ArrowSelect®

Quick Ship Conveyors

Technical Manual

ArrowSelect®

Conveyor Equipment, Inc.
Food Handling Specialists
Sales • Service • Engineering
When you need to add or replace a component or section of your product handling system, ArrowSelect® can **SAVE COSTS**... in dollars and time.

### The ArrowSelect® Concept
ArrowSelect® can streamline your new conveyor configuration – whether your system faces upgrades due to new contracts or changes in product design.

ArrowSelect® allows you to...

- **Select** pre-manufactured components or conveyor sections in the easy-to-use ArrowSelect® Technical Manual.
- **Order** your new components or sections by calling Arrow Conveyor Equipment Inc. at 585-377-7115
- **Receive** your order in 1/3 the time it would take to receive a custom order.
- **Install** the new components using your own personnel, saving installation costs.

We stock most standard components and conveyor sections, allowing us to ship your order without delay – typically within two weeks or less.

### The ArrowSelect® Promise
ArrowSelect® offers you an entire family of both table top and mat top conveyors and complementary products for your product handling system.

ArrowSelect® assures you of...

- **Quick Delivery**
  We maintain an inventory with standard conveyor components so we can respond rapidly to your needs.
- **Optimum Quality**
  ArrowSelect® components and sections have been designed and precision engineered for layout flexibility, easy installation, and long term reliability.
- **Maximum Value**
  Arrowhead purchases in large volume so we can produce conveyor components and sections at LOW cost... and pass the savings on to you.

### In Stock Components
The key to ArrowSelect® is Arrowhead Conveyor’s complete inventory of finished components.

- Each component is manufactured to exact tolerances and inspected before being placed in inventory.
- When you order ArrowSelect®, we immediately respond to your needs by assembling and shipping a finished product of utmost quality.

### Questions?
Call or E-Mail Us   -  585-377-7115   - sales@arrowconveyor.com
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ArrowSelect® Table Top Conveyors

Table Top General Specifications

1) MATERIAL
- 10 gauge #4 polish type 304 stainless steel side frames
- 10 gauge mild steel frames painted Burke Superlife 316 SS Flake

2) CHAIN TYPES

<table>
<thead>
<tr>
<th>Straight</th>
<th>Flex</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF820 - K3¼</td>
<td>LF879T - K3¼</td>
</tr>
<tr>
<td>LF820 - K4½</td>
<td>LF879T - K4½</td>
</tr>
<tr>
<td>LF820 - K7½</td>
<td>LF880T - K3¼</td>
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<td>LF880T - K4½</td>
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<td>LF882T - K7½</td>
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<td>LF831 - K3¼</td>
<td>LF882T - K10</td>
</tr>
<tr>
<td>LF831 - K4½</td>
<td>LF882T - K12</td>
</tr>
<tr>
<td>LF831 - K7½</td>
<td>SS881T - K3¼</td>
</tr>
<tr>
<td>SS815 - K3¼</td>
<td>SS881T - K4½</td>
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<tr>
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<td>SS881T - K7½</td>
</tr>
<tr>
<td>SS815 - K7½</td>
<td></td>
</tr>
</tbody>
</table>

3) OPEN TOP CONSTRUCTION
- 9” deep side frames on all 3'-0" drive and idle ends
- 7½” deep side frames on all intermediate sections with serpentine & roller return
- 12" deep side frames on all 2'-0" drive and idle ends

4) WEARSTRIPS UHMW
- ⅛” clip-on UHMW Wear strips

5) CHAIN RETURN
- Serpentine style
- PVC Roller with Delrin end bearings
- Slider on tab (turns only)

6) BEARINGS
- Two-hole flange bearings

7) SUPPORTS
- All supports available from 27” elevation to 57” elevation in 1” increments
- CSA-103 supports have ± 3” adjustment from the base elevation
- CSA-106 supports have ± 2” adjustment from the base elevation
For other elevations consult factory:

