

**PFAFF®**

245; 1245;  
246; 1246

## Service Manual

Innovation made by **PFAFF**

## Notes on safety

The machine must only be used for the purpose it was designed for.

If it is converted to another version, all valid safety regulations must be observed.

Service- and repair work must only be carried out by qualified personnel.

Apart from exceptions according to DIN 57 105 and VDE 0105, work on live parts is not permitted.

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## Instructions for adjusting Pfaff 245, 1245 and 1246 machines

Note:

All illustrations in this book apply to Pfaff 245 and 1245 single-needle machines. On Pfaff 246 and 1246 two-needle machines various adjustments have to be made twice. The respective sections contain a note to this effect; some of the illustrations in these sections apply in reflex.

### Technical data

Needle system:

134-35 on subcl. -706/05, -706/07 and -706/35  
134 on subcl. -706/25  
190 on subcl. -706/47 and -706/48

Needle bar rise:

Models A and B = 1.6 mm  
Models B/C and C = 2.0 mm  
Models C/D and D = 2.2 - 2.5 mm

Top feed lift: 5 mm on subcl. -706/05  
7 mm on subcl. -706/07 and -706/47  
5 mm on subcl. -706/25  
5.5 mm on subcl. -706/35  
8.0 mm on subcl. -706/48

Max. clearance between presser foot and needle plate: 14 mm\*

### Tools, gauges and other items needed for adjustment

Set of screwdrivers with blades from 2 to 10 mm wide  
Set of allen keys ranging from 2 to 6 mm  
Set of spanners from 7 to 14 mm wide  
C-clamp, No. 08-880 137-00  
Gauge, No. 08-880 136-14  
Metal rule  
Sewing thread and material for testing purposes

\* En machines equipped with knee lifter or subcl. -910/04.

1                    Positioning the feed dog

Correct  
setting:

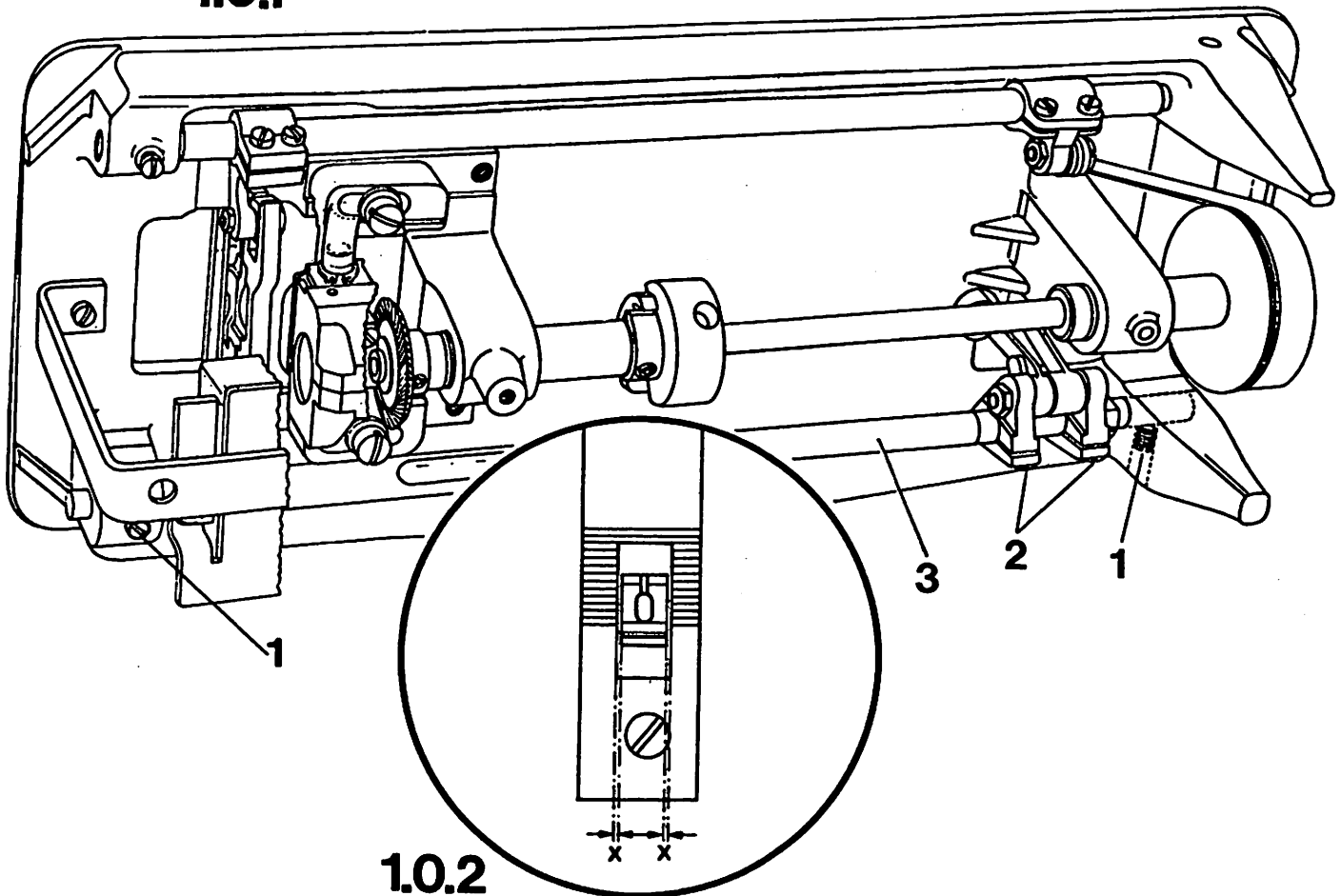
The feed dog must not strike the needle plate during any phase of its motion.

1.1                Position crosswise to sewing direction

Adjustment:

Center the feed dog in its slots sideways.

## 1.0.1



## 1.0.2

1.1.1            Take the needle out of the needle holder and loosen screws 1 and 2 (two each).

1.1.2            Adjust shaft 3 sideways so that the feed dog is centered in its slot.

1.1.3            In this position, tighten the two screws 1.

Please note:    The surfaces of the centre pins should be opposite the surfaces of screws 1. Rock shaft 3 must not have any play and not bind either.

