Product Manual
Brake/Meter Belt Conveyor

Application Guidelines, Specifications, Installation Procedures, Maintenance, Parts Identification, and Product Index

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Read these documents thoroughly before attempting to perform maintenance or repairs to the applicable Intelligrated conveyor system components or devices. Exercise extreme caution when working around moving and rotating conveyor equipment. Wear the proper clothing and safety equipment. DO NOT attempt to perform any maintenance until the equipment is de-energized, locked out and tagged out in accordance with established company procedures.

The information presented in these documents are correct at the time of publication. Intelligrated has made every effort to ensure that the information presented is correct and free from error. However, some errors or misprints may occur. Please contact Intelligrated with any corrections.

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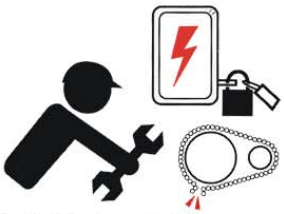
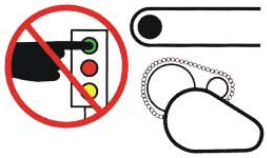
Package Conveyors

SAFETY IS IN YOUR HANDS

Do Not Climb, Sit, Stand, Walk, Ride, or Touch the Conveyor at Any Time



Do Not Perform Maintenance on Conveyor Until Electrical, Air, Hydraulic and Gravity Energy Sources Have Been Locked Out or Blocked



Operate Equipment Only With All Approved Covers and Guards in Place

Do Not Load a Stopped Conveyor or Overload a Running Conveyor

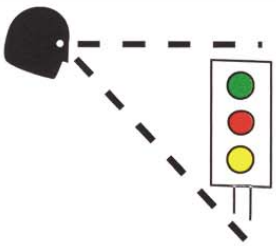
Ensure That All Personnel Are Clear of Equipment Before Starting

Allow Only Authorized Personnel To Operate or Maintain Material Handling Equipment

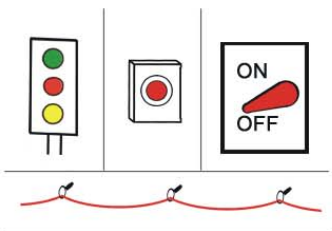
Do Not Modify or Misuse Conveyor Controls

Keep Clothing, BodyParts, and Hair Away from Conveyors

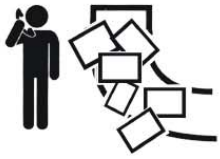
Remove Trash, Paperwork, and Other Debris Only When Power is Locked Out and Tagged Out



Ensure That ALL Controls and Pull Cords are Visible and Accessible



Know the Location and Function of All Stop and Start Controls



Report All Unsafe Conditions Jams should be cleared ONLY BY Authorized, Trained, Personnel

POST IN PROMINENT AREA

Intelligrated®

Product Manual Issue and Revision Date(s)

1st Issue	December 2003
1st Revision	December 2006

Product Manual Revision Summary

Revision Date	Manual Section(s)	Revision Summary
December 2006	Section I	Update Part Numbers

Section G Installation Procedures

Section H Maintenance

Section I Parts Identification

Section J Product Index

SECTION A:PRODUCT SUMMARY

Table A 1: Product Summary

Conveyor	**Components**			
Model PBM **Type** Transportation **Function** Control Flow	**Widths "W"**	**Lengths**	**Live Load Cap.**	**Belts**
	16" 22" 28" 34" 40"	10'-0" - 15'-0"	100 lbs./ft.	**Belt "A"** PVK 90 FS X RT **Belt "B"** PVK 90 FS X FS
	Drive / Power Unit	**Motor / Reducer**	**Speeds - Belt "A"**	**Speeds - Belt "B"**
	Center Type Left or Right Hand Side Mount / Underhung	Reliance (std.) 1/2, 3/4, 1, 1-1/2, 2, 3, and 5 HP	30 - 350 fpm	45, 60, 75, 90, 120, 150, 180, 200, 250, 300, 350, 400 fpm
Comments	**Fixed Side Guides**		**Adjustable Side Guides**	
	Rail Type	**Mounting Type**	**Rail Type**	**Mounting Type**
	A: 1-3/4 Angle B: 2-5/8" Channel C: 7" Channel D: 10" Channel	A: Bolt-to-Frame B: Spacer C: Inset - 2" Outset - 2"	D Single Rail E Double Rail	D Straight Arm E Offset Arm
	Supports/Hangers	**Supports/Hangers**		**Paint**
	Type FSL or FSM Floor Supports	Type CHA / B Ceiling Hangers		Medium Gray

SECTION B:APPLICATION GUIDELINES

Introduction

The CS Brake / Meter Belt Conveyor is used for generating a gap between individual packages released from an accumulation line.

The speed of Metering Belt “B” is faster than that of Brake Belt “A” (see Figure B - 1). This speed differential generates a gap between items that can be detected by an electric eye. The conveyor can be stopped and started to precisely control the release of each item.

Note: When using the knife edge option, add 3” to the conveyor length except when discharging directly into UniSort® V. The knife edge pulley can be used on either end of the conveyor.

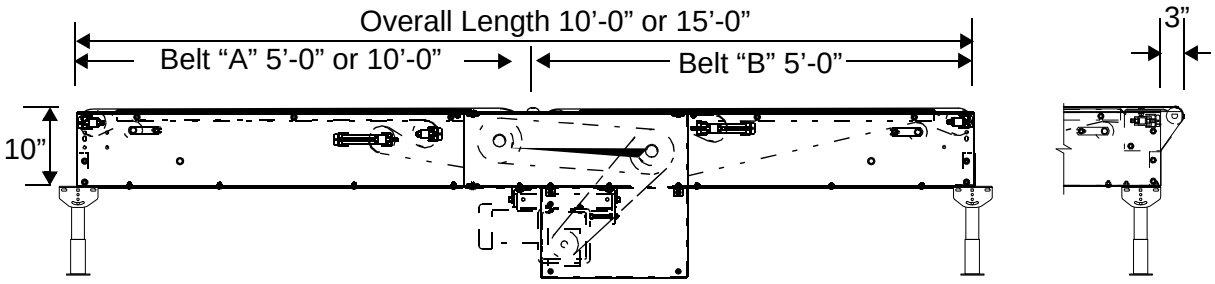


Figure B - 1 10’ Brake/Meter Belt (Knife Edge Pulley Shown at Right)

The speed of Brake Belt “A” should be equal to or less than that of the infeeding accumulation conveyor.

The base conveyor unit includes:

- (2) Series 800 drive units with integral take-ups
- Frame consists of 10” deep x 1-1/4” formed channel with bolted tubular spreaders and slider bed pan inserts.
- Belt(s) black, single-ply polyester carcass.
- Brake Belt “A” - rough top (PVK 90 RT x FS)
- Meter Belt “B” - friction surface (PVK 90 FS x FS).
- Finish - powder coat medium gray

SECTION C:STANDARD SPECIFICATIONS

Specifications

Model

PBM - Brake/Meter Belt

Frame

10” deep x 10 ga. side frame with bolted slider pan inserts. Bolted pipe spreaders.

Widths

16”, 22”, 28”, 34”, 40” “W”

Drive Pulley

(2) Series 800; 8-5/8” diameter lagged and edge crowned pulley, 1-11/16” diameter shaft mounted in grease-packed precision flange-type bearings. The brake belt pulley is driven from metering belt pulley by enclosed PTO chain drive. 2-Bolt flange bearings for 1 to 6 cycle operation. 4-Bolt flange bearings for 7 to 39 cycle operation.

Take-Up Pulley/Shaft

(2) manually adjusted, 3-1/2 diameter, edge crowned, greased-packed precision bearing and 1-1/8” square axle.

Snub Roller

(3) No. 251AB roller. Adjustable for belt tracking.

Fill Roller

(1) No. G196GH roller. Pop out design.

Idler Pulley/Shaft

(4) 3-1/2 diameter, edge crowned, greased-packed precision bearing and 1-1/8” square axle.

Power Unit

From 1/2 to 5 HP; TEFC C-Faced motor/reducer units for speeds from 45-400 fpm (meter belt “B”). Underhung mounting (side mounting available). Chain drives with hardened tooth sprockets and taper-lock hubs.

Belting

Belt A - PVK 90 Rough-Top carrying surface X Brushed Friction Surface bed side.

Belt B - PVK 90 Friction-Surface conveying surface X Brushed Friction Surface bed side.

Application

To generate a gap between individual packages released from an accumulation line.

Underside Personnel Guard

Attached to bottom flanges. Removable.

Operation

The speed of Metering Belt “B” is faster than Brake Belt “A”. This speed differential generates a gap between items that can be detected by an electric eye. The conveyor can be stopped and started to precisely control the release of each item.

Knife Edge Idler Pulley - Optional

Frame

5-1/4” deep side plates attached to conveyor frame. Adjustable for belt tracking.

Pulley/Shaft

2-1/4” diameter x 7/16” wall, precision internal roller bearing, mounted on 3/4” diameter CRS shaft, milled one end to lock in “d” hole. Cotter pinned.

SECTION D:ENGINEERING DATA

Power-Unit Selection

Step 1 - Calculate the Live Load

Determine the weight and number of loads to be conveyed. Then use the following formula to calculate the conveyor's Live Load:

$$\textit{Live Load (lbs/ft)} = \frac{\textit{Total Weight on Conveyor (lbs)}}{\textit{Conveyor Length (ft)}}$$

Note: Assume that the conveyor is fully loaded with the heaviest load to be transported.

Step 2 – Determine the Belt-Speed Ratio (A/B)

Table D 1: lists standard belt-speed ratios corresponding to the distance between products, for a range of product lengths. In the appropriate "Product Length" column, find the first value that exceeds the desired distance between products. If the products to be conveyed vary in length, use the length of the shortest product. Select the belt-speed ratio on the same row as the selected distance between products.

