

R 7858



**341; 343; 345 and 353**

**Single-Needle Cylinder-Bed Sewing Machines  
and**



**342; 344; 346 and 354**

**Two-Needle Cylinder-Bed Sewing Machines**

## **Instruction Book**

## 1. General

The Pfaff 341, 343, 343 U-12 and 345 are all cylinder-bed sewing machines with right-hand balance wheel whose vertical hook is arranged to the right of the needle. The Pfaff 353 with left-hand balance wheel has the sewing hook arranged to the left of the needle.

Both the Pfaff 341 and 342 are equipped with compound feed while the Pfaff 343, 344 and 353 are fitted with ordinary drop feed only. The Pfaff 345 and the Pfaff 346 both feature unison feed.

All the afore-mentioned machines are equipped with sleeve take-up. The rotating motion of the top shaft is transmitted to the hook shaft by bevel gears.

It is recommended to make sure that the take-up lever is at its highest point before beginning or ending a seam. Observation of this rule prevents the thread slipping out of the needle eye and thread jamming in the hook raceway. It eliminates the necessity of holding both threads when beginning to sew.

The maximum stitch length of standard machines is 4.5 mm (5 $\frac{1}{2}$  s.p.i.).

It is recommended to run the machines at the following top speeds:

Pfaff 341	2,600 s.p.m.
Pfaff 342	2,500 s.p.m.
Pfaff 343	2,700 s.p.m.
Pfaff 343 U-12	1,400 s.p.m.
Pfaff 344	2,600 s.p.m.
Pfaff 344 U-12	1,400 s.p.m.
Pfaff 345	2,500 s.p.m.
Pfaff 346	2,400 s.p.m.

When sewing tightly woven or heavily dressed fabrics, the sewing speed must be reduced to prevent overheating of the needle.

On two-needle machines, the maximum sewing speed diminishes as the needle gauge increases.

To avoid trouble, these machines should be run at about 70% of their top speed until all parts in movable contact have become thoroughly glazed by their action upon each other. This should normally be the case after about two weeks' constant use.

All machines are regularly equipped with a fixed pulley which is cast in one with the balance wheel. If desired, however, the machines can be supplied with a disengageable pulley.

If fitted with a disengageable pulley, the machine is dispatched with the sewing mechanism disengaged. To engage this mechanism, hold the balance wheel steady with your left hand and tighten the large locknut by turning it clockwise.

The spool holder on the machine arm is supplied on special request and at extra cost only because the thread stand which is regularly supplied with the machine ensures better thread control.

## Setting Up the Machine

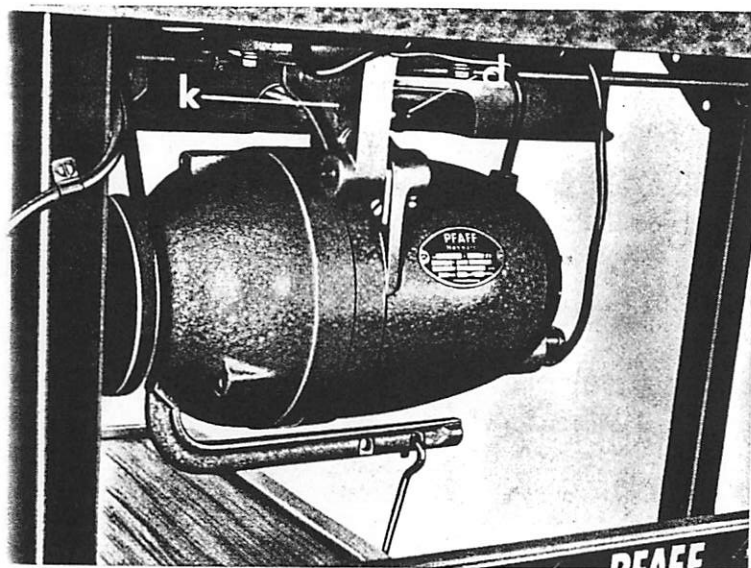
The machine is driven by a 1/3-HP clutch motor which, like all motors supplied with Pfaff machines, is a squirrel-cage induction motor conforming to German DIN 42691 specifications. Voltage and type of current are determined by local requirements. Power is transmitted from the motor to the sewing machine by a V-belt. When mounting the belt for the first time, do not force it onto the pulley because distorted V-belts wear rapidly. All motors are pivotally connected to the motor bracket by means of a hinge bolt (d in Fig. 1). Loosen the nut of the hinge bolt or clamp screw k and lift the motor until the V-belt can be easily placed in the grooves of the balance wheel and motor pulleys.

It requires some experience to correctly adjust the tension on the belt so as to avoid excessive pressure on the arm shaft bearings and the resultant overheating and seizing of the machine.

The belt is correctly tensioned if you can compress it with two fingers, without applying force, by about 2 cm (abt. 3/4") midway between both pulleys.

In this position, securely tighten the hinge bolt nut or clamp screw k (Fig. 1).

The machine is fitted at the factory with the correct motor and motor pulley in accordance with the machine class and the permissible top speed.



R 6835

Fig. 1

## 3. Cleaning and Oiling

Proper cleaning and regular oiling will increase the service life of your machine. Before you put the machine into operation for the first time, take a clean rag and remove the dust accumulated in transit as well as the rust preventative covering all nickel-plated and polished parts. Then apply a few drops of kerosene to all oiling points marked in red on the machine and unthread the needle. Place a piece of fabric under the presser foot and run the machine briefly. Next, apply oil to all points of friction, using Pfaff sewing machine oil No. 280-1-120 122 for this purpose.

All oiling points are marked by arrows in the pertinent illustrations. To get at the oiling points in the cylinder arm of the machine, loosen wing nut F, swing away latch G (Fig. 2), and tilt the machine back, resting it on the wooden machine rest.

The cotton in the hook raceway, which is accessible through hole O (Fig. 16), should be soaked with oil every day. Once a week, unscrew needle plate and feed dog and remove the lint which has accumulated in the vicinity of the sewing hook, using a toothpick or similar wooden object.

When replacing the needle plate, make sure that position finger F of the bobbin case base enters slot P on the underside of the needle plate (Fig. 15).

The bevel gears are enclosed in cases and require no special maintenance, except that the grease in the cases should be changed once a year. For this purpose, use soda grease No. 280-1-120 243. Thanks to the special lubricating properties of this grease, the flanks of the bevel gear teeth should be greased only lightly.

