

Guarding of Return Idler Rollers on Conveyors including Conveyors on Mobile Equipment

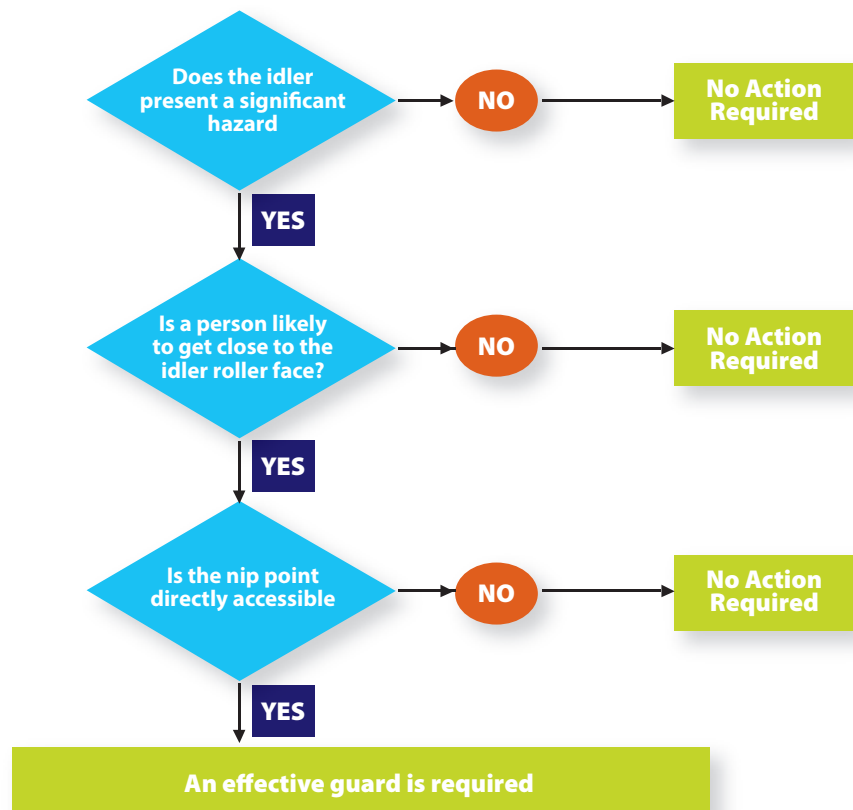
Information Sheet

November 2017

Idlers are an important component in any conveyor system as they are used to support the conveyor belt and the load carried on the belt. The mass of the return belt is the only load that return idlers are required to support. Return idler rollers only require to be guarded where they are accessible to persons and there is a risk of entanglement from a nip point usually as a result of downward pressure on the roller being applied by the conveyor belt. If a conveyor is floor mounted and the return idler rollers are not accessible, they do not require guarding. Similarly, if the return idler rollers are out of reach of persons they do not require guarding.

A number of conveyors are supplied with wipers which are designed to clean wet material from the conveyor belt; some of these are designed to act as both a wiper and as a guard. The diagram opposite indicates the risks that identify if the return idler roller requires guarding. If a wiper is to be acceptable as both a wiper and a guard it must not allow the nip point to be directly accessible.

A simple approach to risk assessment of NIP points:



Return Idler Rollers 0.7 – 2.5 Metres from the Ground

If the return idler rollers of a conveyor are at a height above 0.7 metres and up to 2.5 metres from the ground they must be guarded unless there is no risk of people being injured because the belt can yield (leave the idlers) to produce a clearance of at least 50 mm at the nip point without trapping or crushing.

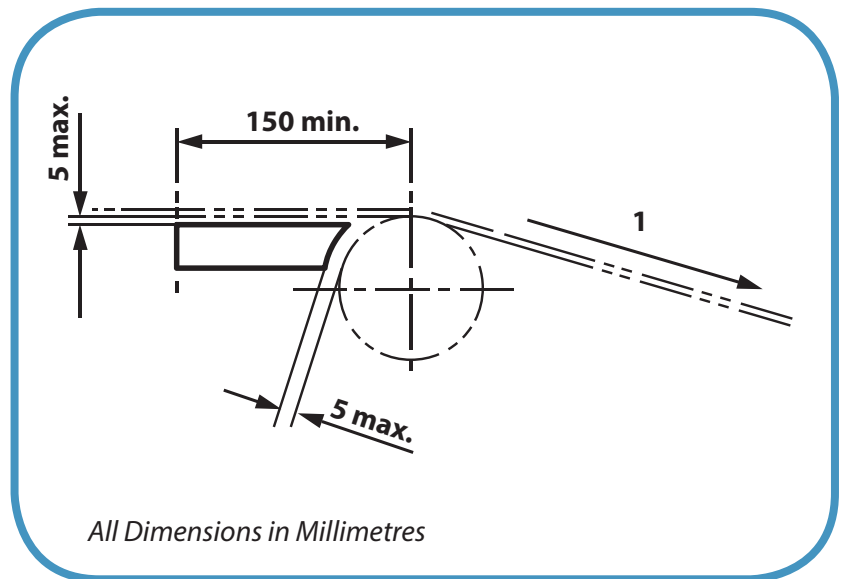
The guards must be one of the three types described below.

