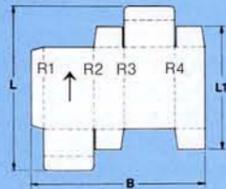


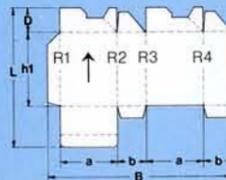
DIANA 145-3, DIANA 165-3 Setting Ranges and Technical Data



1. Straightline Boxes

	DIANA 145-3	DIANA 165-3
B	275-1450 mm	275-1650 mm
L max.	1100 mm	
L1 min.	70 mm	

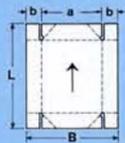
Machine Speed: max. 360 m/min.



2. Lockbottom Boxes

B	285-1450 mm	285-1650 mm
L max.	1100 mm	
D max.	200 mm	
h1 min.	70 mm	
a min.	70 mm	
b min.	40 mm	

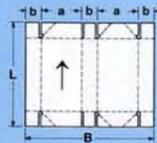
Output: max. 50,000 boxes per hour



3. 4-Corner Collapsible Trays

B	215-1450 mm	215-1600 mm
L	150-1100 mm	
a	135-1200 mm	
b	40-200 mm	

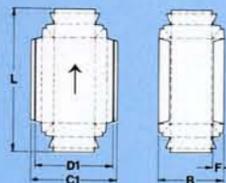
Output: max. 30,000 boxes per hour



4. 6-Corner Collapsible Boxes

B	400-1450 mm	400-1600 mm
L	150-1100 mm	150-1100 mm
a min.	140 mm	
b	40-200 mm	

Output: max. 25,000 boxes per hour



5. Double-Wall Boxes

B	130-1200 mm	
L	120-1100 mm	
C1 max.	1450 mm	1650 mm
D1 max.	1430 mm	1630 mm
F min.	40 mm	

Machine Speed: max. 300 m/min.

For further details see ti 1006.

Material	Corrugated Board	Folding Boxboard (gsm)
1. Straightline boxes	E and B-flute	300-1000
2. Lockbottom boxes	E and B-flute	300-1000
3. Collapsible boxes	E and B-flute	300-1000
4. Double-wall boxes	E and B-flute	300-1000

Space requirements for basic machine, length/width (approx.)		17.4/2.4 m
Net weight of basic machine (approx.)		94,000 N (9,400 kp)
Seaworthy Packing (approx.)		92 m ³
Total connected load		60 kVA

JAGENBERG Diana GmbH
Jagenbergstr. 1
D-41468 Neuss
Postfach 10 07 61
D-41407 Neuss
Telephone (2131) 99-01
Telefax (2131) 99-26 27
Telex 8 517 002

Jagenberg Folding Carton Gluer and Packer Manufacturing Programme

The DIANA manufacturing programme comprises machines in a variety of price and output categories:

- universal high speed machines for all major carton types, with or without collapsible box unit;
- speciality machines for lockbottom cartons, mass orders for straightline cartons and liquid-proof packaging.

The DIANA modular system permits machine expansions to meet future market requirements.

