



操作说明

Owner's Manual

PDS 制版系统

Pattern Designing System



大豪官网



大豪公众号

V 2019-01
Copyright © 2019 DAHAO Technology
版权所有，严禁擅自转载。

目录

1. 系统概要说明	1
1.1 制版系统简述	1
1.2 制版参数数据	1
1.3 硬件配置数据	1
2. 制版系统安装/卸载方法	3
2.1 WINDOWS XP/7/8/10 系统安装制版系统方法	3
2.2 制版系统卸载方法	4
2.3 安装系统出现异常时的解决方法	4
3. 制版系统工具使用说明	6
3.1 通用工具说明	6
3.1.1 制版系统界面	6
3.1.1.1 机型选择/创建/编辑	6
3.1.1.2 功能区域分类	7
3.1.2 基本工具	9
3.1.3 花样查看工具	9
3.1.4 对象选择编辑工具	12
3.1.5 图形对象输入工具	14
3.1.6 针迹对象输入工具	15
3.1.7 针法选择工具	16
3.1.8 针迹巡航工具	17
3.1.9 辅助功能工具	17
3.2 针法辅助功能	18
3.2.1 四大针法	18
3.2.2 针法辅助工具	20
3.2.3 针迹对象属性工具	21
3.2.3.1 输入法 A 和 B 参数	21
3.2.3.2 曲折缝设置方法	22
3.2.3.3 多重缝参数	23
3.2.3.4 倒缝重叠缝:	24
3.2.4 对象形状修改	24
3.2.4.1 图形缩放旋转	24
3.2.4.2 图形变换属性	26
3.2.5 整型工具	26
3.2.6 针迹编辑工具	28
3.2.7 对象辅助工具	29

3.2.7.1 对象输入辅助功能.....	29
3.2.7.2 对象编辑辅助功能.....	30
3.2.7.3 对齐排列功能	31
3.2.7.4 花样查看辅助功能.....	31
3.3 工艺模板工具使用	32
3.3.1 线形套结模板（加固）	32
3.3.2 半月形模板	34
3.3.3 圆头孔形模板（帽眼）	35
3.3.4 钉扣形模板	36
3.3.5 锁眼模板	37
3.3.6 编辑花样起始/结束位置	41
3.3.7 加固机 BIN 花样管理	43
3.4 常用工具操作方法	44
3.4.1 对象输入	45
3.4.1.1 图像对象输入	45
3.4.1.2 图形对象输入	45
3.4.2 针迹对象输入	47
3.4.3 针迹清单	50
3.4.4 对象清单	50
3.5 复杂工具操作方法	51
3.5.1 文字缝图案编辑	51
3.5.2 文字缝的整形	53
3.5.3 主题花纹使用/编辑	54
3.5.4 主题花纹整形	55
4 功能组合操作编辑花样-套结钉扣机	57
4.1 使用平针编辑花样	57
4.2 平针针距修改和添加倒针.....	57
4.3 特殊花样操作	58
4.4 松紧带花样编辑操作	59
4.5 钉扣花样编辑操作	60
4.6 方框打叉花样三种编辑方式的操作.....	61
5 功能组合操作编辑花样-模版机	63
5.1 矢量图模板花样位置设置操作.....	63
5.2 模版机花样编辑中排序功能操作.....	64
5.3 模版机花样转换基础操作步骤.....	67
5.4 模版花样创建图层和添加中途停止码视频.....	69
5.4.1 创建图层	69

5.4.2 添加中途停止码	70
5.5 矢量图闭合图形修改起缝点操作.....	71
5.6 矢量图线段分割功能操作.....	72
5.7 模版机输出设置功能操作.....	74
5.8 模版机花样倒缝设置操作.....	75
5.9 模版机花样缩缝设置操作.....	76
6 功能组合操作编辑花样-花样机	78
6.1 圆形图案编辑花样	78
6.2 编辑花样中添加第二原点.....	80
6.3 针迹线段分割	82
6.4 修改针迹花样（图案中的缝制对象）缝制方向和修改起缝点位置.....	83
6.5 双重缝线迹编辑	84
6.6 直线和曲折缝组合操作.....	85
6.7 花样中添加功能码操作.....	86
6.8 花样缝制转速设定和修改.....	88
6.9 特殊字体编辑操作	88
6.10 空送轨迹修改	89
7 常用术语/快捷键.....	91
7.1 常用术语列表	91
7.2 快捷功能键列表	91

CONTENTS

1. System Introduction	93
1.1 Introduction of Pattern Designing System	93
1.2 Parameter Data of Pattern Designing System	93
1.3 Hardware Configuration Data	94
2. Installation / Uninstallation Method of Pattern Designing System.	95
2.1 Method to Install Pattern Designing System under WINDOWS XP/7/8/10	95
2.2 Uninstall Method of Pattern Designing System	96
2.3 Solution if the installation encounters abnormal	97
3. Instructions of Pattern Designing System	99
3.1 Description of General Tool	99
3.1.1 Interface of Pattern Designing System	99
3.1.1.1 Select machine format.....	99
3.1.1.2 Function Area	100
3.1.2 Common Tools	102
3.1.3 Tools for Viewing Pattern:	102
3.1.4 Tools For Selecting/ Editing Object	105
3.1.5 Tools for Inputting Figure Object	107
3.1.6 Tools For Inputting Stitch Form Object	108
3.1.7 Tools For Selecting of Stitch Type	109
3.1.8 Tool of Stitch Form Guide.....	110
3.1.9 Assistant Functions.....	111
3.2 Stitch Assistant Functions	111
3.2.1 Four Basic policies to produce stitches	112
3.2.2 Shortcut to Quickly produce stitches	114
3.2.3 Properties of Stitch Object	114
3.2.3.1 Input A and B parameters	115
3.2.3.2 Zigzag Stitch Setting Method	116
3.2.3.3 Multi-Sewing	117
3.2.3.4 Back Tack:	118
3.2.4 Changes the Shape of Outline	118
3.2.4.1 Scale and Rotation	118
3.2.4.2 Graphicse Properties	120
3.2.5 Graphics modification Tool.....	120
3.2.6 Edition of Stitch Form	122
3.2.7 Assistant Tool	123

3.2.7.1 Assistant Tools for Object Input	123
3.2.7.2 Assistant Tools for Object Edition	124
3.2.7.3 Alignment	125
3.2.7.4 Assistant Tools for Pattern View	125
3.3 Use of Craft Template	126
3.3.1 Linear Bar-tacking Template (Reinforcement)	126
3.3.2 Semi Lunar Template	128
3.3.3 Round Head Hole Template (Eyelet Hole)	129
3.3.4 Button Sewing Template	130
3.3.5 Buttonhole Template	131
3.3.6 Editing the Pattern Start/End Position	138
3.3.7 BIN Pattern Management	140
3.4 Operation Methods of Common Tool	142
3.4.1 Object Input	142
3.4.1.1 Input of Image Object	142
3.4.1.2 Input of Figure Object	143
3.4.2 Input of Stitch Form Object	145
3.4.3 List of Stitch	147
3.4.4 Object List	148
3.5 Operation Methods of Complex Tool	149
3.5.1 Character Sewing Pattern Editing	149
3.5.2 Adjustment of Character Sewing	151
3.5.3 Use / Edit of Motif	152
3.5.4 Adjustment of Motif	153
4 Function description of pattern design for bar-tacking and button sewing machine.	155
4.1 Edit the pattern with a straight line	155
4.2 Modification of straight stitch distance and addition of inverted stitch	156
4.3 Special pattern operation	157
4.4 Elastic pattern editing operation	157
4.5 Editing operation of button pattern	158
4.6 Operation of three editing methods of box cross pattern	159
5 Function description of pattern design for automatic pattern machine	161
5.1 Setting operation of pattern position in the menu "curve action"	161
5.2 Operation of sorting function in pattern editing of automatic pattern machine	162
5.3 Basic operation steps for pattern conversion of automatic pattern machine	165
5.4 Template pattern build layer and adding midway sup code video	167
5.4.1 Build Layer	167

5.4.2 Add Halfway Sup Code	168
5.5 Curve diagram closed graphics modify sewing point operation	169
5.6 Curve diagram segment segmentation function operation	170
5.7 Automatic pattern machine output setting function operation	172
5.8 Pattern back sew setting operation of automatic pattern machine	174
5.9 Pattern shrinkage stitch setting operation of automatic pattern machine	175
6 Function description of pattern design for pattern machine	177
6.1 Circular pattern editing pattern	177
6.2 Add a second origin to edit pattern	179
6.3 Segmentation of stitch line segments	181
6.4 Modify the sewing orientation of stitch pattern (sewing object in pattern) and modify the position of sewing point	182
6.5 Double stitch editing	184
6.6 Combination operation of straight line and zigzag seam	186
6.7 Adding function codes to patterns	187
6.8 Pattern sewing speed setting and modification	188
6.9 Special font editing operation	189
6.10 Modification of empty delivery trajectory	190
7 Glossary/Hot-keys	192
7.1 Glossary	192
7.2 Hot-keys	193

1. 系统概要说明

1.1 制版系统简述

PDS 是配套大豪缝纫机系列电控的制版系统。系统在兼顾用户已有操作习惯的基础上，增加了大量的高级操作功能，极大丰富了传统缝纫机制版的创作空间。相比较在机器上手工编辑花样，基于 PC 平台的制版系统的制版效率更高，能够快速制作花样，管理海量的花样信息。这些特点不仅适合大批量、统一管理的流水线制作，对于小批量个性化加工的用户来说，由于 PDS 便捷直观的系统界面，丰富的设计功能，也将极大提高小企业的加工水平与接单能力。

PDS 提供了一个可扩展的模版库，内置了大量的套结、钉扣、锁眼等花样模版，用户可根据具体工艺需求，输入长度、宽度、半径等参数从而快速生成花样。再结合系统与缝纫机电控的通信功能进行花样下传，可以大幅提高生产效率。

PDS 其他比较有特色的功能，如多语言文字缝的功能，简化了各种字符花样的创建过程，实现自动的针法生成与布局。再如在任意当前针迹点插入对象的功能，可以方便花样后期的编辑，减少空送操作提高缝纫效率。

PDS 与大豪缝纫机电控的紧密配合，将简化用户在生产管理方面的流程，降低信息自动化的成本，帮助用户实现向更高加工制作水平和向更大生产规模的飞跃发展。

1.2 制版参数数据

项目	内容
适用机型种类	超大幅面花样机、套结机、钉扣机、花样机、平头锁眼机等
可设置编辑范围（XY 正负方向）	1~30000mm 能进行自定义花样编辑范围
可设置最高缝制转速	8000r/min
编辑花样精度	0.05mm /0.1mm
编辑针迹输入工具种类	7 大类，共 77 种
导入花样格式	DHP、DST、DSB、6XX（特殊格式）、VDT、NSP、DXF 支持加固机 BIN 格式 支持导入图片辅助编辑功能 （图片格式：JPG、JPEG、bmp、PNG）
导出格式	DHP（默认格式）、NSP、VDT、BIN 等 DHP 格式为 PDS 系统数据格式，但本公司电控不支持此格式。

1.3 硬件配置数据

项目	内容
CPU 处理器	2.00GHZ（最低配置）
安装内存 RAM	512MB（最低配置）
硬盘（本地磁盘）	64GB（最低配置）

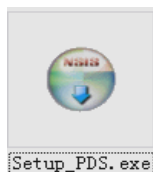
显示卡	128MB（最低配置）
显示器分辨率	1280×1024/1024×768/1280×900/1280×720 或更高分辨率能使用
系统类型	32/64 位操作系统
兼容操作系统种类	Windows XP SP3 Windows 7 SP1 Windows 8 Windows 10 注：苹果系统暂不支持

2. 制版系统安装/卸载方法

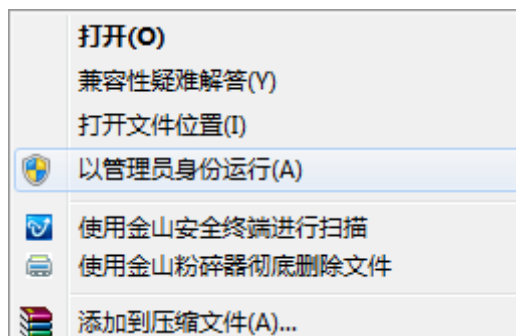
2.1 WINDOWS XP/7/8/10 系统安装制版系统方法

- ①：在 U 盘（或 CD 光盘）中选择本公司的制版系统安装程序，双击左键或单击右键选择“打开”，进行安装操作。可在公司网站上进行下载安装系统。

官网：www.dahaobj.com



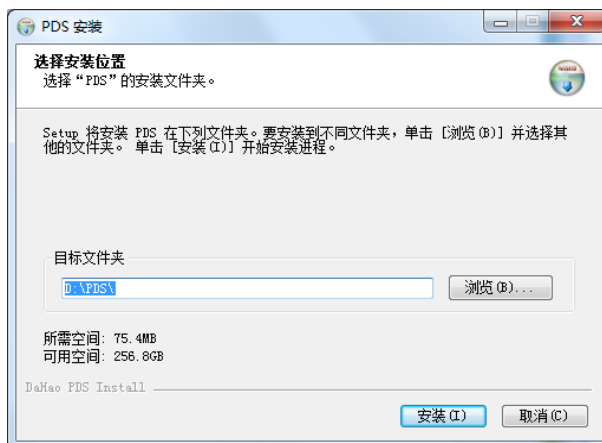
备注：鉴于 Win 7/8/10 系统对于安装程序的“安全状态”要求，所以在进行安装本公司的制版系统时；在选择安装系统图标后，单击右键选择“以管理员身份运行”功能，进行安装系统。



- ②：点击图标进行安装系统时，用户根据使用的 PC 机（办公电脑）操作系统显示语言，进行选择相对应的制版系统显示语言，确定安装系统显示语言后，点击 进行安装。

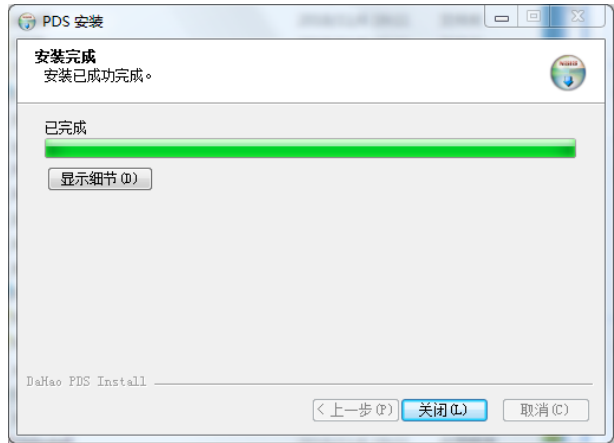


- ③：进入到选择安装组件界面后，点击“浏览”图标进行选择制版系统的安装位置，确定安装位置后，点击进行系统的安装 。



④：当系统安装完成后点击“结束”图标后，在主界面

上会显示  快捷方式。



⑤：将本公司提供的加密钥匙插入 PC 机（办公电脑）上的 USB 口，PC 机自动安装驱动程序后左键双击

，就能运行制版系统并进行花样编辑操作。

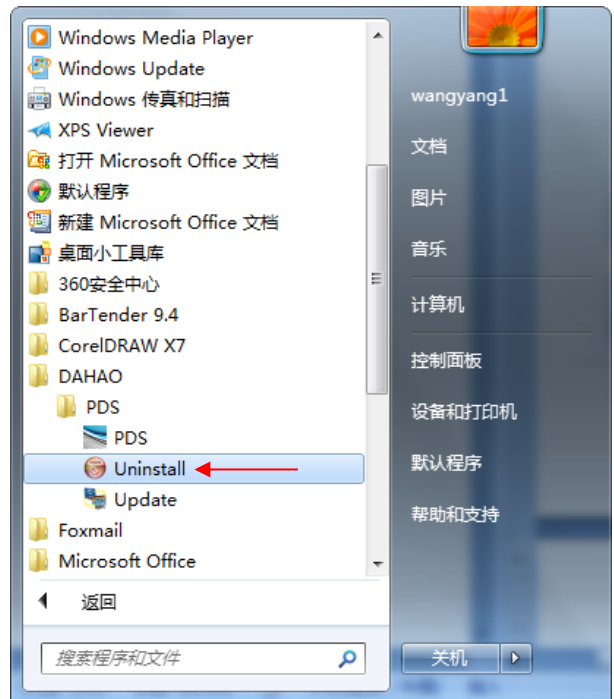


注：系统只能在加密钥匙插入到 USB 口后，才能正常使用，同时编辑操作中，如加密钥匙拔出，会造成报错或花样保存失败等问题。

2.2 制版系统卸载方法

如不再使用本公司的制版系统，或由于安装问题导致系统无法打开，须进行卸载系统；点击 PC 机（办公

电脑）主界面左下角图标 ，进入所有程序中进行 PDS 制版系统卸载。



2.3 安装系统出现异常时的解决方法

1. 安装后在桌面上不显示快捷方式

在 windows 7/8/10 系统系统状态下，进行安装后在桌面上未能显示系统快捷图标。由于用户安装系统时使用鼠标左键双击进行安装后导致。

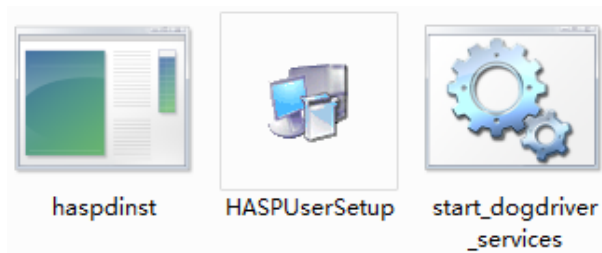
解决方法：将系统卸载后使用鼠标右键，在“管理员身份运行”状态下进行安装后能够在桌面上正常显示系统快捷图标，并正常使用。



2. 系统安装完成后将“加密锁”插入 USB 口后，“加密锁”指示灯不亮。

安装系统完成后，将“加密锁”插入到 USB 口，在显示器右下角不显示“发现新硬件”；同时“加密锁”上的指示灯未点亮，双击系统快捷图标后，显示提示错误信息未能进入系统中。

解决方法：a. 如电脑中存在杀毒系统，先将本司安装系统在杀毒系统中设置为“可信任文件” b. 如已经进行了上述操作，可在硬盘中找到系统安装位置“例如：E:\PDS”，打开“E:\PDS\Driver”文件夹后，将文件夹中的驱动进行重新安装后，进行重新启动 PC 机后，将“加密锁”插入 USB 口后就能进行进入系统并花样编辑。




3. 制版系统工具使用说明

3.1 通用工具说明

3.1.1 制版系统界面

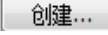
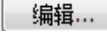
3.1.1.1 机型选择/创建/编辑

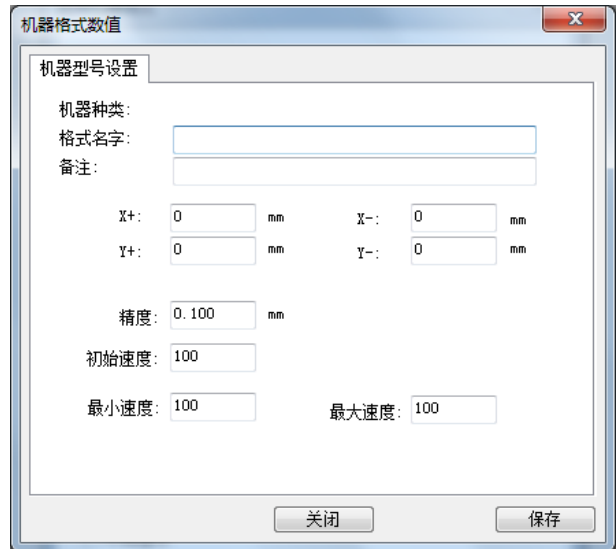


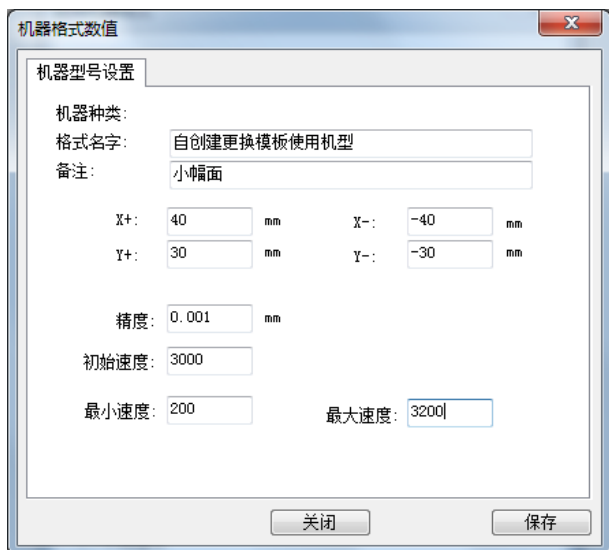
①：双击  运行制版系统，在编辑界面上显“机型格式选择”对话框。

客户编辑花样对应的机型设置。此设置方便在编辑花样过程中避免出现保存的花样，输入到电控中超出缝制范围的现象。



②：在进行机型种类中不存在与之对应或花样编辑范围不符合要求的，可点击  或  进行创建和编辑所需的机型和花样编辑范围。





机型创建，单击 **保存** 后单击 **关闭**

编辑机型：

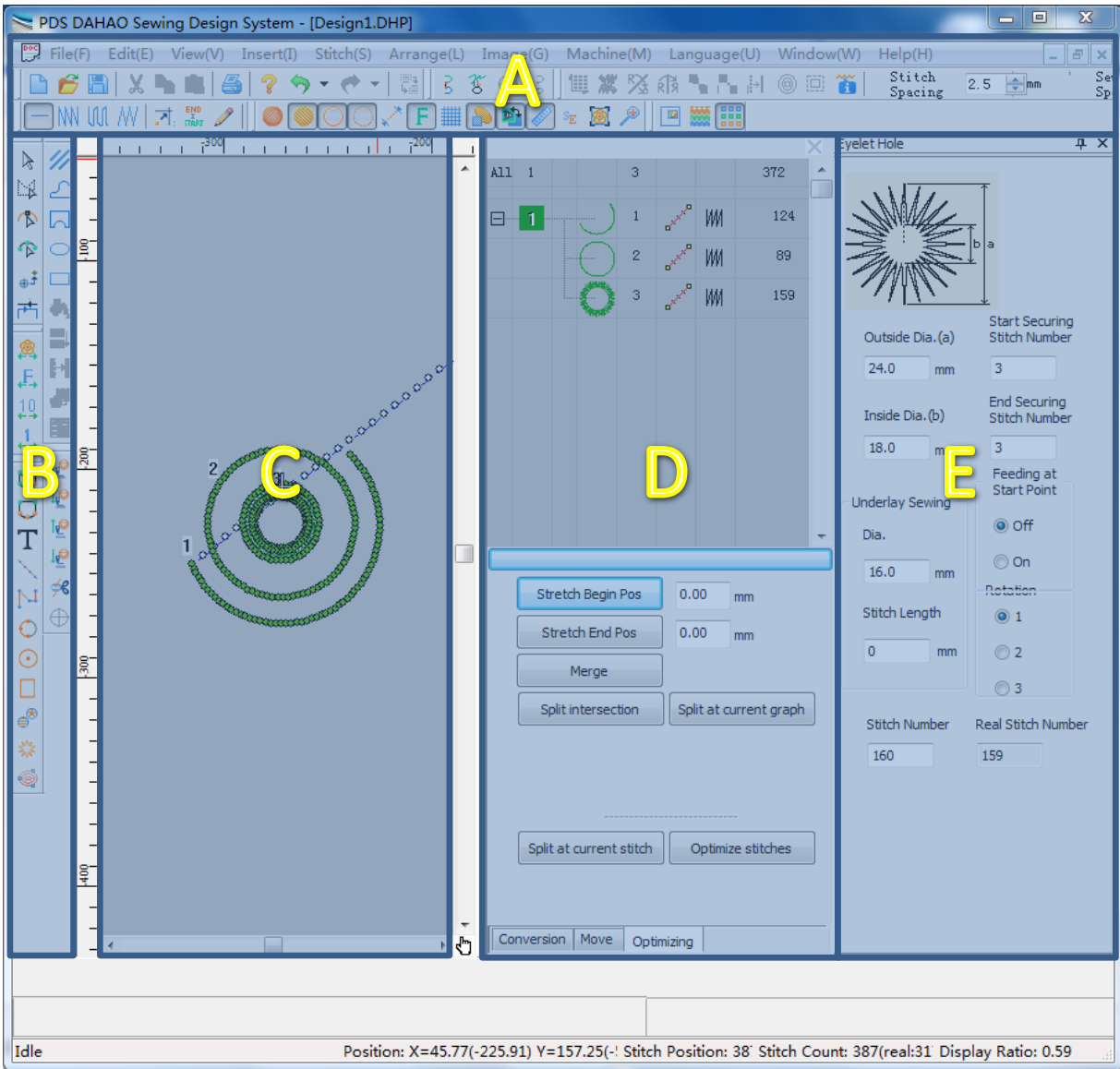
单击选择机器格式界面中 **编辑...**，可将任何机型进行相关参数项目进行修改，当相关项目修改完成后，需要进行 **保存** 操作后才能进行 **关闭**。

注：XY 正负方向可设置范围为 1~30000mm。

3.1.1.2 功能区域分类



机型创建成功



PDS 的系统界面的布局比较简洁直观，界面被划分为以下几个主要功能区域：


A: 主工具栏区域——包括文档操作、视图操作、属性操作等工具栏。

功能详见：[3.1.2 基本工具](#)，[3.1.3 花样查看工具](#)，[3.1.7 针法选择工具](#)，[3.1.9 辅助功能工具](#)


B: 输入工具栏区域——包括对象输入、对象选择、对象编辑等工具。

功能详见：[3.1.4 对象选择编辑工具](#)，[3.1.5 图形对象输入工具](#)，[3.1.6 针迹对象输入工具](#)，[3.1.8 针迹巡航工具](#)

C: 花样编辑窗口——设计对象的输入、显示和编辑窗口。

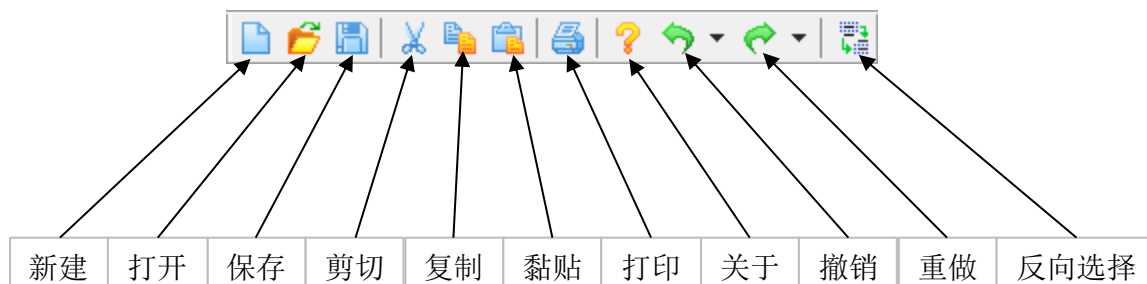
D: 对象列表——按刺绣顺序排列的对象，有输入法、针法、等信息。可通过主工具栏  对象列表图标显示/隐藏。

功能详见：[3.4.4 对象清单](#)

E: 模板参数栏——针对每个工艺模板的参数调整页。可通过输入工具栏  模板图标显示/隐藏。

功能详见：[3.3 工艺模板工具使用](#)

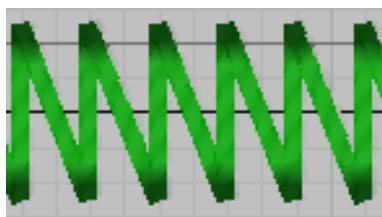
3.1.2 基本工具



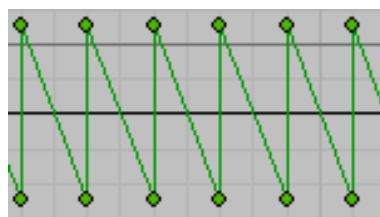
3.1.3 花样查看工具



3D 显示花样。

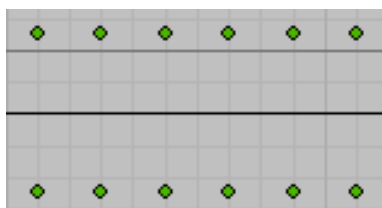


缝制线迹仿真效果

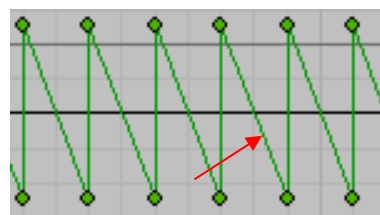


普通效果

隐藏/显示针迹。

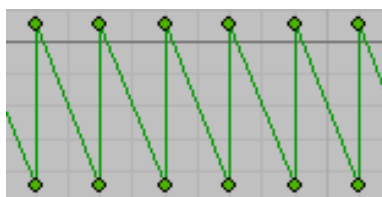


隐藏针迹效果

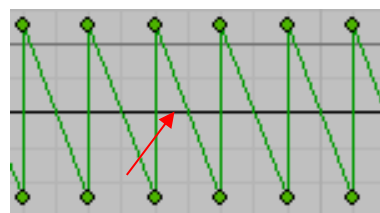


显示效果


隐藏/显示轮廓。

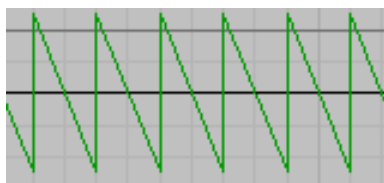


隐藏轮廓效果

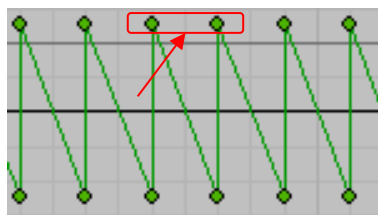


显示效果


 隐藏/显示针迹点。

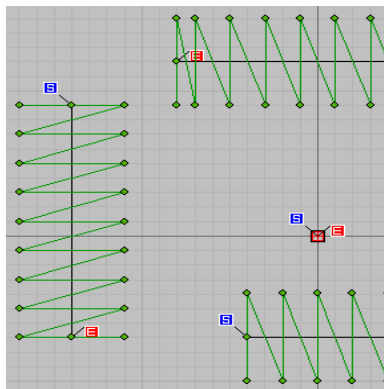


隐藏针点效果

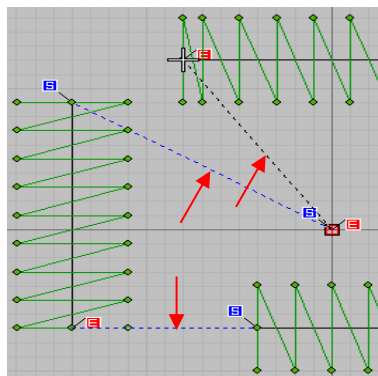


显示效果

 隐藏/显示连接线。不落针的连线，通常为蓝色虚线。

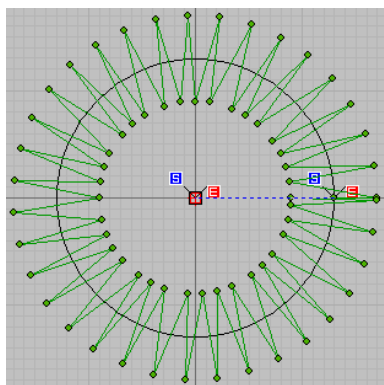


隐藏空送效果

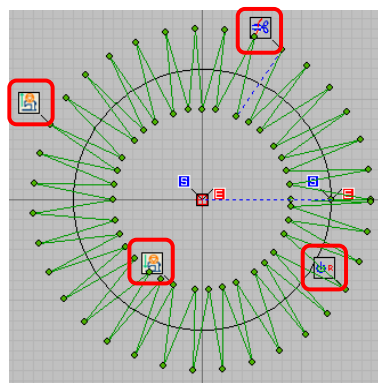


显示效果

F 隐藏/显示功能码。

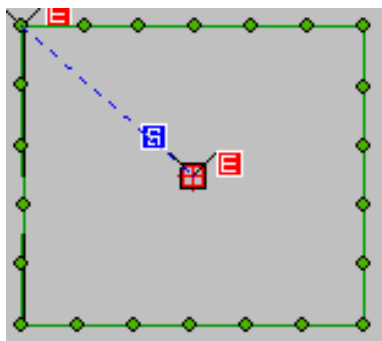


隐藏功能码效果

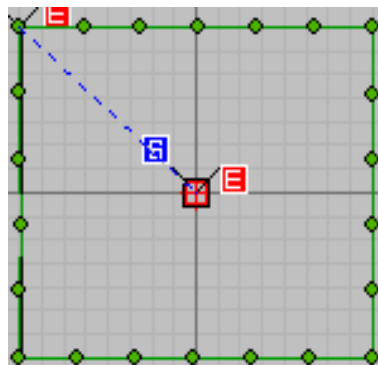


显示效果

 隐藏/显示网格。



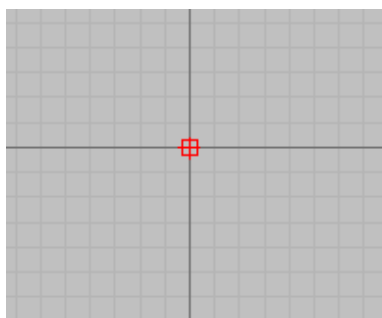
隐藏网格效果



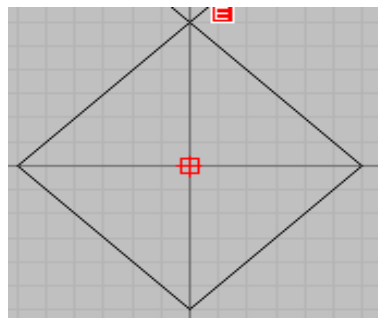
显示网格效果



隐藏/显示图形。图形是无针迹的几何轮廓。



隐藏图形效果

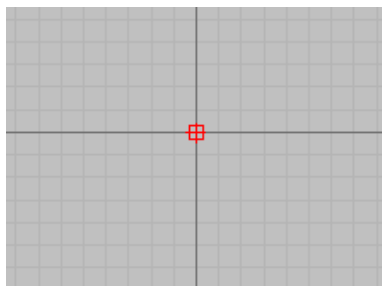


显示效果



隐藏/显示图片

。通过菜单——图像——插入图像文件所倒入的图像对象。



隐藏图形效果



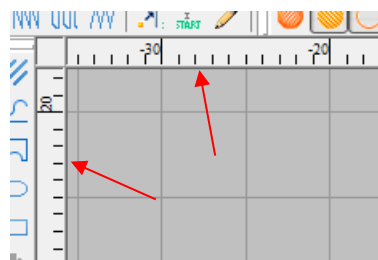
显示效果



隐藏/显示标尺。



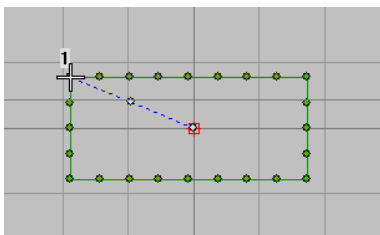
隐藏标尺效果



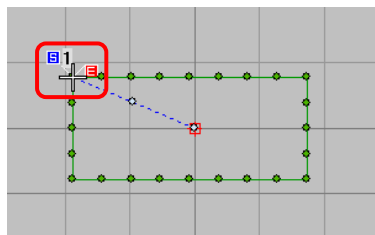
显示效果



显示起始结束图标。

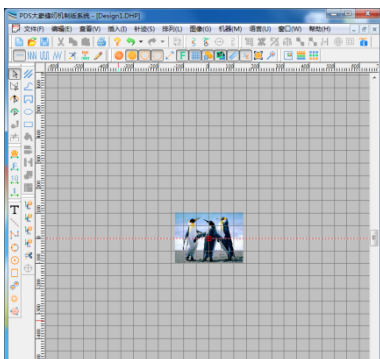


隐藏起始结束图标

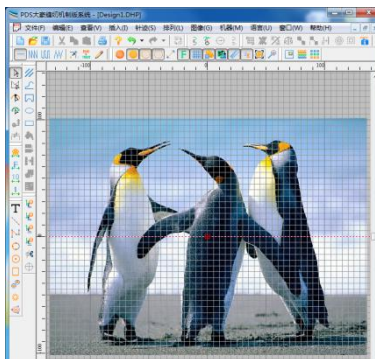


显示起始结束图标

 将花样整体居中显示。

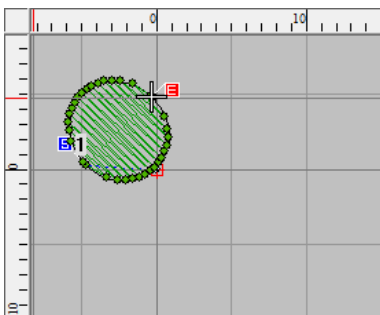


普通显示效果

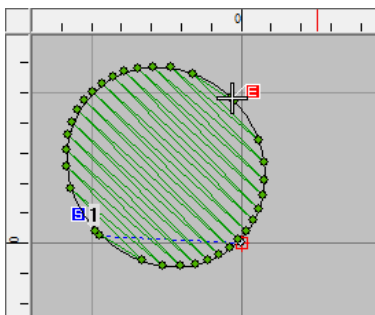


整体居中显示效果

 缩放花样。

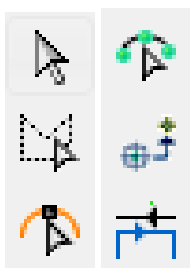


普通显示效果



放大显示效果

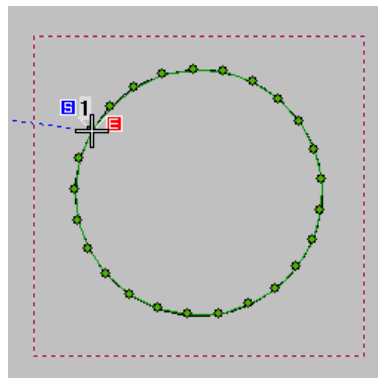
3.1.4 对象选择编辑工具





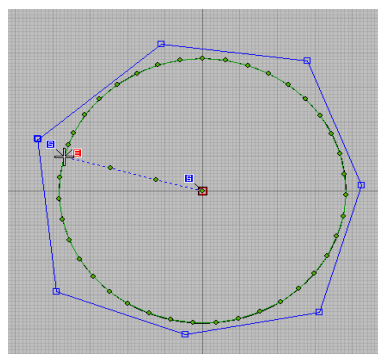
选择工具：

点击轮廓线或左键拖动形成红色虚线框选，即可选中对象。



多边形选择工具：

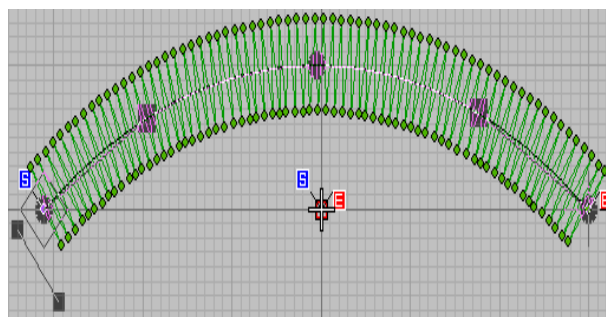
选择对象为不规则或整体对象中单独一个对象，以画轮廓线的方式圈住对象。对象选中后拖动手柄可实现形变操作。



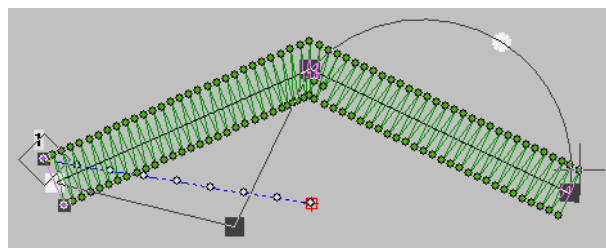
整形工具：选中对象后，切换至整形工具。

可调整对象的轮廓线，起始结束点和针迹方向。左键添加黑色方块、右键添加黑色原点。将鼠标箭头放置方块或原点位置。

按住左键进行移动，方块移动出直线，原点移动出圆弧。



详见 [3.2.5 整形工具](#)



针迹编辑工具：点击针迹点，当前“十”字

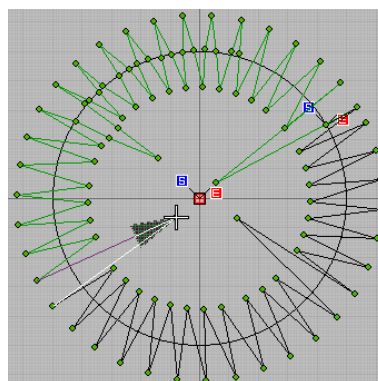
光标移动至所选针迹。

右键添加针点

左键移动针点

Del 键删除针点方法

段选择方法和例图





详见 [3.2.6 针迹编辑工具](#)

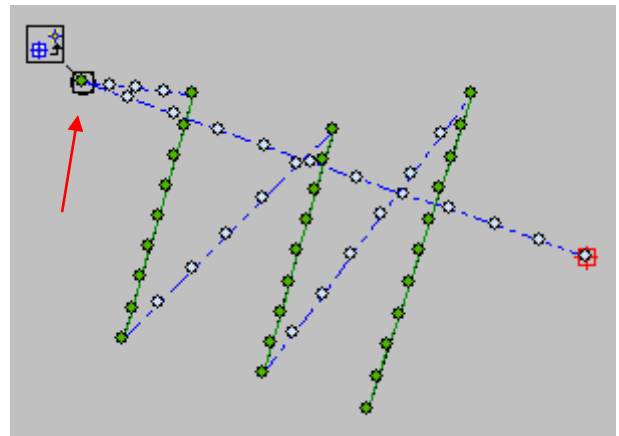
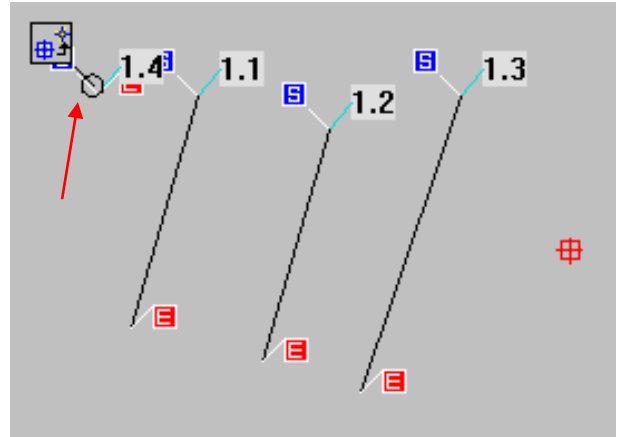


定位点:


此功能用于矢量图（即没有花样缝制数据的图案，DXF 格式或 PLT 格式）状态下，设定其该图案的第二原点位置。


注：该功能在已经生成实际针迹的花样中不能使用。

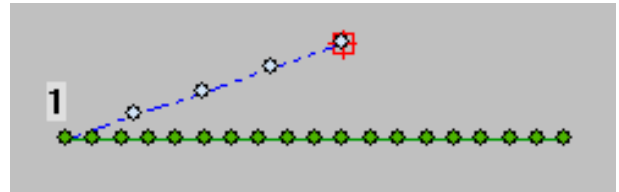
- 1、 将矢量图花样（DXF 格式或 PLT 格式）导入到编辑区域中，使用  工具，按住 Ctrl+鼠标左键，拖动生成圆形，按回车键确定。
- 2、 选择定位点工具 ，将其圆形定义为定位点，进行转换为实际线迹图案。



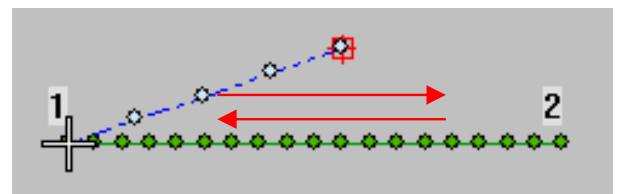
左键返回/右键重复针迹工具:

左键单击 ，新增一个以花样 A 终点为起点，起点为终点的，重复的相反缝制方向的花样，花样 B；

右键单击 ，新增一个以花样 A 起点为起点，终点为终点的，重复的相同缝制方向的花样，花样 C。



花样 A



花样 B



花样 C

3.1.5 图形对象输入工具

（详见 [3.4.1 对象输入](#) 中 3.4.1.2 图形对象输入）



画直线：由两个输入点确定的线段。



画直线和自由曲线：通过鼠标“左键”输入“直线”拐点，通过鼠标“右键”输入“曲线”拐点。



画闭合的直线和自由曲线：点击鼠标“左/右键”连续进行“直线或曲线”编辑，按“enter（回车）键”结束后会自动形成“闭合图形”。



画圆/椭圆形：生成圆或椭圆

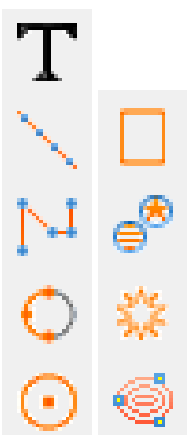


画长方形：生成正方形或长方形

注：上述功能为编辑矢量图工具，编辑花样后需要进行转换成实际线迹，否则进行保存操作没有任何图案生成。

3.1.6 针迹对象输入工具

（详见 [3.4.2 针迹对象输入](#)）



输入文字：使用“运行平针、平包针、榻榻米和锯齿形针”，按字符和字体的设计生成图案。



平针：使用鼠标“左/右键”可以进行“运行平针、平包针、锯齿形针或榻榻米形针”编辑。



手动针迹：使用鼠标“左/右键”可进行“点缝针迹和空送针迹”编辑。（点缝针距最大为 12.1 毫米）

注意：当连续进行点缝和空送针迹编辑时，注意在点缝针迹编辑后衔接“空送针迹开始点”，要点击鼠标“右键”；当在空送针迹结束衔接点缝开始时，也要点击鼠标“左键”。



三点圆弧针迹：通过输入三点，生成一段过三点的圆弧。



圆/椭圆针迹：

- ① 鼠标“左键”输入（拖动）直径数值后，再次点击“左键或回车键”自动生成圆形图案。
- ② 击鼠标“右键”输入（拖动）直径数值后，再次拖动鼠标能够生成圆形或椭圆形图案。
- ③ 按 Shift 键+左键，点击鼠标左键和确定其圆形图案的中心点位置。



矩形针迹：

- ① 使用鼠标左键拖动编辑生成矩形图案。
- ② 按住 Ctrl 键进行拖动鼠标，确定一边后会自动生成一个正方形图案，再按回车键生成花样
按住 Shift+鼠标左键同栋鼠标，生成两倍的矩形图案。



圆形/星形：左键输入生成星形，右键输入生成椭圆形对象。



针迹花样模版：模版库，包含加固、锁眼、钉扣等特定功能花样模版。



输入轮廓：使用鼠标左键单击三个及三个以上点，回车，即可形成闭合轮廓花样。（生成的针迹线段按默认设置进行相应偏移）

3.1.7 针法选择工具

（详见 [3.2.1 四大针法](#)、[3.2.2 针法辅助工具](#)）



运行平针：针迹点在轮廓线上生成。



平包针：针迹点在轮廓线两侧。



榻榻米针：用于区域填充的针法。



锯齿形针：相比平包针，两侧针点交错。

3.1.8 针迹巡航工具

(左键点击当前针向前移动，右键向后)



十字光标自动移动到原点位置



以功能码为单位运行



以 10 针为单位运行



以 1 针为单位运行

注意：使用键盘中的方向键也可进行针迹点移动。右/左方向键可进行前进/后退单针移动，下/上方向键进行 10 针前进/后退连续移动。

3.1.9 辅助功能工具


(详见 [3.2.7 对象辅助工具](#))





对齐和分布：将所选一组对象对齐或等间距排列。





首尾交换：逆序排列曲线点或者缝制点。

 **以参照线对称翻转：**以参考线为基准，对象各点作镜像映射。


 **对称复制：**生成一个与原对象相对的新对象。


 **组合：**将选中的两个或以上对象组合成一个对象。


 **取消组合：**将组合对象取消组合，恢复成单独的单个对象。


 **移动对象：**可将对象移动至指定坐标位置。


 **插入偏移对象：**可在指定偏移位置新增指定花样对象。

 **不重新生产针迹的对象大小修改：**根据尺寸、位置修改对象大小，不重新生产针迹。

 **属性：**可设置填针针迹、主题花纹、图像、连接线、通用、曲折缝、多重缝、倒缝重叠缝。


 **花样概观窗口：**缩略显示花样的预览窗口。

 **针迹清单：**察看针迹详细信息，并进行针迹编辑的窗口。

 **对象清单：**察看对象信息，并进行模板花样转换、复制移动、分割合并等功能。

3.2 针法辅助功能

3.2.1 四大针法

 **运行平针：**

右键点击图标，可以打开平针参数设置窗口，修改后新建对象将以此参数为基准。双击对象打开的属性窗口，也有针法设置选项，此时修改参数仅作用于所选对象。

平针长度：指定的固定针迹长度，当未选择可变平针长度选项时有效。

可变平针长度：使能后，将按照设定的参数生成针迹。

针迹类型: 平针

针迹数值

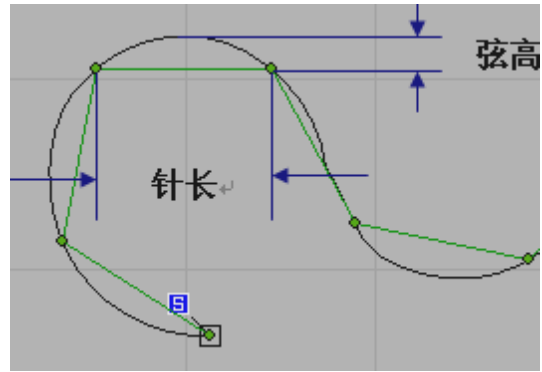
平针长度: 2.5 mm

可变平针长度

最小长度: 0.8 mm

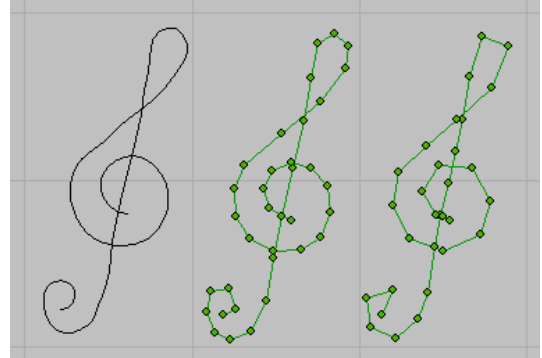
弦高: 0.07 mm


①关于针长与弦高的含义。针长就是相邻两个针迹点的距离，由于规定平针针迹点一定落在轮廓线上，所以弦高是指针迹线与轮廓线的最大垂直距离。



②**可变平针长度**：当满足弦高条件时针长按照设定针长行进。小于弦高时，针长缩短直到满足弦高条件或达到**最小长度**设置。这个属性能够使针迹与轮廓线高度重合。

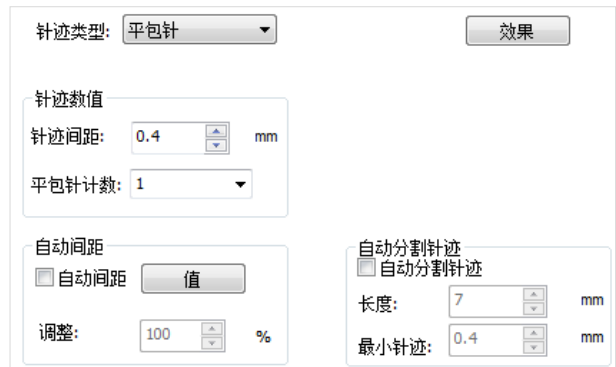
使能可变平针长度后的效果，左边是轮廓线，中间为使能可变针长，右边为固定针长的效果。使用可变平针长度后，虽然会增加针数，但是针迹与轮廓线更接近，缝制效果更佳。




 **平包针**。参数设置窗口打开方式同平针。

针迹间距：平包针相邻同方向针迹的垂直距离，此参数决定了针迹的密度。

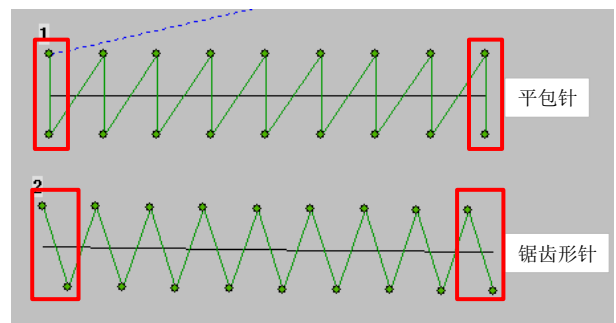
平包针计数：平包针重复次数，默认为 1 即不往复。




 **锯齿形针**。参数设置窗口打开方式同平针。

针迹间距：与平包针的参数含义相同。相邻同方向针迹的垂直距离，此参数决定了针迹的密度。

锯齿形针与平包针的差异在于两侧针迹点为交错分布，而平包针的两侧针迹点为对称分布。锯齿形针可视为一种特殊的平包针。

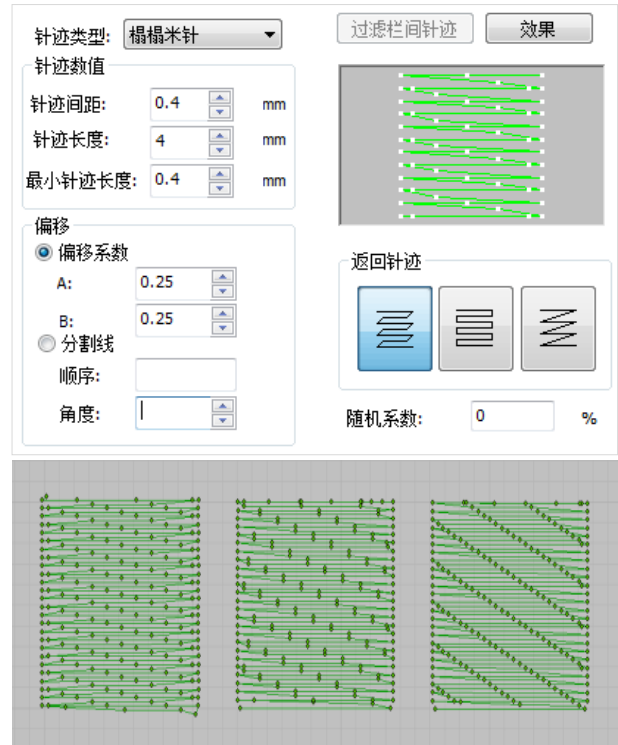


 **榻榻米针**。参数设置窗口打开方式同平针。

针迹间距：相邻两条同方向针迹的垂直距离。

针迹长度：相邻两针的距离。

最小针迹长度：不产生短于此长度的针迹。



偏移 A/B：设置区间 0~1，相当于 0 - 100%。改变针长分割基点，从而改变针迹效果。

不同偏移参数 A/B 设置效果，左边参数 0.25/0.25，中间 0.3/0.0，右边 0.1/0.1。

3.2.2 针法辅助工具




对象的相互转换

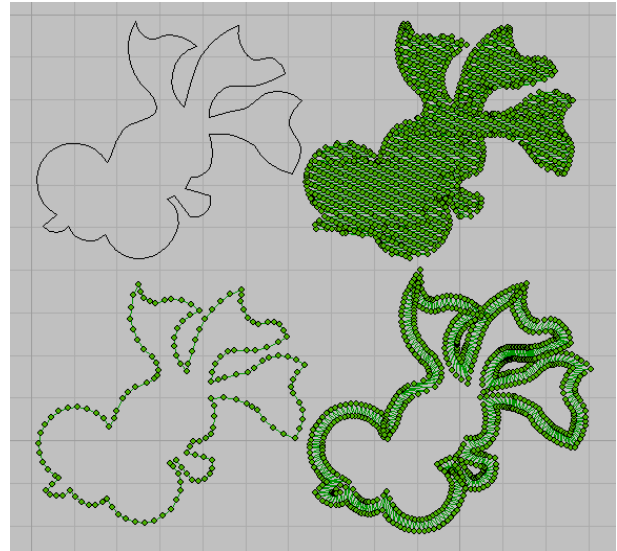
图形对象可**转化**为针迹对象，针迹对象可转化为其他针迹。选中对象后点击鼠标右键，可弹出快捷菜单，选择转换选项后，可弹出转换菜单。

转化通常需要具备一定条件，即要求转换前后的对象轮廓线属性保持一致。如闭合曲线可以转化为复合填充，而普通非闭合曲线则不能。




举例设置后效果演示

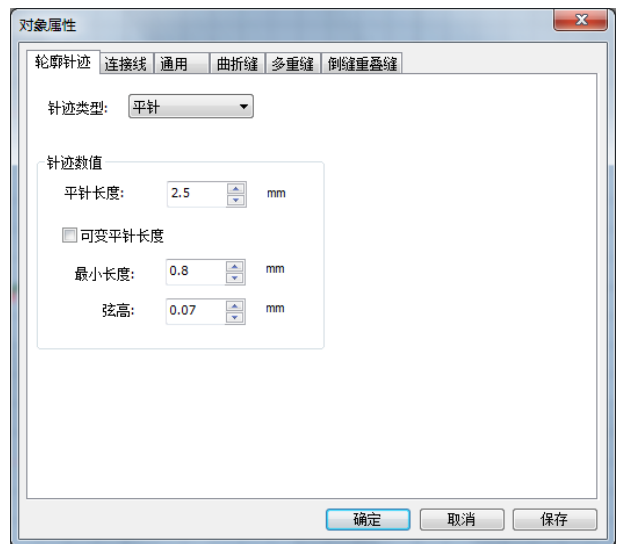
对象转化的一种实际应用。用复合填充  描绘的对象无法直接应用运行平针 ，而通过对对象转化可实现运行平针效果。在有些情况下可以省略曲线针  的二次描绘。



3.2.3 针迹对象属性工具

选中对象后，通过以下几种方式：1、鼠标左键双击选中对象，2、按工具栏属性  按钮，3、点击鼠标右键弹出快捷菜单，选择属性。都可以打开属性对话框。

针迹对象属性中，针迹类型参数已作过介绍。这里只说明输入方法 C、多重缝、倒缝重叠缝等几项参数的使用方法。



3.2.3.1 输入法 A 和 B 参数

点击“插入”→“缝制对象”→可选择“输入法 A”或“输入法 B”。

输入法 A，可进行横向或竖向平针花样编辑：
 选择“输入法 A”后，鼠标自带十字坐标线，单击界面，确认花样起点；
 第二次单击界面，确认花样宽度；
 第三次单击界面，确认花样长度，如图 A；
 第四次单击，确认花样终点，如图 B；
 回车，确认花样，如图 C。

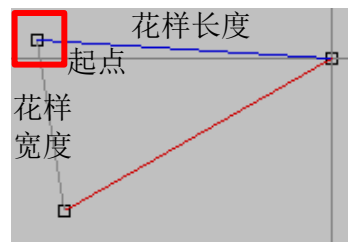
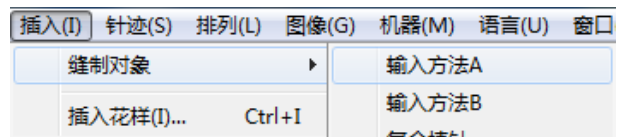
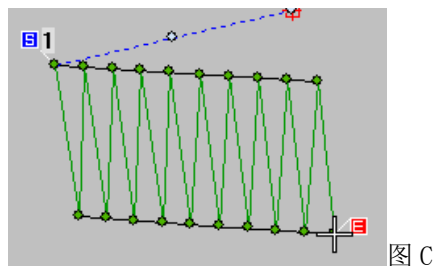
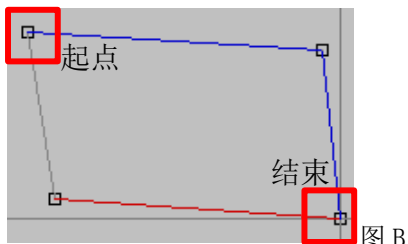
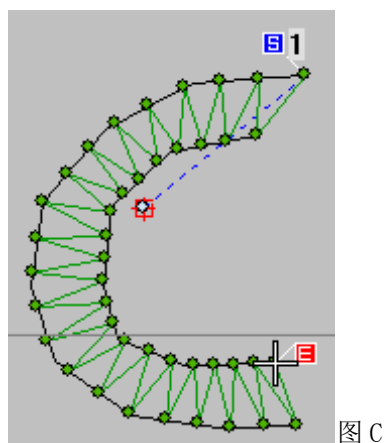
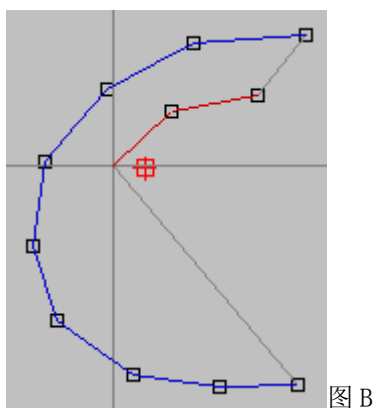
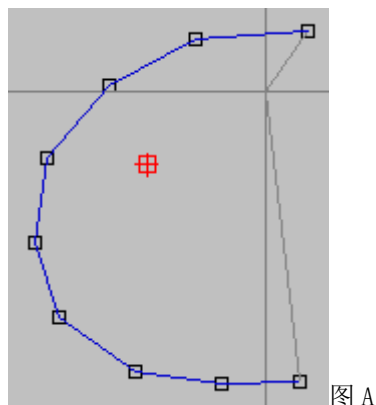




图 A

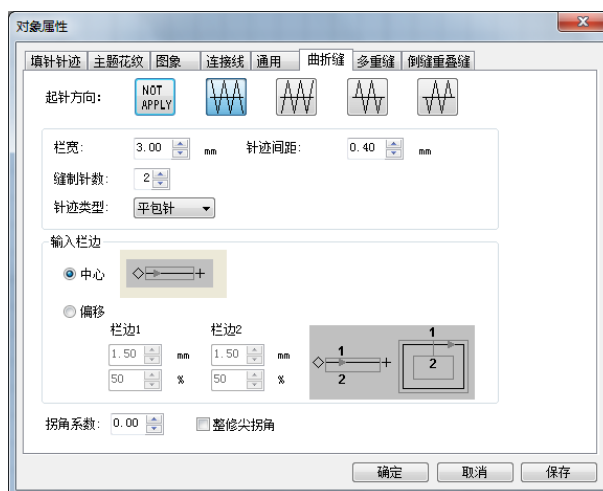


输入法 B，可进行不规则图形的平针花样编辑，
 可先编辑内轮廓或外轮廓，确认后继续从起点附件开始
 编辑外轮廓或内轮廓，来完成整个不规则花样。

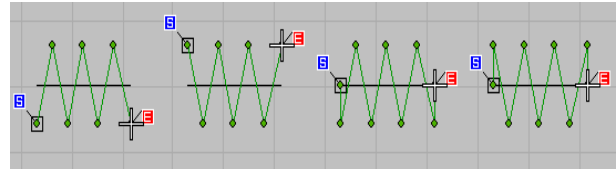


3.2.3.2 曲折缝设置方法

主要设定曲线针在应用基本针法中的  平包针
 和  曲折针时，针迹生成方法的调整。



起针方向：四个按钮分别示意第一针的生成方法。右图所示：针迹与按钮顺序对应。

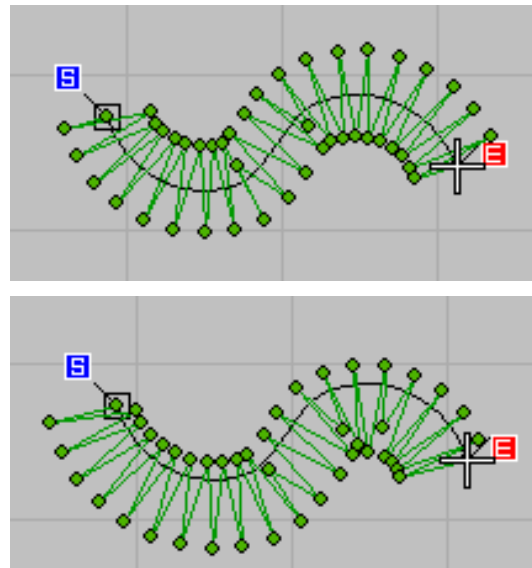


栏宽：平包针和曲折针的包缝宽度。

栏边：中心表示包缝宽度以曲线针轮廓线为中心，两边对称。偏移表示以曲线针轮廓线为参照，左右两边包缝宽度的比例。

举例设置后效果演示

左图为选择中心效果，右图为栏边 1 偏移 20%效果。



3.2.3.3 多重缝参数

多重缝方式种类：多重缝的 5 种重复方法。1、同方向偏移复制，对象间以空送连接。2、每偏移复制一次方向反转一次，对象间以空送连接。3、针迹偏移到新位置。4、偏移复制同方式 1，但对对象间以实针连接。5、偏移复制同方式 2，但对对象间以实针连接。



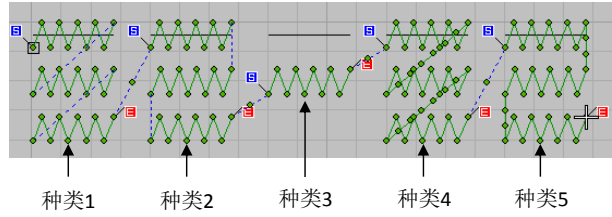
偏移量：以原对象为基准的连续复制偏移长度。

次数：连续复制的次数，但对多重缝方式 3 无效。

偏移方向：相对于针迹行进方向，向左偏移或向右偏移。

举例设置后效果演示

针迹与按钮顺序对应



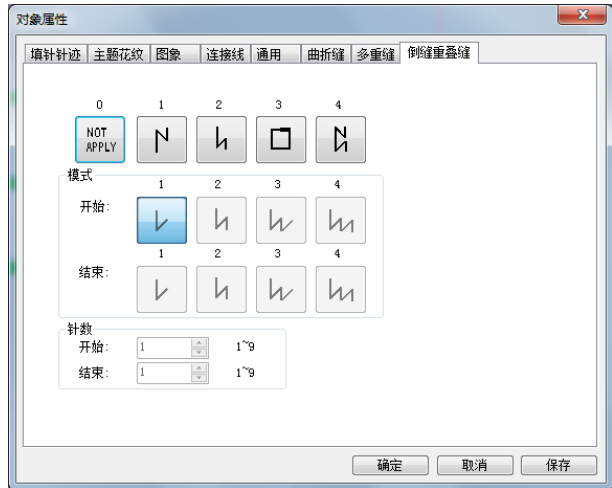
3.2.3.4 倒缝重叠缝:

倒缝: 共 4 种。1、开始倒缝。2、结束倒缝。3、闭合倒缝。4、开始结束均倒缝。

模式: 分别表示 1-4 次重复。开始和结束的重复次数可分别设置。

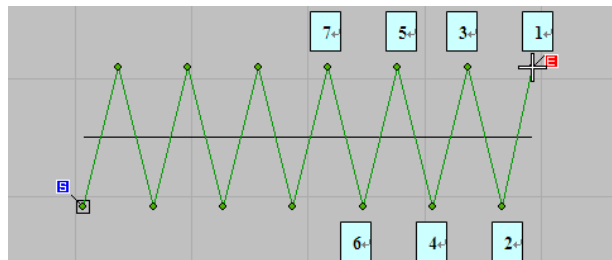
针数: 表示按照对象针迹顺序，重复的针数。

注: 系统的倒缝功能在实际市场中俗称“锁针”。



举例设置后效果演示

标注 1 的点为结束点，如果针数设为 7，则对象从 1 点开始按顺序增加针点到 7 点。如果模式设为 2，则从 7 点继续按照顺序增加针点到 1。



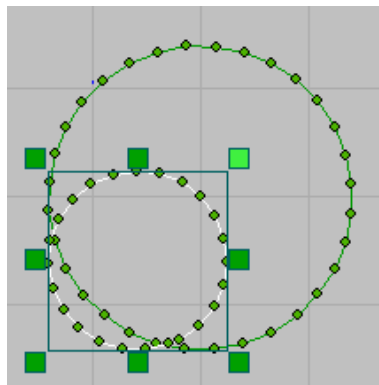
3.2.4 对象形状修改

对象输入只是完成了花样设计的第一步，为了更好的缝制效果，通常还需要后期的修改。后续维护主要是对象整形和针迹编辑，

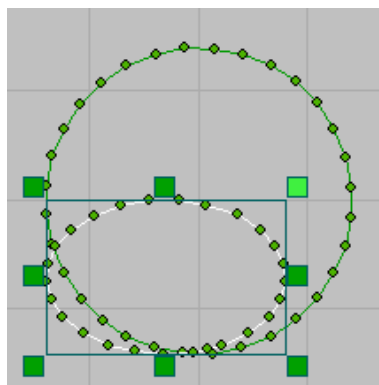
3.2.4.1 图形缩放旋转

选中对象后，会出现一个带有操作手柄的对象范围框；四角的手柄为 X/Y 同时缩放手柄，上下两边手柄只缩放 Y 轴，左右两边手柄只缩放 X 轴。

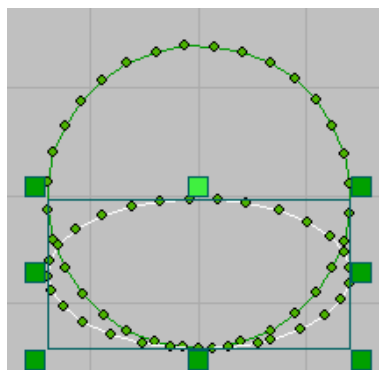
- ① 按住四角的手柄，可进行 X/Y 等比缩放，缩放参考点为范围框上的对角点。



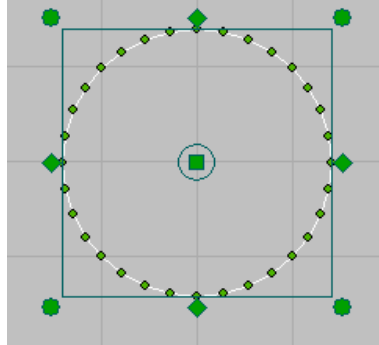
- ② 同时按住 Ctrl 键时，可进行 X/Y 非等比缩放。



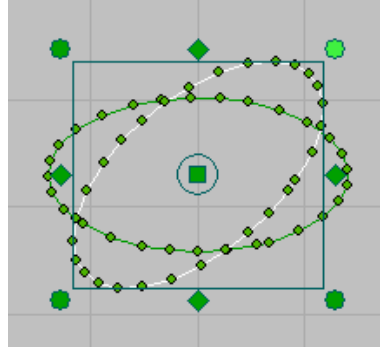
- ③ 选中四边的点，可独立进行 X 或 Y 向的缩放，缩放参考点为范围框上的对边中点。



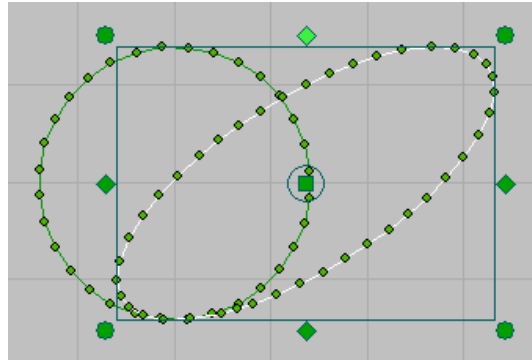
- ④ 在缩放框内原地点击一下鼠标左键，手柄将会切换为旋转状态。中心点的圆圈手柄可以移动，代表旋转操作的中心点。四角的圆形手柄为旋转手柄，四边的菱形手柄为剪切手柄。



⑤ 按住四角的圆形手柄，可以进行旋转操作。



⑥ 按住四边菱形手柄，可以进行相对位置图形修改。



几何操作将改变对象轮廓线，对象轮廓线改变后将重新生成针迹。

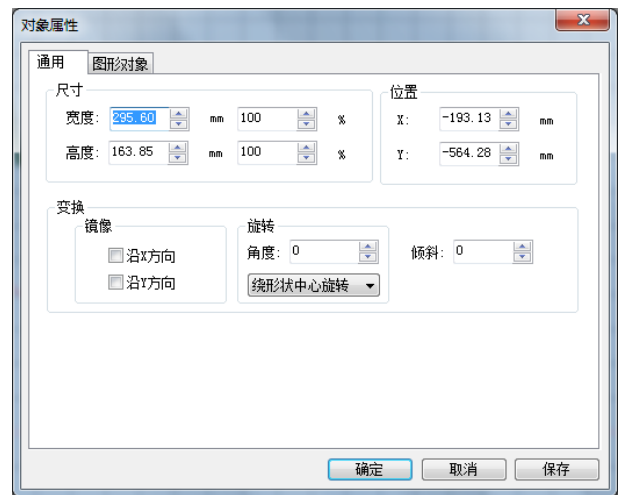
3.2.4.2 图形变换属性

尺寸：对象外围矩形的大小。修改百分比或长度可实现缩放，缩放参考点为对象中心点。

位置：中心点坐标。修改后数值后，对象将移动到新的中心点。

变换：镜像操作以中心点为参考点进行。**旋转**和**倾斜**的效果与通过手柄操作一样，但通过数值操作将更精确。

通过参数设置进行几何变换适合更精确的操作。



3.2.5 整型工具



整形工具按钮

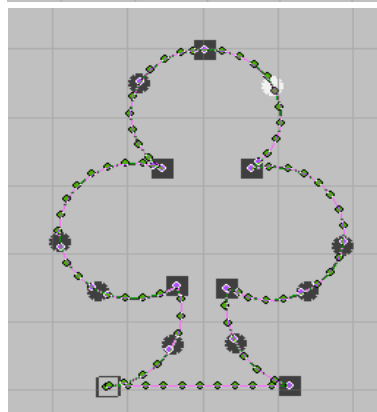
界面编辑状态将进入整形模式。

在整形模式中，选中对象的轮廓将以高亮显示出来。轮廓控制点显示为圆圈的为曲线点，显示为正方形的为直线点，这与对象输入时的**左键直线点**、**右键曲线点**是对应的。

① 用鼠标点击控制点图标，则控制点处于选中状态，色彩与未选中不同，此时可对选中控制点进行拖动。**当控制点处于选中状态时，按 Del 键可以删除当前控制点。**在轮廓线上点击鼠标可以插入控制点。左键插入直线点，右键插入曲线点。



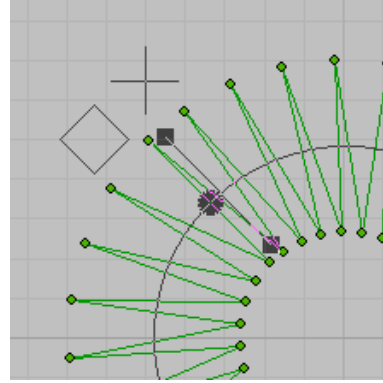
② 拖动控制点后，轮廓线将随控制点改变，但在按下 Enter 键之前，对象针迹和实际轮廓不会改变。按 Esc 键可以放弃修改，按 Enter 键则修改将生效。



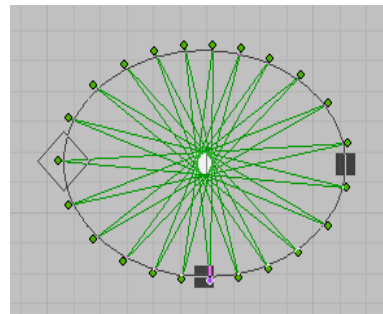
③ 复合填充对象整形时，空心菱形是对象起针点，十字是对象停针点。两个小矩形连接的线段为针迹方向线。（对于复合填充输入法或应用平包针和塌塌米针法的对象，将增加起/止点、方向、栏宽等控制点。）





- ④平包针对象整形时，空心菱形和十字分别代表起/停针点，两个小矩形连接的线段代表栏宽。



- ⑤星形和椭圆形输入法对象整形时，拖动中心的控制点整体移动对象，拖动轮廓上的两个控制点分别调整椭圆的长短轴。空心菱形表示起针点，对象的结束点与起针点重合。




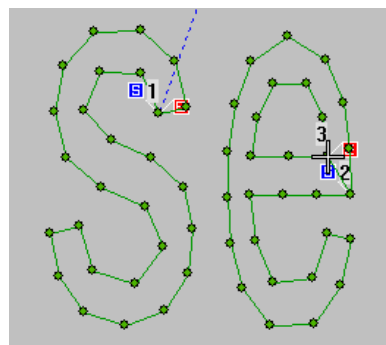
3.2.6 针迹编辑工具

PDS 提供了两种针迹编辑工具。用户可以直接在界面上应用针迹编辑  工具，对针迹点直接进行移动、删除、插入的操作。也可以打开针迹列表  窗口进行针迹修改操作，除了移动、删除、插入操作以外，还可以修改目标针迹的功能码。

界面编辑状态将进入针迹编辑模式。选择针迹编辑前，需要有一个选中对象。

① 选择针迹

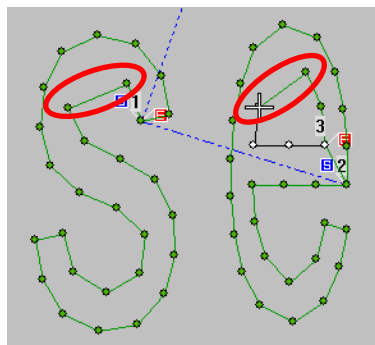
鼠标点击针迹点后，选中的针迹点变成当前针，显示为十字光标 。当前针之前的针迹颜色不变，当前针之后的针迹，颜色变为黑色。当前针下一针的颜色变为白色。可通过在空白区域按住鼠标左键拖动的方法进行框选，处于选择框之内的针迹均会处于选中状态。



原图

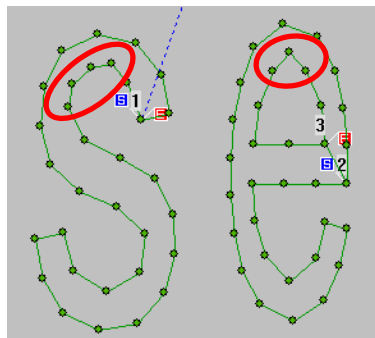
② 删除针迹

处于选中状态的针迹点可通过鼠标进行移动，按 Del 键可将选中的针迹点删除，如右图。



③ 新增针迹

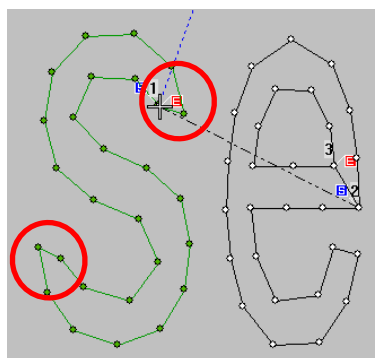
在针迹编辑状态下，点击鼠标右键，会从当前针到点击处生成一条新的针迹，如右图。



④ 移动针迹

在针迹编辑状态下，点击鼠标左键，选中当前点，按住鼠标左键可进行点移动，如右图。

注：可在对象清单中进行设定距离移动。



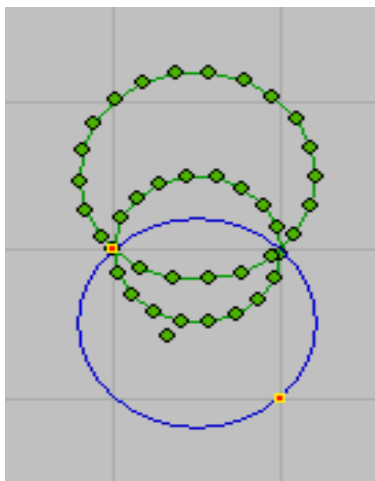
3.2.7 对象辅助工具


3.2.7.1 对象输入辅助功能



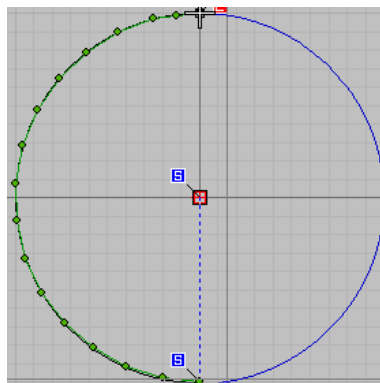
对齐网格。

通过鼠标点击工具图标在使能和取消状态间切换。使能对齐网格后，每次对象的输入点都是网格交点。



 连续输入。

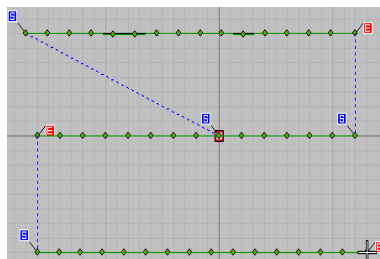
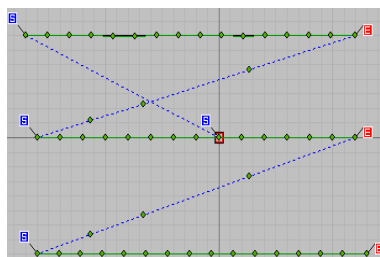
可以输入首尾相连一系列对象，可配合圆弧输入法使用。



3.2.7.2 对象编辑辅助功能

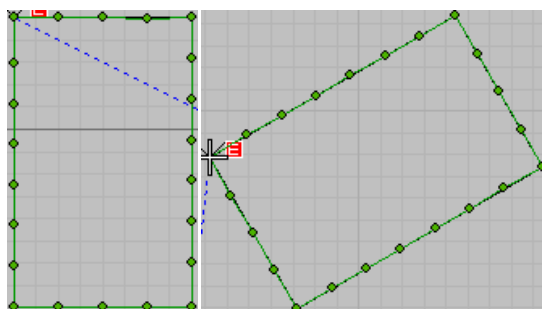
 交换起点。


通过交换起点操作，可以在不进行整形操作前提下，修改针迹前进方向。示例中右图通过交换起点减少了不必要的空送动作。



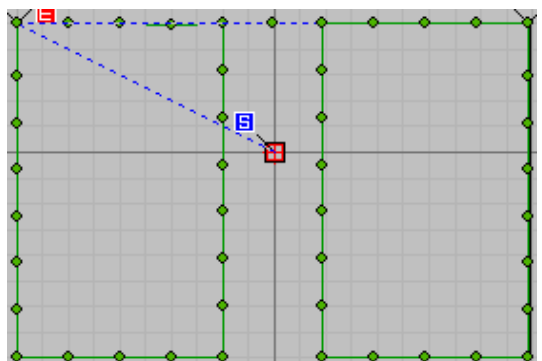
 镜像位移。

相比较对象属性中的镜像操作，镜像位移支持任意位置和角度的镜像参考线。示例右图为镜像 30° 的效果。



 镜像拷贝：

生成一个与原对象相对的新对象。示例中右侧为生成的新对象。

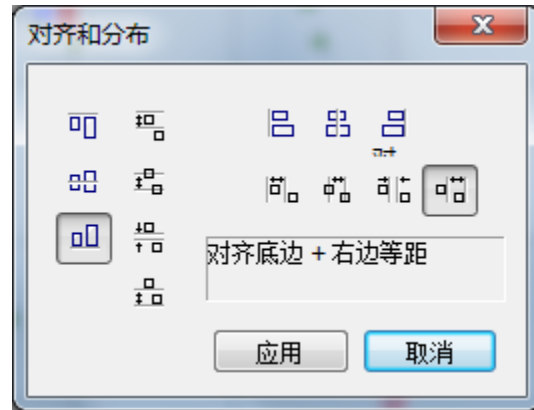


3.2.7.3 对齐排列功能



对齐操作需要有至少两个选中对象。

左边两列按钮表示对齐 Y 坐标和调整 Y 向间距，右边两行按钮表示对齐 X 坐标和调整 X 向间距。左右两组按钮每组只能选取一个，但两组可组合使用。



对齐左边。所有选中对象与最左侧对象的左边界对齐。



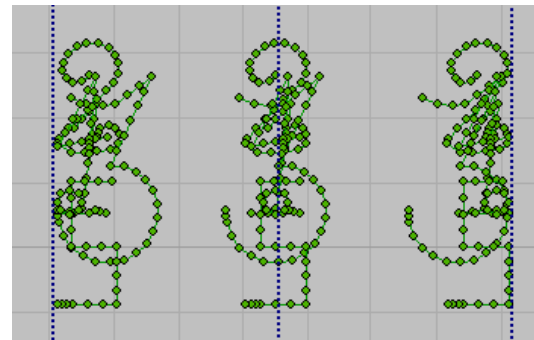
对齐中心。所有选中对象与顺序排在首位对象的中心线对齐。



对齐右边。所有选中对象与最右侧对象的右边界对齐。

待操作的对象。注意对齐操作时，都是以对象的外围框为基准。

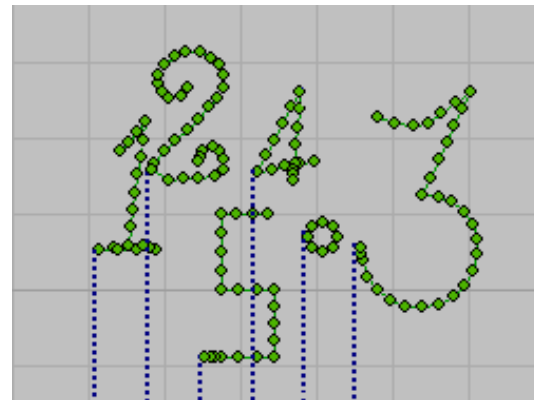
从左到右分别为左对齐、中心对齐、右对齐操作的效果。



左等距分布。对象以各自左边框为基准，两两等距分布。



中心等距分布。对象以各自中心线为基准，两两等距分布。



3.2.7.4 花样查看辅助功能



概观窗口。

花样的整体预览窗口，当设计窗口的区域小于整体花样时，用白色方框标出设计窗口区域。

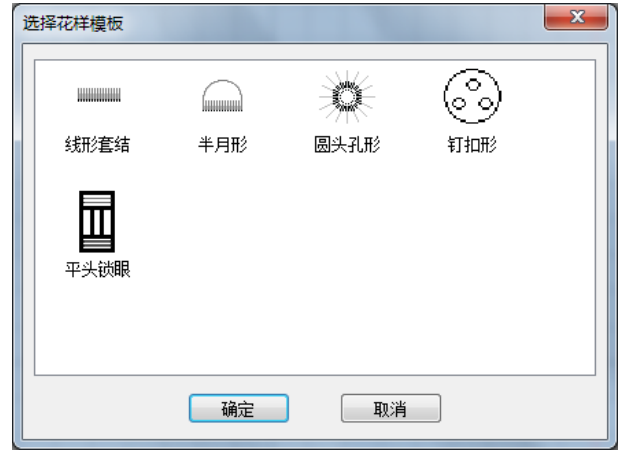
3.3 工艺模板工具使用

工艺模板是针对特定缝纫机类型开发的特殊花样。通常为一系列固定形式的针迹对象组合，如线形套结模版就是由一段平针下缝和一段平包针叠加组成。虽然模版中的对象组合相对固定，但用户可以通过参数调整模版的尺寸大小、针迹密度等特性，生成所需要规格的花样。



针迹花样模板工具位于对象输入工具栏中。

点击工艺模板进入模版选择窗口。选择对应的模版进入输入状态。



3.3.1 线形套结模板（加固）



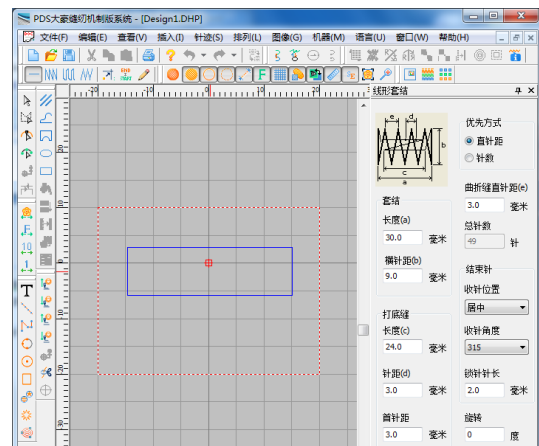
线形套结

以线形套结为例，模版随鼠标位置提供一个矩形提示框。用户可以选择合适的位置按下左键生成套结针迹，或者现在右侧模版参数栏中修改参数后再输入。（其他的输入参数都类似）

缝纫机常用的图案为套结花样，花样主要有平针下缝和平包针组成。



生成针迹花样效果
参数设置



编辑位置选择效果

套结参数：

长度 (a)：套结缝长度。

横针距 (b)：套结缝宽度。

打底缝参数：

长度 (c)：小于套接缝长度。可设置为套接长度的 60-80%。默认 80%。

针距 (d)：默认 3mm。针长，可根据工艺调整。

首针距：默认 3mm。第一针的长度。

优先方式：

直针距：使曲折缝直针距 (e) 参数有效。按照设定的针迹间距生成针迹。

总针数：使总针数参数有效。按照设定针数自动调整



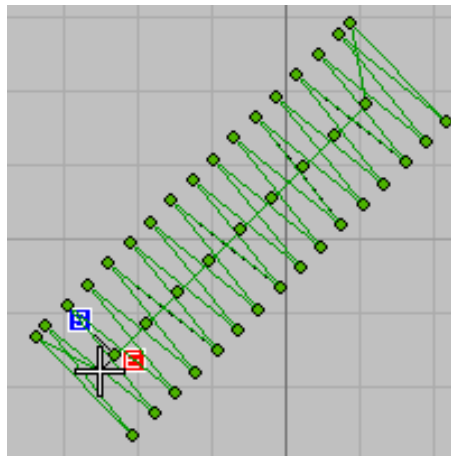
结束针：

收针位置：可选居中、起点两侧。

收针角度：最后一针的方向。

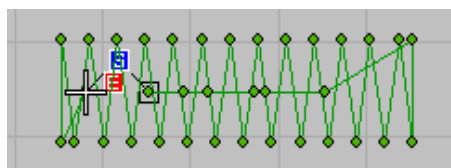
锁针针长：锁针点为位置

旋转：可设定模版以对象中心为圆点的旋转角度。

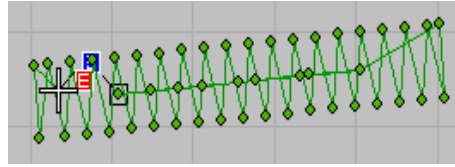


举例编辑花样：

套结长度 (a) 20、套结横针距 (b) 6、曲折缝直针距 (g) 1.6、打底缝长度 (c) 15、结束针居中、生成套结对象效果。



套结长度 (a) 25、套结横针距 (b) 5、曲折缝直针距 (g) 1.8、打底缝长度 (c) 15、结束针起点两侧、旋转 5 度、生成套结对象效果。



3.3.2 半月形模板



半月形

在线形套接模版基础上增加了一条弧形针迹。

参数设置

套结参数:

长度 (a) : 套结缝长度。

横针距 (b) : 套结缝宽度。

打底缝参数:

长度 (c) : 小于套接缝长度。可设置为套接长度的 60-80%。默认 80%。

针距 (d) : 默认 3mm。针长, 可根据工艺调整。

首针距: 默认 3mm。第一针的长度。

优先方式:

直针距: 使曲折缝直针距 (e) 参数有效。按照设定的针迹间距生成针迹。

总针数: 使总针数参数有效。按照设定针数自动调整

结束针:

收针位置: 可选居中、起点两侧。

收针角度: 最后一针的方向。

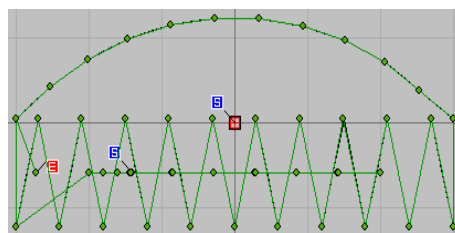
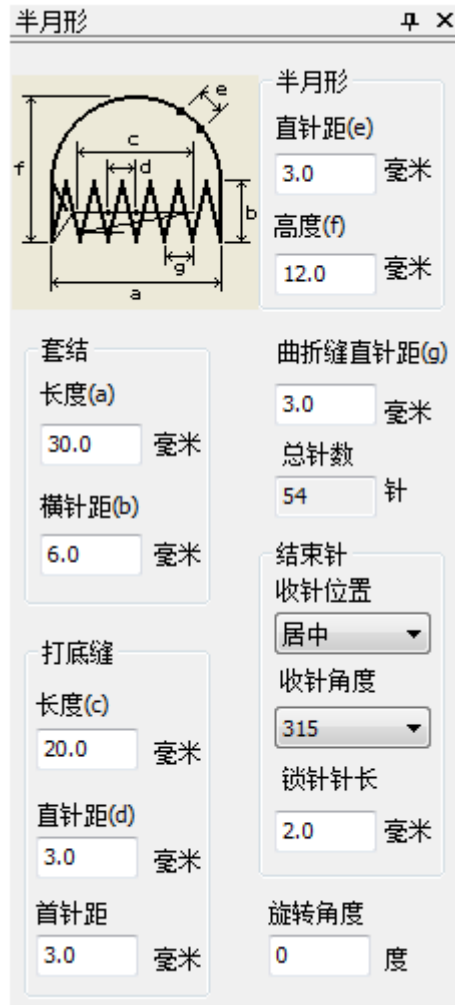
锁针针长: 锁针点为位置

旋转: 可设定模版以对象中心为圆点的旋转角度。

半月形:

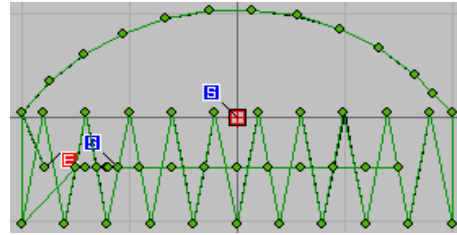
直针距 (e) : 半月形平针的针长。

高度 (f) : 半月形平针的弦高。



举例花样编辑：

套结长度 (a) 20.0、套结横针距 (b) 5.0、曲折缝直针距 (g) 2.0、打底缝长度 (c) 1.5、结束针居中、半月形高度 (f) 10.0，生成半月形对象效果。



3.3.3 圆头孔形模板（帽眼）



圆头孔形

用于面料雕孔后的缝合针迹。与线形套接的差别是轮廓线为圆形。

注：由于编辑后的花样在运行针迹时是顺方向，但在实际花样缝制过程，花样是进行逆方向缝制的；如客户有特别要求可使用 对称复制功能复制一个逆方向运行的花样就可以了。

参数设置

圆形：

外径：为曲折缝外边圆的直径。

内径：为曲折缝内圆的直径

打底缝直径：打底缝平针轮廓圆的大小。

起点送布：是/否从机械位原点移动到花样原点

起点定位针：起缝锁针数

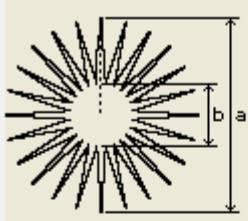
终点定位针：结束缝锁针数。

循环次数：曲折缝重复次数。

针数：设置花样总针数。

实际针数：为设置花样总针数后，系统通过运算后自动显示花样针数。

圆头孔形 + ×

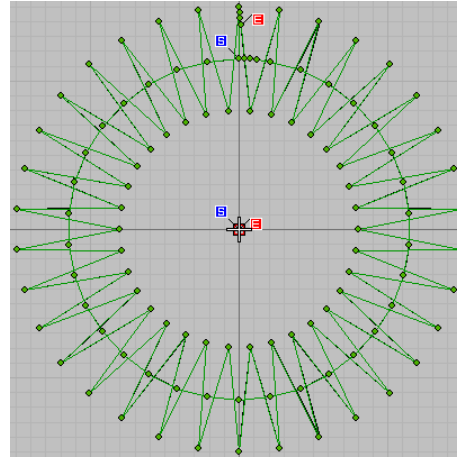


外径(a)	起点定位针
<input type="text" value="24.0"/> 毫米	<input type="text" value="3"/>
内径(b)	终点定位针
<input type="text" value="18.0"/> 毫米	<input type="text" value="3"/>
打底缝	起点送布
直径	<input checked="" type="radio"/> 关
<input type="text" value="16.0"/> 毫米	<input type="radio"/> 开
针长	循环次数
<input type="text" value="0"/> 毫米	<input checked="" type="radio"/> 1
	<input type="radio"/> 2
	<input type="radio"/> 3
期望针数	实际针数
<input type="text" value="160"/>	<input type="text" value="159"/>

期望针数=单圈针数*3+补充针数
实际针数=单圈针数*2+打底缝针数

举例编辑效果：

外径 (a) 15.0、内径 8.0、打底缝直径 11.5、起点定位 3、终点定位 3、循环次数 1、起点送布为关、针数 110、实际针数 113



3.3.4 钉扣形模板



钉扣形

生成各种对称扣眼的钉扣花样。

参数设置

孔数： 2~5。常用 4。

孔间距： 相邻两孔距离。

孔间线数： 重复缝纫针数。

连接方式： 4 孔有效时，选择为“交叉”后，对象为“X”形状；当选择为“不交叉”后，对象为“II”形状。交叉指孔间针迹有相互重叠，紧固效果更好。不交叉较美观。

起针位置： 针迹起点位置。

是否独立线迹： 4 孔时有效，选“是”则针迹为两孔形成的线迹与另外两孔形成的线迹间的连接方式为虚线（空松）连接，选“否”两线迹连接方式为实线（平针）连接。

起针针长： 起缝时锁针针迹长度。

锁针针长： 结束缝锁针针迹长度。

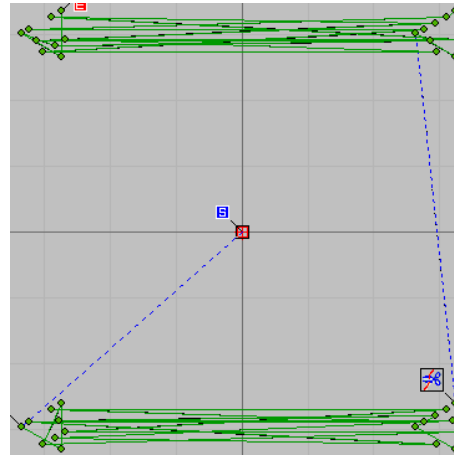
进行锁针缝制起到防止脱线的效果。

旋转角度： 相对 Y 轴正方向的偏转角度。



举例编辑花样效果

孔数 4 孔、孔间距 2.0、孔间线数 6-6、旋转角度 90 度、起针针长 0.2、锁针针长 0.2、连接方式不交叉、独立线迹为是、起针位置左上。



3.3.5 锁眼模板



平头锁眼

此模板只能在机型格式为平头锁眼机型时才能使用

各类锁眼机型模版。此模版分“第一加固部、左平行部、右平行部、第二加固部”四部分针迹。其中左/右平行部是固定的，而加固部可在一定形式内组合。

第 1 加固部（第 1 套结）针迹：

图标粗线表示整体形状，细线表示针迹方向。



方形：矩形水平缝。



圆形：半圆形水平缝。



放射方形：半圆形放射缝。



圆形：带圆心孔的半圆水平缝。



圆头：带雕孔的圆头缝。

第 2 加固部（第 2 套结）针迹：

图标粗线表示整体形状，细线表示针迹方向。



直线：矩形垂直缝。



长尾：末端收窄的矩形水平缝。



半圆：半圆形水平缝。



放射：半圆形放射缝。



圆形：带圆心孔的半圆水平缝。

锁眼模版根据不同 1~2 加固部的组合，能够制作几十种不同针迹。这些子模版的参数设置与 1~2 加固部的组合相对应。下面以角形和圆头长尾两种子模版组合为示例。

方形参数设置

摆针宽度：左/右摆针的曲折缝宽度。

(即为平行部宽度)

平行部针距：左/右摆针的曲折缝针迹间距。

左/右刀门：切布刀口与左右摆缝的间隙。

第 1/2 套结部针距：头/尾的曲折缝针迹间距。

(即为第 1/2 加固部)

左右形状比率：以中心线划分的左右两边的宽度比例。

默认 100%。设定值<100%时，右侧变窄。设定值>100%

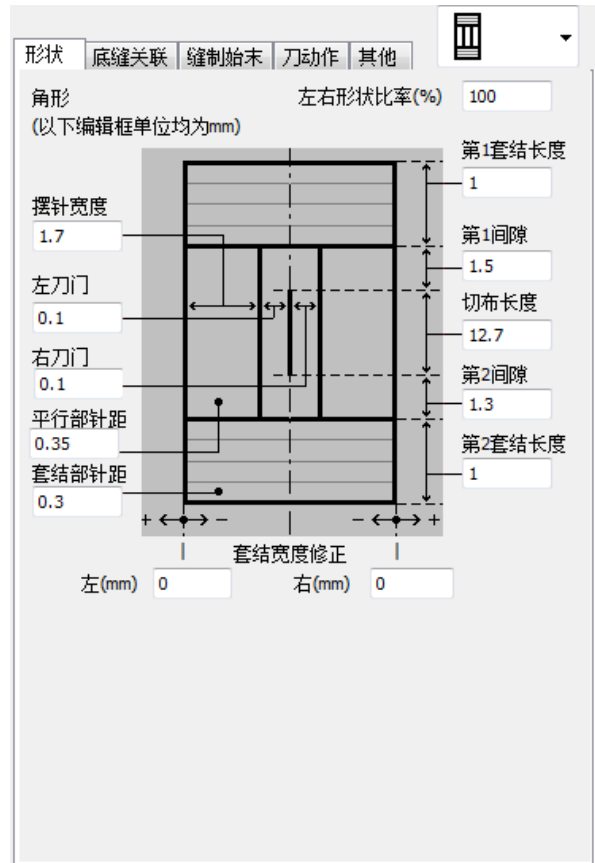
时，右侧变宽。左侧宽度始终不变。

第 1/2 套结长度：头缝/尾缝的缝制宽度。

切布长度：左/右平行部缝制的长度

第 1/2 间隙：切布刀口与头尾缝的间隙。

套接宽度修正：头/尾缝宽度的左右补偿。



确定 预览 取消

圆头长尾套结设置

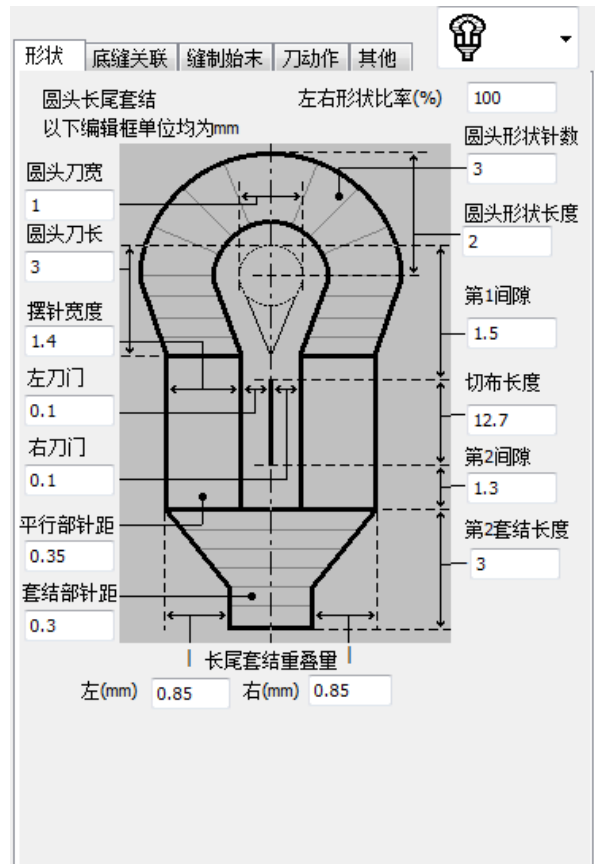
圆头刀宽：雕孔的宽度。

圆头刀长：雕孔的长度。

圆头形状针数：圆头曲折缝总针数。

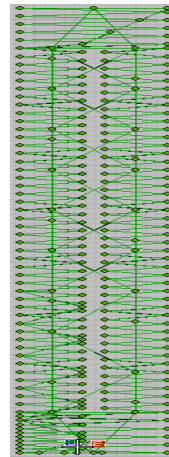
圆头形状长度：圆头缝制宽度。

长尾套接重叠量：长尾收窄的幅度。可左右不对称。

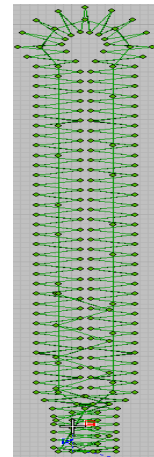


确定 预览 取消

图案效果显示:



方形锁眼花样效果



圆头长尾锁眼花样效果

底缝关联参数设置

底缝参数

底缝设置：设为无，则无底缝。

底缝特指进行左/右摆缝前，进行的缝制动作，起加固作用。

底缝次数：底缝重复的次数。

落针点修正（左右）：相对于上一次底缝线迹的偏移距离。

底缝针距：设置底缝线迹的两点针距

落针点修正（前后）：相对于上一次底缝线迹的起缝点与下一次底缝线迹的结束点距离。

位置修正（左右）：对应所有底缝线迹，进行左/右边修正。

底缝起缝卷入

宽度：底缝加固线迹针长。

针距：底缝加固线迹两点直线距离。

长度：底缝加固线迹的长度。

拼合底缝

拼合：当底缝次数大于 1 时，设置为是或无，则实现底缝线迹交叉缝制功能。

宽度：底缝起缝加固线迹的宽度。

针距：底缝起缝加固线迹中两点间的距离。

长度：底缝起缝加固线迹长度。

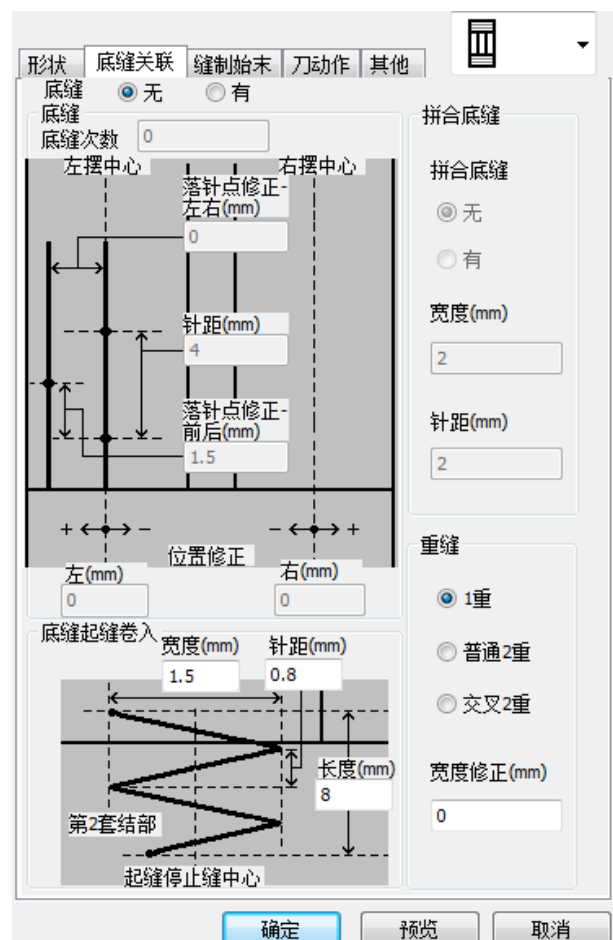
重逢

重逢次数：设置 2 次或交叉后，实现平行部重叠缝功能。

普通 2 重：在原针迹点位置进行重复一次操作。

交叉 2 重：进行左右平行部重复一次操作。（第二次重复的平行部针距为上一次平行部针距的二份之一）

宽度修正：即在“普通 2 重和交叉 2 重”功能的基础上，进行第一重平行部宽度大小的修改。



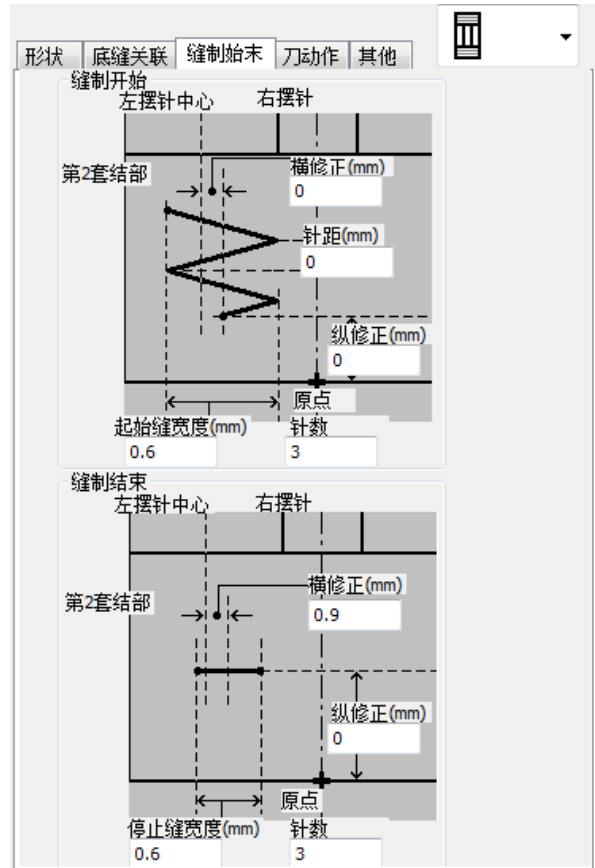
缝制始末

缝制开始

- 横修正：花样起缝锁针线迹位置调整。
- 针距：花样起缝锁针线迹间两针点的距离。
- 纵修正：花样起缝锁针线迹，起缝点位置设置。（与第二加固部结束针位置）
- 起始缝宽度：花样起缝锁针线迹缝制宽度。
- 针数：花样起缝锁针线迹缝制针数。

缝制结束

- 横修正：缝制结束锁针线迹缝制水平位置调整。
- 纵修正：缝制结束锁针线迹缝制垂直位置调整。
- 停止缝宽度：缝制结束锁针线迹宽度。
- 针数：缝制结束锁针线迹缝制点数。



确定 预览 取消

切刀参数

切刀动作

- 切布刀尺寸：设置机头上配置的切刀宽度。
- 标准切刀：是否切刀动作。
- 先切刀：设置是否在进行缝制前先进行切刀动作。
- 2重缝第1圈：设置底缝时缝制一次底缝后是否进行切刀动作。

缝制速度

- 底缝速度限制：当花样中存在底缝功能时，进行缝制底缝线迹时的转速。
- 最高速度限制：花样缝制时的最高转速。

电子夹线

普通花样

- 左/右摆针：此功能为左/右平行部缝制线张力功能设置。
- 第1/第2套结部：此功能为上下两个加固部线张力设置。

普通花样（2重缝第1圈）

- 左/右摆针：此功能为左/右平行部缝制线张力功能设置。
- 缝制开始：底缝针迹起缝时线张力功能设置。



确定 预览 取消

底缝：底缝线迹缝制时线张力功能设置。

其他参数

缝制结束上线张力：为缝制结束时面线线张力功能设置。

切线时上线张力：缝制时进行切刀动作过程中的面线线张力功能设置。

拼合缝上线张力：花样中存在底缝线迹，并进行拼合功能动作时，面线线张力功能设置。

压脚种类：分类为 1、2、3、5（自定义）

压脚自定义时：

压脚宽度：为第 1 和 2 加固部时的宽度

压脚长度：为切布长度

缝制开始位置：为压脚范围内花样起缝点位置。

切布刀多次动作：为是否支持切刀多次动作。

参数名称	当前值	范围
缝制结束上线张力	35	0~200
切线时上线张力	35	0~200
拼合缝上线张力	60	0~200
压脚种类	1	
压脚宽度	4	3.0~10.0
压脚长度	25	10.0~120.0
缝制开始位置	2.5	2.5~110.0
切布刀多次动作	0	0/1 无效/有效

模版的设计主旨是为了用户在使用 PDS 时，能够以最短时间开发出所需要花样类型。但是模版的局限是可调整的参数范围有限，因此希望对花样细节进行更多调整的用户，可以对更高级的系统功能进行学习，从而可以自由的进行复杂花样的设计，满足个性化需要。

3.3.6 编辑花样起始/结束位置

在特定条件下进行花样编辑过程中，需进行花样起缝点和结束点设置时，选择“针迹”功能进行相应起缝点和结束点位置设置。

① 点击“针迹”功能进入功能中，选择“起始结束位置设置”功能。

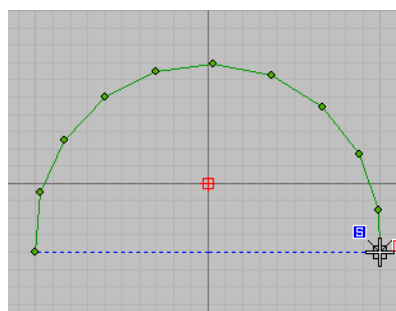
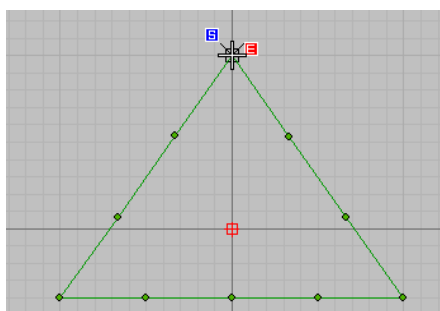


② 进入功能后按所需进行选择相应的功能进行设置。

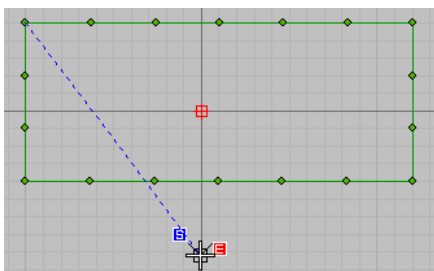


图案效果显示

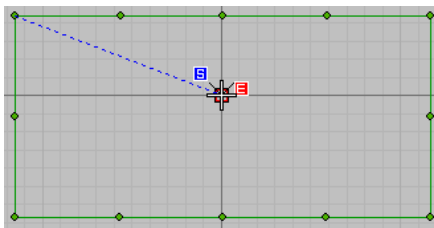
同一位置



第一针

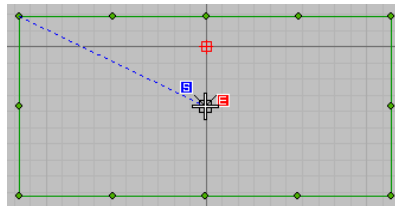


用户指定位置

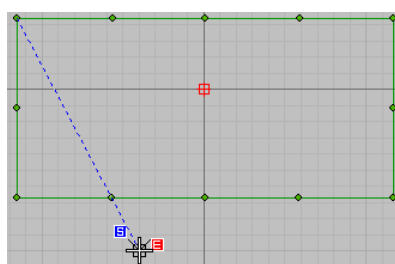


原点位置

最后一针



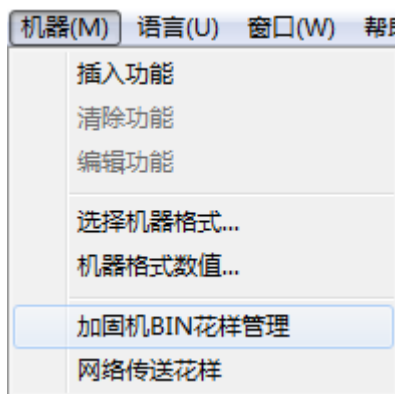
花样中间位置（图片中选择起点和结束点位置）



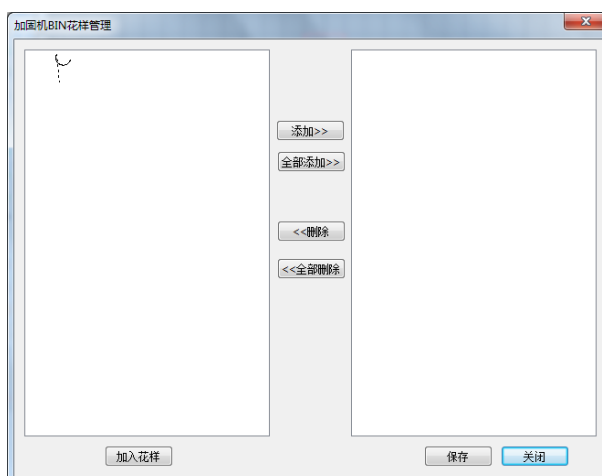
原点位置（偏移）

3.3.7 加固机 BIN 花样管理

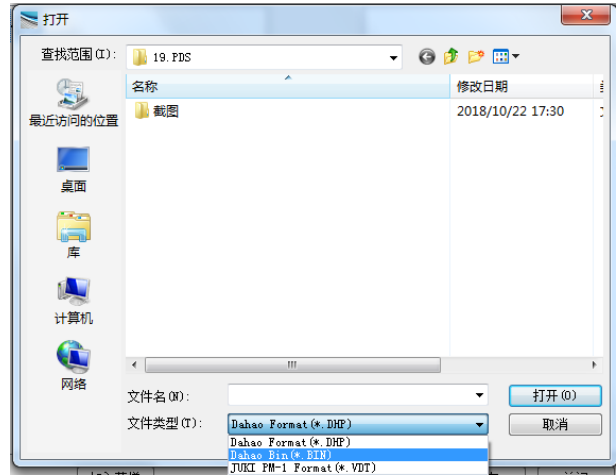
为适应市场上仍存在大量面板为按键形式的套结钉扣机型（系统内存花样格式为.BIN），所以在 PDS 制版系统中特别添加了能够进行“花样转换和管理”功能系统。



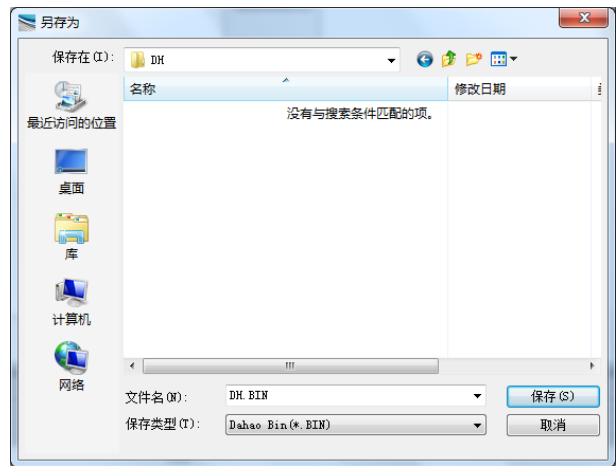
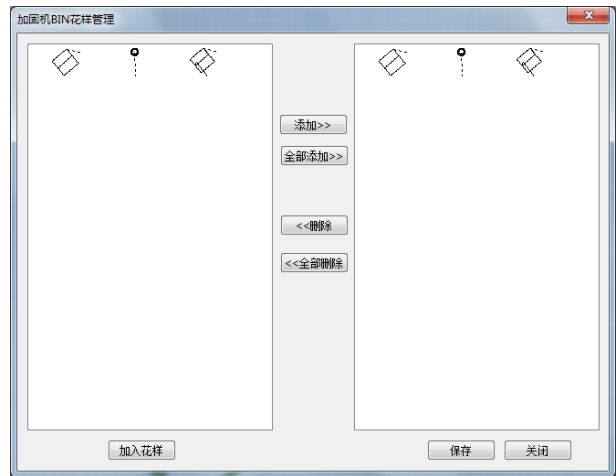
- ① 选择“加固机 BIN 花样管理”选项，进入功能中，点击“加入花样”按键，进行导入要编辑的花样。



- ② PDS 制版系统能够选用的花样格式为 “.DHP”、“.BIN”、“.VDT” 三种格式。



- ③ 将花样导入到管理系统后可选择需要转换的花样进行“添加”操作；或可将导入的全部花样进行“全部添加”操作进行转换。（将转换的花样编辑为 DH. BIN 格式花样，同时将花样存入文件名为 DH 的文件夹中）



注意：在花样编辑完成后进行选择保存花样过程中，当将花样保存为 “.bin 格式” 或将花样进行压缩为 “.bin 格式” 时，注意编辑 “.bin 格式” 花样时不允许在平针与平针中存在空送针迹；如将花样导入到“按键面板显示”的套结钉扣机型中，会出现花样能够正常的读取但在进行缝制花样时，X/Y 方向电机不动作的现象。

BIN 格式花样只适用于大豪套结钉扣机型，同时只限于一代~三代电控使用。

3.4 常用工具操作方法

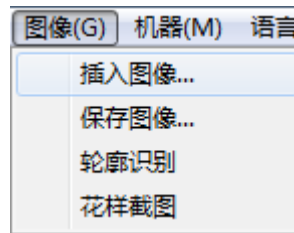
3.4.1 对象输入

PDS 中的最基本单元是对象，本章介绍有关对象的生成与维护。相对于模版，对象留给用户广阔的想象与设计空间，通过输入法和针法的组合操作，能够生成千变万化的针迹对象。就好像相对于数码相机固定的拍照模式设定，专业相机通过调整焦距、光圈和快门便能拍摄出千变万化的图像效果一样。

3.4.1.1 图像对象输入

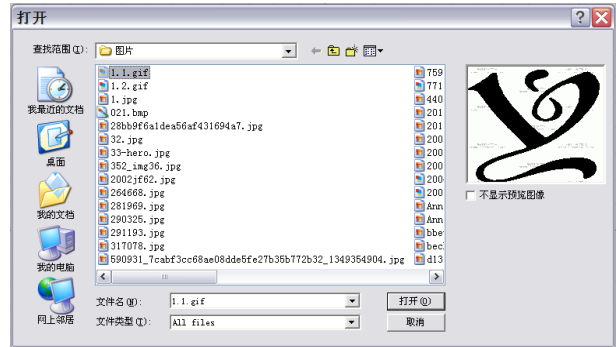
(通过菜单——图像——插入图像文件所倒入的图像对象)



默认图像插入位置为文档中心，默认的图像比例为 100%。图像的尺寸是根据图像文件的尺寸与 DPI 变换得来的。用户可以根据工艺需要，对图片进行缩放。有关图像缩放、旋转等几何变换操作可参考对象整形一章。

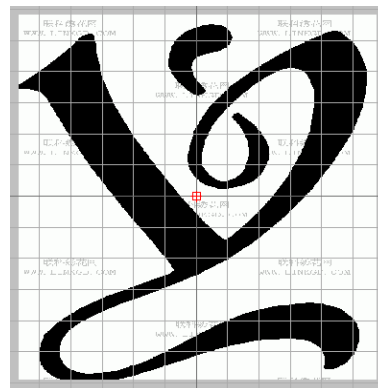


① 在 PC 机中选择所需的花样。

注意：对象长度（单位：mm）= 25.4 * 图片像素（单位：pixel）/ DPI；其中 25.4 为一英尺对应的毫米。DPI 是图片的格式信息，一般默认 96；如果插入 800*600 像素的图片，DPI：96，则对象尺寸为 211*158 毫米。



② 将图片导入到编辑区域中后，使用“使用针迹对象工具”进行图形的描画。（在导入图片过程中当出现不能正常的显示时，观察  图标是否被选中；当导入的图片过大时，可点击  图标将其图片全部显示在编辑花样区域中）



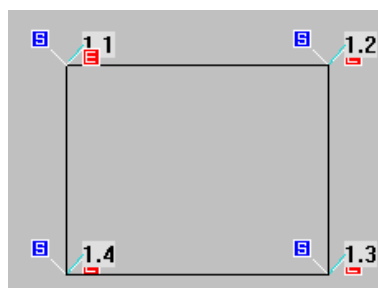
3.4.1.2 图形对象输入

图形对象的输入与针迹对象的轮廓线输入类似。在图形输入法工具栏中选择对应图标即进入对象输入状态。此时鼠标在界面的每次左/右键点击即为一次输入点操作。左键输入一个直线点，右键输入一个曲线点。



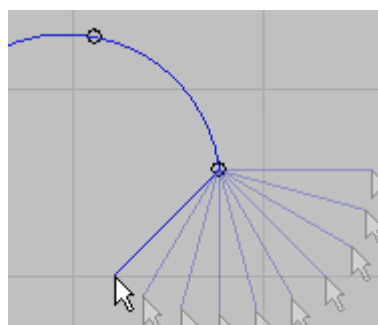
 **画直线:**

两点确定一条直线。

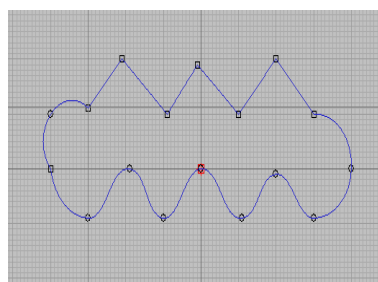



 **画直线和自由曲线:**

① 鼠标左键输入直线点，右键输入曲线点。直线点将在曲线段形成“尖角”，连续的直线点形成直线段。曲线点自动拟和成为弧线，弧度近似为圆弧。

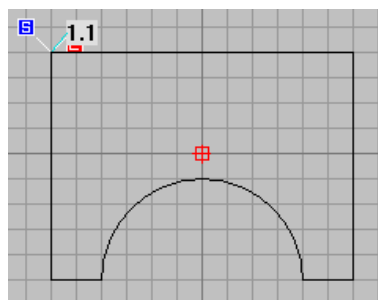


② 图形输入时，当已输入至少 1 点以上时，按住 Ctrl 键移动鼠标，当前鼠标指针与上一输入点的连线将按照 15 度角的倍数变化。此功能用于让相邻两点形成垂直、水平线，或 30、45、60 等常用角度。



 **画闭合的直线和自由曲线:**

输入方法与折线输入方式相同，按回车键后自动形成闭合图案。

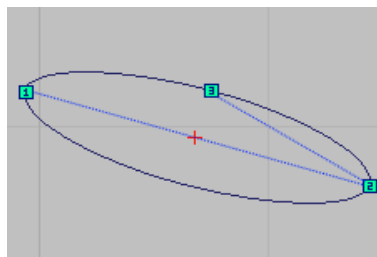




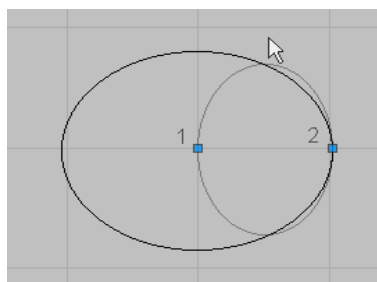
画圆/椭圆:

输入过程分长轴输入和短轴输入两个步骤。两次输入点的距离即为轴长。如果输入长轴后直接按 Enter 回车键，则生成圆，否则生成椭圆。默认以两点式生成圆，即按照长轴的距离作为直径生成圆。

- ① 图中 1、2 两点连线为长轴。3 点与圆心（红十字）连线为短轴。

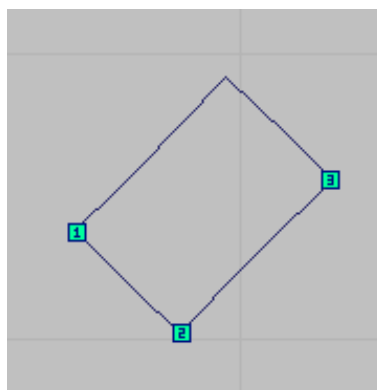


- ② 如果按住 Shift 键输入，则以点圆式输入圆，即按照长轴的距离作为半径生成圆，同时以第一个输入点作为圆心。如果按住 Ctrl 键输入，则始终生成圆形而不生成椭圆。



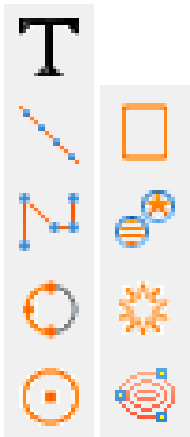
矩形:

输入方式与椭圆类似。如果按住 Ctrl 键输入，则可以选择正方形角度。如果输入第三点前，仍然按住 Ctrl 键输入，则生成正方形。




3.4.2 针迹对象输入




在针迹对象输入法工具栏中选择对应图标即进入输入状态。操作方法可参考图形对象输入。



T 输入文字（详见 [3.5.1 文字缝图案编辑](#)）：

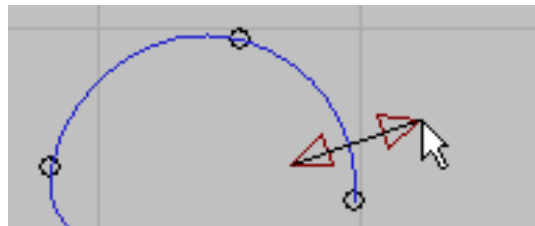
可以输入文字，使用“运行平针、平包针、榻榻米和锯齿形针”，按字符和字体的设计生成图案。

 **平针：**

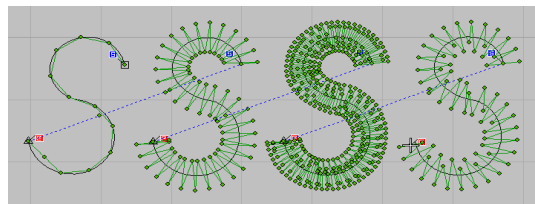
在输入对象前，可先选择针法属性，针法属性包括运行平针 、榻榻米针 、锯齿形针 、平包

针 。默认为运行平针。

① 当选择平针以外针法时，按 enter 键后需要再输入缝纫宽度。如图带箭头线段即为宽度。



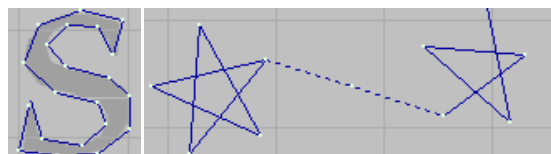
② 分别用四种针法制作的字母 S。后三种针法可以相互转换。



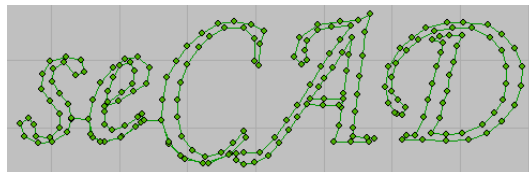
 **手动针迹：**

手工生成的连续单针，没有针法匹配。手动针需用户自己控制针迹长度和方向，以避免过长/过短的针迹。一般手动针需要后续针迹编辑来进一步完善针迹。手动针的约束最少，因此创作空间很大，但生成针迹的效率也最低。

① 手工针通常需要配合参考图描绘。左边为参考图，中间是已描绘针迹点。左键输入为实针点，右键输入为空送点。

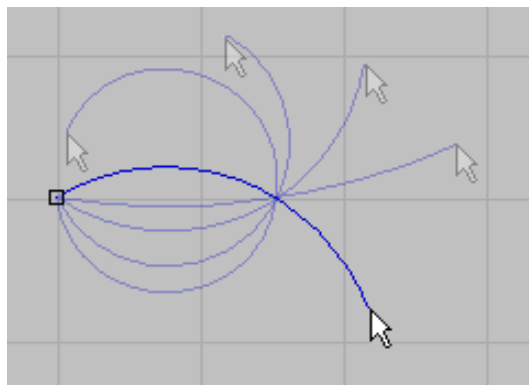


② 手工针迹和针迹编辑功能结合进行图片花样描绘，可以生成比系统自动生成更细腻的线迹。

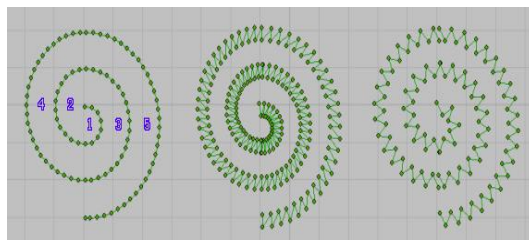


 圆弧

通过输入三点，生成一段过三点的圆弧。除非特殊需要，使用曲线针输入法生成对象的灵活度更高。（输入两点后圆弧段随着鼠标位置而变化）

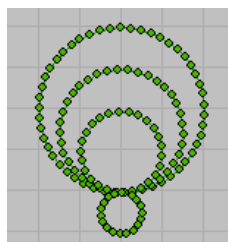


圆弧输入通常配合连续输入 工具，连续输圆弧段来形成整条曲线。用户需要经过一定的练习，使整条曲线的衔接更平顺。（图中针迹应用了连续输入 工具，螺旋线为为 5 段圆弧首尾相连而成。圆弧输入也可以应用曲折缝针法。）



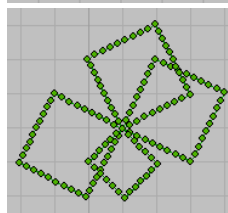
 圆

生成方法与图形对象相同。（图中针迹应用了连续输入工具）



 矩形

生成方法与图形对象相同。（图中针迹应用了连续输入工具）

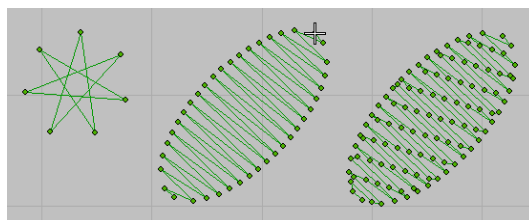


 星形/椭圆

左键输入生成星形，右键输入生成椭圆形对象。区别仅指针迹生成的方法，轮廓线均为椭圆形。

星形针法针迹按对角连线方式生成，椭圆针迹类似于复合填充。

此功能用于小幅面的花样。



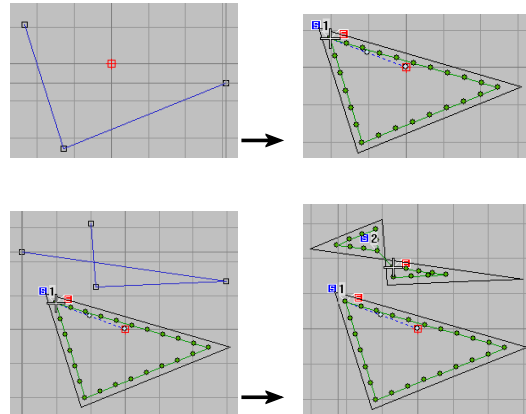
 工艺模版

工艺模版库，包含加固、锁眼、钉扣等特定功能花样模版。操作方法详情请参见[工艺模板工具使用说明](#)



