Flexo Printer Slotter Die-cutter
Bottom Printing Machine
Guangdong Dongfang Precision Science and Technology Co., Ltd (Dongfang Precision), established in 1996 and listed on the A-share in Shenzhen Stock Exchange Market in August 2011. The headquarter is located in Foshan City, Guangdong, China. The new facility ground size is 120,000 square meters and has over 1,200 employees in the world.

Dongfang Precision is a high-tech listed company committed to the manufacturing of digital and intelligent high-end equipment for “Intelligent Packaging”, “Intelligent Automation” and “High-End Core Components”. The main products of “Intelligent Packaging” include high-end corrugated line, corrugated converting machine and peripheral equipments. Besides, intelligent storage and transfer robot for “Intelligent Automation” and outboard motor, engine etc for “High-End Core Components”.

Experience accumulated for many years, Dongfang Precision now is the first comprehensive solution provider for intelligent packaging and logistics system in this industry and has established worldwide network of sales, marketing and services, be able to provide the machinery, solution and technical expertise for the corrugated line, fully automatic corrugated converting line and intelligent storage logistic management in more than 40 countries and regions around the world. Dongfang Precision is the leading brand in China by its absolute comprehensive competitiveness and ranked top 5 brands globally.

By merger and acquisition and strategic cooperation establishment, Dongfang Precision has achieved global wide development, full industrial chain extension and strategic transformation. Through the cooperation with FOSBER Group (Italy) and set up joint venture company Fosber (Asia), to develop and produce high-end corrugated line for Asian market (especially for China and India), so as to achieve successfully the branding of Fosber expanded worldwide further; Wholly-owned acquisition of EDF Europe s.r.l. in 2016 and provide the automatic peripheral equipment for corrugated flexo printing machine; Cooperated with Jaten Robot in 2014 and Ferretto Group (Italy) in 2015, establish a joint venture company with Ferretto to provide total solutions, which covers from intelligent packaging to intelligent storage logistics system, to global customers. Dongfang Precision is leading the development and upgrading of Chinese manufacturing industry to intelligent automation.

With the solid base of integration of intelligent packaging industrial chain, Dongfang Precision is facilitating a full scope of intelligent logistics industrial chain and leading the intelligent transformation of Chinese industry towards "Chinese Intelligent Manufacturing", to eventually achieve its strategic vision of "Intelligent Packaging, Intelligent Plant and Intelligent Manufacturing Solution Provider".

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### Bottom Printing Machine

- **APSTAR HS2 Flexo Printer Die-cutter**
  ---- Bottom Printing, Servo Drive, Vacuum Sheet Transfer
  07/08

- **APSTAR HG2 Flexo Printer Slotter Die-cutter**
  ---- Bottom Printing, Gear Driver, Vacuum Sheet Transfer
  09/10

- **APSTAR Automatic Converting Line**
  ---- Pre-feeder/Stripper Stacker
  11/12

### Folder Gluer

- **APSTAR FG for Bottom Printing Machine**
  13/14
2016...

Wholly-owned acquisition of EDF Europe s.r.l. and established Dongfang R&D and Sales Center in Europe.

Looking forward to the future, Dongfang will develop towards the directions of “Intelligent Packaging”, “Intelligent Plant” and “Intelligent Manufacturing”, continue to make new history.

In 2015

Cooperated with Ferrante Group and established a joint venture company to provide total solutions of intelligent storage logistics systems to the global customers.

Cooperated with Suzhou Parson Power and entered high-end equipment manufacturing industry.

In 2014

Cooperated with FOSENI Group and established the joint venture company: Guangdong Fosber Intelligent Equipment CO., LTD to provide high-end corrugated paperboard production lines to the Asian market (especially the Chinese and Indian market).

Cooperated with JATEN ROBOT and marched towards the intelligent robot industry.

Successfully launched the three new inline products which developed by the Chinese and European team of Dongfang: APSTAR HLL, RDC Converting Line, APSTAR HLL FFG Inline and TOPRA GD FFG Inline to the international market.

In 2013

We developed automatic flexo folder gluer for bottom printer (BFG).

Started the acquisition of 60% stake of FOSENI (Italy).

Together with EDF Europe s.r.l. to develop fully automatic production line (FlexyFeed, IFP, PRM, FLEXYPAL) and put on the domestic market.

In 2012

Global initiative for successful research and development on eight color printer die-cutter equipment in top flexo printing telescopic TOPRA PD-S.

Took on the science and technology plan projects of Guangdong province--The key technology and application demonstration of numerical control packaging and printing machinery products.

In 2011

Dongfang went public in A share stock market successfully.

We were identified as Guangdong Provincial Enterprise Technology Center.

In 2010

We developed top printer slitter die-cutter with gear drive and vacuum transfer (TOPRA GD).

