For cleaner coal at lower cost – Modular Coal Preparation Plant

Modular Coal Preparation Plant
Classification, cleaning and dewatering

we make processes work
Every year around 10 million tons of raw coal are freed of impurities with the help of Schenck Process coal washing plants – our contribution to environmentally friendly energy production.

Schenck Process Modular Coal Preparation Plants (MCPs) help you realize high process efficiency with low investment thanks to their flexible design, modular construction, short project implementation time, scalable equipment and easy maintenance.

We cater for the requirements of various coal categories, including steam, coking and anthracitic coal.

We have successfully proven and met the requirements of washery capacities ranging from 0.6 million tons/year to 31 million tons/year.

Schenck Process MCPP offers a great variety of design techniques, meeting the requirements of multiple products and covering all advanced coal preparation techniques. These include coarse coal bath heavy medium separation, heavy medium cyclone fine coal separation, coarse slurry separation and fine slurry flotation.
Maximizing uptime for complete peace of mind

In coal preparation, you simply cannot afford downtime and subsequent lost output. Therefore our Process Advanced Service System (PASS) gives you complete peace of mind with a comprehensive after-sales service covering repair, maintenance, management and support. All customized to your specific requirements.

The framework of our PASS program is designed with you in mind. With the guidance of our experienced after-sales team, you can create PASS packages comprising original spare and wear parts, various services and high quality components to meet your needs.

PASS is based on a modular principle – you can pick and choose any individual PASS product or a combination of products. Four categories help to easily find appropriate PASS products.

We will happily provide you with individual consultation, either as part of a PASS contract or on individual enquiry.

Whatever Full Service means to you – let’s create it together!
The Schenck Process MCPP solution is modular for a reason: it scales up to match your changing production requirements. And it combines a variety of approaches to maximize quality and throughput:

- Advanced techniques for heavy medium (HM) and fine coals separation
- Flexible and comprehensive process to suit the application and the equipment modules
- Highly scalable
- Delivers stable product quality
- Highly efficient preparation using heavy medium separation
- Compact footprint
- Professional after-sales service
<table>
<thead>
<tr>
<th>CPP Name</th>
<th>Type</th>
<th>Capacity</th>
<th>Processing</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia KEL CPP</td>
<td>steam coal CPP</td>
<td>5.0 million tons/year</td>
<td>two product HM cyclone, slime spirals</td>
<td>no exterior structure is required considering local climate conditions and to minimize cost</td>
</tr>
<tr>
<td>Buertai CPP</td>
<td>steam coal CPP</td>
<td>31.0 million tons/year</td>
<td>coarse coal HM bath, fine coal two product HM cyclone, coarse slimes TBS and tailings slurry filtering</td>
<td>the largest CPP in the world</td>
</tr>
<tr>
<td>Shigetai CPP</td>
<td>steam coal CPP</td>
<td>12.0 million tons/year</td>
<td>coarse coal HM bath, fine coal two product HM cyclone, fine coal spiral separators and tailings slurry filtering</td>
<td>Won the “Model Project Award” for engineering excellence</td>
</tr>
<tr>
<td>Liu Jiakou CPP</td>
<td>steam coal CPP</td>
<td>5.0 million tons/year</td>
<td>two product HM cyclone primary and secondary wash, coarse slimes spirals and fine slimes filtering</td>
<td>Largest single system HM cyclone module (1500THP)</td>
</tr>
<tr>
<td>Shaqu CPP</td>
<td>coking coal CPP</td>
<td>first phase 3.0 million tons/year; second phase 6.0 million tons/year</td>
<td>raw coal secondary desliming two product HM cyclone primary and secondary wash, flotation, hyperbaric filtering and tailings filtering</td>
<td>the world's largest coking coal CPP module</td>
</tr>
<tr>
<td>Sihe CPP</td>
<td>anthracite coal CPP</td>
<td>15.0 million tons/year</td>
<td>coarse coal HM bath, coarse slimes recovery and fine slimes filtering</td>
<td>the world's largest anthracite CPP</td>
</tr>
</tbody>
</table>
INVESTMENT

**Reduced capital costs**
Schenck MCPP costs between 10-20% less than traditional preparation plants using similar equipment

**Advanced design**
It is the advanced design concept, proven design procedure that reduce the cost of construction and production

**Highly efficient preparation**
Heavy medium preparation efficiency is up to 98% while recycling efficiency is 3-5% higher than jigs

PROCESSING

**Advanced techniques**
Heavy medium and fine coal separation processing

**Flexible and comprehensive process**
Arrange the MCPP to suit the process and equipment modules according to the different requirement of thermal, coking and anthracitic coal

**Low energy & water consumption**
The power consumption of a steam coal plant will be less than 5 kWh/t, while medium consumption is less than 1.0 kg/t, and water consumption is less than 100 l/t.

