

- ▲ Parallel working, fully loaded Programming Robot ensuring brilliant production yields
- ▲ Programming, checking, marking and sealing up to 700 devices per hour

Am Pestalozziring 24  
D-91058 Erlangen  
Germany  
Phone: 49 9131 7700-0  
Fax: 49 9131 7700-10  
info@ertec.com  
www.ertec.com

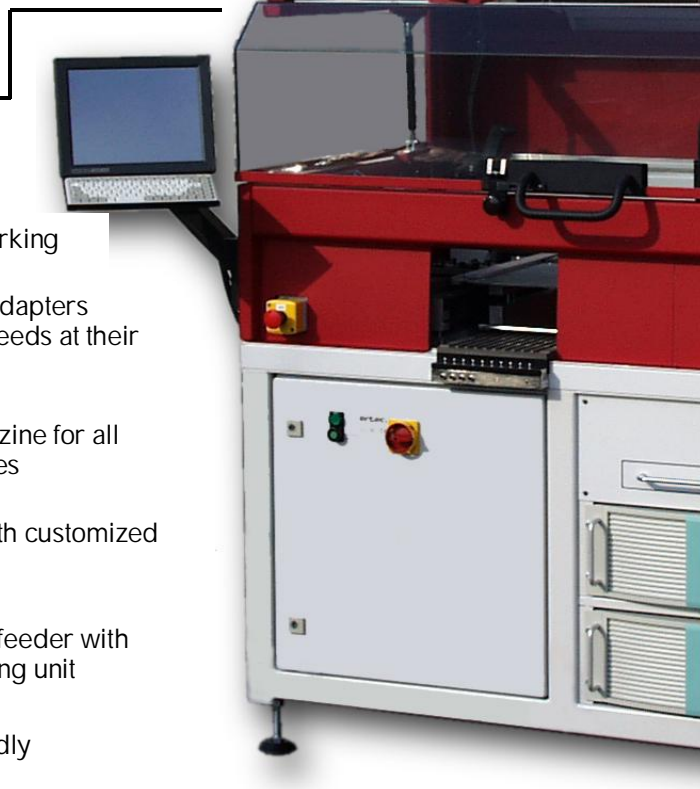
BEAVER is what we called this universal machine with highest accuracy as well as intelligence for all kinds of device types and packages. Mechanics, electronics and software comes from one European manufacturer: ertec !

The integrated vision control system combined with laser controlled measuring systems serves for precise positioning, self-matching and current process control.



## Details

- ▲ Vision system for adjustment and process control
- ▲ Online label printing and laser marking
- ▲ JET modules and JETCAP socket adapters offer quality and programming speeds at their physical limits
- ▲ Universal high capacity tray magazine for all kinds of packages and device types
- ▲ Industrial standard tube feeder with customized unfeeding system
- ▲ Universal tape feeder and tape unfeeder with 2.5D/3D visual inspection and gluing unit
- ▲ Networking- and production-friendly WINDOWS system software
- ▲ New: optional 3D lead inspection to guarantee 100% coplanarity of devices



