

Precision. Quality. Reliability.

## **IC80 Series**

Precision Link Conveyor

# IC80 Features

## Theory of Operation

AMS's IC80 series precision link conveyor is the perfect choice for a robust, accurate linear assembly chassis. Precision machined steel links are accurately advanced with either a fixed motion cam indexer or a servo driven zero-backlash RollerDrive. Customer's part fixtures can be assembled to the links using dowel holes to locate. The robust steel conveyor frame preloads the links in all directions. Our innovative chain tensioning system and all needle bearing design extends the service life of the conveyor by reducing vibration and eliminating chain stretch. Conveyor lengths are available in 480mm (18.89") increments.



## Precision Link Conveyor Overall Features

- **Feed Pitch Accuracy:**  $\pm 0.1\text{mm}$  ( $\pm 0.0039$  inches)
- **Speed:** Up to 120 cycles per minute
- **Conveyor Lengths:** 480mm minimum length in 480mm increments
- **Link Lengths:** 80, 120, 160 or 240mm
- **Cam Indexer Drive:** Accurate for fixed motion applications
- **Servo Motor Drive:** Programmable feed motions or frequent cycling

## Link Details

### Standard Link Design

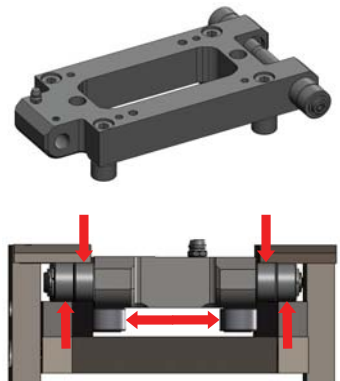
- Lightweight links reduce weight for faster speeds, nickel plated steel material (aluminum available), precision dowel holes, preloaded bearings on each corner and preloaded cam followers support the back of each link.

### All Needle Bearing Design

- Reduces wear for long-term accuracy. Less maintenance and downtime required to address problems associated with chain stretch.

### No Backlash

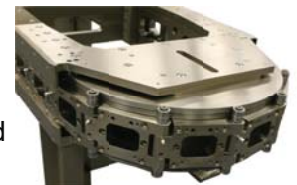
- Sankyo cam indexers and servo-driven RollerDrives are backlash-free for accurate positioning and reduced vibration when quick indexing is required. Each link bearing is preloaded to eliminate play in every direction. This allows accurate, repeatable positioning and minimum vibration and settling time.



## Chordal Compensating Cam Used for Chain Tensioning

### Chordal Chain Tensioning

- The chain follows its natural path and a cam is used to compensate for the chordal action of the chain. This keeps a constant center distance between the driven and idler ends. This minimizes vibration of the conveyor assembly during indexing motions.
- The minimized vibrations contribute to longer service life of the conveyor and help to eliminate chain stretch for better long-term accuracy. This means less maintenance and less downtime for the customer.



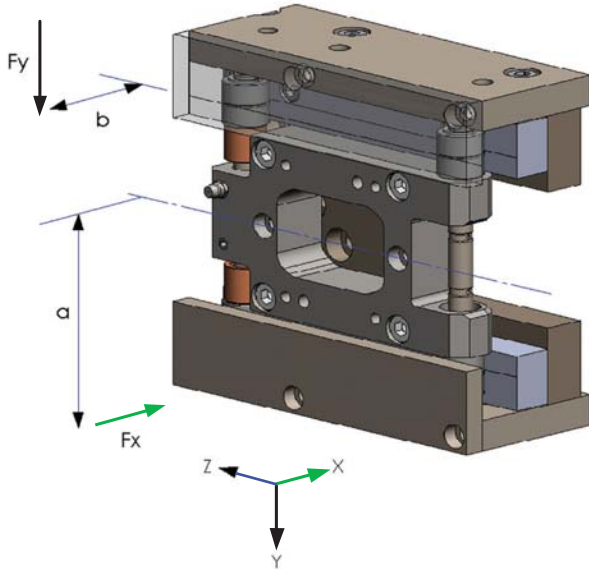
### Link Support

- The conveyor chordal compensating cams support the links at the idler end of the conveyor. Similarly, the drive sprockets support the links. This allows the conveyor drive and idler radii to be used as work stations for added flexibility in when designing system.

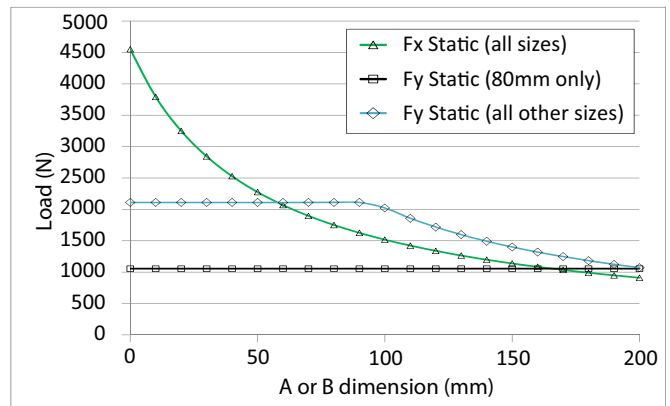
# IC80, Load Capacity

## Dynamic & Static Link Loading

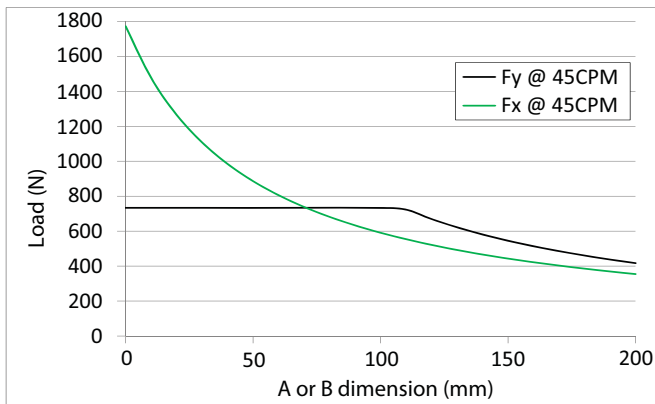
The charts below show the maximum dynamic & static loading capacities for the X and Y directions (see link drawing) for each chain link. The maximum Fx or Fy force is dependent on the offset distance from the link center (a dimension) or link face (b dimension). For example, an 80mm length link can withstand a dynamic load (present every cycle) of 400 Newton (89.9 lbs) force in the Y direction when the b dimension is 200mm (7.87") distance from the chain link face. This dynamic load is rated at 45 cycles/minute. For different cycle rates or for loads beyond the chart ratings, please contact Sankyo for more information.



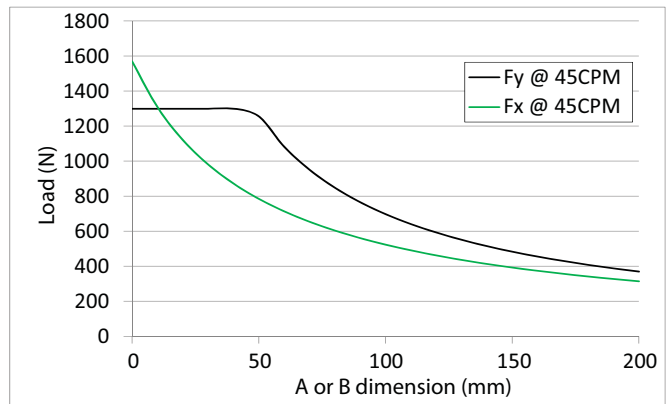
## Static Loading Capacity (all sizes)



