EXPERIENCE · PRECISION · PERFORMANCE

ROYCE Instruments

COMING TO IMAPS 2016….

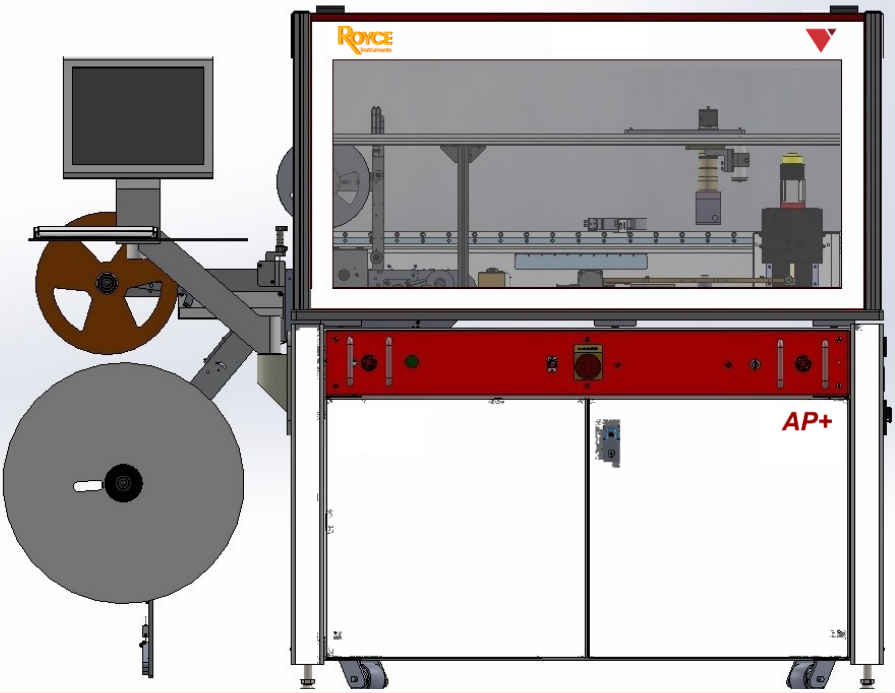
Accelonix keeping you ahead.

Royce Instruments *AP+*

Combining over 30 years of experience, Royce's fragile die pick capability, and V-TEK's latest small die taping technology

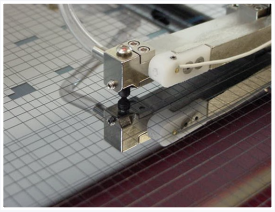
A new automated die sorter to handle the output mediums your process requires (carrier tape, waffle pack, Gel-Pak, JEDEC tray, film frame, grip ring, and custom trays). The ***AP+*** can pick die from wafer, waffle pack, Gel-Pak, JEDEC tray, or custom tray using an input map, perform an optional 180 degree die flip, and place to output, while maintaining input to output traceability at the die level. With its multi-project (pizza map or reticle mask) wafer mapping capability and quick-change fixtures and tooling, this system gives you the highest level of flexibility while maintaining fast change over between processes to support low to medium volume, high mix environments.

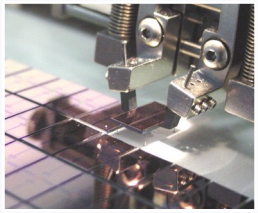
AP+ configured for pick from wafer, place to carrier tape



Specifications:

