

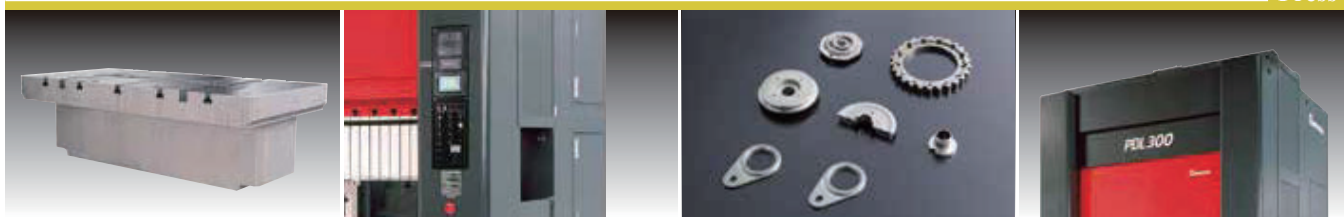
SOLUTION



Super-accurate knuckle link press

PDL SERIES

Press



あける 成形 曲げる



切る

The Engineering AMADA

研削

仕上げる



Super-accurate knuckle link press

The latest innovation in precision press working technology raises progressive stamping performance to new level.

The knuckle link slide motion and the ultra-highly rigid frame bed structure have changed the concept of stamping processes and enabled high value added and high precision production. Precision and roughness of surface have been improved and processing of products having sharp and complicated shape have been enabled by utilizing, in addition to punching, bending, drawing and burring, cold forging technologies of upsetting, extrusion and ironing, and a cutting method of shaving

Super-accurate knuckle link press

PDL SERIES



PDL-300

Possibilities of press process expands.

So far, in case of metal processing for complicated shaped products, jointing, cutting or some other processing methods must have been used to complete the products after processed in a stamping process. But, since the high precision knuckle link press enables metal processing for complicated three-dimensional shape with a single stamping press machine, you can produce products that were impossible to process with one machine before (transfer robot compatible).

● Conventional methods (non-stamping process)

1. Lost-wax casting
2. Sintering and MIM
3. Die-casting
4. Cutting
5. Welding



● Change of process conversion to stamping process with knuckle link press

〈Processing of 3 dimension parts by stamping press〉
Complicated shape products without jointing and cutting steps can be processed by progressive stamping combined with coining, restriking, shaving, ironing, etc.



PDL series valued technologies

1 Cutting-edge functions to accurately respond to processing needs

1 Knuckle link mechanism

- By decelerating at near bottom dead center and almost stopping at bottom dead center, accurate plastic process can be made and unconventional, high precision working that doesn't accompany spring back can be realized.
- Slow return movement of a normal punch when returning from a die clears obstacle in operation rate due to scrap rising accurately.

2 Highly rigid frame bed structure

- This frame is several times more rigid than normal press, and small elongation when being pressurized with highly rigid structure of the column, slide and crown. The machine has an optimum frame bed structure.
- Overall elongation is 0.005 mm/10 kN or less.
- Difference in elongation of right and left of the frame due to eccentric load is very small and maintaining of parallelism is stable.

3 Highly rigid T-shaped bolster

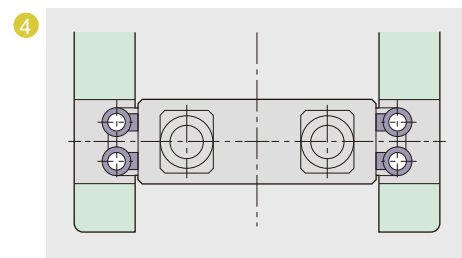
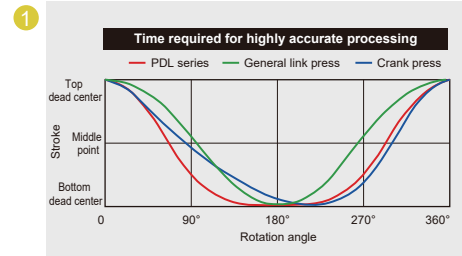
- With combination of highly rigid frame bed structure and T-shaped bolster structure, high precision and high value added production of stamping process have been realized.

4 High precision slide guide utilizing 4 post guides

- Adoption of four quenched and polished post guides assures the structure superior in eccentric load resistant property.