- CSA-103 Mild steel support; painted mild steel angle with painted cross member and formed mild steel plated foot
- CSA-103 Stainless steel support; stainless steel angle with stainless steel cross member and formed stainless steel foot
- CSA-106 Mild steel support; mild steel square tube with mild steel round cross member, stainless steel threaded rod, and articulating plastic foot
- CSA-106 Stainless steel support; stainless steel square tube with stainless steel round cross member, stainless steel threaded rod, and articulating plastic foot

8) GUIDE RAIL BRACKETS
- Adjustable only; stainless steel or mild steel plated, formed ¼” x 1½” material slotted for vertical and horizontal adjustment

9) GUIDE RAILS
- Consist of formed value guide stainless steel with UHMW round (VGSSR), flat (VGSSF), and T-shaped (VGSST) insert and stainless steel compression clips.

10) MOTOR MOUNT
- Vertically flange mounted drive motor is standard; under slung and under slung mounts are optional at an additional cost.
- Left hand motor mount is standard; right hand optional

11) DRIVE PACKAGE FOR STANDARD FLANGE MOUNTED DRIVE
- Inverter duty drive is standard “C” face motor (230 / 460-3-60) with right angle reducer
- Motor horsepower available:
<table>
<thead>
<tr>
<th>½</th>
<th>¾</th>
<th>1</th>
<th>1½</th>
</tr>
</thead>
<tbody>
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<td>53</td>
<td>66</td>
<td>89</td>
<td>106</td>
</tr>
<tr>
<td>133</td>
<td>177</td>
<td>266</td>
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</tr>
</tbody>
</table>
- Nominal Speeds available (in feet per minute) at 60 hertz:

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<th>30</th>
<th>40</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>180</td>
<td>200</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
- Other intermediate speeds can be acquired by incorporating variable frequency drives

NOTE: For additional speeds, consult the manufacturer. Longer deliveries may be required.

12) DRIVE PACKAGE FOR OPTIONAL UNDER SLUNG MOUNTED DRIVE
- Inverter duty drive is standard “C” face motor (230 / 460-3-60) with right angle reducer
- Motor horsepower available:
<table>
<thead>
<tr>
<th>½</th>
<th>¾</th>
<th>1</th>
<th>1½</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
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<td>140</td>
<td>150</td>
</tr>
<tr>
<td>180</td>
<td>200</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
- Speeds available (in feet per minute) at 60 hertz:

NOTE: For additional speeds, consult the manufacturer. Longer deliveries may be required.
Table Top Engineering / Application

**DRIVE CONSTRUCTION**

The 3'-0" drive unit consists of two formed angle frames that are 9" deep and beveled at splice to match a 7½" deep intermediate frame with cross spacers, UHMW wearstrip guides and return rollers or serpentine return. The frame is available in 10 gauge stainless steel with #4 polish or 10 gauge painted mild steel.

**Shaft:** 1" diameter steel or 1" diameter type 303 stainless steel with ¼" keyway for securing sprocket; drive assembly has extended shaft with keyway

**Bearings:** Standard 2 hole flange type mounted with round cut-out in frame for pull through removal of shaft;

**Sprocket:** Supplied as required for type of table top chain used

**End Cap:** Full depth bolt-on with finger guard included for pinch point protection

**Motor Mount:** Flange mounted or under slung with chain guard mount; guard located on left or right side of unit when looking in direction of product flow

- 3'-0" drive (standard) 9" Deep – Flange motor mount design
- 3'-0" drive (optional) 9" Deep – Under slung motor mount with chain, sprockets, and chain guard. (*Under slung motor mounts are optional at an additional cost*)
- 2'-0" drive (standard) 12" Deep – Flange motor mount design
- 2'-0" drive (optional) 12" Deep – Below motor mount with chain, sprockets, and chain guard. (*Under Slung motor mounts are optional at an additional cost*)
**IDLE CONSTRUCTION**

The idle unit consists of two formed angle frames that are 9” deep and beveled at splice to match a 7½” deep intermediate frame with cross spacers, UHMW wearstrip guides and return rollers or serpentine rollers. The frame is available in 10 gauge stainless steel with #4 polish or 10 gauge painted mild steel.

