Product Manual

Chain-Powered Roller

Merge, Diverge, and Crossover Conveyor

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

Intelligrated®

8320 03/05

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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

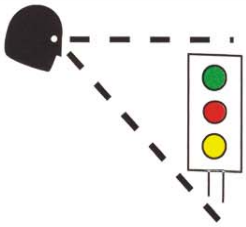
Ensure That All Personnel Are Clear of Equipment Before Starting

Allow Only Authorized Personnel To Operate or Maintain Material Handling Equipment

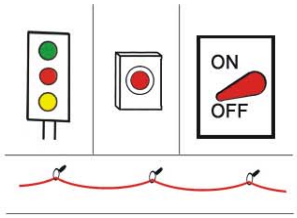
Do Not Modify or Misuse Conveyor Controls

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

Section A Product Summary

Section B Application Guidelines

Section C Specifications

Section D Engineering Data

Section E Engineering Data

Section F Accessories

Section G Installation Procedures

Section H Maintenance

SECTION A:PRODUCT SUMMARY

Product Summary

Table A-1 Product Summary for the CS Powered Merge, Diverge, Crossover

Conveyor	**Components**			
Model PRM **Function** Merge **Model PRD** **Function** Divert **Model PRC** **Function** Transportation	**Widths "W"**	**OA Widths "W"**	**Lengths**	**Carrier Rollers**
	16" 22" 28" 34" 40"	41" 53" 65" 77" 89"	10' 10' and 15' 10' and 15' 15' 15'	No. G196G/CR No. G196GT No. G196HS/CR No. G196FZ No. G196AB
	End Drive Unit		**Power Unit**	**Speeds**
	PRM and PRD Single Power Unit Left or Right Hand At Discharge End Side Mount or Underhung	**PRC** Dual Power Units Right and Left Hand At Discharge End Side Mount or Underhung	Reliance / Hub City 1/2, 3/4, 1, 1-1/2, 2, 3, and 5 HP	45, 60, 75, 90, 120, 150, 180, 210, and 240 fpm **Live Load Cap.** 100 lbs./ft.
Comments	**Fixed Side Guides**		**Supports/Hangers**	**Paint**
	Rail Type A: 1-3/4 Angle B: 2-5/8" Channel C: 7" Channel D: 10" Channel	**Mounting Type** A: Bolt-to-Frame B: Spacer C: Inset - 2" Outset - 2"	Type FSL Floor Supports **Deflectors** PRM: Fixed PRD: Automatic PRC: Automatic	Medium Gray **Roller Centers** 3"

SECTION B: APPLICATION GUIDELINES

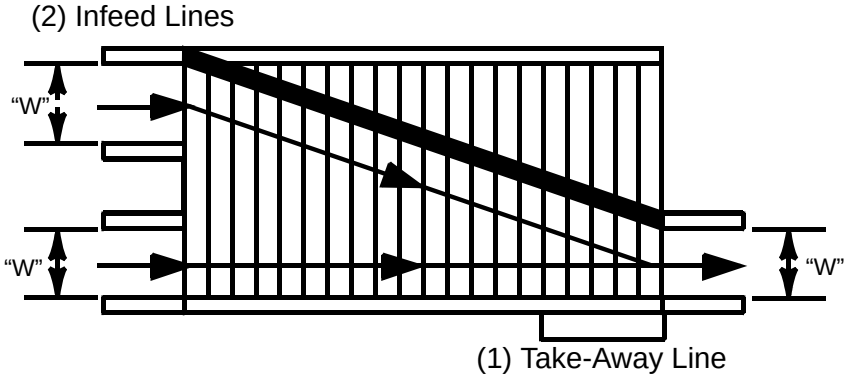
Introduction

The Merge, Diverge, and Crossover Chain-Powered Roller Conveyors are available in three models to provide positive flow of product through merging, diverting or crossover switching operations.

- PRM - Powered Roller Merge
- PRD - Powered Roller Diverge
- PRC - Powered Roller Crossover

Powered Roller Merge

The Powered Roller Merge conveyor is used for combing the flow of product from two (2) infeed lines into one (1) take-away line (see Figure B.1).



Right Hand Unit Shown

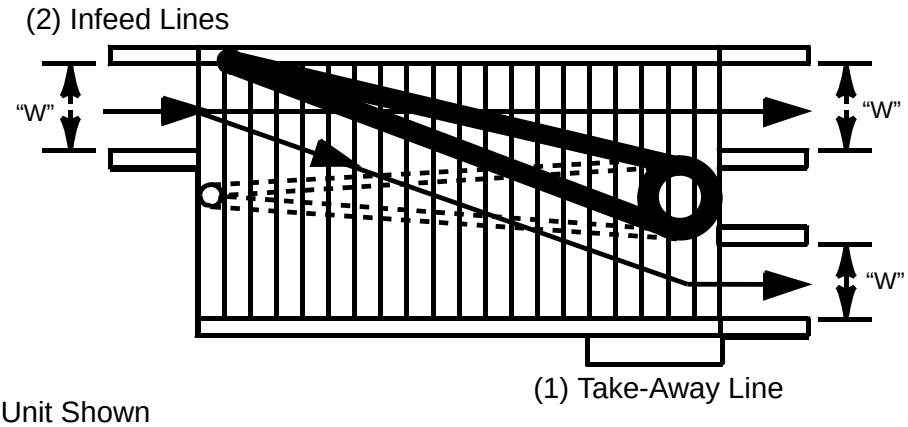
Figure B - 1 Powered Roller Merge Conveyor

The speed of the unit must be "equal to" or greater than that of the infeed lines and "equal to" or less than that of the take-away line.

The electrical flow control of the two infeed lines is required, but not included with the base conveyor.

Powered Roller Diverge

The Powered Roller Diverge conveyor is used for directing the flow of product from one (1) infeed line to either of two (2) take-away lines (see Figure B.2).



Right Hand Unit Shown

Figure B - 2 Powered Roller Diverge Conveyor

The speed of the unit must be “equal to” or greater than that of the infeed lines and “equal to” or less than that of the take-away line.

Electrical flow control of the infeed line is required, but not included with the base conveyor.

Electrical control for the motor-operated deflector is required, but not included with the base conveyor.

Powered Roller Crossover

The Powered Roller Crossover conveyor is used for directing the flow of product from two (2) infeed lines to either of two (2) take-away lines (see Figure B.3).

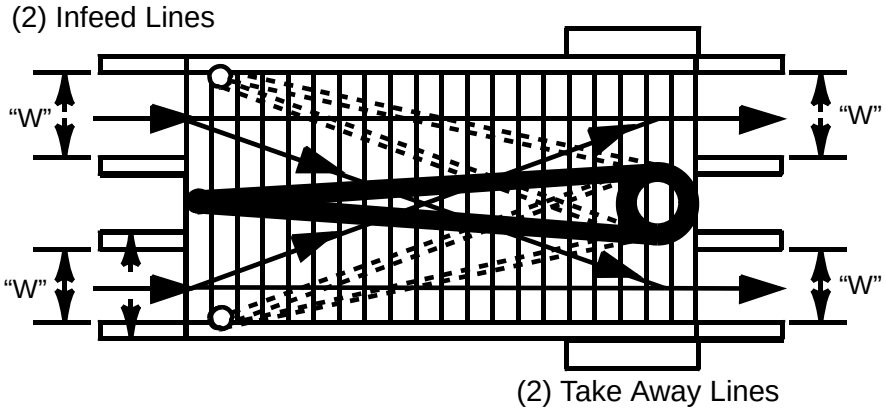


Figure B - 3 Powered Roller Crossover Conveyor

The Powered Crossover conveyor has double-row rollers which are independently driven by separate power units. This permits each lane to run or stop as required when operating in the straight thru, non-switching mode.

The speed of the unit must be "equal to" or greater than that of the infeed lines and "equal to" or less than that of the take-away lines.

Electrical flow control of the two infeed lines is required, but not included with the base conveyor.

Electrical control for the motor-operated deflector is required, but not included with the base conveyor.

SECTION C: SPECIFICATIONS

Models

PRM - Powered Roller Merge

PRD - Powered Roller Diverge

PRC - Powered Roller Crossover

Length/Widths

10’-0” - 16”, 22” and 28” “W”

15’-0” - 22”, 28”, 34” and 40” “W”

Capacity

Live Load = 100 lbs/ft.

Drive/Take-Up Unit

- DISDU - Discharge End Drive Unit
- Dual Roller/Internal Chain Drive (PRM/PRD/PRC - all widths)
- Dual Drive/Power Unit (PRC - all widths)
- Drive shaft extension may be located on either side of the unit (PRM and PRD).
- All components guarded.

Speeds

45, 60, 75, 90, 12 and 150 fpm (standard).

180, 210 and 240 fpm (optional).

Section/Frame

- 10” deep x 10 ga. formed-channel rails (with bolted crossmembers).
- A/CQ Clutch/Diaphragm assemblies.
- RC-40 roller chain(s).
- Dual Drive/Dual Roller/Internal Chain (PRM/PRD/PRC - all widths)
- All components guarded.

Carrier Rollers

No. G196G rollers (standard) have galvanized tubes, greased, sealed and removable-type bearings and spring loaded 7/16” hex axles; 179 fpm maximum speed.

