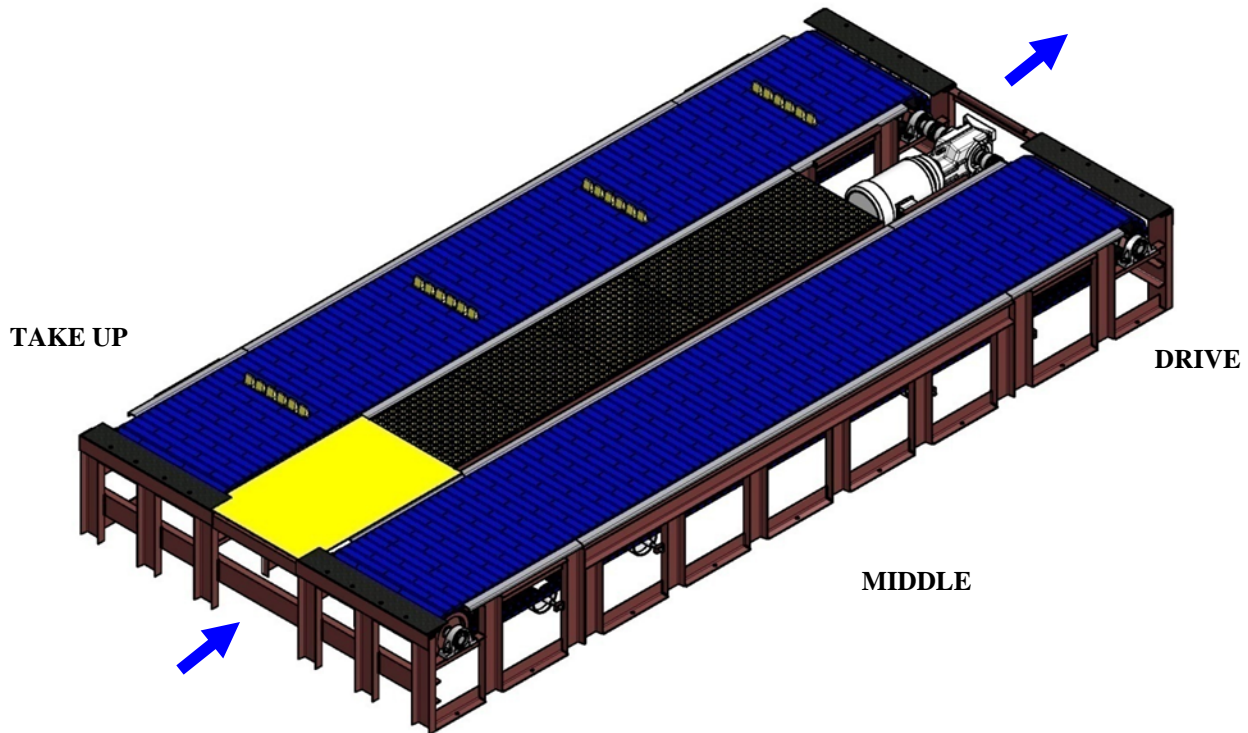
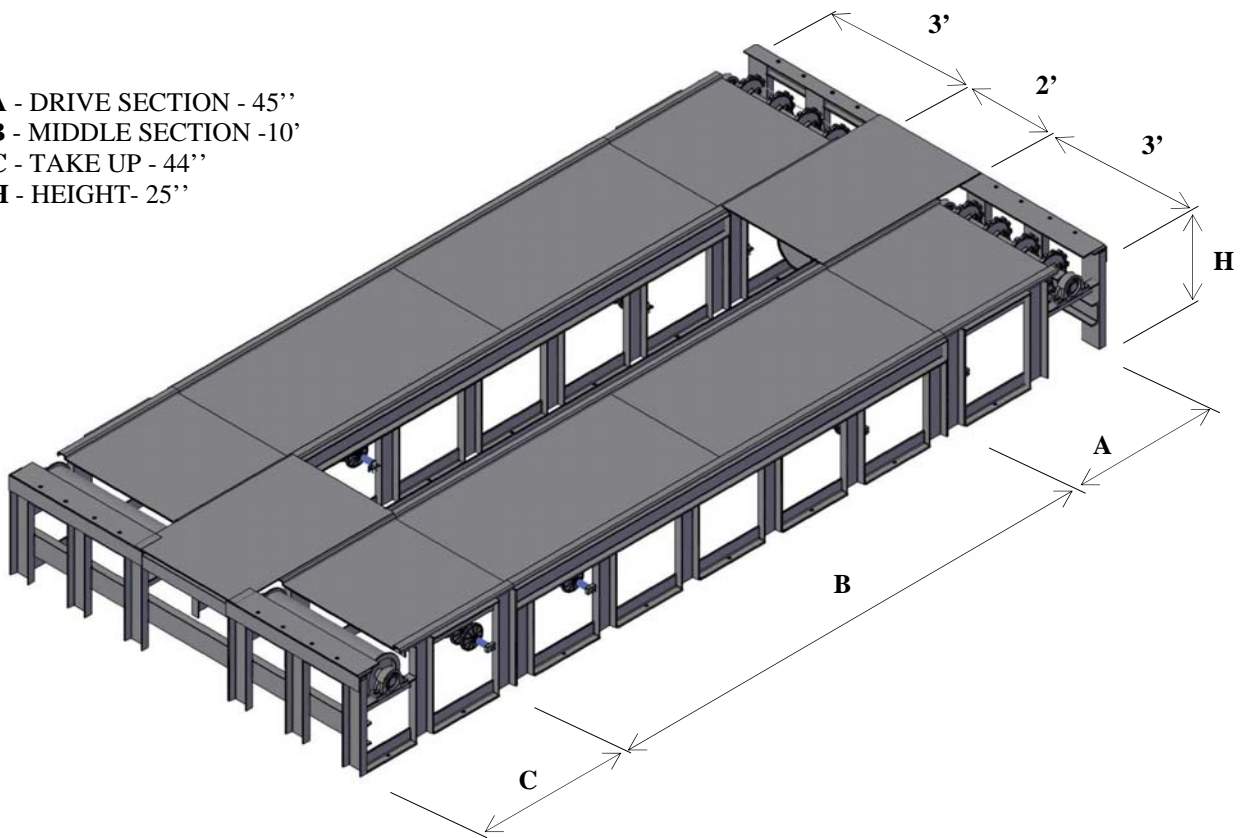