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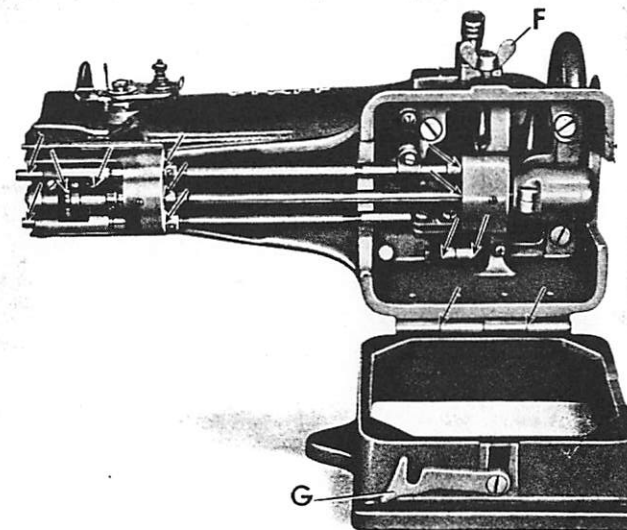


Fig. 2

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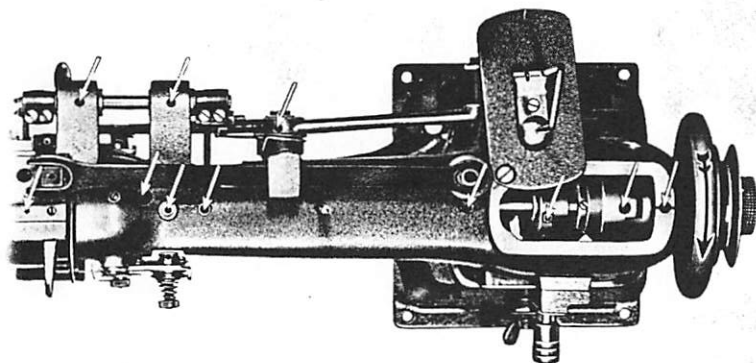


Fig. 3

ing trouble, such as skipping of stitches and thread breaking, cannot be remedied by applying excessive quantities of oil. Excessive oiling may result in soiling of the material and heavy working of the machine caused by a mixture of oil residues and

### Test-Running

It is strongly recommended to test-run the machine without thread and bobbin case.

Before you plug the machine in, however, check to make sure the line voltage is the same as that indicated on the motor rating plate, and the motor pulley turns in the right direction.

The direction of motor pulley rotation is correct if the balance wheel turns toward you, as indicated by an arrow in Fig. 3.

The direction of pulley rotation is best checked before mounting the V-belt. If the V-belt has already been mounted, check the direction of rotation by switching on the motor while lightly tipping on the pedal while holding the balance wheel fast.

If the pulley turns in the wrong direction, the maintenance man has merely to exchange the wires at the motor terminal board.

Do not run a threaded machine unless you have fabric under the presser foot or the presser foot is raised.

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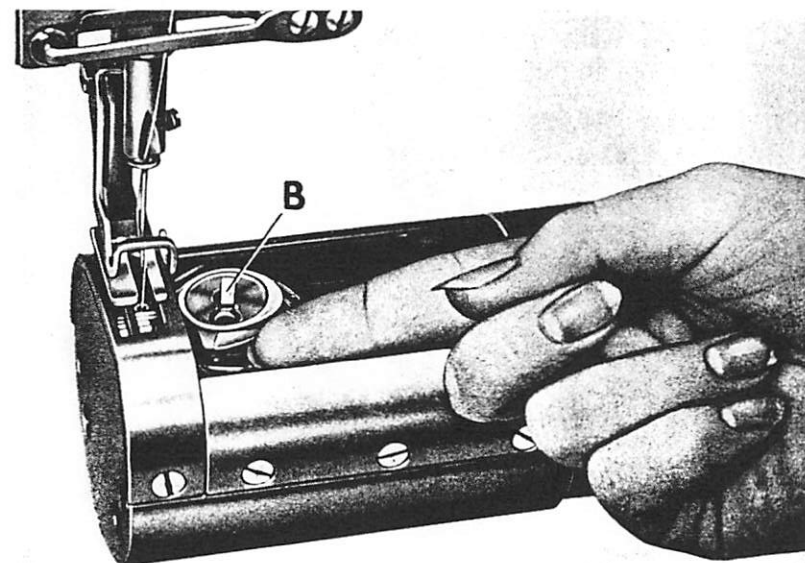


Fig. 4

### 5. Removing the Bobbin Case

Raise the take-up lever to its highest position and open latch **B** (Fig. 4) with the nail of your thumb. Slightly lift the bobbin case with the forefinger of your right hand, as illustrated above, and take it out of the machine, together with the bobbin, with thumb and forefinger.

### J. Winding the Bobbin

The bobbin is wound on the power-driven bobbin winder shown in Fig. 5.

Place a spool of thread on pin 1. Pass the thread through eyelet 2, clockwise around and between tension discs 3 and 4, and, from the inside, through the slot in the bobbin. Wind a few turns of thread on the bobbin in clockwise direction, and place the latter on the bobbin winder spindle.

Start the bobbin winder by pressing down lever 6. The bobbin winder will stop automatically when the bobbin is full. The amount of thread to be wound on the bobbin is regulated by screw 7. Turn this screw clockwise for more thread, or counter-clockwise for less thread.

If the thread should pile up at one end of the bobbin, loosen screw 4 and adjust the position of the bobbin winder tension bracket, as appropriate.

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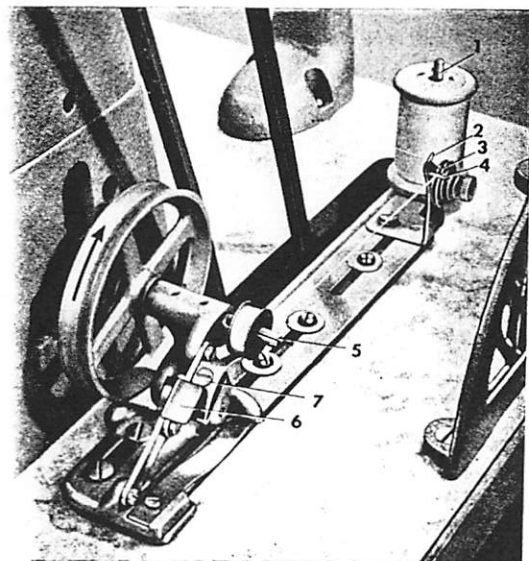


Fig. 5

## Threading and Replacing the Bobbin Case

Place the full bobbin in the bobbin case so that it turns in the direction indicated by the arrow in Fig. 6 when you pull the thread.