Optional bearings available No. G196HS/FZ/CR/ABEC. Grooved end rollers with O-rings.

Flow-Control Devices

- PRM - Fixed-Deflector
- PRD - Pivoting Deflector (motor-operated).
- PRC - Pivoting Deflector (motor-operated).

Power Unit

1/2 to 3 HP, Totally-enclosed, Fan-Cooled, C-Face Motor/Reducer; chain drive to extended drive shaft. Underhung (UH) or Side-Mounted (SM).

Air-Pressure Control

- Filter/regulator/gage assembly (for conveyor)

- 3-way, solenoid-valve mounted and piped: (1) for PRM and PRD; (2) for PRC.

Low-Temperature Components

Rollers and internal drive components for color room (+20° to +40°F), freezer (0° to +20°F) and sub-zero freezer (-20° to 0°F) applications.

Floor Supports/Hangers

Model FSL

SECTION D: ENGINEERING DATA

Conveyor Selection

Step 1 - Calculate the Live Load

Use the appropriate formula below to calculate the conveyor's Live Load (LL) required.

A. When Weight and Number of Loads on conveyor are known.

$$LiveLoad(lbs/ft) = \frac{TotalWeightonConveyor(lbs)}{ConveyorLength(ft)}$$

Example 1a:
A Mode PRC Power Roller Crossover conveyor is 15 ft. lg. and has a total weight of 600 pounds when fully loaded.

$$LiveLoad = \frac{600lbs}{15ft} = 40lbs/ft$$

B. When load Weights and Rates are Constant.

$$LiveLoad(lbs/ft) = \frac{ItemWeight(lbs) \times Rate(loads/min)}{ConveyorSpeed(ft/min)}$$

Example 1b:
A Model PRM Powered Roller Merge conveyor conveys cases received from either of 2 upstream accumulation lines. Each line release 40 lbs. cases in a "slug" at a rate of 150 cases per minute.

$$LiveLoad = \frac{40lbs \times 150casespermin}{150fpm} = 40lbs/ft$$

C. When load Weights and Rates vary.

$$LiveLoad(lbs/ft) = \frac{MaximumLoad/Rate(lbs/ft)}{ConveyorSpeed(ft/min)}$$

*Maximum Load/Rate = Max. Load (lbs.) X Max. Rate (loads/min.)

Example 1c:
A Model PRD Power roller Diverge conveyor receives an assortment of cases that weight between 25 and 40 pounds each. The normal rate is 100 cases per minute. The rate can increase up to 150 cases per minute. The conveyor's speed is 150 fpm.

$$LiveLoad = \frac{40lbs \times 15(40)casesperminute}{150fpm} = 40lbs/ft$$

Step 2 - Determine the Effective Pull

Based on the conveyor's live load and width, see Table D.1 to find the "pull" for one (1) foot of conveyor length. Next, MULTIPLY the Pull by the conveyor's Length to find its Effective Pull requirement.

Effective Pull = (Pull x Length)

Table D-1 Effective Pull (lbs./ft.)

Live Load (lbs./ft.)	Conveyor Line Width - "W"				
	16"	22"	28"	34"	40"
10	6.3	7.2	8.2	9.2	10.2
20	7.9	8.9	9.9	10.9	11.9
40	11.1	12.1	13.1	14.1	15.1
60	14.4	15.4	16.4	17.4	18.4
80	17.6	18.6	19.6	20.6	21.6
100	20.8	21.9	22.9	23.9	24.9

Example 2:
(Refer to Example 1a) The PRC conveyor's length is 15'-0".

Step 3 - Determine the Horsepower

Based on the conveyor's Effective Pull and Speed requirements, use Table D.2 to determine the power unit's horsepower requirement.

Table D-2 Power Unit Capacity - Effective Pull (lbs.)

HP	Conveyor Speed (fpm)								
	45	60	75	90	120	150	180	210	240
1/2	345	277	234	208	159	135	109	97	83
3/4	541	475	399	324	239	202	164	146	125
1		633	532	432	318	269	219	194	167
1-1/2				641	492	408	332	295	250
2					664	557	453	403	345
3							702	624	535

Example 3:
(Refer to Example 2) The Model PRC Conveyor has an Effective Pull requirement of 138 lbs. and is to operate at a speed of 150 fpm.

Per Table D.2, a 3/4 HP Power Unit is required for a conveyor with a 149 lbs. EP and running at a speed of 150 fpm. Use (2) 3/4 HP power units for PRC only.

Note:

Some of the capacities shown in Table D.2 exceed the EP capacity ratings of individual conveyors (500 lbs.) DO NOT EXCEED conveyor's EP capacity rating.

SECTION E: ENGINEERING DATA

Layout Dimensions

Use the following for designing the layout for the Powered Merge, Diverge, and Crossover Conveyor.

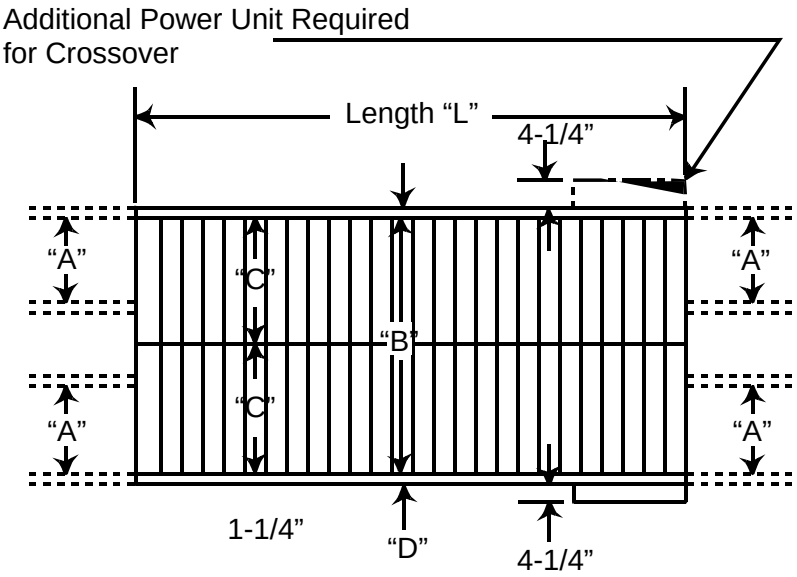


Figure 0 - 1 Merge, Diverge, and Crossover Layout Dimensions

Table E-1 Layout Dimensions for Merge, Diverge, and Crossover Units

Dimensions	**Conveyor Line Width "A" - "W"**				
	16"	**22"**	**28"**	**34"**	**40"**
	Effective Width "B"				
	41"	**53"**	**65"**	**77"**	**89"**
Roller / Frame Width "C"	19-7/8"	25-1/8"	31-7/8"	37-7/8"	40-7/8"
Frame Flange "D"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"
Conveyor Length - "L"	10'	10' & 15'	10' & 15'	15'	15'

Power Unit

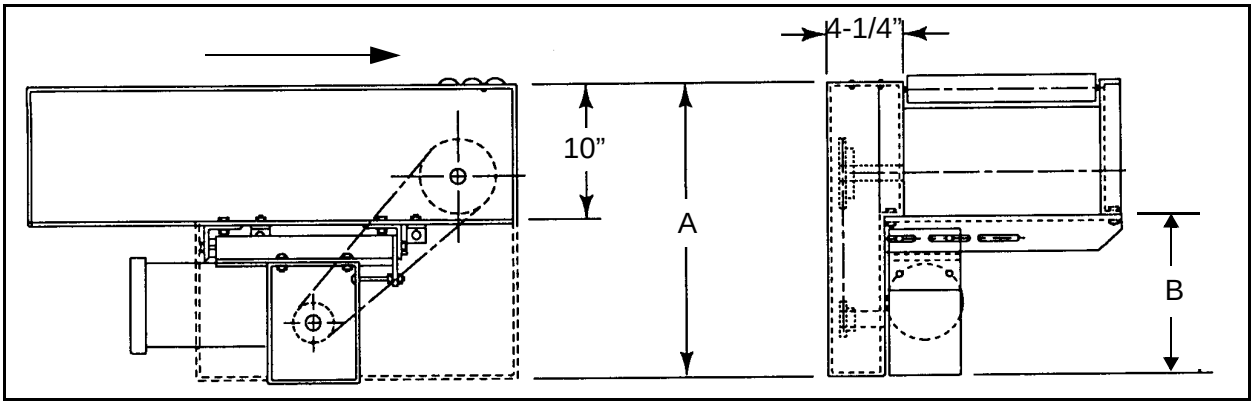


Figure 0 - 2 Power Unit - Underhung Mount (UH) RH Assembly Shown

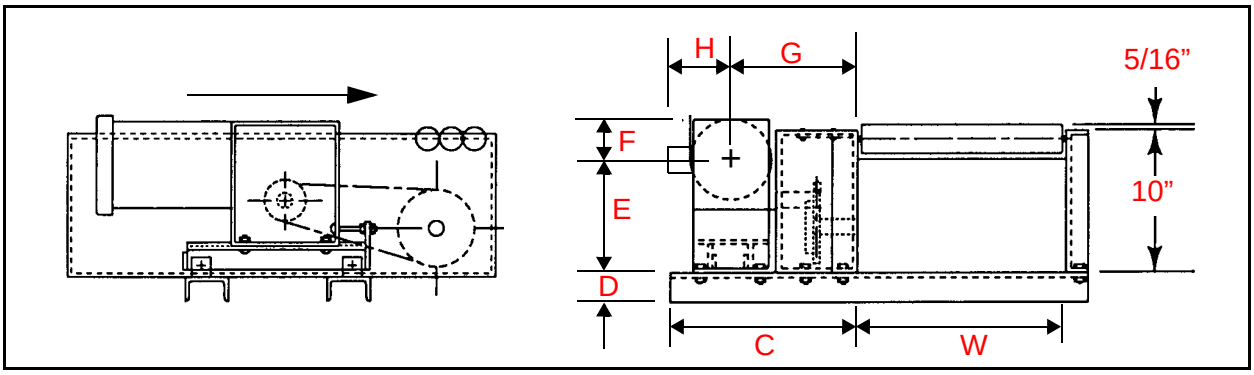


Figure 0 - 3 Power Unit - Side Mounted (SM) RH Assembly Shown

Table E-2 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

Fixed Side Guides - Straight

The standard 12’ lengths of angle or channel-type side guides are strapped in bundles. The mounting components and fasteners are packed in hardware cartons.