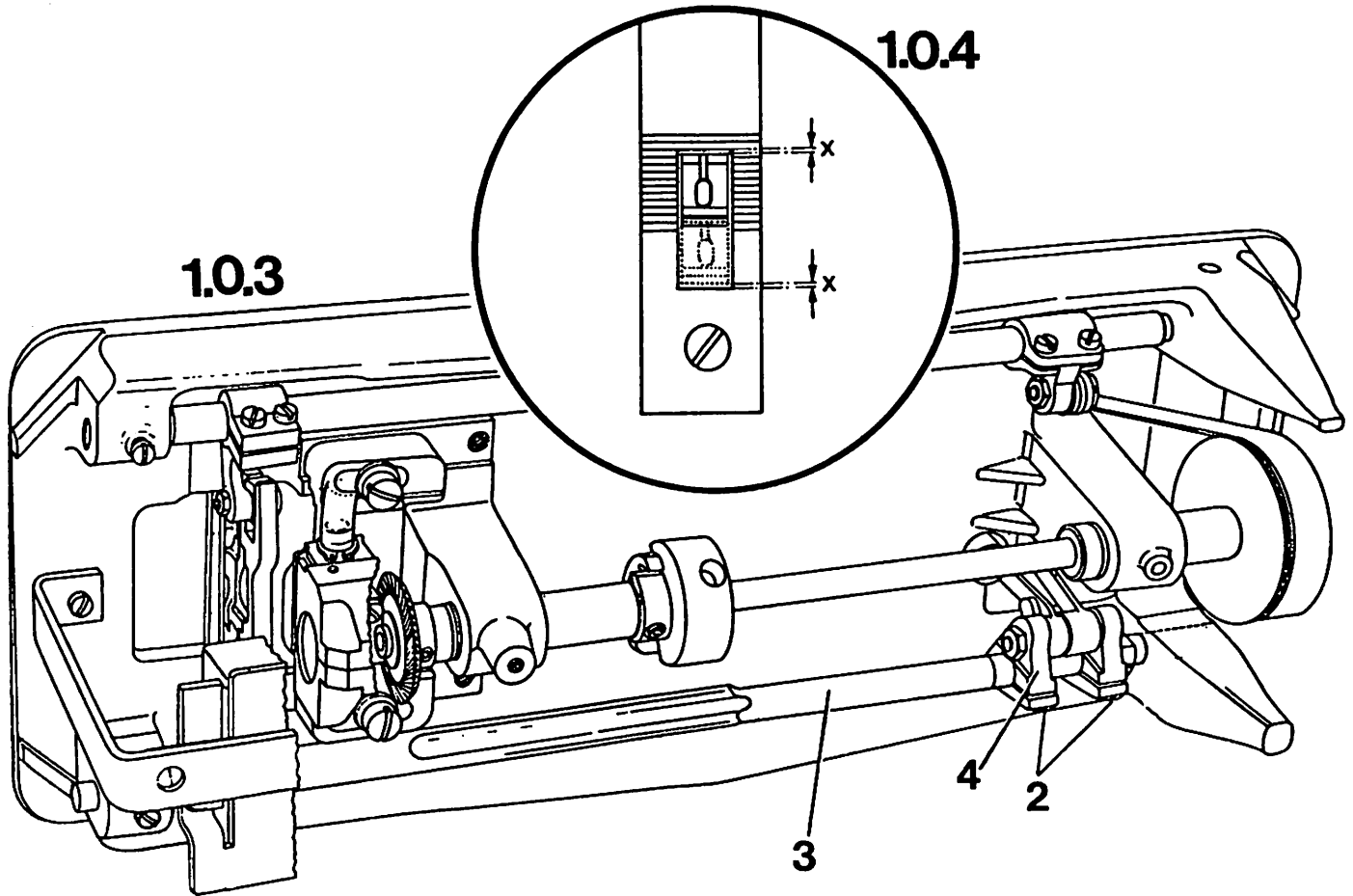
1.1.4            Leave screws 2 loose for the subsequent adjustments.

1.2

Position in sewing direction

Correct setting:

With the machine set at its longest stitch, the feed dog must not strike the near and far ends of its slots during forward and reverse sewing.



1.2.1

Set the machine at the longest stitch.

1.2.2

Making sure that screws 2 in driving crank 4 are still loose, adjust shaft 3 so that the feed dog does not strike the ends of its slot during forward and reverse sewing.

1.2.3

In this position, tighten both screws 2.

1.2.4

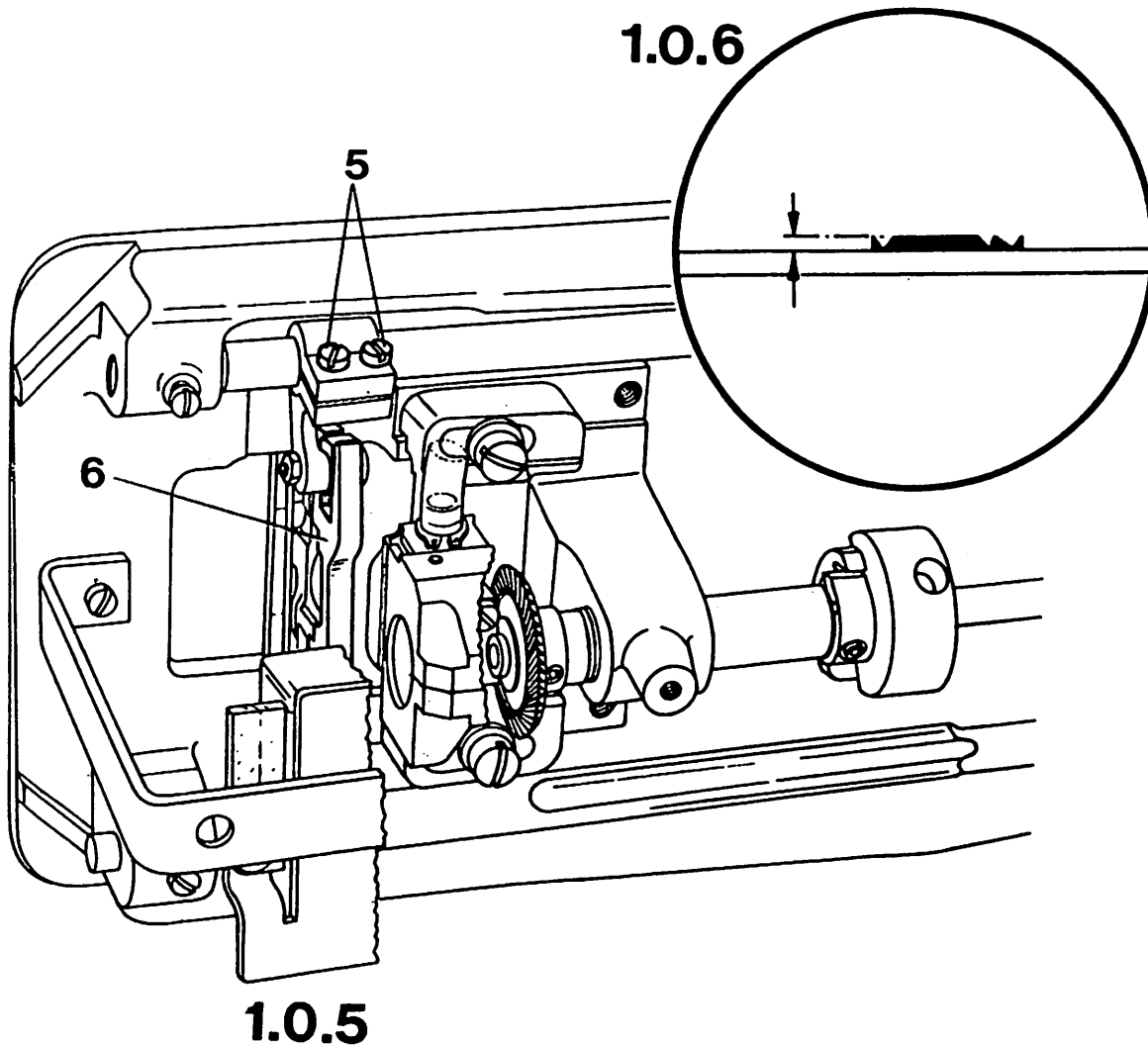
Check this adjustment (see "Correct setting").

1.3

Feed dog height

Correct setting:

With the stitch length set at "0", the feed dog should show a full tooth above the needle plate when it is at its highest point.



- 1.3.1 Set the feed regulator lever at "0".
- 1.3.2 Turn the balance wheel to bring the feed dog to its highest point.
- 1.3.3 Loosen screws 5.
- 1.3.4 Adjust feed bar 6 vertically until the feed dog shows a full tooth above the needle plate.
- 1.3.5 In this position, tighten both screws 5.
- 1.3.6 Check this adjustment (see "Correct setting").

