60G Belt Pressure Type Single Facer (Corrugated Fiberboard Manufacturing Machine)

Since developing the fingerless single facer for manufacturing single faced web in 1979, we have modified and remodeled successively, and have already delivered more than 500 sets all over the world. We have reviewed the productivity, product quality, controllability, maintainability, working environments and other factors associated with these machines, and noticed some points to be improved. In order to solve all existing problems and realize an ideal machine, we have upgraded thoroughly. On the basis of a completely new concept, we have recently

Mitsubishi Heavy Industries, Ltd.
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developed the 60G single facer employing the bonding mechanism by a pressure belt without using pressure roll. Its new features are introduced below.

1. Specifications

The appearance of the machine is shown in Fig. 1, the structure of the belt pressure type and conventional single facers are given in Fig. 2, and the main specifications are listed in Table 1.

2. Features

2.1 Use of pressure belt

(1) In conventional single facers, two sheets are bonded instantly by a large nip pressure of pressure roll, whereas in the pressure belt type, a nip pressure is decreased, but loading time is extended so as to permit bonding sufficiently.

(2) As a result, the hitherto required adjustment of roll clearance and strict control of pressure become not necessary, and operation becomes easy. At the same time, product quality is stabilized, and light weight sheets can be handled easily without the limitations that have been experienced previously.

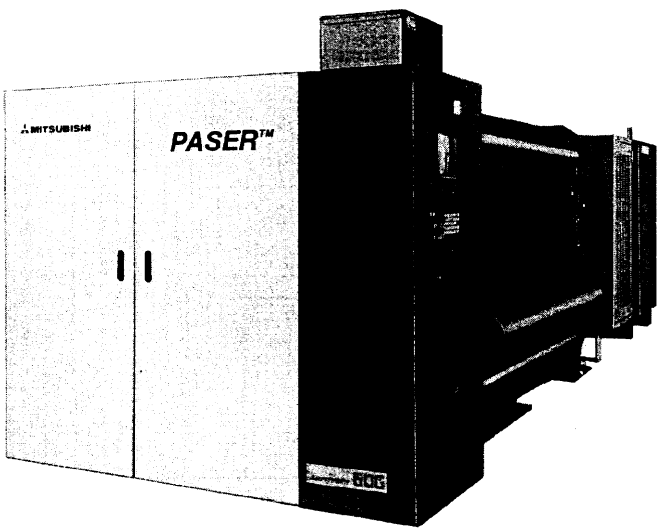


Fig. 1 Overview.

Table 1 Main specifications

Maximum machine speed	400 m/min
Maximum machine width	2 500 mm
Flute height	0.7 to 7.0 mm
Loading mechanism	Belt (aramid fiber)
Medium holding mechanism	Suction
Adhesive applicator	Swing-out type
Clearance adjustment of adhesive applicator roll and corrugating roll	Drive motor torque control
Lubrication of corrugating roll bearing	Grease

(3) Through reduction of the nip pressure applied to sheets, it is possible to print without leaving pressure roll marks (dark brown stripes on the sheet of corrugated fiberboard due to high temperature and high pressure when bonding).

(4) Vibration and noise of the conventional pressure roll type single facer have been dramatically reduced, and the working environments are improved.

(5) Element studies have clarified the conditions relating to pressure, temperature and time necessary for bonding sheets of corrugated fiberboard, and a special heat-resistant belt of high strength has been jointly developed with a belt maker.

2.2 Multi-flute design

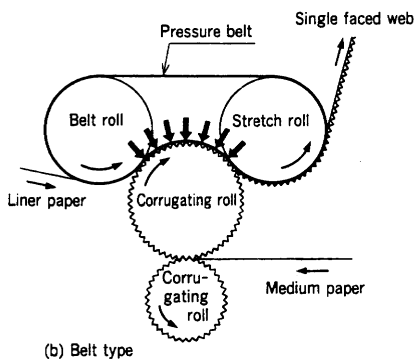
(1) Through incorporation of the corrugating roll in the cassette, its replacement has been made easier. As a result, corrugated fiberboard sheets with multiple types of flutes (shapes of corrugation) can be manufactured by one machine.

(2) In addition, the corrugating roll cassette is compatible with various machines, and the variety of production of corrugated fiberboard sheets has thus been diversified.

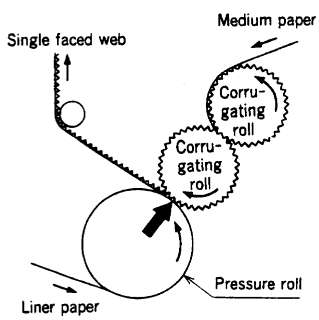
2.3 Ease of operation and maintenance

(1) The clearance between the adhesive applicator roll and the corrugating roll is automatically controlled so as to be equal to the sheet thickness by special control of the servo motor which drives the adhesive applicator roll.

(2) The operation panel comprises a color CRT, and incorporates diagnostic information.



(b) Belt type



(a) Conventional type

Fig. 2 Structure