

enFORCE

DSP1500 SAN Unit Operation Manual



(for Firmware Version 3.x)

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Automation Systems

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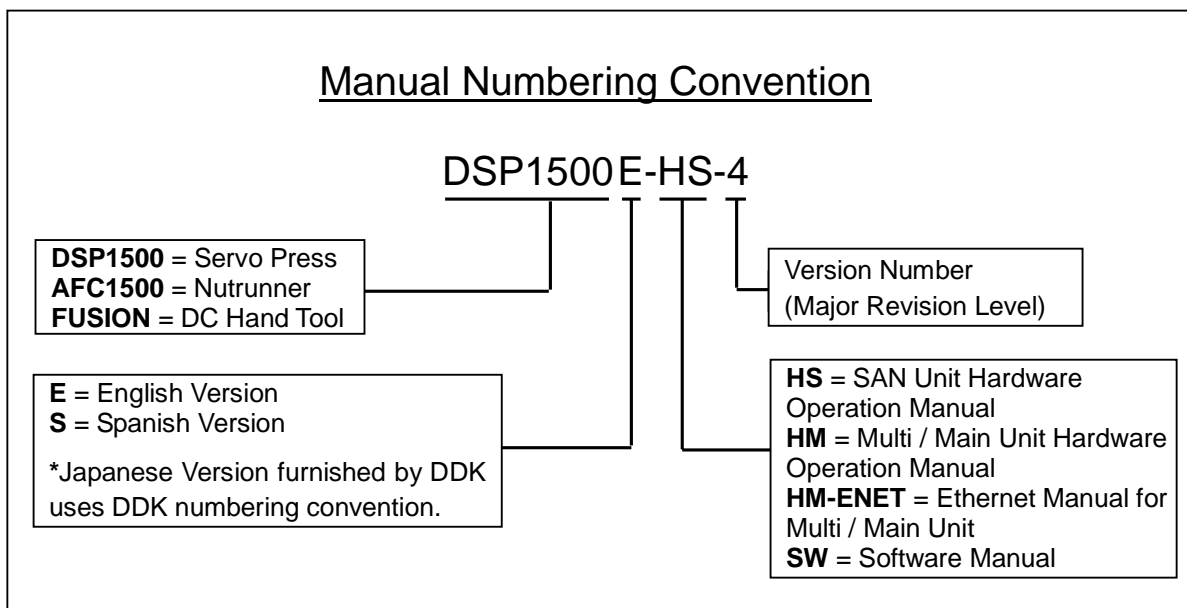
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DSP1500E-HS-4

Revisions

Revision	Revision Date	Revision History	Firmware Version*
3	11/2007	Initial Release	3.14
3.1	10/2008	Minor Revision Chapter 2 - Updated chart for new power requirements. Chapter 4 - Updated transformer sizing chart based on new power requirements.	3.156
4	01/2010	Added functionality for SAN4 Controller. Added functionality for DPM & DPS Series presses. Chapter 6 - Added Real Time Clock functionality for new SAN3-DP1/2S keypad display. Chapter 7 - Expanded on lubrication requirements.	3.201

* Firmware Version at Revision Date.



Introduction

Thank you for purchasing our **Electric Servo Press - DSP1500 System**.

This instruction manual describes the procedures for installation, wiring, handling and actions to be taken in case of any failure.

- ◆ This instruction manual shall be delivered to the end user who operates the equipment.
- ◆ Read all instructions before use and always keep this instruction manual with the equipment.
- ◆ Items not described in this instruction manual shall be considered “unavailable”.
- ◆ The product specification and appearance described in this instruction manual is subject to change without notice.
- ◆ All rights reserved. Any disclosure, copying, distribution, or use of the information contained herein for other than its intended purpose, is strictly prohibited.

For the safety of operator and equipment

- ◆ It is important for you to read all “Safety Precautions” before using the equipment, and understand and observe all instructions and recommendations included in this manual.
- ◆ Read all instructions and recommendations included in this manual, understand the functions and performance of this servo press, and correctly use this machine.
- ◆ Wiring and parameter setting shall only be conducted by a qualified professional.
- ◆ Never conduct a withstand voltage test or insulation resistance test on this equipment.
- ◆ Indicate the following on all instruction manuals that use this equipment.
”This equipment is capable of high voltages hazardous to human life.”

Points to check when unpacking

Please confirm the following when unpacking this equipment:

- ◆ Ensure that you received the correct model as ordered.
- ◆ Ensure that there are no missing parts.
- ◆ Check for any damage caused during transportation.