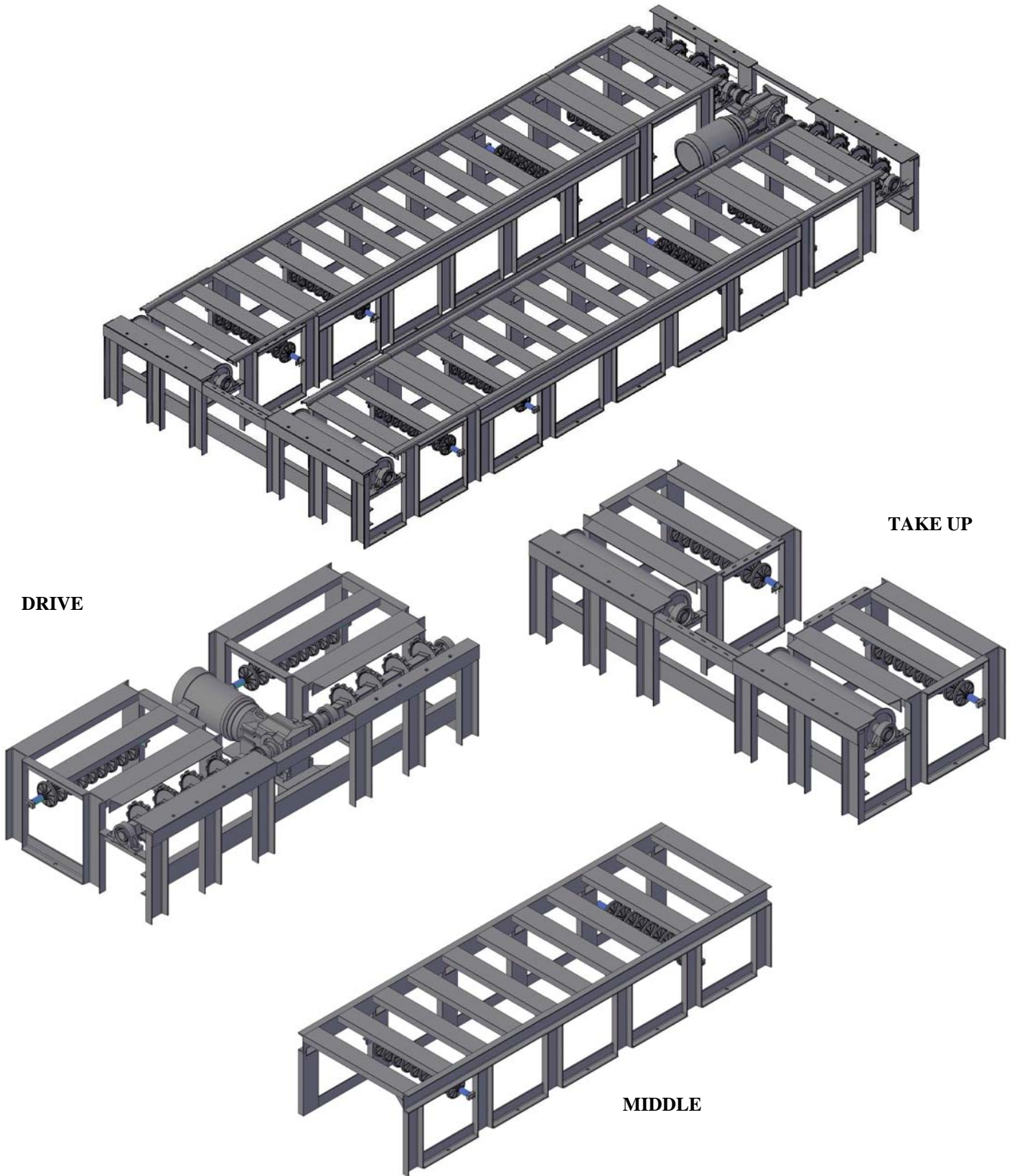
# DUAL BELT CONVEYOR 3' WIDE, Model BCN3



- A - DRIVE SECTION - 45''
- B - MIDDLE SECTION - 10'
- C - TAKE UP - 44''
- H - HEIGHT- 25''

