

Intelligent Press Systems For a New Age

Productivity

Economy

Flexibility



Fully Digital Electric Servo Press System

Environment

Accuracy

enFORCE

DSP-1500 Series

The Future of Pressing Technology!



AUTOMATION SYSTEMS
Certified ISO 9001:2000

51327 Quadrate Drive Macomb, Michigan 48042 - Phone: (586)781-2100 - Fax: (586)781-0044 · Website: www.fec-usa.com

Productivity

Wide Pressing Range

- 2KN (441lbs.) to 200KN (44.1Klbs.)
- 2 Press Types
 - * Fitting Press - for pressing 1 second or less
 - * Bonding Press - for holding applications > 1sec

Wide Speed Range

- Maximized ram speed for improved productivity
 - * Press speeds up to 416mm/sec.
- “0” speed (holding) capability

Ready to Use

- Nine preprogrammed pressing methods
- Special / Custom press method development available
- Sequencing handled internally¹ or by PLC



Flexibility

Simple System Configuration

- Space saving controller size allows easy handling & maintenance
- “Build As You Need” modular hardware configuration
- Three controller sizes cover full range of presses
- 32 parameter sets allow assembly of different parts with same press
- Unlimited press positioning within press stroke
- Custom press strokes available
- 5 inch remote display unit available (graphical)¹

Ease of Use / Set-up

- Windows[®] based software with user friendly graphical set-up
- Minimal cable connections for easy set-up and maintenance
- “Auto” set-up feature for trouble free start-up

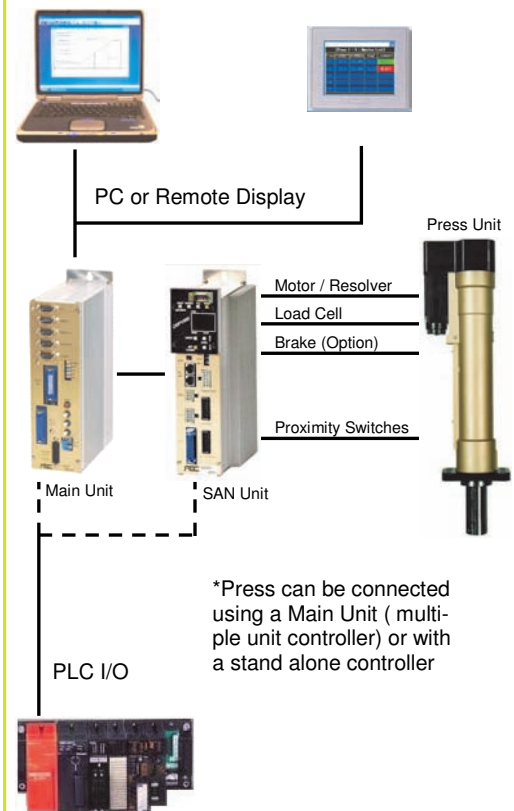
Simplified integration

- Various Fieldbus interfaces available¹
 - * DeviceNet[®], Profibus[®], Modbus Plus[®], EtherNet I/P, CC-Link[®], AB Remote I/O[®] and more
- Main Unit allows connection of multiple presses

Product Traceability, Error proofing

- Part ID (VIN#, Serial#, etc.) information can be imported and married with press data¹
- Store up to 10,000 cycles of press data (with part ID) in controller¹

Simple System Architecture



¹ Main Unit Required

Accuracy

Accurate Load Measuring and Control

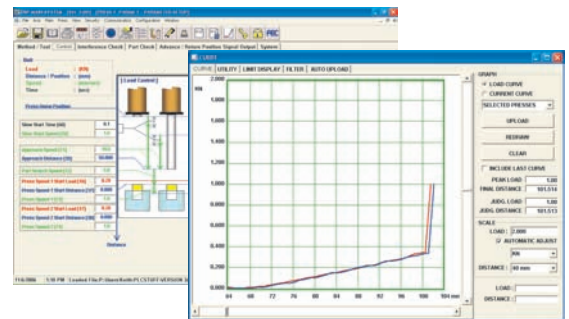
- Built-in high precision load cell (strain gauge technology)
- Built-in intelligent preamplifier with auto press identification
 - * Improved noise suppression and max. response speed
- High servo response through closed loop control
 - * Accuracy <1.5%
- Automatic Calibration / Zero level check each cycle

Integrated Distance Control / Monitor

- High resolution resolver provides accuracy to ± 0.01 mm
- High quality through in-process distance feedback

Robust Drive System

- Precision (anti-rotational) splined ram is insensitive to rotational forces
 - * Guide Ram on presses 10 ton and larger
- High precision ball / roller screw drive
- Durable “low lash” power transfer gearing



Economy / Environment

Low Energy Consumption

- Uses only 1—3% electric power of conventional hydraulic presses

Environmentally Friendly

- Reduces energy, noise, heat, maintenance and space requirements
- Eliminates the costs associated with the handling, storage, clean up and disposal of potentially hazardous fluids (oil)
 - * Reduces work lost due to slip and fall on oil spills



Applications

AUTOMOTIVE

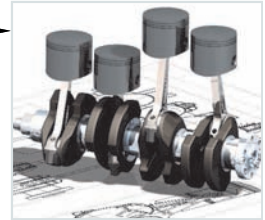
With the wide range of press capacities, **enFORCE** Servo Presses are the perfect solution for many automotive assembly and fabrication applications including:

Engine Component Applications -

- Connecting Rod Pins
- Fan Pulleys
- Piston Ring Insertion
- Freeze Plugs
- Fan Assembly
- Oil Pump Assemblies
- Various Plug Pressing & Staking
- Manifold Heat Shield Forming
- Inserting Piston Sleeves
- Spark Plug Tube Insertion

Other Automotive Applications -

- Hub Bearings & Bushings
- Transmission Gears & Seals
- Steering Gears
- Steering Pump
- Pressing Axle Shafts into Differentials
- Brake Calipers
- CO2 Pump
- Ball Joints



ELECTRONICS

The wide range of speed settings and the ability to press at rated loads for unlimited time make **enFORCE** Servo Presses suited for a wide range of electronic component manufacturing and assembly.

Assembly -

- Pressing Motor Bearings
- Pressing Motor Shaft
- Clinching of Battery Housings
- Forming of Motor Housings

Manufacturing -

- Circuit Board Bonding
- IC Chip Bonding
- IC Chip Lead Forming
- Blanking Keyboard Membrane Pads



TESTING

The high force / distance accuracy and the available push-pull functionality allow **enFORCE** Servo Presses to be used for many testing situations.

Product Testing -

- Springs Compression
- Valve Unseating Force
- Rubber Compression
- Packaging Compression
- Tensile Strength
- Bending
- Connector Insertion
- Piercing

