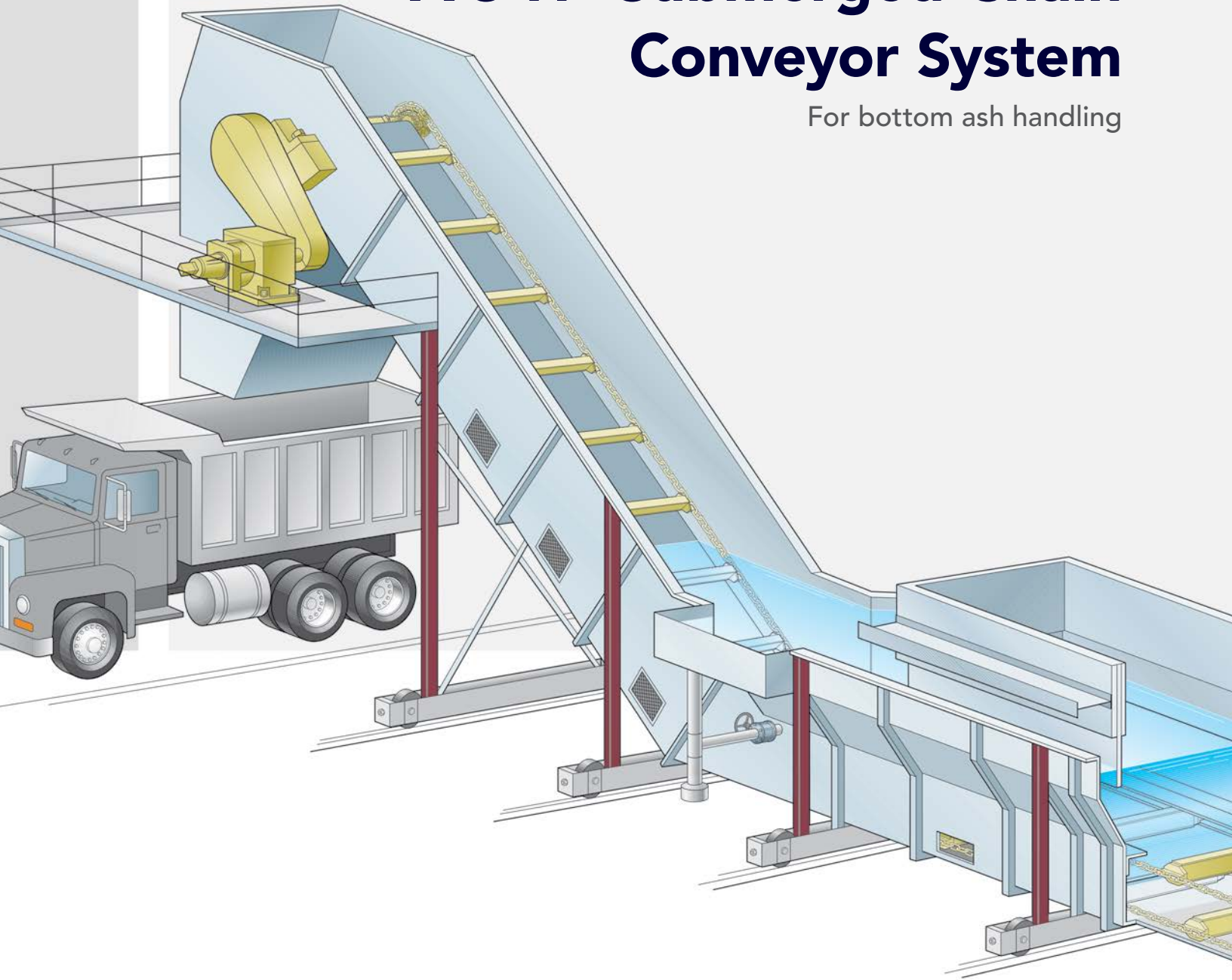


A-S-H[®] Submerged Chain Conveyor System

For bottom ash handling



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A-S-H® Submerged Chain Conveyor System

