



B.I. BROOKS AND SONS INC.

OVERHEAD CONVEYOR

3" and 4" I-Beam Conveyor Components

www.bibrooks.com



X348 and X458

- Track, Chain, and Trolleys
- Roller Turns and Traction Wheel Turns
- Drive Units
- Chain Take Ups

in business since 1959

*... taking care of our customer's material handling needs
based on trust and fairness*



B.I. BROOKS AND SONS, INC.

X348 and X458 Overhead Conveyor

We have developed and designed our own overhead I-beam conveyor, concentrating on 3” and 4” I-beam or X348 and X458 overhead conveyor. We developed a unique design which will simplify the fabrication and assembly process making our conveyor a very competitive alternative to other name brands.

We are utilizing the latest technology in the manufacturing of our components, by laser cutting 3/8” plate steel and forming the plate to our specifications. This way our components are more uniform and can be easily and quickly assembled and welded.

We are also utilizing only certified welders to insure proper weld penetration and coverage for safety and durability.

Track Specifications

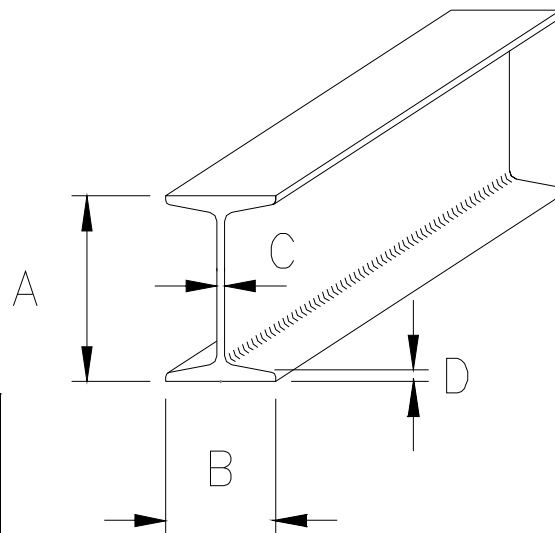
I-Beam Track

We only use #1045 high carbon I-Beam for our conveyor track. This type of I-beam provides greater strength and wear ability when compared to standard mild steel. Also, the I-beam has a low mill tolerance which ensures that the track is very uniformed allowing for smooth transition from track sections, allow the trolleys to ride properly on the bottom flange and makes for an easier installation.

I-Beam Size	A	B	C	D	Weight per Foot
3"	3"	2.33	0.17	0.17	5.7
4"	4"	2.66	0.19	0.19	7.7
Metric Size					Kilograms per Meter
3"	76.2	59.2	4.3	4.3	8.48
4"	101.6	67.6	4.8	4.8	11.46

Load Limits on I-beam Track

I-Beam Size	Hanger		Spacing	
	8'	10'	12'	15'
3"	1650 lb	1350 lb	1100 lb	700 lb
4"	3000 lb	2300 lb	1800 lb	1200 lb
Metric	2.44 m	3.05 m	3.66 m	4.57 m
3"	76.2	59.2	4.3	4.3
4"	101.6	67.6	4.8	4.8



**To Order Call:
888.724.8181 or 913.764.6617**



Conveyor Chain

The power chain is X-type rivetless X348 and X458 chain. The chain is drop-forged cast and heat treated for added strength. This provides a greater ability to withstand shock loads and greater resistance to corrosive and abrasive environments. X-type rivetless chain is a simple design. There are only three components, the center link, side link, and connecting pin. The chain is easy to assemble, no tools are required. The center links are precision forged to ensure maximum contact with the chain pins. Providing correct chain pitch with new chain and longer chain life.



Chain Specification

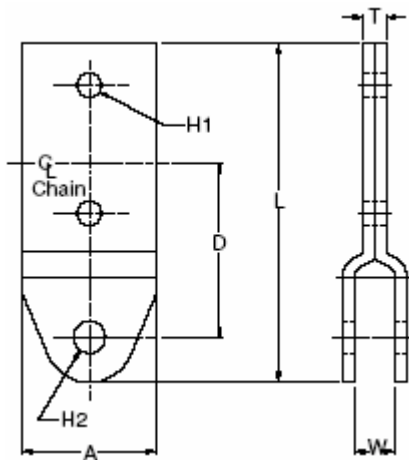
	Chain	Type
	X348	X458
Normal Pitch	3"	4"
Pin Diameter	4/8"	5/8"
Wt. per Foot	2.1 lb	3.1 lb
Maximum Recommended Chain Tension	1800 lb	3000 lb

Trolley Attachments

Trolley attachments are used to support the products that are hung from the conveyor system and create a gap between the two trolley halves. There are many different types of attachment the can be bolted directly to the trolleys or hang from the trolley attachments. Here are two standard attachments.

