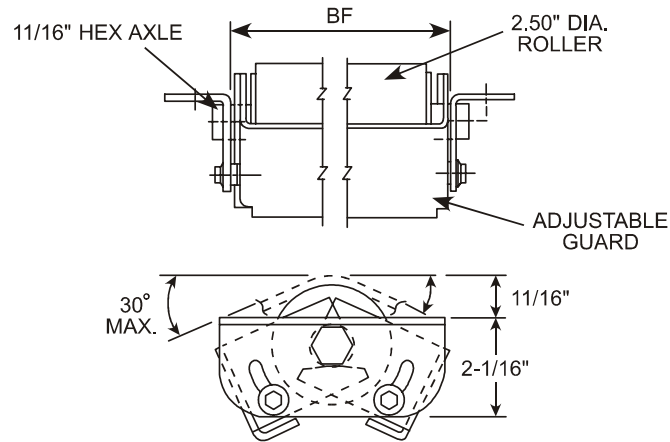
FRAME	Standard - 6" x 2" x .180" (7 ga.) formed steel channel.
WIDTHS	Standard - 27", 33", 39", 45", 51" and 57" Between Frames.
ROLLER	Standard - 2.50" dia. x .120" (11 ga.) steel with B1064-2 grease packed bearings and 1/16" hex axle. Option - Regreaseable bearings are optional (add "RG" on How to Order).
BELT	Standard - Width is 3" less than the Between Frames dimension. Belt length required is 12" per unit. Note: 1 unit = 6-1/2". For greater degrees, additional units are required. Use two for 13°, three for 20°, four for 26°.
COUPLINGS	Standard - Welded butt.

C1245 - Snub Roller

HOW TO ORDER

Quantity	Code No.	W	Options
3	C1245	27"	---

Note: Please list options.



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CONVEYOR WIDTHS

Standard - 27", 33", 39", 45", 51" and 57" Between Frames.

ROLLER

Standard - 2.50" dia. x .120" (11 ga.) steel with B1064-2 grease packed bearings and 11/16" hex axle.

Option - Regreaseable bearings are optional (add "RG" on How To Order).

SNUB ROLLER

Standard - A snub roller is used to carry a return belt that is snubbed over 10°, but not more than 30°.

BELT

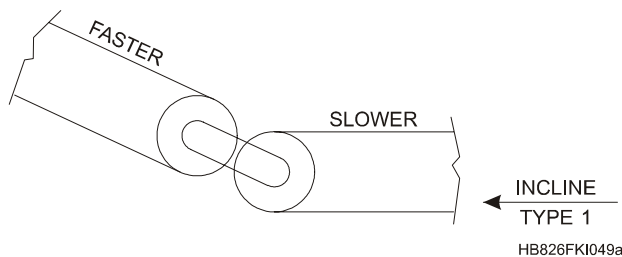
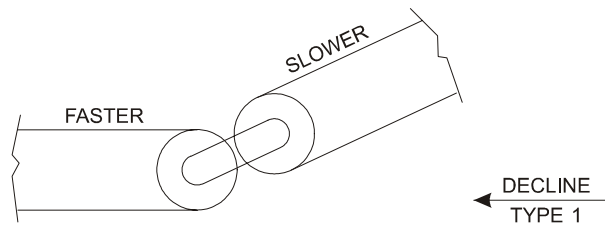
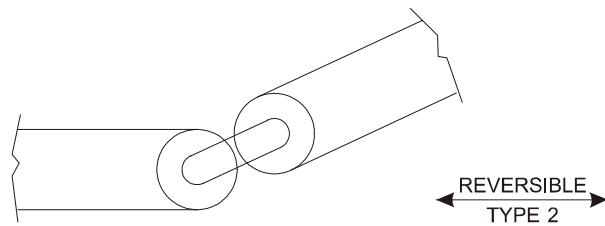
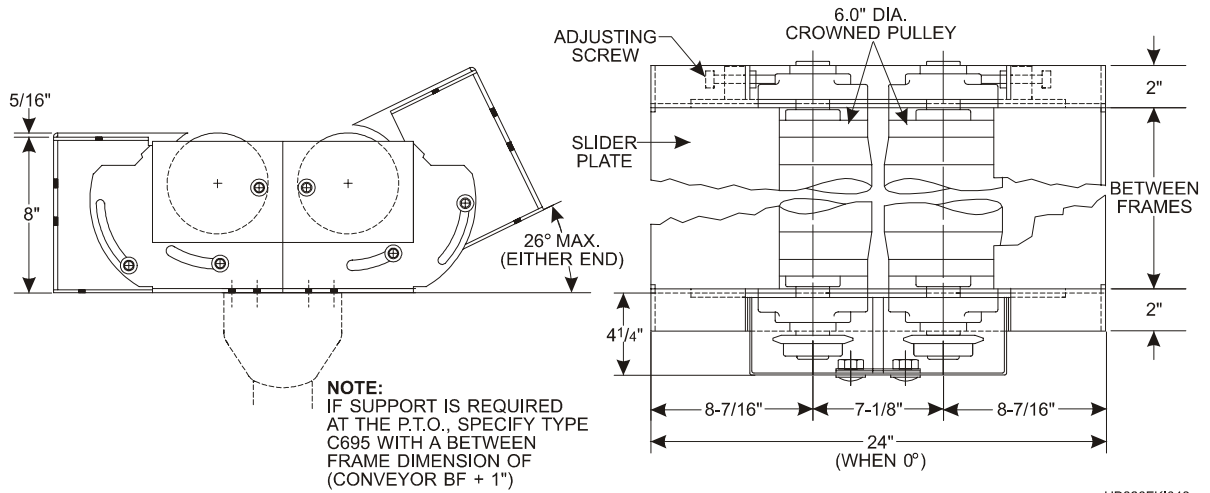
Standard - Maximum belt width is 3" less than the Between Frames dimension.

C1299 Two Pulley P.T.O. - Heavy Duty

HOW TO ORDER

Quantity	Code No.	W	Sprocket type	Options
1	C1299	33"	1	---

Note: Please list options.



WIDTHS	Standard - 27", 33", 39", 45", 51" and 57" Between Frames.
CAPACITY	Standard - 400# effective belt pull.
BELT	Standard - Width is 3" less than the Between Frames dimension. Belt length required is 26-1/2" each pulley
COUPLINGS	Standard - Welded butt.
PULLEY	Standard - 6'-0" dia. crowned pulley with pre-lubricated outboard flanged block bearings and 1-11/16" dia. shaft. This unit may be used for incline or horizontal conveyors. Option - Regreaseable flanged block bearings are optional (add "RG" on How To Order).
P.T.O.	Standard - P.T.O. chain is totally enclosed for safety. Furnished as shown. Option - For opposite hand (add "OPP" on How To Order).

Sprocket combinations must be specified by type.

Sprocket Combination Table			
Type	Sprockets	Bore	Ratio
1	60BH16/60GH14	1-11/16" dia.	1.14 to 1
2	60BH16/60BH16	1-11/16" dia.	1 to 1

Note: Due to possible belt tracking problems, the following are minimum recommended lengths for power feeders driven by the P.T.O.

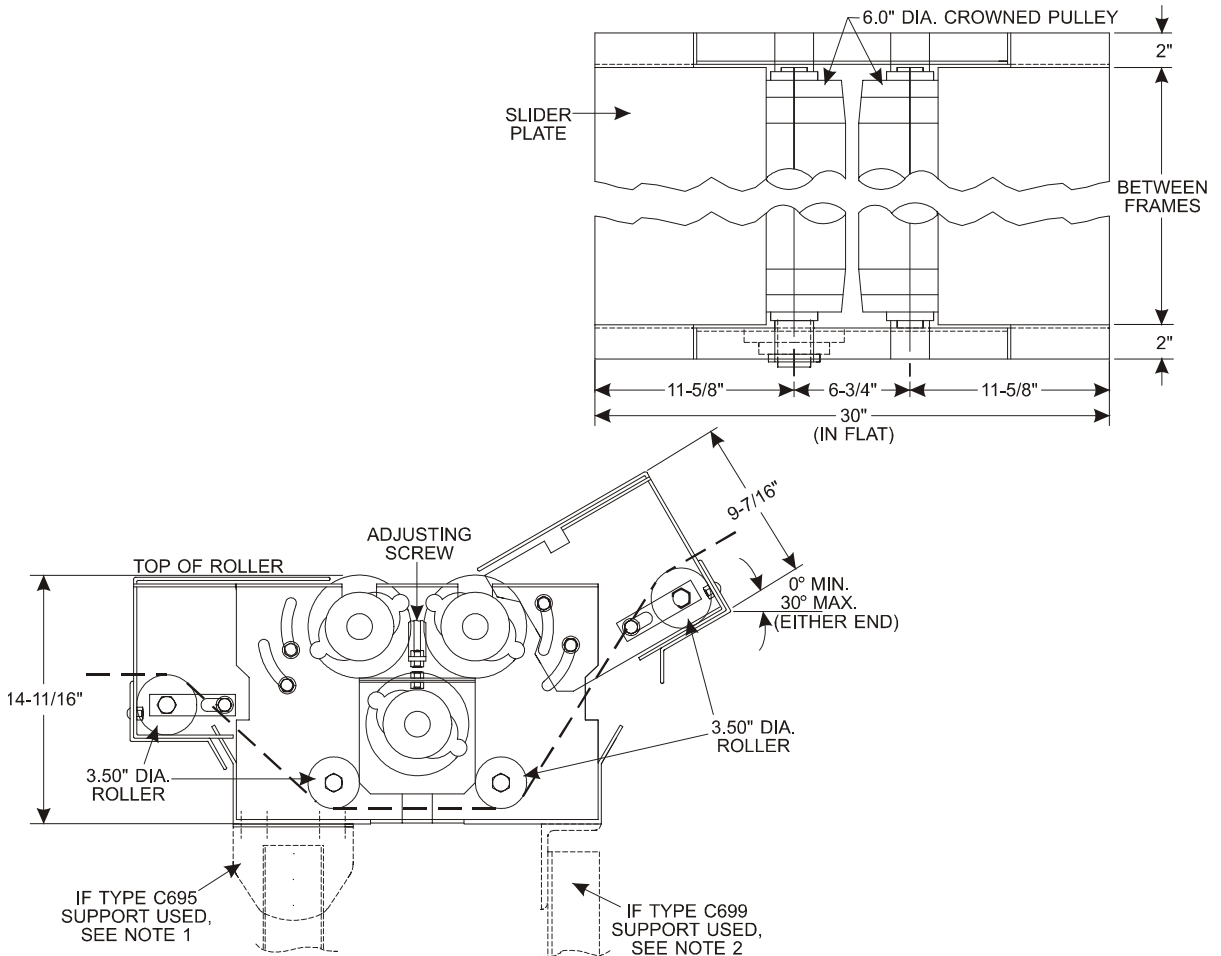
- One Way Travel = 3 x Belt Width
- Reversible Travel = 5 x Belt Width

C1296 - Three Pulley Device - Heavy Duty

HOW TO ORDER

Quantity	Code No.	W	Options
1	C1296	39"	---

Note: Please list options.