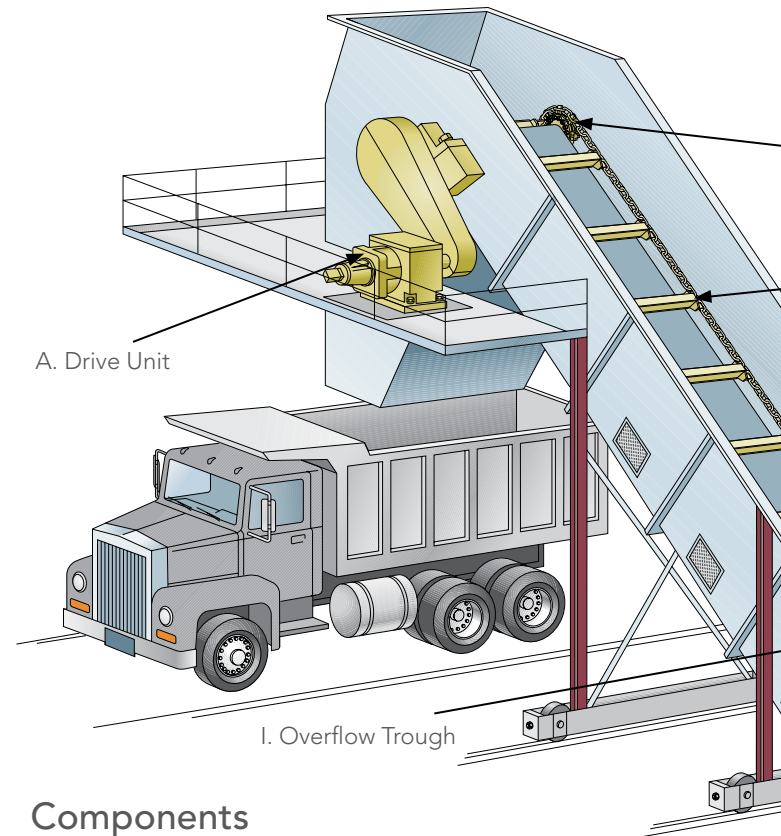
The Allen-Sherman-Hoff® submerged chain conveyor (SCC) system, available from Babcock & Wilcox (B&W), efficiently removes bottom ash from boilers burning solid fuels such as coal, bark, wood or refuse. For nearly a century, Allen-Sherman-Hoff custom designed material handling systems have successfully met the demanding requirements of power generating facilities operating worldwide.

Superior System Operation

The Allen-Sherman-Hoff submerged chain conveyor system easily and efficiently handles bottom ash, mill rejects and economizer ash for immediate transport or disposal. This simple design eliminates or reduces the quantity of many typical bottom ash system components such as pumps, control valves, refractory, pipe and fittings. No dewatering bins or storage ponds are needed.

In bottom ash applications, the SCC system receives the hot ash slag and clinkers falling from the boiler through a transition chute to the water-filled trough. The transition chute provides an air-tight seal between the boiler and the conveyor. The water quenches and cools the hot ash and slag, shattering some of the large clinkers as a result of thermal shock. The ash then settles to the bottom of the conveyor, and is efficiently conveyed to an inclined section of the system for dewatering, producing a manageable product. At the top of the incline, a discharge chute directs the ash into a storage bin or truck.

The Allen-Sherman-Hoff SCC system is also ideal for handling mill rejects and economizer ash. Mill rejects are typically stored in a hopper within close proximity to the mills and then periodically sluiced hydraulically to the submerged conveyor where they are conveyed and dewatered with bottom ash. Economizer ash may be conveyed either mechanically or hydraulically to the submerged chain conveyor as well.



Components

A. Drive Unit

Units operate using hydraulic or electric drive configurations and are available in fixed and variable speeds. A shaft mounted reducer driven by a hydraulic drive is most commonly used. This type of drive offers variable speed with fewer transmission components to maintain.

B. Spray Cleaning Nozzles

Nozzles spray water at the top of the conveyor incline to clean the chain prior to engaging drive sprockets. This reduces chain and sprocket wear, thereby extending the life of the chain.