Table D 1: Distance Between Products And Belt-Speed Ratio (A/B)

Belt-Speed Ratio (A/B)	**Product Length (Inches)**											
	9	**12**	**15**	**18**	**21**	**24**	**30**	**36**	**42**	**48**	**54**	**60**
1.09	0.8	1.1	1.4	1.6	1.9	2.2	2.7	3.2	3.8	4.3	4.9	5.4
1.14	1.3	1.7	2.1	2.5	2.9	3.4	4.2	5.0	5.9	6.7	7.6	8.4
1.15	1.4	1.8	2.3	2.7	3.2	3.6	4.5	5.4	6.3	7.2	8.1	**9.0**
1.17	1.5	2.0	2.6	3.1	3.6	4.1	5.1	6.1	7.1	8.2	**9.2**	10.2
1.20	1.8	2.4	3.0	3.6	4.2	4.8	6.0	7.2	8.4	**9.6**	10.8	12.0
1.26	2.3	3.1	3.9	4.7	5.5	6.2	7.8	**9.4**	**10.9**	12.5	14.0	15.6
1.33	3.0	4.0	5.0	5.9	6.9	7.9	**9.9**	11.9	13.9	15.8	17.8	19.8
1.41	3.7	4.9	6.2	7.4	8.6	**9.8**	12.3	14.8	17.2	19.7	22.1	24.6
1.50	4.5	6.0	7.5	**9.0**	**10.5**	12.0	15.0	18.0	21.0	24.0	27.0	30.0
1.60	5.4	7.2	**9.0**	10.8	12.6	14.4	18.0	21.6	25.2	28.8	32.4	36.0
1.64	5.8	7.7	9.6	11.5	13.4	15.4	19.2	23.0	26.9	30.7	34.6	38.4
1.75	6.8	9.0	11.3	13.5	15.8	18.0	22.5	27.0	31.5	36.0	40.5	45.0
1.86	7.7	**10.3**	12.9	15.5	18.1	20.6	25.8	31.0	36.1	41.3	46.4	51.6
2.00	**9.0**	12.0	15.0	18.0	21.0	24.0	30.0	36.0	42.0	48.0	54.0	60.0

* The dimensions shown are based on there initially being no space between the two products.

Step 3 - Determine the Conveyor Speed

Table D 2: gives the resulting speed for belt A based on the following:

- The selected belt-speed ratio (A/B) (see Step 2), and
- The listed speed for belt B.

Note: The belt B speeds shown are based on standard power units. Any other speed is "special" (nonstandard) and requires an additional engineering charge.

Table D 2: Belt A Speed (Feet Per Minute)

Belt-Speed Ratio (A/B)	Belt B Speed (FPM)											
	45	**60**	**75**	**90**	**120**	**150**	**180**	**200**	**250**	**300**	**350**	**400**
1.09	41	55	69	83	110	138	165	183	229	275	321	367
1.14	39	53	66	79	105	132	158	175	219	263	307	351
1.15	39	52	65	78	104	130	157	174	217	261	304	348
1.17	38	51	64	77	103	128	154	171	214	256	299	342
1.20	38	50	63	75	100	125	150	167	208	250	292	333
1.26	36	48	60	71	95	119	143	159	198	238	278	317
1.33	34	45	56	68	90	113	135	150	188	226	263	301
1.41	32	43	53	64	85	106	128	142	177	213	248	284
1.50	30	40	50	60	80	100	120	133	167	200	233	267
1.60	28	38	47	56	75	94	113	125	156	188	219	250
1.64	27	37	46	55	73	91	110	122	152	183	213	244
1.75	26	34	43	51	69	86	103	114	143	171	200	229
1.86	24	32	40	48	65	81	97	108	134	161	188	215
2.00	23	30	38	45	60	75	90	100	125	150	175	200

Step 4 - Determine Effective Pull

Table D 3: gives the required Effective Pull based on the following:

- The conveyor's length
- The selected belt-speed ratio (A/B)
- The conveyor's Live Load.

Table D 3: Effective Pull (Pounds)

Belt-Speed Ratio (A/B)	Live Load (Pounds)											
	0	**5**	**10**	**15**	**20**	**25**	**30**	**40**	**50**	**60**	**80**	**100**
Conveyor Length – 10 feet 0 inches												
1.09	15	31	47	63	79	96	112	144	177	209	274	338
1.14	14	30	45	61	76	92	107	138	169	200	262	324
1.15	14	30	45	60	76	91	106	137	168	198	260	321
1.17	14	29	44	59	75	90	105	135	165	195	256	316
1.20	14	29	43	58	73	88	102	132	161	190	249	308
1.26	14	28	42	56	70	84	98	126	154	182	238	294
1.33	13	27	40	53	66	80	93	120	146	173	226	279
1.41	13	26	38	51	63	76	88	113	138	163	213	263
1.50	13	24	36	48	60	72	83	107	130	154	201	248
1.60	12	23	34	45	56	68	79	101	123	145	189	233
1.64	12	23	34	45	55	66	77	98	120	141	184	227
1.75	12	22	32	42	52	62	72	93	113	133	173	214
1.86	12	21	31	40	50	59	69	88	107	126	163	201
2.00	11	20	29	38	47	56	64	82	100	117	153	188
Conveyor Length – 15 feet 0 inches												
1.09	16	41	65	89	114	138	162	211	259	308	405	502
1.14	16	39	62	86	109	132	155	202	248	295	388	480
1.15	16	39	62	85	108	131	154	200	246	292	384	476
1.17	16	38	61	84	106	129	152	197	242	287	378	468
1.20	16	38	60	82	104	126	148	192	236	280	369	457
1.26	15	36	57	78	99	120	141	183	225	267	351	435
1.33	15	35	55	74	94	114	134	174	214	254	332	413
1.41	14	33	52	71	89	108	127	165	202	240	315	390
1.50	14	32	49	67	85	102	120	155	190	226	296	367
1.60	14	30	47	63	80	96	113	146	179	212	278	344
1.64	13	30	46	62	78	94	110	143	175	207	272	336
1.75	13	28	43	58	74	89	104	134	164	195	255	316
1.86	13	27	41	55	70	84	98	127	155	183	240	297
2.00	12	26	39	52	65	79	92	118	145	171	224	277

Step 5 - Determine "Headshaft" Horsepower

Table D 4: gives the Headshaft Horsepower (HP) requirement based on the following:

- The required belt B speed, and
- The required Effective Pull.

Headshaft Horsepower = (Effective Pull x Belt B Speed) ÷ 33,000

Table D 4: Headshaft Horsepower Requirement

Effective Pull (Lbs.)	Belt B Speed (FPM)											
	45	60	75	90	120	150	180	200	250	300	350	400
10	0.01	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.08	0.09	0.11	0.12
15	0.02	0.03	0.03	0.04	0.05	0.07	0.08	0.09	0.11	0.14	0.16	0.18
20	0.03	0.04	0.05	0.05	0.07	0.09	0.11	0.12	0.15	0.18	0.21	0.24
25	0.03	0.05	0.06	0.07	0.09	0.11	0.14	0.15	0.19	0.23	0.27	0.30
30	0.04	0.05	0.07	0.08	0.11	0.14	0.16	0.18	0.23	0.27	0.32	0.36
40	0.05	0.07	0.09	0.11	0.15	0.18	0.22	0.24	0.30	0.36	0.42	0.48
50	0.07	0.09	0.11	0.14	0.18	0.23	0.27	0.30	0.38	0.45	0.53	0.61
60	0.08	0.11	0.14	0.16	0.22	0.27	0.33	0.36	0.45	0.55	0.64	0.73
70	0.10	0.13	0.16	0.19	0.25	0.32	0.38	0.42	0.53	0.64	0.74	0.85
80	0.11	0.15	0.18	0.22	0.29	0.36	0.44	0.48	0.61	0.73	0.85	0.97
90	0.12	0.16	0.20	0.25	0.33	0.41	0.49	0.55	0.68	0.82	0.95	1.09
100	0.14	0.18	0.23	0.27	0.36	0.45	0.55	0.61	0.76	0.91	1.06	1.21
125	0.17	0.23	0.28	0.34	0.45	0.57	0.68	0.76	0.95	1.14	1.33	1.52
150	0.20	0.27	0.34	0.41	0.55	0.68	0.82	0.91	1.14	1.36	1.59	1.82
175	0.24	0.32	0.40	0.48	0.64	0.80	0.95	1.06	1.33	1.59	1.86	2.12
200	0.27	0.36	0.45	0.55	0.73	0.91	1.09	1.21	1.52	1.82	2.12	2.42
225	0.31	0.41	0.51	0.61	0.82	1.02	1.23	1.36	1.70	2.05	2.39	2.73
250	0.34	0.45	0.57	0.68	0.91	1.14	1.36	1.52	1.89	2.27	2.65	3.03
275	0.38	0.50	0.63	0.75	1.00	1.25	1.50	1.67	2.08	2.50	2.92	3.33
300	0.41	0.55	0.68	0.82	1.09	1.36	1.64	1.82	2.27	2.73	3.18	3.64
325	0.44	0.59	0.74	0.89	1.18	1.48	1.77	1.97	2.46	2.95	3.45	3.94
350	0.48	0.64	0.80	0.95	1.27	1.59	1.91	2.12	2.65	3.18	3.71	4.24
375	0.51	0.68	0.85	1.02	1.36	1.70	2.05	2.27	2.84	3.41	3.98	4.55
400	0.55	0.73	0.91	1.09	1.45	1.82	2.18	2.42	3.03	3.64	4.24	4.85
425	0.58	0.77	0.97	1.16	1.55	1.93	2.32	2.58	3.22	3.86	4.51	5.15
450	0.61	0.82	1.02	1.23	1.64	2.05	2.45	2.73	3.41	4.09	4.77	5.45
475	0.65	0.86	1.08	1.30	1.73	2.16	2.59	2.88	3.60	4.32	5.04	5.76
500	0.68	0.91	1.14	1.36	1.82	2.27	2.73	3.03	3.79	4.55	5.30	6.06

Step 6 - Select the Power Unit

For each of the standard motors, Table D 5: shows the maximum Headshaft Horsepower capacity according to the required belt B speed. In the appropriate “Belt B Speed” column, find the first “Maximum Headshaft Horsepower” value that exceeds the conveyor’s requirement. Then select the corresponding power unit. Note the size and ratio of the gear reducer to be used, as well as the drive-efficiency percentage.