Die Size Range	0.2 mm sq to > 25 mm sq for tray placement, 0.5 um sq to approx. 17 mm sq for tape placement
Die Input	Film frames or wafer rings, in all current designs, for wafers up to 300 mm diameter Waffle packs, Gel-Paks, JEDEC trays, and custom trays
Pick-up Technology	Surface or top edge contact vacuum tips (rubber, Vespel, tungsten carbide, elastomer) Optional non-surface contact Vespel edge grip
Die Output	Carrier tape (8 mm to 24 mm tape width, heat seal or pressure seal), waffle packs and Gel-Paks (2 inch or 4 inch), JEDEC trays, film frames, wafer rings, or custom. Changeover time between carrier tape placement and tray placement is less than 2 hours.
Placement	± 12.5 micron placement repeatability
Die Sort Modes	Wafer mapping (SEMI E142, Electroglas 40x0, August Simplified INF, SEMI G85-0703, SEMI G85-1101, custom, create your own), ink dot recognition, pick all die
Throughput	Application dependent, 1.3 seconds minimum time per cycle
Options	Die Inverter, Post-Place Vision Inspection of Die in Carrier Tape
Dimensions	2058 mm (81 in) long x 1016 mm (40 in) deep x 2235 mm (88 in) high (with cover open)
Facilities Requirements	Compressed Air at 275 kPa to 410 kPa (40 to 60 psi), Vacuum at –65 kPa (20 in Hg), Electrical at 120-240 VAC ± 10%





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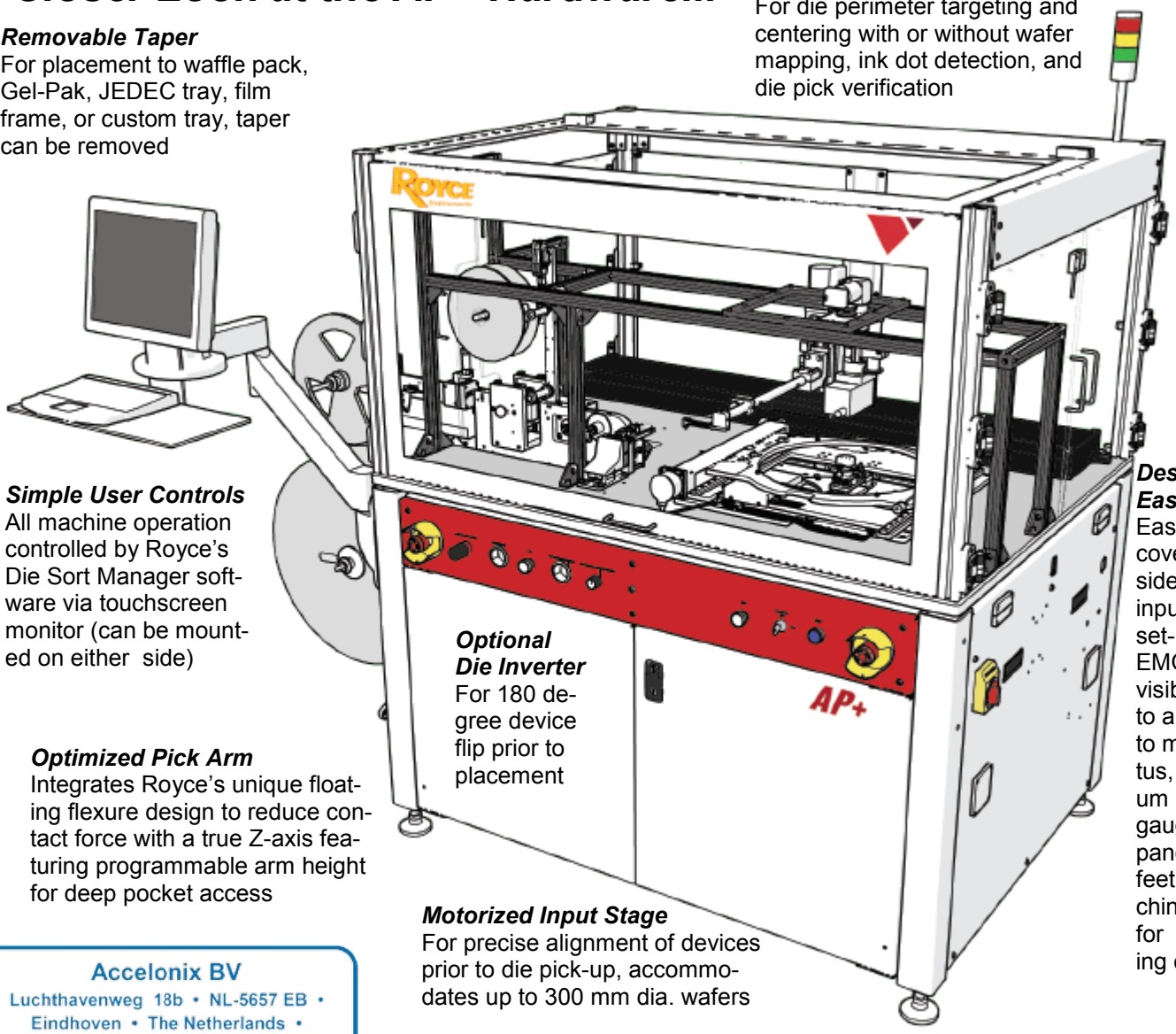
Proudly manufacturing in the U.S.A since 1983

