FOREWORD

Your dream has come true.

You are now the proud owner of a Pfaff Automatic 93, the sewing machine which will enable you to master all ordinary sewing and darning jobs that may come up in a home. In addition, your machine can sew a large number of beautiful decorative designs completely automatically.

This instruction book will help you understand the machine and give you valuable tips to make sewing more fun for you.

Even if you are an experienced seamstress, you will find this book a valuable guide to easy sewing.

Follow these simple instructions and familiarize yourself with the exclusive features of your machine. You will find sewing exciting on your easy-to-operate Pfaff 93.

If you have any sewing problems, please contact your Pfaff dealer. He will be glad to help you at any time.

G. M. PFAFF AG
Karlsruhe-Durlach Branch
Operation of Your Sewing Machine

Engaging the Sewing Mechanism

Hold balance wheel and turn stop motion knob clockwise (as indicated by black arrow).

Disengaging the Sewing Mechanism

Hold balance wheel and turn stop motion knob counter-clockwise (toward you). The sewing mechanism is disengaged for bobbin winding.

The Workplate

The plate is used to enlarge the work area for ordinary sewing. Before you attach the workplate, raise the presser bar lifter and turn the balance wheel until the take-up lever is at its lowest position (see arrow at right).

Hold workplate level and push it between free arm and sewing foot ...

... tilt it slightly so that its lugs enter the holes in the machine base (see arrows). Swing out the support and lower workplate into position.
**Electrical Information**

**Power Drive and Sewlight**
Push plug 1 into receptacle 2 on back of machine, and plug 3 at other end of cord into the wall outlet. Cord 4 leads to the foot control.

**Foot-driven machines**
have merely a sewlight cord whose plug is pushed into the wall outlet. To switch on the sewlight, push button on face cover. Mount driving belt. Before you drop the machine, remove the belt from the stand wheel, pulling it to the right.

**Motor Disengaging Mechanism**
Power-driven machines feature a lever underneath the balance wheel which serves to swing the motor to its operative position. To do this, flick the lever down. After you have completed sewing, flick the lever to its top position in order to return the motor to the inoperative position.

With the motor swung out of engagement, all machines set up on treadle stands can be driven by foot power.

**Foot Control**
Place the foot control under the cabinet within easy reach of your foot. Rest the right foot on the control pedal and press. The harder you press, the faster the machine will run.

On some sewing cabinets, the foot control cord can be passed through the opening in the bedplate extension.

**Sewing Speed**
The Pfaff rotary hook enables you to sew at speeds of over 1200 stitches a minute. Such high speeds are ideal for straight stitching operations.

Wide zigzag stitches and Automatic embroidery work require a lower speed which is obtained by pressing the foot control only slightly.
**Straight Stitching**

For straight-stitch sewing set:
- Lever A = 0
- Lever B = Center

(For straight stitching, too, a fashion disc should be inserted in the machine.)

Control G regulates the stitch length. For detailed instructions please refer to page 20. To backtack the end of a seam, simply depress the finger-tip control.
Zigzag Sewing

If you want to switch from straight (A on “0”) to zigzag stitching, insert the zigzag disc, and turn lever A to desired stitch width (indicated by numbers 1 to 4).

For most sewing jobs it is best to leave zigzag disc (A) in the machine so that you can quickly change over from straight to zigzag stitching. Lever B changes the position of the needle in the needle plate slot. Thus the stitching can be moved from the center to the left or right of the slot, as desired.

Control G lengthens zigzag stitches or packs them more closely together (satin stitch).

The position of lever B (left, center, right) indicates the position of the needle in the needle plate slot.
Functional Stitches

Three exchangeable fashion discs are furnished with each machine. These discs are used to make the zigzag stitch, the elastic serpentine stitch, and the blindstitch, and are marked as follows:

Disc A = zigzag stitch
Disc B = elastic serpentine stitch
Disc C = blindstitch

Ornamental Stitches

Fashion discs D, E, F and G serve to produce various decorative designs. Countless pattern variations are possible by changing both the stitch length and the stitch width.
Changing the Fashion Discs

Always jerk stitch width lever A to "0" before you insert or remove a disc. Turn thumb nut R counter-clockwise to release the disc in the zigzag mechanism, then pull it up and take it out.

Push the disc onto the stud and rotate it until stud H snaps into one of the slots. Then tighten the thumb nut by turning it clockwise.

Set the machine for the desired stitch width and stitch length.
Removing the Bobbin Case

Raise needle to its highest point and open free arm cover.