The fastener requirements (per 12’ side guide length) are identified in Table F.1 based on:

- mounting types (see Figure F.1).
- side guide (see Figure F.2).

Table E-1 Mounting Fastener Requirements (per side - 12’ length)

Key No.	Item	Mounting Type											
		A				B				C			
		Guide Rail Type											
1	3/8” x 3/4” lg. Hex Hd. Bolt w/Flange Nut	4	5	5	5	2	3	3	3	2	3	3	2
2	3/8” x 1-3/4” lg. Hex Hd. Bolt w/Flange Nut	0	0	0	0	4	4	4	4	4	4	4	4
3	3/8” x 3/4” lg. Flt. Hd. Bolt w/Flange Nut	0	0	0	0	0	0	0	0	4	4	4	4
4	1/2” x 11/16” lg. Hex. Nut Spacer	0	0	0	0	4	4	4	4	4	4	4	4
5	Offset Bracket	0	0	0	0	0	0	0	0	4	4	4	4
6	Strap Coupling	0	0	0	0	1	1	1	1	1	1	1	1

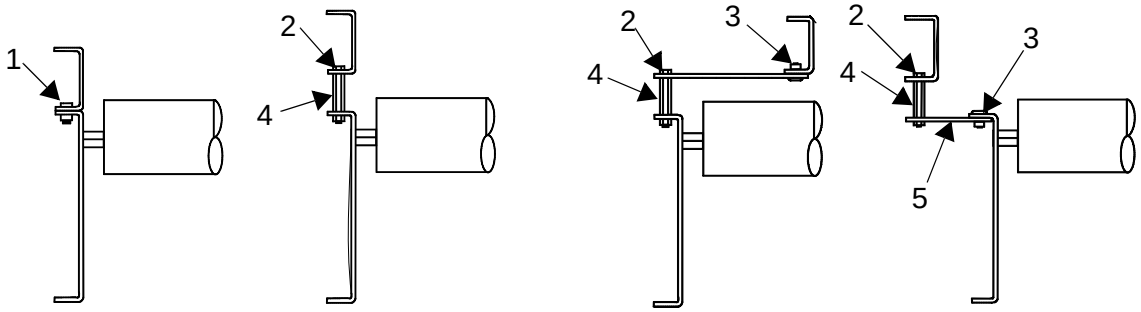


Figure F - 1 Types of Mountings

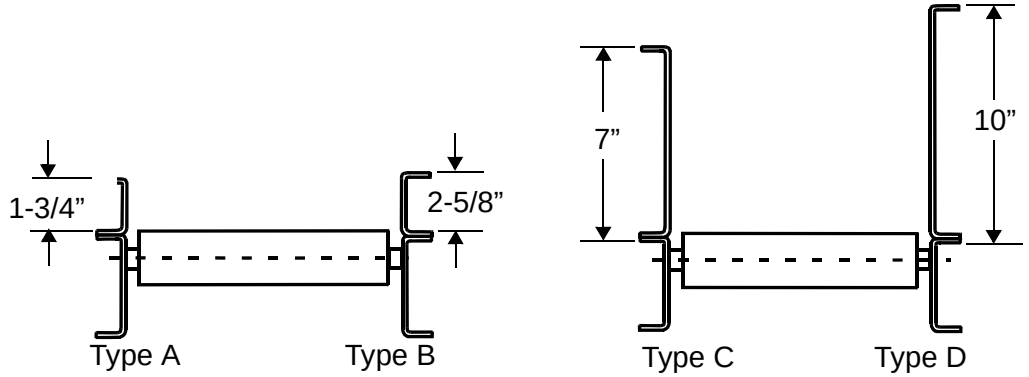


Figure F - 2 Types of Side Guides

Knee Braces

Longitudinal stability is achieved with knee braces. The knee brace eliminates stress caused by flow direction, stops, and starts (see Figure F.3).

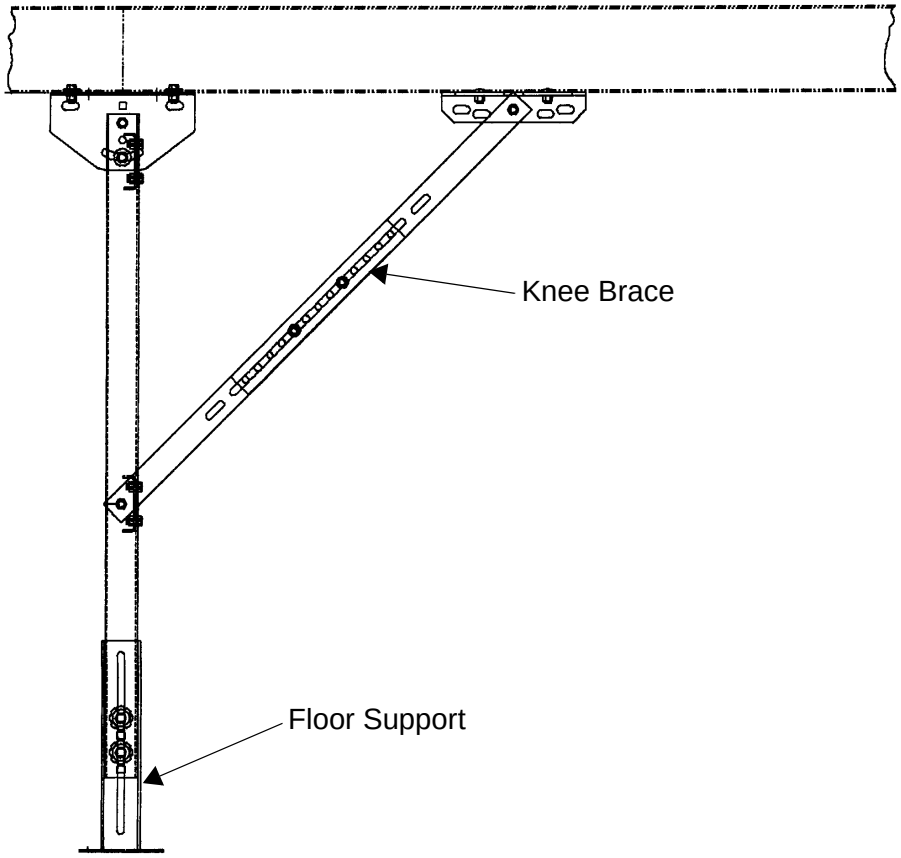


Figure F - 3 Knee Brace

Every support does not require bracing. Knee braces should be used:

- at the ends of straight runs.
- before case stops.
- near the drive
- approximately every 50 feet on a long straight run.

Normally, the knee braces must be located on the “downstream” side of the supports, putting them in tension.

However, the starting of the conveyor puts opposite stresses on the legs to that of stopping. Stresses are resisted by installing braces near the drive, back toward the receiving end “upstream”.

For the best results, the strap to frame angle should not exceed 45° or be less than 30°. On short supports where a small angle results, the brace strap may be shortened.

SECTION G:INSTALLATION PROCEDURES

Introduction

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 Customer Service in writing within ten (10) days after receipt of shipment.

Note: It is very important that you compare the Order Acknowledgment against the actual material received when you receive the shipment so you have enough lead time to order any missing parts. If you find that a part is missing during assembly, you may have to discontinue assembly while you wait for the part to arrive.

Lost or Damaged Shipment

Report lost shipments to our Shipping Department.

If shipping damage is evident upon receipt of the conveyor, 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 seller, 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 our Traffic Department.