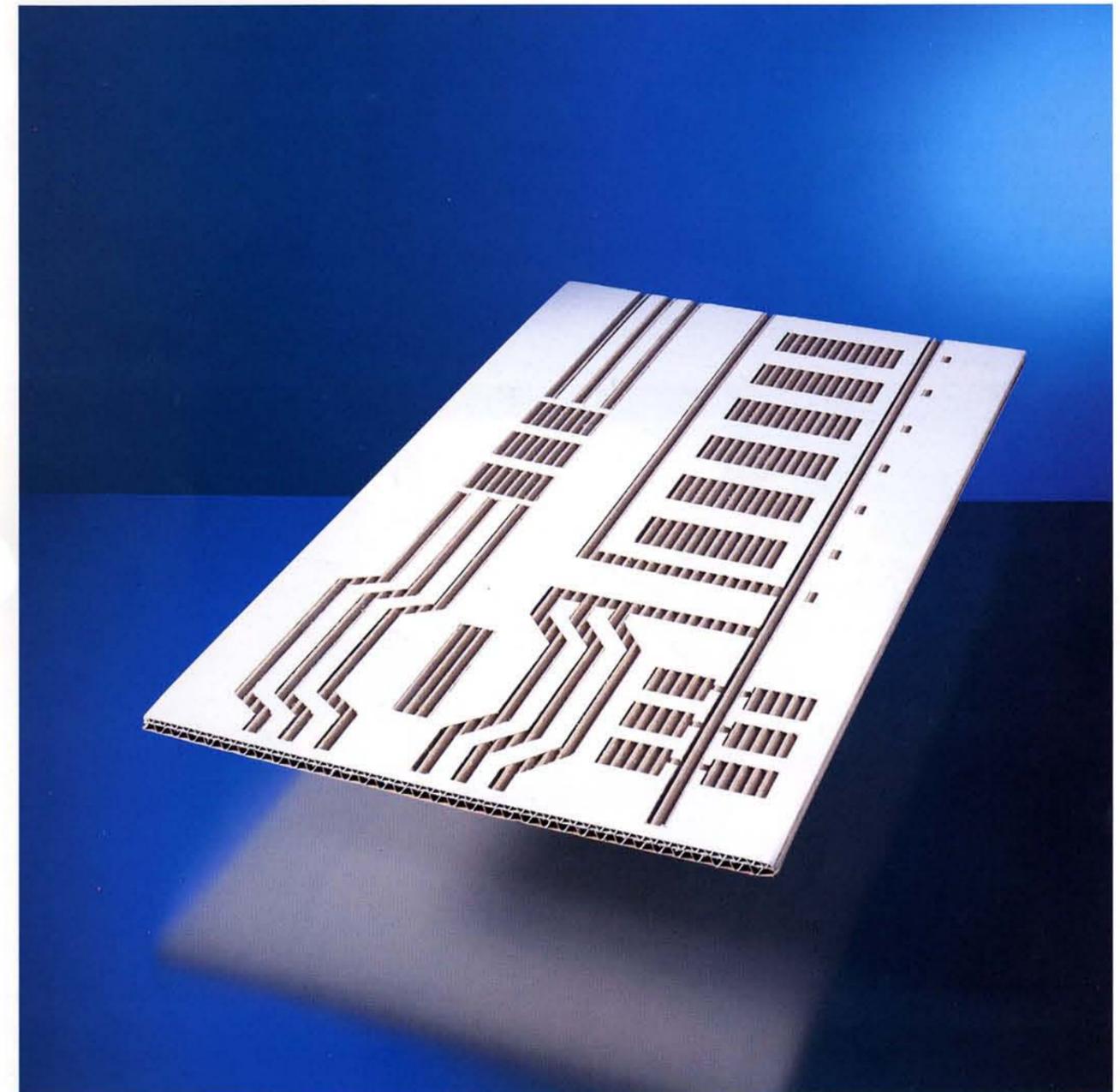
The Jagenberg folding carton gluer programme is complimented by:

- JAGFEED prefeeder with stack turner,
- JAPACK universal folding carton packer,
- Collator-stacker,
- JALOCK lockbottom carton packer.

Jagenberg-Technology for a Competitive World.

DIANA 145-3 DIANA 165-3

The universal corrugated box gluers for E and B-flute corrugated board and solid boxboard. Signalling success "just in time"



Subject to alterations
Printed in Germany
Sch V1.75 02.92337-02

All data represents non-binding guideline values. We reserve the right to make technical alterations at any time without special notice. Further details concerning the DIANA 145-3 and the DIANA 165-3 and the overall manufacturing programme will be supplied on request.

“Just in time”

In today's competitive market, manufacturers are required to process orders as quickly and efficiently as possible. Shorter delivery periods must not however mean poorer quality. Corrugated boxes must be folded and glued with precision. Gluers must be able to handle the difficult material gently and accurately.

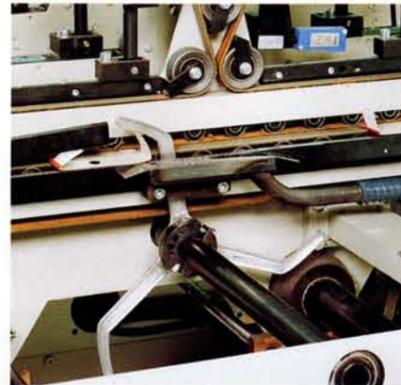
The DIANA 145-3 and DIANA 165-3 folding box gluers can fulfil all these requirements. The machines are designed for the careful processing of high-grade laminated board with E and B-fluting and for solid boxboard.

Keeping up with the market

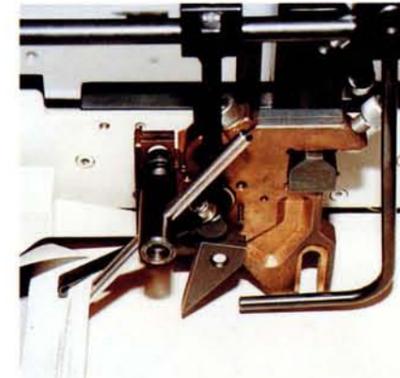
The DIANA 145-3 and DIANA 165-3 have been specially designed by Jagenberg to meet the demands of the “just in time” market. The corrugated box gluers have all the universality and versatility of folding carton gluers.

