

Orthodyne 3600Plus Large Wire Bonder

Versatility Plus

Combining innovation and experience with the proven 3600 platform, Orthodyne has introduced, not only the fastest, most productive large wire bonder, but also the first wire bonder configurable to PowerRibbon™ on the market – the new 3600Plus. The 3600Plus establishes the latest in motion control technology, software, testing, and monitoring capabilities for power modules, automotive packages and other MCM applications.

To bring you unprecedented process monitoring, Orthodyne linked non-destructive pulltesting technology (ALC) and the optional Bond Process Monitoring (BPM) system, now available for front-and rear cut.

The 3600Plus features the latest digital ultrasonic generator technology and the largest variety of bondhead configurations for large wire to handle virtually any package type.

With the newest Orthodyne GSIII PR system or the optional Cognex PatMax®, the 3600Plus provides the most versatile pattern recognition system available. The large 300mm x 300mm work table or the Offline Programming Tool (OPT) offer additional options.

The pluses built into the 3600Plus are made possible through Orthodyne’s experience and understanding of changing customer needs. With a commitment to outstanding performance, exceptional customer service and ongoing product development, we’ve made a better bonder even better.

Specifications

General

Bond Area	150 mm (Y) x 250 mm (X) Optional 300 mm x 300 mm worktable
Z - Axis	50 mm Z-stroke, 0.5 µm resolution
θ - Axis	± 220°, 0.0035° resolution
Programmable Focus	30 mm range, 0.15 mm resolution
Power Requirements	180 - 240 VAC, single phase, 50/60 Hz, line conditioner included
Power Consumption	5A at 230V
Microscope	Stereo zoom with adjustable work distance
Monitor	17-inch Color Flat Panel
Work Height	1000 mm from floor (nominal), adjustable (934 - 1050 mm), meets SMEMA requirement (940 - 965 mm)
Foot Print	680 mm wide x 1308 mm deep
Safety Standards	CE certification through TUV

Large Wire Bondhead

Type	Orthodyne Rotary, front or back cut with active clamps, optional front or back cut version w/o clamp
Transducer	Orthodyne, 60 kHz, 80 kHz frequency upon request
Bond Force	Programmable 50 g - 1500 g
Bondhead Pull Test	Available for ALC style bondhead

Large PowerRibbon™ Bondhead

Type	Orthodyne Rotary
Transducer	Orthodyne, 80 kHz
Ribbon Sizes	30 x 3 mil to 80 x 8 mil. Others may be available by request

Wire Handling Large Wire

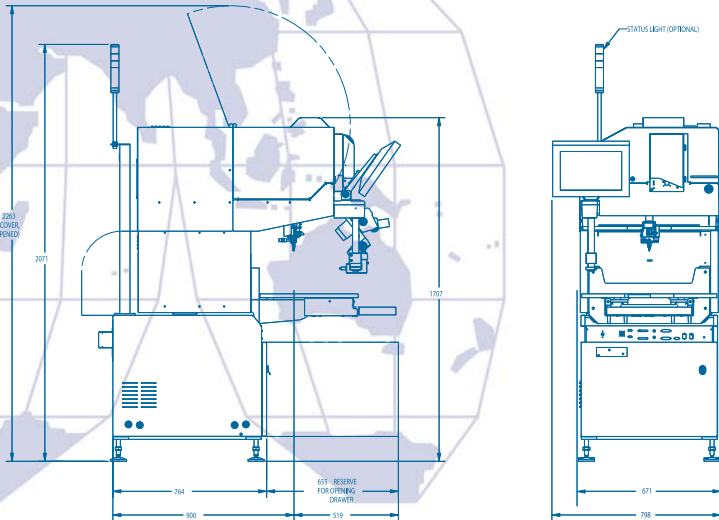
Wire Range	100 µm to 500 µm diameter, <125 µm front cut only recommended
Wire Feed	Motorized wire dereeler with optical encoder
Missing Wire Detection	Wire deformation monitoring
Max. Wire Looping	40.0 mm
Minimum Wire Length	
Detection	2.0 mm wire feed
Wire Spool Size	50 - 120 mm OD, 22 - 45 mm width, 10 - 11 mm ID

Pattern Recognition/Optics

Vision System	Enhanced Orthodyne GSIII Pattern Recognition System
Digital Zoom Available	Yes
Die Rotation	± 7 degrees from nominal for point and dual point mode, ± 20 degrees from nominal for edge mode

System Configuration

CPU	VME PowerPC, for RTS (Real Time Server) CPCI Pentium, for DM (Data Manager)
File Storage	Hard disk, CDRW
Comm. Ports	Serial port, Ethernet, USB, SECS/GEM interface (optional)
Discrete I/O Lines	Standard: 32 lines. Expanded I/O (up to 64 lines) optional. Two 32- line ports available on front panel
Operating System	VxWorks for Real Time Function Windows XP for Graphical User Interface
Number of Bonds/Program	5000 bonds



Made the Orthodyne Way

The new 3600Plus represents a new wire bonder platform that meets today's advanced packaging challenges. Its technology delivers high productivity, process stability, low cost of ownership (COO) and the flexibility to grow with market demands.

The design of this new product family is based on decades of experience. Since 1962 Orthodyne has developed and perfected its core competencies in Motion Technology, Pattern Recognition and Ultrasonics.