2

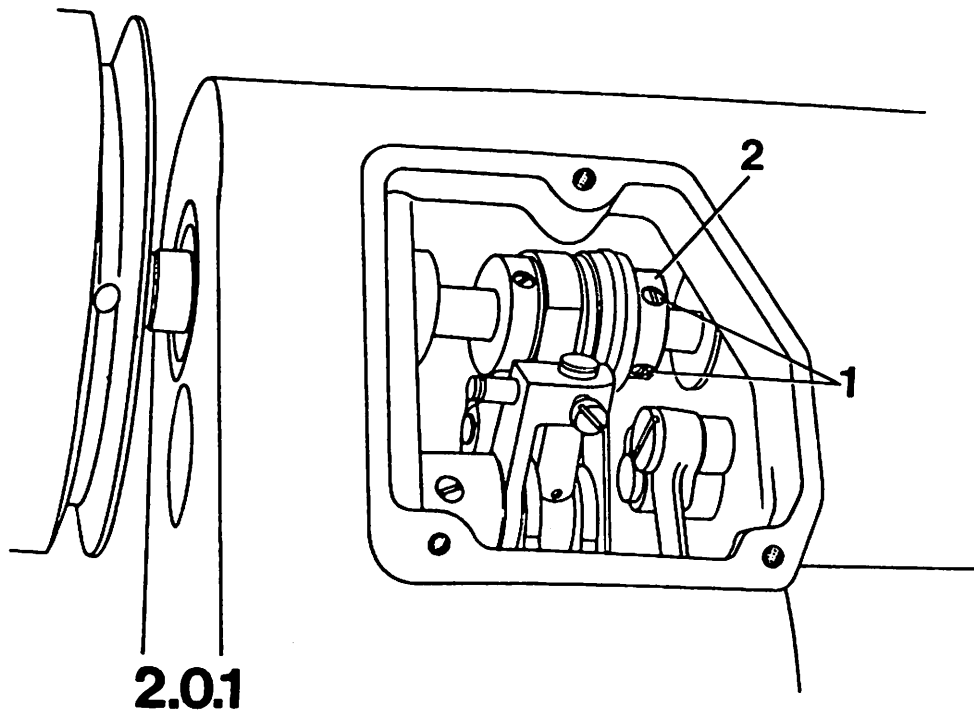
Preliminary adjustment of feed lifting motion

Correct preliminary setting:

When the needle bar is at bottom dead center the feed dog should be at its highest point.

Note:

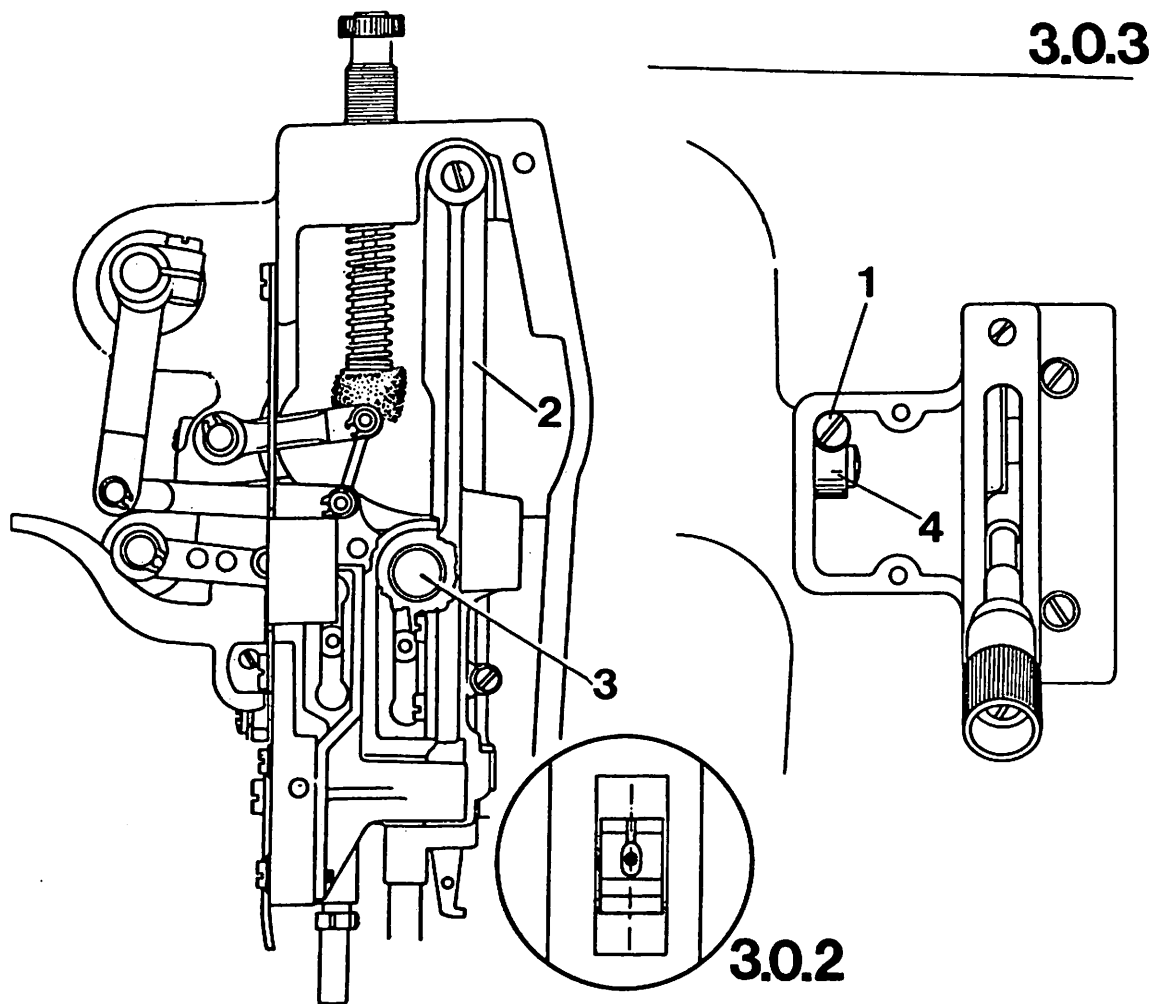
This adjustment is omitted on machines without four-motion drop feed.



- 2.1 Unscrew and remove the cover on the back of the arm standard.
- 2.2 Loosen screws 1 and turn the balance wheel to bring the needle bar to bottom dead center.
- 2.3 Turn lifting eccentric 2 so that its lobe is up.
- 2.4 In this position, securely tighten the accessible screw 1. Leave the second screw 1 loose until after the final adjustment.

Correct  
setting:

A straight needle should be centered in the needle hole.



### 3.0.1

- 3.1 Insert a new needle (for the correct system see page 3) into the needle holder.
- 3.2 Unscrew and remove the face cover and the cover arranged to the left of the feed regulator lever.
- 3.3 Set the feed regulator lever at "0".
- 3.4 Loosen screw 1.
- 3.5 Turn the balance wheel to bring the needle to a position immediately above the feed dog.
- 3.6 Adjust needle bar frame 2 sideways while turning the balance wheel until the needle is centered in the needle hole.
- 3.7 In this position, push against shaft 3 from the needle-bar end of the machine, push driving crank 4 to the left as far as it will go, and tighten screw 1.
- 3.8 Check this adjustment (see "Correct setting").

