PLK-G Wide-area Series

- **PLK-G4030/G4030R**
- **PLK-G6030/G6030R**
- **PLK-G5050/G5050R**
- **PLK-G10050/G10050R**

•Specifications

Model / Item	PLK-G4030	G4030R	PLK-G6030	G6030R	PLK-G5050	G5050R	PLK-G10050	G10050R
Stitching style	Single-needle lockstitch							
Hook	Double-size rotary hook / Shuttle (large)		Double-size rotary hook		Double-size rotary hook		Double-size rotary hook	
Sewing area (XxY)	400 x 300mm		600 x 300mm		500 x 500mm		1,000 x 500mm	
Max. speed (*1)	Intermittent: 2,000rpm Continuous: 2,000rpm				Intermittent: 1,600rpm Continuous: 2,000rpm			
Feeding system	Intermittent or continuous (switchover method)							
Stitch length	0.1 to 20.0mm (minimum resolution 0.1mm)				0.1 to 20.0mm (intermittent) / 0.1 to 4.3mm (continuous) (minimum resolution 0.1mm)			
Max. stitches	20,000/pattern							
Max. patterns	900 (*2)							
Enlargement/ reduction function	10 to 200% for both X and Y axes (variable in 0.1% steps)							
Memory medium	USB flash memory (not included with sewing machine) (USB-connected FDD can also be connected)							
Mass	420kg	430Kg	440kg	450Kg	470kg	480kg	500kg	510kg
Work holder lift stroke	30mm							
Presser foot drive	Pneumatic							
Chucking device	Special specification							
Presser foot lift stroke	12mm (Max. 15mm) variable in 0.2mm steps							
Presser foot stroke	4 to 10mm							
Spindle motor	Mitsubishi Electric 750W direct servo motor							
Needle	DP x 17 #18 (standard)							
Operation panel	5.7'' LCD touch panel, white LED backlight							
Outline dimensions	1,081 x 1,572 x 1,234mm (W x D x H) (excluding thread stand)		1,350 x 1,572 x 1,234mm (W x D x H) (excluding thread stand)		1,384 x 1,855 x 1,234mm (W x D x H) (excluding thread stand)		2,105 x 1,855 x 1,234mm (W x D x H) (excluding thread stand)	
Power supply	200 to 240V, single-phase/3-phase 100 to 120V, 380 to 415V (optional unit required)							

*1:Sewing speed may be limited by the type of sewing material, presser weight and stitch length, etc.
*2:The max. patterns may be limited depending on the number of stitches of each pattern in the memory.

⚠ **Safety Caution**   In order to properly and safely utilize the sewing machines mentioned in this brochure, before starting the operation, please make sure to read the related instruction manuals.

for a greener tomorrow   Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

Automation Technology BY MITSUBISHI ELECTRIC

Advanced, Large G Series – Equipped with Industry-leading Machine Specifications

1

Prevention of skipped stitches and thread breakage even when stitching material thickness changes is ensured using the programmable presser foot height adjustment function.

Digital Feedback Control

Sewing quality improved with new control method
(Digital sewing technology)

2

The digital feedback control suppresses vibrations.

Reduced noise of **82 dB or less**

Low Vibration and Low Noise

3

Powerful penetration force even at the start of stitching and thread trimming.

750W direct servo motor increases sewing applications.

(As of March 2011)

Industry's top-class penetration force

4

Quicker processing of pattern data with high stitch count.

Pattern creation time minimized up to **one-tenth**

Work efficiency increased by **3 to 10-fold.**

(Comparison with PLK-E Series)

USB memory & high-speed processing

5

Direct-drive method reduces power consumption by **approximately 40%.**

(Comparison with PLK-E Series)