Offering complete solutions with award-winning support, investing long-term to excel in an ever-changing industry and pairing leading-edge technology with customer dedication is the Orthodyne way.

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Bulletin 36-305

3600Plus Large Wire Bonder PowerRibbon™ Bonder



ORTHODYNE
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Unprecedented Productivity

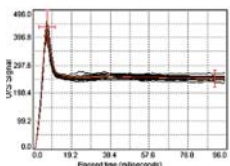
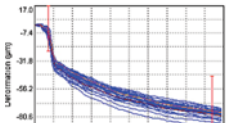
uncompromised quality

Active Loop Control Bondheads (ALC)

Available as Front or Rear Cut version, the bondhead design provides excellent loop control and non-destructive pull-test capability.

Bond Process Monitoring

Optional system monitors bond deformation and ultrasonic signal in real-time. Suspect bonds are flagged and vital process information can be stored for evaluation.



Multiple Bond Frequencies

Multiple bond frequency options are available. All bond frequencies are supported through OE proprietary digital generator technology.

expandable cutting edge capabilities

Networking

Simple Networking via Ethernet. SECS/GEM is available as an option.

File Handling

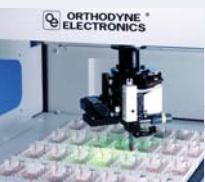
CDRW, hard drive, USB and networking provide easy-to-use tools for data transfer, data storage, and program back-up.

Open Machine Design & System Architecture

Completely open table design allows open access from below the work area. Complicated shuttle and clamping systems as well as line integration are simple and inexpensive. The table can be completely removed or replaced to make room for any customized clamping scheme.

Large Work Area

250mm (X) x 150mm (Y) x 50mm (Z) provides access for large and deep packages and space for convenient manual or automatic loading of parts. A 300 mm (X) x 300mm (Y) large table option is available.



Deep Access Capabilities

All Orthodyne bondheads are re-designed for improved clearance around the bond tool for deep access packages.

Alternative Bondhead Configurations

3600Plus is available with front and back cut bondheads. This flexibility guarantees the best bondhead configuration for your specific package.

cost of ownership

Speed

Low-mass bondhead and unique XY table design combined with high performance linear motors and advanced motion control technology result in the most productive large wire bonders on the market.

New Low-Maintenance Bondhead

Low maintenance bondhead features a modular design that is easy to set-up and maintain resulting in higher uptime.

Enhanced PR

Enhanced third generation system (GSIII) offers accuracy and repeatability through a variety of powerful tools for virtually every device. Optional Cognex PR System including PatMax® available.

On-Board Diagnostics

Continuous feedback of major equipment functions results in higher uptime and controlled performance.



3600Plus
Large Wire Bonder
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"Per Bond" Parameters

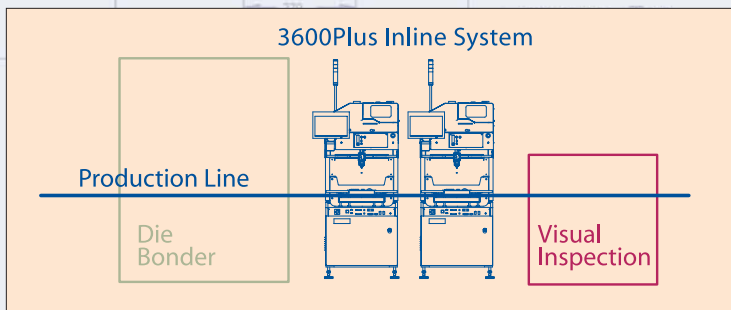
3600Plus Software makes virtually every bond parameter programmable on a "per bond" level. This customization assures maximum flexibility and bond quality for even the most advanced packages.

Programmable Force Control

The 3600Plus bondhead features Orthodyne's third-generation programmable force. The improved accuracy and linearity throughout the bond force range ensures a consistent bond process.

Advanced Looping Algorithms

Constant loop length or height are just two of many looping features available.



WORKHOLDER PLATFORM

Software

New GUI-based software structure offers simplified and user-friendly machine operation and sophisticated trouble shooting tools resulting in lower training cost and increased uptime.

Manual To Fully Automatic

The standard 3600Plus can be loaded manually, for use in a prototype lab or low volume production. At the same time, automation and integration of the system is simple and inexpensive.

Available Options

Bond Process Monitoring Option (BPM)

detects process variations real-time. Process feedback can be stored locally or shared with a host system.

Back Cut Bondhead provides added clearance and allows cutting on a sensitive surface (i.e., die).

Extra Deep Access Bondhead Kits

accommodate deeper package designs.

Programmable Status Light Tower features three programmable lights as well as an audio alarm feature.

Removable Casters facilitate the relocation of the 3600Plus.

Large Moving Work Table expands the work area to 300 mm x 300 mm.

Offline Programming Tool (OPT) lets you convert existing CAD files into machine process programs, significantly increasing machine uptime.

Bondhead Lighting Options offer solutions for every possible application.

SECS/GEM Protocols are supported for various factory automation systems.

PowerRibbon™ Option converts your large wire system into a PowerRibbon bonder, capable of processing Al Ribbon in sizes 30 x 3 mil to 80 x 8 mil.

Cognex PR System including PatMax®

