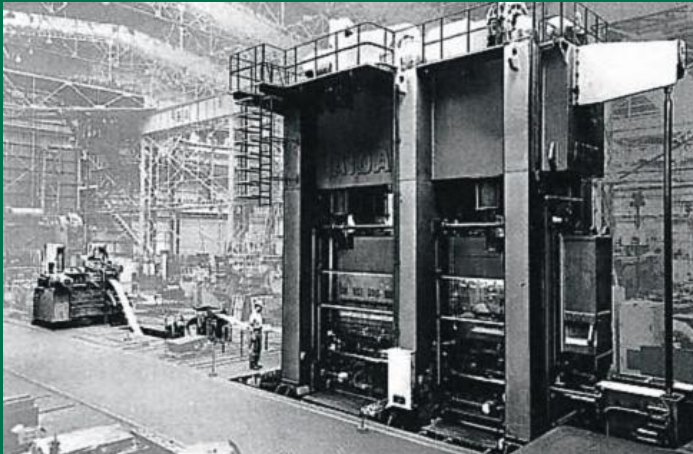




Product Catalogue



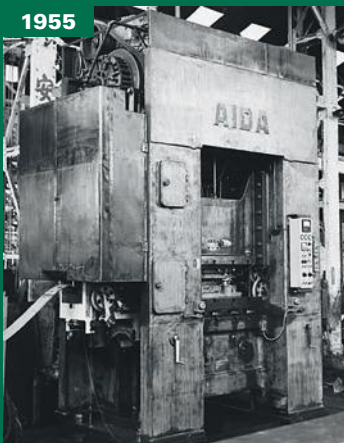
AIDA



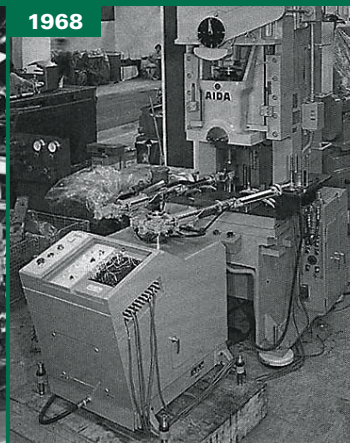
1967

AIDA manufactures a 2500 t transfer press, first in history with such a capacity.

TRADITION



1955



1968

1955

AIDA manufactures the first domestically built 200 t high speed press. The following year, AIDA manufactures a 300 t press with the same features.

1968

AIDA produces the "Auto-Hand", the first industrial robot made in Japan.

P.04

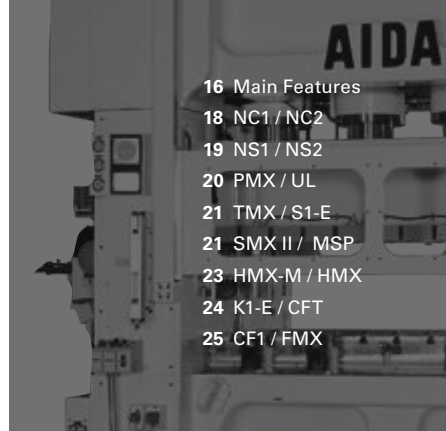
SERVO PRESSES



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- 25 CF1 / FMX

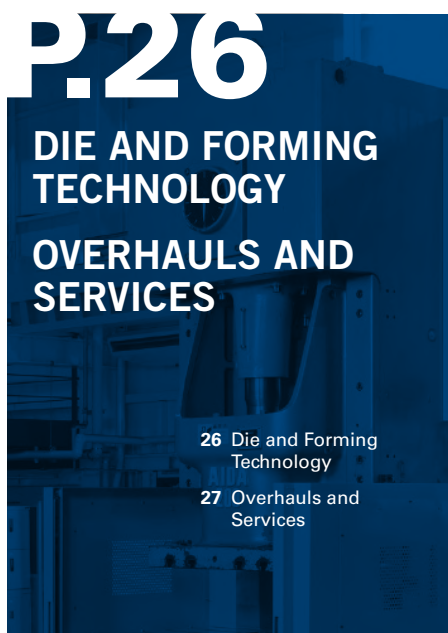
and INNOVATION

Starting in the 20th century and continuing into the 21st century, AIDA has been contributing to people and to the community as a forming systems builder and it is actively engaged in all production optimization technologies.

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DIE AND FORMING TECHNOLOGY

OVERHAULS AND SERVICES

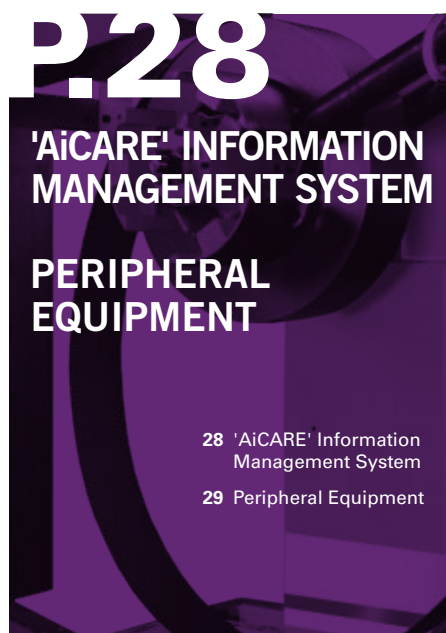


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'AiCARE' INFORMATION MANAGEMENT SYSTEM

PERIPHERAL EQUIPMENT



- 28 'AiCARE' Information Management System
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AIDA Direct Servo Formers

In 2002 AIDA developed the world's first direct drive servo press.

The development concept included features that AIDA wouldn't compromise on.

Minimisation of energy loss, precise transmission of motor torque and minimum maintenance requirement.

AIDA's Focus #1

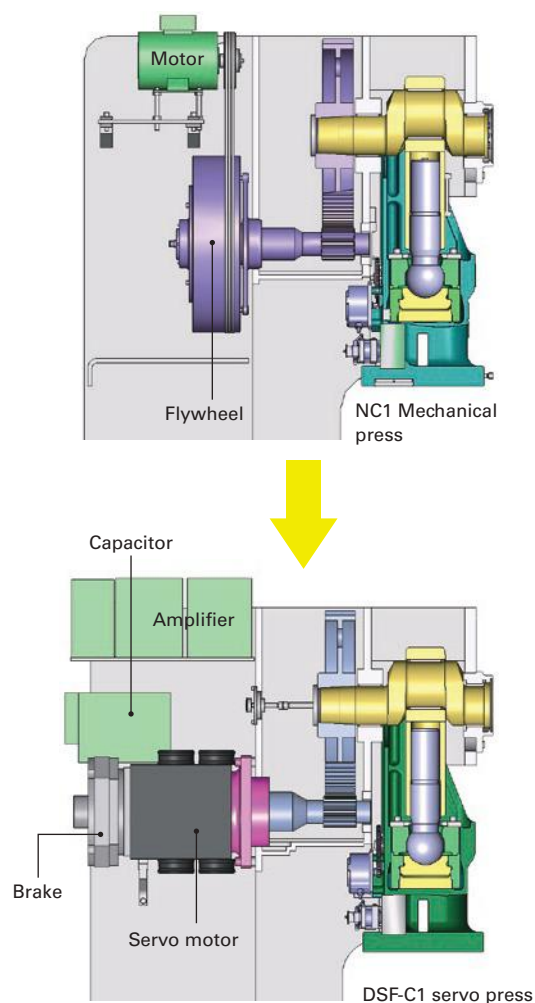
Simple and highly efficient design.

Commercial high-speed motors require a gearbox.

Using a gearbox for energy transmission results in energy losses and requires more maintenance.

SOLUTION

Use of a direct drive mechanism.



AIDA uses a direct drive mechanism that connects the motor shaft directly to the main gear.

Delivery of high torque at low speed and ability to rapidly accelerate and decelerate, expanding the horizons of metalforming.

AIDA's Focus #2

Maximum power from AIDA servo presses.

Servo presses are driven by servo motors. The power of the press, that AIDA wants to maximise, corresponds to the servo motor power (motor output*).

* Motor output (W) = Torque (Nm) x Angular velocity (rad/s)

SOLUTION

In-house development of servo motors specifically designed for press applications.

The AIDA servo motor used on 1500 kN presses delivers a performance five times higher than a standard commercial servo motor. It achieves 9500 Nm output at approx. 250 min⁻¹.

At the same speed a standard commercial servo motor delivers 2000 Nm.



Product lineup

Rated output:	30 ~ 500 kW
Maximum torque:	3,5 ~ 44,0 kNm
Rated speed:	220 ~ 500 min ⁻¹

**Lowering initial investment value
by requiring a smaller primary source capacity.**

**Lowering operational costs and saving energy
by regenerating and returning electricity to the capacitors.**

AIDA's Focus #3

Presses more energy efficient.

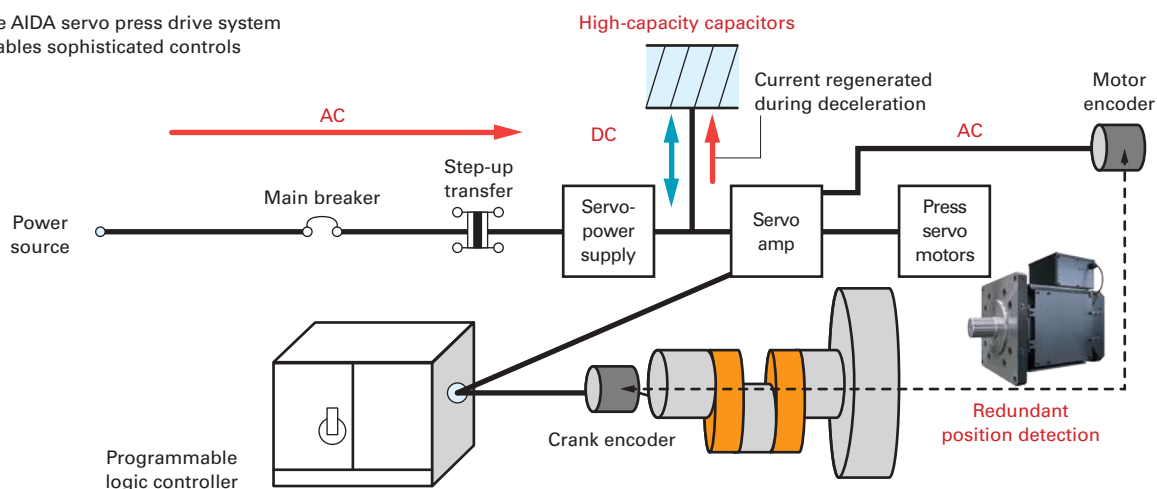
Generally, the more powerful a servo press is, the higher its servo motor capacity and the larger the factory power source.

