Gluing

APPLICATION MANUAL

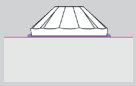
PRECIOSA

Contents

Introduction

Preciosa crystals can be glued to a diverse range of carrier materials. In this step-by-step guide, we will help you select the appropriate type of glue for your project and show you how to securely glue stones into surface cavities and onto flat surfaces.

I. COMPONENTS SUITABLE FOR GLUING

COMPONENT		 SURFACE CAVITY	 FLAT SURFACE
	Round Stones	✓	
	Fancy Stones	✓	
	Nacre Pearls	✓	✓
	No-Hotfix Flatback Stones		✓
	Stones in Settings		✓
	Linked Components		✓
	Crystal Sheet		✓

II. CARRIER MATERIALS SUITABLE FOR GLUING

TYPE OF CARRIER MATERIAL	EXAMPLES	RECOMMENDED TYPE OF GLUE
Porous material	Wood, Paper, Polystyrene	Dispersive
Nonporous material	Metals, Plastic, Ceramics, Stones	Two-component epoxides
Textile	Cotton, Viscose, Polyester, Silk, Chiffon, Velvet, Nylon	Modified silicone
Leather	Genuine leather, Faux/Vegan leather	Modified silicone
Body	Skin	Acrylates copolymer
	Nails	Modified acrylates

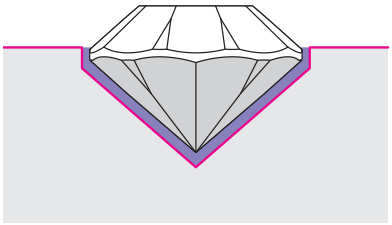
III. CHOOSING THE RIGHT TYPE OF GLUE

Using the appropriate type and amount of glue is crucial to ensuring lasting adhesion and a clean, professional finish. Consider the following factors when purchasing glue for your project:

A. Stone Size

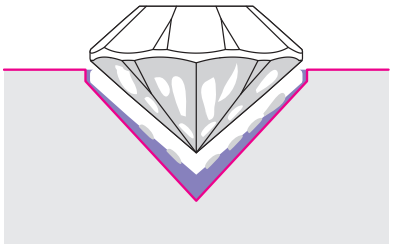
Generally, glues with higher shear strength (e.g. two-component epoxy glue) should be used for gluing smaller stones, whereas more elastic glues (e.g. modified silicones) should be used for larger sizes.

B. Cavity Type



When selecting the glue, it is also important to consider the space for gluing according to the chosen cavity type. Silicon glues are recommended for cavities with a large gap for gluing as they can easily fill the space with minimal tension. Epoxy-ethane/polyurethane glues offer a higher shear strength and can be used in cavities with smaller spaces for gluing.

C. Shrinkage



To avoid shrinkage:

- Choose the glue type carefully and test the result before continuing with your selection.
- Avoid unsuitable climate conditions during the curing process (e.g. extreme heat, high humidity, etc.)
- Be precise when preparing the cavities so as not to create too much or too little space around the stone.

D. Carrier Material

Find the type of component(s) you intended to glue listed above the tables below, and refer to the recommended types of glue for the specific carrier material. In general, "rapid" or "fast drying" epoxy glues are not recommended.

Round Stones, Fancy Stones, Flatback Stones and Nacre Pearls

CARRIER MATERIAL		TYPE OF GLUE			
		Two-compo-nent epoxides	Cyanoacrylate	Modified silicone	Dispersive
Hard materials	Glass	✓	✗	✓	✗
	Metal	✓	✗	✓	✗
	Ceramics	✓	✗	✓	✗
	Stone	✓	✗	✓	✗
Polymer materials (glueable)	Plastics: PPMA, PC, PS, ABS, PVC	✗	✓	✗	✗
	TPE (Thermoplastic elastomers)	✗	✓	✗	✗
	Casting resin	✓	✓	✓	✗
Porous materials	Textiles	✗	✗	✓	✓
	PU foams	✗	✗	✓	✓
	Wood	o	✗	✓	✓
	Paper	o	✗	✓	✓
	Cork	o	✗	✓	✓

Stones in Settings , Linked Components

CARRIER MATERIAL	TYPE OF GLUE	
	Two-component epoxides	Modified silicone
Metal	✓	✓
Plastics: PPMA, PC, PS, ABS, PVC	o	✓
Leather	o	✓

✓ = recommended
o = possible to use but with increased caution
✗ = not recommended

Crystal Sheet

CARRIER MATERIAL	TYPE OF GLUE		
	Two-component epoxides	Cyanoacrylate	Modified silicone
Metal	✓	✓	✓
Plastic: PVC	✓	✗	✓
Wood	✓	✓	✓

NOTE:

When using a new tube of two-component epoxy glue, discard the first two centimeters as the glue at the tip will not be mixed correctly.

For curing conditions, please refer to the material data sheet.

For additional recommendations or if you need help choosing the right type of glue, please contact your Preciosa representative.

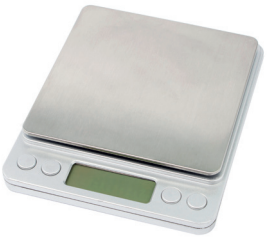
Before You Begin

Make sure you have selected the **right glue** for the stone or setting type, assembled the necessary tools and properly cleaned and treated the carrier material.

I. TOOLS AND EQUIPMENT

Drilling machine
(CNC or column drill)

Hand drill



Precision balance

Surface-tension tester
(pen or ink)

Glue

Acetone or rubbing alcohol

Tweezers

Wax stick

Cotton swab

Dispensing syringe

Protective gloves

Protective eyewear

II. SURFACE PRE-TREATMENT

Cleaning

The most appropriate are materials with at least 38 mN/m. In case of lower values could help following surface pre-treatments:

TYPES OF CLEANING	PRE-TREATMENT CLEANING METHODS
1 Mechanical cleaning Sanding, blasting, brushing; for costume jewelry usually not needed.	• Removal of dirt, varnish residues, rust, scale. • Roughening the surface.
2 Washing and degreasing Make sure the cleaning solution does not contain silicon, which could negatively affect adhesion. When using solvents, it is recommended to test the durability of the cleaned surface in advance to avoid any damage. Do not use solvents containing substances with a high boiling point due to a high risk of residues. When using cleaning agents, wait a few minutes to allow them to evaporate.	• Cleaning with detergent solutions, rinsing with de-ionized water. • Cleaning with isopropyl alcohol/ethanol. • Cleaning with acetone (MEK/ethyl acetate) • Cleaning with a cleaning solvent that does not contain substances with a high boiling point (risk of residues).

Ink test

Before you being, we recommend checking the surface tension by conducting an ink test, either by brush or by pen, which will determine the wetting properties of the surface.

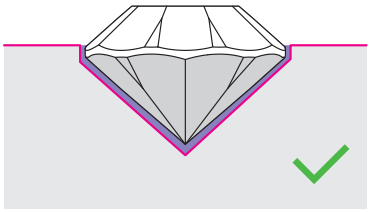
After application, the ink stays in a compact, uninterrupted and unchanged condition on the surface or it spreads and increases the wetted area without changing its consistency – **the material is suitable for gluing.**

The wetted area becomes smaller and starts to break into spots and individual droplets – **the material is not suitable for gluing.**

Application

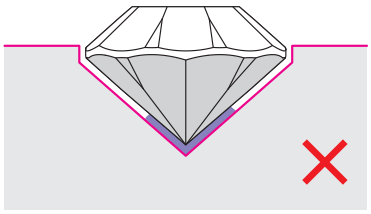
When placing the stone in the cavity or onto the flat surface, press just enough so that glue spreads to the edge of the stone but does not spread out around it.

CORRECT surface cavity application

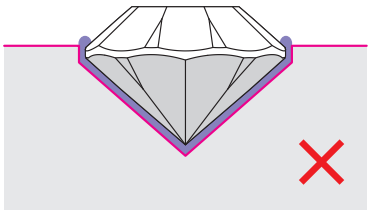


Correct amount of glue and cavity size.

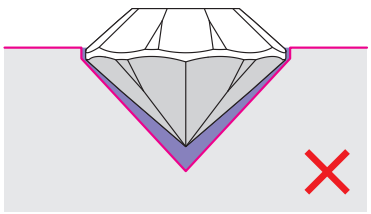
INCORRECT surface cavity application



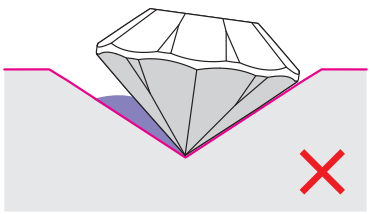
Too little glue.



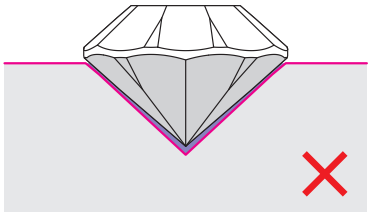
Too much glue.



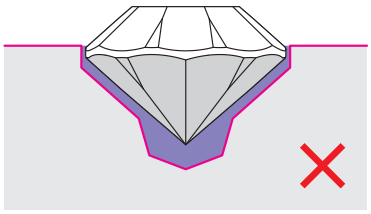
Cavity angle is too narrow.



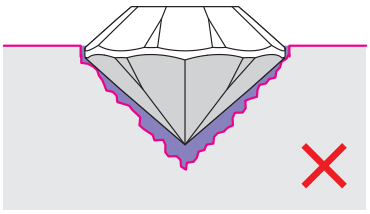
Cavity angle is too wide.



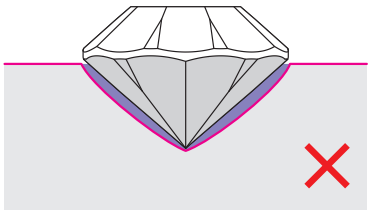
Cavity is too small.



Cavity is too large.

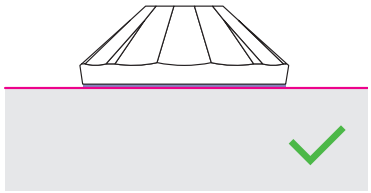


Cavity surface is uneven.



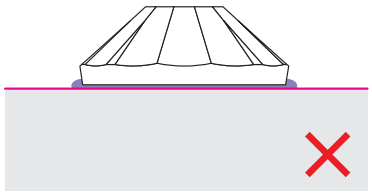
Cavity shape is incorrect.

CORRECT flat surface application

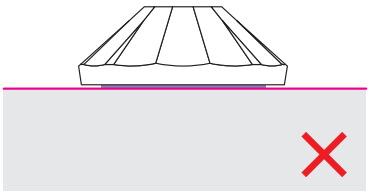


Correct amount of glue.

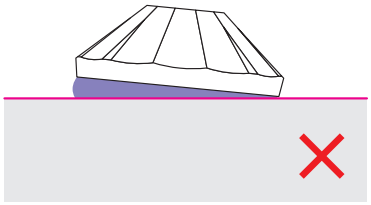
INCORRECT flat surface application



Too much glue.



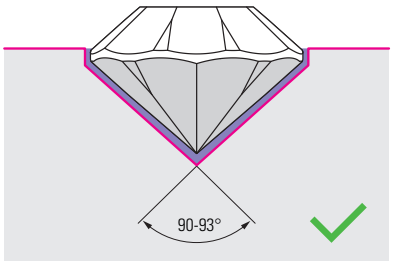
Too little glue.

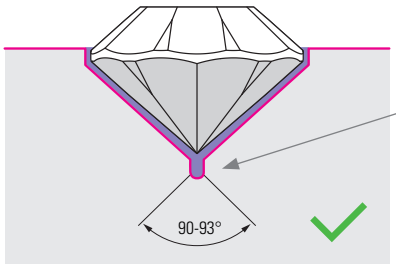


Uneven application of glue.

GLUING INTO A SURFACE CAVITY

Surface cavities make it easier to apply round and fancy stones, and protect the stones against mechanical and chemical stress. The optimal cavity for Preciosa's signature Chaton MAXIMA should have an angle of 90°– 93°. The diameter and size of the cavity should be the same as the stone plus at least 0.1mm.





1)

Check the surface tension of the carrier material.

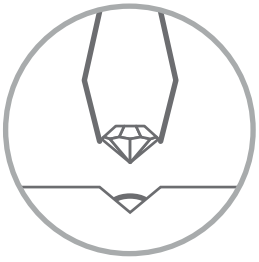
2)

Drill the cavity and clean away any dust or debris.

3)

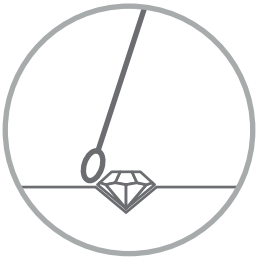
Use a syringe to fill the cavity with the appropriate amount of glue.

4)



Use tweezers or a wax stick to insert the stone and press down gently.

5)



Dip the cotton swab in acetone or rubbing alcohol and gently clean around the applied stone to prevent dirt settling while the glue is drying.

6)

Allow the glue to dry for at least 12 hours or according to the producer's recommendation.

GLUING ONTO A FLAT SURFACE

1)

Check the surface tension of the carrier material.

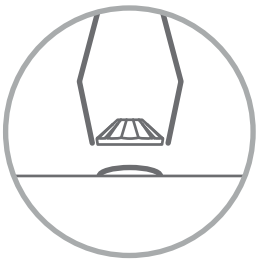
2)

Clean and prepare the surface for application.

3)

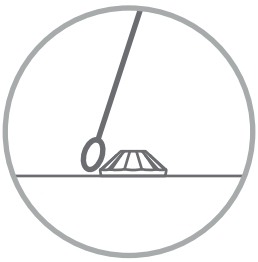
Use a syringe to fill the cavity with the appropriate amount of glue.

4)



Use tweezers or a wax stick to apply the stone and press down gently.

5)



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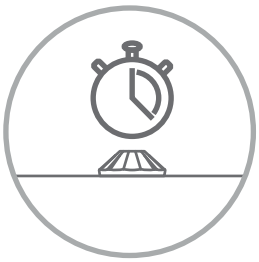

Allow the glue to dry for at least 12 hours or according to the producer's recommendation.

Troubleshooting and Diagnostics

PROBLEM	RECOMMENDATION
The stone appears **less shiny or has changed color.**	This is likely caused by using **too much glue**. Use a swab dipped in acetone or rubbing alcohol to clean any excess residue around the stone.
The stones appears **duller or darker** than surrounding stones.	This is likely caused by an **incorrectly drilled or off-center cavity.**
The stone **fell out of the cavity** and appears **discolored or rusty**.	This is caused by corrosion. The amount of glue was not enought a the **unfilled space is prone to corrosion**. Next time, be careful about the right dosage.
The stone **peeled away from the foiling, fell out of the cavity** and **appears discolored or rusty**.	Use a **glue** that is **more elastic** and does not shrink so much. Tensile stress reduces the adhesion of the mirror coating. Oxygen penetrates between the stone and the mirror coating and causes **oxidation**.
The stone fell out of the cavity **without foiling** - but with the mirror coating and without the platinum or the glue.	The **wrong glue** was used – try another one.
	An **incorrect proportion** of resin and hardener was used. Follow manufacturer´s instructions.
	Detergents affected the glue and/or protective coating. Use **less solvents** or a **different type of the solvent**.
The stone fell out of the cavity **with foiling**. **Glue is not attached** to the stone.	General glue problems. Please, follow the glue producer´s instructions and check if your **glue is in a good condition**. There also could be **to little glue or exceeded processing time** – stiff or hardened glue.
The stone fell out of the cavity **with foiling**. **Glue is attached** to the stone.	To **little glue was used**. Control the exact dosage.
	Check again the **cleaning process**. The surface was probably not treated well before gluing. Some residues may appear on the surface.
	Tha **cavity** has a **wrong shape** (ex. after plating). Modify the original model.
There is an excess of glue **before curing**.	Too much glue was used.
There is an excess of glue but not until **after curing**.	The finished product was put under mechanical stress or handled before the glue finished drying.

Care Instructions

		ROUND STONES	FANCY STONES	FLATBACK STONES	NACRE PEARLS
Stones with coatings – use only gentle wash cycle (30 °C).	Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended.	●	●	●	●
	Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended.				
	Turn inside out and use mild laundry detergent.				●
	Do not wash!				
	Do not use chlorine bleach!	●	●	●	●
	Turn inside out and dry at reduced temperature.				
	Do not tumble dry!	●	●	●	●
	Iron inside out using a silk/polyester viscose setting and pressing cloth.				
	Iron inside out using a wool setting.			●	
	Do not iron!				●
To protect the crystals as much as possible, the use of a soft wash bag is recommended.	May be gently dry-cleaned using perchlorethylene. Turn inside out.	●	●		
	May be gently dry-cleaned using hydrocarbon.	●	●	●	
	Can withstand professional wet cleaning. Turn inside out.	●	●	●	
	Do not dry clean!	●	●	●	●

		STONES IN SETTINGS	CRYSTAL CUPCHAIN	CRYSTAL BANDING	CRYSTAL SHEET
Stones with coatings – use only gentle wash cycle (30 °C).	Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended.				
	Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended.				●
	Turn inside out and use mild laundry detergent.	●	●	●	
	Do not wash!				
	Do not use chlorine bleach!	●	●	●	●
	Turn inside out and dry at reduced temperature.				
	Do not tumble dry!	●	●	●	●
	Iron inside out using a silk/polyester viscose setting and pressing cloth.	●	●	●	
	Iron inside out using a wool setting.				●
	Do not iron!				
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	May be gently dry-cleaned using hydrocarbon.				●
	Can withstand professional wet cleaning. Turn inside out.				●
	Do not dry clean!	●	●	●	●

Preciosa Components
A Member of the Preciosa Group

A global leader in luxury goods manufactured from crystal, the Preciosa Group stands upon centuries of glassmaking tradition and innovation. From the world's smallest faceted flatback stone to our cutting-edge, bespoke lighting installations, Preciosa looks to our own unique heritage to draw inspiration for the future of responsibly crafted Bohemian crystal. Together, the Group operates regional offices across Europe, North America and Asia and melts 40 tons of glass every day.

PreciosaComponents.com

APPLICATION MANUAL

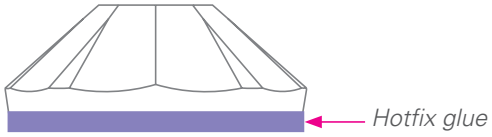
Hotfix

PRECIOSA

Content

Basic Principles of Hotfix Technology

Hotfix stones and applications have a glue layer on their back side. The heat-activated glue turns into liquid and back into a solid after cooling.



PRECIOSA PRODUCTS SUITABLE FOR HOTFIX APPLICATION

COMPONENT		HOTFIX APPLICATION
Flat Back Stones	Hotfix	✓
Hotfix Transfers	Hotfix	✓
Crystal Sheet	Hotfix	✓

PROCEDURE

Application

Cooling

It takes about 5 minutes for the glue to cool down after application, at which point, the stones are fixed to the base material.

Curing

The glue should cure for 24 hours to become firm and durable. Do not handle or wash the textile material during this period.

Care

Textile material with applied stones can be washed at 60 °C, tumble-dried, dry-cleaned and carefully ironed.

Technological requirements

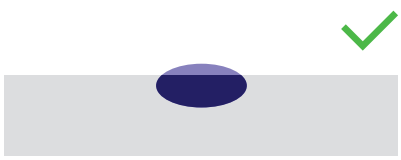
To take full advantage of the outstanding qualities of Preciosa hotfix products it is necessary to observe certain rules for their application:

- Choice and preparation of a suitable base material.
- Correct temperature, pressure and time alloted for the application.
- Choice of the stone/application side for application.

Material Qualities for the Application of Preciosa Hotfix Products

ABSORPTION QUALITIES OF THE MATERIAL

A firm bond between the hotfix stone/application and the base material can only be achieved if at least part of the heat-activated glue soaks into the used base material. Test the absorption qualities of the chosen material in advance with water.



Good absorption qualities: the droplet soaks into the material

Bad absorption qualities: the droplet stays on the surface of the material

Unsuitable base materials and surface treatments

- ✕ Teflon surface treatments.
- ✕ Treatments increasing dirt resistance.
- ✕ Dyes with metal pigments.
- ✕ Enzymatic treatments.
- ✕ Treatments for easy maintenance.
- ✕ Hydrophobic or water repellent treatments (silicon or synthetic rubber as water repellents).
- ✕ Treatments with fluorinated hydrocarbons.
- ✕ Treatments with softening agents.
- ✕ Smooth leather and smooth leather imitations.

Bad absorption qualities of the material caused by improper surface treatments (softening agents in particular) can be sometimes eliminated by washing the material prior to Hotfix application.

