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# BK2100 Series Conveyor User's Guide

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## Manual History

Version	Date	Description	ECO No.
1.0	03-Feb-10	Manual Released	N/A

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**Appendix B – Electrical Drawings**



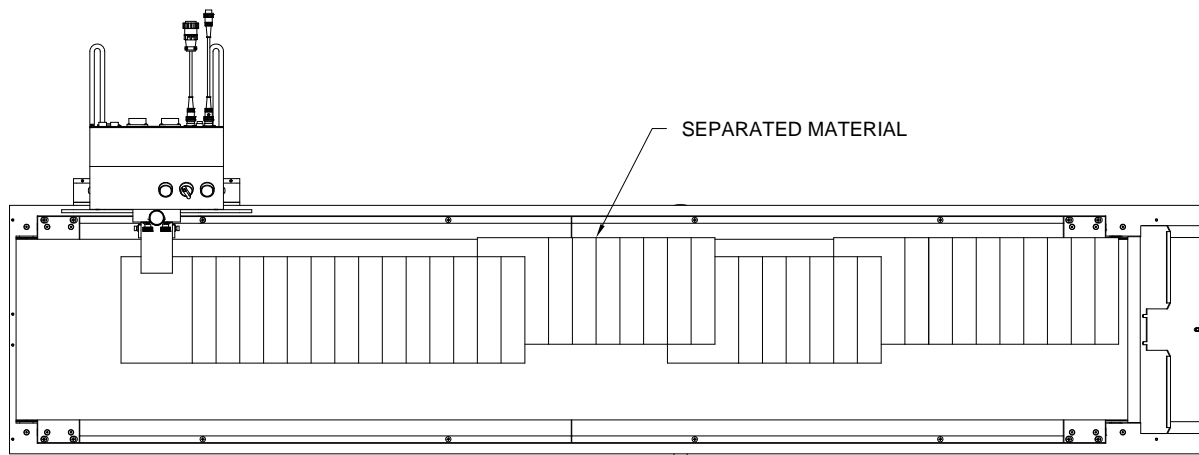
## 1.1 Description

The BK2100 Series Conveyor was designed to operate with Buskro equipment. It is capable of running inline with the transport equipment or at 90 degrees. By default, the Conveyor is controlled by the Inkjet Base. This includes starting, stopping, and speed control.

## 1.2 Bundle Separation

In order to separate the production job into more manageable bundles, bundle separation is possible with Buskro equipment. When used with a Buskro Inkjet Base and controller, bundle separation is provided by speeding up the conveyor between bundles. This provides a physical separation between bundles. Alternatively, a BK160 Conveyor Sort Module can be purchased to separate bundles by offsetting the bundles along the width of the conveyor (Figure 1-1). This can provide a cleaner bundle separation and makes better use of the conveyor length.

*Figure 1-1: Bundle Separation with the optional BK160 Conveyor Sort Module*



### 1.3 Conveyor Specifications

Figure 1-2: Overall Dimensions (BK2108 with BK160 Shown)

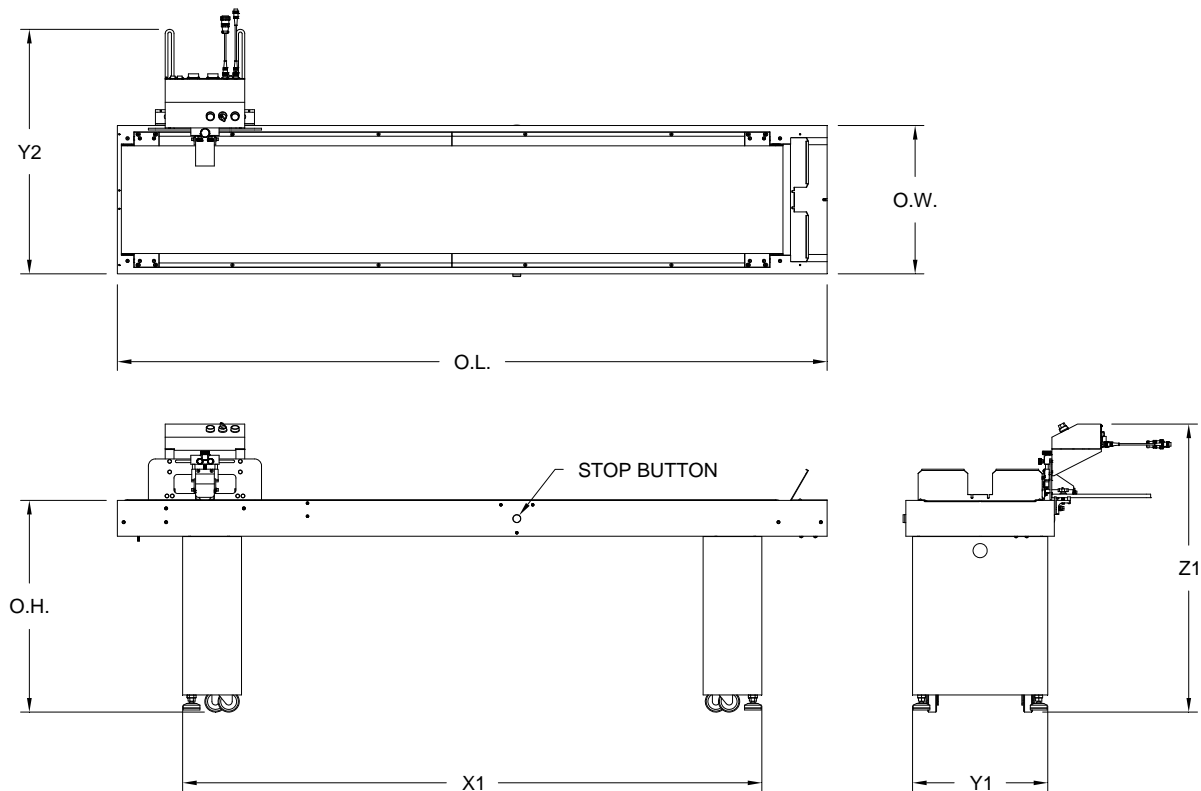


Table 1-1: Overall Dimensions (BK2108 with BK160 Shown)

Symbol	Description	Dimensions	
O.W.	Overall Width	21.00"	534 mm
O.L.	Overall Length	100.40"	2550 mm
O.H.	Overall Height	30.00"	762 mm
X1	Leg Distance (Outside)	81.94"	2081 mm
Y1	Leg Width	19.12"	486 mm
Y2	Width with BK160	35.00"	889 mm
Z1	Height with BK160	40.80"	1036 mm

**Note:** The Conveyor running perpendicular to the Transport Base is the BK2108SB.

The Conveyor running inline with the Transport Base is the BK2108SBI.

Conveyors connecting to a BK71B or a BK761B set at 230 VAC use the 180 VDC motor (BK2108SB-180 or BK2108SBI-180). Conveyors connecting to a 115 VAC BK761B use the 90 VDC motor (BK2108SB-90 or BK2108SBI-90).

Standard Knock Down assembly for the BK2108SB is the BK161. Optional sort module is the BK160. For more information on the BK160, contact Buskro or refer to the BK160 manual.

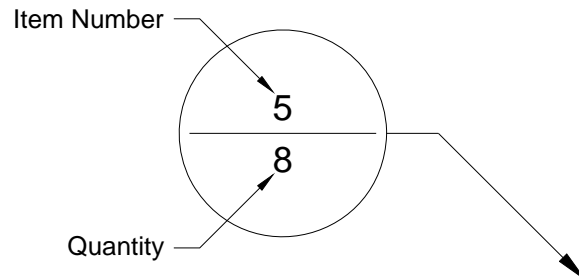
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## Balloon Annotation and Parts Listing



Item	Part Number	Quantity	Description	Reference
1				
2				

The following is a description of how to interpret the information in this section:

### Item:

This column indicates the item number used for each unique part in an assembly drawing. It is matched with the top number in the balloon pointing at the associated part.

### Part Number:

This column represents the Buskro part number.

### Quantity:

This represents the total number of a given part in an assembly. It is matched with the bottom number in the balloon pointing at the associated part.

### Description:

This column contains a brief description of the part.

### Reference:

This column indicates the page location for sub-assemblies.