SOLUTION

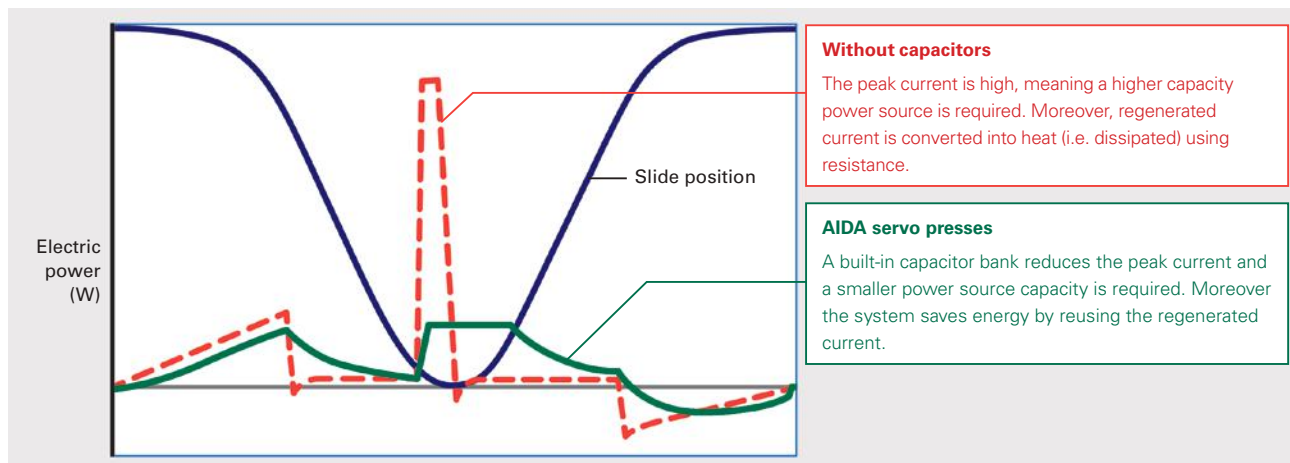
Use of capacitor bank enabling energy regeneration.

AIDA developed an energy control architecture replacing the kinetic energy storage capacity of a flywheel with the electrical energy storage capacity of capacitors. During press deceleration, the electricity is returned to the capacitors. The peak of electrical power required during the forming phase is partly supplied by the electrical energy previously stored in the capacitors, leading to a smaller factory power source capacity comparable to that of a mechanical press.

The AIDA servo press drive system enables sophisticated controls



Comparison of factory power source capacities



AIDA Direct Servo Formers: features

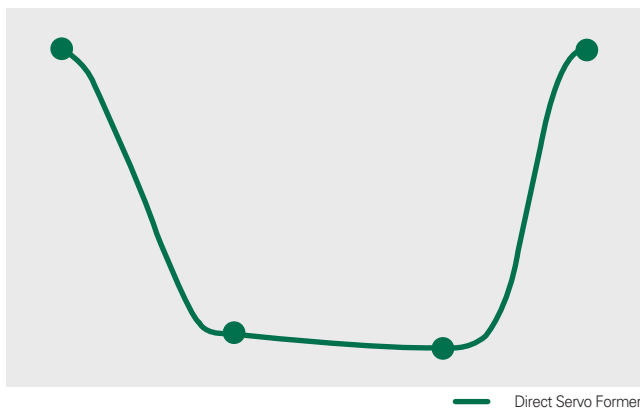
1

High energy at low speed ranges

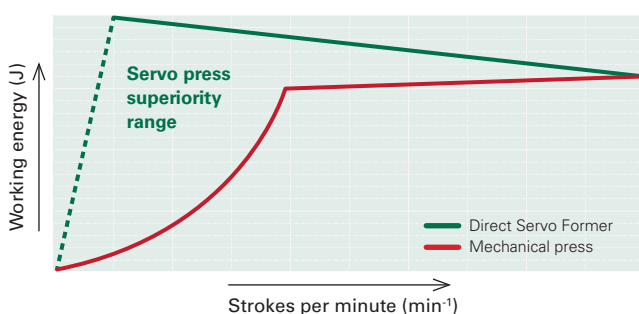
ADVANTAGE

Forming at low speed which is not possible with a mechanical press

Slide motion chart

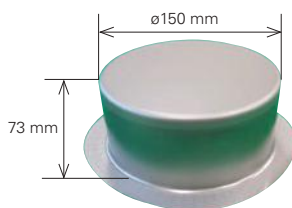


The working energy of a Direct Servo Former is supplied by energy drawn from the factory power source and stored in the capacitor banks. Unlike a mechanical press, a Direct Servo Former can output higher working energy at lower speed.



Case study: stainless steel draw-forming

Thanks to a DSF-N1-1500, draw-forming up to a height of 73 mm is possible.



Material: SUS304
Material thickness: 1,0 mm
Press type: DSFN1-1500
Forming depth: 73 mm
Slide speed: 40 mm/s
Product temperature during forming: 40 °C

(Reference information)

If a mechanical press is used, a press capacity of 3000 kN (or higher) would be required and the slide speed at 73 mm above BDC would be 220 mm/s at 25 min⁻¹.
The product temperature during forming would rise to 80 °C.

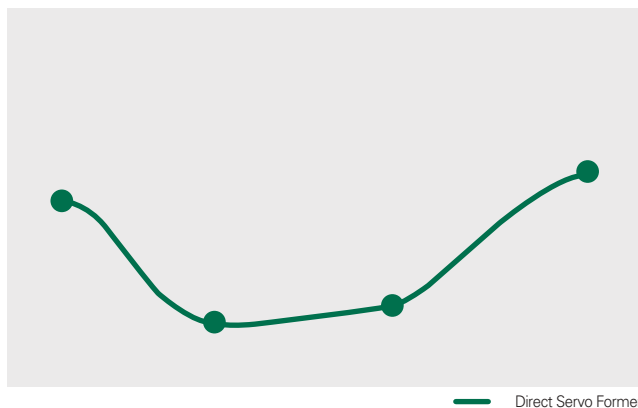
2

Flexibility

ADVANTAGE

Greatly improved productivity

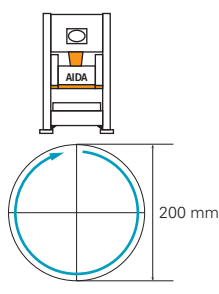
Slide motion chart



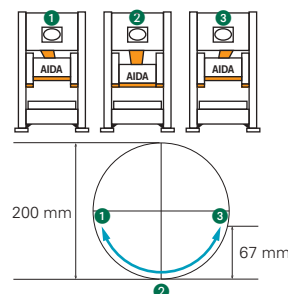
The adjustable slide stroke length of a Direct Servo Former can be optimised by using the forward/reverse rotation function (pendulum motion) of the servo motor. Compared to a conventional mechanical press, a servo press achieves a significant improvement in production efficiency while maintaining a high energy conservation ratio. For example, productivity is improved by 170% in a progressive blanking and bending operation when compared to the full-stroke pattern of a mechanical press. Moreover, the electricity consumption is reduced by almost 50%.

Comparing a mechanical press and a Direct Servo Former under a load of 1350 kN x 1,5 mm*

[NS1-1500(2)]



[DSF-N1-1500]



	NS1-1500(2)	DSF-N1-1500
Production stroke length (mm)	200	67 (Max. 200)
Continuous speed (spm)	60	100
Energy consumption (kWh)	6,76	5,80
Energy consumption per part (Wh/part)	1,88	0,97

* Assuming progressive blanking of material featuring a thickness of 1,0 mm or less

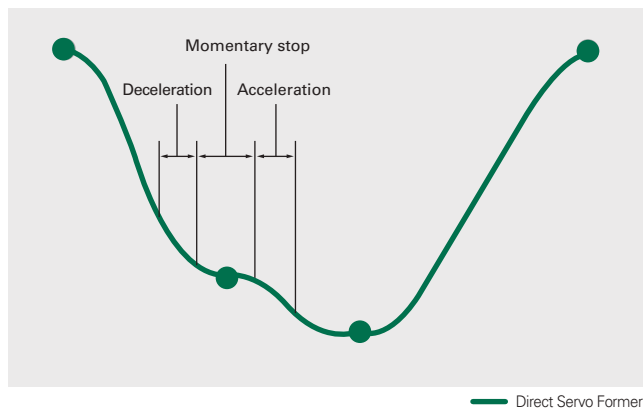
3

Freely programmable motion

ADVANTAGE

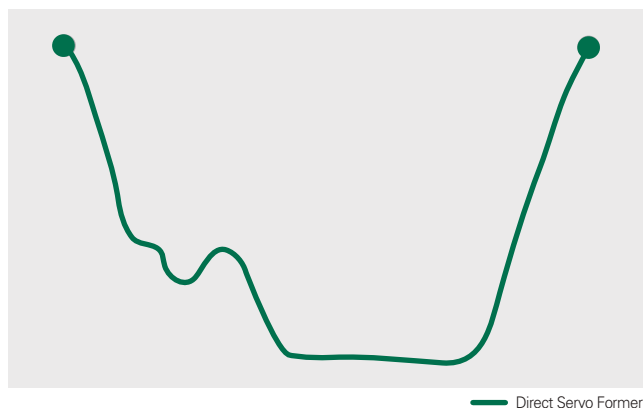
Extended die life and reduced number of forming stages

Slide motion chart



The 'soft touch' when the punch comes in contact with the material determines longer die life, without major compromises in terms of productivity. For example, if a S-curve deceleration on a Direct Servo Former is set to 100% at 5,5 mm above BDC, it will enable a reduction in the contact speed to 10% of that of a mechanical press at 4,5 mm above BDC.

Slide motion chart



If composite forming is required, the number of forming stages can be reduced by understanding the forming details for each process and optimising the appropriate press motion.

4

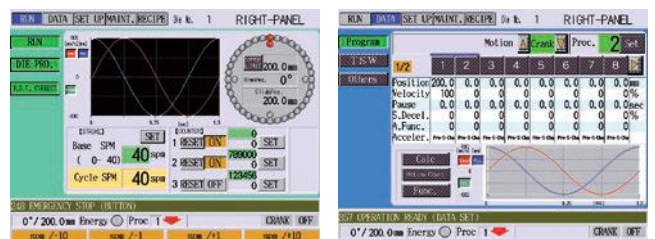
Unparalleled operability

ADVANTAGE

Motion settings are freely programmable and can be easily set

Motion programming at the operation panel

Motion settings for specific stroke positions are freely programmable. Slide motion can be easily set by inputting a slide speed reduction (in percentage) for single slide positions above BDC. Thanks to the auto-calculation feature the motion settings can be validated before the start of production.



Teaching using the step feed unit

When programming motion settings, the step feed unit can be used to inch the slide to the position where the die and the material come into contact. The teaching function on the HMI can then be used to set the forming start position as well as the timing switch on / off settings.



MANUAL PULSE GENERATOR



AIDA high speed servo tandem lines are used to form automotive body panels all around the world.

AIDA takes pride in its large servo tandem lines that deliver the highest production speeds in the world, that can draw-form even highly contoured shapes and that incorporate energy-saving features that only a servo press can provide.

AIDA servo tandem lines are garnering the attention of automotive manufacturers around the world. AIDA will continue to contribute to cutting-edge technologies in order to manufacture the increasingly sophisticated and diverse next generation of automobiles.