“H” Attachment

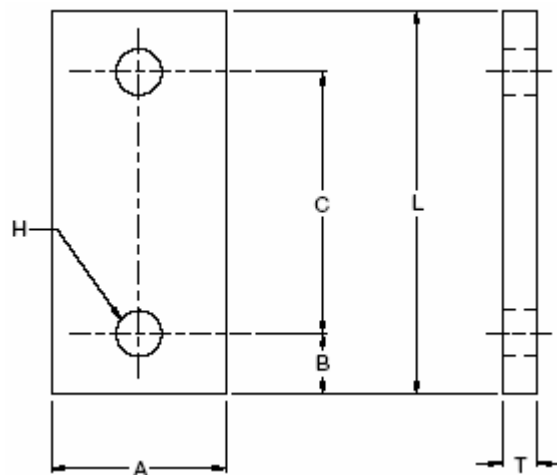
This is the most commonly used type of attachment. It is suitable for suspending almost any type of hook, tray or rack.



Size	A	D	H1	H2	L	T	W
3"	1-5/8"	3-1/8"	21/64"	17/32"	5-1/4"	1/4"	9/16"
4"	2-1/4"	2-7/8"	13/32"	17/32"	5-5/8"	3/8"	11/16"

“I” Attachment

Are used on intermediate trolleys that carry no load. Intermediate trolleys are required when loaded trolley spacing exceeds 36".



Size	A	B	C	H	L	T
3"	1-1/4"	7/16"	1-7/8"	21/64"	2-3/4"	1/4"
4"	1-3/4"	7/16"	2-1/8"	7/16"	3"	3/8"

in business since 1959

www.bibrooks.com

913.829.5494 fax



I-Beam Trolleys

I-beam trolleys are an assembly of two half trolleys (each with wheel, bearing and bracket) and an attachment. It is used to carry the conveying chain. The trolley brackets are forged from carbon steel to provide maximum strength. Trolleys are held together with a rugged two bolt connection with high strength bolts secured with a lock nut.

I-Beam trolley wheel is a full ball complement style bearing. This type of wheel is completely filled with ball bearings, and because of the large number of balls it has greater carrying capacity and also reflects in longer bearing life.

Trolley wheels can either be sealed or open type. The sealed trolleys have a contaminant resist shield and are commonly recommend for trolleys that are subject to extremely dirty, gritty or wet operating conditions. Open trolleys have no seals and are used with a spray type automatic lubrication system. They are recommended for trolleys that operate in oven environments. The trolleys have a hardened outer races, case hardened ball bearings and a through hardened chrome steel inner race.

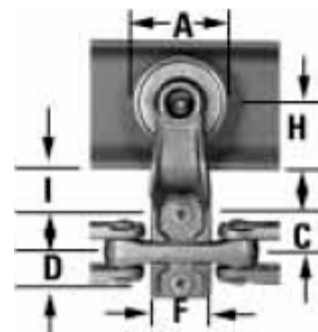
Trolley Specifications

Trolley Size	3"	4"
Trolley Capacity	200 lbs	400 lbs
Trolley Capacity w/ Load Bar	400 lbs	800 lbs
Chain Size	X348	x458
I-Beam Track	S3" x 5.7 lbs	S4" x 7.7 lbs
Drop*	5-1/2"	7-3/16" or 8"

* the "Drop" is the distance from the top of the I-Beam track to the center of the conveyor chain.