HEAT RESISTANCE OF THE MATERIAL

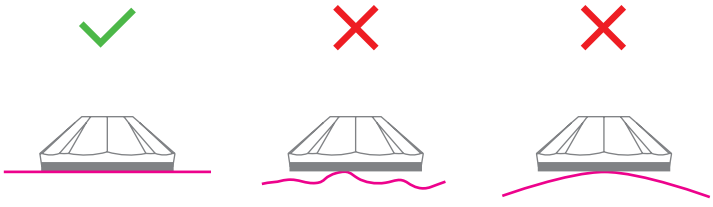
Before starting the application make sure the heat resistance of the base material is suitable for using Hotfix technology. The heat resistance of the material should be at least 120 °C / 250 °F.

PRESSURE RESISTANCE

Some materials can become deformed when exposed to excessive pressure. Make sure that the chosen material is resistant to the application tools by testing a small sample prior to the main application.

SHAPE OF THE BASE MATERIAL

The base material needs to be completely flat. Materials that bend or move easily under application pressure are not suitable for applying big stones.



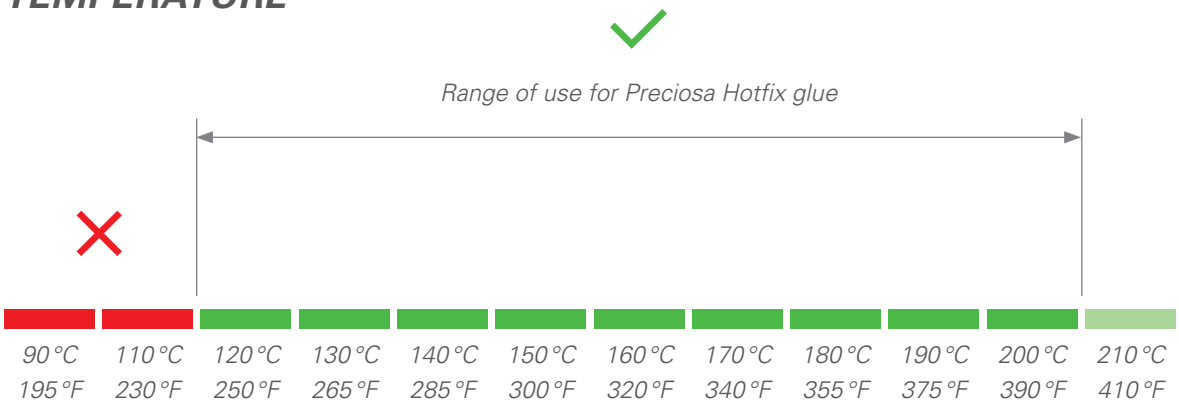
Material without a flat area

Material under bending stress

Technological Parameters for Application of Preciosa Hotfix Products

The choice of temperature, time and pressure is very important for a successful application.
All features are influenced both by the base material quality the size of the stone the surface of application.

TEMPERATURE



Warning:

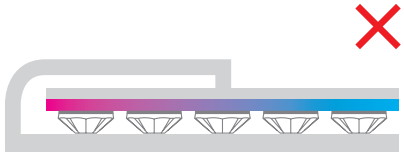
Be careful when using a heat press. The temperature on the display does not necessarily match the actual surface temperature of the heated press plate. The temperature affecting the product after closing the press can also change depending on the application cycle rate. If the time delay from closing the press plates is too long the unheated plate will cool and the temperature affecting the glue during application will be lower than expected. The shorter the time delay when closing the press plates, the higher the temperature of the glue will be.

We recommend pre-heating the press plate before starting the application, i.e. before the first application. Switch on the press and leave it closed and empty (without any textile material). The pre-heating procedure should last approximately three times longer than the application itself (the temperature of the pre-heated plate should be such that you can hold your hand on it).

An uneven heat distribution can also occur or the press heating plate can be defective. It is recommended to check the temperature regularly with a laser thermometer.

Temperature distribution in the heat press

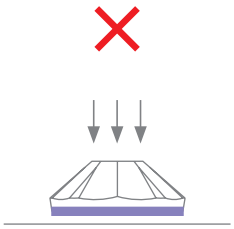
The heat is evenly distributed throughout the whole plate of the heat press



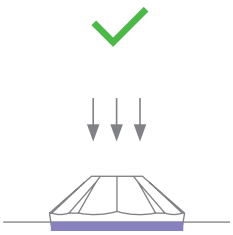
The heat is not evenly distributed throughout the plate of the heat press

PRESSURE

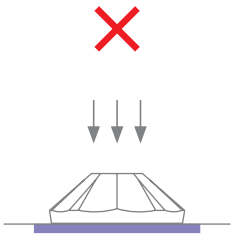
The application pressure depends on the chosen Hotfix product, base material and technical equipment (machines, etc.). Choosing an appropriate pressure when applying the Hotfix stones or applications is another of the decisive factors for a high-quality bond between the product and the base material. It is recommended to test the pressure on a material sample.



Pressure is too low – the glue does not adhere



Optimal pressure – the glue adheres without spreading out



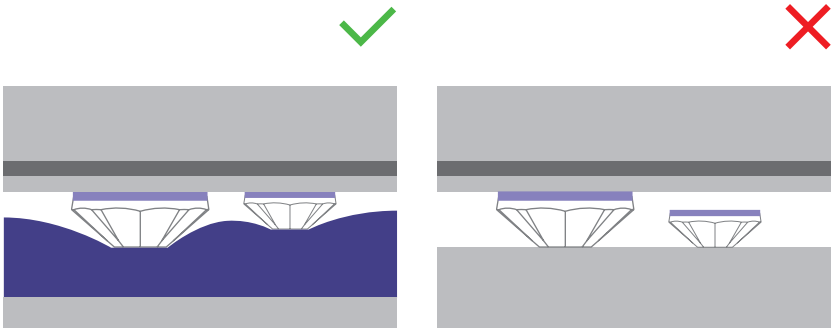
Pressure is too high – the glue spreads out

Pay attention to the following:

- The pressure must be applied directly to the stone/application.
- Special attention should be paid to application near buttons, zippers, seams and other protrusions of the base material.

Recommendation:

Use a compensation pad (e.g. silicon foam or foam rubber) to make the surface even; use the same pad when applying stones of different heights next to each other.



Glue

Compensation pad

APPLICATION TIME

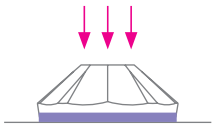
The application time has to be long enough for the glue to melt appropriately and soak into the base material. The base material, size and shape of the stones/applications, choice of equipment and stone/application orientation, (stone/application can be applied with their front or back side exposed to the heat), can all influence the quality of the hotfix application.

APPLICATION SIDE

Hotfix stones/applications can be applied with either their front side or back side exposed to the heat.

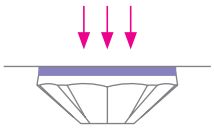
Front side (heat penetrates through the stone)

Very thick materials or materials in multiple layers.

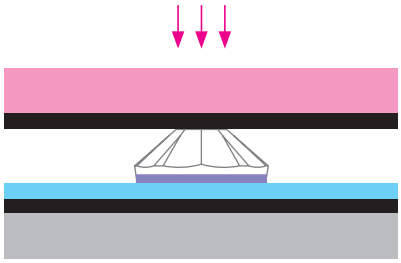


Back side

Thin materials (heat reaches the glue more quickly through the base material).

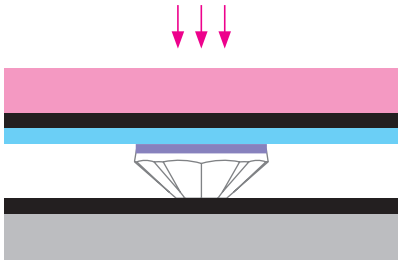


Front side application



Front side of the material is exposed to the heat

Back side application

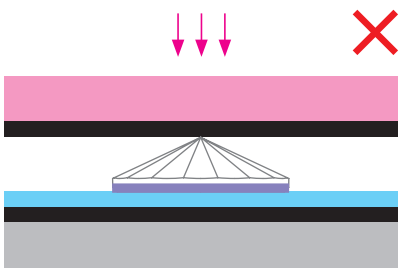


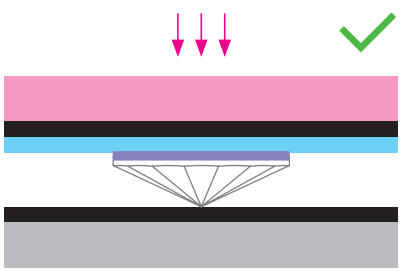
Reverse side of the material is exposed to the heat

Heated press plate *Teflon pad* *Base material* *Unheated press plate*

Be careful with some stone shapes

Some products (e.g. fancy stones) can be applied only with their back side exposed to the heat.





HOW TO RECOGNIZE A PROPERLY APPLIED STONE/ APPLICATION?

A correct combination of application parameters results in a firm bond between the stone/application and the underlying base material. In this case, a tiny amount of glue extrudes around the stone/application circumference, which should not interfere with the aesthetic aspects of the applied stone/application as it is not visible to the eye unless viewed under a magnifying glass. If thin or soft materials are used the stone/application is correctly applied when the glue soaks a little through the base material and is visible on the reverse side.

If the conditions were not followed correctly, (e.g., if the temperature was too high or the pressure was incorrectly applied, etc.), a considerable amount of the glue could become visible surrounding the applied stone/application. The result is a weak bond between the stone and the base material.

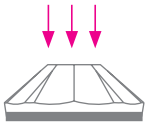
If the application temperature or pressure are too low or the application time too short the glue is not sufficiently activated and problems with adhesion can occur.

TIPS AND TRICKS

- To achieve optimal results, it is necessary to test all application parameters in advance on samples of materials chosen for the application. Use the parameters in the Application Time table for setting approximate values.
- Please note that the glue is cured and the bond between the applied stone/application and the base material becomes firm only after 24 hours since the application. Until then Hotfix products should be handled with care; it is not recommended to check the bond quality or to wash the product.
- If stretch material is used for the hotfix application it is recommended to secure the material slightly stretched on a pad prior to the application.
- Hotfix glue was developed specifically for textile materials. However, it is possible for Hotfix products to be applied to other materials (e.g. wood, paper, metal). It is essential to check the surface quality and conduct tests prior to the application in these cases.
- A high-quality application can be achieved only on a perfectly clean and degreased surface of the base material. A smooth surface can still be inadequately wettable which is caused by surface tension. Low surface tension results in poor surface wetting. The bond between the surface and the Hotfix glue will therefore not be strong enough and might even be impossible.
- The value of 38 mN/m is considered to be the minimal surface tension for any treatment (valid also for painting, varnishing, etc.). The surface tension can be measured and checked with a test pen and ink. It is not possible to test the surface tension on porous or absorption materials.

Single Stone Application

Overview of temperature and time combinations for different materials (MC CHATON ROSE MAXIMA Hotfix)

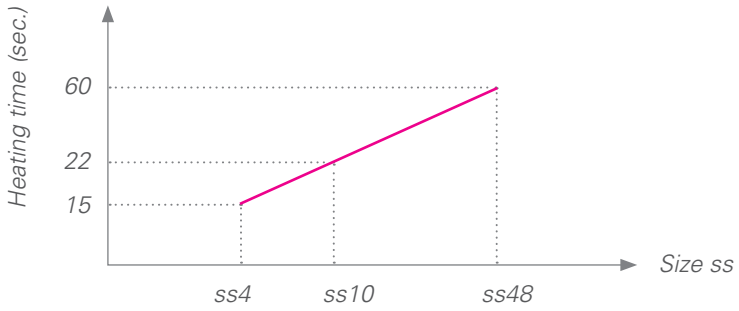


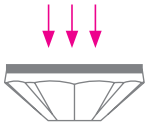
Front side (ss10)

Fabric	Fabric example	Weight (g/m²)	Time (sec.)								
TEMPERATURE			120°C 250°F	130°C 265°F	140°C 285°F	150°C 300°F	160°C 320°F	170°C 340°F	180°C 355°F	190°C 375°F	200°C 390°F
natural plant-based fabrics	cotton, silk, linen	50-200	48	40	34	28	22	16	12	10	8
natural animal-based fabrics	wool, cashmere	200-300	55	45	35	30	25	20	16	13	10
artificial fabrics	PES, lycra	150-250	52	44	48	32	25	18	15	12	9
fabrics that require special care	suede, embroidery, 100% denim	250-400	60	50	42	34	26	20	16	13	10

Time of heating depending on the size of the Chaton Rose

(example:
cotton - temperature 160 °C)



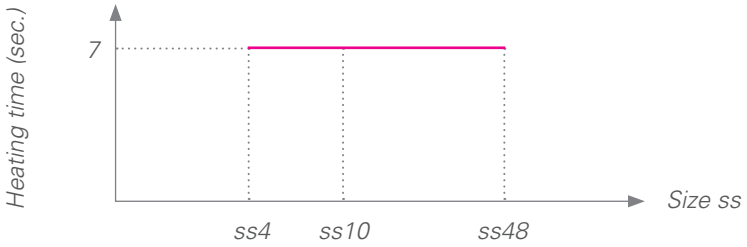


Back side

Fabric	Fabric example	Weight (g/m²)	Time (sec.)								
TEMPERATURE			120°C 250°F	130°C 265°F	140°C 285°F	150°C 300°F	160°C 320°F	170°C 340°F	180°C 355°F	190°C 375°F	200°C 390°F
natural plant-based fabrics	cotton, silk, linen	50-200	15	13	10	9	7	5	4	4	3
natural animal-based fabrics	wool, cashmere	200-300	24	22	17	14	11	7	6	6	5
artificial fabrics	PES, lycra	150-250	20	18	15	12	9	6	5	5	4
fabrics that require special care	suede, embroidery, 100% denim	250-400	25	23	20	15	11	7	6	6	5

Time of heating depending on the Chaton Rose size

(example:
cotton - temperature 160 °C)



When using different base materials and stone sizes, it is necessary to make an application test of particular stones on the chosen base material.

APPLICATION IN A HEAT PRESS

A heat press is a piece of equipment with two flat plates between which the textile is placed during the application. Either one or both plates can be heated.

Advantages:

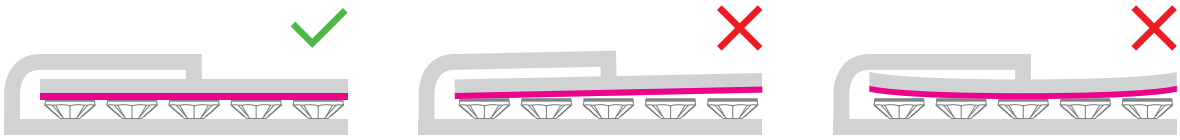
- Uniform and adjustable pressure on the stones/ applications.
- Setting of proper temperature and time.
- High efficiency of application.

Helpful tips:

Teflon or silicon foil. The foil avoids staining or sticking of the reverse side to the front side of the textile in case the glue soaks through where the stones are applied.

Parallel position of the heat press plates

The upper and lower press plates should be in a parallel position which enables the pressure and temperature to be evenly distributed over the whole pressing area.

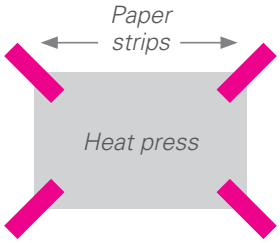


Plates are parallel – pressure and temperature are uniform

Plates are not parallel – pressure and temperature are not uniform

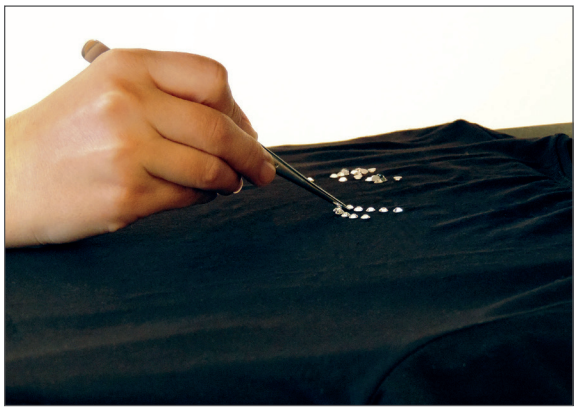
Recommendation:

Paper strips can be used to check if the plates are parallel. Place the strips into the press and close it using the lowest possible pressure. Pull the strips out afterwards; if the same force is used for all four strips then the plates are parallel. If a different force has to be used when pulling the strips out, the plates are not parallel. In this case, the press is not suitable for correct Hotfix assortment application.

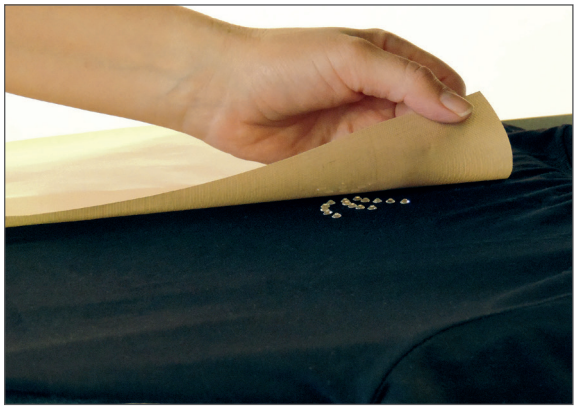


Application procedure

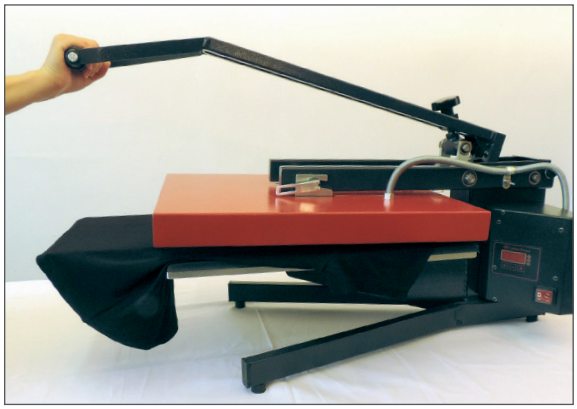
1 Put the clothes on the lower press plate. Insert a pad inside the garment to protect the reverse side from staining. Teflon or silicon are recommended, or even a blank sheet of paper.



2 Create a motif according using tweezers – use stones of the same size.



3 Afterwards, carefully cover the motif with teflon foil.



4 Close the heated press and leave the garment with Hotfix stones in the press according to the time and temperature given in the Application Time table.

5 After finishing the application procedure open the press and gently press down on the motif through an ironing cloth.

6 Let the garment with the applied motif cool down. The glue is cured after 24 hours.

APPLICATION WITH ULTRASOUND EQUIPMENT

In this procedure, the glue is activated by heat that results from friction during quick vibrations; at the same time, the stones are pressed on the base material.

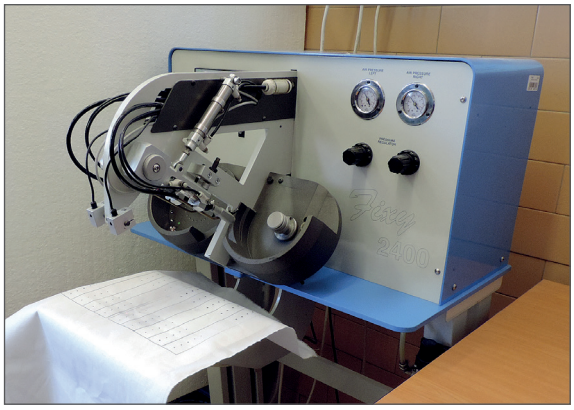
Advantage:

✓ High-quality application.

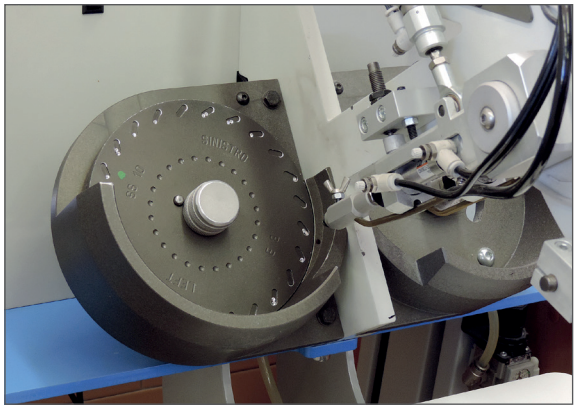
Note:

- When using this equipment it is necessary to carefully follow the producer's instructions (setting the frequency of the ultrasonic equipment).
- The application time is then set according to the previous tests with particular stones and base material.

