GRAPHTEC

Cutting Plotter
FC8600 60/75/100/130/160 series

Grit-rolling cutters
with superior productivity and operation

FC8600-160

FC8600-130

FC8600-100

FC8600-75

FC8600-60

New Feature

Software
Plug-in software for Illustrator & CorelDRAW
Cutting Master 4
Graphics design software
Graphtec Pro Studio [*1] / Graphtec Pro Studio Plus [*2]

ARMS5.0
Enhanced ARMS, improved precision cutting and productivity in Print & Cut application

Network Interface
Built-in Ethernet (10BASE-T/100BASE-TX), ease of use in networked environments

✚ Additional Features >>> Incorporates three new features

ISM(Intelligent Scan Mode)
A new scanning algorithm expands compatible media and increases mark scanning success in Print & Cut application

Sequential cutting
Sequential contour cutting mode within the segment area compensation function improves accuracy of cutting and tracking of media in Print & Cut application

EPS support
Import files in EPS, Ai, CMX, and PDF format to Graphtec Pro Studio for increased compatibility with popular design software

*1 It supports only Windows OS. For Mac OS uses, Graphtec studio.   *2 Option

www.graphteccorp.com

Best performing Cutter in its class

FC8600 series premiere cutting plotter providing higher productivity and greater ease of use

Fastest cutting speed in its class
1485 mm/s maximum cutting speed for the higher productivity.

Highest cutting force in its class
5.88 N (600 gf) maximum cutting force for a wide variety of applications.
Expands the range of possible cutting media such as thick film.

Reliable long-length tracking
Guaranteed 15m tracking and accuracy.[1]
Includes basket and push rollers with 3 different pressure settings[2] to provide a more stable media feed and to support a wider range of media.

[1]: Operated with Graphtec specified media and conditions.
[2]: The center push rollers have 3 pressure settings, the end push rollers have two pressure settings

Five sizes to match all requirements
The series includes cutting widths of 61 cm (24 in.) to 162 cm (64 in.).

FC8600-160	← 162cm (64 in.) →	Media
FC8600-130	← 137cm (54 in.) →	
FC8600-100	← 106cm (42 in.) →	
FC8600-75	← 76cm (30 in.) →	
FC8600-60	← 61cm (24 in.) →	

Labels/Stickers
(Print & Cut in small size)

Apparel pattern paper

Window display
(Indoor and outdoor signage)

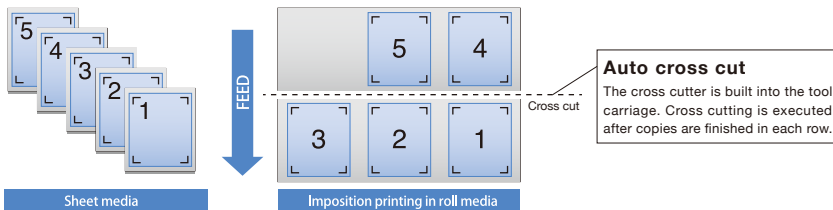Window display with graphics
(Print & Cut in large size)

Traffic sign
(High-intensity reflective film)*

*Using cutting blade CB15UA or CB15UA-K30 is recommended. In some grades of reflective film, reinforcing the backing sheet of the media is recommended.

Enhanced functions for higher productivity

Copy with ARMS
The new fifth generation ARMS5.0 provides high-precision print & cut.
It supports the copying of the cutting data including the ARMS control command for making multiple copies of the downloaded data. This allows multiple copies to be created without a PC, significantly improving work efficiency. The media can be also separated by each row with the cross cutter when the cross cut function is enabled.

FEED

Cross cut

Auto cross cut
The cross cutter is built into the tool carriage. Cross cutting is executed after copies are finished in each row.

Sheet media

Imposition printing in roll media

Built-in network interface
The USB 2.0 (Hi-Speed), RS-232C and Ethernet (10BASE-T/100BASE-TX) are built in as standard. Multiple interfaces enable various connections such as a single PC to single plotter and multiple PCs to multiple plotters. The Ethernet connection also allows sharing of the cutter over a network.
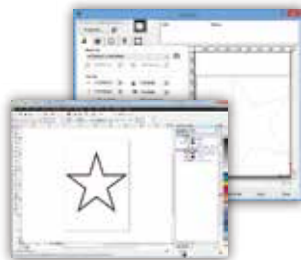
PC PC PC

Improved application software

Plug-in software for Illustrator & CorelDRAW
Cutting Master 4 NEW
Cutting Master 4 is Graphtec plug-in software for Adobe Illustrator and CorelDRAW Graphics Suite. It sends cut data to the plotter and includes a variety of functions such as: preview, registration mark creation, tool conditions, cut job settings and more. Cutting Master 4 is easy to use and enables you to get the best performance from your plotter.