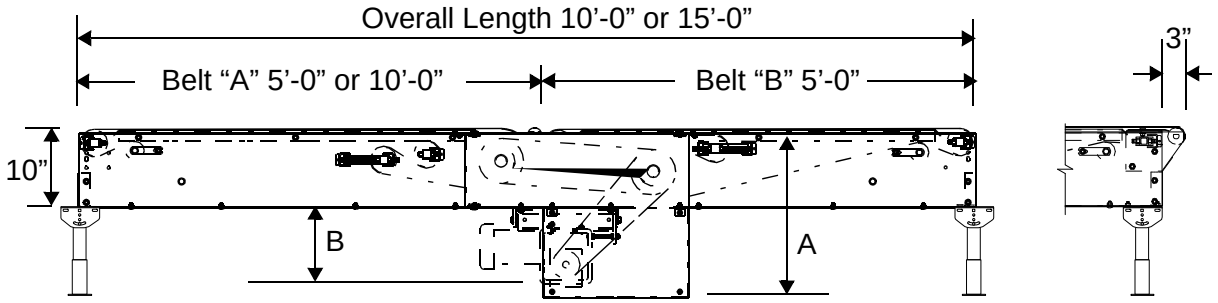
Table D 5: Power Unit - Headshaft Horsepower & Reducer Data

Power Unit	Belt B Speed (FPM)											
	45	**60**	**75**	**90**	**120**	**150**	**180**	**200**	**250**	**300**	**350**	**400**
1/2 Horsepower												
Max. Headshaft HP	0.26	0.28	0.35	0.40	0.36	0.36	0.40	0.40	0.40	0.40	0.44	0.44
Reducer Size	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"
Reducer Ratio	40:1	30:1	25:1	20:1	15:1	15:1	10:1	10:1	10:1	10:1	5:1	5:1
Drive Efficiency	52.6%	56.9%	69.5%	79.0%	72.5%	72.5%	79.7%	79.7%	79.7%	79.7%	88.7%	88.7%
3/4 Horsepower												
Max. Headshaft HP	0.39	0.43	0.52	0.59	0.54	0.54	0.60	0.60	0.60	0.60	0.67	0.67
Reducer Size	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"
Reducer Ratio	40:1	30:1	25:1	20:1	15:1	15:1	10:1	10:1	10:1	10:1	5:1	5:1
Drive Efficiency	52.6%	56.9%	69.5%	79.0%	72.5%	72.5%	79.7%	79.7%	79.7%	79.7%	88.7%	88.7%
1 Horsepower												
Max. Headshaft HP	0.41	0.57	0.70	0.79	0.73	0.73	0.80	0.80	0.80	0.80	0.89	0.89
Reducer Size	3.5"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"
Reducer Ratio	60:1	30:1	25:1	20:1	15:1	15:1	10:1	10:1	10:1	10:1	5:1	5:1
Drive Efficiency	41.1%	56.9%	69.5%	79.0%	72.5%	72.5%	79.7%	79.7%	79.7%	79.7%	88.7%	88.7%
1-1/2 Horsepower												
Max. Headshaft HP	0.72	0.72	0.68	0.85	1.09	1.09	1.20	1.20	1.20	1.20	1.33	1.33
Reducer Size	4.25"	3.5"	3.5"	3.5"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"
Reducer Ratio	60:1	50:1	40:1	30:1	15:1	15:1	10:1	10:1	10:1	10:1	5:1	5:1
Drive Efficiency	47.7%	48.1%	45.2%	56.5%	72.5%	72.5%	79.7%	79.7%	79.7%	79.7%	88.7%	88.7%
2 Horsepower												
Max. Headshaft HP	0.95	1.21	0.90	1.13	1.21	1.21	1.59	1.59	1.59	1.59	1.77	1.77
Reducer Size	4.25"	4.25"	3.5"	3.5"	3.5"	3.5"	2.62"	2.62"	2.62"	2.62"	2.62"	2.62"
Reducer Ratio	60:1	50:1	40:1	30:1	20:1	20:1	10:1	10:1	10:1	10:1	5:1	5:1
Drive Efficiency	47.7%	60.7%	45.2%	56.5%	60.6%	60.6%	79.7%	79.7%	79.7%	79.7%	88.7%	88.7%
3 Horsepower												
Max. Headshaft HP		1.21	1.49	1.49	2.26	1.82	1.79	1.79	2.70	2.70	2.70	2.70
Reducer Size		5.0"	5.0"	5.0"	4.25"	3.5"	3.5"	3.5"	3.5"	3.5"	3.5"	3.5"
Reducer Ratio		50:1	40:1	40:1	25:1	20:1	15:1	15:1	10:1	10:1	10:1	10:1
Drive Efficiency		40.4%	49.6%	49.6%	75.3%	60.6%	59.5%	59.5%	90.0%	90.0%	90.0%	90.0%

SECTION E:LAYOUT DIMENSIONS

CS Brake/Meter Belt Conveyor Layout Dimensions

Use the following for designing the layout of the CS Brake / Meter Belt Conveyor.



See next page for A & B

Figure E - 1 10’ Brake/Meter Belt (Knife Edge Pulley Shown at Right)

Power Unit

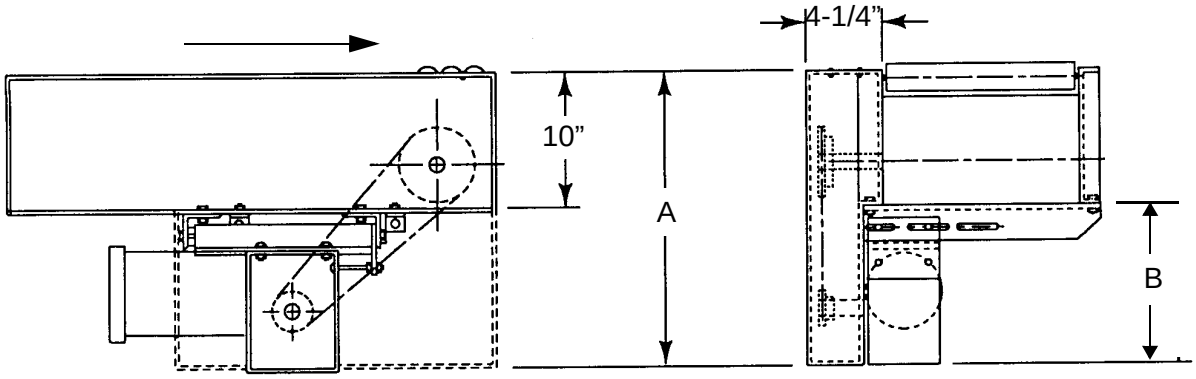


Figure E - 2 Power Unit - Underhung Mount (UH) RH Assembly Shown

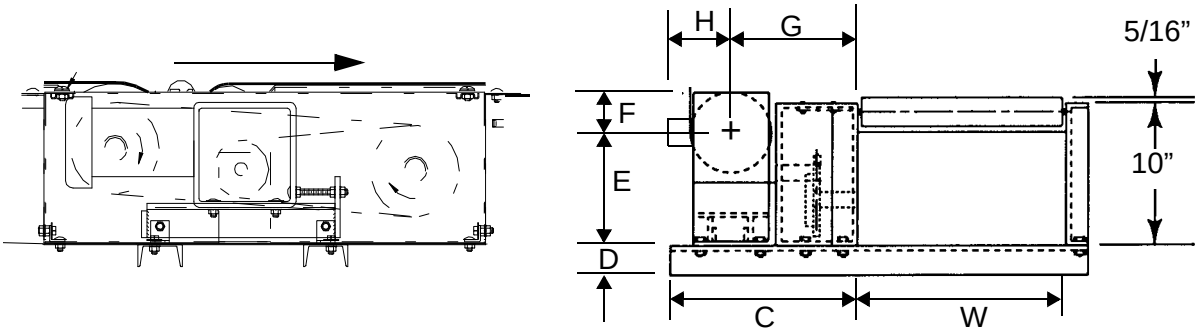


Figure E - 3 Power Unit - Side Mounted (SM) RH Assembly Shown

Table E 1: Power Unit Dimensions

Reducer No.	Dimensions (Inches)							
	A	B	C	D	E	F	G	H
Reliance (TiGear) Reducer								
175	24.50	10.88	11.25	1.44	7.13	3.69	7.59	6.00
200	24.50	11.38	11.25	1.44	7.63	3.69	7.78	6.00
262	24.50	12.06	11.25	1.44	9.00	4.81	7.81	7.06
350	26.50	15.88	14.75	1.44	10.50	4.81	9.19	7.06
Hub City Reducer								
454	27.75	16.81	14.75	1.63	10.05	5.63	9.06	8.25

SECTION F: ACCESSORIES

Brake/Meter Belt Accessories

Powered Belt Conveyor accessories include Floor Supports, Ceiling Hangers, Side Guides, and Case Deflectors. Refer to the following manuals for details:

- Floor Supports and Ceiling Hangers - Manual No. 5310
- Side Guides - Manual No. 5320
- Case Deflectors - Manual No. 5330

SECTION G: INSTALLATION PROCEDURES

Accepting Shipment

Immediately upon delivery, check that all equipment received agrees with the bill of lading or carrier's freight bill. Any shipping discrepancy or equipment damage should be clearly noted on the freight bill before signing.