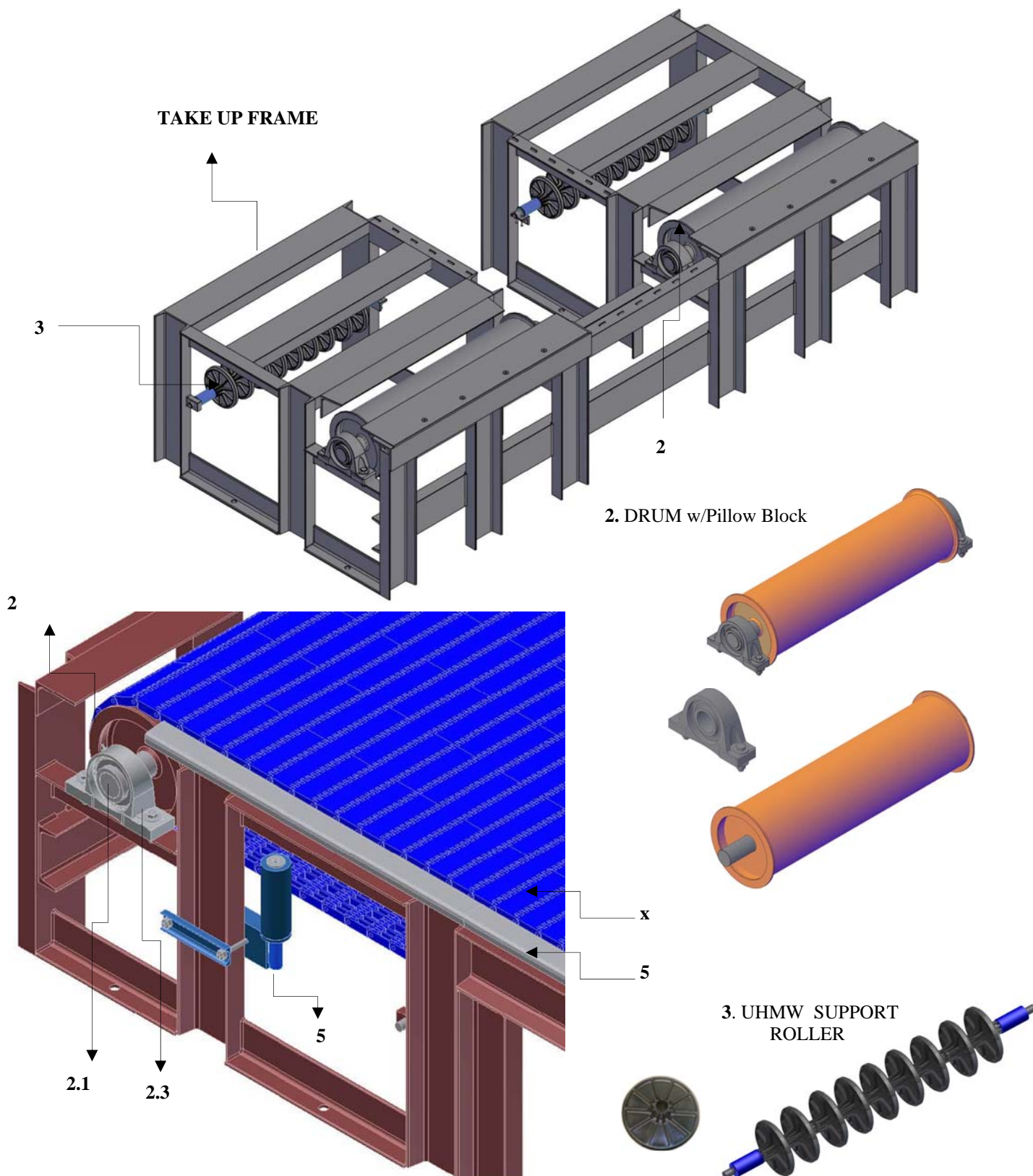


# DUAL BELT CONVEYOR 3' WIDE, Model BCN3



# DUAL BELT CONVEYOR 3' WIDE, Model BCN3

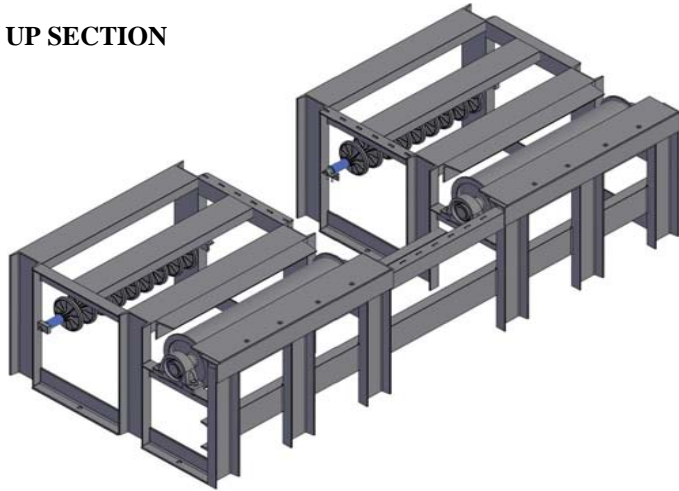
## TAKE UP SECTION



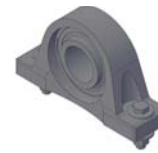
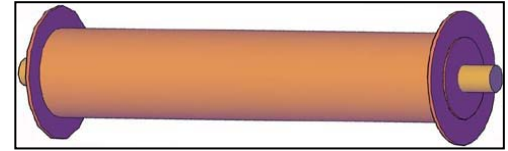
# DUAL BELT CONVEYOR 3' WIDE, Model BCN3

## TAKE UP SECTION

1. TAKE UP SECTION



2. TAKE UP DRUM w/ SHAFTS 2'' and PILLOW BLOCK w/ SCREW FASTENER SETS



2.2 PILLOW BLOCK



2.3 SCREW FASTENER SET

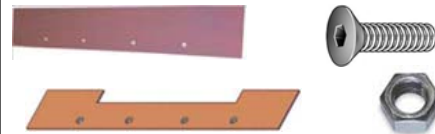
3. BELT w/PUSHERS



3.1 BELT w/o PUSHERS



6. TRANSFER PLATE w/Socket Head Cap Screw



4. UHMW SUPPORT ROLLER w/SHAFT Spacers and U BOLTS



SHAFT



U BOLTS



8. STEEL ANGLE



9. FIBERGLASS GRATING



10. GUIDE RAIL STRIPS



5. RETURN BELT GUIDE



11. GLIDE PLATE



# DUAL BELT CONVEYOR 3' WIDE, Model BCN3

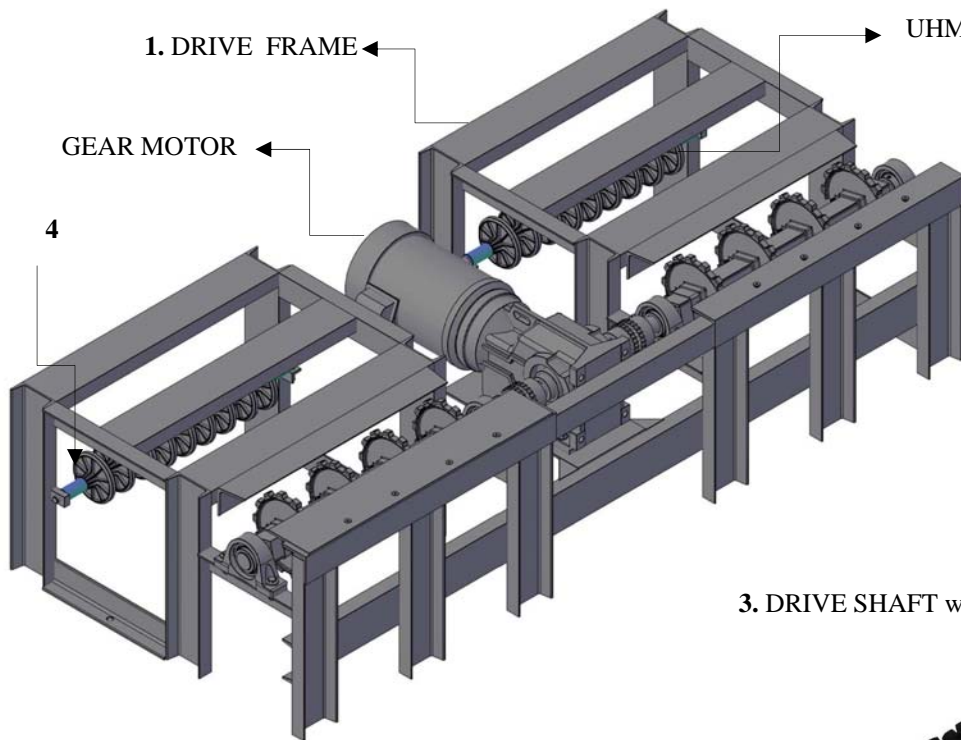
## TAKE UP SECTION

ITEM	DESCRIPTION	PART NO.	QTY.
1	<b>TAKE UP SECTION -FRAME</b>	BCN3AA	1
1.1	<b>TAKE UP SECTION</b> Includes All Components (Take Up Drum, Pillow Blocks, Support Rollers, Belt etc..)	BCN3A	1
2	<b>TAKE UP DRUM ASSEMBLY:</b>	BCN3AD	2
2.1	Shaft 2"		2
2.2	Pillow Block 2"	WA1WB	4
2.3	w/Screw Fastener Sets 1/2"-13x2 1/2"lg	-	8
	Hex Head Cap Screw 1/2"-13x2 1/2"lg	HHCS1213225	16
	Flat Washer 1/2" I.D.x1 1/4"O.D.	FW12125	16
	Split Lock Washer 1/2"	SLW1/2	16
	Hex Nut 1/2"-13	HN1213	16
3	<b>BELT w/ PUSHERS</b>	BCN3EWP	n
3.1	<b>BELT w/o PUSHERS</b>	BCN3ENP	n
4	<b>UHMW SUPPORT ROLLER for DRIVER Side ASSEMBLY</b> Includes UHMW Spacers and Shaft 3/4":	BCN3RU	1
4.1	UHMW ROLLER SUPORT	BCN3RU1	2
4.2	UHMW SPACERS 3/4"O.D.x1-1/2" I.D. x3/8"lg	BCN3RU4	3
4.3	UHMW SPACERS 3/4"O.D.x1-1/2" I.D. x3-1/2"lg	BCN3RU3	2
4.4	SHAFT 3/4"x35-3/4" LG for UHMW Support Rollers	BCN3RU2	1
4.5	ROUND U BOLTS 1/4"x3/4"x2-1/4"	UB- RO25X075X225	2
5	<b>RETURN BELT GUIDE</b> - Adjustable w/Hex Bolt-Thread Rod -Hex Nut -Hex Head Cap Screw	B-CN0413-RBG	4
6	<b>TRANSFER PLATE-PASSENGER</b> 1/4"x 6"x 36"	BCN3AE6	1
6.1	Socket Head Cap Screws ( w/ Flat Head ) 3/8" - 16 x 1"Lg w/ Hex Nut 3/8"-16		1 4
7	<b>TRANSFER PLATE-DRIVER</b> 1/4"x 6"x 36"	BCN3AF6	
7.1.	Socket Head Cap Screws ( w/ Flat Head ) 3/8"-16x1"Lg w/ Hex Nut 3/8"-16	SHCS3816100 HN3816	
8	<b>STEEL ANGLE</b> 4" x 4" x 1/4" x 33" LG, ( to hold Transfer Plates ) w/ -Screw fastener Set 1/2"	BCN3AG	2
8.1			
9.	<b>FIBERGLASS GRATING</b>	FG-PIT	4psc
10.	<b>GUIDE RAIL STRIPS</b> , (14Ga x 3'x 1'x 5'LG) ,Stainless Steel -for whole conveyor	BCN31	n
11.	<b>GLIDE PLATE :</b> Take Up 3'8" LG ( 11GA x 15" x 61 1/4",63"stretch) Drive Section 3'9" LG ( 11GA x 15" x 60 1/4" , 62" stretch ) Middle Section 10' LG ( 11GA x 15" x 58 1/4", 60" stretch )	BCN3-GLIDE-PLATE	n