The DIANA 145-3 and DIANA 165-3 can economically process all common box types:

- straightline folding boxes,
- lockbottom boxes*,
- collapsible boxes* with infold, outfold and combined infold/outfold,
- double-wall boxes* (Version 1).



Electronic rear folding*: simple makeready and high speeds. Vacuum suction boxes for problem-free folding.



Short makeready times for lockbottom and collapsible boxes via pre-assembled folding hook units*.

If necessary, an M 150 module* can be added to the basic machine to allow additional length and cross folding, e.g. for double-wall, 4-corner collapsible boxes (Version 2).

By dispensing with the prefolding section, both DIANA models can be turned into economic machines especially for folding and gluing 4 and 6-corner collapsible boxes* and lockbottom boxes without prefolding (Version 3).

Furthermore, there are numerous gluing systems available for the DIANA 145-3 and DIANA 165-3, e.g.:

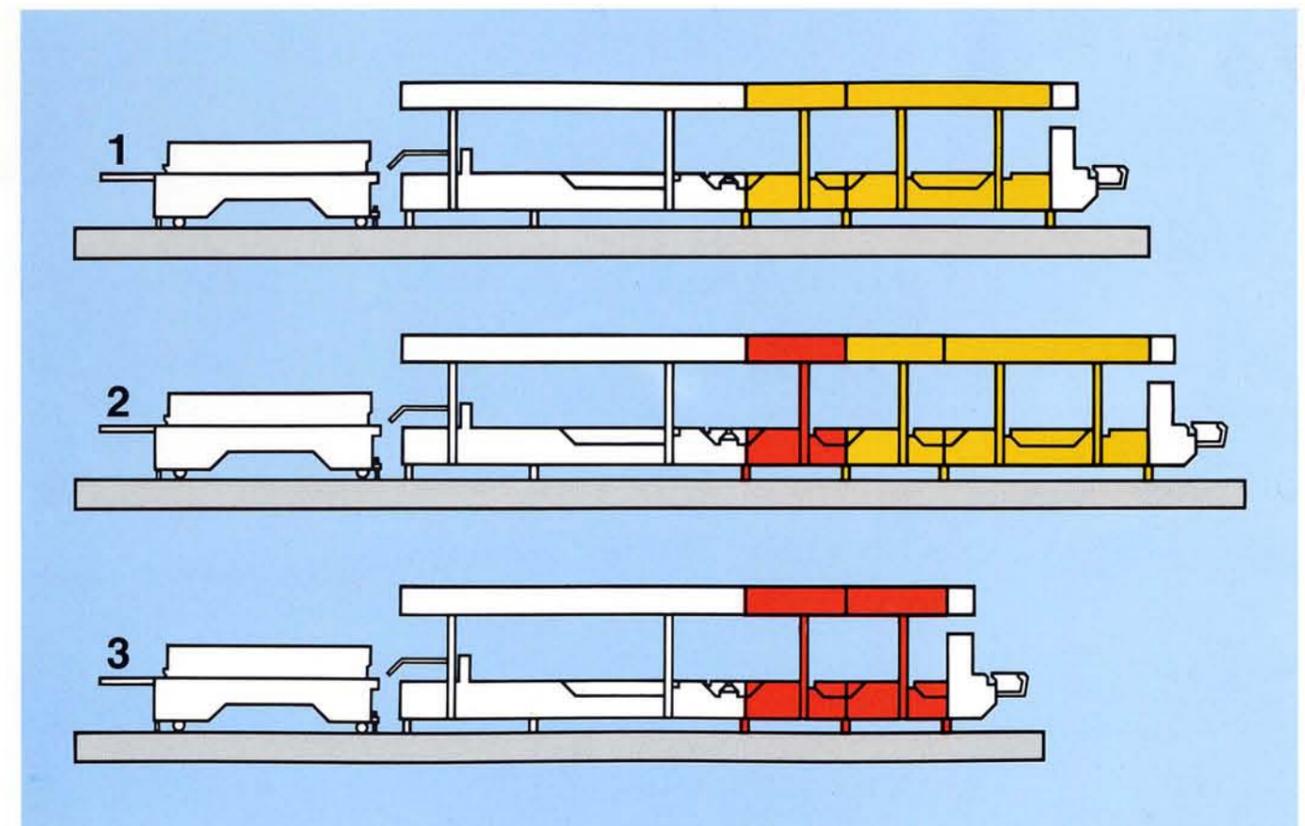
- high-speed bottom glue units,
- overhead strip glue units*, whose height can be adjusted individually to correspond to multiple board layers,
- electronically controlled jet glue units* which can be installed in many of the DIANA machine stations.

