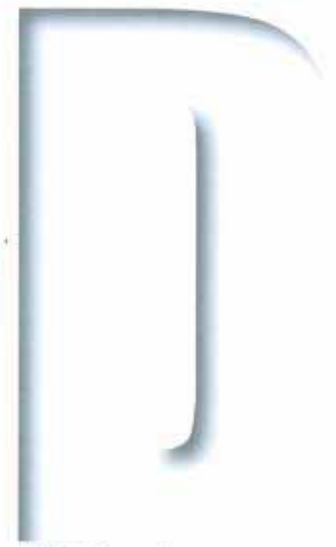
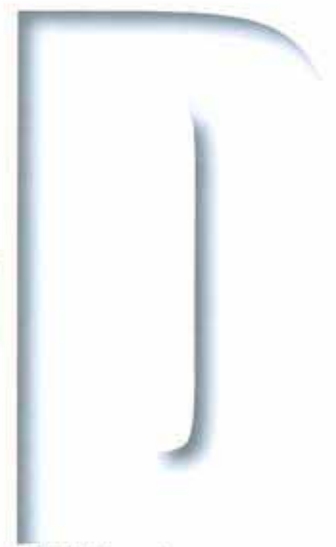




# AIDA Direct Servo Former

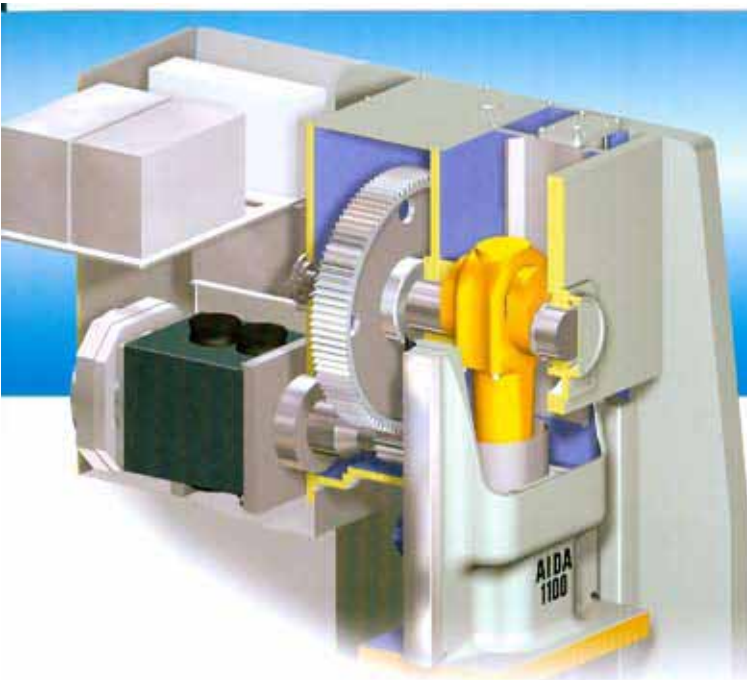


NC1-D series



NS1-D series





## From a Digital Servo F

Focusing on the global market, the  
「AIDA Digital Servo Presses」 has b

Aida is the worldwide pioneer and leader in developing a unique low-speed, high-torque servo motor specifically designed for press applications. Moreover, AIDA has achieved remarkable working energy by using a direct-drive mechanism that directly connects the motor shaft to the main gear.

**SERVO PRO** is derived from the words "servo" and 'professional', and this trademark is used globally for all AIDA servo formers.

The **AIDA Direct Servo Former Series** is equipped with a newly developed servo motor mounted on the proven HY-FLEX PRESS frame.

Only AIDA has a truly professional machine that combines new and existing technologies to enable the forming of high-quality difficult-to-form materials that was not possible using conventional methods.



# SERVO PRO



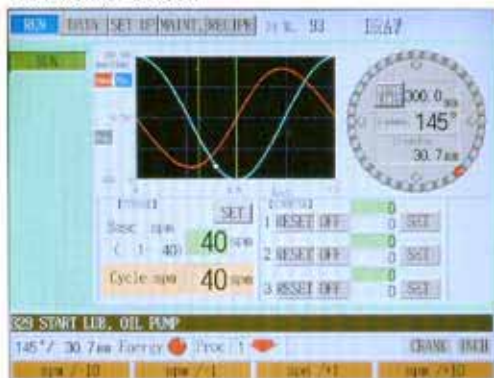
# Former to a Direct Servo Former

The AIDA servo presses have been revamped, and the designation has been changed to 『AIDA Direct Servo Formers』.