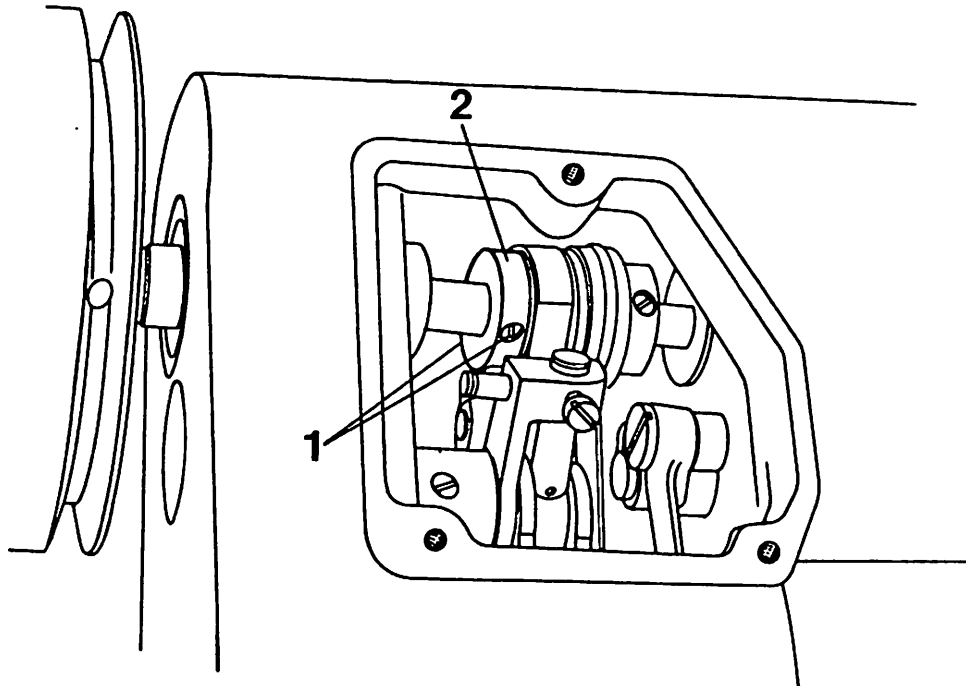


4

Top and bottom feed advancing motions

Correct setting:

With the machine set for its longest stitch and the needle bar positioned at bottom dead center the top and bottom feeds should remain motionless when the feed regulator lever is operated.



**4.0.1**

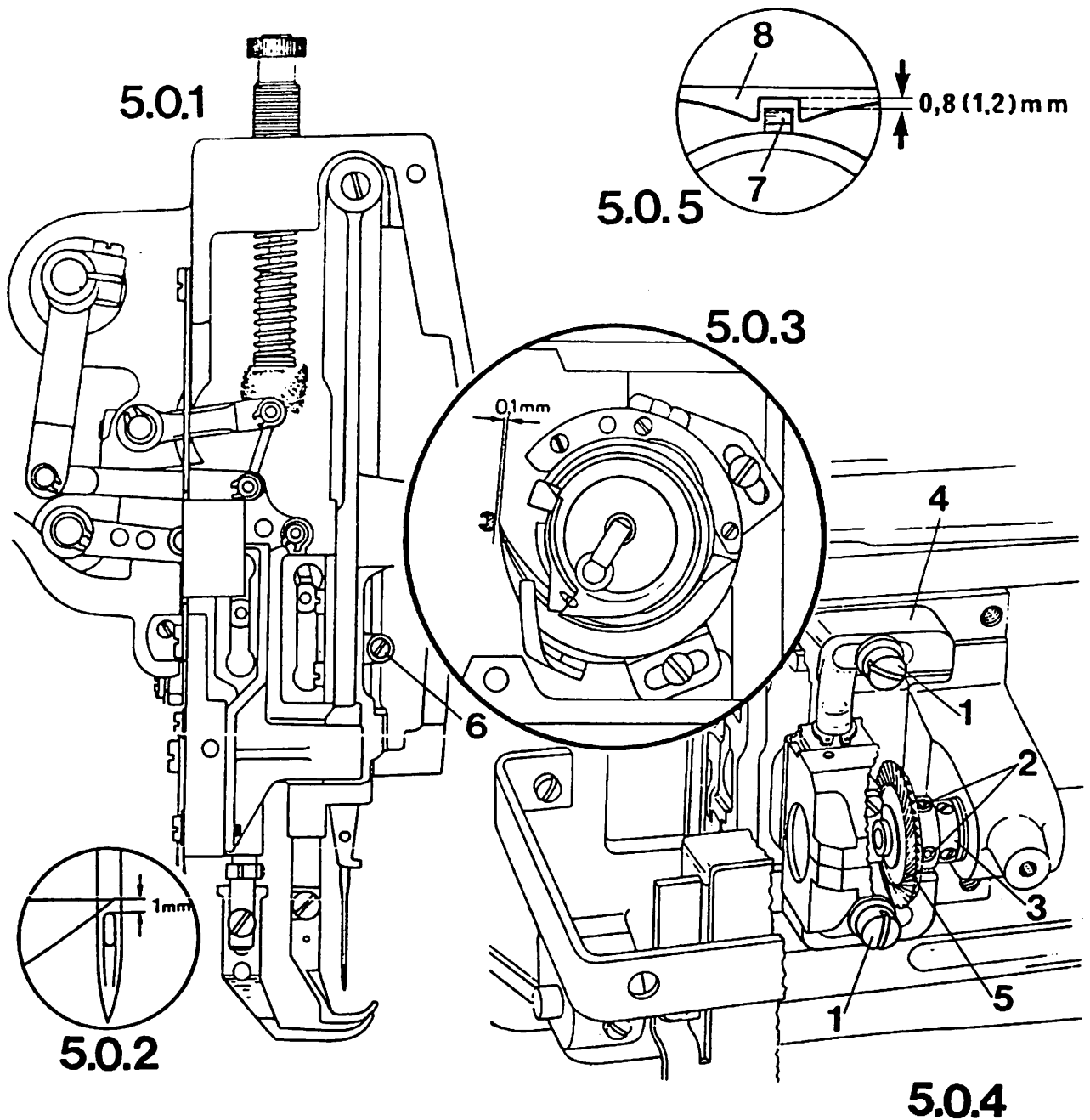
- 4.1 Set the machine for its longest stitch.
- 4.2 Loosen screws 1 just sufficiently to allow feed advancing eccentric 2 to be turned on its shaft against resistance.
- 4.3 Bring the needle bar to bottom dead center.
- 4.4 Position the eccentric lobe of feed advancing eccentric 2 "down" (without disturbing the above setting) and turn just lightly in feeding direction until the top and bottom feeds remain completely motionless when the feed regulator lever is operated.
- 4.5 In this position, tighten screws 1.
- 4.6 Check this adjustment (see "Correct setting").

(On two-needle machines, make this adjustment twice.)

Correct setting:

With the stitch length set at "0" and the needle bar positioned at the respective needle rise position (see below), there should be a clearance of 0.1 mm between hook point and needle. In this position, the top edge of the needle eye should be positioned 1 mm below the bottom edge of the hook point.

Needle bar rise: Models A and B = 1.6 mm  
 Models B/C and C = 2.0 mm  
 Models C/D and D = 2.2 - 2.5 mm



- 5.1 Make sure a new needle has been inserted, then set the stitch length at "0".
- 5.2 Unscrew and remove needle plate and feed dog.
- 5.3 Loosen screws 1 and 2 as well as the screws of collar 3.
- 5.4 Turn the balance wheel and bevel gear 5 until the hook point is positioned in the middle of the needle scarf.
- 5.5 Adjust hook bracket 4 sideways until there is a clearance of 0.1 mm between hook point and needle.
- 5.6 In this position, tighten screws 1.
- 5.7 Turn bevel gear 5 to set the marks of the small bevel gear between those on the large bevel gear.
- 5.8 Push bevel gear 5 up against the small bevel gear so that both gears are neither set too close nor have too much play.
- 5.9 In this position, move collar 3 up against bevel gear 5 and tighten the screws in the collar.
- 5.10 Turn the balance wheel to bring the needle bar to bottom dead center.
- 5.11 Push the appropriate blade of the needle rise gauge (see needle rise data) onto the needle bar immediately below its lower bearing, push the C-clamp up against the blade and tighten its screw.
- 5.12 Pull out the gauge blade and turn the balance wheel until the C-clamp contacts the needle bar bearing.
- 5.13 Turn bevel gear 5 until the hook point is opposite the center line of the needle.
- 5.14 In this position, tighten the accessible screw 2.
- 5.15 Remove the C-clamp from the needle bar.
- 5.16 \* Making sure that the hook point is still positioned opposite the center line of the needle, loosen screw 6 and adjust the needle bar vertically until the bottom edge of the hook point is positioned 1.0 mm above the top edge of the needle eye.
- 5.17 In this position, tighten screw 6, making sure that the needle scarf faces the hook point.
- 5.18 Turn the balance wheel until the second screw 2 is accessible, then tighten it.
- 5.19 Check this adjustment (see "Correct setting").