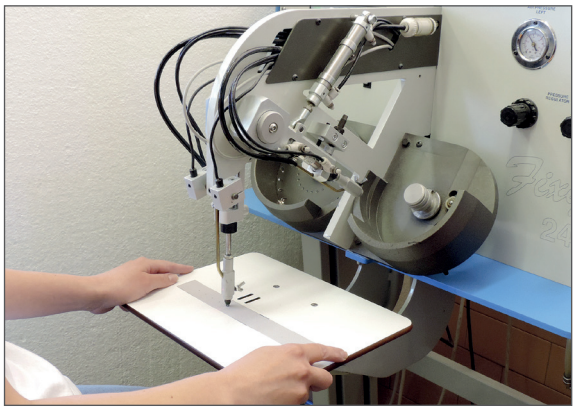
Application procedure



1 During production two different items can be applied at the same time.



2 Stones are picked up automatically.



3 The stone application on the textile material is also automatic – the material has to be positioned correctly.

APPLICATION WITH A MANUAL APPLICATOR

A manual applicator is a cheap way of applying Hotfix MC Chaton Roses on the base material.

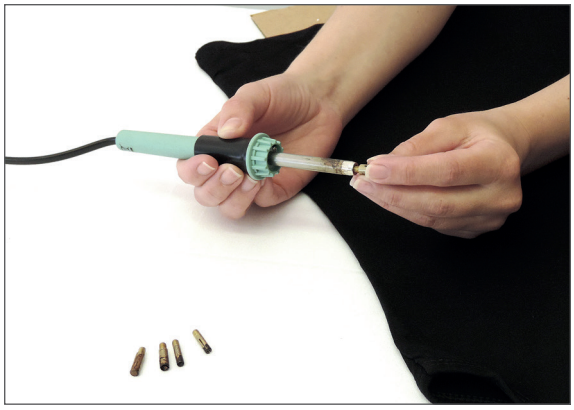
Advantage:

✓ Low purchase price.

Note:

- When using the manual applicator it is necessary to carefully follow the producer's instructions (temperature setting).
- The application time is then set according to the previous tests with particular stones and base material.

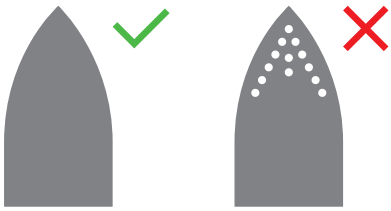
Application procedure



1 Choose an adapter to match the stone size and put it on the applicator.

2 Heat the applicator to the required temperature.

3 Place the clothes on an appropriate pad (glass, ceramic, metal) and press on the stone.



APPLICATION WITH AN IRON

Advantage:

✓ A normal iron can be used to apply all Hotfix products – preferably one without steam slots.

Disadvantage:

✕ Application with an iron does not always produce the best results. It is recommended to use a heat press to achieve a uniform application quality.

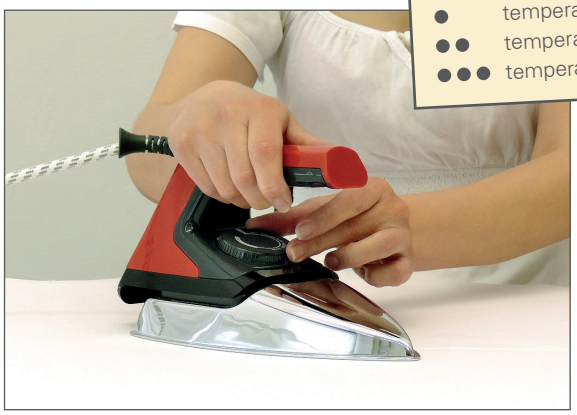
Warning:

- The pressure and temperature regulations are not accurate.
- The accuracy of the pressure regulation depends on individual feeling and estimation of the person who carries out the application.
- Check if there are no steam slots in the bottom of the iron (water droplets and steam can negatively affect the application and can even make it impossible).
- Carry out the application on a firm, flat and even pad.

Application procedure

Symbols according to DIN EN ISO 3758:

- ● temperature of ironing surface 110°C (230°F)
- ●● temperature of ironing surface 150°C (300°F)
- ●●● temperature of ironing surface 200°C (390°F)



1 The optimal temperature of the ironing surface is 150 °C (300 °F).

2 Put a cardboard or a felt pad under the cloth.

3 Stones should be covered with teflon foil during the application to protect the iron surface from staining by glue spreading. Applying without foil is also possible but only with utmost care.

4 Check the applied stones.

Important Advice and Information

POSSIBLE PROBLEMS, THEIR CAUSES AND RECOMMENDATIONS

PROBLEM	CAUSE
The stone/applications does not adhere to the base material.	**1, 2, 3, 4, 5, 6**
The glue spreads around the stone.	**7, 8, 9, 10**
The stone/applications does not hold on seams or layered materials.	**1, 2, 3, 4, 5, 6**

CAUSE	RECOMMENDATION
1 *The application temperature is too low.*	Increase the temperature by at least 10 °C (20 °F).
2 *The application time is too short.*	Prolong the application time. In case of a thick or multilayer material apply the heat from the front side through the stone.
3 *The pressure is too low.*	It can occur by application on a thick material. Increase the pressure.
4 *Uneven distribution of heat on the heated surface.*	Check the temperature with a measuring tape or a laser thermometer. If the difference is higher than ca 5 °C (10 °F) repair the heat press.
5 *The heat press closes askew.*	Repair the heat press.
6 *The application pad is not suitable.*	Test different application pads and choose the most suitable one.
7 *The application temperature is too high.*	Lower the temperature by at least 20 °C (40 °F).
8 *The application time is too long.*	Shorten the application time.
9 *The pressure is too high.*	Decrease the pressure of the heat press.
10 *The application pad is too hard.*	Use a softer application pad.

Hotfix Transfer and Crystal Sheet Application

APPLICATION IN A HEAT PRESS

Adjust the Heat-press to 160-170°C. (Do some tests to find the right temperature because not all thermostats are calibrated exactly). Start with 160°C first, 20 second.

Advantages:

- ✓ Uniform and adjustable pressure on the stones.
- ✓ Setting of proper temperature and time.
- ✓ High efficiency of application.

Please note the recommended application procedure for Crystal Sheet is fundamentally similar to that of Hotfix Transfers (see the next page). For cut-out motifs, application to transfer film is recommended for easier handling and precision.

Crystal Sheet – overview of temperature and time combinations for different materials

Fabric	Fabric example	Weight (g/m^2)	Time (sec.)		
TEMPERATURE			145°C 293°F	155°C 311°F	165°C 329°F
natural plant-based fabrics	silk	50-200	60	45	32
natural animal-based fabrics	wool, felt	200-300	28	16	12
artificial fabrics	artificial velvet	150-250	26	18	14
fabrics that require special care	100% denim, leather, suede	250-400	52	48	32

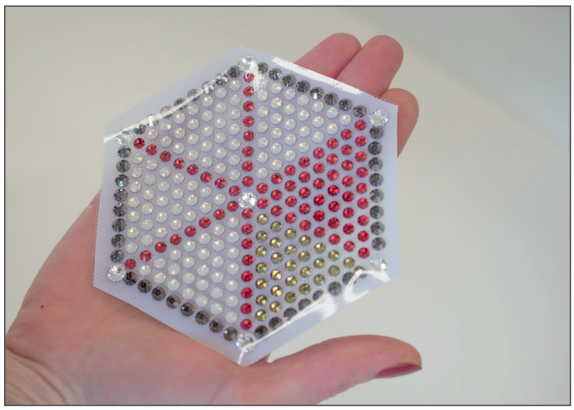
Transfer – overview of temperature and time combinations for different materials

Fabric	Fabric example	Weight (g/m^2)	Time (sec.)	
TEMPERATURE			160°C 320°F	170°C 340°F
natural plant-based fabrics	cotton, silk, linen	50-200	22	16
natural animal-based fabrics	wool, cashmere	200-300	25	20
artificial fabrics	PES, lycra	150-250	25	18
fabrics that require special care	suede, embroidery, 100% denim	250-400	26	20

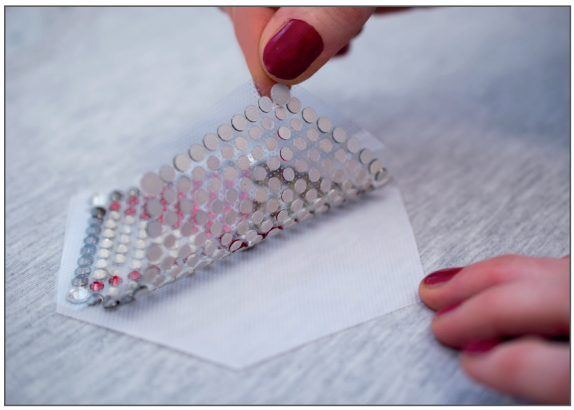
Hotfix Transfer application procedure

1 Place the fabric on the surface.

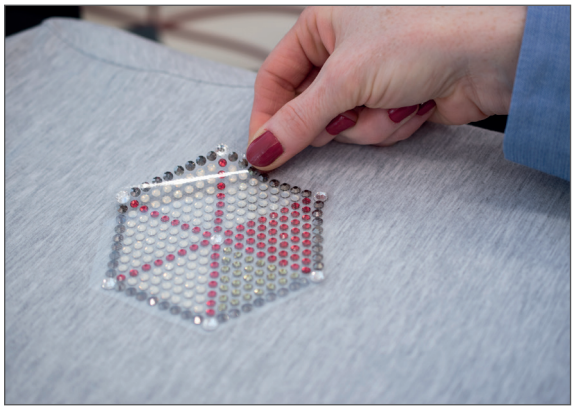
2 Cut out the rhinestone motif.



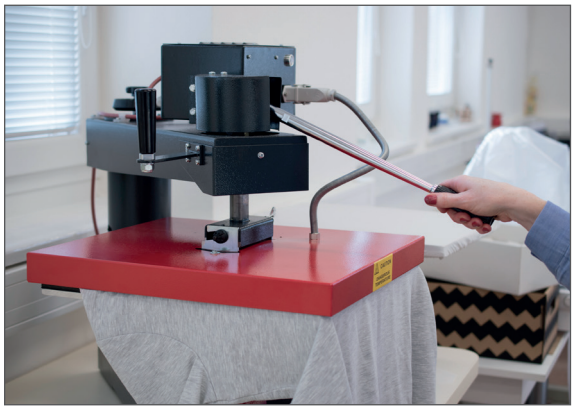
3 Keep excess material around the borders to a minimum.



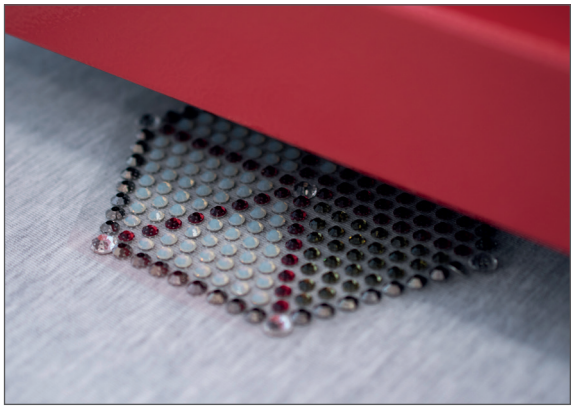
4 Remove the protective sheet of the siliconated paper.



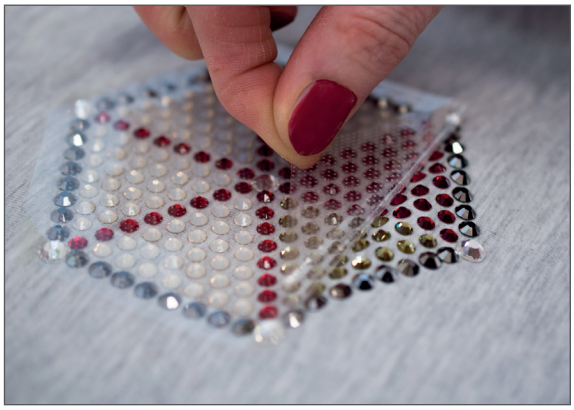
5 Place the transfer onto fabric where you want it to be applied (stones facing up).



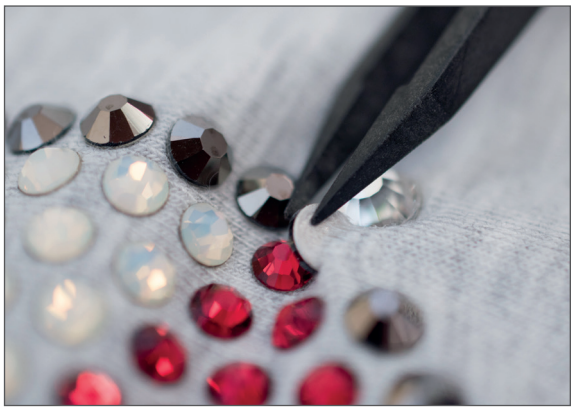
6 Press for 15-20 seconds with medium pressure and temperature at 160°C (make sure to cover the motif with a cotton cloth).



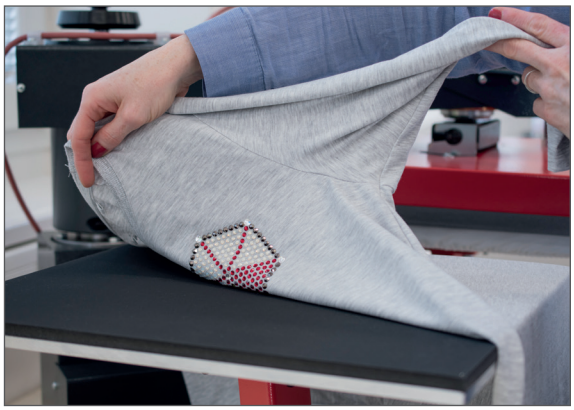
7 Allow to cool for a few seconds.



8 Gently remove the transparent foil. If any rhinestones are loose, cover the motif with the transparent film and a cotton fabric and repeat the procedure again.



9 If the stones are still loose or do not adhere correctly you can raise the temperature by approximately 3-4°C and extend time by 3-4 seconds.



10 For the application of motifs composed of different rhinestones size or of oversize rhinestones (larger than ss16) it is recommended to carry out the application on the reverse side (stones facing down) with increased pressure (heat will reach the base of the rhinestones more easily).

Helpful tips:

Teflon or silicon foil. The foil avoids staining or sticking of the reverse side to the front side of the textile in case the glue soaks through where the stones are applied.

USEFUL INFORMATION FOR CORRECT APPLICATION

- **Before every application make sure to always cover the motif with light cotton fabric or teflon/silicon foil from the heat press. This is important because the transparent film is made of PVC and without cloth protection it can deform under the heat-press.**

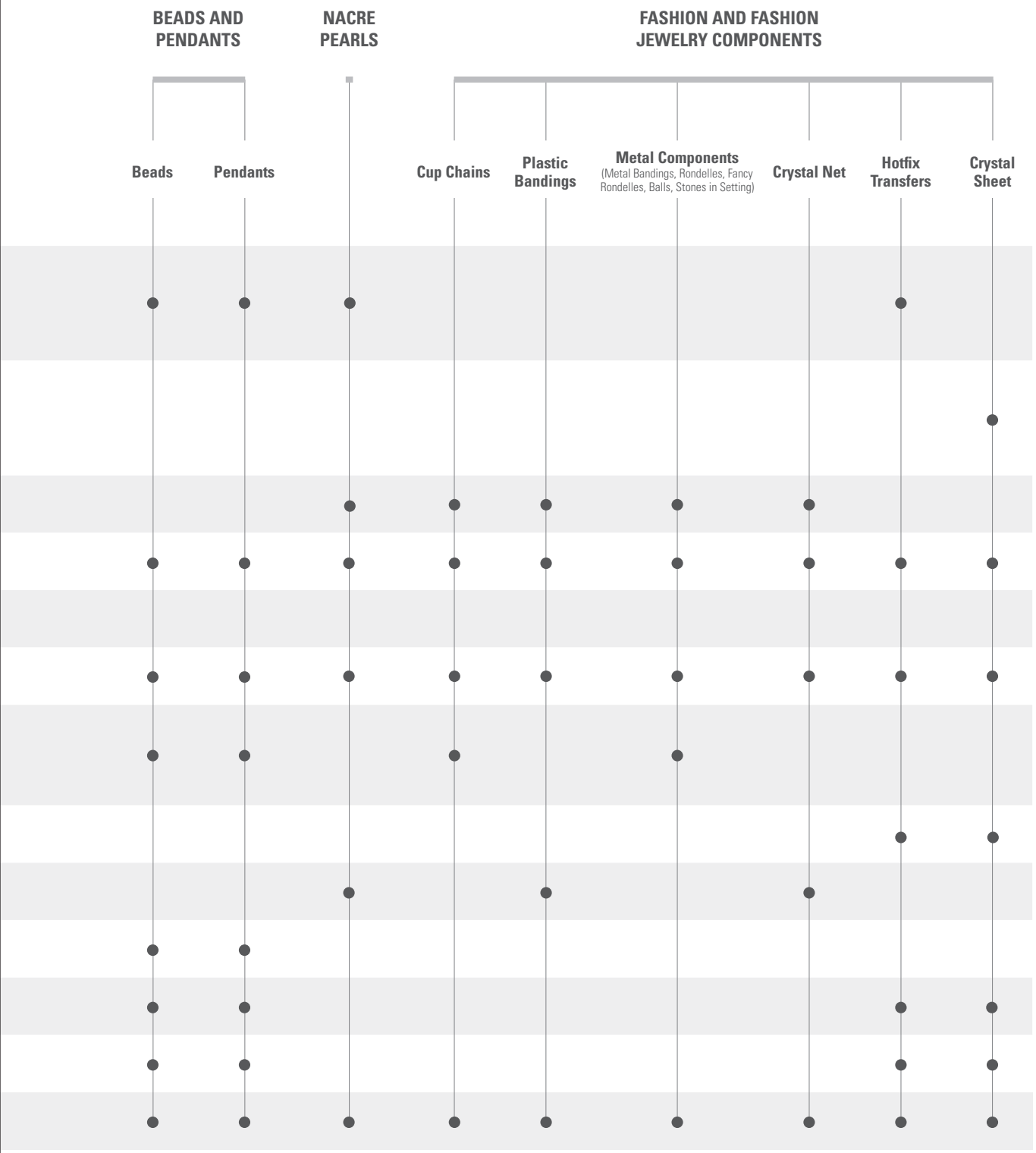
- For optimal adhesion, it is recommended to cover the motif with a cotton cloth after the transparent foil is removed and press for an additional 15 seconds with the same pressure and heat.

- If the transfer has been applied correctly, after removal of the transparent foil let the motif cool and check the adhesion by trying to pull the stones away. Use moderate strength. Single rhinestones that are missing or were loose can be applied manually with a tweezer and then the heating press procedure should be repeated. Always keep in mind that the cover needs to be covered with a cotton cloth.

- For further information please refer to previous chapters of the manual - principles relevant to single stone application are also applicable to transfers.

GENERAL RECOMMENDATIONS

		FASHION JEWELRY STONES		FLAT BACK STONES		
		Round Stones, Channel	Fancy Stones, Ball	No Hotfix Stones	Hotfix Stones	Sew-on Stones
Stones with coatings – use only gentle wash cycle (30 °C).	 Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended.	●	●	●	●	●
	 Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended.					
	 Turn inside out and use mild laundry detergent.					
	 Do not use chlorine bleach!	●	●	●	●	●
	 Turn inside out and dry at reduced temperature.					
	 Do not tumble dry!	●	●	●	●	●
	 Iron inside out using a silk/polyester viscose setting. Ironing the textile inside out and using a pressing cloth is recommended.					
	 Iron inside out using a wool setting.			●	●	●
	 Do not iron! Do not iron directly over the crystals.					
To protect the crystals as much as possible, the use of a soft wash bag is recommended.	 The textile can be gently dry-cleaned using perchlorethylene. Turn inside out.	●	●			
	 The textile can be gently dry-cleaned using hydrocarbon.	●	●	●	●	●
	 The textile will withstand gentle professional wet cleaning. Turn inside out.	●	●	●	●	●
	 The textile may not be dry-cleaned.	●	●	●	●	●


BEADS AND PENDANTS
NACRE PEARLS
FASHION AND FASHION JEWELRY COMPONENTS
Beads
Pendants
Cup Chains
Plastic Bandings
Metal Components
(Metal Bandings, Rondelles, Fancy Rondelles, Balls, Stones in Setting)
Crystal Net
Hotfix Transfers
Crystal Sheet

Preciosa Components
A Member of the Preciosa Group

A global leader in luxury goods manufactured from crystal, the Preciosa Group is built upon centuries of glassmaking tradition and innovation. From hand-made lamp beads to our cutting-edge, bespoke lighting installations, Preciosa looks to our own unique heritage to draw inspiration for the future of premium, responsibly crafted Bohemian crystal. Together, the Preciosa Group operates a global network of 11 regional offices and melts 40 tons of glass every day.