Place the bobbin fast in the bobbin case, pull the thread into slot X, and draw it under the tension spring and into delivery eye Y.

Place the bobbin case with the bobbin on the center stud of the bobbin case base and latch B (Fig. 4).

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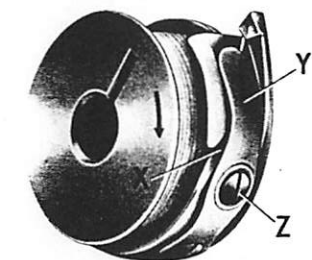


Fig. 6

## 8. Selecting the Correct Needle

All Pfaff machines 341, 343, 345 and 353 use Pfaff System 134 needles with a shank diameter of 2.0 mm (approx.  $\frac{5}{64}$ "), while the Pfaff 343 U-12 is fitted with System 190 needles. High-lift machines, e.g. the Pfaff 345 in Model H 3, use System 134-35 needles which are 4.0 mm (approx.  $\frac{5}{32}$ ") longer.

Pfaff cylinder-bed sewing machines are supplied in three models fitted for the needle sizes indicated:








- Model A for needle sizes 60 to 80
- Model B for needle sizes 90 to 110
- Model C for needle sizes 120 to 160

The number indicating the needle size is identical with the diameter of the needle shaft, or blade, in hundredths of a millimeter. Thus, a No. 100 needle has a shaft diameter of  $\frac{100}{100}$  mm = 1 mm.

The correct needle size for a given thread should be selected from the Needle and Thread Chart on page 10.

System 134 and 134-35 needles are available in several point styles to suit different applications of the machine for fabric and leather stitching.

For fabrics, all machines use round-point needles, while the following needle point styles are available for leather work:

- 134 Lr  Narrow reverse twist point; cutting edge set at an angle of 45 degrees to the right of the line of stitching, makes stitches which extend diagonally toward the left.
- 134 P  Extra-narrow wedge point; cutting edge set at an angle of 90 degrees to the line of stitching; makes stitches which extend diagonally toward the left.
- 134 Lack  Needle with point for patent leather (narrow cross point).
- 134 PCI  Extra-narrow, left-twist groove, wedge point; cutting edge set at an angle of 90 degrees to the line of stitching; for coated fabrics.
- 134 S  Narrow cross point; cutting edge set parallel to the line of stitching; makes long, straight stitches.
- 134 D  Triangular point; flat side facing toward the sewing hook; makes straight stitches.
- 134 Vr  Reverse-twist spear point; cutting edge set at an angle of 45 degrees to the right of the line of stitching; supersedes 134 S and 134 D needles.

The appearance of the finished seam and trouble-free sewing greatly depend on the correct relationship between needle, thread and fabric.

Lightweight fabrics should be sewn with a thin needle in order to avoid ugly needle punctures.

When thick thread is used in a thin needle, the thread is likely to break, while thin thread used in a thick needle is likely to cause skipping of stitches.

The table on page 10 is merely intended as a guide for selecting the correct needle size.

## Needle and Thread Chart

Needle Size	Cotton	Silk	Synthetic	Linen
60	80/3 80/4 80/6	140/3	200/3- 150/3	
70	70/3 70/4 70/6	120/3	140/3- 120/3	
80	60/3 60/4 60/6	100/3	120/3- 100/3	
90	50/3 50/4 50/6	80/3	100/3- 80/3	70/3
100	40/3 40/4 40/6	70/3	70/3	60/3
110	30/3 30/4 30/6	60/3	60/3	50/3
120	24/3 24/6	50/3	50/3	40/3
130	20/3	40/3	40/3	35/3
140	12/3 12/6	30/3	30/3	30/3
150	8/6	25/3	20/3	25/3
160	6/6	20/3	18/2	20/3

## Changing the Needle

1. Raise the needle bar to its highest point. Loosen the needle set screw and pull the needle out of the needle clamp.

2. Insert the new needle into the needle clamp and push it up as far as it will go, making its short groove faces toward the right. On Pfaff 353 machines with left-hand balance wheel the sewing hook is arranged to the left of the needle. Hence, on these machines the short groove of the needle must face toward the left. Securely tighten the needle set screw again.

## 10. Threading the Needle

Lead the thread from the spool through the holes of thread guide 2 (Fig. 7), thread guide 3, thread retainer 4, clockwise around and between tension discs 5, under thread controller disc 6, through thread check spring 7, up and through thread guide 8, from right to left (on Pfaff 353 machines from left to right) through the hole of take-up lever 9, down and through guides 8, 10 and 11, and from left to right (on Pfaff 353 machines from right to left) through the needle eye. (Upper threading of the Pfaff 353 is illustrated in Fig. 13.)

R 6978

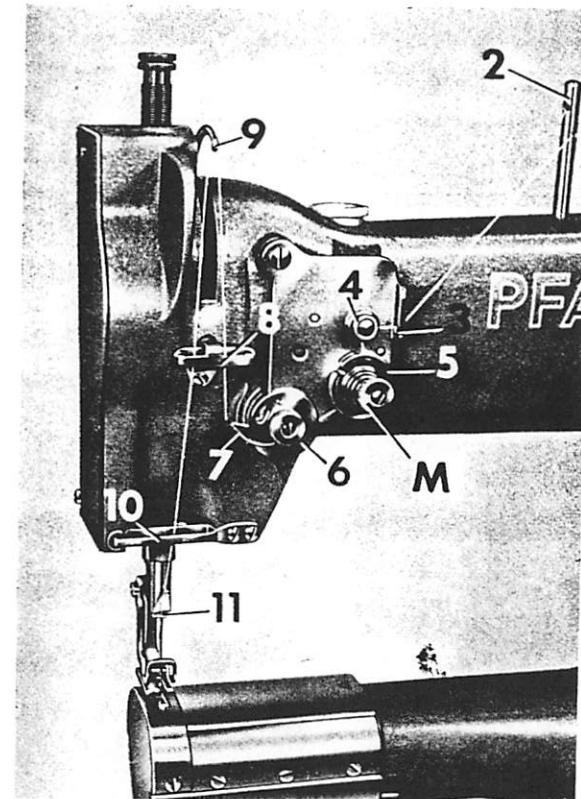


Fig. 7

## 11. Drawing Up the Bobbin Thread

Hold the end of the needle thread and slowly turn the balance wheel toward you until the bobbin thread comes up through the needle hole in a loop.