**Note:** When exchanging a hook bracket make sure that between position lug 7 and the cutout of needle plate 8 the following clearances are kept:  
 Models A and B: roughly 0,8 mm  
 Models C and D: roughly 1,2 mm (see Fig. 5.0.5.)  
 If necessary, correct hook height by inserting respective washers.

\*On N10 machines, make this adjustment with the machine set at its longest stitch.

6

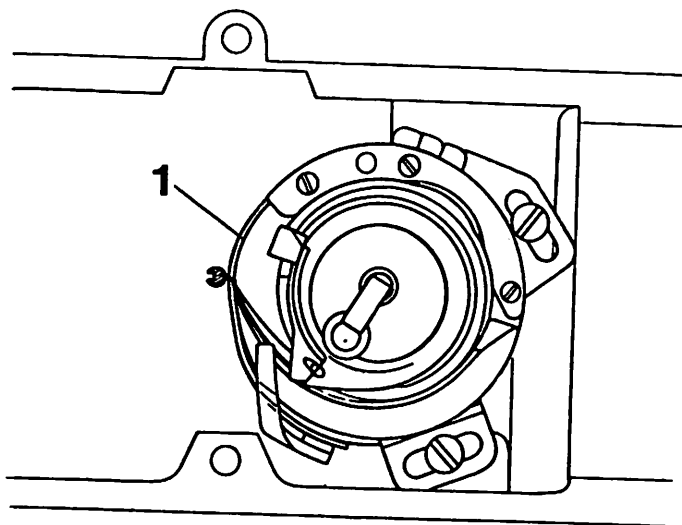
### Needle guard

(On two-needle machines, make this adjustment twice.)

Correct  
setting:

When the needle bar is at the needle rise position, needle guard 1 should contact the needle just lightly, thus preventing the needle striking the hook point.

Requirement: The hook-to-needle clearance must have been set correctly.



## 6.0.1

6.1 Turn the balance wheel to bring the needle to the needle rise position.

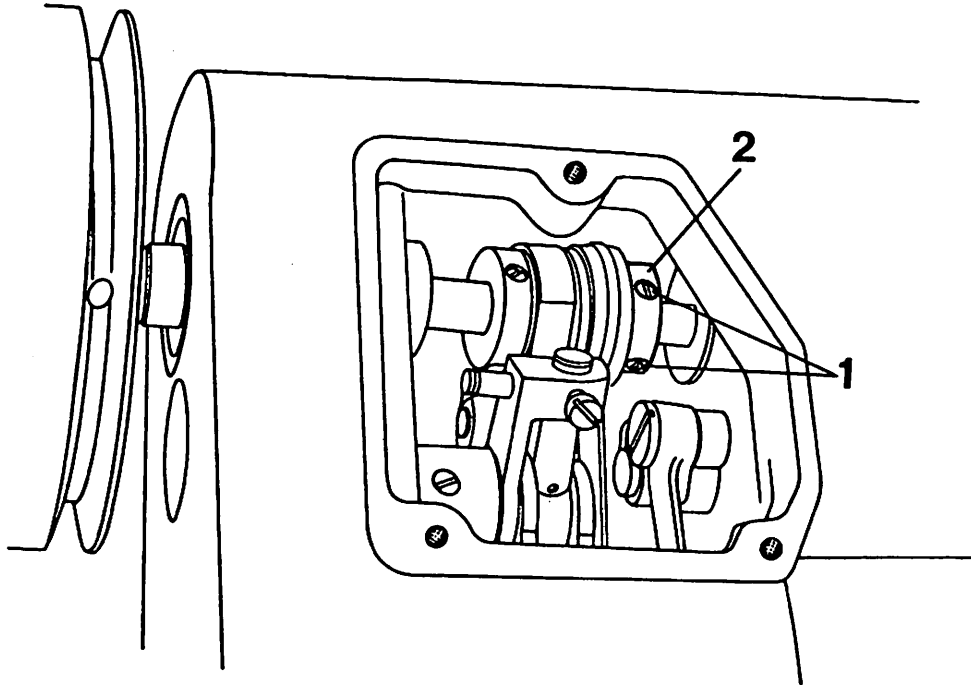
6.2 Adjust needle guard 1 so that it contacts the needle just lightly, however without deflecting it.

Correct  
setting:

With the machine set at its longest stitch, the feed dog and the needle point should reach the top surface of the needle plate at the same time when the balance wheel is turned.

Note:

This adjustment is omitted on machines without four-motion drop feed.



**7.0.1**

- 7.1 Replace and screw on feed dog and needle plate, making sure that position lug 1 of the bobbin case base (Fig. 11.0.1) enters the recess in the needle plate and the feed dog moves freely in its slot.
- 7.2 Loosen screws 1 (Fig. 7.0.1) just sufficiently to allow lifting eccentric 2 to be turned on its shaft against resistance.
- 7.3 Turn lifting eccentric 2 so that feed dog and needle point reach the top surface of the needle plate at the same time when the balance wheel is turned.
- 7.4 In this position, tighten screws 1.
- 7.5 Check this adjustment (see "Correct setting").