Trolley Size	3"	4"
A	2-5/16"	3-3/16"
B	1/4"	3/8"
C	1"	1-5/16"
D	7/8"	13/16"
E	1-1/4"	1-5/16"
F	1-9/16"	2-1/8"
G	4-1/16"	5-3/8"
H	1-7/16"	1-7/8"
I	1-1/2"	1-7/8"



Trolley Spacing

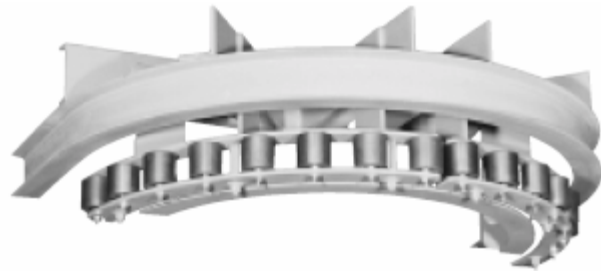
Trolley Size	Drop	Trolley Spacing		I-Beam Size	Chain Size	Shipping Weight
		Minimum	Maximum			
3"	5-1/2"	6"	30"	3"	X348	2-1/2 lbs per set
4"	7-3/16" or 8"	8"	32"	4"	X458	4-3/4 lbs per set

**To Order Call:
888.724.8181 or 913.764.6617**



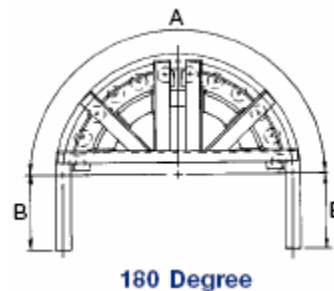
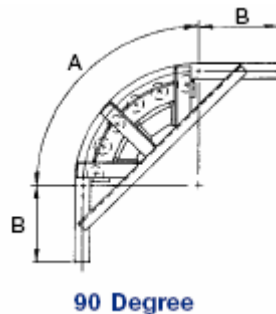
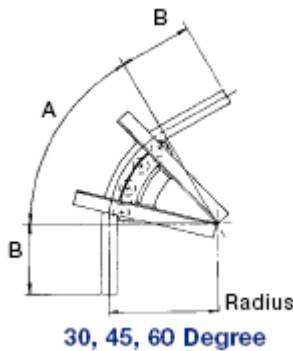
I-Beam Roller Turns

Heavy duty construction using high carbon steel I-beam, 3/8" plate steel, 4" and 6" structural channel and 3" x 1/4" angle. Plus we use industrial rollers with sealed bearings which are greaseable via the roller bolt with a grease zerk.



Using the proper radius is an important element of the system design. Several factors are part of the decision on how to properly size the correct radius, such as; the size of the product being conveyed, single hanging point or multiple hanging points and area constraints for the system. If the product is large or bulky when it is conveyed through the curve the tangent points or length between the products will be shorten and therefore they could collide with one another. A larger the radius will keep the product further apart. If the product is being hung from two points a simple rule of thumb is to have the second hanging point on the radius before the leading hanging point has exited the curve. This way the product will not be stretched over the curve which causes excessive wear on the trolleys and track. If there are columns or other obstacles to negotiate, consideration should be taken on how close you place the curve as well as product swing or over hang as you convey the product around the curve.

Radius	Degree Turn	Dimension "A"	Number of Rollers
24"	30	1'-0-9/16"	3
	45	1'-6-7/8"	4
	90	3'-1-11/16"	8
	180	6'-3-3/8"	16
30"	30	1'-3-11/16"	4
	45	1'-11-9/16"	5
	90	3'-11-1/8"	10
	180	7'-10-1/4"	20
36"	30	1'-6-7/8"	4
	45	2'-4-1/4"	6
	90	4'-8-9/16"	12
	180	9'-5-1/8"	24
42"	30	1'-10"	6
	45	2'-9"	7
	90	5'-6"	14
	180	11'-0"	28
48"	30	2'-1-1/8"	6
	45	3'-1-11/16"	8
	90	6'-3-3/8"	16
	180	12'-6-13/16"	32
54"	30	2'-4-1/4"	6
	45	3'-6-7/16"	9
	90	7'-0-13/16"	18
	180	14'-1-5/8"	36
60"	30	2'-10-9/16"	7
	45	4'-3-13/16"	10
	90	8'-7-11/16"	20
	180	15'-8-1/2"	40