HB826FKI050a

Notes:

1. Type C695 Support can be used with horizontal or inclined unit. Specify support between frames as (conveyors W + 7/8").
2. Type C699 Support can only be used with horizontal unit. Specify support to be used with 6" rail.

WIDTHS	Standard - 27", 33", 39", 45", 51" and 57" Between Frames.
CAPACITY	Standard - 1500# effective belt pull.
RETURN ROLLERS	Standard - 3.50" dia. x .300" wall with power service grease packed bearings and 1-1/16" hex axle. Option - Regreaseable bearings are optional (add "RG" on How To Order).
PULLEYS	Standard - 6.0" dia. crowned pulley with pre-lubricated outboard flanged block bearings and 1-11/16" dia. shaft.
BELT	Standard - Width is 3" less than the Between Frames dimension. Belt length required is 98".
COUPLINGS	Standard - Welded butt.

Note: Due to possible belt tracking problems, the following are minimum recommended lengths for power feeders incorporating this 3 Pulley Device.

B.F.	27"	33"	39"	45"	51"	57"
Power Feeder Min. Lengths	5'-0"	5'-0"	5'-0"	6'-0"	6'-0"	7'-0"

Note: Not recommended for reversible operations.

Supports

C1230 Floor Single Leg Floor Support - 750 Pound Capacity

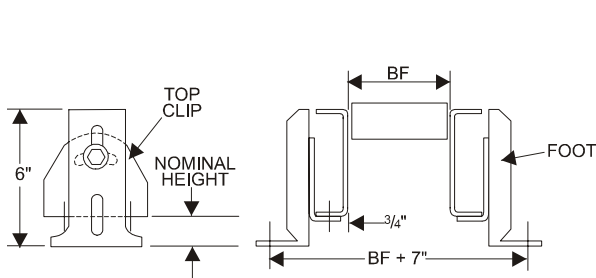
C1231 Floor Support - 1500 Pound Capacity

For use with AR, CR and PR Channel Frame Rails

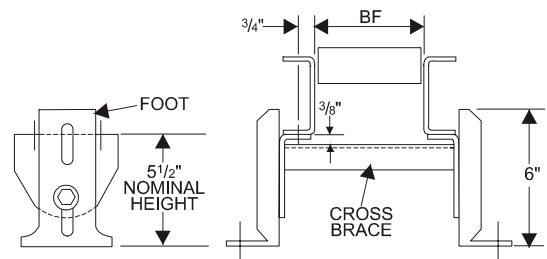
HOW TO ORDER

Description	Quantity	Code No.	W	Nominal Height	Knee Brace (if required)
Single Leg	1	C1230	SL*	28"	KB
Double Leg	1	C1231	21"	34"	KB
3 Rail	3	3C1231	33"	16"	No

*SL denotes single leg

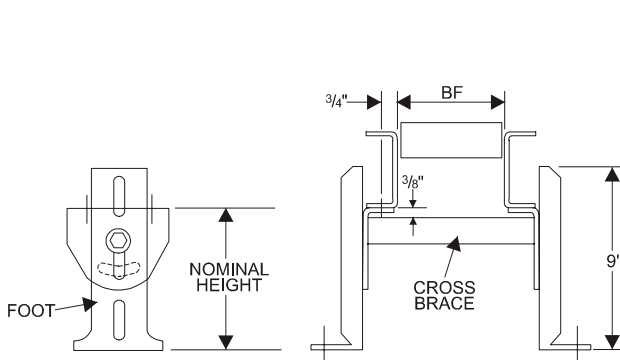


Nominal Heights 2-1/8", ± 1-1/2" Adjustment

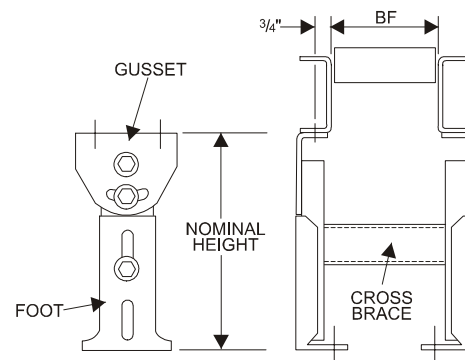


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Nominal Heights 5-1/2", ± 1-1/2" Adjustment

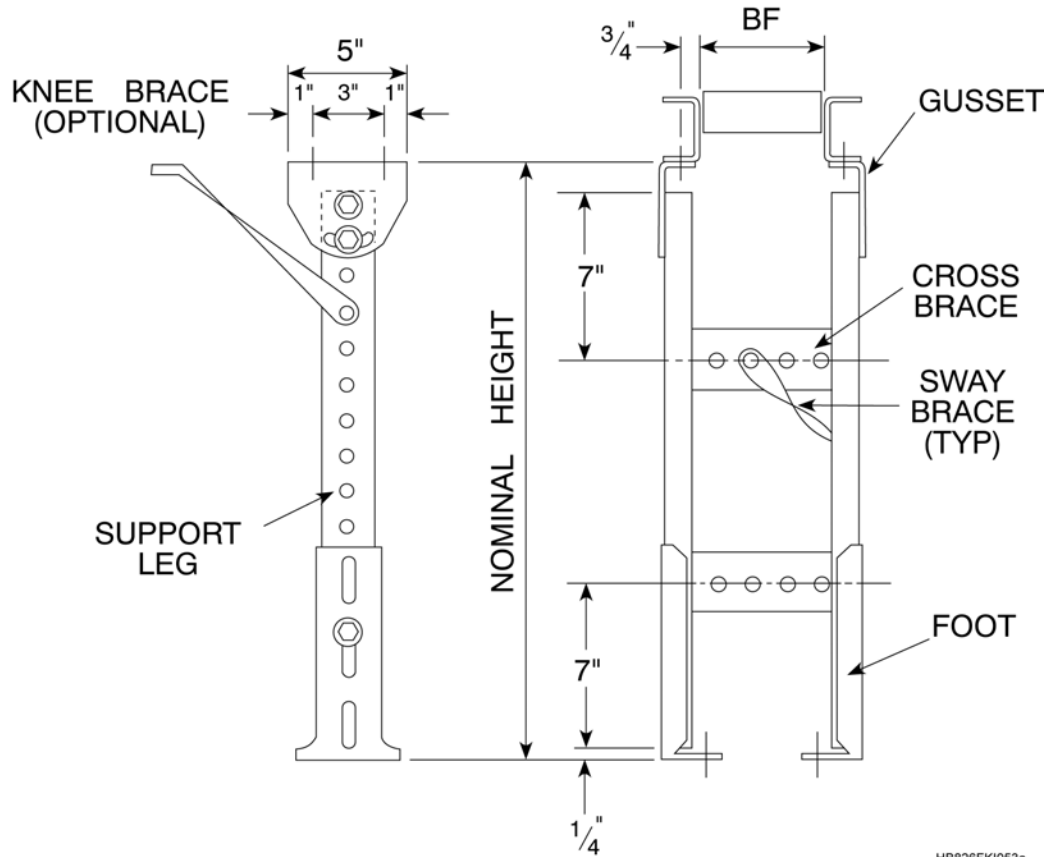


Nominal Heights 7-3/4", ± 2-1/4" Adjustment



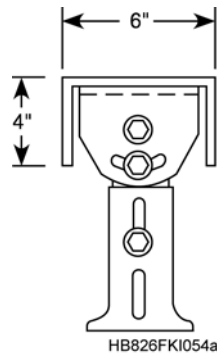
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Nominal Heights 11-1/2", ± 1-1/2" Adjustment



HB826FKI053a

Nominal Heights 16" to 124" in 1-1/2" increments, ± 3" Adjustment



To add cross-members for 3 rail use, add prefix 3 to code number on How To Order

Standard widths 6" to 51" Between Frames in 3" increments.

Heights range from 5/8" to 127" maximum

Use (1) 3/8" diameter anchor bolt per support foot

Sway bracing standard above 72" nominal height.

OPTIONS

Knee braces are available for supports with a nominal height over 16". (Add "KB" on How To Order.

For single leg supports, specify C1230 floor support on How To Order. Single leg support has a maximum capacity of 750 pounds.

Support Selection Table				
Nominal Height	Minimum Height	Maximum Height	Adjustment	Cross Brace
2-1/8"	5/8"	3-5/8"	3"	0
5-1/2"	4"	7"	3"	1
7-3/4"	5-1/2"	10"	4-1/2"	1
11-1/2"	10"	13"	3"	1
13"	11-1/2"	14-1/2"	3"	1
16"	13"	19"	6"	1
19"	16"	22"	6"	1
22"	19"	25"	6"	1
25"	22"	28"	6"	2
28"	25"	31"	6"	2
31"	28"	34"	6"	2
34"	31"	37"	6"	2
37"	34"	40"	6"	2
40"	37"	43"	6"	2
43"	40"	46"	6"	2
46"	43"	49"	6"	2
49"	46"	52"	6"	2
52"	49"	55"	6"	2
55"	52"	58"	6"	3
58"	55"	61"	6"	3
61"	58"	64"	6"	3
64"	61"	67"	6"	3
67"	64"	70"	6"	3
70"	67"	73"	6"	4
73"	70"	76"	6"	4
76"	73"	79"	6"	4
79"	76"	82"	6"	4
82"	79"	85"	6"	4
85"	82"	88"	6"	4
88"	85"	91"	6"	4
91"	88"	94"	6"	4
94"	91"	97"	6"	4
97"	94"	100"	6"	4
100"	97"	103"	6"	4
103"	100"	106"	6"	4
106"	103"	109"	6"	4
109"	106"	112"	6"	4
112"	109"	115"	6"	4
115"	112"	118"	6"	4
118"	115"	121"	6"	4
121"	118"	124"	6"	4
124"	121"	127"	6"	4

Available in 1-1/2" increments.

