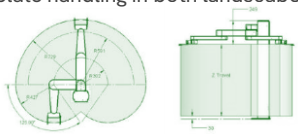
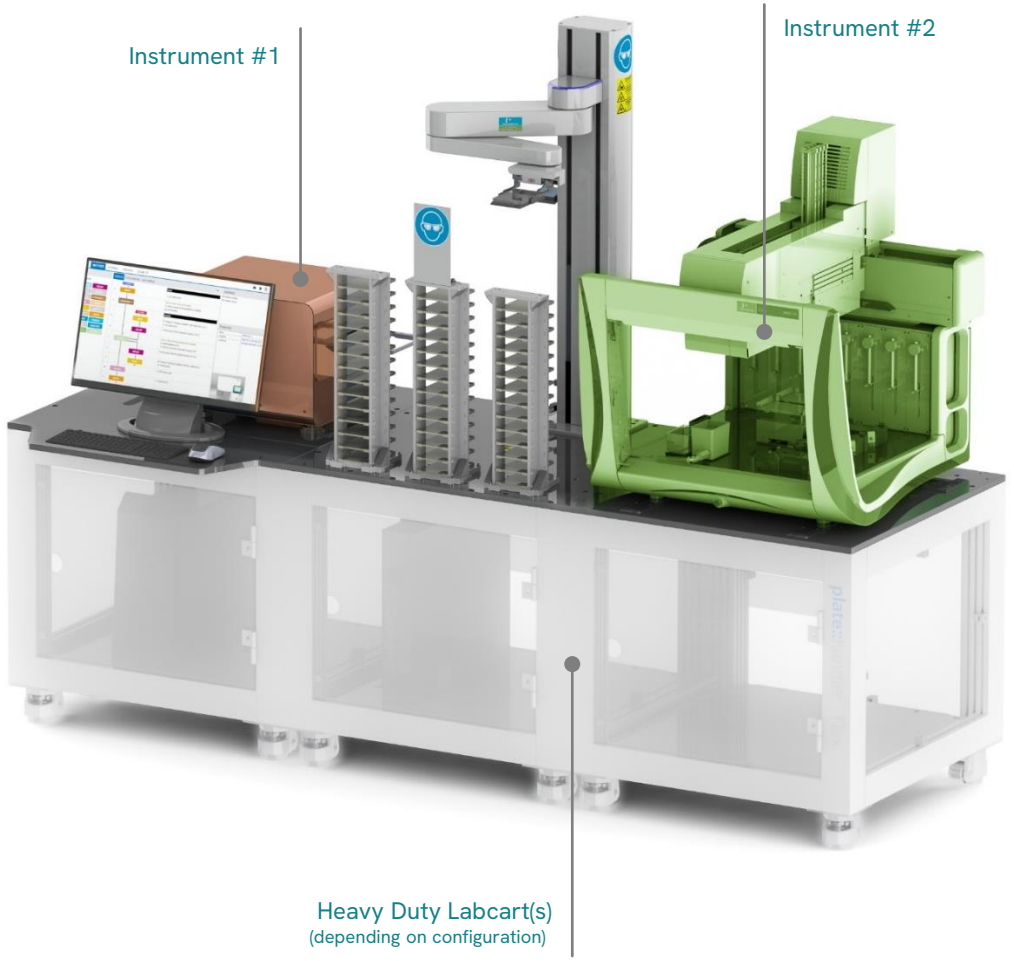
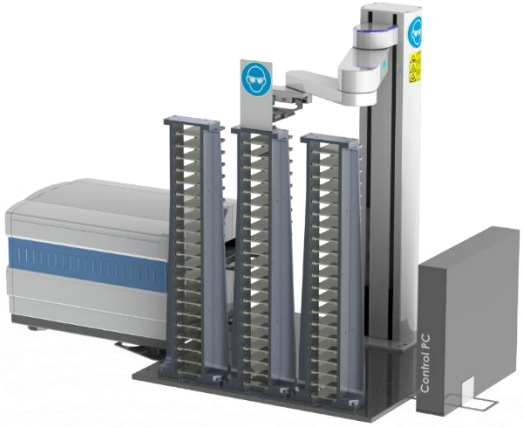
Increase throughput, eliminate manual steps, support walkaway processing by automating plate loading/ unloading as well as simple workflows involving up to two detection, liquid-handling or other microplate instrumentation