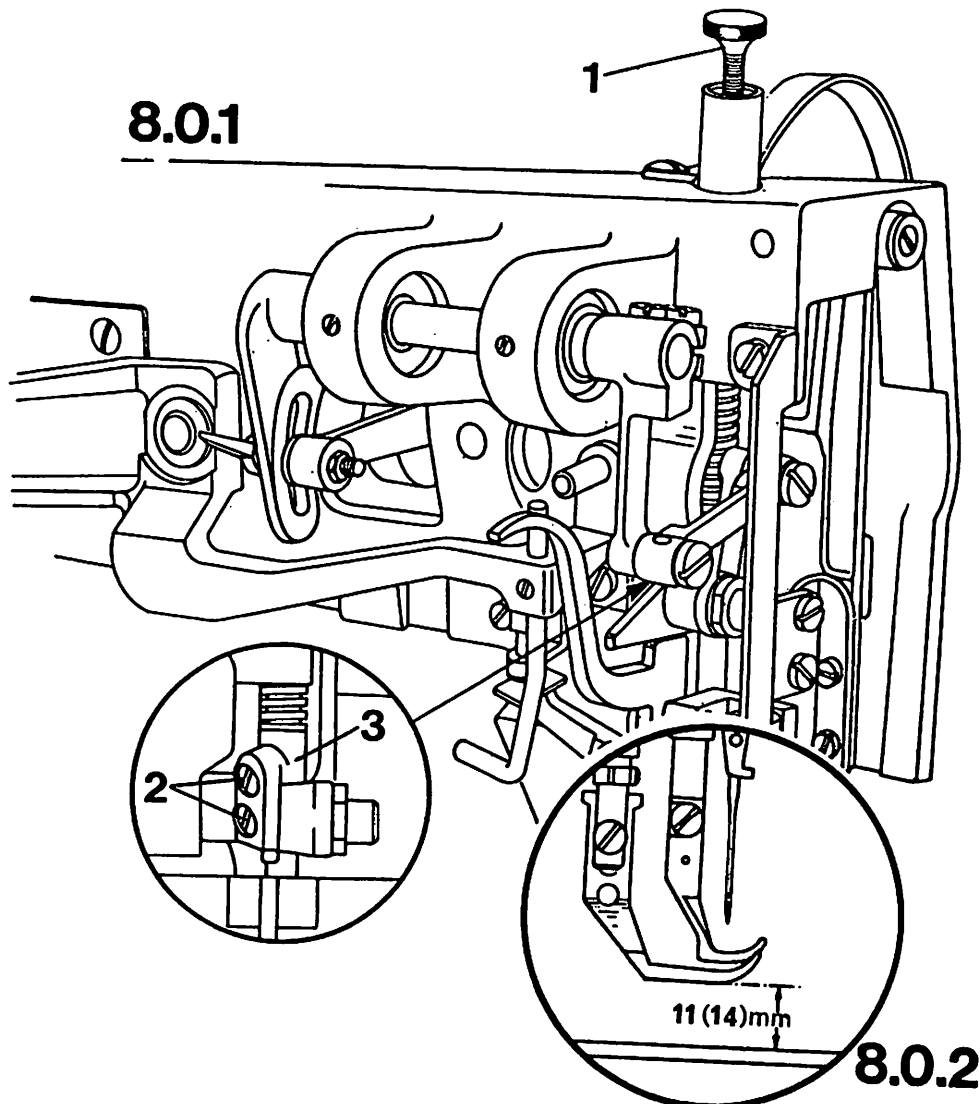
Clearance between presser foot and needle plate  
(On subcl. -706/35; -706/47 and -706/48 machines only)

Correct setting:

When the presser foot is raised, there should be a clearance of about 11 mm on subcl. -706/35 or about 14 mm on subcl.-706/47 and -706/48 between it and the needle plate.

Note:

The clearance on subcl. -706/05, -706/07 and -706/25 machines is determined by the machine design.



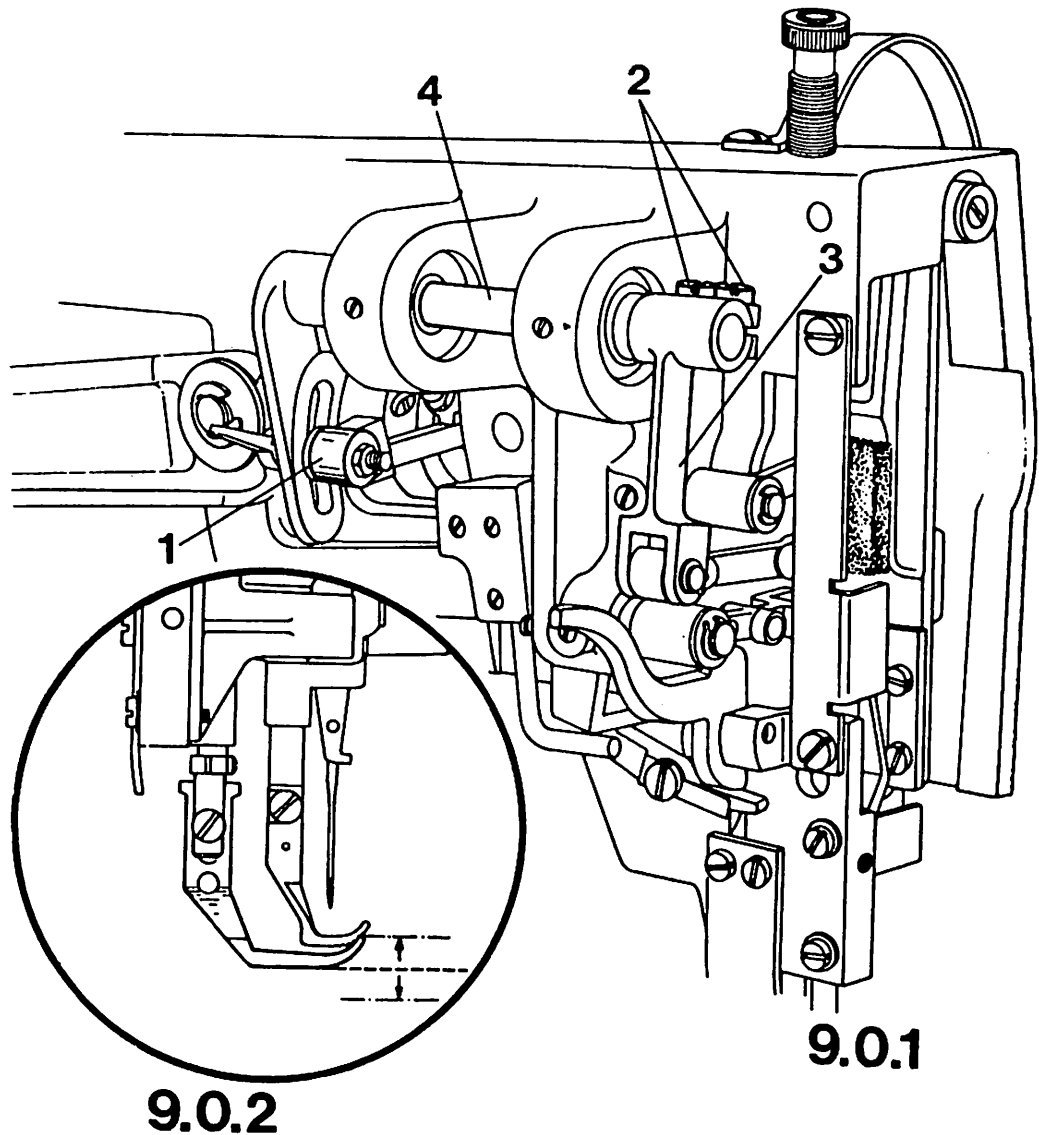
- 8.1 Operate the presser bar lifter to raise the presser foot.
- 8.2 Reduce the pressure on the presser bar by turning out screw 1.
- 8.3 Loosen screws 2 of lifting collar 3.
- 8.4 Adjust the presser bar vertically until there is a clearance of about 11 mm or 14.0 mm respectively between presser foot and needle plate.
- 8.5 In this position, tighten screws 2, making sure the presser foot is set parallel to the edge of the needle plate.
- 8.6 Check this adjustment (see "Correct setting").

Note:

Regulate the presser foot pressure by turning in screw 1 while making a sewing test.

