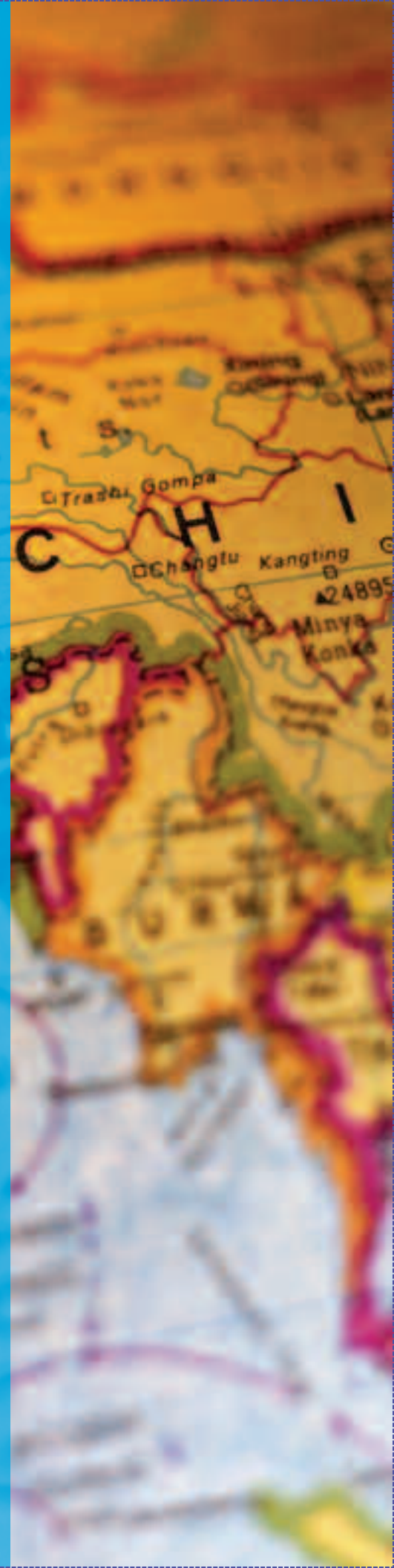




# GOLDLink®

*Your Connection to Predictive  
Maintenance*



# GOLDLink<sup>®</sup> from

## Brooks' Commitment to Your Success

Brooks Automation Global Customer Support (GCS) is committed to your success. Our goal is not to just meet your expectations, but to exceed them in all areas of responsiveness. Our commitment is backed by our around the clock, around the world Guaranteed Up-Time Support (GUTS<sup>®</sup>) support line; your link to our powerful global infrastructure.

### *What is GOLDLink<sup>®</sup>?*

Each year fabs waste time and money dealing with unscheduled downtime. The result is poor process yields and tool availability. Because of this, more and more fabs are taking a proactive approach to minimize downtime. In order to truly minimize downtime, you need to change your support model to a proactive approach. In addition, you would have to employ around the clock coverage just to monitor and understand the failure signatures of components when they are about to fail. But this does not make economic sense to allocate numerous and costly personnel just to this critical monitoring responsibility. That is why we developed GOLDLink.

GOLDLink is the e-Diagnostics component of our family of TrueBlue<sup>®</sup> Service Agreements. GOLDLink is a predictive e-Diagnostic system that continuously monitors the health of your system components. With the help of GOLDLink we are able to optimize component performance while proactively predicting with certainty, component failures. This proactive support approach dramatically reduces unscheduled downtime.

GOLDLink and TrueBlue help you go from reactive services to predictive and proactive support. It is your around the clock task force; a virtual presence in your fab. In the simplest terms, it means when you go home, we do not.



# Brooks Automation

## Why does it matter?

### *What you don't know really can hurt you*

Unscheduled downtime translates into lost production and scrapped wafers, which results in lost profit margins. Sometimes what you don't know can hurt you. Knowing there is an issue before your system is beyond correction is not only being predictive, it is a business advantage. This predictive approach to maintenance turns unscheduled downtime into scheduled downtime.

For older fabs, where unscheduled downtime is a growing concern due to the age of the systems, or for fabs with resource limitations, GOLDLink® is the virtual support needed to maintain a competitive advantage.