Lay both threads back under the presser foot.

## 12. Regulating the Thread Tensions

### Regulating the needle thread tension

Turning tension nut **M** (Figs. 7 and 13) clockwise increases the tension, turning it counter-clockwise decreases it.

If the upper tension is too loose, the bobbin thread draws the needle thread down so that it forms small kinks on the underside of the material, as shown in Fig. 8.

If the upper tension is too tight, the bobbin thread is drawn up to the upper surface of the material or the needle thread breaks (Fig. 9).

Both tensions are correctly balanced if both threads interlock in the center of the material, as illustrated in Fig. 10.

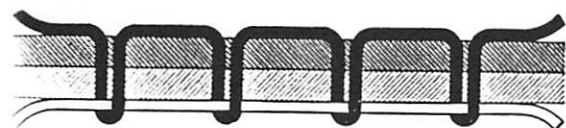


Fig. 8

Upper tension too loose or lower tension too tight.

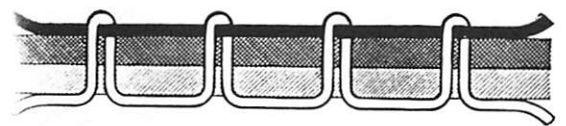


Fig. 9

Upper tension too tight or lower tension too loose.

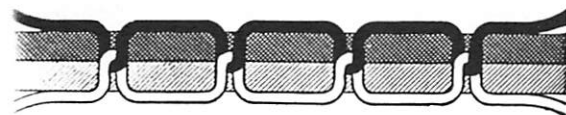


Fig. 10

Both tensions correctly balanced.

When the presser foot is raised, the upper tension is automatically released so that the work can be easily removed from the machine. To remove the work, pull it toward the back (in forward feeding direction), never toward you, as this might cause bending of the needle, skipping of stitches or thread breaking.

### Regulating the bobbin thread tension

Take the bobbin case out of the machine and, using the hook screwdriver, turn screw **Z** (Fig. 6) clockwise to increase the tension, or counter-clockwise to decrease it.

The tension is correct if a noticeable resistance of spring **Y** (Fig. 6) has to be overcome when pulling the thread out of the bobbin case.

Puckering occurs on delicate fabrics although the tension has been set correctly. Use both tensions slightly.

## 13. Regulating the Stitch Length

On all cylinder-bed machines with right-hand balance wheel, the stitch length is regulated by turning screw **S** (Fig. 11). Turn this screw clockwise for shorter stitches, or counter-clockwise for longer stitches. The numbers on the scale indicate the stitch length in millimeters.

All machines, with the exception of the Pfaff 343 U-12 and 353, are regularly fitted with a spring-return feed regulator. A tension spring incorporated in this mechanism permanently holds the feed regulator lever down in forward feeding position. To backtack the end of a seam, simply push this lever up as far as it will go. When the lever is released, forward sewing is resumed instantly.

If desired, all machines featuring this type of feed regulator can be equipped with a pedal which makes it possible to reverse the direction of feed by foot action.

R 7000

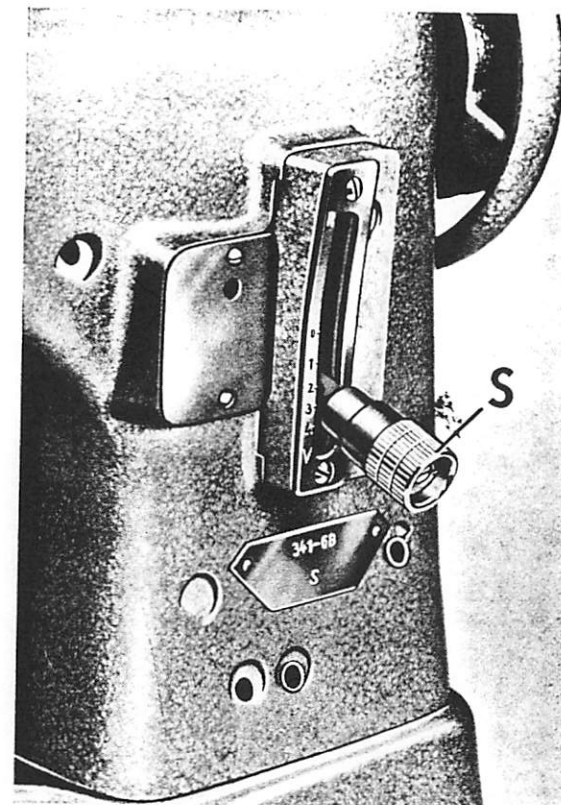


Fig. 11

though the Pfaff 353 is identical with the Pfaff 343, except that it has the balance wheel at the left, its feed regulator differs considerably.

The Pfaff 353 sews forwards only.

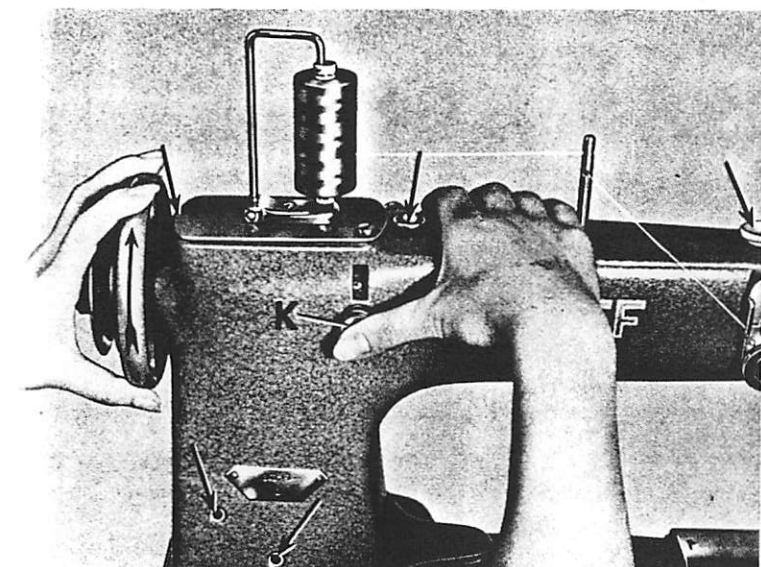
On this machine, the stitch length is regulated as follows: Press button **K** (Fig. 12) with thumb of your right hand and, with your left hand, rotate the balance wheel in the direction indicated by an arrow until the button drops in noticeably.