5 Load gauge and anti-jamming function

- The load monitor detects overload and monitors left-to-right eccentric loads to protect the press and provide consistent part quality.
- Anti-jamming function is adopted to enable lifting as it is even if stopped at bottom dead center with load of 100%.



2 High value added and high precision progressive stamping process

1 Solution to problem (improvement of product precision, stability of quality)

- Stable precision of products is realized by high precision press process.
- Strength of shape deformation can be improved with continuous layer of material (material flow line) and processing hardening. Also, development of downsizing for products is available from stating parts design.

2 Process conversion (cost reduction and rationalization are achieved)

- Complicated shape process can be produced with only stamping process for using super accurate knuckle link press. Therefore, conventionally required cost for each process can be saved and also, production steps are reduced. As a result, rational production processes are created.

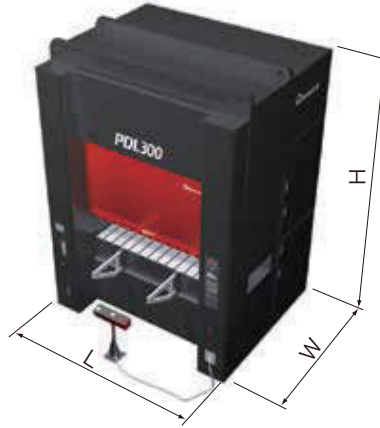
3 Improvement of working environment (creation of clear work environment)

- The working environment is kept clean as the front of slide is covered by a guard.
- Touching noise of the upper die and processing noise have been reduced by the highly rigid frame.
- The suction system of oil mist for cooling dies and other optional features assists the creation of clean environment.

Machine installation range comparison

Unit : mm

- PDL-200
(L : 2600 X W : 2180 X H : 3940)
- PDL-300
(L : 3210 X W : 2610 X H : 4450)
- PDL-400
(L : 3270 X W : 2770 X H : 4650)



Machine specifications

Model		PDL-200	PDL-300	PDL-400
Capacity	kN	2000	3000	4000
Tonnage rating point above BDC	mm	5		
Stroke length	mm	120	150	
Strokes per minute	min ⁻¹	40~80	35~70	
Die height	mm	450	600	
Slide adjustment	mm	60		
Slide face dimensions (LR x FB)	mm	1700×600	2200×700	
Bolster dimensions (LR x FB)	mm	1700×800	2200×900	2200×940
Bolster thickness	mm	150	200	250
Side opening dimensions (FB x HL)	mm	500×350	680×300	700×450
Working surface height	mm	1108	1213	1280
Main motor	kW	22	37	45
Required air pressure	MPa	0.5		0.6
Installation area (LR x FB)	mm	2600×2180	3210×2610	3250×2770
Rotary cam adjustment		Electronic		
Crank angle indicator		Electronic		
Lubrication system		Circulating		
Slide guide		4-piece post guide		
Bolster • head rigidity		1/50000		
Mass of machine	kg	42000	66000	72000

Standard accessories

safety once, inch, off, cont.	Air socket (2 lines)
Prtable stand	Load monitor
Moter reverse	Front acrylic hinged guard (interlock type)
Electric rotary cam (spare 8 gangs)	Preset counter
Air ejector (2 lines)	



Before using this product, please read the operator's manual carefully and follow all applicable instructions.

- Use of this product requires safeguard measures to suit your work.
For details, see the safety guide on the home page of Amada machine tools (www.amt.amada.co.jp)
- This machine correspond to the press machines specified in the Ordinance on Industrial Safety and Health.
It is necessary to make application for their installation and take any other measure required.
- Options are included in the photos.

* Specifications, appearance and equipment are subject to change without notice for improvement.

* Please use the machine model name without a hyphen such as PDL200, when applying for administration applications.
Examples: installation report, export, and financing, etc. To make this catalog more legible, we have inserted a hyphen in the machine model name such as PDL-200. This includes all other machine model names.

* For Japan domestic market.

©AMADA PRESS SYSTEM CO., LTD. All Rights Reserved.

AMADA PRESS SYSTEM CO., LTD.

200, Ishida, Isehara-shi, Kanagawa, 259-1196 Japan
Phone:81-463-96-3321
www.amp.amada.co.jp

Inquiry



AMADA head office is certified and registered of ISO14001.

E040-HQ03en

Apr. 2020