



INNOBIZ

www.ifcw.com

INTERNATIONAL FLAT CABLE



Flexible Flat Cable Machine

0.3pitch Flat / Ribbon / Card Cable

Gold plated cable

Metal shielding on the cable

Permanent bends in the cable at set distances from the ends of the cable

Notched corners on one or both ends of the cable

FFC with both flat and round conductors in the same ribbon

○ Introduction

INTERNATIONAL FLAT CABLE (IFC) is a manufacturer of Flat Flexible Cable (FFC) manufacturing equipment. International Flat Cable is leading the FFC industry in the world today by manufacturing and developing FFC equipment that can easily supply and produce a wide variety of FFC cables of various applications, both economically and efficiently. IFC remains highly competitive, meeting the requirements of our customers, while also keeping up with state of the art industrial trends, such as miniaturization, weight lightening, and more, so as to continue to provide optimal service to our customers, and remain the highest achieving FFC provider in the global market today.

IFC employs the rich experiences we have enjoyed with our customers from the past 23 years of service in the FFC industry. IFC utilizes our vast technical knowledge which has been accumulated in the field from having been in the FFC industry for more than 23 years since our founding in 1994. Our automated FFC manufacturing equipment has been designed using our own vast portfolio of patents and technologies that we have developed. IFC's automated FFC equipment has been recognized as having the best interconnect technology due to realization of low cost and short lead time by its automated production. IFC will keep devoting its efforts for continuous product improvement and commitment to customer service.

○ Features

Machine : Flexible Flat Cable Machine, Airbag cable and other automotive internal wiring cable laminating machine, Multi Functional FFC Machine

Auxiliary Machine : Folding Machine, Taping&Shielding Machine, Locking Tab Creation Machine, In-line vision inspection, Vision inspection cutting, Rolling Machine, Dot printer

○ Industrial Property Rights

PATENT

- Pitch roller manufacturing method for flat cable machine
- Automatic slitting apparatus for Flexible Flat Cable Machine
- Laminating method of Flexible Flat Cables (servomotor type)
- Slitting apparatus for flexible flat cable machine
- Sliding apparatus for flexible flat cable machine
- Small roller apparatus for flexible flat cable machine
- Punching apparatus for flexible flat cable machine
- Supporter for flexible flat cable machine
- Heat roll protection device for flexible flat cable machine
- Anti-Static Brush auto machine
- Vision system for flat cable slitting equipment
- Slitting error controlling method and Automatically device
- Taping apparatus for flat cable
- Manufacturing apparatus of wide flexible flat cable
- Shielding apparatus for flat cable
- An apparatus for folding flat cables
- Pollution control device of heat sealing roller for preventing transition of adhesive or pressure-sensitive adhesive in FFC laminating apparatus

UTILITY MODELS

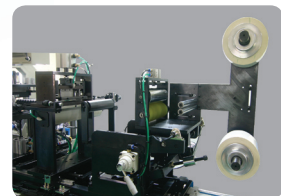
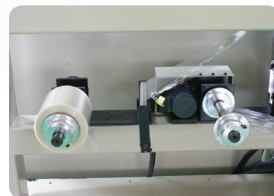
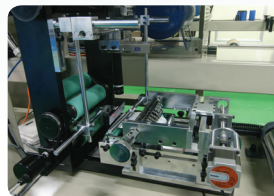
- Puncher in machine making flat cables
- Supporter for flat cable production machine
- Film transfer apparatus for flat cable production machine
- 2 kind of Slitting device for flat cable production machine
- Device for location adjustment of cooling plate production machine
- Heat roller device for flat cable production machine
- Dust collecting device for supporting tape for flat cable production machine
- Puncher apparatus for flat cable machine
- Driving part for puncher and supporter for flat cable production machine