**Shaft:** 1” diameter cold rolled steel or 1” diameter type 303 stainless steel with ¼” keyway for securing sprocket

**Bearings:** Standard 2 hole flange type mounted with round cut-out in frame for pull through removal of shaft;

**Sprocket:** Supplied as required for type of table top chain used

**End Cap:** Full depth bolt-on with finger guard Included for pinch point protection

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**TURN CONSTRUCTION**

The turn unit consists of two rolled side frames that are 7 5/8” deep with cross spacers, UHMW wearstrip guides, and impregnated lubricant in top way and chain return. The frame is available in 10 gauge #4 polish stainless steel or 10 gauge hot rolled painted mild steel.

**Standard Turns:**

- 30°, 45°, and 90° turn for 4½”, 7½”, 10”, and 12” flex chains with centerline radius of 24”
- 30°, 45°, and 90° turn for 3¼” flex chain with centerline radius of 18”

**NOTE:** All standard turns have a 6” straight tangent on both ends.

---

**INTERMEDIATE CONSTRUCTION**

The intermediate unit consists of two formed angle frames that are 7½” deep with cross spacers, UHMW wearstrip guides and return rollers or serpentine return. Lengths are available from 1'-0” to 10’ - 0” in 1” increments. The frame is available in 10 gauge stainless steel with #4 polish or 10 gauge painted mild steel.

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**Standard Intermediate (4’ - 0” Intermediate shown)**

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**Standard Intermediate (4’ - 0” Intermediate shown)**
PARALLEL TRANSFER CONSTRUCTION

The parallel transfer unit consists of a single 48" frame that is 10" deep and beveled at splice to match a 7 ½" deep intermediate frame that will accommodate two lanes of table top straight and / or flex chain. It is constructed so the table top chains have 1/16" gap between them to eliminate the need for dead plates.

Application:
Parallel transfer units reduce the length of a single chain pull while maintaining constant control of the product without requiring the use of dead plates at the transfer point. Reducing chain pull tensions can greatly increase the life expectancy of the table top chain and other conveyor components.

Parallel transfer units are also utilized when line speeds are changed to provide an increase in proper product spacing or rate, a decrease in accumulation, or constant back pressure to a particular machine.

NOTE: It is recommended that each parallel transfer be provided with two supports.

INLINE TRANSFER CONSTRUCTION

The inline transfer unit consists of a single 54" long frame that is 10" deep and beveled at splice to match 7 ½" deep intermediate frame that will accommodate two lanes of table top flex chain. It is constructed so the table top chains have 1/16" gap between them to eliminate the need for dead plates. Inline transfers are only available for 3 ¼” and 4 ½” chain widths.

Application:
Inline transfer units are similar to parallel transfers but with a straight product path, eliminating product damage and increasing product stability.
ADJUSTABLE COPE CONSTRUCTION

The adjustable cope unit consists of two angle frames that are 7 ½" deep with cross spacers, UHMW wearstrip guides and return roller. The modular design allows for angle adjustment ± 10°.

Application:
Adjustable copes are utilized where elevation changes are required.

Several aspects must be considered when utilizing copes, including but not limited to the following:

- Product slippage
- Tipping of the product
- Minimum back flex radius of the conveyor chain
- Possible tab chain requirement
- Maximum ¾" per foot inclines and declines allowable (consult factory for anything greater)

TRANSFER PLATE CONSTRUCTION

The roller transfer plate unit consists of solid marbett plates with stainless steel axles and LBP rollers.

The stainless steel end transfer plate unit consists of a full width plate with bevel on chain side.