Graphics design software
Graphtec Pro Studio NEW
Graphtec Studio
Easy-to-use application software for creating original designs. It has enhanced functions such as auto-shapes, shading, and editing functions. It can also configure the cutting conditions and other settings on the plotter. Importing of EPS, Ai[3], CMX[3], and PDF[3] file types are supported. Graphics created with other popular design software can be imported into the software.

Supported OS[1]	Windows 10/8.1/8/ 7	Supported software[1]	Adobe Illustrator CC2017/CC2015.3/CC2014/CC/CS6/CS5/CS4[2]
	Mac OS X 10.7 — macOS 10.12		Corel DRAW Graphics Suite 2017/X8/X7/X6/X5/X4

<Main Features>
- Editing the position, enlarging and reducing the graphic directly within the preview windows
- Creating an outline of a letter, recognising a line width and the overlap
- Output by a layer or colour ● Inserting a line for weeding
- Splits an object into small pieces with the tiling function ● Supports the connection and switching of multiple plotters

Supported OS[1]	Graphtec Pro Studio	Windows 10/8.1/8/ 7
	Graphtec Studio	Mac OS X 10.6 — macOS 10.12

<Main Features>
- Creating designs using autoshape, various line type, etc.
- Autotrace (supporting bmp, tiff, jpeg, etc. image format)
- Import EPS, DXF format files and other raster format files
- Inserting a line for weeding
- Editing text using rotate, mirror, fit-to-shape, etc.
- Supports the connection and switching of multiple plotters
- Output by a colour

[1] : For more information about compatibility of the OS or application software, please check the Graphtec website or contact your local representative of Graphtec.   [2] CS 4 is supported only in Windows edition of Adobe Illustrator.   [3] It is available on the Graphtec Pro Studio.
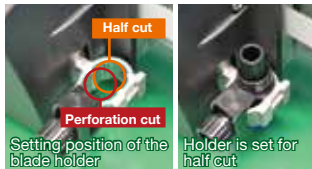
Enhanced functions for high productivity

Intuitive operation

Settings can be easily set up using the large 3-inch LCD and tactile control panel. It is icon driven and supports multiple languages.
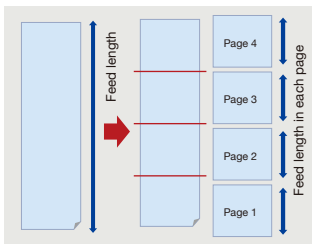
Perforation Cutting

Perforation cutting is performed by controlling the cutting force instead of blade up/down movements, increasing throughput. This is perfect for cutting separation lines for tearing out labels, fold lines for POP signs, and others.
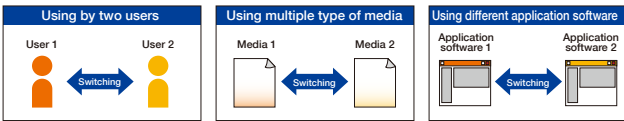
Half cut

Perforation cut

Setting position of the blade holder

Holder is set for half cut

Auto-paneling

Auto-paneling is a new feature that automatically splits long-length jobs into smaller pages that are cut sequentially but without any gaps. The result is a seamless, long-length finished job. Media movement is limited to the smaller page being cut, improving accuracy and tracking.

Feed length

Page 4
Page 3
Page 2
Page 1

Feed length in each page

Dual configuration

Save two (2) user settings with eight (8) condition settings for each user. A fast access key allows quick switching between users. One cutter can be shared by multiple users or for multiple purposes.

Using by two users	Using multiple type of media	Using different application software
User 1 ⟷ Switching ⟷ User 2	Media 1 ⟷ Switching ⟷ Media 2	Application software 1 ⟷ Switching ⟷ Application software 2

2 tool configuration for cutting & plotting (Option)

It holds both a pen for plotting and a blade for perforated cutting. The tool is automatically switched for cutting and plotting as needed.

● The media stocker can be added for storing multiple roll media (Option, up to three)
● The media can be loaded from the rear or front by changing the direction of the stand

Option | Advanced software

NEW

Graphtec Pro Studio Plus

Graphtec Pro Studio Plus is the enhanced edition of Graphtec Pro Studio. It is optional software with functions for improving productivity and advanced design. Additional functions include: transformation of characters and graphics, automatic sequence number insertion, barcode creation, templates for rhinestone creation, nesting, directional change of cutting lines, changing cutting order, and more.