输入轮廓：

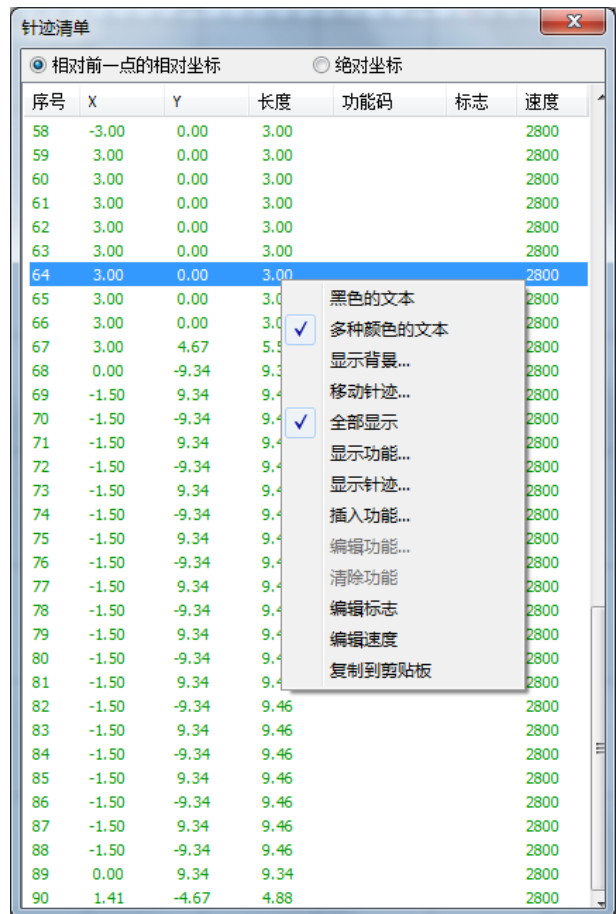
使用鼠标左键单击三个及三个以上点，回车，即可形成闭合轮廓花样。（生成的针迹线段按默认设置进行相应偏移）



3.4.3 针迹清单

使用“针迹清单”进行编辑花样后，特殊情况时需要进行花样数据进行相应的修改。点击图标可进行相应的修改操作。

常用的功能操作为：显示功能、插入功能码、删除功能码、编辑速度、移动针迹



3.4.4 对象清单

使用“对象清单”进行编辑花样后，特殊情况时需要进行个别花样图案数据进行相应的修改。点击图标

进行相应的编辑操作。

常用功能操作为：组合、取消组合、锁定、取消锁定、显示、隐藏、全部解锁、全部显示。



3.5 复杂工具操作方法

3.5.1 文字缝图案编辑

将这种输入法命名为文字缝而不是字母缝，是由于文字缝除了拉丁字母以外，支持所有系统支持的字体文件，因此对于汉字或其他多语言文字符号均实现了支持。这是非常便利的输入方法。

T 文字缝工具

在界面上选择好输入位置点击左键，会弹出文字缝属性窗口并在编辑区域输入所需要的字母或文字。

字母： 字体选择，字体名前带@表示竖排字体。

高度： 表示文字设置高度，根据字体不同实际文字高度会有差异。

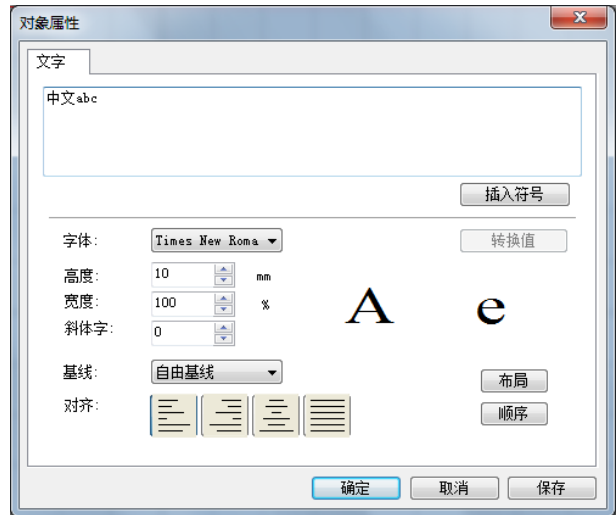
宽度： 相对于标准宽度的比例设置。

斜体字： 文字倾斜角度。

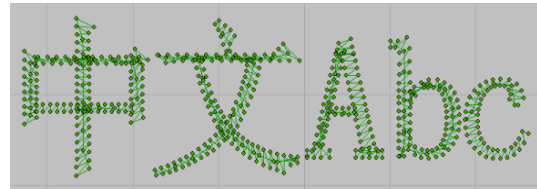
基线： 文字排列的方式。默认为水平基线，可选为垂直、圆弧或用户输入。

对齐： 文字相对于基线的对齐方式。

插入符号、布局 and 顺序： 此功能仍在开发中，等待功能完善后可在大豪网上进行系统更新实现上述功能

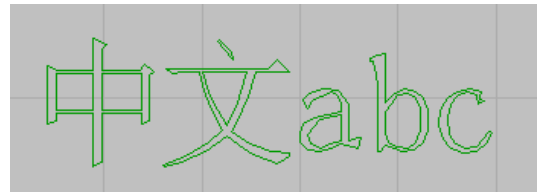


文字缝的轮廓与字体轮廓相吻合，可支持包括英文在内的各种语言字体。

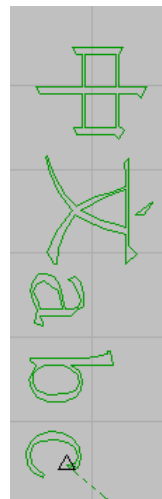


基线： 通过进行基线功能进行设置，能够形成不同形状的字母绣花样。（例如下图）

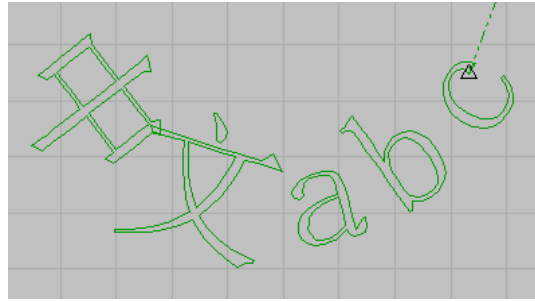
① 字体选择宋体，其他采用默认参数的针迹。此时基线为水平自由基线。



② 基线为垂直自由基线。



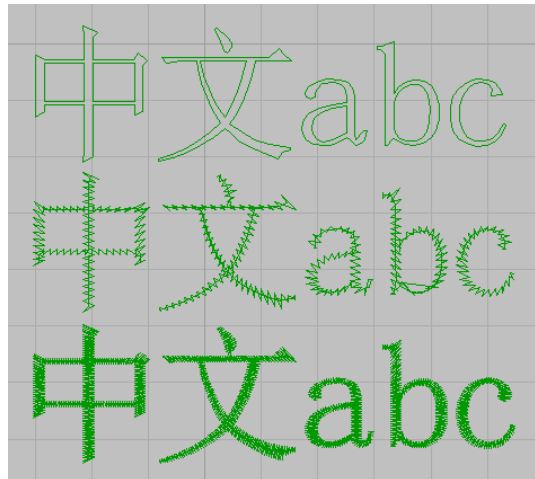
③ 基线为逆时针圆弧。



文字缝输入可以与针法参数配合使用，从而生成相同文字轮廓下的不同针法对象。

最上面为运行平针针法，中间为锯齿形针，下面为榻榻米针。

注意除了针法差异外，三个对象的字体、基线和布局参数均相同。



3.5.2 文字缝的整形

文字缝整形与普通针迹图案整形操作方法有明显的区别。

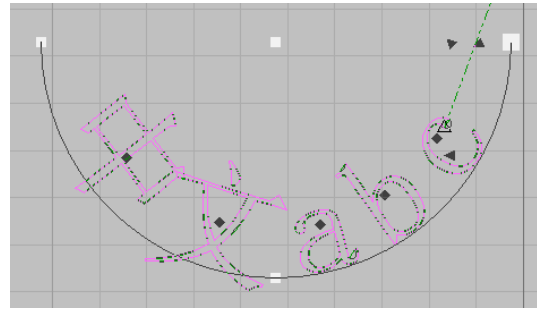
① 水平基线对象的整形。图中文字下面的直线为基线，通过基线两端的矩形图标可以拉伸或收缩基线长度，文字周围的三个三角形图标实现整体缩放功能，分别为仅垂直方向、仅水平方向和垂直水平同步缩放图标。每个字符中心均有一个菱形图标，此图标是字符独立修改的开关，单击此图标将进入单个字符修改模式。按住此图标拖动，能实现单个字符按照基线的走向的移动。



② 选中一个菱形图标后，进入单个字符整形状态。此时会增加 5 个图标，三个实心矩形实现缩放变换功能，空心菱形实现剪切功能，空心矩形实现旋转功能。



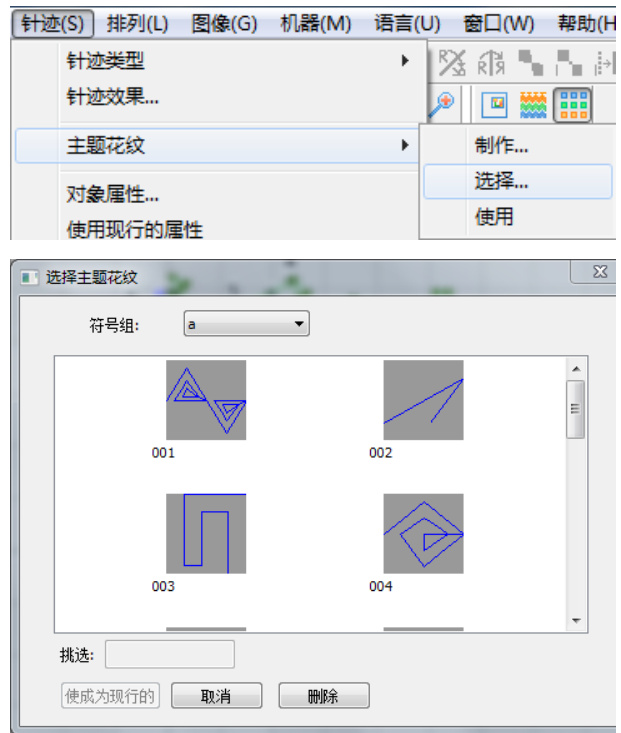
- ③ 对于其他基线的文字缝对象，基线的整形调整将会不同。（图中为逆时针圆弧基线的文字缝对象。此时圆弧两端的矩形用来调整圆弧长度，圆心上的矩形用来调整圆弧半径，圆弧顶点处的矩形用于调整圆弧位置）



3.5.3 主题花纹使用/编辑

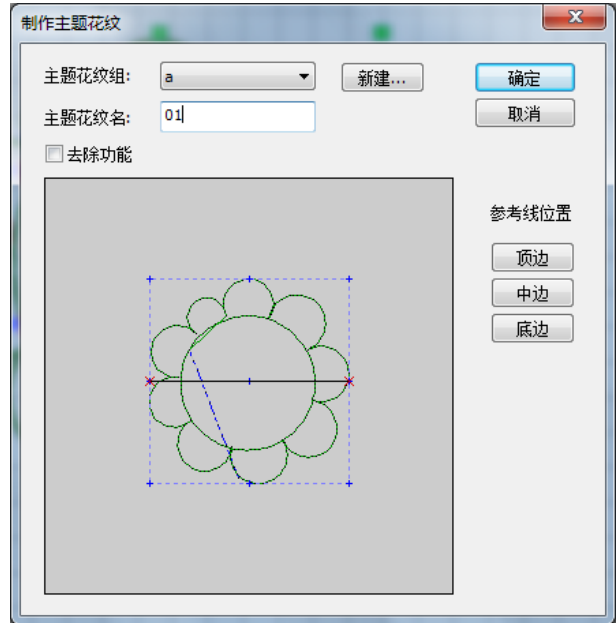
主题花纹提供一种自动重复某一对象单元的方法。能够减少用户在重复单元生成时的工作量，比如花边的制作中。

- ① 主题花样功能主要有两个方面组成。一种是引用 PDS 制版系统中存在的花纹进行编辑花样；这样的操作方式能够方便操作人员进行快捷的进行图案的选项和编辑。



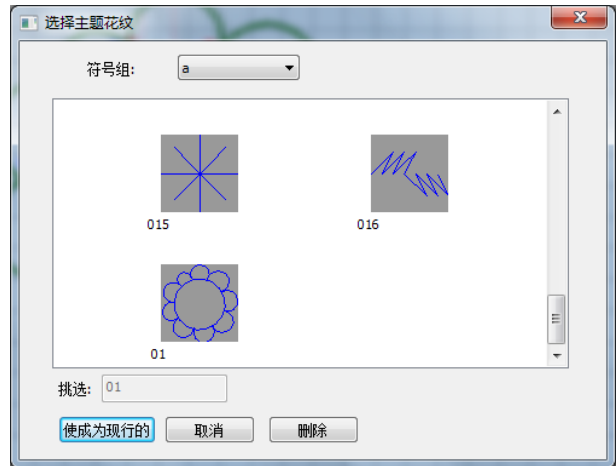
- ② 进行主题花纹制作分两个步骤，首先需要制作花纹到花纹库，然后从库中选择花纹生成对象。花纹可采用任意输入法制作，制作完成后将对象选中，然后选择主菜单-->其他-->主题花纹-->制作，进入创建窗口。

中间缩略图为选中的对象，蓝色虚线示意对象的外围框，黑色线段表示花纹的基准线。基准线的概念很重要，它是主题花纹重复过程中，花纹在轮廓线上所处位置的参考。默认的基准线为花样的中间水平线，可通过右侧顶边、中边、底边按钮调整为底边或顶边水平线。另外也可以通过点击缩略图中基准线的两端进行端点拖动。确定基准线后，选择主题花纹组，输入主题花纹名称就可以新建花纹了。去除功能点选后，花纹在存储时将自动去除对象的功能码。



- ③ 通过主菜单-->其他-->主题花纹-->选择，可以打开主题花纹选择窗口。通过符号组可以选择花纹库，花纹库中的花纹将以缩略图列表的方式显示出来。选中所需花纹点击使成为现行的按钮，则该花纹就成为当前设计花纹。

当主题花纹选的后，在“针迹对象输入工具”选择主题花纹工具进行编辑；其编辑花样方法与普通的花样编辑操作没有明显的区别。

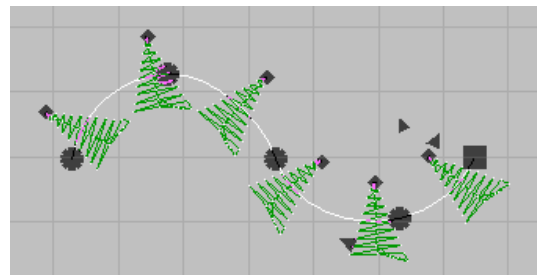


3.5.4 主题花纹整形

选中主题花纹对象后进入整形状态。主题花纹对象的整形，除了轮廓线的整形功能外还支持每个花纹的独立整形功能。

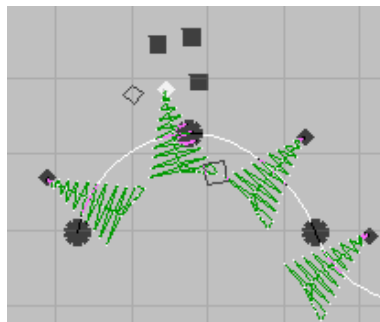
- ① 轮廓线上的点，圆形为曲线点，矩形为直线点。选中轮廓点后按 Del 删除轮廓线点，在轮廓线上按左/右键分别添加轮廓线的直线/曲线点，这与普通对象的整形操作相同。

轮廓线末尾的两个的三角形图标，分别用来进行花纹大小整体缩放和花纹间距整体增减的。



- ② 每个花纹的上方有一个菱形图标，此图标是花纹独立修改的开关，单击此图标将进入单个花纹修改模式。按住此图标拖动，能实现单个花纹按照轮廓线的走向的移动。

单个花纹修改模式增加了 5 个图标显示，三个实心矩形实现缩放变换功能，空心矩形实现选装功能，空心菱形实现剪切功能。



4 功能组合操作编辑花样-套结钉扣机



涉及到的功能： 对齐网格功能、 针迹类型、 网格间距功能


网格间距: 5 毫米

针迹类型: 平针 平针长度: 0.5 mm 栏宽: 3.00 mm

宽度: 7.49 mm 100 % 高度: 13.06 mm 100 % 针迹属性等。

4.1 使用平针编辑花样


在“针迹类型”中选择  运行平针，左侧工具栏中选择  平针，开始编辑。

注：使用网格间距功能调整网格大小，选择  对齐网格线功能，有助于编辑和拖动鼠标拉线时线迹平直。

在“针迹属性功能”进行设置“平针长度”。即：设置两个针点间的距离；同时在上面的解释中，使用鼠标左键和右键生成直线和曲线。




注：在区域中输入数值后按回车键确定

使用鼠标左键可连续进行编辑直线线迹：开始编辑花样，拖动光标按照需要编辑图案的轨迹进行移动；每移动到一个位置后，需点击左键一次，图案编辑完成后按

回车键生产花样；点击  选择对象或按键盘上的“Esc”键退出直线编辑状态，如图 A

使用鼠标右键可连续进行编辑曲线线迹，使用方法同直线线迹，如图 B。

也可左右键配合使用，编辑出需要的花样，如图 C，红色圆圈标记点为左键，其余点为右键。

点击  运行花样和  以 10 针为单位运行或  以 1 针为单位运行，按鼠标右键以特定针数运行花样，检查花样缝制方向和顺序。

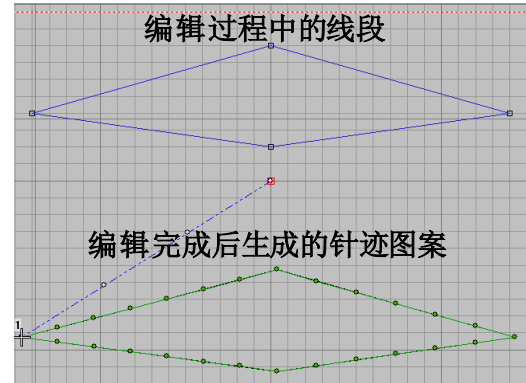


图 A

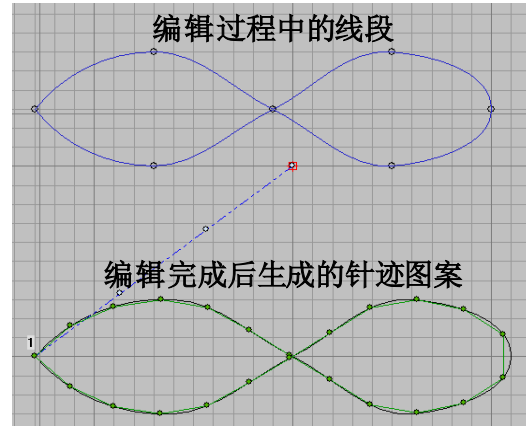


图 B

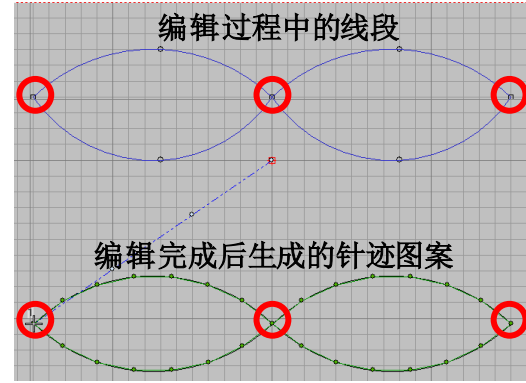



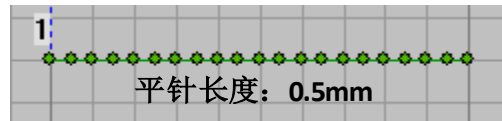
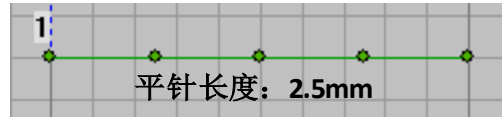
图 C

4.2 平针针距修改和添加倒针

平针针距修改:

选择平针工具后，在编辑区域下方会显示当前针迹类型和生成花样后两针间的针点距离；在“平针长度”中输入相应的针点距离数值后，按回车键确定，花样编辑完成后会按照设定的距离生成针距点。


在运行花样时，在编辑区域下方状态栏位置会根据十字光标位置，显示XY坐标位置和针距大小。



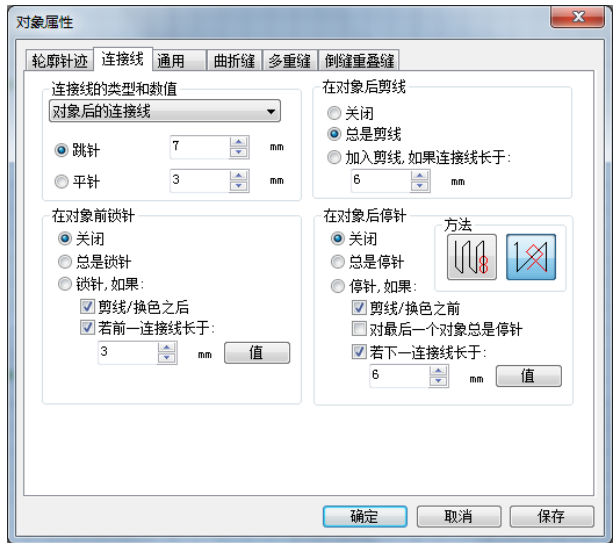
坐标: X=5.00(5.00) Y=45.00(35.00) L=45.28 针迹位置: 23

添加倒针:


在实际花样缝制过程中，为避免开始缝制和结束缝制脱线的问题出现，会在花样中添加“倒针针迹”。

选中花样后，在主工具栏区域单击属性，进入对象属性设置界面，选择“连接线”界面，可设置连接线的类型和数值、在对象后剪线、在对象前锁针、在对象后停针。

将“在对象前锁针”设置为“总是锁针”，将“在对象后停针”设置为“总是停针”，系统会在花样开始和结束时自动添加“倒针”针迹。

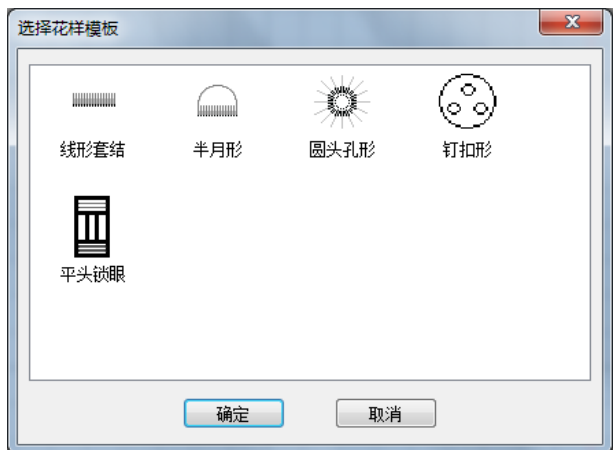


4.3 特殊花样操作

在左侧针迹对象输入工具栏中选择工艺模版，

在模板中选择“圆头孔形”，单击确认键，进入功能开始编辑。

注：线形套结和半月形模板，主要用于裤兜、裤祥和书包带加固使用；圆头孔形模板主要用于帽子上；钉扣形模板，在需要缝纫纽扣的衣服上均会使用。



进入模板后，移动光标，确定花样原点位置，点击鼠标左键确定其位置。

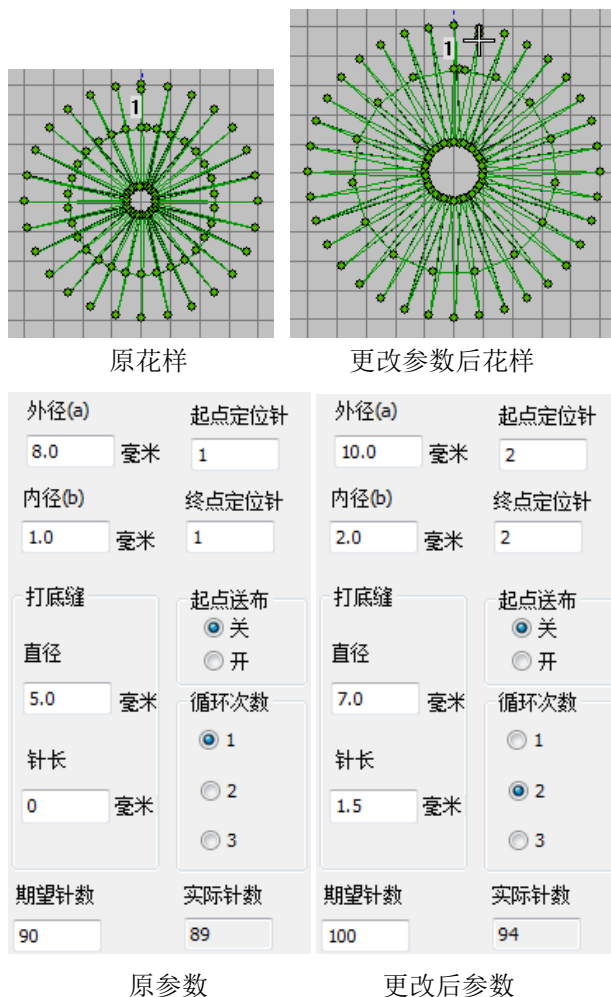
在右侧模板参数设置界面进行设置，系统会实时显示修改参数后的花样效果。

花样生成后需进行“运行花样”操作，检查其花样缝纫顺序和大小是否符合要求。

具体参数参考 [3.3.3 圆头孔形模板（帽眼）](#)。

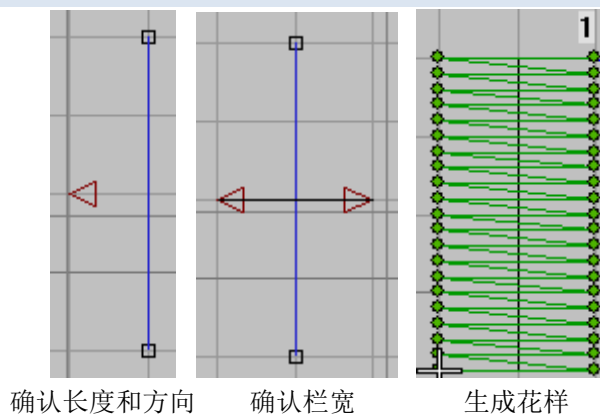
注：参数主要修改项：外径、内径、打底缝；


参数次要修改项：缝制针数、起针、结束定位针。



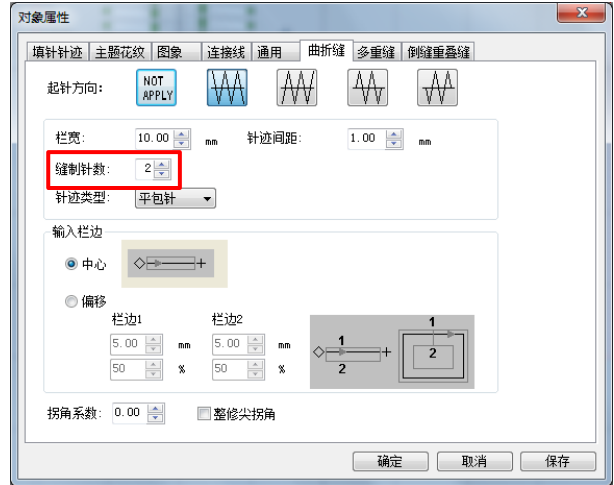
4.4 松紧带花样编辑操作

在“针迹类型”中选择 平包针，针迹对象输入工具中选择 平针工具进行编辑；首先借助网格来确定曲折缝花样缝制长度和方向，回车确认；其次借助网格确定曲折缝宽度（即栏宽），回车确认。



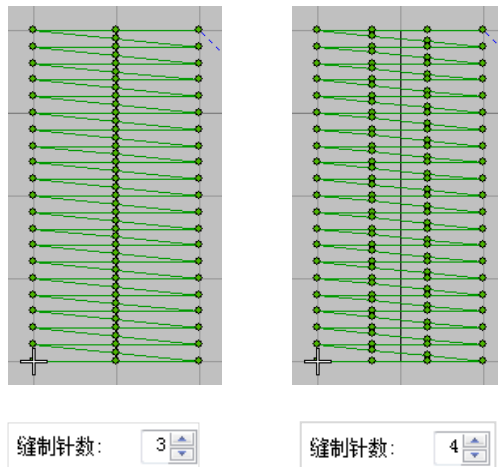
选中花样，单击  属性工具，或右键单击花样，选择属性，通过修改曲折缝设置界面的缝制针数，来实现“三点至九点曲折”。

注：根据曲折缝栏宽大小，系统自动指定可调范围。



如右图，为“三点曲折”和“四点曲折”。

注：如有曲折缝“间距和栏宽修改”需要，可在编辑完成曲折缝花样后，选择“针迹间距”或“栏宽”进行设置即可。



4.5 钉扣花样编辑操作

在左侧针迹对象输入工具栏中选择  工艺模版，

在模板中选择“钉扣形”，单击确认键，进入功能开始编辑。

钉扣形模板中，能进行“两孔、三孔、四孔和五孔”花样编辑。

两孔和三孔花样能够进行“孔间距、孔间线数、起缝/结束锁针长度和旋转角度”的设置；

五孔花样，除了能进行两孔和三孔花样的设置外，还能进行“连接方式”的功能设置；

四孔花样，除了能进行两孔、三孔和五孔花样的设置外，还能进行“独立线迹、起缝位置”的功能设置。



独立线迹功能：可设置在花样缝制过程中是否剪线，当设置为“否”后，花样在开始到缝制结束前都不会剪线，可以避免剪线后再次缝制时出现脱线的问题。

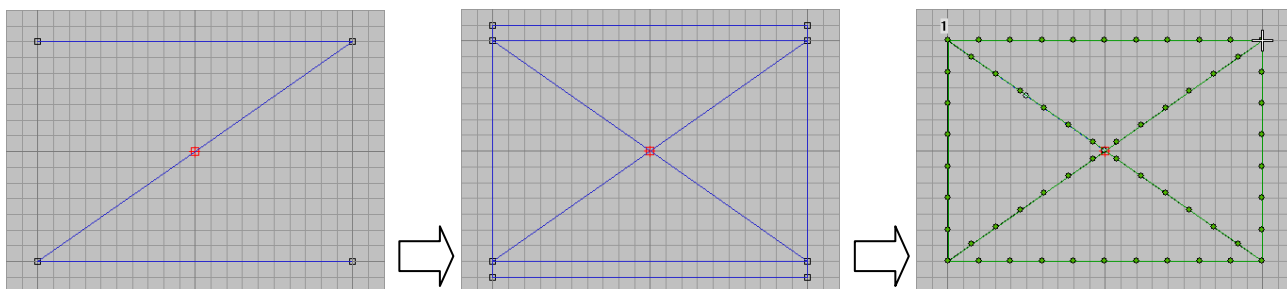


4.6 方框打叉花样三种编辑方式的操作

方框打叉花样三种编辑方式：

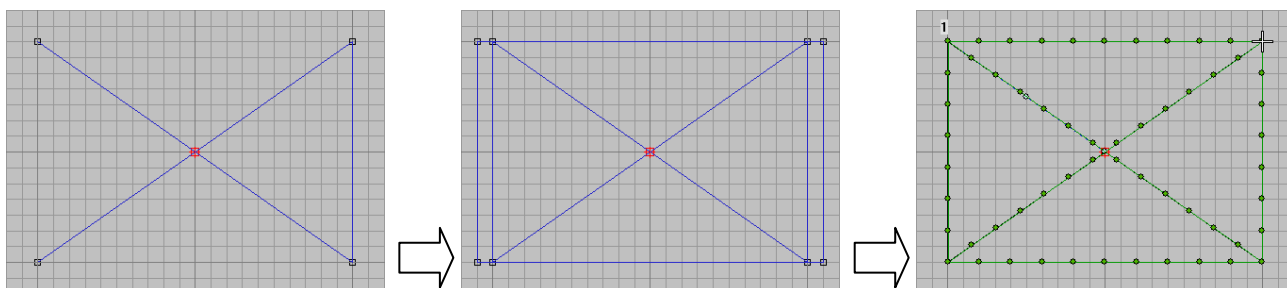
(1) 上下线段重复缝制

上下缝制两遍的方框打叉花样编辑方法



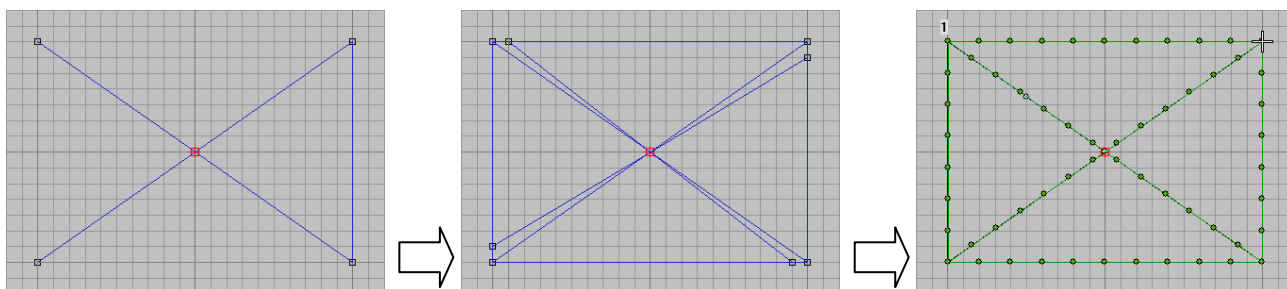
(2) 左右线段重复缝制

左右缝制两遍的方框打叉花样编辑方法



(3) 打叉线段重复缝制。

交叉缝制两遍的方框打叉花样编辑方法



5 功能组合操作编辑花样-模板机

由于系统已经投放市场供给客户使用，并根据客户的要求增加了相应的功能；为方便大家更好了解其功能特此将在下面进行相应的功能介绍。

5.1 矢量图模板花样位置设置操作



单击“编辑”，选择矢量图形操作，有“模板基准”和“居中模板”可选择。

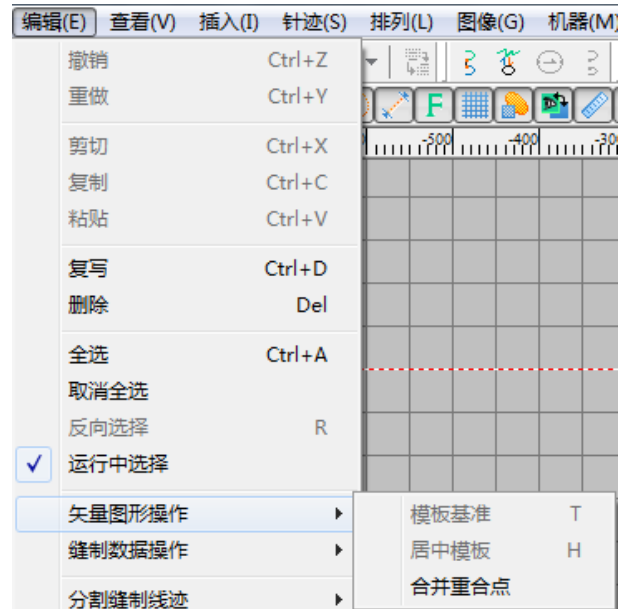
首先，将文件中矢量图花样导入到编辑区域中；

然后，全选花样，全选花样有 3 种方法：

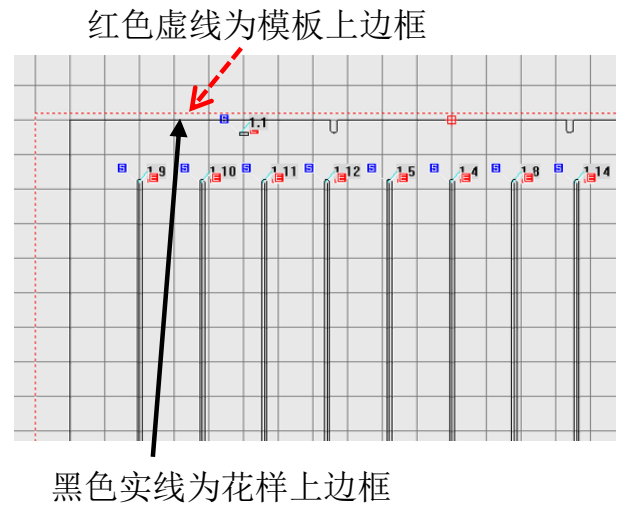
- (1) 使用快捷键 **Ctrl+A** 全选花样；

- (2) 使用  选择工具全选；

- (3) 点击  对象清单，选择对象优化页面，单击  全选花样。



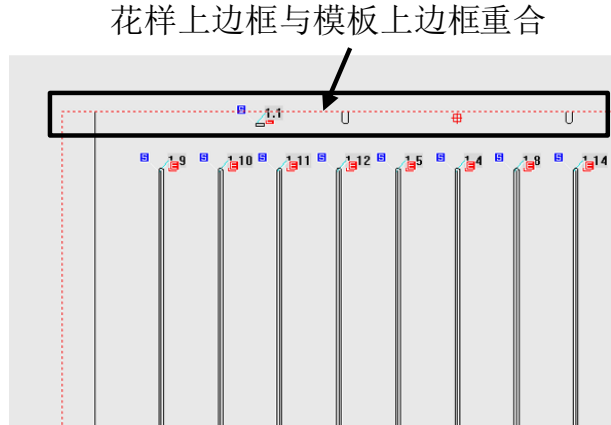
将文件中矢量图花样导入编辑区域中后，默认为以模板为基准的居中模式，如右图，黑色实线为花样上边框，红色虚线为模版机型允许的缝制范围（或编辑范围）。



(1) 模板基准:

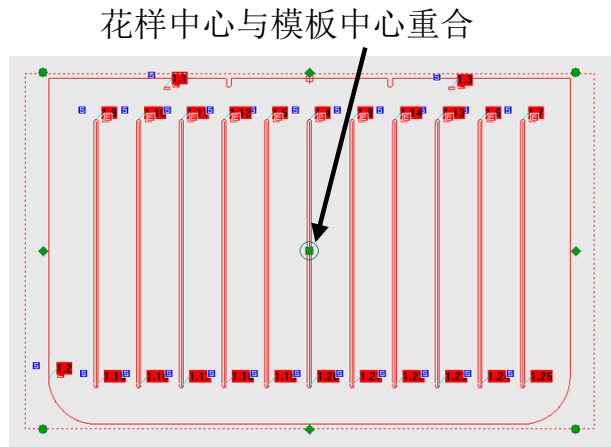
选中花样后, 单击“模板基准”, 以模版上边缘为基准对齐, 花样边框 (X 正方向限定编辑范围区) 将与模板框上边缘重合对齐, 如右图。

注: 花样上边框中心点


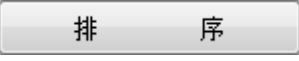


(2) 居中模板:

选中花样后, 单击“居中模板”, 模板花样的原点与机型中心点重合, 如右图。

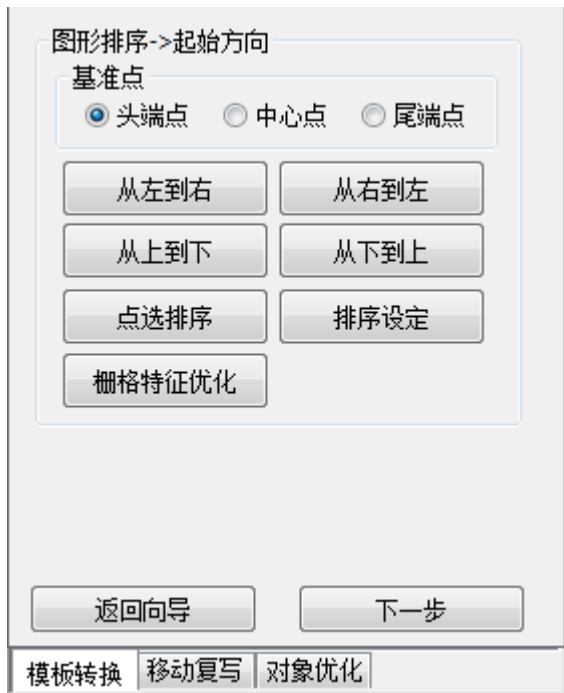


5.2 模版机花样编辑中排序功能操作

在主界面中单击  对象清单, 单击“模板转换”栏, 单击  , 进入排序功能。

排序方式分为:

从左到右	从右到左
从上到下	从下到上
点选排序	排序设定
栅格特征优化	



1, 从左到右和从右到左, 均为横向排序, 更适用于横向排列的花样;

举例, 编制几个横向花样如图 A,

单击 **从左到右**, 花样则按照从左到右的顺序排列, 如图 B,

单击 **从右到左**, 花样则按照从右到左的顺序排列, 如图 C。

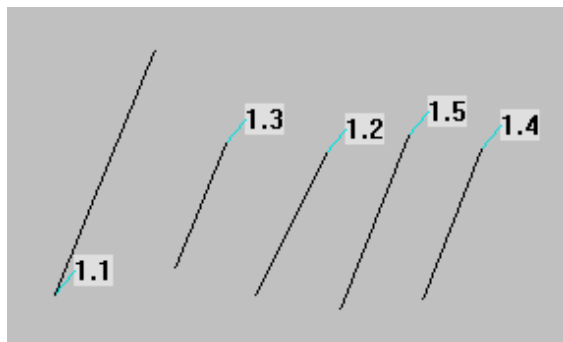


图 A

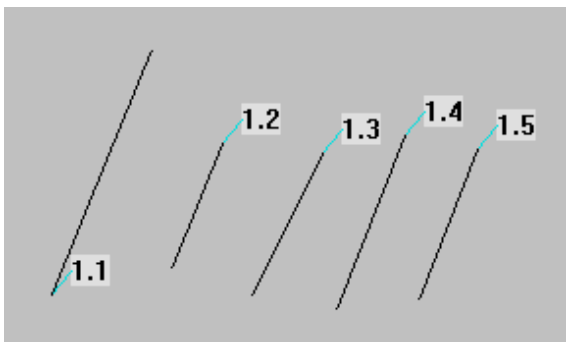


图 B

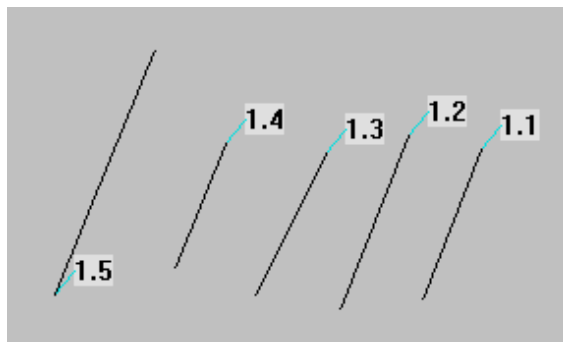


图 C

2, 从上到下和从下到上, 均为纵向排序, 更适用于纵向排列的花样;

举例, 编制几个纵向花样如图 D,

单击 **从上到下**, 花样则按照从上到下的顺序排列, 如图 E,

单击 **从下到上**, 花样则按照从下到上的顺序排列, 如图 F。

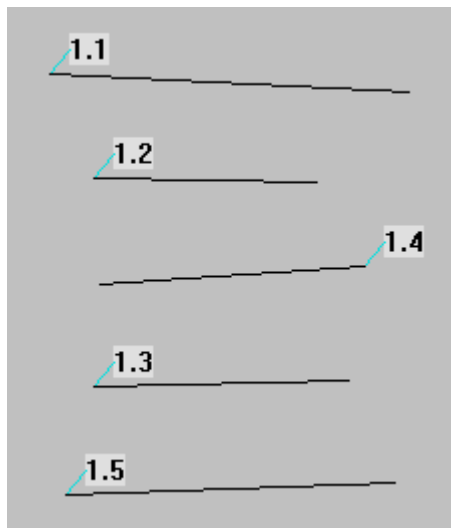


图 D

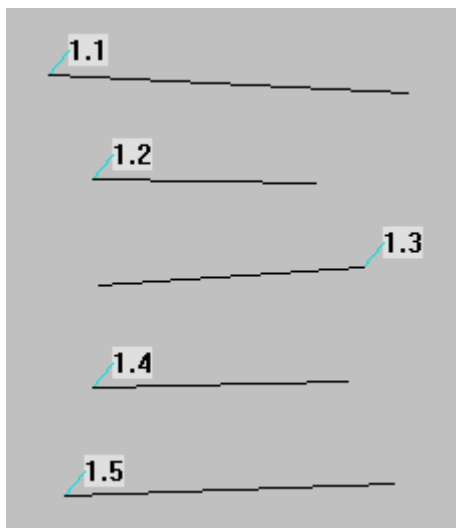


图 E

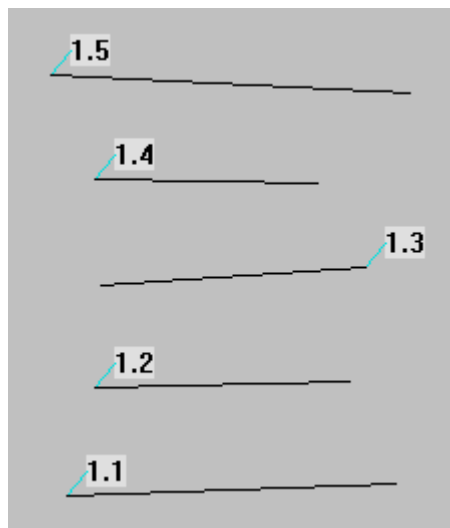


图 F

3, 点选排序, 可以根据用户手动点击花样的先后顺序, 对花样进行自由排序。

举例, 编辑几个无规则花样如图 G。

单击 , 花样可按照鼠标单击花样的顺序排序, 如图 H-1 和 H-2。

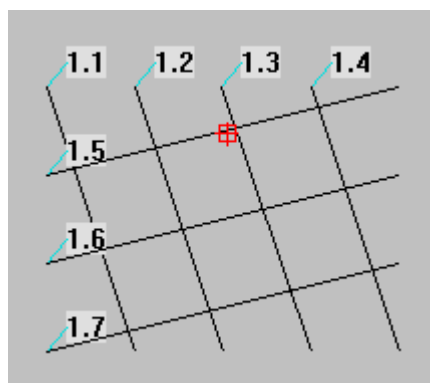


图 G

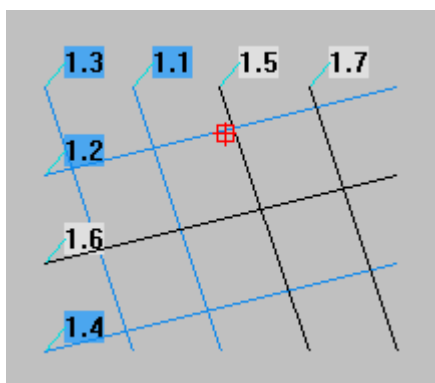


图 H-1

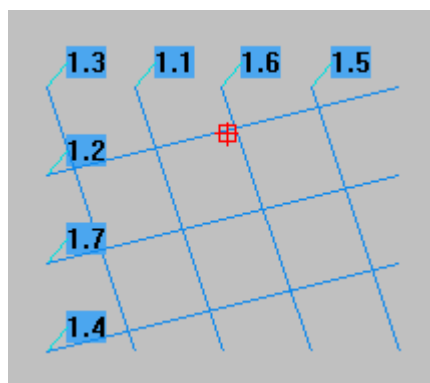
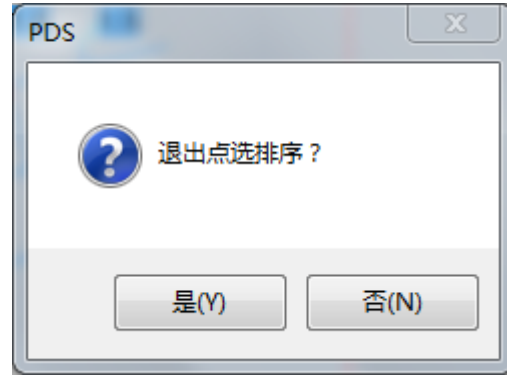


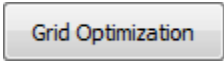
图 H-2

点选排序完成后，可单击空白处，提示退出点选排序？选择是，即可完成点选排序。



4, 栅格特征优化, 此排序方式适用于右图栅格方式排列的乱序花样, 单击后以减少空送间距为目标进行排序。

举例, 编辑几个无规则花样如图 G。

单击  , 花样即可完成自动排序, 如图 J。

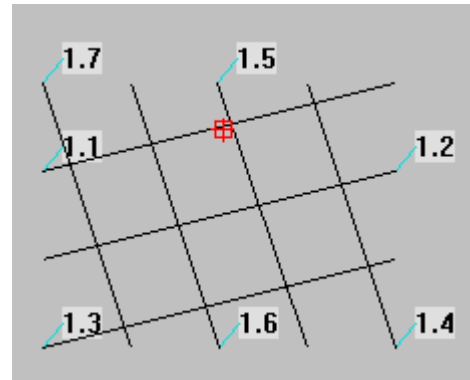
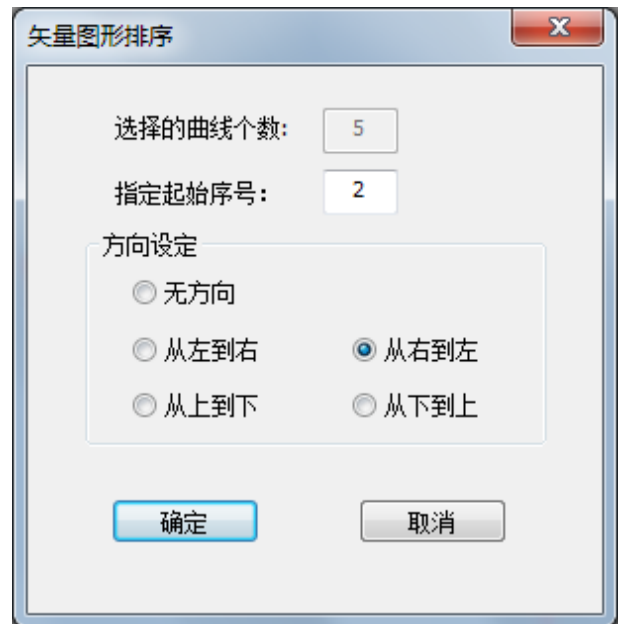


图 J

5, 排序设定, 此排序可对选中的部分花样进行指定方向设定排序, 可设定方向为:

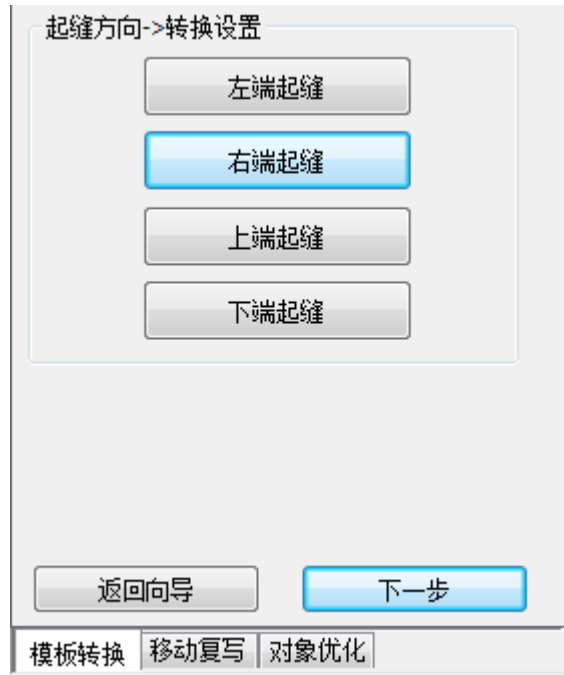
- (1) 无方向, 此排序方式为系统默认优化排序方式, 单击后即可对花样自动排序;
- (2) 从左到右和从右到左, 均为横向排序, 更适用于横向排列花样;
- (3) 从上到下和从下到上, 均为纵向排序, 更适用于纵向排列花样。



5.3 模版机花样转换基础操作步骤

选择需转换花样，根据 3.7.1 章节进行排序后，可单击下一步，进行转换设置，此步可设置起缝方向：

左端起缝，右端起缝，上端起缝，下端起缝；确认后单击下一步，进入预览针迹。



预览针迹项，可设置花样针距和缝制速度、倒缝设置、设置起缝点、缩缝设置、层间插入暂停码、默认值；

举例设置倒缝设置，如图 A：

选择首尾倒缝，开始：倒缝 2 针，结束：倒缝 2 针；

单击确定键，花样转换成功，如图 B。

花样转换成功后，可对缝制速度进行设置和试缝，确认后，可单击保存花样将花样保存到本地。



图 A

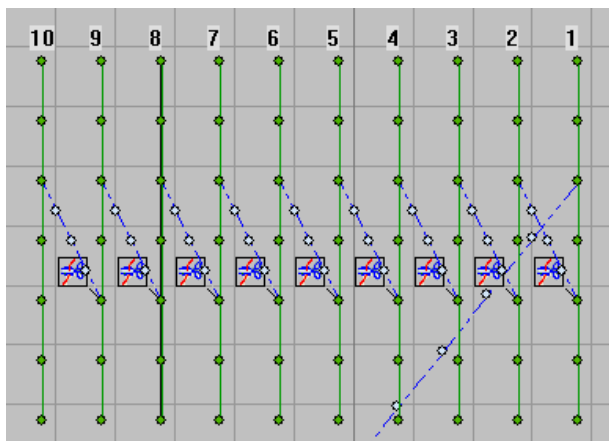


图 B



5.4 模版花样创建图层和添加中途停止码视频

5.4.1 创建图层

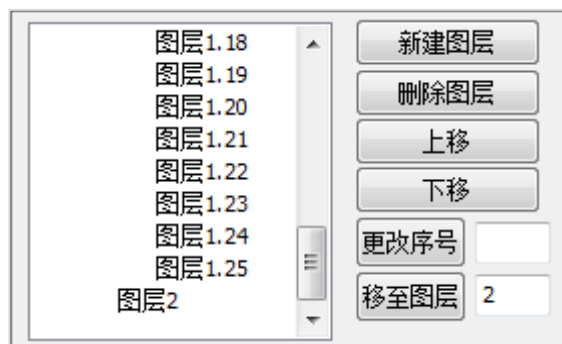
新建图层:

在对象清单→模板转换项，单击新建图层，则新增

图层 2；

移动图层:

选中要移动图层的花样，在“移至图层”处填写想要移至的图层号，则完成花样移动图层。



图层显示设置:

右击要设置的图层，单击菜单中的属性，可以设置图层的尺寸、位置、变换、线条等，如图 A。

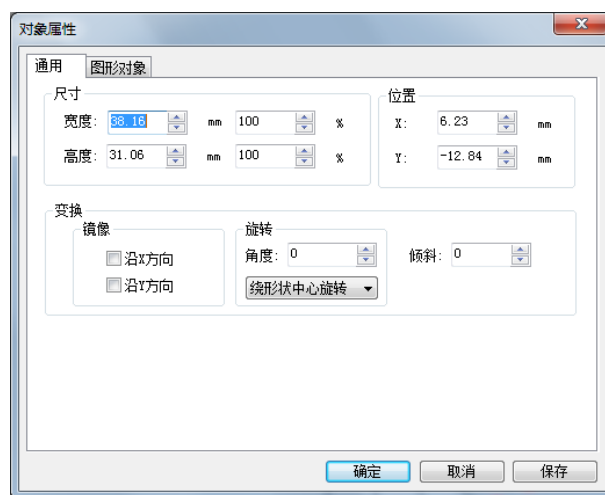
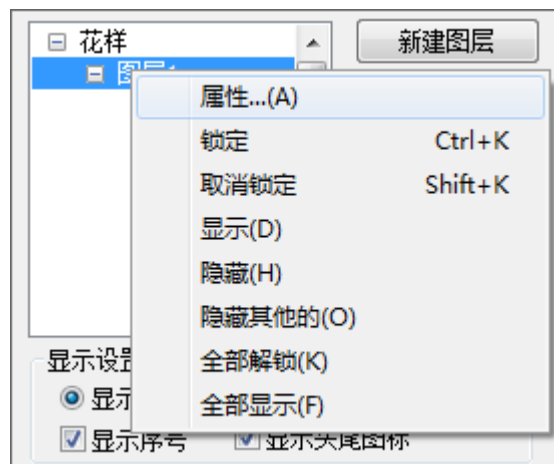


图 A


仅对单一图层设置时，建议将剩余图层属性设置为“锁定”、“隐藏”，以便于对图层的设置；

右击要设置的图层，单击菜单中的属性，即可设置“锁定”、“隐藏”。

5.4.2 添加中途停止码

以右图举例，在 origin 处增加中途停止码：

1、根据 [5.3 模版机花样转换基础操作步骤](#) 完成花样转换；

2、单击  将十字光标自动移动到 origin 位置，然后根据 [3.1.8 针迹巡航工具](#)（左键点击当前针向前移动，右键向后）将十字光标运行到第 1 图层最后一针位置，如图 B；

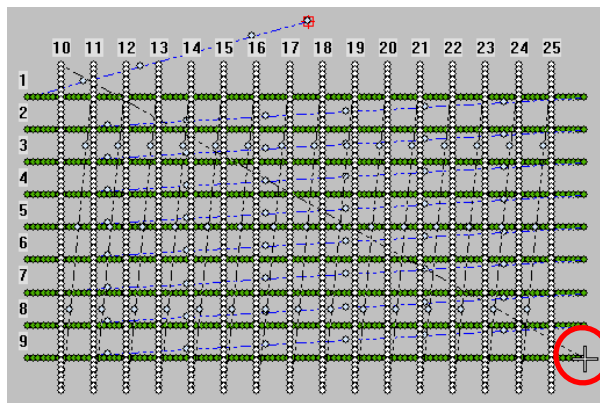



图 B

3、根据 [3.4.2 针迹对象输入](#)，使用  手动增加空送针迹，使图层 1 花样缝制完成后，自动回到 origin 位置，如图 C；

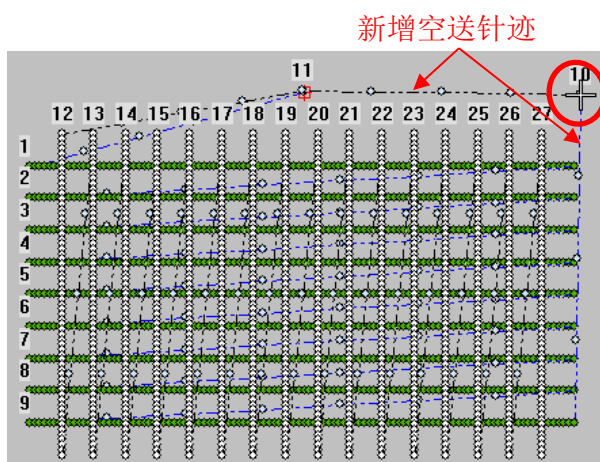



图 C

4、将光标运行至 origin 位置后，单击上暂停键 ，中途停止码添加成功，如图 D。

注：功能码添加位置由用户需求进行自定。

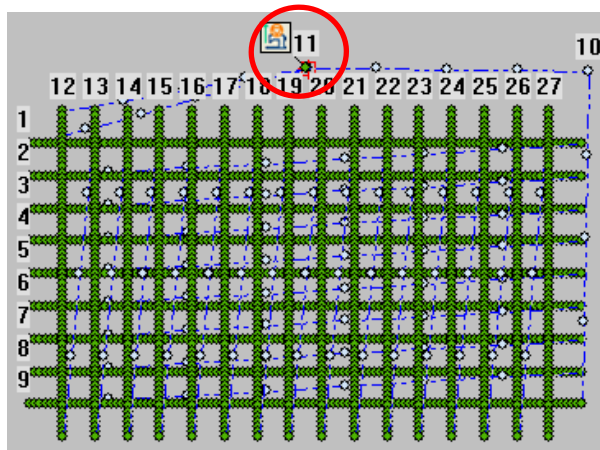




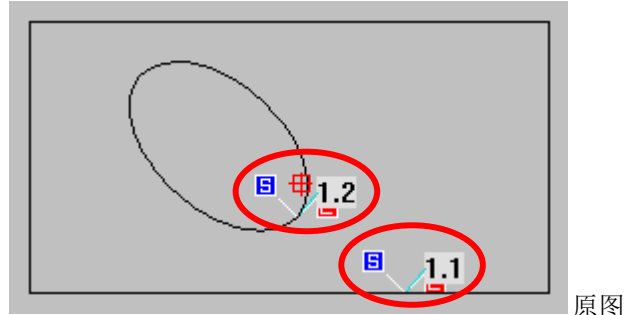
图 D

5.5 矢量图闭合图形修改起缝点操作

以右侧矩形和椭圆形花样为例，修改起缝点：

1、矩形为例：根据 [3.1.4 对象选择编辑工具](#) 使用  针迹编辑工具，在想要的起缝点处增加针迹点，在针迹点处单击  闭合曲线设置起缝点键，则起缝点修改成功，如图 A。

2、椭圆形为例：与矩形设置方法相同（注意：椭圆形增加针迹点方式有右键单击），如图 B



原图

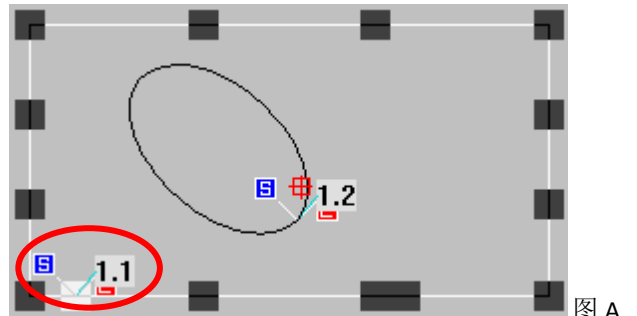


图 A

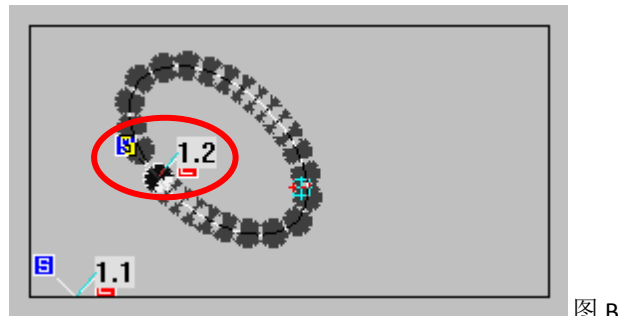
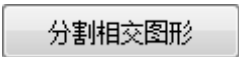
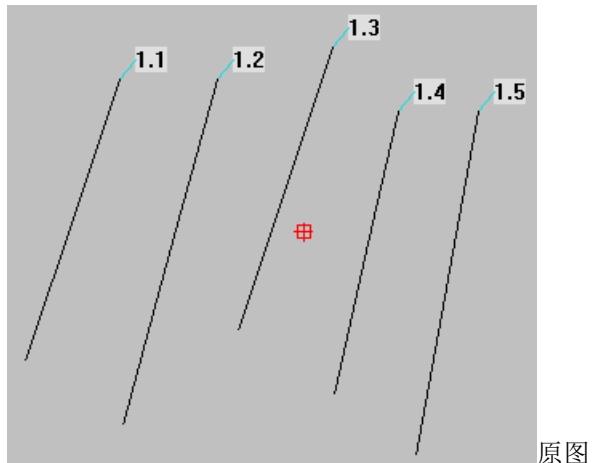


图 B

5.6 矢量图线段分割功能操作

1、直线线段分割

以右图 5 根直线为例，进行分割；在想要分割的长度处画一条直线，单击 ，完成分割，如图 A。



原图

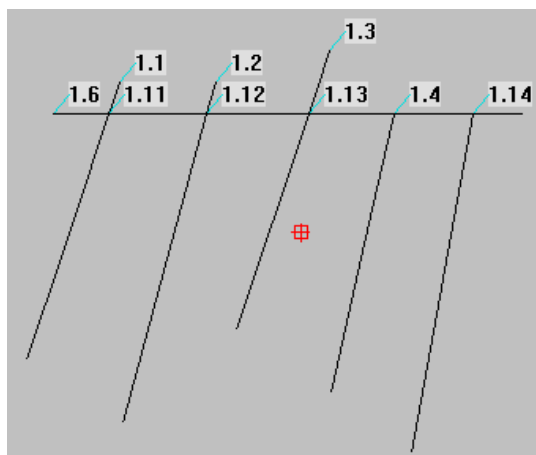
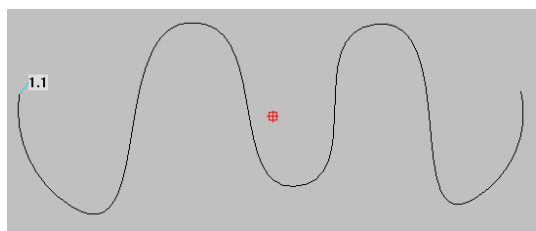


图 A

2、曲线分割

以右图曲线为例，进行分割；

在编辑→分割图形曲线中，可选择分割方式，如图 A：



原图

- (1) 当前形状点分割，
- (2) 选择角点分割，
- (3) 分割所有角点

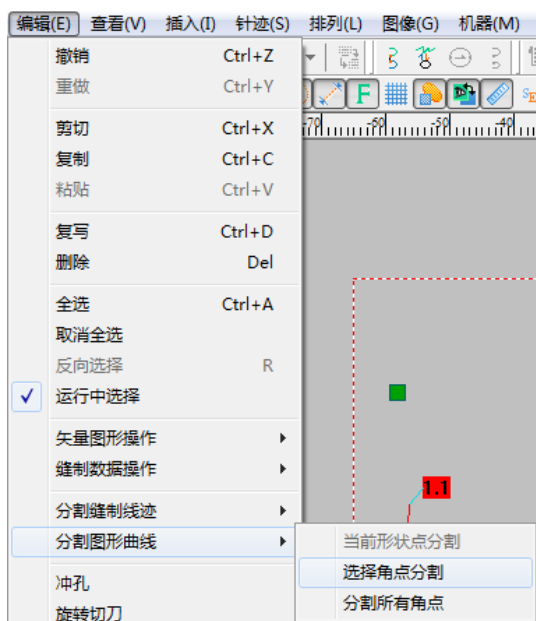
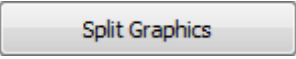