**AIDA Direct Servo Formers** have many additional value-added functions, such as greatly enhanced control user-friendliness for making settings and an average 30% increase in the number of strokes per minute (compared to existing AIDA servo presses).

## A New Operator Panel That Delivers Outstanding Operability

Run Monitor Screen



Timing Switch Setting Screen



The new operator panel has a 10.4-inch color LCD screen. While using the Step Feed to reach the forming start position, new onscreen functionality allows you to 'Teach' position settings and to make timing switch On/Off settings. Visibility is also greatly improved by a faster crank angle indicator display and the display of motion graphs on the Run screen. The control has a one-touch retrieval of feeder equipment timing switch settings for pendulum motion operations.

## AIDA's Unique Technology Provides Nine Pre-Programmed Motions as Standard.



Moreover, with the freely programmable slide motion found only on a servo press, you could fully leverage the capability to increase productivity, improve high-precision forming, and lengthen die life. Utilizing the know-how of AIDA's die engineering department, the servo press databank has 9 preprogrammed motions as standard.

## Easily Programmable "Soft Touch" Motions at Specific Positions.

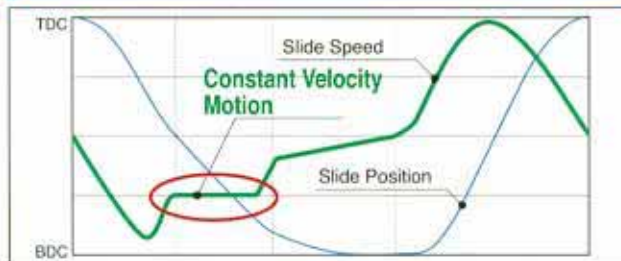


The combination of AIDA's unique S-deceleration and teaching functions enables the setting of "soft-touch" motion.



\* Example of Deep-Drawing of SUS material while Maintaining Uniform Thickness.  
φ 150mm. t=1.0mm. H=73mm

## Constant Velocity Movement within Specific Ranges



An entire new range of metal forming is possible by specifying the forming zone and selecting a constant velocity motion.

High Power  
Capacity  
Elements

High Torque  
Capacity

High Energy  
and Torque at  
Low Speeds

# SERVO PRO

## Direct Servo Former

# NC1-D

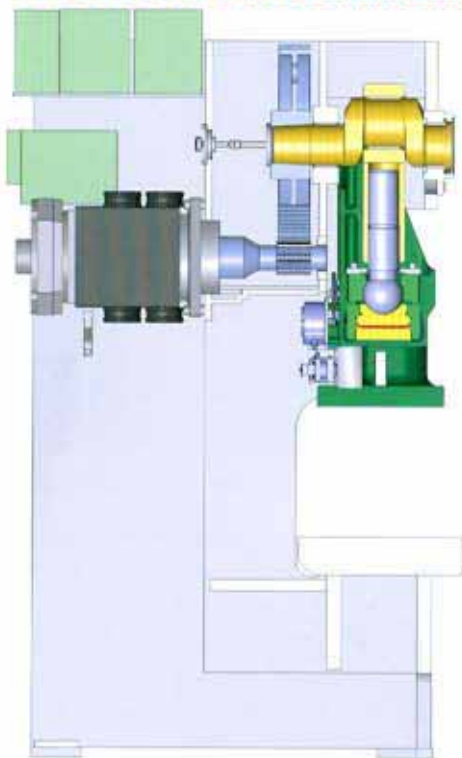
Providing minimal total clearances that exceed JIS Class 1 standards, and a highly rigid frame that minimizes frame throat deflection.

The proven NC1 Series reliability enables the full utilization of the servo press capabilities.