*Table A-1: BK2108SB-180 - Conveyor, 8', Solid Belt, Right Angle, 180 VDC*

Item	Part Number	Quantity	Description	Reference
1	406670	2	Screw, HHMS, 5/16-18 UNC x 1"	
2	440015	2	Washer, 5/16" ID	
3	614530A	1	Cable, Conveyor Interconnect	
4	706135	1	Backlash Plate	
5	9105750A	1	Conveyor Assembly, 8', Solid Belt, 180 VDC	Page A-17
6	BK161	1	Conveyor Knockdown Assembly	Page A-5

*Figure A-1: BK2108SB-180 - Conveyor, 8', Solid Belt, Right Angle, 180 VDC*

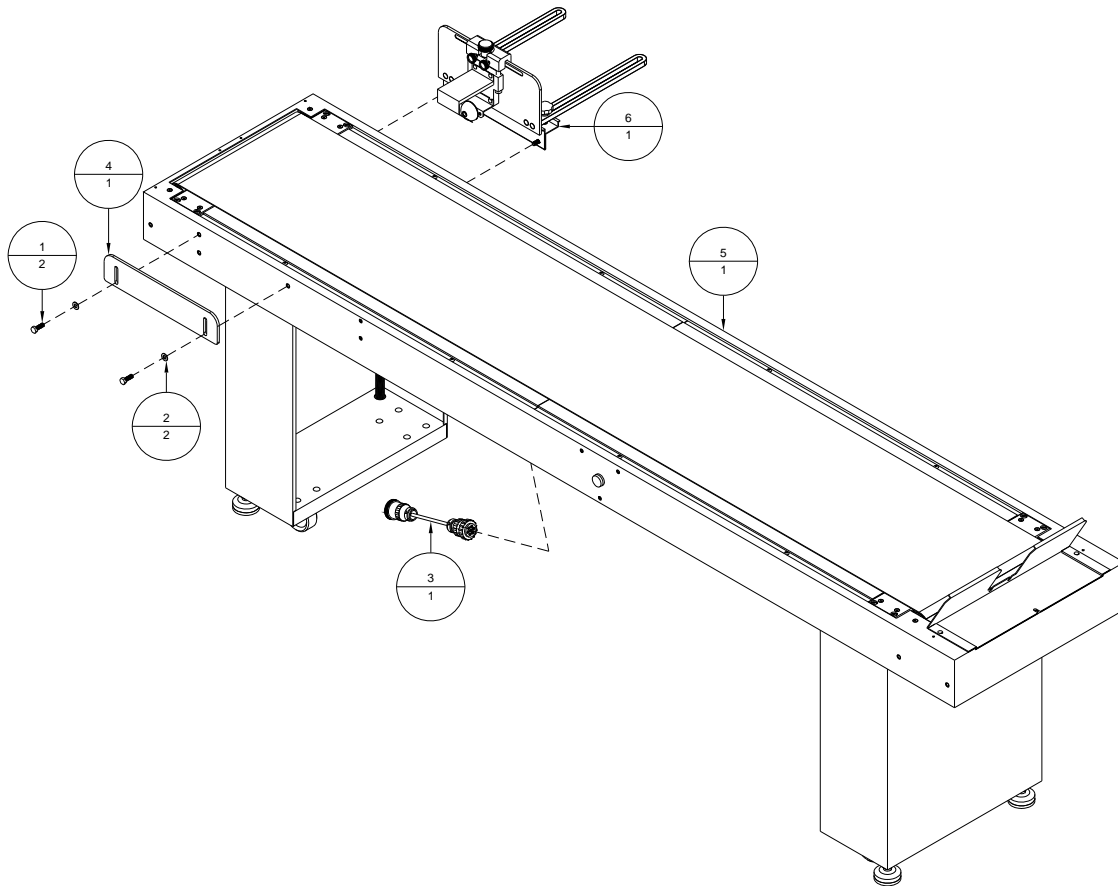
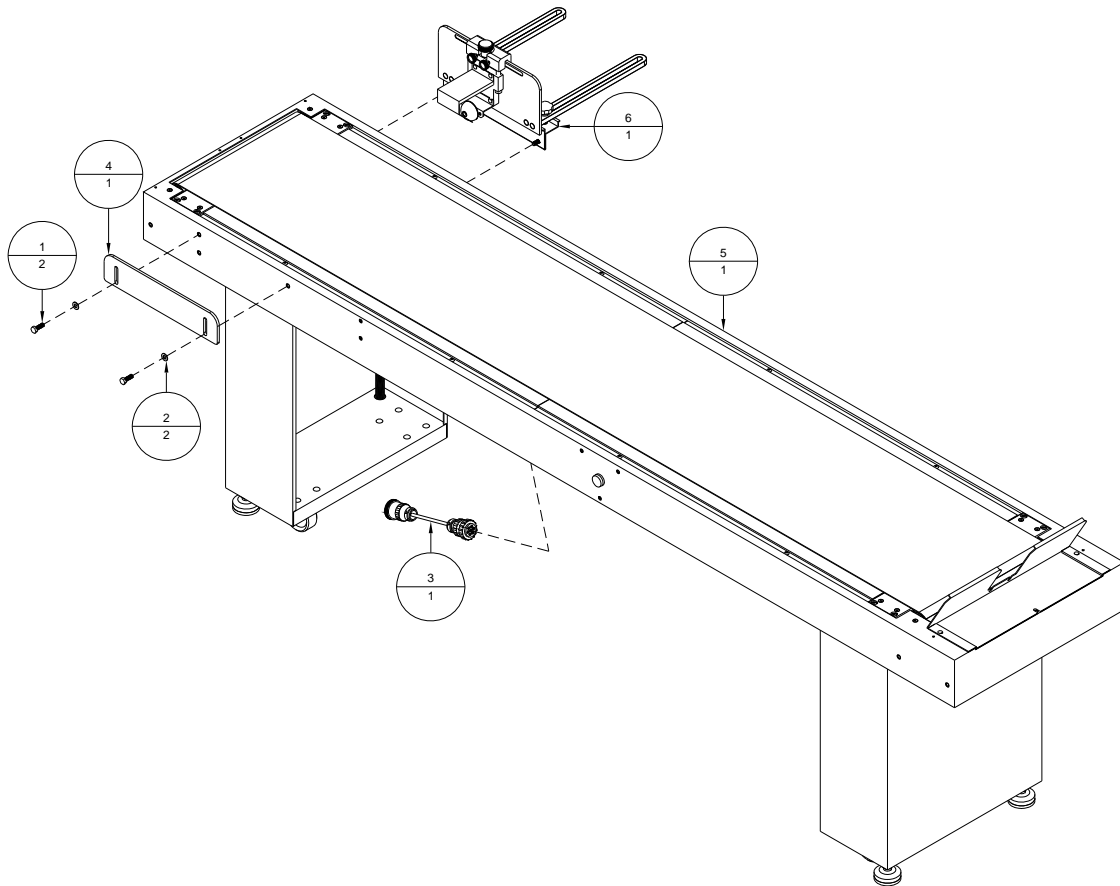


Table A-2: BK2108SB-90 - Conveyor, 8', Solid Belt, Right Angle, 90 VDC

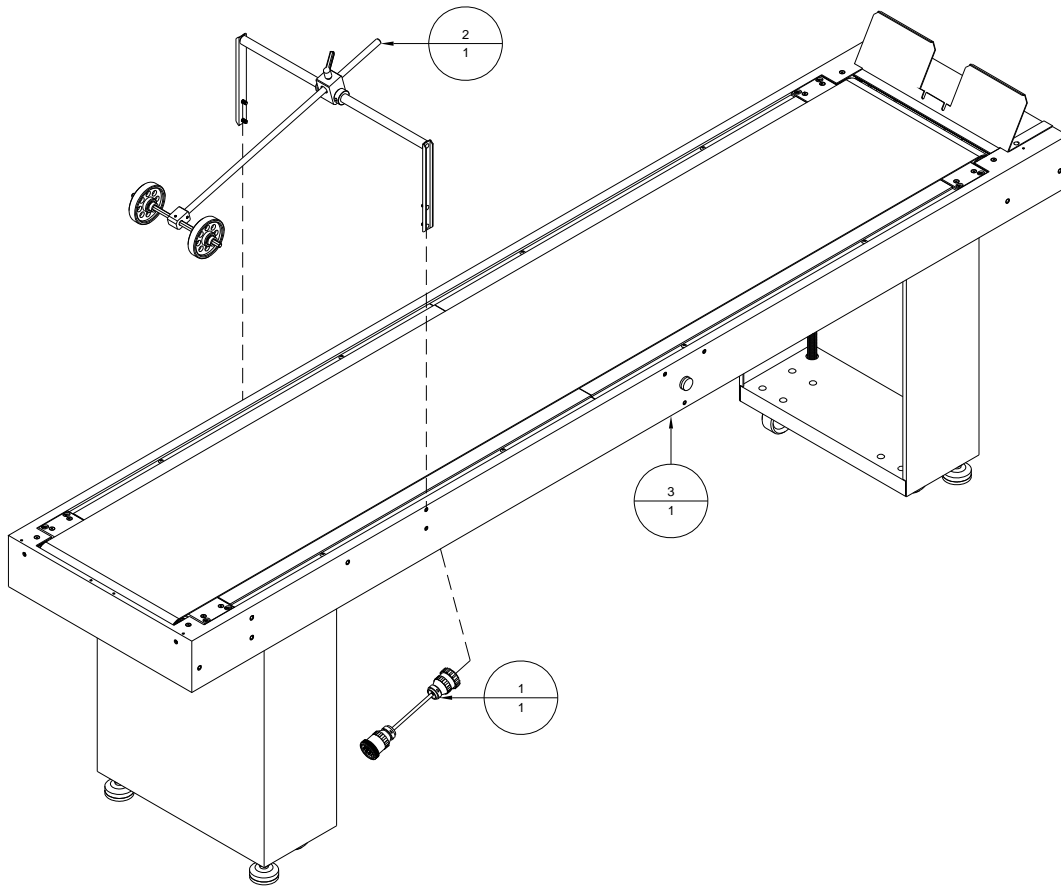
Item	Part Number	Quantity	Description	Reference
1	406670	2	Screw, HHMS, 5/16-18 UNC x 1"	
2	440015	2	Washer, 5/16" ID	
3	614530A	1	Cable, Conveyor Interconnect	
4	706135	1	Backlash Plate	
5	9105751A	1	Conveyor Assembly, 8', Solid Belt, 90 VDC	Page A-18
6	BK161	1	Conveyor Knockdown Assembly	Page A-5