The large number of possibilities for expanding the DIANA 145-3 and DIANA 165-3 allows you to adapt your machine at any time to suit your individual requirements. By choosing a DIANA, you are investing in a machine that will pay dividends in the future.

* auxiliary equipment



Small selection from a large variety of box styles.



Expandable for every market and production requirement.

In both DIANA models, the timed belt feeder ensures that the blanks are fed without twisting or marking. The feeder can operate both in un-timed and timed mode. Belt speed is synchronous in the feeder and prefolding section.

The extra wide, high-traction feed belts provide an excellent surface for blank transport. With standard feeders, there is a danger of blanks twisting as they are fed into the prefolder. In the timed belt feeder the belts run synchronously with the folding and carrier belts and thus the problem of twisting is avoided. Reliable functioning of the belts is assured throughout their long service life. The feed belts are also fitted with vacuum suction boxes to prevent slippage when the blanks are accelerated. Additional suction cups ensure the reliable feeding of warped, corrugated blanks.

Immediately following the feeder, the squaring station aligns the blanks in travel and cross direction,



Vacuum-assisted timed belt feeder for problem-free feeding.

ensuring that each one is exactly positioned in the correct place. The squaring station is particularly useful for processing:

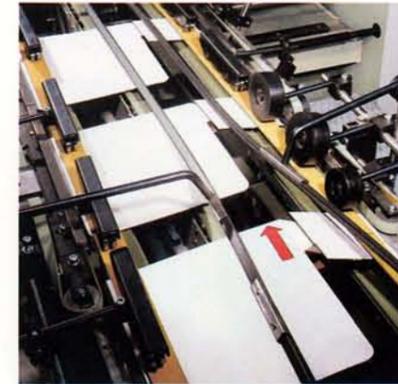
- blanks with difficult side ratios and long lids,
- especially long blanks with vertical fluting,
- blanks with glue flaps of varying widths.



Wheel-type calibrating units calibrate the cartons in cross direction ...

An electronically controlled rear folding device can, for example, fold the rear flaps of collapsible boxes to the front. During the process, the optimum selected point for the hooks on the carton is determined by computer.

The carrier section and roller bars of the DIANA 145-3 and 165-3 include heavy wheel-type calibrating



... and calibrating belts ensure precision folding.

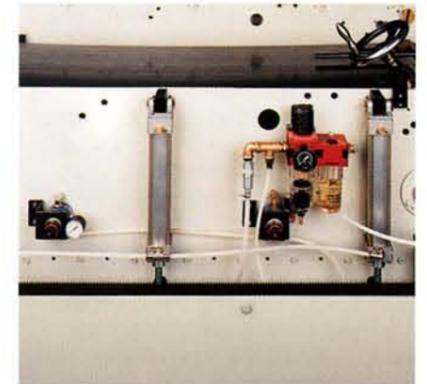
units and vertical rotating calibrating belts which ensure high precision folding of corrugated and solid board boxes. The carrier section, roller bars, calibrating units and belts can all be set by motor and computer.

The long folding way in the folding section and the broad folding and carrier belts also provide exact



Accurate positioning in travel direction guaranteed by the box aligning station.

and gentle blank handling. The carton aligning station in the compression and delivery section can be pneumatically swung in and ensures that blanks are folded with utmost precision.



Compression and delivery section with pneumatic, reproducible pressure.



The modern electronic concept

The DIANA 145-3 and DIANA 165-3 are equipped with a new, self-contained and expandable electronic concept which extends beyond the classic functions to include production data acquisition and indication of possible machine faults.

A further innovation is the central position of the switchgear cabinets over the machine to accommodate all operating components and displays. The canopy houses the complete machine control system including the box flow controlled stacker drive for the compression and delivery section, operating speed displays in m/min and cartons/hr, the automatic machine stop, control units for glue monitors* and jet glue applicators*.

JAGSET*, the makeready unit which increases quality and production

The makeready unit, JAGSET*, shortens set-up times and thereby increases production. JAGSET* automatically finds the optimum settings for top operating speeds and highest folding accuracy. Production can begin without time-consuming adjustments and start-up waste. JAGSET allows even small orders to be produced economically.

JAGSET* always has the right program

JAGSET* is equipped with make-ready programs for

- straightline boxes,
- lockbottom boxes with or without prefolding,
- 4 and 6-corner collapsible boxes.