Claims and Returns

All equipment furnished in accordance with the Manufacturer's Agreement is not returnable for any reason except when authorized in writing by the Seller. Notification of return must be made to the Customer Service Department, and if approved, a "Return Authorization Tag" will be sent to the Purchaser (user). 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

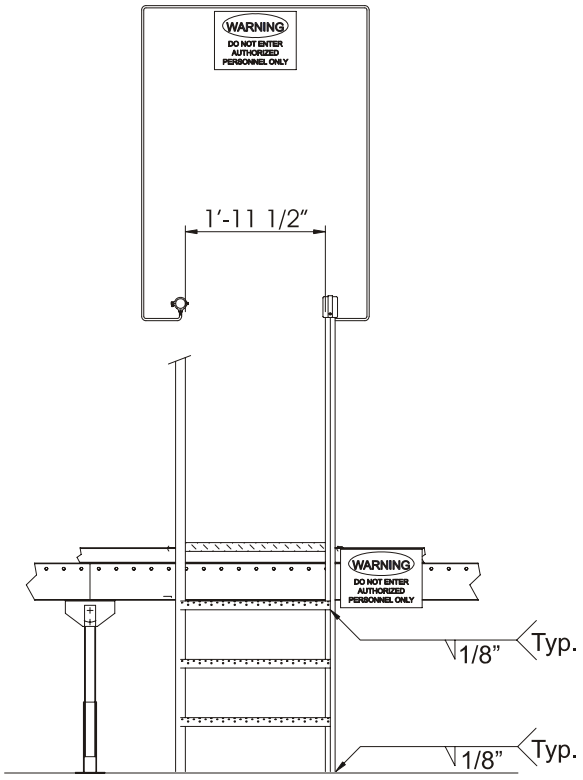
The conveyor equipment is designed and manufactured to comply with the American National Standard Institute's "SAFETY STANDARDS FOR CONVEYORS AND RELATED EQUIPMENT" (ANSI/ASME B20.1) and with the National Electrical Code (ANSI/ NFPA70).

The Purchaser/User shall be familiar with, and responsible for, compliance with all codes and regulations having jurisdiction regarding the installation, use, and maintenance of this equipment.

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 or bills-of-materials for replacement part numbers.

WARNING: For conveyors installed at floor level in an **"Authorized Personnel Access Area Only"**, fixed rollers (3" centers) may be used in conjunction with an emergency pull cord. The area must be apart from normal working areas and access must be marked with a sign, **"Warning - Do Not Enter - Authorized Personnel Only".**
Part Number for ordering Warning Sign is 957305.
The illustration below shows the location for installation of the sign.



TO ORDER LADDER SUPPORTS PER CROSSOVER:		
QNTY:	PART DESCRIPTION:	PART DESCRIPTION:
1	957173	X-OVER SIGN FRAME
2	957174	3/8" DIA NYLON LOOP CLAMP (TO ATTACH SIGN TO FRAME)
4	957175	1 1/4" DIA PIPE RING W/BOLT (TO ATTACH SIGN TO LADDERS)
4	957305	SIGN,WARN BY-WS10 SETON M2540

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. If quantity requirements or code numbers are not indicated on the conveyor parts list, refer to the equipment bill(s)-of-materials. For added convenience, a list of selected spare parts is included in this manual (see Section I).

Factory Assistance

Contact Field Service for installation, operation, or maintenance assistance, or Customer Service and Support for replacement parts.

Assembling the Conveyor

The balance of this section will be provided in a later release.

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 E-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.

CAUTION: 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 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 E-1 Scheduled Maintenance

	Components	Item Check									
		Lubrication	Oil Level	Tension	Wear	Alignment	Fasteners	Set Screws	Proper Position	Physical Condition	Operation
Weekly	Air Pressure Regulator & Filter									X	X
	Carrier Rollers								X	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 Chain - Internal	X		X	X						
	Drive Chain / Sprockets	X		X	X	X	X			X	
	Power Unit - Motor						X			X	
	Power Unit - Reducer						X			X	
	Supports / Hangers						X			X	
Semi Annually 1040 hrs.	Bearings - External	X									
	Drive Clutch Assemblies				X					X	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

Internal Chain Tension

Check the setting of the internal chain tensioner(s) on a daily basis for the first week of operation, then check weekly for the next three weeks, then monthly. Adjust if additional tension is required.

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 and Hub City = 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. These 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 observe 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

Carrier 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.

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.

General Structure & Operation

Check the conveyor's physical condition, looking for lose fasteners, damaged or wearing components, build-up of dust and product spillage. Listen for unusual noises such as squeaking bearings, chains jumping sprockets, etc.

Check that the conveyed product travels across the case deflector and along the length of the conveyor without obstruction or hesitation. Check that the solenoid valve is functioning properly and that the clutch assemblies are properly engaging and disengaging the rollers.

Check the PRD and PRC conveyors for proper operation, checking that the motor-operated deflector positions itself smoothly and stops at the required location(s).

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.

Air Filter and Pressure

If movement of the product is not positive and uniform along the length of the conveyor it may be necessary to check the air filer and pressure. The filter element may become so clogged that its air flow rate is reduced to the point where it cannot provide for the peak air demands of the conveyor.

The porous bronze (5 micron) element should either be replaced or washed with denatured alcohol. DO NOT attempt to by-pass the filter at any time for any reason.

Monthly Inspections

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.

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 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 bars of the chain. If loose, tighten the sprocket fasteners.

Internal Chain and Sprockets

Check and adjust tension of the internal drive chains.

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

Drive Chain and Drive Sprockets

If chain appears to be in need of lubrication, lubricate lightly with SAE 30 oil.

Check chain tension and adjust if necessary.

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.

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.

Semiannual Maintenance

External 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.

Power Unit Reducer (Hub City ONLY)

Drain and refill with fresh gear lubricant. These units are supplied with Hub City's "All Temperature Synthetic Gear Lubricant", (Mobile SHC-634). Consult Hub City if replacing with another brand of premium gear lubricant.

Drive Clutch Assemblies

Inspect a random sampling of drive wheels for sprocket and thread wear. Replace drive wheel/threads when clutch housing (not the thread) contacts the roller(s) and the rollers are no longer driven.

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 E-2.

WARNING: 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 tagout the conveyor operation control(s) before attempting to correct any malfunction.

Table E-2 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.
	Low air pressure at air pressure switch (for optional air operated tail end take-up only).	Adjust tail end regulator to the pressure as specified on the label at the tail end. Correct leaks and check main air supply.
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.

Problem	Cause	Solution
Rollers do not rotate or have insufficient drive	Roller obstruction.	Remove obstruction and inspect roller for damage.
	Roller bearing failure.	Replace bearings.
	Dirty Rollers	Clean rollers.
Gearmotor unusually noisy	Mounting bolts are loose.	Retighten mounting bolts.
	Unit misaligned or defective.	Realign or replace.
	Insufficient lubrication.	Lubricate gearmotor. Refer to vendor tags on gearmotor.
Gearmotor runs hot or overheats	Overload.	Check air pressure to take-up cylinder, check intermediate air pressure (15 psi). Lubricate the chain. Check sprocket bearings and proper engagement of chain with sprockets. Reduce load.
	High or low power voltage.	Refer to the motor nameplate for proper voltage and test with voltmeter.
	Inadequate ventilation or insufficient lubrications.	Service the unit.
Chain chatters or jumps off sprocket	Take-up is not functioning properly.	Check for free travel of take-up.
	Alignment between drive sprocket and chain is incorrect.	Check and, if necessary, adjust alignment.
	Chain worn out.	Check chain elongation and replace if required.
Excessive sprocket wear	Chain worn out (wears chain tooth profile).	Check chain elongation and replace if required.
	Alignment between sprocket and chain is incorrect (wears sprocket face).	Adjust sprocket alignment.
Excessive chain wear	Misalignment of sprocket (wears inner side of bushing link plates).	Check and, if necessary, adjust alignment.
	Inadequate chain lubrication (causes chain to elongate).	Lubricate chain.

SECTION I: SPARE PARTS

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.