PreciosaComponents.com

COMPONENTS

APPLICATION MANUAL

Sewing & hand application

PRECIOSA

Sewing and hand application

Preciosa Components offers a wide range of various products ideal for sewing and embroidery. Thanks to a rich choice of shapes, sizes, settings and applications, Preciosa crystals can be used in mass apparel and accessories production, designer´s studios and Do-It-Yourself activities. Stones can be easily applied with industrial sewing or embroidery machines or household sewing machines and are also suitable for various manual applications.

PRODUCT OVERVIEW

	COMPONENTS	SEWING	HAND APPLICATION
Flat Back Stones	Sew-on Stones	✓	✓
Beads and Pendants	Beads	✓	✓
	Pendants	✓	✓
Nacre Pearls	Nacre Pearls	✓	✓
Fashion and Fashion Jewelry Components	Cup Chains	✓	✓
	Plastic Bandings	✓	✓
	Metal Bandings	✓	✓
	Stones in Settings	✓	✓
Fashion and Fashion Jewelry Application	Crystal Mesh	✓	✓

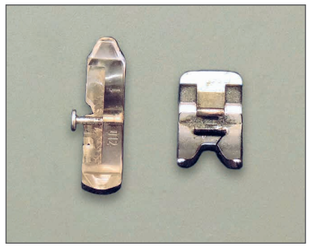
MACHINES, TOOLS AND AIDS

Use the following machines, tools and aids for sewing Preciosa components:

- Household sewing machine with common stitch types (straight, zigzag, button sewing programme).
- Industrial sewing machine.
- Sewing machine accessories – presser feet, needles, threads.
- Goggles.

Household sewing machine

Industrial sewing machine



Different types of presser feet

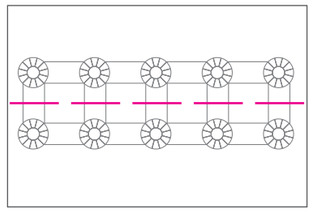
Sewing – basic rules

CHOICE OF THE RIGHT THREAD

Synthetic threads of 50 – 60 Nm strength are the most suitable for sewing Preciosa stones. The threads are abrasion resistant and products with these threads are sufficiently resistant against any damage. Cotton threads are not suitable as their abrasion resistivity is lower.

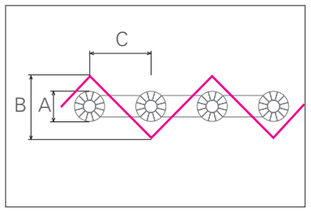
CHOICE OF THE STITCH TYPE

A wide range of stitches can be used for sewing Preciosa stones, beads and applications:



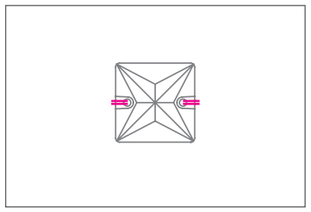
Straight stitch

The stitch length should be selected according to the space between the cups so that the stitch fits into the space.



Zigzag stitch

The length and width of the stitch has to be adjusted to the applied element. The stitch width (B) should be by 0,5 mm – 1 mm broader on both sides than is the applied crystal element (A). The stitch length (C) should be equal to ca. 2/3 of the stitch width. It might be necessary to reduce the tension of the upper thread sometimes.

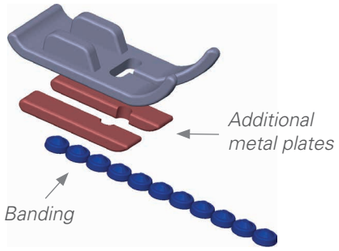


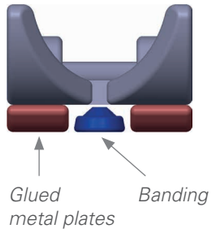
Button sewing programme

Sew-on stones can be easily applied using a button sewing programme. A correct stitch width must be chosen. Proceed according to the sewing machine manual.

ADAPTED PRESSER FOOT

A standard presser foot of the household sewing machine can be adapted for an easier sewing on of plastic bandings. Take two small metal plates and fix one on the left side and one on the right side of the presser foot with an epoxy glue. The resulting gap should be equal to the banding width.





TYPES OF MACHINE APPLICATION OF CRYSTAL COMPONENTS

APPLICATION		MACHINE	TOOL	PROGRAMME	NOTE
Sew-on stones		Sewing machine	Button foot	Programme for button sewing without the feed function	Switch off the lower feed, adjust the stitch width to the product
Plastic Bandings	Basic (one row)	Sewing machine	Adapted standard presser foot	Zigzag stitch	Adjust the stitch width to the product
			Zipper foot	Straight stitch	Net edges
	Basic (multiple rows)	Sewing machine	Standard presser foot	Straight stitch, Zigzag stitch	Adjust the stitch width to the product
			Zipper foot	Straight stitch	Net edges
	Fishnet	Sewing machine	Adapted standard presser foot	Straight stitch	
	Decorative	Sewing machine	Zipper foot	Straight stitch	Net edges
Metal Bandings		Sewing machine	Standard presser foot	Straight stitch	
			Zipper foot	Straight stitch	Net edges
Cup Chains		Sewing machine	Adapted standard presser foot	Zigzag stitch	Adjust the stitch width to the product
Crystal Mesh		Sewing machine	Standard presser foot, Teflon presser foot, Adapted standard presser foot	Straight stitch, Zigzag Stitch	Adjust the stitch width to the product For Zigzag stitch use the teflon presser foot to protect stones from getting scratched

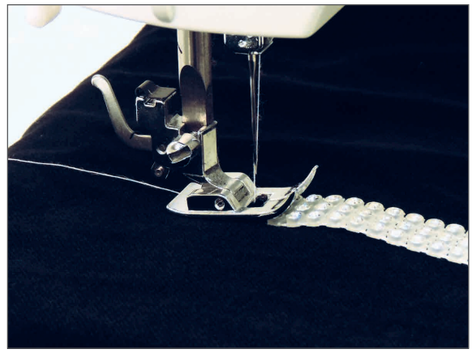
Application with a sewing machine

Choosing the right thread (strength ca. 50 – 60 Nm) and needle (strength ca. 80 Nm) is particularly important for sewing on applications. A right tension of the upper and lower thread has to be set on the sewing machine. The fabric must be smoothly stretched and the upper and lower thread should run easily and smoothly.

Tests with the material chosen for the application should be carried out before beginning the production.

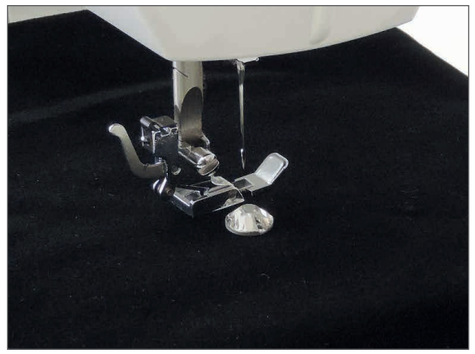
It is important to set the sewing machine to the correct hole pitch and stitch length and width before sewing on crystal stones. This prevents the stones from being damaged during sewing on and reduces the risk of an injury.

When sewing high multi-row bandings, problems with the sewing machine feed caused by an inclined presser foot can occur. Use a height compensating pad to avoid this. Place it beneath the presser foot so that the presser foot is parallel to the material which then feeds through smoothly.



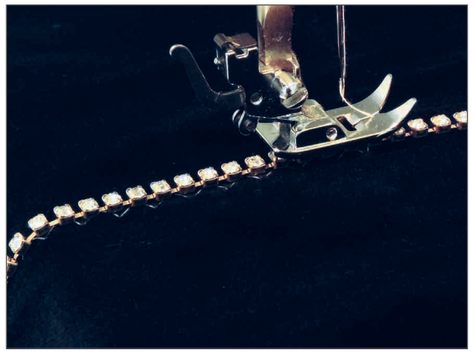
Inclined presser foot can cause problems with sewing machine feed of the base material.

The presser foot lies flat due to the height compensator.

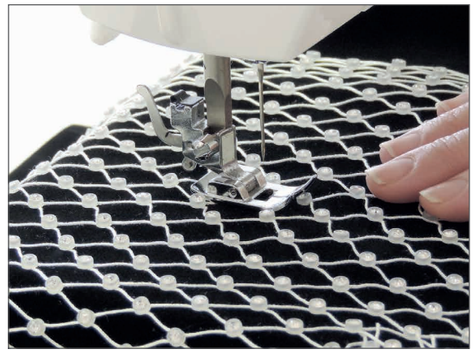


Application of crystals with the lower feed switched off.

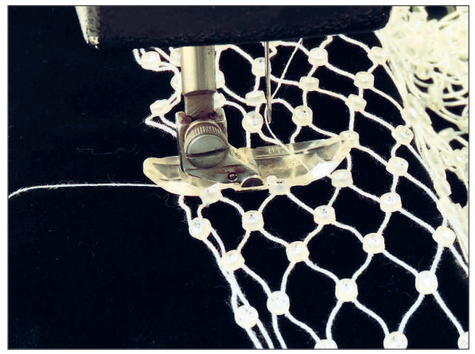
Application of one-row banding or a cup chain (zigzag stitch).



Detail of a zigzag stitch.



Multi-row banding and similar products are sewed on between the rows of stones.



Use a narrow „zipper“ foot when appropriate due to the applied product.

Hand application

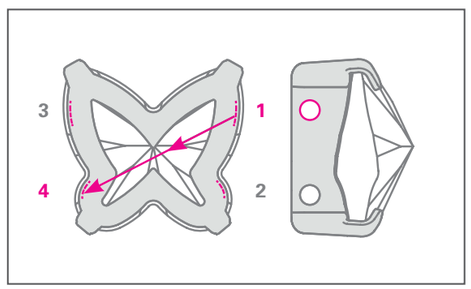
All Preciosa products listed in the overview at the beginning of this chapter can be also used in hand applications. Extensive choice of various products offers endless possibilities for creation of your own design; the only limits are your fantasy and wishes.

Note:
Crystal beads larger than 6 mm have to be fixed either by knotting or threaded on a suitable wire.

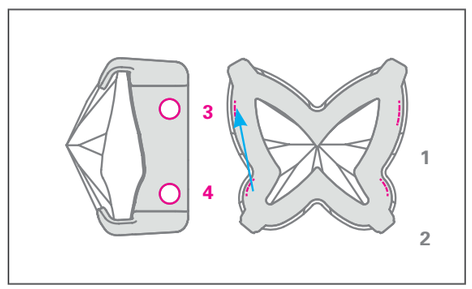
APPLICATION OF MC BUTTERFLY 601 IN SEW ON CUP

You will need: 0,6 mm needle; 0,3 mm thread

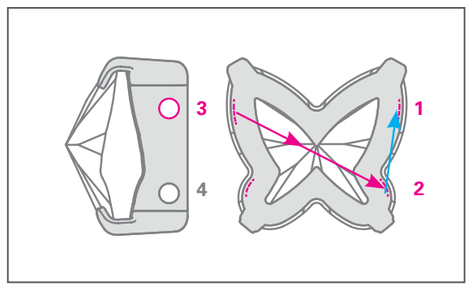
How to sew



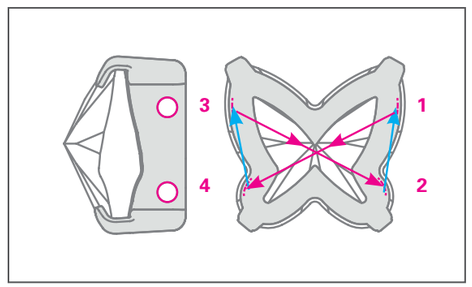
Pull the thread through from the underside of your material until the knot is snug. Thread the butterfly at point **1**, and continuing on its underside, thread your needle through the butterfly at **4**.



Turn the needle and sew through material at **4**, then come up at **3**.



Thread the butterfly from **3** to **2**, again along its underside. Turn the needle and attach the butterfly to material at **2**. Come back up through the material at **1**.



Repeat for added strength.

Important advice and information

POSSIBLE PROBLEMS, THEIR CAUSES AND RECOMMENDATIONS

PROBLEM	CAUSE
The product or fabric does not feed through correctly.	**1, 2, 3**
The sewing machine misses stitches.	**4, 5, 6, 7**
The thread tears.	**4, 6, 8, 9**
The needle breaks.	**10, 11, 12, 13**
The stones fall from the cups.	**14**

CAUSE		RECOMMENDATION
1	The foot pressure is too low.	Increase the foot pressure according to the instructions.
2	There is dust between the feeder teeth.	Clean the teeth.
3	The upper feed is faulty.	Replace the upper feed.
4	The needle is bent or damaged.	Replace the needle.
5	The needle is not fitted correctly.	Push it right up into the needle holder.
6	The machine is wrongly threaded.	Re-thread the machine.
7	The thread tension is incorrect.	Check the thread tension.
8	There are knots on the tread or it is too thin.	Check the thread for faults and change it if necessary.
9	The components forming stitches can be damaged.	Have the sewing machine checked by a specialist.
10	The wrong needle was used.	Choose a needle of correct size for the base material.
11	The bobbin is not fitted correctly.	Check the bobbin.
12	The needle is too thick and gets stuck in the product.	Use a thinner needle.
13	The needle hits the stone.	Sew more slowly and feed the product through the machine more carefully.
14	The needle damages the cup.	Check the stitch length and the needle thickness.

GENERAL RECOMMENDATIONS

		FASHION JEWELRY STONES		FLAT BACK STONES			BEADS AND PENDANTS		NACRE PEARLS	FASHION AND FASHION JEWELRY COMPONENTS					
		Round Stones, Channel	Fancy Stones, Ball	No Hotfix Stones	Hotfix Stones	Sew-on Stones	Beads	Pendants		Cup Chains	Plastic Bandings	Metal Components (Metal Bandings, Rondelles, Fancy Rondelles, Balls, Stones in Setting)	Crystal Net	Hotfix Transfers	Crystal Sheet
Stones with coatings – use only gentle wash cycle (30 °C).	Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended.	●	●	●	●	●	●	●	●					●	
	Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended.														●
	Turn inside out and use mild laundry detergent.								●	●	●	●	●		
	Do not use chlorine bleach!	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Turn inside out and dry at reduced temperature.														
	Do not tumble dry!	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Iron inside out using a silk/polyester viscose setting. Ironing the textile inside out and using a pressing cloth is recommended.						●	●		●		●			
	Iron inside out using a wool setting.			●	●	●								●	●
	Do not iron! Do not iron directly over the crystals.								●		●		●		
To protect the crystals as much as possible, the use of a soft wash bag is recommended.	The textile can be gently dry-cleaned using perchlorethylene. Turn inside out.	●	●				●	●							
	The textile can be gently dry-cleaned using hydrocarbon.	●	●	●	●	●	●	●						●	●
	The textile will withstand gentle professional wet cleaning. Turn inside out.	●	●	●	●	●	●	●						●	●
	The textile may not be dry-cleaned.	●	●	●	●	●	●	●	●	●	●	●	●	●	●

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Stone Setting

APPLICATION MANUAL

PRECIOSA

Contents

Introduction

Preciosa round, fancy and no-hotix flatback stones can be set in metal parts, rendering them suitable for a range of application techniques, such as sewing, soldering and gluing. In this step-by-step guide, we will show you how to securely fasten each type of stone into the two most popular kinds of metal settings: prong settings and bezel settings.

Whenever possible, stones should be set before plating the setting. Preciosa's assortment also includes pre-set stones and linked components, like crystal cupchain and banding.

I. COMPONENTS SUITABLE FOR SETTING

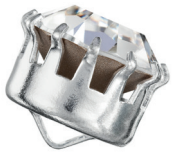
COMPONENT		 STONE SETTING
	**Round Stones**	✓
	**Fancy Stones**	✓
	**No-Hotfix Flatback Stones**	✓

II. TYPES OF SETTINGS

Preciosa crystals can be set by hand and by machine. This application manual outlines methods used for manual setting using hand-held tools like tweezers, a setting knife and fly press.

Prong setting

Suitable for: fly press | tweezers | setting knife | prong setting tool

	Crystal is fixed in position by prongs

Bezel setting

Suitable for: fly press

	Crystal is fixed in position by a bezel rim

Linked setting

Crystals in linked settings, like cupchain and banding, are usually secured by machines that gather, place and fix the crystals in position using a pressure head. This application manual does not provide instruction for this method; however, care instructions for both crystal cupchain and banding may be found on page 11.

Before You Begin

Make sure you have selected the **right setting** for the stone type, size and intended use, assembled the necessary tools and properly cleaned and treated the setting.

I. TOOLS AND EQUIPMENT

Tweezers

Setting knife

Fly press

Hand-held prong setting tool

Setting die set

A simple tool with a single groove for manual stone setting

Protective gloves

Protective eyewear

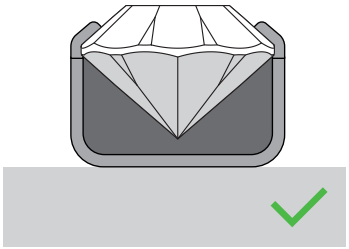
II. SURFACE PRE-TREATMENT

Take care to properly degrease and dry the setting cup before placing the stone inside.

Application

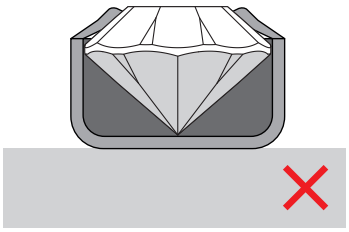
It is important to choose the right cup size. The crystal must precisely fit the setting so that it can be inserted without damaging the foiling or protective varnish. Take care not to block any holes in the setting (for sew-on application) with the underside of the stone.

Correct

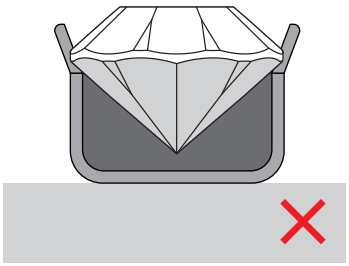


Stone has been set correctly.

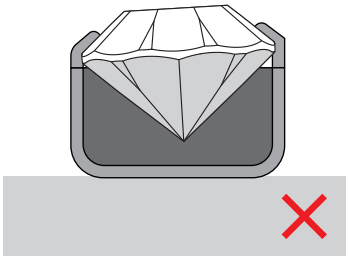
Incorrect



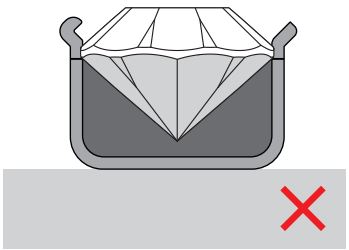
Setting cup is too big.



Setting cup is too small.



Stone is set askew.

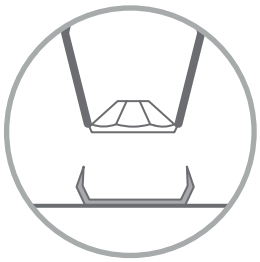


Prongs are incorrectly bent.

PRONG SETTING

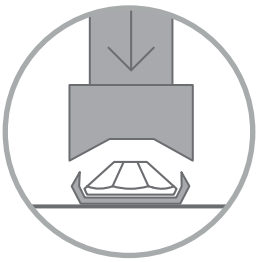
Fly press

1)



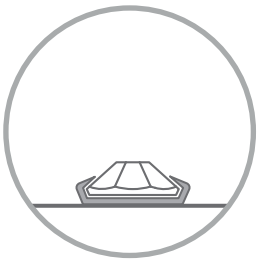
Use tweezers to place the stone in the setting cup.

2)



Use the appropriate size setting closer and fly press to bend and close the prongs.

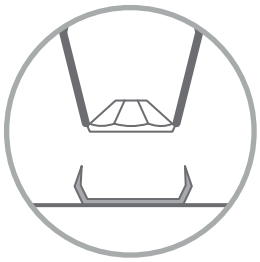
3)



The stone is set.

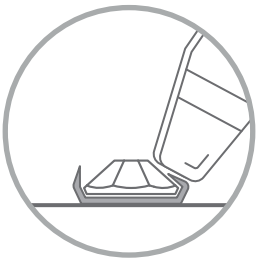
Tweezers

1)



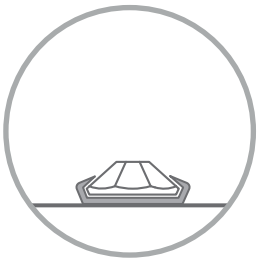
Use tweezers to place the stone in the setting cup.