图 A

选择角点分割：选择想要分割的点，如图 B；

确认后单击 ，完成分割，如图 C。

直线曲线和自由曲线切割方式相同。

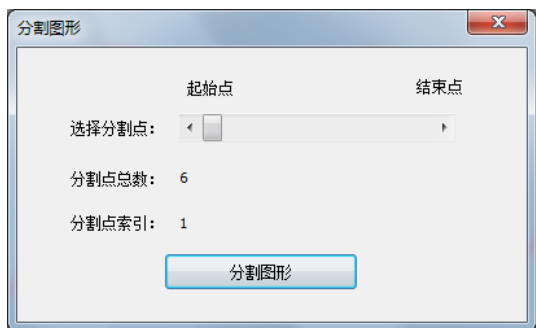


图 B

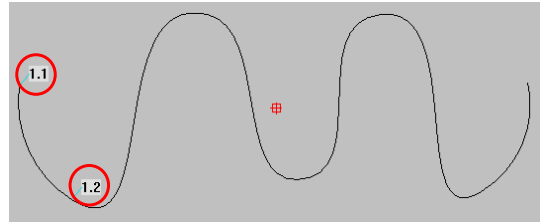


图 C

分割所有角点：选中直线曲线，如图 D，选择“分割所有角点”，完成分割，如图 E。

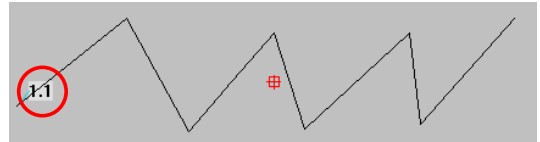


图 D

注：分割所有角点方式仅对直线曲线有效。

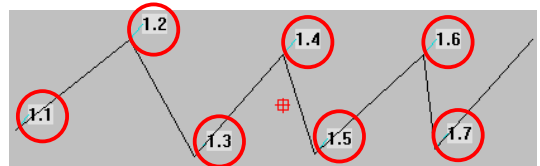


图 E

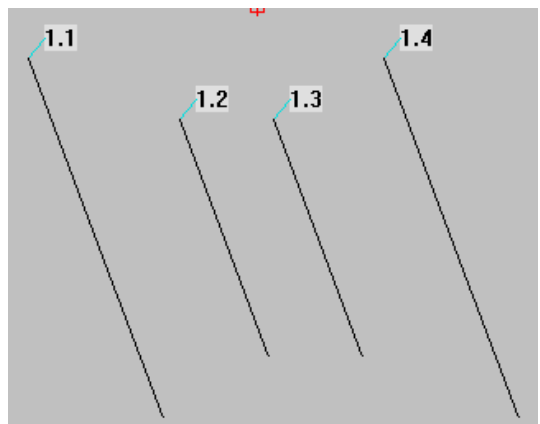
5.7 模版机输出设置功能操作

以添加首尾画笔举例操作，铣刀和激光切割设置方法相同：

方法一、

将直线 1.2 和 1.3 设置为画笔，选中两条直线，在“对象清单”→“模板转换”→“输出设置”项，选择首尾画笔，如图 A；

可单击 **Param** 继续设置两条直线参数，如图 B。



原图

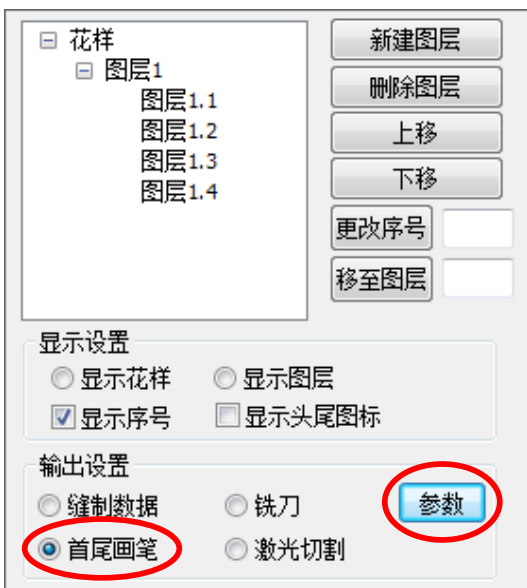


图 A

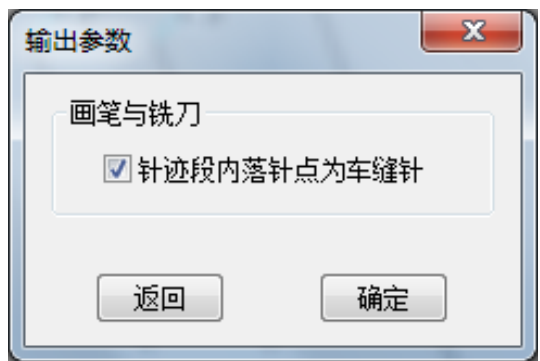



图 B

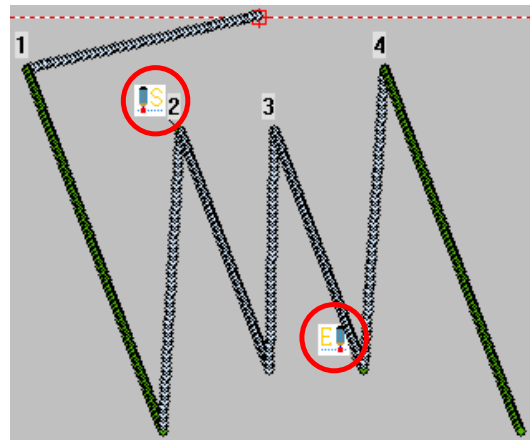
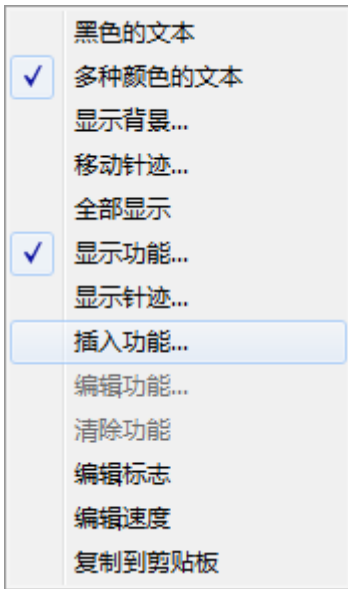
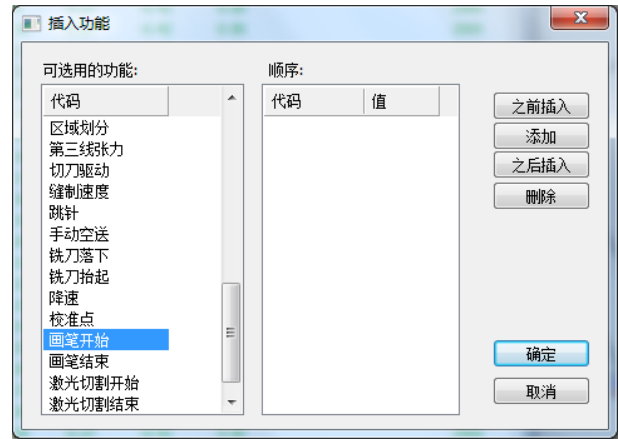
方法 2、

根据 5.3 模版机花样转换基础操作步骤将直线转换为花样。


将图形转换后，单击  针迹清单：察看针迹详细信息，并进行针迹编辑，右键单击要插入画笔功能的针迹，单击“插入功能”，将画笔功能添加；

注意：完整的画笔、铣刀、激光切割功能必须有开始和结束两个功能。

注意：同一线迹下，只能设置画笔、铣刀、激光切割中一项功能。



5.8 模版机花样倒缝设置操作

在  对象清单→模板转换→转换设置中，可进行花样倒缝设置。

单击 ，5 种倒缝方式可选择：


- 0、关闭倒缝：倒缝功能关闭；
- 1、首倒缝：仅可设置花样开始位置倒缝模式和针数；
- 2、尾倒缝：仅可设置花样结束位置倒缝模式和针数；
- 3、闭合倒缝：可设置闭合图形倒缝模式和针数（仅可设置结束模式和针数）；
- 4、首尾倒缝：可设置花样开始和结束位置倒缝模式和



针数。

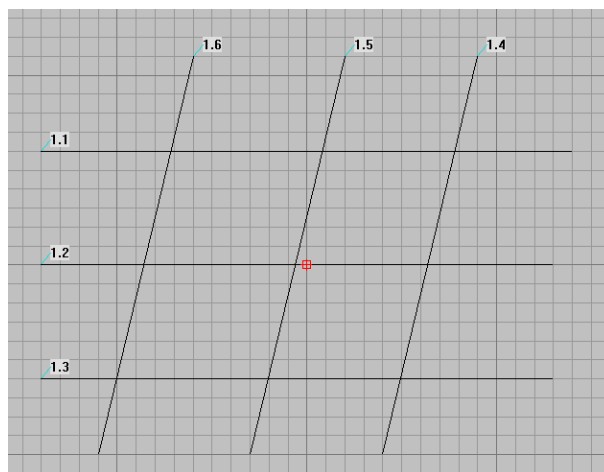
注：该倒缝功能只能在**矢量图**状态下使用。

5.9 模版机花样缩缝设置操作

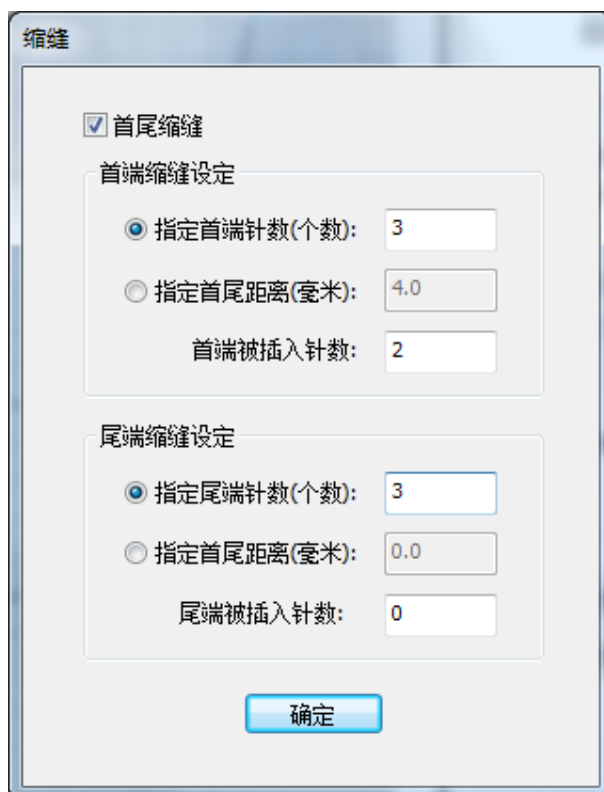
在  对象清单→模板转换→转换设置中，可进行花样缩缝设置。

单击 ，进入缩缝设置。

将文件中的矢量图花样导入到系统编辑区域中，或在编辑区域中编辑矢量花样。

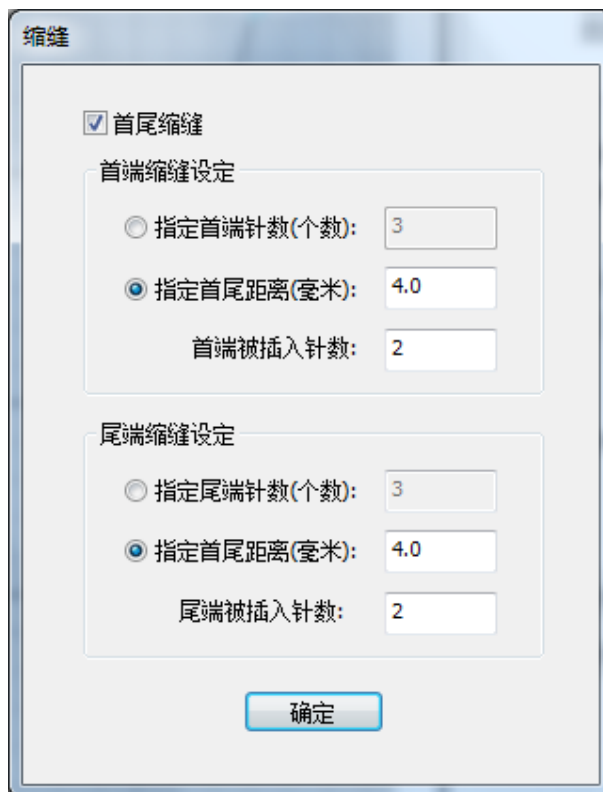


缩缝设置中，可直接进行设置首针（起缝开始第 1 针和第 2 针间），设置插入的针数（插入针数为等针距）。

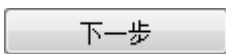


也可进行设置缩缝针距，同时在设置的内进行插入针数。

注：可只进行开始（首端）位置缩缝或只进行尾端缩缝。如只进行首端缩缝的话就将尾端缩缝设置为 0 即可。同理只进行尾端缩缝的话就将首端设置为 0。



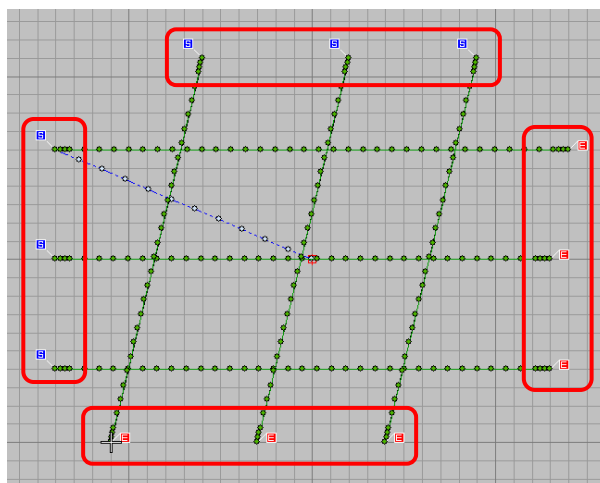
设置完成后继续点击‘转换向导’中提示的




就能生成缩缝花样。

注：

1. 缩缝功能只能在矢量图情况下使用；
2. 如果在起缝处既指定了倒缝又指定了缩缝，那么倒缝设置将被忽略；
3. 如果在结束处既指定了倒缝有指定了缩缝，那么倒缝设置将被忽略。



6 功能组合操作编辑花样-花样机


涉及到的功能： 对齐网格功能、 针迹类型、

针迹类型： 平针长度： mm 栏宽： mm

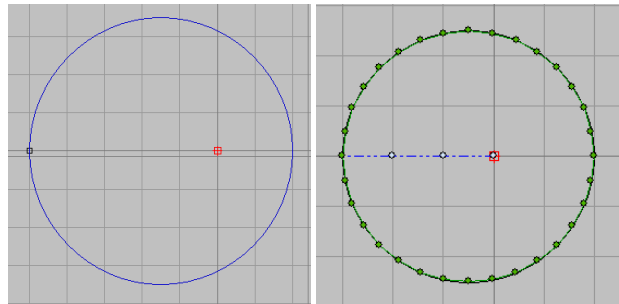
宽度： mm 100 % 高度： mm 100 % 针迹属性等。

6.1 圆形图案编辑花样

编辑圆形图案：

(1) 先选择‘针迹类型’的针型和‘对齐网格’后选择  圆形工具进行编辑。

(2) 使用鼠标左键点击确定圆形图案直径一端位置，然后拖动鼠标确定圆形图案的直径再次点击左键确定生成圆形图案；

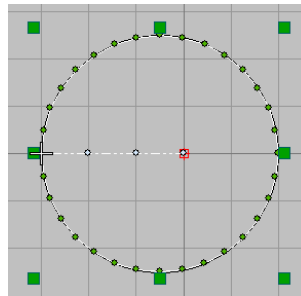


轮廓图案

生成花样图案

(3) 生成花样后点击‘选择对象’工具选择生成的花样，然后在‘针迹属性’中设置针距和修改图案的大小；

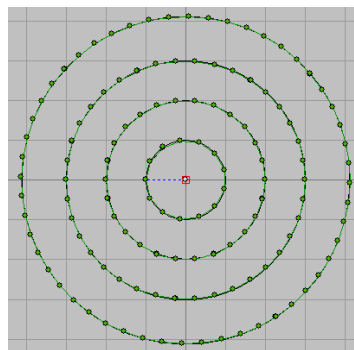
注：在修改针距和图案大小时，输入数值后要点击确定键，是指按自定义数据生成花样。



编辑同心圆形图案：


(1) 还是先选择针迹类型和对齐网格，然后选择圆形工具开始编辑花样；

(2) 按住 shift 键+鼠标左键，左键点击圆心位置，然后拖动鼠标确定圆形半径，再次点击左键生成圆形；连续反复进行操作编辑圆形图案；



螺旋圆形图案编辑:

涉及到的功能与编辑圆形图案使用的功能相同。

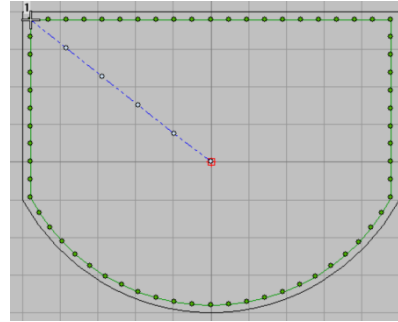
- (1) 选择  输入轮廓工具编辑图案;

注意: ‘输入轮廓’ 工具要求其编辑花样必须为闭合花样才能够生成所需的花样

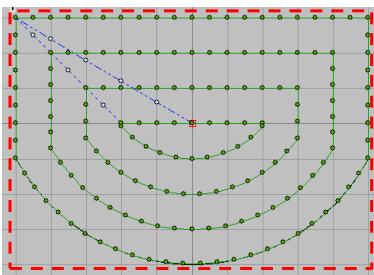
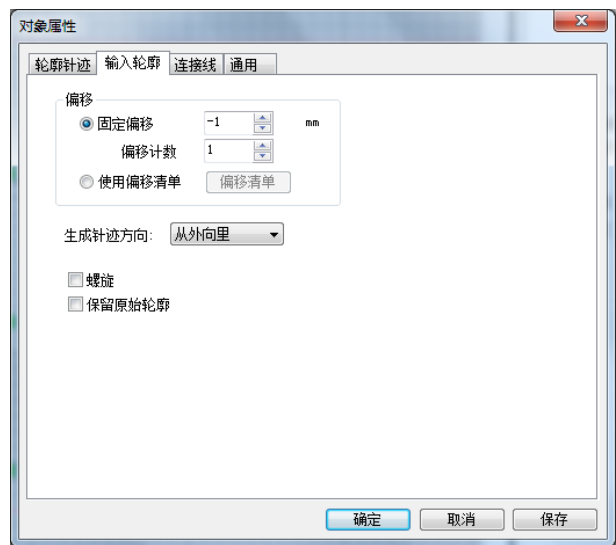
- (2) 可使用鼠标左键或右键进行编辑, 花样编辑完成后按回车键确定;

- (3) 生成初始花样后使用 ‘选择对象’ 工具或使用 Ctrl 键+A 键选中花样, 然后点击属性功能图标或在选中的花样上点击鼠标右键, 在弹出的菜单中选择 ‘属性’ 功能;

在属性中进行修改 ‘偏移’、‘生成针迹方向’、“螺旋”、“保留原始轮廓” 相关参数后生成不同形式的花样。

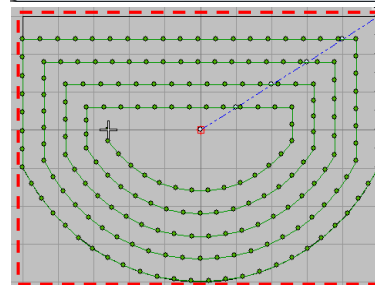


生成初始花样图案



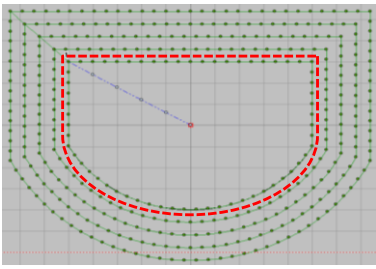
生成针迹方向: 从外向里

- 螺旋
- 保留原始轮廓



生成针迹方向: 从外向里

- 螺旋
- 保留原始轮廓



偏移

固定偏移 1 mm

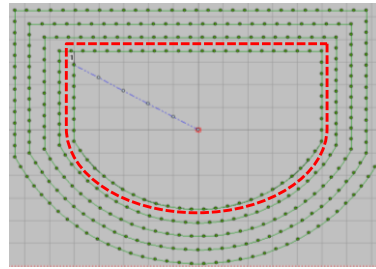
偏移计数 4

使用偏移清单 偏移清单

生成针迹方向: 从里向外

螺旋

保留原始轮廓



偏移

固定偏移 1 mm

偏移计数 4

使用偏移清单 偏移清单





生成针迹方向: 从里向外

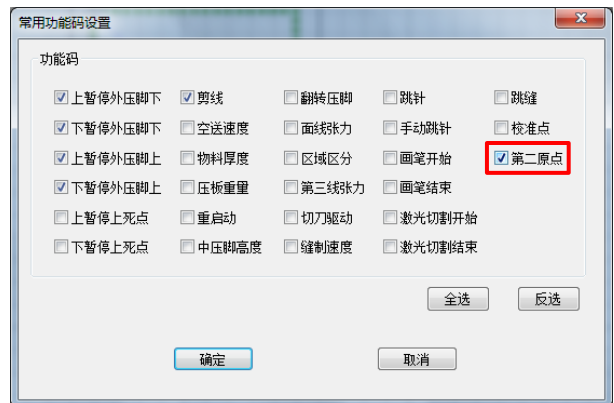
螺旋

保留原始轮廓

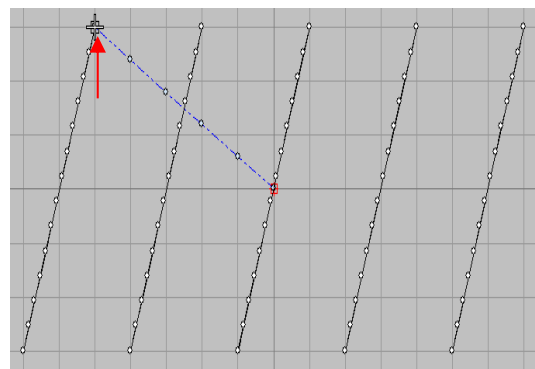
6.2 编辑花样中添加第二原点


在编辑前先了解一下何为‘第二原点’，第二原点即为：除去花样起缝点（开始缝制时的第一点位置）外的第二个原点位置

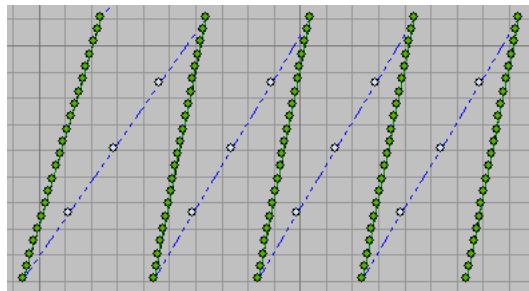
(1) 在编辑区域左侧位置“对象选择编辑工具”中单击  第二原点功能码；或在“功能码工具栏”中单击  第二原点功能码，如果“功能码工具栏”中没有  第二原点功能码，可在主工具栏单击“查看”→“功能码选项”功能中，选中“第二原点”，单击确认后，左侧位置“功能码工具栏”中将会出现  第二原点功能码。




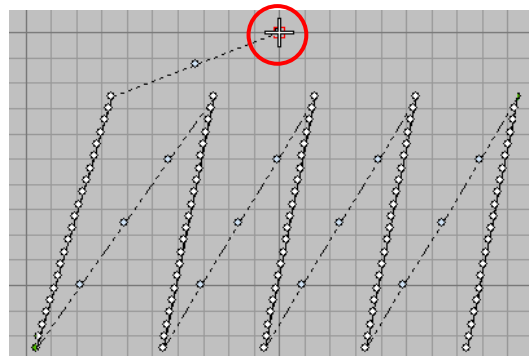
(2) 正常编辑花样按回车键生成针迹花样，在原点（编辑区域中心）与花样起缝点间的空松线段上添加‘第二原点’，系统会自动默认添加到花样起缝点位置上。




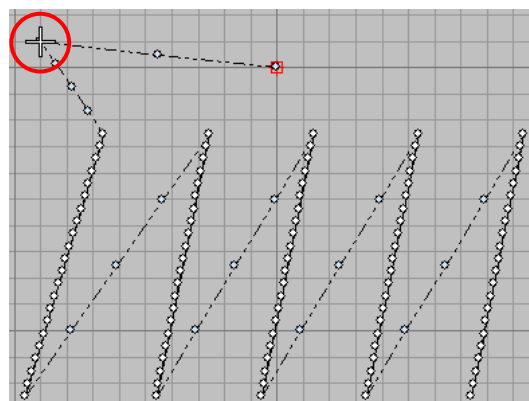
(3) 如需要规划空送轨迹，则需要使用  手工针迹工具进行添加空送点。



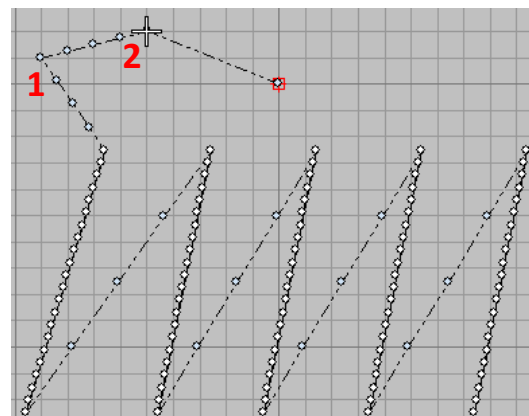
(4) 先将十字光标移动到编辑区域中的原点位置，或点击  运行花样开始/结束功能。



(5) 使用  手工针迹工具，选定插入空送点位置，点击鼠标右键，并按回车键确定。



(6) 如需再次插入空送点，则需要空送点前方再次进行点击鼠标右键插入并回车。

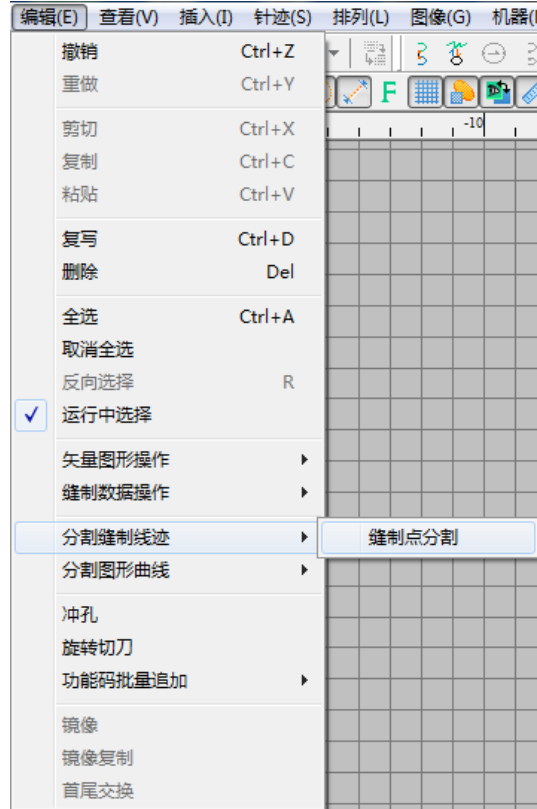
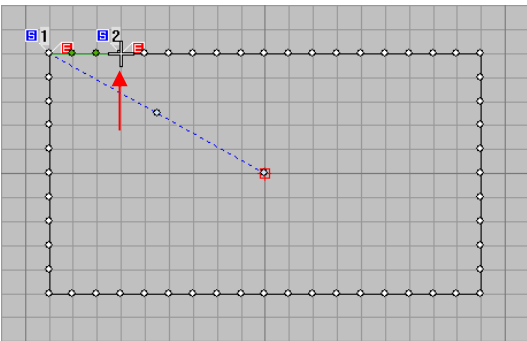


6.3 针迹线段分割

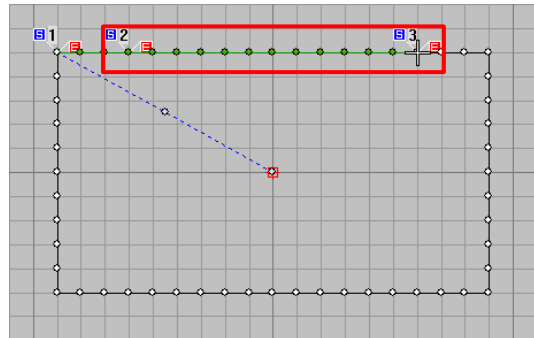
在编辑花样过程中会遇到修改花样的时候，例如将花样中的某一选段将其在中间删除，所以就需要使用‘分割缝制线迹’功能。

删除针迹线段中某一选段：

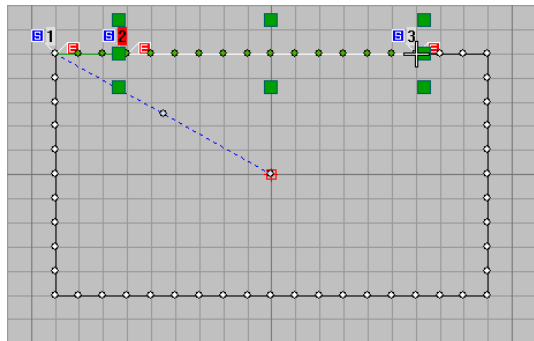
(1) 使用方向键将十字光标移动到要删除线段的一端，然后在“编辑”中选择“分割缝制线迹”→“缝制点分割”，完成针迹线段分割为两段。



(2) 进行相同的操作，将十字光标移动到需删除段的另一端，再次进行点击“编辑”，选择“分割缝制线迹”→“缝制点分割”，将需删除断分割出来：




(3) 使用鼠标左键点击要删除的线段，然后点击鼠标右键在弹出的菜单中选择‘删除’或按 Delete 键删除选中的线段，完成删除针迹线段中某一选段。



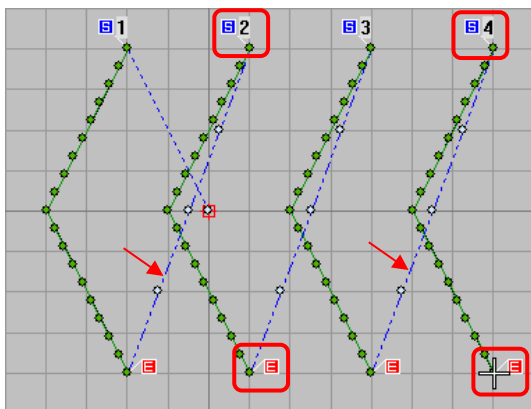


6.4 修改针迹花样（图案中的缝制对象）缝制方向和修改起缝点位置

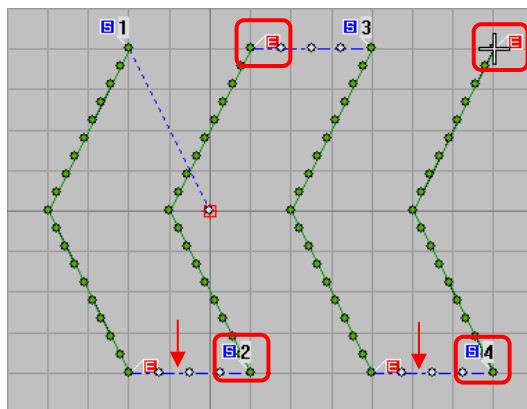
修改针迹花样缝制方向：

使用鼠标左键点击要修改的图案中的对象（或按住左键拖动鼠标将修改的对象框选中），然后选择编辑区域上方的  首尾交换功能键进行修改（反复进行操作）；

举例，将下图花样 2 和 4 进行首位交换，如下图：



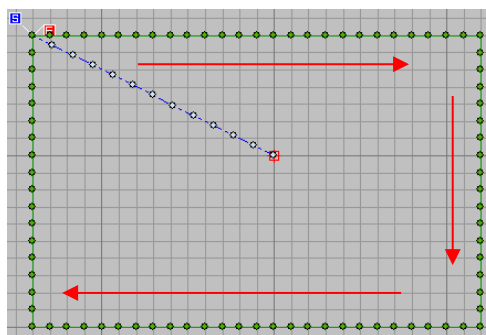
原图



修改后

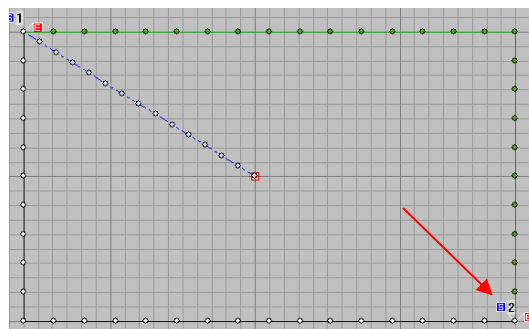
修改花样起缝点位置：参考 [5.5 矢量图闭合图形修改起缝点操作](#)

现将十字光标位置移动到起缝点位置的对角位置（修改的起缝点位置可根据需求进行任意设置）；

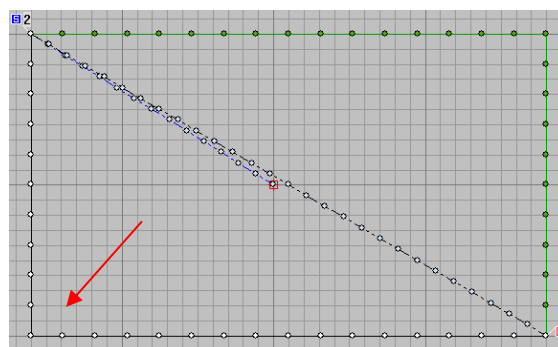


原图

使用‘分割缝制线迹’将闭合花样分给为两个对象；

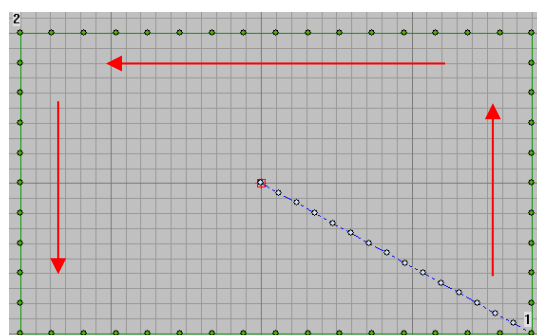


根据缝制方向选取其中一个被分割的对象进行‘收尾交换’操作；



同理将另一个对象进行操作后，花样显示就会出现起缝点位置自动变为分割点位置；

注意：在闭合针迹花样进行修改起缝点过程中，由于将进行了分割操作将原来一个对象分成了两个对象，所以在进行保存花样前需要在结束位置手动添加剪线功能码，同时在保存时设置不自动添加剪线。

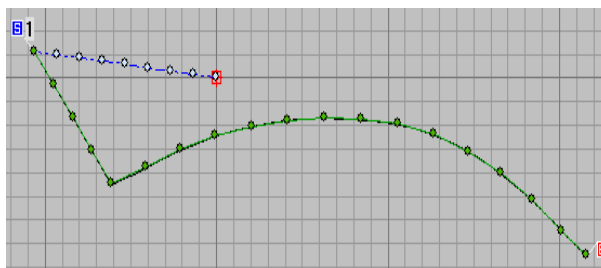


6.5 双重缝线迹编辑

在市场中常常会遇到图片中的缝制效果，在应对图片中的缝制花样时就需要使用特殊的工具进行操作。



(1) 使用‘针迹类型’和输入工具中的‘直线’工具，使用鼠标左键和右键生成花样；



(2) 使用鼠标左键选择花样，并选择‘属性’功能中的‘多重缝’功能，在其页面中设置缝制种类、偏移量、次数和偏移方向；



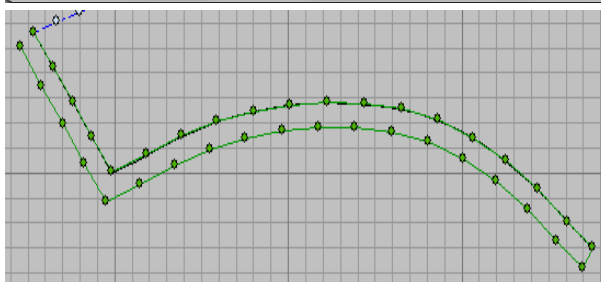
缝制种类：即多重缝方式。


偏移量：即生成的线段与原线段间的间距。

次数：即生成相同线段的个数。

偏移方向：以缝制方向为基准进行生成线段。

(3) 在属性中进行设置后按确定后生成所需要的花样。






注：如花样中需添加锁针，可在  属性中进行设置。（自编针迹花样中使用）

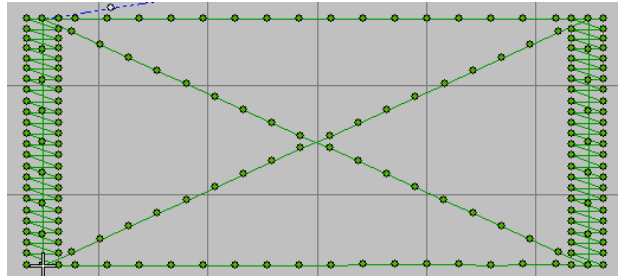






6.6 直线和曲折缝组合操作

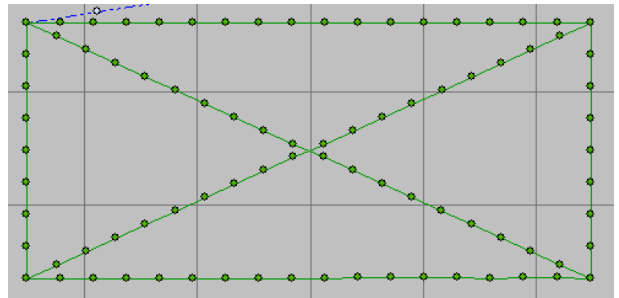
在现实中学生书包或手提包上的背带接口会使用特殊的花样。



涉及到的功能有针迹类型中的  运行平针

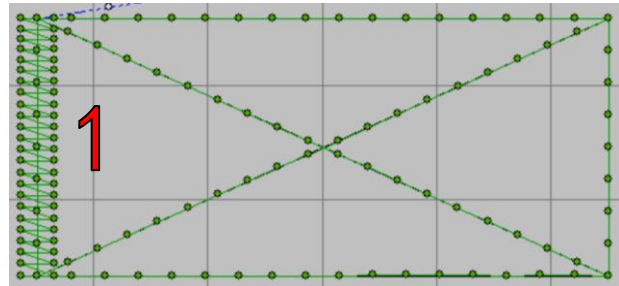
和平包针，输入工具中的  平针，同时还有  连续编辑功能键，如右图所示。



(1) 将  ‘对齐网格线’和‘连续编辑’  功能同时选中，现使用‘运行平针’  和‘平针’  工具编辑一个“方框打叉”的花样。



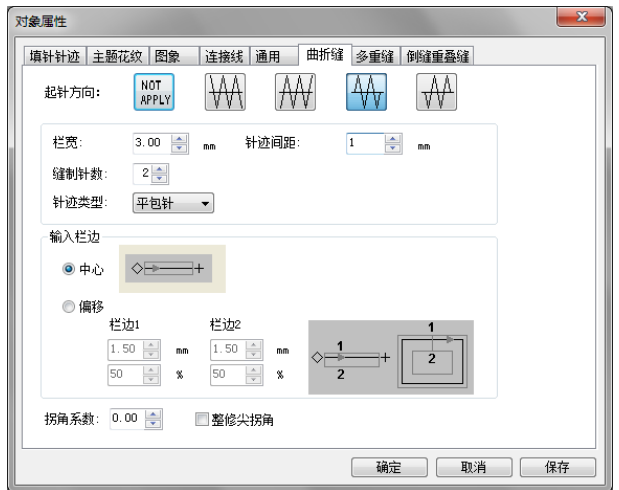
(2) 然后选择‘平包针’  和‘平针’  功能，在方框打叉花样的结束位置开始编辑曲折缝花样。



(3) 如果生成的平包针的‘针迹间距’和‘栏宽’数据不是期望值，那么需要进行调整；

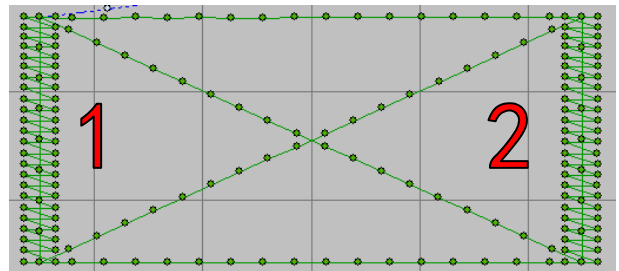
起缝方向：在选项中选择合适的方式，是指其曲折缝起缝点与上一个对象结束点间不会产生空送线段；

曲折缝栏宽和针迹间距：修改栏宽达到编辑所需的宽度；修改针迹间距是修改曲折缝线迹的间距宽度；



(4) 在编辑另一边的平包针线迹时需要缝制到下一个位置，所以需要使用平针工具在第一个平包针的结束位置开始编辑平针线段到下一个平包针的开始位置。

(5) 进行 (2) 和 (3) 步骤相同的操作是生成对应的平包针线迹。

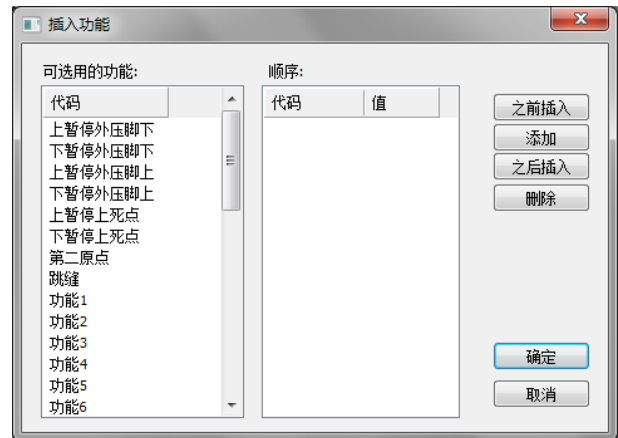
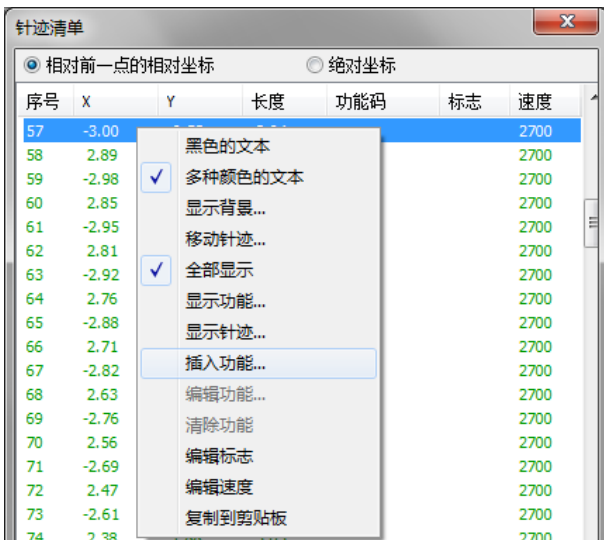


6.7 花样中添加功能码操作

缝制缝制花样过程中需要在缝制到某一位置后机械执行特殊的动作，所以就涉及了在花样中添加功能码的操作，在添加功能码的位置分别是编辑区域左侧插入功能码功能条和针迹清单中进行添加；



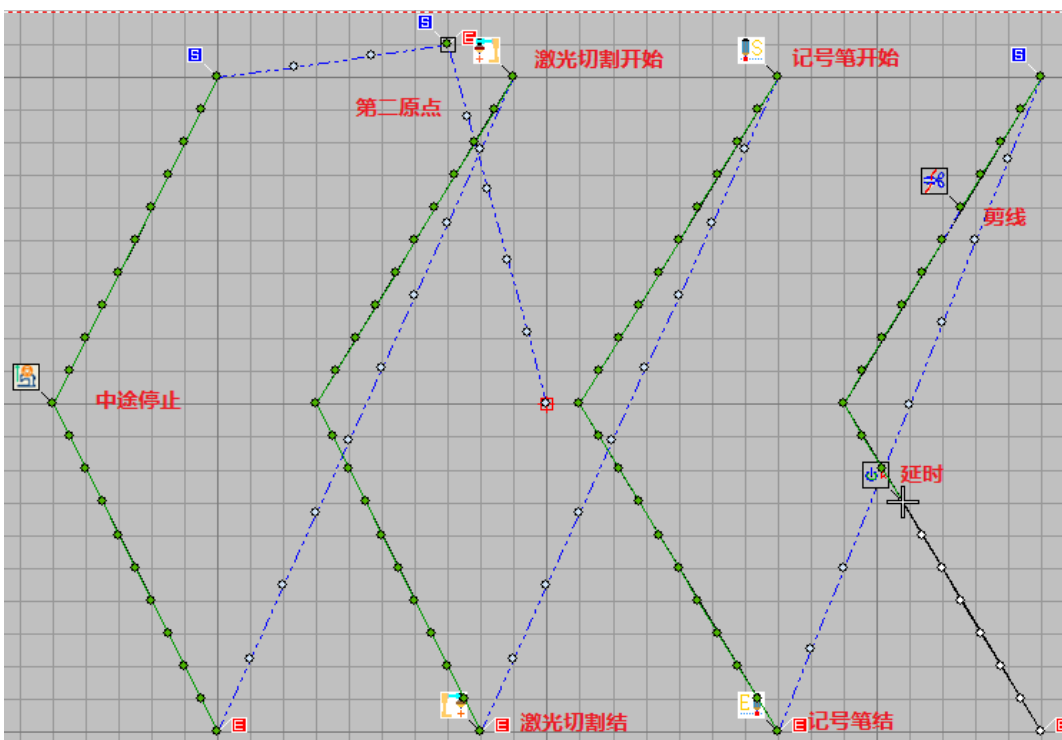
插入功能条



插入功能框

针迹清单中插入功能

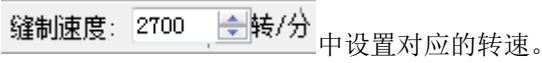
将十字光标移动到要插入功能码位置，然后在功能码条或针迹清单中进行插入功能码操作。



6.8 花样缝制转速设定和修改

在缝制花样中会遇到缝制薄厚不一致的现象出现，所以在应对薄料不一致的花样时，在缝制厚料位置时将缝制速度设置为低速，缝制到薄料时将转速设置为高速。

(1) 如果花样是由多个对象组成的，其中的个别对象为厚料其它的为薄料，就要选中其对象并在‘缝制速度’



(2) 如只是将对象中的某一段进行修改的话，可在‘对象清单’中进行更改。

使用鼠标左键点击修改段落的开始点，然后使用 Shift 键+左键点击修改段落中的结束点，将修改段全部选中，再次点击鼠标右键在弹出的菜单中选择‘编辑转速’进行设置。



6.9 特殊字体编辑操作

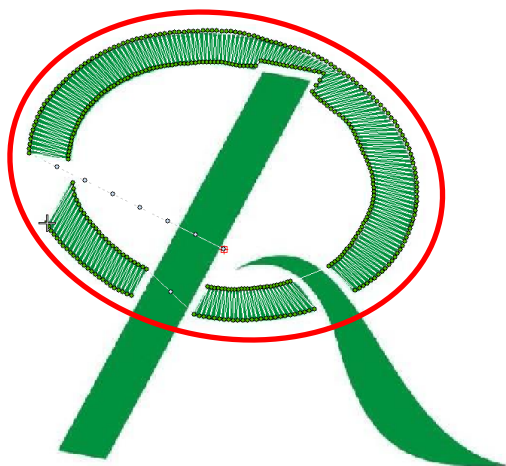
当特殊的字体和图片在系统字库中不存在时，需要使用特殊的功能进行编辑。

举例，如右图。

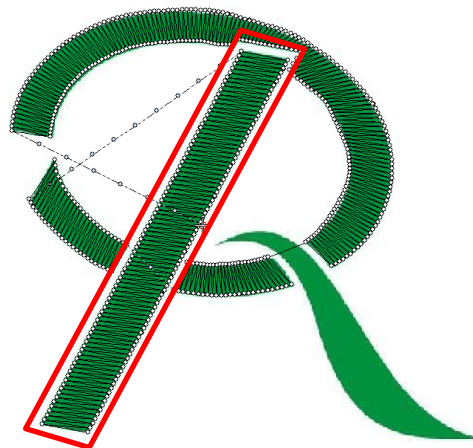


使用输入工具中的‘输入法 A’和‘输入法 B’进行编辑，过程如下。

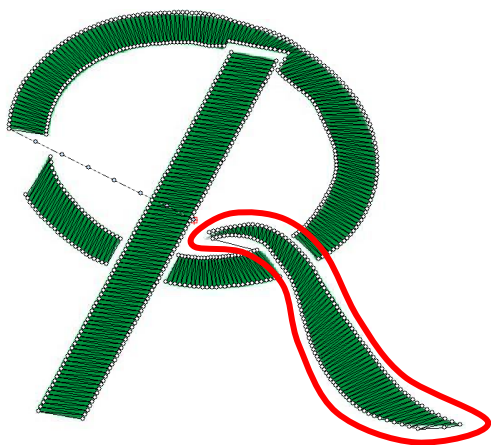
注：输入法 A 和 B 的功能操作方法，请参见上述的 [3.2.3 针迹对象属性工具](#) 的 3.2.3.1 输入法 A 和 B 参数。



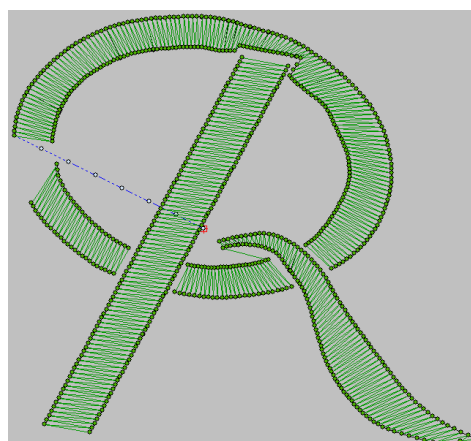
输入法 B 功能编辑效果



输入法 A 功能编辑效果



输入法 B 功能编辑效果

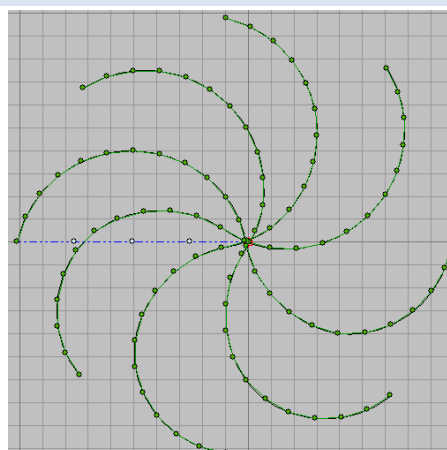


实际缝制效果


6.10 空送轨迹修改

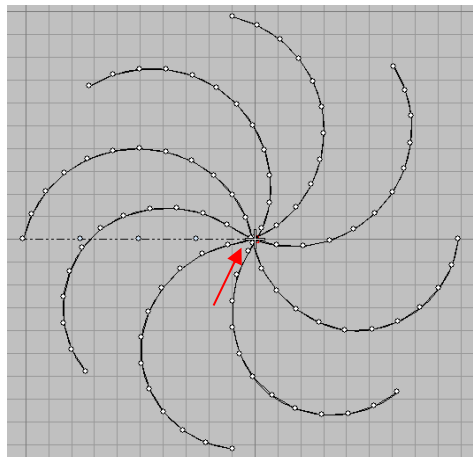
为缝制所需的花样，用户会根据花样的形状进行制作对应的模板。但由于使用了模板后在踩启动踏板，模板由原点位置移动到起缝点的过程中，可能会出现中压脚撞击到模板上，所以就需要进行规划，来避免撞压板的问题出现。


(1) 在进行移动十字光标运行花样时，首先确定花样处于未选中状态（在花样周围没有绿色实心方块，即：如图示 1）

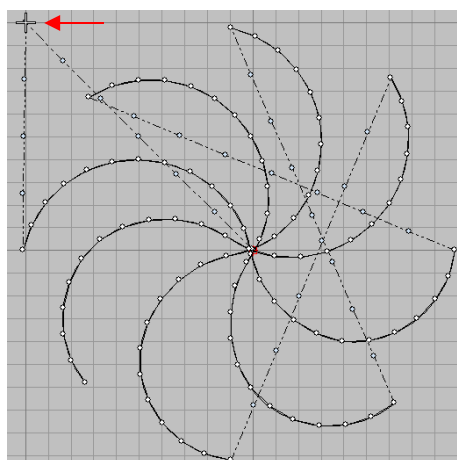


图示 1

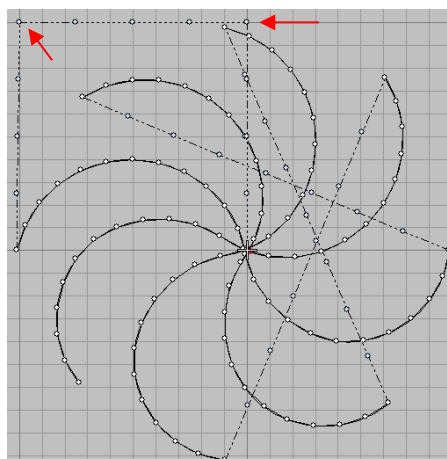
(2) 按  运行到花样开始\结束键，十字光标将自动移动到原点位置。



(3) 点击  手动针迹键，然后拖动鼠标到预定位置，点击一次鼠标右键然后按回车键生成空送点。



(4) 在十字光标位置不变的状态下，再次拖动鼠标在另一位置点击右键和按回车键，生成另一个空送点。



7 常用术语/快捷键

7.1 常用术语列表

术语	注解	备注
花样	由基础设计对象构成的设计文档。	
轮廓线	由矢量曲线段构成的线条	
图像对象	由位图构成的对象	
图形对象	只有轮廓线的对象	
针迹对象	按落针点顺序的连线，也称线迹。	
针迹点	也称落针点。针迹点是一个花样最基本的数据单元，通常包含 X、Y 方向的位移和功能码等信息。	
功能码	针迹点包含特殊功能的识别码。如金片的送片功能码。	
起缝点	开始缝纫的起点。	
结束点	缝纫的结束点。	
针迹角度	相邻两针组成针迹的方向。	常用于榻榻米针
平针	针迹点均落在轮廓线上的生成针迹方法。	
平包针	针迹点按照栏宽设定分布在轮廓线两侧的生成针迹方法。	
榻榻米针	针迹点有规律的按照一定间距角度填充封闭区域的生成针迹方法。	
曲折针	与平包针类似，但针迹点稀疏很多。	
平针长度	平针针法相邻两针的距离。也称平针针距。	当设定可变针长属性时，优先按照可变针长参数处理。
栏宽	平包针的宽度，也称横针长度。	
栏边	平包针落在轮廓线两侧针点构成的平移轮廓线。	
下缝	打底缝制的线迹	
空送	没有落针动作的移框，也称越框。	
锁针	缝纫结束前为防止线头松脱的小针距平针。	

7.2 快捷功能键列表

类别	操作	按键组合	说明
文档操作	新建文档	Ctrl + N	
	保存文档	Ctrl + S	
	打开文档	Ctrl + O	
	打印文档	Ctrl + P	
对象操作	复制	Ctrl + C	
	复写	Ctrl + D	
	粘贴	Ctrl + V	
	剪切	Ctrl + X	
	删除	Del	
	全选	Ctrl + A	

	反选	R	
	组合	Ctrl + G	
	取消组合	Shift + G	
	锁定	Ctrl + K	
	解除锁定	Shift + K	
	自动下缝	U	
	模板基准	T	
	居中模板	H	
	撤销	Ctrl + Z	单步操作的撤销
	重作	Ctrl + Y	单步操作的重做
	显示模式	3D 显示花样	Alt + 1
显示针迹		Alt + 2	
显示轮廓		Alt + 3	
显示针迹点		Alt + 4	
显示连接线		Alt + 5	
显示功能码		Alt + 6	
显示网格		Alt + 7	
显示图形		Alt + 8	
显示图片		Alt + 9	
显示刻度尺		Alt + 0	
显示起始结束图标		Alt + P	
显示整个花样		Alt + V	
缩放花样		Alt + Z	
测量		M	界面上任意两点的物理距离
对齐网格		G	
放大 1 倍		Z	
缩小 1 倍		Shift + Z	
概况窗口		F10	居中显示框选中的内容
针迹清单		F11	缩放倍率设置为 1.0
对象清单	F12		
缩放系数	Ctrl+Shift+Z		
功能窗口	对象属性	A	
	对象整形	C	
	编辑针迹	E	
	插入花样	Ctrl + I	
	运行平针	Ctrl + 1	
	平包针	Ctrl + 2	
	榻榻米针	Ctrl + 3	
	锯齿形针	Ctrl + 4	

1. System Introduction

1.1 Introduction of Pattern Designing System

PDS is the Pattern Designing System special for Dahao Series control systems for sewing machines. On the basis of the existed operation custom of users, we added many superior operating functions and expanded the creation range of the pattern for sewing machine. Comparing to the manual edition of pattern on machine, the Pattern Designing System on basis of PC platform features the higher efficiency, which is able to quickly make pattern and to manage the various patterns' information. These characters are suitable for the users using the production line that features the large scale production and unified management. And for the users specialized in providing customized processing service, the PDS can also enhance the processing quality and the working capacity due to its simple and visible operation interface, as well as the various functions for designing patterns.

PDS provides an extendable template library, where stores a number of pattern templates like bar-tacking sewing, button sewing and buttonhole sewing. According to the specific craft requirements, user can quickly create the pattern by inputting the parameters, such as length, width and diameter. The created pattern can be transferred to the controller of sewing machine through the communication system between the system and the sewing machine controller, so as to raise the productivity by large margin.

PDS has also below advantages: The function of sewing character in various languages simplifies the creation process of figures and designs so that the system can generate the stitch form and layout automatically. The function for inserting object at random sewing stitch form point will make the latter edition of pattern be easier, reduce the empty feeding and enhance the sewing efficiency.

With close cooperation between the PDS and the Dahao sewing machine controller, it simplifies the processes of the production control, lower the cost of the information automation and help user to reach the higher production level and larger production scale.

1.2 Parameter Data of Pattern Designing System

Project	Content
Applicable model type	Ultra-large pattern machine, bar-tacking sewing machine, button sewing machine, pattern machine, buttonhole machine, etc.
Editable range can be set (XY positive and negative directions)	1~30000mm can customize the range of pattern editing
Maximum sewing speed can be set	8000r/min
Edit pattern accuracy	0.05mm /0.1mm
Edit stitch input tool type	7 categories, a total of 77 species
Import pattern format	DHP, DST, DSB, 6XX(Special Format), VDT, NSP, DXF Support reinforcement machine BIN format Support to import image aided editing function (Picture format: JPG, JPEG, BMP, PNG)
Export format	DHP (default format), NSP, VDT, BIN, etc. The DHP format is the PDS system data format, but the electronic control of the

	company does not support this format.
--	---------------------------------------

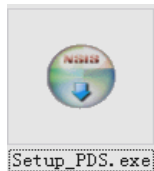
1.3 Hardware Configuration Data

Project	Content
CPU processor	2.00GHZ (minimum configuration)
Install internal storage RAM	512MB (minimum configuration)
Hard disk (local disk)	64GB (minimum configuration)
Graphics card	128MB (minimum configuration)
Monitor resolution	1280×1024/1024×768/1280×900/1280×720 Or higher resolution can be used
System type	32/64 bit operating system
Compatible operating system type	Windows XP SP3 Windows 7 SP1 Windows 8 Windows 10 Note: Does not support the Mac operating System

2. Installation / Uninstallation Method of Pattern Designing System

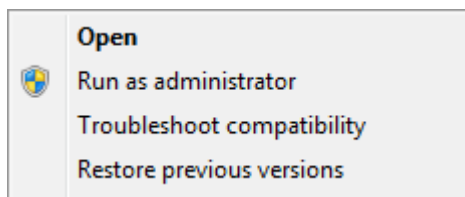
2.1 Method to Install Pattern Designing System under WINDOWS XP/7/8/10

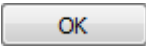
① Select Pattern Designing System installation program of our company in the USB disk (or CD), double-click the left button or right-click to select the "open" for installation operation. **You can download and install the system on the company Website.**




Company Website: www.dahaobj.com

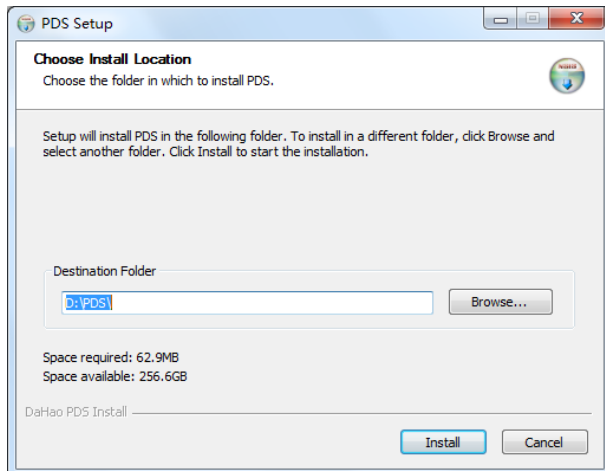
Note: In view of the "UAC " requirement of the WinDOWS 7/8/10 system for the installer, when installing the Pattern Designing System, after selecting the install system icon, right-click and select the "Run as administrator" to install.



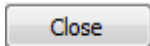

②: When clicking the icon to install the system, the user selects the corresponding language of the Pattern Designing System according to the display language of operating system of the PC (office computer) used. After confirming the installation language, click  to install.

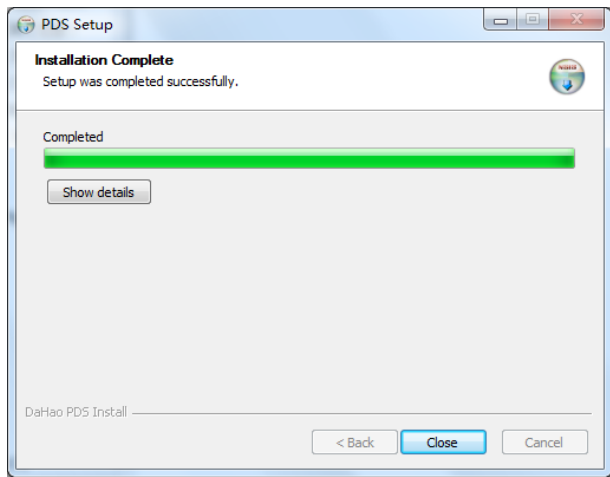


③: After entering the interface of selecting the installation component, click the "Browse" to select the installation location of the Pattern Designing System. After determining the installation location, click the  for system installation.




④: When the system installation is complete, click

, the shortcut  will be displayed on the desktop.



⑤: Insert the encryption key provided by Dahao company into the USB port on the PC (office computer). After the PC automatically installs the driver, double-click

 to run the Pattern Designing System and perform the pattern editing operation.




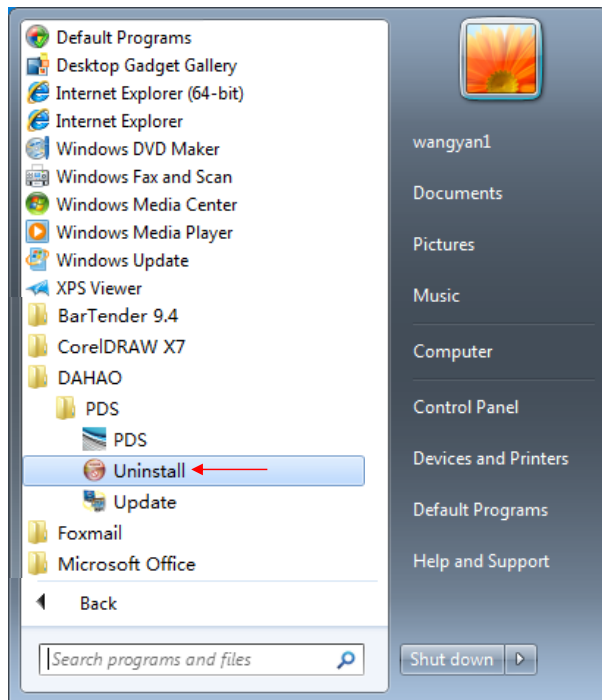
Note: The system can only be used normally after the encryption key is inserted into the USB port. At the same time, in the editing operation, if the encryption key is pulled out, it will cause problems such as error reporting or pattern saving failure.

2.2 Uninstall Method of Pattern Designing System

If you no longer use the Pattern Designing System, or the system cannot be opened due to installation problems,



you must uninstall the system; click the  in the lower left corner of the desktop of the PC (office computer), enter All the Programs to uninstall the PDS Pattern Designing System.



2.3 Solution if the installation encounters abnormal

1. Missing shortcuts on the desktop after installation

Under Windows 7/8/10, the system shortcut icon is not displayed on the desktop after installation. This is caused by that as installing the system, the user uses the left mouse button to double-click to install

Solution: Uninstalling the system, pressing by using the right mouse button the system shortcut icon on the desktop, click "Run as administrator", and use it normally.

2. After the system installation is completed, insert the “Encryption Lock” into the USB port, and the “Encryption Lock” indicator does not light.

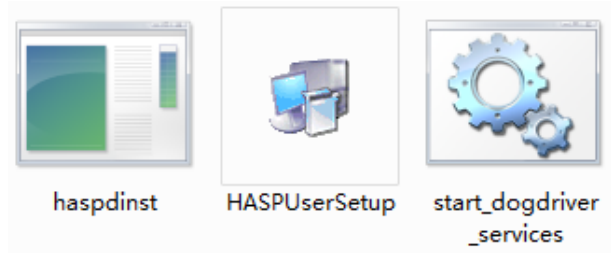
After the installation system is completed, insert the “Encryption Lock” into the USB port, and “Discover new hardware” is not displayed in the lower right corner of the display monitor; at the same time, the indicator on the “Encryption Lock” is not lit. After double-clicking the system shortcut icon, display that the error message is not entered the system.