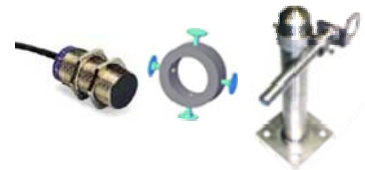


# DUAL BELT CONVEYOR 3' WIDE, Model BCN3

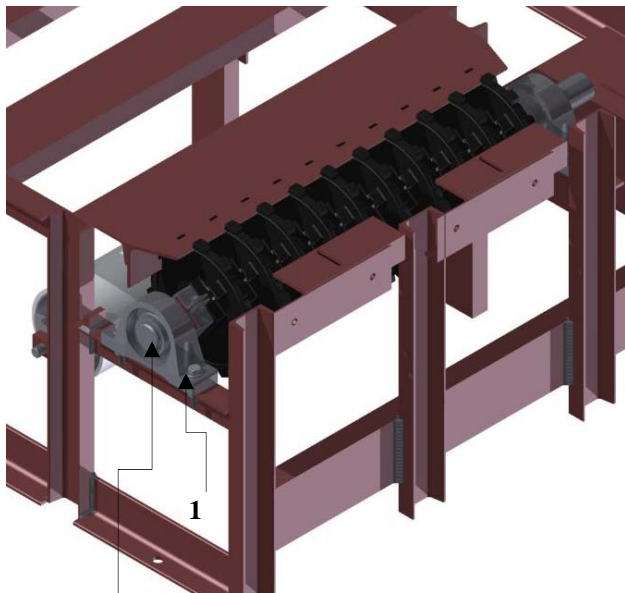
## DRIVE SECTION



2. STAND & BRACKET PROXIMITY SWITCH



3. DRIVE SHAFT w/UHMW ROLLERS ASSEMBLY



5. PLASTIC SPROCKET



6. CHAIN COUPLING ASSEMBLY



7. GEAR DRIVE ASSEMBLY

8. SHIMS



11. TRANSFER PLATES w/ SCREW FASTENER SETS

13. CONVERSION PLATE



4. UHMW SUPPORT ROLLER



14. VARIABLE FREQUENCY DRIVE



# DUAL BELT CONVEYOR 3' WIDE, Model BCN3

## DRIVE SECTION

ITEM	Description	PART NUMBER	QTY.
1	<b>DRIVE SECTION - FRAME</b>	BCN3BA	1
1.1	<b>DRIVE SECTION</b> Includes All Components ( Drive Shaft, UHMW Rollers, Pillow Blocks, Support Rollers, Belt etc..)	BCN3B	1
2	<b>STAND&amp;BRACKET PROXIMITY SWITCH</b> -Proximity Switch -Collar/Target	CN1A-CPX CN1SW CN1A-CPFB	1 1 1
3	<b>DRIVE SHAFT w/KEYWAYS</b>	BCN3BH-35	2
3.1	<b>PILLOW BLOCK FOR DRIVE SHAFT</b> - Pillow Block 2 -15/16" - w/Screw Fastener Sets 1/2"-13x2 1/2"lg - Hex Head Cap Screw 1/2"-13x2 1/2"lg - Flat Washer 1/2" I.D.x1 1/4"O.D. - Split Lock Washer 1/2" - Hex Nut 1/2"-13	- WA1WB - HHCS1213250 FW12125 SLW1/2 HN1213	- 4 8 8 16 8 8
4	<b>UHMW SUPPORT ROLLER ASSEMBLY</b> for DRIVER Side Includes UHMW Spacers and Shaft 3/4"	BCN3RU -	1 -
4.1	UHMW ROLLER SUPORT	BCN3RU1	2
4.2	UHMW SPACERS 3/4"O.D.x1-1/2" I.D. x3/8"lg	BCN3RU4	3
4.3	UHMW SPACERS 3/4"O.D.x1-1/2" I.D. x3-1/2"lg	BCN3RU3	2
4.4	SHAFT 3/4"x35-3/4" LG for UHMW Support Rollers	BCN3RU2	1
4.5	ROUND U BOLTS 1/4"x3/4"x2-1/4"	UB- RO25X075X225	2
5	<b>PLASTIC SPROCKET</b> w/ 5.1 SPACERS (Steel Square Collars)	BCN3BP BCN1BS	20 4
6	<b>CHAIN COUPLING ASSEMBLY</b> w/ -CHAIN	CC8018X2X2	2sets 1
7	<b>GEAR DRIVES ELECTRIC MOTOR ASSEMBLY:</b>	BCN3BG	1
7.1	<b>GEAR DRIVE</b> - For conveyor < 100' KA97	BCN1BGB	1
7.1.1	SHAFT 2-3/4" x 20" LG, w/	BCN3BGBS1	1
7.1.2	KEYWAYS (for Gear Drive)	BCN3BGBS -	2
7.3	<b>GEAR DRIVE</b> - For conveyors >100' KA107 - OPTIONAL	BCN1BGB	1
7.3.1	SHAFT 3-1/4" x 20' LG, w/		1
7.3.2	KEYWAYS (for Gear Drive)		2
7.4	<b>ELECTRIC MOTOR</b> -7.5 HP, 1800 RPM, w/	BCN1BGM07.5-1800	1
7.4.1	Screw Fastener Sets 3/4"-10x3 1/2"lg : -Hex Head Cap Screw 3/4"-10x3 1/2"lg -Flat Washer 3/4" I.D. -Split Lock Washer 3/4" -Hex Nut 3/4"-10 for Gear drive	- FW34125 HN3410	4
7.5	<b>SCREW FASTENER SET</b> for Gear Drive: 3/4"-10x3-1/2" LG, OR 5/8"-10x2-1/4" LG	-	