To increase the stitch length, keep button **K** engaged and continue turning the balance wheel in the direction indicated by an arrow until the number corresponding to the desired stitch length appears in the small window above button **K**.

To decrease the stitch length, turn the balance wheel in the opposite direction.

The number appearing in the window indicates the stitch length in millimeters, with "4" denoting the longest stitch.

A double-headed arrow together with a "+" and a "-" symbol engraved in a small window on the flat top cover further facilitate the regulation of the stitch length. Turning the balance wheel toward "+" increases the stitch length, turning it toward "-" decreases the stitch length.



R 6973

Fig. 12

#### 14. Regulating the Pressure on the Material

Turning in screw **V** (Figs. 7, 13 and 18) increases the presser foot pressure for heavier and harder materials.

Lightweight and delicate materials require a lighter pressure which is obtained by turning screw **V** out.

Some variants of the Pfaff 345 are equipped with one or two leaf springs on the machine arm instead of the conventional presser bar spring. On these machines, the presser foot pressure is increased by turning knurled nut **V** upwards (Fig. 14), and decreased by turning it downwards.

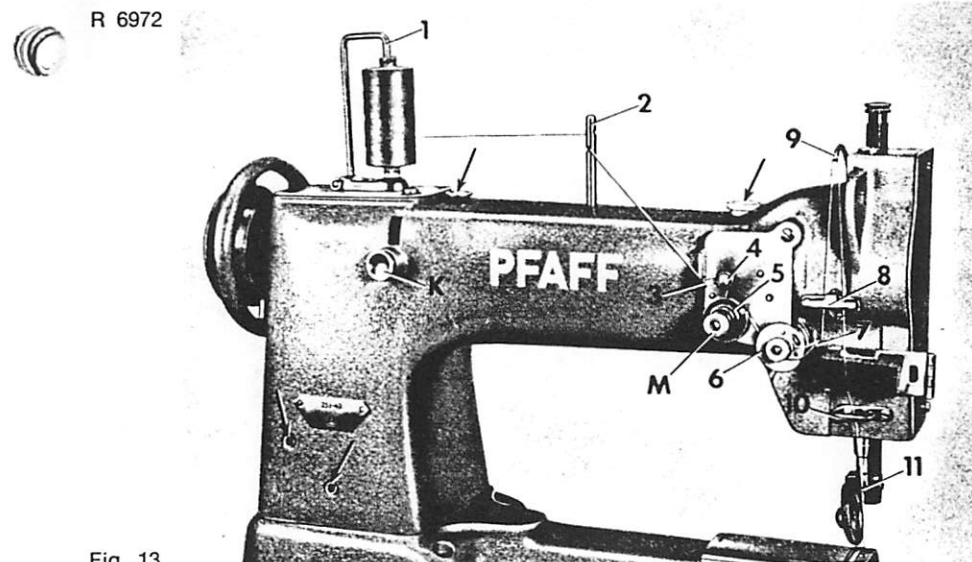


Fig. 13

R 7769

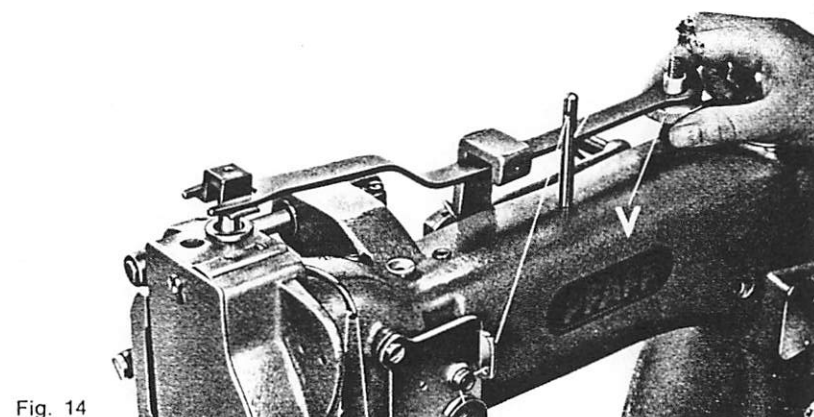


Fig. 14

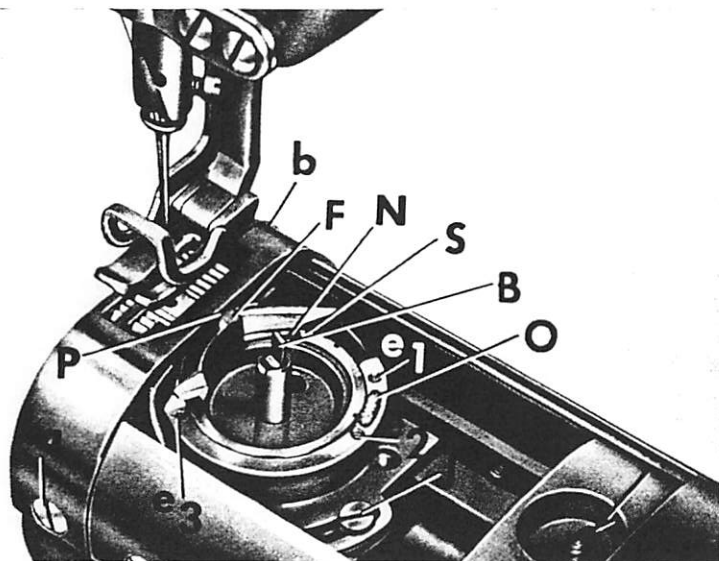
## 5. Changing the Feed Dog

To change the feed dog, take out screws **a** and **b** and remove the needle plate (Fig. 15).

Then take out both feed dog screws **c** and **d** and remove the feed dog (Fig. 16).