Installation site	China
Delivery date	April 2014
Line speed	20 spm
#1 press	25000 kN
Die cushion	Servo
Slide stroke	1100 mm
Die height	1650 mm
#2 press	18000 kN
Slide stroke	1100 mm
Die height	1650 mm
#3, 4 and 5 presses	12000 kN
Slide stroke	1100 mm
Die height	1650 mm
Press pitch	5700 mm
Bolster area	5000x2500 mm



Installation site	United Kingdom
Delivery date	March 2014
Line speed	20 spm
#1 press	25000 kN
Die cushion	Servo
Slide stroke	1100 mm
Die height	1650 mm
#2 press	18000 kN
Slide stroke	1100 mm
Die height	1650 mm
#3, 4 and 5 presses	12000 kN
Slide stroke	1100 mm
Die height	1650 mm
Press pitch	5700 mm
Bolster area	5000x2500 mm



Installation site	Thailand
Delivery date	February 2013
Line speed	18 spm
#1 press	20000 kN
Die cushion	Servo
Slide stroke	1100 mm
Die height	1250 mm
#2, 3 and 4 presses	10000 kN
Slide stroke	1100 mm
Die height	1250 mm
Press pitch	5500 mm
Bolster area	4500x2500 mm



Installation site	United States
Delivery date	August 2011
Line speed	18 spm
#1 press	23000 kN
Die cushion	Servo
Slide stroke	1100 mm
Die height	1400 mm
#2 press	16000 kN
Slide stroke	1100 mm
Die height	1500 mm
#3 press	12000 kN
Slide stroke	1100 mm
Die height	1500 mm
#4 press	10000 kN
Slide stroke	1100 mm
Die height	1500 mm
Press pitch	5900 mm
Bolster area	5000x2500 mm



Installation site	Japan
Delivery date	June 2009
Line speed	18 spm
#1 press	23000 kN
Die cushion	Servo
Slide stroke	1100 mm
Die height	1400 mm
#2 and 3 presses	12000 kN
Slide stroke	1100 mm
Die height	1350 mm
#4 press	10000 kN
Slide stroke	1100 mm
Die height	1350 mm
Press pitch	5500 mm
Bolster area	4500x2200 mm

Melding servo technologies to develop customised midsize and large servo presses that are spurring innovations in manufacturing.

Highly rigid and precise tandem presses that spur new dimensions in the quality of tooling.

The AIDA DSF-S Series

Leveraging servo technologies for the next generation forming of thick materials.

Available capacities:
3000 kN ~ 25000 kN

DSF-S4-10000 part of a hybrid tandem line



A fusion of cutting-edge servo technologies with AIDA proven know-how on transfer presses.

The AIDA DSF-T Series

Transfer forming at maximum performance using pendulum motion.

Available capacities:
3000 kN ~ 30000 kN

DSF-T4-30000

The bestselling PMX Series,
available with a direct servo drive.

The AIDA DSF-P Series

With more than 1500 units sold, the
PMX Series has an extraordinary
proven track record.

Available capacities:
3000 kN ~ 27000 kN

DSF-P4-27000



From sheet metal to billets,
the ultimate high-precision forming
presses.

The AIDA DSF-U Series

The ultimate high-precision presses
for progressive, fine-blanking and
flow-control forming.

Available capacities:
1600 kN ~ 25000 kN

DSF-U1-6000

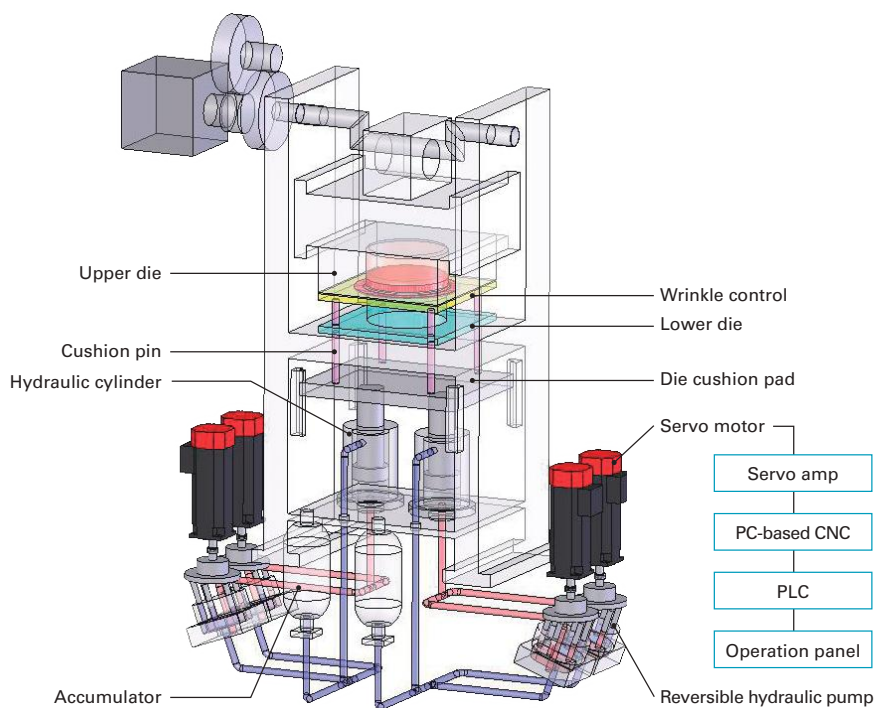


FOCUS

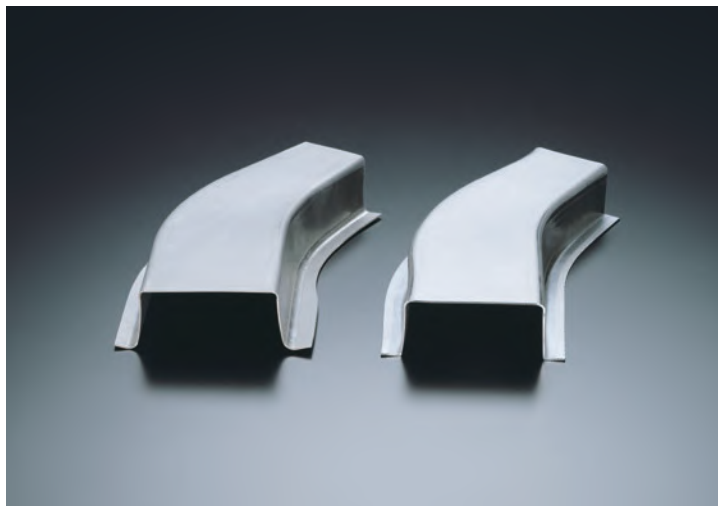
AIDA's Exclusive Servo Die Cushion Technology

The advantages of servo die cushions

- It enables optimal conditions for draw-forming of highly complex parts and of difficult materials, such as high-strength steels.
- A stable and reliable draw-forming process reduces the amount of material used in production.
- Improved material yields and flexibility to change materials lead to lower costs.
- The electrical power regeneration feature enables high-efficiency energy-saving production.
- The built-in hydraulic overload protection provides safety against possible damages due to overloads.
- Impact forces on the press are kept to a minimum, reducing maintenance.



Forming 980 MPa (100-Kilo Class) high-strength material using a DSF-M2-4000 servo press



Left: when formed using a pneumatic die cushion.

Right: when formed using an AIDA servo hydraulic die cushion.



DSF-M2-4000

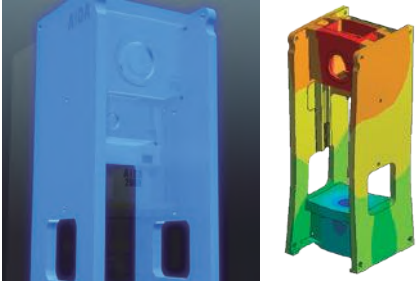
Compact High Speed Servo Tandem Line

A tandem line is created by using a general purpose servo press at each stage and linking these presses with AIDA high-speed transfer robots.

Establishment of a newly designed platform for dedicated robot lines.

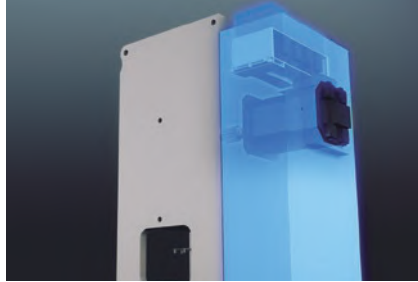
DSF-NI-A SERIES
Direct Servo Former Tandem Version

Enhanced frame rigidity



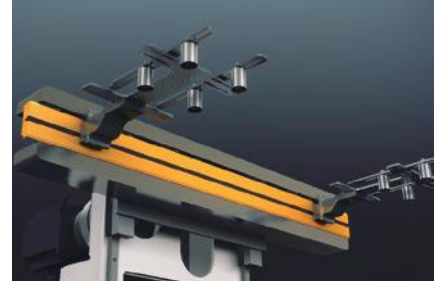
- Using a press frame that is symmetrical front-to-back delivers uniform front-to-back elongation and improves dynamic accuracy.
- AIDA is working towards even better durability by taking measures to reduce stress concentrations.

Isolating electrical components to extend service life



Electrical components are located in separate cabinets to isolate them from stamping vibration. This extends the service life of electrical components.

High-speed transfer robots NCAH-III (S)



AIDA has doubled the productivity of a conventional compact tandem line thanks to high-speed transfer robots and high-precision synchronised controls.

As the entire line can be synchronised without sacrificing speed while still avoiding interference between the timing of the press slide and robot transfer motions, it achieves an equivalent or even better productivity than a dedicated transfer press.

In addition to that, a separate press slide for each stage of the forming process, not only reduces the effects of off-center loading, but also enables the choice of optimal forming motion for each stage of the process. This contributes significantly to uniform product accuracy.

Space-saving design



No maintenance is required on either side of the press. When combined with a NCAH-III (S) transfer robot system, the installation footprint of a line composed of six 2000 kN presses is 40% smaller than a conventional transfer press.

Since large buildings and deep pits are not required, factory-side capital investments, such as the capacities of cranes and the power of air conditioning equipment, are significantly reduced.



Synchronised operation servo motion

Thanks to dedicated press slide for each process stage, forming is possible with optimal motion for each stage.

Reduction of factory capital investment



- Pitless
- Reduction of crane capacity
- Reduction of air conditioning equipment power, etc.

More compact than a conventional transfer press!

AIDA DSF-C1A Series Direct Servo Presses

High-performance servo basic machines

- High productivity by using a low-speed, high-torque AC servo motor designed specifically for press applications.
- Direct-drive mechanism connects the motor shaft directly to the drive pinion and then to the main gear in order to achieve high-precision and high value-added forming.
- An energy-saving eco-mode can be selected from 3 patterns matching a particular productivity.



Main specifications

Model		DSF-C1-800A	DSF-C1-1100A	DSF-C1-1500A	DSF-C1-2000A	DSF-C1-2500A
Capacity (kN)		800	1100	1500	2000	2500
Stroke length (mm)	Fwd./ Rev. motion	60/100/130	70/110/150	80/120/160	110/160/200	120/180/240
	Full stroke	160	180	200	250	300
Strokes per minute (min ⁻¹)	Fwd./ Rev. motion	126/101/86	121/97/79	112/91/74	86/70/60	77/62/51
	Full stroke	1~80	1~70	1~60	1~50	1~40
Die height (mm)		320	350	400	450	540
Slide area (mm) (L/R x F/B)		540×460	630×520	700×580	880×650	1100×730
Bolster area (mm) (L/R x F/B)		810×600	940×680	1050×760	1240×840	1610×900
Frame gap (mm)		310	350	390	430	470
Working height (mm)		900	900	900	1000	1100

AIDA DSF-N1A Series Direct Servo Presses

High-performance servo basic machines

- High productivity by using a low-speed, high-torque AC servo motor designed specifically for press applications.
- Direct-drive mechanism connects the motor shaft directly to the drive pinion and then to the main gear in order to achieve high-precision and high value-added forming.
- Highly rigid frame, symmetrical front-to-back.
- No maintenance space is required on either side of the press, enabling a line with a smaller footprint.