Shortages or Errors

Report any shortages or errors to the Manufacturer's Customer Service in writing within ten days after receipt of shipment.

Lost or Damaged Shipment

Report lost shipments to the Manufacturer's Shipping Department.

If shipping damage is evident upon receipt of the conveyor equipment, note the extent of the damage on the freight bill and immediately contact the transportation carrier to request an inspection. Do not destroy the equipment crating and packing materials until the carrier's agent has examined them. Unless otherwise agreed by the manufacturer, the Purchaser (User) shall be responsible for filing claims with the transportation carrier. A copy of the inspection report along with a copy of the freight bill should be sent to the Manufacturer's traffic department.

Claims and Returns

All equipment furnished in accordance with the Manufacturer's Agreement is not returnable for any reason except where authorized in writing by the Manufacturer. Notification of return must be made to the Manufacturer's Customer Service Department, and if approved, a "Return Authorization Tag" will be sent to the Purchaser (Users). The return tag sealed in the "Return Authorization Envelope" should be securely affixed to the exterior surface on any side of the shipping carton (not top or bottom) or affixed to any smooth flat surface on the equipment, if not boxed.

Send authorized return shipment(s) transportation charges prepaid to the address indicated on the Return Authorization Tag. If initial shipment is refused, the Purchaser (User) shall be liable for all freight charges, extra cost of handling, and other incidental expenses.

Codes and Standards

The conveyor equipment is designed and manufactured to comply with the American National Standard Institute's "SAFETY STANDARDS FOR CONVEYORS AND RELATED EQUIPMENT" (ANSI B20.1) and with the National Electrical Code (ANSI/NFPA70).

The Purchaser/Operator shall be familiar with, and responsible for, compliance with all codes and regulations having jurisdiction regarding the installation, use, and maintenance of this equipment. Appropriate lockout/tagout policy and procedures shall comply with the minimum safety requirements outlined in the American National Standard Institute's current publication (ANSI Z244.1).

Warning Signs

Warning signs and labels posted on or near the conveyor equipment shall not be removed, painted over, or altered at any time. All safety devices, warning lights, and alarms associated with the conveyor system should be regularly tested for proper operation and serviced as needed. If the original safety item(s) become defective or damaged, refer to the conveyor parts list(s) or bill(s)-of-materials for replacement part numbers.

Safety Features

- DO turn off conveyor power source(s) and affix appropriate lockout/tagout device(s) to operating controls before servicing the equipment. ONLY trained and qualified personnel who are aware of the safety hazards should perform equipment adjustments or required maintenance while the conveyor is in operation.
- DO observe all warning signs, lights, and alarms associated with the conveyor operation and maintenance, and be alert at all times to automatic operation(s) of adjacent equipment.
- DO use extreme caution near moving conveyor parts to avoid the hazard of hands, hair, and clothing being caught.
- DO NOT sit on, stand on, walk, ride, or cross (over or under) the conveyor at any time except where suitable catwalks, gates, or bridges are provided for personnel travel.
- DO NOT attempt to repair any equipment while the conveyor is running, replace any conveyor component without appropriate replacement parts, or modify the conveyor system without prior approval by the manufacturer.
- DO NOT operate the conveyor until all safety guards are securely in place, all tools and non-product materials are removed from or near the conveying surfaces, and all personnel are in safe positions.
- DO NOT remove or modify any safety devices provided on or with the conveyor.
- DO NOT clear jams or reach into any unit before first turning off the equipment power source(s) and affixing appropriate lockout/tagout device(s).

Parts Replacement

To minimize production downtime, selected conveyor spare parts should be stocked for replacement of defective components when required. Refer to the equipment bill(s)-of-materials where quantity requirements or code numbers are not indicated on the conveyor parts list. For added convenience, a list of selected spare parts for standard products is included in this manual (see Section I).

Factory Assistance

Contact Field Service for installation, operation, or maintenance assistance, or Customer One Protection (COP) for replacement parts.

Assembling the Bed Section

Use the following steps to assemble the conveyor:

1. Remove any shipping braces and filler blocks and check the alignment of frames, pulleys, and rollers before proceeding. Corner-to-corner diagonal frame measurements of each conveyor should be equal within 1/16”.
2. Attach the supports to the conveyor, (2 for 10’-0” units and 3 for 15’-0” units) (see Figure G - 1 and Figure G - 2).

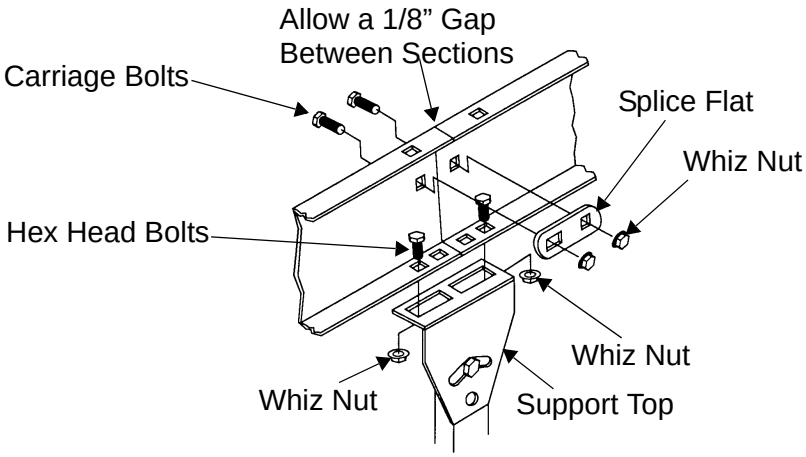


Figure G - 1 Standard Floor Support Assembly

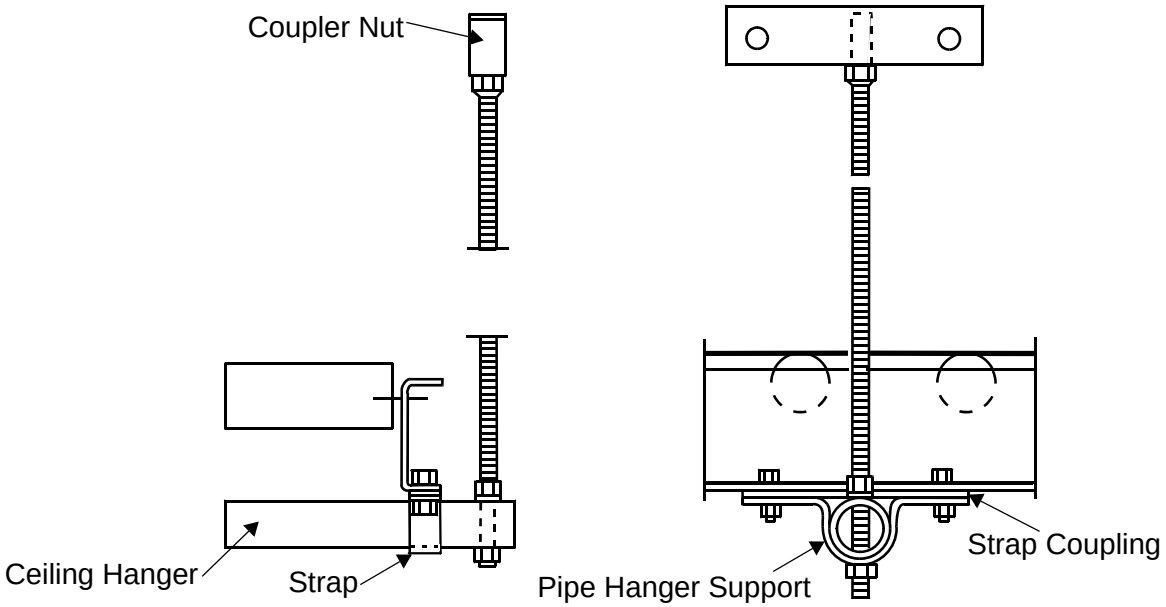


Figure G - 2 Ceiling Hanger Installation

3. Adjust the supports to the required height and level the conveyor using a spirit level. Check the alignment of the frame, pulleys, and rollers.

Note: Frames, pulleys, and rollers MUST be square to properly track the belt. When the corner-to-corner squaring method is impractical, as with long narrow sections, use a steel square to check (and realign if necessary) pulleys, rollers, and bolted cross members to ensure they are mounted perpendicular to the conveyor side frames.

For 15'-0" long units - If the joint of the 5' -0" and 10'-0" long sections is located directly over the support, the coupling straps securely couples the two sections together. If the joint is located somewhere other than directly over a support, a splice plate must be used.

The maximum allowable center-to-center distance between supports is 12'-0".

Power Unit Assembly

The Power Unit is shipped from the factory fully-assembled to the drive section. When installing, check the following before starting.

Lubricant

Check that the reducer lubricant is up to the "Oil Level Plug." Before adding any lubricant, refer to the manufacturer's tags attached to the reducer.

Reducer Plugs/Fittings

Check that the oil level and drain plugs are properly installed and sufficiently tightened. (Hub City reducers ONLY) Check that the breather plug is properly installed and functioning.

Sprocket Alignment and Set Screws

Check sprocket alignment; check tightness of taper lock hub fasteners (see Figure G - 3). For additional information, see sub-section "Pre Start-Up Preparation".

WARNING: Before working on a power unit or PTO unit, make certain the conveyor's power disconnect is locked in the open position and tagged to prevent accidental or unexpected application of power.

