



Heavy Duty Screw Feeder
Meters Lime Kiln Dust to
Load Out

Consulting Engineer
Sutton Engineering Technologies,
Inc.
Alabaster, AL

Owner
Major Lime Supplier
Alabama

Heavy Duty Screw Feeder for Metering Lime Kiln Dust at Major Lime Supplier in AL

General Description

One of the largest suppliers of lime, limestone, and clay products to markets in the U.S. and Canada supports many vital industries including chemicals, water treatment, electricity production, iron and steel, agriculture, and building products.

Through the thermal decomposition process in a rotary kiln, limestone produces quicklime and carbon dioxide with dust, known as Lime Kiln Dust (LKD). Most often LKD is sent to landfills as it offers little beneficial use. Alternatively, LKD's chemical makeup of quicklime and inert materials makes it suitable for drying and modifying certain types of soils and for industrial waste stabilization. LKD is commonly stored in silos until it can be hauled away by truck or rail.

The company contracted Sutton Engineering Technologies, Inc. (SET) to oversee a new truck loading project for the disposal of LKD. The project would require a screw feeder to meter LKD from a silo and discharge it to a loading spout to fill trucks. The success of KWS and SET as partners on similar projects and the supply of similar equipment in other parts of the plant by KWS made this collaboration a natural fit.

Design Parameters

Product Type: Lime Kiln Dust (LKD)
Material Density: 85 Lbs. per Cubic Foot
Conveyor System Capacity: 2,824 Cubic Feet per Hour
Duty: Intermittent

KWS Advantages

Over several years of study, the company has proven that the robust design and high quality of KWS equipment has yielded substantial operational cost savings. With prolonged equipment up-time and reduced maintenance costs, the company has documented cost savings of over \$2,000,000.00 with the use of KWS equipment. KWS provides customer-specific enhanced design features on all the company's equipment to ensure high efficiency and sustained reliability.

Special Features

The new KWS screw feeder was designed for the harshest environment and duty of the application. Abrasion resistant steel plate was used for the tubular housing and screw flights for enhanced wear life. The non-split tubular housing completely contains the fine powdered LKD and eliminates any leakage.

The screw feeder was designed with a single-piece variable pitch screw to evenly meter bulk materials from the silo. Per the company's request, the screw was designed to span nearly 24-feet without the use of an intermediate support/hanger bearing. The heavy wall center pipe of the screw was

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KWS Manufacturing
3041 Conveyor Drive
Burleson, Texas 76028

Toll Free: (800) 543-6558
Phone: (817) 295-2247
Fax: (817) 447-8528

www.kwsmfg.com



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was oversized to minimize screw deflection. To bolster the torque rating of the center pipe, KWS designed and machined custom external sleeves for optimal fit and superior performance.

KWS utilized a pedestal trough end to protect the end bearing from contamination. The KWS pedestal trough end is compact and houses the bearing, seal, shaft, and speed sensor. The extended tail shaft is drilled, tapped, and fitted with a speed sensor target to monitor any changes in screw speed. The speed sensor alerts operators to any malfunctions and protects the screw feeder from damage. All rotating parts are guarded with OSHA compliant guards.

Testimonial

"Everything is great. The heavy duty KWS screw feeders runs like a charm!"

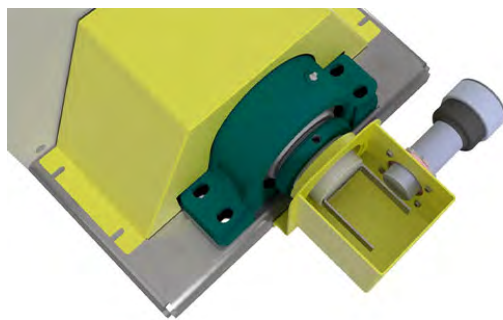
Barry Kornegay, Sr. Project Manager – Sutton Engineering Technologies, Inc.



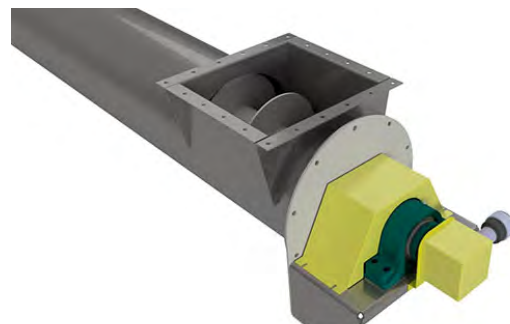
Non-Split Tubular Housing Keeps Lime Kiln
Dust Completely Contained with No Leakage



External Collar on Each End Provides Higher
Torque Rating and Superior Performance



Speed Sensor Detects Any Change in Speed
and Protects Screw Feeder from Damage



KWS Provides Shaft Guards to
Meet OSHA and MSHA Guidelines



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