The stainless steel side transfer plate unit consists of a vertically adjustable stainless steel plate.

Application:
Transfer plates are utilized to bridge the gap between conveyor sprockets on end to end transfers. Transfer plates are often NOT self clearing.

Where minimal gaps are required, parallel or inline transfers are recommended.
Table Top General Information

TABLE TOP CHAIN SELECTION
When selecting the proper table top chain, it is important to consider the following factors:

Product:
Determine the type of product the conveyor will transport. What type of material is the product? What type of material is the container? Will the container be filled with chemicals that have corrosive properties?

Environmental Conditions:
Determine the temperatures and atmospheric conditions in which the conveyor will operate. Will the atmosphere be abrasive, combustible, or explosive? Will there be corrosive material?

Accumulation or Transportation:
Determine whether the product will be accumulated or simply transported.

Conveyor Wash down:
Determine the chemical properties of wash down solutions required for your conveyor. Will the wash down solutions be compatible with your chain selection?

Chain Lubrication:
Determine the type of lubrication necessary to maintain the type of chain. The type of lubrication can greatly enhance the wearstrip to chain compatibility. What type of material is the chain? Lubrication is required for steel and stainless steel chains and recommended for all chains. Proper lubrication will provide the lowest friction factor between the product, chain, and chain wearstrip.

CHAIN AND PRODUCT COMPATIBILITY GUIDE
Use the following guidelines when considering the compatibility of the chain and product:

Stainless Steel Chains:
- Soft drink and brewery glass handling conveyor
- Glass handling conveyor where glass breakage is present
- Food processing and industrial where some acids or chemicals may be handled

Steel Chains:
- Glass manufacturing plants
- Industrial applications

Plastic Chains:
- Soft drink and brewery steel and aluminum can handling conveyor
- Paper container handling
- Plastic container handling
GUIDE RAIL SETTINGS (Round Product)

The ideal guide rail setting provides straight rows of product at 60° to the guide rail.

Determine the guide rail settings with the following formula.

**Formula for Guide Rail Settings:**

\[ S = [(\text{No. of Rows} - 1) \times (\sin 60 \times D)] + D \]

**Example:**

- \( D = 2" \)  \( \text{No. of Rows} = 3 \)
- \( S = [(3 - 1) \times (\sin 60 \times 2'')] + 2" \)
- \( S = 5.46" + .125" \)
- \( S = 5.59" \) Rail Setting

1/8" should be added to each side for product running clearance.

---

CONVEYOR SPEEDS

When determining the speed of the conveyor, remember that the chain and conveyor components will last longer if you do not run the chain faster than the speed required to properly carry the product and maintain production machine rates.

When conveying product in single file to a production machine, it is common to run the chain approximately 20% over production rates.

**Formula for Conveyor Speed Settings:**

\[ SS = \left( \frac{\text{Machine Rate}}{\text{Products per Foot of Chain}} \right) \times 1.2" \]

**Example:**

- \( D = 3" \)  \( \text{Machine Rate} = 100 \text{ PPM} \)
- \( \text{Products per Foot of Chain} = 12" \div D \)
- \( SS = \left( \frac{100}{12" \div 3"} \right) \times 1.2" \)
- \( SS = (100 \div 4) \times 1.2" \)
- \( SS = 25 \times 1.2" \)
- \( SS = 30 \text{ FPM} \) Speed Setting

When high speed packaging machines cause infeed and discharge chains to run at extremely high speeds, it is not practical to run the product single file any longer than required. In such cases, wider or multiple chains can be added to slow down the product. Wider chains can also be used for product accumulation.