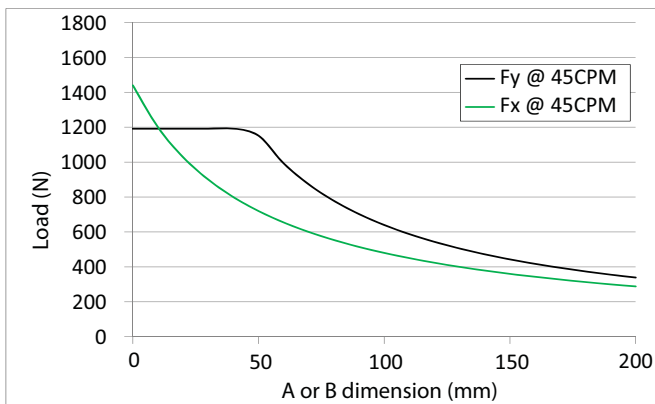
## 80mm Link Dynamic Capacity



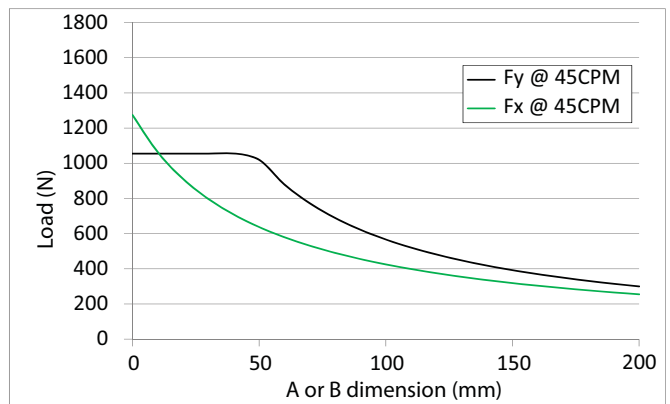
## 120mm Link Dynamic Capacity



## 160mm Link Dynamic Capacity



## 240mm Link Dynamic Capacity



# IC80 Specifications & Model Code

## 80, 120, 160 & 240mm Link Specifications

Description	Units	IC80-80	IC80-120	IC80-160	IC80-240
Link Length	mm (inch)	80 (3.14)	120 (4.72)	160 (6.29)	240 (9.44)
Cycles per Minute	-	0 to 120			
Feed Accuracy (without clutch)	mm (inch)	±0.10 (±0.0039)			
Feed Accuracy (with clutch)	mm (inch)	±0.11 (±0.0046)			
Load Capacity		(see dynamic & static capacity charts)			
Recommended Leg Spacing	mm (inch)	1440 (56.7)			
Max. Weight Between Legs	kg (lb)	250 (550)			
Drive-End Weight	kg (lb)	120 (265)	131 (288)	122 (268)	134 (295)
Single Mid-Section Weight	kg (lb)	42 (92)	43 (94)	42 (92)	43 (94)
Return-End Weight	kg (lb)	64 (142)	74 (162)	66 (145)	77 (169)
Link Weight (each)	kg (lb)	1.1 (2.42)	1.5 (3.30)	1.8 (3.96)	2.5 (5.51)

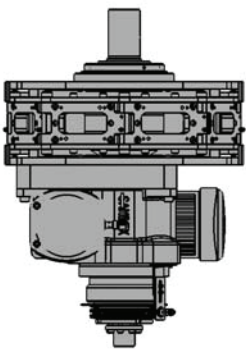
## Model Code Nomenclature

**IC 80 - 80 - 16T - 3660 - SH CL1 / X**

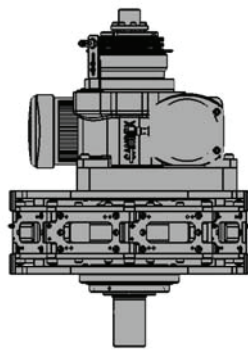
a      b      c      d      e      f      g      h

a Model Number	b Link Height (mm / inch)	c Link Length (mm / inch)	d Drive Sprocket Tooth Quantity	e Conveyor Center to Center Distance (mm / feet)	f Link Material & Type	g Mounting Type	h Special Items
Inline Chassis <b>IC</b>	80 / 3.14 <b>80</b>	80 / 3.14 <b>80</b> 120 / 4.72 <b>120</b> 160 / 6.29 <b>160</b> 240 / 9.44 <b>240</b>	16 Teeth <b>16T</b> 12 Teeth <b>12T</b> 8 Teeth <b>08T</b> 6 Teeth <b>06T</b>	480 / 1.57 <b>480</b> 6240 / 20.47 <b>6240</b> 12000 / 39.37 <b>12000</b>	Steel Hollow <b>SH</b> (standard)  Steel Solid <b>SS</b> Alum. Hollow <b>AL</b> Alum. Solid <b>AS</b>	Carousel <b>CL1</b> <b>CL2</b>  Over-Under <b>OU1</b> <b>OU2</b>	Requires Drawing <b>/X</b>

## Mounting Type

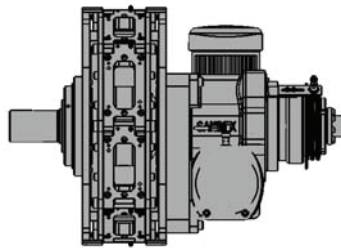


CL1 Drive Position

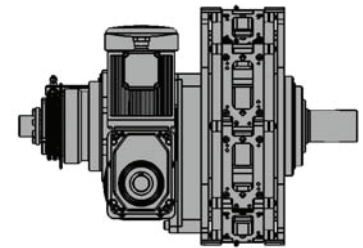


CL2 Drive Position

### Carousel Type Conveyor



OU1 Drive Position



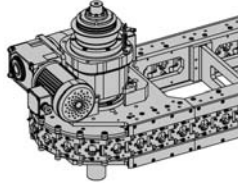
OU2 Drive Position

### Over-Under Type Conveyor

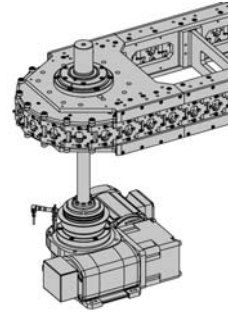
# IC80, Motor Drive Options

## Direct & Indirect Drive Options

We offer two standard drive mounting options, direct and indirect mounting. The standard direct mounting, includes a torque limiting clutch and either a fixed stop cam indexer or a servo driven RollerDrive positioner mounted directly to the conveyor frame. If the direct mount options interferes with another part of the machine, we offer an indirect mounting option with a longer input shaft that couples to a drive package mounted remotely.



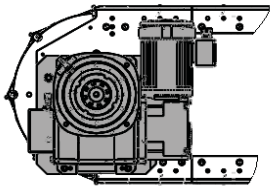
Direct Mounting



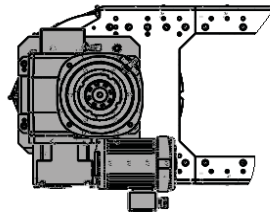
Indirect Mounting

## Drive Position Options

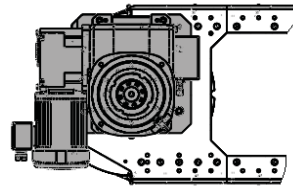
Various drive mounting positions are offered to avoid part interference, minimize footprint size and, allow maintenance access.



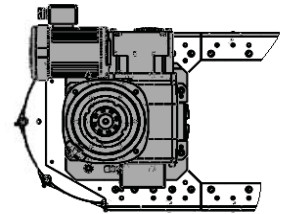
Position 1



Position 2



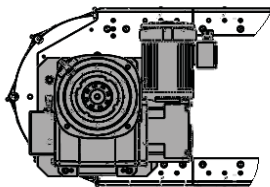
Position 3



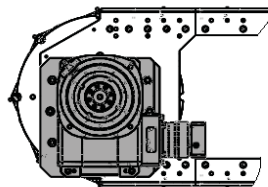
Position 4

## Drive Type Options

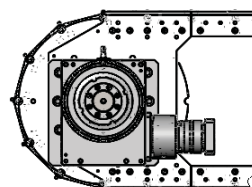
Sankyo offers fixed motion cam indexers and programmable motion, zero-backlash RollerDrive servo positioners. Each option comes with an appropriate secondary input reducer to match your application. All secondary reducers can be mounted on either side of the indexer or positioner. In-line or right-angle type secondary reducers are available for more flexibility to meet the customer's needs.