Figure A-2: BK2108SB-90 - Conveyor, 8', Solid Belt, Right Angle, 90 VDC



*Table A-3: BK2108SBI-180 - Conveyor, 8' Solid Belt, Inline, 180 VDC*

Item	Part Number	Quantity	Description	Reference
1	614530A	1	Cable, Conveyor Interconnect	
2	9105393A	1	Inline Roller Bar Assembly	Page A-11
3	9105750A	1	Conveyor Assembly, 8', Solid Belt	Page A-17

*Figure A-3: BK2108SBI-180 - Conveyor, 8' Solid Belt, Inline, 180 VDC*

*Table A-4: BK2108SBI-90 - Conveyor, 8' Solid Belt, Inline, 90 VDC*

Item	Part Number	Quantity	Description	Reference
1	614530A	1	Cable, Conveyor Interconnect	
2	9105393A	1	Inline Roller Bar Assembly	Page A-11
3	9105751A	1	Conveyor Assembly, 8', Solid Belt, 90 VDC	Page A-18

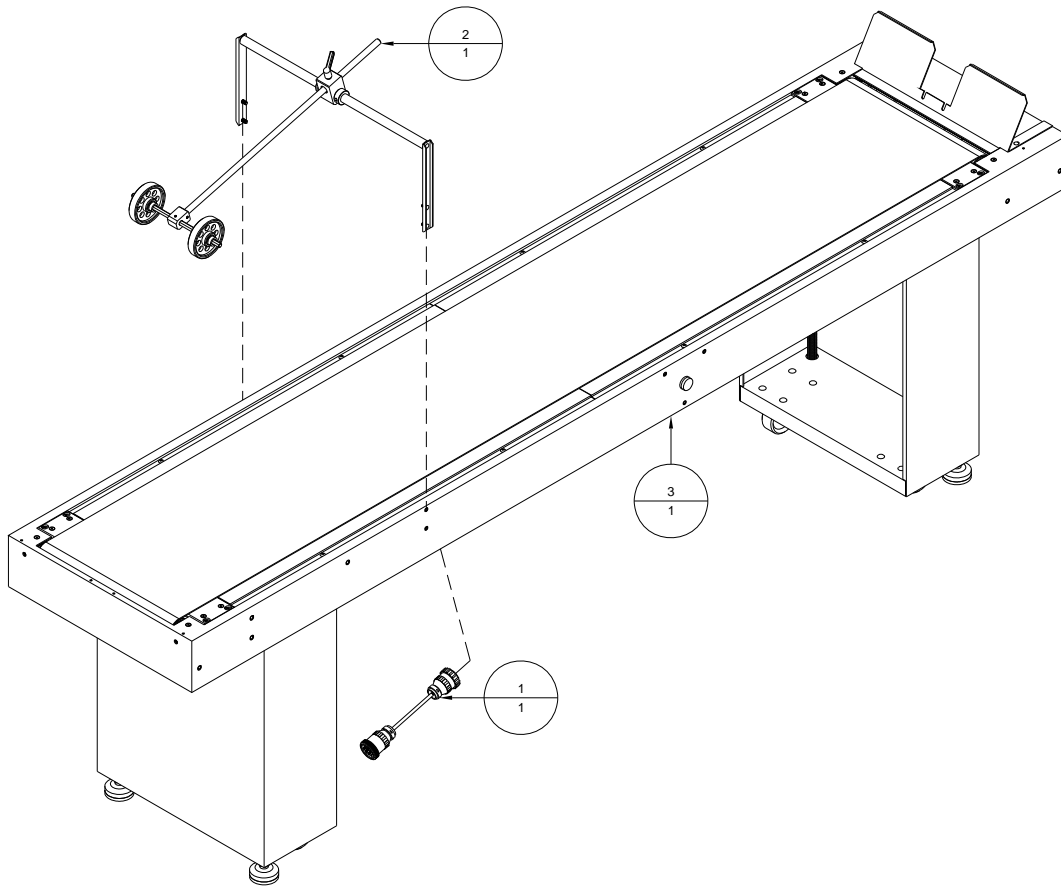
*Figure A-4: BK2108SBI-90 - Conveyor, 8' Solid Belt, Inline, 90 VDC*

Table A-5: BK161 - Conveyor Knockdown Assembly

Item	Part Number	Quantity	Description	Reference
1	340165	2	Backstop Adjustment Bar	
2	405050	4	Screw, FHCS, 1/4-20 UNC x 3/4"	
3	406670	2	Screw, HHMS, 5/16-18 UNC x 1"	
4	438150A	2	Rosette Knob Assembly, 3/8"	
5	439015	2	Lockwasher, 5/16" ID	
6	440015	2	Washer, 5/16" ID	
7	440020	2	Washer, 3/8" ID	
8	9105146A	1	Height Adjuster Knockdown Assembly	Page A-6
9	9105148	1	Bracket, Knockdown Support	
10	9105149	1	Backplate, Knockdown	

Figure A-5: BK161 - Conveyor Knockdown Assembly

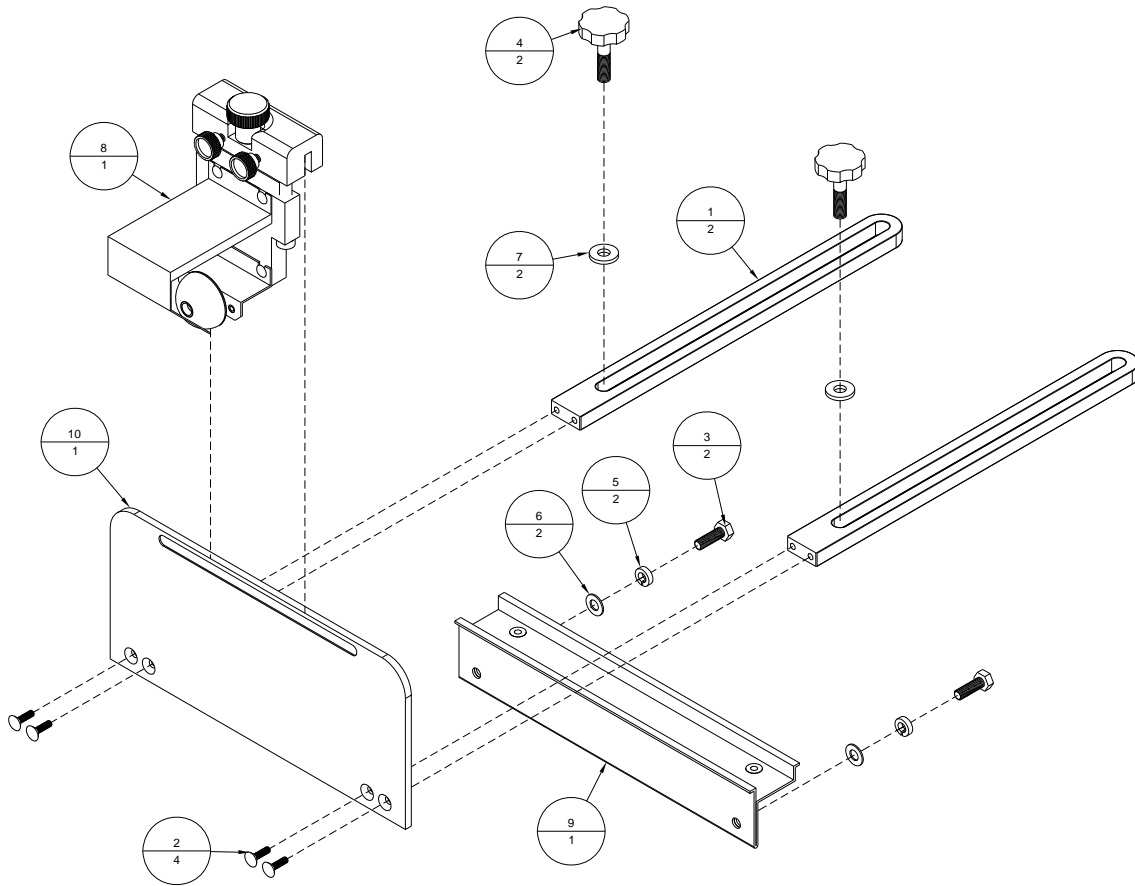
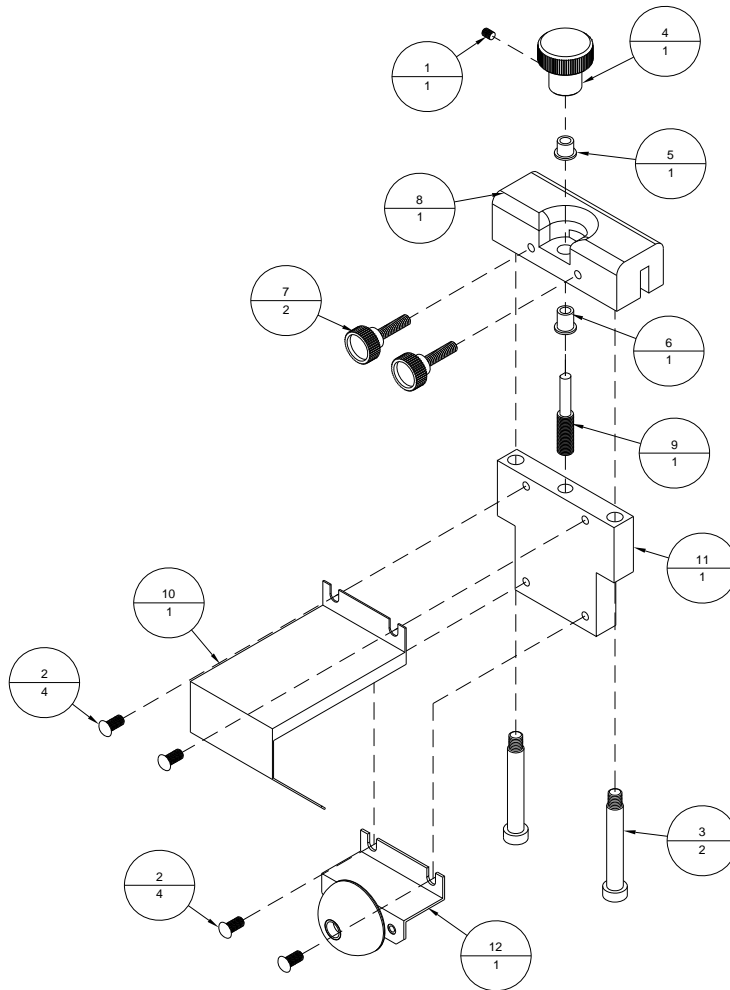


