

1 Product information

1.1 Intended use



Fig. 1 Varimatrix 105 CS 2nd generation

The **Varimatrix 105 CS 2nd generation** machine is a high-quality **embossing and die-cutting system** that is in conformity with EC requirements and the latest state of the art. The **Varimatrix 105 CS 2nd generation embossing and die-cutting system** has left the factory in a perfect condition in terms of operation and safety. Nevertheless, improper use of the machine can impair its operability, damage other property and create risks for the life and limb of the operator or third persons. The **Varimatrix 105 CS 2nd generation embossing and die-cutting system** may only be operated in a perfect technical condition and for the intended purpose by authorized qualified personnel who are safety and risk-conscious. The operating instructions must always be followed. The **Varimatrix 105 CS 2nd generation embossing and die-cutting system** is deemed to be used for the intended purpose if it is exclusively used to emboss, die-cut, score and crease sheeted stock made of paper, cardboard or paperboard with the approved thicknesses, weights and dimensions.

The values for thicknesses, weights and dimensions are shown in the following tables (Tab. 1, Tab. 2, Tab. 3).

The approved tool specifications and pallet sizes stated in the section **Technical Data** must be observed without reservation.

Detailed information on the tools can be found in the section **Tools**.

1.2 Improper use

The embossing and die-cutting system is to be used exclusively to emboss, die-cut, score and crease paper and cardboard with the thicknesses, weights and dimensions stated in the sections **Processable material** and **Processable sheet sizes**. Any other or additional use, such as inserting sheets of a different material or with incorrect dimensions, constitutes an improper use of the machine!

If the stipulations in the sections **Processable material**, **Processable sheet sizes** and the section **Technical data** are not observed, or arbitrary structural modifications are made without the written approval of Heidelberg Druckmaschinen AG, this will be deemed to be improper use of the machine.

**Note**

Heidelberger Druckmaschinen AG will accept no liability whatsoever for any personal injuries or property damage arising from improper use of the machine!

1.3 Processable material

Material	Basis weight, material thickness
Paper	min. 80 g/m ²
Board / solid fiberboard	max. 1,400 g/m ²
Solid fiberboard	max. 2.0 mm
Corrugated board	max. 4.0 mm

Tab. 1 Processable material

1.4 Processable sheet sizes

Sheet size	Length x width
minimum	350 x 400 mm
maximum	750 x 1050 mm

Tab. 2 Processable sheet sizes

1.5 Processable sheet sizes with small-format attachment (option)

Sheet size	Length x width
minimum	300 x 350 mm
maximum	750 x 1050 mm

Tab. 3 Processable sheet sizes with small-format attachment (option)

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2 Technical data

2.1 Performance data

Performance data	
Machine speed	max. 7500 S/h
Maximum cutting power with full size	3.0 MN (300 t)
Corrugated board	max. 4 mm
Solid fiberboard	max. 2 mm
Max. pile height, main pile:	
- Feeder with automatic non-stop, incl. pallet	max. 1000 mm
- Feeder without automatic non-stop, incl. pallet	max. 1200 mm
Delivery incl. pallet	max. 840 mm
Max. pile height, main pile:	
- Feeder	max. 1200 kg
- Delivery station	max. 840 kg

Tab. 4 Performance data

2.2 Dimensions and weight

Dimensions and weight	
Length	approx. 7070 mm
Width of machine (without platform)	approx. 2092 mm
Width of machine (with platform)	approx. 3806 mm
Height (without elevating element)	approx. 2450 mm
Height (with elevating element)	approx. 2750 mm
Weight	approx. 16500 kg

Tab. 5 Dimensions and weight

2.3 Technical data

Technical data	
Max. cutting-die size	740 mm x 1060 mm
Gripper margin, adjustable with 13 mm wood before the 1st slitter	10 - 18 mm
Cutting-knife height	23.8 mm
Counter matrix	736 mm x 1080 mm
Net cutting surface	727 mm x 1050 mm
Max. pallet size	750 mm x 1050 mm
Pallet height	145 mm - 170 mm
Cutting-die thickness	18 mm
Upper stripping tool	15 mm

Technical data	
Stripping board	12 mm
Cutting plate thickness	5 mm

Tab. 6 Technical data

2.4 Electrical system

Electrical system	
Installed loads:	
Power output, main motor	11 kW
Power output, machine	25 kW
Operating voltage	3 AC 230 V 50/60 Hz
Control voltage	24 V DC
Auxiliary supply voltage	230 V AC
Nominal current	60 A

Tab. 7 Electrics

2.5 Pneumatic system

Pneumatic system	
Cutter:	
Compressed air connection	max. 8 bar
Operating pressure	min. 6 bar
Air requirement as a function of the suction volume	667 l/min, 40 m ³ /h

Tab. 8 Pneumatic system

2.6 Load-carrying capacity test

In accordance with the EC Machinery Directive, the following tests have been performed:

- The static test was performed with 1.25 times the maximum weight of the pile.
- The dynamic test was performed with 1.1 times the maximum weight of the pile.

Both tests were performed successfully, i.e., no obvious strength deficiencies occurred.

2.6.1 Load-carrying capacity

Maximum weight of main pile

	Weight [kg]
Feeder	1200
Delivery	840

Tab. 9 Maximum weight of main pile

Maximum weight of auxiliary pile

	Weight [kg]
Feeder	530

Tab. 10 Maximum weight of auxiliary pile

2.7 Quality of the compressed air

The compressed air used must comply with the requirements of DIN ISO 8573-1, quality class 5-4-3.

- Solids: Max. particle size 40 µm
- Moisture content: Max. pressure dew point +3 °C
- Oil content: Max. concentration of oil 1 mg/m³.

If these values are not observed, the fine filter will become contaminated. The pressure will drop.

3 Sound emission

3.1 Rules

DIN EN 13023

Noise measurement methods for printing, paper-converting and paper-making machinery and auxiliary equipment - Accuracy grades 2 and 3; German version EN13023: (10/2003)

DIN EN ISO 11204

Acoustics - Noise emitted by machinery and equipment - measurement of emission sound pressure levels at a work station and at other specified positions applying accurate environmental corrections (ISO 11204:1995); German version EN ISO 11204:1995

3.2 Measuring devices

Larson Davis LD 824

3.3 Machine description

Machine description	Data
Type	Embossing and die-cutting system for paper and cardboard in general (paper, board and cardboard conversion)
Type	Varimatrix CS
Serial number	MP.DAA.01010
Year of manufacture	2008
Maximum speed	7500 sheets / h
Machine dimensions (L x W x H)	5.7 x 2.05 x 2.1 m
Enveloping surface F	71.1 m ²
Enveloping surface measurement LF	18.5 dB

Tab. 11 Machine description

3.4 Measuring conditions

Measuring conditions	Data
80% maximum speed	6000 sheets / h
Material format	70x100 cm
Material type	Machine-made gray board 600 gr/m ²
Cutting die	Perfume samples (large number of blanks)

Tab. 12 Measuring conditions

3.5 Measured sound values

	Measuring location	L _d [dB(A)]
1.	in front of the feeder	80
2.	Stripper control panel	74
3.	Delivery	77
4.	Waste disposal system	76

Tab. 13 Measured sound values



Note

The subjective sound level at the machine may exceed this SPL due to the surroundings and particular spatial conditions at the machine location. In this case, the customer must take appropriate protective measures.