

Glossary of overhead conveyor terms

A

Accumulating. The capability to disengage the free trolley from the power chain and stop loads as found in a power-and-free overhead conveyor, independent of the rate of travel of the power chain.

Air-operated takeup. An assembly of the necessary structural and mechanical parts that provides the means to adjust the length of the power chain by the use of an air cylinder to compensate for chain stretch, shrink, or wear and to maintain proper tension.

Antibackup. A mechanical safety device to prevent reversal of a loaded conveyor under action of gravity when forward travel is interrupted.

Antirunaway. A safety device to stop a declining conveyor and thus prevent running away in event of an electrical or mechanical failure.

Automatic lubricator. A device used to automatically lubricate the chain, trolley wheels, or other components as they pass.

B

“B” or bolt attachment. A trolley attachment having a threaded rod projection for attaching a load bar or various objects.

Backstop. A mechanical device used to prevent reversal of a loaded conveyor under action of gravity when forward travel is interrupted. An antibackup.

Backup bar. A heat treated bar drive component used to back up the caterpillar chain dogs.

Backup rollers. Series of rollers so mounted in the drive as to retain the conveyor chain in proper relation to the caterpillar chain dogs.

Balanced drives. Two or more drives on one conveyor chain each driving the conveyor with a predetermined share of the load with synchronized speed.

Beam clamp. A device for gripping the flange of supporting beams or trusses for the purpose of suspending a conveyor frame or track.

Beaver tail. The tail plate or after configuration of a free trolley in a power-and-free conveyor, that, when engaged with the duck bill or lever arm and bumper on successive free trolleys, permits accumulation of the free trolleys.

C

“C” or pendant attachment. A single bar trolley attachment projecting through the chain having a single hole for supporting loads.

Caterpillar chain. A short endless chain on which dogs or teeth are spaced to mesh with and move, a conveyor power chain.

Caterpillar chain dog. A dog or tooth attached to a caterpillar drive chain to provide the driving contact with the conveyor power chain.

Caterpillar drive. A drive equipped with a caterpillar chain to provide the propelling contact with the conveyor power chain.

Caterpillar takeup sprocket. The non-driving sprocket of a caterpillar

drive. Adjustable to tension the caterpillar chain.

Center link. The loop-shaped link of rivetless chain that provides the bearing surfaces for the pins and permits passage of the trolley load support members through the chain.

Chain pin. The pin that is used to connect succeeding links of a chain about which the link pivots.

Change of elevation. Vertical distance between the upper horizontal track of a vertical curve to the corresponding point on the lower horizontal track.

Clevis pin attachment. A forged chain pin with a clevis on one end used for supporting light loads from a trolley conveyor chain between trolleys.

Compound vertical curve. An assembly of two single vertical curves with necessary connecting track to accomplish a change in elevation.

Conveyor guard. A structure mounted below the conveyor path to protect personnel and equipment below.

Counterweighted takeup. An assembly of the necessary structural and mechanical parts that provides the means to adjust the length of the power chain by the use of counter weights to compensate for chain stretch, shrink, or wear and to maintain proper tension.

D

Drive frame. The structure that supports the drive shaft assembly

and machine parts, and that contains or supports the motive power; or supports the assembly to which the motive power is connected.

Drive shaft. Main driving shaft on which the conveyor sprocket is mounted.

Drive sprocket. Driving sprocket of a caterpillar drive or of a sprocket drive.

Drop. The vertical distance from the top of the I-beam track to the centerline of the power chain. In a 3-inch system using X-348 chain, the drop is 5½ inches; in a 4-inch using X-458, the drop may be either 7¾ inches or 8 inches; in a 6 system using X-678 chain, the drop is 10 inches.

Drop section. A section of free track in an overhead power-and-free conveyor system that can be lowered either hydraulically, pneumatically, or by electrical means, to pick up a load, and then return to the original elevation of the adjacent power-and-free track to permit the trolleys on the drop section to enter the rest of the overhead conveyor system.

Duck bill. The actuating lever on the forward end of a free trolley in a power-and-free conveyor, that, when engaged with the beaver tail or after plate configuration of preceding trolleys, will retract the power dog on the free trolley, disengaging it from the power chain and permitting accumulation of the free trolleys.

F

Frog. The diversion mechanism in a switch, may be manually operated or powered.

H

“H” or clevis attachment. A forked or clevis type trolley attachment to suspend a load.

Hanger steel. Structural members by which a conveyor is hung from supports.

Header steel. Suitable steel framing to support the overhead conveyor track with all trolleys chain and the total load including product and hangers.

I

“T” or idler attachment. An attachment used to complete the assembly of a nonload carrying trolley.

K

Kicker. A roller bank turn or traction wheel used to maintain alignment of the power chain to the centerline of the track in horizontal deviations of 45° or less.

L

Link. A chain unit of one pitch length.

Load bar. A device used to distribute a load over pairs of trolleys.

M

Machinery guard. A covering or barricade for safety purposes such as gear, chain, and V-belt guards.

Multiple drives. Two or more motorized drives applied to a single conveyor for the purpose of reducing the chain tension in any given section.

P

Pick-and-place. The means of loading/unloading an overhead conveyor system using automated modules or robots.

Power and free. An overhead conveyor incorporating multiple tracks. Generally, a two track overhead conveyor system, one track over the other; the lower track supports the load carrying free trolleys while the power chain for driving them is suspended from the upper track.