Lift latch k with the thumb of your left hand and pull out bobbin case with bobbin. When you release the latch, the bobbin drops out.
**Winding the Bobbin**

Disengage the sewing mechanism (see page 4) and flick presser bar lifter to highest position. Raise the spool pins to the vertical position. Place spool of thread on one of the spool pins and set bobbin on bobbin winder spindle so that the key at base of spindle enters slot in bobbin.

**Threading the Machine**

Lead the thread from spool 1 through both front holes of thread retainer 2 and thence to the bobbin on the bobbin winder spindle. Pass end of thread through slot in bobbin, from inside. Press bobbin winder lever toward bobbin and start winding. Having wound a few turns, break off end of thread. Bobbin winder will stop automatically when bobbin is full.

Since the upper thread is passed through the rear holes of the four-hole thread retainer, you can wind the bobbin from a second spool without unthreading the needle.

Before you drop the machine into the cabinet or place it in the carrying case (portable machines) the spool pins should be swung forward to the horizontal position.
**Inserting a Full Bobbin into the Bobbin Case**

1. As shown in illustration 1, hold bobbin in left hand so that the thread end falls from the top down toward you, and insert bobbin into bobbin case.

2. Hold the bobbin firmly in the bobbin case and pull the thread into the case slot.

3. Pull the thread under the tension spring until it emerges from the opening at the end of the spring. Leave about three inches of thread hanging from the bobbin case.

4. Hold the case by its open latch so that the bobbin cannot fall out.
**Inserting the Bobbin Case**

Raise take-up lever to its highest point and lift the latch with the thumb and forefinger of your right hand. Turn bobbin case until slot points up (see arrow). Place bobbin case on center stud of hook.

In replacing the bobbin case, it is best to hold the loose end of thread so that it will not get jammed between bobbin case and hook. Release the latch and press against bobbin case until you hear it snap into place. An improperly inserted bobbin case will cause needle breakage.
### Types of Fabrics

<table>
<thead>
<tr>
<th>Types of Fabrics</th>
<th>Mercerized Cotton</th>
<th>Silk</th>
<th>Needle Size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fine Fabrics</strong></td>
<td>80 to 100</td>
<td>0 to 000 twist</td>
<td>60 or 70</td>
</tr>
<tr>
<td>such as georgette, chiffon, batiste, voile, lawn, silk.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lightweight Fabrics</strong></td>
<td>70 to 80</td>
<td>A &amp; B twist</td>
<td>80</td>
</tr>
<tr>
<td>such as dress silks and cottons, sheer woolens, shirting, draperies.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Medium Fabrics</strong></td>
<td>50 to 70</td>
<td>B &amp; C twist</td>
<td>90</td>
</tr>
<tr>
<td>such as lightweight woolens, madras, muslin, brocades, heavy silks and rayon, gabardine.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Heavy Fabrics</strong></td>
<td>40 to 50</td>
<td>C &amp; D twist</td>
<td>100</td>
</tr>
<tr>
<td>such as coating, denim, corduroy, slipcover fabrics, bed tickings, lightweight canvas.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Synthetics, Rayon, Acetate</strong></td>
<td>Determined by weight of fabric 40 to 50</td>
<td>Determined by thread size 60 to 80</td>
<td></td>
</tr>
<tr>
<td>including nylon, orlon, dacron, plastics, etc.</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

### Recommended Needle and Thread Sizes

The appearance of the finished seam is dependent on the correct relationship between needle, thread and fabric. Select the proper thread sizes and needles from this chart.

The same size threads should be used in the needle and on the bobbin. Some experienced seamstresses prefer a somewhat thinner bobbin thread. However, the bobbin thread never should be thicker than the needle thread.

For embroidery and darning work, a No. 50 thread should normally be used.
**Important Facts about Needles**

On Pfaff 93 sewing machines, System 130 R, flat-shank needles are used for all ordinary sewing and embroidery work. The last column in the chart on page 14 gives you the needle size required for the material in hand. Genuine Pfaff needles, System 130 R, are available from every Pfaff dealer. Bent or blunt needles should not be used.

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**Changing the Needle**

Bring needle bar to its highest point and lower sewing foot.

Loosen needle set screw a half a turn and pull old needle out of needle clamp.

Make sure that the flat side of the shank faces toward the back and long groove toward you. Insert new needle into opening of needle clamp and push it up as far as it will go. Tighten needle set screw a.
Upper Threading

Raise the spool pins to the vertical position and place a spool of thread on one of them. Lace the thread through the two rear openings of thread retainer 2 (see illustration).

Pull thread between any two of tension discs 3, as illustrated, and jerk it far over to the right so that it slips properly into the slot and under the thread check spring. At the same time, press the thread between spool and tension against the top of the machine.