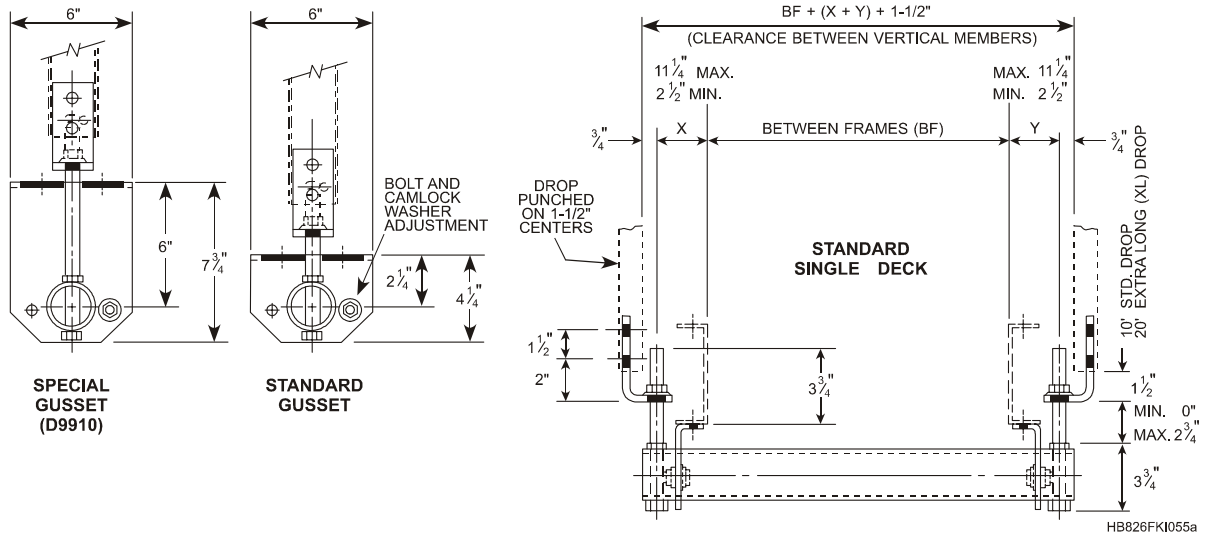
C1275 - Hanger Support - 1500 Pound Capacity

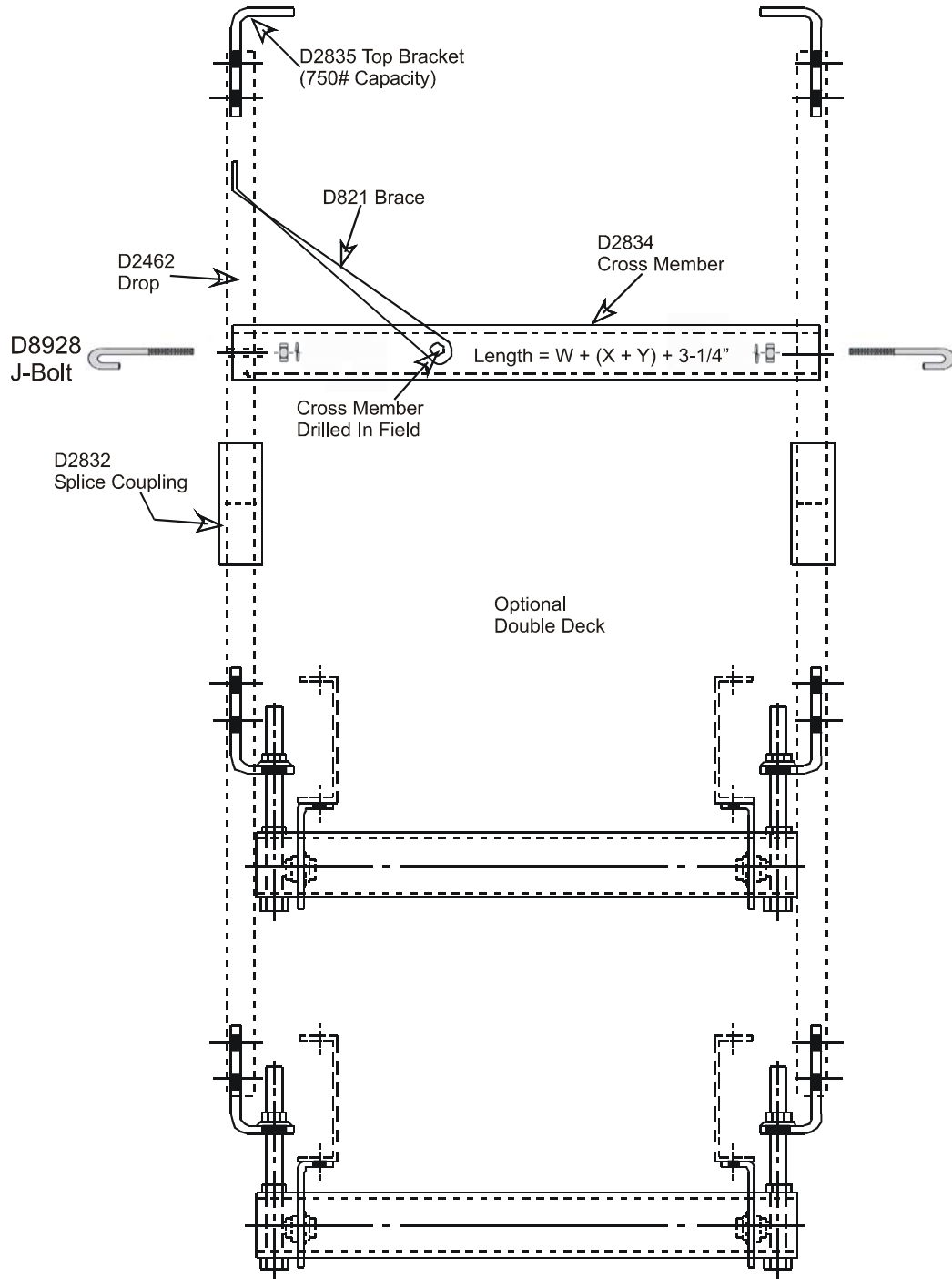
For use with Standard Duty Belt Conveyors

HOW TO ORDER

Quantity	Code No.	W	"X" dim.	"Y" Dim.	Options
6	C1275	21"	2-1/2"	2-1/2"	SP

Note: Please list options.





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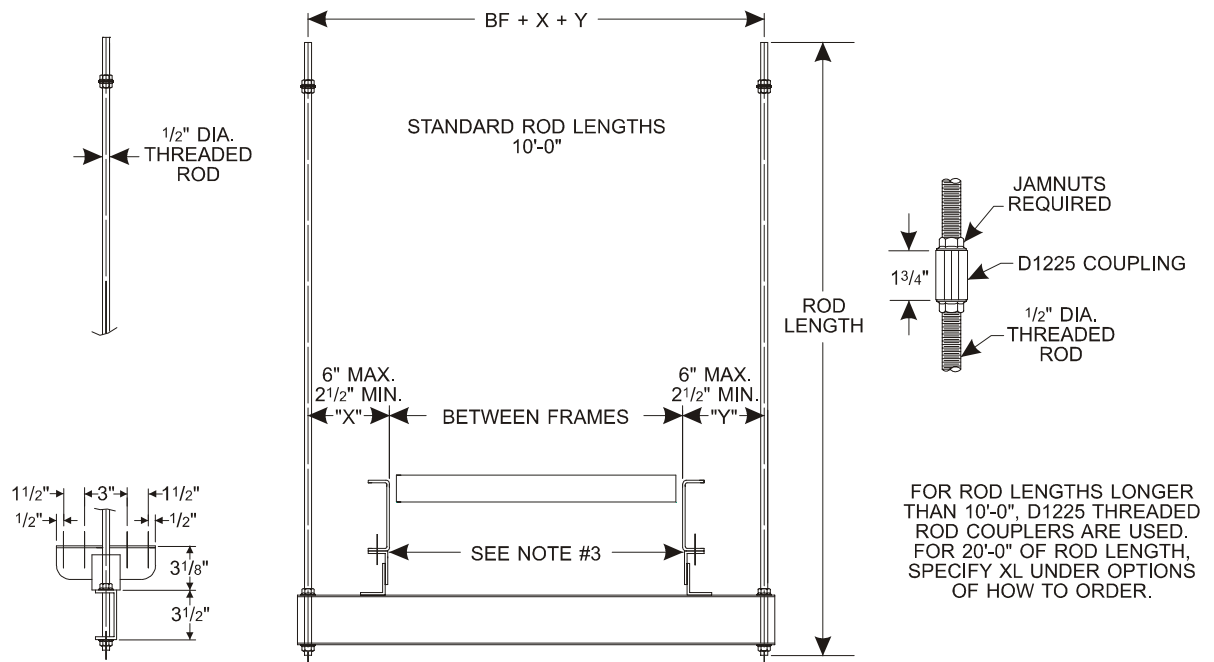
WIDTH	Standard - 15" through 39" Between Frames in 3" increments.
VERTICAL MEMBERS	Standard - 2-1/2" x 1" x .109" (12 ga.) formed channel. Standard length is 10'-0". Extra long length is 20'-0" (add "XL" in How To Order). Maximum clearance between vertical members = $W + X + Y - 1-1/2" = 63"$.
HORIZONTAL MEMBER	Standard - 2.50" x .120" wall tubing. Option - D9910 Spacer for use with VBLR and line shaft conveyors (add "SP" in How To Order).
ADJUSTING BOLT	Standard - 5/8" dia. threaded rod, 2-3/4" adjustment.
SPECIAL NOTE	<p>This support may be used for single or multiple decks. Maximum load capacity per deck is 1500# and maximum load capacity per support is 3000#. Attachments to overhead structures to be supplied by purchaser, and must be sufficient to develop the full capacity of the support.</p> <p>The following are "optional" and must be ordered separately:</p> <ul style="list-style-type: none"> D2835 - Top Bracket (750# capacity each) D2834 - Cross member D2832 - Splice Coupling D921 - Brace <p>To order additional hardware for second deck, order as C1275-W-X-Y-omit D2452 Drops.</p>
NOTES	<ol style="list-style-type: none"> 1. Vertical members shipped in nominal 10'-0" (std) or 20'-0" (XL) lengths. Cut to proper length in the field. 2. All components shipped loose.