### *Too much of a good thing can also hurt you*

Today some fabs operate in a reactive “run-to-fail” mode. This method can be very effective for non-mission critical components however; mission critical components tend to fail during valuable production time. The result is unscheduled downtime. On the other hand, fabs that are allowed to operate in a preventive “replace-in-case” mode, will minimize unscheduled downtime but at the cost of replacing good components.

Over the course of a year, there are hundreds to thousands of hours spent on scheduled or preventative maintenance activities to keep the systems running smoothly. Although this is considered “planned” downtime and is helpful to your fab, there is a significant opportunity for improvement. With GOLDLink's proactive “just-in-time” capability, you can do an even better job of synchronizing corrective actions within scheduled “PM” windows. This will not only decrease unscheduled downtime, but with our TrueBlue® Service Agreements we will also optimize your scheduled downtime by ensuring that you have the right component on site when you need them.

Additional savings can be realized by minimizing cycle times. This “discovered” capacity certainly adds up. Replace wasteful “replace-in-case” with efficient “just-in-time”. The same predictive methodology is used to optimize scheduled maintenance programs. This enables you to plan ahead to combine service visits as well as minimize inventory by extending the useful life of your components.

# Powerful Information just one click away;

## Strength in Numbers

Every day, the data from a large population of components across a broad semiconductor application base increases the size and scope of our data pool. Our engineers analyze this rapidly growing database and develop algorithms that predict faults, in advance, with a high degree of confidence of the root cause. This early warning and precision not only avoids costly downtime and wafer scrap, but also enables you to reduce the hidden costs of service such as the cost of fab downtime, on-site labor charges and part delivery delays.

## Getting Connected...

GOLDLink® is supported by our professionally staffed Customer Response Center. In order to establish a virtual presence in your fab we work closely with your IT personnel to install the GOLDLink system. The GOLDLink installation is non-intrusive; we plug directly into your fab's existing network infrastructure and we communicate on specific TCP (Transmission Control Protocol) ports, providing a very secure and reliable connection.

## GOLDLink data collection, delivery and security

The data collected by GOLDLink is component data only, not process related data. The data is encrypted and sent to Brooks primary data center as well as our Brooks secondary data center. The data is stored in secured data marts providing additional levels of security. The data is available to you 24 x 7 x 365 days a year through your customized customer web site.

Current data is analyzed by the GOLDLink system for immediate predefined alarm notifications. Historical data used to identify more complex and longer term trends are analyzed by our team of GOLDLink specialists at our Customer Response Center, with the results delivered to you 24 x 7 x 365 days a year.

Once the data is analyzed, the GOLDLink team makes customized recommendations and plan of actions specific to your needs. The data and all recommendations are available to you via the Customer website, e-mails or quarterly reports.

You are always in control. We communicate on specific TCP ports that you control.



## Customer Website

The GOLDLink® GUI is arranged to give you quick and easy access to the information you need with the areas of concern highlighted in red for easy identification. When you click the highlighted component the parameters and measurements are highlighted to easily identify the preferred setting and the current measurement. Additional historical information is available so you can easily compare current performance over a period of time to past performance. This allows you to correlate process wellness (process capability metrics, yield, throughput, etc.) with component wellness parameters collected by GOLDLink.

From the GOLDLink website, customers can click on the tool they wish to view information on and the data will display.

The image displays three screenshots from the GOLDLink website. The top screenshot shows a 'REGENERATION PARAMETERS SUMMARY' page with a grid of tool names and dates. A red box highlights a specific tool, and an arrow points to a larger 'PUMP DETAILS' screenshot. The 'PUMP DETAILS' screenshot shows various parameters and a 'REGENERATION PARAMETERS' table. A second red box highlights a date in the summary grid, and an arrow points to a 'REGENERATION HISTORY' table. The 'REGENERATION HISTORY' table contains multiple rows of data with columns for Date, Temperature, Flow, etc.

This screen shot is an example of the regeneration history associated with this specific tool.

This screen shot is an example of the pump details and regeneration parameters a customer will see.