Bring take-up lever 4 as high as it will go and pass thread from right to left through the hole at its end and into slot at left of thread guide 5. Then thread needle, front to back.
Correct Tension Regulation

Balanced tensions are essential for sewing. If your tension is correct, you will have perfect seams as sketched below (III).

- **Sketch I** – The threads interlock on the underside of the fabric.
  - **Cause**: Upper tension too loose or lower tension too tight.

- **Sketch II** – The threads interlock on the surface of the fabric.
  - **Cause**: Upper tension too tight or lower tension too loose.

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Drawing Up the Bobbin Thread

Hold needle thread lightly in your left hand. Turn balance wheel toward you until the needle moves once down and up again. Lightly pull needle thread to draw bobbin thread up through the needle hole. Place both threads back under the sewing foot.
Regulating the Thread Tension

The bobbin thread tension has been set for a medium grade and need not be adjusted for all ordinary sewing operations. If a special sewing operation should require a looser or tighter tension, turn the small knurled screw on the bobbin case with the tip of your thumb as follows:

- Turn it left \(<\) for looser tension.
- Turn it right \(>\) for tighter tension.

Determine whether the bobbin thread tension is set for a medium grade by holding the thread end between thumb and forefinger and letting the bobbin case hang freely. The tension should be strong enough to keep the bobbin case from being pulled down by its own weight. However, as you jerk your hand slightly, the bobbin case should gradually slide down. Do not turn the knurled screw too far to the left to keep it from falling out. Choose the lower tension slightly stronger when doing ornamental stitching to be sure you always have a neat satin stitch on the right side of the fabric.

The final stitch appearance can be regulated by the upper tension dial, as follows:

- Turn left \(<\) for looser tension.
- Turn right \(>\) for tighter tension.

The upper tension is so designed that all grades of tension — loose to tight — can be covered with one complete turn of the tension dial. The numbers on the tension dial indicate different degrees of tension. The higher the number, the greater the tension. Only in very rare cases will it be necessary to reset the tension. For ordinary sewing, the upper tension should be set between 3 and 5. Your upper tension has a third tension disc for two-needle work.
Stitch Length Regulation

The stitch length control serves to regulate the stitch length and to limit it in sewing backwards.

The numbers on the control indicate the stitch length (the higher the number, the longer the stitch). When the control is set on "0", the machine ceases feeding.

To regulate the stitch length, turn the control until the number indicating the desired stitch length is opposite the mark on the left edge of the slot. (The position of the mark is indicated by an arrow in the illustration.)

Reverse Sewing

To sew in reverse, simply press the finger-tip control down. When the control is released, the machine resumes forward sewing.

This feature is ideal for backtacking the beginning or end of a seam and for darning rips.
Changing the Sewing Foot

Lift both needle and presser bar to their highest positions and turn sewing foot thumb screw b to the left. Tilt the foot sideways and pull it down.

Reverse procedure to slip on new foot and tighten screw b securely.
Preparing Your Machine for Darning

Raise the needle and remove the sewing foot. Put the rear end of your brush under the edge of the needle plate and lift until the press stud snaps out.

Turn needle plate upside down and replace so that raised portion is at front (see illustration). Press down stud, thread needle with embroidery thread or darning wool and lower presser bar lifter.

Now you can embroider and darn without presser foot, moving the work freely by hand.
Darning and Embroidery Foot

Remove the sewing foot. Attach darning foot No. 93-100134-91 from the rear.
Hold spring clip c so that it is behind the needle set screw, and tighten screw b.

All-Purpose Sewing Foot
(with Clear-View Shoe)

All-purpose sewing foot No. 93-100179-00 is attached as instructed on page 21.
The transparency of its shoe facilitates all sewing operations where it is important to watch the needle penetrate the fabric.
Special application possibilities are discussed in the second part of this book under the heading "Using Sewing Feet and Attachments".
Care and Maintenance

Longevity and smooth machine performance are dependent on regular and proper cleaning and oiling.

Use PFAFF sewing machine oil only. Never lubricate machine with animal or vegetable oils. All moving and rotating parts require regular lubrication.

To oil mechanism in free arm, remove sewing foot, raise needle and swing out free arm cover. Turn thumb nut r until free arm top cover is loose. Now lift the top cover and pull it out lengthwise of the arm. The principal oiling points are marked by arrows in the illustrations on these pages.

To replace and secure top cover, proceed in reverse order.

From time to time, lubricate the needle bar frame bearings in the sewing head.
There are two openings in the rim of the stitch width dial, one on the left and the other at the back (see arrows). These openings are the oil holes of the zigzag mechanism.

Make sure you put only one drop of oil into the oil hole located on the left of the balance wheel, if there is such an oil hole on your machine.

Do not lubricate the bobbin winder.