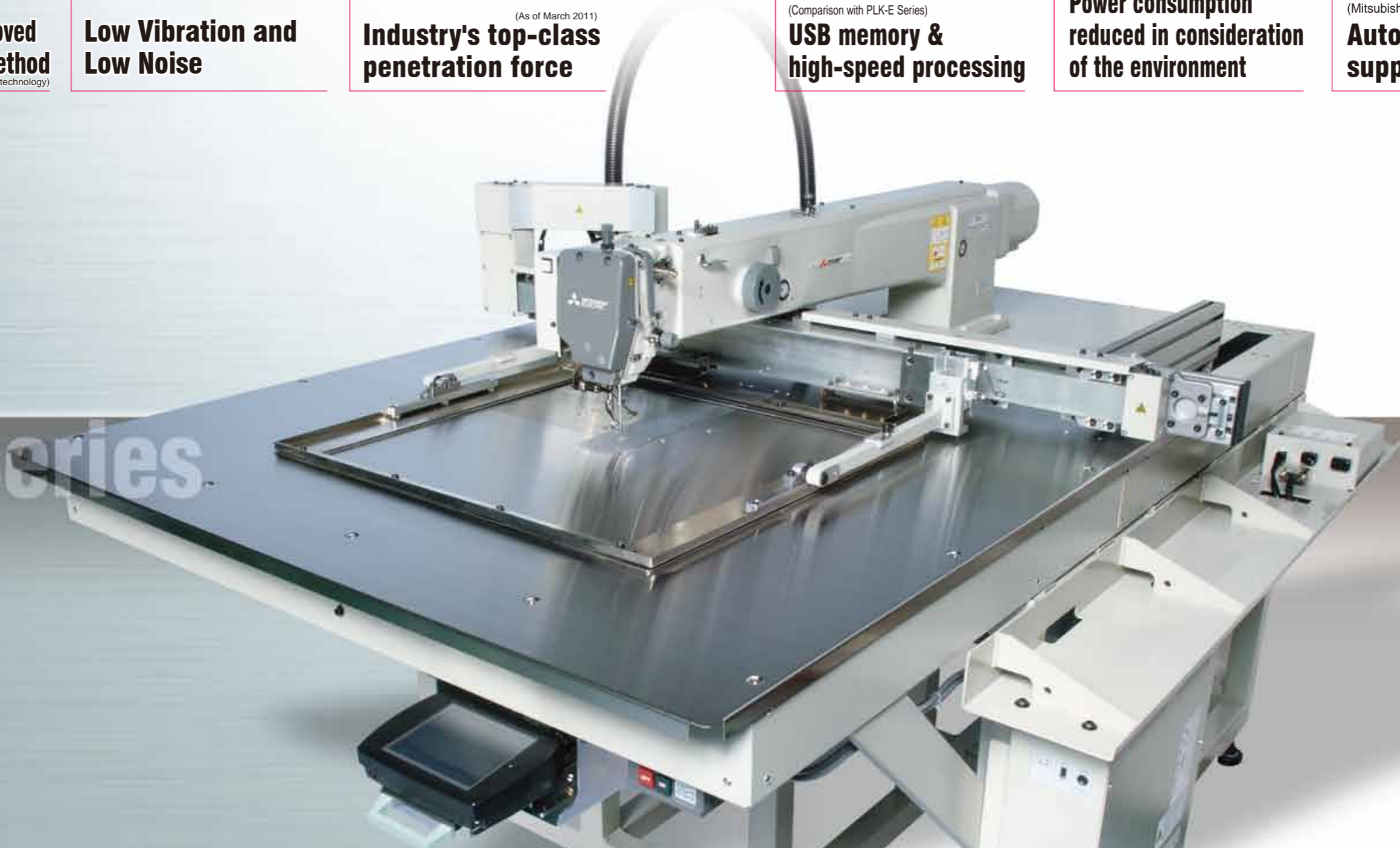### Power consumption reduced in consideration of the environment

6

Easy expandability for customization and automation

Superior **compatibility** with **host control units.**

(Mitsubishi Electric programable controller)

Automation support functions
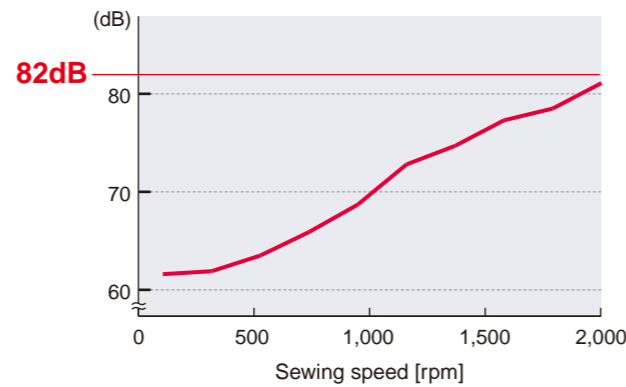
G series

Low Vibration and Low Noise

The digital feedback control suppresses vibrations, achieving a low noise of 82 dB or less *1.

