

MF Eco Machine Certification System Registry (Press Machines) Registered: December 11, 2012
 Revised: March 12, 2013
 Revised: December. 2, 2014
 Revised: June. 2, 2015
 Revised: December 1, 2015

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| Certified registration no. & registered product name | MF-P007 Mechanical Servo | Product Scope | Hybrid AC Servo Press H1F35,45,60,80,110-2,150-2,200-2 |
| Registered name of corporation | Komatsu Industries Corp. | Certified product | H1F35/45/60/80/110-2/150-2/200-2 |
| Reference model & Production time | OBS35(-),OBS45 (-),OBS60(-) OBS80 (-), OBS110-2 (-), OBS150 (-), OBS200 (-) | | |

| Requirements & environment factors | | Evaluation item | Evaluation criteria | Evaluation result and/or remarks | | | | | | |
|------------------------------------|--------------------|-----------------|----------------------|----------------------------------|----------------|----------------|----------------|--------------------|--------------------|--------------------|
| (1) Essential requirement | | | H1F vs OBS | H1F35 vs OBS35 | H1F45 vs OBS45 | H1F60 vs OBS60 | H1F80 vs OBS80 | H1F110-2 vs OBS110 | H1F150-2 vs OBS150 | H1F200-2 vs OBS200 |
| Energy saving | Energy consumption | Reduction ratio | Reduce more than 15% | 58% | 43% | 25% | 33% | 57% | 37% | 49% |
| | | | | based on JFMA criteria | | | | | | |

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|-------------------------------|------------------|-------------------------------|-------------------------|----------------|----------------|----------------|----------------|--------------------|--------------------|--------------------|
| (2) Selective requirement | | | H1F vs OBS | H1F35 vs OBS35 | H1F45 vs OBS45 | H1F60 vs OBS60 | H1F80 vs OBS80 | H1F110-2 vs OBS110 | H1F150-2 vs OBS150 | H1F200-2 vs OBS200 |
| Resources saving | Compactification | Number of air/hydraulic parts | 10% or more reduced | X | X | X | X | X | X | X |
| | Air | Total consumption | 10% or more reduced | X | X | X | X | X | X | X |
| Environment conservation | Safety | Safety standard | Applicable set standard | X | X | X | X | X | X | X |
| Minimum selective requirement | | 3 items or more | | 3 items | | | | | | |

| (3) Recommendation requirement | | Names of equipped devices/functions | Summary of effects on environmental burden reduction |
|--------------------------------|---|-------------------------------------|---|
| Environment factor | Energy saving, durability, long life, display/management of environment info., vibration/noise, emission (atmosphere, soil) | Stop monitor function | Constantly monitors inclination at the time of stop by the brake. |
| | | Powerful mechanical brake | holds brake torque, exceeding the maximum torque of main motor. |
| | | Small capacity servo motor | Adoption of link mechanism enables smaller capacity of servo motor. |
| | | Photoelectric safety device | Equipped as the standard equipment |
| | | Elimination of clutches | No wear and tear of lining enables longer life. |
| Minimum requirement | | 3 items or more | 5 items |

Remarks;

- (1) Revised on March 12, 2013: additon of 2 items (H1F35,60)
- (2) Revised on December 8, 2014: change of 1 items (H1F200-2)
- (3) Revised on June 2, 2015: change of 1 items (H1F150-2)