The raceway in the sewing hook is the most important oiling point. Put one drop of oil into the raceway each day you sew (see picture at top right).

From time to time, remove the needle plate and clean the machine feed with a soft brush. Take a toothpick and remove accumulations of packed lint. Take out the bobbin case and the bobbin and clean the vicinity of the sewing hook.

Before you begin to oil the mechanism under the arm top cover and at the needle-bar end of the machine, remove the dirt and lint which has accumulated on these parts.
Changing the Light Bulb

The built-in 15-watt sewing light illuminates the area of stitching perfectly. To change the light bulb, remove the face cover, push the bulb into its socket, turn left, and pull out. When inserting sew light bulb, be sure to slide bulb pins into socket slot. Press bulb in and turn right.

Removing the Face Cover

To change the light bulb or all the parts at the needle-bar end, remove the face cover by pulling it upwards.

Replacing the Face Cover

Slip tip d into slot e and push face cover up until it snaps into place.
Trouble Shooting

1. Machine Skips Stitches

Cause:
Needle incorrectly inserted.
Wrong needle.
Needle bent.
Machine threaded improperly.
Needle too fine or too thick for the thread.

Remedy:
Push needle up as far as it will go and be sure that the long groove faces toward you, and flat side of shank away from you.
Choose the correct needle from chart on page 14. (For ordinary sewing, use System 130R needles.)
Insert new needle.
Check and correct threading as instructed on pages 16 and 17.
Use correct needle and thread (see chart on page 14).

2. Needle Thread Breaks

Cause:
The above mentioned may cause thread breakage.
Thread tension too tight.
Poor, knotty or rotten thread used.
Hook raceway is jammed with thread or needs oiling.
Burrs or sharp edges on needle plate slot.

Remedy:
See remedies listed under 1. above.
Adjust tensions as instructed.
Use good quality threads only.
Clean and oil hook raceway.
Polish needle plate slot with fine emery cloth.
3. Needle Breaks

Cause:
- Bent needle strikes point of sewing hook.
- Needle too thin or thread too heavy.
- Fabric pulls needle so it bends and strikes needle plate.
- Bobbin case inserted incorrectly.

Remedy:
- Replace needle at once to prevent further damage.
- Use correct needle and thread sizes.
- Don’t force the feeding motion. Guide the material lightly.
- Push bobbin case until you hear it snap into place.

4. Faulty Stitch Formation

Cause:
- Improper tension.
- Thread too heavy, knotty or hard.
- Bobbin unevenly wound.
- Pieces of thread between tension discs.

Remedy:
- Adjust tensions as instructed.
- Use only first-rate thread – the correct size for the needle and fabric.
- Don’t run thread over finger when winding the bobbin.
- (For instructions see page 11).
- Raise presser bar lifter and remove thread.

5. Machine Feeds Improperly

Cause:
- Machine does not feed because stitch length control set on “0”.
- Accumulations of lint packed between feed teeth.

Remedy:
- Regulate stitch length, as desired.
- Take off needle plate and remove lint with a stiff brush.

Cause:
Hook raceway lacks oil or is obstructed by pieces of thread.
Mechanism clogged by inferior oil.
Bobbin winder working while sewing.

Remedy:
Clean and oil hook raceway.
Use only Pfaff sewing machine oil – never salad oil or glycerine.
Stop bobbin winder.

7. Machine Fails to Sew Zigzag or Ornamental Stitch Desired

Cause:
Wrong fashion disc inserted or none at all.

Remedy:
Jerk stitch width lever to “0” and insert proper fashion disc.
For straight stitching, too, a fashion disc should be inserted in the machine (see pp. 6, 7 and 9).

8. Motor Idles

Cause:
Motor disengaging lever raised.

Remedy:
Flick lever down (see page 5).

Thread Jamming
The Pfaff rotary hook will not normally jam, even if the machine should be handled improperly. If thread should happen to jam in the hook raceway, the power of the motor in most instances will be sufficient to overcome hard working of the mechanism.
If this action should not free the jammed thread, put a dop of kreosene into hook raceway, jerk the balance wheel back, then rock it back and forth.
Zipper Insertion

Machine Setting: A=0; B= -

Pin or baste closed zipper on wrong side of fabric. Position of zipper depends on whether or not you want the edge of the fabric to overlap the zipper. Turn fabric to right side. Run a straight seam close to left edge of zipper, stitch across end and up the other side in one continuous operation. Use right edge of foot as a guide.

Quilting

Machine Setting: A=0; B= -

Edge stitcher No. 847.600 used with the quilting gauge sews parallel rows of stitching over the entire surface of the fabric. Always guide the gauge finger along the preceding row of stitches.