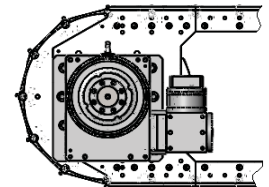
Fixed Motion &  
Right Angle Type  
Geared Motor



Fixed Motion &  
Inline Servo Type  
(frequent cycling)



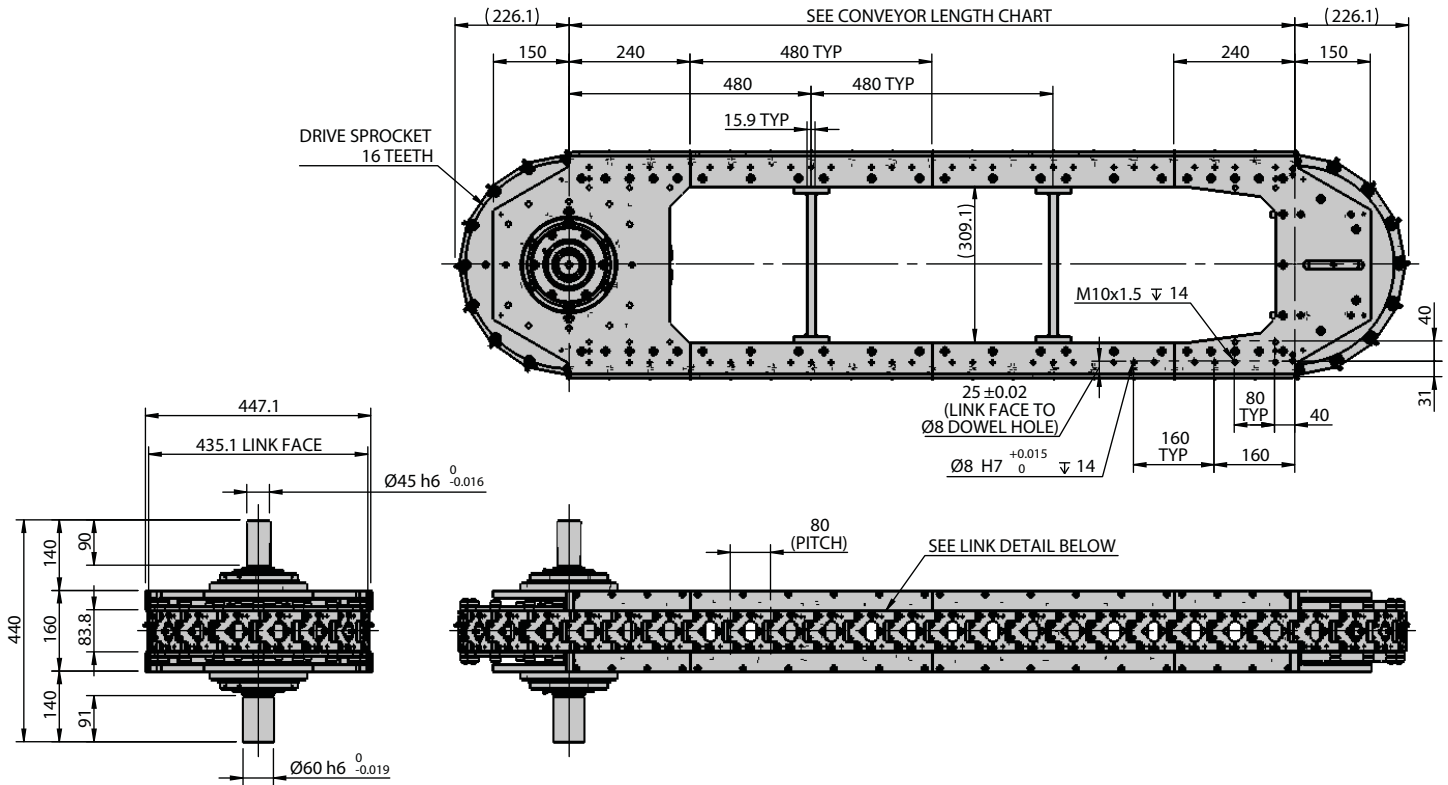
Programmable Motion  
Inline Servo Type



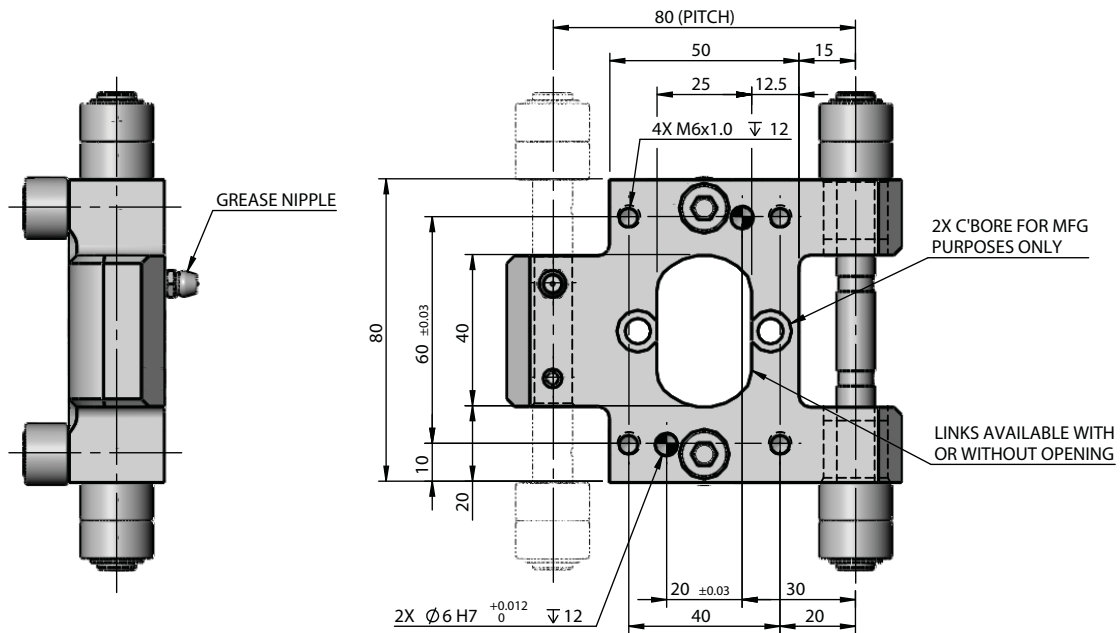
Programmable Motion  
Right Angle Servo Type