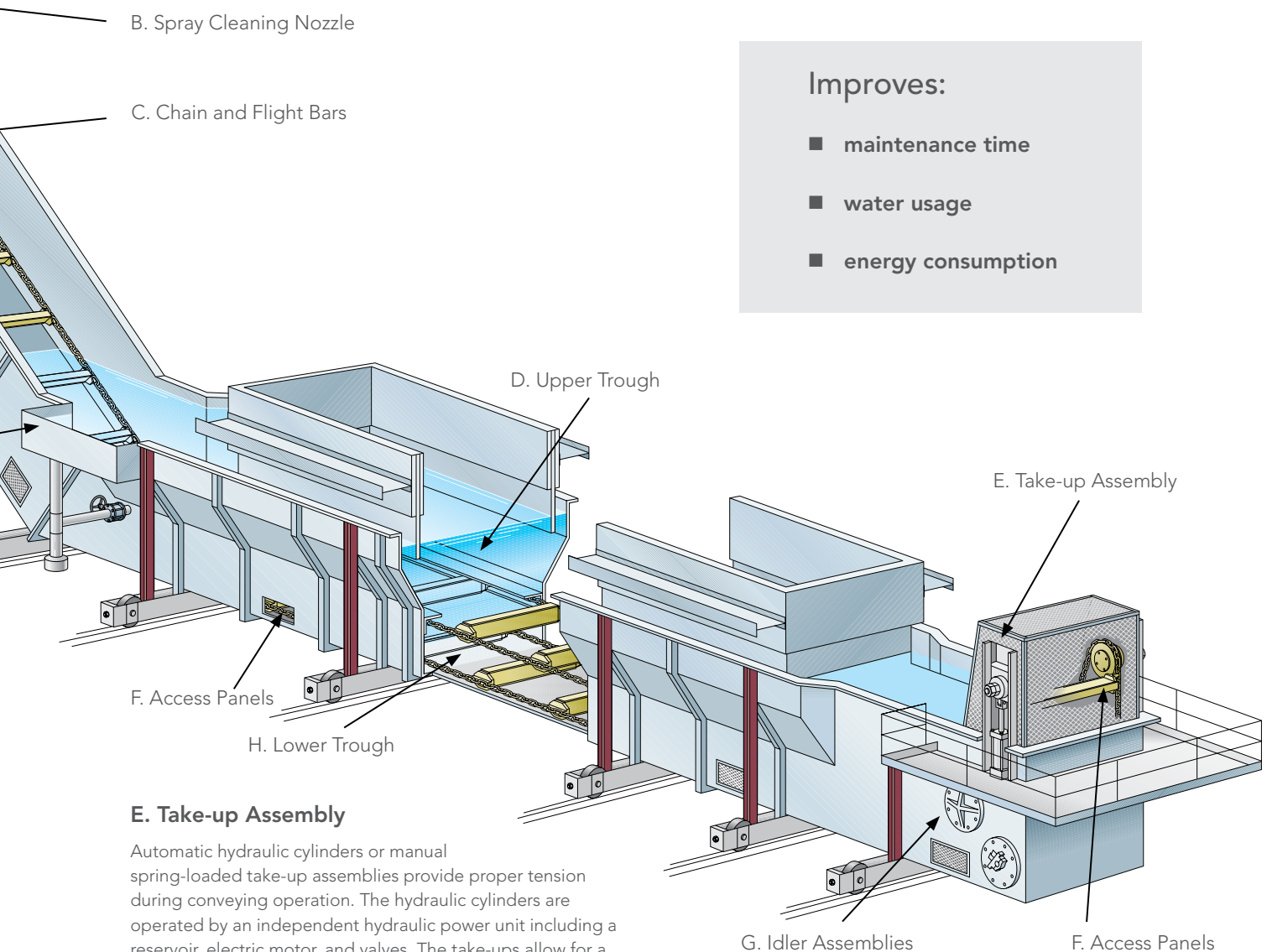
C. Chain and Flight Bars

Round link ship chain is selected to meet the specifications for each application. Flight bars are constructed to handle the impact of falling slag and include abrasion-resistant wear flats to extend flight life.

D. Upper Trough

The upper trough is constructed of 0.375 in. (10 mm) minimum carbon steel, stiffened to withstand hydraulic forces and falling slag impact. Typically, the bottom of the trough sections are lined with renewable 1 in. (25 mm) AR400 abrasion-resistant steel for longer wear life.

A-S-H® Submerged Chain Conveyor System Cross-section



Improves:

- maintenance time
- water usage
- energy consumption

E. Take-up Assembly

Automatic hydraulic cylinders or manual spring-loaded take-up assemblies provide proper tension during conveying operation. The hydraulic cylinders are operated by an independent hydraulic power unit including a reservoir, electric motor, and valves. The take-ups allow for a minimum of 12 in. (305 mm) of vertical travel and are provided with limit switches to indicate end-of-travel.

F. Access Panels

Removable expanded metal panels on the dry return run provide accessibility for conveyor chain and flight bar inspection or replacement.

G. Idler Assemblies

Cantilevered-type idler assemblies are flange mounted for easy removal and maintenance. Anti-friction bearings can be greased from outside the trough.

H. Lower Trough

The lower trough houses the return run chain and flights and extends the entire length of the conveyor. The return row is lined with AR plate or basalt.

I. Overflow Trough

An overflow trough maintains the proper water level and can be equipped with a parallel plate clarifier to minimize the amount of suspended particulate leaving the conveyor.



■ Features

The Allen-Sherman-Hoff SCC system is designed with the following features for optimum performance and efficiency:

- Variable speed drive to match boiler load
- Roll-out design for easy access to boiler throat
- Ash is conveyed up the conveyor incline for dewatering providing an end product ready for sale or disposal
- Take-up assembly provides proper tension during conveying operation
- Ideal for handling bottom ash, mill rejects and economizer ash for immediate transport or disposal
- Removable back panel on dry-side return for ease of inspection and maintenance without emptying or moving the unit

■ Benefits

Outperforms traditional hydraulic bottom ash systems:

- Eliminates storage ponds
- Removes material using less power
- Uses less water to operate
- Automatic ash dewatering
- Fits low headroom spaces
- Less maintenance with fewer components
- Easy access for inspection or "in-place" maintenance
- Produces a more manageable product for sale or disposal

The Babcock & Wilcox Company

1200 E Market Street, Suite 650
Akron, Ohio, U.S.A. 44305
Phone: +1 330.753.4511

www.babcock.com    

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Babcock & Wilcox supplies Diamond Power boiler cleaning and Allen-Sherman-Hoff ash handling equipment and systems.

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