DSVS® Rotating Classifier

Improves pulverizer efficiency and operational flexibility

Reliable coal pulverizer performance throughout the load range is essential for operation of modern pulverized coal-fired electric generating stations. An effective pulverizer must be capable of handling a wide range of coals with varying grindabilities, moisture levels and ash constituents.

To meet this operational challenge, The Babcock & Wilcox Company (B&W) offers the DSVS® rotating classifier for vertical spindle, air swept pulverizers. The DSVS classifier combines the best features of our stationary classifier with the improved separation capability of the rotating classifier. It can be supplied as original equipment on new pulverizers or retrofit into an existing pulverizer.

A major feature of the DSVS classifier is improved particle separation, significantly increasing the amount of coarser particles that are prime contributors to unburned carbon in the fly ash. The DSVS classifier also results in less pressure loss than static classifiers. This reduction in system resistance may result in fan power savings, or may be utilized for higher fineness or additional coal flow.

The DSVS classifier combines the benefits of the traditional B&W stationary and rotating classifiers to achieve optimum fineness.

Optimized burner and boiler performance

DSVS classifier design benefits include:

- Improves combustion efficiency by reducing unburned carbon loss and improves flame stability with low volatile coal
- Ensures flexibility to control product fineness to accommodate either short- or long-term changes in coal characteristics through a separately controlled, variable speed drive system
- Promotes earlier devolitization of the smaller size coal particles, enhancing NO_x reduction and control
- Promotes earlier coal combustion stabilization during cold-boiler startup and maintains burner stability at lower loads, saving premium fuels (oil/gas)
- Can be installed on existing pulverizers

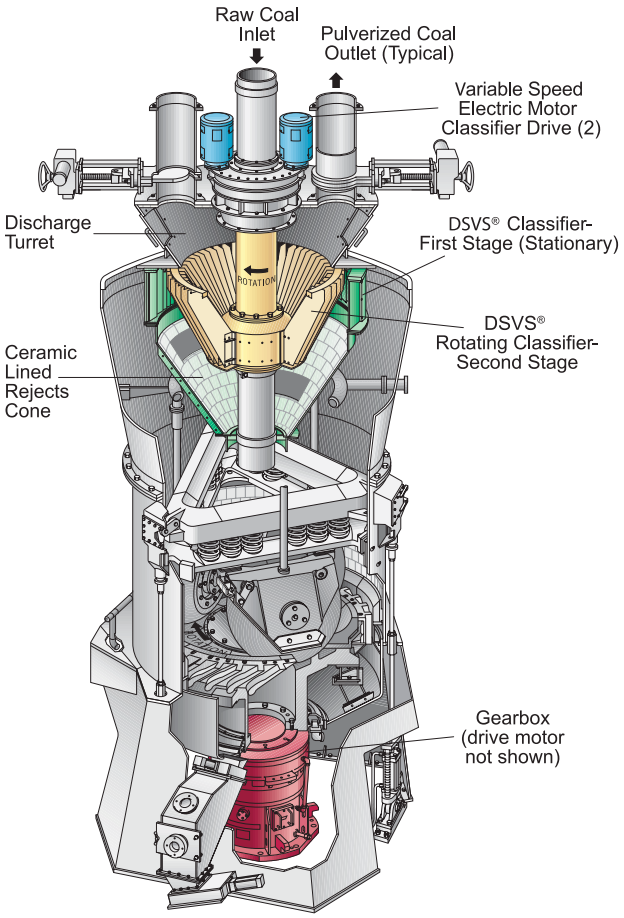
Reduced unburned carbon

Restrictions on NO_x and SO_2 air emissions have become more stringent in recent years. As a result of these regulations, utilities may find it necessary to change the type of coal being fired, improve the quality of the coal product, or upgrade combustion equipment. B&W can help you make these changes.