# IC80, 80mm (3.14") Dimensions

## 80mm (3.14") Conveyor Dimensions (mm)



## 80mm (3.14") Link Dimensions (mm)

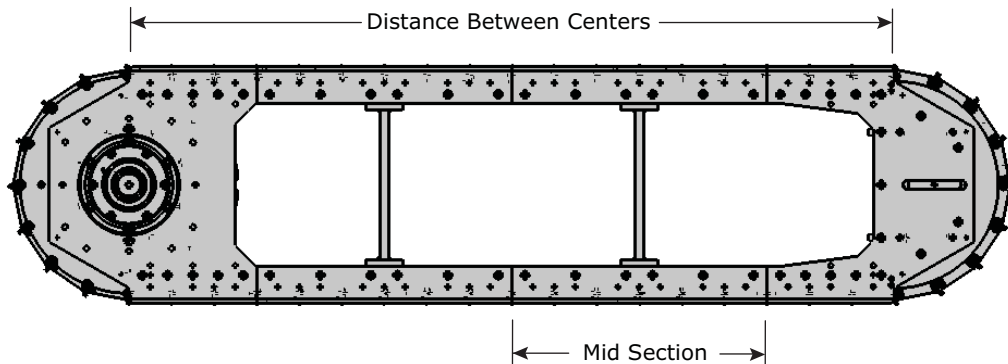


# IC80, 80mm (3.14”) Link Configuration

## 80mm (3.14”) Link Conveyor

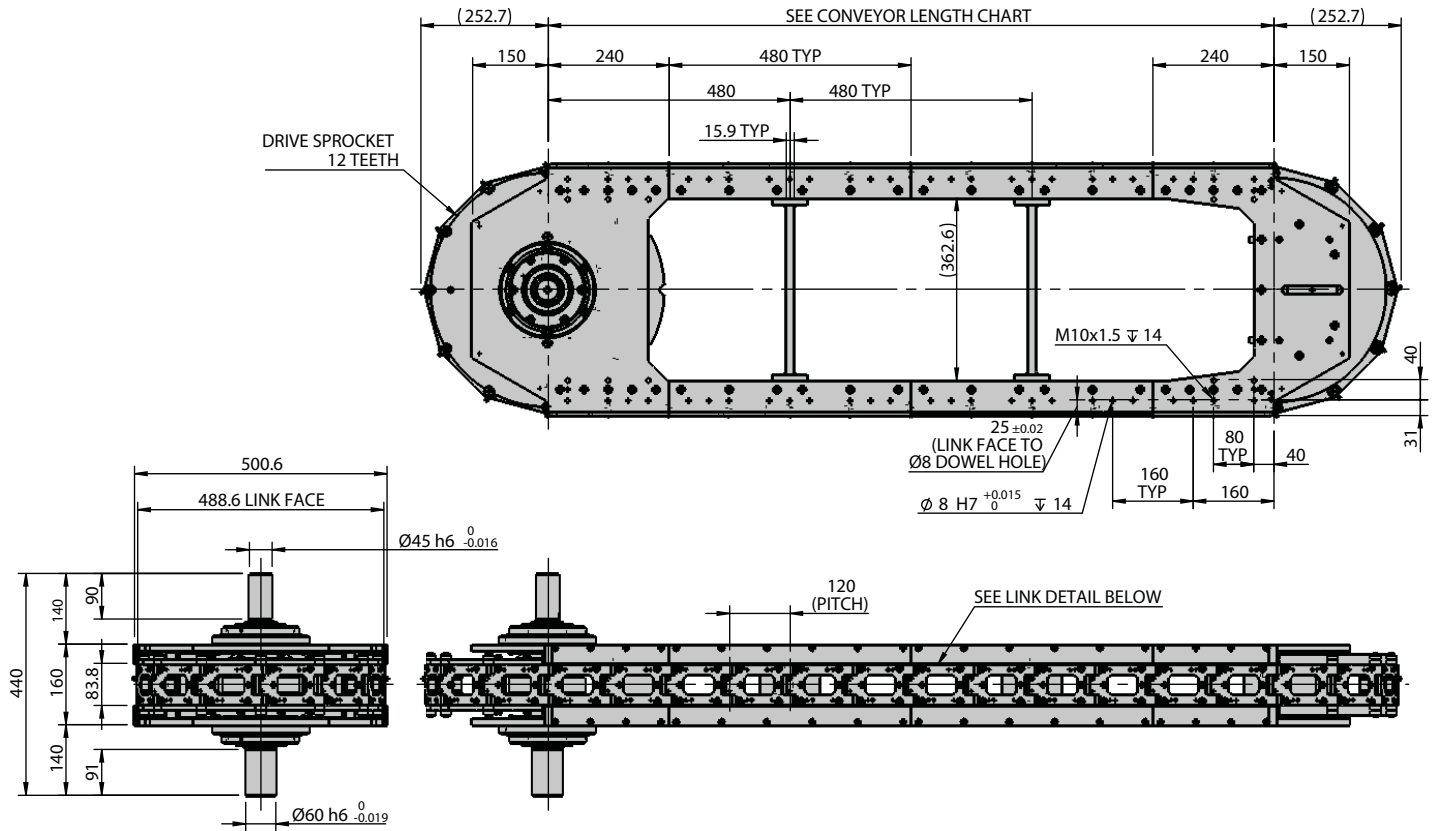
Model Code	Distance Between Centers			Mid Section Quantity	Links per Rail	Links per Each End	Total Link Quantity	Link Quantity per Index Compatibility		
	mm	Inches	Feet					2	3	4
IC80-80-16T-480	480	18.89	1.57	0	6	8	28	x		x
IC80-80-16T-960	960	37.78	3.14	0	12	8	40	x		x
IC80-80-16T-1440	1440	56.69	4.72	1	18	8	52	x		x
IC80-80-16T-1920	1920	75.59	6.3	2	24	8	64	x		x
IC80-80-16T-2400	2400	94.49	7.87	3	30	8	76	x		x
IC80-80-16T-2880	2880	113.39	9.45	4	36	8	88	x		x
IC80-80-16T-3360	3360	132.28	11.02	5	42	8	100	x		x
IC80-80-16T-3840	3840	151.18	12.6	6	48	8	112	x		x
IC80-80-16T-4320	4320	170.08	14.17	7	54	8	124	x		x
IC80-80-16T-4800	4800	188.98	15.75	8	60	8	136	x		x
IC80-80-16T-5280	5280	207.87	17.32	9	66	8	148	x		x
IC80-80-16T-5760	5760	226.77	18.9	10	72	8	160	x		x
IC80-80-16T-6240	6240	245.67	20.47	11	78	8	172	x		x
IC80-80-16T-6720	6720	264.57	22.05	12	84	8	184	x		x
IC80-80-16T-7200	7200	283.46	23.62	13	90	8	196	x		x
IC80-80-16T-7680	7680	302.36	25.2	14	96	8	208	x		x
IC80-80-16T-8160	8160	321.26	26.77	15	102	8	220	x		x
IC80-80-16T-8640	8640	340.16	28.35	16	108	8	232	x		x
IC80-80-16T-9120	9120	359.06	29.92	17	114	8	244	x		x
IC80-80-16T-9600	9600	377.95	31.5	18	120	8	256	x		x
IC80-80-16T-10080	10080	396.85	33.07	19	126	8	268	x		x
IC80-80-16T-10560	10560	415.74	34.64	20	132	8	280	x		x
IC80-80-16T-11040	11040	434.64	36.22	21	138	8	292	x		x
IC80-80-16T-11520	11520	453.54	37.79	22	144	8	304	x		x
IC80-80-16T-12000	12000	472.44	39.37	23	150	8	316	x		x