# DUAL BELT CONVEYOR 3' WIDE, Model BCN3

## DRIVE SECTION

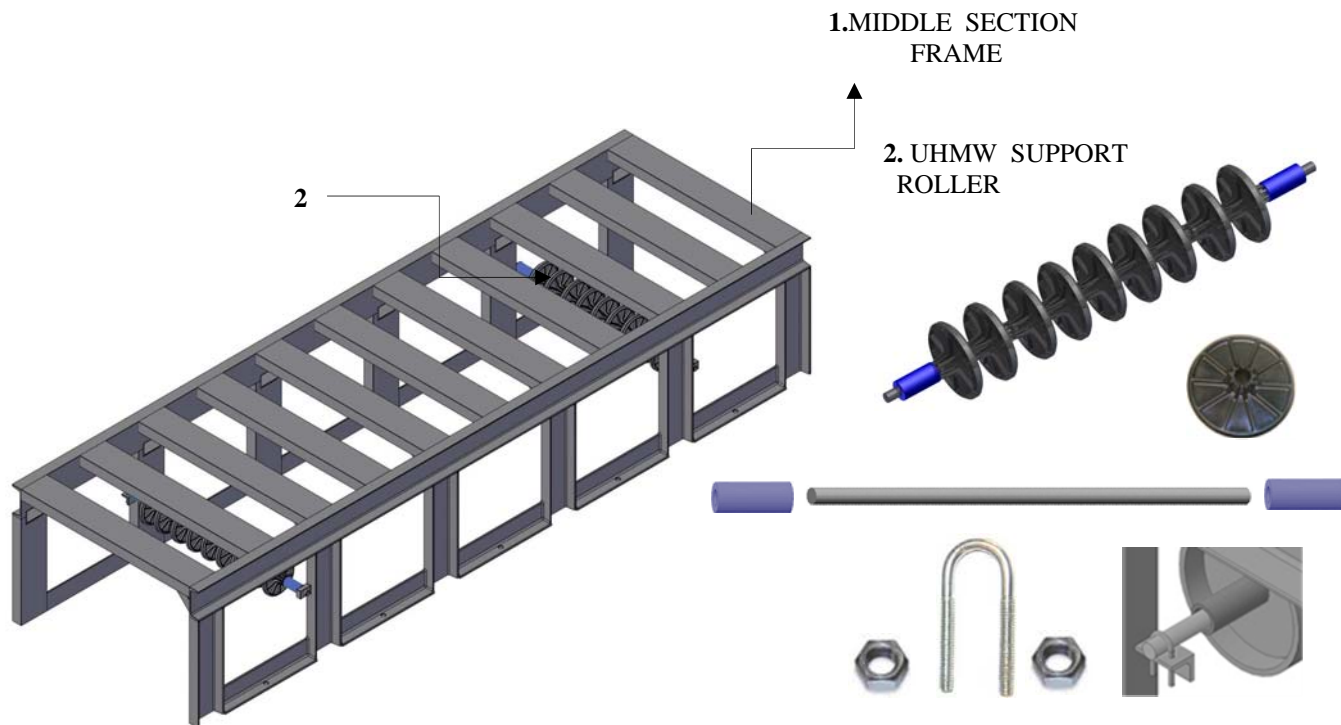
ITEM	Description	PART NUMBER	QTY.
8	<b>SHIMS</b> 2½"x9" for 2" For: Pillow Blocks, 8pcs.,		8
9	<b>SHIMS</b> 3"x11" for 2-15/16" For : Pillow Blocks, 8pcs,		8
10	<b>SHIMS</b> 2½"x2½" For: Gear Drives, 12pcs.		12
11	<b>TRANSFER PLATE-PASSENGER</b> ¼"x7"x36" Socket Head Cap Screws ( w/Flat Head ) 3/8" - 16 x 1"Lg w/ Hex Nut 3/8"-16	BCN3AE7 HHCS1213150 HN1213	1
12	<b>TRANSFER PLATE-DRIVE.</b> ¼"x7"x36"w/ Socket Head Cap Screws ( w/Flat Head ) 3/8" - 16 x 1"Lg w/ Hex Nut 3/8"-16	BCN3AF7 HHCS1213150 HN1213	1
13	<b>CONVERSION PLATE</b> 3/8" x 12" x 18" (For conveyors less then 100" lg. )	BCN3BK	1
14	<b>VARIABLE FREQUENCY DRIVE (Optional )</b>	BCN3VFD	1





# DUAL BELT CONVEYOR 3' WIDE, Model BCN3

## MIDDLE SECTION



ITEM	Description	PART NUMBER	QTY.
1	<b>MIDDLE SECTION - FRAME</b>	BCN3BA	1
1.1	<b>MIDDLE SECTION</b> Includes All Components (Support Rollers, Belt etc..)	BCN3B	1
2	<b>UHMW SUPPORT ROLLER</b> for DRIVER Side -ASSEMBLY Includes UHMW Spacers and Shaft 3/4"	BCN3RU	1
2.1	UHMW ROLLER SUPORT	BCN3RU1	2
2.2	UHMW SPACERS 3/4"O.D.x1-1/2" I.D. x3/8"lg	BCN3RU4	3
2.3	UHMW SPACERS 3/4"O.D.x1-1/2" I.D. x3-1/2"lg	BCN3RU3	2
2.4	SHAFT 3/4"x35-3/4" LG for UHMW Support Rollers	BCN3RU2	1
2.5	ROUND U BOLTS 1/4"x3/4"x2-1/4"	UB- RO25X075X225	2
3	<b>PLASTIC SPROCKET</b> w/ SPACERS (Steel Square Collars)	BCN3BP BCN1BS	9+9
4	<b>DRAIN CONTAINER</b> PLASTIC ANGLE, 2"x2"x1/4"x10'LG	CN11	n



