



FOUNDRY

Aluminum Casting Process

For high quality casting production

Solutions for high quality casting production in a variety of aluminum casting processes

Environmental protection

Energy saving

CORE MAKING

New core making process friendly to environment, worker and product

▶ LYTECORE®

Page 6

▶ Shell mold process

Page 6

▶ Coldbox process

Environmental protection

Energy saving

LYTECORE® reduces loads from different working processes

Good collapsibility

Sand removal Simplified (Easy removal by lighter vibration)

Cooling Sand can be removed without waiting for complete solidification of casting, shortening cooling line

Odor reduced down to 1/5 (compared with shell molding)

Environmental protection equipment Deodorizer can be eliminated.



Improved productivity

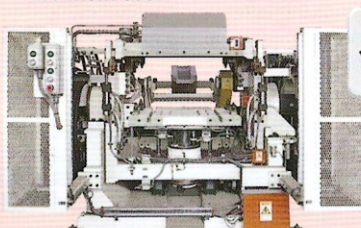
Energy saving

CASTING

Unique design and highly accurate casting system for stable production of high quality casting

▶ Tilting-type gravity diecasting machine

Metal is poured by gravity from top of die. Simple equipment with low initial investment cost



PLS series Page 3

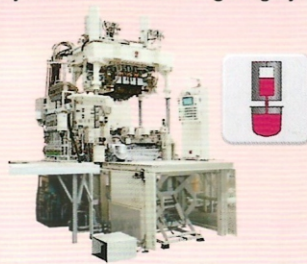
Reduced defects by high precision pouring



GDCX
Downsized from conventional

▶ Low pressure diecasting machine

Metal is poured from bottom of die by pressurization. High yield production is possible by reduced volume of gating system



LPD series Page 4

Yield ratio is improved by highly accurate die stripping mechanism

Low pressure sand mold casting process

Flexible to small lot production

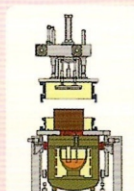


▶ Low pressure sand mold casting machine MPS

Applicable to green sand molding line

Feature Combined advantages of high productivity by green sand molding and high quality by low pressure casting

* Please consult with us regarding incorporation of low pressure casting units in your existing green sand molding line



Differential pressure die casting machine SAAT series

Pinhole defect is prevented by pressurized pouring

Improved productivity

DIE MANAGEMENT

Casting quality is stabilized by extending die life and improving durability

▶ D-CHECK: Heat check resistance improvement process

Increasing residual stress to the mold die surface by shot peening

▶ D-SCC: Die life extension

Preventing stress corrosion cracks at bottom of cooling water pipes by shot peening

▶ D-FLOW: Process for reducing casting defects

Reducing defects by forming minute dimples on die surface

Improved productivity

D-FLOW improves defects by poor die quality and prevents yield ratio reduction

Improved defect: Peel-off

Improved defect: Burn-on



Not processed

After D-FLOW

Not processed

After D-FLOW

Environmental protection

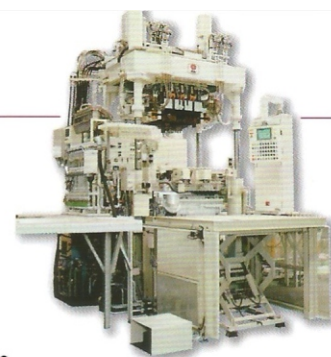
ENVIRONMENTAL PROTECTION EQUIPMENT

Total coordination of environmental protection for aluminum casting



Molten

Low Pressure Diecasting Machine LPD series



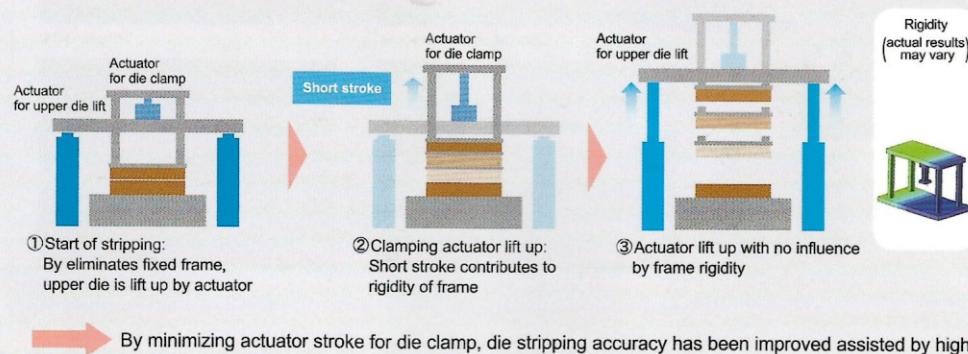
Improving yield ratio & Downsizing by unique structure

Conventional machine used long stroke actuator for die strip, requiring larger draft angle.