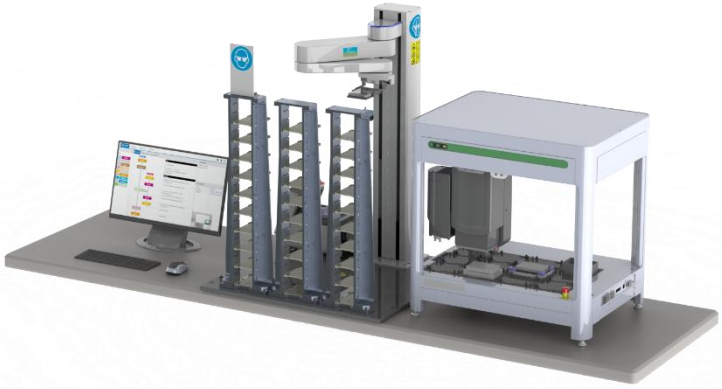
SPECIFICATIONS

Robotic Arm	Brooks PreciseFlex collaborative, four-axis SCARA robot supporting side-by-side human-robot cooperation, build-in servo gripper enabling microplate handling in both landscape and portrait formats. Maximum reach: 731mm Maximum z-travel: 750mm Repeatability: 0.2mm 
Plate Storage Capacity & Conditions	3x random access racks. Depending on configuration racks to hold 14 or 21x 96/384 SW plates or 10x DW plates respectively tip boxes Incubator and other storage solutions depending on configuration
Control Software	plate::works™ software 6.25 or better
Control PC	19'' industrial PC running Windows 10 Enterprise IoT LTSB version supporting medical and/or mission critical applications
Barcode Reader	SICK CLV601, for reliable barcode reading in laboratory automation
Electrics / Power consumption	1-phase 230V/50Hz (110V/60Hz) / ~200W (Robot + PC)
Options & Accessories	see Options & Accessories