When replacing the needle plate, make sure position finger **F** enters slot **P** on the underside of the needle plate (Fig. 15).

Never run the machine with the needle plate removed since this may result in damage to the bobbin case and bobbin case opener **L** (Fig. 16).



R 6974

Fig. 15

## Cleaning the Sewing Hook

To dismantle the sewing hook, bring the needle bar to its highest point, take out screws **e2** and **e3**, and remove the hook gib (Fig. 15).

Slowly turn the balance wheel until point **S** of the bobbin case base is about to enter slot **N** of the sewing hook (Fig. 15). In this position, the bobbin case base can be pulled out easily. To do this, take the center stud between thumb and forefinger and pull it upwards, while rocking the balance wheel back and forth.

Clean the sewing hook thoroughly, particularly the hook raceway. At the same time, check to make sure the cotton in hole **O** has not become matted (Fig. 15). If it has, replace it and soak the new cotton with oil.

Replace the bobbin case base in the sewing hook, making sure that position finger **F** again enters slot **P** on the underside of the needle plate (Fig. 15).

R 6975

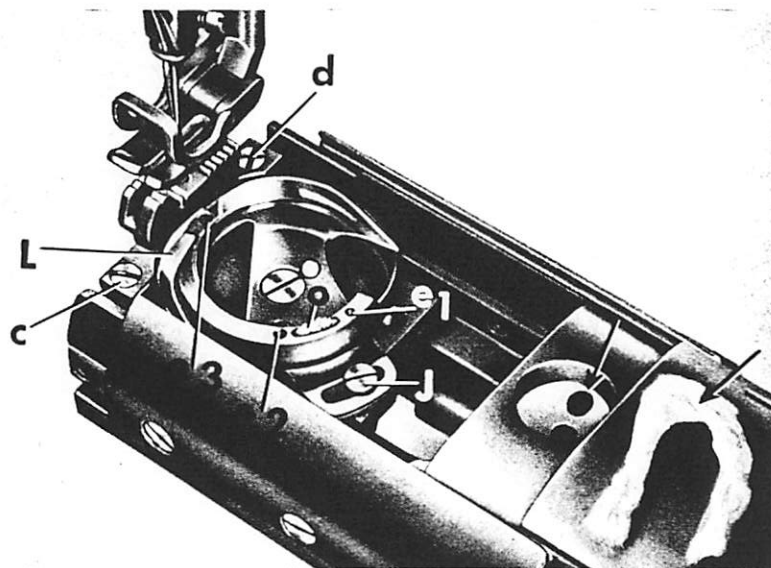


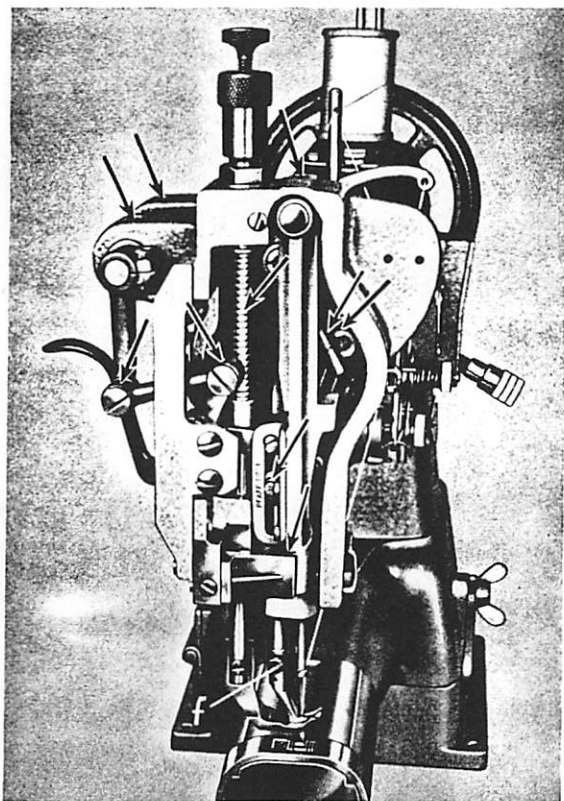
Fig. 16

### 17. Changing the Vibrating Presser on unison-feed machines

Raise the presser bar lifter and bring the needle bar to its highest position by turning the balance wheel.

Loosen screw **f** (Fig. 17) and pull out the vibrating presser, turning it slightly to the right and left.

When replacing the vibrating presser, take care that you push it up as far as it will go and position it so that the needle is properly centered in its needle hole.



R 6966

Fig. 17

### 18. Adjusting the Foot Lift on unison-feed machines

In order to adapt the lift of the vibrating presser to the thickness of the material to be sewn, loosen wing nut **F** and adjust the position of lifting eccentric connection **H** in the slot of the lifting crank (Fig. 18).

Move this connection upwards for a higher lift, or downwards for a lower lift.

The arrows in Figs. 17, 18 and 22 indicate the oiling points of unison-feed machines.

