How often should I change the needle?

1. It is essential that your needle is fitted correctly as this will affect the performance of your machine and thread. The groove should be placed to face you.

2. Change your needles on a regular basis as blunt or damaged needles will cause stitching to loop, look uneven or worse still, won't sew at all! Replacing the needle will prevent looping and create a crisper finish. We highly recommend a set schedule for changing needles, e.g. weekly in rotation.

3. Change your needle when using a different thread weight or introducing a new type of thread e.g. Metallic, we recommend keeping separate needles specifically to use with metallic threads.

4. Change your needle when applying new embroidery techniques e.g. three dimensional embroidery, this requires a slightly shorter needle - **DBXK5 KK80** due to its shorter shank, bending resistance is lower.

5. Change your needle when you embroider onto denser woven fabrics such as martial art belts and baseball caps. Use a titanium sharp point needle **MXK5 SAN1** size 80 which is specially designed to pierce into woven fabrics and prevent the needle from blunting or overheating.

6. Puckering occurs when the fabric has been gathered by the stitches. This is caused by too many stitches in your design, loose hooping, lack of backing, incorrect tension or a dull or oversized needle. Reduce your needle size for finer fabrics to prevent holes forming around the design.

7. Bird nesting is a build-up of thread between the actual garment and needle plate. This can be caused by inadequate tensioning, too many stitches or a blunt needle.

8. Thicker garments such as horse blankets and arctic style fleeces can cause the needle to overheat after having to cut through a heavier fabric. Change your needle frequently.

9. If your machine is missing stitches, it could mean the hooped fabric isn't tight enough, your machine isn't threaded properly or the needle is incorrectly fitted or blunt.

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Jan 2015

MADEIRA

How to apply the correct hooping technique

1. Hooping properly is an important step in the embroidery process. The smaller the hoop the easier it is to stabilise the fabric. Select a hoop slightly larger than the design and big enough for the needle not to hit the frame. Specialist hoop styles are available for awkward items.

2. Choose the correct backing, the goal is to stabilise the fabric to avoid problems such as distortion. The backing piece should be large enough to extend over the sides of the hoop.

3. Take your hoop apart and place the lower hoop on a flat surface. Place the backing on top followed by the item to be embroidered. Place the upper hoop over the fabric and push it down into place. Do not stretch the fabric as this could cause puckering. Treat each fabric according to its characteristics. For example, knits should not be overstretched, thick fabric may need to be clamped.

4. When your garment is hooped correctly you will be able to run your fingers over the fabric without it moving or rippling. If your garment is too loose, take it out of the hoop and repeat the process. Never pull the fabric as this can cause design position problems.

5. On velvet the hoop can leave a mark so cover the inner ring with tape or backing or don't hoop at all. Delicate fabrics, satin, lycra, and thin nylon can be difficult to hoop as they tend to slip and the hoop can leave a ring mark. The solution is to lay the fabric on top of the hooped backing which should be either a stick on peel away or a standard backing secured in place with a temporary adhesive spray.

6. When using a stick on peel away backing such as **051SV57W** hoop with the backing side down, score the protective sheet and peel away, then place the fabric on top.

7. For backing that is not sticky, hoop up the backing and use a temporary adhesive spray such as **MSA1100** or **AD505** to ensure the fabric stays in place whilst embroidering.

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April 2015

MADEIRA

How to embroider small lettering

1. Use the correct size and style of thread for clarity in small letters and fine contours. If possible use finer thread, **Classic and Polyneon No.60** or superfine **Polyneon No.75.** On the shadecards No.60 threads are marked with a blue dot and No.75 with a yellow dot.

2. If it is not possible to use a finer thread then use **Classic No.40** as viscose is a much more flexible thread. For an alternative visual effect try using **Frosted Matt** or **Metallic No.50.**

3. The design should be digitised specifically for the finer weight thread and any unnecessary stitches removed. Ensure stitches are linked closest to point, otherwise you will have partially stitched lettering. It takes 6 - 7 needle movements to pick up the bobbin thread.

4. The smallest text attainable without losing clarity is 6-7mm when using No.40 weight thread and 3mm using No.60. Text less than 3mm is now achievable using **Polyneon No.75.**

5. Use the smallest needle possible, finer weight thread requires a finer needle. For Classic or Polyneon No.60 use size **65/9** for superfine Polyneon No.75 size **60/8** is recommended.