A Closer Look at the AP+ Hardware...

Removable Taper
For placement to waffle pack, Gel-Pak, JEDEC tray, film frame, or custom tray, taper can be removed

Vision System
For die perimeter targeting and centering with or without wafer mapping, ink dot detection, and die pick verification



Simple User Controls
All machine operation controlled by Royce's Die Sort Manager software via touchscreen monitor (can be mounted on either side)

Optimized Pick Arm
Integrates Royce's unique floating flexure design to reduce contact force with a true Z-axis featuring programmable arm height for deep pocket access

Optional Die Inverter
For 180 degree device flip prior to placement

Motorized Input Stage
For precise alignment of devices prior to die pick-up, accommodates up to 300 mm dia. wafers

Designed for Ease of Use
Easy reach front cover handle, side doors for input and output set-up, multiple EMO locations, visible tower light to alert operator to machine status, air and vacuum regulator and gauge on front panel, leveling feet to lift machine off castors for stability during operation

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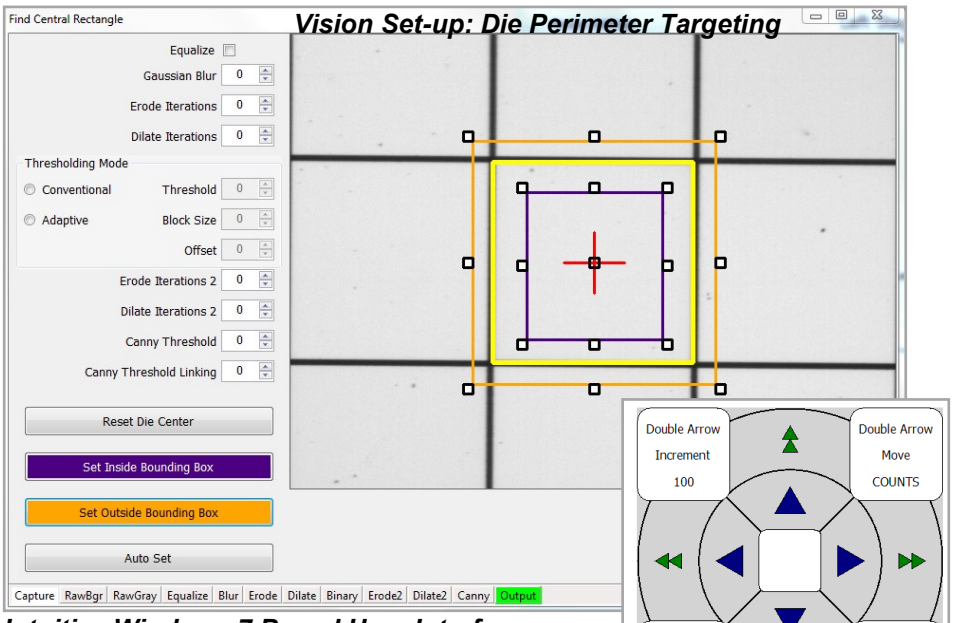
... and the Latest Die Sort Manager Software



Intuitive Windows 7 Based User Interface
Graphically lays out process to simply set-up and operation, while still maintaining flexibility to meet R&D and production environment requirements.