C686 - Hanger Support - 750 Pound Capacity

For use with Standard Duty Belt Conveyors

HOW TO ORDER

Quantity	Code No.	W	"X" Dim.	"Y" Dim.	Options
3	C686	21"	2-1/2"	2-1/2"	---



HB826FKI057a

- | | |
|--------------------|--|
| WIDTHS | Standard - 15" through 39" Between Frames in 3" increments. |
| VERTICAL MEMBERS | Standard - 1/2" dia. threaded rod 10'-0" long.
Option - 20'0" rod length (add "XL" in How To Order). |
| HORIZONTAL MEMBERS | Standard - 3-1/2" x 1-1/2" x 11 ga. channel. Maximum Width = W + X + Y + 1-1/2" = 52-1/2".
Option - D2998 Spacer (3-1/2" wide) for use with VBLR and line shaft conveyors (add "SP" in How To Order). |
| NOTES | <ol style="list-style-type: none"> 1. Attachment to overhead structure to be supplied by purchaser and must be sufficient to develop the full capacity of the support. 2. Vertical members shipped in nominal 10'-0" lengths. Cut to proper length in the field. 3. All components shipped loose. |

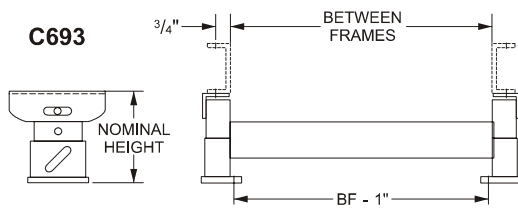
C693, C694, C695, C696 Floor Support - 3000 Pounds Capacity

For use with Heavy Duty Conveyors

HOW TO ORDER

Description	Quantity	Code No.	W	Nominal Height
Single Leg	3	C695	SL*	25"
Double Leg	7	C696	33"	43"
3 Rail	5	3C695	27"	26"

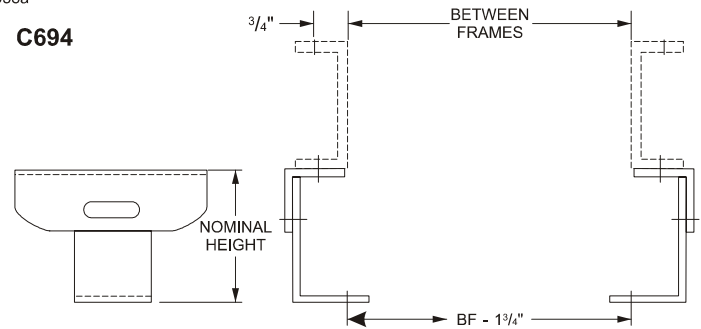
*SL denotes single leg.



NOMINAL HEIGHTS 6", 7", 9", 11" and 12"
±3/4" ADJUSTMENT

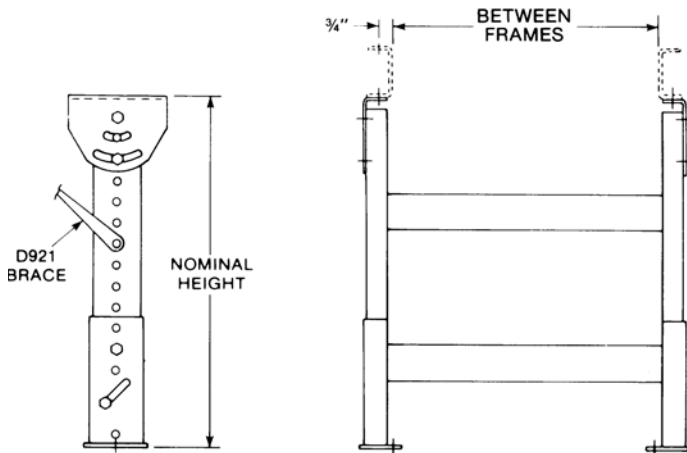
HB826FKI058a

C694



NOMINAL HEIGHTS 3", 4" and 5"
±7/16" ADJUSTMENT

HB826FKI059a



Nominal Heights 13" to 119", ± 1-1/2" Adjustment

HB826FKI060a

WIDTHS Standard - 27" through 57" Between Frames
 HEIGHTS Standard - 2-7/8" to 121-1/4" maximum
 KNEE BRACES Standard - Knee braces are standard at 23" nominal height and above.
 Use (1) 3/8" diameter anchor bolt per support foot.

Code No.	Nominal Height	Minimum Height	Maximum Height	Adjustment	Cross Brace
C694	3"	2-7/8"	3-3/4"	7/8"	0
	4"	3-7/8"	4-3/4"	7/8"	0
	5"	4-7/8"	5-3/4"	7/8"	0
C693	6"	5-5/8"	7-1/8"	1-1/2"	1
	8"	7-1/8"	8-5/8"	1-1/2"	1
	9"	8-5/8"	10-1/8"	1-1/2"	1
	11"	10-1/8"	11-5/8"	1-1/2"	1
	12"	11-5/8"	13-1/8"	1-1/2"	1
C695	13"	11-3/4"	14-3/4"	3"	1
	14"	13-1/4"	16-1/4"	3"	1
	16"	14-3/4"	17-3/4"	3"	1
	17"	16-1/4"	19-1/4"	3"	1
	19"	17-3/4"	20-3/4"	3"	1
	20"	19-1/4"	22-1/4"	3"	1
	22"	20-3/4"	23-3/4"	3"	2
	23"	22-1/4"	25-1/4"	3"	2
	25"	23-3/4"	26-3/4"	3"	2
	26"	25-1/4"	28-1/4"	3"	2
	28"	26-3/4"	29-3/4"	3"	2
	29"	28-1/4"	31-1/4"	3"	2
C696	31"	29-3/4"	32-3/4"	3"	2
	32"	31-1/4"	34-1/4"	3"	2
	34"	32-3/4"	35-3/4"	3"	2
	35"	34-1/4"	37-1/4"	3"	2
	37"	35-3/4"	38-3/4"	3"	2
	38"	37-1/4"	40-1/4"	3"	2
	40"	38-3/4"	41-3/4"	3"	2
	41"	40-1/4"	43-1/4"	3"	2
	43"	41-3/4"	44-3/4"	3"	2
	44"	43-1/4"	46-1/4"	3"	2
	46"	44-3/4"	47-3/4"	3"	2
	47"	46-1/4"	49-1/4"	3"	2
49"	47-3/4"	50-3/4"	3"	2	
50"	49-1/4"	52-1/4"	3"	3	

Code No.	Nominal Height	Minimum Height	Maximum Height	Adjustment	Cross Brace
C696	52"	50-3/4"	53-3/4"	3"	3
	53"	52-1/4"	55-1/4"	3"	3
	55"	53-3/4"	56-3/4"	3"	3
	56"	55-1/4"	58-1/4"	3"	3
	58"	56-3/4"	59-3/4"	3"	3
	59"	58-1/4"	61-1/4"	3"	3
	61"	59-3/4"	62-3/4"	3"	3
	62"	61-1/4"	64-1/4"	3"	3
	64"	62-3/4"	65-3/4"	3"	3
	65"	64-1/4"	67-1/4"	3"	3
	67"	65-3/4"	68-3/4"	3"	3
	68"	67-1/4"	70-1/4"	3"	3
	70"	68-3/4"	71-3/4"	3"	3
	71"	70-1/4"	73-1/4"	3"	3
	73"	71-3/4"	74-3/4"	3"	3
	74"	73-1/4"	76-1/4"	3"	4
	76"	74-3/4"	77-3/4"	3"	4
	77"	77-1/4"	79-1/4"	3"	4
	79"	77-3/4"	80-3/4"	3"	4
	80"	79-1/4"	82-1/4"	3"	4
	82"	80-3/4"	83-3/4"	3"	4
	83"	82-1/4"	85-1/4"	3"	4
	85"	83-3/4"	86-3/4"	3"	4
	86"	85-1/4"	88-1/4"	3"	4
	88"	86-3/4"	89-3/4"	3"	4
	89"	88-1/4"	91-1/4"	3"	4
	91"	89-3/4"	92-3/4"	3"	4
	92"	91-1/4"	94-1/4"	3"	4
	94"	92-3/4"	95-3/4"	3"	4
	95"	94-1/4"	97-1/4"	3"	4
97"	95-3/4"	98-3/4"	3"	4	
98"	97-1/4"	100-1/4"	3"	4	
100"	98-3/4"	101-3/4"	3"	4	
101"	100-1/4"	103-1/4"	3"	4	
103"	101-3/4"	104-3/4"	3"	4	
104"	103-1/4"	106-1/4"	3"	4	
106"	104-3/4"	107-3/4"	3"	4	
107"	106-1/4"	109-1/4"	3"	4	
109"	107-3/4"	110-3/4"	3"	4	
110"	109-1/4"	112-1/4"	3"	4	
112"	110-3/4"	113-3/4"	3"	4	
113"	112-1/4"	115-1/4"	3"	4	

Code No.	Nominal Height	Minimum Height	Maximum Height	Adjustment	Cross Brace
C696	115"	113-3/4"	116-3/4"	3"	4
	116"	115-1/4"	118-1/4"	3"	4
	118"	116-3/4"	119-3/4"	3"	4
	119"	118-1/4"	121-1/4"	3"	4

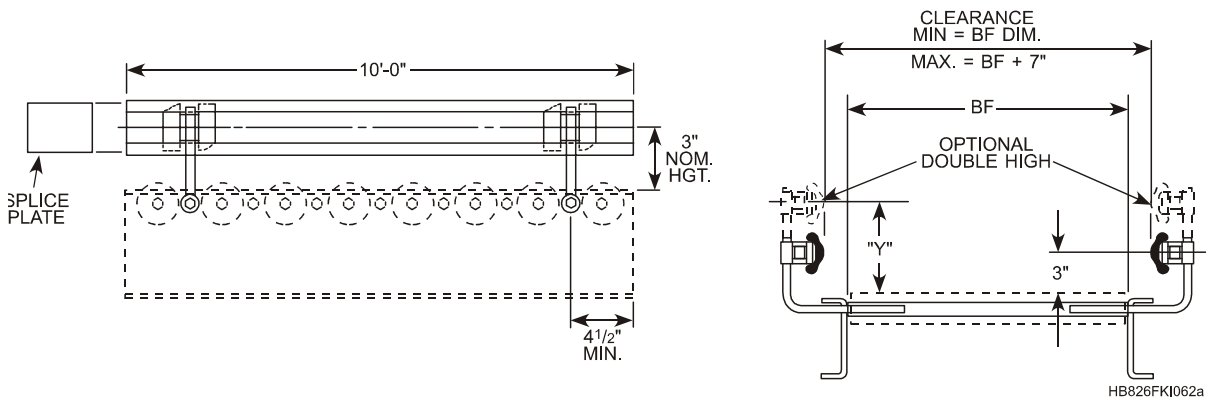
Accessories

C1276 Straight Adjustable Guard Rail

For Use with Standard Duty Belt Conveyors

HOW TO ORDER

Quantity	Code No.	W	Length	Option
1	C1276	21"	120"	12" Double High

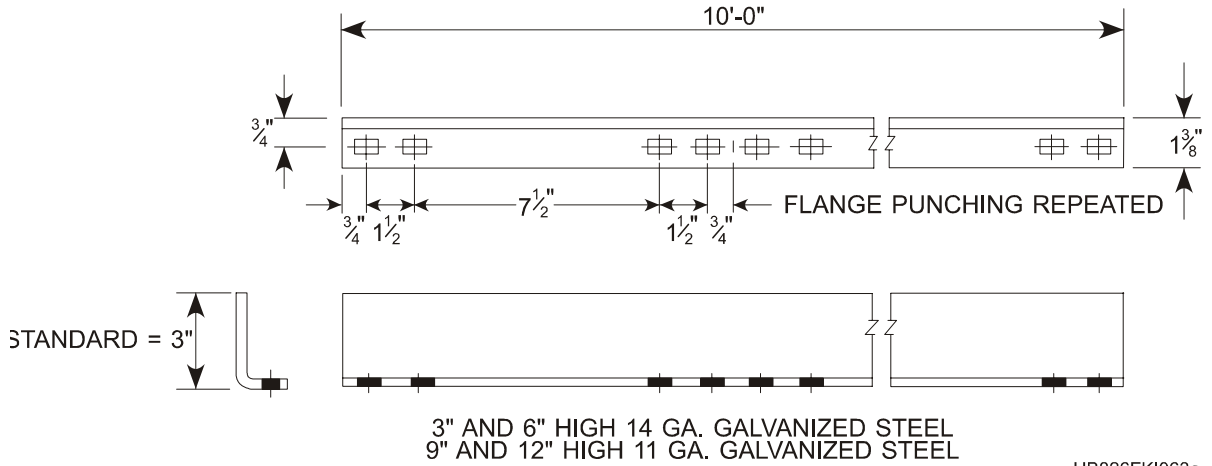


- LENGTH Standard - 10'-0", odd lengths cut in field.
- WIDTHS Standard - 15", 21", 27", 33" and 39" Between Frames
- All components galvanized.
- C1276 guards include rail both sides, four posts, four sets of clips, two splice plates and two post support tubes.
- OPTION Double high "Y" DIM = 6", 9" or 12" (includes 4 rails).