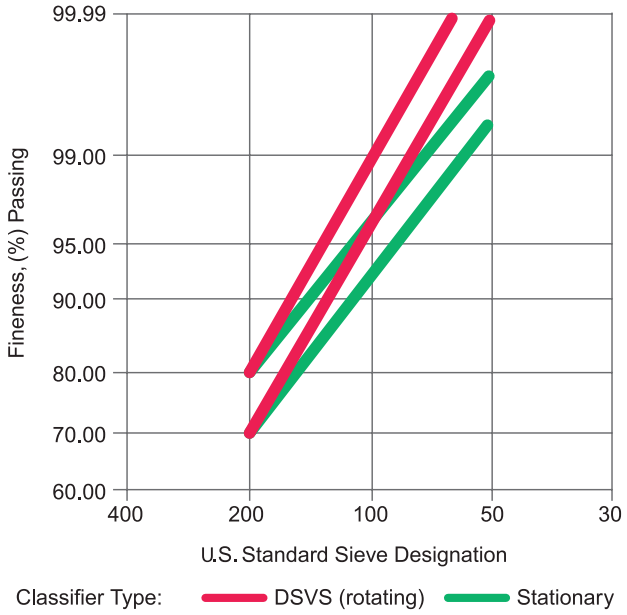
Improved fineness and reduced unburned carbon

Our DSVS classifier greatly reduces the amount of coarser particles, such as those greater than 50 and 100 mesh, that leave the pulverizer for a given 200 mesh fineness. These particles are major contributors to unburned carbon loss, a possible side effect of staged low NO_x combustion systems. For a pulverizer equipped with a traditional stationary classifier, the 200 mesh fineness might need to be increased to 80% to achieve the same excellent 50 and 100 mesh fineness that the DSVS can provide at 70% passing 200 mesh.

A 10% increase in 200 mesh fineness reduces capacity by as much as 20% for a pulverizer equipped with a stationary classifier. Pulverizers equipped with DSVS classifiers can maintain pre-retrofit unburned carbon levels, and excellent low NO_x burner performance, at 70% passing 200 mesh fineness. For optimal low NO_x burner performance and further unburned carbon reduction, fineness can be increased from 70 to 80% or higher through 200 mesh with much less capacity reduction.



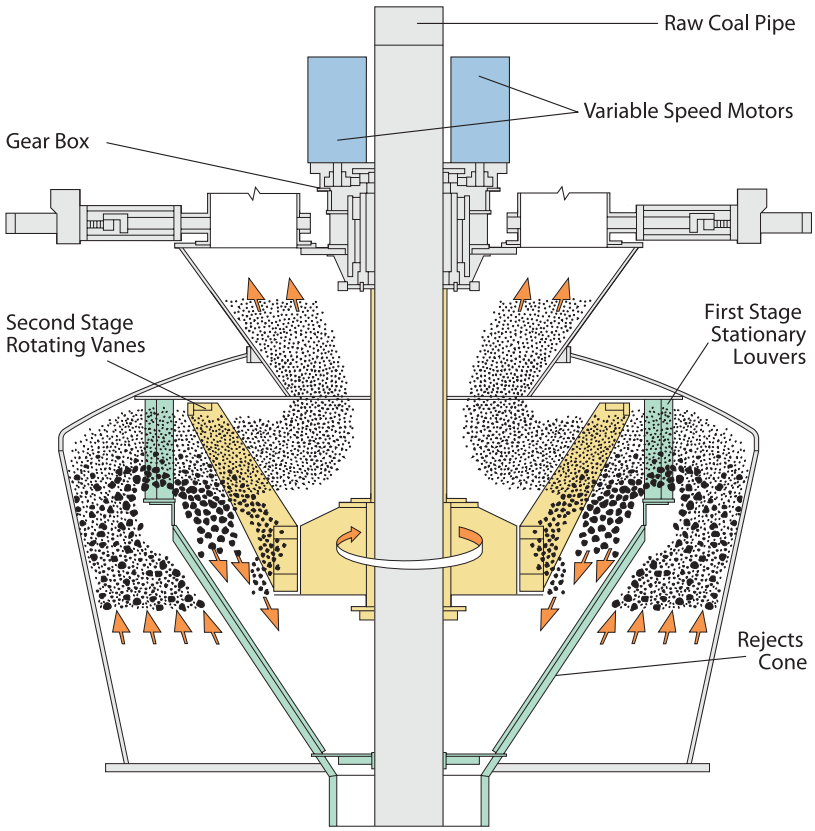
When retrofitting roll wheel pulverizers with our compact DSVS rotating classifier, no modifications to the height of the upper mill housing are required, regardless of the original equipment manufacturer.