A. Nip Guards for Return Idler Rollers

Nip guards at return idler rollers shall extend across the width of the belt and for a minimum of 150 mm from the nip point.

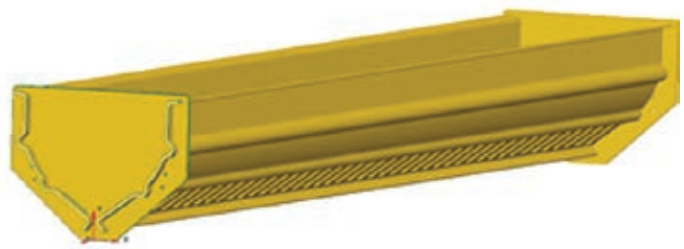
They shall be closely fitted to follow the belt line and idler periphery approaching the nip point, with a maximum clearance of 5 mm.

1. Direction of belt travel



B. Fixed Distance Guards for Return Idler Rollers

Fixed distance guards shall be securely fixed in position using captive type fastenings and shall only be capable of being opened or removed with the aid of a tool.



C. Fixed Enclosing Guards

Fixed enclosed guards shall be securely fixed in position using captive type fastenings and shall only be capable of being opened or removed with the aid of a tool. If they are removable, they shall be capable of being removed and replaced without dismantling any other part. Fixed enclosing guards shall be designed so that they cannot remain in the closed position unless they are fastened. Fixed enclosing guards shall not be designed to have sufficient space to allow any person to enter and be enclosed inside.



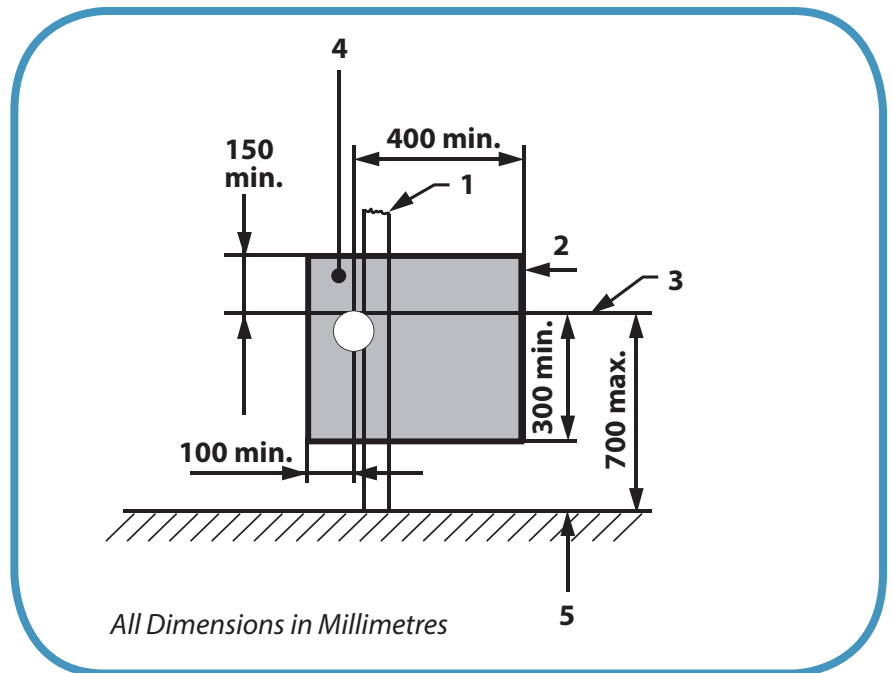
Return Idler Rollers 0.3 to 0.7 Metres from the Ground

Where the return belt is at a height of less than 0.7 m above the floor of the working area fixed guards having the dimensions shown below can be fitted.

Fixed Guard

1. Structure Element of Conveyor
2. Direction of Belt Travel
3. Height of Return Belt
4. Fixed Guard (Shaded)
5. Floor Level

If a conveyor is floor mounted then the return idler rollers will not require guarding as they will be less than 0.3 metres from the ground



Convex Curves

In working areas, carrying and return idler rollers at convex curves shall be safeguarded where there is an angle of deflection of the belt of more than 3° at any roller.

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Further information

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