For larger sizes, please contact Sankyo Automation

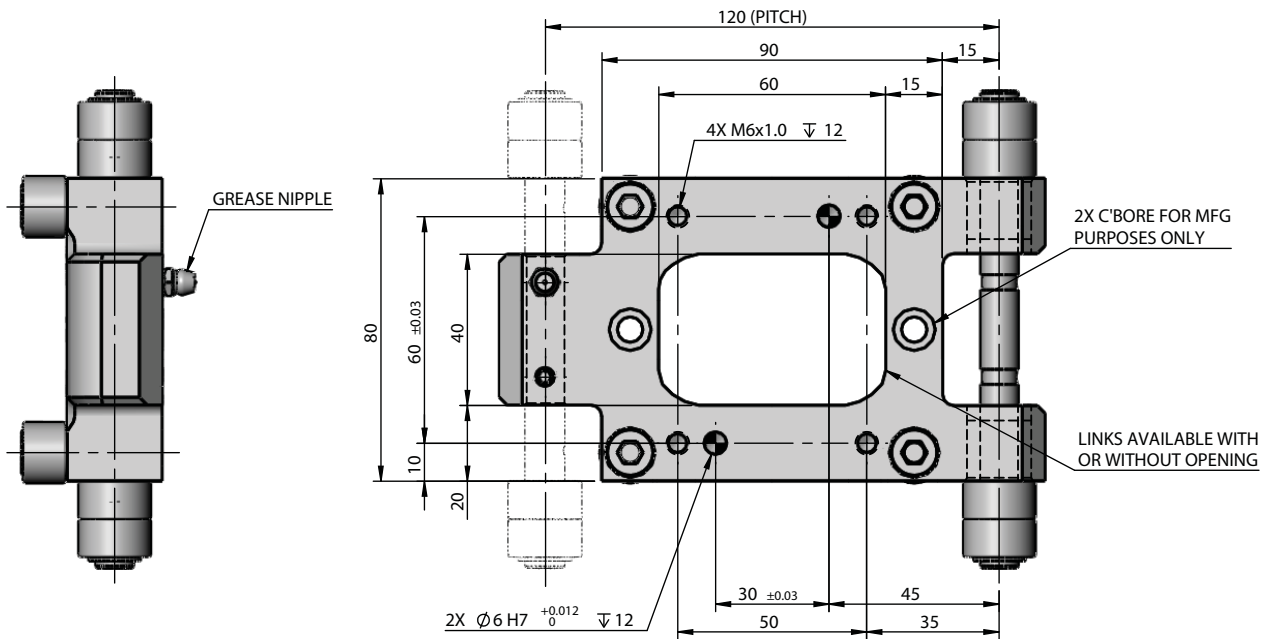


# IC80, 120mm (4.72") Dimensions

## 120mm (4.72") Conveyor Dimensions (mm)



## 120mm (4.72") Link Dimensions (mm)



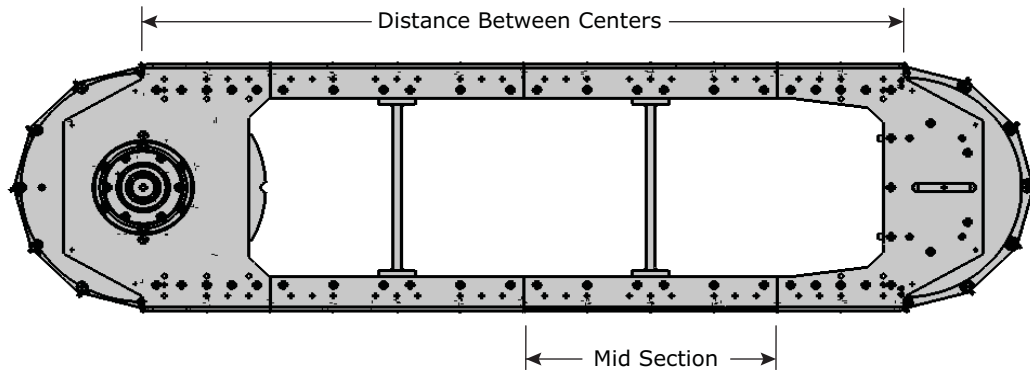


# IC80, 120mm (4.72") Link Configuration

## 120mm (4.72") Link Conveyor

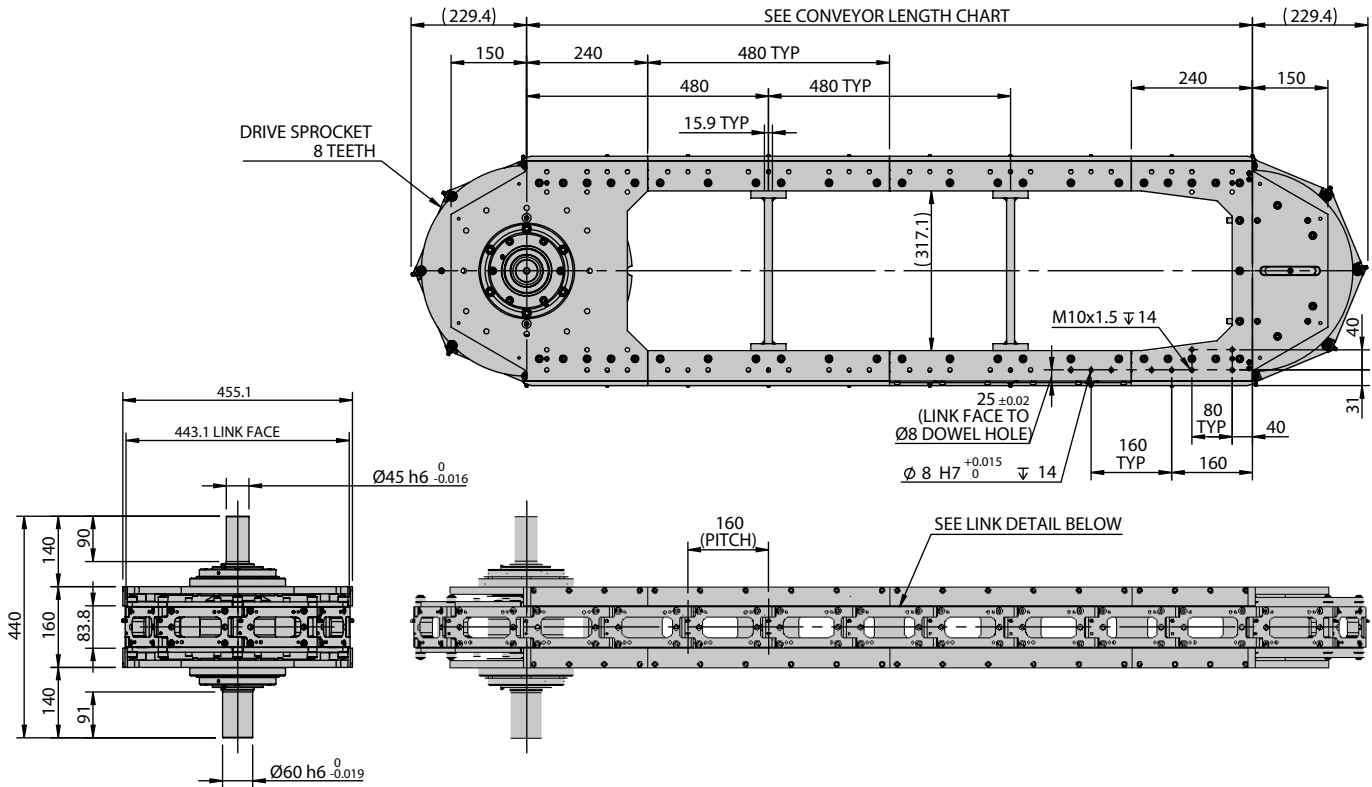
Model Code	Distance Between Centers			Mid Section Quantity	Links per Rail	Links per Each End	Total Link Quantity	Link Quantity per Index Compatibility		
	mm	Inches	Feet					2	3	4
IC80-120-12T-480	480	18.89	1.57	0	4	6	20	X		X
IC80-120-12T-960	960	37.78	3.14	0	8	6	28	X		X
IC80-120-12T-1440	1440	56.69	4.72	1	12	6	36	X	X	X
IC80-120-12T-1920	1920	75.59	6.3	2	16	6	44	X		X
IC80-120-12T-2400	2400	94.49	7.87	3	20	6	52	X		X
IC80-120-12T-2880	2880	113.39	9.45	4	24	6	60	X	X	X
IC80-120-12T-3360	3360	132.28	11.02	5	28	6	68	X		X
IC80-120-12T-3840	3840	151.18	12.6	6	32	6	76	X		X
IC80-120-12T-4320	4320	170.08	14.17	7	36	6	84	X	X	X
IC80-120-12T-4800	4800	188.98	15.75	8	40	6	92	X		X
IC80-120-12T-5280	5280	207.87	17.32	9	44	6	100	X		X
IC80-120-12T-5760	5760	226.77	18.9	10	48	6	108	X	X	X
IC80-120-12T-6240	6240	245.67	20.47	11	52	6	116	X		X
IC80-120-12T-6720	6720	264.57	22.05	12	56	6	124	X		X
IC80-120-12T-7200	7200	283.46	23.62	13	60	6	132	X	X	X
IC80-120-12T-7680	7680	302.36	25.2	14	64	6	140	X		X
IC80-120-12T-8160	8160	321.26	26.77	15	68	6	148	X		X
IC80-120-12T-8640	8640	340.16	28.35	16	72	6	156	X	X	X
IC80-120-12T-9120	9120	359.06	29.92	17	76	6	164	X		X
IC80-120-12T-9600	9600	377.95	31.5	18	80	6	172	X		X
IC80-120-12T-10080	10080	396.85	33.07	19	84	6	180	X	X	X
IC80-120-12T-10560	10560	415.74	34.64	20	88	6	188	X		X
IC80-120-12T-11040	11040	434.64	36.22	21	92	6	196	X		X
IC80-120-12T-11520	11520	453.54	37.79	22	96	6	204	X	X	X
IC80-120-12T-12000	12000	472.44	39.37	23	100	6	212	X		X

