

# Vertical Lift Bridge

## Series SAB Drum Brakes with Thrusters

### PROBLEM

Built in 1984, the Veterans Memorial lift bridge spanning the Fox River in Kaukauna, Wisconsin, was in need of repair. The bridge features a 90 ft. long center span that raises 55 ft. to allow large vessels to pass. The refurbishment focused on the replacement of the bridge's mechanical drive components, including braking systems, that had not been used since the early 1990s due to the river's lock closure.

In its search for economical braking solutions, the bridge construction contractor contacted a Regal Rexnord partner based on previous successful collaborations. While competitor brakes were considered, ultimately, Stromag SAB brakes were selected due to their reliable performance.

### SOLUTION

The elaborate drive system, enclosed in the bridge's upper super structure, utilizes two electric motors that drive a single gearbox with dual output shafts. Each of these shafts connect to a secondary gear reducer to turn pinion shafts that move vertical gear racks which raise and lower the bridge span.

SAB 8" drum brakes (with 275 ft.lbs. max. torque) are installed between the electric motors and input shafts of the dual-output gear reducer. Additionally, a pair of SAB 19" drum brakes (with 1800 ft.lbs. max. torque) are installed on mid-ratio shafts on the secondary output shafts. This configuration is the same on both the North and South bridge towers.

The SAB brakes provide static holding (parking) functionality during normal operations. However, in the event of a power loss, the brakes can also provide E-stop functionality. All brakes feature a hand release lever, status switches, ascent or descent valving, special voltage and high temperature seals in the thrusters.

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MCCSS-P-8212-SG-EN-US 02/26



### HIGHLIGHTS

- Drum brakes with electrohydraulic thrusters
- Maintenance-free, self-lubricated bushes
- Auto-aligning brake shoe device
- Automatic wear compensation
- Hand release lever
- Status switches
- Ascent or descent valving
- Special voltage
- High temp thruster sealsw