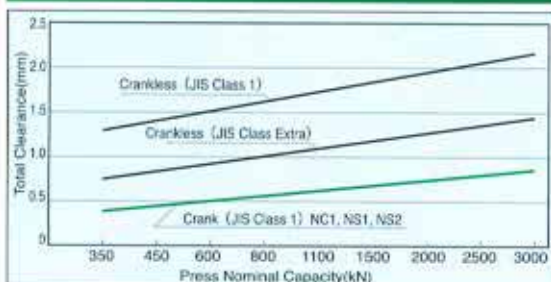
This highly automation-compatible press series can easily accommodate any type of presswork.

## HY-FLEX PRESS NC1-D Series

### Direct Drive Mechanism



### Minimal Total Clearances

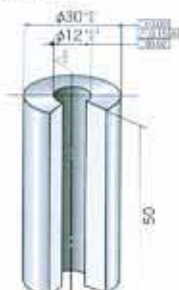


The high-precision machining of each structural component results in minimal overall clearances, dramatic reduction of breakthrough, significant extension of die life, and greatly reduces noise and vibration.

### Metal forming Examples that Demonstrate the Highly Rigid Frame Structure



This  $\phi 30$  mm x 50 mm (H) material (SC415) is formed in a single hit.



### Production System

■ NC1-D x 5 presses + A-B Robot Line



# SERVO PRO

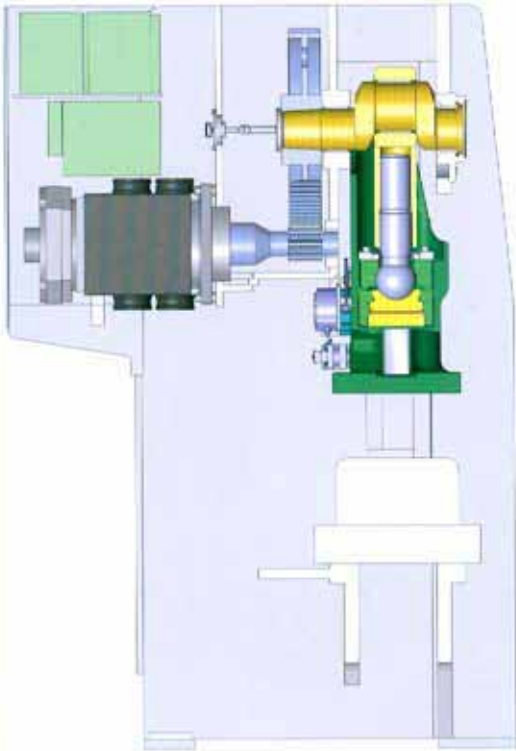
## Direct Servo Former

# NS1-D

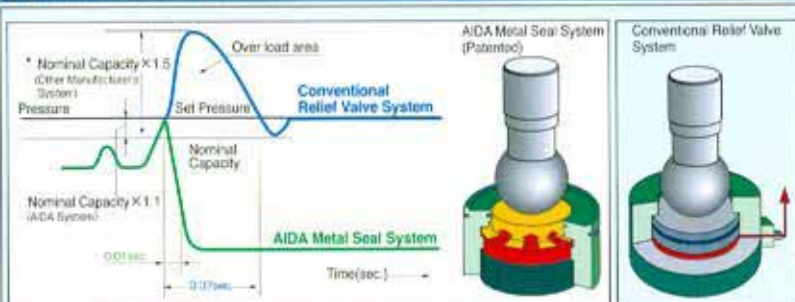
The unitized straightside frame eliminates frame throat deflection and further minimizes frame elongation. Higher value-added production is achieved by providing centrally located full-length slide guides.

## HY-FLEX PRESS NS1-D Series

### Direct Drive Mechanism



### Hydraulic Overload Protector



If an overload occurs during press operation, the AIDA hydraulic overload protector, with its unique metal seal system, will stop the slide immediately without causing additional loading.

Returning the slide to top dead center will automatically reset the system without a cumbersome valve operation, etc.

### Centrally Located Full-Length Slide Guides



The slide guides are centrally located front-to-back, guiding the slide throughout the entire range of motion. This improves front/back and left/right eccentric loading, dynamic accuracy performance, and contributes to increased die life.