## GOLDLink® Benefits

### *Proactive*

- Data driven component replacement decisions
- Less spares inventory required
- Increased uptime, due to “no surprise” component failures
- Optimized component life
- Reduced cost of ownership typically associated with the “replace-in-case” model

### *Flexible and Timely*

- The GOLDLink system is adaptable to your specific requirements
- Real time data access and responses
- Available 24 x 7 x 365 days

### *Efficient*

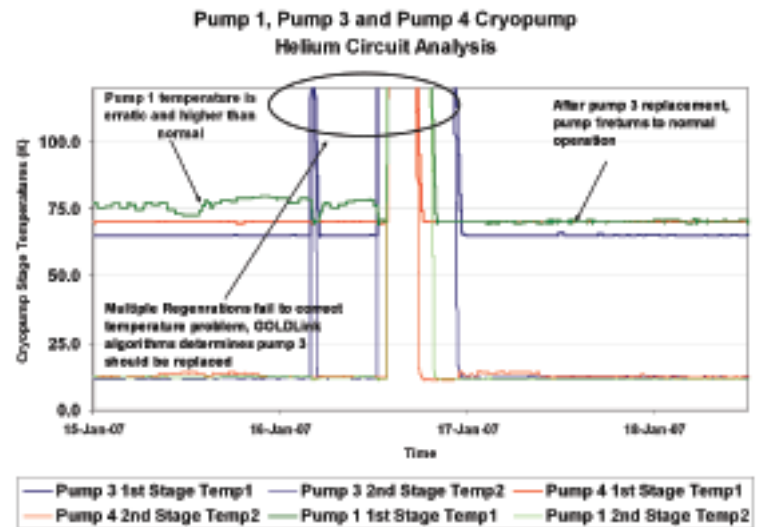
- Decisions are based on complete and current data
- Immediate response to situations of interest
- Extended component life and optimized performance
- Eliminates non-added value access to production area
- Plugs directly into the existing fab’s infrastructure
- No manual data retrieval

### *Effective*

- Reduced component monitoring; GOLDLink identifies which components need to be monitored
- Automated data collection and analysis
- Proactive vs. Reactive

### *Secure*

- GOLDLink server is installed in the fab’s data center
- GOLDLink communicates on specific TCP (Transmission Control Protocol) ports that you control
- Direct connection to the components only
- Encrypted component data is zipped into a text file (<1MB) and sent as an e-mail attachment at predefined intervals using your SMTP mail server



*GOLDLink's proprietary algorithms analyzed the performance of this customer's components and identified an anomaly. GOLDLink automatically alerted the customer and the Brooks Customer Support Engineer (CSE) prior to impacting the performance of the tool. GOLDLink's algorithms identified that a cryopump's 1st stage temperature was underperforming. From the results of the algorithms together with the historical data, working knowledge of the tool and configuration, the Brooks CSE was able to quickly identify the correct pump to replace. They coordinate the replacement of the pump during a scheduled preventative maintenance cycle.*

*In this case, GOLDLink prevented unscheduled tool downtime by quickly identifying the correct pump to replace and coordinating the arrival of a replacement pump just-in-time.*

## Brooks: *Delivering The Power of Blue*

GOLDLink® from Brooks Automation is an enabling technology option to your TrueBlue® Service Agreements, helping you to improve the availability and performance of your systems while significantly reducing the complexity and costs associated with keeping these systems running smoothly.

GOLDLink from Brooks creates value through remote diagnostic monitoring of the Brooks Automation systems used in semiconductor wafer fabrication. We will leverage our virtual presence in the fab to provide unmatched proactive uptime support resulting in significant availability and performance enhancements.

Brooks Automation TrueBlue® Services is our total corporate commitment to deliver not only superior technology, but also unmatched performance, world-class global support, products and infrastructure and an expectation of “no surprises” — ever.

Our commitment to excellence begins the first time we speak with you and *that commitment never changes*. When you put your trust in Brooks Global Customer Support you get a powerful global infrastructure of competent, committed support to ensure that all Brooks products deliver the performance and reliability you expect — always. Let Brooks’ knowledgeable team show you first-hand why we’re turning total customer satisfaction into long time customer loyalty.

### Brooks Global Customer Support: Committed to Our Customer’s Success



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