Table A-6: 9105146A - Height Adjuster Knockdown Assembly, BK161

Item	Part Number	Quantity	Description	Reference
1	404810	1	Screw, SHSS, 10-32 UNF x 1/4"	
2	405530	4	Screw, BHCS, 1/4-20 UNC x 1/2"	
3	416186	2	Shoulder Bolt, 3/8" x 2-1/4" (5/16-18)	
4	438010	1	Knob, Gate Adjustment	
5	505463	1	Flange Bushing, 1/4" ID x 3/8" OD x 3/8" Lg.	
6	505464	1	Flange Bushing, 1/4" ID x 3/8" OD x 1/2" Lg.	
7	9102209	2	Knob, Thumb, 1/4-20 UNC	
8	9104775	1	Slider, Height Adjuster	
9	9104779	1	Threaded Rod, 3/8-24 UNF, Stacker	
10	9104838	1	Shield, Deflection, Stacker	
11	9105146	1	Block, Height Adjuster, Knockdown	
12	9105147A	1	Knockdown Bracket Assembly, BK161	Page A-7

Figure A-6: 9105146A - Height Adjuster Knockdown Assembly, BK161



*Table A-7: 9105147A - Knockdown Bracket Assembly, BK161*

Item	Part Number	Quantity	Description	Reference
1	414130	1	Shoulder Bolt, 1/4" x 1/2" (10-24)	
2	440006	1	Washer, #8, 1/2" OD x 0.05" Thick	
3	9104772	1	Cone, Short, Stacker	
4	9105147	1	Bracket, Knockdown, Fixed Roller	

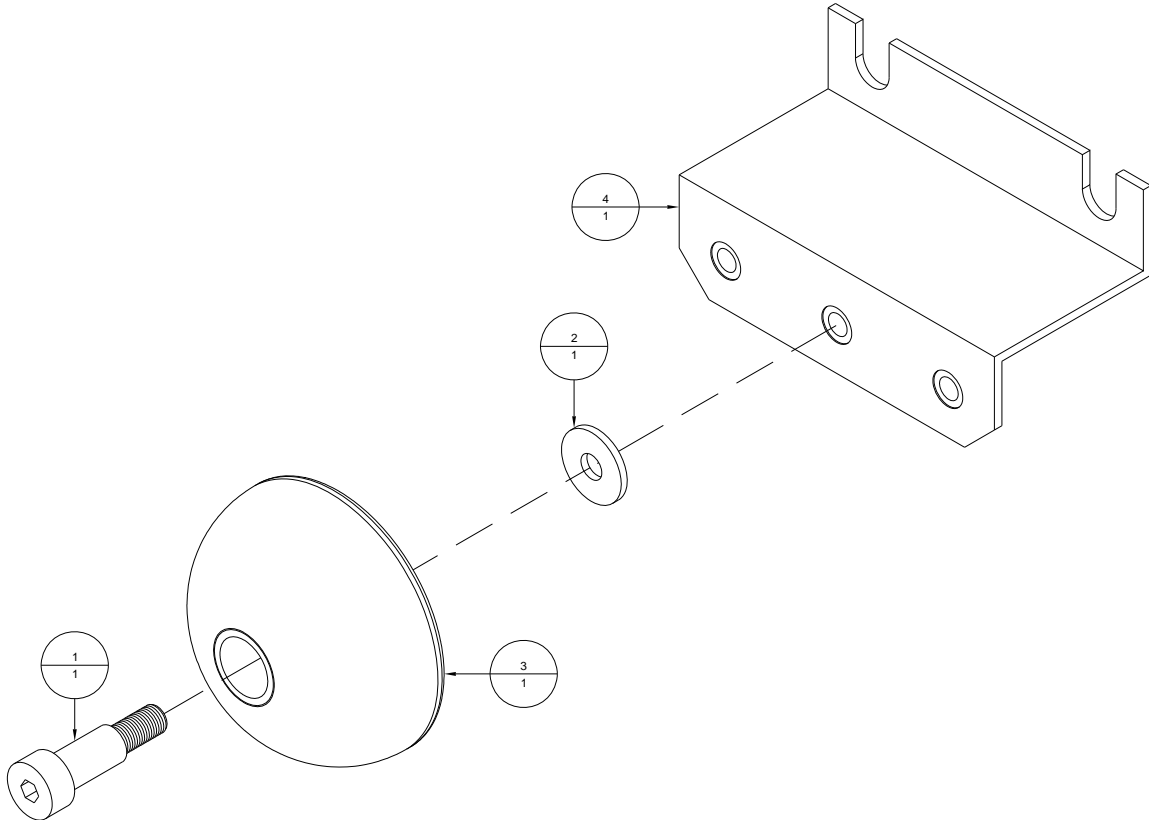
*Figure A-7: 9105147A - Knockdown Bracket Assembly, BK161*

Table A-8: 9105382A - Gearmotor Assembly, 90 VDC

Item	Part Number	Quantity	Description	Reference
1	113150	1	Sprocket, 35B13 x 5/8 ID x 3/8 Pitch	
2	404820	2	Screw, SHSS, 10-32 UNF x 3/8"	
3	405540	4	Screw, BHCS, 1/4-20 UNC x 5/8"	
4	433000	1	Keystock, 3/16 x 3/16, 1"	
5	439010	4	Lockwasher, 1/4" ID	
6	440010	4	Washer, 1/4" ID	
7	609102	3	Marrette, Black	
8	9105382	1	Gearmotor, 90 VDC, 1/8 HP	