# LUBRICANTE TABLE

			ISO, NLGI	Mobil®	Shell	KLÜBER	ARAL	bp	TEMAKO	Castrol	FUCHS	TOTAL
R...	Standard -10	CLP(CC)	VG 220	Mobilgear 600 XP 220	Shell Omala 220	Kiuberoll GEM 1-220 N	Aral Degol BG 220	BP Energol GR-XP 220	Meropa 220	Tribol 1100/220	Renolin CLP 220	Carter EP 220
K... (HK...)	-25	CLP PG	VG 220	Mobil Glygoyie 220	Shell Tivela S 220	Kiubersynth GH 6-220	Aral Degol GS 220	BP Enerdyn SG-XP 220	Synlube CLP 220	Alphasyn PG 220 Optiflex A 220	Renolin PG 220	Carter SY 220
	-25	CLP HC	VG 220	Mobil SHC 630	Shell Omala HD 220	Kiubersynth GEM 4-220 N	Aral Degol PAS 220		Pinnacle EP 220	Alphasyn T 220 Optigear Synthetic X 220	Renolin Unisyn CLP 220	
	-40	CLP HC	VG 150	Mobil SHC 629	Shell Omala HD 150	Kiubersynth GEM 4-150 N			Pinnacle EP 150	Alphasyn T 150 Optigear Synthetic X 150	Renolin Unisyn CLP 150	Carter SH 150
	-20	CLP (CC)	VG 100	Mobilgear 600 XP 100	Shell Omala 100	Kiuberoll GEM 1-150 N	Aral Degol BG 100	BP Energol GR-XP 100	Meropa 150	Alphasyn SP/100/150 Optigear BM 100	Renolin CLP 150	Renolin CLP 150
F...	-30	HLP (HM)	VG 68-46	Mobil D.T.E. 13M	Shell Tellus T 32	Kiuberoll GEM 1-68 N	Aral Degol BG 46		Rando EP Ashless 46	Hypsin AWS 32 Optigear 32	Renolin B 46 HVI	Equivis ZS 46
	-40	CLP HC	VG 68	Mobil SHC 626							Renolin Unisyn CLP 68	
	-40	CLP HC	VG 32	Mobil SHC 624		Kiuber-Summit HySyn FG-32			Cetus PAO 46	Alphasyn T32 Optilieb HY 32	Renolin Unisyn OL 32	Dacnis SH 32
	-40	HLP (HM)	VG 15	Mobil D.T.E. 11M	Shell Tellus T 15	Isoflex MT 30 ROT		BP Energol HLP-HM 15	Rando HDZ 15	Hypsin AWS 22	Renolin MR 310	Equivis ZS 15
S... (HS...)	Standard 0	CLP (CC)	VG 680	Mobilgear 600 XP 680	Shell Omala 680	Kiuberoll GEM 1-680 N	Aral Degol BG 680	BP Energol GR-XP 680	Meropa 680	Alphasyn SP 680 Optigear BM 680	Renolin SEW 680	Carter EP 680
	-20	CLP PG	VG 680 1)		Shell Tivela S 680	Kiubersynth GH 6-680		BP Enerdyn SG-XP 680	Synlube CLP 680	Optiflex A 680	Renolin PG 680	
	-10	CLP HC	VG 460	Mobil SHC 634	Shell Omala HD 460	Kiubersynth GEM 4-460 N			Pinnacle EP 460	Optigear Synthetic X 460	Renolin Unisyn CLP 460	
	-40	CLP HC	VG 150	Mobil SHC 629	Shell Omala HD 150	Kiubersynth GEM 4-150 N			Pinnacle EP 150	Optigear Synthetic X 150	Renolin Unisyn CLP 150	Carter SH 150
R... K... (HK...) F... S... (HS...)	-20	CLP (CC)	VG 150	Mobilgear 600 XP 100	Shell Omala 100	Kiuberoll GEM 1-150 N	Aral Degol BG 100	BP Energol GR-XP 100	Meropa 150	Alphasyn SP/100/150 Optigear BM 100	Renolin CLP 150	Carter EP 100
	-25	CLP PG	VG 220 1)	Mobil Glygoyie 220	Shell Tivela S 220	Kiubersynth GH 6-220	Aral Degol GS 220	BP Enerdyn SG-XP 220	Synlube CLP 220	Alphasyn PG 220 Optiflex A 220	Renolin CLP 220	Carter SY 220
	-40	CLP HC	VG 68	Mobil SHC 626	Shell Cassida Fluid GL 460	Kiuberoll 4UH1-460 N			Cetus PAO 46	Alphasyn T32	Renolin Unisyn CLP 68	Dacnis SH 32
	-40	CLP HC	VG 32	Mobil SHC 624	Shell Cassida Fluid GL 220	Kiuberoll 4UH1-220 N				Optilieb GT 460	Renolin Unisyn CLP 68	
W... (HW...)	-25	H1 PG	VG 460 1)		Shell Cassida Fluid HF 68	Kiuberoll 4UH1-68 N				Optilieb GT 220	Renolin Unisyn CLP 68	
	-20	E	VG 460 2)			Kiubersynth UH1 6-460				Optilieb HY 68	Renolin Unisyn CLP 68	
	-20	SEW PG	VG 460 2)		Kiuberbio CAZ-460	Kiuberoll UH1 6-460	Aral Degol BAB 460			Tribol Bio Top 14:18/460	Plantogear 460 S	
	-40	API GL5	SAE 75W90 (-VG 100)	Mobil Synthetic Gear Oil 75W90								
R32 R302	-20	H1 PG	VG 460 3)			Kiubersynth UH1 6-460						
	-25	DIN 51 818	00	Glygoyie Grease 00	Shell Tivela GL 00	Kiubersynth GE 46-1200						Marson SY 00
	Standard -15		000 - 0	Mobilux EP 004	Shell Avtemia GL 00	Kiubersynth GE 46-1200	Aralub MFL 00	BP Energrease LS-EP 00	Multiflak 6833 EP 00		Renolin SF 7 - 041	Multis EP 00



# **AVW Dual Belt Conveyor Installation Instructions**

---

## **Pre-Installation Checks**

1. As soon as the concrete is poured, measure the actual length of the conveyor trench at its shortest point top-to-bottom and side-to-side. Report the length to AVW so your conveyor fits without modification.
2. At the same time, measure the width of the trench over its entire length.
  - a. The trench width cannot be less than 8'-4" (Dual 30" Belt) or 10'-4" (Dual 42" Belt) at any point, and the pit walls must be straight. Check with a plumb line. Measure the width at the top of the wall and at the floor of the trench.
    - i. Check not only for a single crooked wall, but two (or more) bulges that make an s-shaped trench (two or more bulges on opposite sides of the trench at different lengths along the trench).
    - ii. Any narrow spots or excessively crooked walls must be corrected by the concrete contractor. The conveyor is 8'-2" wide and must be straight.
  - b. Also check the depth of the conveyor shelves in the trench. They must be at least 25" everywhere; pay special attention to the ends of the trench.
  - c. Check slopes per the AVW drawings.
  - d. You will be able to correct or compensate for most errors in a car wash – but not a bad concrete pour.
3. Check the slope of the entrance and exit slabs.
  - a. The concrete slope of the entrance slab should be at a minimum of 2% and a maximum of 5% (more is better up to 5%) for 10 feet onto the conveyor to "push" the vehicles onto the conveyor.
  - b. The exit slope should be flat for 5 feet immediately following the conveyor, and then downward at a minimum of 2% and a maximum of 5% (more is better up to 5%) for 10 feet to "pull" the vehicle off the conveyor.
  - c. These requirements are just as important as the trench dimensions and are essential to the conveyor's optimum contribution to the productivity of the wash. The car wash's maximum volume throughput and maintenance costs are directly affected by these parameters.
  - d. Failure to implement these requirements without consulting AVW for an alternative solution is the cause of a substantial portion of conveyor operational problems and maintenance issues and may void the conveyor warranty.

## **Install the Conveyor Frame**

4. Locate the conveyor.
  - a. Find the narrowest part of the trench.
  - b. At that point, using the 8'-2" (for a Dual 30" Belt) or 10'-2" (for a Dual 42" Belt) width dimension of the conveyor, mark the precise location of the centerline of the conveyor on the pit floor. This "location point" determines the left (driver) to right (passenger) location of the entire conveyor.