We developed top printer slitter die-cutter with independent servo motor drive, unit fixed and vacuum transfer (TOPRA FD).

We developed bottom fixed printer with independent servo motor drive and vacuum transfer (APSTAR HBL).

We developed automatic Flexo Folder Gluer for top printer (TFG).

We have been given the title of National High-Tech Enterprise.

In 2009

We developed top printer slitter die-cutter with independent servo motor drive and vacuum transfer.

In 2008

We developed bottom printer slitter die-cutter with independent servo motor drive and vacuum transfer.

In 2005

We applied technology of servo motor drive to die-cutter unit.

In 2003

Our products were sold to Europe market and launched in the international market.

In 1998

We developed the first bottom printer slitter die-cutter with lead edge feeder and vacuum transfer in China.

In 1997

We developed the first printer slitter die-cutter with kick feeder.

In 1996

We developed the first flexo printer.
Features:
Produced by European design philosophy and CE certified, APSTAR HS2 features movable units, servo motor drive for each unit, vacuum sheet transfer for accurate transmission of various corrugated paperboards, which considerably upgrade printing register. Optional drying devices of hot air, IR or UV facilitate high-graphic full-screen coated paper printing, partly taking place of offset printing. Four-color RLS is equipped for frequent color change, remote maintenance and fast trouble shooting. Furthermore, central dust collecting system and air-conditioning for electric cabinet of each unit are provided. Applicable to high-graphic printing on coated paperboards or normal printing on kraft paperboards. A datable to inline work with standard stacker or vibrator stacker.

Feeder Unit: Servo Motor drive
- Continuous and skip feeding are available.
- Servo driven lead edge feeder with adjustable feed stroke control.
- Variable frequency drive control of vacuum suction and pressure to suit different size paperboards.
- Extended sheet cleaning system including anti-static bar, multiple brushes, and strong vacuum to remove the dust from the print surface of the paperboards.

Dwell Unit: Servo Motor drive
- Hot air dryer, flexo IR dryer or UV curing system can be installed in the last dwell unit (Optional).

Printer Unit: Servo Motor drive
- Vacuum sheet transfer system with rollers.
- Mattress or quick-look plate mounting system (alternative).
- Printing plate length compensation: automatic compensation of up to 3mm for printing plate length deviation caused by difference in printing pressure between plates.
- Correcting device for tilted printing plate: if caused by plate mounting can be quickly corrected with a range of maximum ±0.5mm.
- First to last print registration of ±0.3mm.
- Chamber doctor blade or single doctor blade inking system (alternative).
- Peristaltic pump to supply ink, dual diaphragm pump to return ink.
- Auto washing system included with “wash-white-run” capability for fast and efficient ink cleanup.
- Auto register reset system after printing plates are cleaned.
- Inter-station hot air dryer, IR dryer can be installed in each printer unit (optional).
- Quick change anilox roll cart included.

Die-Cutter Unit: Servo Motor drive
- Quick die mount system (Optional).
- Servo motor drive system on anvil cylinder.
- Automatic side to side oscillation of the anvil cylinder (90mm).
- Micro grind anvil trimming system with automatic speed compensation control. When every 10,000 pieces are die-cut, the system will automatically grind 0.02mm from the anvil covers and adjust the anvil drum speed accordingly to maintain a constant speed with the die cylinder and paperboards.

Specifications subject to change without advance notification.
APSTAR HG2 / Flexo Printer Die-cutter

Bottom Printing / Gear Drive / Vacuum Sheet Transfer

www.vmtdf.com

Features:
Produced by Euramerican-design philosophy and CE certified, APSTAR HG2 features movable units, gear drive, and vacuum sheet transfer for accurate transmission of warp corrugated paperboards, which considerably upgrade printing register. Optional drying devices of hot air, IR or UV facilitate high-graphic full screen coated paper printing. Touch screen PLC is equipped for frequent order stores, remote maintenance and fast trouble shooting. Furthermore, central dust collecting system and air-conditioning for electric cabinet of each unit are provided. Applicable to high-graphic printing on coated paperboards or normal printing on kraft paperboards. Adaptable to inline work with stacker or folder gluer.

Feeder Unit
- Continuous and skip feeding are available.
- Lead edge feeder with adjustable feed stroke.
- Extended short cleaning system (including anti-static bar, multiple brushes and strong vacuum to remove the dust from the print surface of the paperboards).
- Variable frequency drive control of vacuum suction and pressure to match different sizes of paperboards.

Printer Unit
- Vacuum sheet transfer system with rollers.
- Matthews or quick-lock plate mounting system (iterative).
- First to last print registration of ± 0.5 mm.
- Doctor blade (chamber or single) for foil-to-roll inking system.
- Perforating pump to supply ink, dual diafragm pump to return ink.
- Auto washing system included with “wash-while-run” capability for fast and efficient ink cleanup.
- Auto register reset system after printing plates are cleaned.
- Inter-Station hot air dryer or IR dryer can be installed in each printer unit (Optional).
- Quick change rolls are roll cart included.

