How Manual & Fire Curtain Rigging Works

Round Weights

The leading edge of the curtain system includes two sets of round weights that balance against each other. One centres the fire line, while the other exerts pressure against the clutch floor in the opposite direction. If the tension is too low, the second weight exerts the clutch, allowing the friction block to spin.

Traction Drive Hoist

The fire curtain lift lines pass over a V-shaped traction block that guides them. The block is connected via an electric drive and travels through a clutch mechanism that keeps it from turning. With low line slackness, the clutch, the traction block spins and the fire curtain falls.

Lattice Track

Lattice track arbors ride a lattice track which is attached to the front wall of the stage and is totally separate from the counterweight system used to control other elements.

Fire Lines

The fire line engages the mechanical clutch of the traction drive train during normal operation. When the fire line is cut or released, or the lattice lines are opened, the fire curtain falls automatically.

Fusable Links

Fire lines are joined by fusible links, which are basically flat pieces of steel that have been soldered together with a low-melting-point fusible alloy. In the event that temperatures exceed this level, the fusible links give way and release the clutch, which then releases the curtain.

Lattice Track Arbor

The lift lines supporting the fire curtain are attached to this arbor. The arbor counterbalances some of the curtain's weight, as the curtain's descent is powered by the most reliable force of all, gravity.

Sure Guard® II Release System

The fire line can also be released by J.R. Clancy's Sure Guard® II system, an electronic mechanical device that can be connected to the detection systems or rate-of-rise temperature sensors. When the Sure Guard® II system circuit is broken, the fire line is automatically released.

Manual Release

Fire lines also have a manual release line located at each side of the opening. When the release lever is pulled, the fire curtain falls in a controlled fashion.

Smoke Pocket

The vertical, guided edges of the fire-curtain ride the smoke pocket, which is a shadow, steel box. The curtain is housed against the smoke pocket, sealing the edges of the proscenium opening.

Lift Lines

The galvanized wire rope lift lines support the pipe battens and backside feed for rigging system together.

Pole Batten

The batten supports a wide range of lighting fixtures, curtains, scenery, and audio equipment, ensuring they won’t interfere with the hand lines or counterweight arbors.

Batten Clamp

Batten clamp pins the pipe batten along the length, usually on 10 ft. centers. They should be load rated for safety. Another cam lock tension option is batten clamps with tumbler locks.

Index Light

Index lights, attached to the outgoing batten, allow the firemen to see in darkened wings. A reflector hides the light from the audience.

Manual rigging consists of a balanced set of weights that are controlled by pulling on ropes to raise and lower scenery, lighting, and other equipment with minimal effort. Manual rigging can be found in nearly every theatre worldwide. First introduced in the early 1900s, it’s still a practical solution for new theatres of all sizes. Manual systems can also be upgraded to include “push button” or “touch screen” control. To learn more or discuss your rigging needs visit us online or contact us today.

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