Powered Roller Merge (PRM) Drive Unit

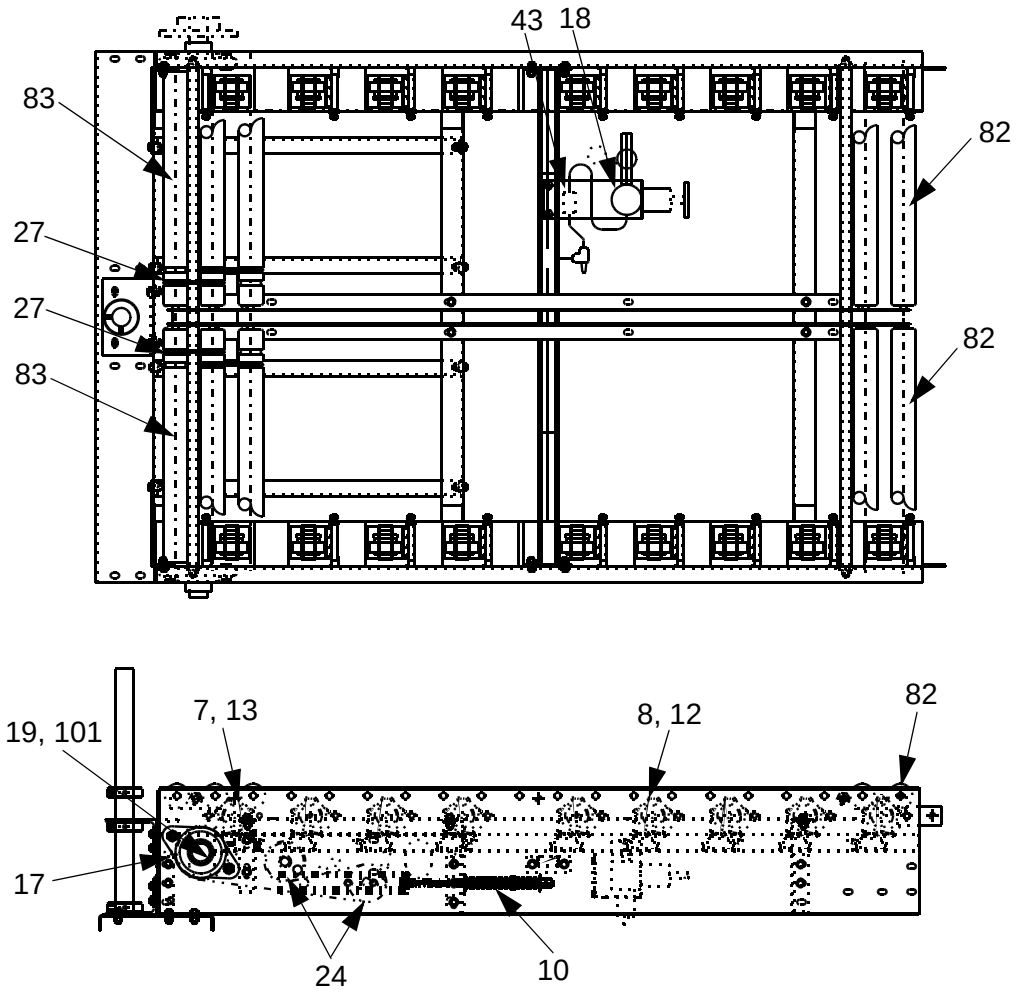


Figure I - 1 Powered Roller Merge Drive Unit

Powered Roller Diverge (PRD) Drive Unit

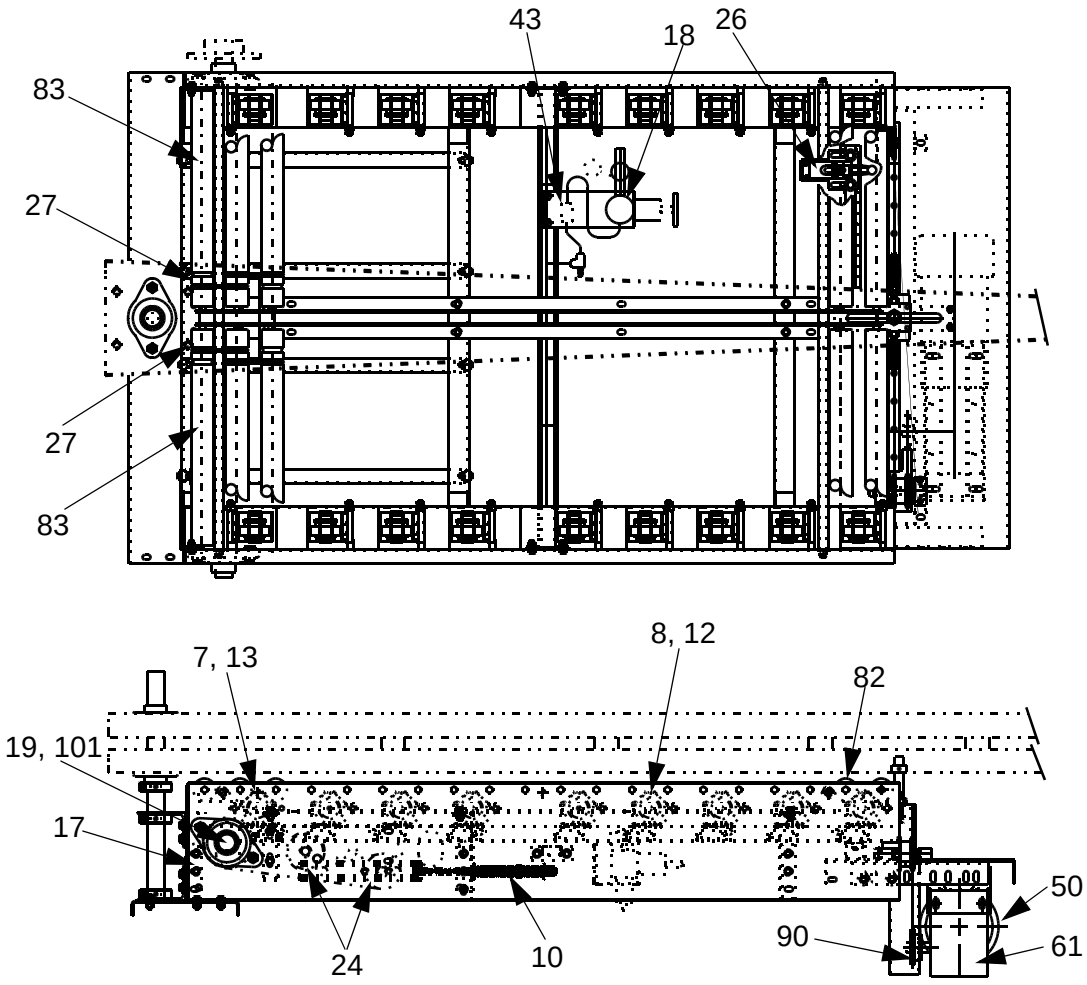


Figure I - 2 Powered Roller Diverge Unit

Powered Roller Crossover (PRC) Drive Unit

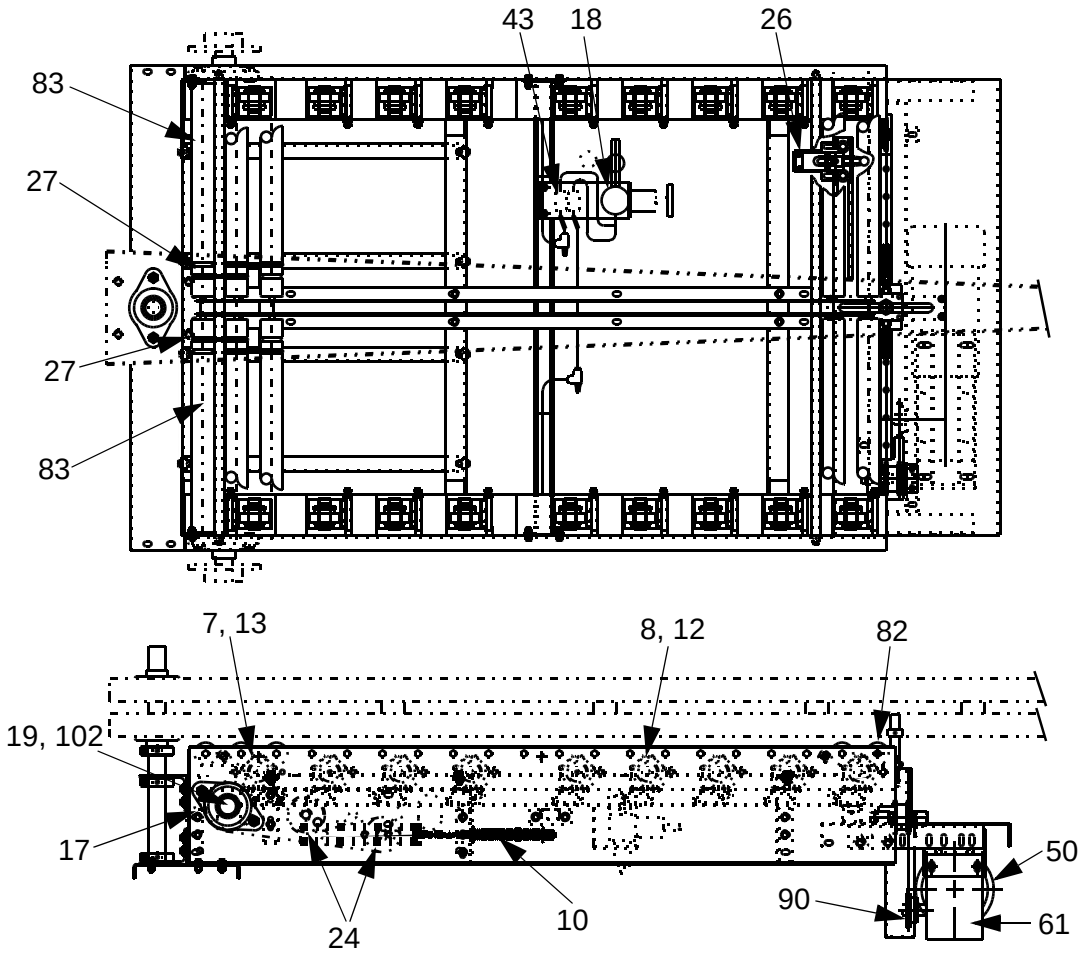


Figure I - 3 Powered Roller Crossover (PRC) Drive Unit

L/CQ Merge, Diverge and Crossover Take-Up Unit

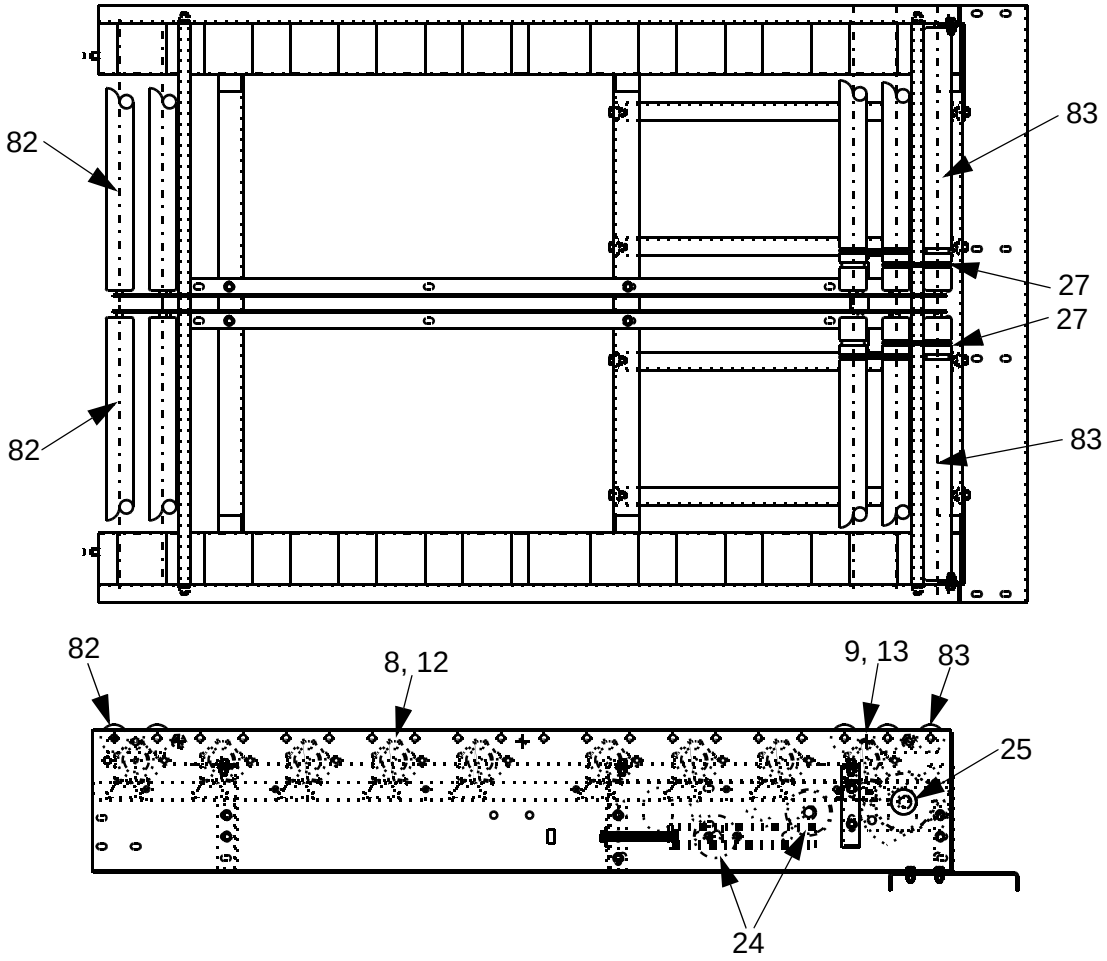
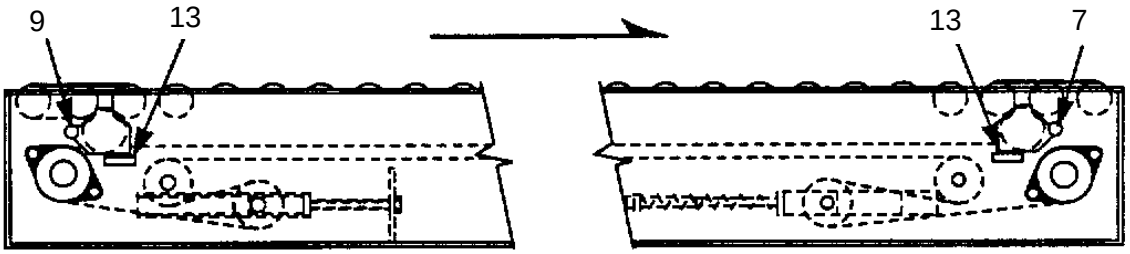


Figure I - 4 L/CQ Merge Take-Up Unit

DR/TU Section Clutch



For DR Section Clutch (13) Only - Select RH/LH assembly that is opposite the mounting side
Example: Use LH assembly when mounting on RH side of conveyor.

Figure I - 5 End Take-Up Section

Power Units

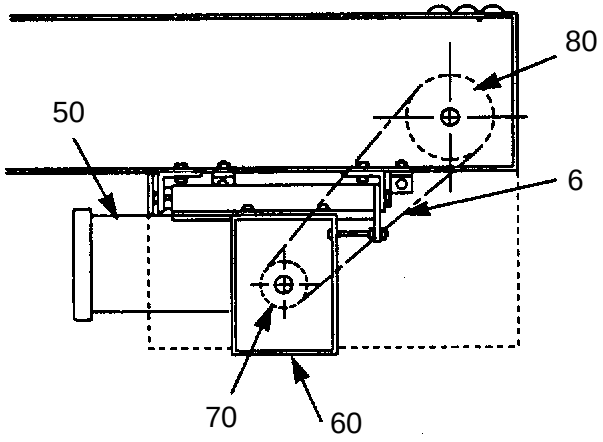


Figure I.1 Power Unit - Underhung Mount (UH) RH Assembly Shown