C1443 Angle Guard Rail

HOW TO ORDER C1443 ANGLE GUARD (Example):

Quantity	Code No.	Length	Length
1	C1443	3"	120"



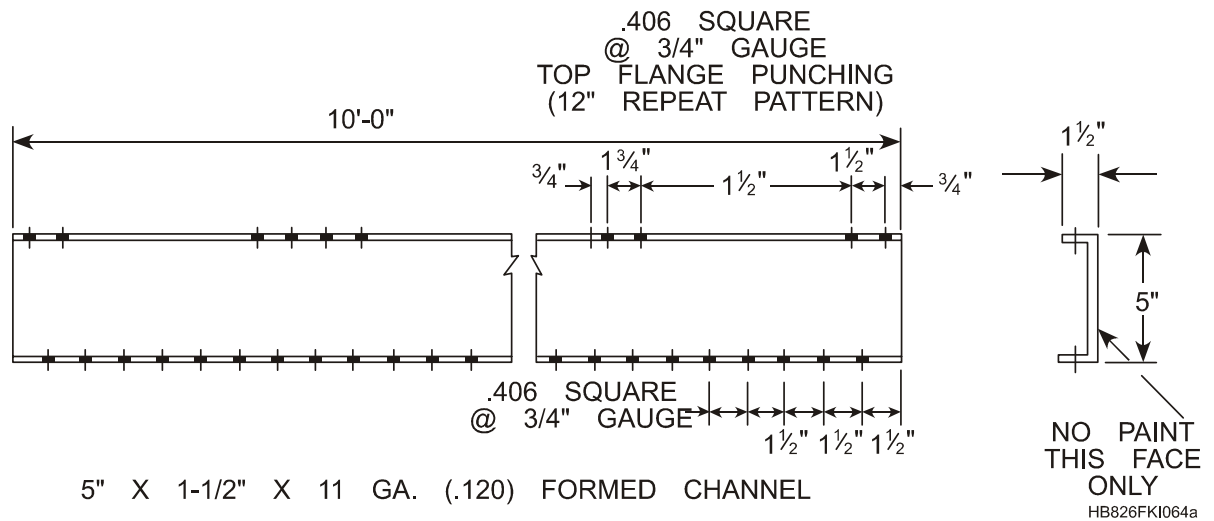
- LENGTH Standard - 10'0" (odd length cut in field).
- HEIGHTS 3", 6", 9" and 12".
- Galvanized finish standard.
- C1443 guards (includes 2 rails).
- For one side only, order D1443-HT-120.

C1303 Channel Guard Rail

HOW TO ORDER C1303 CHANNEL GUARD (Example):

Quantity	Code No.	Length	Option
4	C1303	120"	B

Note: Please list options.

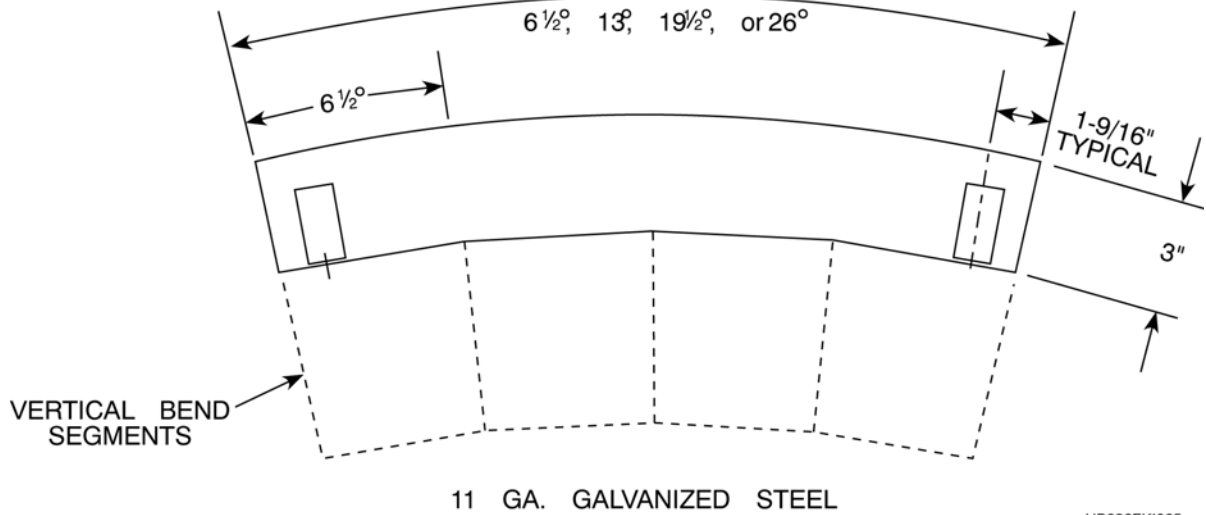


LENGTH	Standard - 10'0" (odd length cut in field).
PAINT	Standard - Standard paint (except guard face). C1303 guard (includes 2 rails).
COUPLINGS	Option - Welded butt couplings (add "B" to How To Order).

C1249 Vertical Bend Guard

HOW TO ORDER

Quantity	Code No.	Degrees
4	C1249	19-1/2°



DEGREES Standard - $6\frac{1}{2}^\circ$, 13° , $19\frac{1}{2}^\circ$ and 26° .
 C1249 (includes 2 guard assemblies, 1 per side).
 Galvanized finish standard.

Component Belt Length Requirement

To determine the length of belting required for a conveyor, add the lengths shown in the following table for each of the components required for the conveyor.

Code Number	Description	Belt Length Required
C1237	Conveyor Section	Twice Conveyor Section Length
C1238	Slider Bed Conveyor Section	Twice Conveyor Section Length
C1239	End Roller / Take-Up Unit	22"
C1626	End Roller Unit	22"
C1743	Intermediate Drive	33"
C1252	Two Pulley PTO	25-1/2" Each Side
C1264	Intermediate Take-Up	29"
C1267	Vertical Bend Unit	12"
C1418	Three Roller Device	76"
C1700	Low Profile Intermediate Drive	30"
C1504	PTO	26" Each Side
C1510	Take-Up	5"
C1716	End Drive with Take-Up	66"
C1721-NT	End Drive without Take-Up	50"
C1721	Low Profile End Drive with Take-Up	66"
C1721-NT	Low Profile End Driver without Take-Up	50"
C1291	Heavy Duty Intermediate Take-Up	39"
C1292	Heavy Duty Intermediate Drive	42"
C1296	Heavy Duty Three Pulley Device	98"
C1297	Heavy Duty Vertical Bend	12" Each Unit
C1298	Heavy Duty Conveyor Section	Twice Conveyor Section Length
C1299	Heavy Duty Two Pulley PTO	26-1/2" Each Pulley
C1300	Heavy Duty End Roller / Take-Up Unit	27"
C1301	Heavy Duty End Roller / Take-Up Unit	25"

Telescoping Belt Conveyor

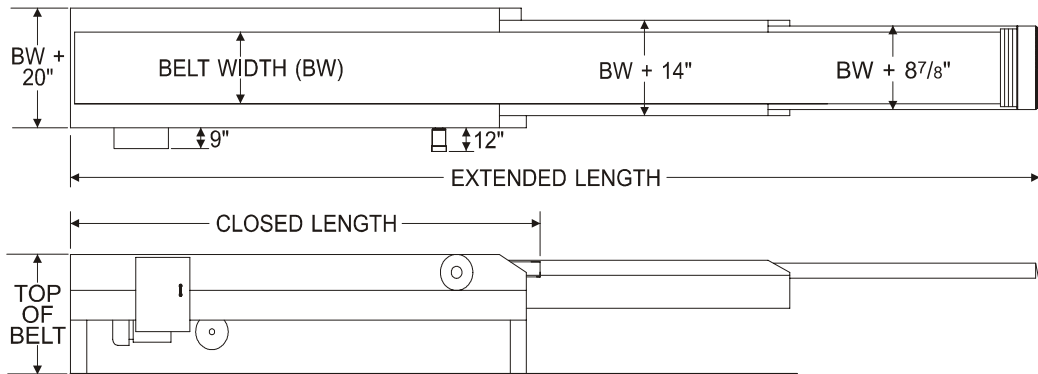
Double and Triple Boom

HOW TO ORDER

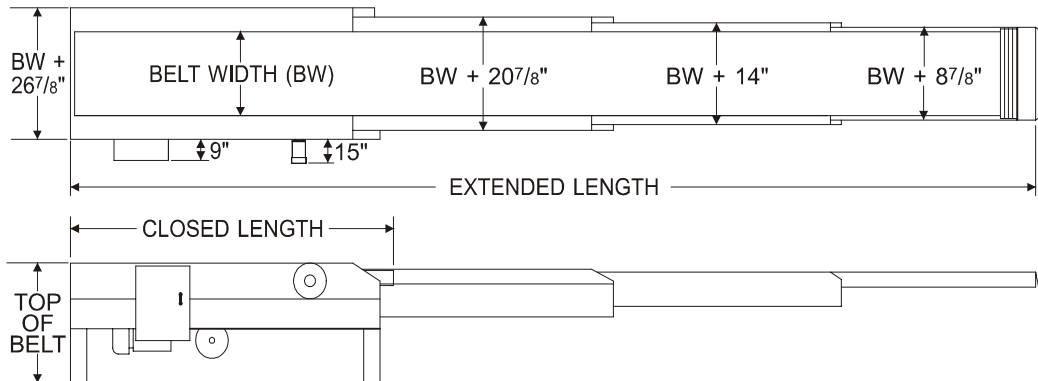
Quantity	Code No.	Voltage	Options
1	817D24	230	---

Note: Please list options.