Solution:

a. If anti-virus system exists in the computer, first set the installation system of the company in the anti-virus system as "trusted file".

b. If you have already done the above operation, you can find the system installation location on the hard disk "Example: E :\PDS", after opening the "E:\PDS\Driver" folder, after reinstalling the driver in the folder, then restarting the PC, insert the "Encryption Lock" into the USB port and enter the system for pattern editing.




3. Instructions of Pattern Designing System

3.1 Description of General Tool

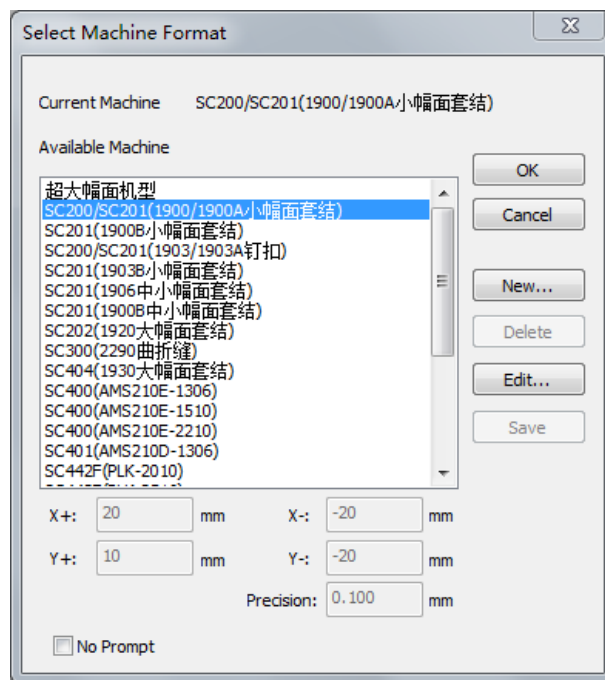
3.1.1 Interface of Pattern Designing System

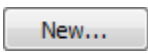
3.1.1.1 Select machine format

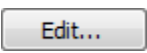


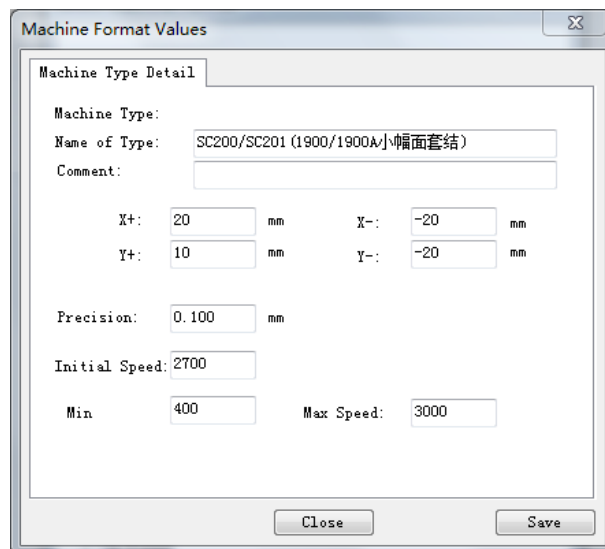
①: Double-click  to run the Pattern Designing System and display the “Select machine format” dialog box on the editing interface.

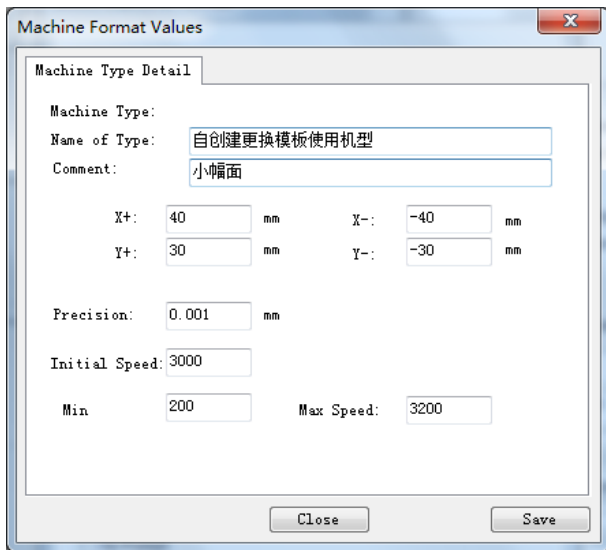
The customer edits the model settings corresponding to the pattern. This setting makes it easy to avoid the saved patterns during editing of the pattern and input them into the electronic control beyond the sewing range.

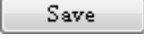


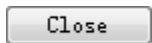
②: If there is no corresponding machine type in the model type or the pattern editing range does not meet the requirements, you can click "New..." 

button or "Edit..."  button to create or edit the required model and pattern editing range.

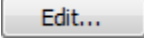


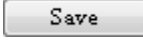


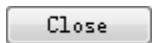
Model creation, click  and click



Edit model:

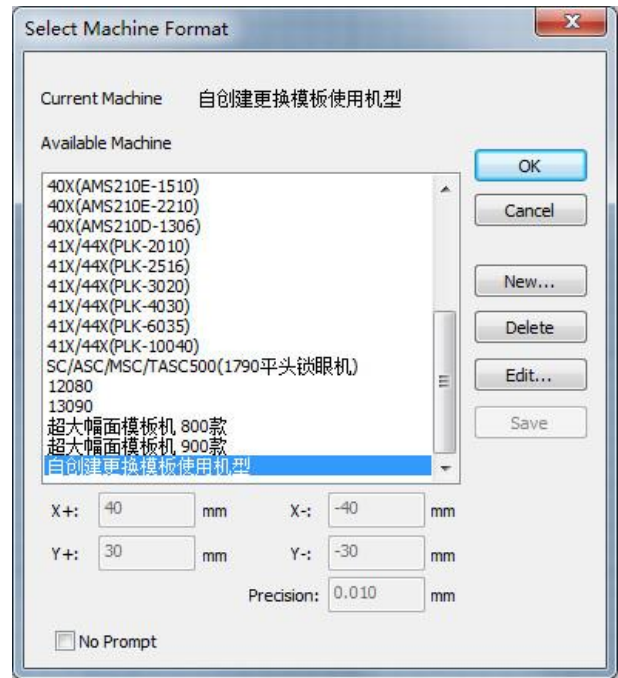
Click  to select the machine format interface, you can modify the relevant parameter items of any model. After the related items are modified, you need to perform

the operation  before proceeding

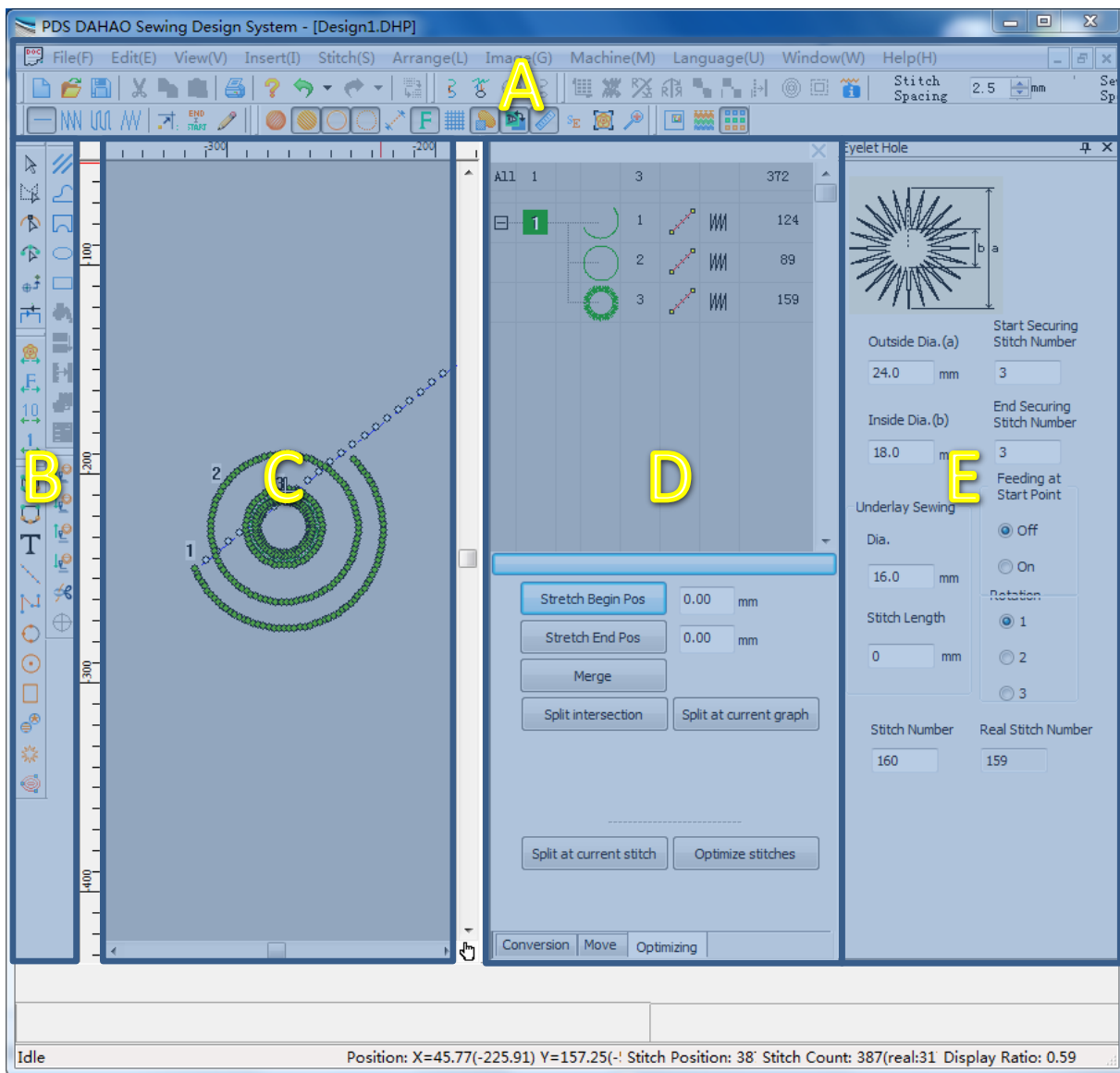


Note: XY positive and negative directions can be set within the range of 1~30000mm

3.1.1.2 Function Area



Model Creation



The layout of the PDS interface is quite simple, which is divided into the main functional areas as below:

A: Main tools: Include the tools for file operation, view operation, properties operation and so on.


See:[3.1.2 Common Tools](#),[3.1.3 Tools for Viewing Pattern](#),[3.1.7 Tools For Selecting of Stitch Type](#),[3.1.9 Assistant Functions](#)

B: Input tools: Include the tools for object input, object selection, object edition and so on.


See:[3.1.4 Tools For Selecting/ Editing Object](#),[3.1.5 Tools for Inputting Figure Object](#),[3.1.6 Tools For Inputting Stitch Form Object](#),[3.1.8 Tool of Stitch Form Guide](#)

C: Design window: The window for the input, display and edition of the entire designed objects

D: Object list: List the object according to the sewing order. The information, like input method, stitch type and so on

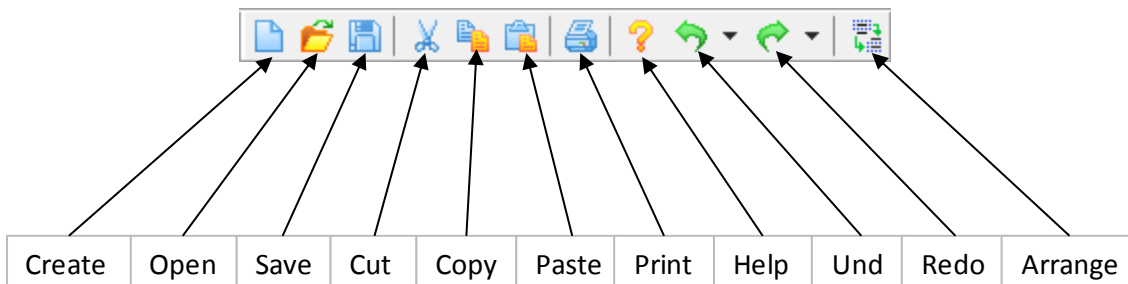
can be displayed. User can conceal or activate this list by pressing  in main tool bar.

See:[3.4.4 Object List](#)

E: Parameter bar: Page for adjusting parameters of each craft template. User can use  to activate/hide it.

See:[3.3 Use of Craft Template](#)

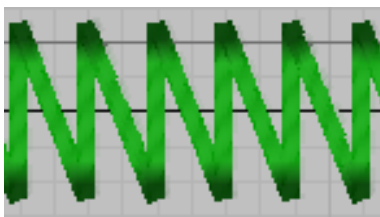
3.1.2 Common Tools



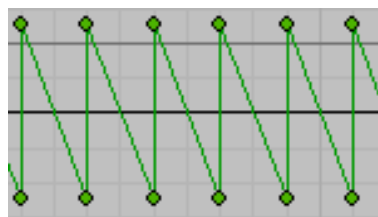
3.1.3 Tools for Viewing Pattern:



 **3D display pattern**

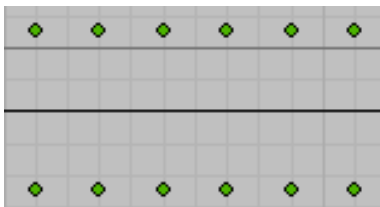


Sewing stitch simulation effect



Ordinary effect

 **Hide/Display Stitch**

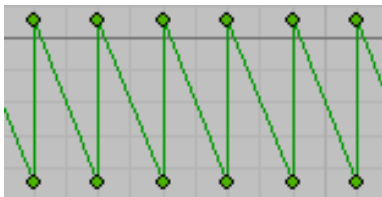


Effect of hiding stitch form

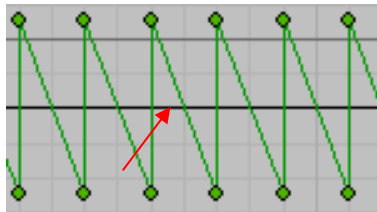


Display effect

 **Hide/Display Outline**



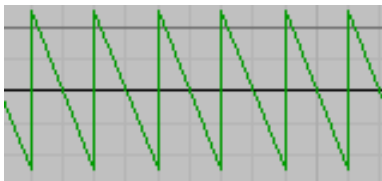
Effect of hiding outline



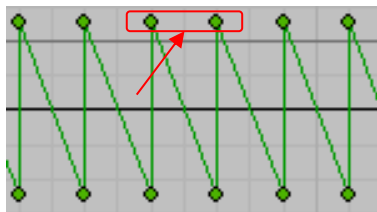
Display effect



Hide/Display Stitch Form Point.



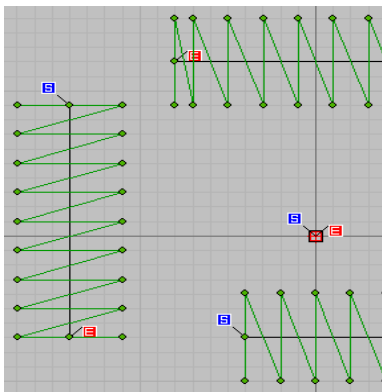
Effect of hiding stitch form point



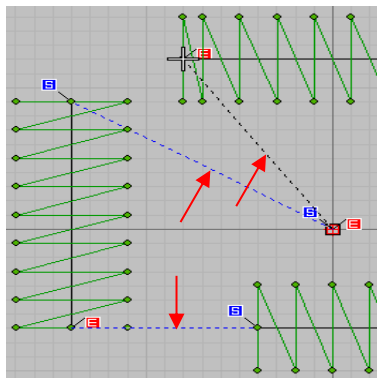
Display effect



Hide/Display Empty Feeding. The line without stitch point is usually displayed as the blue dashes lines.



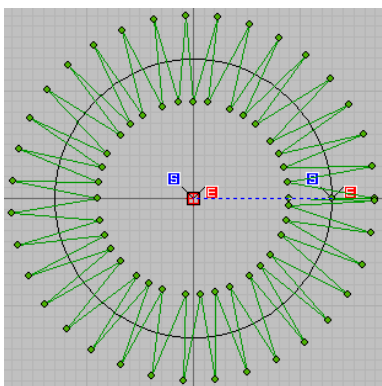
Display empty feeding



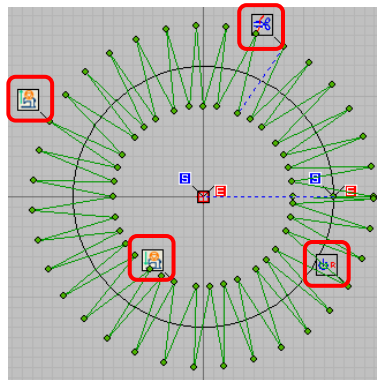
Display effect



Hide/Display Function Code



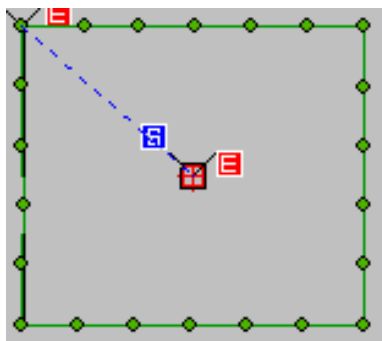
Effect of hiding function code



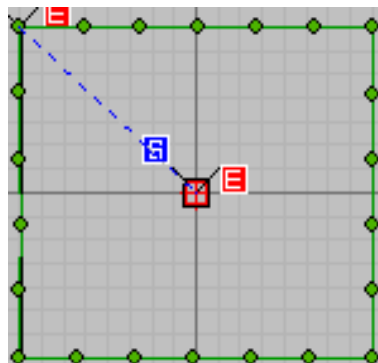
Display effect



Hide/Display Grid.



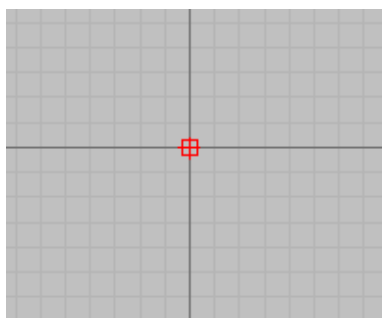
Effect of hiding grid



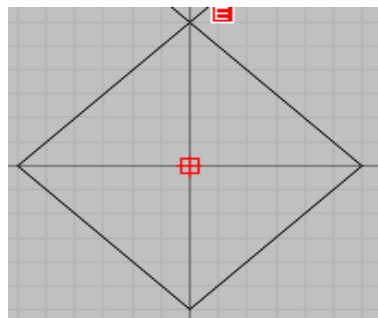
Display grid effect



Hide/Display Figure. Figure is the geometric outline without stitch form.



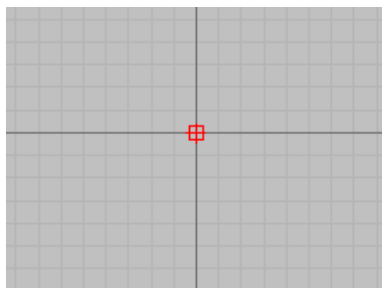
Effect of hiding figure



Display effect



Hide/Display Image. Hide/Display Image. Use “Menu -> Image-> Insert Image” to input the image object.



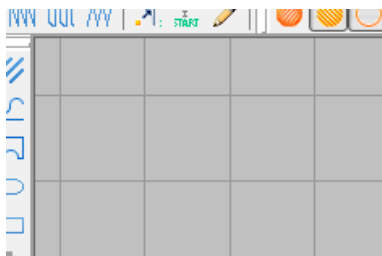
Effect of hiding image



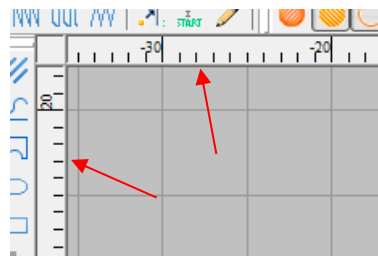
Display effect



Hide/Display Scale



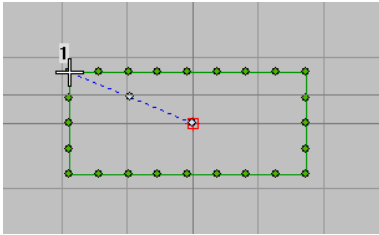
Effect of hiding scale



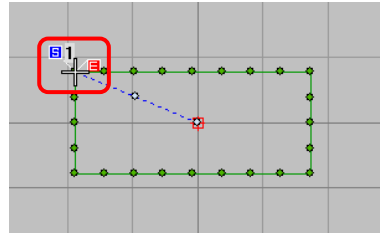
Display effect



Display start/end icon



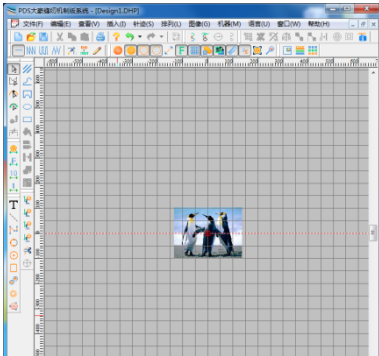
Hide start/end icon



Display start/end icon



Display the pattern in centre.



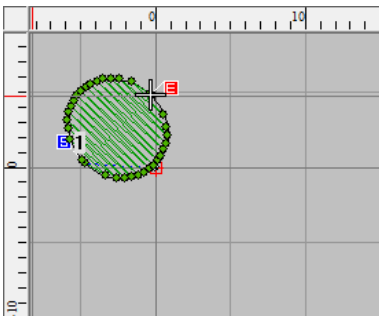
Normal display effect



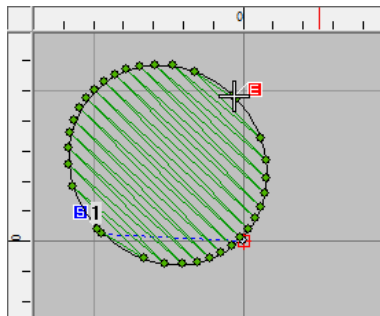
Overall centered display effect



Scale pattern

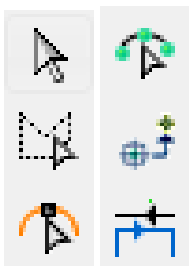


Normal display effect



Magnify the display effect

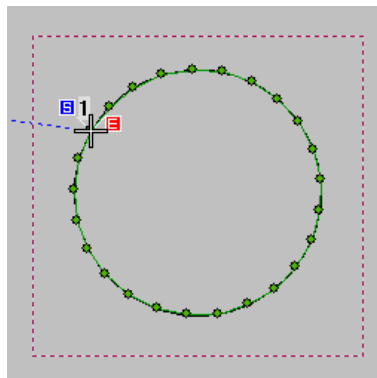
3.1.4 Tools For Selecting/ Editing Object





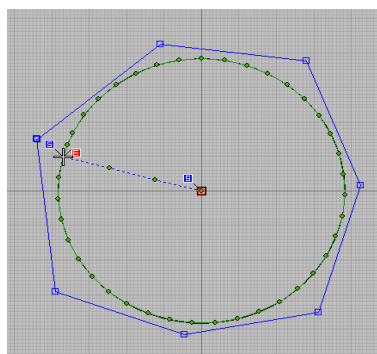
Selection Tool:

Clicking the outline or the closed curve to select the object. After selecting the object, user can draw the mouse to changes its shape.



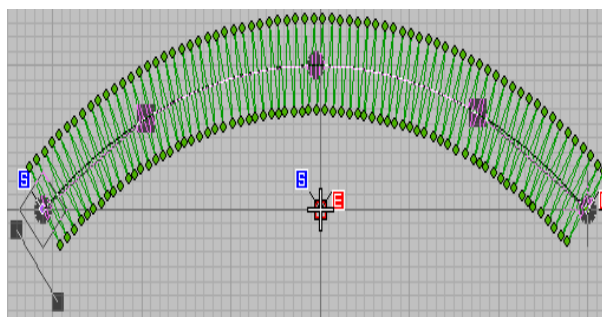
Polygon Selection Tool

Select an object as an irregular or a single object in the overall object, and encircle the object by drawing outlines. After the object is selected, drag the handle to achieve the deformation operation.

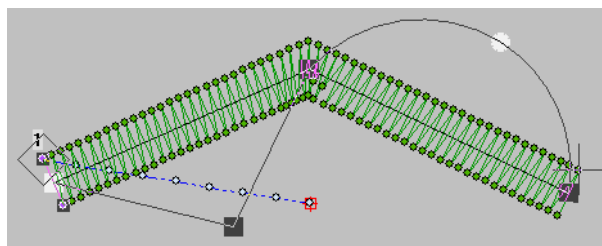


Adjustment tool: after selecting the object, user can shift to adjustment tool, which can adjust the outline, start point, end point and stitch direction of that object.

Press and hold the left button to move, the square moves out of the line, and the origin moves out of the arc.



See [3.2.5 Graphics modification Tool](#)




Stitch Form Edition Tool:

Click the stitch point. When the current icon moves to the selected stitch form, user can perform the operation of moving, deleting or inserting the stitch point.

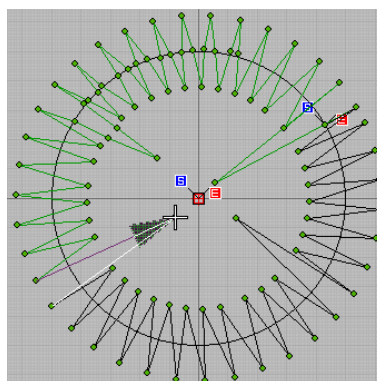
Right click to add pin point

Left button to move the pin point

Delete pin point by pressing "Delete" key on keyboard

Segment selection method and sample graphs 

See [3.2.6 Edition of Stitch Form](#)







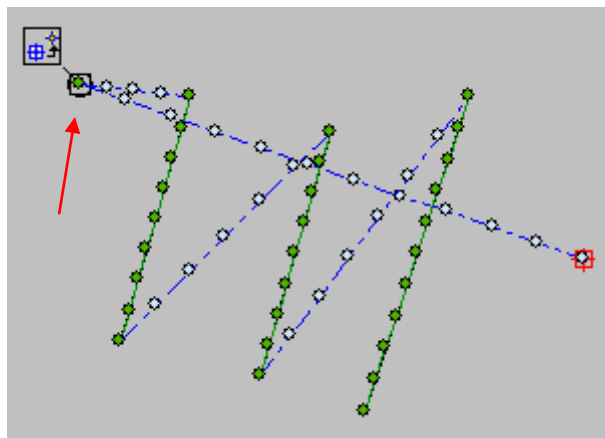
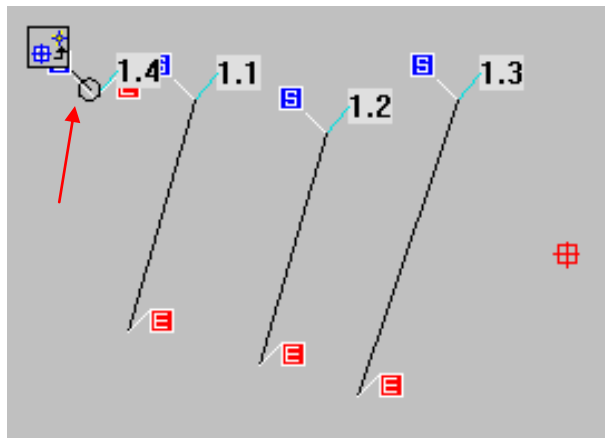
Anchor Point

This function is used to set the second origin position of the pattern in the state of the vector image (that is, the pattern without the pattern sewing data, DXF or PLT format).


Note: This function cannot be used in patterns that have already generated actual stitches.


1. Import the vector pattern (DXF or PLT format) into the editing area. Use  tool, hold down Ctrl+left mouse button, drag to create a circle, and press Enter to confirm.

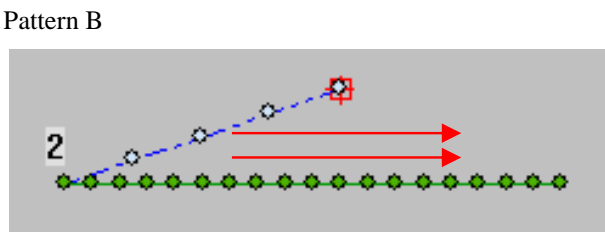
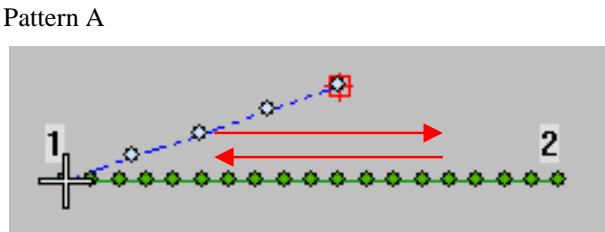
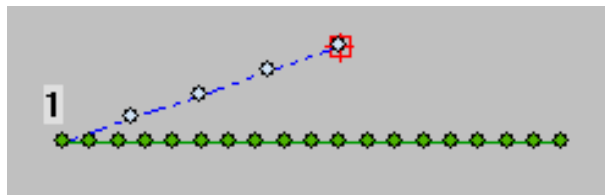
2. Select the anchor point  and define its circle as the anchor point to convert to the actual stitch pattern.



Left button return / right click repeat stitch tool

Left-click , add a pattern with the end point of the pattern A as the starting point, the starting point as the end point, repeating the opposite sewing direction, pattern B;


Right-click  and add a pattern that repeats the same sewing direction, pattern C, starting from the starting point of pattern A and ending at the end point.





3.1.5 Tools for Inputting Figure Object


(See: [3.5.1 Object Input](#)'s 3.5.1.2 Input of Figure Object)




 **Line:** The line segment settled by two inputted points.

 **Line and free curve:** Enter the “line” inflection point with the “left button” of the mouse and the “curve” inflection point with the “right button” of the mouse.

 **Closed line and free curve:** Click the left/right button of the mouse to edit the line or curve continuously, and press the “enter” button to automatically form the “closed figure”.

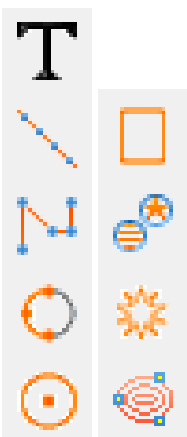
 **Circle:** Create circle or ellipse.


 **Rectangle:** square or rectangle


Note: The above function is to edit the shape tool. After editing the pattern, it needs to be converted into the actual stitch. Otherwise, there is no pattern generation for the save operation.


3.1.6 Tools For Inputting Stitch Form Object

(See [3.4.2 Input of Stitch Form Object](#))




 **Enter Text:** Use “Running flat stitch, satin stitch, tatami stitch and zigzag stitch” to create patterns based on the design of characters and fonts.

 **Curve Stitch:** Use the “Left/Right” button of the mouse to edit the "Running flat stitch, satin stitch, tatami stitch and zigzag stitch".

 **Manual Stitch:** Use the “Left/Right” button of the mouse to edit the “Staple Stitch and Empty Stitch”. (The stitch length is up to 12.1 mm)

Note: when continuously performing the stitch sewing and the empty feeding editing, pay attention to the “empty feeding start point” after the stitch editing, click the “right button” of the mouse; when the stitch is finished at the end of the empty feeding at the beginning, also click the left button of the mouse.

 **Three-point Arc Stitch:** By inputting three points, an arc of three points is generated.


 **Circle/Ellipse Stitch**


- ① After the mouse “left button” enters (drags) the diameter value, click “Left or Enter” again to automatically generate a circular pattern.
- ② After you right-click on the mouse to enter (drag) the diameter value, drag the mouse again to create a circular or oval pattern.
- ③ Press Shift + Left, click the left mouse button and position the center point of its circular pattern.


 **Rectangular Stitch**

- ① Use the left mouse button to drag and edit to create a rectangular pattern.
- ② Hold down the Ctrl key to drag the mouse, and then automatically generate a square pattern after pressing one side, then press the Enter key to generate the pattern.

Hold down Shift + Left mouse button to create a double rectangle pattern.

 **Circle/Star:** Left-click input to generate a star, right-click to generate an elliptical object

 **Template:** Template library, containing the patterns with special functions, such as bar-taking sewing, button sewing and buttonhole sewing.

 **Input Contour:** Click three or more points with the left mouse button and press Enter to form a closed contour pattern. (The generated stitch segment is offset by default)

3.1.7 Tools For Selecting of Stitch Type

(See [3.2.1 Four Basic policies to produce stitches](#) and [3.2.2 Shortcut to Quickly produce stitches](#))



Create Flat Stitch: create the stitch point on the outline



Satin stitch: stitch with the stitch point at both sides of outline.



Tatami Stitch: Stitch for section filling.



Zigzag Stitch: Comparing to satin stitch, its stitch point at both side are not exactly facing to each other.

3.1.8 Tool of Stitch Form Guide

(clicking left key is to move current stitch forward while clicking right key is to move the current stitch backwards)



The cross cursor automatically moves to the origin position



Run in function code



Run in units of 10 pins



Run in units of 1 stitch

Note: stitch point movement is also possible using the arrow keys in the keyboard. the right/left direction key can be used to move forward/backward single needle, and the down/up direction key to perform 10-pin forward/backward continuous movement.

3.1.9 Assistant Functions

(See [3.2.7 Assistant Tool](#))



Alignment: Align the selected objects, or arrange them with equal interval



Change Start Point: arrange stitches or shape points reversely.



Mirror Displacement: according to the basic line, mirror each point on the object.



Mirror Copy: Create a new object symmetrical to the mirror of the original object.



Combination: Combine two or more selected objects into one object.



Ungroup: Ungroups the combined objects and reverts them to a single, individual object.



Move Object: move the object to the specified coordinate position



Insert Offset Object: The specified pattern object can be added at the specified offset position.



Object Size Modification without Re-Production of Stitches: The size of the object is modified according to size and position, and stitches are not re-produced.



Property: can set stitching, theme pattern, image, connecting line, universal, zigzag stitch, multiple seam, back seam overlapping seam



General Interface: display the preview window of the pattern



Stitch Form List Interface: check the details of the stitch form and edit the stitch form



Object List Interface: Check the information of the object. Include lots of operation about copying, moving, translation, splitting, merge and soon.

3.2 Stitch Assistant Functions

3.2.1 Four Basic policies to produce stitches



Plain Stitch

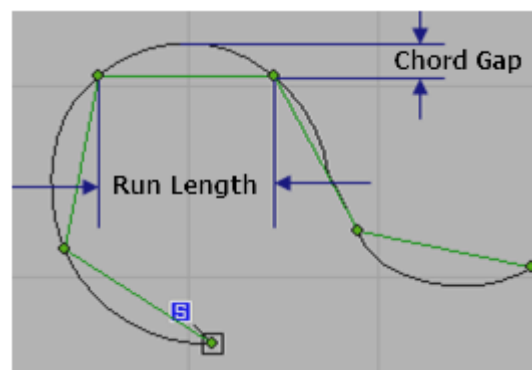
Clicking the icon with right mouse button will open the window for setting plain stitch parameters. After modification on the parameters, these new parameter values is treated as the standard for the newly generated objects. Double clicking the object is to open the properties window, where also contains several options about stitch parameter. The modified parameters are only available for the selected object.



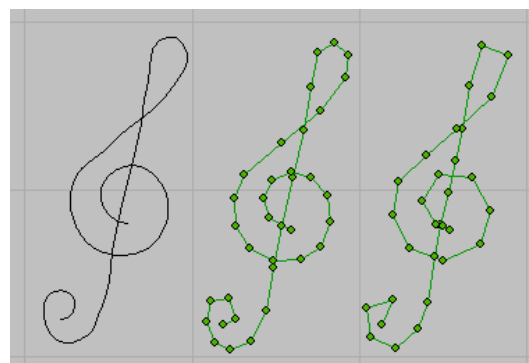
Plain Stitch Length: fixed length between any two stitches. It is available when options of changeable length is unselected.

Changeable Plain Stitch Length: sewing stitches is produced follow by user settings if the option of changeable length is enabled.

① The explanations on the stitch length and the chord height: The stitch length is the distance between the two neighboring stitch points. Because the stitch form point of plain stitch should be covered the outline, the chord height is the maximum vertical distance between the stitch form and the outline.



② **Changeable Plain Stitch Length:** When conditions of **chord height** are met, the stitch length will be the set one. if it is smaller than the chord height, the stitch length will be decrease until it meets the condition of chord height or it reaches the **Min Stitch length**. This can make the stitch form and the outlines be highly overlapped.



This is the effect after user activates the Changeable Plain Stitch Length. The left one is the outline, the middle one is the effect of using the changeable stitch length, the right one is effect of using the fixed stitch length. After the activation of Changeable Plain Stitch Length, although more stitches are needed, the stitch form will be closer to the outline, which creates the

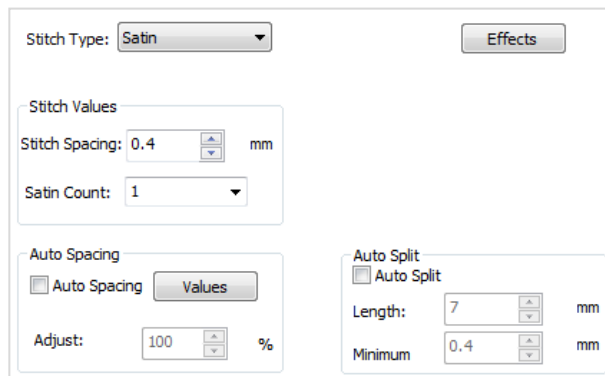
better sewing effect.



Satin Stitch: The method for opening the parameter setting window is same to that of the plain stitch

Stitch: The vertical distance between the neighboring satin stitch forms in same direction, this parameter is to set the density of the stitch form.

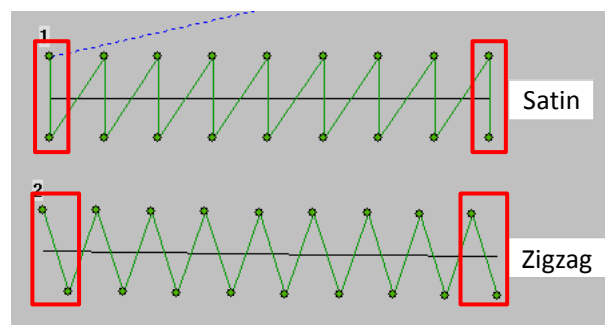
Satin Stitch: The repetition of the satin stitch, the default value is 1 represents no repetition.



Zigzag Stitch: The method for opening the parameter setting window is same to that of the flat stitch.

Stitch: Same to that of the satin stitch parameter, the vertical distance between the neighboring stitch forms in same direction, this parameter is to set the density of the stitch form.

The difference between the **Zigzag Stitch** and **Satin Stitch** is at the arrangement of the stitch form points at both sides. For the *Zigzag Stitch*, these points are in alternative arrangement, while these points are arranged symmetrically in *Satin Stitch*. So we can deem the *Zigzag Stitch* as a special kind of *Satin Stitch*.

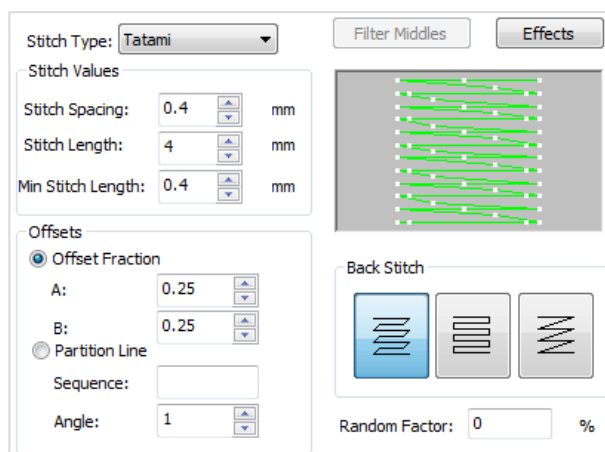


Tatami Stitch: The method for opening the parameter setting window is same to that of the flat stitch.

Stitch: The vertical interval between two stitch forms in the same direction.

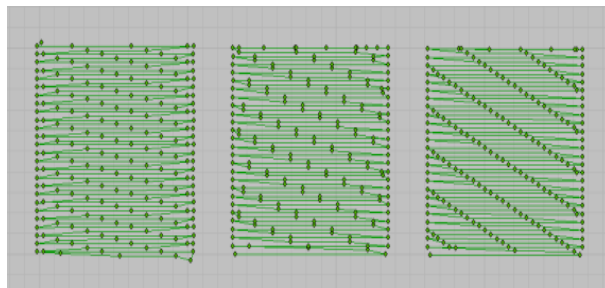
Stitch Length: Distance between two neighboring stitches.

Min Stitch: The minimum length of the created stitch.



Deviation A/B: Section range: 0~1, equal to 0 ~ 100%. This is to change the effect of stitch form by modifying the division point of the stitch length.

Effects of Different Deviation A/B Values, Left: 0.25/0.25; Middle 0.3/0.3; Right 0.1/0.1.

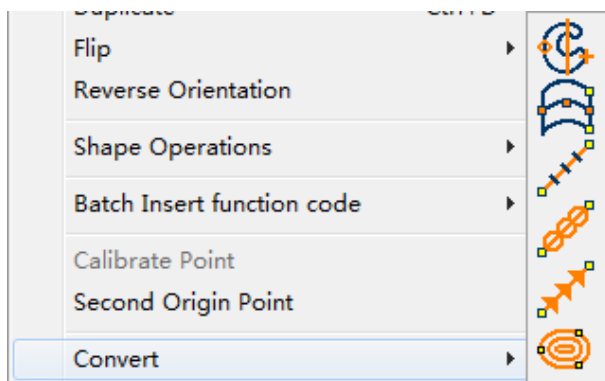


3.2.2 Shortcut to Quickly produce stitches

produce sewing stitches according to graphics



The graphics can **turn to** the stitch form object while the stitch form object can be changed to other stitch forms. After the selection, please click the right key of mouse to activate the hot menu. After user selects the “*Convert*”, the menu or shift can be activated.


Usually, conversion is finished correctly after certain condition got available. That is to say, the form of stitches and corresponding graphics have same characteristic. such as closed curve is converted to sewing stitches with compound filling, the unclosed curve, however, cannot support this feature.

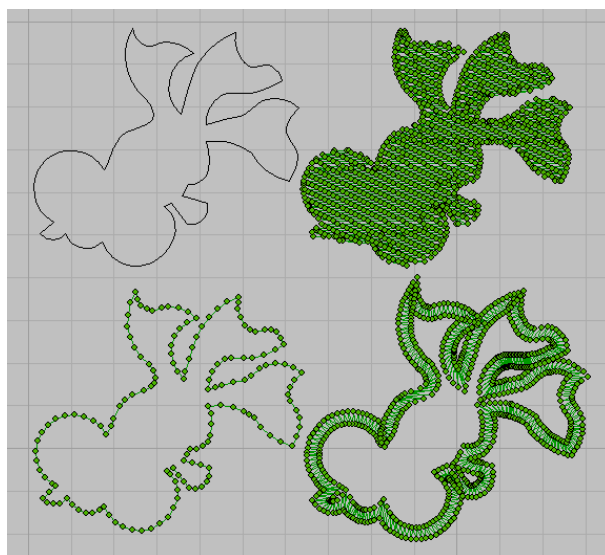


Demonstration


The objects drawn in the method of Compound

Filling  can't use the plain Stitch  directly; however, with the Convert of Objects function, those objects can have the plain stitch effects. Besides that, in some condition, the second drawing of the Curve Stitch

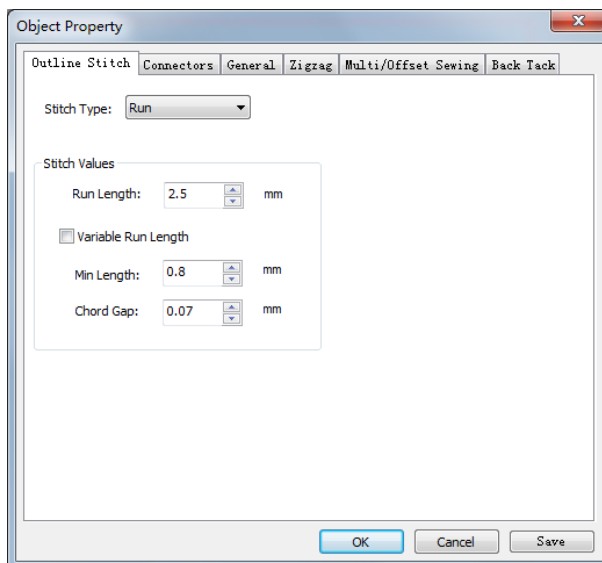
 can also be omitted.



3.2.3 Properties of Stitch Object

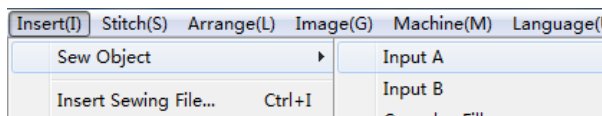
After selecting the object, user can use one of the following ways to open the properties window: 1. Double click the left key of mouse on the object; 2. Press “Properties”  button; or 3. Click right key of mouse to activate the hot menu and select “Properties”.

Among the Properties of Object, we have already introduced the Input C Property, Multi-sewing, Back Tack and so on.



3.2.3.1 Input A and B parameters

Click "Insert" → "Sew Object" → select "Input A" or "Input B".



Input A, for horizontal or vertical flat stitch editing: After selecting "Input A", the mouse comes with a cross coordinate line.

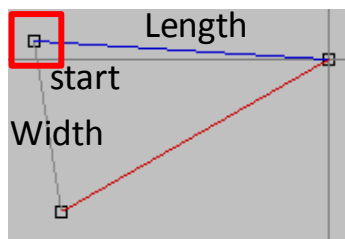


Image A

Click the interface to confirm the starting point of the pattern;

Click the interface for the second time to confirm the width of the pattern;

Click the interface for the third time to confirm the length of the pattern, as shown in Figure A;

Click the interface for the fourth time to confirm the end of the pattern, as shown in Figure B;

Enter and confirm the pattern, as shown in Figure C.

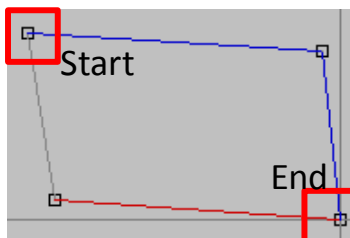


Image B

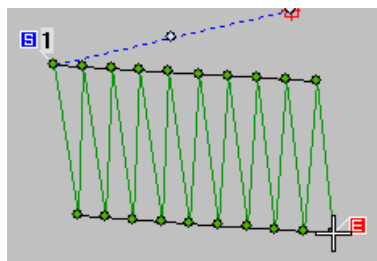


Image C

Input B, can edit the plain stitch pattern of irregular images,

You can edit the inner or outer contour first, and then confirm to continue editing the outer contour or inner contour from the starting point attachment to complete the entire irregular pattern.

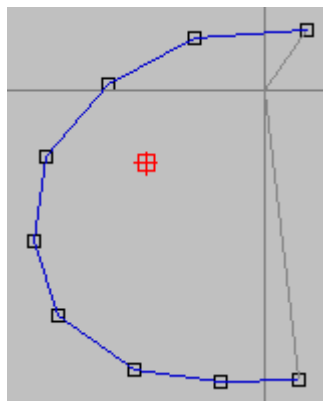


Image A

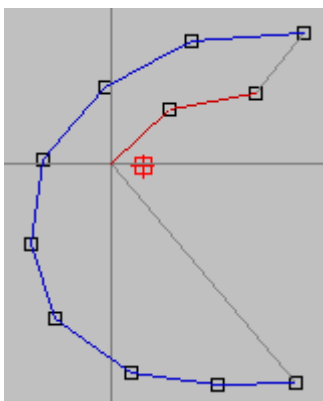


Image B

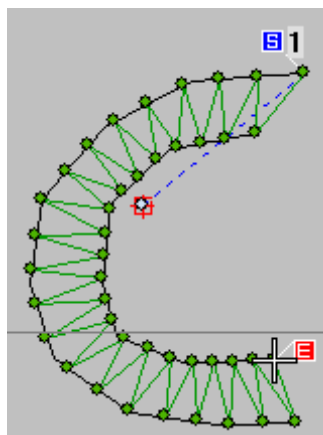


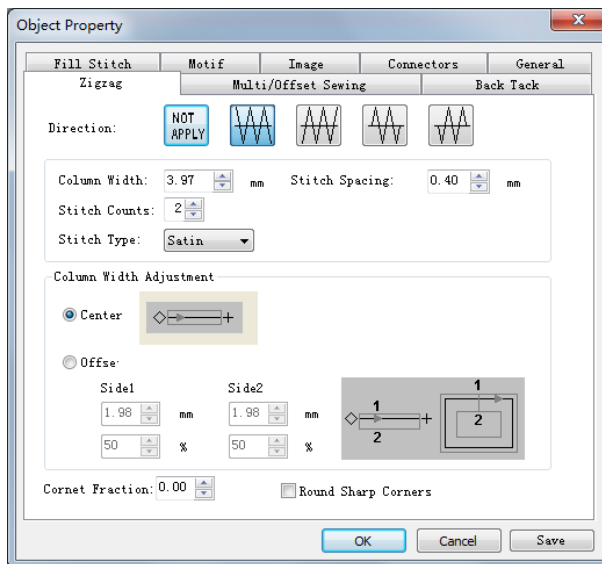


Image C

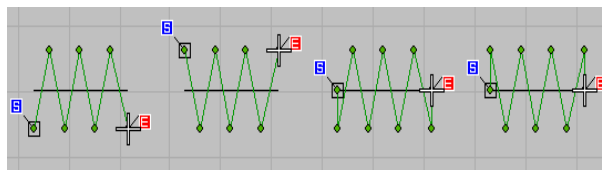
3.2.3.2 Zigzag Stitch Setting Method

Mainly, it is used for setting the generation methods

of the  Satin Stitch and  Zigzag Stitch are used.



Start Direction: These four keys are used to describe the generation method of the first stitch respectively. In this figure the stitch forms are corresponding to the order of the keys

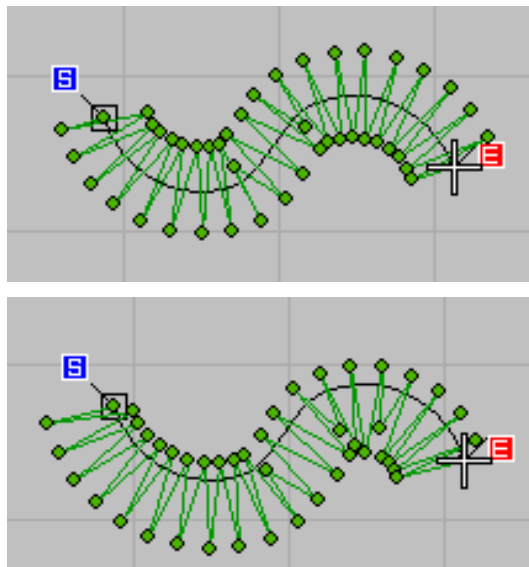


Width: Width of the Satin Stitch and Zigzag Stitch.

Margin: Center means the width centralizes with the outline of the curve stitch. Both sides are symmetrical to each other. Deviation means the ratio between the widths of these two sides with the outline of curve stitch as referred line.

Demonstration

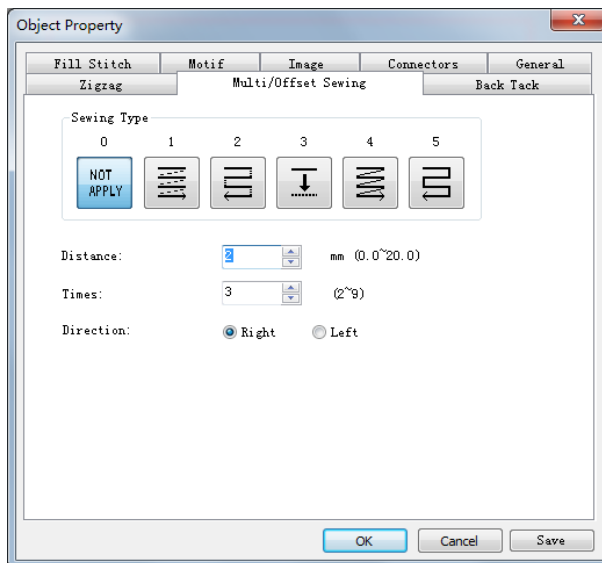
The left image shows the Center effect, and the right image shows the deviation at margin 1 for 20%



3.2.3.3 Multi-Sewing

Sewing Type: There are 5 copy methods at Multi-sewing:

1. Offset copy in same direction, the objects are connected with empty feeding;
2. The direction reverse at each offset copy, and the objects are connected with empty feeding;
3. Stitch form is deviated to a new position;
4. The offset copy is same to 1, but the objects are connected with solid stitch;
5. The offset copy is same to 2, but the objects are connected with solid stitch.



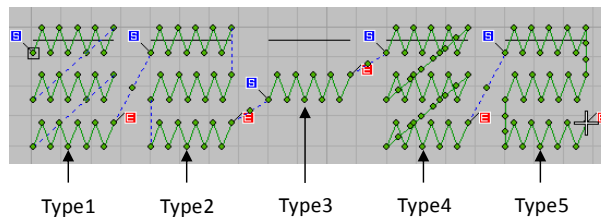
Distance: The offset length at continuous copy basing on the original object.

Times: Times for continuous copy, invalid at Type 3.

Direction: According to the proceeding direction of stitch form, the deviation head for left or right.

Demonstration

Stitch correspondence with button order



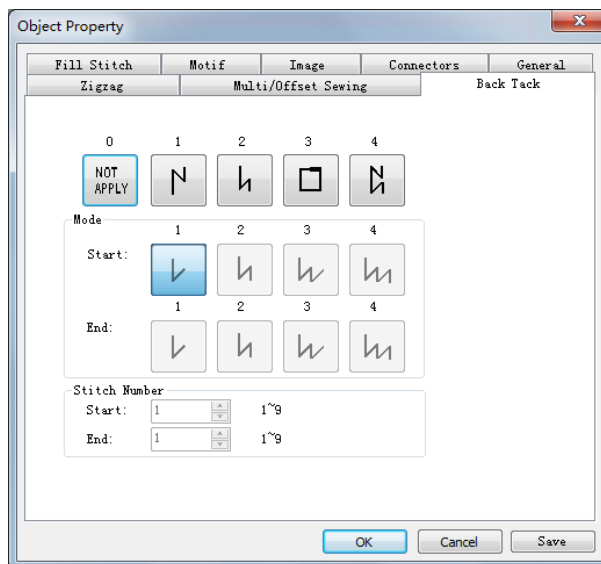
3.2.3.4 Back Tack:

Back Tack: There are 4 kinds of Back Tack: 1. Back Tack at Start; Back Tack at End; 3. Close Back Tack; and 4. Back Tack at Start and End.

Mode: Repetition for 1~4 times; the repetition time at start and end can be set respectively.

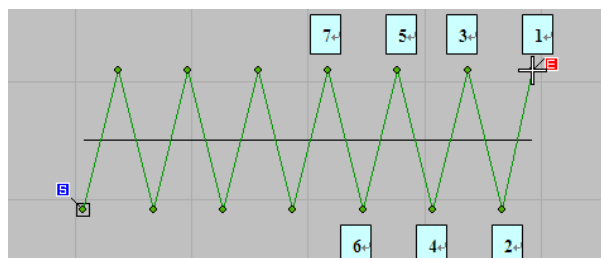
Stitch Number: The repeated stitch number according to the order of the object stitch.

Note: The back tack function of the system is commonly referred to as “locking stitch” in the actual market.



Actual Practice

No.1 is the end point. If the stitch number is 7, the object will be added the stitch point from No.1 to No.7. If it is in mode No.2, these seven points will be added from No. 7 to No. 1.



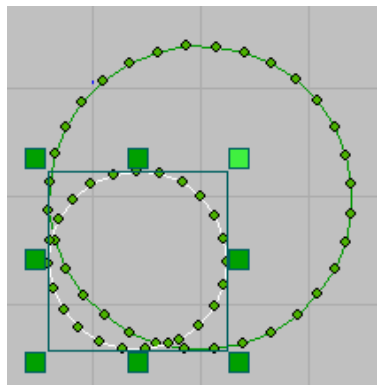
3.2.4 Changes the Shape of Outline

The input of object is just the first step of the pattern design. To receive the better sewing effect, user usually needs the modifications. The modifications are mainly the adjustment on the object and the edition of the stitch form.

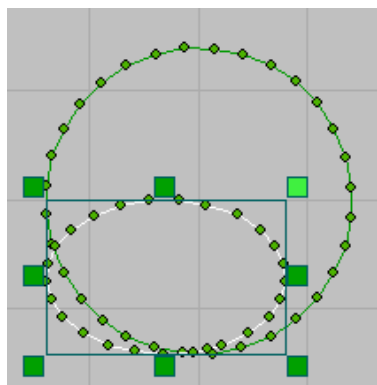
3.2.4.1 Scale and Rotation

After selection of the object, the object frame with operational handle will be displayed. The handle at each corner will scale the X and Y direction at the same time. The handles at upper side and lower side can only scale the Y axis, and the handle at left and right side can only scale the X axis.

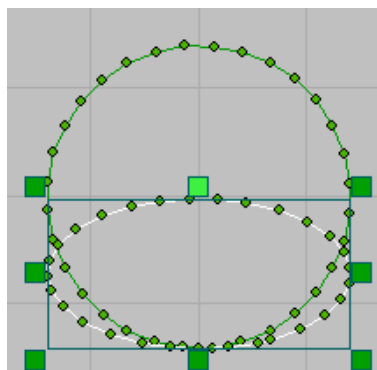
- ⑦ Press the handle at the corners to scale the X and Y in the same ratio. User can take the corner point on the frame as the reference point.



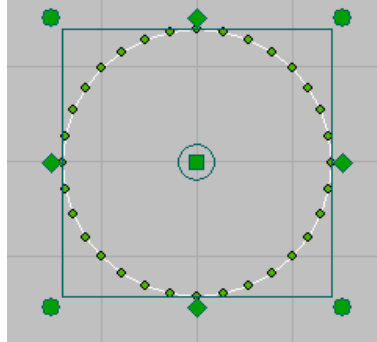
- ⑧ If user holds the Ctrl at this moment, the scaling in X and Y direction will not be at the same ratio.



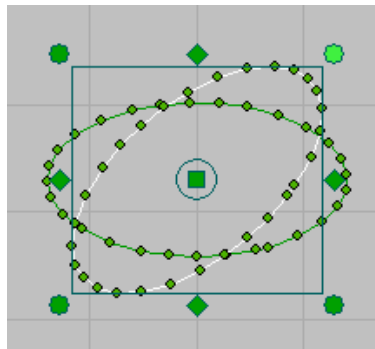
- ⑨ Selecting the point at each side is to perform the scaling in X or Y direction independently. The reference point is the middle point on the opposite side of the frame.



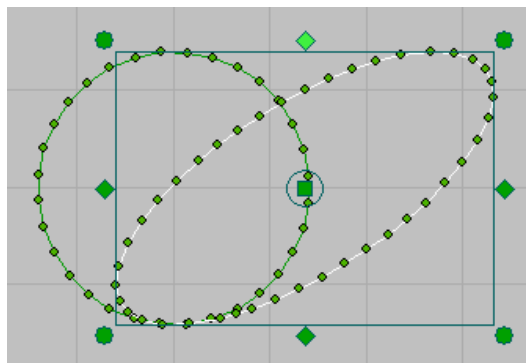
- ⑩ Click the left key within the range of the frame to change the scaling handle to the rotation handle. The round handle in the center can be moved, which is the center for the rotating operation. The round handle at each corner is the rotating handle, while the diamond handle at each side is the cutting handle.



- ⑪ Holding the round handle at either corner will be able to perform the rotating operation.



- ⑫ Holding the diamond handle at either side will be able to perform the cutting operation



These operations can only change the outline. After the outline of object changes, the stitch form will be regenerated.

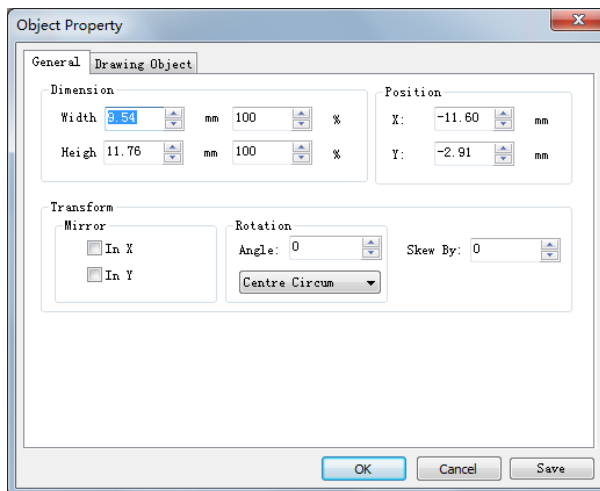
3.2.4.2 Graphicse Properties

Size: The size of the external rectangle. User can change the percentage or scale the length of the rectangle. The center of the object is the reference point for the scaling operation.

Position: Coordinate of center. After modification of the value, the object will move to the new center.

Change: The **Mirror** operation is performed with the center as the reference point. The effects of the **Rotation** and **Tile** are same to that performed with handle, but the operation via value are more accurate.

By setting the parameters, user can have this change be more accurate.



3.2.5 Graphics modification Tool



button of graphics modification

Enters graphics edit mode after tapping the button of graphics modification.

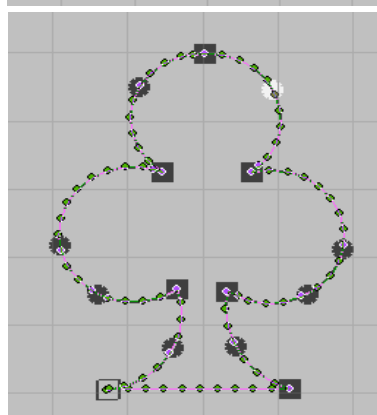
In the graphics edit mode, the outline of the selected object will be displayed in highlight. Among the outline control

points, the curve points are displayed as circles while the linear points are displayed as the squares, which are corresponding to the moment of **left key is to insert linear point, while clicking right key is to insert the curve points.**

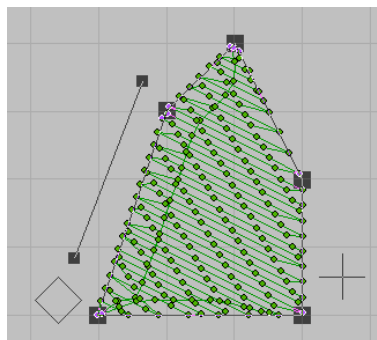
① Click the icon of the control point to select it, and then its color will change. Then , user can drag the selected control point. **When the control point is selected, pressing Del is to delete it.** A new control point can be produced when tapping on the outline. It is treated as corner point if tapping by left mouse button, drawn square in black. It is treated as arc point if tapping by right mouse button, drawn circle in black.



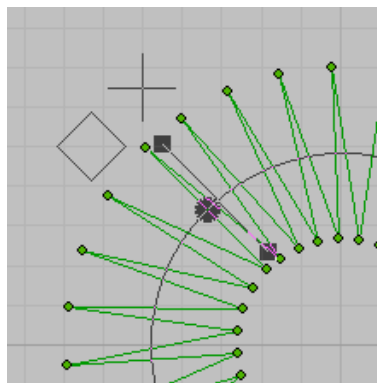
② Once you drag the control point, the shape of the outline will be changed along with the movement of the control point. However, before you press the Enter, nothing will be changed on the object stitch form and the actual outline. Press Esc to give up the modification; press Enter to make the modification be valid.



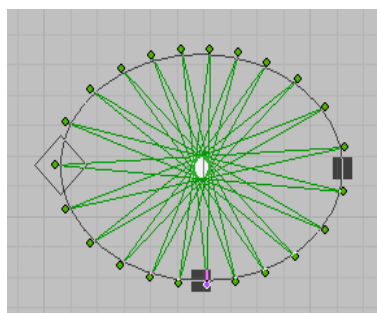
③When adjusting the object using the compound filling, the empty diamond is the start point of the object, the cross is the stop point and the segment connecting two small rectangles is the direction line of stitch form. **(For compound filling input or objects that apply flat stitches and tatami stitches, control points such as start/stop, direction, and width are added.)**



- ④ When adjusting the object using the satin stitch, the empty diamond is the start point of the object, the cross is the stop point and the segment connecting two small rectangles is the width




- ⑤ For star and ellipse objects: in the adjustment mode, dragging the control point at center will move the entire object. Dragging the two control points on the outline is to adjust the long axis and short axis of the ellipse. The empty diamond is the start point, and the end point of object is coincided to its start point



3.2.6 Edition of Stitch Form

PDS provides two kinds of tools for editing the stitch form. User can directly use the stitch form edition tools




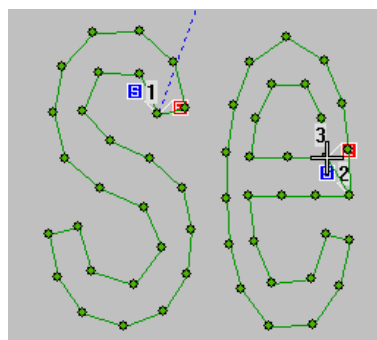
to move, delete or insert the stitch form point on the interface; he also can open the stitch form list  to change the stitch, where the user can change the function code of the targeted stitch form, beside to the operations of moving, deletion and insertion mentioned above.

The interface edit status will enter the stitch edit mode. Before selecting stitch editing, you need to have a selected object.

- ⑤ Select stitch

After user clicks the stitch form point, the selected stitch point will turn to the current stitch, displayed as

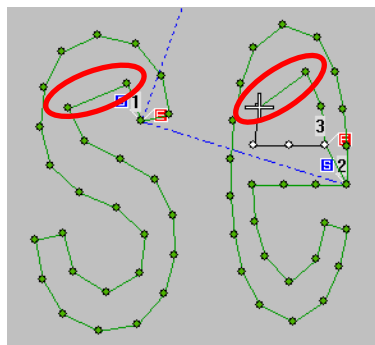
the cross icon . The stitch forms before the current stitch will keep their colors, but the stitch forms after the current stitch will turn to black. The stitch next to the current stitch will turn to white. User can hold the left key and drag the icon in the blank area to select the stitch form in batch, and the stitch form within the selection frame will turn to the status of being selected.



Initial image

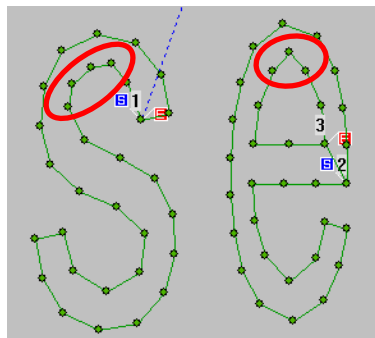
⑥ Delete stitch

User can move the selected stitch points with mouse. Press Del to delete the selected stitch form point.