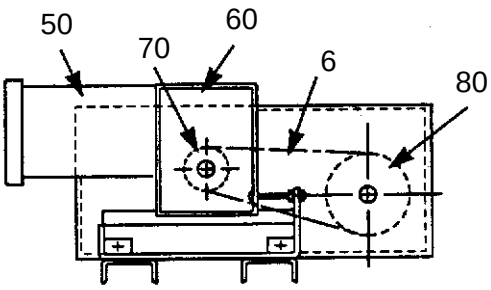


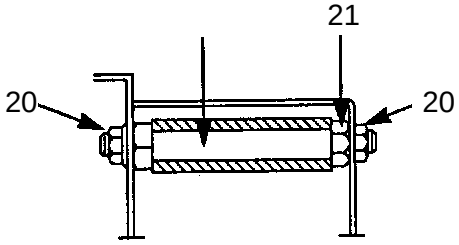
Figure I.2 Power Unit - Side-Mounted (SM) RH Assembly Shown

Figure I - 6 End Drive Section

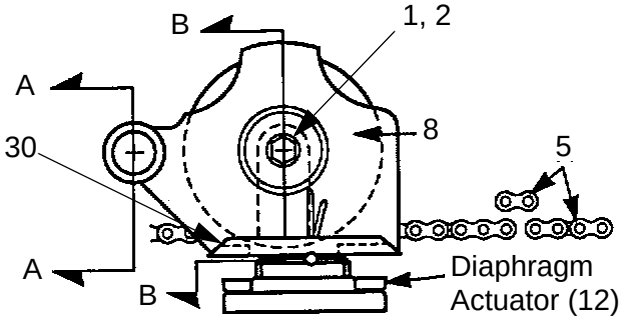
Table E-1 Power Unit Reducer Mount Requirements

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

Intermediate/Skew Section Clutch Assembly



Section A-A



Intermediate Section Clutch Assembly

Figure I - 7 Intermediate Section A-A

Figure I - 8 Intermediate Section / Clutch Assembly

Take-Up Section Clutch Components

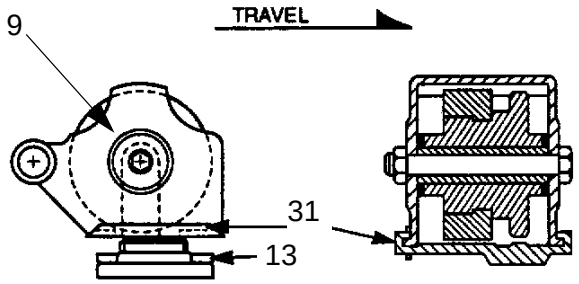


Figure I - 9 Take-Up Section Clutch Components

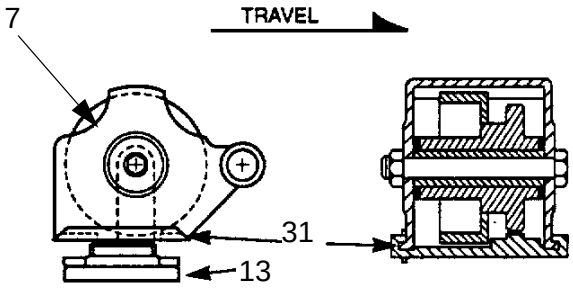
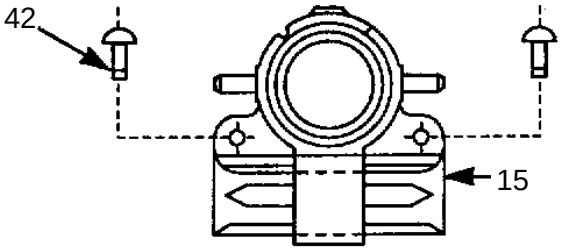


Figure I - 10 DR Section Clutch Components

Note: For components NOT called out above, refer to the “Intermediate/Skew Section Clutch Assembly”.