For larger sizes, please contact Sankyo Automation

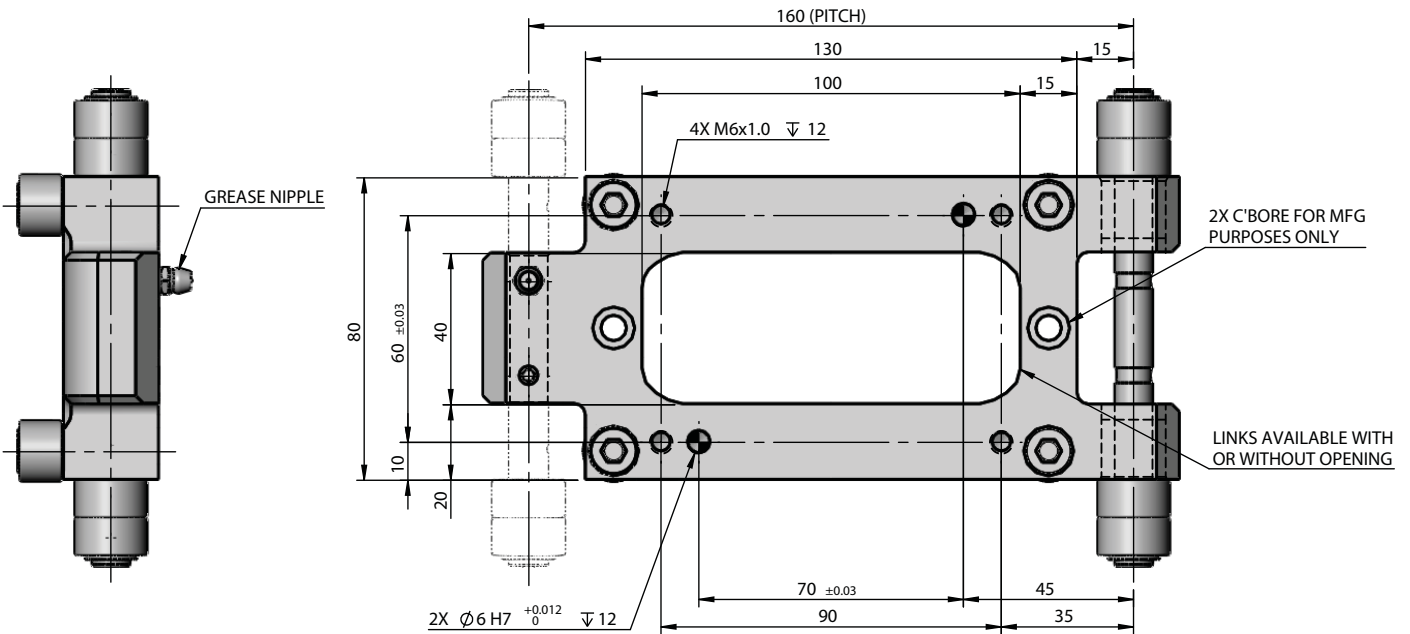


# IC80, 160mm (6.29") Dimensions

## 160mm (6.29") Conveyor Dimensions (mm)



## 160mm (6.29") Link Dimensions (mm)

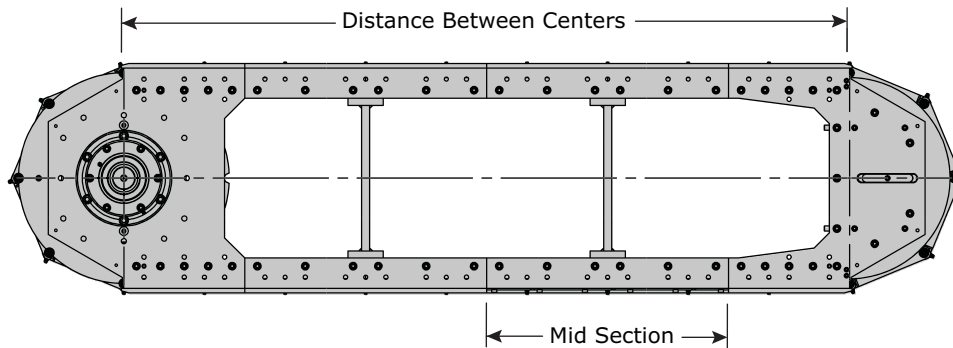


# IC80, 160mm (6.29") Link Configuration

## 160mm (6.29") Link Conveyor

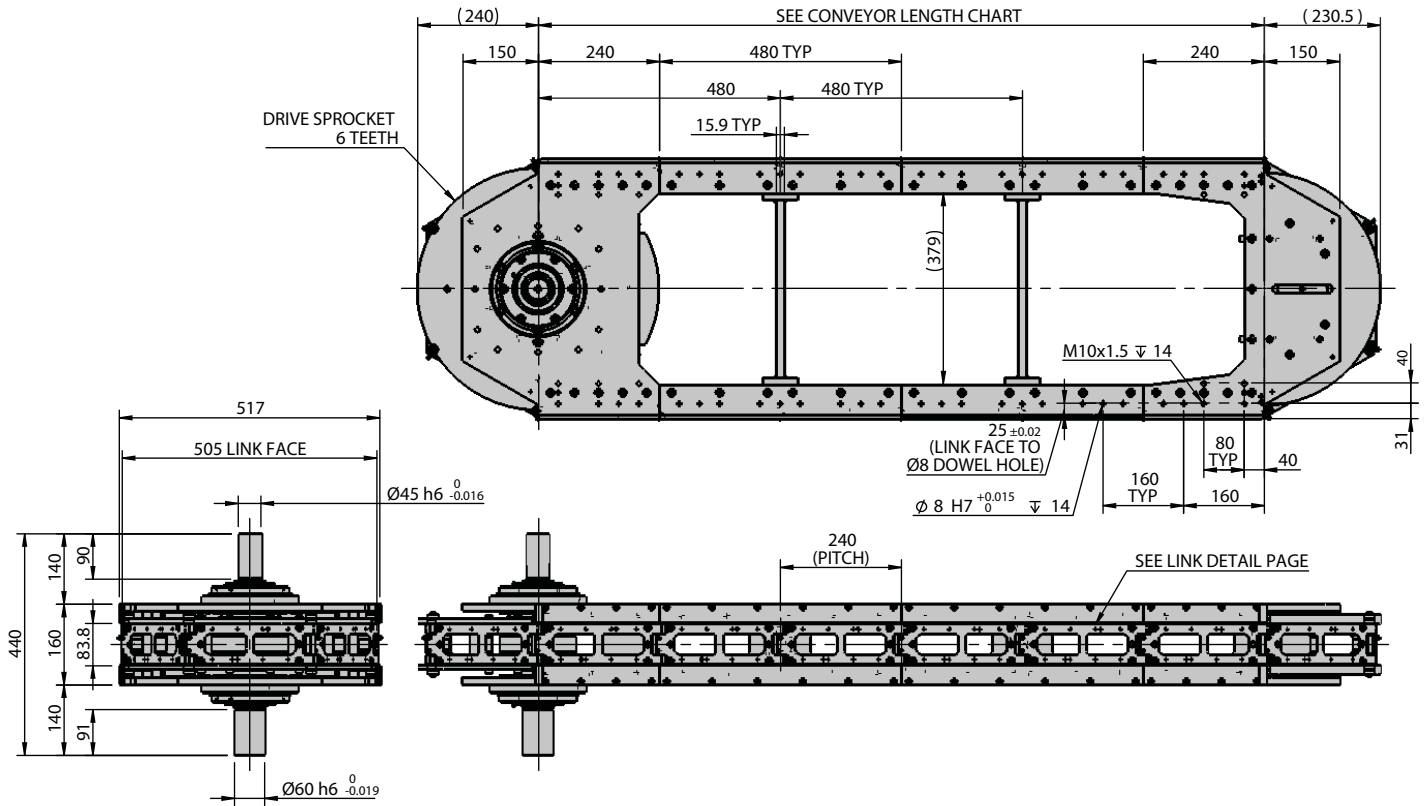
Model Code	Distance Between Centers			Mid Section Quantity	Links per Rail	Links per Each End	Total Link Quantity	Link Quantity per Index Compatibility		
	mm	Inches	Feet					2	3	4
IC80-160-8T-480	480	18.89	1.57	0	3	4	14	X		
IC80-160-8T-960	960	37.78	3.14	0	6	4	20	X		X
IC80-160-8T-1440	1440	56.69	4.72	1	9	4	26	X		
IC80-160-8T-1920	1920	75.59	6.3	2	12	4	32	X		X
IC80-160-8T-2400	2400	94.49	7.87	3	15	4	38	X		
IC80-160-8T-2880	2880	113.39	9.45	4	18	4	44	X		X
IC80-160-8T-3360	3360	132.28	11.02	5	21	4	50	X		
IC80-160-8T-3840	3840	151.18	12.6	6	24	4	56	X		X
IC80-160-8T-4320	4320	170.08	14.17	7	27	4	62	X		
IC80-160-8T-4800	4800	188.98	15.75	8	30	4	68	X		X
IC80-160-8T-5280	5280	207.87	17.32	9	33	4	74	X		
IC80-160-8T-5760	5760	226.77	18.9	10	36	4	80	X		X
IC80-160-8T-6240	6240	245.67	20.47	11	39	4	86	X		
IC80-160-8T-6720	6720	264.57	22.05	12	42	4	92	X		X
IC80-160-8T-7200	7200	283.46	23.62	13	45	4	98	X		
IC80-160-8T-7680	7680	302.36	25.2	14	48	4	104	X		X
IC80-160-8T-8160	8160	321.26	26.77	15	51	4	110	X		
IC80-160-8T-8640	8640	340.16	28.35	16	54	4	116	X		X
IC80-160-8T-9120	9120	359.06	29.92	17	57	4	122	X		
IC80-160-8T-9600	9600	377.95	31.5	18	60	4	128	X		X
IC80-160-8T-10080	10080	396.85	33.07	19	63	4	134	X		
IC80-160-8T-10560	10560	415.74	34.64	20	66	4	140	X		X
IC80-160-8T-11040	11040	434.64	36.22	21	69	4	146	X		
IC80-160-8T-11520	11520	453.54	37.79	22	72	4	152	X		X
IC80-160-8T-12000	12000	472.44	39.37	23	75	4	158	X		