R 6965

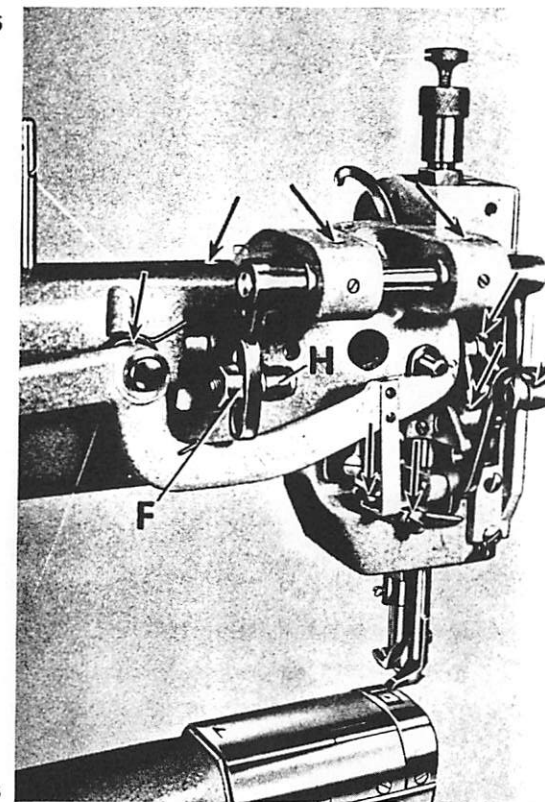


Fig. 18

## Additional Instructions

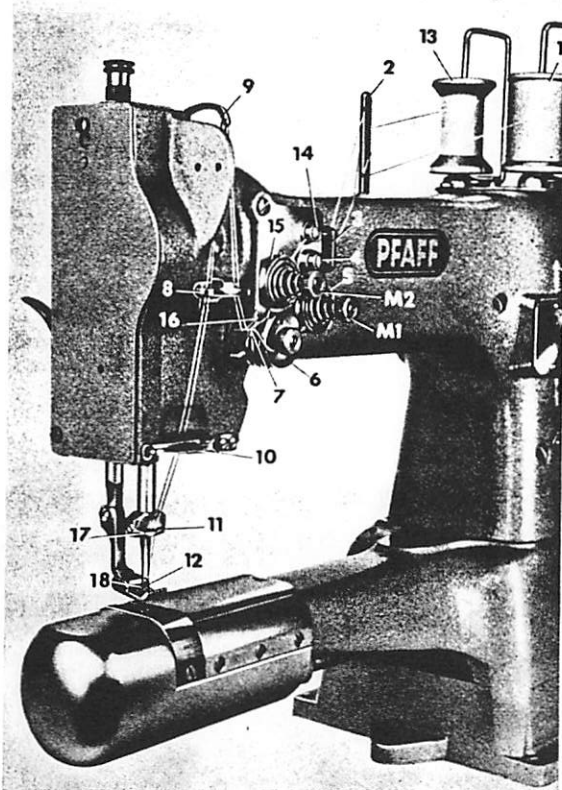
for Pfaff 342, 344 and 346 two-needle, cylinder-bed sewing machine with right-hand balance wheel and the Pfaff 354 two-needle machine with left-hand balance wheel

The basic instructions given for the single-needle machines analogously apply to the corresponding two-needle versions of these machines, too. Additional instructions are contained on the following pages.

### 19. Upper Threading of Two-Needle Machines

Thread the right needle like on a single-needle sewing machine, leading it from 1 to 12 as illustrated in Fig. 19.

To thread the left needle, pass the thread from spool 13 (Fig. 19) through the holes of thread guide 2, the upper hole of thread guide 3, thread retainer 14, clockwise around and between tension discs 15, around the rear thread controller disc 16, through thread check spring 7, up and through thread guide 8, from right to left through the upper hole of take-up lever 9, down and through thread guides 8 and 10, the left hole of needle holder 17, and from right to left through the eye of the left needle 18. The thread tension is regulated by turning nut M 2.



R 8320

Fig. 19

### 20. Cleaning the Sewing Hooks of Two-Needle Machines

The instructions given for cleaning the sewing hook of a single-needle machine likewise apply to the sewing hooks of two-needle machines. It should be noted, however, bobbin case opener L of the second hook is arranged in a position diagonally apart from that of the other bobbin case opener (Fig. 20).

The needle plate is secured in position by screws a and b (Fig. 21) and the feed by screws c and d (Fig. 20).