Component, Detail	Description												
Control and Handling	<ul style="list-style-type: none"> <li>- Industrial PC, Windows-XP</li> <li>- Ethernet LAN based support for programming job management, software update, statistic, protocol tasks and machine data maintenance</li> <li>- 17" - TFT-Touch-Screen-Monitor, compact keyboard, optional barcode reader</li> </ul>												
Machine Security	<ul style="list-style-type: none"> <li>- in compliance with CE rules (i.e. EN60204, EN292, EN1088, EN100015)</li> <li>- Security circuit including limit switches, top hat with self-check and disabled auto start</li> <li>- top hat made of PVC material ESLON-DC</li> <li>- locked top hat while processing</li> </ul>												
Programming System	<ul style="list-style-type: none"> <li>- ertec Programming System PGS67</li> <li>- Usage of standard programming modules with open top sockets</li> <li>- Standard: 4 modules accommodating 4 sockets each = 16 programming sites</li> <li>- expandable up to 16 modules at 4 sockets each= 64 programming sites</li> </ul>												
Tray Magazing	<ul style="list-style-type: none"> <li>- Integrated tray table for up to 8 trays</li> <li>- unlimited usage of other tray formats</li> <li>- easy placement, fixed by simple magnetic holders</li> </ul>												
Tape Magazing / Input	<ul style="list-style-type: none"> <li>- Standard feeder interface at front, 120 mm width</li> <li>- for insertion of up to 2 units standard tape feeder for loading of devices</li> <li>- expandable by 2 additional units</li> </ul>												
Tape Magazing / Output	<ul style="list-style-type: none"> <li>- optional extension box with integrated tape unloader</li> <li>- adjustable to different tape widths</li> <li>- 2D- (optional) 3D- visual inspection</li> <li>- hot- and cold gluing unit</li> </ul>												
Tube Magazing	<ul style="list-style-type: none"> <li>- 1 feeder- and 1 unfeeder-unit each at the front side connected to feeder interface</li> <li>- capacity: up to 8 tubes per feeder, depending on tube width</li> </ul>												
Supported Device Packages	PLCC, SOIC, SSOP, CSP, QFP, TQFP, TSOP, BGA, $\mu$ BGA												
Marking by Labels	<ul style="list-style-type: none"> <li>- integrated thermotransfer label printer with peel-off unit as standard</li> <li>- Label nozzle for pick and place with lift at actor head</li> <li>- supporting paper / polyester materials and different formats (ask for specific details and device packages)</li> </ul>												
Marking by Laser	<ul style="list-style-type: none"> <li>- optional extension box with CO<sub>2</sub> laser marker, device shuttle with 2 nozzles</li> <li>- adjustment and control integrated in system software and job management</li> <li>- integrated fume extractor with vacuum filters</li> <li>- integrated interlocks to secure laser safety</li> </ul>												
Optical Adjustment	<ul style="list-style-type: none"> <li>- Inspection and adjustment of input devices by visual inspection system</li> <li>- versatile and flexible visual inspection tasks, integrated in system software</li> </ul>												
Drives	<ul style="list-style-type: none"> <li>- 4 units AC servo belt drive assemblies (additional units with laser and tape unloader)</li> <li>- DSP controlled amplifiers and regulators with s-shaped acceleration</li> <li>- support for regulator adjustment, auto tuning and parameter management</li> <li>- high resolution encoders 10,000 imp. / rotation</li> </ul>												
Positioning	<table border="0"> <thead> <tr> <th></th> <th>Resolution</th> <th>Accuracy</th> </tr> </thead> <tbody> <tr> <td>X, Y-axis:</td> <td>0.01 mm</td> <td>0.05 mm</td> </tr> <tr> <td>Z-axis:</td> <td>0.0007 mm</td> <td>0.005 mm</td> </tr> <tr> <td>C-axis:</td> <td>0.015 degrees</td> <td>0.05 degrees</td> </tr> </tbody> </table>		Resolution	Accuracy	X, Y-axis:	0.01 mm	0.05 mm	Z-axis:	0.0007 mm	0.005 mm	C-axis:	0.015 degrees	0.05 degrees
	Resolution	Accuracy											
X, Y-axis:	0.01 mm	0.05 mm											
Z-axis:	0.0007 mm	0.005 mm											
C-axis:	0.015 degrees	0.05 degrees											
Laser Distance Measuring	<ul style="list-style-type: none"> <li>- Mounted at actor head, to perform self-matching and current process control</li> <li>- Range: +/- 10 mm</li> <li>- Accuracy: +/- 0.05 mm</li> </ul>												
Cycle Time	Pick and Place: T <sub>cy</sub> =5,5 s												
Throughput	If programming time < 60 s using 4 programming modules: <table border="0" style="margin-left: 20px;"> <tr><td>650 devices / h (tray in tray)</td></tr> <tr><td>550 devices / h (tray-laser-tape)</td></tr> <tr><td>450 devices / h (tray-laser-tray)</td></tr> <tr><td>400 devices / h (tray-label-tray)</td></tr> </table> 16 progr.-modules / progr. time <300s: 550 devices / h (tape-laser-tape)	650 devices / h (tray in tray)	550 devices / h (tray-laser-tape)	450 devices / h (tray-laser-tray)	400 devices / h (tray-label-tray)								
650 devices / h (tray in tray)													
550 devices / h (tray-laser-tape)													
450 devices / h (tray-laser-tray)													
400 devices / h (tray-label-tray)													
Dimensions, Weight	1,500 x 1,800 mm; 2.7 m <sup>2</sup> ; up to 350 kg												
Power Supply	400 VAC~3, 50 Hz, 10 A; consumption: 200 up to 450 Watt												
Air Pressure	Min. 7 Bar; consumption: up to 1,500 litres / h												
Environment	Temperature: + 20° up to 30° C Humidity: 40% up to 70%, not condensed Altitude: up to 5,000 m												
Noise	< 60 dbA												

