ODIN™ WORKSTATION

Manage your entire production process and improve line efficiencies by using digital technologies to empower your operators, process engineers and line managers.

ODIN Workstation is a process security solution for improving efficiencies on your production line. Its core products assist with enhanced operator guidance, traceability and production planning.

HIGHLIGHTED FEATURES:

- Animated operator guidance
- Traceability, data & reporting
- Flexible multi product production
- No-code line configurations
- Adaptable hardware integration
- AI vision system for process tracking

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ODIN™ MANUFACTURING
A JENDAMARK ECOSYSTEM

ODIN WORKSTATION

TECHNICAL SPECIFICATIONS

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CATEGORY	DESCRIPTION	FEATURES	DETAILED DESCRIPTION
Main Functional Features	Functional features allow devices and operators to work through sequences of operations.	Multi-operator station	Operators can work co-operatively at one particular station to complete a set of processes on a part. There are no limits to how many operators can work in a station at the same time; each operator will get a set of work instructions and sequence to follow that is visible on individual displays. Each operator can be individually tracked with a login system such as a badge reader, or a single station “foreman” operator can be logged in to handle all sub-stations as a unit with many other helper operators present - each with their own work instructions and displays. This enables dynamic workforce allocation when required.
		Operator performance tracking	Each operator that is logged into the system can be monitored for performance according to the required quota (or Takt) for their given station. The performance tracking can include the time when the operator logged into and out of the system, how long the operator worked on a given process step (operation) and how long they took to complete all process steps that are not equipment related. Having operator performance tracking allows for insights into the process and aids industrial engineering teams to be able to optimise operator and machine workflows.
		Multiple user levels and user roles	A system user can be assigned a user role with certain privileges based on their access level. These roles include administrator, commissioning, supervisor and operator. Each role has privileges relative to the next - from base level, such as operator guidance, to the highest privilege that enables the user to maintain the system as a whole without restrictions.
		Operator badge RFID and biometric device support	The user can identify themselves on the ODIN Workstation using electronic methods such as RFID-enabled cards and fingerprint scanners. ODIN has a selection of supported devices that are integrated into the core of Workstation, providing even tighter system security. Such devices can be expanded on, with new integration options available on request.
		Dynamic sequencing	The operator guidance feature typically functions as a linear sequence of operations that can be performed and tracked in the pre-defined order. ODIN Workstation also allows for operation sequences to jump based on the conditions of operation outcomes and follow a completely different sequence that handles the outcome. This is known as branching and when a sequence is developed there are endless possibilities available to the curator to handle almost any known condition of production.
		Device arbitration	ODIN Workstation allows multiple operators to work in the same station simultaneously while sharing device resources appropriately to limit duplication and save costs, and to enable cross-functionality between process steps. ODIN Workstation works hard to arbitrate the devices between operators according to a priority order and can adhere to process deviations and backup or replacement tools effectively.
		Equipment performance tracking	When it comes to equipment, tracking performance is key. ODIN Workstation enables this by collecting dynamic statistics on machine usage that is OEE equivalent. Topics such as machine downtime, operator working time, station idle time, cycle time, deviations and anomalies can all be brought forward and analysed with the highly interactive ODIN Insights dashboards.

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		Barcode scanner support	Critical components tracking and assembly tracking are very important to ensure traceability and process security. ODIN Workstation supports a multitude of serial RS232 and Ethernet-enabled barcode scanners from various vendors. The barcode scanner is one of the most important devices that complements and tightly integrates with ODIN Workstation.
		Printer support	Support for Zebra printers (ZPL) and Intermec printer (IPL) enables easy printing of labels to use for tracking and identification. With support for standard desktop printers, you can print a range of quality reports as the final documentation of the assembly, or even a certificate of conformity, according to the production requirements.
		Socket tray support	Keeping track of sockets during a production process can be tedious and error prone. ODIN Workstation has socket tray support that complements any operation that supports it, as well as native support for socket handling for any bolting operation. Sockets can be tracked by the socket tray implementation and ODIN Workstation will keep track of when to use and when not to use sockets by incorporating the usage requirements into the process step.
		Pick-2-Light support	When dealing with multi-variant component assembly, there is a need to make sure the correct component is used in the assembly to ensure process security and limit the potential for errors during production. With pick-2-light support, ODIN Workstation can guide and ensure that the right component is picked at the intended step in the process. ODIN Workstation has native support for pick-2-light systems that can be enabled on any operation that requires a pick list to be followed.
		ODIN Vision tracking support	ODIN Workstation has native support for ODIN Vision, supporting features like hand tracking and hand gestures. These features can augment the system usage to complement or even replace traditional hardware components such as push buttons for manual validation, pick-2-light sensors, socket tray sensors and more. With ODIN Workstation's integrated support for tool tracking, ODIN Vision helps by providing real-time feedback on tool location and orientation without the need for physical positioning hardware such as encoders or laser sensors.
		Tool position tracking	ODIN Workstation can keep track of tools and equipment in real-time using the location tracking system for virtual devices, ODIN Vision. The two systems allow for torque tool position sensing, workpiece orientation sensing and clamp-in-place sensing, for example. ODIN Workstation can ensure the correct mechanical steps are followed and critical process steps are followed accordingly.