Single-Shaft Slotter Unit
- Single shaft with double knives, the internal gear drive adjusts the height of the box and prevents the lubricant oil from spilling or leaking on to the paperboard.
- The slotting box moves along linear bearing driven by lead screws for more flexible and precise movement.
- The structure of the gluelath/knives can cut 5-layer or 5-layer paperboard without adjustment.
- Pre-cresser and creaser to minimize score cracking and promote better folding accuracy.
- Hand hole-punching dies are available.

Double-Shaft Slotter Unit (Optional)
- Knife sets do not need to be removed when slotting larger size paperboard and during skip feeding.
- The slotting box moves along linear guides driven by lead screws for more flexible and precise movement.
- The structure of the gluelath/knives can cut 5-layer or 5-layer paperboard without adjustment.
- Pre-cresser and creaser to minimize score cracking and promote better folding accuracy.
- Hand hole-punching dies are available.

Die-Cutter Unit
- Servo motor drive system on die cylinder (Optional).
- Quick die mount system (Optional).
- Servo motor drive system on anvil cylinder.
- Side to side oscillation of anvil drum (50mm).
- Micro grid anvil trimming system with automatic speed compensation control. When every 1.0000 pieces are die-cut, the system will automatically trim 0.02mm from the anvil cover and adjust the anvil drum speed accordingly to maintain a constant speed with the die cylinder and paperboards.

Specifications subject to change without advance notification.
- Doctor chamber blade inking system
- Roll-to-roll inking system
- Ceramic suction system
- Anti-static device
Features:
APSTAR full-automatic converting line is composed by Prefeeder+Printer Die-cutter+Stripper Stacker with production speed of up to 2300 cartons/min. It can set up 1000 customer files. Storage of each registration (0-8) orders, intelligent design and smooth linear processes is to minimize labor costs, reduce management stress, and improve operational efficiency for all carton box companies.

Prefeeder
High-speed prefeeder is appropriate for all major brands of bottom printing, converting machines, slitter, scorer, die-cutter, FFG inline folder gluer and flat-bed die-cutting machine.
- Bottom printers to match the prefeeder:
  APSTAR HS2 1621/1624/1628/1632
  APSTAR HG2 924/1224/1228/1624/1628/1632

- The optional ’Reverser (R. Unit)’ makes the prefeeder work with top printers.
- Top printers to match the prefeeder:
  TOPRA GD 920/924/1224/1228/1624/1628/1632
  TOPRA AD 920/924/1224/1228/1624/1628/1632

Remark: Prefeeder and palletizer are produced by Italy EDF.

Stripper Stacker
This brand new automatic stripper stacker matches the rotary die-cutting machine, photoelectric sensor, counting the boxes exactly, helping customer analyzing orders, improving efficiency. Pushing out bundle of paper when the machine at highest speed, avoid to stop the rotary die-cutting machine.
- Matching bottom printers:
  APSTAR HS2 1621/1624/1628/1632
  APSTAR HG2 924/1224/1228/1624/1628/1632

This brand new Stripper Stacker has three models:
FLEXYSTACK-IFP, FLEXYSTACK-PRM and FLEXYSTACK-VACUUM

FLEXYSTACK-IFP:
This stripper stacker can deliver paperboards like normal stackers and add modules to upgrade to delivery by both bundle and stack. Accurate counting of paperboards is available by either bundle or stack according to customer needs.
FLEXYSTACK-PRM:
This stripper stacker is designed to deliver paperboards by bundle only. Accurate counting of paperboards is available by either bundle or stack according to customer needs. Especially applicable to special processing of paperboards, e.g. scored turning or rotary layout.
FLEXYSTACK-VACUUM:
This fully automatic vacuum stacker is able to process very complex jobs, and possible to adjust a cardboard sample during the production, perfect squeezing of the bundles. It is the perfect machine to be combined with fully automatic palletization line. The best stripper stacker that the market can offer.

Furthermore, FLEXYSTACK-PRM can combine with UNIPAL (Palletizer).
This latest fully automatic palletizer offers various modularized installation and configuration according to layout of customer’s workshop. With functions of collecting, bundling and palletizing is the best solution for unmanned production in the field of bundle collection with stripper stacker.
**Features:**

- Folder Gliser for Bottom printing machine.
- New Design Concept: Real-thickness pressure adjustment for no crush box transportation, not necessary manual adjustment, especially at the cardboard thickness change.
- Bottom transfer belts combined with pulley section and vacuum section.
- Top transfer belts driven by the independent motors for precise sheet control.
- New “Sandwich Belts” and “Side Squeezing Belts” improve the flatness and gap on box.
- Glue extension system: VALCO, ERO (Optional).
- Counter ejector is driven by the servo motors which control the quantity of the papers accordingly.