○ Company History

- 1988
 - Purchased FLAT & RIBBON CABLE production equipment from High tech cable Corp. in the USA
 - Exported cables for military to ESC (ELECTRODYNE SYSTEMS CO., LTD) in the USA
 - Started development of FFC(FLEXIBLE FLAT CABLE) production machine
- 1994
 - **Founded INTERNATIONAL FLAT CABLE company**
 - Developed silicon oil sprayer for wire stripping (for LG Cable and other companies)
 - **Exported products to TUNGHING in Hongkong ; CVILUX in Taiwan**
 - Obtained EM Mark Certificate from Korea Agency for Technology and Standards of the Ministry of Commerce, Industry and Energy (FFC production machine) ; certification of venture company by Small and Medium Business Administration
- 2002
 - Exported products to **HITACHI CABLE** in China ; **SONY CHEMICAL** in Japan ; **NICOMATIC, PARLEX** in the USA ; **DRAKA CABLES** in Spain
 - **Won 1 Million Dollar Export Tower Prize on 39th Trade Day ; the Deputy Prime Minister and the Minister of Finance and Economy's award (Taxpayer's Day)**
 - **Obtained CE Certificate** and EM Mark Certificate from Korea Agency for Technology and Standards of the Ministry of Commerce, Industry and Energy (High Speed Vertical Flat Cable Manufacturing Equipment)
 - Designated as again a specialized parts and material company by the Ministry of Commerce, Industry and Energy
 - Selected as a small & medium company's technology innovation development project by Small and Medium Business Administration
- 2006
 - Exported products to **SUMITOMO** in Japan ; **FOXCONN, HUNG FU, TENNRICH, PARLEX, P-TWO, TSUJIMOTO, HAMBURG, DEREN, XIAMEN, XINYA, CFMG, TECH MASTER** in China ; **HITACHI CABLE, SUMITOMO** in Malaysia
 - **Won a 3 Million Dollar Export Tower Prize on 47th Trade Day ; a citation from the Minister of Knowledge Economy ; a citation from the Minister of Commerce, Industry and Energy for the development of good capital goods**
 - Designated as an Industrial Family company by Small and Medium Business Administration ; a specialized parts and material company by the Ministry of Knowledge Economy ; a 2009 Electronic Products Trade Frontier company by Small and Medium Business Administration
 - Obtained certification of dedicated research & development department from Korea Industrial Technology Promotion Association
- 2011
 - Won Exemplary Taxpayer Prize from the Director of the National Tax Service
 - Exported products to **HITACHI CABLE** in Vietnam ; **NICOMATIC, HAMBURG, DEREN, ZHENG HAO, RICHANG** in China
 - Supplied products to **YOUNG SHIN, UJU ELECTRONICS, SHINCHANG CONNECTOR, DOOSAN , SERONICS** in Korea
 - Obtained UL Certificate Style No.20624, 2896, 2643, 20566
 - **Established a liaison Office in the United States**
 - **Developed Multi-functional flexible flat cable manufacturing equipment ; Folding Machine, Rolling Machine, Locking Tab Creation Machine, Tape Splicer Machine**
 - Exported new developed laminating machine to USA
- 2017
 - **Safety and reliability are guaranteed by our CE certificate renewal.**
 - Exported products to Richang in China

Flexible Flat Cable Machine (SERVO TYPE)

○ Standard

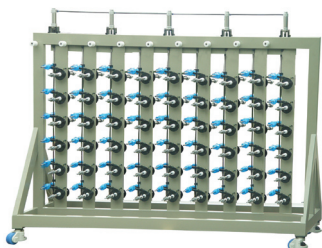


The automated FFC manufacturing equipment is designed specifically to produce Flexible Flat Cable, which consists of a wire rack, the main body, a cable capstan, a winder, and other equipment options specified by our customers, such as a dielectric withstand tester. The main body's major components are a puncher and supporting tape /stiffener apparatus. The puncher forms a connector window, and the supporting tape/stiffener is placed on the punched portion of the cable to allow for easy connection interface during utilization. A servo motor-driven system, created and patented by IFC, has been applied to improve tolerance limit of the cable and improve productivity. Built-in servo motors independently perform the process controlling the puncher and supporting tape/stiffener apparatus. It forms a connector window, and allows for the attachment of the supporting tape/stiffener that supports the connector. The applied Human Machine Interface (HMI) is composed of a touch screen interface which allows for a more efficient control of the manufacturing process through monitoring and control of production. The system includes a data logger that tracks the machine's settings, which has been key to the high reliability and low defect rate of our cables produced.