2)



Use tweezer to bend and close the prongs.

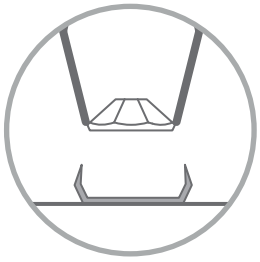
3)



The stone is set.

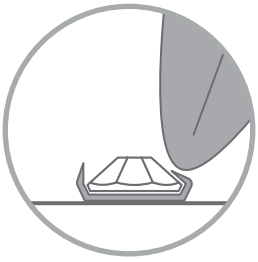
Setting knife

1)



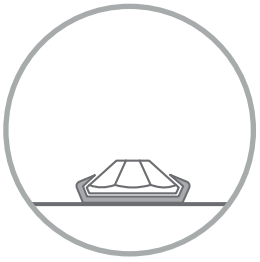
Use tweezers to place the stone in the setting cup.

2)



Use the setting knife to bend and close the prongs.

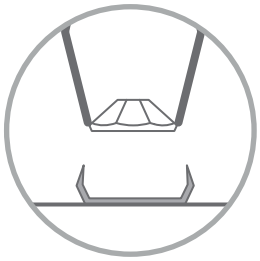
3)



The stone is set.

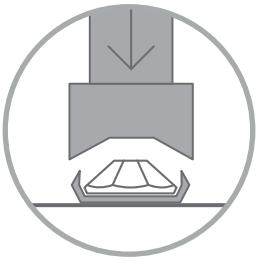
Prong setting tool

1)



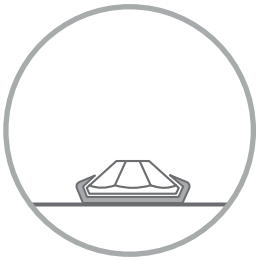
Use tweezers to place the stone in the setting cup.

2)



Use the prong setting tool to bend and close the prongs.

3)

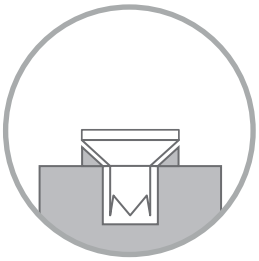


The stone is set.

BEZEL SETTING

Fly press

1)

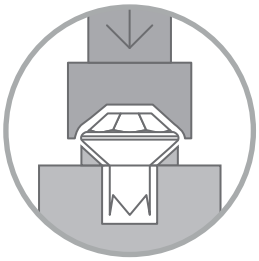


Place the setting cup in the fly press.

2)

Use tweezers to place the stone in the setting cup.

3)



Use the appropriate size setting closer and fly press to secure the stone.

4)

The stone is set.

Troubleshooting and Diagnostics

PROBLEM	RECOMMENDATION
The stone is set **askew**.	Check the correct **position** of the stone in the cup. Check that the right **cup size** has been used.
The stone is too **loose** in the cup.	Check the correct **position** of the stone in the cup. Check that the right **cup size** has been used. **Bend the prongs** slightly. Re-calibrate the stroke height of the **setting head**. The prongs should barely touch the stone's surface.
The stone is **chipped** or otherwise damaged after setting.	**Loosen the prongs** slightly. Re-calibrate the stroke height of the **setting head**. The prongs should barely touch the stone's surface.

Care Instructions

		STONES IN SETTINGS	CRYSTAL CUPCHAIN	CRYSTAL BANDING
Stones with coatings – use only gentle wash cycle (30 °C).	 Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended.			
	 Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended.			
	 Turn inside out and use mild laundry detergent.	●	●	●
	 Do not wash!			
	 Do not use chlorine bleach!	●	●	●
	 Turn inside out and dry at reduced temperature.			
	 Do not tumble dry!	●	●	●
	 Iron inside out using a silk/polyester viscose setting and pressing cloth.	●	●	●
	 Iron inside out using a wool setting.			
	 Do not iron!			
To protect the crystals as much as possible, the use of a soft wash bag is recommended.	 May be gently dry-cleaned using perchlorethylene. Turn inside out.			
	 May be gently dry-cleaned using hydrocarbon.			
	 Can withstand professional wet cleaning. Turn inside out.			
	 Do not dry clean!	●	●	●

Preciosa Components
A Member of the Preciosa Group

A global leader in luxury goods manufactured from crystal, the Preciosa Group stands upon centuries of glassmaking tradition and innovation. From the world's smallest faceted flatback stone to our cutting-edge, bespoke lighting installations, Preciosa looks to our own unique heritage to draw inspiration for the future of responsibly crafted Bohemian crystal. Together, the Group operates regional offices across Europe, North America and Asia and melts 40 tons of glass every day.

PreciosaComponents.com

Soldering

APPLICATION MANUAL

PRECIOSA

Contents

Introduction

Soldering is a process of joining two metal surfaces together using a filler metal called solder. The soldering process involves heating the surfaces to be joined and melting the solder, which is then allowed to cool and solidify, creating a strong and durable joint. For a clean, uniform appearance of the metal, components should be soldered before they are plated.

I. COMPONENTS SUITABLE FOR SOLDERING

COMPONENT		SOLDERING
	**Stones in Settings**	✓
	**Cupchain**	✓

Before You Begin

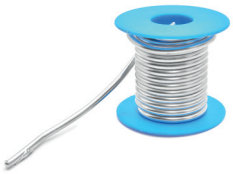
Make sure you have assembled the necessary tools and properly cleaned and treated the metal settings before soldering. Make sure the workspace is adequately ventilated. The use of protective eyewear is strongly recommended.

I. TOOLS AND EQUIPMENT

Impression paste

Tweezers

Wire cutters



Solder wire

Smoother

Oxygen/hydrogen soldering kit

Ultrasound

Protective gloves

Protective eyewear

II. SURFACE PRE-TREATMENT

The material and all tools should be clean and without any grease in particular. Use organic solvents or aqueous solutions of suitable detergents. If you want to get a galvanic layer of the highest quality the decreasing procedure can be also done by bright pickling.

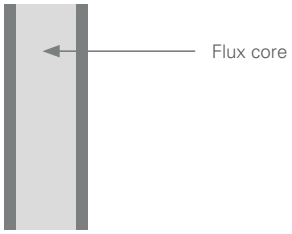
III. BASIC PRINCIPLES OF SOLDERING

Solder wire

Working temperatures and flow characteristics are of particular importance when selecting a solder. Solders are available from various manufacturers in a wire form with or without a flux core, as a paste or in pellets. We recommend solder wire with an integrated flux core. When using solder pellets or wire without a flux core, it is necessary to adapt the flux according to the instructions of the solder manufacturer. Corrosive effects on the foiling should be tested in advance.

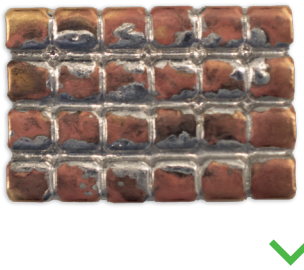
Note that lead-free solders require a higher working temperature.

Adjust the solder diameter according to the product thickness and dimensions.

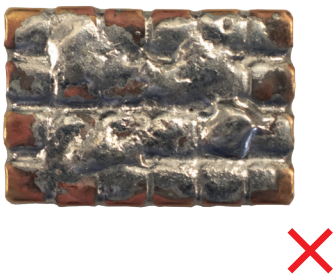


Solder amount

The amount of solder used to join the parts should be in accordance with the size of the soldered parts. Too much solder, as well as too little solder, can negatively influence the quality of the product.

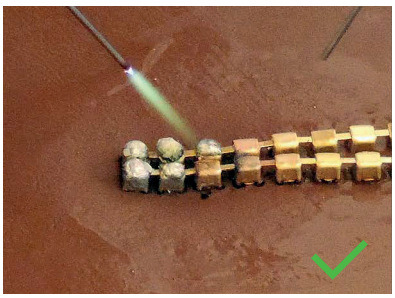


Optimal quantity of solder

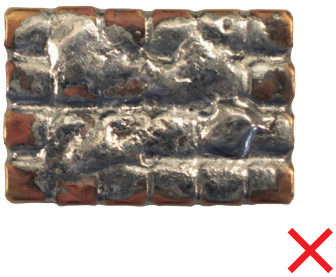


Too much solder
(the solder flows over the cups)

Only that part of the jewellery piece should be heated, where the solder is being used to join the parts. It is not recommended to apply the solder on the entire surface and heat it afterwards.



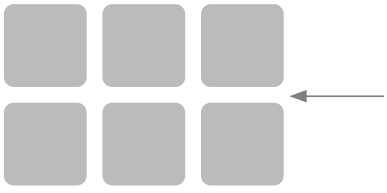
Only soldered spots should be heated



Solder has been applied to the entire surface before heating

Width of the joint

The joint between the soldered parts should be 0.1 – 0.3 mm. A strong and reliable joint can only be achieved when parts around the joint are thoroughly warmed. The heat, however, should be applied only for a necessary time (exceeding the optimal time can result in a damage of the stones).



Impression paste

Impression paste is a material in which a jewelry piece is impressed. The original design (finished product with the stones, called the "sample"), is pressed into the paste, stones side down. An impression of the sample remains in the paste after the "sample" is removed. The new product is placed by tweezers into the impression paste and is ready to be soldered. The back side of the components has to be directed upwards with stones facing the paste.

Impression paste should be elastic and should not dry out. It has to effectively remove the heat from the product.

Always consider the best layout so that a maximal number of samples can be impressed.

Temperature

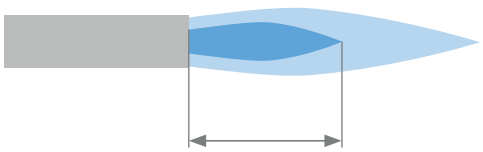
Even though the melting point of the solder is 190° C, the real temperature affecting the stones can be much higher. When using the oxygen / hydrogen flame, the temperature of the flame core can reach 3,000 °C.

The temperature of the flame core can reach 3,000 °C.

The recommended melting temperature of the solder should be 190 °C / 375 °F.

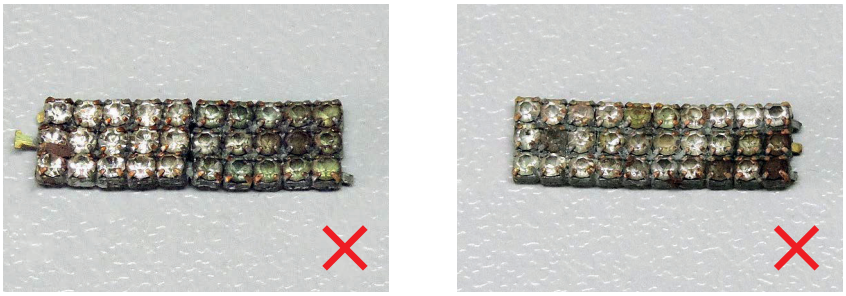
Flame

The optimal length of the flame core should be 5 – 10 mm. The soldering kit should be set accordingly. Using a proper soldering technique with precise oxygen / hydrogen flame provides the highest labour efficiency. Respect also the product thickness and dimensions.



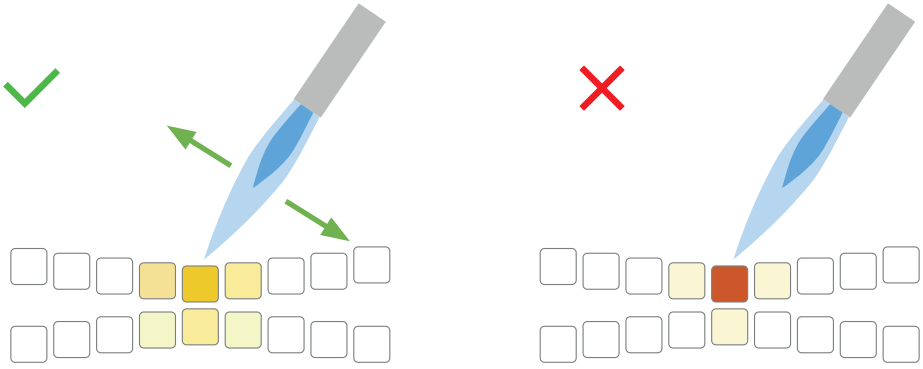
The optimal length of the flame core is 5 –10 mm.

The right flame size and time of its application are important criteria for a successful soldering. If the flame is focused on the jewellery piece too long, the stone and the article may become overheated and therefore damaged and destroyed.



Stones damaged by long soldering and high tempertature.

Do not focus the flame on one spot but move it slightly to and from during soldering.



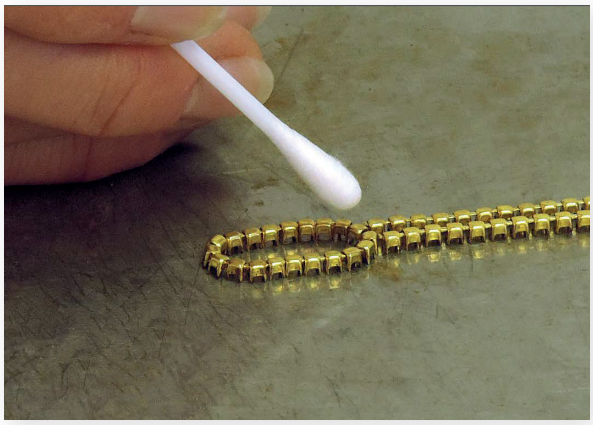
Moving the flame slightly to and fro during soldering provides an even warming of the joint and does not damage the stones.

Focusing the flame on one spot causes stone damage – loss of optical-aesthetic qualities (brilliance,fire).

Damage usually becomes visible after post-soldering surface treatments, e.g. after degreasing or plating. Foiling damage by soldering has a negative influence on the results of the subsequent plating process (deterioration of optical-aesthetic qualities).

Application

SOLDERING

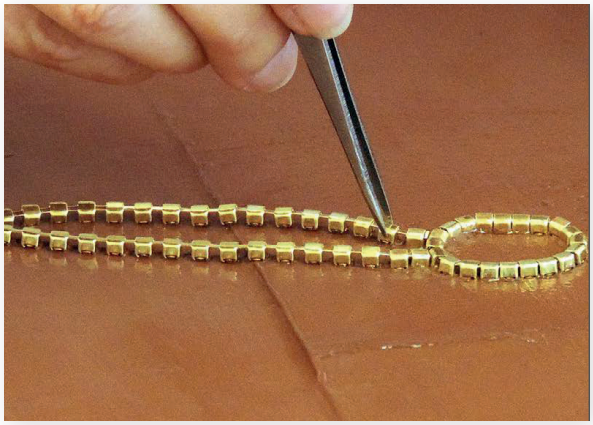


1. Degrease and dry the underside of the metal setting(s).

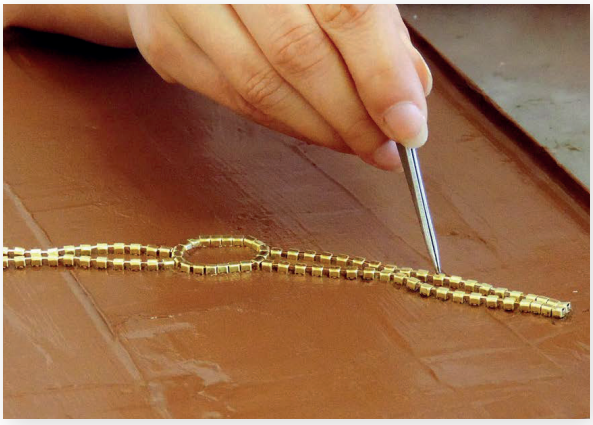
2. Spread the impression paste in the plate; smooth into an even and compact layer.

3. Place the plate with the impression paste on a surface.

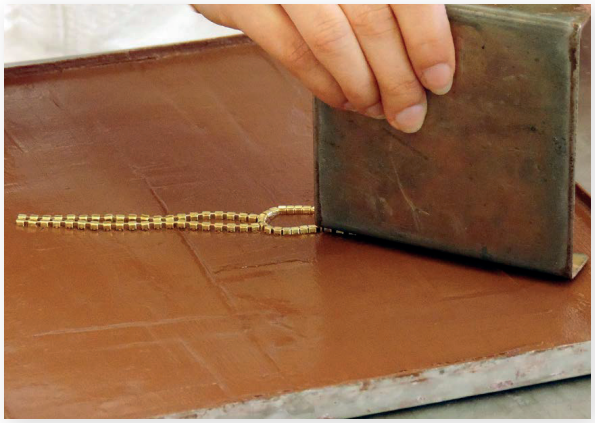
4. Press the the design into the impression paste, stone side down.



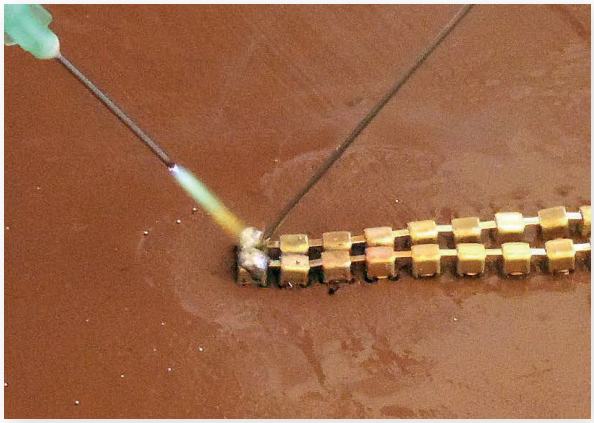
5. Place the set components into the impression of the design in the desired arrangement.



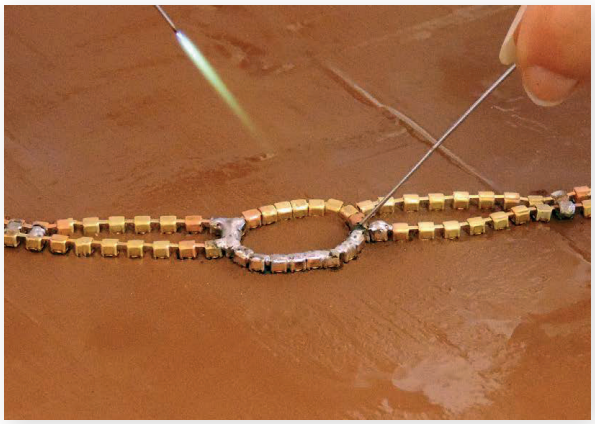
6. Check that the set stones are placed according to the sample design.



7. Press down on the design gentle using a small plate to secure the stones in place.



8. Place the solder wire on the warmed joint and heat the solder until the solder melts and fills the space between the joints.



9. Repeat the soldering process on all desired joints.

10. Let the solder cool down until it is no longer hot to the touch.

AFTER SOLDERING

Let the product cool down and then remove it from the impression paste. Clean the product by immersing it into a mild alkali bath. Use ultrasound to remove solder remainders. To remove a slight colouring caused by oxidation use a mild acid bath with ultrasound. Natural cleaning agents or identical cleaning substances (turpentine, limonene) can be used in a solution with alcohol and water. Let the product dry at an ambient temperature or dry it in warm air.

Troubleshooting and Diagnostics

PROBLEM	RECOMMENDATION
Incorrect impression.	Compare the impression with the sample. The jewelry was laid down in the impression paste incorrectly or the **wrong sample** was used.
The **solder does not flow** properly.	**Check the solder** and change it if necessary. **Increase the temperature.**
Solder and material are **heated insufficiently.**	**Increase the temperature** or **prolong the time of heating** the material.
Too much solder due to repeated soldering or improper solder.	Clean the joint mechanically, e.g. by grinding and solder again.
Solder flows over the stones due to overheating.	Do not solder one spot for a very long time. Remove the solder. Replace the damaged stones and set new ones.
Yellow, discoloured or cracked stones.	Cracking or changing colour can be caused by **overheating**. Try to **cut the** soldering **time**. Do not focus the **flame** on one spot for a long time but **move** it slightly. Use the **solder that melts at a lower temperature**. The solder could have flown into the cup and damaged the foiling. Remove the crystal and check it. **Reduce the amount of solder**. Take care not to use the ultrasound for cleaning the soldered part too intensively. **Avoid extreme temperature differences** during and after soldering. **Replace the** damaged **stones** and set new ones.
The solder **joint cracks.**	Solder again and **use more solder**. Too much solder can also cause cracking as the flexibility of the parts is restricted. **Use less solder**. **Clean** the metal surface sufficiently **before soldering**.
The metal **surface is eneven.**	**Polish** the product. For example by mechanical polishing devices. It is also ideal for preventing corrosion.