### Production System

■ NS1-D + F20II + L30

■ NS1-D + TCS

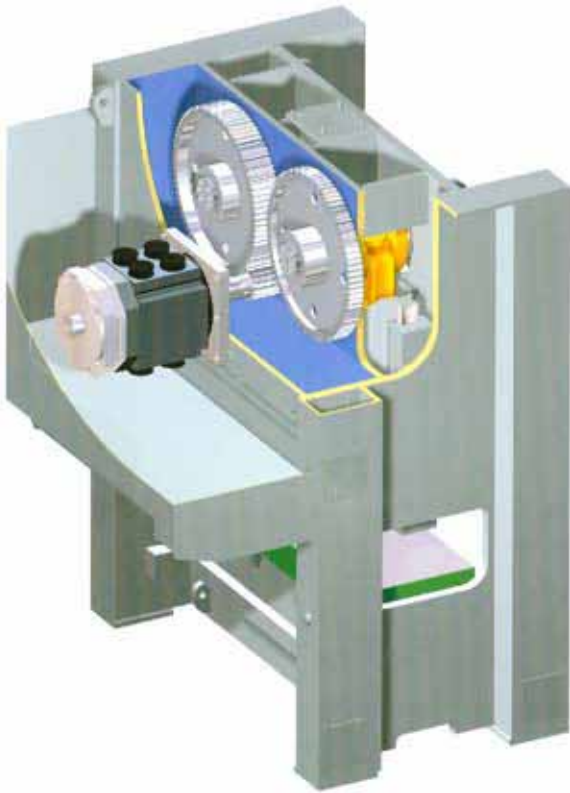


# SERVO PRO

## Direct Servo Former

# NS2-D

### Direct Drive Mechanism

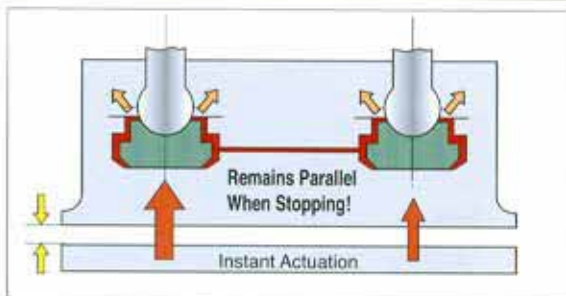


**A highly rigid frame and counter-rotating gear mechanism that withstands eccentric loads.**

The left and right suspension points and the six-surface perpendicular slide guides securely handle the eccentric loading that occurs during multi-stage forming work in transfer and progressive applications.

Because the counter-rotating gear mechanism keeps the generated thrust forces at zero, the die can maintain high precision levels over an extended period of time.

**AIDA's 2-Point Simultaneous Actuation Overload Protector**



Equipped with metal seal-type hydraulic overload protectors at the left and right suspension points. When an overload occurs, the slide is instantly stopped in order to protect the die. High-precision dies can be used with confidence knowing that the slide and bolster will immediately stop and remain parallel if the overload protector is tripped by an eccentric load.

Returning the slide to top dead center will automatically reset the system, without cumbersome valve operation, etc.

With a proven track record for transfer or progressive forming applications, double-crank NS2 Series presses provide superior working space and user accessibility.

This series fully meets the requirements for high-precision forming and high productivity.

## HY-FLEX PRESS NS2-D Series



**Production System**



# SERVO PRO

## Direct Servo Former ACCESSORIES

AIDA provides user-friendly, safe, and environmentally-friendly standard equipment.

Optional equipment tailored to meet specific customer needs is also available.

These robust functions support stable, high-quality production environments.

## Standard and Optional Equipment

### Primary Standard Equipment

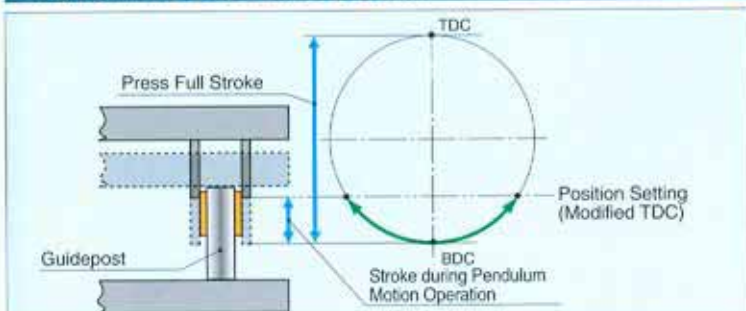
#### Operation Button Box with Manual Step Feed.