Attractive tea cosies, slippers, seat pads and covers can be quilted.
Flat Felled Seams

Machine Setting: A=0 or 2; B=

Flat felled seams are used to durably join two pieces of fabric. They are made in two operations.

Flat felled seams usually are straight-stitched. Narrow zigzag stitches are used for felling on elasticized fabrics only.

First Seam
Lay pieces together with the wrong sides facing and the bottom piece protruding 1/8 inch. Feed both pieces into felling foot, as illustrated, so that the bottom fabric is folded over edge of top piece and stitched down. Make sure that protruding seam allowance is not folded twice.

Second Seam
Open the two pieces, place them under the needle right side up, insert seam ridge into felling foot opening, and stitch down to the left. Make sure that second seam is placed close to the edge but not beyond it.

The felling foot has a needle slot, rather than a needle hole, to permit zigzag felling.
Hemming

Machine Setting: A = 0 or 2 to 3; B = 4

The hemmer foot is indispensable if you want to sew a uniform hem. You can hem with straight or zigzag stitches, depending on the type of fabric you are using. Clip off the corner of the fabric to facilitate insertion into the hemmer foot curl. Feed fabric so that the raw edge is in line with the left edge of the hemmer foot. If you feed less, the fabric will not be folded twice and the raw edge will show.

Avoid ugly ends by slowing down feeding. To do this, press the fabric against the needle plate on the left side of the foot before you come to the end of the hem.
Overcasting Edges

Machine Setting: A=2 to 4; B=

Overcasting prevents frayed edges. Use a long wide zigzag stitch and sew edge with the needle taking one stitch into the fabric and the other over its edge (normal tension setting). You may overcast edges after fabric is cut and before the pieces are joined.

Butt Seaming

Machine Setting: A=3 or 4; B=

Two similar pieces of fabric which do not ravel easily may be butted together and joined with zigzag stitches. Worn bed sheets may be mended this way. Cut out worn center strip. Place the selvaged edges of the remaining pieces of sheet under the sewing foot so that the abutted edges are centered under the needle. Join them with close, wide zigzag stitches to obtain a neat and flat seam. Hem raw edges of sheet.
Darning without Darning Hoops

You will really appreciate the free arm of your Pfaff 93 when you darn tubular clothing, such as underpants, sleeves, socks or stockings without darning hoops.

Trim ragged edges of hole with the fabric grain, then stitch back and forth across the hole from one side to the other with the machine running at high speed.

Now sew back and forth over preceding work with short stitches taken length-wise of the arm. This anchors threads in the unworn area around the hole. Always hold fabric taut.
Darning

Machine setting: A=0; B=

Prepare your machine for darning as instructed on pages 22 and 23. Place fabric into darning hoop, the damaged area being in the center of the hoop. Hoops may be obtained from your Pfaff dealer.

Triangular Tears
Triangular tears are best darned by placing the torn section between hoops and making close stitches across and lengthwise. Move work under the needle with both hands.

Thin Spots
Remember that “a stitch in time saves nine” and reinforce spots that have worn thin with short stitches made lengthwise and across worn section. This job can be done without foot, too.

Small Holes
Darn small and medium-size holes by trimming ragged edges with the fabric grain. First stitch back and forth across the hole from one side to the other with the machine running at high speed. Then turn the fabric at right angles and sew back and forth over preceding work with short stitches. Make sure the stitches are taken right into the good material.

Long Rips
may be darned with the normal sewing foot and without hoops. Set needle plate in its normal, or sewing, position and use forward-reverse feed control.
Inserting Patches

Elastic Fabrics

Insert fashion disc B (elastic serpentine stitch).
Machine Setting: $A=6; B=\uparrow$
Stitch Length: Medium

Large holes can be patched quickly. The following method may be used for jersey and other elastic fabrics. Cut patch so that its grain will match the rest of the fabric. Place the patch over the damaged area.

Sew it down with an elastic serpentine stitch of medium length.

For additional strength, stitch over corners twice. Turn over and trim close to seams.

Ordinary Fabrics

Insert fashion disc A.
Machine Setting: $A=2; B=\uparrow$
Stitch Length: Minimum

Patches are inserted in ordinary fabrics with short zigzag stitches. Sew over corners twice. Other than that, proceed as instructed above.

For added strength, sew around patch again, guiding the edge of the sewing foot along the first seam.
Blindstitching

Insert fashion disc C.

Machine Setting: A=4; B= *

Stitch Length: Maximum

Skirts, dresses and ladies’ coats of medium and heavy-weight fabrics are hemmed with blind stitches. To do this, insert the blindstitch disc and a No. 70 needle. Use embroidery thread No. 50 or silk thread that matches the fabric. Ease upper tension somewhat.