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Main Functional Features	Functional features allow devices and operators to work through sequences of operations.	Scheduled jobs for out of sequence operations	Scheduled jobs allow ODIN Workstation to perform out-of-sequence operation or process steps that are not part of the production sequence. This includes component batch scanning, calibration/ verification, operator notifications, TPM processes, birthday messages and more. Scheduled jobs are a powerful way to manage the production requirements that don't fall neatly into the normal production sequence that are either time-, component count-, or production count based. They can be manually triggered from the ODIN Workstation interface or automatically triggered from an external system.
		Process deviation tracking	During the execution of a sequence of process steps, it is important to have the facility to retry and deviate from the sequence norm. ODIN Workstation can deviate from the current sequence in place with the following deviation types: station reset, send to rework, send to audit, send to checkpoint, force sequence complete, skip an operation, redo an operation and device override. All deviations are user role specific to supervisor level and above, and can be adjusted to allow operators to handle their own deviation if required. Each time a deviation event occurs, it will be recorded and shown on the final part history report.
		Process and data integrity	Process security is at the heart of ODIN Workstation. It collects and validates a number of data points to ensure that correct reporting is given and that the process data is stored coherently with every process step. ODIN Workstation tracks results from various devices and machines in the field, whether it is being handled by the operator or automatically by the control system, and all data is stored for traceability and performance monitoring. ODIN Workstation can behave as a sign-off station (End Of Line), whereby any assembly arriving at the last station of the production line can be evaluated for data integrity. If all due processes have been followed correctly, the assembly can then be qualified with a final printed label or certificate of conformity, according to the customer's production requirements.
		File transfer jobs	Transfer jobs can be set up for ODIN Workstation that will allow large-format media to be collect and stowed for long-term storage. Images and videos are often too large to be sent over the lifespan of an operation but transfer jobs allow for lazy collection of the media when it becomes available without hindering the functionality of the operator station. Quality data in the form of JSON or XML that is not supported natively by ODIN Workstation can also be collected and stored.
CATEGORY	DESCRIPTION	FEATURES	DETAILED DESCRIPTION
Operational Features	Production-related features allow operations to be set up, changed or executed remotely.	Multi-variant production	Assemblies are rarely configured to be a one-type production and are usually a combination of components that serve different functions based on the intended features of the assembly. ODIN Workstation aids in multi-variant production builds by allowing product categories to be defined and variant specifications to be set up under each product category. ODIN Workstation handles components and dunnage assignments dynamically based on what BOM or build string the product has been assigned and automatically configures the system to handle the assembly with ease. ODIN Workstation provides validation of the BOM and build string to ensure that components cannot be incorrectly assigned to an assembly if the variant BOM criteria are not met.