DOUBLE BOOM TELESCOPING BELT CONVEYOR



TRIPLE BOOM TELESCOPING BELT CONVEYOR



HB826FKI066a

CAPACITY	Standard - 100 pounds per foot live load.
SPEED	Standard - 80 FPM Option - 30 to 150 FPM
DRIVE	Standard - Fully enclosed, oil bath lubricated gearmotor.
GUARDS	Standard - Guards and covers provided on all drives, take-ups and other moving parts.
SAFETY FEATURES	Standard - Safety pop-up transition at boom end to prevent injury. Slider plate at boom end to allow bundle to stop before handling. Emergency stop at boom end. Motor mounted brake on boom drive to prevent drift of booms.
HORSEPOWER	Standard - Double boom has a 2 HP belt motor and 3/4"HP boom motor. Triple boom has a 3 HP belt motor and 1 HP boom motor.
BELT	Standard - PVK-120-COS laced belt. Option - Belt width can be specified from 12" to 36" wide.
STRUCTURE	Standard - Welded structural channel construction.
SHIPPING	Standard - Shipped fully assembled and wired.
FINISH	Standard - As specified.
OPTIONS	Available on all models. 1. Reversing belt drive (REV). 2. Hydraulic control on front or rear of unit (HYD CON). 3. Elevating control pushbutton at end of boom (ELEV PB). 4. Portable for use on a track system: Manual (MAN) or Powered Drive (PWR). 5. 3 ft. long powered conveyor belt (stacker) mounted on boom end and powered 30° up and down (STKR). 6. Powered incline or decline conveyor mounted on top of base (INCL/DECL).
POWER	Standard - Power normally 230/460 volts, 3 phase, 60 hertz.

STANDARD DOUBLE BOOM SPECIFICATIONS						
Code No.	Closed Length	Extended Length	Boom Extension	Belt Width	Base Width	Approx. Weight
817D24	8'-3"	17'-0"	9'-0"	24"	44"	2500#
1021D24	10'-3"	21'-0"	11'-0"	24"	44"	3700#
1225D24	12'-3"	25'-0"	13'-0"	24"	44"	4000#
1328D24	13'-3"	28'-0"	15'-0"	24"	44"	4400#
1431D24	14'-3"	31'-0"	17'-0"	24"	44"	4900#
1534D24	15'-3"	34'-0"	19'-0"	24"	44"	5400#
1637D24	16'-3"	37'-0"	21'-0"	24"	44"	5700#
1740D24	17'-3"	40'-0"	23'-0"	24"	44"	6000#
1843D24	18'-3"	43'-0"	25'-0"	24"	44"	6400#
1946D2D	19'-3"	46'-0"	27'-0"	24"	44"	6800#
2049D24	20'-3"	49'-0"	29'-0"	24"	44"	7100#
2560D24	25'-3"	60'-0"	35'-0"	24"	44"	7500#

STANDARD TRIPLE BOOM SPECIFICATIONS						
Code No.	Closed Length	Extended Length	Boom Extension	Belt Width	Base Width	Approx. Weight
1030T24	10'-3"	30'-0"	20'-0"	24"	51"	5200#
1134T24	11'-3"	34'-0"	23'-0"	24"	51"	5300#
1238T24	12'-3"	38'-0"	26'-0"	24"	51"	5600#
1340T24	13'-3"	40'-0"	27'-0"	24"	51"	5900#
1444T24	14'-3"	44'-0"	30'-0"	24"	51"	6400#
1548T24	15'-3"	48'-0"	33'-0"	24"	51"	6800#
1650T24	16'-3"	50'-0"	34'-0"	24"	51"	7200#
1754T24	17'-3"	54'-0"	37'-0"	24"	51"	7500#
1858T24	18'-3"	58'-0"	40'-0"	24"	51"	8200#
1961T24	19'-3"	61'-0"	42'-0"	24"	51"	8900#
2065T24	20'-3"	65'-0"	45'-0"	24"	51"	9200#
2169T24	21'-3"	69'-0"	48'-0"	24"	51"	9800#

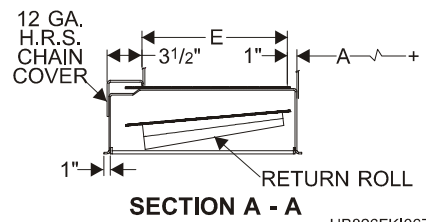
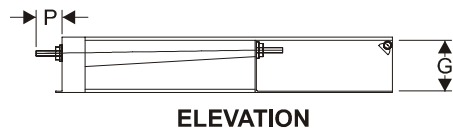
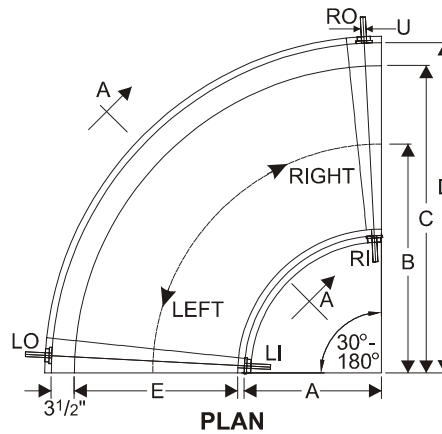
Flat Belt Curves

Powered Belt Curves

HOW TO ORDER

Quantity	Code No.	Degree	Speed	Drive Location	HP	Electrical Specs.	Options
1	A3610	90°	70	RO	1/2	230V - 3 PH	Floor Supports 30" TOB

Note: Please list options.



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FRAME	Standard - 12 ga. formed teel.
CAPACITY	Standard - 40 lbs. per foot at centerline. with relief rollers, 75 lbs. per foot at centerline.
DRIVE SYSTEM	Standard - Shaft mounted gear reducer with open drip proof flange mounted motor. Normal mounting at outside radius discharge end. (RO or LO position as shown.) Option - totally enclosed, fan cooled motor. Explosion prof motor.
BELT	Standard - Black SBR-FIT. Temperature range 20° to 225° F. Option - special belting available.
DEGREE	Standard - 30° to 180°.
SPEED	Standard - Fixed speeds from 5 FPM to 170 FPM. Measured at the center of the belt. Option - Variable and other fixed speeds.

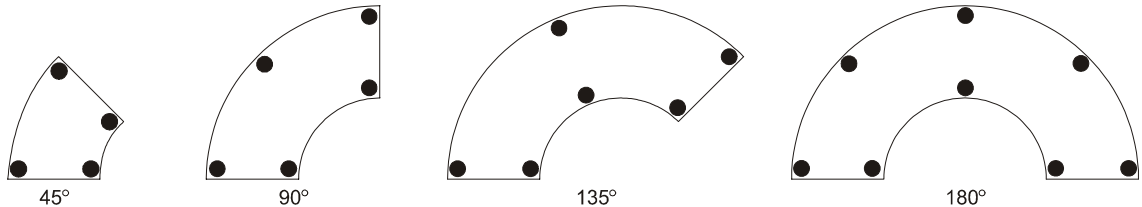
Live Load Capacity at 70 FPM	
HP	Live Load
1/2	150#
3/4	250#
1	350#

Belt Conveyor Curves								
Curve Code Number	"A" Inside Radius	"B" Centerline Radius	"C" Outside Conveying Radius	"D" Outside Radius	"E" Effective Belt Width	"G" Frame Height	Minimum Product Length	
AAA-224 -206 -188 -1610 -1412 -1214	22" 20" 18" 16" 14" 12"	25" 24" 23" 22" 21" 20"	27"	30-1/2"	4" 6" 8" 10" 12" 14"	6-1/2"	10"	
* AA-306 -288 -2610 AA-2412 -2214 -2016	30" 28" 26" 24" 22" 20"	34" 33" 32" 31" 30" 29"	37"	40-1/2"	6" 8" 10" 12" 14" 16"	8-1/2"	12"	
A-406 -388 -3610 -3412 -3214	40" 38" 36" 34" 32"	44" 43" 42" 41" 40"	47"	50-1/2"	6" 8" 10" 12" 14"	8-1/2"	14"	
* A-3016 A-2818 -2620 -2422 * A-2224	30" 28" 26" 24" 22"	39" 38" 37" 36" 35"	47"	50-1/2"	16" 18" 20" 22" 24"	8-1/2"	14"	
B-4612 -4414 -4216 -4018 -3820 -3622 -3424	46" 44" 42" 40" 38" 36" 34"	53" 52" 51" 50" 49" 48" 47"	59"	62-1/2"	12" 14" 16" 18" 20" 22" 24"	9"	14"	
* B-3226 -3028 * B-2830 -2632 -2434 * B-2236	32" 30" 28" 26" 24" 22"	46" 45" 44" 43" 42" 41"	59"	62-1/2"	26" 28" 30" 32" 34" 36"	9"	14"	
C-7610 -7412 -7214 -7016 -6818 -6620 -6422 -6224 -6026	76" 74" 72" 70" 68" 66" 64" 62" 60"	82" 81" 80" 79" 78" 77" 76" 75" 74"	87"	90-1/2"	10" 12" 14" 16" 18" 20" 22" 24" 26"	10"	14"	

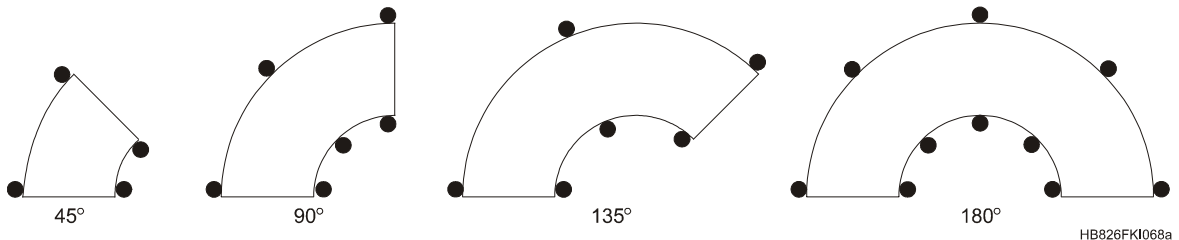
Belt Conveyor Curves								
	Curve Code Number	"A" Inside Radius	"B" Centerline Radius	"C" Outside Conveying Radius	"D" Outside Radius	"E" Effective Belt Width	"G" Frame Height	Minimum Product Length
	C-5828	58"	73"			28"		
	-5630	56"	72"			38"		
*	C-5432	54"	71"	87"	90-1/2"	32"	10"	14"
	-5234	52"	70"			34"		
*	C-5036	50"	69"			36"		
	C-4838	48"	68"			38"		
	-4640	46"	67"			40"		
	-4442	44"	66"	87"	90-1/2"	42"	12"	18"
	-4244	42"	65"			44"		
	-4046	40"	64"			46"		
	-3848	38"	63"			48"		

*90° units in bolt print offer best delivery.