Care Instructions

		STONES IN SETTINGS	CRYSTAL CUPCHAIN
Stones with coatings – use only gentle wash cycle (30 °C).	 Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended.		
	 Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended.		
	 Turn inside out and use mild laundry detergent.	●	●
	 Do not wash!		
	 Do not use chlorine bleach!	●	●
	 Turn inside out and dry at reduced temperature.		
	 Do not tumble dry!	●	●
	 Iron inside out using a silk/polyester viscose setting and pressing cloth.	●	●
	 Iron inside out using a wool setting.		
	 Do not iron!		
To protect the crystals as much as possible, the use of a soft wash bag is recommended.	 May be gently dry-cleaned using perchlorethylene. Turn inside out.		
	 May be gently dry-cleaned using hydrocarbon.		
	 Can withstand professional wet cleaning. Turn inside out.		
	 Do not dry clean!	●	●

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PreciosaComponents.com

COMPONENTS

APPLICATION MANUAL

Pins

PRECIOSA

Hand and mechanical applications

MC Chaton Rose VIVA 12® PINS can be applied either by hand or using mechanical force, creating thus a lasting bond with the carrier material. This simple application technique is used primarily in the textile and accessories fields.

PRODUCT OVERVIEW

JEWELLERY APPLICATION	HAND APPLICATION	MECHANICAL APPLICATION
MC Chaton Rose VIVA 12® PINS	✓	✓
Nacre Cabochon PINS	✓	✓

CHECKING THE CARRIER MATERIAL THICKNESS, SELECTION OF PINS AND DIES

Please consider the material thickness when selecting pins.

MC CHATON ROSE VIVA 12 PINS	ART. NO.	SIZE	MATERIAL THICKNESS*
MC Chaton Rose VIVA 12® PINS	7192 9313	ss 16	1 – 2 mm
MC Chaton Rose VIVA 12® PINS	7192 9315	ss 20	1 – 2 mm
MC Chaton Rose VIVA 12® PINS	7192 9357	ss 34	1 – 2 mm
Nacre Cabochon PINS	7192 9515	4,5 mm	1 – 2 mm

** This can vary according to the type and toughness of the used material. Pins are not suitable for application to the leather and too rigid, fine or elastic materials.*

MACHINES, TOOLS AND AIDS

PRECIOSA offers a hand tool with upper and lower dies for sizes ss16 – ss20 and ss34.

A setting knife.

A hand tool can be used for the application of MC Chaton Rose VIVA 12® Pins. This tool can be provided by PRECIOSA.

A fly press represents an easy way how to mechanically apply the products.

Hand Application

MC Chaton Rose VIVA 12® PINS can be applied manually using a setting knife.

1. MC Chaton Rose VIVA 12® PINS, fabric for PIN application and a setting knife

2. Take the pin in your fingers and direct its prongs toward the fabric

3. Push the prongs through the fabric.

4. Make sure that all prongs are poking out of the fabric.

5. Turn one prong after another toward the center and to the fabric using the setting knife.

6. The PIN fixed by prongs in the fabric looks like this.

Mechanical application

MC Chaton Rose VIVA 12® PINS can be applied manually or mechanically, using a pin applicator.

1. A manual pin applicator (SAP 4271319) with a die set (SAP 4271332).

2. Put the pin into the upper die.

3. Place the fabric between the dies so that the rose pin is positioned where you want it. Make sure to punch it to the right side of the fabric. Squeeze the handles of the applicator.

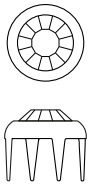
4. Repeat the step No. 3

5. The application of rose pins from the top.

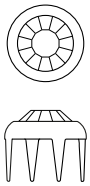
6. The application of rose pins from the bottom. The back side of the fabric should always look like this.

MC CHATON ROSE VIVA 12® PINS

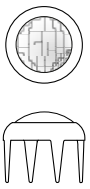
7192 9313 MC Chaton Rose VIVA 12® PINS (ss16)

	DRAWING	UPPER DIE SS 16	LOWER DIE SS 16 – SS 20
			

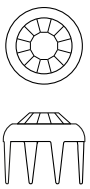
7192 9315 MC Chaton Rose VIVA 12® PINS (ss20)

	DRAWING	UPPER DIE SS 20	LOWER DIE SS 16 – SS 20
			

7192 9515 Nacre Cabochon PINS (4,5mm)

	DRAWING	UPPER DIE SS 20	LOWER DIE SS 16 – SS 20
			

7192 9357 MC Chaton Rose VIVA 12® PINS (ss34)

	DRAWING	UPPER DIE SS 34	LOWER DIE SS 34
			

Important advice and information

POSSIBLE PROBLEMS, THEIR CAUSES AND RECOMMENDATIONS

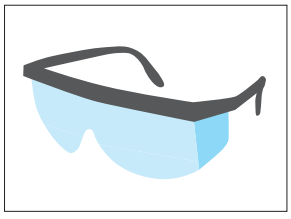
The table shows possible problems with mechanical applications, their causes and advice how to avoid them.

PROBLEM	CAUSE
The pins are not properly attached to the carrier material.	**1, 2, 3, 4, 5**
The carrier material ripples or crinkles.	**2, 3, 4, 5**
The dies cannot be inserted into the fly press.	**3, 6, 7, 8**
The dies cannot be unscrewed.	**6, 8, 9**
The pin crystals break.	**2, 3, 4, 5, 10**

CAUSE	RECOMMENDATION
1 The pressure is too low.	Increase the pressure when applying the product. Adjust the stop.
2 The carrier material is too thick or there are too many layers.	A hole can be pre-punched.
3 The die (the spare part) of the upper die is defective or improperly attached.	Check the die (the spare part) and replace or repair it if necessary.
4 Wrong dies are used for the pin application.	Check if the correct dies are being used.
5 The dies are not attached correctly.	Check if the pins are placed accurately and in a correct position on the dies. Then turn slowly the fly press handle to make sure that the upper and lower parts of the fly press meet precisely.
6 The fly press and dies do not fit together.	Check the thread size of both the fly press and the upper die; the size must be the same.
7 The upper die cannot be attached.	Check the fastening screw on the upper die; it may be screwed too tightly.
8 The die (the spare part) may be damaged.	Check the die and in case it is defective replace it with a new one or a spare part.
9 The screw on the upper die has broken off.	Carefully loosen the screw using pliers. It is necessary to oil and centre the die once in a while.
10 The pressure is too high.	Use a bit less pressure when applying the pin and adjust the stop.

CARE INSTRUCTIONS

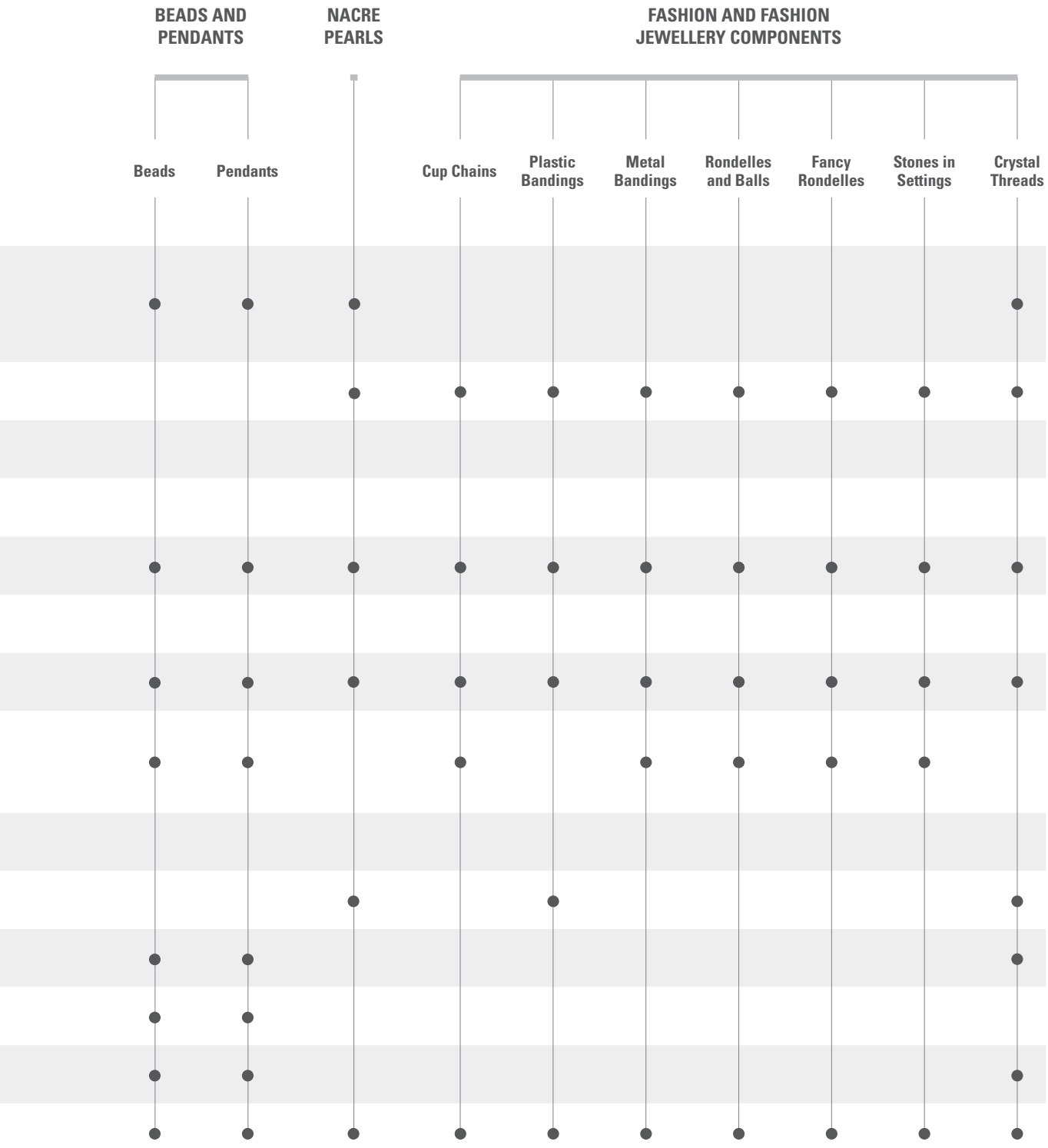
A proper care will ensure high quality and long-lasting applications of PRECIOSA products.



It is recommended to wear a protective eyewear during the mechanical application to avoid any injury.

GENERAL RECOMMENDATIONS

			FASHION JEWELLERY STONES		FLAT BACK STONES		
			Round Stones, Channel	Fancy Stones, Ball	No Hotfix Stones	Hotfix Stones	Sew-on Stones
Stones with coatings – use only gentle wash cycle (30 °C).		Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended.	●	●	●	●	●
		Turn inside out and use mild laundry detergent.					
		Do not wash!					
		Chlorine bleach may be used.					
		Do not use chlorine bleach!	●	●	●	●	●
		Turn inside out and dry at reduced temperature.					
		Do not tumble dry!	●	●	●	●	●
		Iron inside out using a silk/polyester viscose setting. Ironing the textile inside out and using a pressing cloth is recommended.					
		Iron inside out using a wool setting.			●	●	●
		Do not iron! Do not iron directly over the crystals.					
To protect the crystals as much as possible, the use of a soft wash bag is recommended.		The textile can be gently dry-cleaned using perchlorethylene. Turn inside out.	●	●			
		The textile can be gently dry-cleaned using hydrocarbon.	●	●	●	●	●
		The textile will withstand gentle professional wet cleaning. Turn inside out.	●	●	●	●	●
		The textile may not be dry-cleaned.	●	●	●	●	●


BEADS AND PENDANTS
NACRE PEARLS
FASHION AND FASHION JEWELLERY COMPONENTS
Beads
Pendants
Cup Chains
Plastic Bandings
Metal Bandings
Rondelles and Balls
Fancy Rondelles
Stones in Settings
Crystal Threads

Preciosa Components
A Member of the Preciosa Group

Preciosa Group is a global leader in products *manufactured from crystal*. From the world famous Czech Beads and Crystal Components used in fashion industry, to tailor made Lighting projects for luxury hotels, royal palaces and yachts, the true craftsmanship of crystal production has been present in Bohemia since 16th century.

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COMPONENTS

APPLICATION MANUAL

Setting stones in epoxy clay

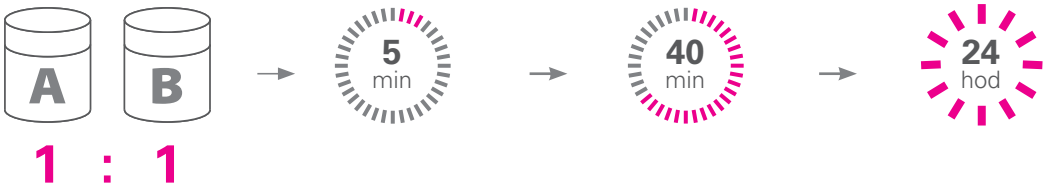
PRECIOSA

Working instructions for two-component glue for fixing glass stones in costume jewellery products

OVERVIEW OF PRECIOSA PRODUCTS SUITABLE FOR SETTING IN EPOXY CLAY

COMPONENTS		SETTING IN EPOXY CLAY
Fashion Jewellery Stones	Round Stones	✓
	Fancy Stones	✓

PROCEDURE



Preparation of the clay

Mix both clay components – A (resin) and B (hardener) – in the ratio recommended by the producer, typically 1:1.

Mixing the clay

Mix both clay components for at least 5 minutes till they are thoroughly mixed together.

Workability

The substance can be formed for 40 to 60 minutes, then it starts to harden.

Curing

The epoxy clay needs to cure 24 hours to reach its full strength and durability. Do not handle the material during this period.

The above given data are valid for the majority of the delivered substances. It is, however, recommended to follow the producer's instructions.

APPLICATION PROCEDURE

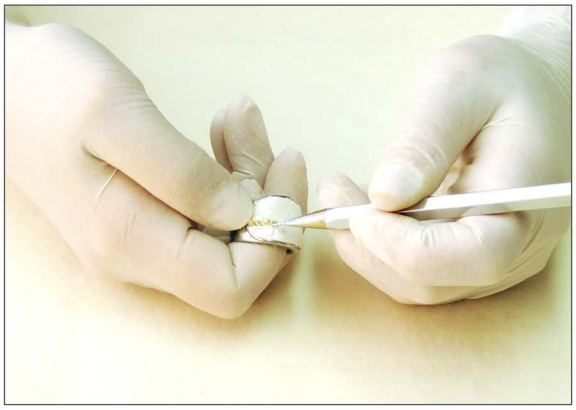
1 Take the required quantity of the clay components A (resin) and B (hardener) from the cartridges in a ratio recommended by the producer, typically 1:1 by weight.

2 Mix both clay components A and B thoroughly. A properly mixed substance is significant for a firm bond between the clay and the underlying material as well as for a proper fixing of the stone in the clay.

3 Mix the clay for at least 5 minutes till you get a homogenous substance.

4 Form the required shape from the substance.

5 Fix the pre-formed substance on the base material (e.g. a costume jewellery part) and mould it into the final shape.



6 Place the stones in the prepared substance and press them properly up to their girdle into it. Only then are the stones perfectly fixed in the costume jewellery part.

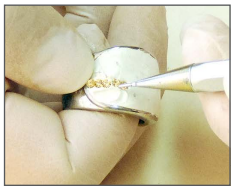
7 The clay should not extend beyond the stone edges as it would negatively influence the brilliance of the stones (optical qualities).

8 Produced substances are typically workable for ca. 40 to 60 minutes. Setting the stones and correcting their position should be carried out during this interval.

9 The epoxy clay cures at ambient temperature. After curing, clean the product with a soft cloth or a stick with cotton wool. A small amount of alcohol can be used in case of need.

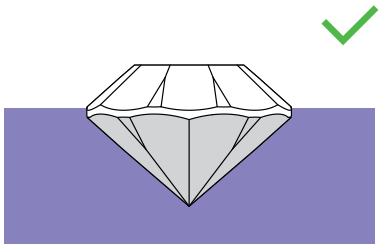
10 The maximal strength of a finished product (stones fixed firmly) is reached after ca. 24 hours or when the clay is no more elastic.

⚠ Use protective gloves when working with the clay. Make sure that the working surface is always clean, i.e. without dust, grease and other impurities.

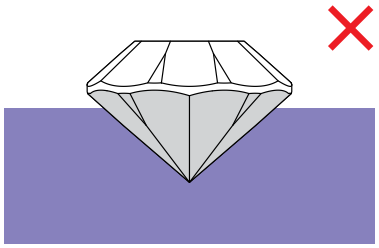


A correct position of the stone in the clay

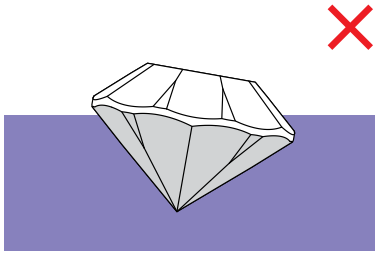
Note to the step No. 6



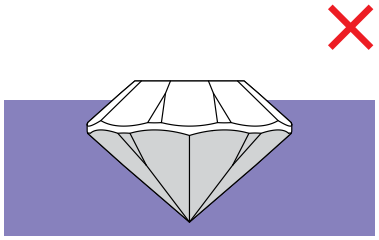
A correct position of the stone in the clay



The stone is pressed too little



The stone is set askew



The stone is pressed too deep

Recommended epoxy clays

PRODUCT	PRODUCER	WWW
Ferido X2-SP Glue	Cyberbond Apollo 2999 (Cyberbond)	www.ferido.com
epoGEM	International Adhesive Manufacturer	www.inter-adhesive.com
wGlue	Trinity Industry	www.wglue.en.ec21.com

Important advice and information

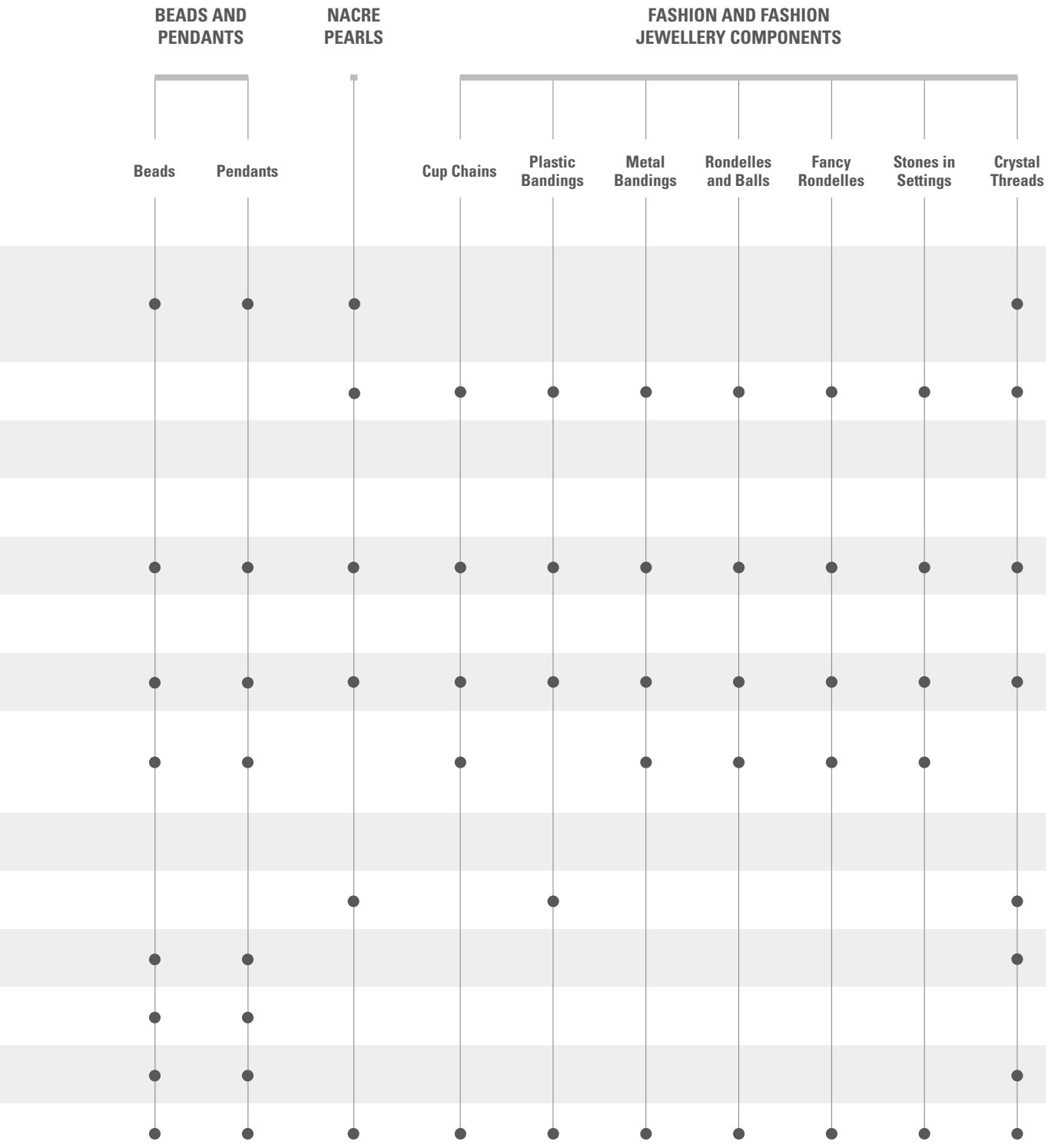
POSSIBLE PROBLEMS, THEIR CAUSES AND RECOMMENDATIONS

PROBLEM	CAUSE
Some stones fall out even after clay hardening.	**1, 2, 3, 5, 6, 8**
The substance is not fixed to the base material.	**1, 2, 3, 5**
Some stones lose their brilliance.	**4, 7**

CAUSE	RECOMMENDATION
1 The correct ratio of A and B was not observed.	Pay attention to the proper ratio recommended by the clay producer.
2 A and B components were not properly mixed.	Mix the substance longer till it is perfectly homogenous.
3 The workable time of the substance was exceeded.	Mix a new substance.
4 The stone surface was stained by clay.	Clean the product with a soft cloth or a stick with cotton wool after the clay was cured at the room temperature. Use a small amount of alcohol in case of need. Make sure that the working surface is always clean, i.e. without dust, grease or other impurities.
5 The surface of the jewellery piece was not properly cleaned.	Make sure that the working surface is always clean, i.e. without dust, grease or other impurities.
6 The stone is not set deep enough.	Set the stone up to its girdle.
7 The stone is set too deep.	Set the stone only to its girdle.
8 The substance has not cured for 24 hours.	Observe the recommendations of the clay producer regarding the curing conditions and glue lifetime.