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Operational Features	Production-related features allow operations to be set up, changed or executed remotely. Production-related features allow operations to be set up, changed or executed remotely.	Batch build queuing or JIT/ JIS integration	ODIN Workstation supports two types of production execution schemes: batch build processing and Just in Time/Just in Sequence processing. Based on a queueing system, batch build can offer a production schedule and management thereof that is based on production quotas and the batching of product variants together. JIT/JIS provides a means to handle production in a more dynamic way based on the BOM of the assembly, where a BOM or build string is provided to the ODIN Workstation system. The assembly is manufactured to order, allowing fine-grained control of production orders at every process step.
		Work instructions for operator guidance	Operators interact with ODIN Workstation by following a set of pre-defined work instructions. These instructions provide worker guidance on how to execute a given assembly task as intended. Work instructions are one part of the larger operation mechanisms, which keep track of the process, do data tracking and interface to devices. Operations can be reused for multiple variants to minimise the duplication of common operation and worker guidance data across variants.
		Predefined operations for common functions	ODIN Workstation has predefined operation work flows that handle specific tasks such as manual validation and inspection, tightening operations, barcode scanning, marking, printing, gauging, event checking, choice selection and many more. Operations are detailed in configuration and can determine the outcome of a sequence based on pass/fail mechanisms and how many retries the operators are allowed before the assembly fails to meet conformity. Operations have the ability to select like devices that can be used as a shared resource in multi-operator scenarios.
		Real-time operator notifications and side actions	Most of the time, the production line and ODIN Workstation follow a predefined sequence of operations, but ODIN Workstation can also be configured to show notifications or alert the operator of a task that needs to be performed that is not part of the default sequence steps. ODIN Workstation can be enabled to show notifications such as cleaning schedules or tool change requirements or messages to the operator in which a confirmation is required. The operator can also be alerted at the start of or during a process cycle of things that need immediate attention, such as calibration/ verification required. ODIN Workstation is also continuously monitoring to see if an e-stop button has been pressed.
		Cross-sequence or in-sequence interlocking	Sequences inside ODIN Workstation can function as a linear set of operations. It can do sequence branching, background operations, undo a set of operations based on group criteria as well as handle multiple operators in real time. This poses several challenges when making sure a certain process step is completed before another and ensuring that operators are in sync when components are assembled to the assembly in a coherent manner. ODIN Workstation provide the means to do sequence interlocking in real time, tracking process step outcomes and deciding the outcome of an entire sequence based the outcome of a particular operation if required. Sequence interlocking can also occur between two or more operators to aid in the correct process of assembly and in maximising tool usage when tools are shared.

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CATEGORY	DESCRIPTION	FEATURES	DETAILED DESCRIPTION
Operational Features	Production-related features allow operations to be set up, changed or executed remotely.	Teardown procedures and actions	Production assembly does not always go according to plan and recovery of the assembly is required. In most cases, the components can be reused in the next assembly, while some need to be scrapped as they have not met the minimum quality level required. ODIN Workstation Teardown allows an assembly to be disassembled in a way that is tracked and guided. This means the teardown specialist gets similar teardown steps to the assembly but be able to choose which steps to execute. ODIN Workstation Teardown will recommend how to tear down an assembly based on its history. Teardown stations allow for recovery of components while keeping the process security and traceability intact throughout the assembly lifecycle.
		Dedicated auditing functions	ODIN Workstation has a special audit mechanism whereby the quality control of assemblies can be manually audited at specific intervals, such as after a series of builds or at the beginning or end of shift. The part can also be manually sent to an audit station from another station in the process. Audited parts have special audit data that is included in the ODIN Workstation base report.
		Daily production planning	Planning production builds is easy with ODIN Manager. ODIN Workstation has two production build concepts: batch build production and JIT/JIS build production. With JIT/JIS, production is usually decided by the provider of the production orders from an ERP integration. With batch build production, ODIN Manager allows the production supervisor to set up batch builds for a particular type and its quantity. These batch entries can be configured to execute on a particular shift time slot or on a particular day, allowing production to be scheduled ahead of time and automatically changed over when the next batch is scheduled. Quotas can also be readjusted whenever it becomes necessary, which allows for agile production planning.
CATEGORY	DESCRIPTION	FEATURES	DETAILED DESCRIPTION
Configuration Features	System set-up features that are critical to use of the application.	Build string capabilities	Managing production orders can become complex and cumbersome when components change on a per variant basis. ODIN Manager allows product requirements to be predefined in a flexible manner based on components and assembly BOM specifications. A build string can be provided to ODIN Manager that describes the build criteria for a given product variant. ODIN Workstation will decode and validate the build string against the predefined component and BOM entries and allow assembly to start based on the build string. This is useful if the build string is retrieved from a separate system and production orders are handled in a JIT/JIS execution scheme.
		Change control of all process settings	ODIN Manager keeps track of all the changes that have occurred to the setup of the process, the operation, settings, setpoints and more. The change control system is designed to keep track of which setting was changed by which user, and provide a method of rollback to previous states if required. User roles can be set up so that, in order to make a change to the setup, a change request will be forwarded to a manager-level user for approval before a commit is made.
		Localisation	ODIN Manager keeps language tables in order to translate pre-defined text into a language of choice. Changing the localisation is as simple as specifying the language to display and ODIN Manager will apply the preference on both ODIN Workstation and ODIN Manager. New translation text tables can be compiled to cater for languages that are not part of ODIN Manager already.