When determining inline accumulation speeds, use the basic speed formula plus a higher percent of increase to allow sufficient accumulation space. Approximately 30 to 50% of clear area is required on the conveyor for this type of accumulation.
# Table Top Chain Types and Dimensions

### LF820 Chain (Straight)

<table>
<thead>
<tr>
<th>Chain Width</th>
<th>Approximate Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>in</td>
<td>mm</td>
</tr>
<tr>
<td>3.25</td>
<td>82.6</td>
</tr>
<tr>
<td>4.50</td>
<td>114.3</td>
</tr>
<tr>
<td>7.50</td>
<td>190.5</td>
</tr>
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</table>

### LF821 Chain (Straight)

<table>
<thead>
<tr>
<th>Chain Width</th>
<th>Approximate Weight</th>
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</thead>
<tbody>
<tr>
<td>in</td>
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<tr>
<td>7.50</td>
<td>190.5</td>
</tr>
<tr>
<td>10.00</td>
<td>254.0</td>
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<tr>
<td>12.00</td>
<td>304.8</td>
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### LF831 Chain (Straight)

<table>
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<tbody>
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<tr>
<td>3.25</td>
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<tr>
<td>4.50</td>
<td>114.3</td>
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<tr>
<td>7.50</td>
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</table>
SS815 CHAIN (STRAIGHT)

<table>
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<th>CHAIN WIDTH</th>
<th>APPROXIMATE WEIGHT</th>
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<td>mm</td>
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<td>82.6</td>
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<tr>
<td>4.50</td>
<td>114.3</td>
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<tr>
<td>7.50</td>
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</table>

LF879TAB CHAIN (CURVE)

<table>
<thead>
<tr>
<th>CHAIN WIDTH</th>
<th>MIN. SIDE-FLEX RADIUS</th>
<th>APPROXIMATE WEIGHT</th>
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</thead>
<tbody>
<tr>
<td>in</td>
<td>mm</td>
<td>in</td>
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<tr>
<td>3.25</td>
<td>82.6</td>
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<td>4.50</td>
<td>114.3</td>
<td>24.00</td>
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LF880TAB CHAIN (CURVE)

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<th>APPROXIMATE WEIGHT</th>
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<td>in</td>
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<tr>
<td>3.25</td>
<td>82.6</td>
<td>18.00</td>
</tr>
<tr>
<td>4.50</td>
<td>114.3</td>
<td>24.00</td>
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</tbody>
</table>
**LF882TAB Chain (Curve)**

<table>
<thead>
<tr>
<th>Chain Width</th>
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</thead>
<tbody>
<tr>
<td>in</td>
<td>mm</td>
<td>lbs/ft</td>
</tr>
<tr>
<td>4.50</td>
<td>114.3</td>
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</tr>
<tr>
<td>7.50</td>
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<td>12.00</td>
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**SS881TAB Chain (Curve)**

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<td>lbs/ft</td>
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<td>190.5</td>
<td>609.6</td>
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### Straight Roller Return Cross-Section

#### Table Top Standard Cross-Section Styles and Dimensions

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<thead>
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<th>W</th>
<th>H</th>
<th>GR</th>
<th>G1</th>
<th>G2</th>
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<th>OAH</th>
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<td>5.00&quot;</td>
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<td>Close</td>
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<td>9.75&quot;</td>
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## Curve Returns

### Straight Serpentine Return Cross-Section

![Straight Serpentine Return Cross-Section Diagram]

### Curve Serpentine & Roller Return Cross-Section

![Curve Serpentine & Roller Return Cross-Section Diagram]

<table>
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<tr>
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Mat Top General Specifications

1) MATERIAL
- 10 gauge #4 polish type 304 stainless steel side frames
- 10 gauge mild steel frames painted Burke Superlife 316 SS Flake

2) CHAIN TYPES

<table>
<thead>
<tr>
<th>Chain Type</th>
<th>Chain Type</th>
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<tr>
<td>HP8505 – 3¼”</td>
<td>HP8505 – 3¼”</td>
</tr>
<tr>
<td>HP8505 – 4½”</td>
<td>HP8506 – 4½”</td>
</tr>
<tr>
<td>HP8505 – 7½”</td>
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<td>HP8505 – 15”</td>
<td>HP8506 – 15”</td>
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<tr>
<td>HP8505 – 18”</td>
<td>HP8506 – 18”</td>
</tr>
<tr>
<td>HP8505 – 24”</td>
<td>HP8506 – 24”</td>
</tr>
</tbody>
</table>

