

Technical Information TI-F40

DGUV Test Certificate

for Locking Units

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1 Approval as mechanical restraint device for presses according to DGUV

The European standard **ISO 16092-1** in connection with **ISO 16092-3** (Machine tools - Safety - presses, parts 1 and 2) requests certain safety measures to prevent injuries caused by unintentional lowering of the slide due to its own weight (force exceeding 150 Newton).

A distinction is made between the following operating states:

- production
- maintenance or repair

In both cases mechanical restraint devices are accepted solutions.

For maintenance or repair, a mechanical restraint device is the only accepted solution:

"Where there is a risk of injury (force higher than 150 Newton) from a gravity fall of the slide/ram, during repair works or any necessary intervention between the parts of the tools (which is not the normal manual feeding), a mechanical restraint device, e.g. a chock, a safety block or a ram block, shall be installed in the press." (translation of German DIN EN ISO 16092-1, paragraph 5.3.6)

For larger presses, the following additional requirement applies:

"On presses with an opening stroke length of more than 500 mm and a depth of table of more than 800 mm, a mechanical restraint device shall be permanently fixed and integrated with the press." (translation of German DIN EN ISO 16092-3, paragraph 5.3.6.1)

SITEMA Locking Units are **mechanical restraint devices** which are permanently installed into a press.

1.1 Certificate number

After a thorough examination, the test and certification body DGUV (German Social Accident Insurance) issued the following DGUV Test Certificate. With the certificate, the DGUV confirms that the SITEMA Locking Units are restraint devices to this effect:

Certificate number:	HSM 240086
Valid for:	Locking Units KFHS and KFHSR series



It is possible to install our KFHS Locking Units in mechanical "series 2" presses (servo presses) according to DIN EN ISO 16092-1/-2. For further information, please contact SITEMA.

Validity of the Certificate

The DGUV Test Certificate is only valid for a specific period of time. A follow-up certificate will be issued if the product still fulfills the requirements.

The first certificate was issued in the year 2014.

2 DGUV Test Certificate

Certificate
No. **HM 240086**,
dated July 10, 2024



DGUV Test Certificate

Name and address of
the certificate holder:
(customer) SITEMA GmbH & Co. KG
G.-Braun-Straße 13
76187 Karlsruhe

Product description: **Locking Unit**

Type: KFHS and KFHSR

Testing principle: GS-HM-21:2023-12 presses and forging machines

Related test report: No. 2024-0013-01, dated June 27, 2024

Further information: Intended use:

Installation in:

- Presses according to DIN EN 289;
- Mechanical "series 1" presses according to DIN EN ISO 16092-1/-2;
- Hydraulic presses according to DIN EN ISO 16092-1/-3;
- Injection-molding machinery according to
DIN EN ISO 20430 for holding a load from standstill

Remarks: see appendix.

Follow-up certificate to certificate no. HSM 19011, dated

June 26, 2019

The tested model conforms to the requirements stated in Section 3 (1) of the German Product Safety Act (ProdSG). Therefore, the tested model also conforms to the applicable rules and regulations of the **Machinery Directive 2006/42/EC**. The certificate holder is authorized to attach the DGUV Test mark shown on the reverse side of this document to products conforming with the tested model.

This certificate and the right to attach the DGUV Test mark is valid until: **July 9, 2029**

The Rules of Procedure for Testing and Certification contain additional information about validity, extension of validity as well as further conditions.


Dr. Björn Otte
Head of the Testing and Certification Institute



Reverse side of DGUV Test Certificate HM 240086

DGUV Test mark



PZB09MA
04.17

APPENDIX

for DGUV test certificate no. HM 240086, dated July 10, 2024



Name and address of the certificate holder: SITEMA GmbH & Co. KG
G.-Braun-Straße 13, 76187 Karlsruhe

Product description: Locking Unit KFHS
and KFHSR

The intended use includes the following:

- select and install according to the instructions of the company SITEMA and the requirements of the applicable product standards (DIN EN 289, DIN EN ISO 16092-1/-2, DIN EN ISO 16092-1/-3, DIN EN ISO 20430);
- observe the operating manual;
- carry out safety tests on the Locking Unit at regular intervals and take into account all test instructions of the company SITEMA;
- the machinery manufacturer may only use the Locking Unit for holding a load from standstill (during normal operation);
- if EN ISO 13849-1 with PL d or PL e is targeted, the Locking Unit safety function "holding the load (from standstill)" corresponds to the requirements of categories 2 or 3 (PL d) or category 4 (PL e), respectively;
- if the product standard does not specify performance tests, the machinery manufacturer takes automated testing measures for the machine fitted with the Locking Unit as a result of its risk assessment, or the machinery manufacturer describes tests carried out by the machine operator with testing intervals in the operating manual for the machine;
- if the product standard does not specify performance tests for the relevant machine, single-use Locking Units are loaded with at least 1.5 times the load to be restrained (E: ≥ 1 s long) and redundant Locking Units are each loaded with at least 1.1 times the load normally restrained by all Locking Units together (E: ≥ 1 s long) if at all possible;
- the machinery manufacturer considers the decline in performance which may occur if lubricants are applied on frictional surfaces in comparison with the calculated design and performance by SITEMA;
- the machinery manufacturer takes measures which prevent the unlocking of the Locking Unit before the load is taken over;
- the machinery manufacturer ensures that the pivot valve outflow of the Locking Unit is depressurized.

The Locking Unit can be regarded as a "proven component" for holding a load from standstill and can therefore be used in category 1 (PL c) control systems according to DIN EN ISO 13849-1.

For the safety function "holding a load" (mechanical, from standstill) for a single-use Locking Unit as a maximum the PL d of DIN EN ISO 13849-1 can be reached; in a redundant application as a maximum the PL d or PL e of the DIN EN ISO 13849-1 can be reached (the PL is determined for the specific application).

APPENDIX

for DGUV test certificate no. HM 240086, dated July 10, 2024



This certificate does not cover the following:

- Installation in machines not mentioned above, especially installation in mechanical "series 2" servo presses according to DIN EN ISO 16092-1/-2;
- braking performance/braking function (emergency stop function);
- non-safety-related properties;
- proximity switches and other accessories.

The risk assessment of the manufacturer was not checked.

Mainz, July 10, 2024

A handwritten signature in blue ink, followed by a circular blue stamp. The stamp contains the text 'Prüf- und Zertifizierungsstelle', 'DGUV Test', and 'Fachbereich HM'.

Dr. Björn Otte
Head of the Testing and Certification Institute