Correct  
setting:

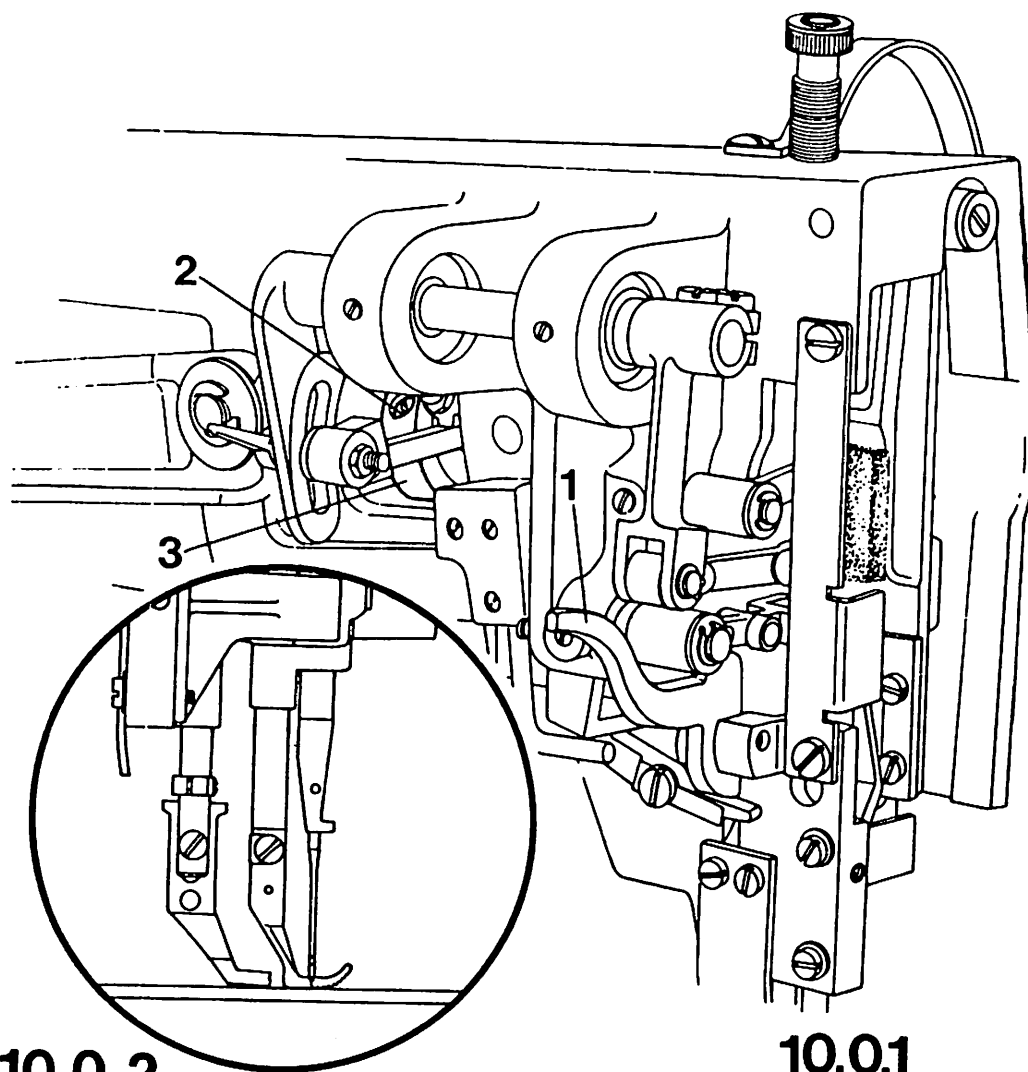
With stud 1 centered in its slot and the presser foot lowered onto the needle plate, the vibrating presser should make half its motion above and the other half below the presser foot sole.



- 9.1 Make sure the presser foot is lowered onto the needle plate and stud 1 is centered in its slot, then loosen screws 2 just sufficiently to allow lever 3 to be turned on drive shaft 4 against resistance.
- 9.2 Adjust lever 3 so that the vibrating presser makes half its motion above and the other half below the presser foot sole when the balance wheel is turned.
- 9.3 In this position, tighten both screws 2.
- 9.4 Check this adjustment (see "Correct setting").

Correct  
setting:

With the presser foot resting on the needle plate, the vibrating presser and the needle point should reach the needle plate at the same time.



**10.0.2**

**10.0.1**

- 10.1 Operate presser bar lifter 1 to lower the presser foot onto the needle plate.
- 10.2 Loosen screws 2 just sufficiently to allow lifting eccentric 3 to be turned on its shaft against resistance.
- 10.3 Turn lifting eccentric 3 until the vibrating presser and the needle point reach the needle plate at the same time when the balance wheel is turned.
- 10.4 In this position, tighten screws 2.
- 10.5 Check this adjustment (see "Correct setting").



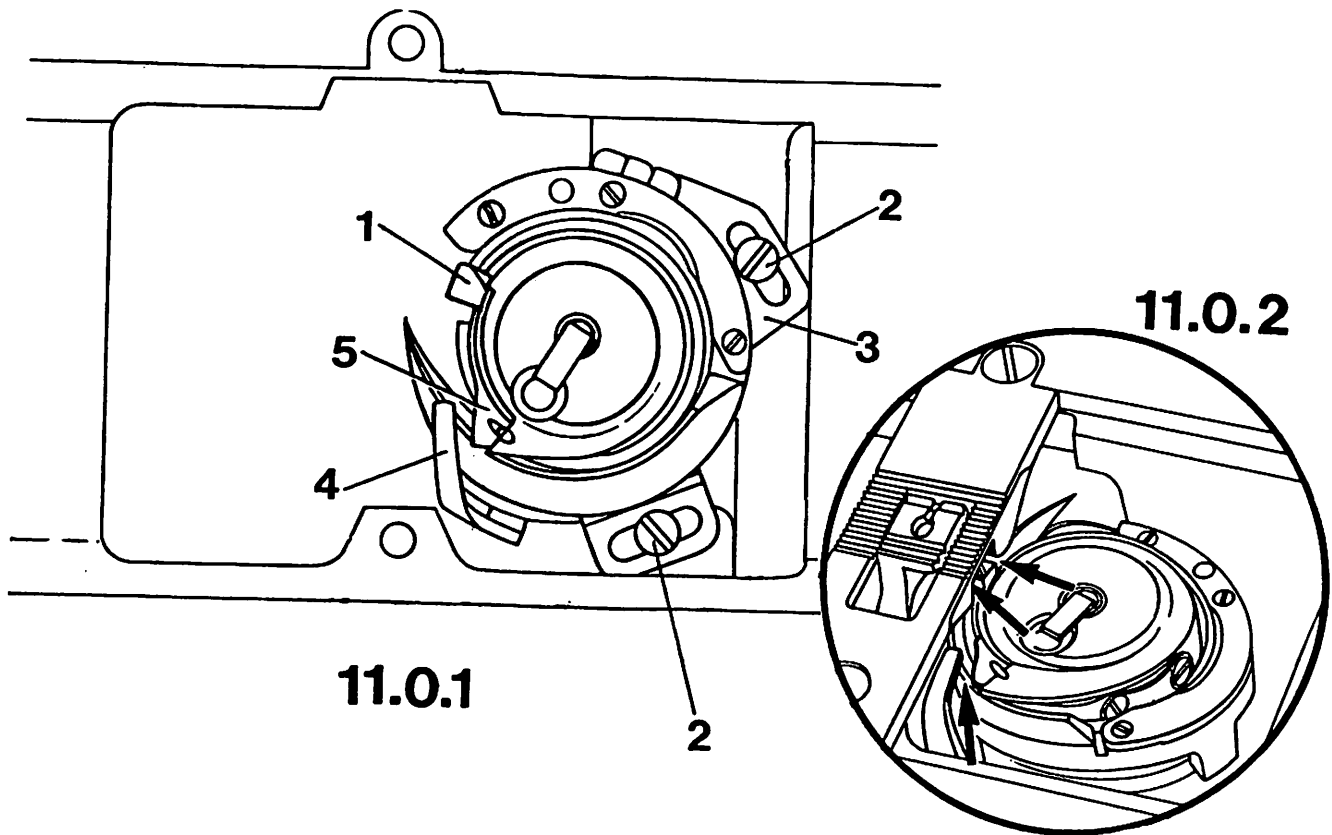
11

Bobbin case opener

(On two-needle machines, make this adjustment twice.)

Correct setting:

The needle thread must be trapped neither between opener finger 4 and bobbin case base 5 nor between position lug 1 and the walls of the recess in the needle plate (see arrows in Fig. 11.0.2).