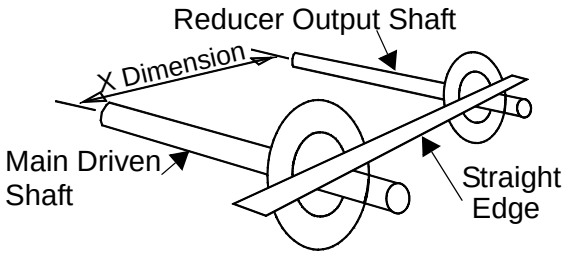


Figure G - 3 Check Sprockets Alignment - Shafts must be Parallel

Connector Channel Assemblies

The adjoining terminal end of two separate conveyors can be supported by a single floor support or ceiling hanger if the system is furnished with Connector Channel assemblies (see Figure G - 4). These assemblies consist of Connector Channels and Fill Flats that compensate for the difference in heights of various terminal ends (see Figure G - 5 and Figure G - 6).

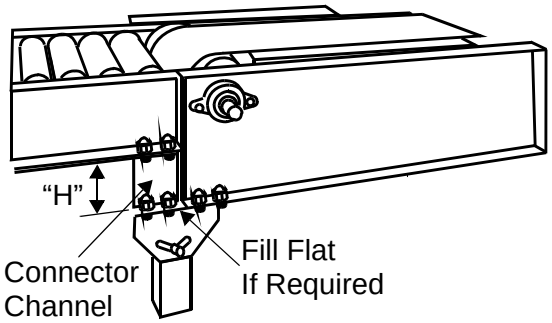


Figure G - 4 Connector Channel

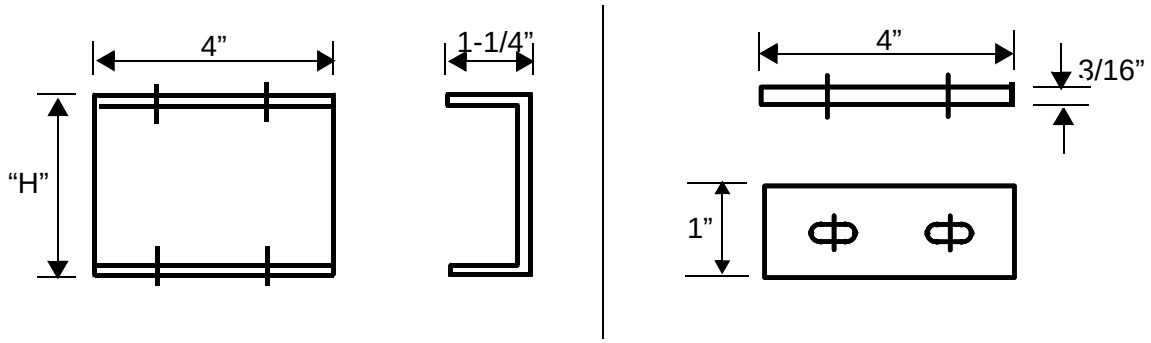


Figure G - 5 Connector Channel

Figure G - 6 Fill Flat

For example, when connecting a belt conveyor to a live roller conveyor, the fill flats are inserted between the support top and the end plates of the roller type conveyor to keep the elevations of the belt and carrier rollers the same.

Note: These flats are not needed when connecting to another belt conveyor and may be discarded in such cases.

Each Connector Channel assembly includes:

- connector channels with proper required dimensions
- (2) adjustable fill flats
- (4) 3/8" x 1" long bolts with nuts, washers, etc.

Note: These parts are shipped in hardware cartons.

Installing Electrical Wiring

Electrical wiring must be installed by a competent licensed electrician. The licensed electrician must be familiar with the operation and adjustment requirements of the conveyor so that the conduit and apparatus do not interfere with required access.

A lockable disconnect switch, rated to the service, must be mounted near and wired to each drive motor. All power to be connected to the motor must be routed through the disconnect switch. This will permit local physical lockout of the motor by persons making repairs or adjustments to the drive.

After completion of the wiring, the electrician should “bump” each drive motor, and if necessary, modify the connections to achieve proper rotation for the required direction of belt travel.

Pre-Start-Up Preparation

WARNING: To prevent accidental start-up, make certain electrical power to the power unit is turned off and locked out.

Pre-operation Check List

The following describes the check list prior to equipment start-up:

1. Check conveyor elevation and adjust supports as needed.
2. Check conveyor alignment (lengthwise and widthwise) with a spirit level. Adjust supports or add shims as needed and securely tighten all mounting bolts.
3. Check that all pulleys and rollers are mounted perpendicular (90°) to the direction of belt travel.
4. Check belt sag and adjust take-up pulley as needed.
5. Check driver/driven sprocket alignment with a straightedge. Securely tighten all sprocket fasteners.
6. Check drive chain tension and adjust gearmotor as needed. Securely tighten all mounting bolts.
7. Check motor wiring connections.
8. Check other wiring connections and test all conveyor electrical controls for proper operation.
9. Check that all conveyor safety guards removed during the installation have been replaced.
10. Check that tools and all installation materials have been removed from the conveyor.
11. Review safety precautions located in Section A of this manual.

SECTION H:MAINTENANCE

Recommended service checks and equipment maintenance are outlined below for typical, intermittent-duty conveyor applications. Additional maintenance and servicing schedule adjustments may be required for continuous-duty operation or extreme environmental conditions.

All newly installed equipment should be frequently inspected and serviced as needed during the first 40 hours of operation; thereafter, an appropriate maintenance program should be established and followed (see Table A.1).

Maintaining separate service log sheets on each type of conveyor is recommended for plants operating more than one shift. Each log sheet should show dates, detailed inspection service information, and name or initials of person(s) performing the equipment inspection or service for future reference.

WARNING: ***Before performing maintenance on a conveyor, make certain that the conveyor's power disconnect is locked in the OPEN position and tagged to prevent accidental or unexpected application of power.***
Do not perform maintenance while the conveyor is running unless specifically instructed to do so in this manual. Note: Other than belt tracking and checking of chain tension, it is NOT necessary to have the conveyor turned ON in order to perform any of the work described in this section.
Maintenance must be performed only by qualified personnel who are trained in normal and emergency operations of the conveyor and who are knowledgeable of all safety devices, their locations, and functions.

Before restarting a conveyor:

- Remove all foreign objects from the conveyor.
- Be sure that all guards and safety devices are properly installed and working.
- Make sure that all persons are clear of the conveyor and are aware that the conveyor is about to be restarted.

Table A.1 Scheduled Maintenance

	Components	Item Check									
		Lubrication	Oil Level	Tension	Wear	Alignment	Fasteners	Set Screws	Proper Position	Physical Condition	Operation
Weekly	Belt			X	X	X				X	
	Belt Lacing									X	
	Belt Return Rollers									X	X
	Electrical Devices								X	X	X
	General Structure						X			X	X
	Power Unit - Reducer		X								
	Safety Guards/Devices								X	X	X
Monthly	Bearings - External						X	X		X	
	Drive Chains and Sprockets	X		X	X	X	X	X		X	
	Take-up/Idler Pulleys									X	X
	Power Unit - Motor						X			X	
	Power Unit - Reducer						X			X	
	Pulley Lagging									X	
	Supports and Hangers						X			X	
Semi Annually 1040 hrs.	Bearings - External	X									
	Power Unit - Motor	X									
	Power Unit - Reducer	X	X								

Scheduled Maintenance

Intervals indicated for performing maintenance should be considered for an 8 hour per day operation. An application may subject the equipment to conditions that would necessitate more frequent maintenance. This may best be determined by performing maintenance more frequently when the conveyor is first put into operation, and then lengthening the intervals based on experience.

Initial Start-up/Run-in Period

Chain and Sprockets

Check the drive chain tension daily for the first week of operation, then monthly. Refer to the "Chain Maintenance" label on the inside of chain guard.

WARNING: ***Chain tension must be checked while the conveyor is running with the chain guard removed. When checking, be careful to stay clear of the chain and drive components.***

Power Unit Reducer

Reliance RELIALUBE®

This unit is supplied with "lifetime" synthetic lubricants (Reliance = Mobile SHC-634) that do not need to be changed after the unit is put into service.

Note: All reducers tend to run hot when first put into operation until the maximum break-in efficiency is reached (approx. 120 hours).

Hub City

After the first 100 hours of operation, drain and flush out the gearcase with an approved non-flammable, non-toxic solvent. Refill with fresh lubricant. The units are supplied with Hub City's "All Temperature Synthetic Gear Lubricant" (Mobile SHC-634). Consult Hub City if replacing the Hub City synthetic lubricant with another brand of premium gear lubricant.

To prevent oil leakage, apply Teflon tape or Permatex to the threads of the fill plug and oil level plug before reinstalling. Properly install and tighten plugs before putting the unit back into operation.

Daily Inspections

General walk-through inspections of the conveyor equipment during daily plant operation is recommended. Listen for unusual noises and carefully observing the system. For continuous duty applications, conduct conveyor inspections once each shift.

Frequently check equipment safety guards, warning signs, lights, and alarms associated with the operation of the conveyor system and keep them in good condition to ensure the safety of all plant personnel. Any unusual conveyor noise, oil leaks, and operational problems should be immediately reported and promptly corrected.

Weekly Inspections

Belting

Check that the belt is tracking properly along the entire conveyor length. Make appropriate adjustments of snub rollers, etc. If required; check that the belt tension is sufficient to prevent the belt from slipping on the drive pulley under the maximum required load. Remove any buildup of product spillage.

Belt Lacing

Check the lacing for damage or protrusions which might cause damage to the conveyor or product. If the lacing needs to be replaced and the take-up permits, cut both ends of the belt square and resplice. If the take-up does not permit, cut and lace in a short length of belting (1'-0" long minimum).