*1: Measurement condition
- Stitch length : 3 mm
- Sewing speed : 2,000 rpm
- Feed method : Continuous
- Sewing area : Maximum sewing area for each model

(dB)
82dB
80
70
60

0   500   1,000   1,500   2,000
Sewing speed [rpm]

Shuttle Hook/Rotary Hook, two types of sewing machines are lineup

Now the shuttle hook type only sewing machines had been added with rotary hook type too.*1
More selections have been provided to customers that can help satisfy different manufacturing conditions like materials, threads, maintenance, etc..*2

*1: Rotary Hook are available only in sewing area 500x500mm and 1000x500mm.
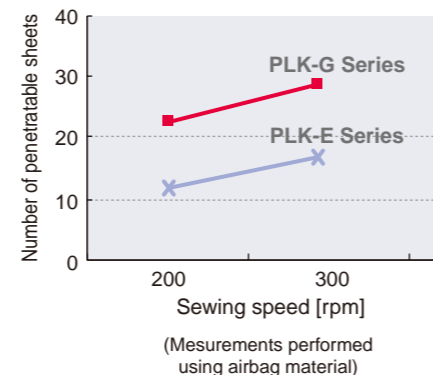*2: The spare parts between Shuttle Hook and Rotary Hook types are not compatible to each other.
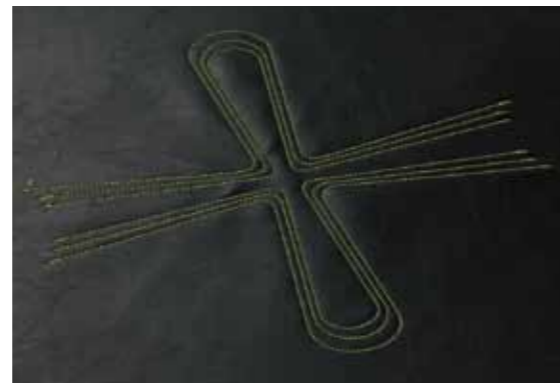
Industry Top-class Penetration Force (As of March 2011)

The increased power of the 750W direct-drive servo motor provides the industry top-class penetration force. Low-speed sewing (200 rpm) at the start of sewing and thread cutting, which was conventionally difficult to carry out, can now be performed with ease.

Increased applications!!   Improved stability!!   Improved quality!!

40
30
20
10
0

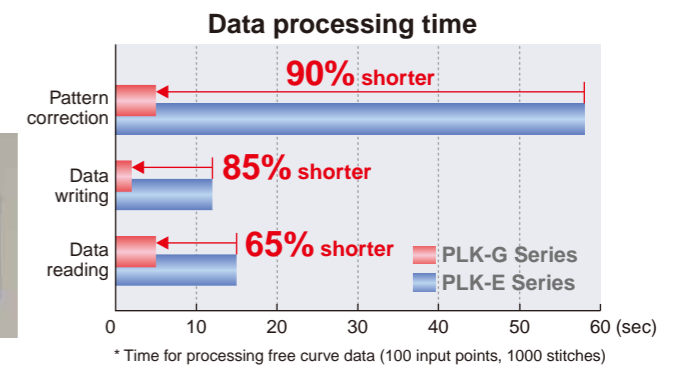Number of penetratable sheets

PLK-G Series
PLK-E Series

200   300
Sewing speed [rpm]

(Mesurements performed using airbag material)

Reduced Power Consumption

The direct-drive method helps to reduce the power consumed during sewing by approximately 40% (for G5050).