Major advantages of the standard FFC machine are :

- Capability of producing high-precision FFC cables
- Supporting tape/stiffener apparatus with enhanced precision/tolerance limit
- Built in servomotor driven puncher and supporting tape/stiffener apparatus versus belt driven style (servomotor allows for less defects and a higher precision rate)
- Protective film equipment that protects the conductor of the cable from the adhesive applied during manufacture (prevents adhesive from spilling onto conductor, which hinders conductivity and gold plating process). And the equipment also prevents the damage of heat roller from the melted adhesive

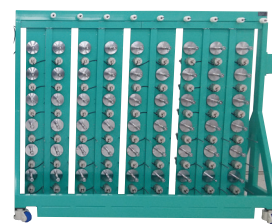
○ Wire Rack Type (optional)



BELT



MINI KEEPER



AIR CYLINDER

- The number of spools of each wire rack (optional) : 72, 108, 120, 216 and 240



INTERNATIONAL FLAT CABLE

Head Office & Factory : 190, Songseon-ro, Pocheon-si, Gyonggi-do, 11161, Korea.

URL : www.ifcw.com

E-mail : ifcw@ifcw.com

Tel : +82-31-541-4505,4506,4507

Fax : +82-31-541-4508



Applications

Automotive Industry

Air-bag, Audio system, Black box, Car CPU, Car electric devices, Car lamp, Car radio, Car side door, Automobile Cockpit, CD changer, Electric vehicle, GPS, Navigation equipment, Seat heat line, Side-Mirror, Steering wheel, Sunroof, Trunk

Aviation Industry

Airplane seats, Aeronautical light

Health Medical Industry

Electronic manometer, Seat DVD, Robots, RCU, Emergency lighting

Home Automation

Air-conditioner, Audio, Camcorder, Cleaning machine, Digital camera, Digital piano, Electronic cigarette, Electric fan, Electric rice cooker, Flat screen TV, Microwave oven, Mixer, Personnel computer, Refrigerator, Smart TV, Video phone, Washing machine

Information Technology

ATM, CDP, CD / DVD rom driver, LDP, LED Display, DRONE = UAV, Mobile phone, Modem, PMP, Simultaneous translation, Smart card reader, VCR

Industrial Automation

FA (Factory Automation), Industrial PDA, Touch screen, 3D printer, Timer, Controller, Inverter, PLC, PSU

Office Automation

Card reader (MSR), Copy machine, Ink jet printer, Computer, Facsimile, Fax machine, Laser printer, Notebook PC, Scanner, Voice recorder, Typewriter, Walkie-talkie