Figure A-8: 9105382A - Gearmotor Assembly, 90 VDC

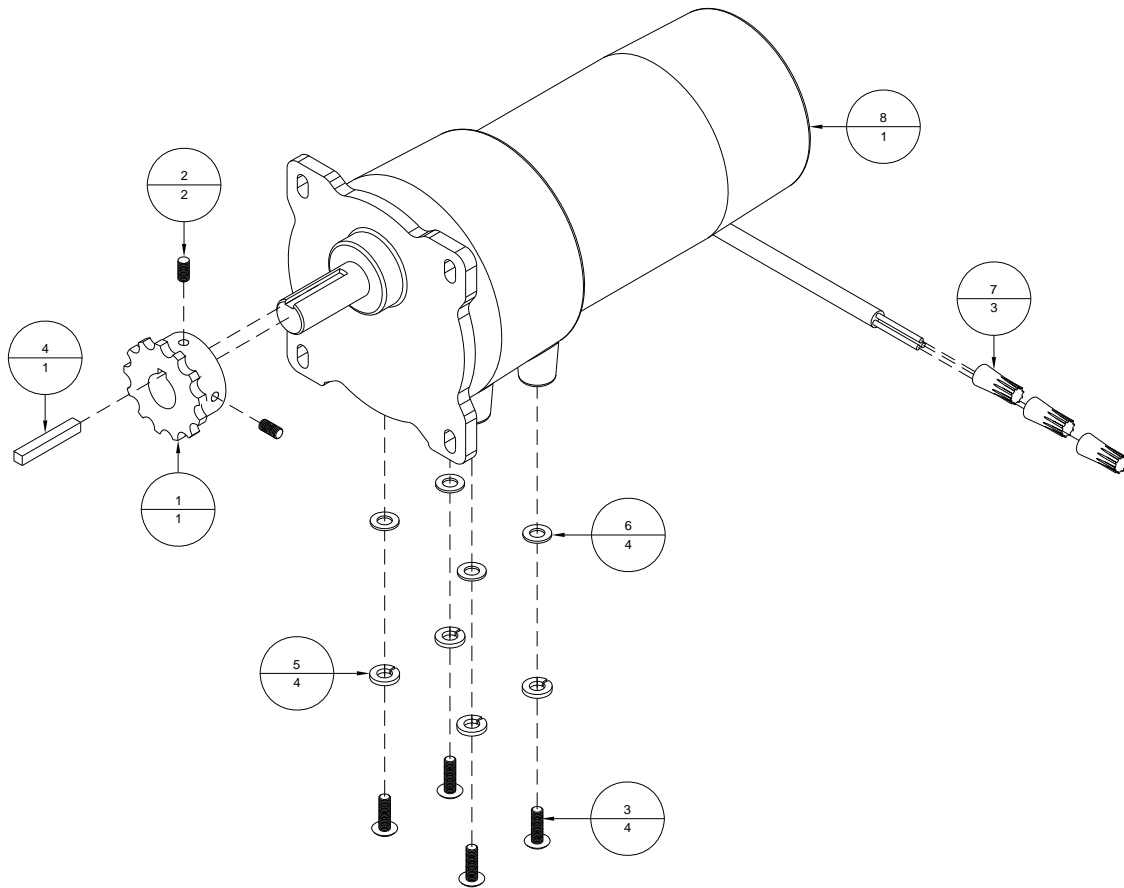
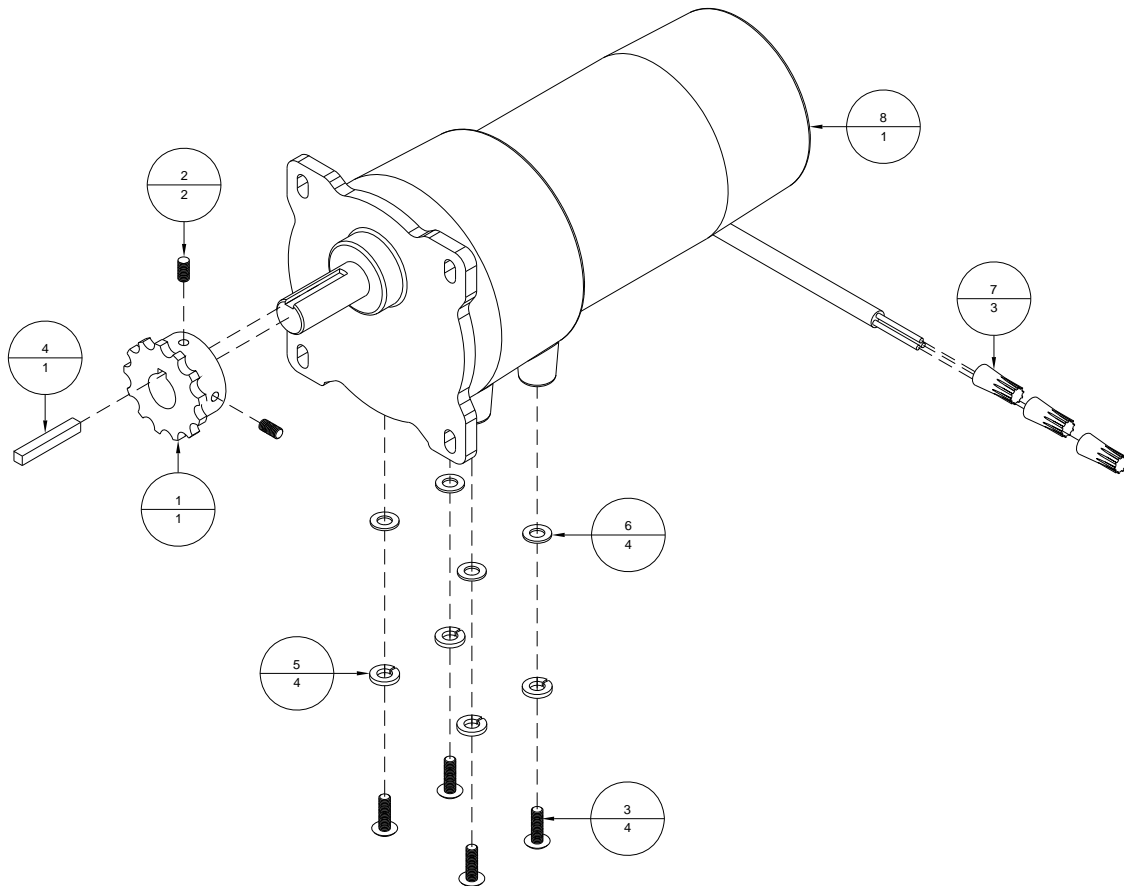


Table A-9: 9105383A - Gearmotor Assembly, 180 VDC

Item	Part Number	Quantity	Description	Reference
1	113150	1	Sprocket, 35B13 x 5/8 ID x 3/8 Pitch	
2	404820	2	Screw, SHSS, 10-32 UNF x 3/8"	
3	405540	4	Screw, BHCS, 1/4-20 UNC x 5/8"	
4	433000	1	Keystock, 3/16 x 3/16, 1"	
5	439010	4	Lockwasher, 1/4" ID	
6	440010	4	Washer, 1/4" ID	
7	609102	3	Marrette, Black	
8	9105383	1	Gearmotor, 180 VDC, 1/8 HP	

Figure A-9: 9105383A - Gearmotor Assembly, 180 VDC



*Table A-10: 9105388A - Idler Roller Assembly, Conveyor*

Item	Part Number	Quantity	Description	Reference
1	500055	2	Bearing, UBR-204-12S, $\frac{3}{4}$ " ID	
2	9105386	1	Roller, 1.85" OD x 15.36" Lg.	
3	9105388	1	Shaft, 0.75" OD x 17.86" Lg.	

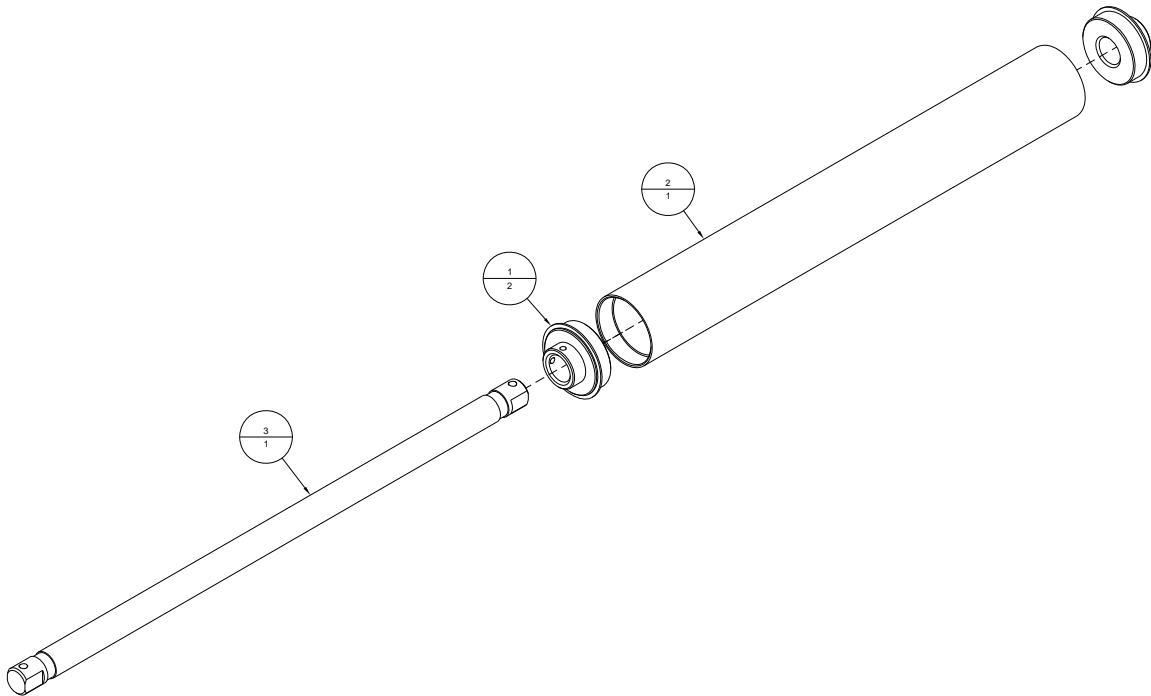
*Figure A-10: 9105388A - Idler Roller Assembly, Conveyor*

Table A-11: 9105393A - Inline Roller Bar Assembly, BK21XX

Item	Part Number	Quantity	Description	Reference
1	100183	1	Pressure Roller Shaft	
2	106182	2	Pressure Roller	
3	131020	4	Collar, 3/8" ID	
4	131050	2	Collar, 3/4" ID	
5	206010	1	Lever Handle, 1/4-20 UNC x 3/4"	
6	310182A	1	Extension Bar Assembly	
7	330181	1	Extension Bar Swivel	
8	404810	1	Screw, SHSS, 10-32 UNF x 1/4"	
9	405530	6	Screw, BHCS, 1/4-20 UNC x 1/2"	
10	500020	4	Bearing, R6, 3/8" ID	
11	9105393	2	Bracket, Inline Bar	
12	9105394	1	Shaft, Inline Roller Bar	