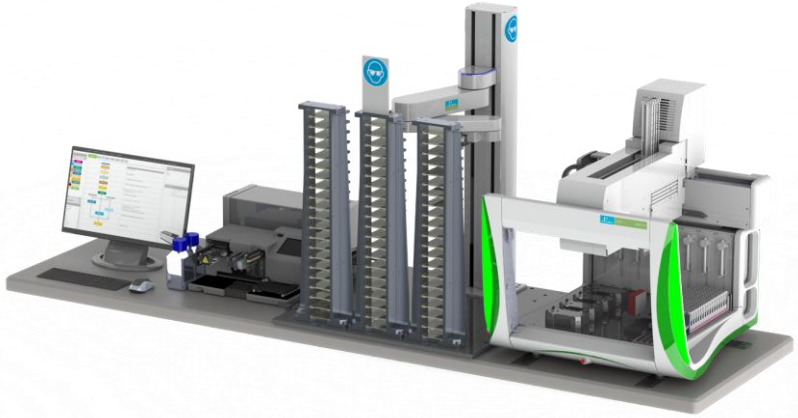


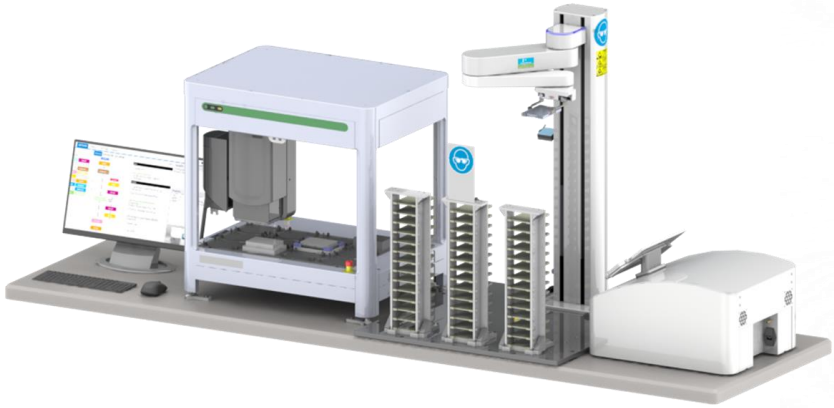
EXAMPLES
for Plate Feeding Solutions





EXAMPLES
for Simple Workflow Solutions





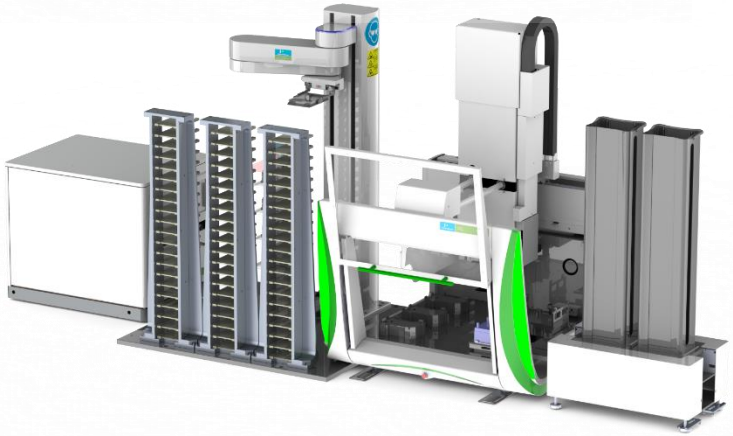


plate::handler™ FLEX

Brochure

plate::works™
SCHEDULING & CONTROL SOFTWARE

BUILDING ON 20+ YEARS OF EXPERIENCE

Launched in 1997 to support industrial high-throughput screening applications, plate::works™ scheduling software supports parallel execution of processes within one workcell as well as over multiple connected workcells. With plate::works™ to plan and to continuously optimize labware movements. With full sample tracking and an unlimited number of transportation devices (robotic arms, turntables, grippers, conveyor belts,...) working in parallel and in a coordinated way to increase throughput and efficiency.

FLEXIBLE

plate::works'™ event-based scheduling concept, while fundamentally dynamic and hence able to adapt schedule to changes with execution times, instrument errors, in response to results, user changes, ... will empower operators to take fully control of method execution. With check points, branches and the option to fix timings for critical steps, adding a level of control needed to accommodate even the most challenging workflows. With plate::works™ scheduling software to increase operational efficiency by supporting an unlimited number of workflows processed in parallel.

EASY-TO-USE

To create a new method, operators can drag-and-drop instrument icons to create a workflow. With plate::works™ scheduling software to guide users through the steps to set-up and parametrize automated processes. All labware movements to be planned, optimized and coordinated automatically by the scheduler. With all transportation devices to use speed settings and gripping positions stored in a central labware database. No need for operators to teach-in new plates and/or to plan and program labware movements.

RELIABLE

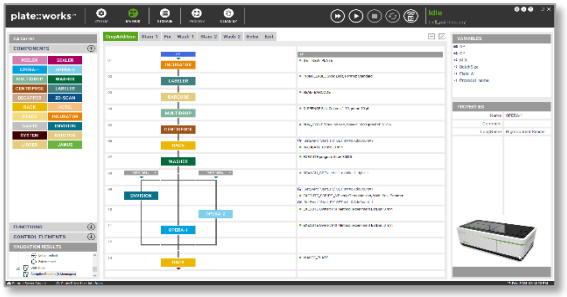
Originally developed to support 24x7 automation in an industrial screening environment, plate::works™ will make every attempt to recover from an error situation. Making a failed or to be aborted run an exceptional event. Advanced error handling routines will guide operators through the steps and options to get the system quickly back into operation.