Belt Return Rollers

Check that all rollers are in place and turning freely. Remove any buildup of dirt and/or product spillage. Take care in keeping cleaning materials from coming in contact with the ball bearings.

General Structure/Operation

Check the conveyor's physical condition, looking for lose fasteners, damaged or wearing components. Listen for unusual noises such as squeaking bearings, chains jumping sprockets, etc.

Check that the conveyed product travels along the length of the conveyor without obstruction of hesitation.

Power Unit Reducer

Check for signs of oil leakage on the floor and/or in the drip pan. If leakage persists or the amount of leakage is significant, repair or replace the unit. Until corrections are made, closely monitor the unit's oil level.

Safety Guards/Devices

Check that the safety guards, warning signs, light, and alarms are in place and in proper working condition. Check that all emergency-stop pull-cords and/or push buttons are functioning properly.

Electrical Devices

Photocells, proximity sensors, limit switches, etc. should be periodically inspected and adjusted as needed. Lenses and reflectors on photoelectric devices should be wiped clean on a daily basis. For additional maintenance provisions, refer to the appropriate vendors instructions provided.

Monthly Maintenance

External Bearings

Check that all mounting bolts, set screws, etc, are securely tightened, and that no lubricant is coming out of the seals. Listen for any unusual noises.

Internal Bearings

Check that the bearings are fully-pressed into the roller tube, and that the lubricant is not coming out of the seals. Listen for any unusual noises.

Power Unit Motor

Remove any build-up of dirt/dust around the motor vent openings. Check that all mounting bolts are securely tightened and that the motor lead wires are securely connected.

Unless specified, wick-oil sleeve bearings should be lubricated every 2000 to 4000 hours. After the first 4000 hours of operation lubricate with 3 or 4 drops of light grade mineral oil or SAE10W motor oil. Refer to the motor lubrication plate or vendors instruction tag(s).

Power Unit Motor/Brake

Due to normal wear, the brakes require periodic inspection and adjustment. For instructions, refer to the vendors installation and maintenance manual or contact the manufacturer for additional information.

Power Unit Reducer

Check the oil level while the unit is warm, but not running. If required, add oil through the “fill” hole until the oil begins to run out of the “oil level” hole. All standard reducers are filled by the manufacturer with a synthetic gear lubricant. When replenishing the oil, be sure to use the same brand and type. DO NOT MIX lubricants. For further information, refer to the instruction tag attached to the unit.

To prevent oil leakage, apply Teflon tape or Permatex to the threads of the fill plug and oil level plug before reinstalling. Properly install and tighten the plugs before putting the unit back into operation.

Hub City reducers ONLY - Wipe off any dirt on the breather plug which could clog the unit and interfere with its operation.

Power Unit Chain and Sprockets

Check tension per instructions given on the “Chain Maintenance” label located on the inside of the chain guard. Remove dirt or dried oil with a kerosene soaked rag.

Inspect the chain for need of lubrication. If required, lubricate the chain lightly with SAE 30 oil. Do not use grease.

Check sprocket alignment by placing a straight-edge across the face of both sprockets simultaneously. Also, check for wear on the sprocket teeth, and side bards of the chain. If loose, tighten the sprocket fasteners.

Drive Chain

Lubricate and check tension per instructions given on the “Chain Maintenance” label located on the inside of the chain guard. Remove any dirt or dried oil with a kerosene soaked rag.

WARNING: ***Chain tension must be checked while the conveyor is running and/or with the guards removed. When checking, be careful to stay clear of the chain and drive components.***

Drive Sprockets

Check the alignment by placing a straight-edge across the face of both sprockets simultaneously. Also check for wear on the sprocket teeth and side bars of the chain. If loose, tighten the sprocket fasteners.

Drive Pulley/Lagging

Check the pulley alignment and make certain that all mounting bolts are securely tightened. Check for worn or damaged lagging on the drive pulley. Repair or replace as required.

Supports and Hangers

Check that all floor supports and/or ceiling hangers are in good physical condition and have not been damaged. Check that all fasteners are securely tightened and that none are missing.

Semi Annual Maintenance

Power Unit Motor

Units up to 5 HP are lubricated for life. For 7.5 HP and 10 HP motors, refer to the manufacturer's motor lubrication plate or operating instruction tag wired to the motor.

Power Unit Reducer (Hub City ONLY)

Drain and refill with fresh gear lubricant. These units are filled with "All Temperature Synthetic Gear Lubricant", supplied by Hub City. Consult Hub City if replacing the Hub City Synthetic lubricant with another brand of premium gear lubricant.

External Pulley Bearings

All external bearings have lubed-for-life bearing cartridges, and do not require periodic lubrication.

If desired, the bearings may be re-lubricated using the grease-fitting that is provided in all bearing housings. Once grease is added, the bearing must be re-lubricated every 6 months with a lithium based ball bearing grease or compatible grease conforming to NLG1 Grade 2 consistency.

Add the grease slowly and sparingly while the pulley is rotating until a slight showing of grease forms around the seals. DO NOT OVER LUBRICATE. Too much grease may damage the seals. If a bearing is over greased; remove the fitting to allow the excess grease to escape. Replace the fitting and wipe clean before putting the conveyor back into operation.

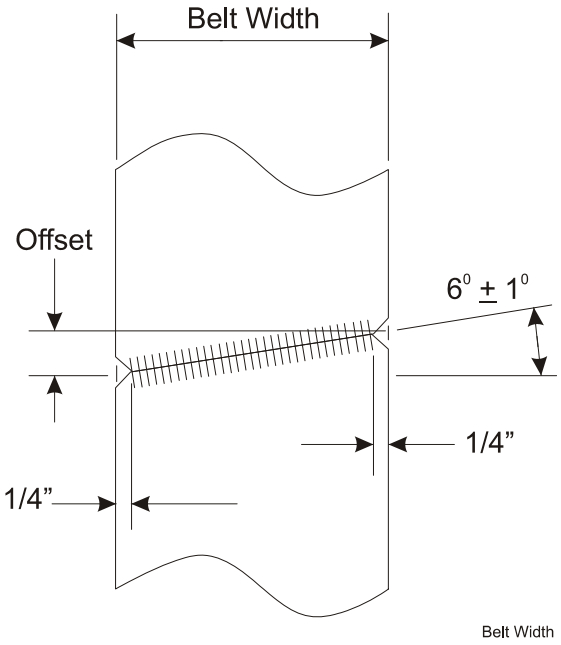
Internal Bearings

Check that the bearings are fully-pressed into the roller tube, and that the lubricant is not coming out of the seals. Listen for any unusual noises.

Note: For 2-1/4" dia. knife edge pulleys lubricate with Valvoline #633 every 1000 hours.

Replacing the Belt(s)

When replacing the belt(s), it may be beneficial in certain applications to splice the belt on a bias to reduce noise. When the belt is spliced on a bias, Intelligrated engineering requires the angle of the splice to be less than 7 degrees. Use the table below as a guide for common belt widths and dimensions. Each end of the belt must be cut at the exact same angle to ensure proper belt tracking. Be sure to take the offset measurement before trimming 1/4” from the corners, so as not to exceed the maximum bias angle.



Common Belt Widths	Offset Dimension for 6 Degree Bias
12”	1-1/4”
18”	1-7/8”
24”	2-1/2”
30”	3-1/8”
36”	3-13/16”

Troubleshooting

Basic troubleshooting provisions are outlined below. For troubleshooting for the specific conveyor system installed, always check the maintenance information. Basic troubleshooting is outlined in Table H 1:.

CAUTION: ***Do not clear jams or reach into any unit before first turning off the equipment power source(s) and making certain that all moving parts are fully stopped. To avoid personal injury or equipment damage, lockout and tagged the conveyor operation control(s) before attempting to correct any malfunction.***

Table H 1: Basic Troubleshooting Problems and Solutions

Problem	Cause	Solution
Conveyor does not start.	Electrical power shut off or control circuit NOT energized.	Check that system control panel(s) are energized. Be certain emergency stop devices are not activated.
	System control devices (photocells, limit switches, etc.) out of adjustment or defective.	Adjust or replace.
	Motor overload block open.	Check conveyor drive system and overload sizing before resetting.
Conveyor shuts off.	Accumulation photocell or other control device(s) actuated or defective.	Check conveyor accumulation or obstruction of control device; replace control device if defective.
	Emergency stop activated.	Correct condition and reset according to control logic.
	Power or component failure at system control center.	Refer to vendor manuals.
	Motor overload.	Check conveyor drive system and overload sizing before re-starting.
One part of belt creeps to one side.	Belt ends not cut square.	Cut the belt ends perfectly square using a T-square.

Problem	Cause	Solution
Entire belt creeps to one side.	Improper loading of belt.	Center the product on the belt. Load in direction of travel.
	Belt shifts to low side. The base structure or conveyor frame is not level or is crooked.	Stretch a string along the edge of the frame, check alignment of the frame and correct. Next, check the level of support structure.
	Alignment of pulleys; drive, tail, pulleys, or snub rollers are out of line or not perpendicular with the center line of the conveyor.	Use a T-square against the edge of the conveyor to recheck and square the pulleys.
	Underside of the belt is dirty.	Remove foreign matter, because it creates a new crown on the pulley/ roller face adversely affecting the tracking.
Belt creeps to one side in head (discharge) pulley area.	Head pulley is out of alignment (not perpendicular with the center line of the conveyor).	First, adjust the snub roller. Second, realign the head pulley by advancing (belt travel direction) the end of the pulley to which the belt has shifted.
Belt creeps to one side in tail (infeed) pulley area.	Tail pulley is out of alignment (not perpendicular with the center line of the conveyor.	First, adjust the snub roller. Second, realign the tail pulley by advancing (return belt travel direction) the end of the pulley to which the belt has shifted.
Belt wanders irregularly.	The conveyor is over-belted. This results in the belt being too stiff to properly operate over the pulley diameters.	Change to the proper belt or use pulleys with larger diameters.
	Off center or improper loading.	Correct loading procedure.
Edge wear is excessive.	Belt edges fold up on conveyor guards and frame.	Remove the rough areas on the conveyor guards or frame.
	Belt shifts to opposite side and rubs excessively due to side loading.	Loading in direction of belt travel will improve this condition.
	Refer to previous Belt Problems to eliminate edge rubbing.	
Belt fasteners pulling out.	Fasteners are incorrect size	Re-lace the belt with proper size fasteners.
	Too much tension on belt.	Relieve tension until belt will run without slipping on the drive pulley.