Supported OS*1	Windows 10/8.1/8/7

<Main Features>

● Deformation, shadow, and stripe of texts and shapes
● Check the spelling ● Vectoring ● Filter for bitmap image
● Serialized number, Bar-code, QR code, etc. ● Power Nest (Nesting)
● Cutting simulation (Changing cutting order)
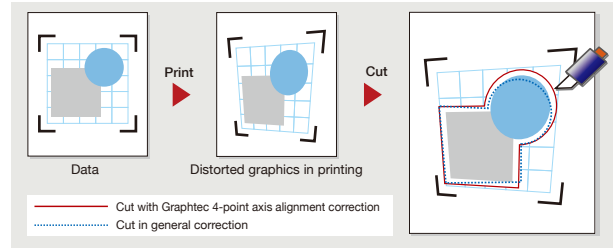● Output by a layer or colour ● Inserting a line for weeding

Improved ARMS 5.0 for high precision cutting

ARMS
Advanced **R**egistration **M**ark **S**ensing System

4 4-point axis alignment

This feature compensates for any direction on the X-axis and Y-axis using sophisticated fifth-generation algorithms. This leads to more accurate registration and improves the reliability and quality of Print & Cut.

Data → Print → Distorted graphics in printing → Cut

— Cut with Graphtec 4-point axis alignment correction
········· Cut in general correction
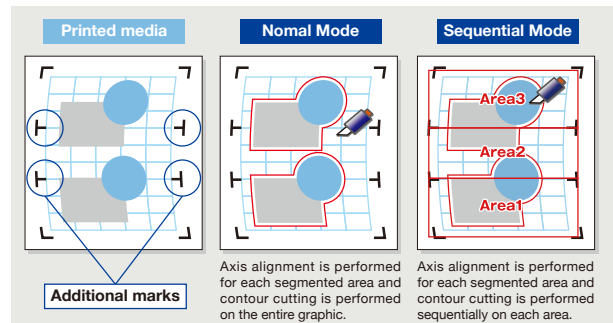
Multiple-mark compensation

When the design is printed with the matrix copy function, the action of reading the marks and contour cutting is repeated for each copy. It significantly improve productivity for Print & Cut.

*This function is available when the Graphtec Studio, Cutting Master 3 or Cutting Master 2 software is used.
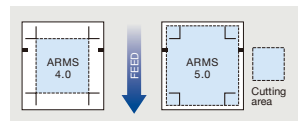
A Segment area compensation

The 4-point axis alignment is performed for each segmented area. In Normal Mode, this is performed by reading the mark in the middle of the feeding direction for the entire graphic and then cutting the entire graphic, provides high-precision alignment for long length Print & Cut applications. In the new Sequential Mode, contour cutting is performed sequentially in each segmented area. Media movement is limited to the smaller area being cut, improving accuracy and tracking for heavier media or media that has been laminated.

* Normal mode is available when Graphtec Studio, Cutting Master 2/3, or Plotter Controller software is used. Sequential mode is available when Graphtec Studio (ver. 2.1.200 or later) or Cutting Master 3 (ver. 2.1.211 or later) is used. This function is available in firmware version 2.10 or later. Media must be within the specification in range. Marks may not be detected due to poor printing quality or media surface.

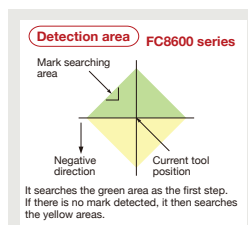| Printed media	Nomal Mode	Sequential Mode
Additional marks		Area3 / Area2 / Area1
	Axis alignment is performed for each segmented area and contour cutting is performed on the entire graphic.	Axis alignment is performed for each segmented area and contour cutting is performed sequentially on each area.

Expanded effective cutting area

The new ARMS 5.0 expands the cutting area to include the area outside the registration marks. This increases the production efficiency by reducing media waste.

ARMS 4.0 → FEED → ARMS 5.0 / Cutting area

auto Auto mark detection

The first registration mark is automatically detected within a wide search area; this eliminates the need to manually move the sensor near the registration mark position. Subsequent marks are automatically located which improves the operation of the registration mark searching.

Detection area **FC8600 series**

Mark searching area

Negative direction

Current tool position

It searches the green area as the first step. If there is no mark detected, it then searches the yellow areas.

Intelligent ScanMode ISM (Intelligent Scan Mode)

ISM incorporates a new scanning algorithm that expands the range of compatible media. ISM increases the mark scanning success, and can also detect the registration mark on textured media, such as brushed aluminum, or glossy laminated materials that were difficult using the conventional method.