plate::handler™ FLEX

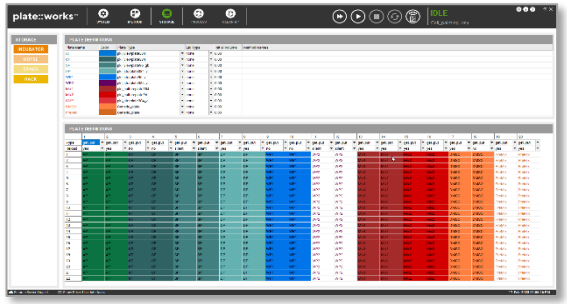
Brochure

plate::works™
SCHEDULING & CONTROL SOFTWARE

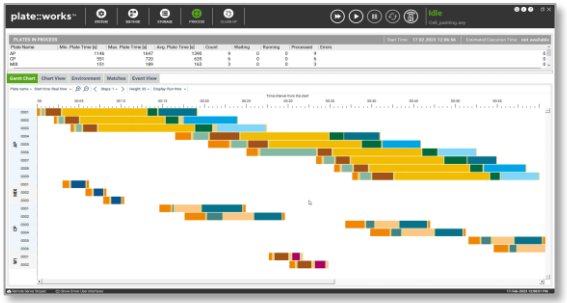
METHODS EDITOR



STORAGE EDITOR



GANTT CHART

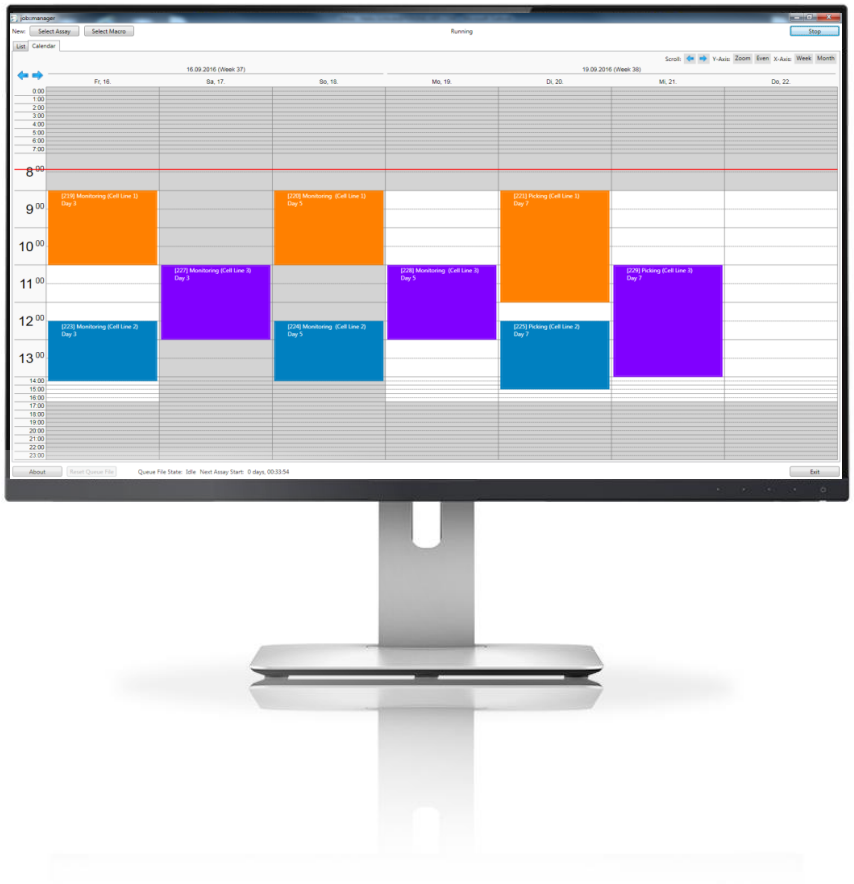


KEY FEATURES	
Event Driven Scheduling	plate::works™ scheduling software to combine advantages of dynamic and static scheduling enabling operators to control and fine-tune scheduling by adding constraints and/or controlling elements
Real Time Decision Making & Re-Scheduling	Scheduler to support on-the-fly re-scheduling allowing critical parameters to be updated at any time during a run and plate processing to respond to external data or events (results, conditions, LIMS, scripts, ...)
Parallel Methods	Scheduler to support multiple independent methods being executed in parallel
Support For Multiple Robots	Scheduler to support an unlimited number of robots and other plate handling devices (conveyor belts, turntable, shuttle stations, ...) to move simultaneously and in coordination. With scheduler to automatically plan, optimize and coordinate plate transportation between instruments
Continuous / On-Demand Processing	Scheduler to support continuous plate processing allowing new plates and labware to be added to an already running process as well as on-demand plate processing with system to process plates when they become available
Pooling	Multiple identical instruments to be treated as one logical instrument (for easier programming and added redundancy)
Simulations	To quickly optimize workflows (test different process variants and conditions) and to check for correct execution prior to committing time and reagents
21CFR11 Support	plate::works™ scheduling software to support setting-up regulated processes by providing user rights management and by logging changes being made to methods
Worklist Support	Plate/sample specific parameters or conditions (incubation times, dispense volumes, ...) can be read from worklists. Support for cherry picking, normalization and other tasks relaying on external information
Scripting Support	Enabling operators to add own functionality to scheduling process