SECTION I: PARTS IDENTIFICATION

Introduction

The purpose of this section is to identify the critical replacement parts required for a solid preventative maintenance program and to minimize the chances for extended DOWN TIME.

The following pages illustrate the location of these recommended spare parts as they apply to each particular unit. Keep in mind that these illustrations apply to the STANDARD product line ONLY.

Brake Metering Belt

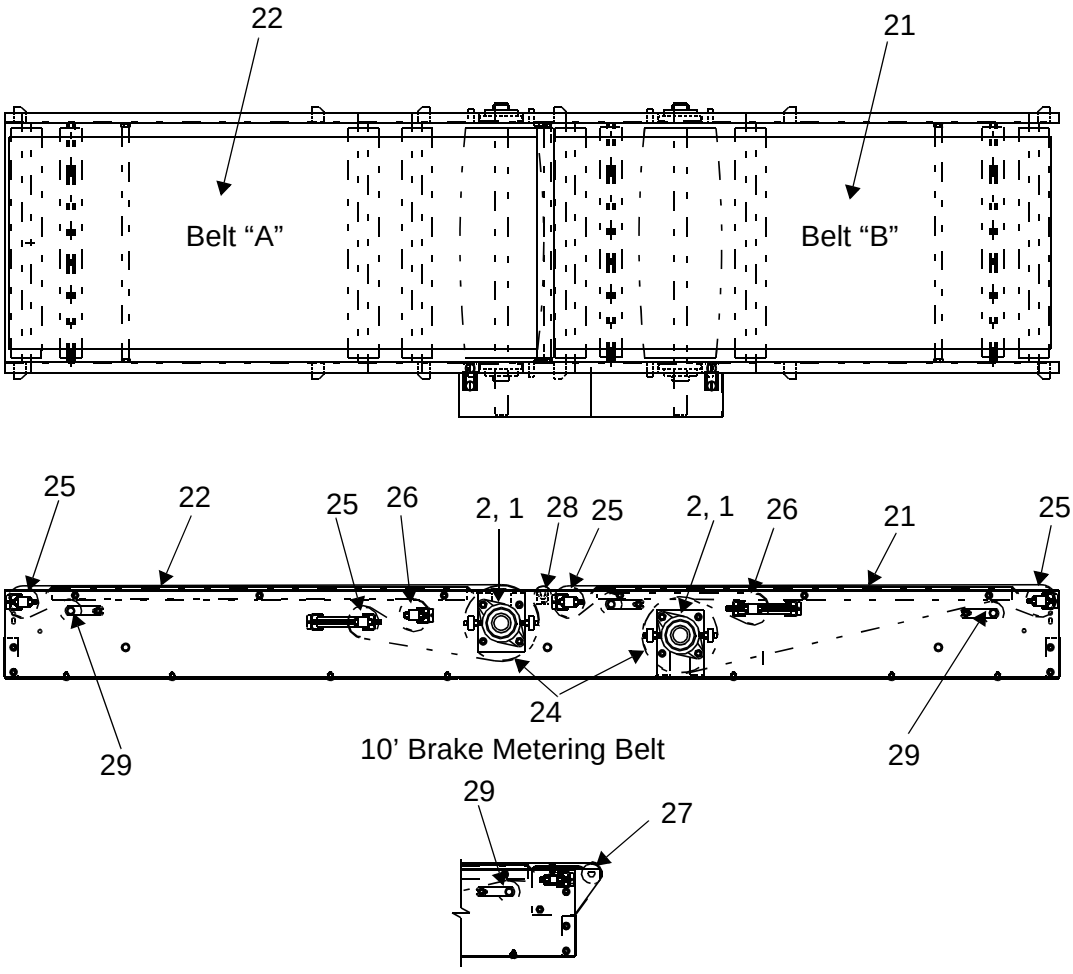


Figure I - 1 Brake Metering Belt - Top and Side View, and Knife End Extension

Power Units

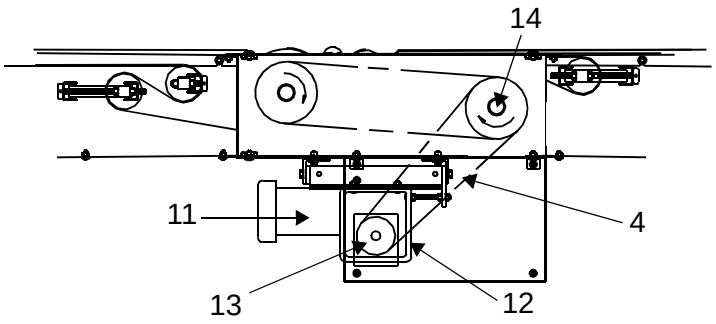


Figure I - 2 Power Unit - Underhung Mount (UH) RH Assembly Shown

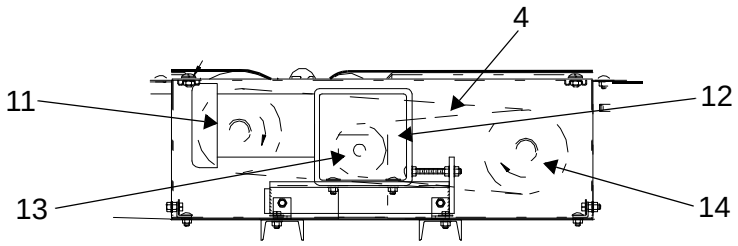


Figure I - 3 Power Unit - Side Mounted (SM) RH Assembly Shown

Table I 1: Power Unit Reducer Mount Requirements

Underhung Mount (UH)			**Side Mount (SM)**		
RH Assembly (Shown Above)	Reliance	L1	RH Assembly (Shown Above)	Reliance	K1
	Hub City	C		Hub City	B
LH Assembly	Reliance	K1	LH Assembly	Reliance	L1
	Hub City	B		Hub City	C

Common Parts - Non-Width Related

Key No.	Part Description	Part Number
1	Bearing, 2-Bolt Flange, 1-11/16” BR - Pressure Lubricated (1-6)	400990
2	Bearing, 4-Bolt Flange, 1-11/16” BR - Pressure Lubricated (7-39)	400952
3	Bearing - For 3-1/2” Idler/Take-Up Pulley (1-1/8” SQ BR)	350360
4	Chain - RC-60 (High-Speed)	200987
	Chain - RC-60 Connector Link	200986
	Chain - RC-80 (High Speed)	200989
	Chain - RC-80 Connector Link	200070
5	Cable - Safety / Fill Roller	500843
6	Paint - Medium Gray - 5 Gal	000013
	Paint - Medium Gray - Spray Can	000014
7	Reducer Lubricant - US Electric Motor - Above +20° F (1 Gallon)	000021
	Reducer Lubricant - US Electric Motor -20° to +20° F (1 Gallon)	Consult Factory
	Reducer Lubricant - Reliance -20° F to +20° F (1 Gallon)	Consult Factory
	Reducer Lubricant - Hub City -20° F to +20° F (1 Gallon)	Consult Factory

Key No.	Part Description	Part Number		
11	**Power Unit - C-Face Motor**		**Brake Motor (Kit)**	**Horton Clutch/ Brake**
			Reliance	
	1/2 HP 56-C - 230-460/3/60		(33-0903)	4870723
	3/4 HP 56-C - 230-460/3/60			
	1 HP 56-C - 230-460/3/60			
	1.5 HP 145-C - 230-460/3/60		(33-0906)	4870724
	2 HP 145-TC - 230-460/3/60			
	3 HP 182-TC - 230-460/3/60		330619	NA
	5 HP 184-TC -230-460/3/60		330623	NA

Key No.	Part Description			Part Number			
12	Power Unit - C-Face Reducer						
	Ratio	Frame		Reliance		Hub City	
		Red.	Motor	K1	L1	B	C
	5:1	175ES	56C	810751	810752		
		175ES	140TC	810753	810754		
		17	56C				
		17	145TC				
		200ES	140TC	810767	810768		
		26	145TC				
	10:1	175ES	56C	810755	810756		
		17	56C				
		200ES	140TC	810769	810770		
		262	140TC	810893	810894		
		26	145TC				
		350	180TC	810952	810953		
		37	182TC				
		454	182TC			811278	811279
		524	184TC			811294	811295
		524	213TC			811265	811266
		524	215TC			811237	811238

Key No.	Part Description		Part Number			
12	**Power Unit - C-Face Reducer**					
	Ratio	**Frame**		**Reliance**		**Hub City**	
		Red.	**Motor**	**K1**	**L1**	**B**	**C**
	15:1	175ES	56C	810757	810758		
		17	56C				
		200ES	56C	2003631	2004631		
		262	140TC	810919	810939		
		26	56C				
		26	140TC				
		350	140TC	810871	810872		
		350	180TC	810920	810940		
		37	140TC				
		37	180TC				
		524	184TC			811296	811297
		524	213TC			811233	811234
	20:1	175ES	56C	810759	810760		
		17	56C				
		262	56C	810906	810926		
		26	56C				
		350	140TC	810910	810930		
		350	180TC	810913	810933		
		37	145TC				
		37	182TC				
		454	184TC			811229	811230
		524	184TC			811263	811264
	25:1	175ES	56C	810761	810762		
		17	56C				
		262	56C	810879	810880		
		26	56C				