3) OPEN TOP CONSTRUCTION
- 9” deep side frames on all drive and idle ends and transfers
- 15” deep side frames on 90° transfers
- 7” deep side frames on all intermediates

4) WEARSTRIPS UHMW
- 3/16” x 1.00” clip-on UHMW on outside frames
- SS backed UHMW for center support

5) CHAIN RETURN
- Serpentine style
- PVC Roller with Delrin end bearings

6) BEARINGS
- Two-hole flange bearings

7) SUPPORTS
- All supports available from 27” elevation to 57” elevation in 1” increments
- CSA-103 supports have ±3” adjustment from the base elevation
- CSA-106 supports have ±2” adjustment from the base elevation

For other elevations consult factory:
- CSA-103 Mild steel support; painted mild steel angle with painted cross member and formed mild steel plated foot
- CSA-103 Stainless steel support; stainless steel angle with stainless steel cross member and formed stainless steel foot
- CSA-106 Mild steel support; mild steel square tube with mild steel round cross member, stainless steel threaded rod, and articulating plastic foot
8) GUIDE RAIL BRACKETS
- Adjustable only; stainless steel or mild steel plated, formed ¼” x 1½” material slotted for vertical and horizontal adjustment

9) GUIDE RAILS
- Formed stainless steel with UHMW round or 1¼” flat profile insert and stainless steel compression clips; double high

10) MOTOR MOUNT
- All drive motors to be flange mounted left hand or right hand assemblies as required

11) DRIVE PACKAGE
- Inverter duty drives as standard “C” face motors (230 / 460-3-60) with right angle reducers
- Motor horsepower available:

<table>
<thead>
<tr>
<th>Horsepower</th>
<th>1</th>
<th>1½</th>
<th>2</th>
</tr>
</thead>
</table>

- Speeds available (in feet per minute) at 60 hertz:

<table>
<thead>
<tr>
<th>Speed (fpm)</th>
<th>44</th>
<th>53</th>
<th>66</th>
<th>89</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>106</td>
<td>133</td>
<td>177</td>
<td>266</td>
</tr>
</tbody>
</table>

- Other intermediate speeds can be acquired by incorporating variable frequency drives

NOTE: For additional speeds, consult the manufacturer. Longer deliveries may be required.
Mat Top Engineering / Application

**DRIVE CONSTRUCTION**

The drive unit consists of two formed angle frames that are 9" deep and beveled at splice to match a 7" deep intermediate frame with cross spacers, UHMW wearstrip guides and return rollers or serpentine return. The frame is available in 10 gauge stainless steel with #4 polish or 10 gauge painted mild steel.

** Shaft: ** 1\(\frac{7}{16}\)" diameter steel or 1\(\frac{7}{16}\)" diameter type 303 stainless steel with \(\frac{3}{8}\)" keyway for securing sprocket; drive assembly has extended shaft with keyway

**Bearings:** Standard 2 hole flange type mounted with round cut-out in frame for pull through removal of shaft; internal bearings are lubed for life

**Sprocket:** Thermoplastic split

**End Cap:** Full depth bolt-on with finger guard, roller deadplate, or SS deadplate

**Motor Mount:** Flange mounted

- 48.00" drive (standard) – Flange motor mount design

**IDLE CONSTRUCTION**

The idle unit consists of two formed angle frames that are 9" deep and beveled at splice to match a 7" deep intermediate frame with cross spacers, UHMW wearstrip guides and return rollers or serpentine rollers. The frame is available in 10 gauge stainless steel with #4 polish or 10 gauge painted mild steel; either 18" or 48" long.