Figure A-11: 9105393A - Inline Roller Bar Assembly, BK21XX

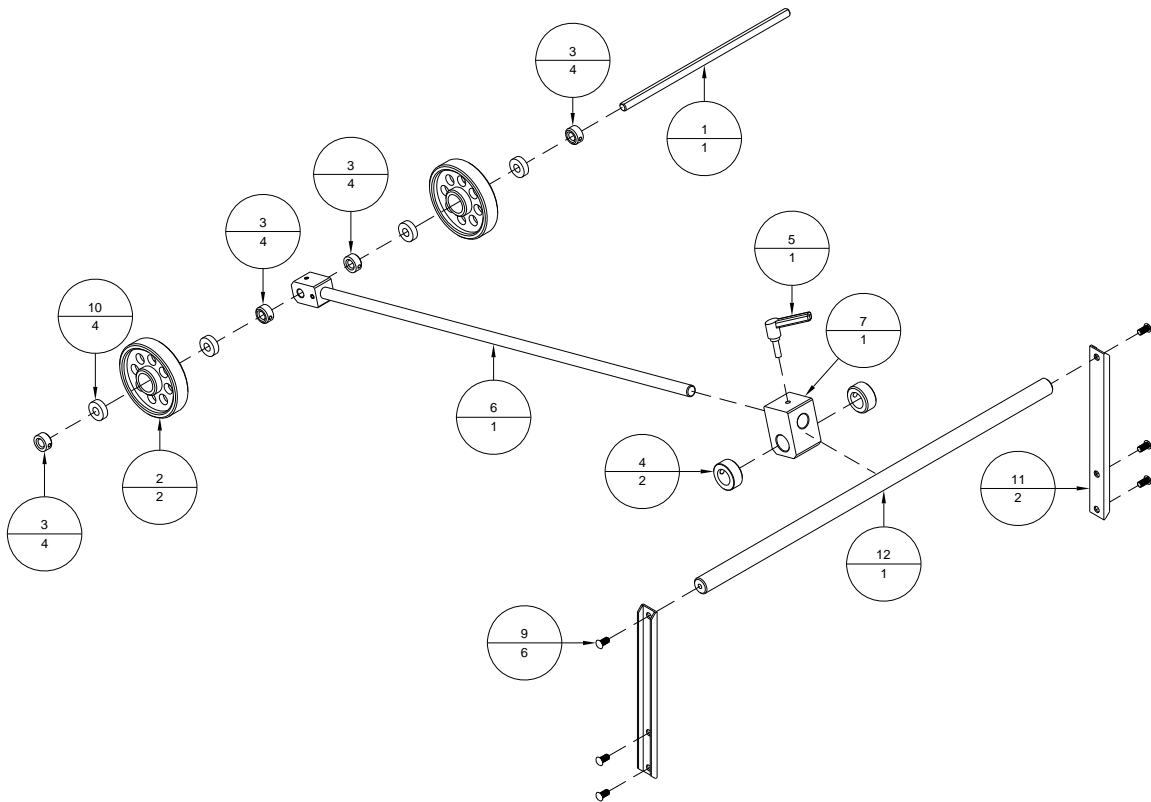


Table A-12: 9105407A - Tabletop Assembly, Conveyor Tensioner

Item	Part Number	Quantity	Description	Reference
1	404030	6	Screw, FHCS, 10-32 UNF x 1/2"	
2	405885	2	Screw, SHSS, 1/4-20 UNC x 2"	
3	416170	2	Shoulder Bolt, 3/8" x 1" (5/16-18)	
4	9102167	2	Bushing, Belt Guide	
5	9105388A	1	Idler Roller Assembly, Conveyor	Page A-10
6	9105410	1	Tabletop, Conveyor Roller Support	
7	9105411	1	Block, Belt Guide	
8	9105436	2	Bracket, Conveyor Tensioner	

Figure A-12: 9105407A - Tabletop Assembly, Conveyor Tensioner

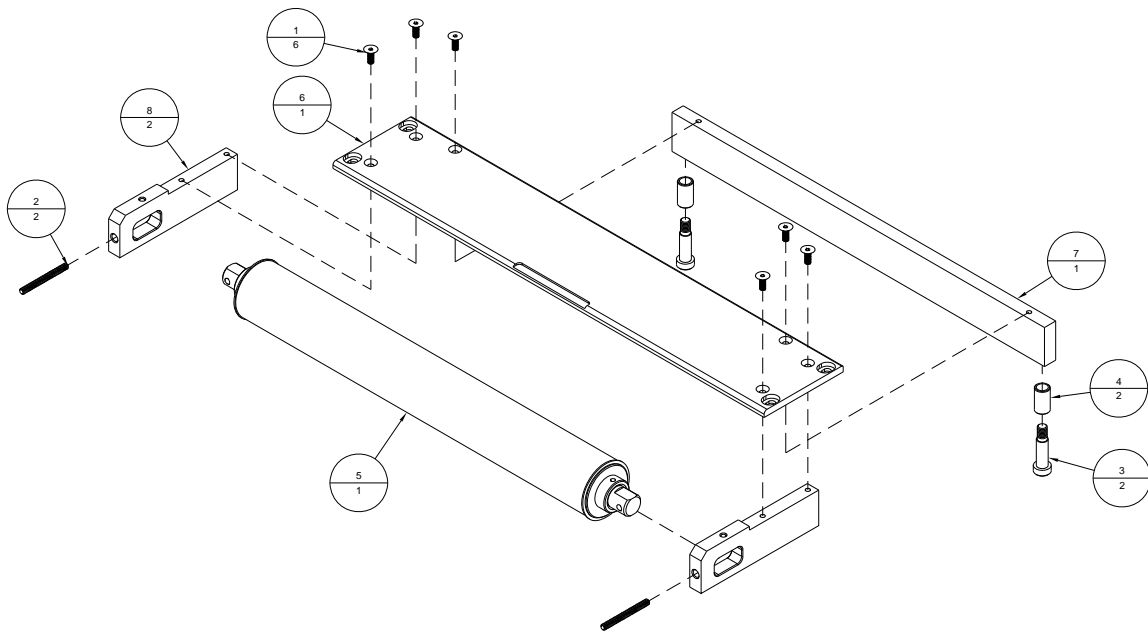


Table A-13: 9105409A - Conveyor Bed Assembly, BK2108

Item	Part Number	Quantity	Description	Reference
1	420008	4	Nut, 10-32 UNF	
2	439009	4	Lockwasher, #10	
3	440008	4	Washer, #10	
4	603124	1	Switch, Red Push Button, Flush	
5	603125	1	Switch Locking Collar	
6	603127	1	Block, N.C. Contact, Red	
7	615131	1	Cable Clamp, 3/8" Metal	
8	615150	1	Electrical Junction Box, 2 x 4"	
9	615151	1	Junction Box Cover, 2 x 4"	
10	615425	1	Hole Plug, 7/8"	
11	9105409	1	Bed, Conveyor, 8'	
12	9105461A	1	Connection Box Assembly	Page A-16