⑦ New stitch

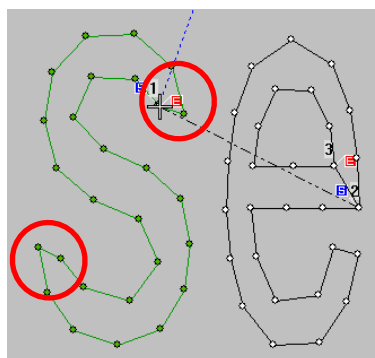
In the status of editing the stitch form, by clicking the right mouse button, user can receive a new stitch form from the current stitch to the position, where he clicks the right mouse button. As the right figure.



⑧ Moving stitch

In the stitch editing state, click the left mouse button to select the current point, and hold down the left mouse button to move the point, as shown in the right figure.

Note: The set distance can be moved in the object list.



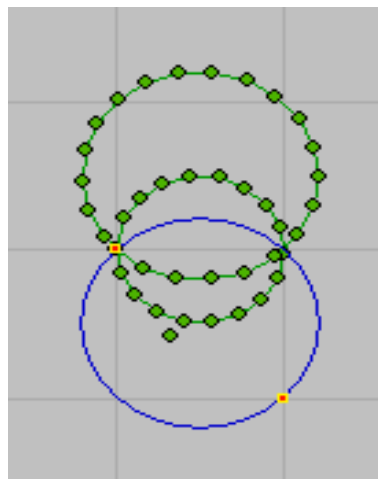
3.2.7 Assistant Tool

3.2.7.1 Assistant Tools for Object Input



Grid Alignment

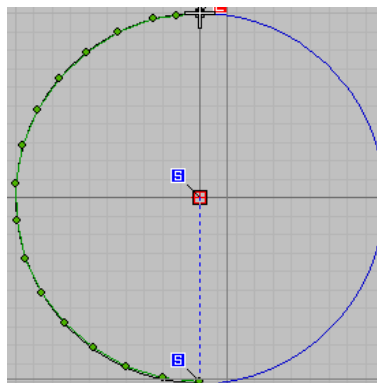
Click the tool figure to activate /deactivate the function. After user activates this function, the inputted point of object at each time will be cross of the grid.





Continuous Input

Input a series of objects successively. It can be cooperated with the input method of arc.

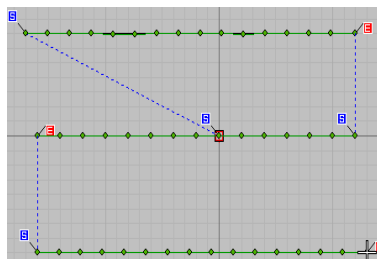
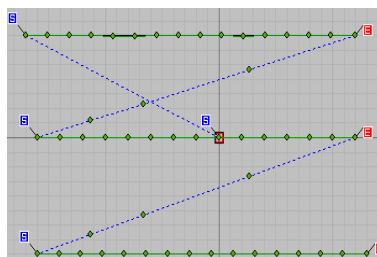


3.2.7.2 Assistant Tools for Object Edition



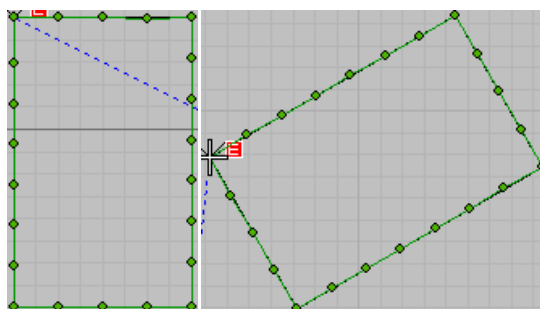
Reverse Direction

This function can reversely layout all control points for both graphics and sewing stitch, if they are selected. for sewing stitch, it sometimes reduces length of empty feeding, especially start point of one curve is nearer than the end point of the other curve.



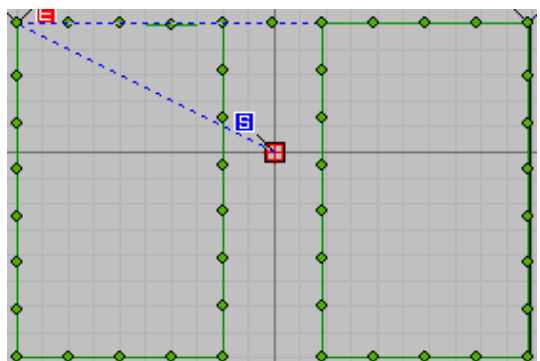
Mirror Displacement

Compared to the mirror operations in the object properties, the mirror displacement supports the mirror reference line in any position and angle. The example on the right shows the effect of mirroring 30°.



Mirror Copy

Generate a copy of sewing stitch or graphics at the other side of the reference line. See the sample from right figure.

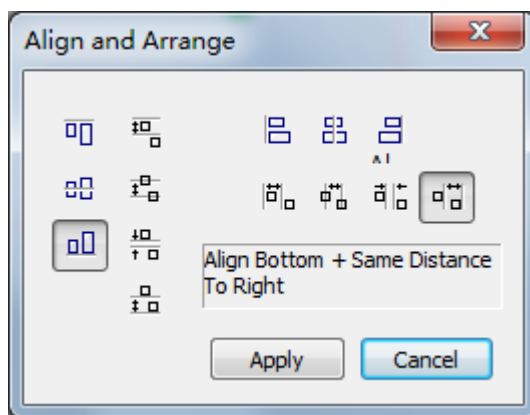


3.2.7.3 Alignment



For the operation of alignment, you need select at least two objects.

The two rows of keys at the left are used to align the Y coordinates and adjust the interval in Y direction, while the two rows of keys at the right are used to align the X coordinates and adjust the interval in X direction.



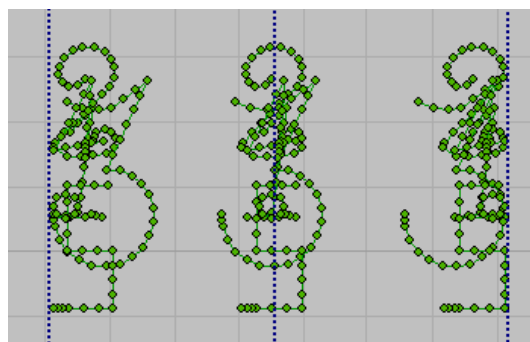
Left Alignment: The entire selected objects shall align according to the left border of the most left object.



Alignment of Middle: The entire selected objects shall align according to the center line of the first object



Right Alignment: The entire selected objects shall align according to the right border of the most right object.



Objects for Alignment Operation

Attention: at alignment operation, the base line is the external frame of the object.

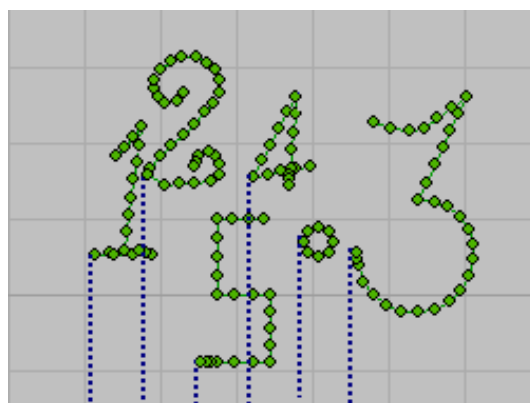
From left to right, these are the effects of “Left Alignment”, “Alignment of Middle” and “Right Alignment”.



Left Equal Distance: Each object uses its left frame as the standard; the distance between each one is the fix value.



Center Equal Distance: Each object uses its center line as the standard; the distance between each one is the fix value



3.2.7.4 Assistant Tools for Pattern View



Overview Window

Windows for generally previewing the pattern. When the area of the design window is smaller than the whole pattern, the design window area will be marked with the white square.

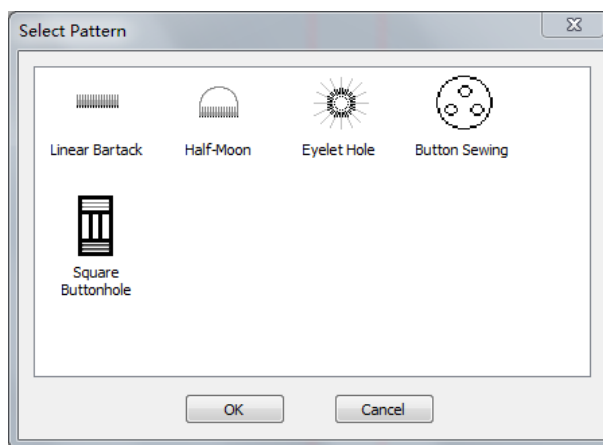
3.3 Use of Craft Template

The craft template is the special pattern developed for the particular sewing machines. Usually, it is a series combination of stitch form in the certain term, for an example, the linear bar-tacking template is formed by a part of flat stitch lower sewing and a part of the satin stitch. Although the combination of the object is relatively stable, user can still generate the customized pattern by inputting the parameters to adjust the size, stitch density or other properties of the pattern.



The tools of craft template are located at object input tool bar.

Click “Craft Template” to have access to the interface for selecting the template. Select the corresponding template to have access to the input status.



3.3.1 Linear Bar-tacking Template (Reinforcement)



Linear Bartack

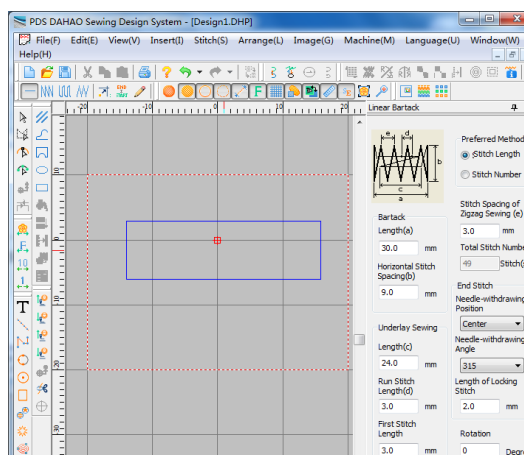
Take the linear bar-tacking sewing as an example: the template will provide a rectangular frame according to the position of the icon. User can select the proper position and press left mouse button to create a bar-tacking stitch form, or change the parameters in the template parameter list at right and input the pattern. (other input parameters are similar)

This most common pattern for bar-tacking machine is formed by the flat stitch lower sewing and the satin stitch.



Generate stitch pattern effect

Parameter setting



Edit position selection effect

Bar-tacking Parameters:

Length (a): Length of bar-tacking sewing.

Stitch Interval (b): Width of bar-tacking sewing

Underlay sewing

Length(c): usually smaller than the length of the bar-tacking. User can set it as 60~80% of the bar-tacking length. The default is 80%.

Stitch Interval (d): 3mm as default. The stitch length can be adjusted according to the craft.

First Stitch Interval: 3mm as default. The length of the first stitch

Priority Policy:

Stitch Interval of Zigzag Sewing (e): Enable the parameter of Zigzag Straight Stitch Interval become valid. The system will generate the stitch form according to the set stitch form interval automatically.

Total Stitch Number: Enable the Total Stitch Number become valid. It will adjust the stitch form interval according to the set stitch number automatically.

Finish Stitch:

Needle-withdrawing Position: user can select “Middle” or “Beside Start”

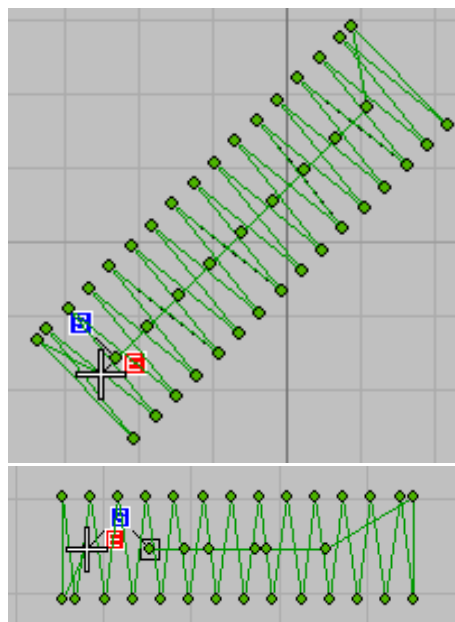
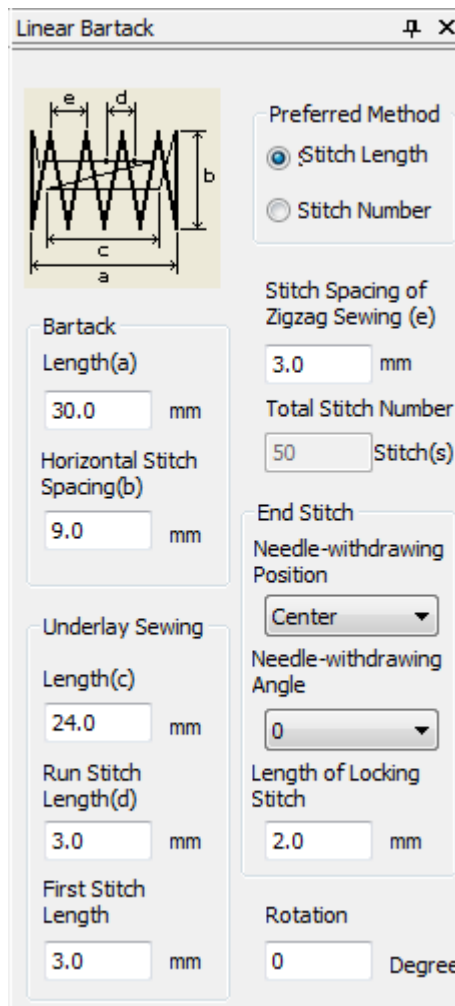
Needle-withdrawing Angle: the direction of the last stitch

Length of Locking Stitch

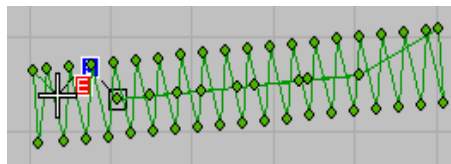
Rotation: Enable to set the rotation angle of the template (take the center of the object as the circle center).

Example Editing Pattern

Length (a) 20, Stitch Interval (b) 6, Zigzag Straight Stitch Interval (g) 1.6, Underlay Sewing Length (c) 15, The finish stitch is at center.



Bar-tacking Length (a) 25, Horizontal Stitch Distance (b) 5, Zigzag Straight Stitch Interval (g) , Underlay Sewing Length (c) 15, ending stitch at the both sides of start point, rotation 5 degree.



3.3.2 Semi Lunar Template



Add an arc stitch form on the basis of the linear bar-tacking template.

Half-Moon

Parameter Setting

Bartack Parameters:

Length (a): Length of bar-tacking sewing.

Stitch Interval (b): Width of bar-tacking sewing

Underlay sewing

Length(c): usually smaller than the length of the bar-tacking. User can set it as 60~80% of the bar-tacking length. The default is 80%.

Stitch Interval (d): 3mm as default. The stitch length can be adjusted according to the craft.

First Stitch Interval: 3mm as default. The length of the first stitch

Priority Policy:

Stitch Interval of Zigzag Sewing (e): Enable the parameter of Zigzag Straight Stitch Interval become valid. The system will generate the stitch form according to the set stitch form interval automatically.

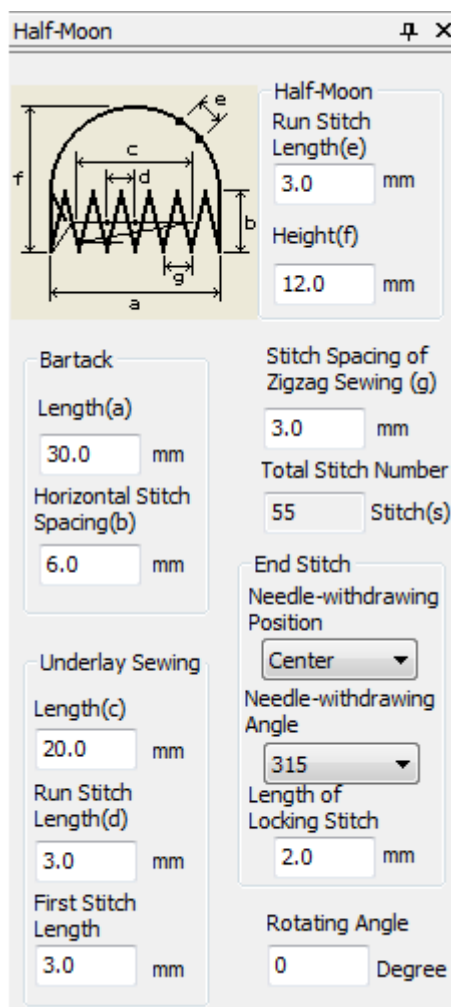
Total Stitch Number: Enable the Total Stitch Number become valid. The system will adjust the stitch form interval according to the set stitch number automatically.

Finish Stitch:

Needle-withdrawing Position: user can select “Middle” or “Beside Start”

Needle-withdrawing Angle: the direction of the last stitch

Length of Locking Stitch

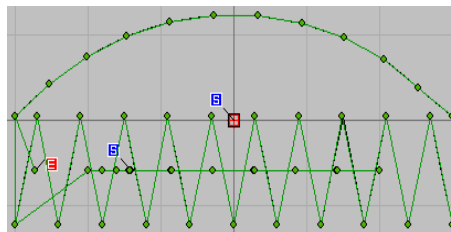


Rotation: Enable to set the rotation angle of the template (take the center of the object as the circle center).

Semi-lunar:

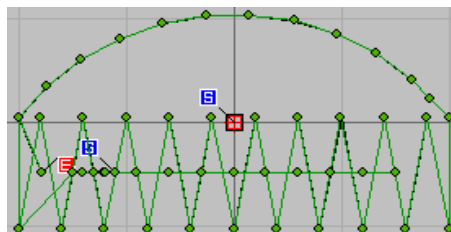
Stitch Interval of Zigzag Sewing (e): The needle length of a half-moon flat needle.

Height (f): The chord height of the half-moon shaped flat needle.



Example Pattern Editing:

Doubling Length (a) 20.0, Horizontal Stitch Distance (b) 5.0, Zigzag Straight Stitch Interval (g) 2.0, Underlay Sewing Length (c) 1.5, the finish stitch is at center, half moon height (f) 10.0, generated half moon shaped object effect




3.3.3 Round Head Hole Template (Eyelet Hole)

This is used as the mending stitch form after the fabric eyeleting. the difference between this and the linear doubling is that the outline of this is circle.



Eyelet Hole

Note: since the edited pattern is in the forward direction when the stitch is running, in the actual pattern sewing process, the pattern is stitched in the reverse direction;

if the customer has special requirements, the Mirror Copy  can be used to copy a pattern running in the reverse direction.

Parameter setting

Round:

Outer Radius: the diameter of the outer circle of the zigzag slit.

Inner Radius: the diameter of the inner circle of the zigzag

Underlay Sewing Radius: The size of the circle for the bottom flat stitch.

Feeding at Start Point: Yes/No Move from the origin of the mechanical position to the origin of the pattern

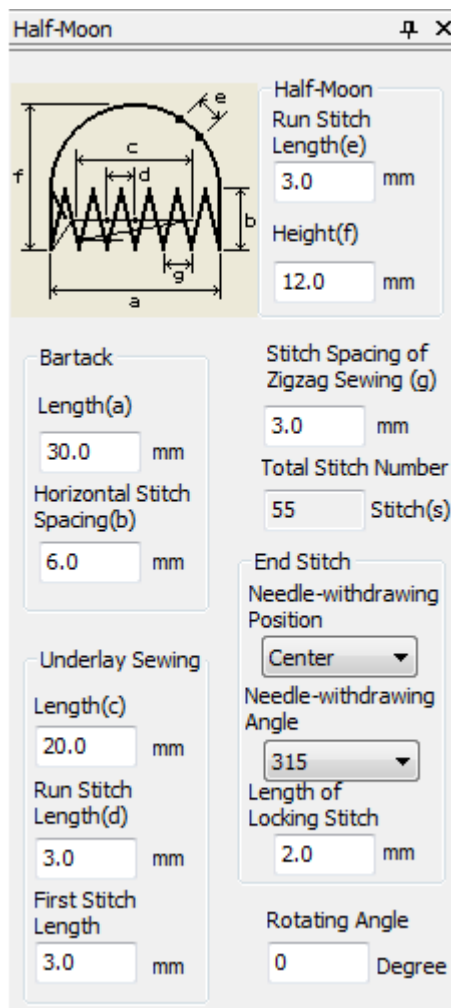
Start Positioning Stitch Number: The number of the locking stitches at start point

End Positioning Stitch Number: The number of the locking stitches at ending point.

Cycle times: the repetition time of the Zigzag sewing

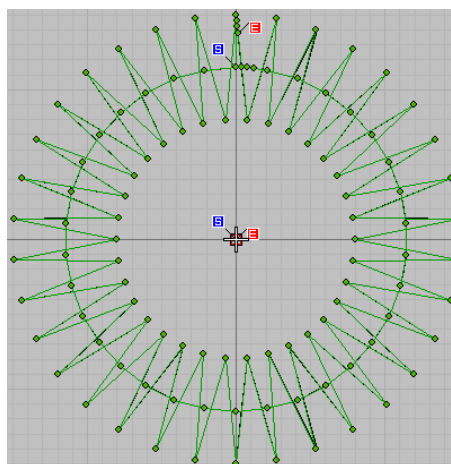
Number of stitches: Set the total number of stitches for the pattern.

Actual number of stitches: After setting the total number of stitches for the pattern, the system automatically displays the number of stitches after calculation.



Example Editing Effect:

Outer radius (a) 15.0, inner radius 8.0, underlay sewing radius 11.5, start positioning stitch 3, end positioning stitch 3, cycle times 1, feeding at start point is off, number of stitches 110, actual number of stitches 113



3.3.4 Button Sewing Template



Button Sewing

The button sewing pattern can generate various kinds of symmetrical button holes.

Parameter setting

Hole Number: Minimum at 2, usually it is 4

Hole Interval: distance between two neighboring holes.

Number of Thread between Holes: the repetition stitch number

Connecting Method: The Crossing means that the stitch forms between holes are overlapped, which is much firmer.

The uncrossed connection features the tidy stitch form.

Start Position: Start point of the stitch form

Independent Stitch Form: only available when the hole number is 4. The order of “Yes” will have the system make the stitch form in the shape of “11”; or the system will make the stitch form in the shape of “□”.

Length of Start Stitch: The length between first two stitches.

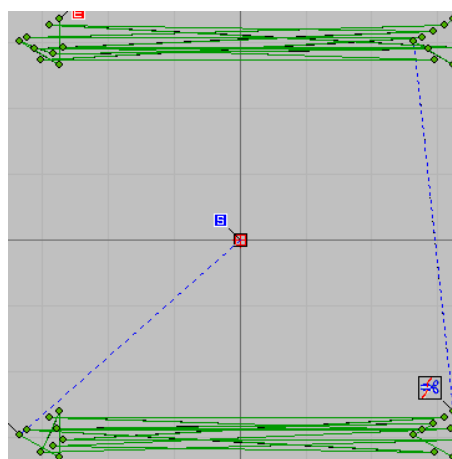
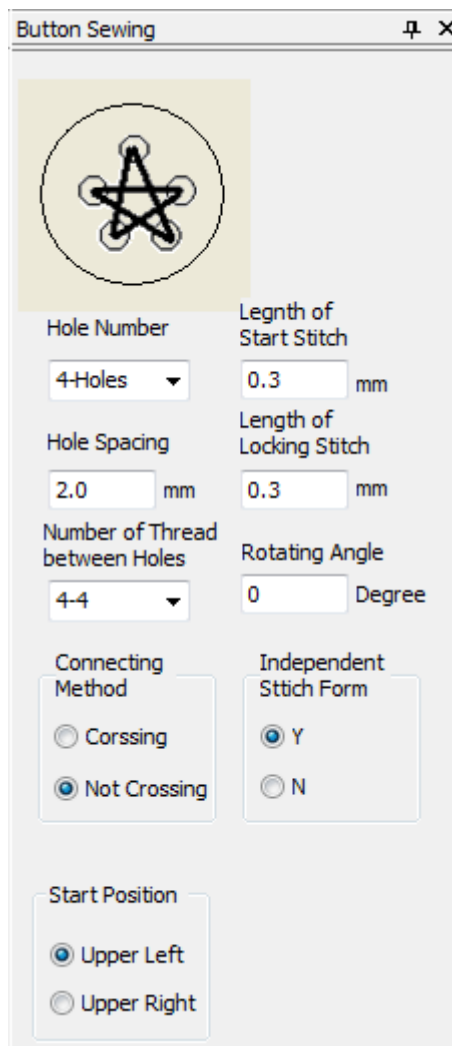
Length of Locking Stitch: The length between last two stitches.

Locking Stitch can prevent the thread from coming off.

Rotating Angle: Deviation angle comparing to the positive direction of Y axis.

Example Editing Effect:

The hole number is 4 holes, the hole interval is 2.0, the number of thread between holes is 6-6, the rotating angle is 90 degrees, the length of start stitch is 0.2, the length of locking stitch is 0.2, the connection mode is not crossed, the independent stitch is on, and the needle position is upper left.



3.3.5 Buttonhole Template



Square Buttonhole

It is available only when the machine type is set as buttonhole machine.

These are the templates for various kinds of buttonhole machines. The stitch form of a template is divided into four parts, the head, the left swing, the right swing and the Tail, among which the left/right swing are fixed, but user can make the combination on the head and the Tail in certain forms.

Head Stitch Form:

The thick line of the icon indicates the overall shape, and the thin line indicates the direction of the stitch.



Square: Rectangle horizontal sewing.



Round: Semicircle horizontal sewing with eyelet hole in center



Radiation: Semicircle radiation sewing



Round: Semicircle horizontal sewing with eyelet hole in center



Eyelet: The round head sewing with eyelet.

End Stitch Form:

The thick line of the icon indicates the overall shape, and the thin line indicates the direction of the stitch.



Line: Rectangle vertical sewing.



Long Tail: The rectangle horizontal sewing narrowing at the tail



Semicircle: Semicircle horizontal sewing



Radiation: Semicircle radiation sewing



Round: Semicircle horizontal sewing with eyelet hole in center

According to the different combination between head sewing and end sewing, the buttonhole template can provide dozens of stitch form. The parameter settings of these sub-templates are corresponding to the combination between the head sewing and end sewing. At below, we will give two sub-template combinations, the Square and the Eyelet Long Tail Bar-tacking as examples.

Setting of Parameters for Square

Width of Swing Stitch The width of the Zigzag sewing at left/right swing

(that is, the width of the parallel portion)

Parallel Part Stitch Interval: The stitch form interval of Zigzag sewing at left/right swing.

Left/ Right Knife: Interval between edge and swing.

Bar-tack Part Stitch Interval: The stitch form interval of Zigzag sewing at head/ end

(that is, the No.1/No.2 reinforcement)

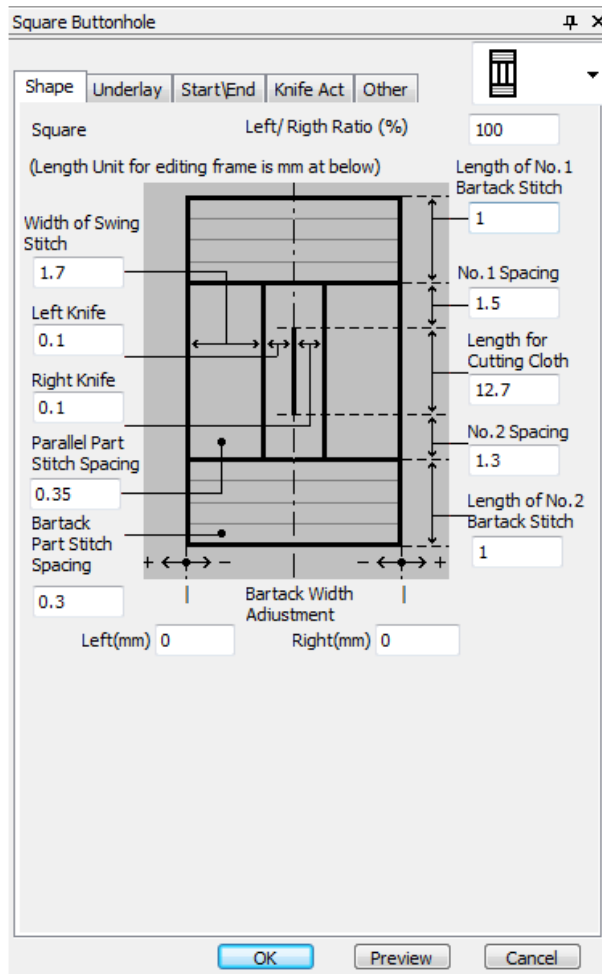
Left/Right Ratio: it is the width ration between left side and right side (according to the center line). The default value is 100%. When the value is lower than 100%, the right side will be narrowed; when the value is over 100%, the right side will be widened. The width of the left part keeps still at all the time.

Length of No.1/No.2 Bar-tack Stitch: The length of head / end sewing

Length for Cutting Cloth The length of the edge at cutting cloth

No.1/ No.2 Interval: The intervals between edge and head/end sewing

Bar-tack Width Adjustment: Left/Right: The compensation on the width of head/end sewing



Setting of Parameters for Eyelet Long Tail Bar-tack

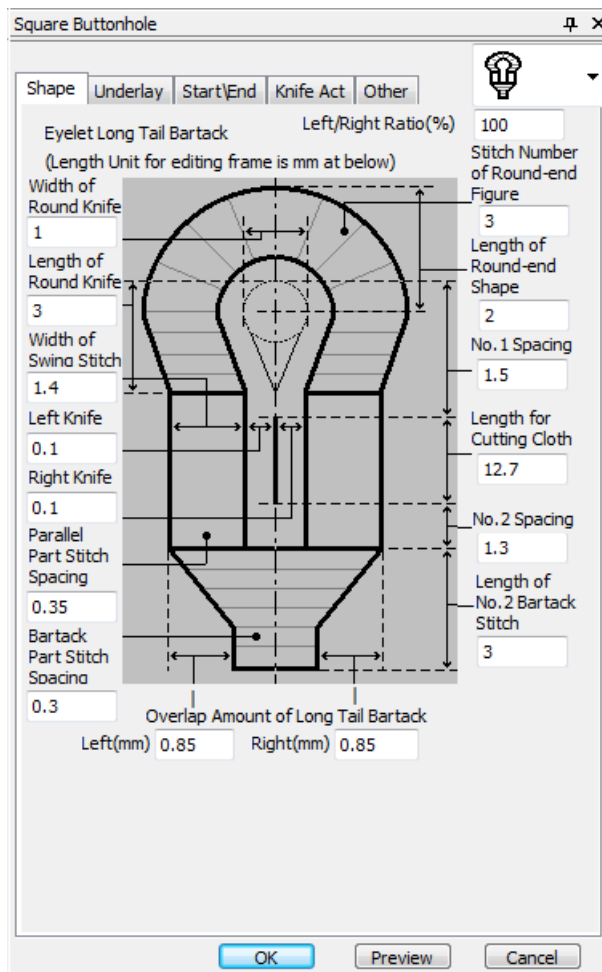
Width of Round Knife: The width of eyelet

Length of Round Knife: length of eyelet

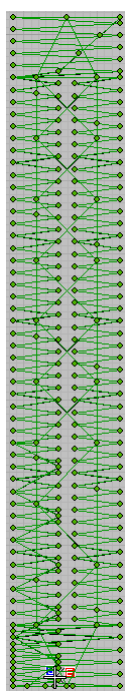
Stitch Number of Round-end Figure Total Zigzag stitch number of the eyelet

Length of Round-end Shape The height of eyelet

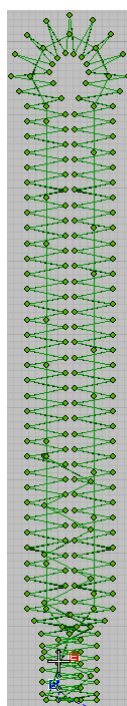
Overlap Amount of Long Tail Bar-tack Left/Right: the narrowing degree, left part is not systematical to the right



Pattern Effect Display:



Effect of Angle Buttonhole



Effect of Eyelet Long Tail Bartack Buttonhole

Parameter Setting of Bottom Sewing

Bottom Sewing Parameter

If it is set “No” at bottom sewing parameter, the system will not perform the bottom sewing.

The bottom sewing is the sewing actions before the left/right swing sewing, which is to strengthen the sewing.

Times of Bottom Sewing: The repetition times of bottom sewing

Needle Entry Point Compensation Left/Right: The deviation amount of the bottom sewing, comparing to the stitch from at upper level

Stitch Interval of Bottom Sewing: Set the stitch interval of bottom sewing.

Needle Entry Point Compensation Front/ Back: The distance from the stitching point of the last bottom stitch and the ending point of the next bottom stitch.

Position Compensation Left/Right: Perform Left/Right correction for all bottom stitches.

Fabric Rolled-in at Start of Bottom Sewing

Width: The stitch length of bottom sewing stitch reinforcement.

Stitch Interval: The bottom sewing is reinforced with two straight lines of distance.

Length: The length of the bottom sewing reinforcement stitch.

Bottom Sewing Splice

Splice: When the number of bottom sewing is greater than 1, set to yes or no, the bottom stitch stitching sewing function is realized.

Width: The width of the bottom sewing reinforcement stitch.

Stitch Interval: The distance between the two points in the stitching reinforcement stitch.

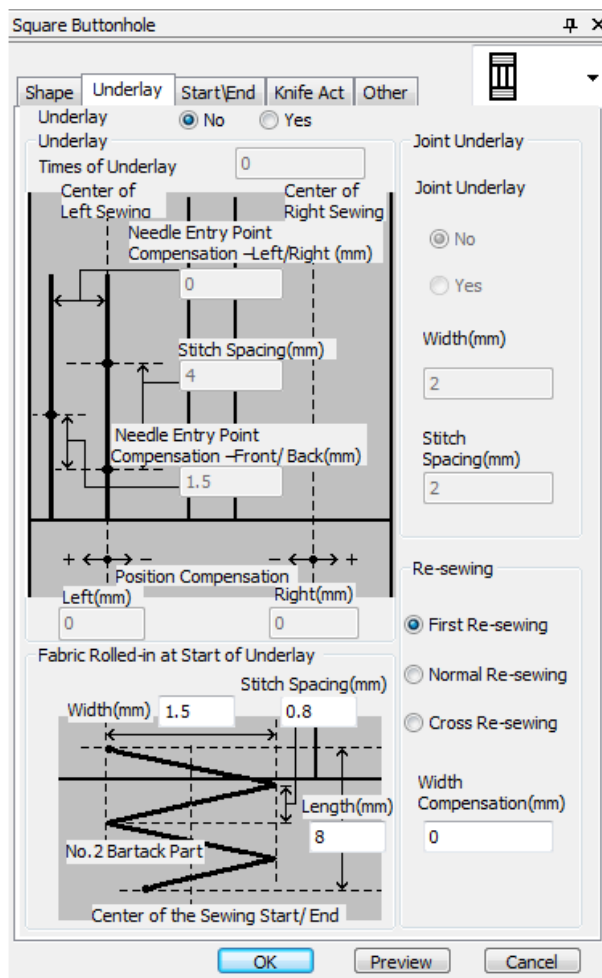
Length: The bottom sewing is used to reinforce the stitch length.

Overlap

Number of overlap: After setting 2 times or crossing, the parallel stitching function is realized.

Normal 2 overlap: Repeat the operation at the original stitch point position.

Cross 2 overlap: Repeat the operation for the left and right parallel parts. (The second repeated parallel stitch length is one-half of the last parallel stitch length)



Width correction: On the basis of the "normal 2 overlap and cross 2 overlap " function, the modification of the width of the first weight parallel portion is performed.

Sewing Start/ End

Sewing start:

Horizontal Correction: The position of the stitching stitch is adjusted.

Stitch Interval: The distance between two stitches between the stitches of the pattern stitches.

Longitudinal Correction: The pattern is stitched with stitch stitches and the stitching point position is set. (End needle position with the second reinforcement)

Starting Seam Width: pattern stitching stitch stitching width.

Stitches Number: Number of stitches for stitching stitches.

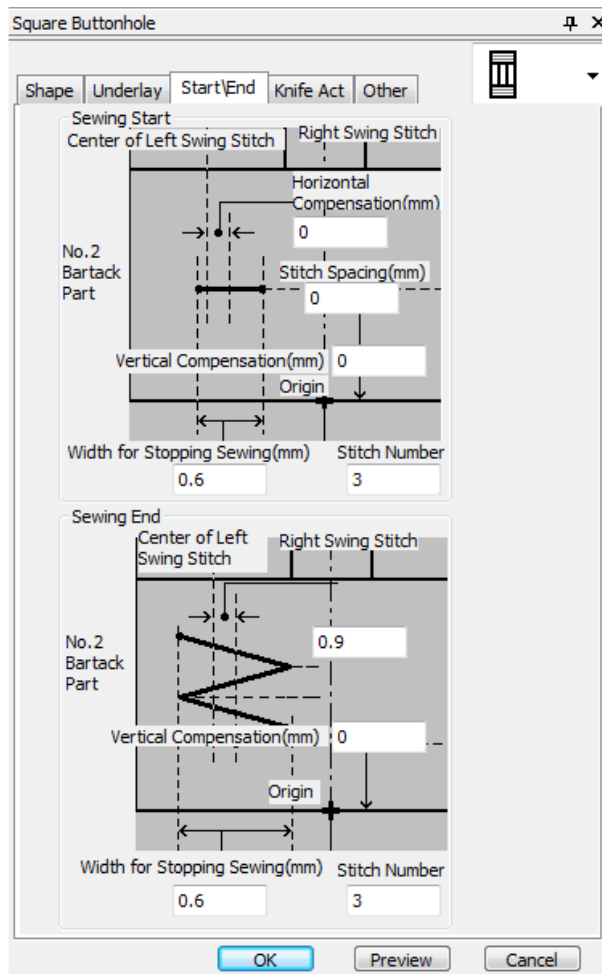
Sewing End

Horizontal Correction: Horizontal position adjustment of sewing stitch sewing at the end of sewing.

Longitudinal Correction: Sewing end stitch sewing vertical position adjustment.

Stop sew width: sew ends the stitch width.

Stitches Number: The number of sewing stitches at the end of sewing.



Knife parameter

Knife Action

Cloth knife size: Set the knife width configured on the headpiece.

Standard knife: Whether the knife is moving.

First knife: Set whether to perform the knife action before sewing.

2 Reunion on the first lap: Whether to perform the knife action after sewing the bottom sewing at the time of setting the bottom sewing.

Sewing Speed

Bottom seam speed limit: The speed at which the bottom stitch is sewn when there is a bottom sewing function in the pattern.

Maximum speed limit: The maximum speed at which the pattern is sewn.

Electronic Thread-holding

Ordinary Pattern

Left/Right Pendulum: This function sets the left/right parallel stitching tension function.

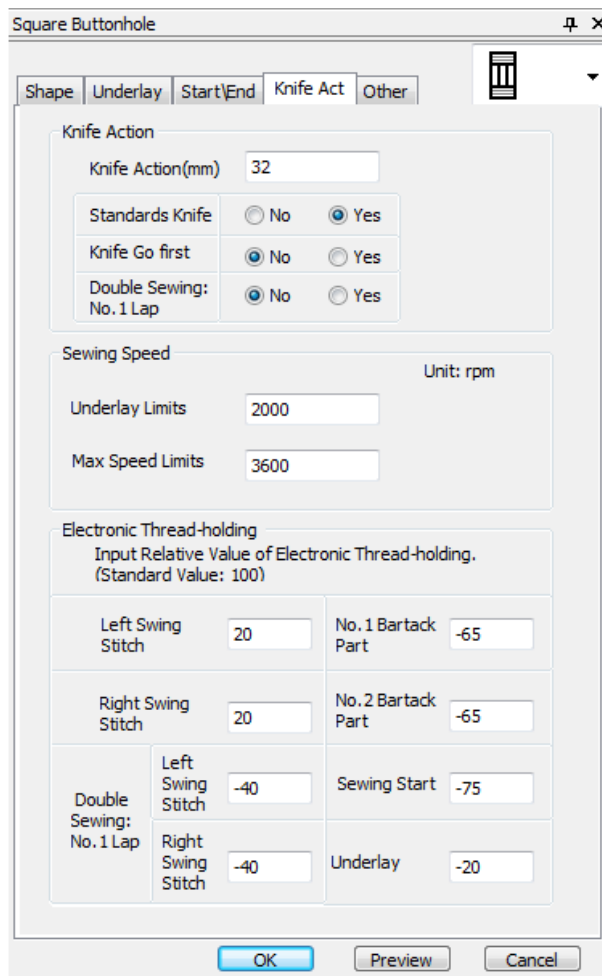
No. 1/No. 2 knot: This function is set for the upper and lower reinforcement line tension.

Ordinary pattern (2 stitches 1st circle)

Left/Right Pendulum: This function sets the left/right parallel stitching tension function.

Sewing start: Set the thread tension function when the bottom stitch is stitched.

Bottom sewing: The thread tension function setting when the bottom stitch is sewn.



Other parameters

Upper Thread Tension at Sewing End: Set the upper thread tension at sewing end

Upper Thread Tension at Thread-trimming: Set the upper thread tension at thread-trimming

Upper Thread Tension at Joint Sewing: Set the upper thread tension at joint sewing

Presser Type: Classified as 1, 2, 3, 5 (custom)

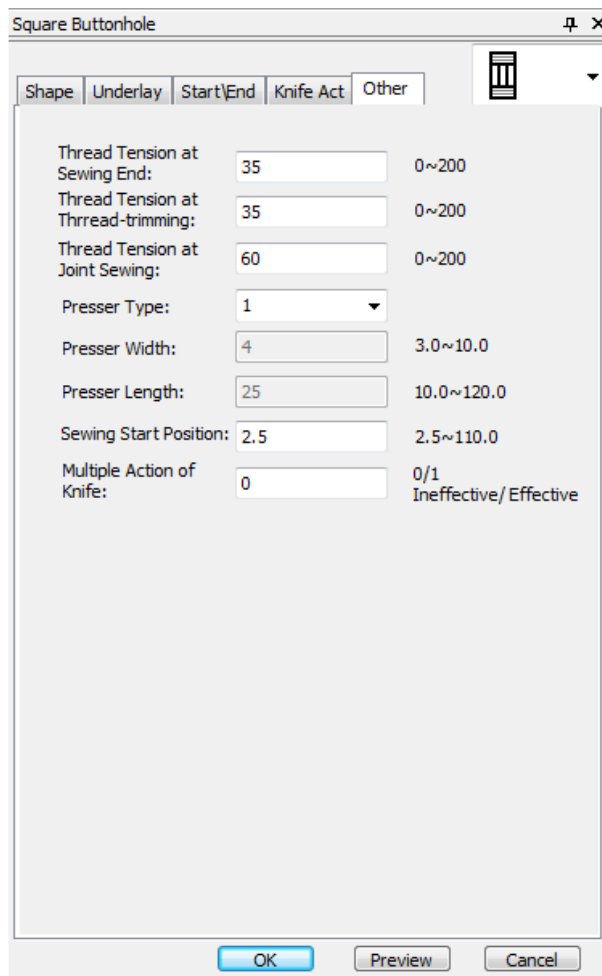
When the presser is customized:

Presser Width: width for the 1st and 2nd reinforcements

Presser Length: length of cut cloth

Sewing Start Position: The position of the stitching point in the range of the presser.

Multiple Actions of Knife: whether to support the knife multiple times.

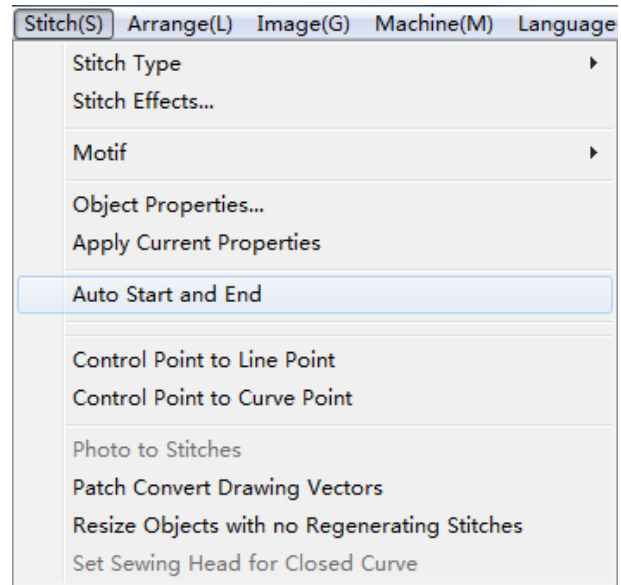


The templates are designed for user to finish the needed pattern within the shortest time when they are using the PDS. But the adjustable range of the parameter for template is still limited. Therefore, the users, who want to have more adjustments on the details of the patterns, are still recommended to learn the function at higher level so that those users can design the better patterns freely and fulfill their customized needs.

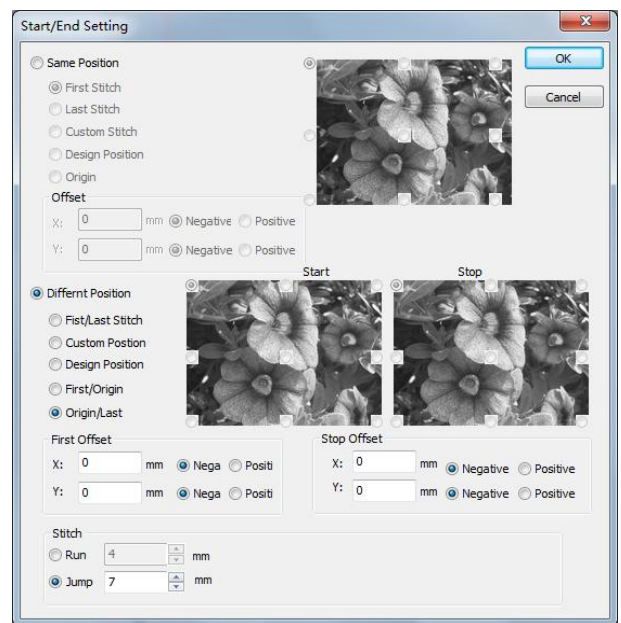
3.3.6 Editing the Pattern Start/End Position

When pattern editing is performed under certain conditions, when the pattern start point and end point settings are required, enter the “stitch” menu to set the corresponding start point and end point position.

- ③ Click the “Stitch” to enter the function and select the “Auto Start and End” function.

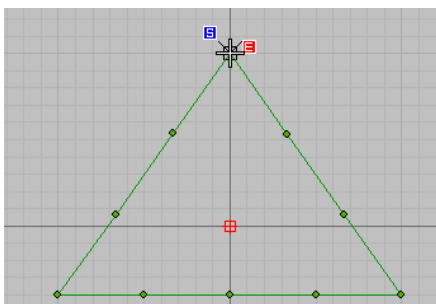


- ④ Coming in Start/End Setting dialog, set parameters by titles of these buttons or edit boxes.

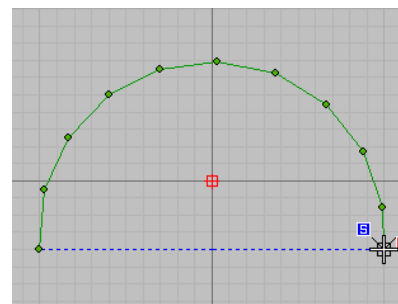


Pattern effect display

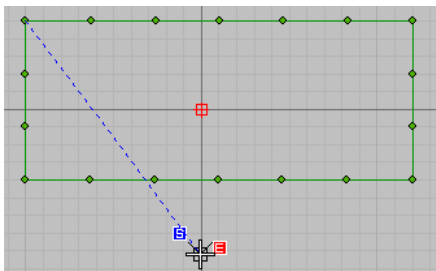
Same location



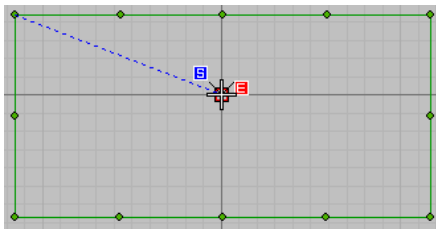
First stitch



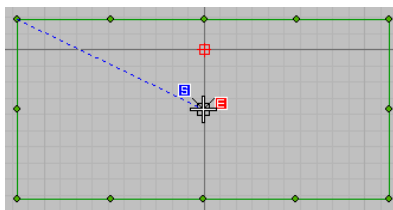
Last stitch



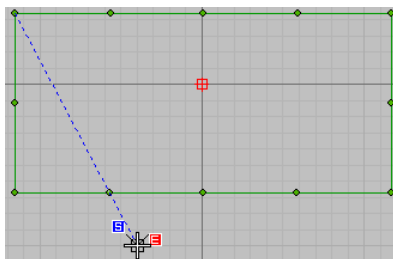
User specified location



Origin position



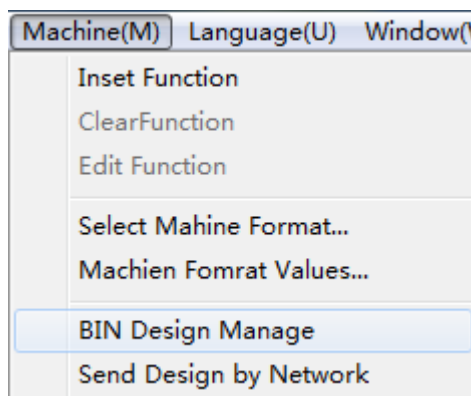
Middle position of the pattern (select the start point and end point position in the picture)



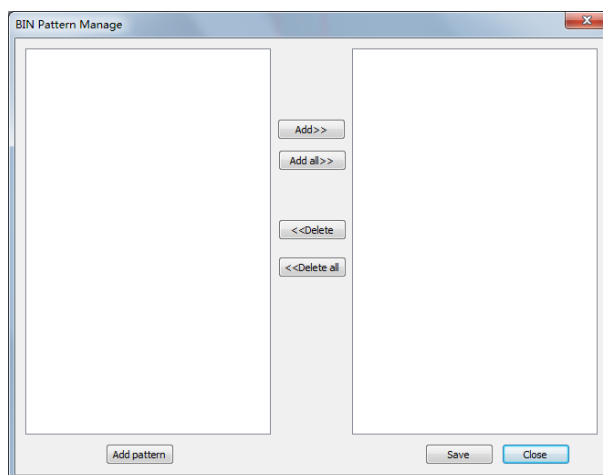
Origin position (offset)

3.3.7 BIN Pattern Management

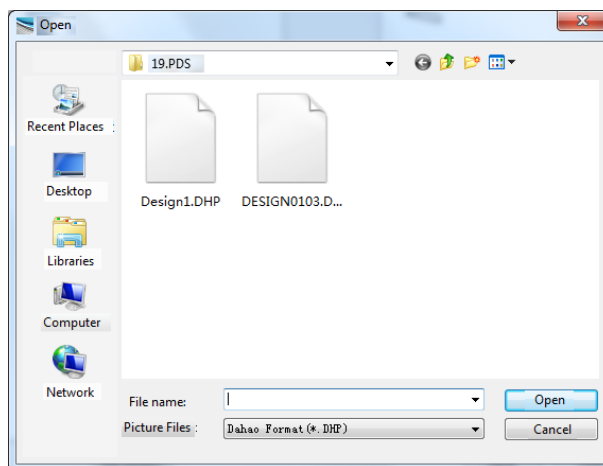
In order to adapt to the market, there are still a large number of panel-type button-locking models (the system memory pattern format is .BIN), so the system for "BIN Design Manage" has been added to the PDS Pattern Designing System.



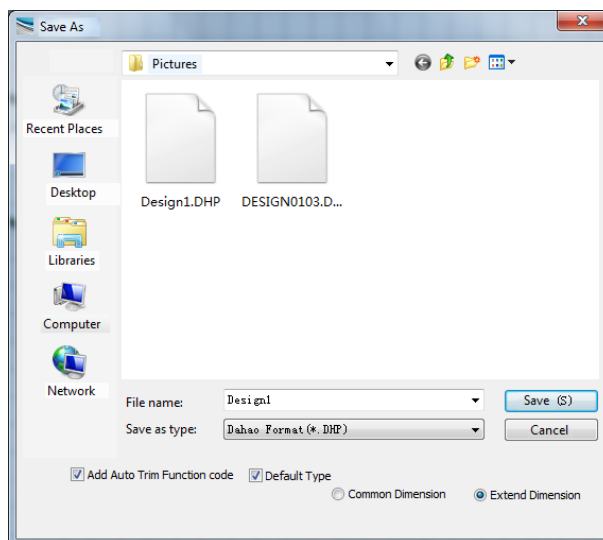
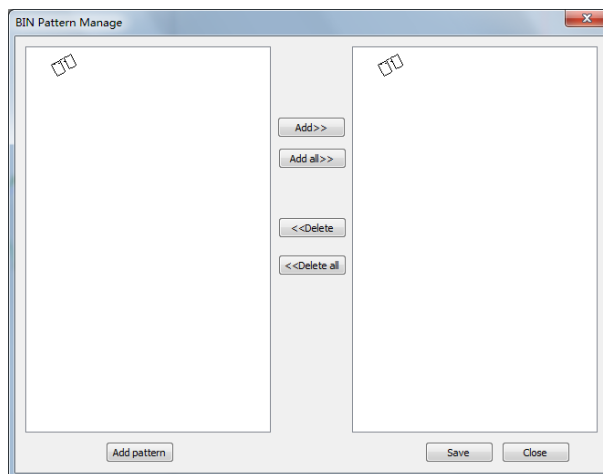
- ④ Select the "BIN Pattern Manage", enter the function, click the "Add " to import the pattern to be edited.



- ⑤ PDS Pattern Designing System can choose the format of ".DHP", ".BIN", ".VDT".



- ⑥ After importing the pattern into the management system, you can select the pattern to be converted for “Add”; or you can convert all the imported patterns by “Add all”. (Edit the converted pattern to the DH.BIN format and save the pattern to the folder named DH)



Note: during the process of saving the pattern after editing, when saving the pattern to “.bin format” or compressing the pattern to “.bin format”, please note that when editing the “.bin format” pattern, it is not allowed to be flat. There is an empty feed stitch in the needle and the flat needle; if the pattern is introduced into the knot button type of the "button panel display", the pattern can be read normally but the X/Y direction is used when the pattern is sewn. The phenomenon that the motor does not move.

The BIN format pattern is only applicable to the Dahao machine type of bar-tacking, button sewing

and buttonhole, and is limited to one generation to three generations of electronic control.

3.4 Operation Methods of Common Tool

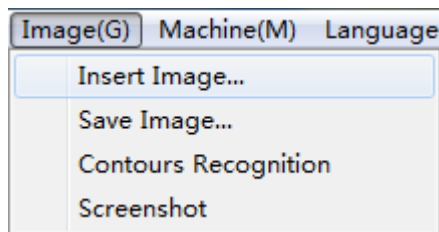
3.4.1 Object Input

The basic unit in PDS is Object, whose generation and maintenance will be introduced in this chapter. Comparing to the template, the object leaves larger spaces for users at designing. By using the compound operations on input method and stitch types, user can create the object of stitch form in various shapes. It is similar to the difference between the common digital camera and professional camera, which can creates various graphical effect with the combination of focal distance, iris diaphragm and shutter instead of the fixed picture mode in the common digital camera.

3.4.1.1 Input of Image Object

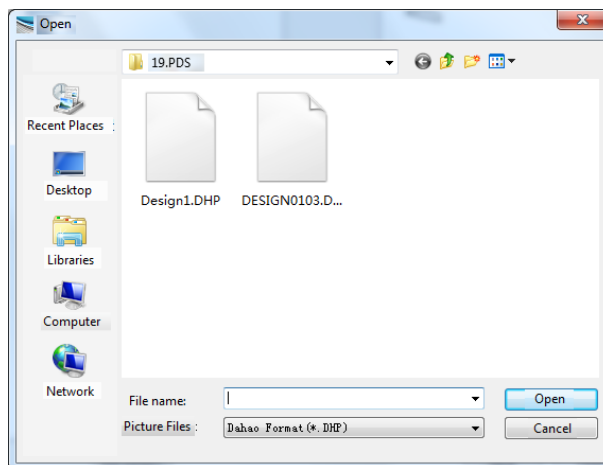
(User can open the file window in the following order: Main menu →Image→Insert image)



The default position for inserting is the center of editing area, and the default scale of graph is 100%. The size of the figure is generated according to the size of image file and DPI. User can scale the image according to the needs of the craft. For the operation of image scale, rotation and other geometric change, please refer to Adjustment of Object.

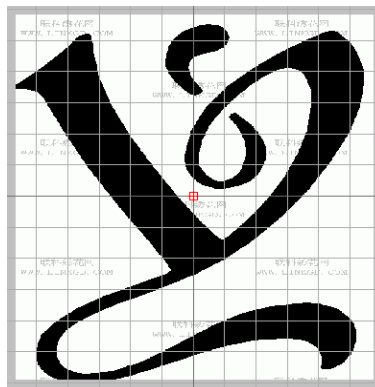


- ③ Select the desired pattern from local disk.

Note: object length (unit: MM) = 25.4 * picture pixels (unit: PIXEL) / DPI; where 25.4 is the millimeter corresponding to one foot. DPI is the format information of the picture, generally 96 by default; if you insert a picture of 800*600 pixels, DPI: 96, the object size is 211*158 mm.



- ④ After importing the image into the editing area, use the stitch object tool to draw the graph. (If failing to display during the import of the image, observe whether the  is selected; when the imported image is too large, click the  to display all the images in the edit pattern area)



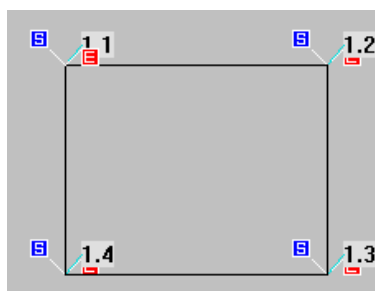
3.4.1.2 Input of Figure Object

The input of the figure object is similar to that of the stitch form outline. Select the corresponding figure within the figure input tool bar to have access to the object input status. At this moment, each click on the mouse means to input a point in the interface. Tap by left mouse button is for linear point, right mouse button is for curve point.



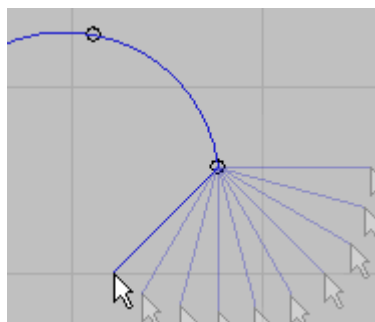
Line

Input the segment. Every two points construct a segment.



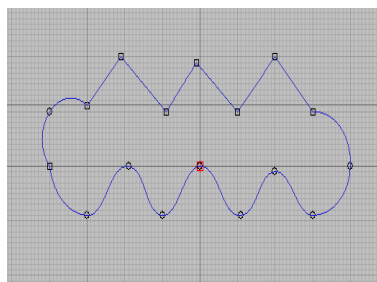
Curve

- ② Tap by left mouse button is for inputting linear point, while **right mouse button** is for inputting the curve point. The linear point will form a “sharp angle” on the curve segment. The continuous linear points will form the linear segment. The curve point will automatically form the arc; the radian is similar to the



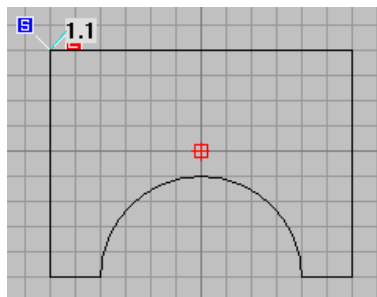
circular arc.

- ② When drawing graphics, when at least 1 point has been drawn, hold down the Ctrl key to move the mouse. The current mouse pointer and the previous input point will be changed by a multiple of 15 degrees. This function is used to make the adjacent two points form vertical, horizontal lines, or common angles such as 30, 45, and 60.



Closed curve

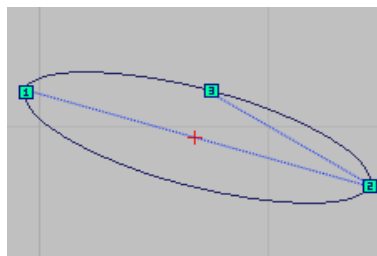
The drawing method of it is similar to that of the curve. But if user presses Enter to end the operation, the curve will be closed automatically



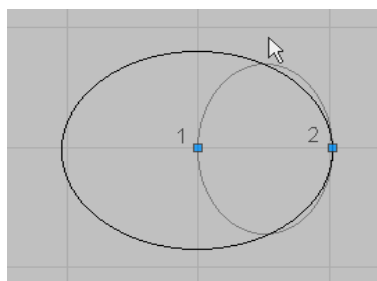
Circle/ Ellipse

The input is divided into two steps, the inputs of the long axis and the short axis. The distance between two inputted points is the length of axis. If user inputs the axis length and presses the **Enter** directly, the system will create a circle, or the system will create an ellipse. The system will use 2 points to create a circle in default, say use the length of the long axis as the diameter to generate the circle.

- ③ In the above figure, the connecting line between point 1 & 2 is the long axis. The connecting line between point 3 and the Red Cross is the short axis.



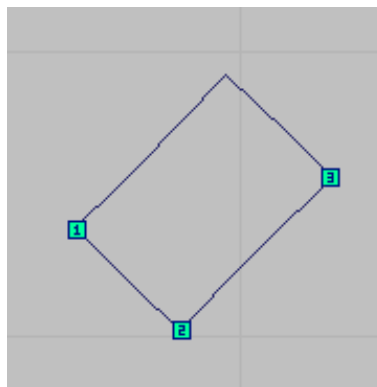
- ④ If user holds the **Shift** and inputs the value, the spot circle will be inputted (the distance of the long axis will be used as the radius of the generated circle, and the first inputted point will be used as the circle center). If user holds **Ctrl** and inputs the values, the system will only generate the circle.





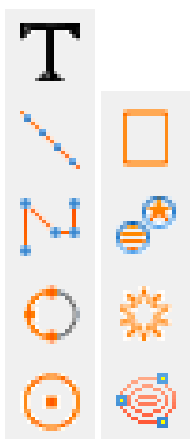
Rectangle

The drawing method is similar to that of ellipse. Holding **Ctrl** is to choose the angle of the rectangle. If user still holds **Ctrl** before tapping the third point, only the square will be generated.



3.4.2 Input of Stitch Form Object

In stitch form input tool bar, selecting the corresponding figure will have access to the object input status. For the operation method, please refer to that of the figure object input.







T **Input text**(See [3.5.1 Character Sewing Pattern Editing](#))

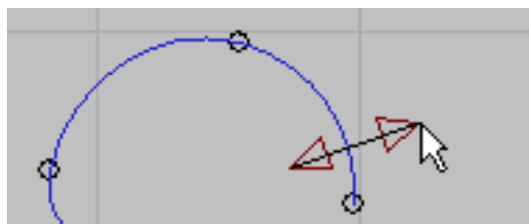
You can enter text and use “Running flat stitch, satin stitch, tatami stitch and zigzag stitch” to create patterns based on the design of characters and fonts.



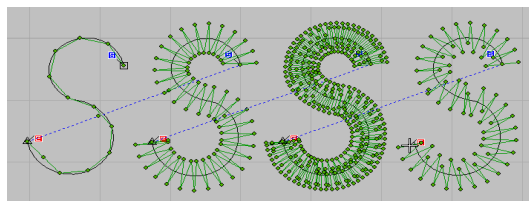
Flat stitch

Before inputting the object, user can select the stitch properties at first, which includes **flat stitch** , **tatami stitch** , **Zigzag sewing**  and **satin stitch** . The default is the flat stitch.

- ③ When selecting the stitch other than flat stitch, user needs press Enter and input the width of sewing. In the right figure, the line segment with arrow is the width.



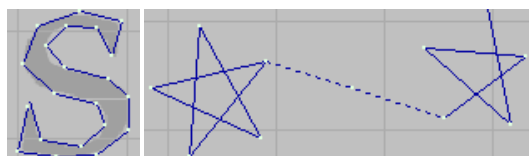
- ④ S made in four kinds of stitch form. The later three kinds of stitch form can be shifted mutually



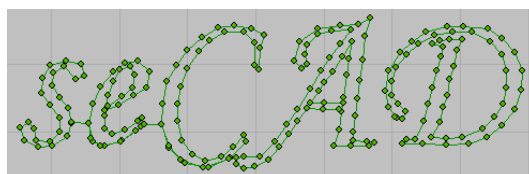
Manual stitch

Manual stitch is the continuous single stitch made in manual, which needs user to control the length and the direction so as to make sure the proper length. Generally, user needs edit the manual stitch after the creation for further improvement. The limitation of the manual stitch is the lowest, but the productivity of it is also the lowest.

- ③ Usually, user needs reference figure to draw the manual stitch. The left is reference figure, the middle one is the drawn stitch for points. Use left key to input the solid stitch point; use right key to input the empty feeding point, as shown in right figure.

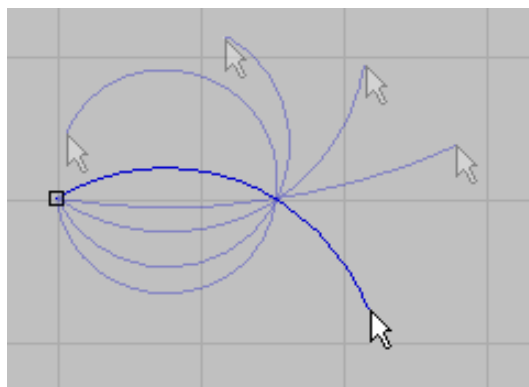


- ④ The manual stitch form is drawn from the former image object. This is the final version after the edition of the stitch form. The manual edition can create smoother stitch form than that generated by system automatically.

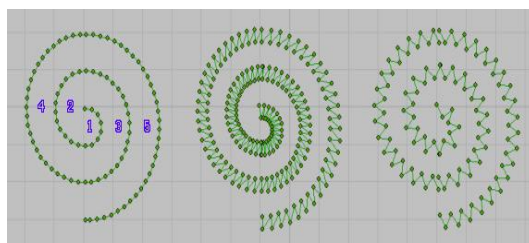


Arc

By tapping three points, user can create an arc crossing these three points. Unless for the special needs, the object generated by inputting curve stitch features the higher flexibility (After two points are tapped, the arc is changed along with the position of the mouse)



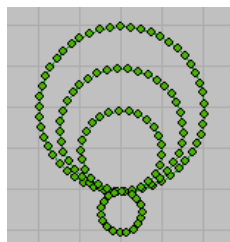
Usually, the input of arc is combined with the Continuous Input tools. By tapping the arc continuously, user can create the whole curve. User need some practice to have the curves connected much smoother. (In the above figure, the Continuous Input tool is used, so the helical line is formed by 5 arcs connected in order. For inputting the arc, user can also use the Zigzag stitch.)