GENERAL RECOMMENDATIONS

		FASHION JEWELLERY STONES		FLAT BACK STONES		
		Round Stones, Channel	Fancy Stones, Ball	No Hotfix Stones	Hotfix Stones	Sew-on Stones
Stones with coatings – use only gentle wash cycle (30 °C).	Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended.	●	●	●	●	●
	Turn inside out and use mild laundry detergent.					
	Do not wash!					
	Chlorine bleach may be used.					
	Do not use chlorine bleach!	●	●	●	●	●
	Turn inside out and dry at reduced temperature.					
	Do not tumble dry!	●	●	●	●	●
	Iron inside out using a silk/polyester viscose setting. Ironing the textile inside out and using a pressing cloth is recommended.					
	Iron inside out using a wool setting.			●	●	●
	Do not iron! Do not iron directly over the crystals.					
To protect the crystals as much as possible, the use of a soft wash bag is recommended.	The textile can be gently dry-cleaned using perchlorethylene. Turn inside out.	●	●			
	The textile can be gently dry-cleaned using hydrocarbon.	●	●	●	●	●
	The textile will withstand gentle professional wet cleaning. Turn inside out.	●	●	●	●	●
	The textile may not be dry-cleaned.	●	●	●	●	●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Notes

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COMPONENTS

APPLICATION MANUAL

Rivet

PRECIOSA

Mechanical Applications

Now available with our premium MC Chaton MAXIMA crystals, Rivets give the perfect edge to shoes, handbags and textiles. This product range is easily applied via Fly Press or manual applicator.

PRODUCT OVERVIEW

JEWELLERY APPLICATION	MANUAL APPLICATOR	FLY PRESS
MC Chaton MAXIMA Rivet	✓	✓

CHECKING THE CARRIER MATERIAL THICKNESS AND SELECTING THE RIVETS AND DIES

Rivets can be applied to various materials using Back Parts. Please note the material thickness when selecting the Rivets.

MC CHATON MAXIMA RIVET	ART. NO.	SIZE	MATERIAL THICKNESS*
MC Chaton MAXIMA Rivet	7193 2018	ss 18	2.0 – 2.5 mm
MC Chaton MAXIMA Rivet	7193 2029	ss 29	2.0 – 2.5 mm
MC Chaton MAXIMA Rivet	7193 2034	ss 34	2.0 – 2.5 mm

** If the carrier material proves too thick, or is made up of several layers, it is recommended to punch a hole before application.*

MACHINES, TOOLS AND AIDS

PRECIOSA offers a hand tool with upper and lower dies for Rivets, sizes ss18 – ss34.

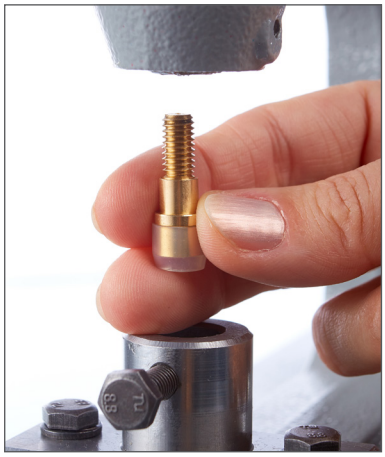
The Fly Press is an easy way to mechanically apply Rivets. This tool can be provided by PRECIOSA (SAP 4301631).

PRECIOSA can also provide a manual applicator. (SAP 4271319).

Die set for MC Chaton MAXIMA Rivet. This set can be provided by PRECIOSA (SAP 4290881).

Mechanical Application

Able to be bolted down to a flat surface, the Fly Press is a sturdy and reliable tool suitable for frequent application of Rivets.



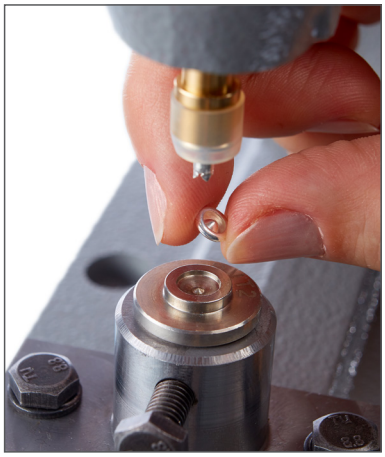
1. Placemet of the upper die.

2. The upper die needs to be screwed in tightly.

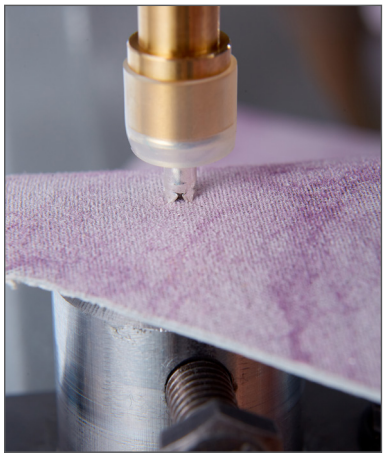
3. Placement of the lower die.

4. Tighten the lower die.

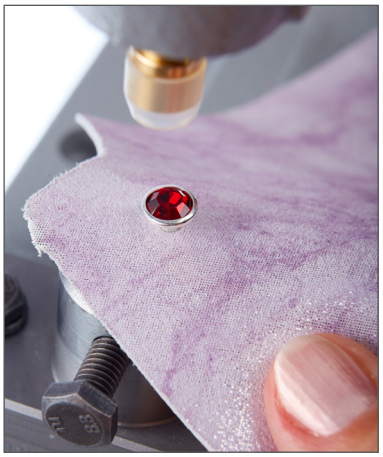
5. Attach the rivet to the upper die.



6. Place the back side of the Rivet on the lower die.



7. Application on leather.



8. Applied Rivet from the top.

9. Applied Rivet from the bottom.

Manual Application

The manual applicator is an alternative, handy tool for applying Rivets that also doubles as an applicator for Pins when used with the corresponding die set.

1. Placemet of the upper die.

2. Placement of the lower die.

3. Tighten the lower die.

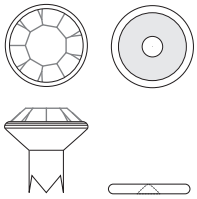
4. Attach the rivet to the upper die.

5. Place the back side of the Rivet on the lower die.

6. Design created using a manual applicator.

7. Applied Rivets on a leather band.

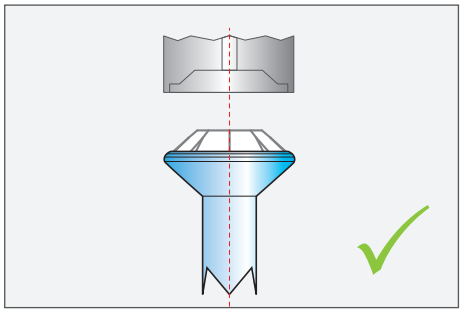
MC CHATON MAXIMA RIVET

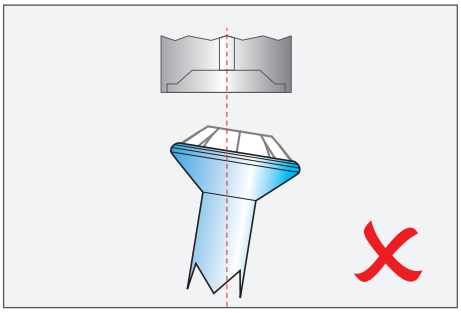
	DRAWING	UPPER DIES	LOWER DIE
			

USEFUL TIPS

OPTIMUM PRODUCT/DIE ALIGNMENT

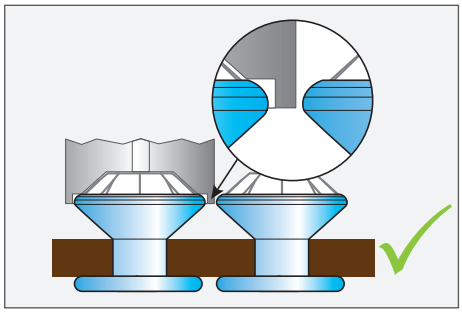
It is important to make sure that the Rivets are properly aligned with the dies, so as to avoid any problems during the mechanical application process.

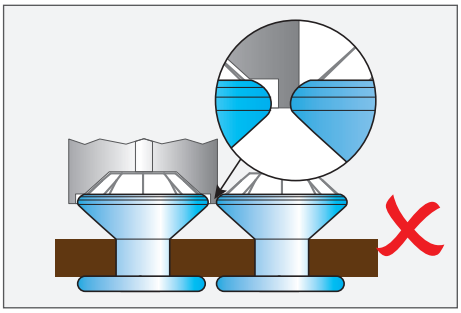




MINIMUM GAPS

During application, the Rivet is entirely surrounded by the upper die. To prevent neighbouring Rivets from being damaged, be sure to check the minimum space required by the die when calculating the space between each Rivet.





Important Information

POSSIBLE PROBLEMS, THEIR CAUSES AND RECOMMENDATIONS

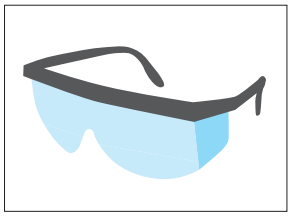
The table below lists possible problems encountered during mechanical application, followed by a list of probable causes and how to fix them.

PROBLEM	CAUSE
The Rivets are not properly attached to the carrier material.	**1, 2, 3, 4, 5**
The carrier material ripples or crinkles.	**2, 3, 4, 5**
The dies cannot be inserted into the fly press.	**3, 6, 7, 8**
The dies cannot be unscrewed.	**6, 8, 9**
The Rivets' crystals break.	**2, 3, 4, 5, 10**

CAUSE	RECOMMENDATION
1 The pressure is too low.	Increase the pressure when applying the product and adjust the stop.
2 The carrier material is too thick or there are too many layers.	A hole can be pre-punched.
3 The die (the spare part) of the upper die is defective or improperly attached.	Check the die (the spare part) and replace or repair it if necessary.
4 The wrong dies are being used.	Adjust dies according to Rivet.
5 The dies are not attached correctly.	Check to make sure the Rivets are placed properly on the dies, then slowly turn the Fly Press handle to make sure that the upper and lower parts of the applicator meet as they should.
6 The Fly Press and dies do not fit together.	Check the thread size of both the Fly Press and the upper die to make sure the sizes match.
7 The upper die cannot be attached.	Check the fastening screw on the upper die; it may be screwed too tightly.
8 The die (the spare part) may be damaged.	Check to see if the die is defective and replaces if necessary.
9 The screw on the upper die has broken off.	Carefully loosen the screw using pliers. It is necessary to oil and centre the die once in a while.
10 The pressure is too high.	Use a bit less pressure when applying the Rivets and adjust the stop.

CARE INSTRUCTIONS

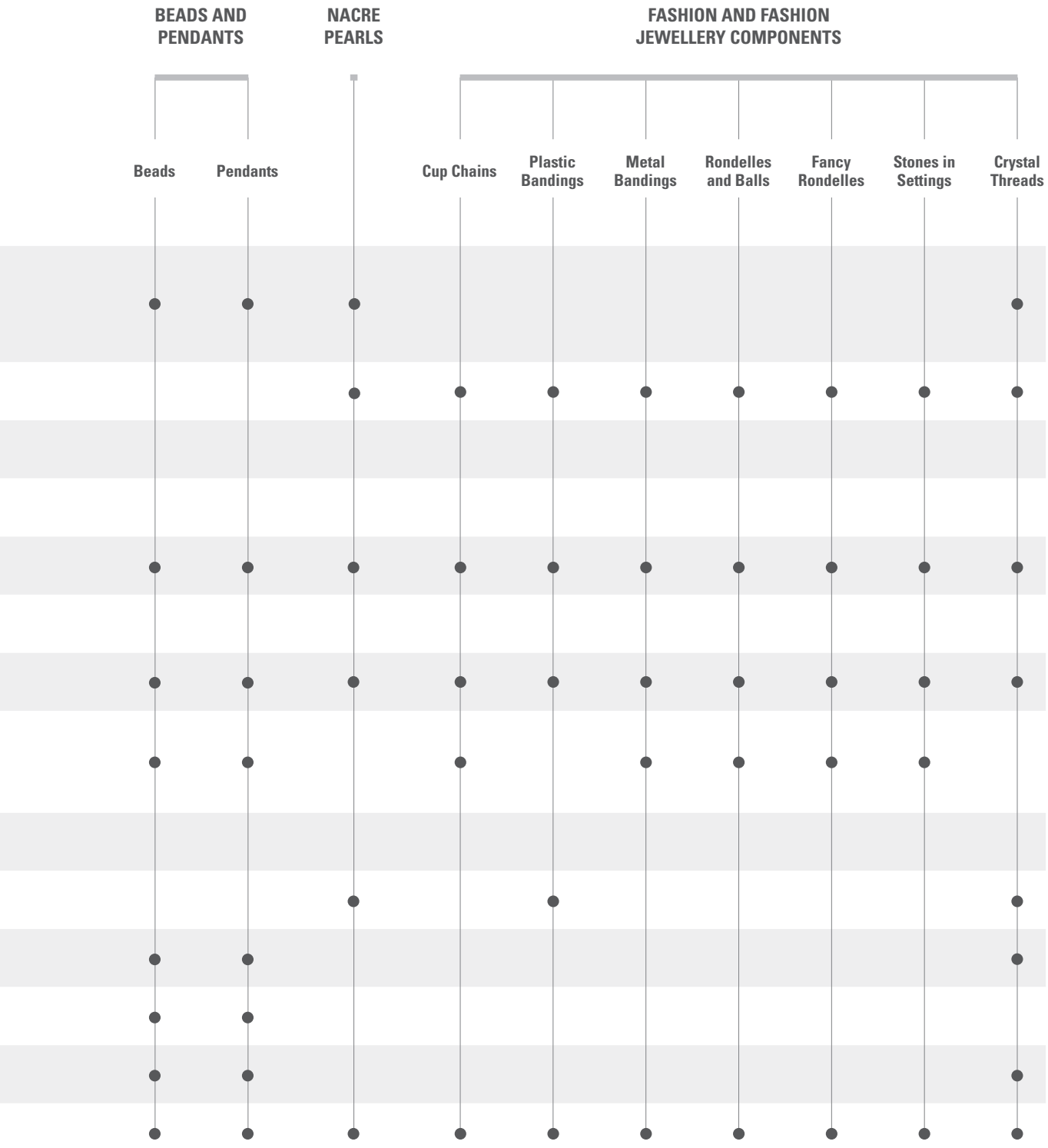
Proper care will ensure the high quality and durable application of PRECIOSA Rivets.



It is recommended to wear protective eyewear during mechanical application to avoid any injury.

GENERAL RECOMMENDATIONS

			FASHION JEWELLERY STONES		FLAT BACK STONES		
			Round Stones, Channel	Fancy Stones, Ball	No Hotfix Stones	Hotfix Stones	Sew-on Stones
Stones with coatings – use only gentle wash cycle (30 °C).		Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended.	●	●	●	●	●
		Turn inside out and use mild laundry detergent.					
		Do not wash!					
		Chlorine bleach may be used.					
		Do not use chlorine bleach!	●	●	●	●	●
		Turn inside out and dry at reduced temperature.					
		Do not tumble dry!	●	●	●	●	●
		Iron inside out using a silk/polyester viscose setting. Ironing the textile inside out and using a pressing cloth is recommended.					
		Iron inside out using a wool setting.			●	●	●
		Do not iron! Do not iron directly over the crystals.					
To protect the crystals as much as possible, the use of a soft wash bag is recommended.		The textile can be gently dry-cleaned using perchlorethylene. Turn inside out.	●	●			
		The textile can be gently dry-cleaned using hydrocarbon.	●	●	●	●	●
		The textile will withstand gentle professional wet cleaning. Turn inside out.	●	●	●	●	●
		The textile may not be dry-cleaned.	●	●	●	●	●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COMPONENTS

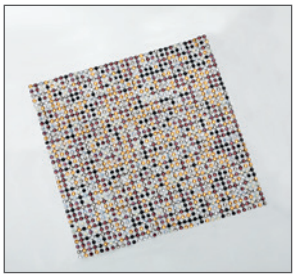
APPLICATION MANUAL

Crystal Net

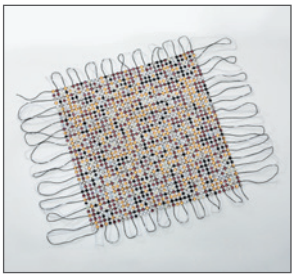
PRECIOSA

Crystal Net Application Methods

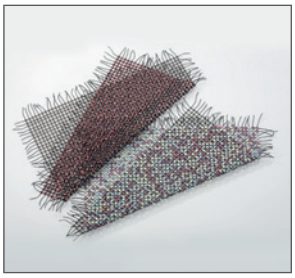
Soft, light and flexible, our stunning Crystal Net is the first innovation of its kind and literally covers whatever it touches in authentic Bohemian crystal. Each piece is a customizable masterpiece of a combination of up to 10 different stone colors and sizes, allowing limitless possibilities and making the Crystal Net a high fashion frontrunner. Made with our premium quality, lead-free MC Chaton Rose MAXIMA hotfix stones, the Crystal Net comes in eight stone sizes, (ss 10 – ss 48), and our full range of colors and coatings.



Neat edge



Looped edge



Loose edge

Filled-in edge
(for machine sewing)

MACHINES, TOOLS AND AIDS

Tools for sewing

By hand - thick needles, rubber string or cotton

Household sewing machine

Tools for hotfix application

Hand-held applicator

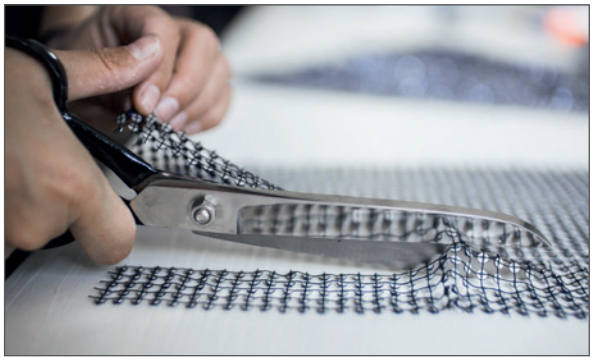
Dry iron

Heat press

Preparation & Cutting

Our Crystal Net is able to be cut into any desired shape, size or length.