Next, follow this procedure:

Turn fabric wrong side up. Fold finished edge of woolen fabrics once (Fig. 1), other thin fabrics twice (Fig. 2). In this latter case there is no need to finish the edge. It is best to press or baste the hem. Guide the work evenly. Set stitch width lever A so that needle takes left stitch exactly in the folded edge and right stitch up to or over the hem edge. When hem is finished, stitches will not be visible on top side.
Sewing Buttonholes

Insert fashion disc A.

Machine Setting: $A = 1/2$ (first notch); $B = \bullet$

Stitch Length: Almost 0 (for buttonhole seam)

Use only No. 50 embroidery and darning thread.

Attach buttonhole foot No. 847616 and set slide on buttonhole gauge to buttonhole length desired. The buttonhole is the right length when beginning of first seam reaches red end of slide indicator (see arrow).

When you follow the procedure on the opposite page, the bartacks at each end of your buttonhole will be twice as wide as a buttonhole seam.

If you prefer more prominent buttonholes, pull a filler cord through the hole in left toe of foot. To get the correct stitch length, sew on a piece of scrap material. In making buttonholes in soft or loosely woven fabrics, it is advisable to place a piece of tissue paper under the material. To strengthen buttonholes in tricot and knit fabrics, insert a piece of firmly woven cotton material between the fabric layers.

Buttonholes may be made with the aid of the all-purpose sewing foot. Place the filler cord in the left groove of the clear-view shoe.
Instructions for Buttonholing

1. Sew first side over a filler cord. When beginning of seam reaches red end of slide indicator on buttonhole gauge, it is the right length. Leave needle in fabric on right side of its throw.

2. Lift foot, turn fabric around clockwise, using needle as a pivot. Lower foot, take one stitch to the left, pull filler cord taut and lay it parallel to completed line of stitching.

3. Turn dial A until it is caught in second notch (or stops at 4). Make 4 to 6 bartack stitches, slightly holding the material to reduce length of bar.

4. Change dial A to "1½". Trim filler cord at end of first stitch row. Sew second row and stop about 4 to 6 stitches ("1½") from end of first row.

5. Turn dial A to second notch position (or "4"). Make second tack, as instructed above (under 3).

6. Turn dial A to "0" and make 3 or 4 fastening stitches.

7. Trim both the sewing and filler threads. Open the buttonhole with your seam ripper. Be careful not to injure the bartacks.
Don't be afraid to sew on buttons or rings with your Pfaff. The needle won't break and the threads will not get loose either. The latter may happen only with ready-made clothing sewn with a chain stitch. It won't be worthwhile to take the machine out for sewing on a single button, but you will appreciate this feature when sewing lines of buttons on pillow and bed covers, on shirts or dresses, or when fastening rings on curtains, etc. There your machine will come in very handy. Attach all-purpose sewing foot No. 93-100179-00 and set the stitch length control on 0.

Hooks and eyes are sewn on with the aid of a special button sewing foot, No. 847608, which can be obtained from your Pfaff dealer. Turn the needle plate half a turn so that the raised portion is at the front (see picture at the bottom of page 22). The raised portion of the needle plate features an elongated needle hole.

Place button under button sewing foot and align so that needle will enter left hole. Let needle stitch through hole and make one or two tying stitches. Raise needle. Turn dial A counter-clockwise, usually to 3, until needle on the right of its throw is centered over right hole. Start machine and sew as many zigzag stitches as you deem necessary to fasten button securely. Return dial A to 0 and make two or three tying stitches.

When sewing on four-hole buttons, reposition button and repeat the above process, stitching through the second pair of holes.
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Attaching Lace

Machine Setting: A=2; B=*

You can attach lace edging in one simple operation. Fold the edge of the fabric about \( \frac{3}{4} \)" over to the wrong side, following the texture, and preferably iron it down. Place the straight edge of the lace on the fold of the fabric and sew it down with narrow zigzag stitches, taking one stitch into lace and fabric and the other into lace only. Cut off excessive cloth on the wrong side of the material close to the seam.

Shell-Edging Made with Blindstitch Disc

Machine Setting: A=4; B=*

Stitch Length: Medium

Insert fashion disc C, and tighten upper and lower thread tensions.

Shell edging is an effective fashion trim on blouses (particularly those made of delicate, soft fabrics). Fold fabric along desired line. Guide work so that needle takes one stitch in the fabric, and the other over its edge. (As the thread interlock outside the material, its edge is drawn back, producing the desired shell edging.)

Shell edging makes a nice trimming on handkerchiefs, too.
Applique Work

Insert fashion disc A.