Main specifications

Model		DSF-N1-800A	DSF-N1-1100A	DSF-N1-1500A	DSF-N1-2000A	DSF-N1-3000A
Capacity (kN)		800	1100	1500	2000	2500
Stroke length (mm)	Fwd./ Rev. motion	60/100/130	70/110/150	80/120/160	110/160/200	120/180/240
	Full stroke	160	180	200	250	300
Strokes per minute (min ⁻¹)	Fwd./ Rev. motion	118/96/82	114/93/76	100/82/68	81/67/57	62/51/42
	Full stroke	1~80	1~70	1~60	1~50	1~35
Die height (mm)		320	350	400	450	570
Slide area (mm) (L/R x F/B)		700×460	800×520	900×580	1000×650	1300×900
Bolster area (mm) (L/R x F/B)		900×600	1000×680	1100×760	1130×840	1500×1000
Frame gap (mm)		440×300 (250)	500×320 (270)	670×380 (330)	800×420 (370)	1000×600 (550)
Working height (mm)		900	900	900	1000	1120

* The dimension between brackets is measured from the top of the bolster.

AIDA DSF-N2 Series Direct Servo Presses

High-performance wide servo basic machines

- High productivity by using a low-speed, high-torque AC servo motor designed specifically for press applications.
- Direct-drive mechanism connects the motor shaft directly to the drive pinion and then to the main gear in order to achieve high-precision and high value-added forming.
- AIDA also offers wide-area models (W Series) with fully synchronised servo transfers.



Main specifications

Model		DSF-N2-1100	DSF-N2-1600	DSF-N2-2000	DSF-N2-2500	DSF-N2-3000
Capacity (kN)		1100	1600	2000	2500	3000
Stroke length (mm)	Fwd./ Rev. motion	70/110/150	80/120/160	110/160/200	120/170/230	120/180/240
	Full stroke	180	200	250	280	300
Strokes per minute (min ⁻¹)	Fwd./ Rev. motion	102/84/70	94/78/66	79/66/57	68/57/46	64/52/43
	Full stroke	1~70	1~60	1~50	1~40	1~35
Die height (mm)		400	450	500	550	650
Slide area (mm) (L/R x F/B)		1360×520	1500×580	1850×650	2100×700	2400×900
Bolster area (mm) (L/R x F/B)		1660×680	1800×760	2150×840	2400×920	2400×1200
Side opening (mm)		700×345 (335)	780×385 (375)	860×425 (415)	940×465 (455)	1220×630 (580)
Working height (mm)		900	900	1000	1100	1150

* The dimension between brackets is measured from the top of the bolster.



A compact high speed servo tandem line of seven DSF-N1-2000A equipped with NCAH-III(S) transfer robot system

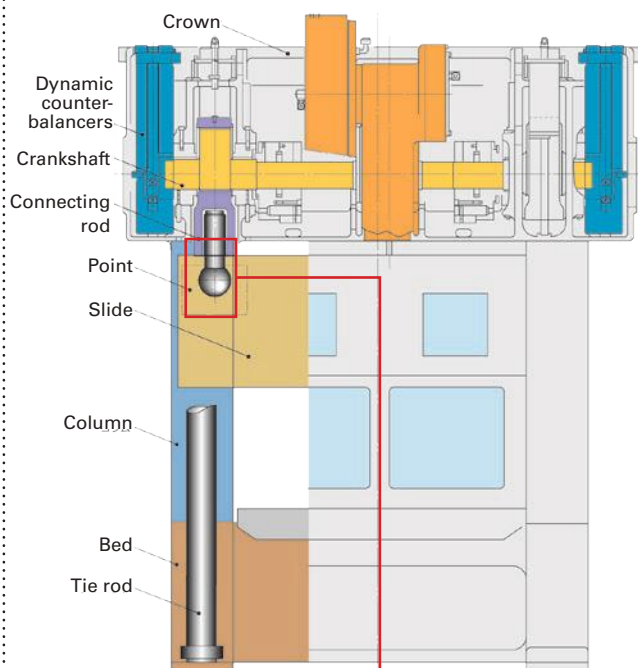
MECHANICAL PRESSES

AIDA has a specialised metalforming engineering department whose expertise in metalforming triggers the design and functioning of AIDA presses. AIDA is developing press models for all types of press metalforming as well as features that are optimised for metalforming processes.

1 Progressive metalforming

When performing high-precision multi-stage progressive metalforming, a press that can withstand off-center loading is essential. The PMX Series - AIDA's bestselling progressive metalforming press - features center-drive design with a wider spacing between points compared to competitors' presses. This allows the PMX presses to withstand off-center loads and, consequently, a simpler die layout design.

The center drive design and the widely-spaced points

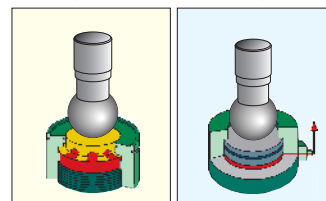


2 AIDA's Hydraulic Overload Protection System (HOLP)

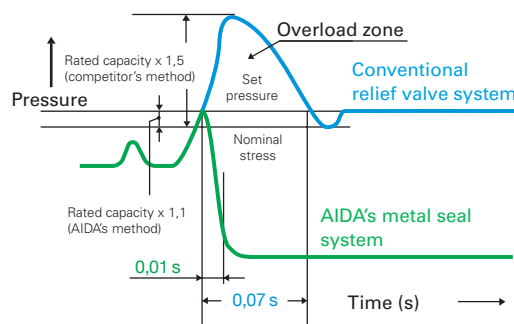
AIDA uses a hydraulic overload protection system with superior actuation reliability and resetting performance.

AIDA unique overload protection system

AIDA's metal seal system Conventional relief valve system



Comparison of overload protection performance



3 Transfer forming



NS2-3000(2) + Transfer (TCS)



TMX-30000
Transmax press series

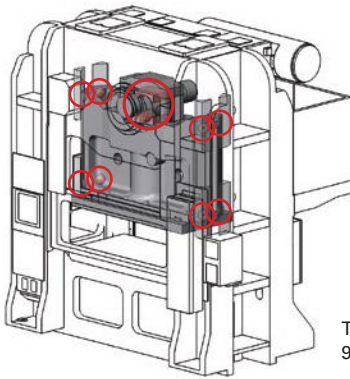
It has been almost sixty years since AIDA manufactured its first transfer press. AIDA takes pride in having manufactured almost 2500 transfer presses since, with capacities ranging from 800 kN to 40000 kN.

Engineering adaptability enables compliance with national standards throughout the world

AIDA has engineering and manufacturing facilities in six countries around the world (Japan, China, Malaysia, Italy, Germany and the US). AIDA has exported products to over sixty countries and has a proven track record for having the flexibility to comply with the various national standards, including national safety standards.

4 Precision shearing metalforming

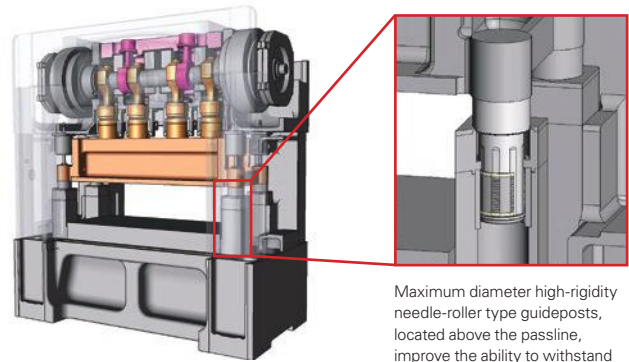
The UL Series press was developed through AIDA's pursuit of ultimate product accuracy. AIDA independently developed zero-clearance slide guides which use spherical shoes and composite materials. The slide is supported by a central single point suspension and eight-gib guides. As the slide is fully constrained by these nine points, there is no slide shimming in the forming portion of the stroke. Moreover, no connecting rods expanding and contracting in response to forming loads and to heat are used. The high-rigidity frame securely absorbs forming loads and the negligible frame deformation serves to improve the die life considerably.



The UL Series
9-point support system

5 High-speed blanking

Manufacturing the motor cores for high-efficiency motors used primarily in hybrid cars requires both large forming areas and ultra-precise dies. The MSP presses provide both a wide forming area and the required dynamic accuracy. Combination of multiple suspension points, highly rigid yet compact hybrid suspension points, highly rigid frame and guideposts allow to achieve enhanced overall rigidity.



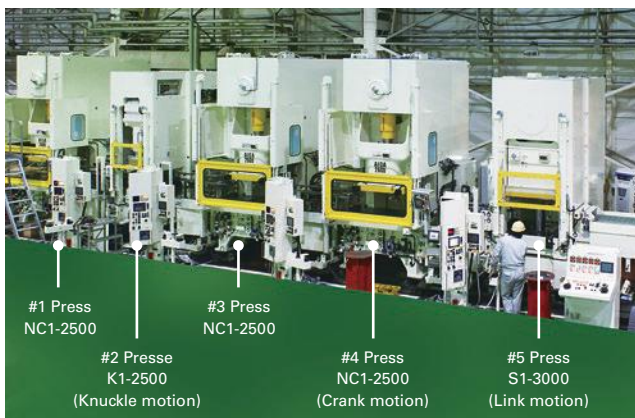
Internal design of an MSP press.
AIDA MSP presses have gained an unparalleled share of the motor core manufacturing market.

Maximum diameter high-rigidity needle-roller type guideposts, located above the passline, improve the ability to withstand eccentric loads and ensure enhanced slide positioning accuracy.

6 Synchronisation control technologies

As a forming system builder, AIDA develops all its servo motors, servo amplifiers, controllers and software internally. AIDA is able to achieve high-efficient, fully-synchronised systems thanks to a deep knowledge of the controls backwards and forwards.

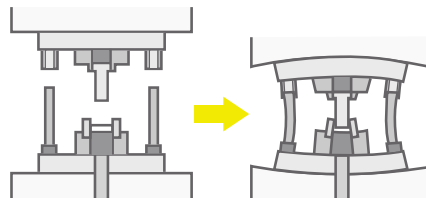
Example of control synchronisation on a compact tandem line composed of different press models



7 Cold forging metalforming (dies)

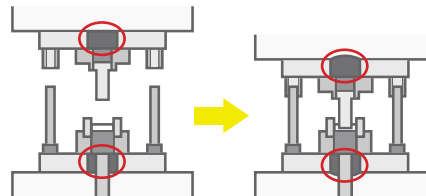
AIDA Forming Engineering Center (AFEC), AIDA in-house die and metalforming technology department, uses cold forging principles to research and develop products design.

A conventional single-plate forging die



Accuracy cannot be maintained because the forming load deforms the entire die set.

AIDA sectional forging die



○ Parts subject to load

Parts in the die that maintain accuracy are segregated from the parts subject to forming loads.

AIDA NC1 Series Hy-Flex Presses

The high-performance basic machines

- The highly rigid frame construction minimises frame elongation and deflection that occurs during stamping.
- AIDA's Hydraulic Overload Protection (HOLP) that activates instantaneously to protect the press and the tooling. The HOLP system resets automatically.
- The large touch-panel HMI enhances productivity and safety.