Offline Use	plate::works™ scheduling software to support operators taking critical detection instruments off-line and to use manually up till the point where instrument is been needed to support the automated process.

job::manager
WORKFLOW PLANNING

As part of plate::works, job::manager will allow (multiple) users to plan method execution over longer periods of time, with job::manager to automatically start methods at the scheduled time. Featuring a calendar view, job::manager provides an easy overview about workstation availability enabling operators to interleave multiple runs and/or to break down longer experiments (spanning over days or weeks) into smaller processes and routines which can be re-used.

KEY FEATURES	
Improve equipment utilization	Plan & execute long-term processes while retaining flexibility to use system for other tasks
Simplify method programming	Break down long-term processes (running over days/weeks) into more manageable modules
Quickly set-up multi-day schedules and sequences	Macros to automatically add reoccurring tasks (e.g. daily media exchange) to schedule
Outlook style “Calendar View”	Software to warn users when a scheduled run is approaching
Support multi-user environments	Inventory management functionality to show operators which positions e.g. in an incubator are already allocated and which are free to add new plates



AUTOMATION COMPONENTS & OPTIONS

Plate Storage (ambient)

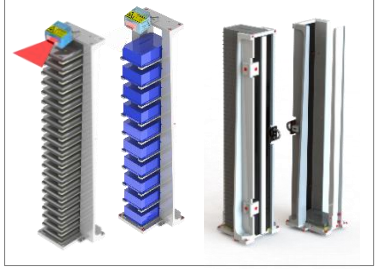
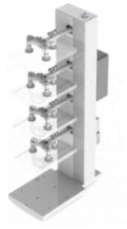


plate::rack & plate::stack
Random access rack(s) or LIFO plate stacker(s) for storing/(incubating) a broad range of different labware items. Easy plate loading (with system in operation) from the back side.

Lid Handling



Also available in variants with 1, 2 and 3 lid holders as well as custom

lid::handler
Lids to be hold by means of vacuum suction. plate::works™ software to ensure fix plate-lid pairings. Range of custom options available to handle specialty lids.

Barcode Reading

Barcode Scanner
Raster laser barcode scanner configured to work with a great variety of different barcode labels including misplaced, misprinted and party damaged barcodes.