Application example:

**Coal preparation plant**
Scalability
The flexible design of Schenck Process MCPP means you can add modules to improve the feed system or preparation process based on changing coal quality conditions.

CONSTRUCTION

Simple basic treatment
200 mm – 300 mm concrete

Shorter project construction time
From fabrication in the workshop to erection at site, the total project period typically takes 6–9 months from contract signing to operation.

EQUIPMENT

Compact MCPP footprint size
Optimal and compact design, allowing our plant to reduce space requirements by 50 % compared to conventional washery plants of the same capacity.

High performance
Advanced design equipment, with low noise, low maintenance requirements and optimal performance.

Stable product quality
The separation fluctuation range is less than 0.005 kg/L, accurate separation.

Automatic operation
Only requires 2–3 operators per shift.
Individual solutions for the most extreme conditions

Coal mining and coal preparation requires technology and materials capable of withstanding the most extreme conditions.

Schenck Process solutions prevail where others give up. Our products are durable, indestructible and extremely reliable under the most difficult conditions.

LinaClass® SLG/SLK/SLS
Linear vibrating screens
- Widths up to 4,500 mm
- Lengths up to 11,500 mm
- DF exciters
- Single, double and triple deck designs

LinaClass® SLO
Banana screens
- Multi-slope designs for the highest fines recovery
- Widths up to 4,500 mm
- Lengths up to 10,800 mm
- Reliable DF exciters
- Single and double deck designs

LinaClass®
De-watering screen
- Reverse incline or reverse banana style
- DF exciters or vibrator motor driven
- Widths up to 3.0m (10 ft)
- Lengths up to 8.0m (26 ft)
- High capacities for a wide range of materials
Screen panels
- Panels made from highly wear-resistant polyurethane, system panels and steel panels
- Maximum dimensional accuracy through mechanical rework
- Shore hardnesses of 55 to 90 Shore A

DF exciters
- Economic and powerful exciter for high performance
- Long service life and extremely calm operation
- Minimum maintenance requirements
- Optimum, application-orientated graduation of exciters
- Low operation noise level
- 98% availability
- Ideal for use in continuous operation

Vibrating feeder
- Straight or diverging pan
- Directed-force exciters
- Reliable and proven designs
- Several liner material available
**Centrifuge**
- Raw material acquisition via separation
- Twin preload bearing arrangement
- Multiple centrate discharge chutes
- Split inlet chute
- Shaft assembly extraction system
- Average feed moisture 18-25%
- Average product moisture 5-9%
- Feed rates up to 500t/h possible

**Fine Coal Slurry Separator**
- Raw Coal Processing
- Efficient alternative for fine coal processing
- Low cost plant capacity upgrade
- Spiral replacement
- Spiral Product Upgrading
- Increase plant yield by producing a lower ash fines product
- Froth Flotation Tailings Retreatment
- Recover fine coal from flotation tailings

**Magnetic Separator**
- Process ore pulp both magnetite and non-magnetic
- Realize magnetite recovery in heavy media circuits
- Achieve recycling of heavy medium by utilizing ferromagnetism of strong magnets to attract away the magnetic material and recover them
MULTIRAIL® TrainLoadOut
- Dynamic weighing of rail vehicles
- Increased average wagon load
- Optimised loading performance – no overload
- Improved rail logistics efficiency
- Management of roll back and data transmission
- FulFiller® W train loader interface
- Calculating the front/rear and right/left load distribution in the wagon

FulFiller® W
- Train loading system
- Feed rate up to 6,000 t/h for coal and up to 12,000 t/h for iron ore
- Suitable also for other bulk materials
- Turn-key supply
- High process safety, availability and operational reliability

Heavy Medium Vessel
- Feed size: 200~6 mm (Max. size <300 mm)
- Conveyor flight width: 1372 mm (54”)
- Overflow weir width: 7315 mm (24”)
- Tailor made to your need
The Schenck Process Group is a global market leader in
industrial weighing and feeding technology // screening and separation systems for bulk materials // dust collection and air filtration technology // pneumatic and mechanical conveying solutions // automation and diagnostic technology