

Development of the Large AC Servo Press

The large AC servo press, developed jointly with Toyota Motor Corporation, replaces the clutch brake and pneumatic die cushion used in conventional mechanical presses with an AC servo drive, substantially increasing production capacity by about 1.35 times (compared with previous Komatsu machines). In addition, the large AC servo press enjoys the following superior features compared to conventional mechanical presses:

- Utilization of the servo motor recovery function leads to a 40% decrease in electricity consumed
- The servo motor allows control of the sliding speed and the touch speed to the die assembly can be reduced, resulting in a 20dB decrease in noise
- The drive has been simplified wherever possible, leading to improved maintainability
- The size of the press has been reduced by 50%, contributing to more effective use of space in customers' plants.



Large AC servo press

Life Cycle Assessment Provisional Calculations for the Large AC Servo Press

Life cycle assessment (LCA) provisional calculations of CO₂ emissions reduction effects were conducted on the large AC servo press.

Provisional calculations of the CO₂ emissions reductions per unit of production showed that compared to conventional mechanical presses, a significant reduction of about 34% is achieved due to the smaller size of the press, resulting in less input of materials, less processing and waste, and less electricity consumed during operation. In addition, it is possible to reduce the number of necessary lines by one-third as a result of increased press productivity. Combined with the reduction in the size of the press itself, it is possible to decrease the overall space required for the press line by about 43%, and there are cases of electricity required at the plant for lighting, air conditioning, and compressors being reduced by 64%.

Life Cycle Assessment Provisional Calculations for the Large AC Servo Press (Per unit of production)

