

**Smart  
Elevator  
Tech, LLC**

# Rope Align Block™

**Aligns hoist ropes above hitch plate for  
rope brake or beam clearance.**



## ■ **Problem: Hoist Ropes Bind in Rope Brake**

When adding a rope brake, such as a Hollister-Whitney *Rope Gripper*™, BODE *Rope Brake* or the Draka *Sure Stop*™, to a traction elevator roped 1:1 there is often a problem with the spread of the ropes coming from the staggered car or counterweight hitch being too great for the open jaw clearance of the rope brake. All car or counterweight hitch plates have a staggered hole pattern that allow sufficient space to fit and adjust the rope shackles. The ropes lead off from the car or counterweight hitch plate with as much as a 4-inch spread with each rope running in its own straight line to where it makes contact with the machine drive or the deflector sheave.

Hollister-Whitney's *Rope Gripper*™, for example, has a total initial clearance between the two open brake pads equal to the hoist rope diameter plus 5/8". In a typical installation, the hoist rope spread or lack of alignment will exceed the open rope brake jaw clearance at around 18 to 24 inches below the centerline of the sheave or about a 1/2 foot to a foot below the sheave. If the rope brake is mounted below these levels, the hoist ropes will cut too deeply into the rope brake pads causing premature wear to both the ropes and the brake pads.

## ■ **Solution: Install a Rope Align Block™**

The solution is to add the **Rope Align Block™** as manufactured by **Smart Elevator Tech, LLC**. This device is easily installed above the hoist rope shackles and below the rope brake to gather and align the hoist ropes so they fit the rope brake jaw clearance. Each **Rope Align Block™** is made and labeled to the specific hoist rope quantity, size and pitch (rope center-to-center) to suit the elevator installation. The rigid PVC blocks will not harm the hoist ropes and are bored and countersunk with rope paths sized not to bind or clamp the ropes, as required per code. In this way, each hoist rope is free to move through the PVC blocks as needed for rope tensioning. Each assembly comes with two 1/8" cables with two clamps each which thread through the provided holes in the blocks and through the shackles. These cables keep the blocks tethered to the shackles and keep the blocks from riding up the ropes. Also, the PVC construction meets A17.1 non-combustible requirement and is not affected by moisture.

## ■ **Order**

To order, simply call or email **Smart Elevator Tech, LLC** and identify the quantity of **Rope Align Blocks™** needed for each hoist rope quantity, rope size & rope pitch. Quantity discounts apply and shipping is via UPS Ground or USPS Priority Mail. Some **Rope Align Blocks™** are in stock for immediate shipment and if not stocked can usually be fabricated and shipped within a week from order placement.

## ■ **Installation**

To install a **Rope Align Block™** it is essential to verify the available clearance so as to properly locate the device between the hoist rope shackles and the rope brake or other obstruction. It is critically important to assure that the **Rope Align Block™** does not strike the rope brake or other obstacle when the car or counterweight reaches their maximum upward movement. See ASME A17.1 section 2.4.6 to determine the "maximum upward movement" for the car and section 2.4.9 for that of the counterweight. Also see sections 2.4.9 and 2.4.11 which applies to the **Rope Align Block™** mounted above the counterweight or the car not striking the rope brake, other equipment or structure in the overhead.

It may be necessary to reduce the tension on the outer hoist ropes either by running out the nuts on the outer shackles or running in the nuts on the inner shackles. Install the split PVC blocks of the **Rope Align Block™** assembly at the location above the shackles as determined above. Take care that the hoist ropes are completely within the bored paths (holes) of both blocks and that the blocks do not pinch the ropes. Tighten the two bolts that pass through the PVC blocks. Install the 1/8" cables through the provided holes of the PVC blocks and through the shackles, snug the cables and add the cable clamps. Re-tension the elevator hoist ropes as required. It may be necessary to tap the PVC blocks lightly to release any internal binding that may exist between the PVC blocks as the hoist ropes, especially the outer ropes. Finally, verify that all required clearances are met.

## ■ **Clarifications & Disclaimers**

Note that the **Rope Align Block™** does not work on a 2:1 or other multi-roping scheme. The **Rope Align Block™** can only work on an elevator roped 1:1. **Rope Align Block™** cannot be used as a hoist rope anti-rotation device (see A17.1, 2.20.9.8). **Rope Align Block™** may not work on all applications as there may be insufficient clearances to properly locate the device. It is the sole responsibility of the purchaser to determine if the **Rope Align Block™** will fit and serve as designed for each application. For installation on existing elevator systems, a thorough field survey may be required to determine the feasibility of properly installing the **Rope Align Block™**. For installation on new elevator systems, an analysis of the elevator and building design drawings may be necessary to determine the necessary clearances. Seek professional engineering services if necessary (such services are available from **RGB ELEVATOR CONSULTING, LLC**). Installation of the **Rope Align Block™** must be performed by a fully authorized and licensed (where applicable) elevator mechanic/technician. Also reference the rope brake manufacturer's installation and appropriate documents concerning the installation of the rope brake. The purchaser assumes all responsibility and liability for installation of the rope brake and the **Rope Align Block™**.

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