Warranty

Warranty Period

The standard warranty period is one year from the date of purchase or one year from delivery to the designated End User (not to exceed 18 Months). Actual terms are order specific.

Provision of warranty

If at any time during the warranty period your product proves to be defective, it will be repaired free of charge as long as it was used properly in accordance with this instruction manual. However, the customer will be required to pay for repair charges in the following cases even if the defects occurred within the warranty period.

1. Any defect due to improper conditions, improper circumstances and improper handling.
2. Any defect due to modifications or repairs performed by the customer.
3. Any defect caused by other equipment.
4. Any defect caused by customer failing to meet the equipment's specification.
5. Any defect due to natural disasters and accidents.

This warranty shall be limited to repairing or replacing this product. Any liability for indirect or consequential loss or damage of any kind incurred or suffered by the customer due to a defect of the product is excluded.

Safety Precautions

Read all instructions before operating the equipment in order to use this equipment safely and correctly. Read this instruction manual carefully and fully understand the equipments functions, safety precautions and instructions prior to using the equipment. Safety precautions in this manual are marked with two symbols [Warning] and [Caution].

To prevent danger to the user and other persons as well as property damage, instructions that must be fully observed are marked with the symbols below.

- ◆ This instruction manual uses the following two symbols according to the degree of damage that may be caused when the instruction is not observed.




This symbol indicates that failure to observe instruction marked with this symbol may result in severe personal injury or death.



This symbol indicates that failure to observe instruction marked with this symbol may result in minor personal injury or material damage.



Even instructions that are marked with  may result in severe damage if they are not observed according to conditions.

Contents marked with the above symbols are very important instructions. For your safety, follow all instructions and especially those marked with these symbols.

- ◆ This instruction manual uses the following additional symbols for instructions that shall be observed.



Warning:
Pinch Point



Warning:
Electric shock



Warning:
Fire



Caution:
Fire



Caution:
Electric shock



Caution:
High Temperature



Prohibited



Do not disassemble



Required



Ground

Safety Precautions



Warning



Never touch press ram during operation.
Failure to do so may cause injury.



Make sure that no part of your body gets near any moving part of the tool even while the equipment is at rest. The press ram may lower for some reason resulting in injury.
When performing maintenance or inspection, be sure to secure the press ram with safety blocks to prohibit the ram from lowering.



Do not remove the motor and gear case of tool.
The press ram may lower resulting in injury.



Do not repair, disassemble, or modify the equipment individual components of the system.
Failure to observe this instruction may cause injury, electric shock, fire, and malfunction.



Never operate the equipment where it is exposed to water, near a corrosive atmosphere or flammable gases. Failure to observe this instruction may cause fire.



Keep fingers away from the connectors while the equipment is turned ON and for a while after the equipment is turned OFF. Failure to observe this instruction may cause electric shock.



Wiring operation and maintenance work shall be conducted by a qualified professional.
Failure to observe this instruction may cause electric shock and injury.



Turn OFF the power when conducting wiring operation and maintenance. Failure to observe this instruction may cause electric shock and injury.



Never damage the cables, apply excess stress to cables, or squeeze the cables. Never use damaged cables. Failure to observe this instruction may cause electric shock and fire.



Conduct type-3 grounding of FG terminals.
Failure to observe this instruction may cause electric shock.



In case of an abnormal odor, noise, or operation error occurrence, stop operation immediately and turn OFF the power source. Failure to observe this instruction may cause injury and fire.



Install a Power shutdown device in order to ensure the safety of equipment.
Failure to observe this instruction may cause injury.



Install an emergency stop circuit on the outside of equipment in order to stop operation promptly. Failure to observe this instruction may cause injury.



Keep away from the equipment during recovery from a temporary blackout, and ensure safety measures are conducted after restarting the equipment. The equipment may suddenly restart. Failure to observe this instruction may cause injury.

Safety Precautions

Transportation / Storage



Caution



Transport the equipment properly according to its weight.
Failure to observe this instruction may cause injury and malfunction.

The conditions when transporting the equipment by ship is as below.



- ◆ Ambient temperature: $-5^{\circ}\text{C}\sim+55^{\circ}\text{C}$ (Avoid freezing)
- ◆ Ambient humidity: 50% RH or lower (Avoid moisture)
- ◆ Package: Tight seal
- ◆ Rust prevention measure: Apply grease or oil on tools.

