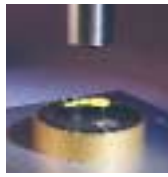
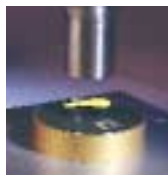
Ultrasonic Welders





30 Plus Years of Experience

You couldn't be in better hands with Dukane's 30 plus years of experience in every facet of ultrasonic assembly. We have a long list of product innovations, a well known reputation for fast service and support, and a product line to match every need.

Ultrasonic Press Systems
Precise and rugged, yet easy–to–use, these highly engineered systems are loaded with features that make them accurate, versatile and very reliable.

Dynamic Process Controllers (DPC)
Our ultrasonic generators are the most advanced in the industry and are designed to give you the highest level of control and capability at the best possible value.

Automated Systems
We offer both turnkey systems and OEM components for fast and easy system integration.

Custom Engineering
All of our products can be modified to meet your requirements. Their modular design simplifies customization.

DUKANE

Intelligent Assembly Solutions

Industry Firsts

We strongly believe in customer–driven design and it has led to some of the most important innovations in our business. Here are just a few of our industry firsts:

Dual–Pressure Welding allows more versatile control of the weld process and improves joint strength.

Weld–by–Distance sets, measures and controls the precise melt collapse distance to minimize reject parts.

Linear Soft Start eliminates power surges by controlling the ramp profile of the ultrasonic amplitude.

Line Voltage Regulation keeps the output amplitude constant by automatically adjusting for AC line voltage fluctuations.

Load Regulation eliminates output amplitude variations due to load dynamics and improves process consistency.

'Hot–Keys' on our generators permit quick access to frequently used commands for faster setup.

Plug–And–Weld modules expand the capability and versatility of our DPC series generators.

Auto–Trac Tuning automatically locks the ultrasonic output signal to the resonant frequency of the tooling.

Hydraulic Downspeed Control provides precise, repeatable control of the tool motion. This permits more uniform material flow which results in stronger welds.

Magnum Transducer with patented Crush–Foil technology reduces acoustic losses between the transducer crystals to deliver maximum power to the load.

Applications Lab

Our application labs are a valuable resource to save you money and time getting to production. Our team of assembly experts can review your application long before mold steel is cut to ensure the weld joint will produce the desired result. You get into production faster with an optimized joint design and save money on mold changes. Let us help you with:

- Design analysis for a more robust part
- Material weldability testing
- Actual tooling tests and weld analysis
- Initial settings and parameters
- Part testing and problem solving

Press Systems

Precise, rugged and easy to use, our benchtop presses are highly engineered systems, loaded with features that make them accurate, versatile and extremely reliable.

- Widest range of frequencies: 15k, 20k, 30k, 40k, 50k and 70kHz
- Power levels ranging from 100 Watts to 4,000 Watts.
- Exclusive dual–pressure capability
- Smooth linear ball–slides for precise vertical movement
- Robust cast–aluminum base and machined steel column to eliminate flexing for accurate repeatability
- Generous 7–inch stroke with adjustable bottom stop
- Ergonomic design with universal icons and easy–access controls

Hand Held and Lightweight Systems

These portable and lightweight units provide an economical and practical solution for operations where it is more convenient to bring the ultrasonics to the part, instead of bringing the parts to the ultrasonic assembly system.

- Both hand–held and machine mountable probes
- Standard 20kHz and 40kHz models are available off–the–shelf
- Full range of process control capabilities and power options
- Includes transducer, DPC unit and user–selectable I/Os for system integration

Automated Systems

Our rotary parts handling systems are not only space saving but are self contained turnkey systems. They are designed to improve productivity and reduce operator fatigue.

- Both benchtop and floor–standing models
- Can be interfaced with all Dukane assembly systems
- Variable speed, variable drive indexer
- Multiple station indexer
  - Programmable controller
  - Safety guarding

Modular Components

The modular design of our products allows us to easily configure them as stand–alone units, single–station systems or fully–automated multihead machines. We can deliver total engineered systems or partner with machine builders. We can also integrate our equipment into existing machines. Some of our custom capabilities include:

- Narrow profile thrusters for close center–to–center mounting
- Compact platen thrusters with remote pneumatics
- Custom software development
- Turnkey automated solutions
- Wide range of process controls with integration and networking capability

Service & Support

For over thirty years, Dukane has been known for our unmatched level of service and support. Here is just a sample:

- Service loaner program
- Dukane online store for parts
- Quick–ship tooling program
- Application labs across the country for engineering help
- Regional service centers
- Factory–trained service technicians
- Extensive training programs
- Resource information center available online at www.dukcorp.com/us

Custom Tooling

Tooling is a critical element in ultrasonic assembly and every application is unique. Each horn and fixture must be designed to specific requirements.

Tooling From Part Files – We can work from your CAD files and extrapolate data to create tool paths. This allows us to machine fixtures and contoured horns before you have actual parts.

Finite Element Analysis – We use an advanced Finite Element Analysis (FEA) methodology to analyze your tool design before it is machined. Material selection, volume and tool configuration are then used to optimize the performance of the final design.

CAD Documentation – Every step of the design and testing process is documented.

CNC Machining – Each tool is machined to exacting tolerances using CNC machines. It is then tested and verified using sophisticated test and measurement equipment.

Material Selection – Horns are machined from aluminum, titanium or hardened Steel depending on the characteristics of the thermoplastic material and its process requirements.

Fixtures – Fixtures are also subject to stringent standards. Resilient fixtures, made from poured or cast urethane, are generally used for contoured parts made from rigid, amorphous materials. Rigid fixtures, machined from stainless steel or aluminum, are used to assemble semi–crystalline materials.

Process control for every need

Our Dynamic Process Controllers™ (DPC) are built to give you the highest level of control and capability at the greatest possible value. We bundle the industry's most advanced features into cost–effective models to match specific requirements. Each model is available in a wide range of frequencies and power levels, and can be customized to your exact requirements.

Standard to every DPC are exclusive Dukane features like:

- Patented Pulse-Width Modulation
- Linear Ramp Soft Start
- Auto-Trac Tuning
- Unique Flow-Through Cooling
- Line and Load Regulation

DPC I

The first choice for OEM applications, this compact generator/power supply is designed to easily integrate into automated machinery. Custom configurations and private labeling available.

DPC II

A perfect fit to our mounted or hand probes. It features modular design and integrates easily with PLCs. Its advanced I/O and Multi–Point Controller (patent pending) allow greater flexibility. This makes it ideal for automated systems that require multi–level status outputs and multiple mounted probes.

DPC II Plus

The only low–cost generator to offer Time and Energy welding capability. Simple operator interface with one–touch hot keys give quick access to frequently used commands for fast setup. It also features modular design and three separate displays for data, power and status.

DPC III

Combines some of our most advanced DPC features with the user–friendly interface from our familiar Ultra–Com controller. It adds weld–by–distance, a full–screen user interface and memory for eight separate weld setups and part data.

DPC IV Plus

Our most advanced generator offers total process control with features like weld data storage to PC, multi–system networking for single–point data output, graphing, standard printer protocols and welder calibration. It is the ideal choice for systems that require FDA or SPC process documentation.

Shown with user-supplied LCD screen and keyboard.

User-friendly graphical interface

Our *i*PC™ software gives you an easy way to communicate with our DPC IV **Plus** to set operating parameters and analyze part data. Since it operates with your PC browser, it has a compatible and familiar interface. This makes it easy to share setups, graph data, print and save files.

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Printed in U.S.A.

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#11671-B-05