Main specifications

Model	NC1-350		NC1-450			NC1-600			NC1-800		NC1-1100		NC1-1500		NC1-2000		NC1-2500
Variant	(1)E	(2)E	(S)E	(1)E	(2)E	(S)E	(1)E	(2)E	(1)E	(2)E	(1)E	(2)E	(1)E	(2)E	(1)E	(2)E	(2)E
Capacity (kN)	350		450			600			800		1100		1500		2000		2500
Stroke length (mm)	70	120	50	80	120	55	90	140	100	160	110	180	130	200	160	250	300
Strokes per minute (min ⁻¹)	90~150	55~105	85~175	65~130	50~95	80~165	60~120	45~85	55~110	40~75	50~100	35~65	40~85	30~55	35~70	25~45	20~35
Die height (mm)	200	250	250		270	270		300	300	320	320	350	350	400	410	450	540
Slide area (mm) (L/R x F/B)	380×300		410×340			480×400			540×460		630×520		700×580		880×650		1100×730
Bolster area (mm) (L/R x F/B)	730×310	730×380	810×360		810×440	870×400		870×520	950×460	950×600	1070×520	1070×680	1170×600	1170×760	1390×680	1390×840	1750×900
Frame gap (mm)	160	195	185		225	210		270	240	310	270	350	310	390	350	430	470
Working height (mm)	800		800			900			900		900		900		1000		1100

AIDA NC2 Series Hy-Flex Presses

The high-performance wide-bolster basic machines

- Featuring a highly rigid frame and a counter-rotating gear design that can withstand eccentric loading.
- The high-precision machining of every single component minimises the total clearance and reduces breakthrough.
- High versatility for a wide array of applications. The NC2 presses can be upgraded to create forming systems that incorporate coil feeding lines and transfer units.



Main specifications

Model	NC2-1100		NC2-1600		NC2-2000		NC2-2500	
Variant	(1)E	(2)E	(1)E	(2)E	(1)E	(2)E	(1)E	(2)E
Capacity (kN)	1100		1600		2000		2500	
Stroke length (mm)	110	180	130	200	150	250	170	280
Strokes per minute (min ⁻¹)	50~100	35~65	40~85	30~55	35~70	25~45	25~55	20~35
Die height (mm)	350	400	400	450	450	500	450	550
Slide area (mm) (L/R x F/B)	1360×520		1500×580		1850×650		2100×700	
Bolster area (mm) (L/R x F/B)	1880×520	1880×680	2040×600	2040×760	2420×680	2420×840	2700×760	2700×920
Frame gap (mm)	270×310	350×630	310×350	390×700	350×390	430×800	390×350	470×880
Working height (mm)	900		900		1000		1100	

AIDA NS1 Series Hy-Flex Presses

The next generation of high-performance basic machines

- High-precision and high value-added forming.
- Monobloc straightside construction eliminates frame deflection.
- Forced circulation lubrication system.
- Centrally located full-length slide guiding.



Main specifications

Model	NS1-800		NS1-1100		NS1-1500		NS1-2000	
Variant	(S)	(1)	(S)	(1)	(S)	(1)	(S)	(1)
Capacity (kN)	800		1100		1500		2000	
Stroke length (mm)	60	100	70	110	80	130	95	160
Strokes per minute (min ⁻¹)	75~150	55~125	65~135	50~110	55~115	40~95	45~95	35~80
Die height (mm)	300		320		350		410	
Slide area (mm) (L/R x F/B)	700×460		800×520		900×580		1000×650	
Bolster area (mm) (L/R x F/B)	900×460		1000×520		1150×600		1250×680	
Side opening* (mm)	440×270(220)		500×290(240)		560×330(280)		620×380(330)	
Working height (mm)	900		900		900		1000	

* The dimension between brackets is measured from the top of the bolster.

AIDA NS2 Series Hy-Flex Presses

The next generation of high-performance wide-bolster basic machines

- High-precision and high value-added forming.
- Monobloc straightside construction eliminates frame deflection.
- Forced circulation lubrication system.
- Full-length slide guides.



Main specifications

Model	NS2-1100		NS2-1600		NS2-2000		NS2-2500		NS2-3000		NS2-3000W	NS2-4000W
Variant	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(2)	(2)
Capacity (kN)	1100		1600		2000		2500		3000		3000	4000
Stroke length (mm)	110	180	130	200	150	250	170	280	200	300	500	500
Strokes per minute (min ⁻¹)	50~110	35~70	40~90	30~60	35~75	25~50	25~60	20~40	20~50	15~35	10~30	10~30
Die height (mm)	350	400	400	450	450	500	450	550	600	650	650	700
Slide area (mm) (L/R x F/B)	1360×520		1500×580		1850×650		2100×700		2400×900		2100×1200	2100×1200
Bolster area (mm) (L/R x F/B)	1660×680		1800×760		2150×840		2400×920		2400×1200		2400×1400	2400×1400
Side opening (mm)	700×285	700×335	780×325	780×375	860×365	860×415	940×355	940×455	1220×530	1220×630	1400×670	1400×720
Working height (mm)	900		900		1000		1100		1150		1150	1200

AIDA PMX Series Progmax Presses

The basic machines for high precision progressive die applications

- Link motion improves productivity and assures stable high-precision forming.
- The wide spacing between the points enables the PMX presses to effectively withstand off-center loads.
- The highly rigid frame can withstand the progressive stamping of thick sheet metal.
- The symmetrical front-to-back and left-to-right frame maintains high dynamic accuracy.
- Available up to 16000 kN for 2-point presses and up to 12000 kN for 4-point presses



Main specifications

Model	PMX-2000		PMX-3000			PMX-4000		PMX-5000		PMX-6000
Variant	PMX-L2-2000(1) 155-83	PMX-L2-2000(1) 185-88	PMX-L2-3000(1) 185-88	PMX-L2-3000(1) 215-100	PMX-L2-3000(1) 245-120	PMX-L2-4000(1) 215-115	PMX-L2-4000(1) 245-115	PMX-L2-5000(1) 215-115	PMX-L2-5000(1) 245-115	PMX-L2-6000(1) 245-125
Capacity (kN)	2000		3000			4000		5000		6000
Stroke length (mm)	200		200			200	300	250		250
Strokes per minute (min ⁻¹)	50~120		40~100			30~80	30~60	30~70		30~70
Die height (mm)	475		550			650	700	700		750
Slide area (mm) (L/R x F/B)	1550×830	1850×880	1850×880	2150×1000	2450×1200	2150×1150	2450×1150	2150×1150	2450×1150	2450×1250
Bolster area (mm) (L/R x F/B)	1550×950	1850×950	1850×1000	2150×1000	2450×1200	2150×1250	2450×1250	2150×1250	2450×1250	2450×1400
Max. upper die weight (kg)	1000		1000	1500		3000		3000		3000
Side opening (mm)	850×375		900×450	1020×450	1220×450	1170×550		1170×600		1270×650

AIDA UL Series Ultimate High-Precision Forming Presses

The ultimate next-generation forming machines 'more accurate than the die'

- The UL tremendously enhanced dynamic accuracy increases die life from ten to almost hundred times.
- The innovative 9-point support system enables high precision forming that has expanded the boundaries of metalforming.
- Zero-clearance slide guides and highly rigid frame.
- Suitable for a wide variety of applications, ranging from progressive, fine-blanking and flow-control forming to cold forging.



Main specifications

Model	UL-2000(1)-155-83	UL-3000(1)-200-90	UL-4000(1)-200-90	UL-5000(1)-200-95	UL-6000(1)-185-100
Capacity (kN)	2000	3000	4000	5000	6000
Stroke length (mm)	200	200	250	250	200
Strokes per minute (min ⁻¹)	40~80	40~80	30~70	30~70	30~80
Slide adjustment (mm)	100	100	100	100	100
Die height (mm)	450	550	700	700	700
Slide area (mm) (L/R x F/B)	1550×830	2000×900	2000×900	2000×950	1850×1000
Bolster area (mm) (L/R x F/B)	1550×950	2000×1000	2000×1000	2000×1050	1850×1000
Side opening (mm)	540	600	660	750	800

AIDA TMX Series Transmax Presses

The transfer presses on the cutting edge of industry trends

- A stamping system that enables maximum production diversity and stability.
- TMX presses meld AIDA's production concepts and cutting-edge forming technologies to become a class by themselves.
- A reliable transfer-forming production system built upon AIDA's vast experience and long track record.



Main specifications

Model	TMX-3000	TMX-5000	TMX-8000	TMX-10000	TMX-12000	TMX-15000	TMX-20000	TMX-25000	TMX-30000	TMX-35000
Variant	TMX-S2-3000(2)-300-100	TMX-S2-5000(2)-360-140	TMX-S2-8000(2)-360-160	TMX-S2-10000(2)-420-160	TMX-S2-12000(2)-480-160	TMX-S4-15000(2)	TMX-S4-20000(2)	TMX-S4-25000(2)	TMX-S4-30000(2)	TMX-S4-35000(2)
Capacity (kN)	3000	5000	8000	10000	12000	15000	20000	25000	30000	35000
Rated tonnage point (mm)	13	13	13	13	13	13	13	13	13	13
Stroke length (mm)	310	460	510	600	650	800	800	800	800	800
Strokes per minute (min ⁻¹)	20~40	15~35	15~35	15~30	15~30	12~28	12~25	12~25	12~25	15~30
Die height (mm)	600	800	800	900	1000	1100	1150	1150	1150	1150
Slide adjustment (mm)	100	100	100	150	150	200	250	250	280	280
Slide area (mm) (L/R x F/B)	3000×1000	3600×1400	3600×1600	4200×1600	4800×1600	6100×1900	6250×2300	6250×2300	6250×2300	6250×2300
Bolster area (mm) (L/R x F/B)	3000×1000	3600×1400	3600×1600	4200×1600	4800×1600	6100×1900	6250×2300	6250×2300	6250×2300	6250×2300

AIDA S1-E Series Heavy Stamping Presses

The machines expanding the limits of thick material forming

- The S1-E presses achieve high precision and high productivity.
- AIDA's unique 'slow-touch' link motion and separate-type ring frame keep elongation to a minimum.
- Slide knockouts and die cushions are available as standard options for the blanking and draw-forming of thick materials.

Main specifications

Model	S1-3000E		S1-5000E	
Capacity (kN)	3000		5000	
Rated tonnage point (mm)	13		13	
Stroke length (mm)	250		300	
Strokes per minute (min ⁻¹)	15~40		15~35	
Die height (mm)	570		650	
Slide area (mm) (L/R x F/B)	1000×900		1200×1100	
Bolster area (mm) (L/R x F/B)	1000×985		1200×1215	
Slide knockout capacity *1 (kN)	30		50	
Die cushion capacity (kN)	160 ^{*1}	250 ^{*2}	260 ^{*1}	400 ^{*2}



*1 When air pressure is 0,5 MPa

*2 When air pressure is 0,8 MPa

AIDA SMX II Series Stampmax Presses

The high-rigidity, high-precision basic machines providing superior basic performances

- The soft touch of link motion (optional) keeps die heat to a minimum, while the long restriking time and quick return motion assure stable product quality.
- The total clearance is even smaller than the threshold value stated in the JIS Grade 1 specification for crank presses.
- Noise reduction and minimal breakthrough extend die life.
- Perfect for medium and large panel forming and deep draw applications.
- Suited for fully automatic tandem lines as well as for single-strike forming.