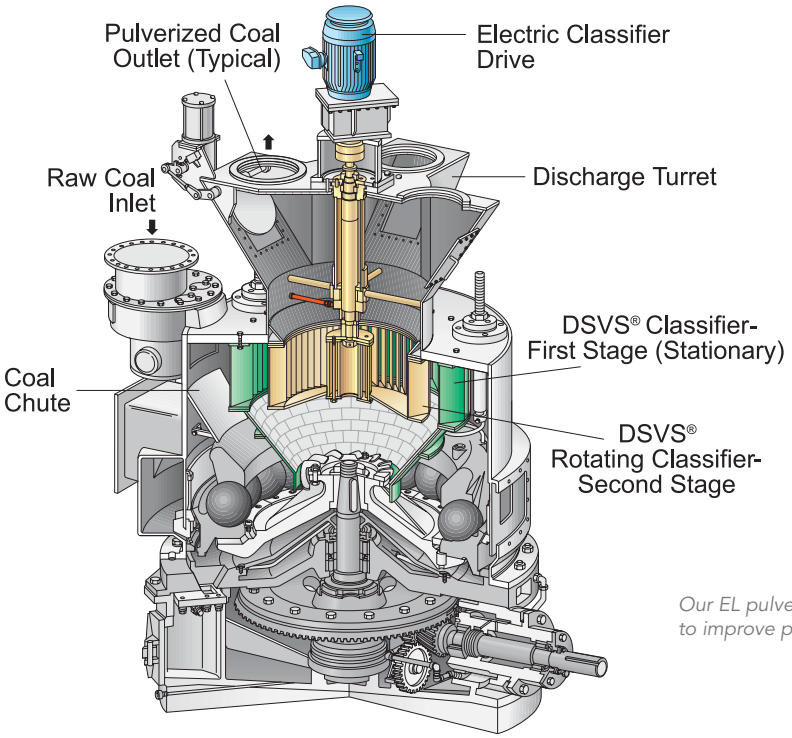
The improved particle separation feature of B&W's DSVS classifier significantly reduces the amount of coarser particles that are prime contributors to unburned carbon.

Dual-stage process promotes flow efficiency

B&W's DSVS classifier uses a two-stage process to ensure more efficient particle size classification. The first stage (stationary louvers and cone) directs the flow through the louver assembly at the top of the pulverizer, accomplishes preliminary cyclonic separation of the coarsest particles, and prevents course particle re-entrainment. The second stage (rotating vanes) creates a tortuous air flow path through which only the desired fine particles remain entrained. The coarser particles are impacted and tangentially rejected by the rotating vanes, and very few fine particles are unnecessarily recirculated. This controlled flow path results in less classifier pressure drop. The reduced fine particle recirculation decreases mill power and grinding zone pressure drop.



B&W 's DSVS rotating classifier uses a two-stage process to promote flow efficiency and to accomplish fineness classification.



Our EL pulverizers can be retrofitted with the DSVS classifier to improve pulverizer performance and fineness.

Improved fineness control

The DSVS rotating classifier is another product from B&W which can improve your pulverizer's performance. The DSVS classifier accommodates flexibility in your choice of coals and provides excellent fineness control with improved particle size distribution having less coarse end material. The improved fineness control reduces unburned carbon loss, which is especially beneficial in low NO_x burner retrofits.

Full-scope pulverizer solutions

As an industry leader in pulverizer engineering, manufacturing and operating experience, B&W continually develops new product and design enhancements. Some of these include:

- Advanced Cera-VAM® ceramic lining for erosion protection
- Low pressure drop rotating throat for improved performance and longer wear life
- On-line Auto-Spring™ pulverizer loading systems allowing the grinding force to follow coal feed rates for smooth operation at lower loads
- Asymmetric WEARESISTOR™ roll wheel tires for extended wear life
- Gear drive remanufacturing program to return equipment to as-new condition
- On-Track™ EL pulverizer grinding element package which greatly reduces premature grinding zone problems such as shaft or spring failure, and ring chipping or cracking
- Larger LongLife™ EL pulverizer grinding balls for added wear material

We provide assistance in selecting and retrofitting your equipment to help meet federal and local environ-mental regulations, while maintaining pul-verizer performance. With more than 3,000 coal pulverizers installed worldwide, turn to B&W – a proven leader in steam generation.

B&W offers a wide range of pulverizer upgrades, parts and services to improve overall performance.

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Established in 1867, Babcock & Wilcox is a global leader in advanced energy and environmental technologies and services for the power, industrial and renewable markets.

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