Rotating Table (Operator Access)

Rotating Instrument Tables
Heavy duty turntable to improve user access to integrated instruments.

Monitor/Keyboard Cart

Keyboard/Monitor Cart
Supporting sitting or standing operation of our systems. Keyboard tray can be stowed under the work surface. Internal cable management.

Enclosure (optional item)

Custom Enclosure

job::manager (optional item)

job::manager
job::manger allows (multiple) users to plan method execution over longer periods of time with software to automatically start method execution at the scheduled time.

Instrument Table (configuration specific)

Heavy-Duty Instrument Table
Build from extruded aluminum profiles
TRESPA® table top with configuration specific cutouts for cables and tubings
Locking caster wheels

plate::handler™ FLEX

LINEAR UPGRADE PATH TO explorer™ G3 workstation

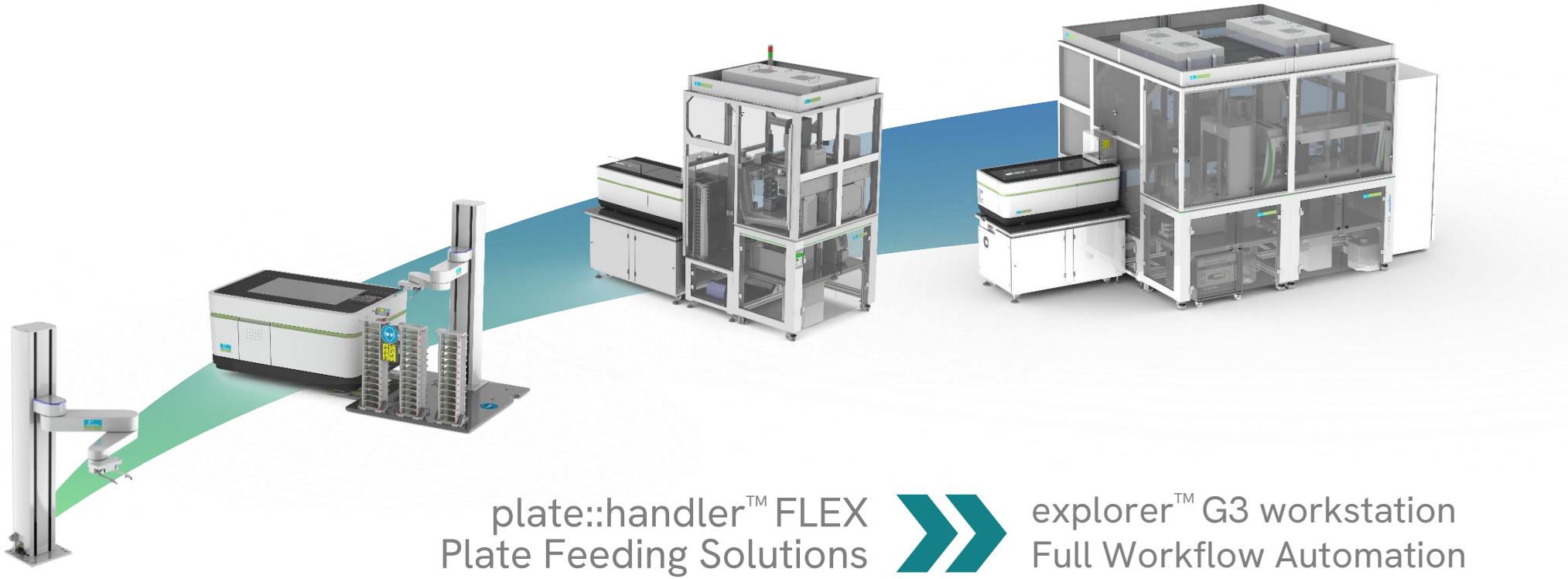


plate::handler™ FLEX
Plate Feeding Solutions

Same Robot
Same PC
Same Software

explorer™ G3 workstation
Full Workflow Automation