Main specifications

Model	SMX-II-2000	SMX-II-3000		SMX-II-4000		SMX-II-5000		SMX-II-6000	
Variant	S2/L2	S2/L2		S2/L2		S2/L2		S2/L2	S2
Capacity (kN)	2000	3000		4000		5000		6000	
Rated tonnage point (mm)	6.5	13		13		13		13	
Stroke length (mm)	300	460	500	460	510	460	510	510	600
Strokes per minute (min ⁻¹)	20~40	15~30		15~30		15~30		15~20	
Die height (mm)	600	700	800	800	900	800	900	900	
Slide adjustment (mm)	200	200		200	300	200	300	300	350
Slide area (mm) (L/R x F/B)	2150x1200	2150x1250	2450x1250	2500x1250	2750x1250	2500x1400	2750x1400	2750x1500	
Bolster area (mm) (L/R x F/B)	2150x1300	2150x1400	2450x1400	2500x1400	2750x1400	2500x1500	2750x1500	2750x1500	
Bolster height (mm)	180	200		220		240		250	

AIDA MSP Series Multi Suspension Presses

The high-precision, high-rigidity, state-of-the-art presses with a multi-suspension design

- The multiple suspension point system minimises slide deflection and tipping.
- Designed with hybrid points with lightweight yet highly rigid ball systems that leverage the advantages of a wrist-pin design to withstand reverse loads.
- Equipped with a unique slide cooling system that minimises the effects of thermal expansion on parallelism.



Main specifications

Model	MSP-2200-200	MSP-3000-230	MSP-3000-270	MSP-4000-280	MSP-4000-336
Capacity (kN)	2200	3000	3000	4000	4000
Stroke length (mm)	30	30	30	30	30
Continuous working energy (J)	2000	3000	3000	4000	4000
Strokes per minute (min ⁻¹)	120~500	120~420	100~400	100~350	100~300
Die height (mm)	420~480	420~520	470~520	500~600	500~600
Slide area (mm) (L/R x F/B)	2000x800	2300x800	2700x800	2800x900	3360x900
Bolster area (mm) (L/R x F/B)	2000x1000	2300x1000	2700x1000	2800x1200	3360x1200
Max. upper die weight (kg)	1800	2000	2300	2300	3000
Side opening (mm)	490 x die height	490 x die height	490 x die height	980 x die height	980 x die height

AIDA HMX-M Series Hypromax Presses

Pursuing improved productivity and high-precision stamping

- The highly rigid frame and the guideposts above the passline height enable high-precision stamping.
- Use of combined bearings that leverage the advantages of both high-load, high-durability plain bearings and minimal-clearance roller bearings.
- The dual guiding system consisting of guideposts and plunger guides reduces slide tipping resulting from off-center loads.



Main specifications

Model	HMX-1250M	HMX-2000M
Capacity (kN)	1250	2000
Stroke length (mm)	30*1	30*1
Continuous working energy (J)	1200	2000
Strokes per minute (min ⁻¹)	160~500	160~450
Die height (mm)	380~430	400~480
Slide area (mm) (L/R x F/B)	1300x600	1700x650
Bolster area (mm) (L/R x F/B)	1300x850	1700x950
Max. upper die weight (kg)	500	900
Side opening (mm)	450 x die height	530 x die height

*1 Requests for stroke lengths up to 80 mm can be accommodated.

AIDA HMX Series Hypromax Presses

Pursuing improved productivity and high-precision stamping

- The highly rigid frame and the 8 pre-loaded guides minimise slide tipping and enable high-precision forming.
- Stable high-speed operation by combining high-rigidity dual eccentric shafts and bi-metal bearings.
- AIDA's wealth of experience and advanced forming technology enables high-speed stamping.



Main specifications

Model	HMX-1250	HMX-2000	HMX-3000	HMX-3000W
Capacity (kN)	1250	2000	3000	3000
Stroke length (mm)	30	30	30	30
Continuous working energy (J)	1200	2000	3000	3000
Strokes per minute (min ⁻¹)	200~800	200~600	160~500	120~410
Die height (mm)	380~430	400~480	420~520	420~520
Slide area (mm) (L/R x F/B)	1300x600	1700x650	2000x750	2260(2300)x1000*1
Bolster area (mm) (L/R x F/B)	1300x850	1700x950	2000x1000	2300x1200
Max. upper die weight (kg)	500	900	1300	1500
Side opening (mm)	340 x die height	440 x die height	540 x die height	540 x die height

*1 Inside '()' the maximum die dimension value.

AIDA K1-E Series Cold Forging Presses

The basic cold forging presses to form high-grade components

- K1-E is equipped with a strong and highly rigid monobloc frame, six-sided right-angle long slide guides and a quick-response hydraulic overload protection system.
- Compact bed knockouts are built into the bed. The press is floor-mounted for easy installation.
- Wide range of metalforming operations including transfer forming of billets, high-precision progressive forming of coil material and cold forging of metal plate billets.



Main specifications

Model	K1-2500E	K1-4000E	K1-6300E	K1-10000E
Capacity (kN)	2500	4000	6300	10000
Rated tonnage point (mm)	7	7	7	10
Stroke length (mm)	160	180	220	250
Strokes per minute (min ⁻¹)	30~60	30~50	25~45	25~40
Die height (mm)	400	450	550	650
Slide area (mm) (L/R x F/B)	600×400	700×500	800×600	1000×900
Bolster area (mm) (L/R x F/B)	600×500	700×600	800×700	1000×900
Bed knockout capacity (kN)	120	200	320	500
Knockout stroke length (mm)	80	90	110	110

AIDA CFT Series Cold Forging Transfer Presses

High productivity using proven transfer technology

- For crank motion multi-stage cold forging.
- 2-point straightside high rigidity frame.
- The superior off-center loading capability expands the range of die process design possibilities.
- Upgrading to a servo transfer enables high flexibility.



Main specifications

Model	CFT-6000	CFT-8000	CFT-10000	CFT-12000
Capacity (kN)	6000	8000	10000	12000
Rated tonnage point (mm)	7	7	7	7
Stroke length (mm)	250	250	250	250
Strokes per minute (min ⁻¹)	30~45	25~35	25~35	20~30
Die height (mm)	650	650	650	650
Slide area (mm) (L/R x F/B)	1200×750	1200×750	1500×1000	1500×1000
Bolster area (mm) (L/R x F/B)	1200×900	1200×900	1500×1100	1500×1100
Bed knockout capacity (kN)	300 (150 each)	400 (200 each)	500 (250 each)	600 (300 each)
Number of stages	3	3	3	3

AIDA CF1 Series Cold Forging Presses

High forming forces can be applied high in the stroke

- Single connection point and long stroke link motion.
- Simple mechanism with low thrust forces for better forming results.
- High-level operability and shorter setup times.
- Capable of a broad range of forming applications including shaft forming and closed die forging.

Main specifications

Model	CF1-6300	CF1-15000
Capacity (kN)	6300	15000
Rated tonnage point (mm)	10	10
Stroke length (mm)	400	400
Strokes per minute (min ⁻¹)	15~25	15~25
Die height (mm)	900	980
Slide area (mm) (L/R x F/B)	800×1050	1100×1000
Bolster area (mm) (L/R x F/B)	800×1100	1100×1100
Bed knockout capacity (kN)	400	750
Knockout stroke length (mm)	150	180



AIDA FMX Series Cold Forging Presses

Press evolution driven by metalforming technology expectations

- For multi-stage link motion cold forging applications.
- 2 connection points, full-length slide guides and high off-centre loading capabilities serve to expand the die process design possibilities.
- The link motion enables a wider forming range and allows even greater product accuracy and higher productivity.
- Suitable for extrusion forming of long parts with stepped shapes, transfer forming of billets, cold forging of metal plate billets and closed die cold forging applications.
- Available with mechanical or 3D servo drive transfers.

Main specifications

Model	FMX-400		FMX-630		FMX-800		FMX-1000		FMX-1200	
Capacity (kN)	4000		6300		8000		10000		12000	
Rated tonnage point (mm)	13		13		13		13		13	
Stroke length (mm)	300	400	300	400	300	400	300	400	300	400
Strokes per minute (min ⁻¹)	25~40	20~30	20~30	15~25	15~30	15~25	15~30	15~25	15~30	15~25
Die height (mm)	600	900	650	1000	650	1000	700	1000	650	1100
Slide area (mm) (L/R x F/B)	900×1000		1100×1000		1200×1000		1200×1000		1300×1200	1250×1000
Bolster area (mm) (L/R x F/B)	900×1000		1100×1000		1200×1000		1200×1000		1300×1200	1250×1000
Bed knockout capacity (kN)	240/ 100, 240, 100		300/ 120, 300, 120		500/ 200, 500, 200		500/ 200, 500, 200		600/ 240, 600, 240	
Number of stages	3		3		3		3		3	



Die and Forming Technology

An introduction to AIDA Forming Engineering Centre (AFEC)

AFEC brings the right technologies to the table to solve a wide variety of metalforming challenges.

Customers have to deal with many challenges when using presses to form metals such as process designs, die designs and the review of forming system specifications.

The AIDA Forming Engineering Centre (AFEC) functions as AIDA's metalforming process development centre and it helps customers achieve high value-added production by providing problem solving support that leverages a wide range of proven cutting-edge technologies.

In addition, through its research of the latest technologies and the in-house development of new forming methodologies and new forming systems, AFEC is working to expand the boundaries of the metalforming field.



Services provided by AIDA Forming Engineering Centre

Development advice

AFEC offers advice regarding forming methodologies, processes and associated systems.

Mass production support

AFEC supports smooth mass production startup by manufacturing and testing mass production dies.

Turnkey package systems

You can entrust entire projects to AFEC, starting from product drawing reviews, continuing through forming method trials, die trials, press forming equipment trials up to post-installation support. AFEC leverages the wealth of expertise that only a press manufacturer can provide in order to support quick production startup.

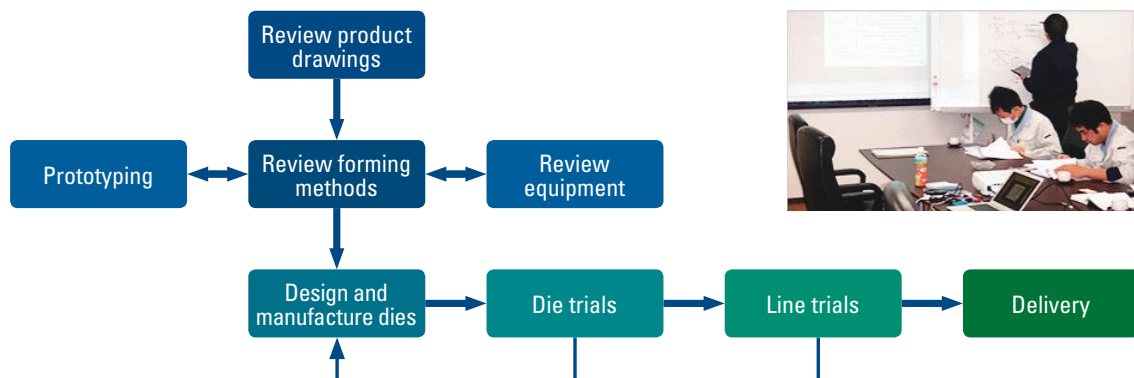
Systems for all types of dies

The environmentally friendly high performance AFP Series press die lube pump. AIDA hydraulic die cushions that enable precision shearing and multi-action forming.