6. If embroidering Polo or T-shirts, try using a filled in stitched background, such as Complex Fill or Tatami. Using tone on tone thread to match the colour of your garment will create an ideal foundation for your small lettering.

7. Use **Avalon** water soluble topping to prevent the text from sinking into the fabric.

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Jan 2015

MADEIRA

How to prevent fabric damage

1. It is important to select the correct **backing** for the type of material you are going to embroider. Unstable material will require more support so use a heavier or fusible backing.

2. Tear away or cut away backing? Consider the material to be stitched. Tearing backing away from a very lightweight fabric could damage the garment when removing, therefore cut away backing is better on fine materials.

3. Excess stitches in your design will cause bunching that could damage the fabric. Reduce the amount of underlay and avoid using short stitches or piling too many stitches on the same area.

4. Use the appropriate **needles**. Sharp point are designed to pierce the fabric and used for tightly woven materials or denim, leather and plastics. Ball point are designed to slip between knitted or loosely woven fibres and used for garments like polo shirts, fleece and knitwear. For stiff or thick fabrics use a larger or stronger needle, Madeira's specialist titanium needles - **MXK5 SAN1** are designed for tough materials and ideal for baseball caps or areas over seams.

5. Reduce your needle size when embroidering finer fabrics to prevent holes forming around the design. Ensure your fabric is taut like a drum in the **hoop**. Loosely hooped fabric may move during the embroidery process and cause garment damage.

6. **Trim** any excess threads on the reverse of the embroidery before removing the hoop or excess backing, to keep the fabric stable. Use the correct **scissors** for trimming to avoid damaging the garment, curved blade scissors are a great idea.

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Jan 2015

MADEIRA

How to prevent puckering

1. Are there too many stitches in your design? Using 10% lower stitch density will filter out any unnecessary stitches and reduce puckering.

2. **Backing:** For fine fabrics use a stronger backing to help stabilise the garment such as **051PS89W**, **BO508** or **051SV57W**.
A temporary adhesive spray **- AD505** or **MSA1100 -** on a lighter backing will also prevent movement and distortion. In each case be careful the backing is not too thick or the fabric will wave and embroidery pucker.

3. Use the smallest needle possible for the design especially for finer fabrics. Size 65/9 or 75/11 **- MXK5L** are ideal.

4. **Punching:** Check the stitch distance is not too tight for the thread weight and fabric. More than one fill stitch area? Check start and end points are from inside to outside, so the stitches will push the fabric outwards away from the design centre.

5. Make sure the fabric is taut like a drum within the hoop. If too loose, fabric will move and distort. Make sure the hoop is only slightly larger than the design.

6. Try loosening the bobbin tension slightly to avoid underthread pull on the design.

7. Embroider at a slower speed to reduce the amount of tension created.

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Jan 2015

MADEIRA

How to stop thread breaks

1. When using good quality thread such as Madeira, breaks are rarely caused by faulty thread.
First check the entire thread path to ensure correct threading and no tangles.

2. Interchange colours on the design, head and needles to establish a control group. If thread breaks persist this will highlight whether the design, digitising, head or needle is at fault.

3. **Needles** - it is critical to use the correct needle size, point and eye for the thread, application and type of fabric being embroidered. The correct needle will ensure the thread runs smoothly and will prevent snapping. If the thread is breaking at different points in the design, change the needle.

4. **Thread tension settings** - rule of thumb for even stitches: on the reverse of your design you should see one third bobbin thread to two thirds top thread. Thread breaks occur when the upper tension is too tight or if the bobbin thread is too loose and not running smoothly out of the bobbin case. Adjust the tension when changing thread types.

5. **Digitising** - if the thread breaks at the same point each time, adjust the digitising. Reduce overlapping stitch build-up and/or reduce stitch density where stitch distance is too high and check stitches are not too small.

6. **Needle plate** and **bobbin case** - should be inspected for abrasions, sharp edges, cracks and lint build up. Also be sure to check the sewing machine hook, if it becomes damaged this can lead to thread breaks.

7. Thread breaks can be caused by friction/heat build-up from embroidering dense fabrics such as denim and leather or on cap seams, this can be prevented by using titanium coated needles - **MXK5 SAN1**.