**Models Suited to APSTAR FG**

- APSTAR HG \(924, 1224, 1228, 1624, 1628, 1632\)
- APSTAR HS \(1624, 1628, 1632\)

**Main Specification**

<table>
<thead>
<tr>
<th>Item</th>
<th>Model</th>
<th>FG 2400</th>
<th>FG 21224</th>
<th>FG 2800</th>
<th>FG 3200</th>
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<tbody>
<tr>
<td>Max. machine speed(pec/min)</td>
<td>HG 2004</td>
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<tr>
<td>Min. feeding size (mm)</td>
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<td>350x600</td>
<td>450x600</td>
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<td>Max. feeding size (mm) (glue flap width 45 included)</td>
<td>HG 2800</td>
<td>900x2400</td>
<td>1200x2400</td>
<td>1200x2800</td>
<td>1600x2800</td>
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<tr>
<td>Max. printing size (mm)</td>
<td>HG 3200</td>
<td>880x2500</td>
<td>1180x2500</td>
<td>1180x2700</td>
<td>1580x3100</td>
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<tr>
<td>Max. panel size (mm)</td>
<td>HG 3200</td>
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<td>Glue flap side 1100</td>
<td>Glue flap side 1300</td>
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<tr>
<td>Glue flap side 1100</td>
<td>Opposite glue flap side 1000</td>
<td>Opposite glue flap side 1100</td>
<td>Opposite glue flap side 1300</td>
<td>Opposite glue flap side 1500</td>
<td></td>
</tr>
<tr>
<td>Min. slotting space (normal knife) (mm)</td>
<td>HG 3200</td>
<td>Glue flap side 130</td>
<td>Glue flap side 130</td>
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<tr>
<td>Glue flap width (mm)</td>
<td>HG 3200</td>
<td>&lt; 45</td>
<td>&lt; 45</td>
<td>&lt; 45</td>
<td>&lt; 45</td>
</tr>
</tbody>
</table>

Specifications subject to change without advance notification.

**Counting (pcs/per bundle):**

- 5 pcs: 125 (pcs/min)
- 10 pcs: 250 (pcs/min)
- 15 pcs: 350 (pcs/min)
- 20 pcs: 350 (pcs/min)
- > 25 pcs: 350 (pcs/min)

**Paperboard ejection height (mm):** 1000


**Standard Stacker**

- Stacked height up to 1700mm. Connection arms can be operated manually or automatically.
- Connection's speed is normally the same as feeding speed. It can also be adjusted independently.
- Pneumatic side jogger makes paperboards in order and squared.
- Sprocket and chain structure controls the up and down of transport belt that prevents the collecting hub from falling. This makes operation safer.
- A pneumatic controlled plate will be pop-up to hold the coming paperboard, when the pile reaches a pre-set height.
- Transfer belts are rough-top flat belts, improving adhesive power and preventing paperboard from falling.
- The tension of the belts for connection arm can be adjusted independently, the upper of connection unit is equipped with 2 sets of 0.35kw air blowers for clean paper scraps.

**Main Specification**

<table>
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<tr>
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<tr>
<td>2400</td>
<td>900X2400</td>
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<tr>
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<tr>
<td>3200</td>
<td>1600X2400</td>
</tr>
<tr>
<td>3600</td>
<td>1600X3600</td>
</tr>
</tbody>
</table>

**Standard Vibrator Stacker**

- Stacked height up to 1700mm. Connection arms can be operated manually or automatically.
- Connection's speed is normally the same as feeding speed. It can also be adjusted independently.
- Pneumatic side jogger makes paperboards in order and squared.
- Sprocket and chain structure controls the up and down of transport belt that prevents the collecting hub from falling. This makes operation safer.
- A pneumatic controlled plate will be pop-up to hold the coming paperboard, when the pile reaches a pre-set height.
- Equipped with 3 section belts conveying paperboard, the front with 6 units round belts, the middle and the back with rough-top flat belts. The rough-top belts can improve adhesive power and prevent paperboard from falling.
- Both the upper of middle and front convey belts are equipped with 2 sets 0.75kw scrap air blowers, totally 4 sets. The upper of vibrating section with 1 set 2.2kw scrap air blower. The upper of round belt in vibrating section with 1 set brush to clean scraps.
- The bottom of vibrating section is equipped with scrap conveying device to convey the scraps at the bottom of vibrating section to the front of the stacker.

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<td>3200</td>
<td>1600X2400</td>
</tr>
<tr>
<td>3600</td>
<td>1600X3200</td>
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</table>

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