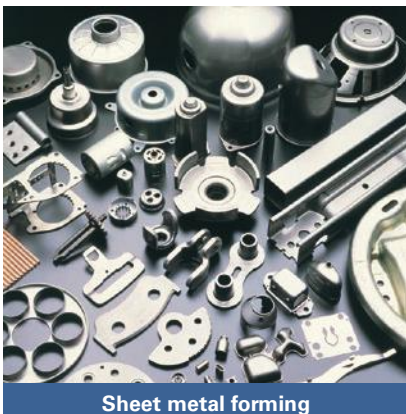
Technology training services

AFEC provides training seminars in response to customers' requests such as 'We want to learn the basics of metalforming' or 'We want AFEC to explain the new forming methodologies to us'.

Turnkey project flowchart



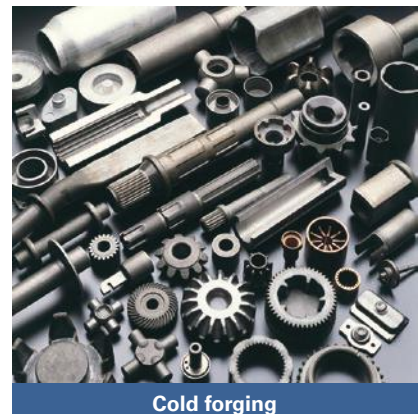
Typical examples



Sheet metal forming



Flow control forming (FCF)



Cold forging

Overhauls and Services

The most crucial element of a retrofit project is to take into consideration the original design intent of the press model in order to avoid losing its original intrinsic advantages. AIDA not only aims to solve current issues, but also to enable the press to smoothly function for a long time in the future.

AIDA thoroughly examines any current issue and pores over the press drawings in order to recommend the optimal solution.

Maintenance inspections

Trust AIDA for your non-AIDA presses

It doesn't matter who originally manufactured the press. AIDA's specialised engineering and manufacturing personnel will respond in earnest as only a press manufacturer can.

Upgrades

Modernization projects

AIDA has a proven track record

Whether it is control and operation panel upgrades, motor replacements or peripheral equipment upgrades, AIDA has a proven track record when it comes to improving productivity.

Overhauls

Relocation projects

Contact AIDA for your relocation projects

AIDA can provide complete support anywhere in the world, ranging from overhauls to quick start-up. When relocating equipment overseas, you can trust 'AIDA Global Service' fully leveraging its overseas network.

Conversion from mechanical to servo

BEFORE



AFTER



2days Project examples

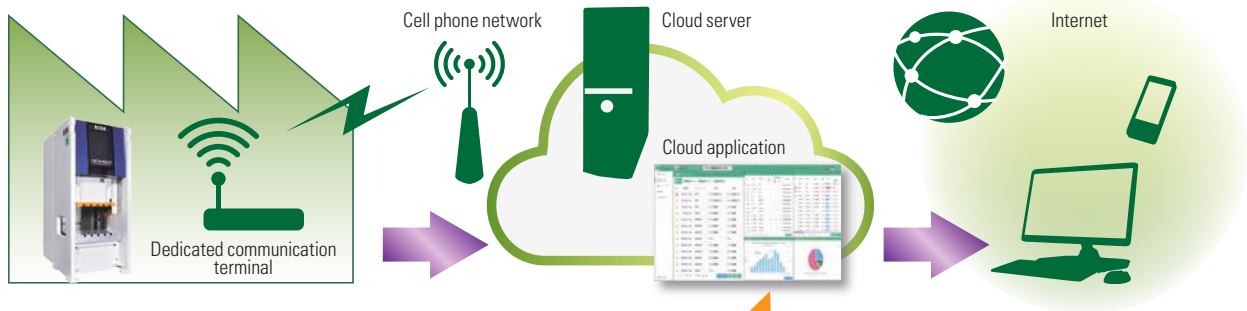
It only takes two days to do the following!

Purpose	Project Examples
Preventive maintenance (Upgrading obsolete components)	• Upgrade the PLC on a small press • Upgrade the HMI • Upgrade the die height indicator • Upgrade the timing switches • Add an oil-water separator
Improve productivity / operability	• Upgrade rotary cams to timing switches • Add more timing switches • Upgrade to automatic die height adjustment • Upgrade a fixed-speed motor to an inverter motor • Upgrade an automatic greasing device • Add a flywheel brake • Add a tonnage monitor
Safety-related projects	• Upgrade to dual clutch and brake solenoid valve • Add die blocks • Overhaul wet-type clutch and brake units
Energy-saving and cost reduction projects	• Replace a variable speed motor with an inverter motor

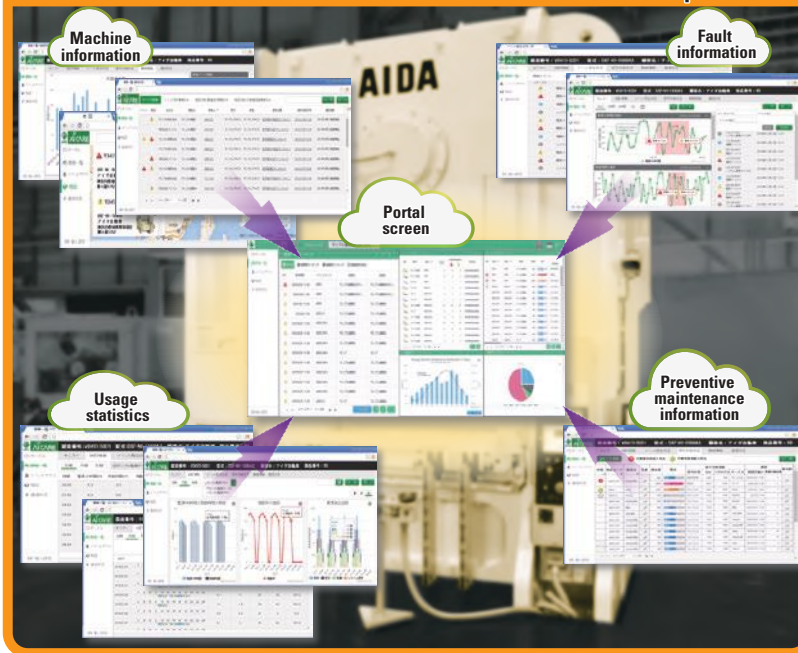
'AiCARE' Information Management System



links machines worldwide and enables visualization and analysis of utilization conditions



The desired information can be customised to meet customers' requirements



- AiCARE is a system that uses an Internet line to automatically transmit machine information, enabling easy management at each terminal.
- Machine information can be freely added based on the specific requirements of each customer.
- The collected data can be analysed to help the customer manage everything from product quality control to preventive maintenance.

Collection of a wide array of data

Standard data collection items

Power ON time / cumulative power ON time
Usage time / cumulative usage time
Die change time / cumulative die change time*
Servo / main motor ON time
Production quantity / cumulative production quantity
Power consumption / cumulative power consumption*
Product no.*
Product designation*
Press speed setting*
Current die height value*
Tonnage values*
Fault / maintenance codes (including e-mail notifications for serious malfunctions)

Items marked with an * are included only when the press is equipped with the necessary data collection sensors or devices. Data is collected every 3 minutes and is uploaded to the server every hour. Data can be downloaded as a CSV-format file.

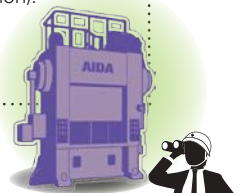
Optional customised data collection (examples)

Main motor amperage
Motor load factor
Power and air consumption per stroke
Control panel internal temperature
Current leakage (for monitoring insulation degradation)
External temperature
Lubrication oil / hydraulic fluid temperature
Crankshaft temperature
Slide gib temperatures
Bearing vibration
Bottom dead center displacement / slide parallelism
Die cushion pressure

Wide-ranging support details

Examples of optional functions

- 'AiCARE' can be purchased with new equipment or added to existing equipment (even non-AIDA equipment).
- Realtime data, such as power consumption, can be collected for primary processing (visualisation).
- The output format of usage conditions is customisable based on customers' requirements.
- Data can be collected via PLC unit (Siemens, Mitsubishi, Omron) at each location.



PERIPHERAL EQUIPMENT

AIDA manufactures also peripheral automation equipment such as coil feeding lines, blank feeders and transfers, enabling easy synchronisation with AIDA presses. Experience the next-generation production systems made possible by cutting-edge line synchronisation control technologies.

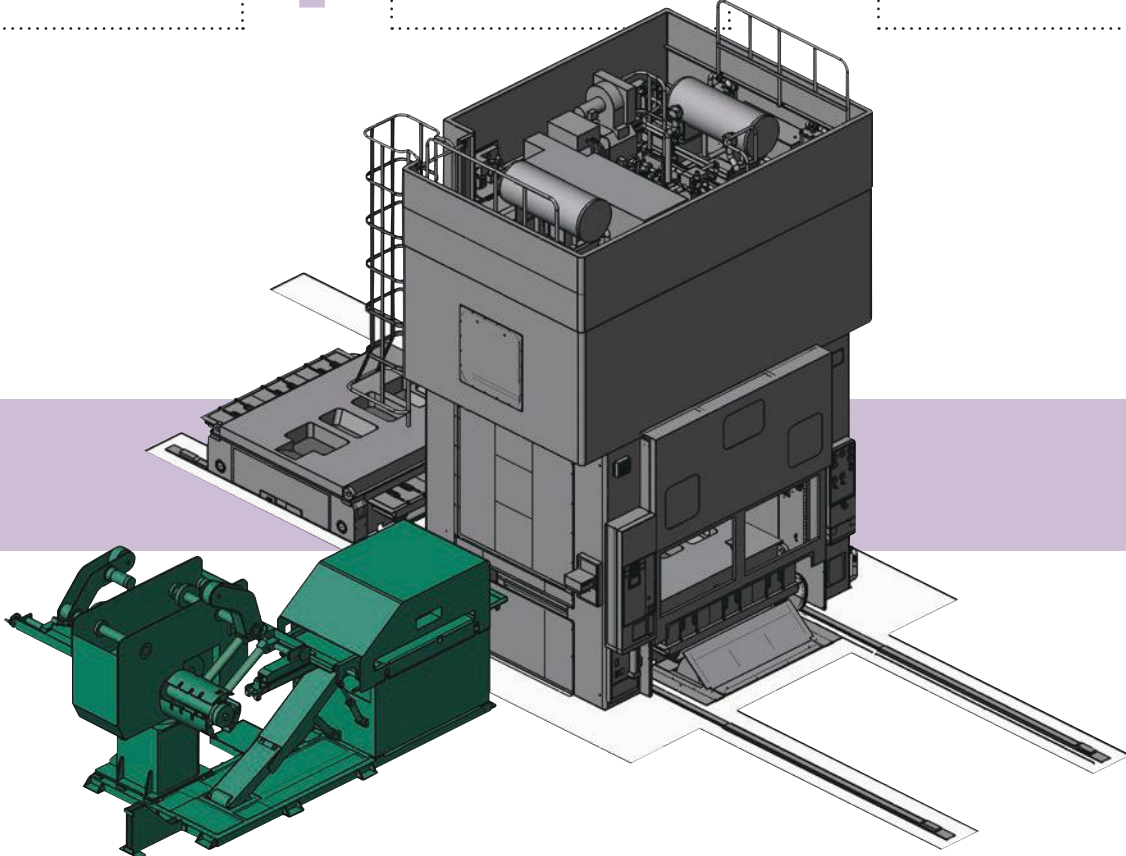
**AIDA
Servo Presses**



**AIDA
Automation**



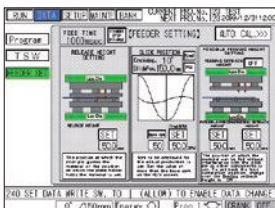
**3
Advantages**



1 Operability

ADVANTAGE

The optimal productivity settings can be easily input

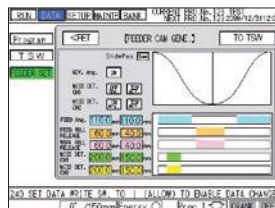


When the material feed length and feed start position are set on the feeder control panel, the press factors in the emergency stopping time and automatically calculates the optimal pendulum motion stroke length to maximise the output.