8. Take care not to use excessive adhesive spray as build up can cause the needle to drag and thread to break. Regularly using adhesive spray remover is recommended.

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Jan 2015

MADEIRA

How to use MadeirAS Film for badges

1. **MadeirAS Film** is sturdy enough for single or multiple layer application; you can make badges and solid fill stitch logos with satin stitch borders without needing any other fabric.

2. First of all, decide how many layers of the AS Film you need to use. This will depend on the density of the stitches in the design.
One layer - place the rough side down
Two layers - smooth side down for layer one, then rough side down for layer two. Placing the rough sides together will reduce slippage.

3. Hoop the AS Film as you would a normal fabric - no need to use a backing. Adjust the overlap between the filled in background and the satin border. Both sections must be overlapped by 50% upwards. This is required to prevent splitting of the background and border.

4. Place the hoop onto the machine and stitch the design outline to secure the layers of film. Within the outline, create a grid support of running stitches to stabilise and add structure.

5. Use a fill stitch to create a solid background. Embroider the motif, characters or text of your badge.

6. Embroider the border using zigzag underlay stitches around the outline to create a foundation, then finish with satin stitch. Stitches need to be wide apart so the film will not perforate when embroidering.

7. Once completed, remove from the hoop, then carefully tear away the AS Film or remove residue with an iron or heat press at 120 -140°C.

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Jan 2015

MADEIRA

How to use water soluble film Avalon

1. **Avalon** is a transparent film which provides extra stability for knitwear and stretchy fabrics. Can be used as a topping or backing to help improve the appearance of embroidery. **Avalon** is available in different weights depending on the application.

2. **Avalon 20 micron** is to be used as a topping to aid your embroidery for small lettering and to stop stitches sinking on deep pile fabrics such as towelling or fleece. For unstable, thin or stretchy fabrics, place between two layers of Avalon and stretch taut in the embroidery hoop.

3. After completing the embroidery, tear off the Avalon, brush off any excess or use a damp brush or steam iron.
NB: Do not mist spray or leave embroidery wet as this may cause colours to run.

4. **Avalon Strong** - a thick textured film ideal for detailed embroidery without tearing and larger projects you cannot frame. Use as a backing or for badges embroider directly onto.

5. **Avalon Ultraflat** - strong, smooth film ideal for bridal wear, lingerie and other flimsy fabrics. Can be embroidered directly onto and will dissolve after washing.

6. **Avalon Plus** - soft next to the skin with a non woven fabric apearance. Ideal for light, delicate fabrics and polo shirts. Embroider directly onto or use as a backing which will dissolve completely after the first wash, leaving no residue.

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April 2015

MADEIRA

How to use Bodybuilder

1. **Madeira's 3D BODYBUILDER** foam - the perfect solution to create raised embroideries, available in hard or soft. Hard foam for stiffer surfaces like baseball caps and bags and softer foam for more flexibility.

2. **Notify your digitiser who MUST accommodate 3D stitching**. Where possible, embroider 3D areas at the end of the design to save time. Stitch flat surfaces then insert a stop, lay foam and stitch the 3D area. Shapes and letters with open areas need to be capped off or rounded to perforate the foam. Select a round style font.

3. **Needles:** Ballpoint **SES** needles perforate the foam better and work on many fabrics but choose needle style and size most suitable for materials. Sharp point **RG** needles are best for tightly woven fabrics and **Baseball caps** in size 80 or larger, or try extra strong titanuim needles.

4. **Do not hoop the foam with the fabric.** Pre-cut the foam slightly larger than the 3D area required and lay on top. To prevent movement, fix using temporary adhesive spray or secure with two stitches top and bottom.
To increase embroidery height, use two layers of foam, then increase the pull compensation of the design to accommodate the extra thickness.

5. With running stitch, create an outline of the shape to be embroidered. Double the stitch density from **0.4mm to 0.2mm** - moving stitches closer together improves coverage and assists foam perforation.

6. Embroider 3D area of your design in satin stitch for optimum results, as other stitch types will flatten the foam. Increase stitch length and loosen thread tension, so foam is not compressed. Seal off the ends of any straight edges with extra stitches, to stop the foam showing through.

7. **Peel away excess foam. BODYBUILDER's** structure allows your stitches to create a clean perforation ensuring it will pull away easily. Use hot air to shrink any visible foam or gently press into the stitches to help it disappear back under the thread.