## **AVW Dual Belt Conveyor Installation Instructions**

---

- c. Using a plumb line or laser over the entire length of the trench, project the location point to the end walls of the trench while keeping the projection line parallel to the direction of the trench, and mark the projection points. These will be your reference points to center the take-up and drive sections of the conveyor.
  - d. Check that the projection points have not been rotated around the location point. Both ends of the conveyor should have the same bias left or right of trench center as the location point (that is, both are biased left or both are biased right, not one left and the other right to make the conveyor crooked in the trench).
5. Drop the conveyor sections into the end of the trench and roll them into place on a dolly or piece of pipe. Leave the shortest middle piece of conveyor out of the trench to give yourself some room to work.
6. A Dual Belt Conveyor's slope and elevation **do not follow the floor** of the car wash. The slope of the conveyor is consistent over the length of the conveyor from beginning to end regardless of what the car wash floor does. The Dual Belt Conveyor should be perfectly level from side-to-side. Do not use the floor of the car wash or the floor of the trench as a reference point. The only elevation reference points are the elevations of the steel bullnose at the entrance and the exit end of the trench.
- a. The entrance edge of the top of the take-up end of the conveyor frame should be installed  $\frac{3}{4}$ " below the edge of the bullnose at the entrance end of the trench. The objective is to make as smooth a transition as possible from the entrance concrete over the transfer plate and onto the top of the  $\frac{3}{4}$ " belt on top of the conveyor frame, so the  $\frac{3}{4}$ " dimension is critical. At the entrance, err on the "down" side if necessary so that the vehicle rolls **down** from the concrete onto the belt, never up.
  - b. The exit edge of the top of the drive end of the conveyor frame should be installed  $\frac{1}{2}$ " below the edge of the bullnose at the exit end of the trench. The objective is to make as smooth a transition as possible from the top of the  $\frac{3}{4}$ " belt on top of the conveyor frame onto the  $\frac{1}{4}$ " transfer plate and onto the exit concrete, so the  $\frac{1}{2}$ " dimension is critical. At the exit, err slightly on the "up" side if necessary so that the vehicle rolls **down** from the conveyor belt onto the concrete, never up.
7. Start the installation at the entrance end of the conveyor.
- a. Use the marks on the end trench walls from Step 3 to establish a plumb line or laser line on the **inside** of the driver or passenger side of the conveyor frame. Use the line to center the take-up section side-to-side.
  - b. Use jacks to adjust and hold the conveyor take-up section in position. Make sure that the conveyor section is braced and stable when on the jacks. Do not allow anyone in the trench to stand alongside the frame until it is tacked in place to avoid injury, stand PAST the end of the conveyor when doing all positioning adjustments.
  - c. Use the entrance end bullnose elevation to set the elevation of the take-up section as described in 6.a.
  - d. Use a long level to level the take-up section from side-to-side.

## **AVW Dual Belt Conveyor Installation Instructions**

---

- e. Check that the take-up section is perpendicular to the length of the conveyor. The entrance trench wall is not always necessarily “square”, but the building’s entrance walls are usually a better (though sometimes also flawed) reference. This will be checked and adjusted if necessary a little later.
  - f. Check the entrance end of the conveyor to make sure that **both sides** are at least  $\frac{3}{4}$ ” below the bullnose. If the concrete is not level side-to-side, set the elevation of the take-up section by using the lower side of the concrete as the starting conveyor elevation.
  - g. Weld the entrance end of the take-up conveyor section in place using “ties” to fasten the section to the entrance bullnose. Use flat steel lying horizontally so that it can flex and act as a hinge when you establish the slope of the conveyor. Then making sure that the exit end of the take-up section is securely supported so that it cannot fall, weld cleats at the bottom of the legs at the entrance end, but do not weld them to the floor yet. Allow them to slide on the floor until the slope of the section is established.
8. To monitor the slope of the conveyor:
- a. Use a laser line. Very convenient. Spot a line from  $\frac{3}{4}$ ” below the entrance bullnose elevation to  $\frac{1}{2}$ ” below the exit bullnose elevation and install the conveyor frame to the elevation and slope of that line.
  - b. If you do not have a laser line, use a 10’ straight board or steel profile, a long level, and a tape measure. Given the overall slope of the trench, calculate the precise rise over a 10’ section of conveyor. Use your level to level the board, and measure the rise of the top of the conveyor section and match it to your target.
  - c. Since the measurement error on each conveyor section in Step 8.b. is cumulative, establish checkpoints along the way by using a transit if available or by using lengths of taught plumb line over a fractional length of the conveyor. Check the reference point **from both ends** of the trench.
9. At 3’-7”, the take-up end of the conveyor is too short to establish the slope of the conveyor.
- a. Weld a center section of conveyor firmly to the take-up section on the same side as your plumb line, making sure that the top of the two sections are flush. This then makes a 13’-7” long section with which to establish slope.
  - b. Check the alignment of the combined section with your plumb line and re-align the take-up section to square it with the trench if necessary.
  - c. Weld everything in place.
10. Continue down the trench, checking the progressive elevation as well as side-to-side level at each section.
11. Make sure to weld the back legs (by the wall) as well as the front legs (by the pit) and tie the sections to the steel bullnose at the top of the side wall.

### **Install the Take-up Drum, Guide Rollers, and Return Rollers**

12. Install the take-up bearings, shafts and rollers. Orient the bearing zerk fittings and set screws for ease of access. Align the take-up rollers perpendicular to the direction of conveyor travel as

## AVW Dual Belt Conveyor Installation Instructions

---

closely as possible. Shim the bearings so that the surface of the roller is level with the deck of the conveyor **with a glide plate in place**. This is critical; if the belt slides up from the roller onto the conveyor, the glide plate will wear very fast and the belt may be severely damaged.

13. Install the return rollers. Check that the spacing of the “grooves” within the rollers and the depth of the “grooves” in the rollers fits the pusher pattern of the belt. There should be one return roller at the end and “middle” of every 10’ conveyor section, i.e., a return roller every 5’ on average.
  - a. Pay special attention to the end of the conveyor. There should be a regular return roller like all the others installed in the very first location nearest both the drive sprockets and the take-up roller. This is called the “pinch roller” and is necessary for proper operation of the belt. Failure to install these pinch rollers will result in premature belt and sprocket wear at the drive end and may cause belt breaks at the entrance end.
14. Install the guide rollers on the inside of the legs near the take-up end. These rollers guard against belt drift on the take-up drum and resultant damage at the entrance end.

### Drive Installation

15. Slide the gearbox shaft with the key into the gearbox. Set the gearmotor in place and bolt it down, finger tight only. Slide one chain coupling flange and key onto each end of the gearbox shaft.
16. Assemble the drive shafts.
  - a. Loosen the screws on the sprockets and slide the sprockets on the shafts. There should be 10 sprockets on a Dual 30” drive shaft and 14 sprockets on a Dual 42” drive shaft. Somewhere near the ends, **but not on the ends**, insert the sprocket retaining collars between two sprockets. Leave all of the screws on the sprockets and the retaining collars loose for now.
  - b. Slide the bearings onto the shafts. Orient the zerk fittings and the set screws for easy access. Slide a chain coupling flange and key onto one end of each drive shaft.
  - c. Drop the assembled drive shafts into place.
  - d. Place a glide plate onto the end of the conveyor frame.
  - e. Shim the bearings to obtain the proper shaft height.
    - i. For a 2-1/2” shaft, the flat of the shaft should be 3-5/16” below the top of the glide plate.
    - ii. For a 3-1/2’ shaft, the flat of the shaft should be 2-13/16” below the top of the glide plate.
    - iii. Shim the gearbox to match the shaft height.
  - f. Join the flanges with the coupling chain.
17. Align the drive shafts and the gearbox shaft to each other and perpendicular to the conveyor direction of travel.
  - a. Tighten down the gearbox.
  - b. Tighten the shaft bearings. Insert pieces of steel between the end of the bearing and the conveyor frame to keep the bearings from slipping under belt tension.