* Media must be within the specification range. Marks may not be detected due to poor printing quality or media surface. This function is available in firmware version 2.10 or later.

Sensitivity Adjust Auto sensitivity adjust

The sensitivity of the registration mark sensor is automatically set by measuring the reflective level of the mark and the background of the actual media. The mark can be detected when the colour of the mark has a reasonable contrast against the background. For example, a white mark can also be detected on a coloured background.

Specifications

Model	FC8600-60	FC8600-75	FC8600-100	FC8600-130	FC8600-160
CPU	32-bit CPU				
Configuration	Grit rolling type				
Drive method	Digital servo drive				
Maximun cutting area (W x L) (*1)	610 mm x 50 m	762 mm x 50 m	1067 mm x 50 m	1372 mm x 50 m	1626 mm x 50 m
Cutting area of guaranteed accuracy (*2)	590 mm x 15 m	742 mm x 15 m	1043 mm x 10 m, 894 mm x 15m	1342 mm x 10 m, 894 mm x 15 m	1603 mm x 10 m, 894 mm x 15 m
Mountable media width — Minimum	50 mm				
Mountable media width — Maximum	770 mm	920 mm	1224 mm	1529 mm	1850 mm
Maximum cross cut width	734 mm	886 mm	1191 mm	1496 mm	1750 mm
Number of push rollers	2 rollers	2 rollers	3 rollers	3 rollers	4 rollers
Maximum cutting speed	1485 mm/s at 45° direction				
Axial acceleration	Max. 39.2 m/s^2 (4 G) in 8 steps				
Cutting force	Max. 5.88 N (600 gf) in 48 steps				
Mechanical resolution	0.005 mm				
Programmable resolution	GP-GL: 0.1 / 0.05 / 0.025 / 0.01 mm, HP-GL^{TM}: 0.025 mm				
Distance accuracy (*2)	Max. 0.1 mm or 0.1 % of plotted length				
Repeatability (*2)	Max. 0.1 mm in plot up to 2 m (excluding the expansion and contraction of the media)				
Minimum character size	Approx. 3 mm alphanumeric (varies depending on character font and media)				
Mountable number of tools	1 tool (cutting blade, plotting pen or pouncing tool) in standard; 2 tools (cutting blade and plotting pen) when second penholder (optional) is installed				
Blade types	Supersteel (0.9 mm or 1.5 mm diameter)				
Pen types	Water-based fiber-tip pen, Oil-based ballpoint pen				
Pouncing tool type	Steel pin 1.5 mm diameter, required optional pouncing tool (PPA 33-TP12)				
Media types (*3)	Self-adhesive marking film (vinyl, fluorescent, reflective, high-intensity reflective film) up to 0.25 mm thick, Sandblast resist rubber up to 1 mm thick				
Compatible paper for pouncing	Regular paper from 0.06 to 0.13 mm thick				
Light pointer	Built into the tool carriage				
Cross-cutter	Built into the tool carriage				
Perforation cutting	Supported (performed by force control)				
Registration mark sensing system	Scans the mark by optical sensor (ARMS5.0), Segment area and Multiple-mark compensation, 4-points axis alignment, Auto mark detect				
Alignment accuracy (*2)	Up to 0.3mm with printed image				
Standard interface	USB2.0 (Hi-Speed), RS-232C, and Ethernet (10BASE-T/100BASE-TX)				
Buffer memory	2 MB				
Command sets	GP-GL / HP-GL^{TM} emulation (Set by menu or command, and selects from GP-GL, HP-GL^{TM}, or Auto select)				
Condition settings	Dual configuration (save two (2) user settings with eight (8) separate condition setting for each user)				
Display	Graphic type LCD (3-inch, backlight)				
Power source	100 V to 240 V AC, 50 / 60 Hz				
Power consumption	Max. 160 VA				
Operating environment	10 to 35 °C, 35 to 75 % R.H. (non-condensing)				
Guaranteed accuracy environment	16 to 32 °3C, 35 to 70 % R.H. (non-condensing)				
External dimensions (W x D x H) (approx.)	1128 x 715 x 1219 mm	1278 x 715 x 1219 mm	1578 x 715 x 1219 mm	1878 x 715 x 1219 mm	2138 x 715 x 1219 mm
Weight (approx.)	38 kg including stand	42 kg including stand	46 kg including stand	54 kg including stand	59 kg including stand
Compatible OS (*4)	Windows 10 / 8.1 / 8 / 7, Mac OS X 10.6 to macOS 10.12(Graphtec Studio : 10.6-10.12, Cutting Master 4 : 10.7-10.12)				
Supported software (*4) (*5)	Cutting Master 4, Graphtec Pro Studio, Graphtec Studio(for Mac)				
Compatible Standards — Safety	UL60950-1, cUL, CE mark (Low voltage and EMC)				
Compatible Standards — EMC	FCC-A, EN55032-A				

