

|                                    |                                                                                                                             |                                       |                                                                                                                                   |                                                  |            |                       |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|------------|-----------------------|
| Certification number               | MF-P005<br>Mechanical Servo Press                                                                                           |                                       | Product scope                                                                                                                     | Large servo press<br>H4F800, 1000,<br>H4F(R)1600 |            |                       |
| Registered company                 | Komatsu Industries Corp.                                                                                                    |                                       | Certified product                                                                                                                 | H4F800/H4F1600 (20,000kN)                        |            |                       |
| Reference model & production time  | L4S800 (May, 2004)/L4S1800 (18,000kN) (May, 2004)                                                                           |                                       |                                                                                                                                   |                                                  |            |                       |
| Requirements & environment factors | Evaluation item                                                                                                             | Criteria                              | Evaluation result and/or remarks                                                                                                  |                                                  |            |                       |
| (1) Essential requirement          |                                                                                                                             |                                       | H4F800 vs L4S800                                                                                                                  | H4FR1600 vs L4S1800                              | H4F1000    |                       |
| Energy saving                      | Energy consumption                                                                                                          | Reduction ratio                       | 10% or more reduced                                                                                                               | <b>21%</b>                                       | <b>21%</b> | at the time of update |
| based on JFMA criteria             |                                                                                                                             |                                       |                                                                                                                                   |                                                  |            |                       |
| (2) Selective requirement          |                                                                                                                             |                                       | H4F800 vs L4S800                                                                                                                  | H4FR1600 vs L4S1800                              | H4F1000    |                       |
| Resources saving                   | Compactification                                                                                                            | Height                                | 10% or more reduced                                                                                                               | <b>X</b>                                         | <b>X</b>   | <b>X</b>              |
|                                    | Air                                                                                                                         | Initial filling volume                | 11% or more reduced                                                                                                               | <b>X</b>                                         | <b>X</b>   | <b>X</b>              |
|                                    | Operating, lubricating oil                                                                                                  | Total consumption                     | 12% or more reduced                                                                                                               |                                                  | <b>X</b>   | <b>X</b>              |
| Environment conservation           | Safety                                                                                                                      | Safety Standard                       | Applied standard                                                                                                                  | <b>X</b>                                         | <b>X</b>   | <b>X</b>              |
| Minimum selective requirement      |                                                                                                                             |                                       | 3 items or more                                                                                                                   | <b>4 items</b>                                   |            |                       |
| (3) Recommended requirement        |                                                                                                                             | Names of equipped devices/functions   | Summary of environmental load reduction                                                                                           |                                                  |            |                       |
| Environment factor                 | Energy saving, durability, long life, display/management of environment info., vibration/noise, emission (atmosphere, soil) | Die Cushion                           | AC servo driven mechanism enables energy saving, vibration/noise reduction, and longer life.                                      |                                                  |            |                       |
|                                    |                                                                                                                             | Mechanical brake                      | Brake capability check mechanism and its capability comply per T1103:2008(Industrial standard on servo press safety requirements) |                                                  |            |                       |
|                                    |                                                                                                                             | Power regeneration type servo control | Regeneration (by register , condenser )is not necessary, thus longer life of control system is materialized.                      |                                                  |            |                       |
|                                    |                                                                                                                             | synchronized line control             | Phase difference operation at the time of line composition enables the efficient line power consumption.                          |                                                  |            |                       |
| Minimum recommendation requirement |                                                                                                                             | 3 items or more                       | <b>4 items</b>                                                                                                                    |                                                  |            |                       |

Note:

- (1) Revised content: 2 models (H4F800, 1000) were added.
- (2) Revised content on March 16, 2010: Height factor in compactification of selective requirement for H4F1000, H4F1600 and H4FR1600 was added.
- (3) Revised content: The company's name is changed from Komatsu to Komatsu Industries Corp.