Diaphragm Actuator / Air-Line Components / Miscellaneous



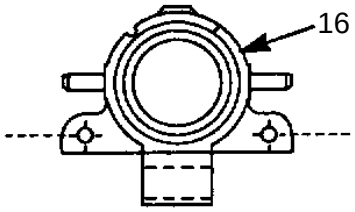


Figure I - 11 Intermediate Diaphragm Actuator (Left View)

Figure I - 12 Terminal Diaphragm Actuator (Right View)

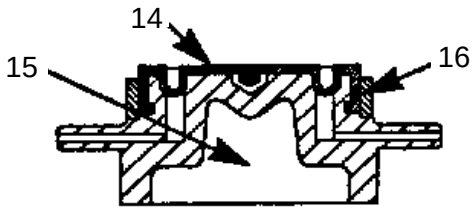


Figure I - 13 Diaphragm Actuator Components

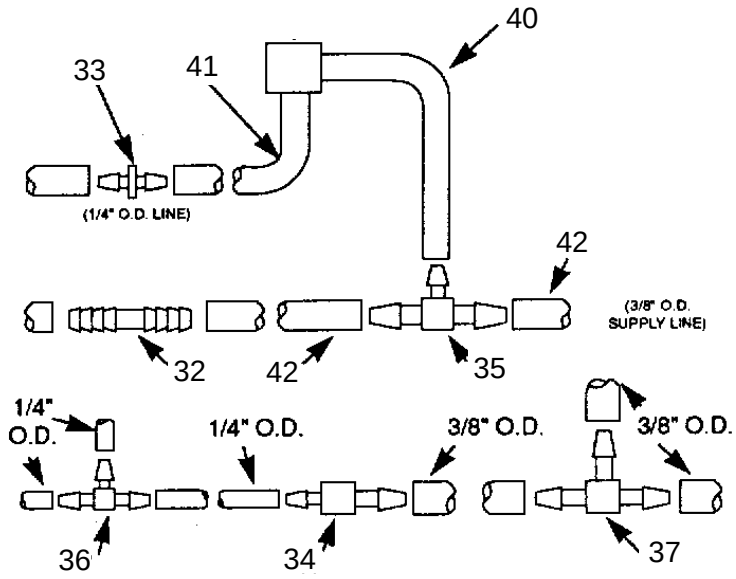


Figure I - 14 Air-Line Components

Non-Width Related

Key No.	Part Description		Part Number
1	Axle Bolt - HX HD, 3/8” x 2-3/4”		22-1053
2	Axle Bushing (Steel) 5/8” dia.		69-2603
3	Cable Tie / Ty-RA (Not shown)		30-0087
4	Cap Plug (For Lower Zone Enclosure - Not shown)		30-0089
5	Chain - RC-40		20-0551
	Chain - RC-40 (Cold Room, Freezer, High Speed)		20-0571
	Chain - RC-40 Connector Link		20-0020
	Chain - RC-40 Connector Link (CR, FZ, HS)		20-0567
6	Chain - RC-60		20-0985
	Chain - RC-60 Cold Room, Freezer, High Speed		20-0987
	Chain - RC-60 Connector Link		20-0060
	Chain - RC-60 Connector Link (CR, FZ, HS)		20-0986
7	Clutch Assembly - Drive / Idler Section		
	Standard	Black Sprocket / White Tread	37-1004 LH 37-1003 RH
	Cold Room	Black Sprocket / White Tread	37-1004 LH 37-1003 RH
	Freezer	Black Sprocket / White Tread	37-1004 LH 37-1003 RH
	Sub-Zero Freezer	Black Sprocket / White Tread	37-1004 LH 37-1003 RH
8	Clutch Assembly - Intermediate Section		
	Standard	Black Sprocket / Black Tread	37-1002 LH 37-1001 RH
	Cold Room	Black Sprocket / Amber Tread	37-1014 LH 37-1013 RH
	Freezer	Black Sprocket / Amber Tread	37-1014 LH 37-1013 RH
	Sub-Zero Freezer	Black Sprocket / Blue Tread	37-1008 LH 37-1007 RH

Key No.	Part Description		Part Number
9	Clutch Assembly - Take-Up Section (TU)		
	Standard	Black Sprocket / White Tread	37-1004 LH 37-1003 RH
	Cold Room	Black Sprocket / White Tread	37-1004 LH 37-1003 RH
	Freezer	Black Sprocket / White Tread	37-1004 LH 37-1003 RH
	Sub-Zero Freezer	Black Sprocket / White Tread	37-1004 LH 37-1003 RH
10	Compression Spring #55		31-0259 (3”) 31-0206 (6”)
11	Cotter Pin		22-0688
12	Diaphragm Actuator - Intermediate (0° to 150° F) Diaphragm Actuator - Intermediate; Blue (-20° to 0°F)		37-1123 37-0937
13	Diaphragm Actuator - Terminal (0° to 150° F) Diaphragm Actuator - Terminal; Blue (-20° to 0°F)		37-1104 37-1106
14	Diaphragm (0° to 150° F) Diaphragm; Blue (-20° to 0°F)		37-1111 37-0935
15	Diaphragm Frame - Intermediate		37-1109
16	Diaphragm Locking Collar		37-1113
17	Drive Sprocket - H40B25, 1-7/16” BR, KW, SS		74-3147
18	Filter Regulator - Gage Assembly (0-15 psi)		27-1557
19	Flange Bearing - 2 Bolt, 1-7/16” BR, Grease-Packed		40-0987
20	Flange Nut - 3/8” - 16		22-0654
21	Full Nut - 3/8” - 16		22-0402
22	Grease - Lubriplate 110, 10 oz. Tube (Drive Wheels)		00-0035
23	Housing - Clutch		37-1105
24	Idler Sprocket - HB40A17, 5/8” BR, GP Brg.		74-2932
25	Idler Sprocket - HB40A25, 5/8” BR, GP Brg.		74-2933
26	Limit Switch, Rotary Spring Return		30-2673
27	O-Rings/1.9” x 3C - 10-1/4” (3” Roller Centers)		00-0002

Key No.	Part Description	Part Number
28	Paint - Gray 5 Gal.	00-0013
	Paint - Gray Spray Can	00-0014
29	Reducer Lubricant - Reliance - Above +20° F (1 Gallon)	Consult Factory
	Reducer Lubricant - Reliance - 20° to + 20° F (1 Gallon)	Consult Factory
	Reducer Lubricant - TQ - Above +20° F (1 Gallon)	00-0021
	Reducer Lubricant - TQ - 20° to + 20° F (1 Gallon)	Consult Factory
30	Shoe - Intermediate/Skew Section Clutch Assembly	37-1034
31	Shoe - Drive/Take-Up/Idler Section Clutch Assembly	37-1035
32	Straight Connector - 3/8” (Low Pressure tubing)	27-1578
33	Straight Connector - 1/4” (Low Pressure tubing)	27-1584
34	Straight Connector - 3/8” x 1/4” (Low Pressure Tubing)	27-1585
35	T-Fitting 3/8” x 3/8” x 1/4” (Low Pressure Tubing)	27-1441
36	T-Fitting - 1/4” (Low Pressure Tubing)	27-1522
37	T-Fitting - 3/8” (Low Pressure Tubing)	27-1497
38	Thrust Washer - 5/8” ID x 1” OD x 1/16” Bronze	23-0631
39	Thrust Washer - 5/8” ID x 1” OD x .02” Steel	22-4329
40	Tubing - 1/4” OD x 5/32” ID - Green (Low Pressure)	27-1432
41	Tubing - 1/4” OD x 5/32” ID - Yellow (Low Pressure)	27-1436
42	Tubing - 3/8” OD x 1/4” ID - Red (Low Pressure)	27-1570
43	Valve, 3-way Low Pressure	27-1778
44	Wheel, Drive	
	Black Sprocket / BlackTread	37-1030
	Black Sprocket / Amber Tread	37-1032
	Black Sprocket / Blue Tread	37-1031
	Black Sprocket / White Tread	37-1033

Key No.	Part Description	Part Number		
50	Power Unit - C-Face Motor	Standard Motor	Brake Motor (Kit)	
		Reliance	Reliance	
	1/2 HP 56-C - 230-460/3/60	33-0601	(33-0903)	
	3/4 HP 56-C - 230-460/3/60	33-0774		
	1 HP 56-C - 230-460/3/60	33-0775		
	1.5 HP 145-C - 230-460/3/60	33-0607	(33-0906)	
	2 HP 145-TC - 230-460/3/60	33-0613		
	3 HP 182-TC - 230-460/3/60	33-0617	33-0619	
	5 HP 184-TC - 230-460/3/60	33-0621	33-0623	