** Shaft: ** 1\(\frac{7}{16}\)" diameter cold rolled steel or 1\(\frac{7}{16}\)" diameter type 303 stainless steel with \(\frac{3}{8}\)" keyway for securing sprocket

**Bearings:** Standard 2 hole flange type mounted with round cut-out in frame for pull through removal of shaft; internal bearings are lubed for life

**Sprocket:** Thermoplastic split

**End Cap:** Full depth bolt-on with finger guard, roller deadplate, or SS deadplate

![4' - 0" Drive – Flange Motor Mount](image)

![18" Idle End](image)

![4' Idle End](image)
INTERMEDIATE CONSTRUCTION

The intermediate unit consists of two formed angle frames that are 7” deep with cross spacers, UHMW wearstrip guides and return rollers or serpentine return. Lengths are available from 6” to 5’ - 0” in 1” increments and from 5’ - 6” to 10’ - 0” in 6” increments. The frame is available in 10 gauge stainless steel with #4 polish or 10 gauge painted mild steel.

Application:

Intermediate sections are used for simple transportation and accumulation between drive and idle sections.

90° TRANSFER CONSTRUCTION

The 90° transfer unit consists of four side frames that are 15” deep with cross spacers, and UHMW wearstrip guides. The frame is available in 10 gauge #4 polish stainless steel or 10 gauge painted mild steel.

Application:

90° transfers are used for direction and / or speed changes. They are available in standard and reverse flow configurations.

<table>
<thead>
<tr>
<th>Standard 90° Transfers:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infeed</strong></td>
</tr>
<tr>
<td>15”</td>
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<tr>
<td>15”</td>
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<tr>
<td>18”</td>
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<td>18”</td>
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<td>24”</td>
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</table>
ADJUSTABLE COPE CONSTRUCTION

The adjustable cope unit consists of two frames that are 7” deep with cross spacers, UHMW wearstrip guides and return roller. The modular design allows for angle adjustment ± 10°.

Application:
Adjustable copes are utilized where elevation changes are required.
Several aspects must be considered when utilizing copes, including but not limited to the following:
- Product slippage
- Tipping of the product
- Maximum ¾” per foot inclines and declines allowable (consult factory for anything greater)

TRANSFER PLATE CONSTRUCTION

The roller transfer plate unit consists of stainless steel axles and LBP rollers.

Application:
Transfer plates are utilized to bridge the gap between conveyor sprockets on end to end transfers. Transfer plates are often NOT self clearing.
Where minimal gaps are required, parallel transfers are recommended.
PARALLEL TRANSFER CONSTRUCTION

The parallel transfer unit consists of a single 48” or 72” frame that is 9” deep and beveled at splice to match a 7” deep intermediate frame that will accommodate two lanes of chain. It is constructed so the chains are side by side to eliminate the need for a dead plate.

Application:

Parallel transfer units reduce the length of a single chain pull while maintaining constant control of the product without requiring the use of dead plates at the transfer point. Reducing chain pull tensions can greatly increase the life expectancy of the mat top chain and other conveyor components.

Parallel transfer units are also utilized when line speeds are changed to provide an increase in proper product spacing or rate, a decrease in accumulation, or constant back pressure to a particular machine.

NOTE: It is recommended that each parallel transfer be provided with two supports.

Standard Parallel Transfers:

<table>
<thead>
<tr>
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<th>Discharge</th>
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</table>
Mat Top General Information

MAT TOP CHAIN SELECTION
When selecting the proper mat top chain, it is important to consider the following factors:

Product:
Determine the type of product the conveyor will transport. What type of material is the product? What type of material is the container? Will the container be filled with chemicals that have corrosive properties?

Environmental Conditions:
Determine the temperatures and atmospheric conditions in which the conveyor will operate. Will the atmosphere be abrasive, combustible, or explosive? Will there be corrosive material?