For larger sizes, please contact Sankyo Automation

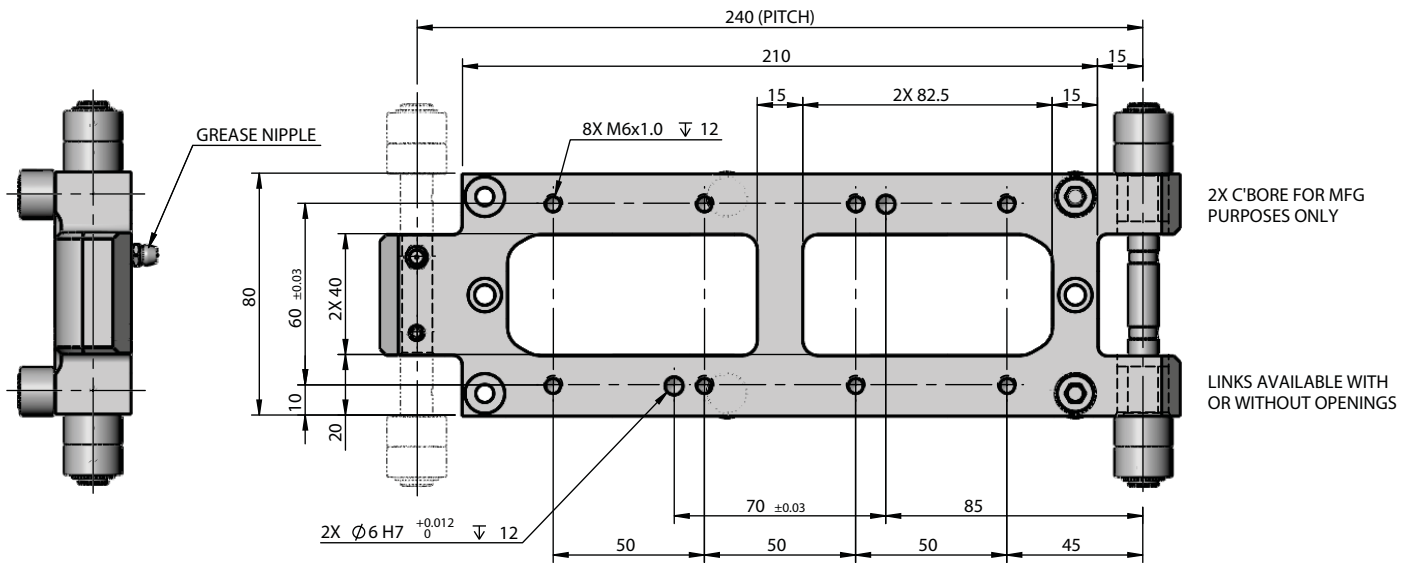


# IC80, 240mm (9.44") Dimensions

## 240mm (9.44") Conveyor Dimensions (mm)



## 240mm (9.44") Link Dimensions (mm)

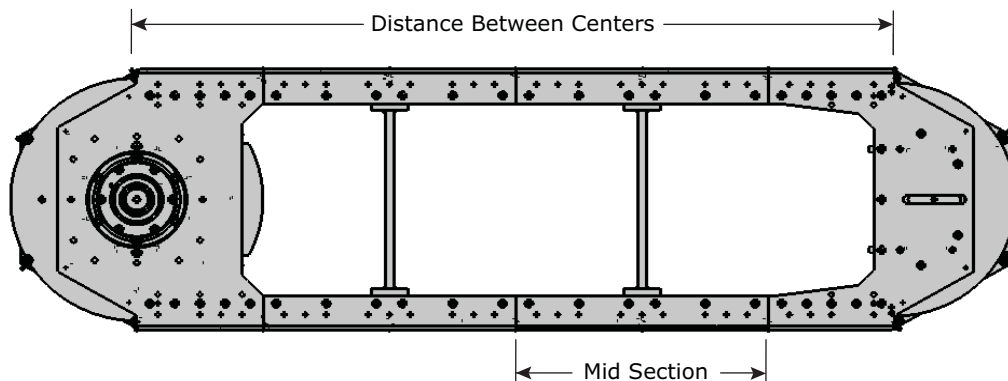


# IC80, 240mm (9.44") Link Configuration

## 240mm (9.44") Link Conveyor

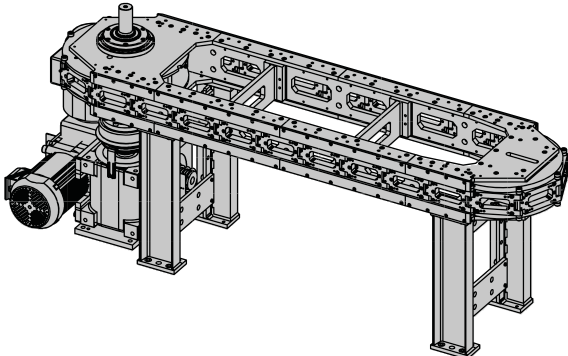
Model Code	Distance Between Centers			Mid Section Quantity	Links per Rail	Links per Each End	Total Link Quantity	Link Quantity per Index Compatibility		
	mm	Inches	Feet					2	3	4
IC80-240-6T-480	480	18.89	1.57	0	2	3	10	x		
IC80-240-6T-960	960	37.78	3.14	0	4	3	14	x		
IC80-240-6T-1440	1440	56.69	4.72	1	6	3	18	x	x	
IC80-240-6T-1920	1920	75.59	6.3	2	8	3	22	x		
IC80-240-6T-2400	2400	94.49	7.87	3	10	3	26	x		
IC80-240-6T-2880	2880	113.39	9.45	4	12	3	30	x	x	
IC80-240-6T-3360	3360	132.28	11.02	5	14	3	34	x		
IC80-240-6T-3840	3840	151.18	12.6	6	16	3	38	x		
IC80-240-6T-4320	4320	170.08	14.17	7	18	3	42	x	x	
IC80-240-6T-4800	4800	188.98	15.75	8	20	3	46	x		
IC80-240-6T-5280	5280	207.87	17.32	9	22	3	50	x		
IC80-240-6T-5760	5760	226.77	18.9	10	24	3	54	x	x	
IC80-240-6T-6240	6240	245.67	20.47	11	26	3	58	x		
IC80-240-6T-6720	6720	264.57	22.05	12	28	3	62	x		
IC80-240-6T-7200	7200	283.46	23.62	13	30	3	66	x	x	
IC80-240-6T-7680	7680	302.36	25.2	14	32	3	70	x		
IC80-240-6T-8160	8160	321.26	26.77	15	34	3	74	x		
IC80-240-6T-8640	8640	340.16	28.35	16	36	3	78	x	x	
IC80-240-6T-9120	9120	359.06	29.92	17	38	3	82	x		
IC80-240-6T-9600	9600	377.95	31.5	18	40	3	86	x		
IC80-240-6T-10080	10080	396.85	33.07	19	42	3	90	x	x	
IC80-240-6T-10560	10560	415.74	34.64	20	44	3	94	x		
IC80-240-6T-11040	11040	434.64	36.22	21	46	3	98	x		
IC80-240-6T-11520	11520	453.54	37.79	22	48	3	102	x	x	
IC80-240-6T-12000	12000	472.44	39.37	23	50	3	106	x		

For larger sizes, please contact Sankyo Automation

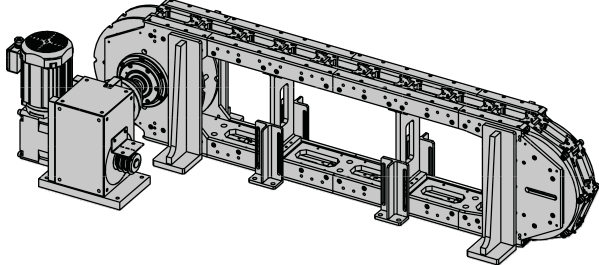


# IC80 Options

## Support Legs

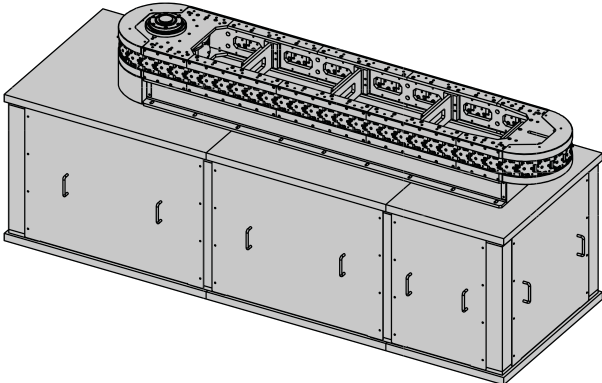


Carousel Type

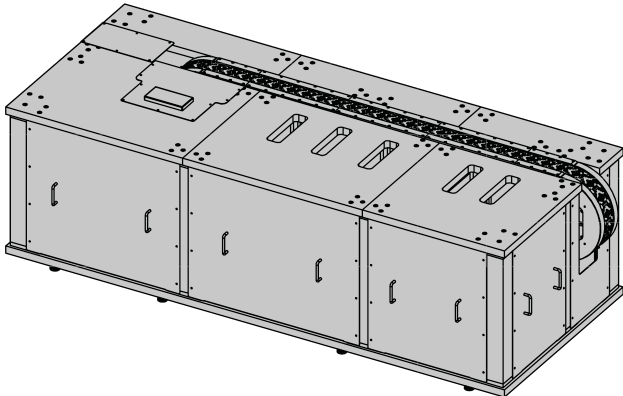


Over-Under Type

## Machine Base

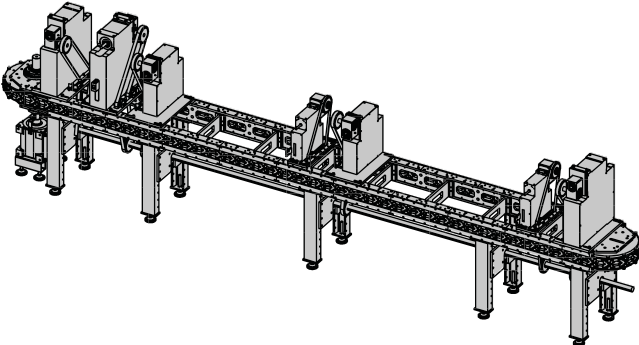


Carousel Type

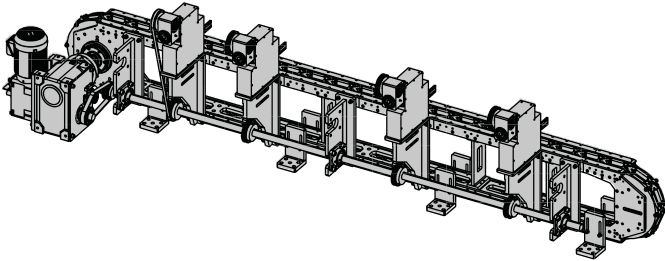


Over-Under Type