60 Power Unit - C-Face Reducer

Ratio	Frame		Reliance		Hub City	
	Red.	Motor	K1	L1	B	C
5:1	175ES	56C	81-0751	81-0752		
	175ES	140TC	81-0753	81-0754		
	17	56C				
	17	145TC				
10:1	175ES	56C	81-0755	81-0756		
	17	56C				
	200ES	140TC	81-0769	81-0770		
	262	140TC	81-0893	81-0894		
	26	145TC				
	350	180TC	81-0952	81-0953		
	37	182TC				
	454	182TC			81-1278	81-1279
15:1	175ES	56C	81-0757	81-0758		
	17	56C				
	262	140TC	81-0919	81-0939		
	26	140TC				
	350	140TC	81-0871	81-0872		
	350	180TC	81-0920	81-0940		
	37	140TC				
	37	180TC				

Key No.	Part Description		Part Number				
60	**Power Unit - C-Face Reducer**						
	Ratio	**Frame**		**Reliance**		**Hub City**	
		Red.	**Motor**	**K1**	**L1**	**B**	**C**
	20:1	175ES	56C	81-0759	81-0760		
		17	56C				
		262	56C	81-0906	81-0926		
		26	56C				
		350	140TC	81-0910	81-0930		
		37	145TC				
	25:1	262	56C	81-0879	81-0880		
		26	56C				
	30:1	175ES	56C	81-0763	81-0764		
		17	56C				
		262	56C	81-0907	81-0927		
		26	56C				
		350	140TC	81-0911	81-0931		
		37	145TC				
	40:1	350	56C	81-0863	81-0864		
		37	56C				
61	**Deflector Power Unit - C-Face Reducer**						
	60:1	175ES	56C		81-0766		
			56C				

Key No.	Sprockets - Hardened Teeth w/Taper Lock Hubs - Part Numbers							
70	**Power Unit - Driver Sprocket**			**Sprocket Bore / Part Number**				
	Sprocket		**TL Hub No.**	**7/8”**	**1”**	**1-1/8”**	**1-1/2”**	**1-5/8”**
	RC-60	11T	No. 1008	74-5631				
	RC-60	12T	No. 1008	74-5632				
	RC-60	13T	No.1210	74-5633	74-5633	74-5633		
	RC-60	15T	No. 1610				74-5635	74-5635
	RC-60	16T	No. 1610	74-5636	74-5636	74-5636	74-5636	74-5636
	RC-60	17T	No. 1610				74-5637	74-5637
	RC-60	18T	No. 1610	74-5638	74-5638	74-5638	74-5638	74-5638
	RC-60	19T	No. 1610				74-5639	74-5639
	RC-60	21T	No. 2012			74-5641	74-5641	74-5641
	“TL” Hub		No. 1008	23-0701				
			No. 1210	23-0716	23-0717	23-0718		
			No. 1610	23-0746	23-0597	23-0578	23-0753	23-0751
			No. 2012			23-0778	23-0785	23-0787
80	**Power Unit - Driven Sprocket**			**Sprocket Bore / Part Number**				
	Sprocket		**TL Hub No.**	**1-7/16”**				
	RC-60	24T	No. 2012	74-5644				
	“TL” Hub		No. 2012	23-0781				
90	**Deflector Power Unit - Sprocket**			**Sprocket Bore / Part Number**				
	Sprocket		**Hub Type**	**7/8”**				
	RC-40	13T	Type B	74-0411				

* Includes Taper Loc Hub

** Type A Plate Sprocket (Bolts to Wrap-Spring clutch)

Width Related

Key No.	Roller Width "W"	Part Description and Number						
		Roller Number - Suffix(*)						
		G	G-CR	HS	HS-CR	FZ	AB	GT
BEARINGS ONLY (Bearing No. & Part No.)								
For No. 196 Roller		35-0253		35-0255		35-0256	NA*	35-0254
No. G196 - Straight Carrier Rollers (Full Width "W")								
82	16"	49-1700	49-1710	49-1726	49-1736	49-1742	49-1748	49-1716
	22"	49-1701	49-1711	49-1727	49-1737	49-1743	49-1749	49-1717
	28"	49-1702	49-1712	49-1728	49-1738	49-1744	49-1750	49-1718
	34"	49-1703	NA	49-1729	NA	NA	49-1751	49-1719
	40"	49-1704	NA	49-1730	NA	NA	49-1752	49-1720
No. G196 - Grooved Rollers (Full Width "W")								
83	16"	49-1705	49-1713	49-1731	49-1739	49-1745	49-1753	49-1731
	22"	49-1706	49-1714	49-1732	49-1740	49-1746	49-1754	49-1722
	28"	491707	49-1715	49-1733	49-1741	49-1747	49-1755	49-1723
	34"	49-1708	NA	49-1734	NA	NA	49-1756	49-1724
	40"	49-1709	NA	49-1735	NA	NA	49-1757	49-1725

(*)All No. G196AB rollers have "crimped" ends. Therefore the bearings are non-replacable. Order complete roller.

LEGEND:

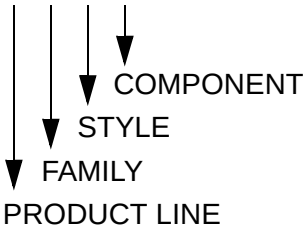
G = Grease-Packed
G-CR = Cold Room
FZ = Freezer
AB = Precision ABEC-1 Brg.
HS = High-Speed
HS-CR = High-Speed Cold Room
GT = Teflon-Sealed

Key No.	Part Description	Part Number				
PARTS - WIDTH RELATED		**16" W**	**22" W**	**28" W**	**34" W**	**40" W**
DRIVE SHAFT - END DRIVE UNITS AND END TAKE-UP UNITS W/PTO						
101	Single Extension PU - PRM/PTD	69-3221	69-3222	69-3223	69-3224	69-3225
	Single Extension PU (Plated)	69-3231	69-3232	69-3233	NA	NA
102	Single Extension PU - PRC	69-3155	69-3156	69-3157	69-3158	69-3159
	Single Extension PU (Plated)	69-3160	69-3161	69-3162	NA	NA

SECTION J: PRODUCT INDEX

Merge Conveyors

ITEM CLASS B 2 A 1



(F1) A/CQ DU RAIL
(F2) A/CQ DR 5-0 FRAME
(F3) A/CQ PU RU-LS
(F4) A/CQ PU LU-RS
(F5) MOTOR
(F6) A/CQ CHAIN GUARDS
(F7) ROLLERS
(F8) GROOVED ROLLERS
(F9) NON-REQUIRED
(F10) NON-REQUIRED

DESCRIPTION	DWG. NO.	41" W	53" W	65" W	77" W	89" W
PRM MERGE DU 5'-0"	19180 D	826396	826397	826398	826399	826400

ITEM CLASS B 2 A 2

(F1) A/CQ IS RAIL
(F2) ROLLERS
(F3) NON-REQUIRED
(F4) NON-REQUIRED
(F5) NON_REQUIRED

DESCRIPTION	DWG. NO.	41" W	53" W	65" W	77" W	89" W
L/CQ MERGE IS 5'-0"	19179 D	NA	820907	820908	820909	820910

Merge Take-Up

ITEM CLASS B 2 A 3

(F1) A/CQ TU RAIL
(F2) A/CQ TK 5'-0" FRAME
(F3) ROLLERS
(F4) GROOVED ROLLERS
(F5) NON_REQUIRED

DESCRIPTION	DWG. NO.	41" W	53" W	65" W	77" W	89" W
L/CQ MERGE TU 5'-0"	19178 D	820911	820912	820913	820914	820915

If an option is required, an option number must be entered in the select-number. If an option is non-required, enter 00 in the select-number and this component will be eliminated.

Items listed below are cover sheet items.

DESCRIPTION	DWG. NO.	10'-0" W	15'-0" W
PRM DEFLECTOR ARM FIXED	22025 D	730100	730101

Diverge And Crossover Units

ITEM CLASS B 2 B 1

(F1) A/CQ DU RAIL
(F2) A/CQ DR 5’-0” FRAME
(F3) A/CQ PU RU-LS
(F4) A/CQ PU LU-RS
(F5) MOTOR
(F6) A/CQ CHAIN GUARDS
(F7) ROLLERS
(F8) GROOVED ROLLERS
(F9) NON-REQUIRED
(F10) PRD & PRC DIV ARM

DESCRIPTION	DWG. NO.	41” W	53” W	65” W	77” W	89” W
PRD DIVERGE DU 5’-0”	19181 D	826401	826402	826403	826404	826405

ITEM CLASS B 2 C 1

(F1) A/CQ DU RAIL
(F2) A/CQ DR 5’-0” FRAME
(F3) A/CQ PU RU-LS
(F4) A/CQ PU LU-RS
(F5) MOTOR
(F6) A/CQ CHAIN GUARDS
(F7) ROLLERS
(F8) GROOVED ROLLERS
(F9) NON-REQUIRED
(F10) PRD & PRC DIV ARM

DESCRIPTION	DWG. NO.	41” W	53” W	65” W	77” W	89” W
PRC CROSSOVER DU 5’-0”	19182 D	826406	826407	826408	826409	826410

If an option is required, an option number must be entered in the select-number. If an option is non-required, enter 00 in the select-number and this component will be eliminated.

DESCRIPTION	DWG. NO.	10’-0” W	15’-0” W
L/C DEFLECTOR ARM AUTOMATIC	19194 D	730102	730103