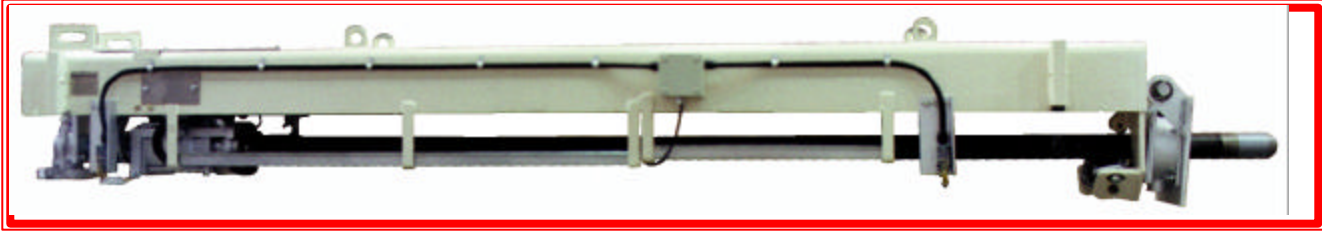


MODEL RKS

LONG RETRACTABLE SOOTBLOWERS



General Description

The Clyde Bergemann Model RKS electric drive Long Retractable sootblower is designed to remove deposits from heating surfaces of fossil fired boilers. These sootblowers are used by the Power Production Industry, Pulp & Paper Industry, Petro-Chemical Industry, Municipalities and boiler applications requiring reliable cleaning. The model RKS sootblower are constructed for dependable operation indoors or outdoors in all climates. This sootblower is capable of travels up to 35 (thirty-five) feet. They can use air, saturated or superheated steam as a cleaning medium and their balanced drive design make them highly versatile for limited space installation locations. The RKS lance tube is a full retract design making it possible to use these sootblowers in hot furnace locations.

Function

The RKS uses a lance tube with two opposed nozzles at its front end for cleaning. A high pressure blowing medium (air or steam) is supplied via the poppet valve, through the feed tube and lance tube to the nozzles. The blowing medium expands and exits the nozzles at supersonic speed forming two blowing jets, which are used for deposit removal. To achieve full cleaning coverage the RKS uses a standard drive option that rotates the lance during insertion and retraction from the furnace.

Complete Line

In addition to the standard RKS, there are several other drive options available for special applications. These variations can be retrofitted to the standard RKS at a later date.

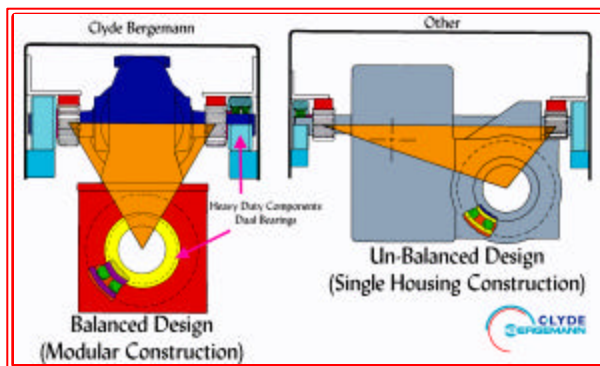
RKP	The Lance can oscillate at various strock angles instead of the 360 deg. complete rotation
RKA	The lance cleans in a non-rotational pattern (straight Line)
RKT	Lance is a non-rotation design with a rake element including multiple nozzles
RKSB	Lance has multiple sets of nozzles & can provide multiples in coverage (partially retractable)

RKS Features

Canopy

The canopy is constructed of 1/4" carbon steel and is designed to provide easy accessibility for periodic maintenance. The gear rack mounts, carriage support rails, front and rear plates and linkage brackets are welded in place and designed to provide maximum support while allowing optimal functionality. The complete canopy is steel shot blasted and coated with zinc primer and an epoxy topcoat.

Balanced Drive



The dual rack-&-pinion drive has been developed using a "Balanced Design" concept. All major components such as the poppet valve, feed tube, traveling carriage and lance tube are symmetrically located on the centerline of the sootblower housing. This "Balanced Design" construction evenly distributes the forces caused by pressurized cleaning medium over the drive train thus minimizing gear, pinion and rack wear.