1. Customizable according to any textile pattern.



2. Light weight and easy to handle.

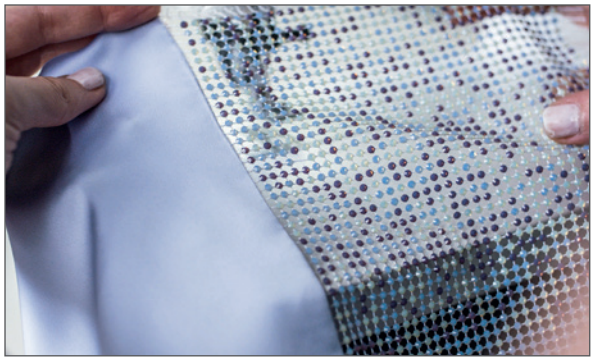
Machine Sewing

Appropriate for household sewing machines, (filled-in edge recommended).

1. Align the sewing machine with the edge.

2. Sew along the edge.

3. End sewing with backwards motion as with any textile.

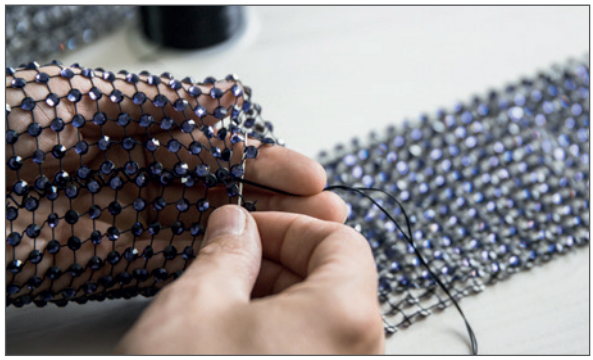


4. Crystal Net joined with textile.

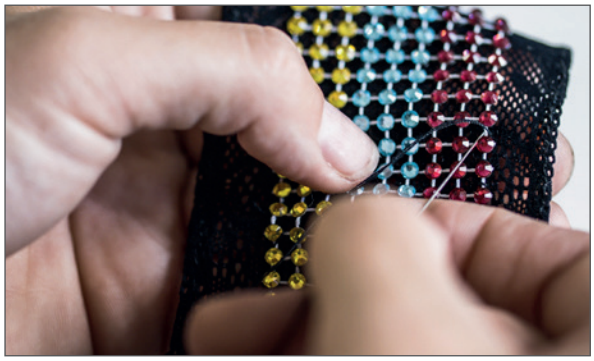
NOTE: Crystal Net with a filled-in edge cannot be applied by iron or heat press, which could cause possible damage.

Sewing by Hand

Crystal Net can also be sewn together and applied to textile, both by hand.



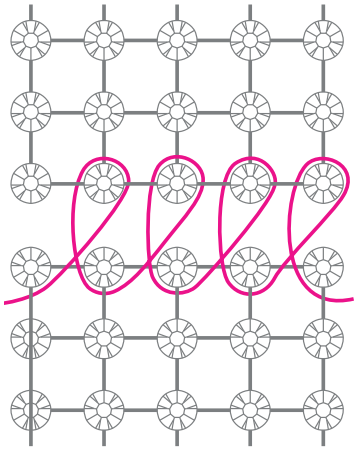
1. Crystal Net being sewn together.



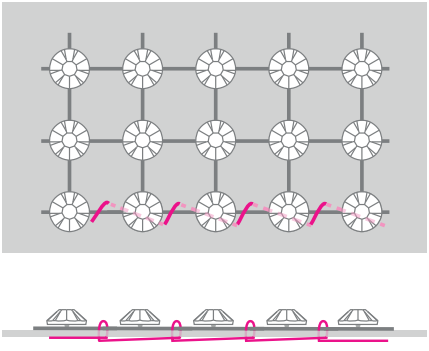
1. Crystal Net being sewn to textile.

Recommended stitching technique

Crystal Net to Crystal Net

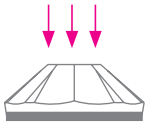


Crystal Net to textile



Hotfixing

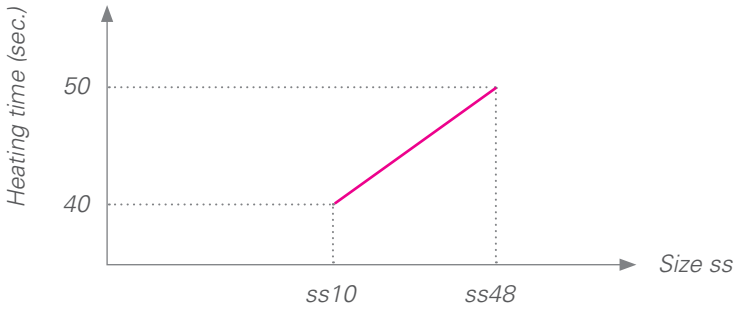
Overview of temperature and time combinations for different materials (MC CHATON ROSE MAXIMA Hotfix)



Front side (ss20)

String type	Fabric	Temperature	Time (sec.)
elastic/non-elastic	cotton, chiffon, PES, silk, wool, denim	150°C	40

Time of heating depends on the size of the Chaton Rose



TIPS AND TRICKS

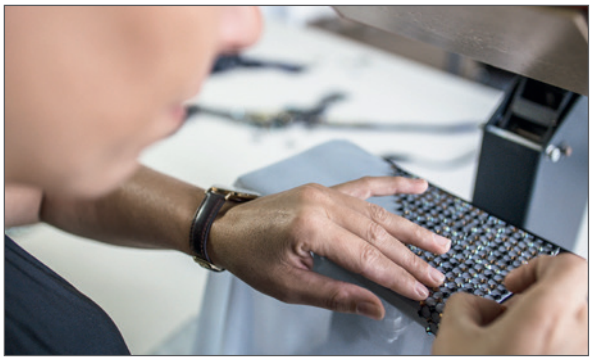
- To achieve optimal results, it is necessary to test all application parameters in advance on samples of materials chosen for the application. Use the parameters in the Application Time table for setting approximate values.
- Please note that the glue is cured and the bond between the applied stone and the base material becomes firm only 24 hours after the application. Until then, products containing hotfix stones should be handled with care; it is not recommended to check the bond quality or to wash the product.

Warning:

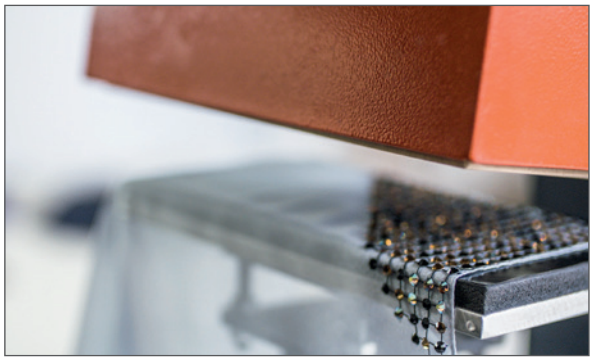
Do not steam or iron textile to which the Crystal Net has been applied.

Heat Press

For frequent and large-scale application of Crystal Net, a heat press is recommended.

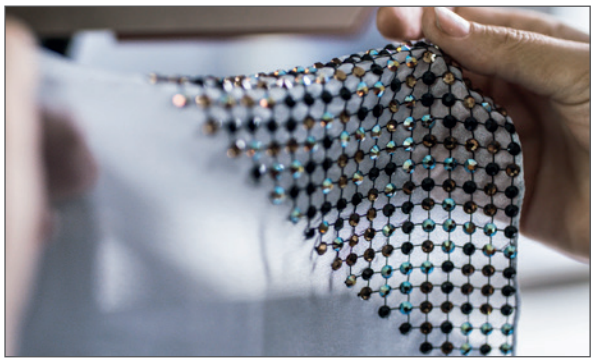


1. Place and adjust the crystal net as desired.



2. Correctly placed Crystal Net on textile.

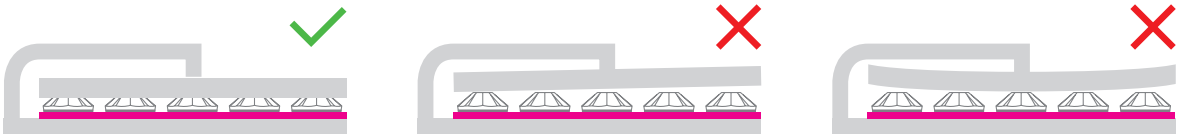
3. Heat for the recommended length of time according to the table found on the opposite page.



4. Crystal Net applied to textile.

Positioning of Heat Press Plates

Make sure that the upper and lower plates are placed parallel to the fabric and stones so that the temperature and pressure are evenly distributed.

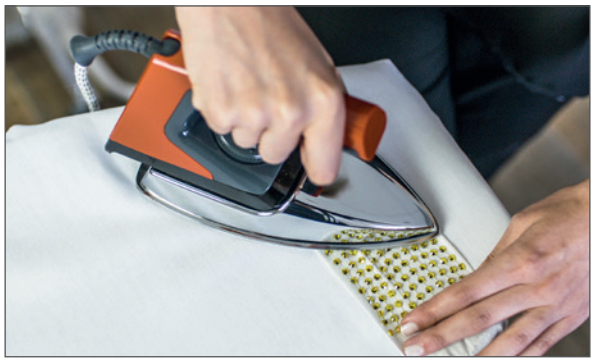


Plates are parallel - correct!

Plates are not parallel - incorrect!

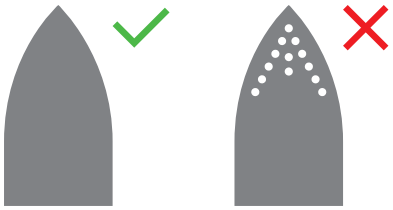
Dry Iron

Crystal Net is easily applicable with a household dry iron, (without steam). For best results, place a sheet of baking paper between the iron and the stones during application.



1. Place the Crystal Net on the textile.

2. Carefully apply pressure; when applying pressure to a different spot, lift the iron and replace, (avoid the back-and-forth motion)



Advantage:

✓ A dry iron can be used to apply any/all hotfix Chaton Roses.

Disadvantage:

✗ Application can be uneven because it is done manually, as opposed to that achieved by a heat press.

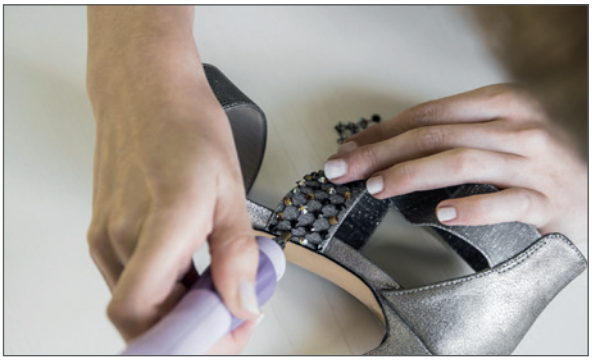
Warning:

- Pressure and temperature regulations may vary.
- Pressure accuracy depends on the individual feeling of the person carrying out the application.
- Double checking the iron to make sure that it does not have any steam holes is recommended.
- Make sure to carry out the application on a firm, flat and even iron-safe padded surface.

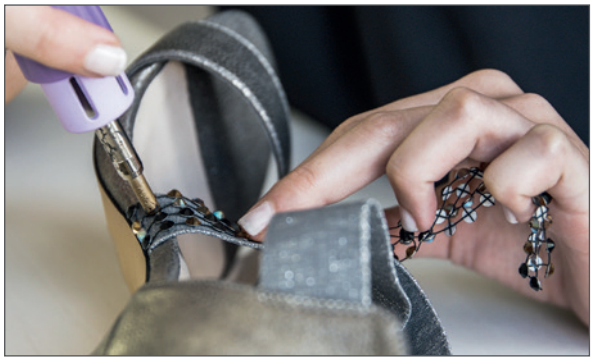
Hand-held Hotfix Applicator

Hotfix by a hand-held applicator is also possible but is generally only recommended for DIY projects and individual or small-scale application of Crystal Net.

1. Cut the Crystal Net into the desired shape.



2. Begin by attaching/hotfixing the edge of the Crystal Net first.



3. Continue by hotfixing one stone at a time in the direction of the opposite edge.

4. It is recommended to use the application head one size smaller than that of the stone being applied so as not to burn the string or the textile.

Note:

- When using a hand-held applicator, always closely follow the instructions of the manufacturer, especially with regard to the temperature setting.
- Learn as you go! Base the application time and proper temperature setting on previous experience working with the base material.
- Hand-held applicators are generally only recommended for DIY projects.

Heat Press Manufacturers

PRODUCER	TYPE OF MACHINE	LOCATION	WEB SITE
Bestblanks	Heat press	USA	www.bestblanks.com
Jesse J Heap & Son Inc.	Heat press	New Jersey, USA	www.jesseheap.com
PRO World	Heat press	Philadelphia, USA	www.proworldinc.com
RPL Supplies, Inc.	Heat press	New York, USA	www.rplsupplies.com
Stahls Europe GmbH	Heat press	Dillingen, Germany Ceské Budejovice, Czech Republic	stahlseurope.com
Teva	Heat press	Innsbruck, Austria	www.teva-organisation.com
Thermopress Europe	Heat press	Ransbach-Baumbach, Germany	www.thermopress.de
Wagner GmbH	Heat press	Geretsried, Germany	wagner-transferpressen.de
Avetech	Heat press	Prague, Czech Republic	www.avetech.cz
Lotus press	Heat press	Milan, Italy	www.lotustransfers.com
ColDesi, Inc	Heat press, Ultrasonic device, Stone setting machine	Florida, USA	www.coldesi.com
Zhejiang Huangyan Garment Machinery Factory	Heat press, Ultrasonic device	Shanghai, China	www.ji-feng.com
Geo Knight & Co., Inc.	Heat press	Massachusetts, USA	www.heatpress.com

Dry Iron Manufacturers

PRODUCER	WEB SITE
BOSCH	www.bosch-home.com
ETA	www.etasince1943.com
Tefal	www.tefal.com
Philips	www.philips.com
Orava	www.orava.eu
Severin	www.severin.com

Important Information

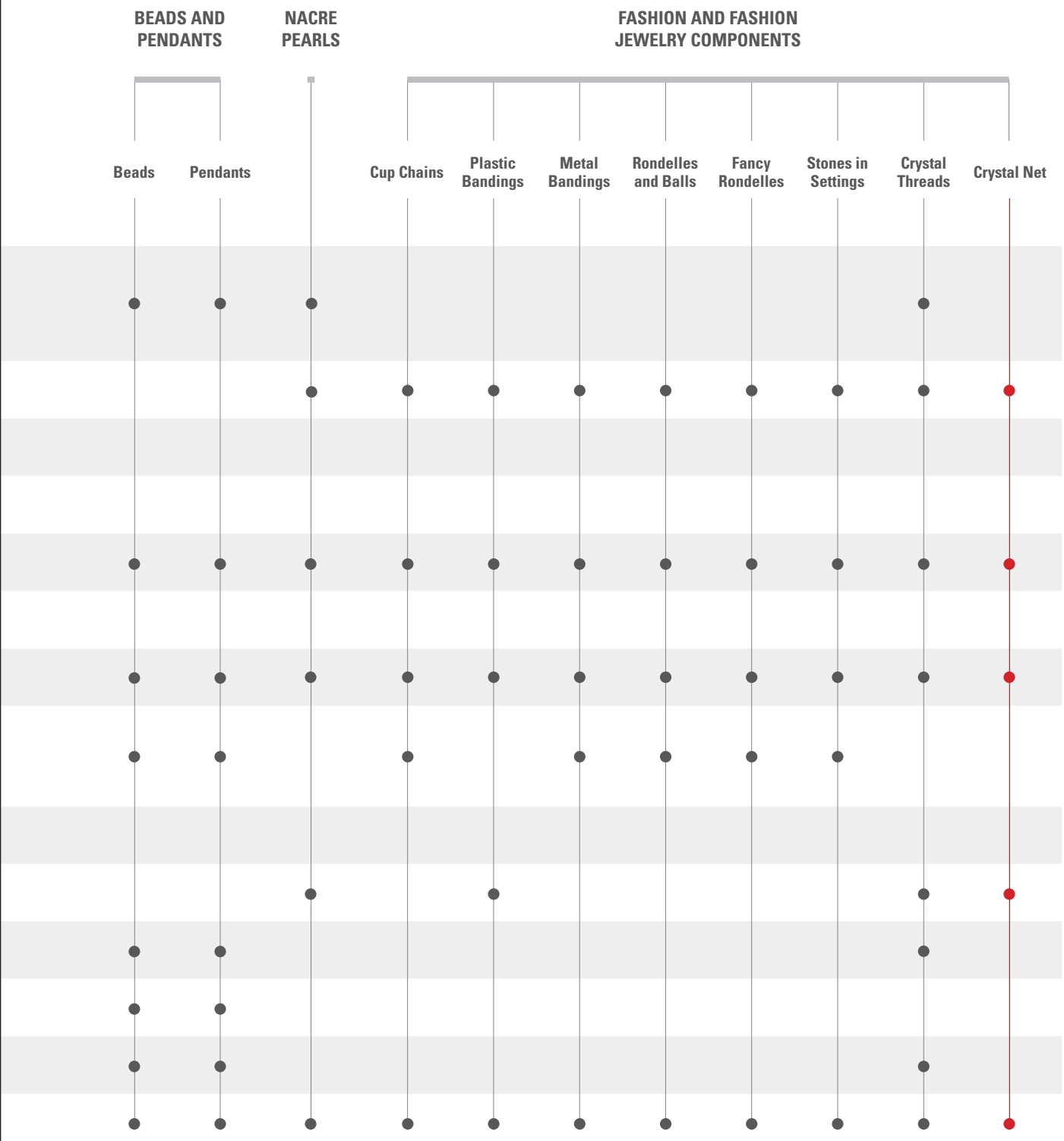
POSSIBLE PROBLEMS, THEIR CAUSES AND RECOMMENDATIONS

PROBLEM	CAUSE
The stone does not adhere to the base material.	**1, 2, 3, 4, 5, 6**
The glue spreads around the stone.	**7, 8, 9, 10**
The stone does not hold on seams or layered materials.	**1, 2, 3, 4, 5, 6**

CAUSE	RECOMMENDATION
1 *The application temperature is too low.*	Increase the temperature by at least 10 °C (20 °F).
2 *The application time is too short.*	Prolong the application time. In case of a thick or multilayer material apply the heat from the front side through the stone.
3 *The pressure is too low.*	More likely to occur when applying to thicker material - increase pressure.
4 *Uneven distribution of heat on the heated surface.*	Check the temperature with a measuring tape or a laser thermometer. If the difference is higher than ca 5 °C (10 °F) repair the heat press.
5 *The heat press closes askew.*	Repair the heat press.
6 *The application pad is not suitable.*	Test different application pads and choose the most suitable one.
7 The application temperature is too high.	Lower the temperature by at least 20 °C (40 °F).
8 The application time is too long.	Shorten the application time.
9 The pressure is too high.	Decrease the pressure of the heat press.
10 The application pad is too hard.	Use a softer application pad.

GENERAL RECOMMENDATIONS

			FASHION JEWELRY STONES		FLAT BACK STONES		
			Round Stones, Channel	Fancy Stones, Ball	No Hotfix Stones	Hotfix Stones	Sew-on Stones
Stones with coatings – use only gentle wash cycle (30 °C).		Turn inside out, choose a gentle wash cycle and use mild laundry detergent. To protect the crystals as much as possible, the use of a soft wash bag is recommended.	●	●	●	●	●
		Hand wash only. Turn inside out and use mild laundry detergent.					
		Do not wash!					
		Chlorine bleach may be used.					
		Do not use chlorine bleach!	●	●	●	●	●
		Turn inside out and dry at reduced temperature.					
		Do not tumble dry!	●	●	●	●	●
		Iron inside out using a silk/polyester viscose setting. Ironing the textile inside out and using a pressing cloth is recommended.					
		Iron inside out using a wool setting.			●	●	●
		Do not iron! Do not iron directly over the crystals.					
To protect the crystals as much as possible, the use of a soft wash bag is recommended.		The textile can be gently dry-cleaned using perchlorethylene. Turn inside out.	●	●			
		The textile can be gently dry-cleaned using hydrocarbon.	●	●	●	●	●
		The textile will withstand gentle professional wet cleaning. Turn inside out.	●	●	●	●	●
		The textile may not be dry-cleaned.	●	●	●	●	●


BEADS AND PENDANTS
NACRE PEARLS
FASHION AND FASHION JEWELRY COMPONENTS
Beads
Pendants
Cup Chains
Plastic Bandings
Metal Bandings
Rondelles and Balls
Fancy Rondelles
Stones in Settings
Crystal Threads
Crystal Net

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