NB - An example DST file for BODYBUILDER embroidery is available on request.

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August 2015

MADEIRA

How to use Burmilana No.12

1. **Burmilana** is a finely spun merino wool and acrylic blend. **Burmilana CO** is a cotton and acrylic thread mix. Approximately 3 times thicker than standard machine embroidery threads.

2. Burmilana with the characteristics and appearance of wool, is the perfect choice for creating a soft textured, almost hand stitched look on garments, logos and badges. Burmilana CO available in fresh bright colours is a great summery alternative.

3. For the best results, use a fine bobbin thread and slightly reduce machine speeds. To accomodate the thicker thread tighten the top tension only, do not adjust the bobbin tension otherwise birdnesting can occur. When running wool thread you will also have to clean out the bobbin case more often.

4. Madeira **MXK5L** size100 needles allow the thicker thread to pass through more easily. For knitwear a ball point needle is recommended.

5. When digitising your design it is important to alter the stitch length and reduce stitch density. Each stitch must be longer than for a 40 weight thread. Widen the stitch gauge from 0.4mm to 1.2mm to avoid birdnesting.

6. To create a fur like texture with Burmilana, brush your embroidery with a soft wire brush or a piece of Velcro (hook side).

7. Burmilana and Burmilana CO can be washed up to 40°C on a delicate machine cycle. Do not use bleaching agents and always iron on the reverse.

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April 2016

How to use Heatseal Film

1. **Heatseal - HSF-5256** is a polyester based thermoplastic adhesive film used to permanently bond badges or appliqué to garments. Heatseal produces a durable bond with excellent washing and dry cleaning resistance up to 60°C.

2. **To seal a badge or emblem:** Place the Heatseal face down on the reverse of the badge ensuring the paper backing remains between the heat source and the film to avoid sticking. Bond lightly using a heat press or iron. Heat press temperature setting 170°C, 0 - 1 bar for 5 seconds or iron at a high temperature, 3 points without steam, for 5 seconds on each side.

3. **To adhere a badge or appliqué to a garment:** Follow step 2, then peel off the release paper and position onto the garment. Cover with a clean cloth and heat press or iron. Heat press temperature setting of 160°C - 200°C at 2.8 - 4.2 bar (40-60 psi) for 15 - 20 seconds. Alternatively iron on both sides at a high temperature, 3 points without steam, for 15 - 20 seconds.

4. Bonding conditions will vary between different machinery and fabrics. Always run tests before production to establish optimal bonding conditions.

5. Heatseal film achieves its full adhesive force after 48 hours and will be reactivated each time it is ironed. The film will adhere to most fabrics, those containing cotton will have the best results.

6. Heatseal film is compliant with Oeko-Tex® Standard 100 Class 1 certification, therefore suitable even for use on baby items.

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September 2016

MADEIRA

How to use Metallic Threads

1. Don't be afraid of using metallised embroidery and effect threads! Good quality threads will run smoothly and are easy to use if you follow these useful hints.

2. Make certain your machine is in excellent running condition. Thread guides should be free of rough spots and the bobbin cases should be checked and cleaned.

3. The embroidery design should not be too dense or have sharp angles. Programs should be punched or changed to accomodate the weight and structure of the selected metallic thread.

4. **Metallic thread** will usually run as well as rayon, provided tensions are looser than normal. Placing a net over the cone will keep the thread taut whilst feeding through the machine.

5. Choose a suitable, clean needle with a large eye. Required needle sizes vary depending on thread thickness, so refer to the back of the shadecard. The **MXK5 SAN 8-80** is a specially designed size 80 needle with a size 90 eye allowing for the thread to embroider more easily. We recommend keeping seperate needles specifically to use with metallic threads.

6. A slower machine speed will facilitate the production of more intricate designs. It is advisable to run a sample of your design on the production fabric.

7. Make sure your threads are not too cold! Allow them to warm to room temperature.

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Jan 2015

MADEIRA

How to use tear off appliqué fabrics

1. Use a sharp point needle size 60 - 70 **MXK5S** to pierce through the fabric and create a cleaner appearance.

2. **Digitising for Vellutex, Pelltex and Glitter Lux** - create the design using two outer edge stitched borders placed 1 - 2mm apart. The internal border can either be a running or decorative pattern stitch i.e. feather stitch and must be 1.5mm wide. The outer edge must be a Satin/Steil border with a zig zag underlay. Increase stitch density slightly from 0.4mm to 0.35mm.