Machine Setting: A = \frac{1}{2} to 2; B = •

Applique is easy and modern.

Trace design on wrong side of fabric and baste a piece of contrasting material to right side. Outline design on wrong side with a narrow zigzag stitch – and the motif will appear on right side.

Trim excess material close to the seam and sew over edges of applique with a medium-wide satin stitch. If you want to give the design a plastic effect, use buttonhole foot Nr. 847616 or all-purpose sewing foot, flick lever B to the left and satin-stitch over a filler thread (see also page 38).

Applique is very effective on buster suits, pinafores, bibs, frocks, covers, wall hangings, or wherever a gay note is desired. Fill out small, but essential sections of design with granite stitches.
lique is very effective on buster suits, stores, bibs, frocks, covers, wall hangings or wherever a gay note is desired. Out small, but essential sections ofIGN with granite stitches.

Monogram Embroidery

Insert fashion disc A.

Machine Setting: A = 3 to 4; B = 9

Prepare machine as for darning. Script letters are best for monogram embroidery without a sewing foot. It requires a little practice. You will soon enjoy creative embroidery once you have learned to move the material at a uniform rate. The fabric should be held taut in the hoops and the presser bar lifter lowered. Let the needle stitch into the fabric at the beginning of your design and draw bobbin thread up through the fabric. Hold both thread ends and sew over outline, moving hoops slowly and evenly. To give your monogram dimensional quality, embroider outline twice. Be sure stitches are closely spaced.

Sewing Monograms

Machine Setting: A = 2'/2 to 3; B = 9

The procedure below is primarily used for block letters. Set needle plate so that feed dog feeds the material. Attach all-purpose sewing foot and set machine for satin stitch. Sew outlines of monogram, making sure that seams do not overlap at joints of letters.
**Straight-Stitch Hemstitching**

Insert fashion disc A.

Machine Setting: A=0; B=*

Stitch length: Medium to maximum.

Insert twin hemstitching needle, System 130 Zwi-Ho, as instructed on page 15. Turn out needle set screw a little further than for ordinary needles.

The thread size, threading procedure and thread tension are the same as for cording work (see page 45).

Beautiful hemstitching effects on blouses, dresses, handkerchiefs, doilies and so forth, can be obtained with Pfaff’s System 130 twin needle. The harder the fabric yarn, the more pronounced the hemstitching will be. For this reason, batiste, organdy, georgette, etc. are best suited to hemstitching, while wooly fabrics are not recommended.

**Procedure**

Fold fabric to mark seamline or trace seamline on fabric. Sew first row.

Guide fabric so that wing needle stitches along traced line. At the end of the seam, turn fabric half a turn and sew second row. Guide fabric in such a way that wing needle penetrates the needle holes it has made and enlarged previously.

Imitation hemstitching thus requires at least two operations. If desired, additional straight or curved ornamental seams may be stitched parallel to the first one. Exciting decorative effects may be obtained by using vari-colored embroidery and darning threads.

**Zigzag Hemstitching**

Insert fashion disc A.

Machine Setting: A=Up to 1½; B=*

Same as above, except that the wing needle should penetrate the traced line only when it is on the left of its throw.
Cording

Machine Setting: A=0; B= *

To cord on your Pfaff 93, use a cording foot and a twin needle.

Twin needles are available for needle distances of 1.2 (1/4"), 1.6 (1/4"), 1.8, 2.0 (7/32"), 2.5 (1/8"), 3.0, and 4.0 (5/32") millimeters.

Cording feet are available in three varieties, as follows:
Pin tucks are made with cording foot No. 847680 (7 grooves, 3/32" wide each) and a 1.2-mm twin needle.
For narrow cording use cording foot No. 847675 (5 grooves, 1/16" wide each; see ill.) and a 1.6-mm twin needle.
Wider cording is made with cording foot No. 847671 (3 grooves, 5/32" wide each) and a twin needle with a needle distance of 2.0 or 2.5 millimeters.

Cording feet and twin needles, System 130, are supplied on special request and at extra cost.

Changing the Needle and the Sewing Foot

Bring take-up lever to highest point, loosen needle set screw a, and pull ordinary needle out of needle clamp. Insert twin needle into opening of needle clamp and push it up as far as it will go. Make sure that the flat side of the shank faces toward the back. Tighten needles set screw a securely.
Turn sewing foot thumb screw \( b \) to the left and take out the sewing foot. Slip on cording foot and tighten screw \( b \) securely.

It is best to turn out screw \( b \) completely if you want to slip on a cording foot with the guide attached.

**Thread Size**

Pin tucks and narrow cording are made with a No. 50 embroidery thread, wider cording with sewing silk in the needle and on the bobbin.