When making motion settings, you can inch the slide using the Step Feed feature to confirm the position where the die comes in contact with the material.

You can also use the Step Feed feature to pinpoint settings such as the forming stroke start position and the timing switch on and off timing by means of the HMI "Teaching" function.

#### Variable Preset Stop Point Equipment



When stopping during pendulum motion operations, the slide does not return to the full stroke top dead center position, and thus the die guideposts remain engaged. It is also possible to use a short stroke for one-hit forming.

#### Die Height Indicator That Displays in 0.01 mm Increments.



Because die height adjustments can be made in 0.01 mm increments, it enables precise alignment of precision dies.

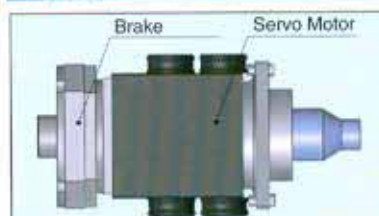
#### Forced Recirculation Lubrication System



A recirculating oil lubrication system is used to lubricate the press drive and bearing areas and also the slide guide areas, thereby controlling thermal frame deformation and enabling high-precision forming.

The environmentally friendly design has fewer lubricant types that require disposal.

#### Equipped with a Mechanical Brake to Promote Safety.

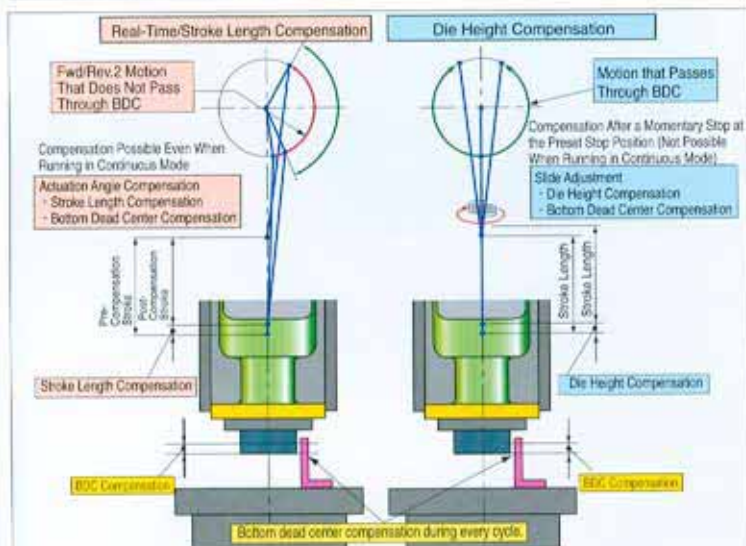


The Servo Motor and Brake System Developed by AIDA (Patent Pending)

The drive system braking equipment, independently developed by AIDA, is standard equipment and promotes operator safety by providing reliable braking even in the unlikely event of a control system failure.

### Custom Equipment (Options)

#### BDC Compensation Device



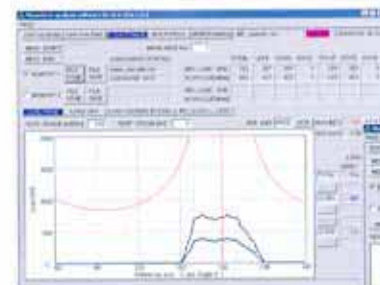
#### Features of the Compensation System

| Correction System           | Real Time Compensation  | Die Height Compensation   |
|-----------------------------|---|---|
| Maximum Correction Accuracy | ±0.01 mm  | ±0.02mm   |
| Compensation Time           | Minimum Compensation Time: Approx. 0.3 sec.                                 | Compensation Time: 1 sec.   |
| Motion System               | Direct compensation of the slide position using the crankshaft drive motor. | Bottom dead center displacement compensation using automatic die height adjustment. |

#### Load Monitor



Different types of data, such as tonnage measurements at the time of breakthrough, are vividly displayed as numeric values or as graphs on the high-resolution touchscreen.



Optional Windows-compatible load analysis software is also available.

With manufacturing and sales locations around the world,  
AIDA provides local customers with  
optimized production systems and service.

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