Failure to observe this instruction may cause earth leakage and malfunction.



Do not hold cables or press ram when transporting the tools.
Failure to observe this instruction may cause injury and malfunction.



Do not hold the indicator on the front panel when transporting the SAN Unit.
The indicator may come off and drop from the front panel.
Failure to observe this instruction may cause injury and malfunction.



The equipment shall be stored under the following conditions.

- ◆ Ambient temperature: $-5^{\circ}\text{C}\sim+55^{\circ}\text{C}$ (Avoid freezing)
- ◆ Ambient humidity: 90% RH or lower (Avoid moisture)
- ◆ Atmosphere: Indoors (Avoid direct sunlight)
 - No corrosive gases or flammable gases
 - No oil mist, dust, water, salt, iron powder
- ◆ Avoid direct vibration or shocks

Failure to observe this instruction may cause earth leakage and malfunction.

Safety Precautions

Installation / Wiring



Caution



Install the tools in a place that can support the weight and maximum load during operation. Failure to observe this instruction may cause injury and malfunction.



Install the SAN Unit firmly inside the control panel using the specified screws. Failure to observe this instruction may cause malfunction.



Use the specified tool for the SAN Unit. Failure to observe this instruction may cause fire and malfunction.



The SAN Unit shall maintain the specified distance from other devices. Failure to observe this instruction may cause fire and malfunction.



Do not block the ventilation hole of the SAN Unit. Avoid any foreign body from entering inside the equipment. Failure to observe this instruction may cause fire and malfunction.



The power source shall be provided with safety measures such as breakers and circuit protectors. Failure to observe this instruction may cause fire and malfunction.



Do not use tools or SAN Units that are damaged or have missing parts. Failure to observe this instruction may cause fire, injury, and malfunction.



Do not climb on top of the equipment or place heavy objects on the top of equipment. Failure to observe this instruction may cause injury, and malfunction.



Do not subject the equipment to excess shock and impact. Failure to observe this instruction may cause malfunction.



Conduct wiring properly and firmly. Failure to observe this instruction may cause injury, false operation, and malfunction.



Operate the equipment within the specified power supply voltage. Failure to observe this instruction may cause injury, electric shock, fire, and malfunction.

When operating the equipment in the following conditions, take sufficient measures to shield the equipment.



- ◆Locations where electrical noise is generated.
- ◆Locations where the equipment is subjected to a strong electric field or magnetic field.
- ◆Locations near high power wiring.

Failure to observe this instruction may cause injury, false operation, and malfunction.

Safety Precautions

Operation / Adjustment



Caution



Never operate the equipment with wet hands.
Failure to observe this instruction may cause electric shock.



Keep fingers away from the SAN Unit radiating fins and tool motor while the equipment is turned ON or for a while after the equipment is turned OFF. These parts may become very hot. Failure to observe this instruction may cause burns.

Use the equipment under the following conditions.

- ◆ Ambient temperature: 0°C ~ +45°C (Avoid freezing)
- ◆ Ambient humidity: 90% RH or lower (Avoid moisture)
- ◆ Atmosphere: Indoors (Avoid direct sunlight)
 - No corrosive gases or flammable gases
 - No oil mist, dust, water, salt, iron powder
- ◆ Avoid direct vibration or shocks

Failure to observe this instruction may cause earth leakage and malfunction.



Confirm and adjust all parameters before operation in order to prevent unexpected movement of the equipment.

Failure to observe this instruction may cause injury, false operation and malfunction.



Never conduct extreme adjustments or setting changes that may cause instability of operation.

Failure to observe this instruction may cause injury, false operation and malfunction.



The equipment may restart suddenly when the equipment is reset with the start signal ON. Always ensure that the start signal is OFF before resetting the equipment.

Failure to observe this instruction may cause injury.



Do not turn ON and OFF the equipment repeatedly.
Failure to observe this instruction may cause malfunction.



Do not use the equipment at loads higher than the maximum load.
Failure to observe this instruction may shorten equipment life or cause malfunction due to the high temperature caused by overload.



The magnetic brake is for holding the press ram when performing maintenance procedures. Do not use for normal braking otherwise failure may result.



The magnetic brake may fail to hold near the end of its life expectancy due to wear. Secondary braking structures should be installed on the machine side to safely secure otherwise injury may result.



In case any abnormality occurs, remove the cause and ensure safety before resetting and restarting the equipment.

Failure to observe this instruction may cause injury.

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