Figure A-13: 9105409A - Conveyor Bed Assembly, BK2108

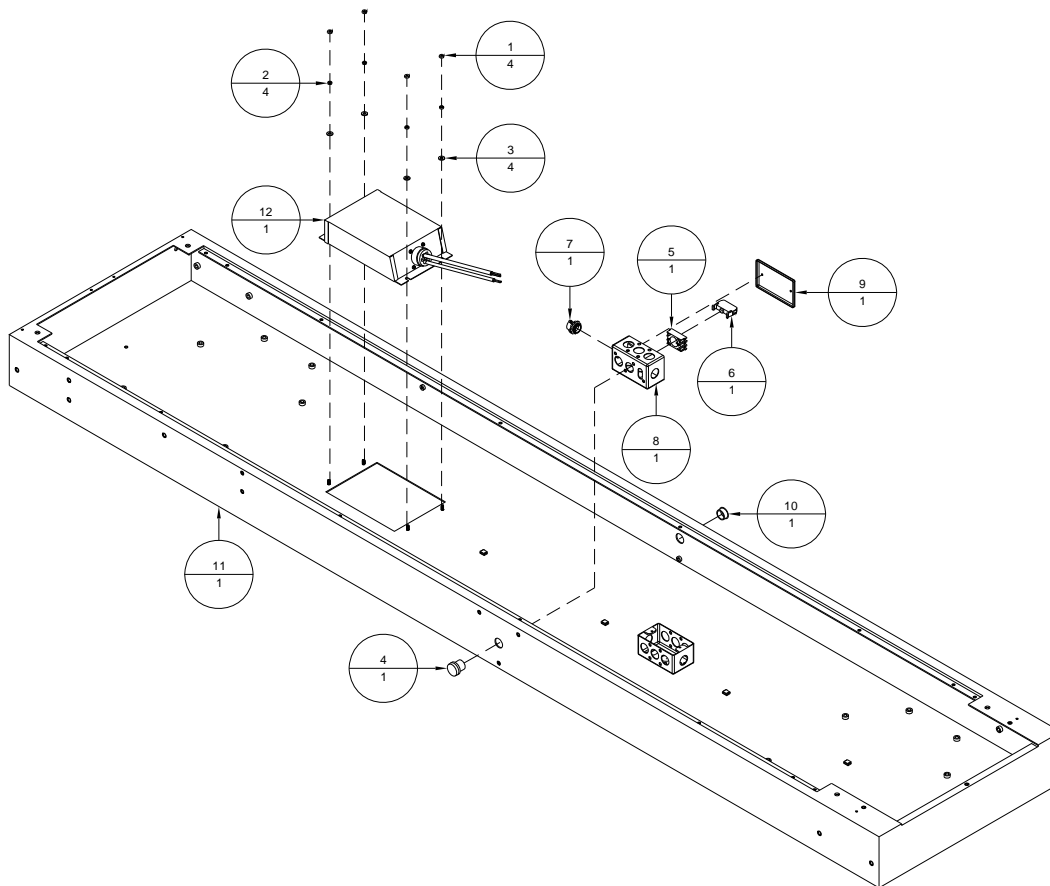


Table A-14: 9105412A - Tabletop Assembly, Conveyor Drive Roller

Item	Part Number	Quantity	Description	Reference
1	113151	1	Sprocket, 35B13 x 3/4" ID x 3/8" Pitch	
2	152000	1	Connecting Link	
3	152024	1	Drive Chain, #35, 19 links	
4	404030	6	Screw, FHCS, 10-32 UNF x 1/2"	
5	405850	2	Screw, SHSS, 1/4-20 UNC x 3/4"	
6	416180	2	Shoulder Bolt, 3/8" x 1-1/2" (5/16-18)	
7	500055	2	Bearing, UBR-204-12S, 3/4" ID	
8	9102167	2	Bushing, Belt Guide	
9	9105385	1	Roller, 2.84" OD x 0.75" ID x 15.61" Lg.	
10	9105410	1	Tabletop, Conveyor Roller Support	
11	9105411	1	Block, Belt Guide	
12	9105412	2	Bracket, Drive Bearing	
13	9105413	1	Shaft, 3/4" OD x 18.71" Lg.	

Figure A-14: 9105412A - Tabletop Assembly, Conveyor Drive Roller

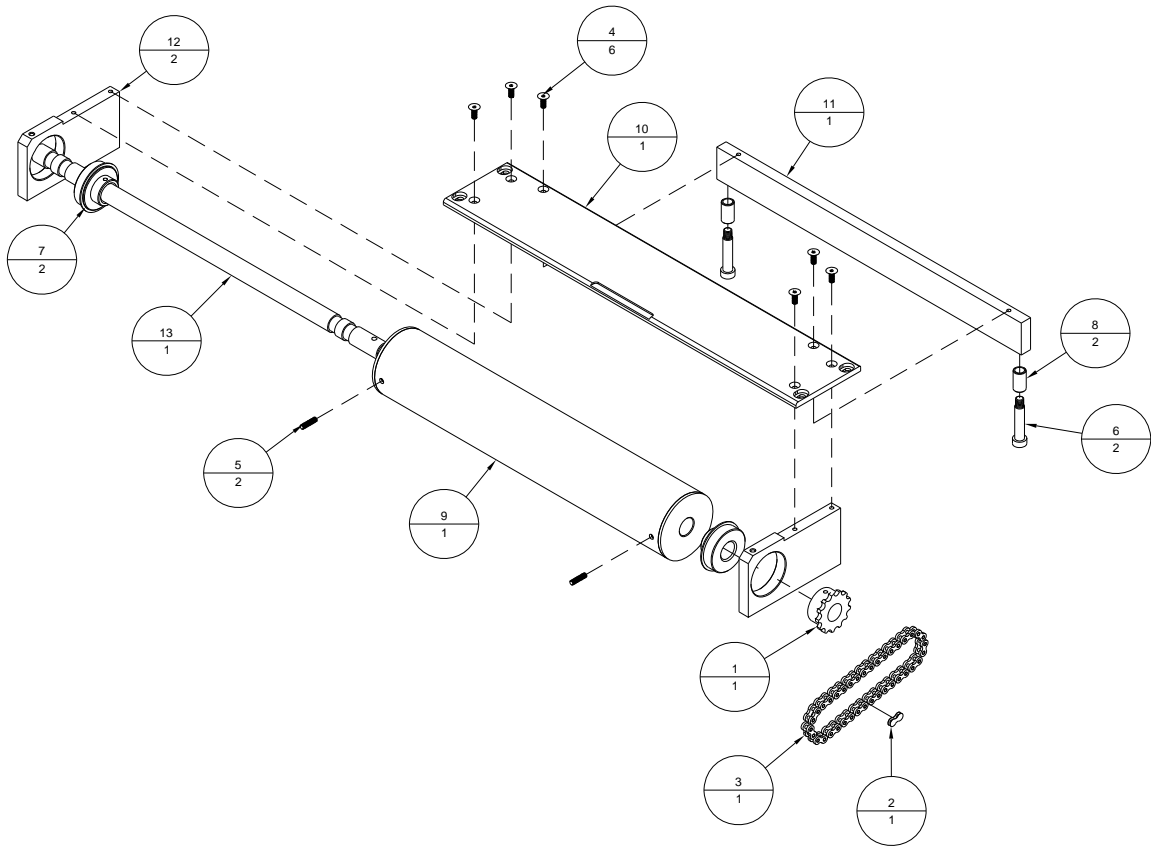
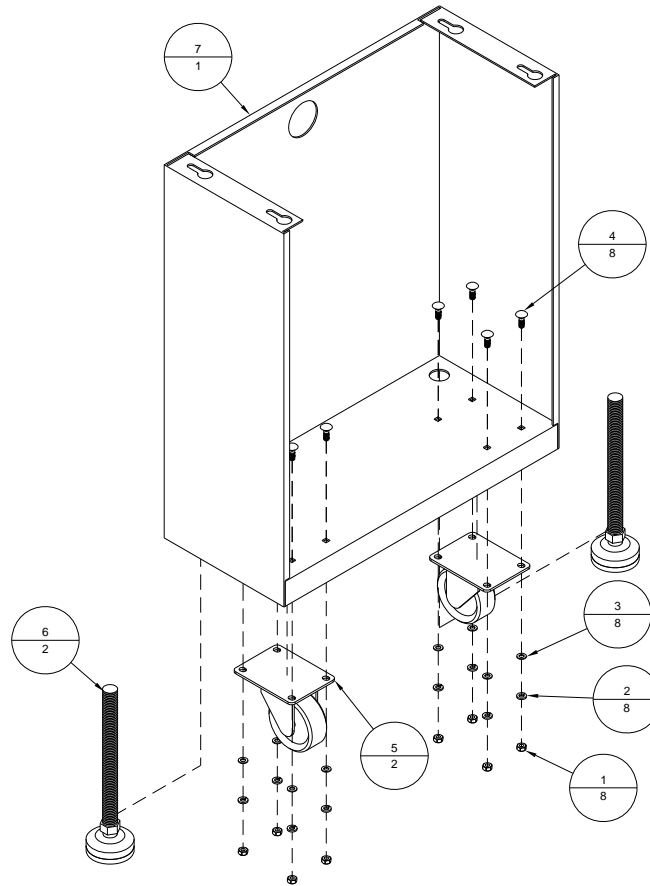


Table A-15: 9105417A - Conveyor Leg Assembly

Item	Part Number	Quantity	Description	Reference
1	420010	8	Nut, 1/4-20 UNC	
2	439010	8	Lockwasher, 1/4" ID	
3	440010	8	Washer, 1/4" ID	
4	9102068	8	Bolt, Carriage, 1/4-20 UNC x 3/4" Lg.	
5	9103219	2	Caster Wheel, 3" DIA	
6	9103929A	2	Leveling Leg Assembly, 3/4-20 UNC, 8"	
7	9105417	1	Leg, Conveyor	

Figure A-15: 9105417A - Conveyor Leg Assembly



*Table A-16: 9105461A - Connection Box Assembly, Conveyor*

Item	Part Number	Quantity	Description	Reference
1	402320	4	Screw, PHMS, 6-32 UNC x 3/8"	
2	614127A	1	Cable, Conveyor Internal	
3	9105461	1	Box, CPC Connection	