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Configuration Features	System set-up features that are critical to use of the application.	Access control	Access control for the ODIN Manager works differently to ODIN Workstation; the user roles have been expanded to cater for user job responsibilities and only allow editing and viewing features to be made available to any user with the appropriate access permissions. This flexibility allows ODIN Manager to limit access to configuration data to certain users and restrict users completely if the user does not satisfy the role criteria.
		No-code setup for sequences and machine interaction	No-code setup for sequences and machine interaction once initial hardware type is set up.
		Simulation of workstation behaviour	ODIN Workstation Simulator shows how the sequence of operations are stepped through with the visual user interface.
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Quality Control	Traceability and process security features to ensure unique and flexible quality control.	Basic production reporting for product traceability	Product traceability has become paramount in the last 10 to 15 years, forcing component and assembly suppliers and automotive manufacturers to keep a record of how production is executed and traced. ODIN Workstation provides a basic product traceability report for every step in the product's lifecycle, including standard operating procedure data, measuring data, part conformity data, rework and scrap part data, process deviations and production notes. ODIN Workstation provides this report through ODIN Manager, which can be downloaded or emailed if required.
		Dynamic product and component tracking	ODIN Workstation can track entire processes of the product assembly and manufacturing. It has the functionality, such as batch scanning and component counting, to produce traceability for every component that forms part of the assembly. The product being built can be dynamically assembled with top-level build instructions that are validated to match each process step according to station. Stations can be dynamically retooled to fit the needs of the production process, allowing a multitude of unrelated assemblies to be built using the same equipment.
		Product and component validation	Assembling parts into a product that has several variations or iterations of the assembly can pose challenges when making sure the correct component is inserted in the correct assembly. ODIN Workstation helps by providing validation mechanisms, such as part number or variant validation, to ensure the process security remains intact during the entire assembly process. Features such as component re-usage tracking and spent component tracking ensure that components that should be not be used will not be assembled with the final assembly.

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Quality Control	Traceability and process security features to ensure unique and flexible quality control.	Rework	Operators can rework a part in-line (in the same station as normal assembly) or in a dedicated rework station.
		Tear-down actions	The system allows for configuring actions that enable the teardown of components, which are disassembled to the desired specific component stage unique to that variant.
CATEGORY	DESCRIPTION	FEATURES	DETAILED DESCRIPTION
Integration Features	Device and third-party integration features.	Integration with existing ERPs	ODIN Workstation can integrate with existing ERP management platforms such as SAP through data connectors that can be changed as the customer's requirements change. These connectors are mainly database connectors, however connectors to AMQP and RabbitMQ are possible via ODIN API Gateway. This allows critical production information, production orders and resource metrics to be shared between ODIN Workstation and the ERP system.
		Machine integration	ODIN Workstation can integrate into production equipment using ODIN Workstation PLC adapters that talk directly to PLC hardware. With the implementation of a data exchange protocol API that can be used by any system integrator, ODIN Workstation can integrate to new or existing systems and enable tight control of the process from all levels of the production line.

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Manage your entire production process and improve line efficiencies using digital technologies for operator guidance, traceability and production planning.

ODIN LINEWATCH

Get real-time production data straight from your assembly line. Access relevant data to make timely decisions to manage potential problems before they happen.

ODIN INSIGHTS

Consolidate all ODIN data onto one platform, allowing your data to inform and guide your next action. With personalised dashboards, KPIs, and AI-driven algorithms.

ODIN VR

Test-drive your assembly line virtually before it is built, to optimise the design. Use VR to train your operators on the line ahead of installation.

ODIN MAINTENANCE

Cloud-based solution for preventative and predictive maintenance. Set, track and control maintenance and service tasks to prolong the lifespan of your assets.

ODIN DOCUMENTATION

Find all your latest project and asset documentation in one place including manuals, machine buy-outs, layouts, technical reports and more.

ODIN TOOL CHANGE

Paperless, interactive guidance for correct tooling change-over per variant. Manage faster transitions between production processes on the same line.

ODIN AR

Improve operator performance by using AR glasses to guide the assembly process. Approve assembly facility designs remotely via your mobile device.

ODIN IOT

Gather real-time performance data straight from your new and old machines, to predict and avoid downtime. Pairs best with our Raven sensor.

ODIN RAVEN

Raven sensors perform vibration analytics and provide insight into an asset's performance. Onboard processing of data. Easy add-on for any machine.

ODIN ENGAGE

App that encourages data-driven behavioural change. Employees can use their individual performance data to self-motivate and drive on-the-job improvement.

ODIN HEALTH

Coordinate your employee health and wellness programme. Daily symptom screening and temperature recording. Share company policies and procedures.

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