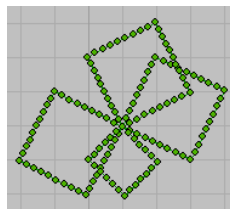
Circle

The generation method is same to that of the figure object. (The Continuous Input tools are used in creating this stitch form.)



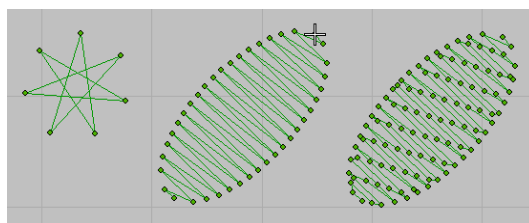
Rectangle

The generation method is same to that of the figure object.(The Continuous Input tools are used in creating this stitch form.)



Star / Ellipse

Tapping by left mouse button is to generate star, while using right mouse button is to generate ellipse. The difference between these two objects is only at the generation method of the stitch form. The outlines of both objects are ellipse.



The star stitch form is generated by connecting the diagonal lines, and the stitch form of the ellipse is similar to the compound filling.

This feature is used for small format patterns.



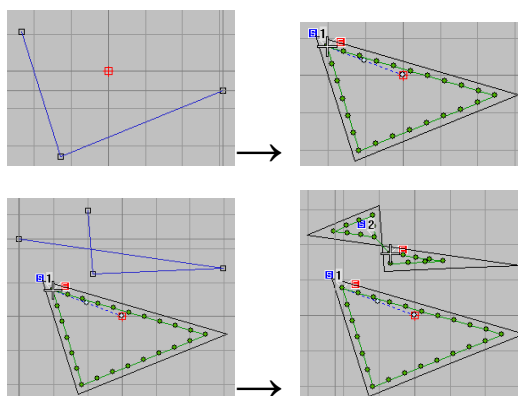
Craft Template

Craft template base contains the templates of patterns with special functions, such as bar-taking sewing, button sewing and buttonhole sewing. The craft template will be introduced as an independent chapter Craft Template.



Compound Filling

Use the left mouse button to click three or more points and press Enter to form a closed contour pattern. (The generated stitch segment is offset by default)

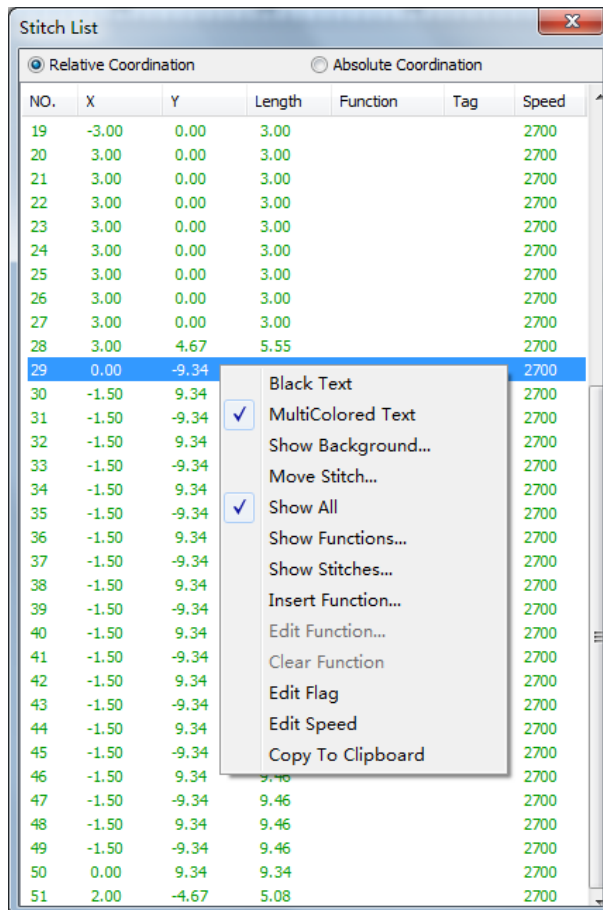


3.4.3 List of Stitch


After editing the pattern using the “stitch list”, the pattern data needs to be modified accordingly in special

cases. Click the  to modify it accordingly.

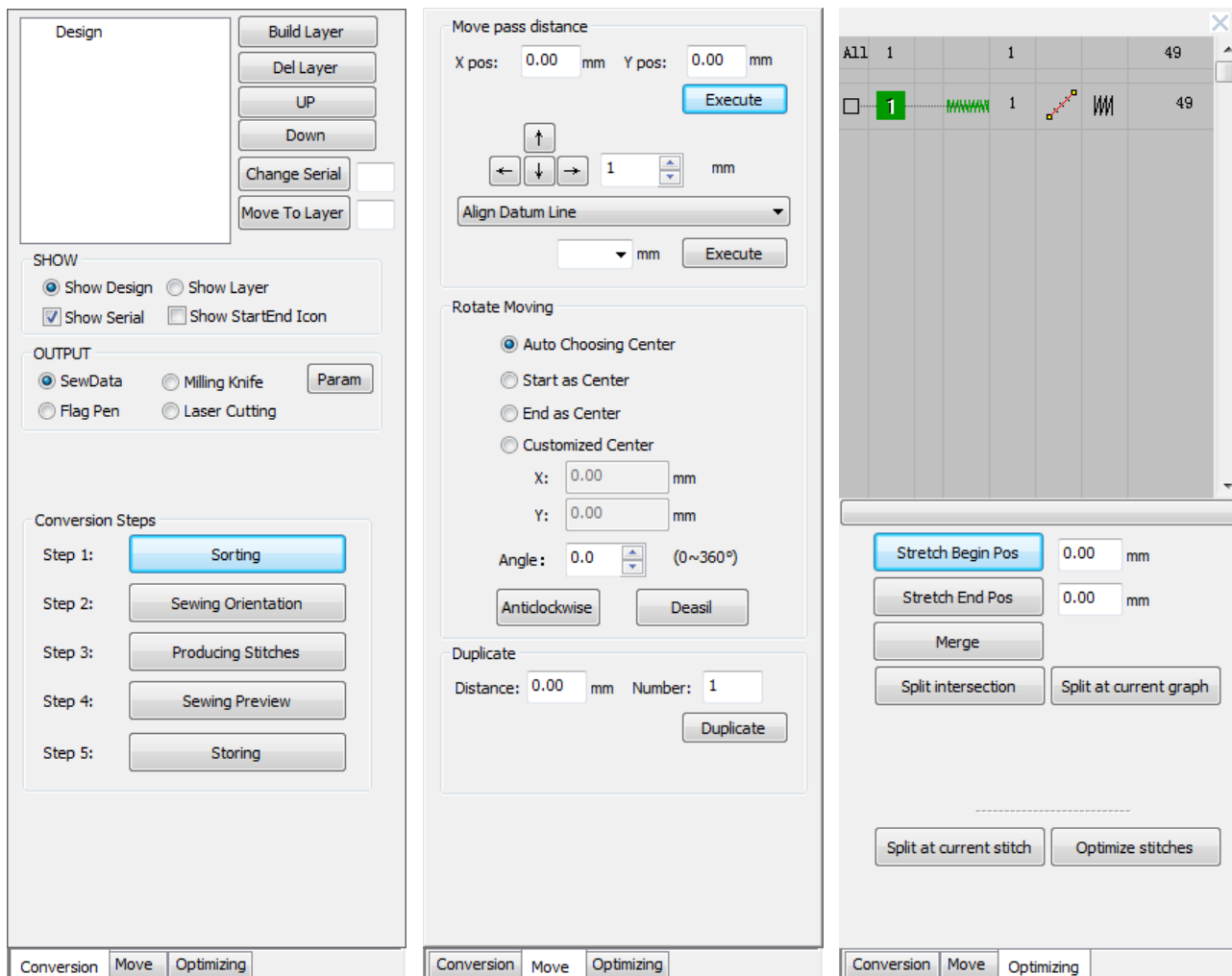
Commonly used function operations are: display function, insert function code, delete function code, edit speed, move stitch



3.4.4 Object List

After editing the pattern using the "object list", the individual pattern data needs to be modified accordingly in special cases. Click the  to edit it accordingly.

Common function operations are: combination, ungroup, lock, unlock, show, hide, unlock all, show all.



3.5 Operation Methods of Complex Tool

3.5.1 Character Sewing Pattern Editing

The input method is named as a text stitch instead of a letter stitch. It is because the text is stitched except for the Latin alphabet and supports all font files supported by the system. Therefore, support for Chinese characters or other multi-language text symbols is supported. This is a very convenient input method.

T Character Sewing

Click the Tool of Character Sewing: Select the position for input, then click left mouse button to activate the character sewing property window.

Letter: select the font. The font whose name attaches @ in front is the letter in vertical direction.

Height: The height of the character. For the different character, the actual height of the characters will be of difference.

Width: The ratio comparing to the standard width.

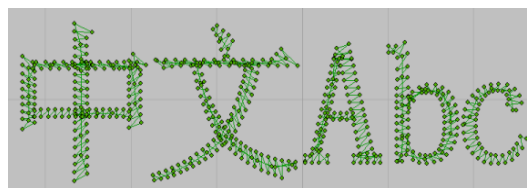
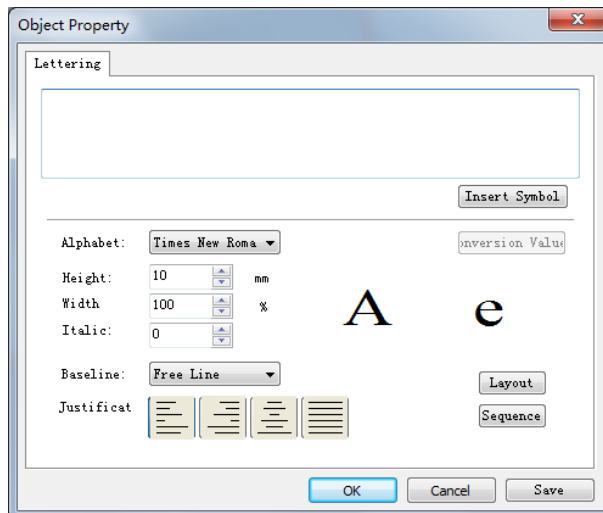
Italic: The tilt angle of the character.

Base: The method for arranging the characters. The horizontal base line is the default; user can also set it as vertical base line, arc base line or the customized shape.

Alignment: The alignment method of the character comparing to the base line.

Insert symbol, layout and order: This function is still under development. After waiting for the function to be perfect, you can perform system update on Dahao website

The outline of the character sewing exactly matches to the outline of the font. This system supports the letters in kinds of language, including English.



Base: By setting the baseline function, you can form letter embroidery patterns of different shapes. (for example, below)

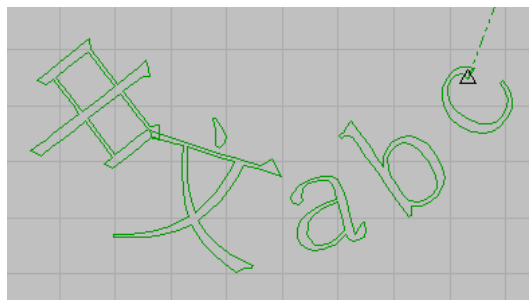
④ This is the stitch form with font as “Song Ti” and other parameters at their default values. At this moment, the base line is the free base line in horizontal direction.



⑤ In this figure, the base line is the free base line in vertical direction.



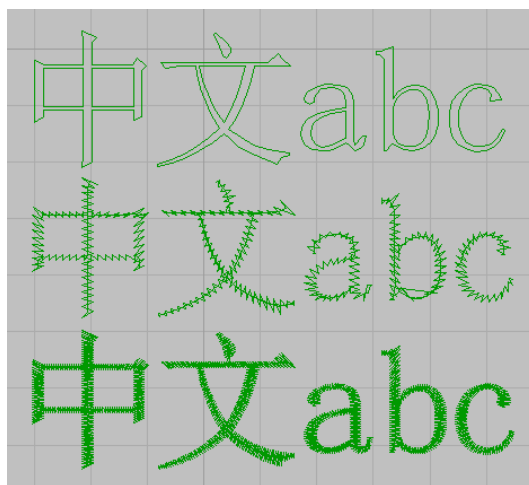
- ⑥ In this figure, the base line is the arc in counterclockwise.



The input of character sewing can be used along with the stitch parameters, so as to generate the object with the same character outline but different stitch form.

The upper one uses the **flat stitch**, the middle one uses the **zigzag stitch**, and the lower one uses the **tatami stitch**.

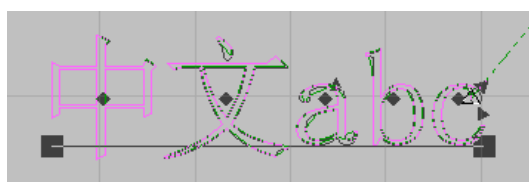
Attention: except the stitch types, these three objects are same in font, base line and the layout parameter values.



3.5.2 Adjustment of Character Sewing

The operation for adjusting the character sewing is similar to that of the motif, but there are still some differences.

- ④ Adjustment of the object with horizontal base line: In the above picture, the line under the characters is the base line. The rectangle marks at both ends of base line are used to change the length of the base line. The three triangles around character are used to scale that character, among these three, the one is only for the vertical direction, the one is only for the horizontal direction and the last one is for both directions. In the center, there is a diamond mark, which is the switch for the individual change of the single character. Clicking it is to have access to the modification mode of the single character. Holding and dragging this figure will have the single character to move along with the direction of the base line.



⑤ After user selects a diamond figure, the system will be the modification mode of the single character, where 5 additional items are added. The three solid rectangles are used to scale the character, the empty rectangle is used for rotation and the empty diamond is used for the cutting function.



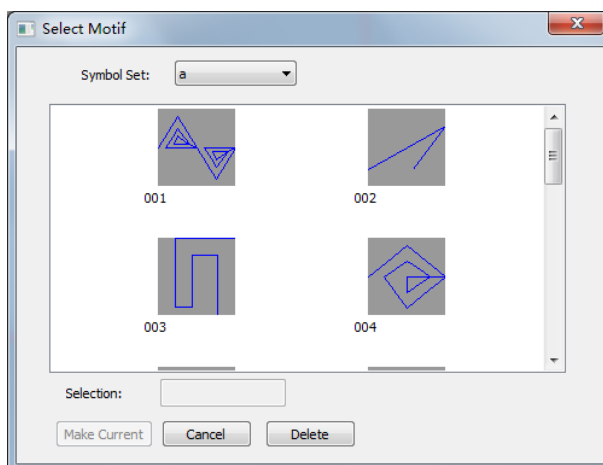
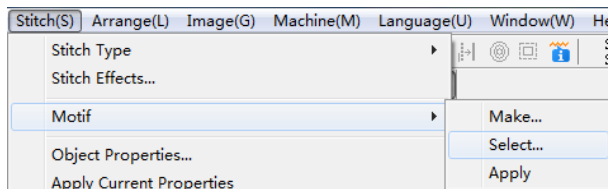
⑥ For the character sewing object with other kinds of base line, the adjustment method will be of difference. (In this figure, it is the character sewing object with the arc base line in the counterclockwise direction. At this moment, the rectangles at both sides of the arc are used to change the length of the arc, the rectangle at the circle center is used to change the radius of arc and the rectangle at the top point is to adjust the position of the arc.)



3.5.3 Use / Edit of Motif

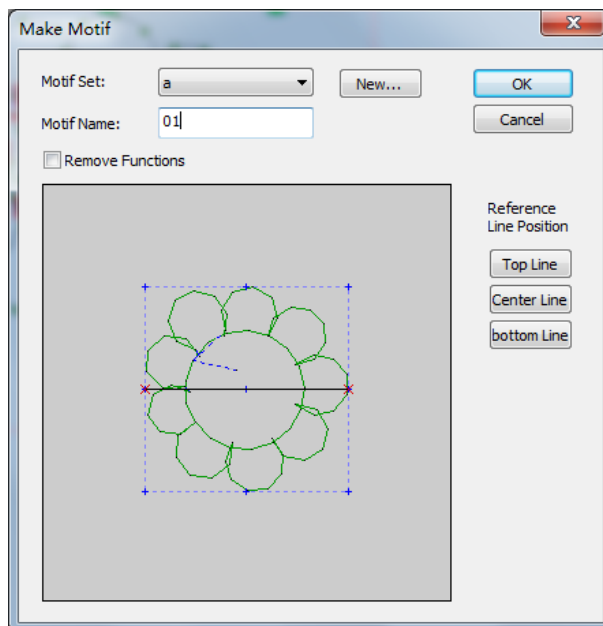
Function of Motif provides a method for repeating certain unit automatically, which will reduce the working amount of user at creating the repeated units, like making the purl.

④ Function of Motif mainly consists of two aspects. One is to edit the pattern by referring to the pattern existing in the PDS Pattern Designing System; such an operation mode can facilitate the operator to quickly select and edit the pattern.



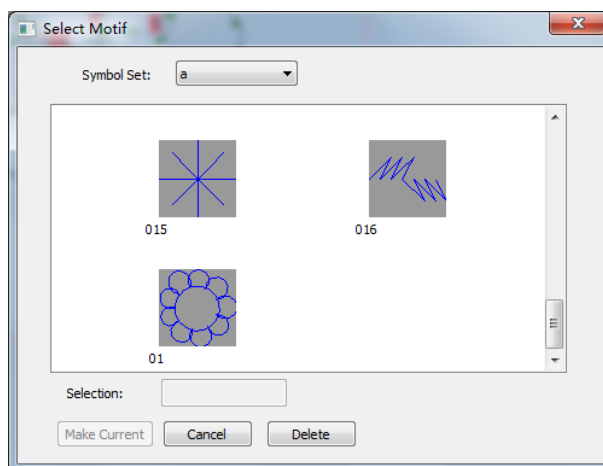
- ⑤ There are two steps in making the Motif. Firstly, user needs to make the figure to the figure base. Then, select figure from the base to create the object. User can use the method of random input to create the figure. After the generation of the figure, user can select the object. Then select Main menu --> Other--> Motif --> Create, and have access to the window for creating the figure.

The thumbnail in the middle is the selected object, the blue dot lines are the external frame of the object and the black lines are the base lines of the figure. The base line is of importance, because, in the process of repeating the Motif, they are the reference of the figure position on the outline. The default base line is the horizontal line in the middle of the pattern. User can use the buttons on the top, middle and bottom of the right side to adjust the horizontal lines on the top or bottom. Additionally, user can also drag the end points by clicking both ends of the base line in the thumbnail. After setting the base lines, user can select the group of the Motif. Then user can create a new figure by inputting the name of the Motif. After user selects the function for removing the functional points, the figure will delete the function code on the object automatically when being saved.



- ⑥ Via Main Menu-->Other-->Motif-->Selection, user can open the window for selecting the motif. Through the figure group, user can select the figure base, where the figures are displayed as the thumbnail. Click the needed figure and make it become the current figure.

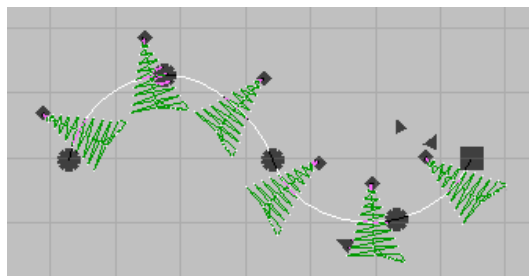
After the Motif is selected, the Motif tool is selected for editing in the "Stitch Object Input Tool"; The edition and other operation on the motif are same to that of the normal object.



3.5.4 Adjustment of Motif

After selecting the motif, user needs to make adjustments on it. The adjustment of the motif is not only the adjustment on the outline, but also the adjustment on each individual figure.

- ③ The points on the outline: the round is the curve point, and the rectangle is the linear point. After the selection of the outline point, pressing Del is to delete it. On the outline, click left/right keys to add the linear /curve point on the outline, which share the same operation method as the common object.





There are two triangle figures at the end of the outline, which are used to scale the figure and adjust the interval of the figure respectively.

- ④ Above each figure, there is a diamond mark, which is the switch for the individual change of the single figure. Holding and dragging this figure will have the figure to move along with the direction of the outline.

In the modification mode of the single figure, 5 items are added. The three solid rectangles are used to scale the figure, the empty rectangle is used for rotation and the empty diamond is used to cut the figure.



4 Function description of pattern design for bar-tacking and button sewing machine



Functions involved: : Snap to grid function,  stitch type,


Grid Spacing mm grid Spacing feature

Stitch Type: Run Length: mm Column Width: mm
 Width: mm % Height: mm %

stitch properties, and more.

4.1 Edit the pattern with a straight line


Select "Pitch Type" to run the plain stitch , and select the line  in the left toolbar to start editing.

Note: Use the Grid Spacing feature to resize the grid and select  the Snap to Grid feature to help you edit and drag the mouse when the cable is straight.

Set the "plain stitch length" in the "Stitch Properties Function". That is run length: set the distance between the two stitch points; in the above explanation, use the left and right mouse buttons to generate lines and curves.

Note: Enter the value in the area and press Enter to confirm

Use the left mouse button to edit the line stitch continuously: start editing the pattern, drag the cursor to move according to the track where you want to edit the pattern; after moving to a position, you need to click the left button once, press the Enter button to complete the

pattern editing. Pattern; click to select  the object or press the "Esc" button on the keyboard to exit the line editing state, as shown in Figure A

Use the right mouse button to edit the curve trace continuously, using the same method as the straight line trace, as shown in figure B.

You can also use the left and right mouse buttons together to edit the required pattern, as shown in Figure C, the red

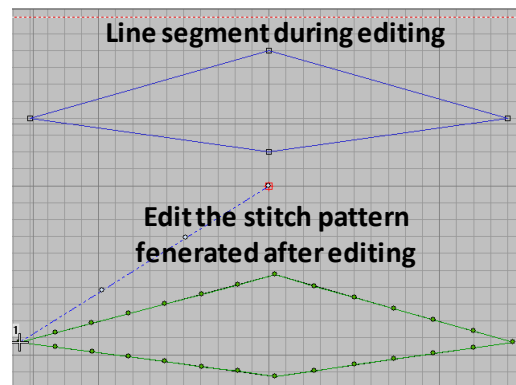


Image A

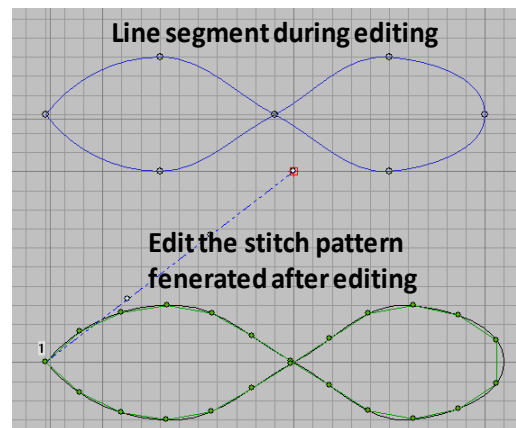


Image B

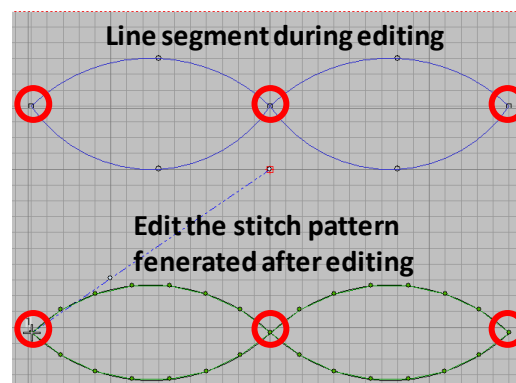






Image C

circle marks the left mouse button and the rest the right mouse button.

Click  to run the pattern and  run in units of 10 stitches or  in units of 1 stitch. Press the right mouse button to run the pattern with a specific number of stitches, and check the direction and sequence of the stitching.

4.2 Modification of straight stitch distance and addition of inverted stitch

Modification of straight stitch pitch:

After selecting the line tool , the current stitch type and the stitch distance between the two stitches after the pattern is generated will be displayed below the editing area; after entering the corresponding stitch point distance value in the "plain stitch length", press the Enter key to confirm the pattern. After the editing is completed, the stitch point will be generated according to the set distance.




Position: X=-0.91(5.18) Y=1.11(0.01) L=1.44

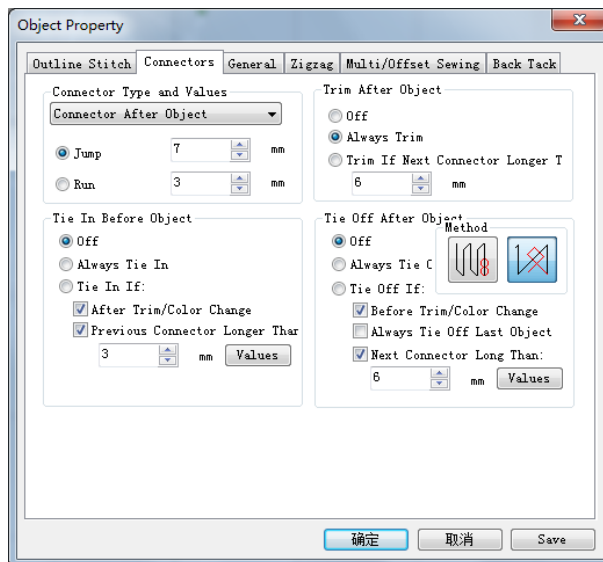
Stitch Position: 7

When running patterns, the status bar position below the editing area will display XY coordinate position and stitch length according to the cross cursor position.

Add inverted stitch:

In the actual pattern sewing process, in order to avoid the problems of starting sewing and ending sewing thread shedding, an "inverted stitch" will be added to the pattern.


After selecting the pattern, click Properties  in the main toolbar area to enter the object property setting interface. Select the "Connecting Line" interface to set the type and value of the connecting line, trim the line after the object, lock the stitch before the object, and behind the object. Stop the stitch.



Set "lock stitch before object" to "always lock stitch" and "sup stitch after object" to "always sup stitch". The system will automatically add "back stitch" stitches at the

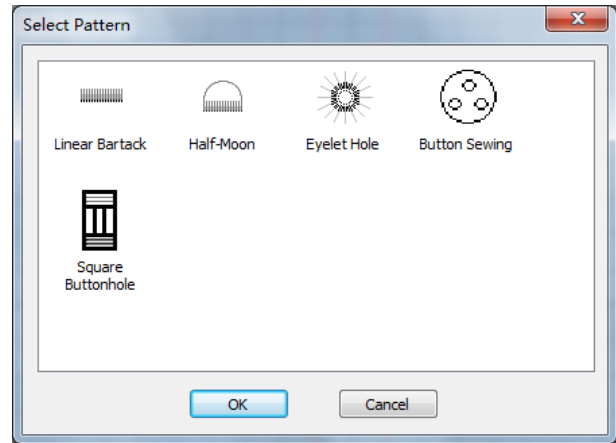
beginning and end of the pattern.

4.3 Special pattern operation

Select  the process template in the left stitch object input toolbar.

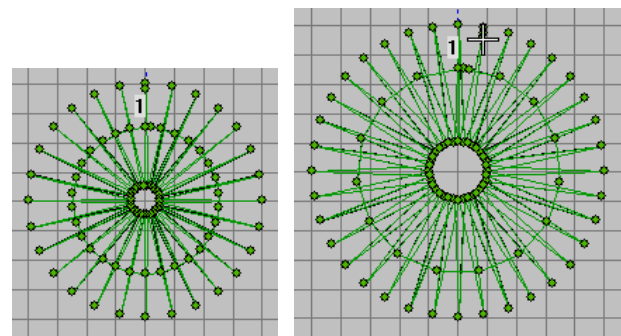
Select "Eyelet Hole " in the template, click the confirmation button to enter the function to start editing.

Note: Linear bartack and half-moon templates are mainly used to reinforce trouser pockets, trouser loops and schoolbag belts. The eyelet hole template is mainly used on hats. Button Sewing templates are used on clothes that need sewing buttons.



After entering the template, move the cursor to determine the origin position of the pattern, and click the left mouse button to determine its position.

Set in the template parameter setting interface on the right, and the system will display the pattern effect after modifying the parameters in real time.



After the pattern is generated, the " running pattern " operation is required to check whether the sewing sequence and size of the pattern meet the requirements.



Refer [3.3.3 Round Head Hole Template \(Eyelet Hole\)](#) specific parameters.

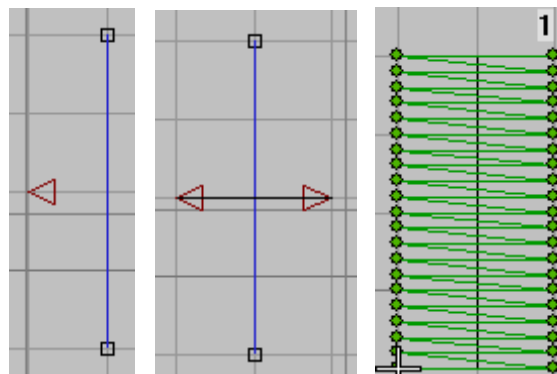
Note: Parameters are mainly modified: outer diameter, inner diameter and underlay sewing;

Minor modification items of parameters: sewing stitch number, starting stitch and ending positioning stitch.


Pattern after original		Pattern changes parameters	
Outside Dia. (a)	Start Securing Stitch Number	Outside Dia. (a)	Start Securing Stitch Number
8.0 mm	1	10.0 mm	2
Inside Dia. (b)	End Securing Stitch Number	Inside Dia. (b)	End Securing Stitch Number
1.0 mm	1	2.0 mm	2
Underlay Sewing	Feeding at Start Point	Underlay Sewing	Feeding at Start Point
Dia. 5.0 mm Stitch Length 0 mm	<input checked="" type="radio"/> Off <input type="radio"/> On Rotation <input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	Dia. 7.0 mm Stitch Length 1.5 mm	<input checked="" type="radio"/> Off <input type="radio"/> On Rotation <input type="radio"/> 1 <input checked="" type="radio"/> 2 <input type="radio"/> 3
Stitch Number 90	Real Stitch Number 89	Stitch Number 100	Real Stitch Number 94

4.4 Elastic pattern editing operation

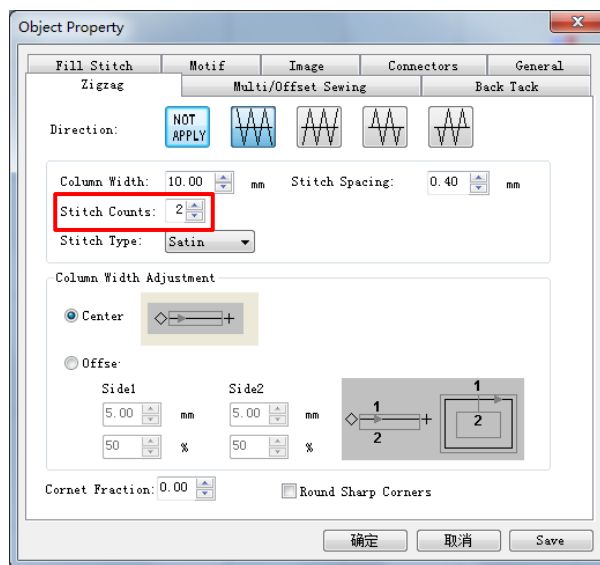
In the "Stitch Type", select the satin stitch , and select the  line tool for editing in the stitch object input tool; firstly, determine the sewing length and direction of the zigzag stitch pattern by using the mesh, and confirm with the carriage return; secondly, determine the zigzag stitch by means of the mesh. Width (i.e. column width), enter to confirm.



Confirm length and direction Confirmation column width Generate pattern

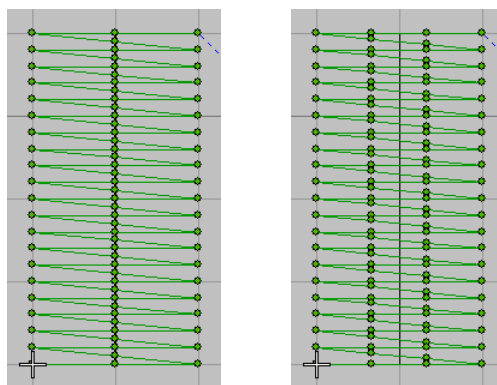
Select the pattern, click  Properties tool, or right-click the pattern, select Properties, and modify the number of stitches in the zigzag setting interface to achieve "three to nine twists".

Note: The system automatically specifies the adjustable range according to the width of zigzag seam fence.



As shown in the right figure, there are " three twists" and " four twists".

Note: If there is a need to modify " spacing and column width" for zigzag sewing, you can select " stitch spacing" or " column width" to set it after editing the zigzag sewing pattern.



Stitch Counts: 3 Stitch Counts: 4

4.5 Editing operation of button pattern

Select "button sewing " in the template, click the confirmation key, enter the function and start editing.

In the button sewing template, the pattern editing of " two holes, three holes, four holes and five holes" can be performed.

The two-hole and three-hole patterns can be set with " hole spacing, number of lines between holes, length of starting / ending lock stitch and rotation angle";

Five - hole pattern can not only set two-hole and three-hole patterns, but also set the function of " connection mode".

Four - hole pattern can be set up with two - hole, three-hole and five-hole patterns, as well as the function of " independent stitch and sewing position".

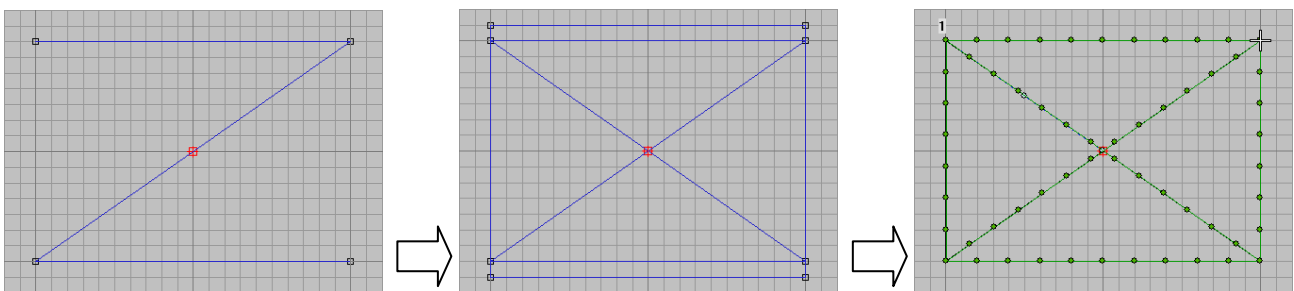
Independent stitch function: it can be set whether trim during pattern sewing. when it is set to " no", the pattern will not be cut from the beginning to the end of sewing, which can avoid thread shedding when sewing again after trim.



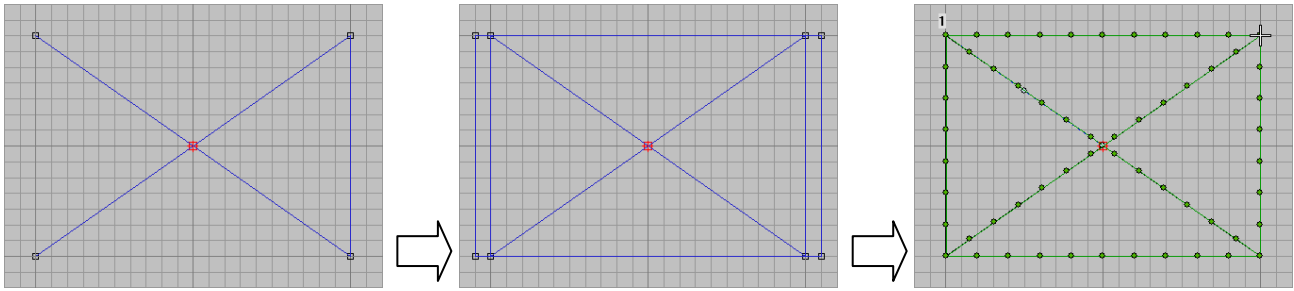
4.6 Operation of three editing methods of box cross pattern

Three editing methods of box cross pattern:

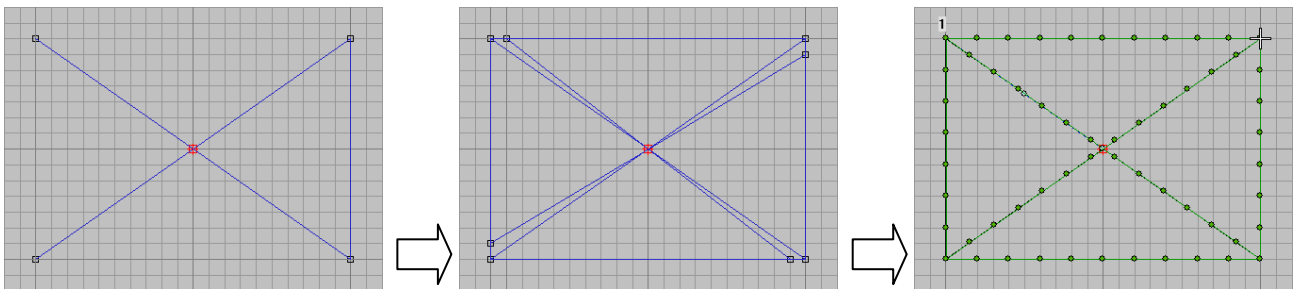
- (4) Repeat sewing of upper and lower line segments
Editing method of square cross pattern by sewing up and down twice



- (5) Repeat sewing of left and right line segments
Editing method of square cross pattern with left and right sewing twice



(6) Repeat sewing for the crossed line segment.
 Editing Method of Square Cross Pattern with
 Cross Sewing Twice



5 Function description of pattern design for automatic pattern machine

As the system has been put on the market for customers to use, and the corresponding functions have been added according to customers' requirements; In order to facilitate people to better understand its functions, the following will introduce the corresponding functions.

5.1 Setting operation of pattern position in the menu "curve action"

Click menu "Edit" to select menu item "curve action".


There are "Align Datum Line" and "Align Center" to select.

Firstly, the graphics in the file is imported into the editing area;

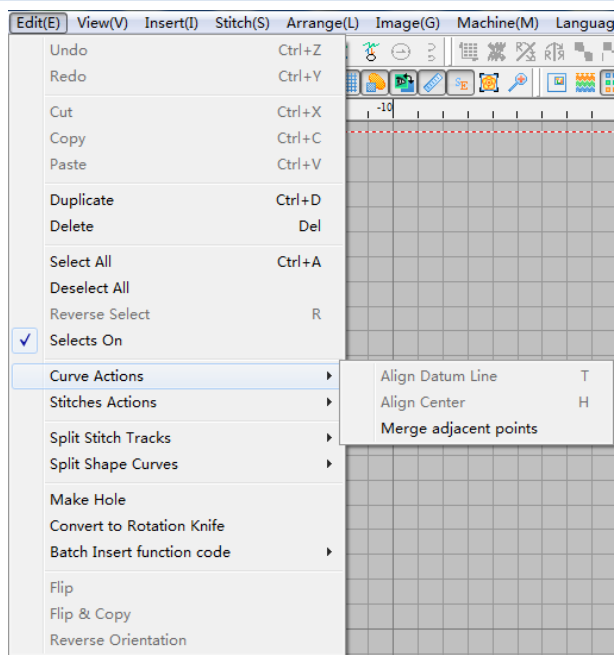
Then, choose all patterns. There are three ways to choose all patterns:

(1) Use the Ctrl+A to select all patterns;

(2) Use  to select all

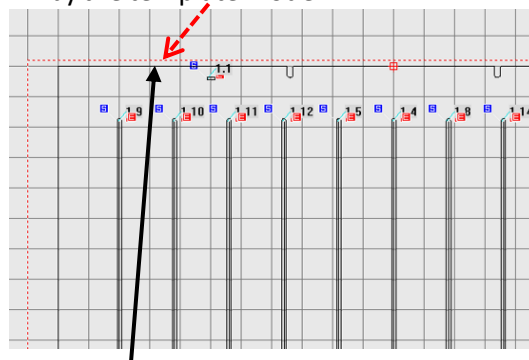
(3) Click  object list, select the object optimization

page, and click  to select all patterns.



After the graphics in the file is imported into the editing area, the default is the template-based centering mode, as shown in the right figure, the black solid line is the upper border of the pattern, and the red dashed line is the sewing range (or editing range) allowed by the template model.

the red dashed line is the sewing range (or editing range) allowed by the template model



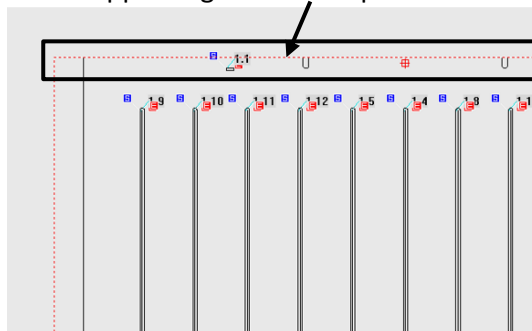
the black solid line is the upper border of the pattern

(1) Align Datum Line

After the pattern is selected, click "Align Datum Line" to align with the upper edge of the template as the datum, and the pattern border (the editing range area defined by X positive orientation) will be aligned with the upper edge of the template frame, as shown in the right figure.

Note: Center point of upper border of pattern

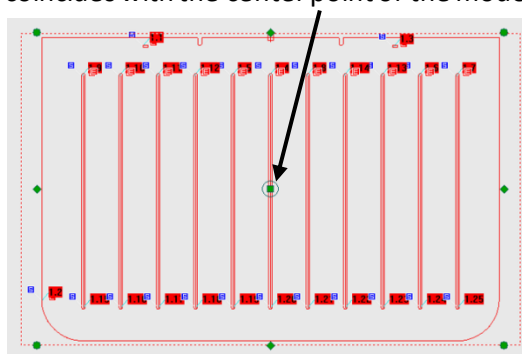
the pattern border will be aligned with the upper edge of the template frame




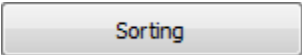
(2) Align Center:

After the pattern is selected, click "Align Center ". The origin of the pattern of the template coincides with the center point of the model, as shown in the right figure.

The origin of the pattern of the template coincides with the center point of the model

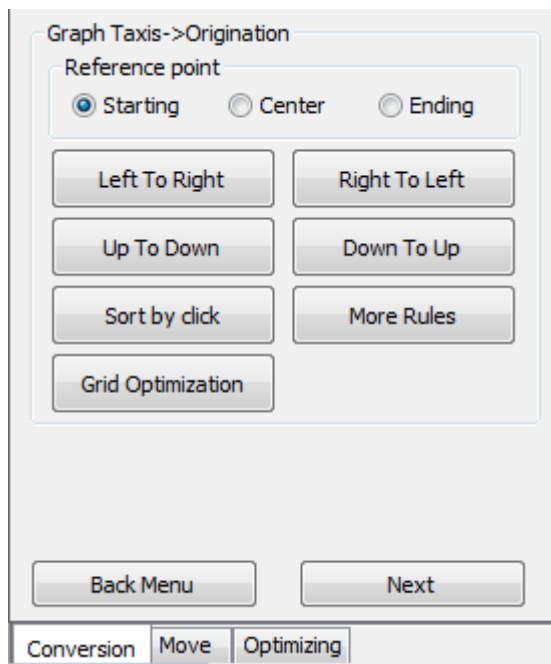


5.2 Operation of sorting function in pattern editing of automatic pattern machine

In the main interface, click icon  of the object list, click the tab sheet page "Conversion", and click  to enter the sorting function.

The sorting method is divided into:

Left to right	Right to left
Up to Down	Down to Up
Sort by click	More rules
Grid optimization	



- 6. From left to right and from right to left, they are all arranged horizontally, which is more suitable for patterns arranged horizontally.

For example, make several horizontal patterns as shown in Figure A,

Click , the patterns are arranged in order from left to right, as shown in Figure B.

Click , the patterns are arranged from right to left, as shown in Figure C.

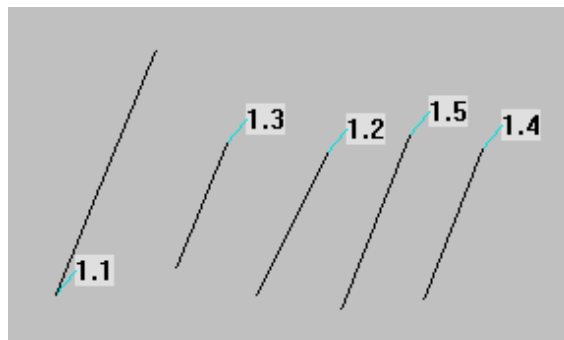


Figure A

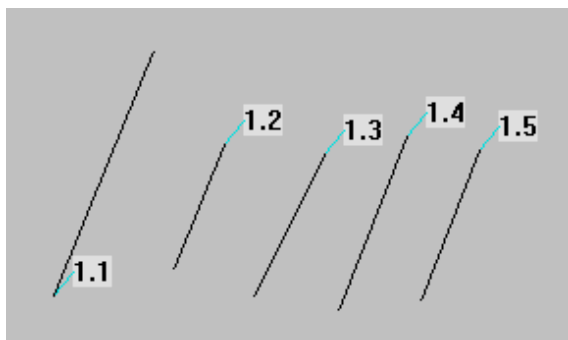


Figure B

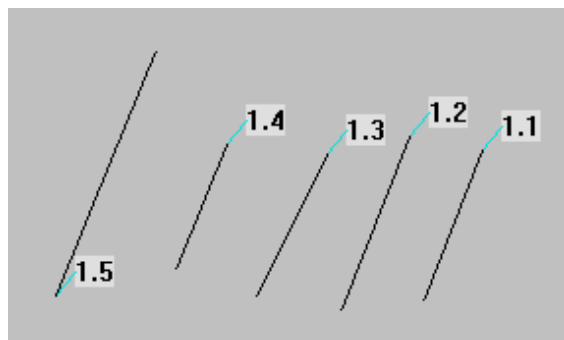


Figure C

- 7. From up to down and from down to up, they are both arranged vertically, which is more suitable for vertically arranged patterns.

For example, draw up several longitudinal patterns as shown in Figure D,

Click , the patterns are arranged in order from up to down, as shown in Figure E.

Click , the patterns are arranged in order from down to up, as shown in Figure F.

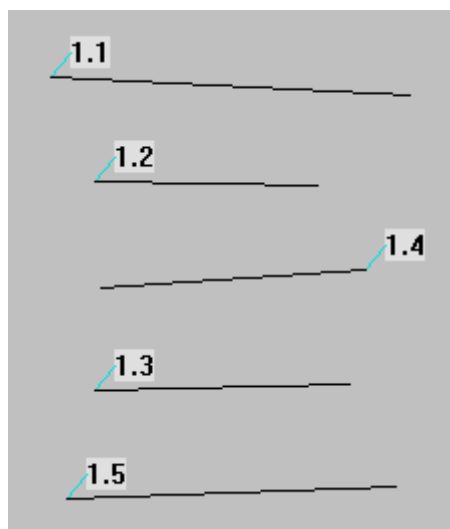


Figure D

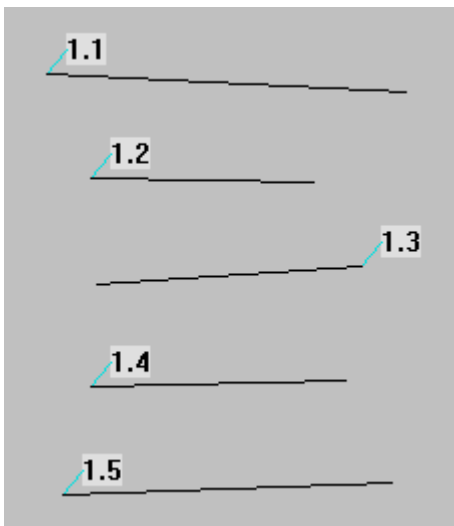


Figure E

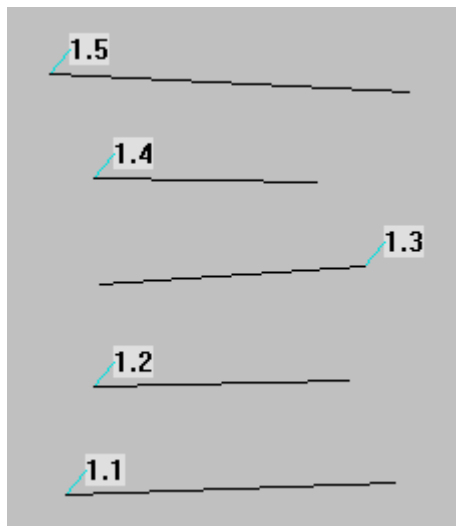


Figure F

- 8, Click More rules, and the patterns can be sorted freely according to the order in which the user manually clicks the patterns.

For example, edit several irregular patterns as shown in Figure G.

Click , the pattern can be sorted according to the order of the mouse clicks, as shown in Figures H-1 and H-2.

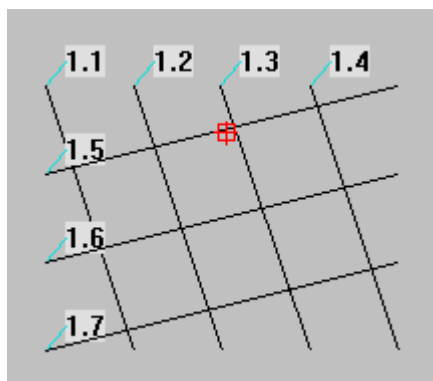


Figure G

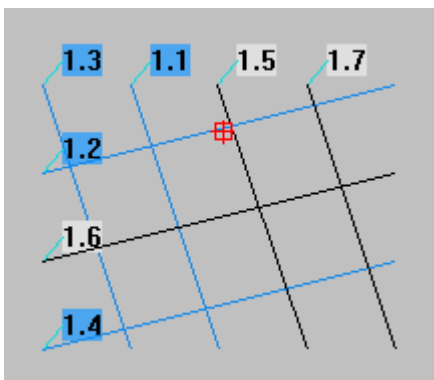


Figure H-1

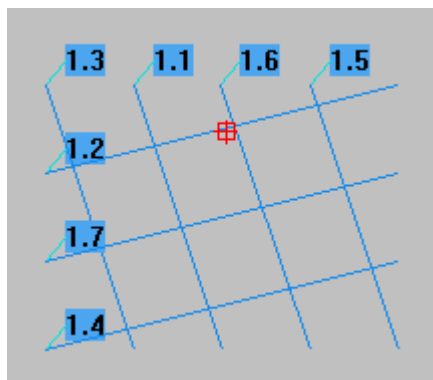
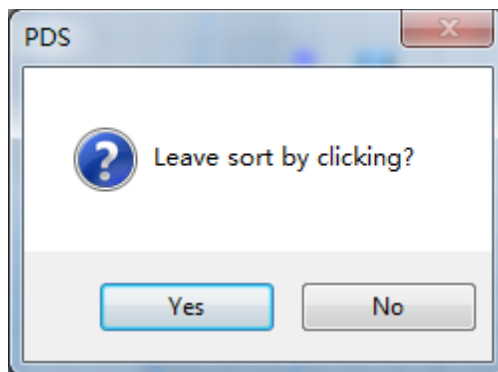


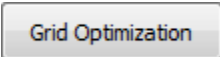
Figure H-2

After finishing the click sorting, you can click on the blank space to leave sort by clicking? Select Yes to complete the click sorting.



9, Grid optimization. This sorting method is applicable to the disordered patterns arranged in the grid mode on the right. Click to sort with the goal of reducing the empty feed spacing.

For example, edit several irregular patterns as shown in Figure G.

Click , the pattern will complete the automatic sorting, as shown in Figure J.

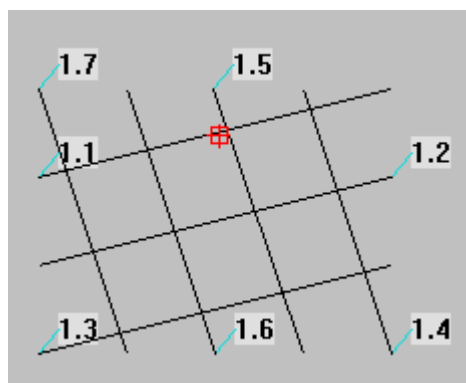
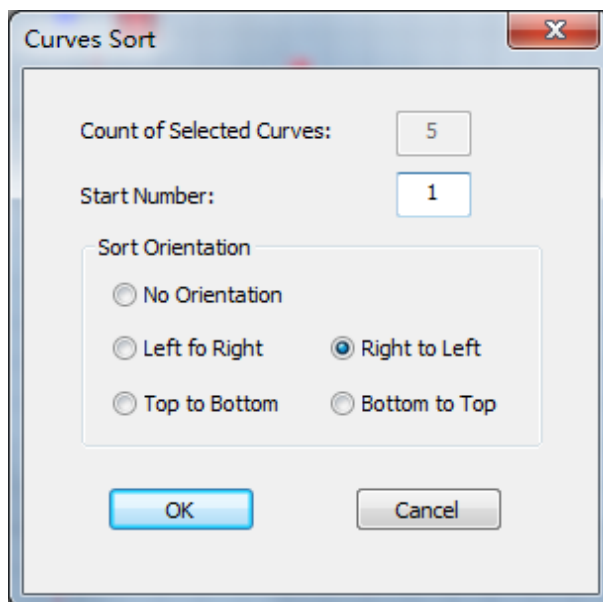


Figure J

10, Curves sort: this sort can set sort for the selected part of patterns in the specified orientation. The orientation can be set as follows:

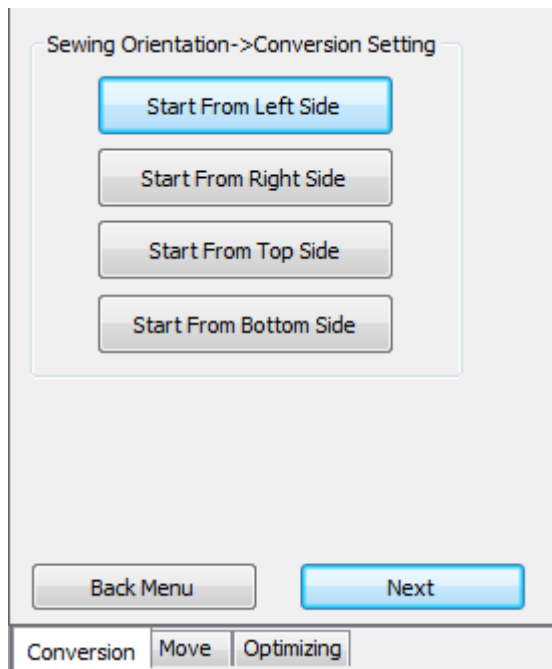
- (4) If there is no orientation, this sorting method is the default optimized sorting method of the system system. Click to automatically sort patterns.
- (5) From left to right and from right to left, they are all arranged horizontally, which is more suitable for arranging patterns horizontally.
- (6) From up to down and from down to up, both are arranged vertically, which is more suitable for vertically arranging patterns.



5.3 Basic operation steps for pattern conversion of automatic pattern machine

Select the pattern to be converted, and after sorting according to section 3.7.1, click next to set the conversion settings. In this step, the sewing orientation can be set:

Start from left side, start from right side, start from top side, start from bottom side; After confirmation, click Next to enter the preview stitch.



Back Tack, which can set pattern stitch distance and sewing speed, back stitch setting, stitch starting point setting, shrinkage stitch setting, interlayer insertion pause code and default value;

For example, set up back sew, as shown in Figure A:

Select end-to-end back sew, start: back sew 2 stitches, end: back sew 2 stitches;

Click OK, and the pattern conversion is successful, as shown in Figure B.

After successful pattern conversion, the sewing speed can be set and trial sewing can be performed. After confirming the setting, click Save Pattern to save the pattern locally.

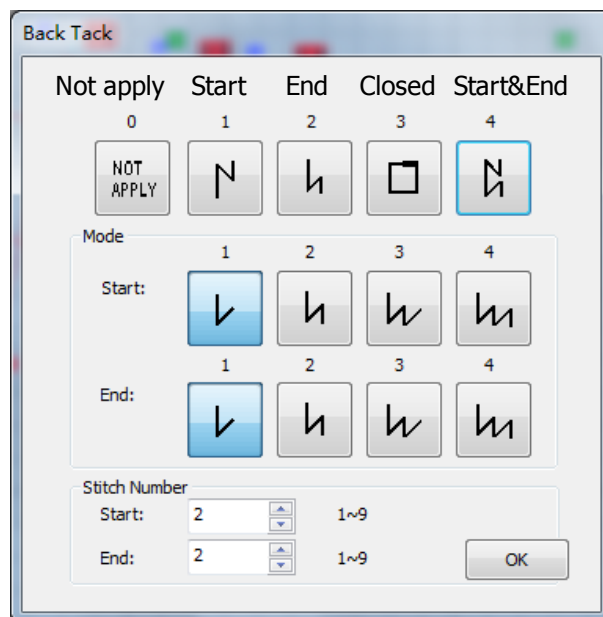


Figure A

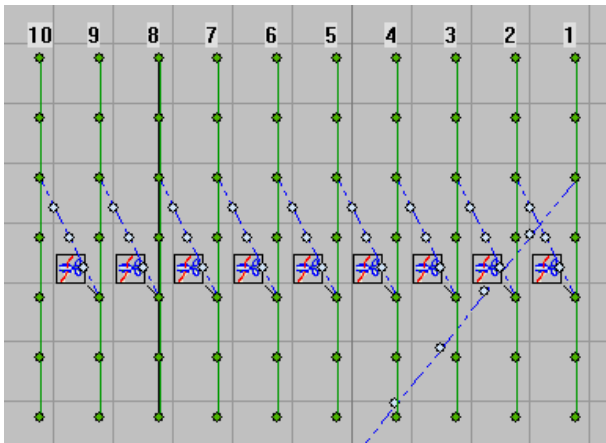
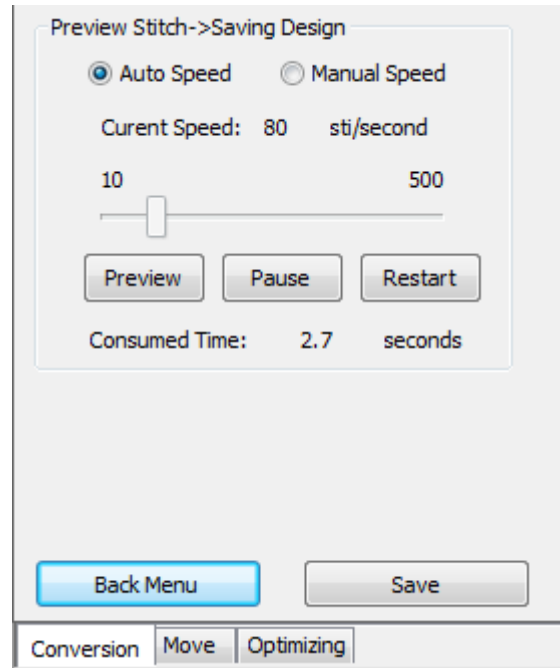


Figure B



5.4 Template pattern build layer and adding midway sup code video

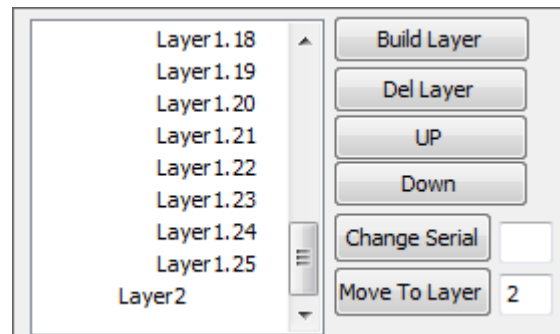
5.4.1 Build Layer

New layer:

In the object list →tab sheet page conversion, click New Layer to add Layer 2;

Move to layer:

Select the pattern of the layer to be moved, and fill in the number of the layer to be moved at "Move to Layer" to complete the pattern moving layer.



Layer display settings:

Right-click the layer to be set, and click properties in the menu to set the size, position, transformation, lines, etc. of the layer, as shown in figure a.

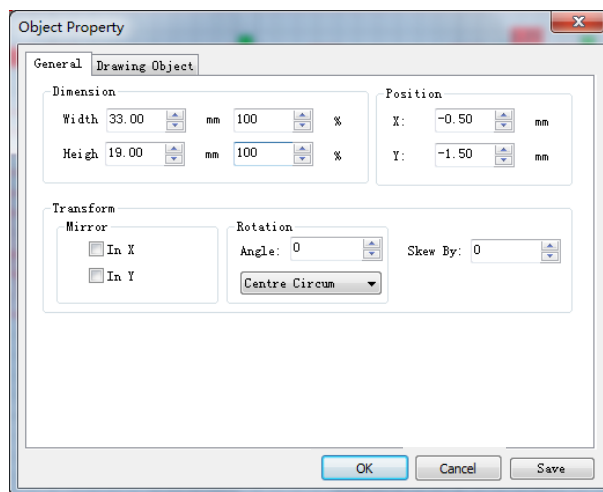
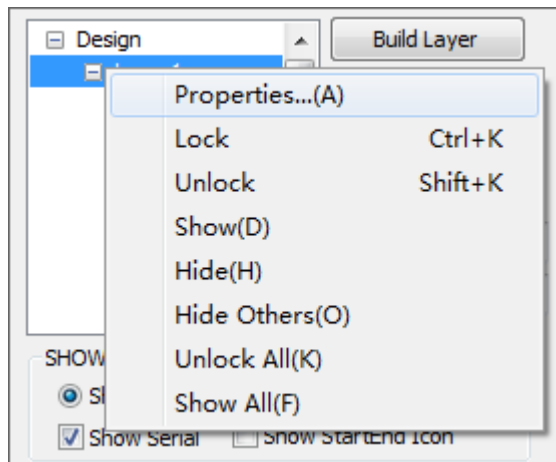


Figure A


When setting only for a single layer, it is recommended to set the remaining layer attributes to "locked" and "hidden" to facilitate the setting of the layer.


Right-click the layer to be set, and click properties in the menu to set "lock" and "hide".


5.4.2 Add Halfway Sup Code

Take the right figure as an example, add a sup code at the origin:

1. Complete pattern conversion [5.3 Basic operation steps for pattern conversion of automatic pattern machine](#)

2. Click  to automatically move the cross cursor to the origin position, and then move the cross cursor to the last stitch position of the first layer according to the [3.1.8 Tool of Stitch Form Guide \(clicking left key is to move current stitch forward while clicking right key is to move the current stitch backwards\)](#), as shown in the figure. B;

3. According to [3.4.2 Input of Stitch Form Object](#) the  manual increase of the empty feed stitch, so that after the Layer 1 pattern is finished, it will automatically return to the original position, as shown in Figure C;

4. After running the cursor to the origin position, click the  Pause, and the stop code is added successfully, as shown in Figure D.

Note: The location of adding function codes is determined by the user's requirements.

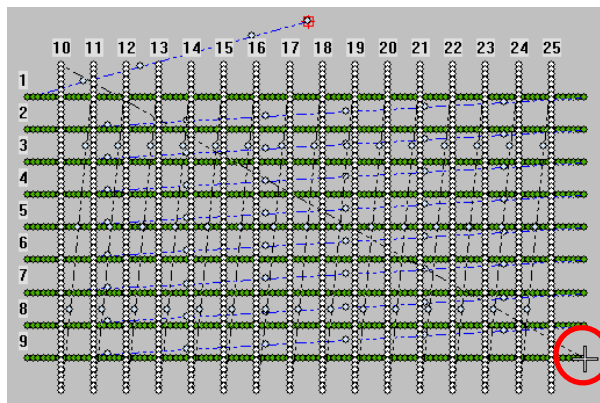


Figure B

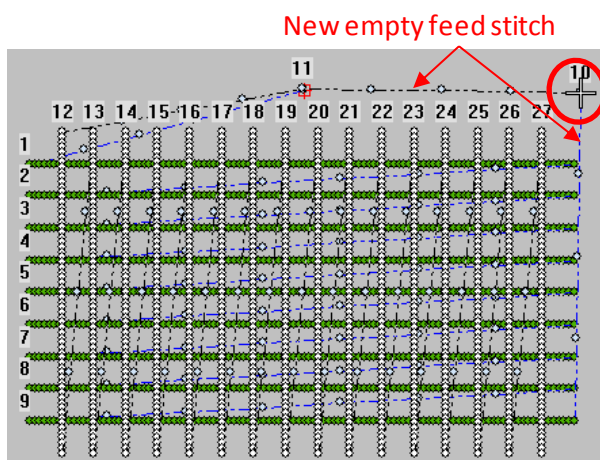


Figure C





Figure D

5.5 Curve diagram closed graphics modify sewing point operation

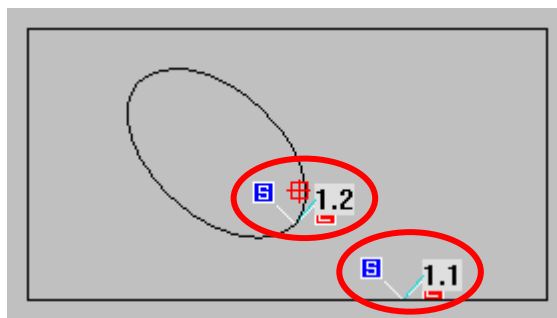
Take rectangular and ellipse patterns on the right as an example, modify the starting point:

3、 Rectangular example: According to the [3.1.4 Tools For](#)

[Selecting/ Editing Object](#), use the  stitch editing tool to increase the stitch point at the desired stitching point, and click the closing curve at the stitch point

 to set the stitching point button. The seam point was successfully modified, as shown in Figure A.

