

PFlow F Series Lets the Texas Longhorns Band March in!



- F Series 4-Post Mechanical Lift
- Ascends and Descends in 30 seconds
- Lifts Loads up to 12,000 lbs.
- 7' Vertical Rise
- 2 Levels of Vertical Rise
- 25' FPM Travel Speed

Nothing matches the spirit and excitement of college football on a sunny fall afternoon - the band, a winning tradition, and a big crowd of students, alumni and fans all cheering together. And nowhere is the pageantry greater than the Darrell K Royal-Texas Memorial Stadium (DKR), home of the University of Texas Longhorns.

The highlight of a remodeling project at DKR was the expansion and enclosure of the north end zone, completed prior to the season in 2008. The project featured the addition of an upper deck, luxury suites and a lower level with a state-of-the-art athletic training facility. The project increased the seating capacity of DKR from 85,123 to 100,119.

An integral component of the renovation infrastructure is a PFlow vertical lift, often referred to as a vertical reciprocating conveyor (VRC).

Tradition dictates that the Texas band, cheerleaders, and "Big Bertha" (world's largest bass drum) enter the stadium through the north end zone after a pre-game parade that leads to the stadium. The initial design had the band march from the street to the field down a ramp with a clearance of only 3' below the main concourse. After it was determined that Big Bertha would not fit down the ramp, the architectural team sought to find a feasible solution. After a thorough review of various options, a PFlow F Series VRC was specified to periodically elevate a section of the concourse up 9', creating a 12' high clearance for the band to safely enter and exit the stadium through the ramp that passes under the main concourse.

PFlow VRCs are routinely installed to lift materials of varying sizes and weights in a wide range of industrial and commercial settings, including sports and performance venues. Never before, however, had a PFlow VRC been used to elevate a portion of a pedestrian thoroughfare to allow access for a monster bass drum!

PFlow partnered on the project with Cisco-Eagle, a material handling company based in Dallas and a long time PFlow dealer in the Southwest. After an initial on-site consultation with the general contractor and the project architects, Jason Eitrem of Cisco-Eagle and Chuck Cobb of PFlow collaborated with PFlow's industry leading engineering team and returned with an innovative solution. No other lift manufacturer came back with a proposal after the initial review phase, apparently assessing that the demands required of a viable system would be too great.

"Once we saw what was needed we felt confident that we could solve the problem, but there were some obvious challenges," said Eitrem. "There were many on-site meetings and consultations between Cisco-Eagle and PFlow in order to develop an effective VRC design that would accomplish this feat."

To the casual observer, it is difficult to distinguish the 10' 0" x 19' 0" swath of concourse that elevates from the fixed portions on either side. The lift surface is skid resistant metal, painted to resemble the concrete of the concourse. The stationary railings are the same as used throughout the concourse, and the gap between the lift platform and concourse floor is less than 1/2" on either side.

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Many aspects of the lift are similar to what would appear in a typical application. The lift is operated by a single 15 hp motor and a common shaft that drives roller chains attached to each of the four posts at the four corners of the lift platform. It features a 12,000 lb. payload, moves vertically at 25 feet per minute, and fully ascends and fully descends in just 30 seconds! The platform typically elevates twice per game, once for the band to enter before the game and once for the band to exit.

The proximity of a large group of people to the lift when it is operating, however, clearly separates it from standard industrial installations.

"One of the critical challenges unique to this application was bracing and stabilizing the system to allow it to operate properly for years to come without obstructing the view of the game and being an aesthetic eyesore," said Eitrem. "PFlow's engineers developed a way to minimize bracing to the stadium structure by containing a majority of the bracing within the lift structure itself."

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The bottom of each guide column is side-mounted to a reinforced concrete ledge within the ramp wall, and the top of the two south guide columns are braced to the concrete underside of the tiered seating area that abuts the lift. However, the primary lift stabilization mechanism is self-contained, featuring a cross-brace gusseted system connected to a cross beam and the two north and two south guide columns.

Though all PFlow VRCs come with an array of standard and optional safety features, there are a series of safety features unique to the DKR installation:

- Rolling hand rails on either side of the lift that cross the concourse, electronically interlocking on the far end with a safety switch that prevents the motor from operating until the gates are fully secured.
- An audible siren and a flashing orange beacon that run while the lift is in motion.
- A gate on the lower ramp that is manually opened by an attendant to let the band come through when the platform is in the fully elevated position.
- PFlow's patented DeckLock® system, an important safety feature that keeps the lift in place in the case of a chain brake or motor failure.

“PFlow has designed lifts for a number of unique applications over the years and each seems to break new ground,” said Cobb. “Over the years PFlow has moved everything from missiles, Greyhound buses, stage floors and 20,000 lb. keel blocks in and out of drydocks. If you come up with the application we can move it.”

The moving concourse has been in place for both the 2008 and 2009 seasons and has worked flawlessly every time. Cisco-Eagle was hired for the first season to be on hand for all games, an arrangement that stadium management felt comfortable without for the 2009 season. Cisco-Eagle continues to perform annual maintenance checks, with the game day operation easily handled by the trained stadium staff.

By all measures the project, officially named the “Red McCombs Red Zone” after one of the project’s major benefactors, has been a huge success. A record attendance of 101,357 was set on November 21, 2009, when Texas beat Kansas 51-20. Recently the project won the 2009 McGraw Hill “Best of the Best Award” for national construction excellence in the sports and recreation category.

Eitreim added the finishing touch when he took the initiative to change the color of the safety beacon from Oklahoma Sooner Red to University of Texas Orange!