R. BAKER & Son

OUTRIGGER

Rigging, Dismantling & Demolition News from R. BAKER & SON

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Complex Industrial Rigging: Four-Unit Dryer Assembly Success Story

At R Baker, we thrive on challenging projects, and this installation certainly delivered that opportunity. Our client required the rigging, assembly, and installation of four massive 35-ton double drum contact dryers, complete with all accessories. Each dryer would arrive as numerous separate components, presenting a significant logistical puzzle.

The primary challenge lay in staging the many large drums, supports, crates, and bins within an already constrained workspace. To address this, we coordinated with the manufacturer to establish staggered delivery dates—one dryer per week—allowing us to complete each unit's rigging and assembly within a seven-day timeframe before moving to the next installation. This approach demanded peak safety standards and maximum efficiency to meet our client's demanding production schedule.

Precision Installation Requirements

Each of the four dryers was mounted on two massive reinforced concrete support columns, measuring 8 feet high by 4 feet wide. The dryer steam drums rested on substantial support chassis that were fastened and grouted to these columns. The 16-foot-long dryer drums required precise laser alignment, positioned side by side with an exacting 3-millimeter gap maintained along their entire length.

Two large overhead I-beams were specifically designed to support the 18,000-pound dryer drums during installation, functioning essentially as a gantry crane system. Our team utilized two heavy-duty forklifts and pneumatic chain hoists to position the drums onto trolleys, enabling careful movement and precise placement.

Collaborative Engineering Approach

Throughout the project, we maintained close collaboration with the manufacturer's installation engineer, from initial planning through final commissioning. Once the large drums and motors were properly positioned and thoroughly inspected, we energized the drum motors to verify rotation and test performance at various speed levels.

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The installation process continued with the attachment of product collection fenders, product augers, large exhaust canopies, end dam assemblies, scrapers, and extensive product piping, actuators, hardware, and hoses.

Control Systems and Infrastructure
Our rigging team also positioned four large dryer PLC/VFD control panels, each measuring approximately 7 feet high by 8 feet wide, alongside smaller HMI and pneumatic panels for their respective dryers. Additionally, Baker assisted with the removal and reinstallation of platform grating to provide necessary access to both upper and lower sections of the dryers.

Upon substantial completion of the dryer installations, we connected the large product blower and product piping systems between all drum dryers, establishing the pathway for product delivery to the collection area.

Project Success
The manufacturer's engineer was so impressed with the Baker team's performance that he requested our millwrights assist with the detailed completion of the dryers and startup procedures. The client was extremely pleased to begin product testing several days ahead of schedule, demonstrating the success of our coordinated approach and technical expertise.

Building Implosions and Dust Control Innovation

Building implosions draw crowds from hundreds of miles away, showcasing remarkable engineering as structures collapse inward within seconds. However, these spectacular demolitions create significant challenges in urban environments.

The Dust Challenge and Solutions
Unlike gradual dismantling over months, implosions generate massive dust clouds that blanket surrounding areas instantly, creating serious issues for nearby businesses, residents, and the environment. Most demolition projects now use mist cannons and high-pressure water systems to minimize dust by releasing fine water droplets that bind with airborne particles, causing them to settle quickly to the ground.

Innovative Water Curtain Technology
Engineers are developing vertical water cannon systems that create protective barriers around imploding buildings. These cannons must deploy thousands of gallons at extreme heights and pressures within seconds, forming a complete water curtain that captures dust as it escapes. The system uses strategically placed pools with submerged pumps that activate on command, shooting water vertically at precisely timed intervals. Success depends on perfect synchronization—the water curtain must reach maximum coverage exactly as the building collapses.

The Future
As urban demolitions become more common, controlling particulate matter remains crucial. Vertical water cannon technology represents a promising evolution in this field, offering hope for cleaner, safer implosions that protect both communities and the environment.

Safety A Century of Progress: How Construction Safety Has Transformed Our Industry

The construction industry of 1925 was a vastly different—and far more dangerous—place than the worksites we know today. Workers climbed steel beams without harnesses, operated heavy machinery without proper training, and faced daily hazards that would be unthinkable on modern job sites. Over the past 100 years, our industry has undergone a remarkable transformation in safety practices, procedures, and outcomes.

1920s-1940s: The Dangerous Era: Construction work had fatal accident rates of 37 deaths per 100,000 workers annually. Workers had virtually no protective equipment—hard hats weren't standard until the 1930s, and safety harnesses were decades away.

1950s-1960s: Early Awareness: Post-WWII construction boom brought increased safety awareness and standardized equipment like improved hard hats and safety glasses. Fatality rates remained high at 25-30 deaths per 100,000 workers.

1970s-1980s: OSHA Revolution: OSHA's creation in 1970 established federal safety standards with enforcement. Significant improvements in protective equipment and training reduced rates to 15-20 deaths per 100,000 workers.

1990s-2000s: Technology & Training: Technological advances brought lighter equipment and sophisticated fall protection. Companies developed formal safety programs and "safety culture" concepts, dropping fatality rates to 10-12 deaths per 100,000 workers.

2010s-Present: Modern Prevention: Today's sites emphasize prevention through hazard analyses, toolbox talks, and worker empowerment. Technology includes GPS equipment, proximity sensors, wearable devices, and drone inspections.

Key Improvements & Future Progress
These advances have reduced construction fatality rates to 3.5 deaths per 100,000 workers—a 90% improvement from 100 years ago. Modern rigging uses engineered lifting plans and load monitoring. Demolition employs controlled techniques and dust control. General construction benefits from enhanced excavation safety and electrical protocols. The journey toward zero accidents continues with emerging technologies like AI, robotics, and advanced materials, all driven by our commitment to worker safety.

Quality Award Winner

Congratulations to Bryan Simoes this quarter's recipient of the R. Baker & Son Quality Award. This program was established to recognize indIviduals for their outstanding achievements in safety, project execution, and customer satisfaction, and for their continuing dedication to R. Baker & Son's growth and success.

Thank You, Bryan Simoes for a job well done!