*1 When the 2nd pen holder is installed, the maximum cutting width is changed. (FC8600-60: 601 mm, FC8600-75: 753 mm, FC8600-100: 1053 mm, FC8600-130: 1352 mm, FC8600-160: 1613 mm)
*2 Operated with Graphtec specified media and conditions. In long-length cutting, the basket is used.
*3 When some grades of high-intensity reflective film is used, the using CB15UA/CB15UA-K30 blade and reinforcing the backing sheet of the media are recommended.
*4 For more information about compatibility of the OS or application software, please check the Graphtec website or contact your local representative of Graphtec.
*5 The software can be used by downloading from Graphtec website.

Options

Item	Part No.	Description
Media stocker	RSK0020	For FC8600-60 (Stock roller, bracket)
	RSK0021	For FC8600-75 (Stock roller, bracket)
	RSK0022	For FC8600-100 (Stock roller, bracket)
	RSK0023	For FC8600-130 (Stock roller, bracket)
	RSK0024	For FC8600-160 (Stock roller, bracket)
2nd pen holder	ECK0009	2nd pen holder (dealer option)
Flange	OPH-A21	Flange for media holding
Additional push roller	OPH-A22	One additional push roller (dealer option)

Standard accessories

Item	Q'ty	Description
Power cord	1	The type of cord is different by destination
Cutting blade holder	1	PHP33-CB09N-HS
Cutting blade	1	CB09UB
Fiber-tip pen holder	1	PHP31-FIBER
Water-based fiber-tip pen	1	KF700-BK (black ink)
Stand	1	Parts kit of stand
Media stocker	1	Set of stock rollers and mounting brackets (Installed on the stand)
Basket	1	PG0039 — Parts kit for FC8600-60
		PG0040 — Parts kit for FC8600-75
		PG0041 — Parts kit for FC8600-100
		PG0042 — Parts kit for FC8600-130
		PG0043 — Parts kit for FC8600-160
USB cable	1	Cable for USB2.0, 2.9m long
DVD-ROM	1	User's manual, Windows driver, Plotter Controller
Printed document	1	Quick start and safety guide

Supplies

Item	Part No.	Description	Package
Blade holder	PHP33-CB09N-HS	For 0.9mm dia. blade (CB09U series)	1 set/pack
	PHP33-CB15N-HS	For 1.5mm dia. blade (CB15U series)	1 set/pack
	PHP35-CB09-HS	For 0.9mm dia. blade (CB09U series)	1 set/pack
	PHP35-CB15-HS	For 1.5mm dia. blade (CB15U series)	1 set/pack
Cutting blade	CB09UB-5	0.9mm dia. supersteel blade	5 blades/pack
	CB09UB-K60-5	0.9mm dia. 60° angle, for cutting thin film	5 blades/pack
	CB15U-5	1.5mm dia. supersteel blade	5 blades/pack
	CB15U-K30-5	1.5mm dia. 30° angle, for cutting sandblast rubber	5 blades/pack
	CB15U-K20-2SP	1.5mm dia. 20° angle, for cutting sandblast rubber	2 blades/pack
	CB15UA-5	1.5mm dia. for cutting high intensity reflective film	5 blades/pack
	CB15UA-K30-5	1.5mm dia. 30°,for cutting high intensity reflective film	5 blades/pack
Cross-cutter blade	CT01H	Standard type	1 blade/pack
	CT02U	High durability type	1 blade/pack
Loupe	PM-CT-001	Checking blade length, for PHP33 and PHP35 series	1 set/pack
Fiber-tip pen holder	PHP31-FIBER	For KF700 series pen	1 set/pack
Water-based fiber-tip pen	KF700-BK	Black colour pen	10 pens/pack
	KF700-RD	Red colour pen	10 pens/pack
	KF700-BL	Blue colour pen	10 pens/pack
Ballpoint pen holder	PHP34-BALL	For KB700 pen	1 set/pack
Oil-based ballpoint pen	KB700-BK	Black colour pen	10 pens/pack
Pouncing tool	PPA33-TP12	Steel pin 1.5mm dia.	1 set/pack

⚠ For using equipment in correctly and safely
• The before using it, please read the user manual and then please use it properly in accordance with the description.
• To avoid an occurrence of malfunction or an electric shock by leakage, please ensure ground connection and use it in specified power source.

GRAPHTEC
Graphtec Corporation

CE

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