Power consumption during sewing

PLK-E5050
PLK-G5050

Approx. 40% reduction

0   100   200   300   (wh)
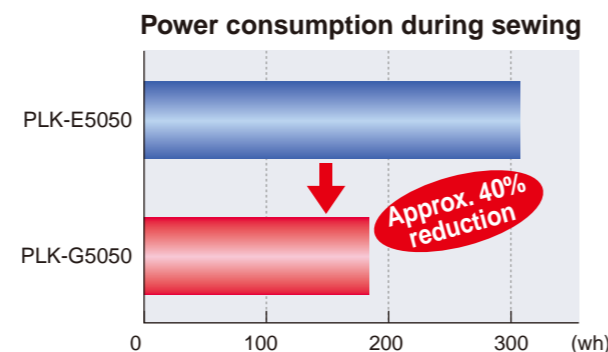
Improved Work Efficiency

Adoption of a USB memory and high-speed processing system has greatly shortened the time required to input and correct data for patterns with many stitches.
The inching key greatly improves the speed during clamp movement, and improves work efficiency.

Data processing time

Pattern correction   90% shorter
Data writing   85% shorter
Data reading   65% shorter

PLK-G Series
PLK-E Series

0   10   20   30   40   50   60 (sec)

* Time for processing free curve data (100 input points, 1000 stitches)

Wide Sewing Area

Sewing can be performed on small to large material in high accuracy. With the wide sewing area, a user can easily perform checks at material setup and during sewing, and make high-quality stitches.

600mm
400mm
300mm
500mm
PLK-G4030   PLK-G6030
PLK-G10050
PLK-G5050
500mm
1000mm
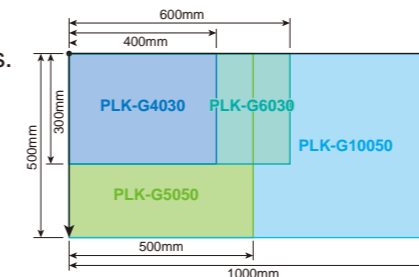
Large, High-visibility, Easy-to-use LCD Touch-type Operation Panel

In addition to the basic sewing machine operations*1, this panel can be used to process patterns*2, confirm the status of the various sensor input and solenoid output signals, and individually set the sewing machine functions and input/output ports.
- Frequently used switching patterns can be selected quickly with the shortcut button.
- A simple explanation function is incorporated to display the application of each screen button when the button is touched.
- When inputting patterns, the clamp frame movement speed can be selected from three different settings.
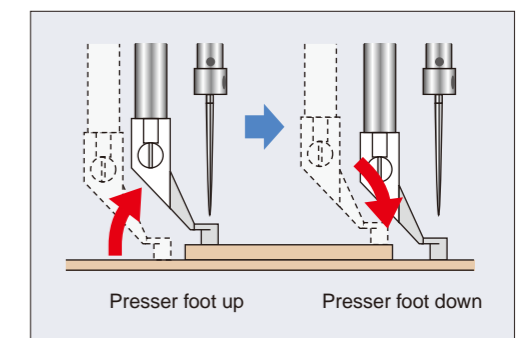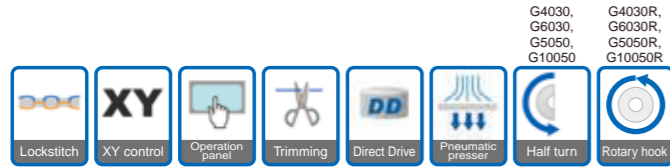- An easy-to-carry and use shape has been adopted.

*1: Home position return, jog, speed change, pattern call, up/down counter, bobbin winding, etc.
*2: Pattern call, write, input, correction, conversion, etc.

Programmable Presser Foot Height Control

A programmable presser foot height function is incorporated. Skipped stitches and thread breakage can be prevented by changing the presser foot height according to the material thickness. The programmed presser foot data is saved in the sewing data, so the presser foot height does not need to be adjusted even if the material thickness changes.

Presser foot up   Presser foot down

Lockstitch | XY control | Operation panel | Trimming | Direct Drive | Pneumatic presser | Half turn | Rotary hook