Set the machine for a medium stitch length.

**Upper Threading**

Place a spool of thread on each of the two spool pins. Pass both thread ends through both thread retainer openings 2, as illustrated on page 17. Lead one thread between the rear and center tension discs, and the other between the center and front tension discs of upper tension 3. Raise take-up lever 4 to its highest position and pass both threads through the hole at its end. Pull threads into slot 5, and thread each needle from front to back.

The bobbin thread is drawn up as instructed on page 18. To do this, hold both needle threads in your left hand.

**Thread Tension**

Slightly increase the bobbin thread tension, and increase or decrease the needle thread tension depending on the type of fabric used. If the tension has been set correctly, the bobbin thread should appear as a faint zigzag line on the other side.

**Filled Cording**

If you want to make cording in filmy fabrics or render your cording more prominent, Pfaff recommends that you insert a filler cord. Its thickness depends on the cording size you want.

Remove the bed slide and pass the filler cord from below through hole \( g \) located in front of the oval needle hole \( f \) (see ill. on page 45). Lay the end of the filler cord back under the cording foot (together with the needle and bobbin thread ends). Pull a filler cord forward under the bed slide and place the ball in your lap.
Spacing between Tucks

To ensure uniform spacing between parallel tucks, place the preceding seam into one of the grooves of the foot and use it as a guide.

For a larger spacing between tucks, use the adjustable guide (see ill. on page 46) which is part of every cording foot.

Various Cording Effects

Attractive cording effects may be obtained by combining horizontal, vertical and diagonal tucks or stitching curved tucks (see ill. below).

If you want to turn a corner, leave needle in fabric (up to needle eye only), lift foot, turn fabric, lower foot, and continue sewing. To stitch an acute angle, turn fabric halfway, let needle make one stitch, turn fabric all the way, and resume stitching.
Coarse-Thread Embroidery

Insert fashion disc A.

Machine Setting: A=0 to 4; B=optional

Buy a coarse, four-ply embroidery thread in the desired colors.

Embroidery designs made with this thread are very attractive. They have dimensional quality and closely resemble manual embroidery work.

The adjoining designs were made with the aid of the zigzag disc. To make the design illustrated in the middle, alternate straight and zigzag stitching.

Machine embroidery is made with the machine running at a moderate speed.
Embroidery

A = 0 to 4; B = optional

-ply embroidery thread in the desired

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dimensional quality and closely
embroidery work.

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ake the design illustrated in the middle,
and zigzag stitching:
	ery is made with the machine running

tomatic Embroidery

Machine Setting: A = 2 to 4; B = *

Stitch Length: Minimum

Insert fashion disc D, E, F or G, and use No. 50 em-
brodery thread.

Numerous pattern variations are possible by changing
stitch width and stitch length. Selecting the most effec-
tive design and color combinations will challenge your
imagination.

Automatic embroidery designs, too, are rendered more
prominent by using coarse embroidery thread. It is
advisable to increase the stitch length slightly.

Flower petals sewn with fashion disc E and coarse
embroidery thread.
Stitching Synthetic Materials

Insert fashion disc A.

Curtains

Machine Setting: A = 1 to 3, depending on material; B = Minimum

Stitch Length: Minimum

To finish the edge of synthetic curtain fabrics, such as Diolen, use a matching synthetic thread. If necessary, ease the upper and lower tensions somewhat.

Both these hints should be adhered to in order to avoid shrinking of both the thread and the fabric in the laundry.

To butt seam the various sections of curtains, proceed as instructed on page 33.

Plastic Sheets

Machine Setting: A = 0 to 2; B = Medium

Stitch Length: Medium

Plastic curtains, as are used in kitchens and bathrooms, are sewn with synthetic thread or cotton and a fine needle.

Place a piece of tissue paper under sticky plastic sheets which can be easily removed after the sewing. To prevent plastic sheets from sticking to the sewing foot, apply a drop of oil to its sole.
Two-Needle Decorative Sewing

Insert fashion discs A to G.

Machine Setting: A = up to 2; B = +

Automatic embroidery designs are particularly attractive when sewn with twin needles and different color thread. The distance between both needles must not exceed 3/4 inch. (For threading the twin needles see cording instructions on page 45.)

Beautiful border effects can be produced by combining zigzag, serpentine, and blindstitch designs.

d. If necessary, ease the upper and lower fabric in the laundry.

Your Pfaff can do many additional sewing jobs and turn out beautiful work. See your Pfaff dealer who will be glad to advise you on our extensive line of attachments designed to enlarge the range of possible applications of your machine. Such additional applications include granite stitching and sewing on wool thread. Interesting effects can also be obtained with the multi-stitch ruffler and the bias binder.
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