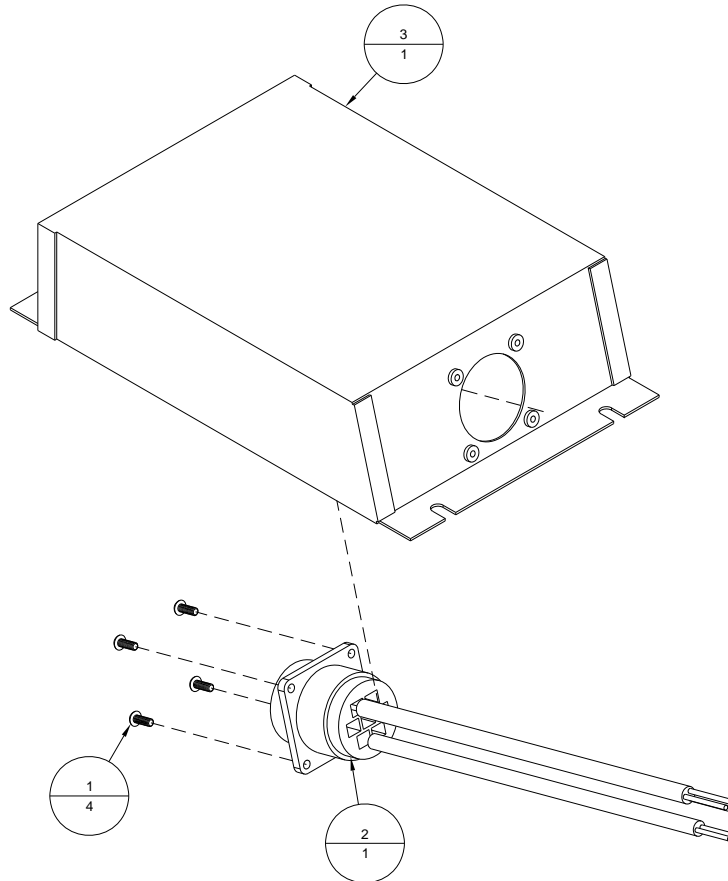
*Figure A-16: 9105461A - Connection Box Assembly, Conveyor*

Table A-17: 9105750A - Conveyor Assembly, 8', Solid Belt, 180 VDC

Item	Part Number	Quantity	Description	Reference
1	404030	4	Screw, FHCS, 10-32 UNF x 1/2"	
2	405530	2	Screw, BHCS, 1/4-20 UNC x 1/2"	
3	406670	8	Screw, HHMS, 5/16-18 UNC x 1"	
4	439015	8	Lockwasher, 5/16" ID	
5	440015	8	Washer, 5/16" ID	
6	9104501	16	Screw, SS, Truss, 10-32 UNF x 3/8"	
7	9105381	1	Belt, Continuous, Flat, 15.25" x 191.05"	
8	9105383A	1	Gearmotor Assembly, 180 VDC	Page A-9
9	9105407A	1	Tabletop Assembly, Conveyor Tensioner	Page A-12
10	9105409A	1	Conveyor Bed Assembly, BK2108	Page A-13
11	9105412A	1	Tabletop Assembly, Conveyor Drive Roller	Page A-14
12	9105414	2	Bracket, Tabletop Insert, Conveyor	
13	9105416	1	Bracket, Conveyor End Angle	
14	9105417A	2	Conveyor Leg Assembly	Page A-15

Figure A-17: 9105750A - Conveyor Assembly, 8', Solid Belt, 180 VDC

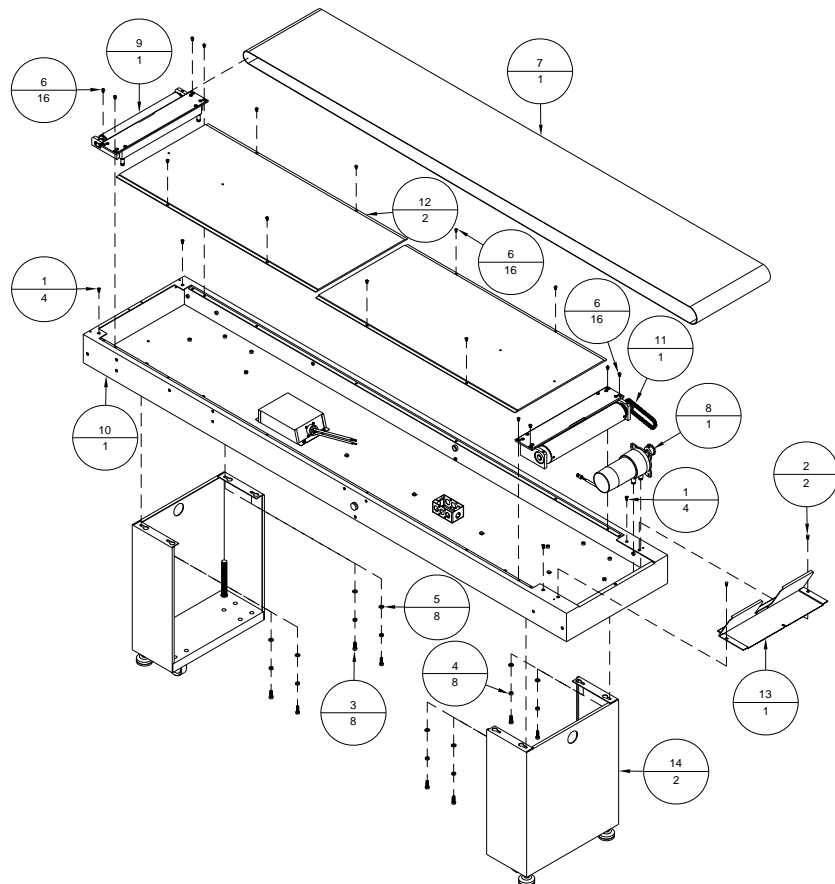
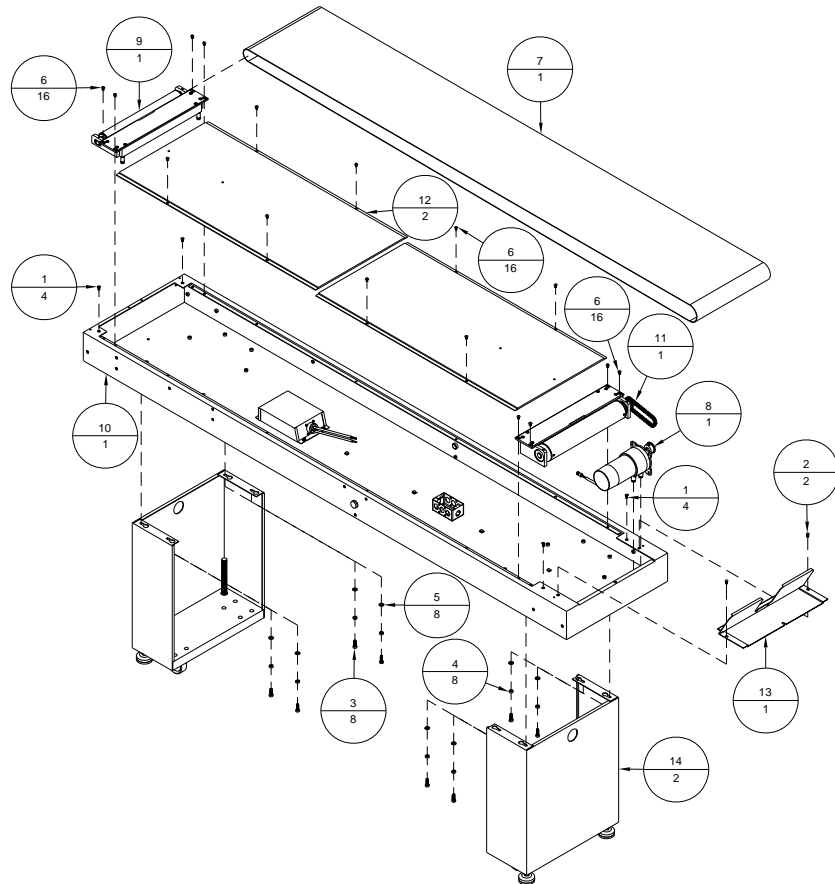


Table A-18: 9105751A - Conveyor Assembly, 8', Solid Belt, 90 VDC

Item	Part Number	Quantity	Description	Reference
1	404030	4	Screw, FHCS, 10-32 UNF x 1/2"	
2	405530	2	Screw, BHCS, 1/4-20 UNC x 1/2"	
3	406670	8	Screw, HHMS, 5/16-18 UNC x 1"	
4	439015	8	Lockwasher, 5/16" ID	
5	440015	8	Washer, 5/16" ID	
6	9104501	16	Screw, SS, Truss, 10-32 UNF x 3/8"	
7	9105381	1	Belt, Continuous, Flat, 15.25" x 191.05"	
8	9105382A	1	Gearmotor Assembly, 90 VDC	Page A-8
9	9105407A	1	Tabletop Assembly, Conveyor Tensioner	Page A-12
10	9105409A	1	Conveyor Bed Assembly, BK2108	Page A-13
11	9105412A	1	Tabletop Assembly, Conveyor Drive Roller	Page A-14
12	9105414	2	Bracket, Tabletop Insert, Conveyor	
13	9105416	1	Bracket, Conveyor End Angle	
14	9105417A	2	Conveyor Leg Assembly	Page A-15

Figure A-18: 9105751A - Conveyor Assembly, 8', Solid Belt, 90 VDC



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# Electrical Drawings

# Appendix **B**

## List of Schematics

Figure B-1: Wiring Diagram, BK2100 Series Conveyor..... B-1

Figure B-1: Wiring Diagram, BK2100 Series Conveyor

**Note that there are 2 different motors for the conveyor:**  
 If it is used with a BK761B designed for 115 VAC Operation, then a 90 VDC Motor (9105382A) should be used  
 For use with all other bases, a 180 VDC Motor (9105383A) should be used