G4030, G6030, G5050, G10050 | G4030R, G6030R, G5050R, G10050R

Wide-area pattern sewing machine

PLK-G4030/G4030R

Sewing area
400 x 300mm

PLK-G6030/G6030R

Sewing area
600 x 300mm

Extra-wide-area pattern sewing machine

PLK-G5050/G5050R

Sewing area
500 x 500mm

PLK-G10050/G10050R

Sewing area
1,000 x 500mm
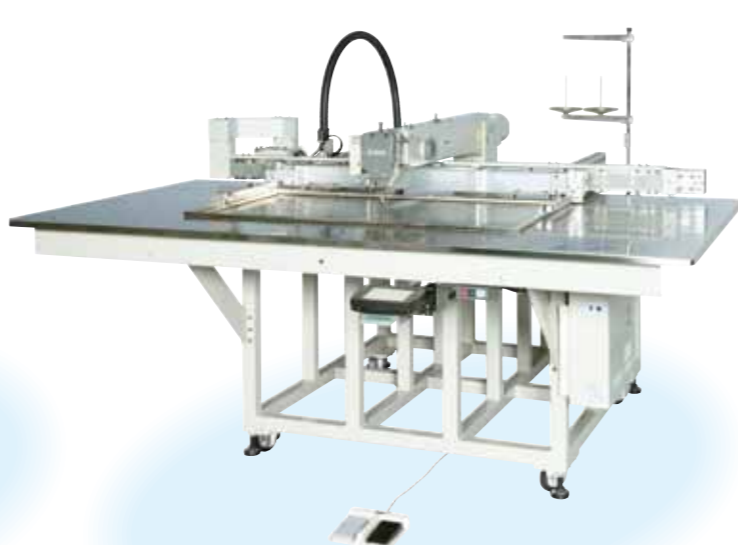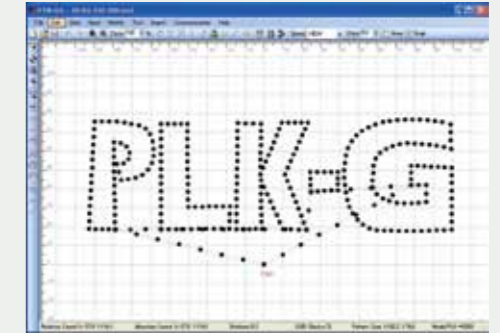
Option

•Computer software

PTN-GX

Powerful Automation Support Functions

● Sewing data creation software

PTN-GX
Sewing data can be easily created on a personal computer.
CAD data can also be imported.
External data can be imported and converted into sewing data.
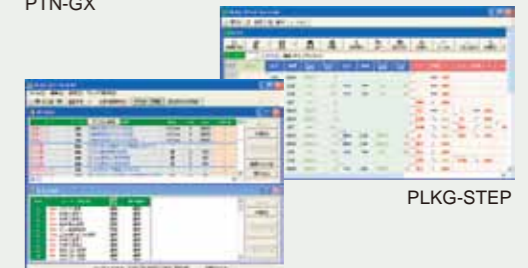The operation of an automated device can be easily input and edited on the sewing data.

● Sewing machine parameter setting software

PLKG-SET
Settings made using the sewing machine's
operation panel can be set using a personal computer.

● Sewing machine sequence software

PLKG-STEP
The sewing machine and external device operations can be programmed.

* Supported operating system: Windows® 2000 SP2 or later or Windows® XP SP3 or later
* Microsoft® Windows® is a registered trademark of Microsoft Corporation in the United States and other countries.

PTN-GX

PLKG-STEP

PLKG-SET

•Chucking function

Chucking function is provided in all wide area models. This function serves a variety of needs. During stitching, next material can be prepared to be stitched. Also a user can handle several sewing machines, improving the work efficiency and productivity.

•Optional devices

MP-G40-AT
Pneumatic 2-step tensioner

MP-G40-TS
Upper-thread breakage detector

MP-G40-TE
I/O expansion unit

Part name	Model	G4030/G4030R	G6030/G6030R	G5050/G5050R	G10050/G10050R	Application
Pneumatic 2-step tensioner	MP-G40-AT	●	●	●	●	Differences in the thread tension caused by changes in the stitching direction or thickness are eliminated.
Upper-thread holding device	MP-G20R-TH	●	●	●	●	Holds trimmed needle thread, preventing the thread from tangling at the start of stitching.
Upper-thread breakage detector	MP-G40-TS	●	●	—	—	Stops the sewing machine when needle thread breakage is detected.
	MP-G50-TS	—	—	●	●	
I/O expansion unit	MP-G40-TE	●	●	—	—	The number of input/output ports which can be connected to the sewing machine are expanded. (12 extra input ports, 12 extra output ports)
	MP-G50-TE	—	—	●	●	