Traveling Carriage Assembly

The Clyde Bergemann traveling carriage assembly is of a "Modular Design". The gearbox housing is completely separate from the spindle housing. This helps prevent leakage, increase maintainability and improves the operational characteristics of the sootblower.

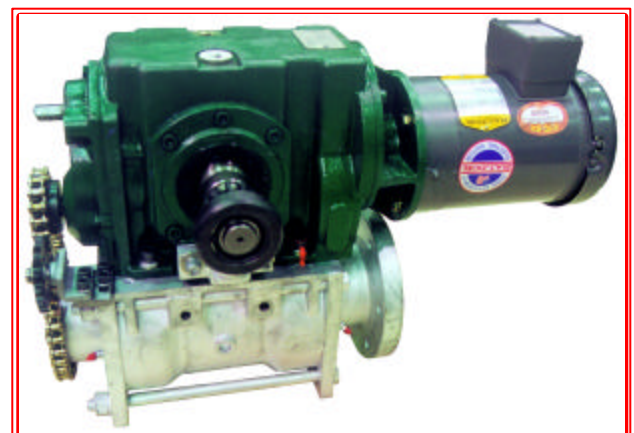
To reduce the amount of radiant heat given off by the feed tube, the gearbox is isolated from the hub assembly. The gearbox contains the self-locking, traversing and rotation gearing and is filled with a special synthetic oil to provide positive lubrication.

The lance hub has been designed to prevent leakage while handling the radiant heat given off by the pressurized cleaning medium traveling through the feed tube. This housing contains the lance hub, which is supported by two oversize bearing assemblies and sealed by two viton seals.

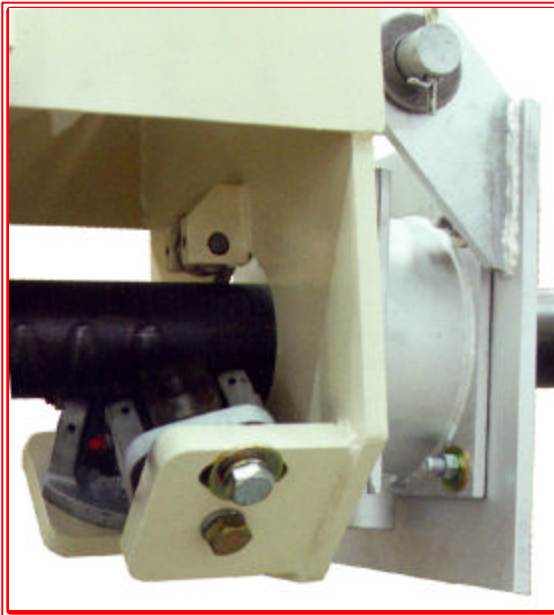
Lance rotation is accomplished through a drive chain and sprocket arrangement mounted on the output shaft of the gearbox and connected to the driven gear mounted on the lance hub. This drive mechanism is mounted externally; therefore, greatly reducing its susceptibility to steam heat. Also, this arrangement provides easy accessibility for maintenance.

The traveling carriage is powered by a 1.5 HP TEFC electric motor. The motor has a class B insulation rating and a service factor of 1.15.

The carriage assembly is supported by two roller assemblies, which provide proper carriage alignment. In the event of a power failure the drive train can be manually driven using an optional pneumatic wrench.