## Line Shaft with Pick & Place (GY Series)



Carousel Type



Over-Under Type

# IC80 Series Precision Link Conveyor Sizing Form



Kaiyuan Road No.1 Lingang ETDZ Weihai, Shandong, china  
Tel: 0631-5927833 • Fax: 0631-5992832  
www.ams88.com

<b>Company</b>			
<b>Address</b>			
<b>Contact Name</b>			
<b>Tel</b>		<b>Fax</b>	
<b>E-mail Address</b>			

<p>A) Application information</p>		<p>L - dimension [mm]</p> <p>Link length (mm)  <input type="checkbox"/> 80   <input type="checkbox"/> 120   <input type="checkbox"/> 160   <input type="checkbox"/> 240</p> <p>Feed pitch [mm]</p> <p>Feed pitch time [sec]</p> <p>Dwell/process time [sec]</p> <p>Link tooling weight [kg]</p> <p>Link tooling quantity</p>
<p>B) Conveyor mounting [please check one]</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <input type="checkbox"/> <b>Carousel Type</b>  </div> <div style="text-align: center;"> <input type="checkbox"/> <b>Over-under Type</b>  </div> </div>		<p>Part weight [kg]</p> <p>Part quantity</p>
<p>C) Offset loading (if applicable), distance from chain link center to load center [mm]</p>		
<p>D) Drive motor options [please check one]</p> <p><input type="checkbox"/> Fixed motion - rotary indexer</p> <ul style="list-style-type: none"> <li>• Induction motor, 230/460, 3-phase package</li> <li>• On demand timing cam prox package</li> <li>• Torque limiting clutch &amp; overload detect prox switch</li> </ul> <p><input type="checkbox"/> VDF controller, variable speed</p>		<p>VFD input voltage/phase</p> <p><input type="checkbox"/> 115 VAC/1-phase</p> <p><input type="checkbox"/> 230 VAC/1-phase</p> <p><input type="checkbox"/> 230 VAC/3-phase</p> <p><input type="checkbox"/> 460 VAC/3-phase</p> <p>Notes</p>
<p><input type="checkbox"/> Programmable motion - servo driven positioner</p> <ul style="list-style-type: none"> <li>• Motor mounting bracket</li> <li>• Zero backlash coupler</li> <li>• Motor adapter to your choice of motor brands</li> <li>• No servo motor or controller, customer supplied</li> <li>• Torque limiting clutch &amp; overload detect prox switch</li> </ul>		<p>Servo motor brand name</p> <p>Model number [if known]</p> <p>Notes</p>