3. **Digitising for Rasotex and Texcotton badges** - create the design using a double zig zag underlay with a running stitched outer edge which must be 2mm from the edge of the satin stitched border. Increase stitch density for your satin border from 0.4mm to 0.3mm.

4. **How to apply Vellutex, Pelltex and Glitter Lux** - Cut the fabric slightly larger than the stitched design, hoop up the garment securing the appliqué fabric with either sticky tape or temporary adhesive spray, **MSA 1100** or **AD505.** Once stitched, remove from the hoop, make an initial cut and carefully pull away the excess fabric.

5. **How to apply Rasotex and Texcotton** - hoop up the fabric and place in the machine, no need for backing fabric. Stitch the design then remove from the hoop. To easily remove, cut up to the edge of the satin stitch border and carefully cut around the contour of the badge.

6. Your badge can be applied either by sewing directly onto the garment or bond using Heatseal Film **035HP855.** When using Heatseal Film take care to follow the heat setting recommendations for the Rasotex and Texcotton.

7. **NB.** Store in a dry place between 5 - 25°C. It is advisable to wash appliqué fabrics inside out.

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May 2016

MADEIRA

How to use temporary adhesive spray

1. **Always test on the fabric** before starting production. Shake the can well and use spray away from all machinery, as it will affect moving parts.

2. Adhesive sprays are suitable for most fabrics however, staining may occur on extremely delicate fabrics or those with a specialist finish such as, silk, velour, imitation leather and technical textiles, so patch test first.

3. If you are having difficulty embroidering onto fine or stretchy fabric, try using a combination of the **051PS89W** backing and temporary adhesive spray **- AD505 or MSA1100.** This should improve the quality of your embroidery.

4. The aim is to obtain just enough sticking strength to hold cut pieces in place whilst embroidering. The adhesive should lightly lie on the cloth pieces which may then be easily repositioned, AD505 and MSA1100 will evaporate. **AD606** can be heat pressed to create a permanent bond.

5. It is important to spray from the recommended distance of approximately 20 - 30cm. This ensures the constituents are correctly mixed and the adhesive agent is dispersed evenly in fine particles, to avoid soaking the fabric. Spray in short bursts to avoid product build up. Excess can be wiped away with spirit cleaner or with Madeira Adhesive Spray Remover **- 4345.**

6. Where possible **spray the appliqué or cut piece** and not the base material.

7. **Patch testing prior to use is essential**, Madeira UK Ltd cannot be held responsible for any damage to garments resulting from the incorrect use of sprays.

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Jan 2015

MADEIRA

How to use the MFS Badge System?

1. A video on how to use Madeira's MFS is available on our website **www.madeira.co.uk** or view the page directly at **www.madeira.co.uk/accessories/mfs-frames/**.

2. **Notes for your digitiser.** The stitched background must have a diagonal lattice grid underlay. Using a density and stitch length of up to 4.0mm. The satin border must have a zig zag underlay and overlap the filled in background by at least 75%. An appliqué stop should be inserted before the satin border is stitched.

3. Insert the inlay plate and place the E-Zee preframe on top, ensuring the preframe holes are aligned correctly over the pins. Squeeze the side handles to securely clip the cover plate into place and attach the MFS frame to your machine.

4. Start your machine firstly stitching the underlay and filled in background. Embroider the motif, characters or text of your logo. The machine will now stop. Now remove the MFS frame from the machine and insert the back hoop inside the garment.

5. Re-insert the MFS frame onto the machine andpress start and embroider the satin border. Once the embroidery is complete, remove the hoop.

6. If you are creating a completed badge to be fixed to the garment using heatseal film product code **035HP885** or hand stitching at a later date then complete your border with satin stitches. Remove from the frame and tear off the Ezee preframe and excess film.

7. If stitching onto a garment clamp the garment into the MFS frame and clip on the convering plates, including your Ezee preframe and partially completed design.

8. Attach the frame to your embroidery machine once more and complete the satin stitch border. This will bind your emblem to the gamrent leaving only the satin stitch border visible on the reverse greatly reducing potential skin irritation.

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