Key No.	Part Description		Part Number			
12	**Power Unit - Reducer - C-Face (continued)**					
	Ratio	**Frame**		**Reliance**		**Hub City**	
		Red.	**Motor**	**K1**	**L1**	**B**	**C**
	30:1	262	56C	810907	810927		
		26	56C				
		350	140TC	810911	810931		
		37	145TC				
		524	182TC			811272	811273
	40:1	200ES	56C	2003613	2004613		
		26	56C				
		350	140TC	810912	810932		
		37	145TC				
		454	145TC			810854	810855
		524	182TC			811274	811275
	50:1	262	56C	810844	810845		
		26	56C				
		350	56C	810950	810951		
		37	56C				
		454	145TC			810848	810849
		524	182TC			811276	811277
	60:1	262	56C	2003700	2004700		
		26	56C				
		350	56C	810846	810847		
		37	56C				
		454	56C			810852	810853
		454	145TC			810850	810851

Key No.	Sprocket		"Hub Type"* (Hub No.)	Sprocket Bore / Part Number					
				7/8"	1"	1-1/8"	1-1/2"	1-5/8"	1-3/4"
13	**Power Unit Sprocket - Driver**								
	RC-60	11T	"TL" (1008)	745631		745631			
	RC-60	13T	"TL" (1210)	745633	745633	745633			
	RC-60	14T	"TL" (1210)	745634	745634	745634	745634	745634	
	RC-60	15T	"TL" (1610)	745635	745635	745635	745635	745635	
	RC-60	16T	"TL" (1610)				745636	745636	
	RC-60	17T	"TL" (1610)			745637	745637	745637	
	RC-60	18T	"TL" (1610)	745638	745638	745638	745638	745638	
	RC-60	19T	"TL" (1610)	745639	745639	745639	745639	745639	
	RC-60	20T	"TL" (2012)				745640	745640	
	RC-60	21T	"TL" (2012)				745641	745641	
	RC-60	22T	"TL" (2012)		745642	745642	745642	745642	
	RC-60	25T	"TL" (1008)				745645	745645	
	RC-60	26T	"TL" (1210)				745646	745646	
	RC-60	29T	"TL" (1610)				745649	745649	745649
	RC-60	30T	"TL" (1610)				745650	745650	745650
	RC-80	11T	"B"				745313	745311	
	RC-80	12T	"TL" (1615)				745683	745683	

*Note: "B" = Sprocket with finished bore, keyway and (2) Set Screws.

"TL" = Sprocket with Taper Bore Bushing.

"H" = Sprocket with Split Taper Bushing.

Key No.	Sprocket		"Hub Type"* (TL Hub No.)	Sprocket Bore / Part Number					
				7/8"	1"	1-1/8"	1-1/2"	1-5/8"	1-3/4"
13	**Power Unit Sprocket - Driver (continued)**								
	RC-80	13T	"TL" (1615)				745684	745684	
	RC-80	14T	"TL" (1615)				745685	745685	
	RC-80	16T	"TL" (2012)						745687
	RC-80	17T	"TL" (2012)						745688
	RC-80	18T	"TL" (2012)						745689
	RC-80	19T	"TL" (2012)						745690
	RC-80	20T	"TL" (2517)						745691
	RC-80	21T	"TL" (2517)						745692
	RC-80	23T	"TL" (2517)						745694
	RC-100	11T	"TL" (1615)						745721
	RC-100	12T	"TL" (1615)						745722
	RC-100	13T	"TL" (2012)						745723
	RC-100	14T	"TL" (2517)						745758
	"TL" Hub		No. 1008	230701					
			No. 1210	230716	230717	230718			
			No. 1215			230731			
			No. 1610	230746	230747	230748	230753	230751	
			No. 1615				230766	230763	230759
			No. 2012		230777	230778	230785	230787	230786
			No. 2517						230798

Key No.	Sprocket		"HubType"* (Hub No.)	Sprocket Bore / Part Number			
				1-3/16"	1-7/16"	1-11/16"	1-15/16"
14	**Power Unit Sprocket - Driven (Hardened Teeth)**						
	RC-60	27T	"TL" (2012)			745647	
	RC-80	19T	"TL" (2012)			745690	
	RC-100	15T	"TL" (2517)			745725	
	"TL" Hub		No. 2012		230781	230782	230783
			No. 2517			230793	230794

*Note "B" = Sprocket with finished bore, keyway and (2) Set Screws.

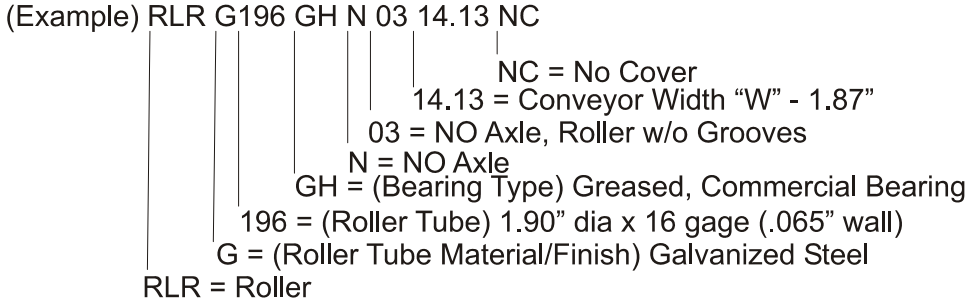
"TL" = Sprocket with Taper bore Bushing.

"H" = Sprocket with Split Taper Bushing

Width Related Parts

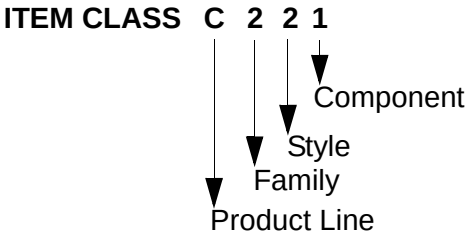
Key No.	Part Description	Part Number				
		16”	22”	28”	34”	40”
		Note: Belt Width = Conveyor Width MINUS 4”.				
21	Belt “B” (Specify Footage Required)					
	PVK 90 Brushed x FS (Black)	190361	190362	190363	190364	190365
22	Belt “A” (Specify Footage Required)					
	PVK 90 RT x FS (Black)	190368	190369	190370	190371	190372
23	Belt Lacing/Pin - Clipper					
	No. 1A (FS x FS)	190712	190713	190714	190715	190716
	No. 1 (RT x FS)	190723	190724	190725	190726	190727
	Pin No. #13 (For No. 1 and 1A)	190703				
24	Pulley/Shaft, Drive, Crown Face, Lagged, Single Shaft Extension (Power Unit)					
	Series 800 - 8-3/16” x 1-11/16”	4852716	4852722	4852728	4852734	4852740
25	Pulley/Axle, Idler, Crown-Face					
	3-1/2” x 1-1/8” SQ BR	501243	501244	501245	501246	501250
	Axle - 1-1/8” SQ (End Idler Assy.)	690909	690910	690919	690920	690970
26	Pulley/Axle, Idler, Flat Face					
	3-1/2” x 1-1/8” SQ BR	501238	501239	501240	501241	501247
	Axle - 1-1/8” SQ CRS	690942	690943	690944	690945	690946
27	Pulley - Idler Knife Edge					
	2-1/4” x 3/4” BR	510001	510002	510003	510004	510005
28*	Roller without Axle - Fill					
	RLR G196 GH N 03 14.13 NC	7496296	-	-	-	-
	RLR G196 GH N 03 20.13 NC	-	7496401	-	-	-
	RLR G196 GH N 03 26.13 NC	-	-	7496494	-	-
	RLR G196 GH N 03 32.13 NC	-	-	-	7496577	-
	RLR G196 GH N 03 38.13 NC	-	-	-	-	7496637
	AXLE, 7/16” Hex	7499010	7499011	7499012	7499013	7499014
29	Roller/Shaft - Snub/Take-Up					
	No. G251AB 2-1/2” x 11/16” Hx	501056	501057	501058	501059	501060

*Roller Description Explanation



SECTION J:PRODUCT INDEX

Brake/Meter Belt Conveyors



(F1) MB HAND ASSY-PTO, DRIVE ASSY (RH, LH)
(F2) SNUB ROLLERS
(F3) MB PBM PTO SPEED RATIO
(F4) MB 3.5” OR KNIFE EDGE IDLER
(F5) POWER UNIT RH
(F6) POWER UNIT LH
(F7) MOTOR
(F8) MB ENDRV CHAIN GUARD & SUPT
(F9) MB BELT & LACING

DESCRIPTION	DWG. NO.	16” W	22” W	28” W	34” W	40” W
PBM 10-0/__1 TO 6	19387 D	827226	827227	827228	827229	827230
PBM 15-0/__1 TO 6	19387 D	827231	827232	827233	827234	827235

(F1) MB HAND ASSY-PTO, DRIVE ASSY (RH, LH)
(F2) SNUB ROLLERS
(F3) MB PBM PTO SPEED RATIO
(F4) MB 3.5” OR KNIFE EDGE IDLER
(F5) POWER UNIT RH
(F6) POWER UNIT LH
(F7) MOTOR W/CLUTCH BRAKE
(F8) MB ENDRV CHAIN GUARD & SUPT
(F9) MB BELT & LACING

DESCRIPTION	DWG. NO.	16” W	22” W	28” W	34” W	40” W
PBM 10-0/__7 TO 40	19386 D	827236	827237	827238	827239	827240
PBM 15-0/__7 TO 40	19386 D	827241	827242	827243	827244	827245