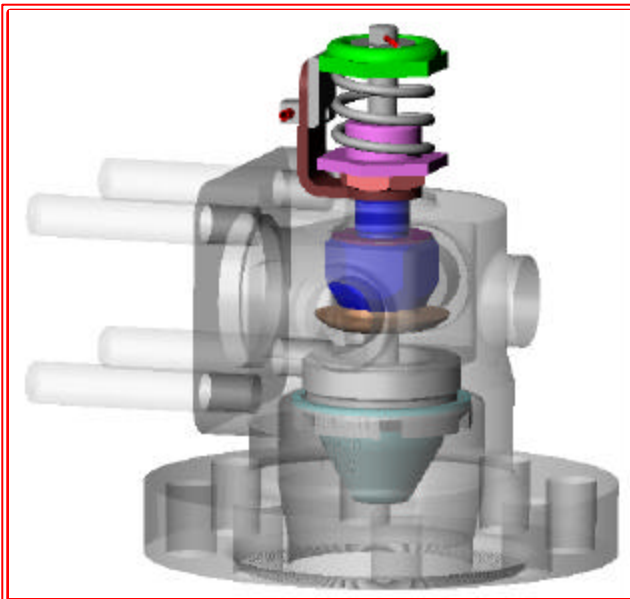


Lance Support Rollers



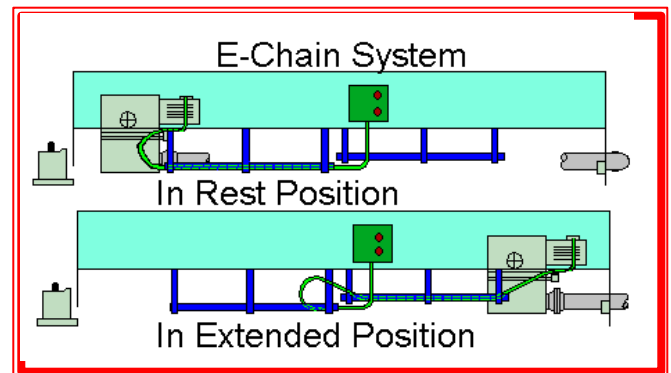
The model RKS front lance support roller assemblies are constructed using dual roller bearings with a hardened roller wheel. The bearings are sealed; however, grease fittings are provided for periodic greasing due to extreme heat operating conditions. The roller brackets are offset so that the rollers can track on a perfect angle to the lance. The roller assemblies can be easily adjustable if required.

Poppet Valve



The poppet valve is a mechanical design and has a removable seat and disc assembly for ease of repair. A pressure control orifice is provided so the blowing pressure is adjusted independent from the valve opening. The pressure adjustment is made external to the poppet valve and while the sootblower is in operation. This allows for very precise adjustments, improved safety and quick adjustment.

Unique E-Chain Assembly



The unique "E-Chain" power supply assembly provides electrical power from the stationary junction box to the traveling carriage assembly. This system has proven to be dependable, low maintenance and durable in the most severe operating conditions.

Lance & Feed Tube Assembly

The feed tube is constructed using surface ground 304 SS material. This component uses an engineered end plug to connect to the poppet valve; thus, eliminating feed tube thread damage problems and improving maintainability.

The lance tube is 3.5" chrome moly tubing with SS head assembly. The flange is a forged & machined one-piece design made integral with the lance for durability and safety. Nozzles can be high impact or flush ground. The lance is indexed during travel to allow for an infinite number of cleaning helix paths improving cleaning coverage and reducing erosion.



Standard Specifications

Standard Specifications	
Drive / Electrical	
Motor	1.5 HP, NEMA 145TC, TEFC, 480V/3ph/60Hz
Travel	Up to 35 feet
Traveling Speed	55 / 85 / 100 inches per minute
Helix	4 / 4 / 3.8 inch centers
Limit Switches	Mechanical, internal wiring with SO cord
Terminal Box	NEMA 4 epoxy painted, push buttons
Poppet Valve	
Rating	ANSI 600 or 900 WC6
Companion Flange	ANSI 600 or 900 , 3 inch weldneck, A106
Pressure Control	Internal
Vent Valve Connection	1 1/4 inch NPT male
Tubing	
Feed Tube	2 3/8 OD A269, 304 SS, 26-32 Rc, ground finish
Feed Tube Packing	Pure graphite with braided end rings
Lance Tube	3 1/2 or 4 inch OD, A213, T11 with nozzle 310 SS & venturis
Housing	
1/4 inch thick canopy, organic zinc primer plus epoxy topcoat	
Wallbox	
Negative pressure	
Options	
Drive	Variable speed
Wallbox	Positive pressure with purge piping
Poppet Valve	Externally adjustable
Lance Tube	Special material, droop correction, center support assembly
Feed Tube	Chrome plated, center support assembly
Housing	Hot dip galvanized
Packing	Live Load Packing
Limit Switches	Proximity switches