Power dog. The forward tooth or “dog” on a free trolley of a power-and-free conveyor that, when engaged with the pusher dog on the power chain, will place the free trolley in motion. Also known as a *pusher pawl*.

Power only. A one track overhead conveyor system with power chain propelling trolleys from which the product is suspended.

Pressure roller. A hardened tubing with integral bearings used to maintain alignment of the power chain to

the centerline of the track. Also known as a *segment roller*.

Pusher dog. A tooth or “dog” on the power chain of a power-and-free conveyor that when engaged with the power dog, or pusher paw, of a free trolley, places it in motion.

R

Rapid slide. A UHMW polymer incorporated in an overhead conveyor component to reduce friction.

Rivetless chain. A completely forged, heat-treated chain of pins, side links and center links that can be assembled or disassembled without the use of tools.

Robot interface. At loading/unloading stations. or welding, painting, assembling, or other production stations where an operation is performed by a robot programmed to accomplish a given task while the overhead conveyor system is functioning.

Roll nest. An assembly of several segment rollers in a straight horizontal frame acting as a backup to the power chain as it is driven by the caterpillar chain dogs.

Roller bank turn. An assembly of several segment rollers in a horizontal frame formed to an arc conforming to the degree of turn required for the track of an overhead conveyor.

Roller turn. A series of vertical rollers mounted in a frame to guide a conveyor chain around a horizontal curve.

Roller turn roller. The vertical roller with integral bearings as used in the roller turn. A pressure or segment roller.

S

Sanitary pan. A trough-type guard suspended under overhead conveyor systems to prevent contamination. Used in conjunction with a “C” hook.

Screen guard. Expanded metal or wire mesh with suitable framing steel to provide a trough type guard

suspended under the overhead conveyor system, where required, to safeguard personnel and equipment.

Screw takeup. The assembly of the necessary structural and mechanical parts that provides the means to adjust the length of the power chain by the use of the manual adjustment of one or more screws to compensate for chain stretch, shrink, or wear and to maintain proper tension.

Segment roller. A hardened tubing with integral bearings used to maintain alignment of the power chain to the centerline of the track.

Side link. That portion of the chain which longitudinally straddles the center link.

Single vertical curve. A section of track bent in a desired curve to change the direction of a conveyor in the vertical plane.

Spring takeup. A spring actuated assembly of the necessary structural and mechanical parts that provides the means to adjust the length of chain to compensate for stretch, shrink, or wear and to maintain proper tension.

Sprocket drive. A conveyor chain driving unit using a sprocket to transmit power to the chain, located at a turn of approximately 90 degrees or more.

Storage bank. Dedicated or on-line power and free track where loads may be accumulated as a part of the production process or for storage purposes.

Superstructure. Members to which the hanger steel is connected and which transfer the load to the building members.

Switch. The means whereby a free trolley in a power and free overhead conveyor system may be horizontally routed off the main track system to a spur for an alternate production operation, to storage or for maintenance. The spur may or may not have its own power chain.

T

Takeups. The assembly of the necessary structural and mechanical parts that provides the means to adjust the length of chain to compensate for stretch, shrink, or wear and to maintain proper tension.

Track. The I-beam or channel sections upon which trolley wheels roll while being propelled.

Track drop. In a power-and-free overhead conveyor, the dimension from the top of the dual channel free track to the bottom of the power track I-beam.

Track shroud. A longitudinal hood-like structure in which the overhead conveyor track is encased to prevent dust, paint, or chemicals from coming into contact with the overhead track, power chain, and trolleys, often air-purged in electrostatic painting systems and high-dust-level conditions.

Traction wheel. A smooth, straight-face wheel that guides the conveyor chain around a horizontal curve.

Traction wheel turn. A mechanism by which the horizontal direction of the conveyor is altered using a smooth, straight-faced wheel to maintain the relation of the chain to the track.

Transfer-on-the-fly. A method of loading/unloading, usually on a power-only overhead conveyor system using lift mechanisms indexed to hang on to the carrier, or remove from the carrier, the product or materials being conveyed.

Trolley. An assembly of two half-trolleys (each with wheels, bearing, and bracket) and an attachment. It's used to support and move suspended loads and to carry the load connecting and conveying chain.

Trolley brackets. Drop forged, or pressed steel members to which the trolley wheels are attached with provision for connecting to the chain.

Trolley conveyor. A series of trolleys supported from an overhead

track and connected by an endless propelling chain with load usually suspended from the trolley. Trolley conveyors may be designed for single- or multiple-plane operation.

Trolley wheel. The circular member with integral bearing mounted to the trolley bracket.

U

UHMW. An ultra-high molecular weight polymer used as an extremely low friction slide.

Unit bracket. For slight changes in direction in the horizontal plane of the overhead conveyor. Consists of a heavy welded steel bracket with one segment roller. Bracket is welded to top of I-beam track with roller centerline positioned at "drop" distance from top of I-beam track. Turn radius and arc determine number of unit brackets required.

V

Variable speed drive. A type of drive designed with a speed changing device by which the speed of the conveyor can be changed.

W

Wheel turn. A structure having a traction wheel that guides a conveyor chain around a horizontal curve.

Y

Yoke. The steel support brackets in power and free overhead conveyor track construction that attaches and supports the free rail toe to toe channel track under the overhead I-Beam power track. **PC**

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