R 8317

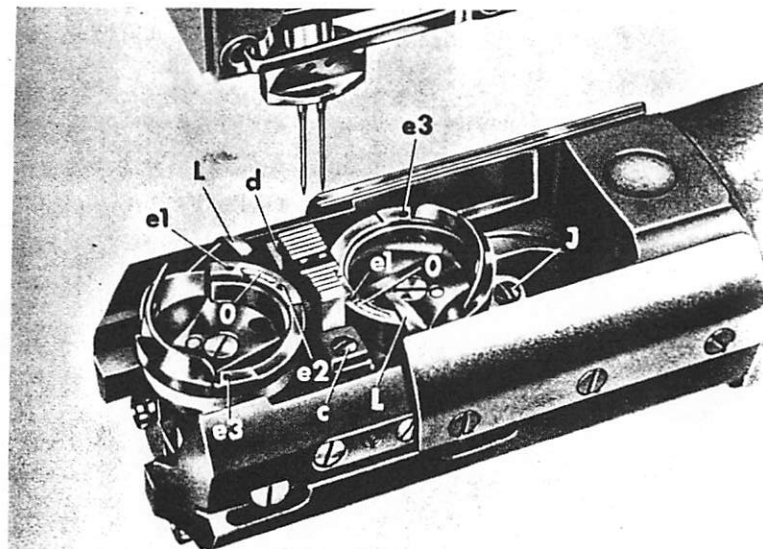


Fig. 20

R 8316

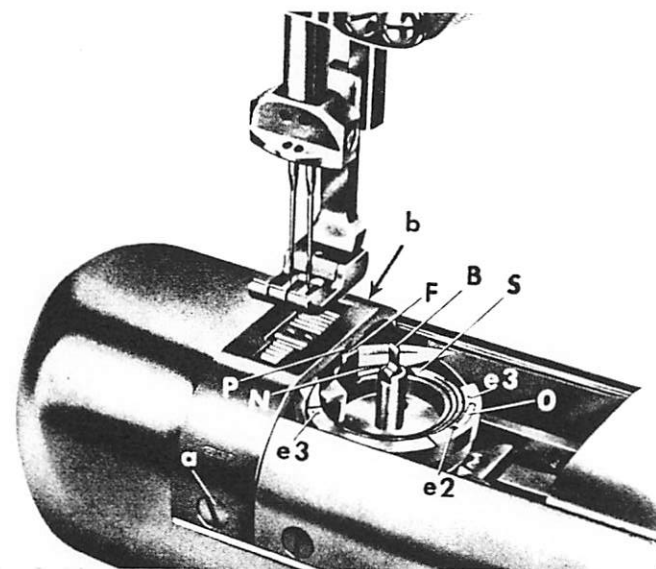


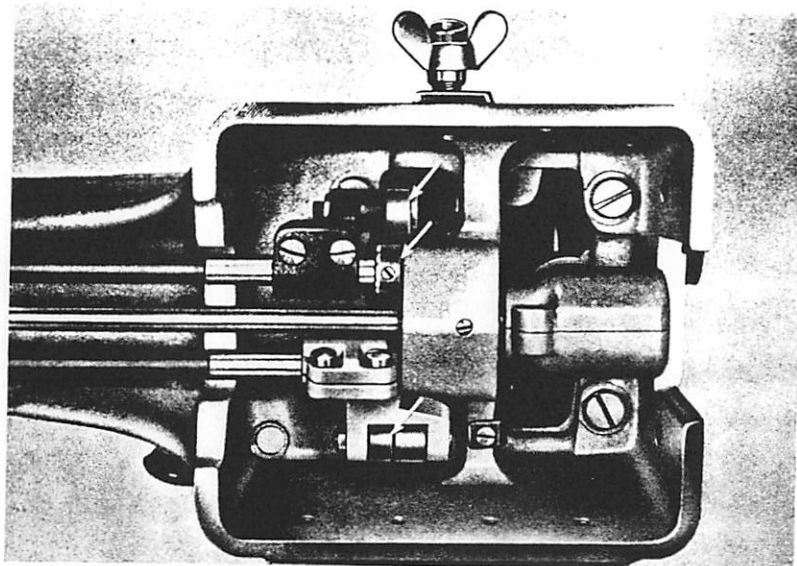
Fig. 21

To dismantle the sewing hook, take out screws **e 1**, **e 2** and **e 3** (Fig. 20) and remove the hook gib. Then rotate the balance wheel until point **S** (Fig. 21) of the bobbin case base is about to enter raceway **N** of the sewing hook. In this position, the bobbin case base can be tipped out easily.

The second sewing hook is dismantled in the same sequence.

The cotton in hole **O** of every sewing hook (Fig. 21) should regularly be soaked with oil so as to ensure proper lubrication of this vital part over a longer period of time.

After tilting the machine back, oil the oiling points marked by arrows in Fig. 22.



R 8319

Fig. 22

## Additional Instructions

for Pfaff machines 343 U-12/02 and 343 U-12/03

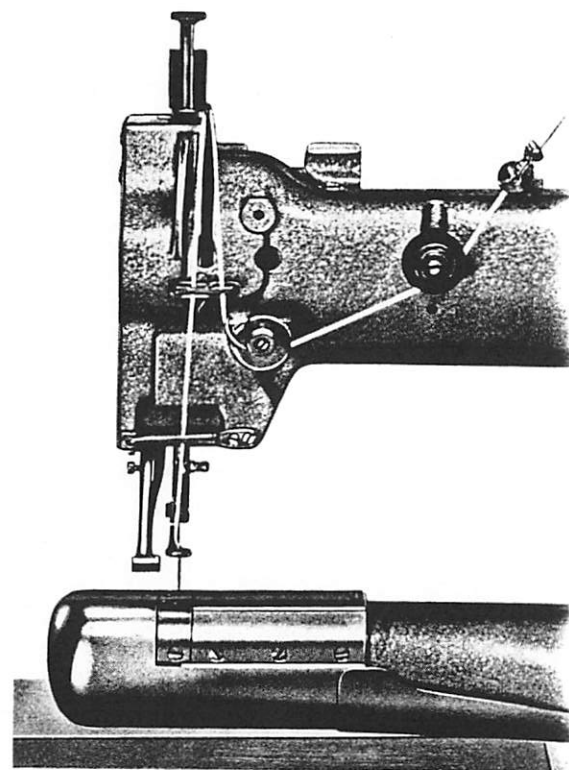
The Pfaff 343 U-12/02 is a single-needle sewing machine equipped with a two-speed motor and a roller thread tension, while the Pfaff 343 U-12/03 is fitted with squirrel-cage induction motor and a disc-type tension. Both machines are equipped with an extra-large vertical rotary hook.

Other than that, the mechanical setup of the Pfaff 343 U-12 is identical with that of ordinary Pfaff 343 so that all operating and servicing instructions given for the latter apply to the former, the only exception being Chapters 10 and 13.

### 21. Threading the Needle of the Pfaff 343 U-12

Lead the thread from the spool up and over the thread guide at the top of the thread stand, down and through the hole of the angular thread guide on the machine arm, a through the thread retainer, making sure that the thread enters the slot in the thread tainer stud. Now wind it once around the roller tension of a subcl. -12/02 machine. lead it clockwise around and between the tension discs of a subcl. -12/03 machine. Then pass it around the thread controller disc, through the thread check spring, up a through the thread guide, from right to left through the eye of the take-up lever, down and through both thread guides, and from left to right through the needle eye.

The Pfaff 344 U-12 has two needles and twin thread guides. It is threaded just like a single-needle machine, except that the threads are passed through the thread guides separately. The left needle is threaded from right to left, the right needle from left to right.



R 9770 a

Fig. 23

## 22. Trouble Shooting

### **Skipping of Stitches**

#### **Cause**

- Wrong needle system.
- Needle bent.
- Needle inserted incorrectly.
  
- Incorrect threading.

#### **Remedy**

- For correct needle system see Chapter 8.
- Insert new needle as instructed in Chapter 9.
- Orient needle so that its short groove faces toward the sewing hook.
- Thread needle(s) as instructed in Chapters 7, 10, 19 and 21.

### **Thread Breaks**

#### **Cause**

- For any of the reasons indicated above.
- Thread tensions too tight.
- Knotty thread.
- Needle point blunt or damaged.
- Thread snarled up.

#### **Remedy**

- See remedies listed above.
- Regulate tensions as instructed in Chapter 12.
- Use high-quality thread only.
- Replace needle.
- Check upper threading from spool of thread to needle.

### **Faulty Stitch Formation**

#### **Cause**

- Improper tension.
- Wrong needle size and/or thread used
  
- Pieces of thread between tension discs or under bobbin case tension spring.

#### **Remedy**

- Regulate tension as instructed in Chapter 12.
- Correlate needle, thread and fabric as shown in table in Chapter 8.
- Remove thread and re-adjust tension as instructed in Chapter 12.

### **Needle Breaks**

#### **Cause**

- Wrong needle system.
  
- Needle bent.
- Needle too thin.

#### **Remedy**

- Insert needle of correct system as instructed in Chapter 8.
- Insert new needle.
- Insert thicker needle.

### **Machine Works Heavily**

#### **Cause**

- Lack of oil.
  
- Wrong lubricant.
  
- Hook race obstructed by pieces of thread.

#### **Remedy**

- Oil machine as instructed in Chapters 3, 16 and 18.
- Use only non-resinous and acid-free sewing machine oil.
- Try to free the jammed thread as you rock the balance wheel back and forth. If this action fails, dismantle the sewing hook as instructed in Chapter 16.

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