

AGC CYLINDER TESTING AND REPAIR

Ensures reliable performance

Hydraulic Automatic Gauge Control (AGC) cylinders are a critical component on rolling mills. These sophisticated cylinder systems automatically adjust the roll gap to provide accurate product gauge control. Cylinder failures can shut a mill down, and cylinders that are not operating properly can adversely impact strip or bar quality.

Preventive maintenance, precision repair and accurate testing are the key to ensure AGC cylinder performance is reliable and consistently yields tight product tolerances for rolling precision.

In order to evaluate, repair and accurately test AGC cylinders, SMS group has developed a comprehensive cylinder test and repair center in our Washington, PA facility. Equipped with all the specialized equipment needed for quality cylinder repairs and one of the largest computerized test stands in North America, we can repair and test large AGC cylinders from all manufacturers in our repair center.

Repairs of SMS group cylinders benefit from our access to SMS Siemag and SMS Meer's resources and engineering know-how. All cylinder repairs benefit from our extensive experience and expertise maintaining metals industry equipment and our technical resources, skilled technicians and stringent repair procedures.



▲ With one of the largest computerized test stands in North America, we can test AGC cylinders from all manufacturers up to 66 inches wide and 57 inches high

Thorough documented inspection and testing

To benchmark performance and identify performance issues, our trained technicians perform a comprehensive incoming inspection prior to disassembly.

In addition, to accurately assess operational performance, cylinders are tested against OEM specifications and for oil leakage throughout their stroke, pressure and load range on our computerized test stand.

Cylinders are then carefully disassembled, cleaned and inspected. Our thorough diagnostic inspection can include non-destructive testing, for example ultrasonic or x-ray, to reveal issues that might not be discovered with a visual inspection.

All test and inspection results are carefully documented. An integral part of our repair process, we provide a complete diagnostic report including any concerns about operational issues and process damage our inspection may have revealed.



▲ Documented test results and repair history are maintained in our facility

Expert repair

Our experienced technicians repair the cylinder, piston, extension rod, springs and seals to restore the cylinder to OEM specifications and dimensions. First-rate equipment that can maintain tight AGC cylinder tolerances and stringent reassembly procedures ensure the cylinder will return to your mill in peak operating condition and perform reliably.

Testing and performance

Using our in-house test stand that can generate up to 10,000 psi, repaired cylinders are pressure tested and cylinder stroke is measured for displacement and parallelism. With state-of-the-art computer controls to ensure accurate test results, it can handle cylinders up to 66 inches wide and 57 inches high and has a 5,000 short-tons-of-force capacity.

The stand's PC-based data acquisition system records important performance parameters, such as pressure, flow and displacement, and provides customized reports including leak tests; stroke parallelism; response characteristics; and static and dynamic friction (aka stiction) values.

All test results are documented and a detailed repair history is maintained at our facility to identify operational and design issues and provide preventative maintenance tracking to improve cylinder reliability.

We are a fully certified ISO 9001 company that adheres to strict quality standards throughout the repair and testing process. Precise repair, stringent standards and



▲ Because the test stand has state-of-the-art computer controls, we can accurately and reliably test large AGC cylinders against their OEM specifications

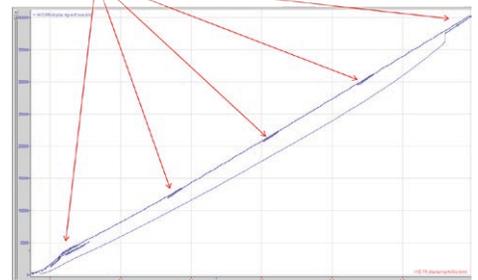
thorough and accurate testing ensures your cylinder will perform reliably in your rolling mill, downtime will be minimized and you get excellent return on your repair investment.

Comprehensive services

Our experienced technicians can provide on-site support for the removal and installation of all process critical cylinders; provide laser alignment services and emergency break down services. They can also evaluate hydraulic gauge control operation, test fluid cleanliness and perform complete multi-point inspections.

With state-of-the-art analytical diagnostic instruments, our knowledgeable field service team can analyze your operating and maintenance conditions and develop a maintenance plan to improve cylinder performance and reliability and reduce downtime.

▼ Friction Test - 5 times from minimum to maximum cylinder force



Using the vast OEM engineering and design resources of the SMS group, we can also upgrade your existing cylinder design to improve its performance and reliability.

To learn more about SMS group's cylinder repair and testing services and how they can help you maintain rolling precision in your mill, produce world-class products and improve your profitability, call +1-412-231-1200.

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