4、 For example, ellipse is the same as rectangle setting method (note: right click is used to add stitch points to ellipse), as shown in Figure B



Original drawing

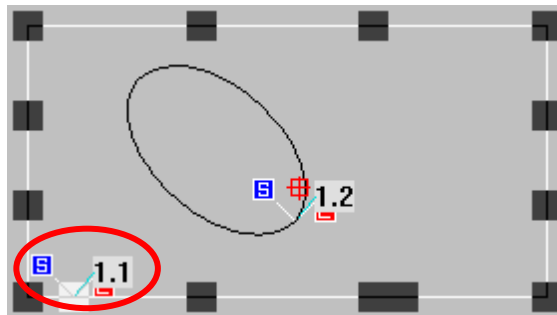


Figure A

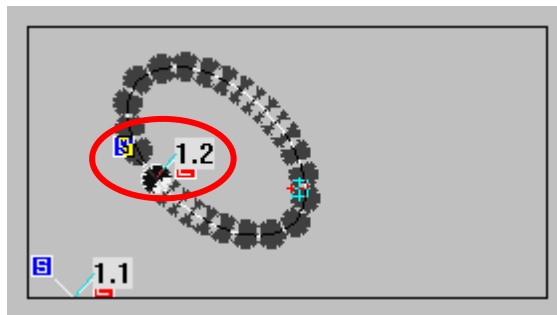
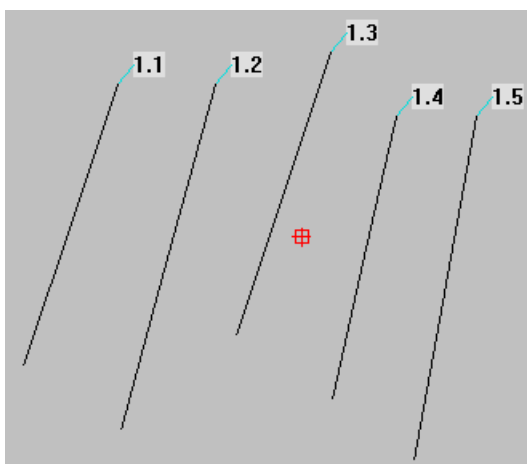


Figure B

5.6 Curve diagram segment segmentation function operation

1. Split intersection

Take the five straight lines on the right as an example for splitting intersection; draw a line at the length you want to divide, and click to complete the intersection as shown in Figure A.



Original

drawing

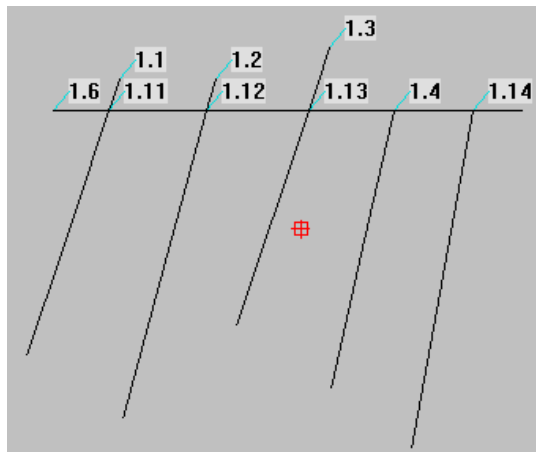
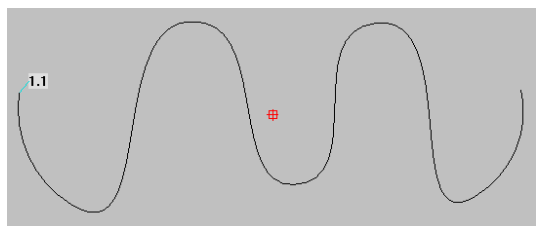


Figure A

2. Curve segmentation

Take the curve on the right as an example for segmentation.



Original drawing

In Edit → Split Graph Curve, you can choose the split method, as shown in Figure A:

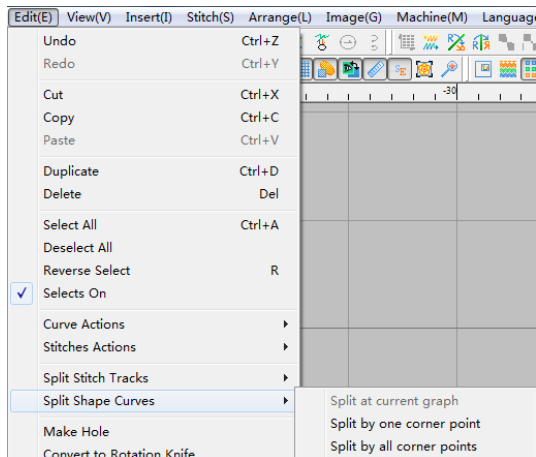
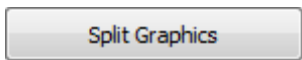


Figure A

- (1) Split at current graph
- (2) Split by one corner point
- (3) Split by all corner points

Split by one corner point: Select the point you want to split, as shown in Figure B;



After confirming, click to complete the split, as shown in Figure C.

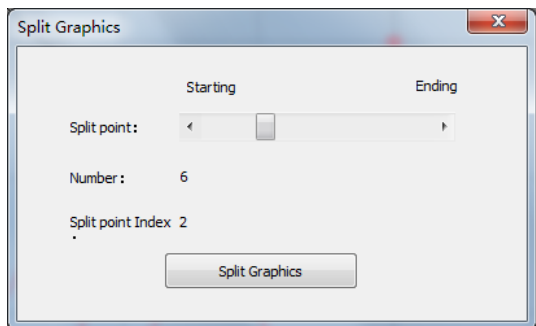


Figure B

Straight curve and free curve are cut in the same way.

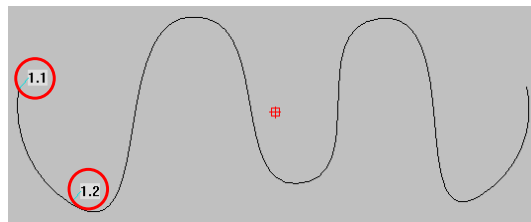


Figure C

Split by all corner points: select straight curve, as shown in Figure D, and select "Split by all corner points" to complete the split, as shown in figure e.



Figure D

Note: The method of splitting all corners is only valid for straight curves.

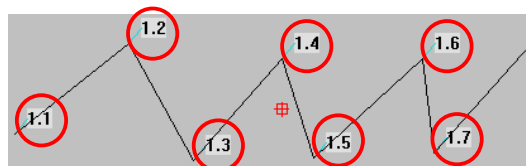


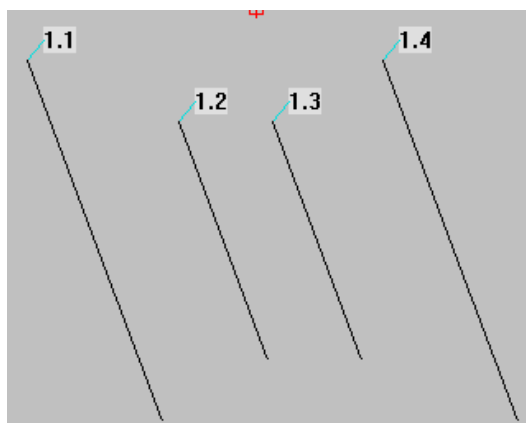
Figure E

5.7 Automatic pattern machine output setting function operation

Take the example of adding end-to-end brushes. The milling cutter and laser cutting setup method are the same:
Method 1

Set straight lines 1.2 and 1.3 as brushes, select two straight lines, select the beginning and end brushes in "object list" → "conversion" → "output setting", as shown in Figure A;

Can click to continue setting the two line parameters, as shown in Figure B.



Original drawing

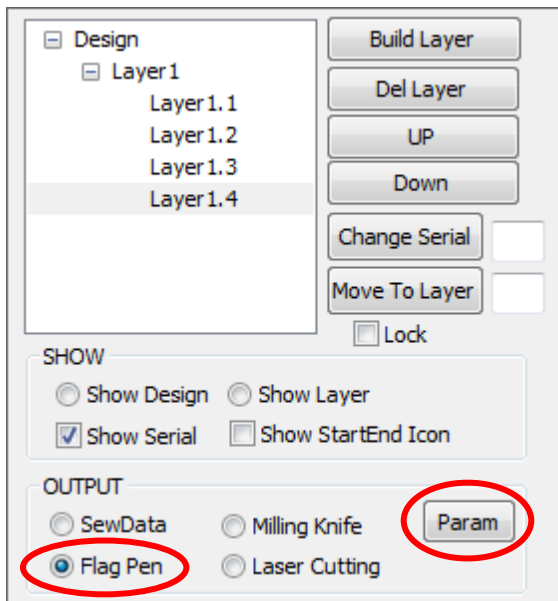



Figure A
Method 2

According to [5.3 Basic operation steps for pattern conversion of automatic pattern machine](#), straight lines are converted into patterns.

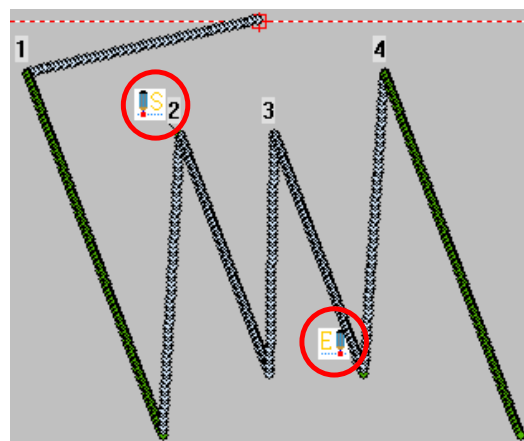
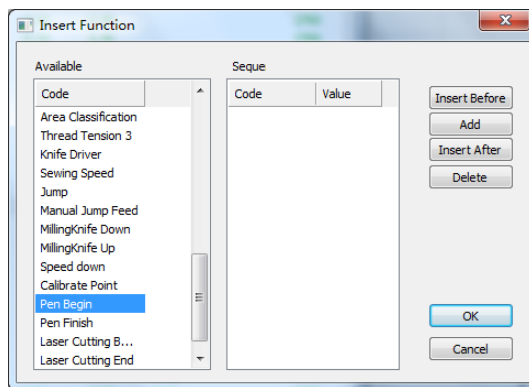
After converting the graph, click on the  stitch list: view the stitch details and perform stitch editing, right-click the stitch to be inserted into the brush function, and click “Insert Function” to add the brush function;

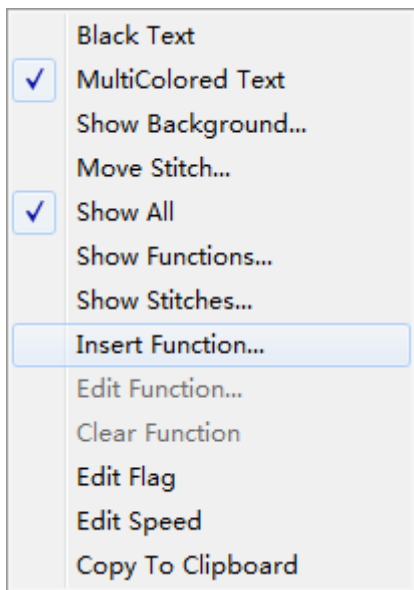
Note: The complete functions of brush, milling cutter and laser cutting must have two functions: start and end.

Note: Only one function of brush, milling cutter and laser cutting can be set under the same line trace.




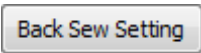
Figure B





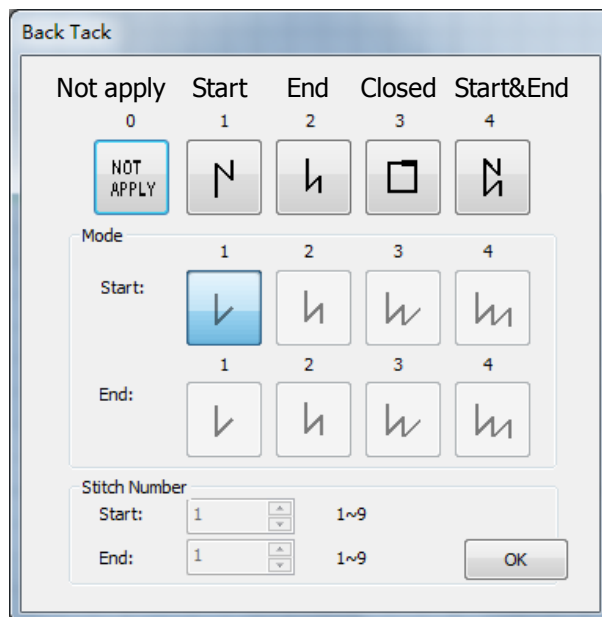
5.8 Pattern back sew setting operation of automatic pattern machine

In the  object list → conversion → producing stitches, the pattern back stitch setting can be performed.


Click , 5 kinds of back sew setting can be selected;

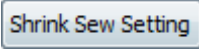
- 0. NOT APPLY: the back sew function is not applied;
- 1. First back sew: only back sew mode and number of stitches at pattern start position can be set;
- 2. Tail back sew: only back sew mode and number of stitches at pattern end position can be set;
- 3. Closed back sew: the back sew mode and number of stitches of closed pattern can be set (only the end mode and number of stitches can be set);
- 4. End- to -end back sew: The back sew mode and number of stitches at the beginning and end positions of the pattern can be set.

Note: This back sew function can only be used in the state of curve diagram.

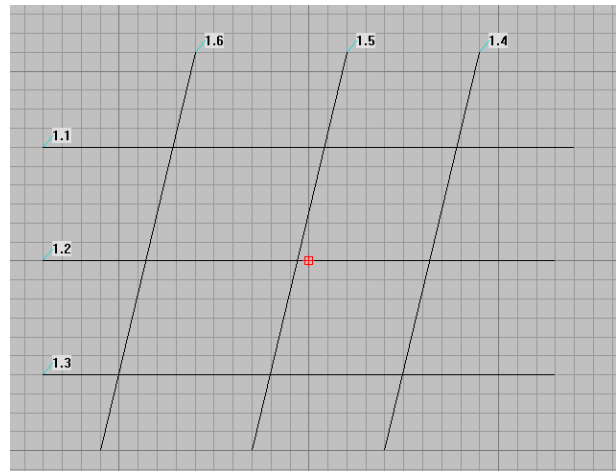


5.9 Pattern shrinkage stitch setting operation of automatic pattern machine

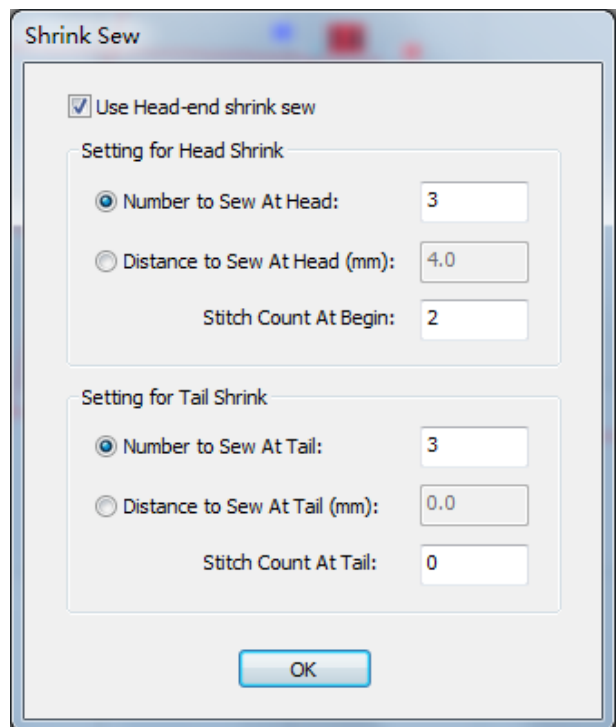
In the  Object List → Conversion → producing stitches, the shrink sew setting can be performed.

Click  to enter the shrink sew setting.

Import the curve diagram from a file into the system editing area, or edit the curve pattern in the editing area.

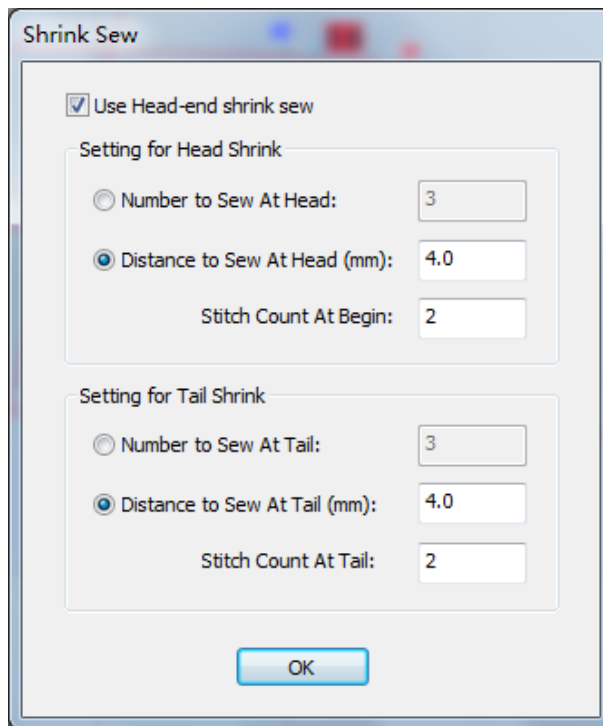


In the shrink sew setting, the first stitch can be directly set (between the first stitch and the second stitch at the beginning of sewing) and the number of inserted stitches (the number of inserted stitches is equal to the stitch pitch).

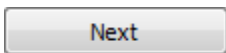


It is also possible to set the shrink sew length and insert the number of stitches within the setting.

Note: Only start (head end) position contraction sewing or only tail end contraction sewing can be performed. If only the head-end contraction joint is performed, the tail-end contraction joint can be set to 0. Similarly, if only the tail end is shrunk, the head end will be set to 0.



After the setting is completed, continue to click the

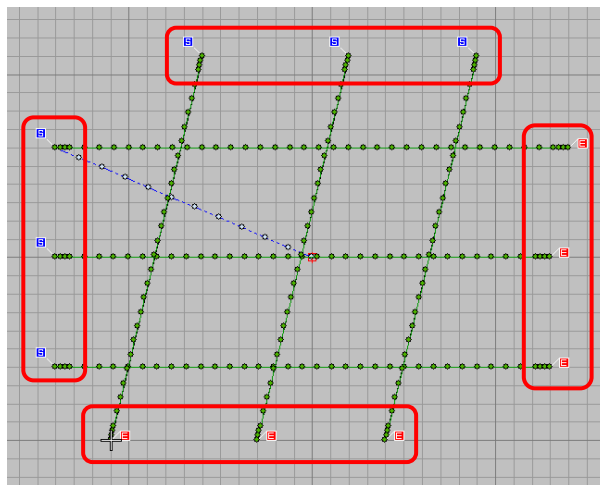


prompt in the 'Conversion Wizard'



to generate the stencil pattern.

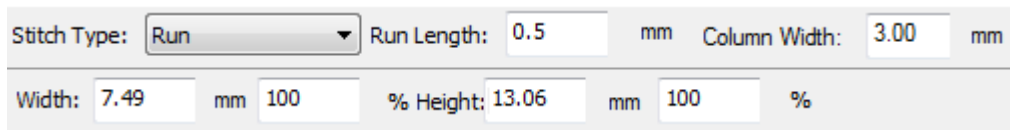
Note:

- 4. Shrink sew function can only be used under the condition of curve diagram;
- 5. If both back sew and shrinkage sew are specified at the starting seam, the back sew setting will be ignored.
- 6. If both back sew and shrinkage sew are specified at the end, the back sew setting will be ignored.



6 Function description of pattern design for pattern machine


Functions involved: : Snap to grid function,  stitch type,



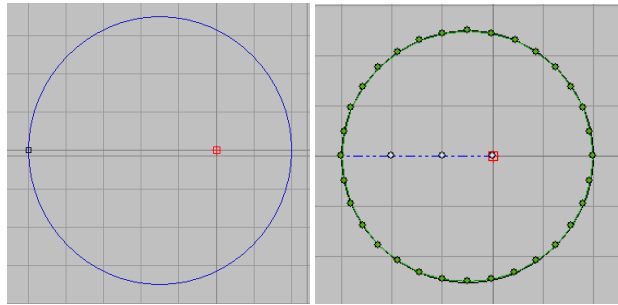
stitch properties, and more.

6.1 Circular pattern editing pattern

Edit circular pattern:

(1) Select the stitch type of 'Stitch Type' and select 'Snap to Grid' and select  the circular tool for editing.

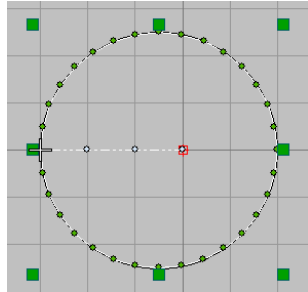
(2) click with that left mouse button to determine the position of one end of the diameter of the circular pattern, then drag the mouse to determine the diameter of the circular pattern, and click with the left mouse button again to determine the generation of the circular pattern;



Silhouette pattern

Create pattern patterns

(3) Click the " Select Object" tool to select the generated pattern after generating the pattern, and then set the stitch distance and modify the size of the pattern in the " stitch attribute";

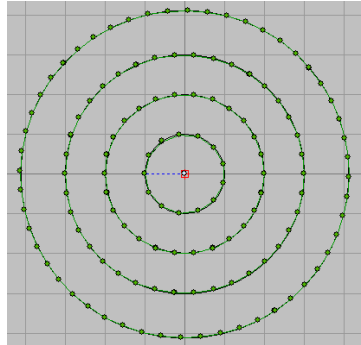


Note: When modifying the stitch distance and pattern size, click the OK button after entering the numerical value, which means to generate the pattern according to the user-defined data.

Edit concentric circular pattern:

(1) Select stitch type and snap to grid first, then select circular tool to start editing pattern;

(2) Hold down the shift key left mouse button, click the center of the circle with the left mouse button, drag the mouse to determine the radius of the circle, and click the left mouse button again to generate the circle; Continuously and repeatedly operating and editing circular



patterns;

Spiral circular pattern editing:

The functions involved are the same as those used for editing circular patterns.

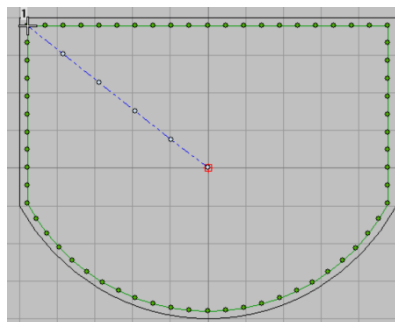
- (1) Select  Input Outline tool to edit the pattern;

Note: The 'Enter Outline' tool requires that its editing pattern must be a closed pattern to generate the desired pattern

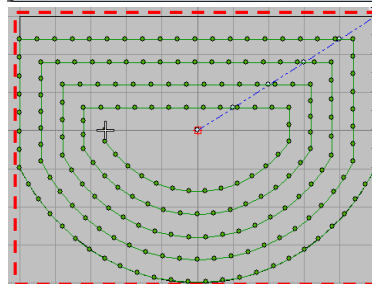
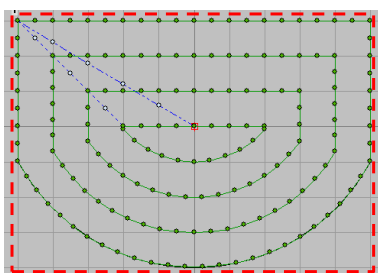
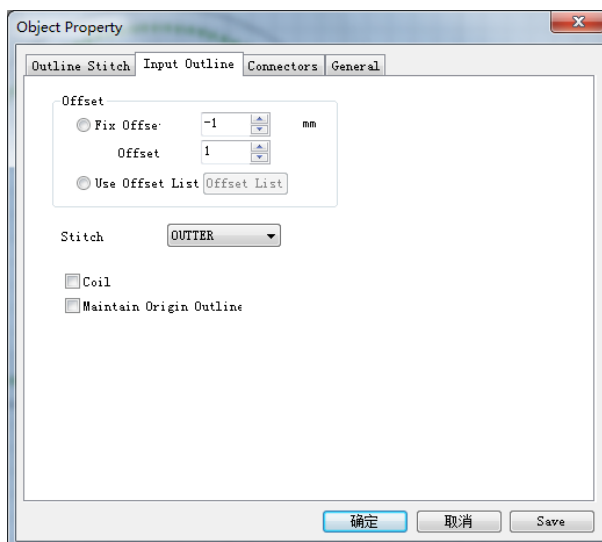
- (2) The left or right mouse button can be used for editing, and press Enter to confirm after pattern editing is completed;

- (3) After generating the initial pattern, use the " Select Object" tool or use Ctrl+A to select the pattern, then click the attribute function icon or right-click the selected pattern, and select the " Attribute" function in the pop-up menu;

Modify the relevant parameters of "offset", "generate stitch orientation", "spiral" and "retain original contour" in the attribute to generate different patterns.



Generates the initial pattern pattern



Offset

Fix Offse: -1 mm

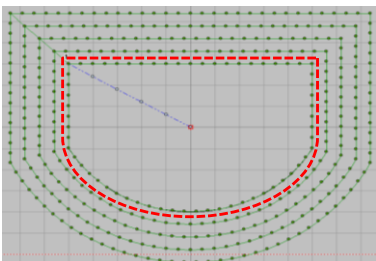
Offset: 3

Use Offset List

Stitch: OUTER

Coil

Maintain Origin Outline



Offset

Fix Offse: -1 mm

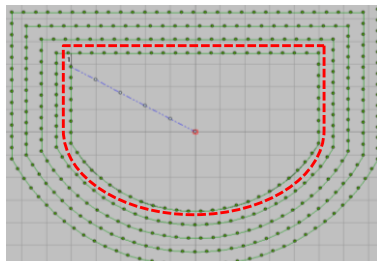
Offset: 3

Use Offset List

Stitch: OUTER

Coil

Maintain Origin Outline



Offset

Fix Offse: 1 mm

Offset: 4

Use Offset List





Stitch: INNER

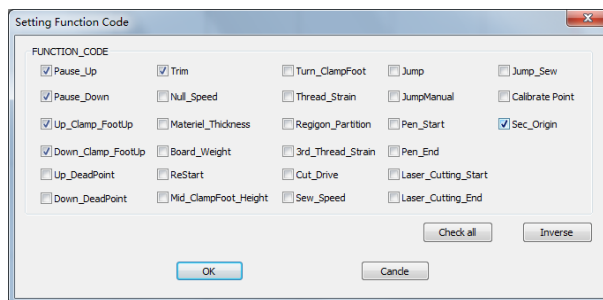
Coil

Maintain Origin Outline

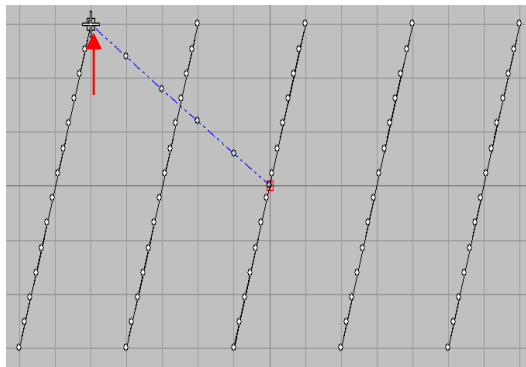
6.2 Add a second origin to edit pattern


Before editing, please know what is the " second origin". The second origin is the second origin position except the pattern sewing point (the first point position when sewing starts)

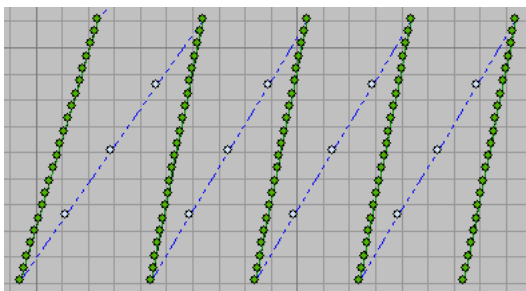
(1) Click  the second origin function code in the object selection editing tool at the left side of the editing area; or click the  second origin function code in the function code toolbar, if there is no second origin  in the function code toolbar Function code, in the main toolbar, click "View" → "Function Code Options" function, select "Second Origin", click OK, the second origin will appear  in the function code toolbar in the left position function code.




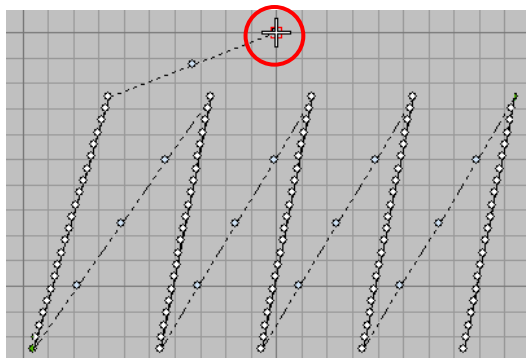
(2) Press Enter key to generate stitch pattern for normal pattern editing, and add 'second origin' to the loose line segment between the origin (center of editing area) and pattern sewing point, and the system will automatically add it to the pattern sewing point position by default.




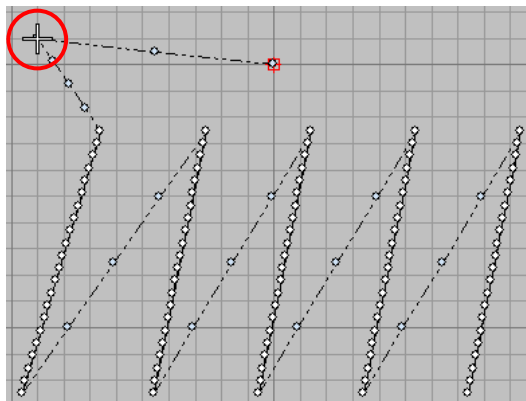
(3) If you need to design an empty feeding stitch, you will need to add an empty feed point using the  Manual Stitch tool.



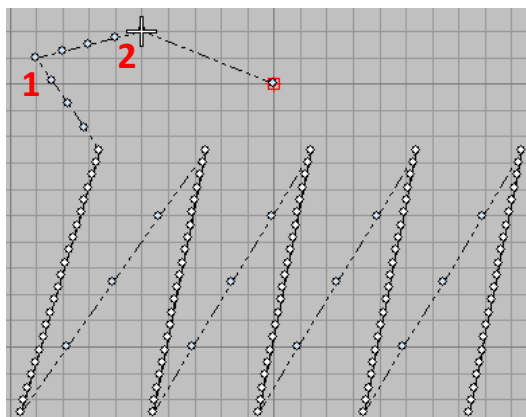
(4) Move the cross cursor to the origin position in the editing area first, or click  to run the pattern start/end function.



(5) Use the  Manual Stitch tool to select the position to insert the empty feeding point, click the right mouse button, and press the Enter key to confirm.



(6) If you need to insert the empty feeding point again, you need to click the right mouse button again in front of the empty feeding point to insert and then press enter key.

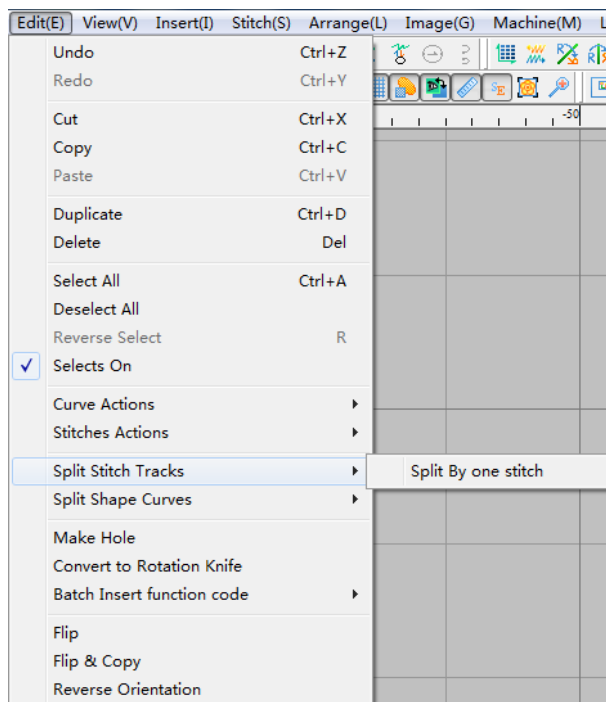
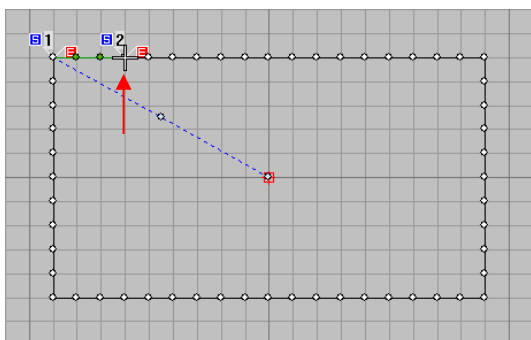


6.3 Segmentation of stitch line segments

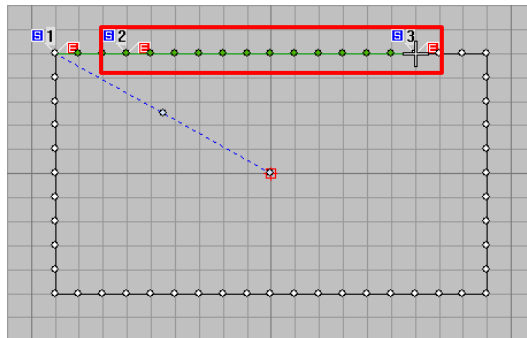
When modifying patterns in the process of editing patterns, for example, a selected segment in the pattern is deleted in the middle, so it is necessary to use the "split sewing stitch" function.

Delete a selected segment in the stitch segment:

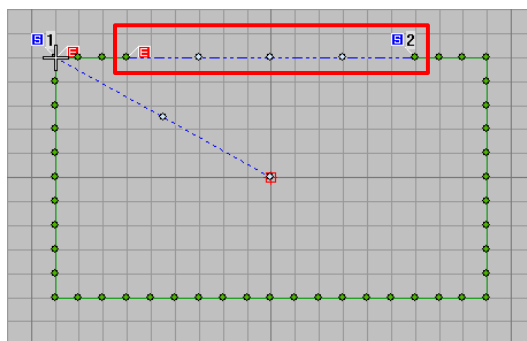
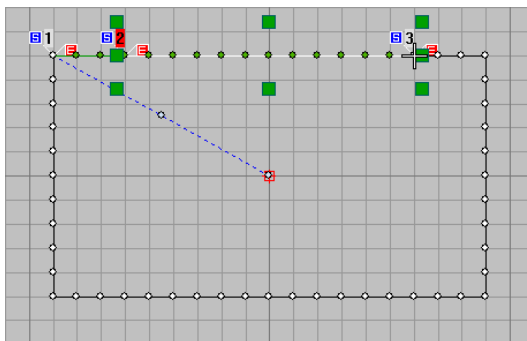
(1) Use the orientation keys to move the cross cursor to one end of the line segment to be deleted, and then select "Split Sewing Tracks" → "Split By one stitch" in "Edit" to complete the split of the stitch line segment into two segments.



(2) Perform the same operation, move the cross cursor to the other end of the segment to be deleted, click " Edit" again, select " Split Sewing Thread" → " Split Sewing Point" and divide the segment to be deleted;




(3) Click the line segment to be deleted with the left mouse button, and then click the right mouse button to select ' Delete' in the pop-up menu or press the Delete key to delete the selected line segment to complete the deletion of a selected segment in the stitch line segment.

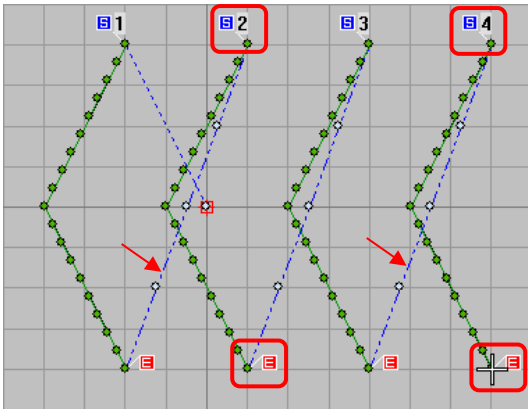


6.4 Modify the sewing orientation of stitch pattern (sewing object in pattern) and modify the position of sewing point

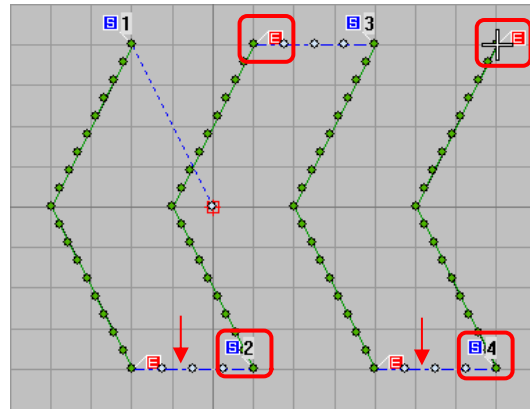
Modify the sewing orientation of stitch pattern:

Use the left mouse button to click on the object in the pattern to be modified (or hold down the left button and drag the mouse to select the modified object frame), and then select the first and last exchange function keys  above the editing area to modify (repeated operation);

For example, first exchange patterns 2 and 4 in the following figure, as shown in the following figure:



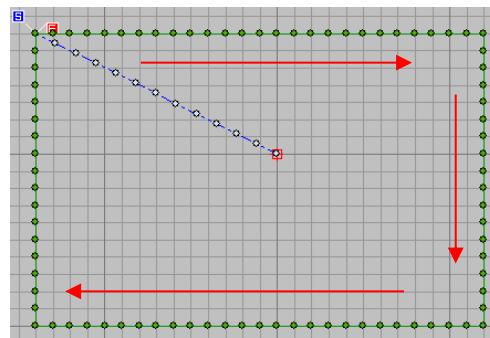
Original image



After modification

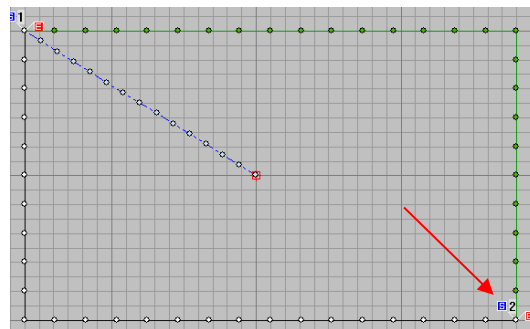
Modify the position of pattern sewing point: refer to Position: Refer to [5.5 Curve diagram closed graphics modify sewing point operation](#)


Now move the cross cursor position to the diagonal position of the starting point position (**the modified starting point position can be arbitrarily set according to requirements**);

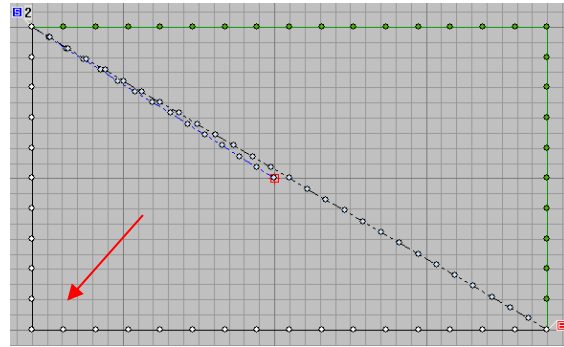


Original drawing

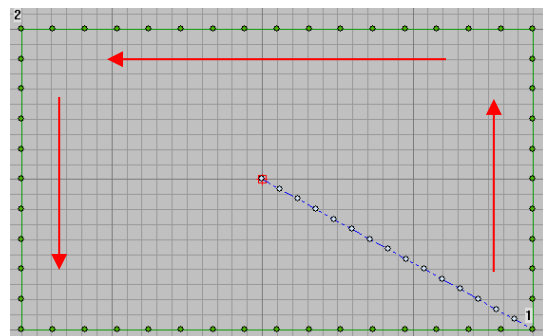
Use 'split sewing stitch' to divide the closed pattern into two objects;



Select one of the divided objects according to the sewing direction to perform a  'close exchange' operation;



Similarly, after another object is operated, the pattern display will show that the sewing point position will automatically change to the dividing point position.



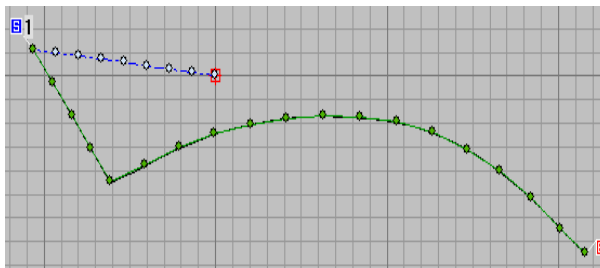
Note: In the process of modifying the stitch starting point by closing the stitch pattern, since the original object is divided into two objects by the segmentation operation, it is necessary to manually add trimming function code at the end position before saving the pattern, and then set not to automatically add trim code when saving.

6.5 Double stitch editing

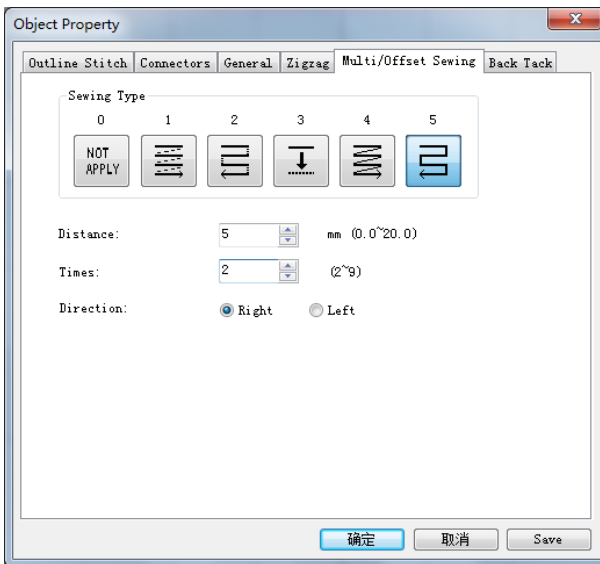
The sewing effect in the picture is often encountered in the market, and special tools need to be used to operate when dealing with the sewing pattern in the picture.



(1) Use the 'stitch type' and the 'straight line' tool in the input tool to generate patterns with the left and right mouse buttons;



(2) Use the left mouse button to select patterns and select the " multiple sewing" function in the " attribute" function, and set the sewing type, offset, number of times and offset orientation in its page;



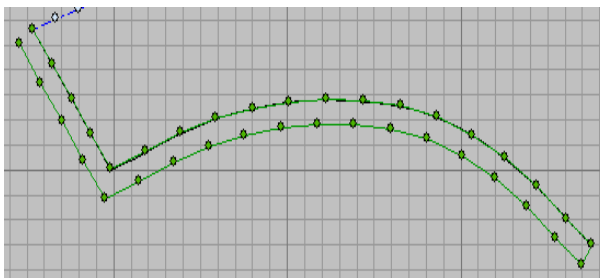
Sewing type: multiple sewing.

Offset: the distance between the generated line segment and the original line segment.

Number of times: that is, the number of same line segments generated.

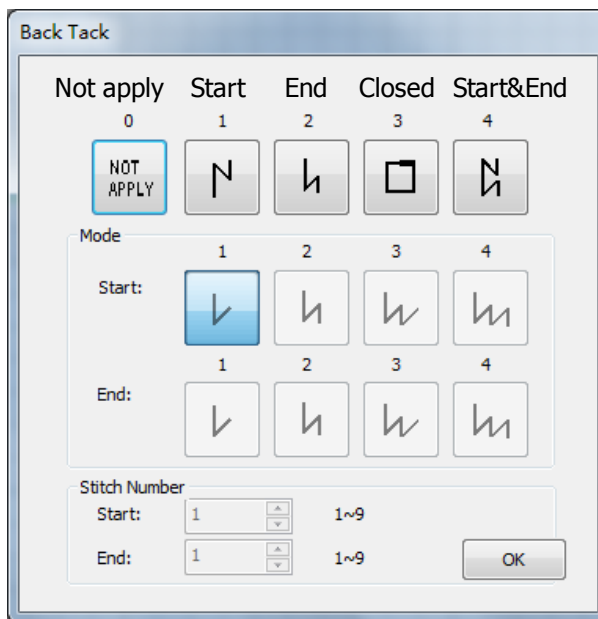
Offset orientation: generate line segments based on sewing orientation.

(3) After setting in the attribute, press OK button to generate the required pattern.




Note: If you need to add a lock pin in the pattern,


you can set it  in the properties. (used in self-stitching stitch patterns)




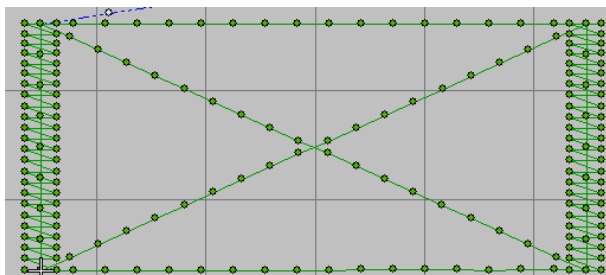
6.6 Combination operation of straight line and zigzag seam





In reality, special patterns will be used for the strap connectors on schoolbags or handbags of middle school students.

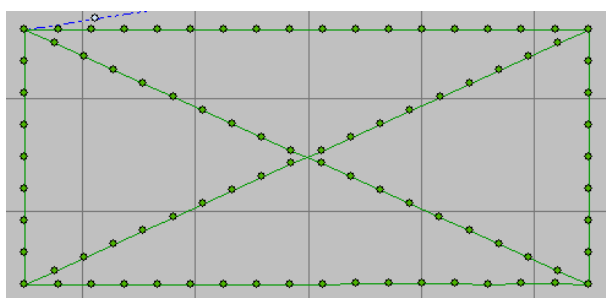
The functions involved are the plain stitch 



and the satin stitch in the stitch type , the plain stitch in the input tool, and the continuous editing

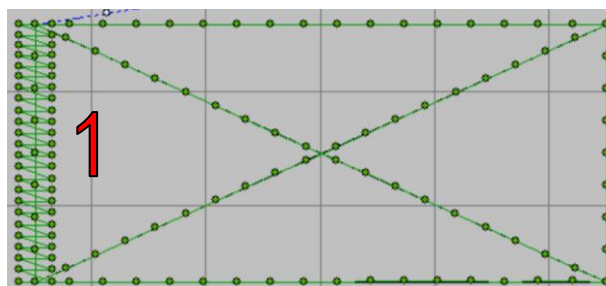
function key , as shown in the right figure.



(1) The  'Snap to grid' and 'Input Continuously'  functions are selected at the same time. Now use the 'Run Plain'  and 'Plane' tools to edit a "rectangle with two diagonal"  pattern.



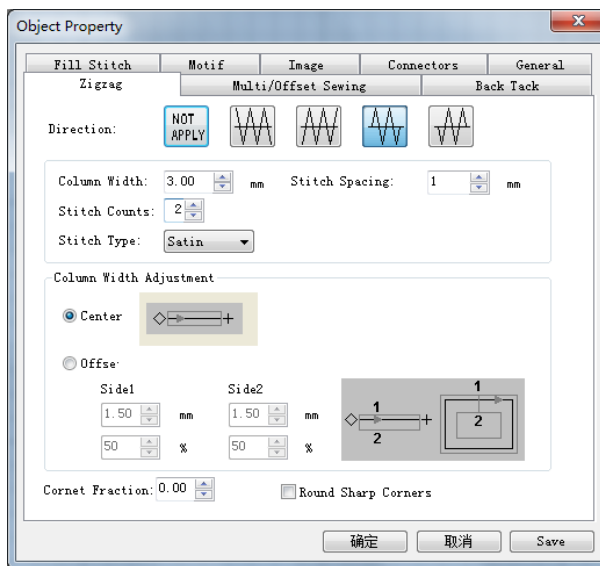
(2) Then select the 'satin stitch'  and 'plain stitch' functions  to start editing the zigzag pattern at the end of the rectangle with two diagonal pattern.



(3) If the generated ' stitch spacing' and ' column width' data of satin stitches are not expected values, adjustment is required;

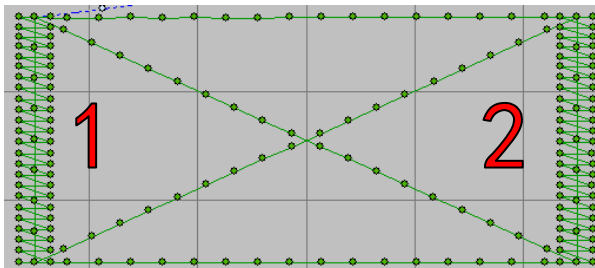
Starting orientation: select the appropriate method in the options, which means that there will be empty feeding line segment between the starting point of zigzag sewing and the end point of the previous object;

Zigzag seam width and stitch spacing: modify the width of the bar to the width required for editing; Modifying stitch pitch is to modify the pitch width of zigzag stitches.



(4 It is necessary to sew to the next position when editing the satin stitch on the other side, so it is necessary to use the satin stitch tool to start editing the plain stitch segment from the end position of the first plain stitch to the start position of the next satin stitch.

(5) The same operations as in steps (2) and (3) are performed to generate the corresponding satin stitches.

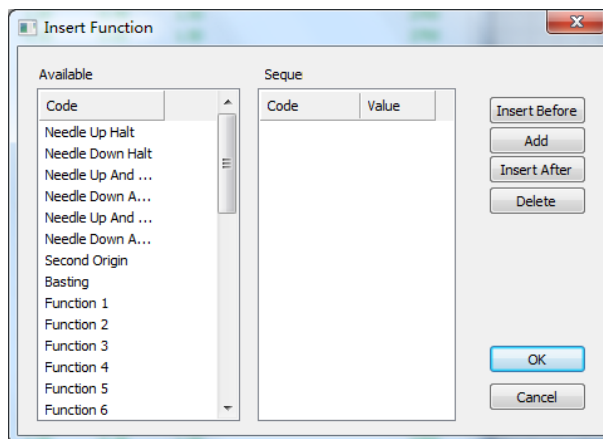
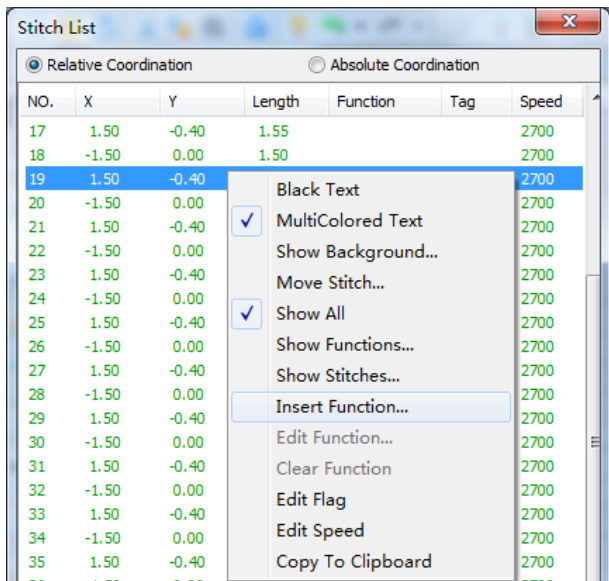


6.7 Adding function codes to patterns

In the process of sewing patterns, special actions need to be performed mechanically after sewing to a certain position, so the operation of adding function codes to the patterns is involved. The positions of adding function codes are respectively inserting function code function bars and stitch lists on the left side of the editing area to add function codes.



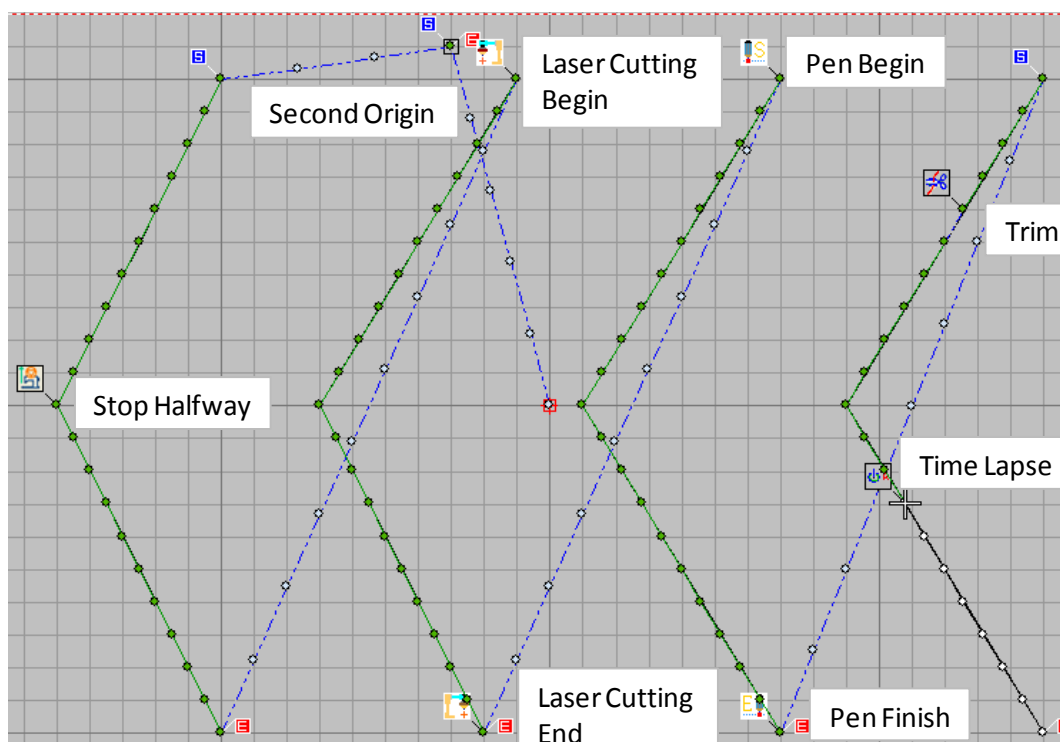
Insert function bar



Insert function dialog

Insert function in stitch list

Move the crossing cursor to the position where the function code is to be inserted, and then insert the function code in the function code bar or stitch list.



6.8 Pattern sewing speed setting and modification

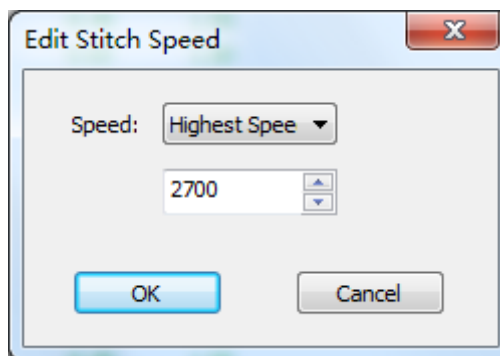
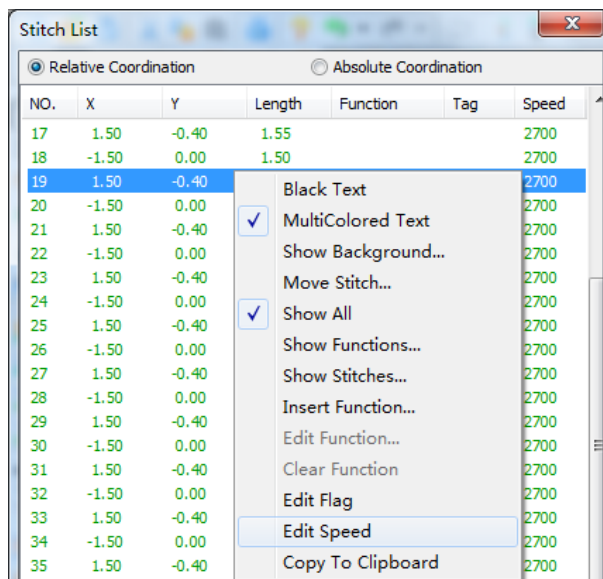
During sewing patterns, the phenomenon of inconsistent thickness and thickness may be encountered, so when dealing with patterns with inconsistent thickness, the sewing speed will be set to low speed when sewing thick materials and high speed when sewing thin materials.

(1) If the pattern consists of multiple objects, some sew with thick materials and others need thin materials, the object is selected and the corresponding speed is set in the 'sewing speed'.



(2) If only a certain stitches in the object need be modified, they can be changed in the ' Object List'.

Click the start point of the modified section with the left mouse button, then click the end point of the modified section with the Shift left mouse button to select all the modified sections, and click the right mouse button again to select ' edit speed' in the pop-up menu to set.



6.9 Special font editing operation

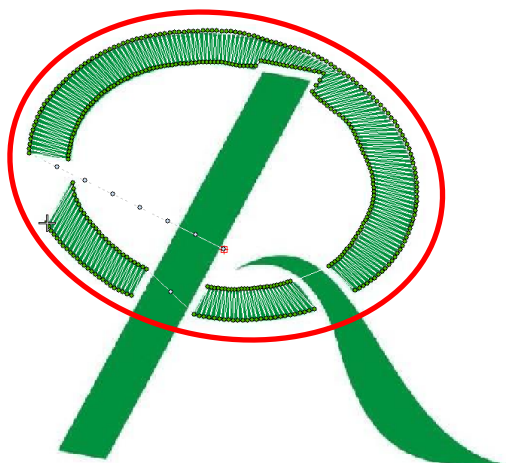
When special fonts and pictures do not exist in the system font library, special functions need to be used for editing.

For example, as shown on the right.

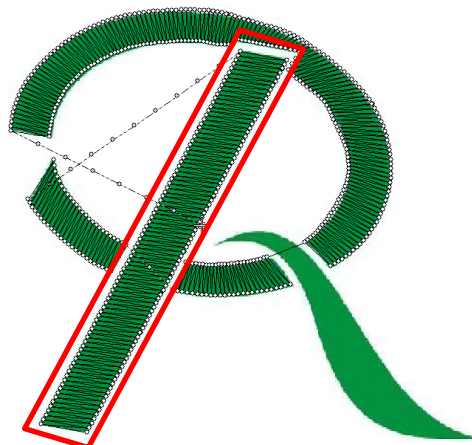


Edit using ' Input Method A' and ' Input Method B' in the input tool as follows.

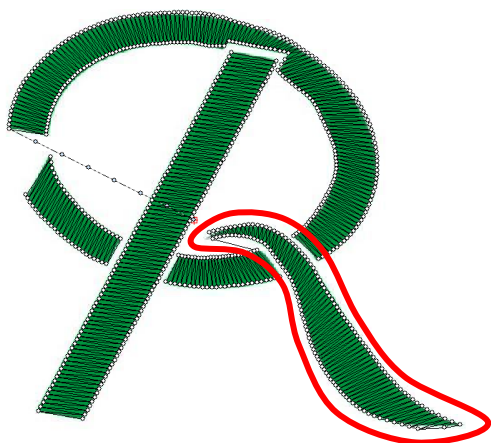
Note: For the functional operation methods of Input Methods A and B, please refer to the 3.2.3.1 Input Method A and B parameters of the [3.2.3 Properties of Stitch Object](#)



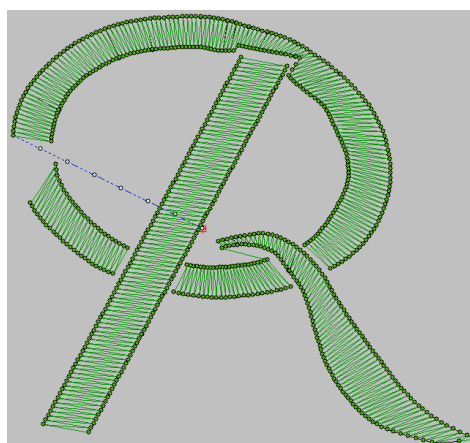
Input method b function editing effect



Input method a function editing effect



Input method b function editing effect



Actual sewing effect

6.10 Modification of empty delivery trajectory

In order to sew the required pattern, the user will make the corresponding template according to the shape of the pattern. However, due to the fact that the middle presser foot may hit the mold when the starting pedal is pressed after the mold is used and the mold is moved from the origin position to the sewing point, planning is needed to avoid the problem of hitting the pressing plate.

- (1) When moving the crossing cursor to simulate the pattern sewing, first make sure that the pattern is not selected (**there are no green solid squares around the pattern, i.e. as shown in Figure 1**)

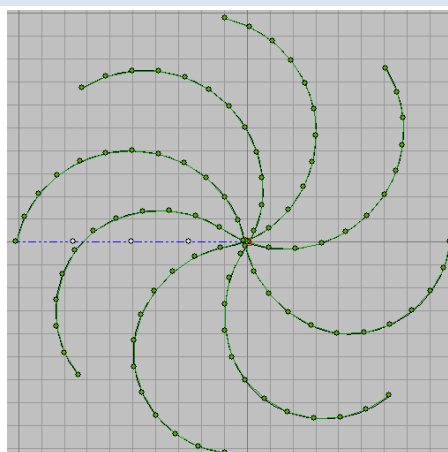

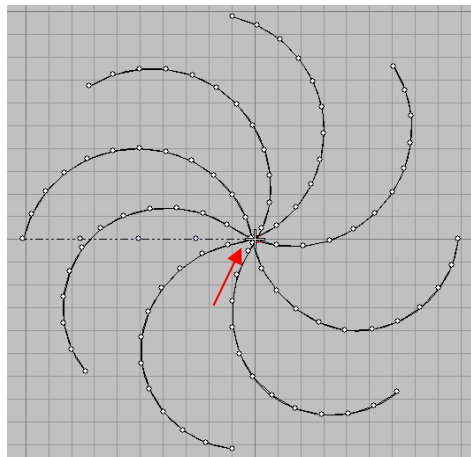

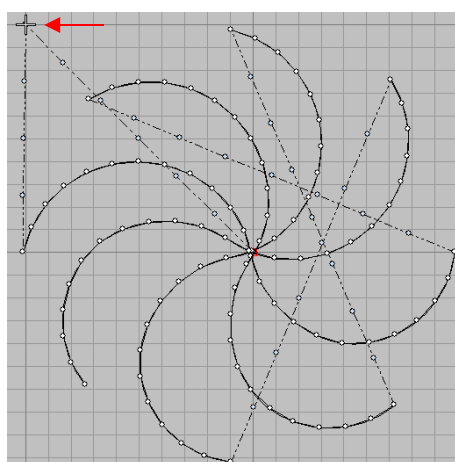


Figure 1

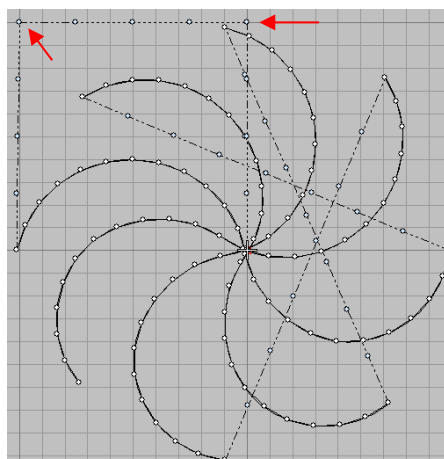
(2) Press  to simulate the pattern sewing start/end button and the crossing cursor will automatically move to the origin position.



(3) Click  the manual stitch button, then drag the mouse to the desired position, click the right mouse button once and press the Enter key to generate a empty feeding point.



(4) Under the condition that the position of the crossing cursor is unchanged, drag the mouse again to right-click at another position and press Enter to generate another empty feeding point.



7 Glossary/Hot-keys

7.1 Glossary

Term	Explanation	Remarks
Pattern	Design file formed by the basic design object.	
Outline	Figures formed by the vector curve segment	
Image object	The figure formed by the bitmap	
Graphics object	The object only containing the outlines	
Stitch Form or sewing stitch	The connecting line in the order of the needle entry point, it is also called as Sewing Forms	
Stitch Point	It is called as "Needle entry point" as well. The stitch point is the most basic data unit in pattern, usually containing the information of function codes and travels in X/Y direction.	
Function Code	The identification code of special functions contained by the stitch point, like the feeding code in sequin embroidery.	
Start Point	The start point of sewing.	
End Point	The end of the sewing	
Angle of Stitch Form	The direction the stitch form composed by two neighboring stitches	For Tatami Stitch
Plain stitch	The method for creating stitch form by putting all the stitch points on the outlines.	
Satin Stitch	The method to create the stitch form by putting the stitch points along the both sides of the outline according to the width of the satin stitch	
Tatami Stitch	The method to create the stitch form by using the stitch points to fill the close area in certain interval and angle.	
Zigzag	Similar to satin stitch, but the density of the stitch point is much lower.	
Length of plain stitch	The distance between two neighboring stitches in the flat sewing.	When user sets the changeable stitch length, the parameter of changeable stitch length will take precedence at system processing.
Length of Horizontal Stitch	The width of satin stitch	
Edge of Row	The straight outline formed by the stitch points of the satin stitch at both sides	

Underlay Sewing	Stitching of underlay sewing	
Empty Feeding	Frame-moving without the action of needle-entry also called as Over-frame	
Lock Stitch	The flat stitch with tiny stitch interval before the sewing end, which is used to prevent the thrum from loosing.	

7.2 Hot-keys

Types	Operation	Buttons used	Description
Operation of File	New File	Ctrl + N	
	Save File	Ctrl + S	
	Open File	Ctrl + O	
	Print File	Ctrl + P	
Operation of Object	Copy	Ctrl + C	
	copy and paste	Ctrl + D	
	Paste	Ctrl + V	
	Cut	Ctrl + X	
	Delete	Del	
	Select All	Ctrl + A	
	Inverse Selection	R	
	Combination	Ctrl + G	
	Ungroup	Shift + G	
	Lock	Ctrl + K	
	Unlock	Shift + K	
	Automatic Lower Stitching	U	
	Template Benchmark	T	
	Centering Template	H	
	Undo	Ctrl + Z	Undo the operation of the single step
Redo	Ctrl + Y	Redo the operation of the single step	
Mode of Display	3D Display Pattern	Alt + 1	
	Display Stitch	Alt + 2	
	Display Outline	Alt + 3	
	Display Stitch Point	Alt + 4	
	Display Cable	Alt + 5	
	Display Function Code	Alt + 6	
	Display Grid	Alt + 7	
	Display Figure	Alt + 8	
	Display Image	Alt + 9	
	Display Scale	Alt + 0	
	Show Start & End Icon	Alt + P	
	Show The Entire	Alt + V	

	Pattern		
	Zoom Pattern	Alt + Z	
	Measurement	M	The physical distance between two points on the interface
	Align To Grid	G	
	Zoom In 1 Time	Z	
	Zoom Out 1 Time	Shift + Z	
	Overview window	F10	Display the selected in center
	Stitch List	F11	Scale rate at 1.0
	List Of Objects	F12	
	Scaling Factor	Ctrl+Shift+Z	
Function Windows	Object Property	A	
	Edit Graphics	C	
	Edit Stitch	E	
	Insert Pattern	Ctrl + I	
	Plain Stitch	Ctrl + 1	
	Satin Stitch	Ctrl + 2	
	Tatami Stitch	Ctrl + 3	
	Zigzag Stitch	Ctrl + 4	



创新永无止境



大家官网



大家公众号

北京大豪科技股份有限公司

地址：北京市朝阳区酒仙桥东路1号M7栋

电话：010-59248888

传真：010-59248866

网址：www.dahaobj.com

资料如有更改，恕不另行通知，以实际系统为准。

Beijing Dahao Technology Corp.,Ltd

Add:M7 Building,NO.1 JiuXianQiao East Road,Chaoyang

District,Beijing

Tel:010-59248888

Fax:010-59248866

Web:www.dahaobj.com

You will be not informed if the lile has been revised.Please set sample as atandard.