in business since 1959

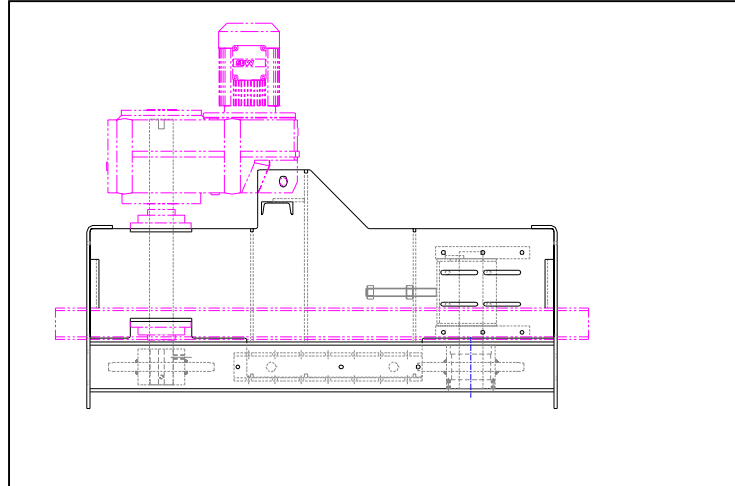
www.bibrooks.com

913.829.5494 fax



Drive Units

A caterpillar drive transmits its driving force to the conveyor chain by means of a caterpillar chain made of precision steel rollers with driving caterpillar dogs that mesh with the links of the power only conveyor chain. B.I. Brooks and Sons, Inc. caterpillar drives utilizes a drive motor torque system instead of the floating frame style. The torque motor system has a solid welded frame and monitors system overload through the drive torque. This heavy duty design allows for a positive engagement and location of the caterpillar drive chain to the power conveyor chain while still allowing the motor/reducer to float. The spring loaded torque arm counterbalances the normal power chain tension and controls the torque of the motor/reducer.



Increased chain pull load will cause the motor/reducer to rotate and change its position relative to the fixed portion of the caterpillar drive. During excessive chain pull loading, the factory calibrated torque arm will allow the floating frame to rotate to its overload position falling off a limit switch that will automatically shutdown the conveyor drive unit and prevent conveyor damage. All drives include limit switch overload protection and do not rely upon shear pins.

The limit switch cut-off design provides fail-safe protection of the drive unit. In the event of a “jam”, the reducer torques around its shaft and the limit switch is released, immediately cutting power to the drive. The safety cut-off limit switch is field wired as normally open/held closed. Being held closed by the roller arm’s continuous contact with the tripping surface of the reducer, any distortion, or at worst, the removal of the roller arm would cause the switch to remain open, preventing operating of the drive without proper protection. The caterpillar chain uses a straight bar design that prevents the caterpillar chain itself from causing a drive jam. The caterpillar dogs are forged from a high carbon steel and heat treated for maximum strength. The caterpillar chain back-up bar is made from high carbon alloy steel and heat treated for long life. This back-up bar is used to hold the drive chain caterpillar dogs in proper contact with the power conveyor chain. A series of rollers called back-up rollers are mounted to guide the back of the power conveyor chain and hold it in proper relation to the caterpillar dogs. The drive capacity and speed are preset at the factory. All drives have inverter duty TEFC motors.

CAT Drive Specification

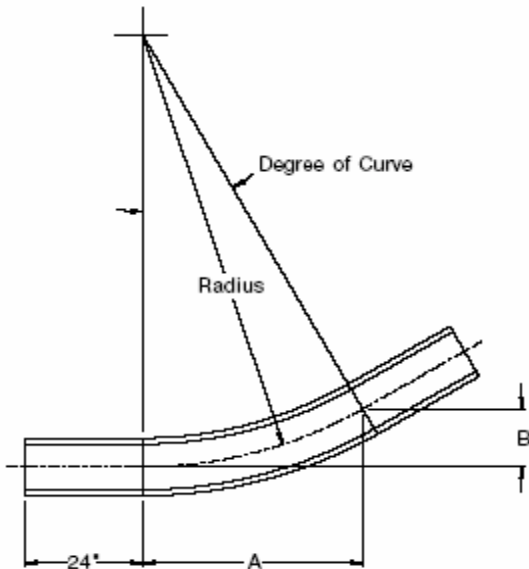
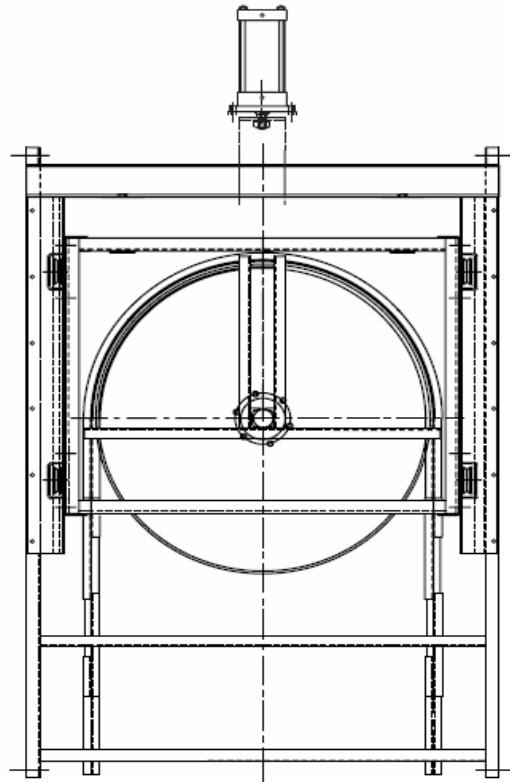
Cat Drives	Chain Pull Capacity
X-348	1200 lbs
	2200 lbs
X-458	2200 lbs
	3000 lbs
	3800 lbs