NUMBER AND LOCATION CHART FOR FLOOR SUPPORTS



NUMBER AND LOCATION CHART FOR CEILING SUPPORTS



HB826FKI068a

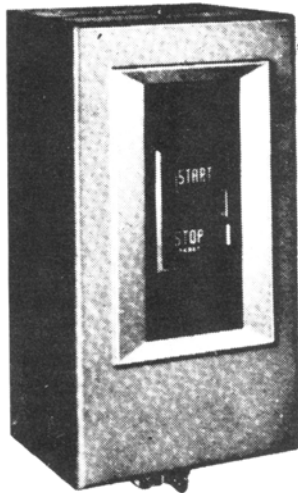
SUPPORT OPTIONS

1. Minimum Heights (G) shown in table on previous page.
2. Non-adjustable floor supports are available form minimum height to 21" top of elevation.
3. Adjustable floor supports are available from 21" top of belt elevation and up and are adjustable ± 1".
4. Ceiling support brackets are available.
5. Add support type and required elevation to How To Order under Options.

SIDE GUARD OPTIONS

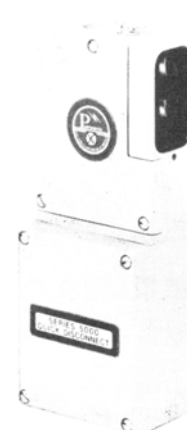
1. Standard heights of 6", 12", 18" and 24'.
2. Inside and Outside available.
3. Optional guards are 14 gage steel, rolled to match the belt curve with a 1" flange on top turned out.

Electrical Components & Control Equipment



NON-REVERSING TYPE
MANUAL STARTERS
NEMA 1

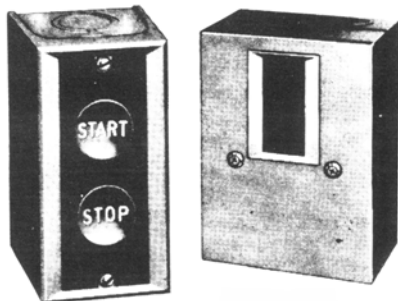
CE-4 Single Phase 2#
CE-5 Three Phase 5#



PHOTOCELL AND
REFLECTOR
(Less Mounting Brackets)

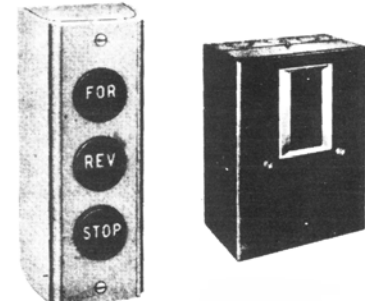
Without Time Delay Relay 2#
With Time Delay Relay 2#

NON-REVERSING TYPE
MAGNET STARTERS
NEMA 1



CE-6 Single Phase Wt. 10#
CE-7 Three Phase Size 0
For Fractional or Integral Use 10#
Two pushbutton stations included
with each starter

REVERSING TYPE
MAGNET STARTERS
NEMA 1



CE-8 Single Phase Wt. 28#
CE-9 Three Phase Size 0
For Fractional or Integral Use 28#
Two pushbutton stations included
with each starter

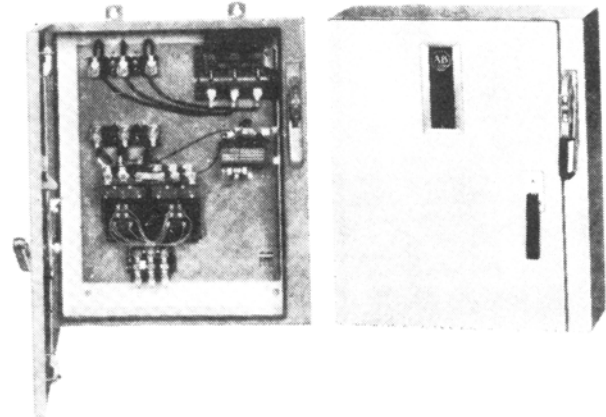
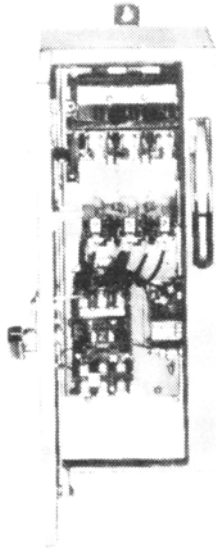
Combination Starters

As the name implies, combination starters put together in one enclosure an externally operable disconnect switch, fuses and either a reversing or non-reversing magnetic starter. This form of control eliminates the field wiring required by the separate fused disconnect used with the standard version of magnetic starters.

The combination starters are listed in both (NEMA 1) standard duty enclosures (NEMA 12) heavy duty, oil tight/dust tight industrial enclosures.

Size 1 starters can handle a maximum of 7 1/2 HP at 200/230 volts and 10 HP at 460/575 volts. To supply the proper starter, **both the operating voltage and horsepower of the motor must be furnished.**

SIZE 1 COMBINATION STARTERS



NON-REVERSING Wt.
CE-12 NEMA 1 35#
CE12A NEMA 12 36#

REVERSING Wt.
CE-13 NEM 1 35#
CE-13A NEMA 12 36#

Standard voltages, which can be furnished, are 200, 230, 460 and 575. Above units are available with separate 120 volt operating coil, add suffix "S".

Transformers for other starter coils are available by adding suffix "T".

Above starters include two pushbutton stations.

Components For Driving and Controlling the Powered Conveyors

This section deals with the components that drive and control powered conveyors. It presents a review of the various components used and information required to make the proper selection. These various control mechanisms can be used to control single units or be incorporated into systems.

Motors

There are three basic types of motor enclosures:

1. Open

The motor windings can be seen through the vents at the end of the motor.

2. Totally Enclosed

The motors are completely encased in a metal enclosure.

3. Explosion Proof

The enclosure of the motor will withstand an explosion from within itself and will not allow sparks or hot gas to escape into the surrounding atmosphere.

Explosion proof motors are further rated by class and group by the National Electric Code according to the environment in which they are designed to operate.

Class I - Hazardous Vapor
Group C - Ethers, Alcohols, etc.
Group D - Petroleum Base

Class II - Hazardous Dust
Group E - Metal
Group F - Carbons
Group G - Grains

There are three designations required when specifying the power source an A.C. motor is to operate from:

1. Phase - Three or One

2. Frequency - Hertz

3. Voltage - Volts

Common single phase voltages are 115 and 230. Common three phase voltages are 208, 230, 460 and 575. Motors for 230 or 460 volt applications normally are supplied as dual voltage, (i.e. 230/460). When specifying motors, the single voltage which will be used to operate the motor must be stated if the proper controls for starting and stopping the motor are to be selected.

Motors are commonly mounted by two principle means, foot mounted or C-face. Foot mounted is nothing more than a set of mounting feet which are welded or otherwise attached to the bottom of the motor. C-face mounting consists of a cast ring or collar on the end of the motor with four mounting holes which allows the motor to be attached to a reducer, machine, etc.

Gear Reducer

A reducer is a device which converts a high RPM with low torque (usually supplied by a motor at the reducer's input shaft) to a lower RPM with higher torque on the reducer's output shaft, which is connected to the conveyor drive.

Reducers are generally selected based on the amount of the horsepower to be transmitted and the amount of reduction in speed that is required. Terminology used in speed reduction is "ratio". Ratio is the rate of the output speed as compared to the input speed. Typical ratios are 10:1, 40:1, etc. If an 1800 RPM motor is coupled to a 40:1 ratio reducer, the resultant output speed would be 1800 divided by 40 which equals 45 RPM. Manufacturer's rating tables are used to select a reducer with the proper horsepower rating.

Gear reducers are generally grouped into two categories, parallel shaft and right angle shaft. The determination is made by the position of the output shaft relative to the input shaft. If the output shaft is in position parallel to the input shaft, then the gear reducer is termed a parallel reducer. If the output shaft is in a position forming a right angle to the input shaft, the reducer is termed a right angle reducer.

The most common mounting arrangement for reducers is foot mounted. This consists of a set of feet, with holes in them, that are attached to the reducer. With this arrangement, the reducer can be bolted to any flat surface. Since the reducer requires oil to lubricate the gears, it is necessary to know whether it is intended to be mounted with the feet up and the reducer below, such as a ceiling hung mounting position or with the feet down and the reducer above them, which would be termed a floor mounted position. Another important consideration in gear reducers is how the motor will be attached to the reducer. One simple means is to foot mount the reducer and foot mount the motor at relative positions so that the output shaft of the motor is aligned with the input shaft of the reducer. A suitable coupling can then be used to connect the two. An alternative approach is to use a C-face motor and C-face reducer. Remember that a C-face motor has a ring or collar on the end of the motor with four mounting holes. Reducers can be purchased that have a corresponding collar around the input shaft of the reducer. A plastic collar couples the output shaft of the motor to the input shaft of the reducer and when the motor and reducer are bolted together, it encloses the "coupling" eliminating the need for a guard.

Because of the popularity of C-face motor reducer combinations when they were originally introduced, manufacturers carried that concept forward with the introduction of the integral gearmotor. An integral gearmotor is a motor and reducer or "gear box", cast into one housing. Basically, the motor is made "open ended" on the end next to the gear box and the gear box has a flat plate and collar to accept the motor. This eliminates the need for C-face rings on the motor and reducer and therefore is more economical. The disadvantages of the integral gearmotor is that if either the motor or reducer fails, both have to be replaced since it is an integral unit. In the case of a C-face motor and C-face reducer, if the motor fails, only the motor has to be replaced. If the reducer fails, only the reducer has to be replaced.

Brakes

The most common types of brakes used with motors are spring set/electrically released type. This is a disc type brake, that when power to the motor is eliminated, a spring sets the brake to stop the rotation of the motor. When power is applied to the motor, the brake is released by an electrical solenoid. Brakes are sized in terms of the torque they produce. Normally, for a holding brake such as is used on a conveyor, a brake should be sized 3 ft. lbs. per horsepower or as an example, a 3 ft. lb. brake is used for a 1 horsepower motor and a 6 ft. lb. brake for a 2 horsepower motor.

Clutch Brake

A clutch-brake is a device that is mounted between the motor and the reducer. With a clutch-brake, the motor runs continuously. When the conveyor is to start, the clutch is energized and the brake is released. When it is desirable to stop the conveyor, the clutch is released and the brake is applied. Clutch-brakes require a special power supply and controlling device. This controller allows the force between the clutch discs and brake discs to be varied. This provides a means of adjusting the starting and stopping motions of the conveyor from “soft” to “violent”.

Three phase motors with brakes generally can be started and stopped up to six times per minute. For applications requiring more starts and stops per minute, a clutch brake should be used.