When setting the machine for a first-time order, the operator simply selects the box type, enters a few dimensions and a code into the process control computer for repeat orders. JAGSET* determines optimum setting values and transmits the data via computer control to the gluer. When an order is repeated, the operator need only select the corresponding code number and makeready is carried out automatically. It is also possible to store setting corrections or makeready data for speciality boxes. Data can be entered even when the machine is running.

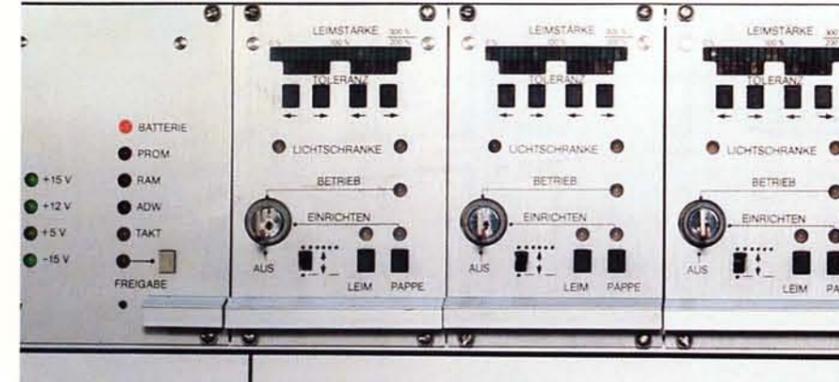
When a size change is required, the following can be set via motor and JAGSET* computer controls: the feeder side walls, main feed gates, carrier sections and roller bars in the prefolding and folding sections, bottom glue unit, transfer station in length and cross direction and the top carriage of the com-



Short set-up times with the motorized setting of the transfer station.

pression and delivery section. Only a few elements are not connected to the computer controlled make-ready process and must be set manually before production can begin. If required, the JAGSET* can be linked to a printer*.

Alternatively, the electronic notebook* with printer and VDU are available for calculating optimum settings. With the help of the displayed values and the digital position indicators, the DIANA can be quickly and easily set by hand.



Glue application measured using microwave technology.

With the electronic notebook* and JAGSET*, almost any number of box measurements can be stored on the hard disc and called up for repeat orders. A data back-up system can also be provided by the use of discs.

Electronic quality control

Electronically controlled units are constantly being improved to meet increasing demands for box quality.

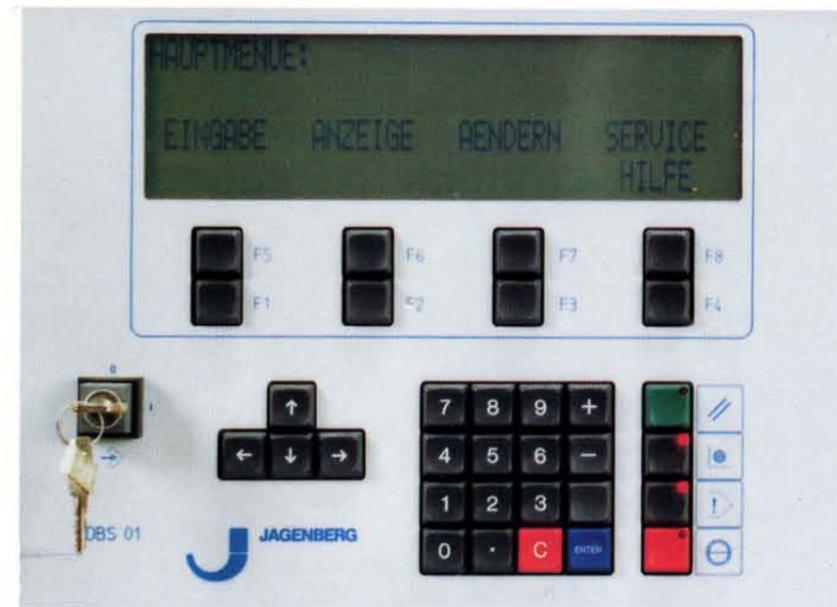
A glue monitor registers if too much, too little or no glue is applied. Capacitive measurement based on microwave technology is carried out by a scanner which detects glue on either side of the blank, depending whether top glue units or bottom glue units are used.

Up to four glue applications can be monitored simultaneously. Tolerance deviations are indicated for each application. If the tolerances are exceeded, the fault is registered by the unit, and once a pre-selected number of consecutive faults has been reached, the machine is brought to a standstill.

* auxiliary equipment



JAGSET-2* makeready unit for increased productivity.



Centralized machine operation, control and monitoring.