3D Printer



Drone



Robot



Medical



Automotive



Electronics, Appliances








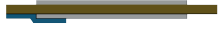



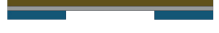



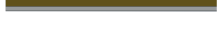
















Display



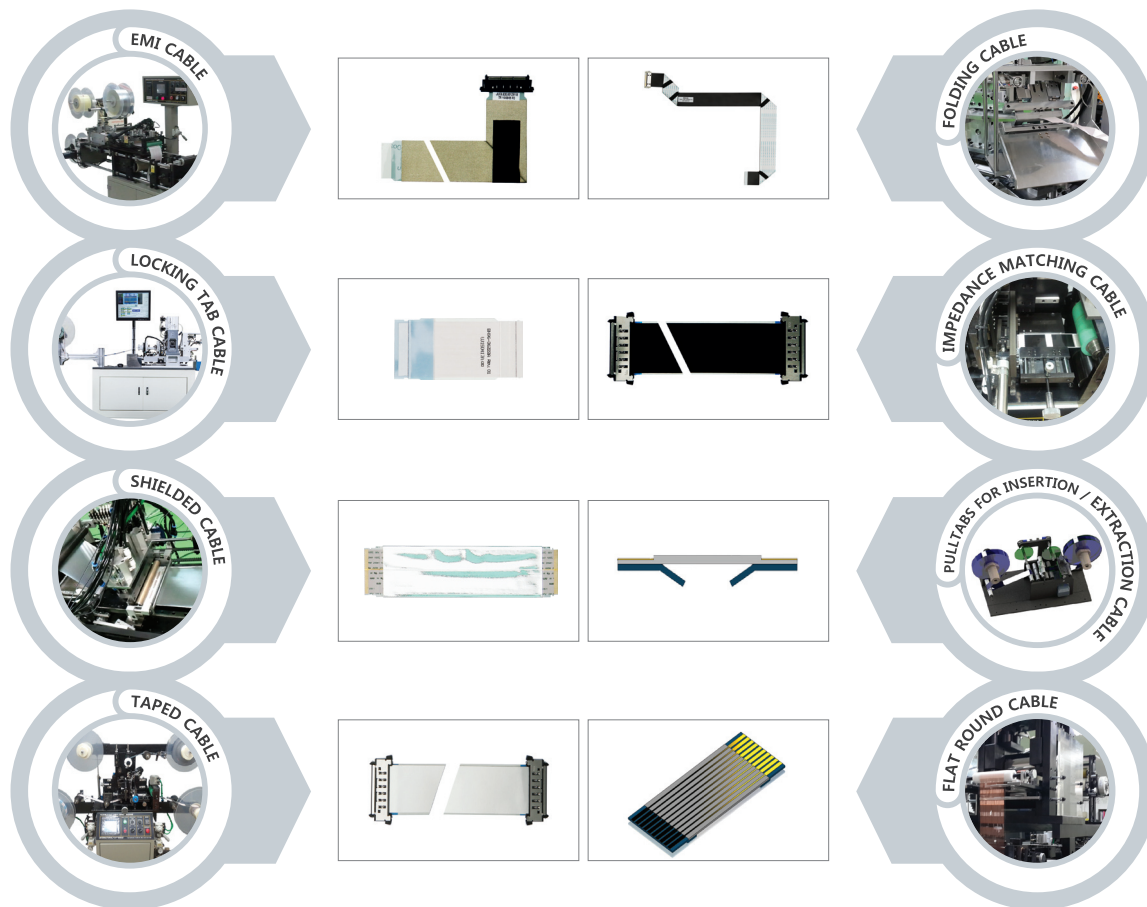
Notebook



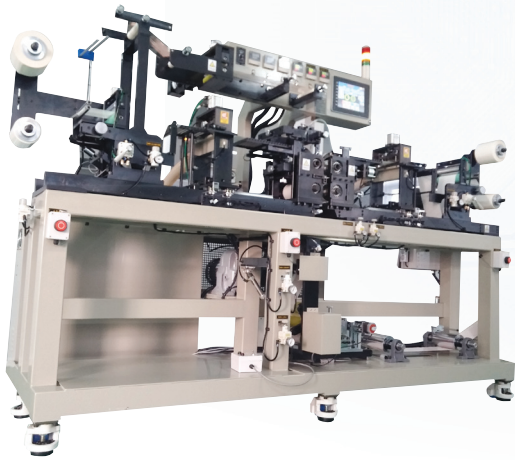
○ Cable Type

Standard Type			Multifunctional Type		
FFC NO. A			FFC NO. A		
FFC NO. B			FFC NO. B		
FFC NO. C			FFC NO. C		
FFC NO. C-1			FFC NO. D		
FFC NO. D			FFC NO. E		
FFC NO. E			FFC NO. F		
FFC NO. F			FFC NO. G		
FFC NO. G					

○ Special Cable



○ Airbag Cable and Other Automotive Internal Wiring Cable Laminating Machine



The Automotive Cable Machine is highly optimized for producing only automotive cables such as air bag cable and other inner wirings for automobiles, and its key advantages are :

- Exclusive FFC cable equipment for vehicles
- Composition of two punchers without the supporting / stiffener apparatus
- Can be equipped with a dielectric withstand tester for film (optional)

○ Multi Functional FFC Machine



As the world of electronics has advanced, so has the application of FFC products. The international market has moved towards products with a focus on miniaturization, weight lightening, and eco-friendliness. Due to this, the demand for a product that can meet these new requirements has blossomed into a new niche for FFC products. In addition, realization of FFC applications to Low Voltage Differential Signals (LVDS) products such as TVs, Lap top computers, monitors, cellular phones, etc. has also increased the demand for FFC products. Consequently, Flexible Printed Circuit (FPC) are being phased out of the market by the application of FFC products where FPC would have been used in the past.

The older FPC type cables are expensive to produce and involve dangerous chemicals to manufacture. They are used where embedded components are

required. Many FPC applications are being redesigned to use FFC cables to reduce the cost, weight and size. Existing FFC manufacturing machines are limited to producing FFC cables with only a few specific supporting tape/stiffeners on the cable. To overcome this limitation to the production of FFC, the Multi-Functional FFC machine was developed.

The major feature of a Multi-Functional FFC machine is that it can produce many various cables that could not be produced with existing FFC facilities. With the Multi-Functional FFC machine, it is possible to integrate various types of strips (punches, exposed conductor) and to attach several supporting tape/stiffeners with different colors to the product.

Even complex FFC configurations can be produced using special FFCs. This is done by attaching maximum four (4) supporting tape/stiffeners with different widths and colors and two (2) punches.