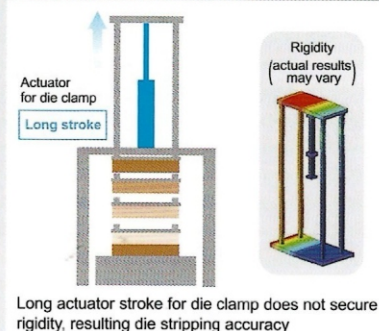
By adopting new die strip mechanism, LPD has achieved downsized body with higher die strip accuracy and higher yield ratio.

Adopting dual-stage die stripping mechanism

Die clamping by dual-stage stripping mechanism

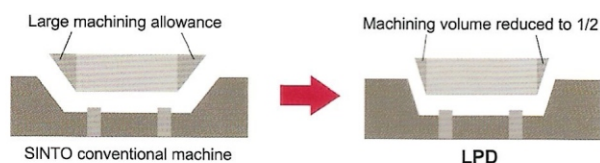


Conventional die stripping (Die clamping actuator only)



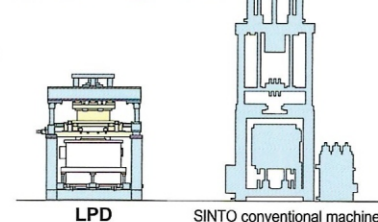
- Thanks to die stripping accuracy, yield ratio is improved by reduced draft angle, and thus minimizing metal consumption.

Example of improved draft angle *Company A



- Machine volume has been reduced by 50% compared to conventional machine, providing advantages of shortened installation period thanks to possible transportation without being disassembled.

Size comparison with die closed



Reduces casting defects such as shrinkage cavity by excellent metal flow control and orientation solidification control

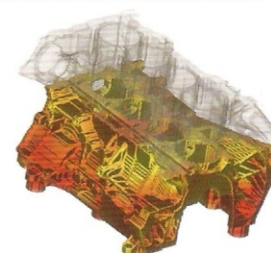
Metal pressurization control and die cooling control prevent casting defect, achieving stable production.

Metal pressurization control

Production of high quality casting is achieved by controlling pressure against molten metal. Since pressurization condition can be set to each casting, this system is optimum for production of small lot casting.

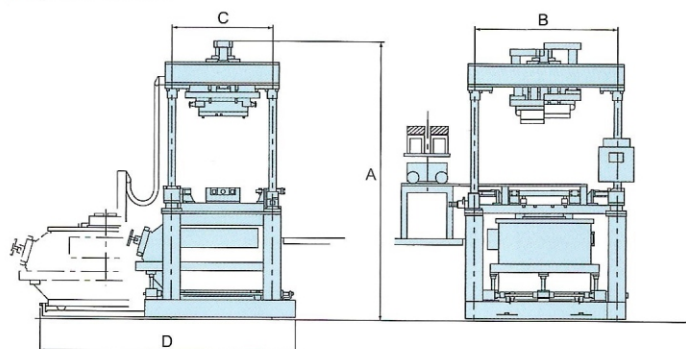
Die cooling control

By water cooling system through die achieves high quality casting by orientational solidification.



Most optimum pressurization conditions for each product is possible

Specifications



Model No.	LPD-I	LPD-II
Moveable die plate (mm)	1200×1000	1400×1260
Stationary die plate (mm)	1900×1200	2500×1400
Open/Shut height (mm)	1200/400	1800/600
Metal holding weight (mm)	500	1000
Dimensions (mm)	A	4000
	B	1800
	C	1000
	D	4000

Target castings (Example)

Cylinder blocks, cylinder heads, intake manifolds, aluminum wheels, air conditioner parts, hydraulic pump casings, etc.

Option



Automatic die clamping mechanism

Simplified replacement and maintenance of die requiring precision.



Casting unloader

Automated product unloading reduces labor.