**To Order Call:
888.724.8181 or 913.764.6617**



Take Up Units

A take up is necessary on every power chain system to insure proper chain tension by removing any chain slack that may accumulate in the chain loop system. Take ups are designed to provide a means of compensating for chain wear resulting in chain stretch. Take ups are also required to be able to relieve chain tension so the conveyor chain may be easily disassembled for chain removal. Take ups are self contained and factory mounted to a rigid external frame. The inner frame which supports a 180 degree horizontal turn is guided and rolls on the rigid outer frame via 3" full ball bearing rollers for ease of take up movement. The chain is supported throughout the take up travel by sliding expansion sleeves. After the take up is completely extended, chain must be manually removed and the take up collapsed to continue proper conveyor operation. There are three types of devices to keep tension on the take up, air, spring and screw type take ups.



Vertical Curves

Vertical curves are used to negotiate elevation changes in conveyor systems. It is best to use the largest radius curve as possible for longer conveyor life.

Radius	15 deg.		20 degrees		30 degrees		45 degrees	
	A	B	A	B	A	B	A	B
5'-0"	1'-3-1/2"	0'-2"	1'-8-9/16"	0'-3-5/8"	2'-6"	0'-8-1/16"	3'-6-3/8"	1'-5-3/16"
6'-0"	1-6-5/8"	0'-2-7/16"	2'-0-5/8"	0'-4-5/8"	3'-0"	0'-9-5/8"	4'-2-5/16"	1'-9-1/8"
8'-0"	2'-0-13/16"	0'-3-5/16"	2'-8-13/16"	0'-5-13/16"	4'-0"	1'-0-7/8"	5'-7-7/8"	2'-4-1/8"
10'-0"	2'-7-1/16"	0-3-5/16"	3'-5"	0-7-1/4"	5'-0"	1'-4-1/16"	7'-0-7/8"	2'-11-1/8"
12'-0"	3'-1-5/16"	0-4-15/16"	4'-1-1/4"	0'-8-11/16"	6'-0"	1'-7-1/2"	8'-5-13/16"	3'-6-3/16"
15'-0"	3'-10-5/8"	0'-6-1/8"	5'-1-9/16"	0'-10-13/16"	7'-6"	2'-0-1/8"	10'-7-9/32"	4'-4-23/32"
20'-0"	5'-2-1/8"	0'-8-3/16"	6'-10-1/16"	1'-2-1/2"	10'-0"	2'-8-1/8"	14'-1-11/16"	5'-10-1/4"

in business since 1959

www.bibrooks.com

913.829.5494 fax

B I BROOKS AND SONS, INC.

CONVEYORS AND MATERIAL HANDLING SYSTEMS

Headquarters:

15625 S. Keeler Terrace

Olathe, KS 66062

Phone: 913.764.6617

Fax: 913.829.5494

Toll Free in USA: 888.724.8181

Email: jbrooks@bibrooks.com

Mexico Office:

Ave. Eloy Carazos #2623 L3

Col. Mirador la Silla

Guadalupe, N.L.

C.P. 67171

Mexico

Phone: 52.81.8398.4074

Email: gmendez@bibrooks.com

*. . . taking care of our customer's material handling needs
based on trust and fairness*

www.bibrooks.com