2 Efficiency

ADVANTAGE

Optimised control synchronisation greatly reduces setup and operation tasks



The feed start position can be easily set using the step feed feature. Cumbersome cam settings (feed, release and material misfeed detection settings) are set via automatic calculations.

3 Stability and reliability

ADVANTAGE

Reliable support systems when emergencies occur



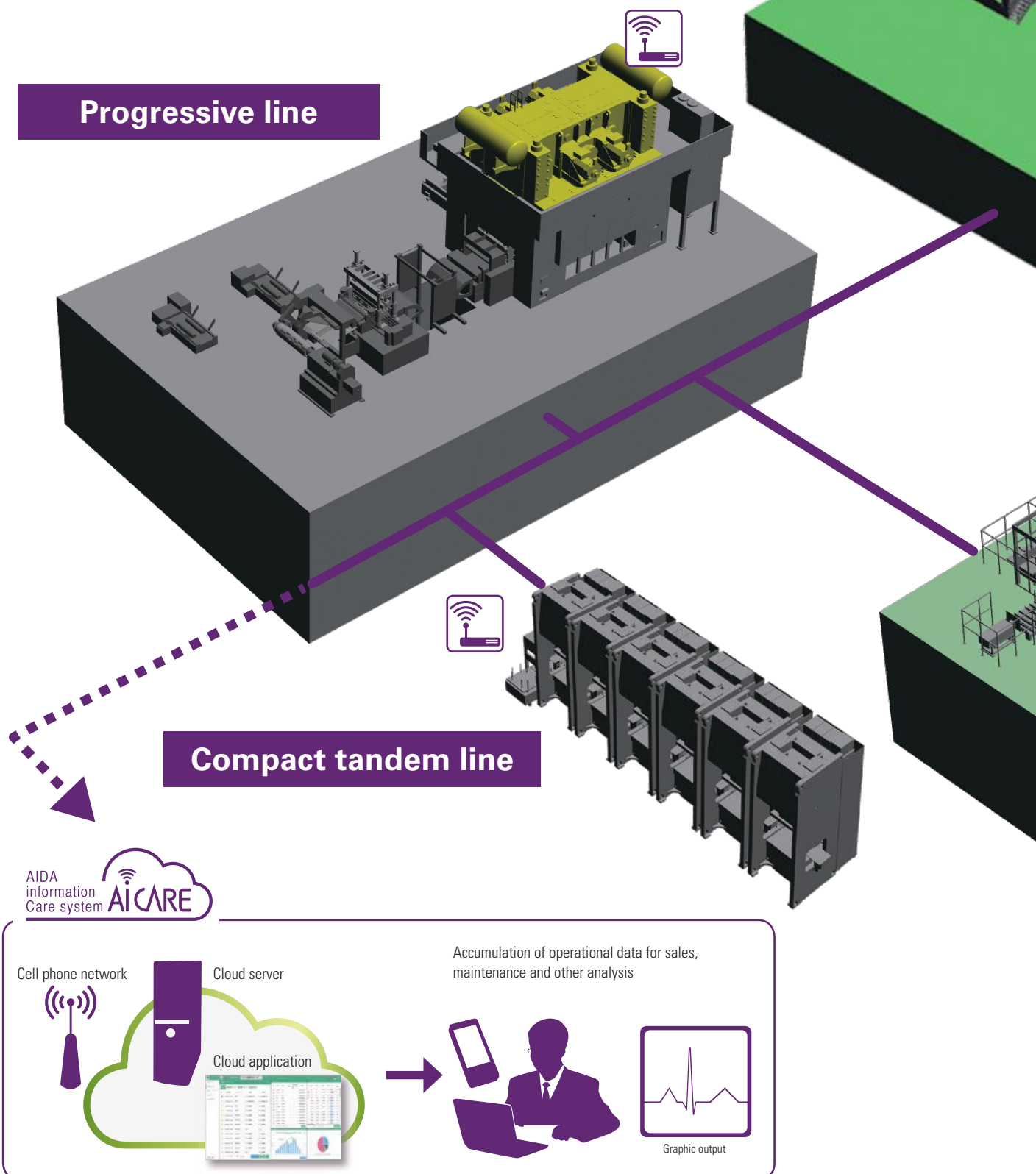
Only AIDA, which services all of its production systems directly, can provide a single point of contact for maintenance support and service. AIDA responds quickly to emergency situations.

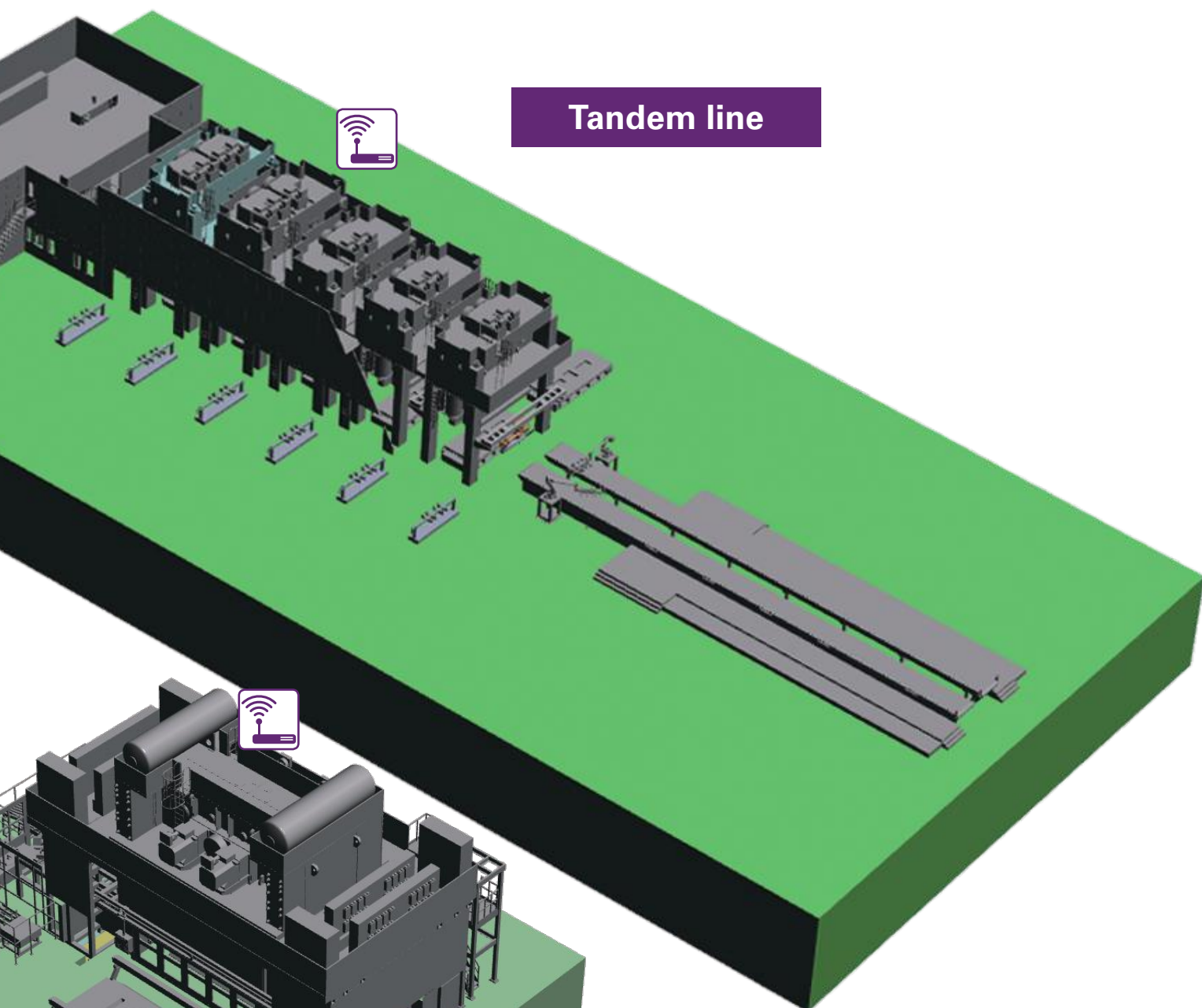
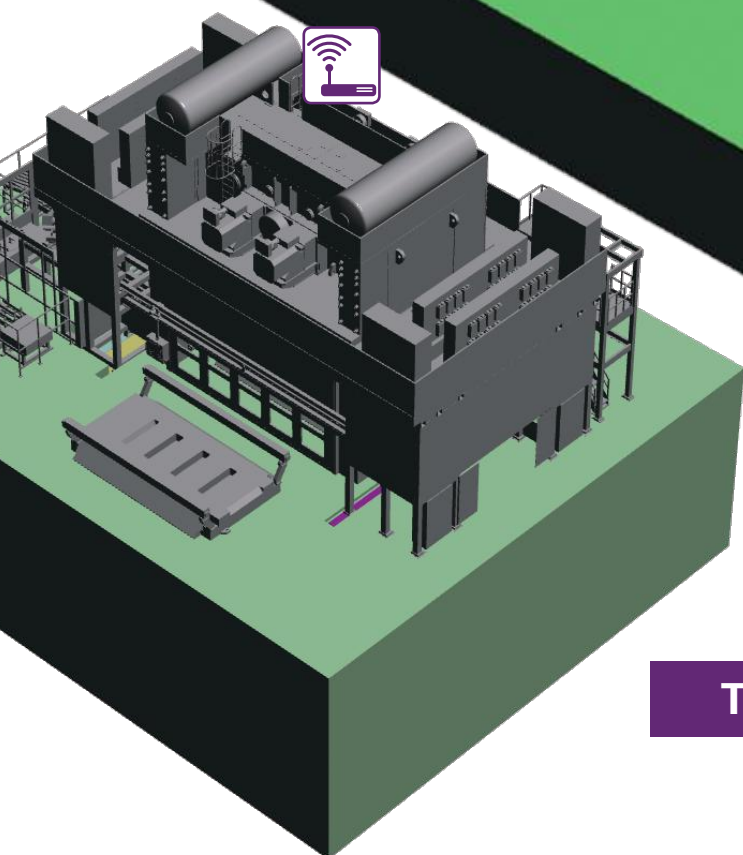
The leading 'Forming Systems Builder' company

For almost 100 years AIDA has been developing and manufacturing specialised metalforming products such as presses and peripheral equipment (press-mounted automatic transfer equipment, industrial robots, etc.). Moreover, AIDA does not just manufacture presses, it also provides comprehensive forming system packages ranging from the development of dies and forming technologies, the supply of peripheral equipment to post-installation services.

This enables AIDA to recommend optimal solutions to meet the forming requirements of its customers and to manufacture products with high value-added content.

The designation 'Forming Systems Builder' also conveys AIDA's mindset of staking everything on this kind of manufacturing.



**Tandem line****Transfer line**

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