Accumulation or Transportation:
Determine whether the product will be accumulated or simply transported.

Conveyor Washdown:
Determine the chemical properties of washdown solutions required for your conveyor. Will the washdown solutions be compatible with your chain selection?

Chain Lubrication:
Determine the type of lubrication necessary to maintain the type of chain. The type of lubrication can greatly enhance the wearstrip to chain compatibility. What type of material is the chain? Lubrication is recommended for all chains. Proper lubrication will provide the lowest friction factor between the product, chain, and chain wearstrip.

CHAIN AND PRODUCT COMPATIBILITY GUIDE
Use the following guidelines when considering the compatibility of the chain and product:

Plastic Chains:
- Soft drink and brewery steel and aluminum can handling conveyor
- Paper container handling
- Plastic container handling
GUIDE RAIL SETTINGS (Round Product)

The ideal guide rail setting provides straight rows of product at 60° to the guide rail.

Determine the guide rail settings with the following formula.

**Formula for Guide Rail Settings:**

\[ S = ((\text{No. of Rows} - 1) \times (\sin 60 \times D)) + D \]

**Example:**

- \( D = 2" \)  No. of Rows = 3
- \( S = ((3 - 1) \times (\sin 60 \times 2")) + 2" \)
- \( S = 5.46" + .125" \)
- \( S = 5.59" \) Rail Setting

1/8” should be added to each side for product running clearance

CONVEYOR SPEEDS

When determining the speed of the conveyor, remember that the chain and conveyor components will last longer if you do not run the chain faster than the speed required to properly carry the product and maintain production machine rates.

When conveying product in single file to a production machine, it is common to run the chain approximately 20% over production rates.

**Formula for Conveyor Speed Settings:**

\[ SS = \left( \frac{\text{Machine Rate}}{\text{Products per Foot of Chain}} \right) \times 1.2" \]

**Example:**

- \( D = 3" \)  Machine Rate = 100 PPM
- Products per Foot of Chain = \( \frac{12"}{3"} \)
- \( SS = \left( \frac{100}{3} \right) \times 1.2" \)
- \( SS = 25 \times 1.2" \)
- \( SS = 30 \) FPM  Speed Setting

When high speed packaging machines cause infeed and discharge chains to run at extremely high speeds, it is not practical to run the product single file any longer than required. In such cases, wider chains can be added to slow down the product. Wider chains can also be used for product accumulation.

When determining inline accumulation speeds, use the basic speed formula plus a higher percent of increase to allow sufficient accumulation space. Approximately 50% of clear area is required on the conveyor for this type of accumulation.
Mat Top Chain Types and Dimensions

HP8505 MTW CHAIN

<table>
<thead>
<tr>
<th>HP8505 Made To Width (MTW) Chain Width</th>
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### HP8505 STANDARD CHAIN

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![Diagram of HP8505 Standard Chain Width](image)
HP8506 MTW CHAIN

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</table>
Mat Top Standard Cross-Section Styles and Dimensions

325 RETURNS

325 Roller Return Cross-Section

325 Serpentine Return Cross-Section
450 RETURNS

450 Roller Return Cross-Section

450 Serpentine Return Cross-Section
750 RETURNS

750 Roller Return Cross-Section

750 Serpentine Return Cross-Section
1200 RETURNS

1200 Roller Return Cross-Section

1200 Serpentine Return Cross-Section
1500 RETURNS

1500 Roller Return Cross-Section

1500 Serpentine Return Cross-Section
1800 RETURNS

1800 Roller Return Cross-Section

1800 Serpentine Return Cross-Section
2400 RETURNS

2400 Roller Return Cross-Section

Dimensions:
- 32.64 TO 36.83
- 19.25 TO 27.50
- 12.53
- 25.14

2400 Serpentine Return Cross-Section

Dimensions:
- 32.64 TO 36.83
- 19.25 TO 27.50
- 12.53
- 25.14