---

## **AVW Dual Belt Conveyor Installation Instructions**

---

- c. Tighten all the set screws on the coupling flanges and the bearings.
- d. Lube all the bearings on the drive and take-up ends.
- e. **Fill the gearbox with the proper grade and quantity of oil.** See the gearbox tag and operating instructions. SEW Eurodrive specifications for KA97 series gearboxes is ISO 150 , and for the M1A position (upright mounted on the feet) the fill volume is 7.0 liters (7.33 quarts). Check the fill level at the oil plug.
- f. Have the electrician wire the gearmotor and motor control center.

### **Stainless Guide Rail and Glide Plates**

18. Install the belt guide rail.

- a. Mount the guide rail channel 15-3/4" (30" Belt) or 21-3/4" (42" Belt) on each side of the centerline of each section. This leaves a nominal 3/4" gap on each side of the belt. This gap is functional; do not try to "tighten it up" for the appearance of precision or because the operator doesn't like it. Weld the guide rail channel to the conveyor frame only **on the outside of the c-channel guide rail** (away from the belt). If you weld the inside of the channel, you will have to grind all the welds smooth (virtually off). Welding the inside of the channel or installing the channel tighter than 3/4" to the belt may damage or excessively wear the edge of the belt and disable its disassembly, and increase the drag, prematurely wearing the belt and the drive system.
- b. The rails must be straight and the inside edge against the belt must be flush so that the belt does not catch an edge.
- c. This is often done after the belt is installed. However, since the fit is generous and not critical, and since there is a risk of belt damage due to weld spatter, AVW recommends that the guide rail be installed prior to belt installation.

19. Place all glide plates on the frame per the diagram in the Packing List.

### **Belt Installation**

20. Assemble the belt on the surface of the conveyor. Roll out the sections and lay them flat. Open the "door" on the end of the belt sections with a screwdriver, mesh the sections together, insert a pin and close the door.

- a. Check each section and assemble them correctly to obtain the appropriate pusher spacing on the driver side. If the pusher pattern is not symmetrical side-to-side, check the direction of the belt to make sure the pushers are oriented toward the correct side.
- b. Slide the sections toward the take-up end and feed the belt underneath the conveyor and over the return rollers as you go. The belt is heavy and it will be difficult to slide it manually if you assemble a long length on top of the conveyor.

21. When you have assembled all of the belt, tighten all of the screws on the sprockets after you have spaced them to fit the pockets on the underside of the belt and you have centered the whole sprocket group on the shaft. Push the retaining collars against the **outside** of an adjacent sprocket and tighten the screws on the collar.

## **AVW Dual Belt Conveyor Installation Instructions**

---

- a. The collars will no longer move but the sprockets, though a little snug, will be able to “float” to line themselves up with the belt.
  - b. The two sprockets restricted by the retaining collars keep the sprockets and belt from wandering side-to-side.
  - c. “Hook” the belt onto the sprockets, making sure that **all** of the sprockets line up with the pockets in the underside of the belt, and making sure to wrap the belt all the way around the sprockets and up onto the glide plate. Only one sprocket out of place can push the belt up and off the other sprockets.
22. Attach the ends of the belt.
- a. Using C-clamps and wood blocks to “pinch” the belt over a portion of c-channel frame, or by parking the front wheels only of a 4-wheel drive vehicle (drive engaged and emergency brake applied) on the entrance end of the belt, “lock” the belt in place.
  - b. “Bump” the belt **in reverse** to take up the slack in the belt and close the gap between the ends. Pull the short end of the belt by hand so the belt slack does not roll off the sprockets and under the conveyor deck, damaging the belt, sprockets, or other conveyor components.
  - c. Fasten the two ends by installing the last pin.
  - d. Remove the c-clamps or vehicle.
    - i. Help the belt settle flat onto the top deck and check the length; the belt should not touch the floor anywhere. Shorten the belt if necessary.
23. Check the belt installation. Run the belt **slowly forward**.
- a. Check for proper operation of the drive system and sprockets. Adjust to correct any problems.
  - b. Check for proper operation of the belt over the return rollers.
  - c. Check for proper operation of the guide rollers. Adjust the height if necessary.
  - d. Check for proper operation of the take-up drum.
  - e. Check that all of the return rollers turn. If they do not, find and fix the problem. The UHMW will very rarely need lubrication on the stainless steel shafts, but if lubrication is required, do not use oil or grease. A small amount of WD40, silicone, or graphite applied to the inside of the UHMW will suffice.
  - f. Check the belt length again so that there are loops in the belt, particularly at the drive end pinch roller, but also so that the belt **never** drags on the floor, anywhere. Shorten the belt if necessary.

### **Fit Transition Plates**

24. Install transition plates at the entrance and exit to transfer the vehicle from the belt surface to the concrete.
- a. Use ¼” diamond plates.
  - b. Match the top of the diamond plate to the top of the belt; shim if necessary. A slight downward step (down from plate to belt at entrance, down from belt to plate at exit) is



## AVW Dual Belt Conveyor Installation Instructions

---

- acceptable as long as it does not appreciably accelerate the vehicle; err on the downward side. Never make the vehicle go up at these transitions.
- c. Bring the diamond plate within 1" of the belt at the entrance and exit.
    - i. On the driver side, entrance and exit, cut slots that clear the pushers, but leave "fingers" that reach within 1" of the belt surface between the pushers.
  - d. Bridge the gap between the concrete and the conveyor frame, always level to down, never up.

**WARNING:** Keep hands, fingers, feet, toes, shoes, clothing, tools, rags, towels, electrical cords, hoses and ropes away from the belt-to-plate transition whenever the conveyor is not locked out of operation. As with any machinery, rotating shafts and pinch points created by the transition plate in close proximity to the moving belt and pushers can cause severe injury.

- a. Do not allow wash customers out of the vehicle near the conveyor while conveyor is in motion. Never allow children in the wash while in operation under any circumstances.
- b. Train all employees in belt safety.
- c. Do not work on the conveyor components unless the conveyor is locked out of operation.
- d. **Never** stand on the belt or frame or in the pit near end of the belt while the conveyor is in operation. Never, ever.
- e. Train all employees in the location and operation of emergency stop button stations.
- f. Maintain startup signal devices and startup delays at all times. Advise employees of the meaning of the signal and train them in the appropriate actions and "all clear" signals.
- g. Keep pit grating or cover plate over the drive section at all times while the conveyor is in operation.
- h. Implement and enforce a zero tolerance policy toward practical jokes involving conveyor operation and horseplay around the conveyor.
- i. Protect against unauthorized operation of the conveyor with restricted access (physical separation, keyed access, pass-code clearance, etc.) to conveyor operation.
- j. Never attempt to prevent property damage by manual intervention while the conveyor is in operation. The first response to impending property damage is always shutdown. Instill in employees that no amount of property damage is worth the risk of bodily injury.