Motor Starters

Manual Motor Starters

Manual motor starters are devices which, when a button is pushed or a toggle type switch is thrown, operate a set of electrical contacts which supply power to a motor. The button or toggle switch is an integral part of the manual starter. Manual motor starters can be used when a conveyor is being controlled from one point only and can not be connected with any other remotely located control circuit devices, such as a second push button, a limit switch, or photoelectric relay. In order to select the proper manual motor starter, the following must be known:

1. Reversing or Non-Reversing
2. Single Phase or 3 Phase
3. Frequency of Power Supply (60 Hertz)
4. Voltage at which the motor is to be run (this must be one voltage, not dual voltage such as 230/460).
5. Horsepower of motor controlled by the starter.

Magnetic Motor Starters

Magnetic motor starters are used where it is desirable to control a conveyor from more than one location. Magnetic motor starters have basically two circuits associated with them. One is a control circuit and the other is a power circuit. The power circuit turns electrical line power to the motor off or on. The line power provides the energy for the motor to actually do work while the control circuit tells it when. The control circuit is controlled by push button, limit switches, photoelectric relays and switching devices. Technically, these switching devices are used to energize the magnetic coil of the starter which in turn operates a set of multiple contacts. These contacts are used to complete the power circuit to the motor. The control circuit voltage is usually lower than the power circuit voltage.

In order to select the proper magnetic starter, the following must be known:

1. Reversing or Non-Reversing
2. Phase, frequency and voltage the motor is to run on (power voltage).

3. Phase, frequency and voltage the push button is to be run on (control voltage)
4. Is a transformer required to change motor voltage to control voltage? (This would be required if, for instance, there was only one power source available, such as 230 volts, which is acceptable for the line power for the motor but the push buttons are desired to operate at 115 volts.)
5. Horsepower of the motor to be controlled.

Combination Magnetic Motor Starters and Control Panels

The National Electrical Code requires both short circuit protection and running overload protection for each motor in a conveyor system. In addition, a lockable disconnecting device must be provided with sight and (also) within 50 feet of each motor.

The running overload protection for a motor is provided by the “heaters” in a starter. Heaters are an integral part of all motor starters. This leaves the problem of providing short circuit protection and a disconnecting means to consider.

Providing a combination motor starter for each motor meets both of these requirements. The fuses or circuit breakers in a combination starter provide the short circuit protection and the disconnect or circuit breaker provides the disconnecting means. The circuit breakers provide the same function as a fused-disconnect. The only other requirement of this alternative to meeting the criteria of the National Electrical Code is physically locating the combination starters within 50 feet and in sight of the motors they control. Typically these starters are individually located directly beside the motor they control and are mounted on the side of the conveyor drive.

A second alternative to meeting this requirement of the National Electrical Code is to provide “across the line” magnetic starters and provide a fused-disconnect in a separate enclosure. Typically the fused-disconnects are provided by whoever is doing the field wiring. Although this is typical it is an often misunderstood point. If “across the line” starters are provided by the equipment supplier, it should be established early in the development of a project whether the equipment supplier is also providing fuse-disconnects or whether they will be provided by the field wiring supplier.

A third alternative to meeting the requirements of the National Electrical Code is providing a prewired control panel. The control panel houses “across the line” starters and fuses or circuit breakers for each motor in a common enclosure. This meets the short circuit protection requirement. The control panel includes a main disconnect switch which meets the disconnecting means requirement of the code as long as all of the motors are located within 50 feet and within sight of the control panel. If some of the motors are beyond a 50 foot radius of the panel or are not visible from the panel, then a non-fused disconnect must be provided for each motor. These disconnects are usually provided by the field wiring contractor but not always. Caution must be exercised between the parties involved in a project that everyone understands who is providing what.

In summary, there are three essential parts to motor control: the disconnecting means, the overload “heaters” contained in the magnetic starter, and the short circuit protection. These can be grouped in various combinations in multiple or common enclosures.

Electrical Enclosures

Standards for the manufacture of electrical control devices have been agreed on by the National Electrical Manufacturers Association or N.E.M.A. N.E.M.A. has established various classifications for enclosures or boxes enclosing push buttons, motor starters, photoelectric cells, etc. A numbering system is used to describe these enclosures, and the following are some of the more common that you will encounter.

1. N.E.M.A. Type 1 - Surface Mounting (General Purpose Sheet Metal)

Type 1 enclosures are intended for indoor use, primarily to provide a degree of protection against contact with enclosed equipment in locations where usual service conditions do not exist. The enclosure is sheet metal and treated to resist corrosion.

2. N.E.M.A. Type 4 (Water Tight)

Type 4 enclosures are intended for in-door or external use primarily to provide a degree of protection against wind blown dust and rain, splashing water, and hose directed water. They are designed to meet hosed down, dust, external icing and rust resistance design tests. They are not intended to provide protection against conditions such as internal condensation or internal icing. Enclosures are made of heavy gauge stainless steel, cast aluminum or heavy gauge sheet metal, depending upon the type of unit. The cover has a synthetic rubber gasket.

3. N.E.M.A. Type 7 and 9 (Explosion Proof)

These enclosures are intended for indoor use. N.E.M.A. type 7 is normally used in atmospheres that contain hazardous gas and will be used in areas that correspond with Class 1, Group C and D motors. N.E.M.A. type 9 would normally be used in atmospheres that contain hazardous dust and would be used in conjunction with motors that are classified as Class II, Group E, F, and G.

4. N.E.M.A. 12 (Industrial Dust-Tight)

These enclosures are intended for use indoors to protect the enclosed equipment against fibers, flying lint, dust and dirt and light splashing, seepage, dripping and external condensation of non-corrosive liquids.

Switching Devices

Push Buttons

Push buttons are about the simplest switching device known. The operator simply pushes a button which causes an electrical contact to close, thus providing a signal for something else to happen.

Limit Switches

Limit switches are switching devices which are actuated by a machine motion striking a lever on the switch. The lever causes an electrical contact to operate which causes some other action to happen.

Selector Switches

Selector switches are similar to a push button except the operator rotates the switch as opposed to pushing down on the switch to cause an electrical contact to operate.

Photoelectric Relays

Photoelectric relays are a "no touch" switching device. This is a device which operates an electrical contact when a beam of light is broken.

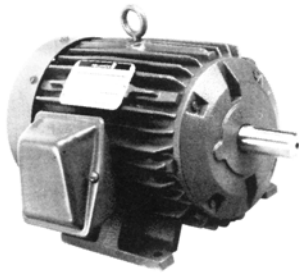
Solenoid Valves

A solenoid valve is an air or hydraulic valve combined with a solenoid. The solenoid is a magnetic coil which is turned on by a switching device or logic device. When the coil is turned on, it causes an armature to move and push a plunger in one direction or the other. The plunger and the solenoid shifts a spool in the valve to cause a different flow path for the air or hydraulic fluid.

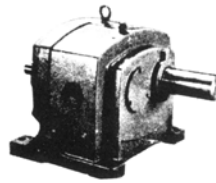
Air Controls

Air control used on conveyors normally consist of valves and filter-regulators which may be used to raise and lower stops and transveyors or perhaps to actuate some other divert mechanism.

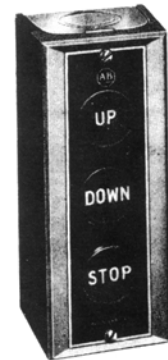
A filter-regulator-lubricator is a combination of three devices. The filter cleans the dirt and grit out of the air, the regulator regulates the pressure in the air line and keeps it below a certain maximum pressure. The lubricator squirts oil into the air passing through it. This lubrication is used to lubricate the valve and cylinder which is normally connected to the filter-regulator-lubricator.



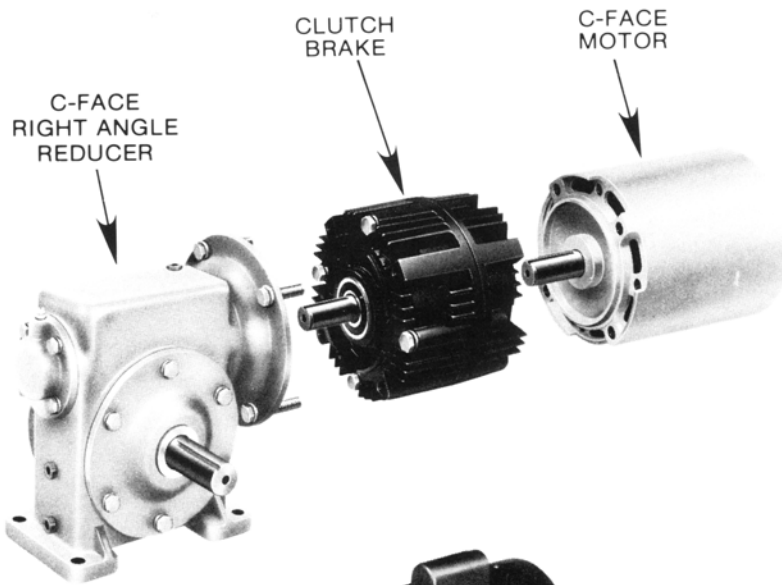
FOOT MOUNTED MOTOR



FOOT MOUNTED PARALLEL SHAFT REDUCER



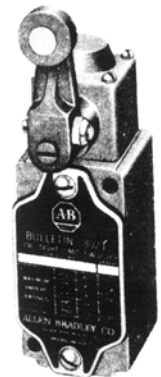
PUSH BUTTON



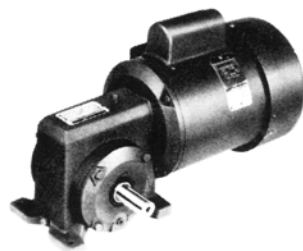
C-FACE RIGHT ANGLE REDUCER

CLUTCH BRAKE

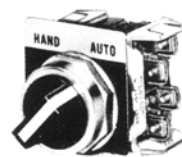
C-FACE MOTOR



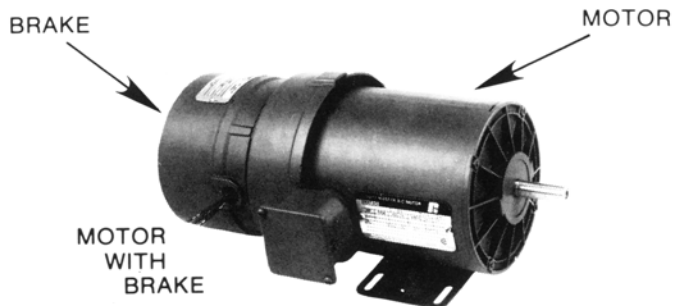
LIMIT SWITCH



INTEGRAL RIGHT ANGLE GEARMOTOR



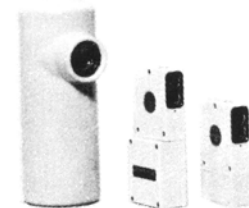
SELECTOR SWITCH



BRAKE

MOTOR

MOTOR WITH BRAKE



PHOTOELECTRIC RELAYS