- 11.1 Thread the machine, place a piece of fabric under the presser foot and lower the latter.
- 11.2 Loosen screws 2 just sufficiently to allow collar 3 to be turned against resistance.
- 11.3 Turn collar 3 on the hook bracket so that when you turn the balance wheel the needle thread will be trapped neither between opener finger 4 and bobbin case base 5 nor between position lug 1 and the walls of the recess in the needle plate (see arrows in Fig. 11.0.2) from the time the loop is picked up by the hook point until it is pulled up through the needle hole.
- 11.4 In this position, tighten screws 2.
- 11.5 Check this adjustment (see "Correct setting").

Tension release mechanism

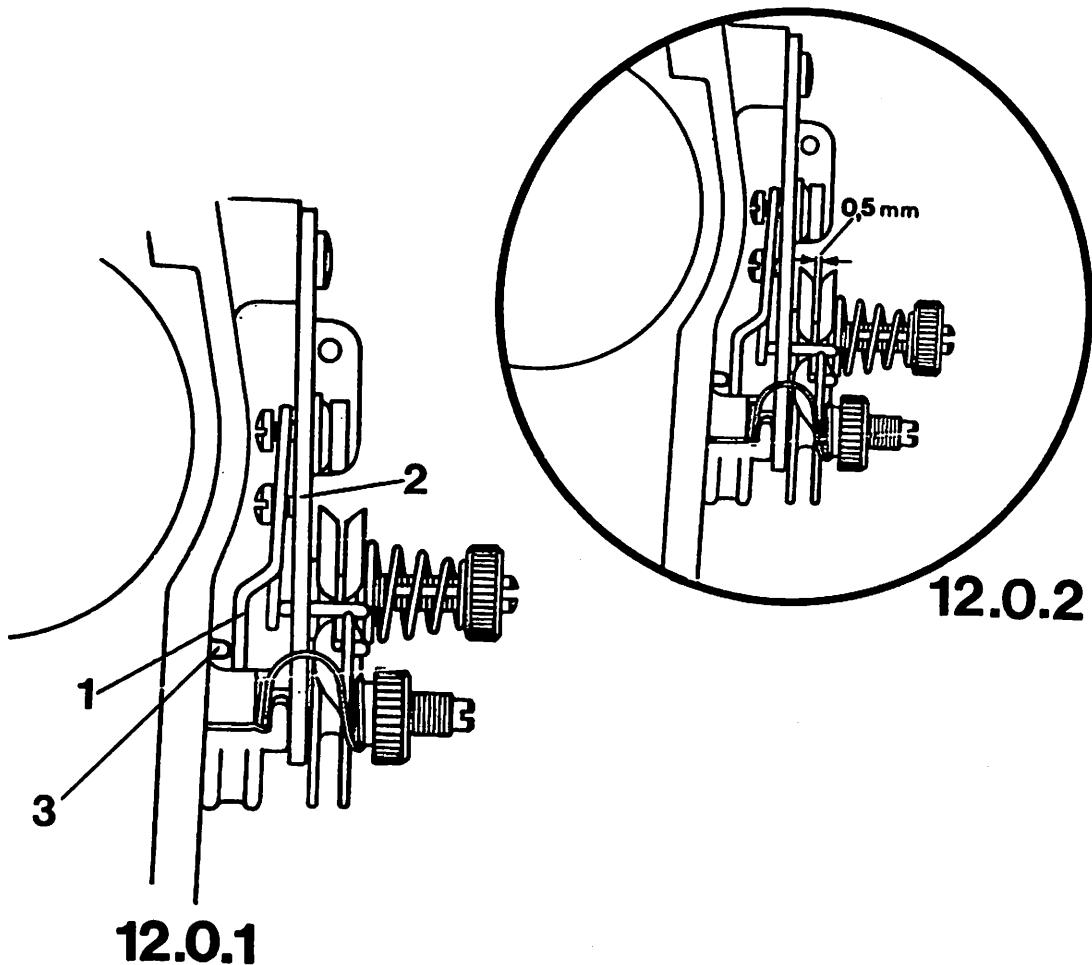
(On two-needle machines, make this adjustment twice).

Correct  
setting:

When the presser foot is raised, both tension discs should be at least 0.5 mm apart.

Note:

The clearance of 0.5 mm is the minimum clearance; for thicker threads a clearance of more than 1.0 mm may be required.



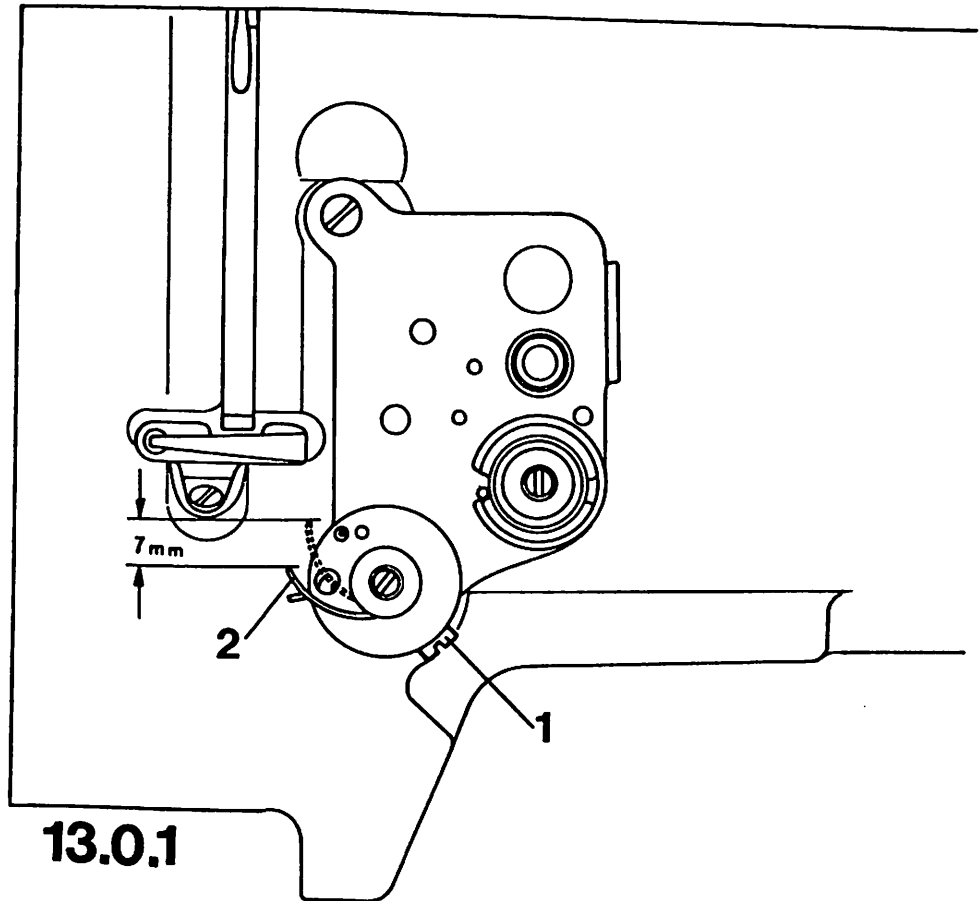
- 12.1 Operate the presser bar lifter to raise the presser foot.
- 12.2 Adjust thrust plate 1 behind tension base plate 2 so that there is a clearance of at least 0.5 mm between both tension discs.  
With effective tension pin 3 must not be under stress.
- 12.3 Check this adjustment (see "Correct setting").

Correct  
setting:

The stroke of the thread check spring should be completed when the needle point has reached the surface of a piece of fabric of medium thickness (which equals a stroke of abt. 7 mm).

Note:

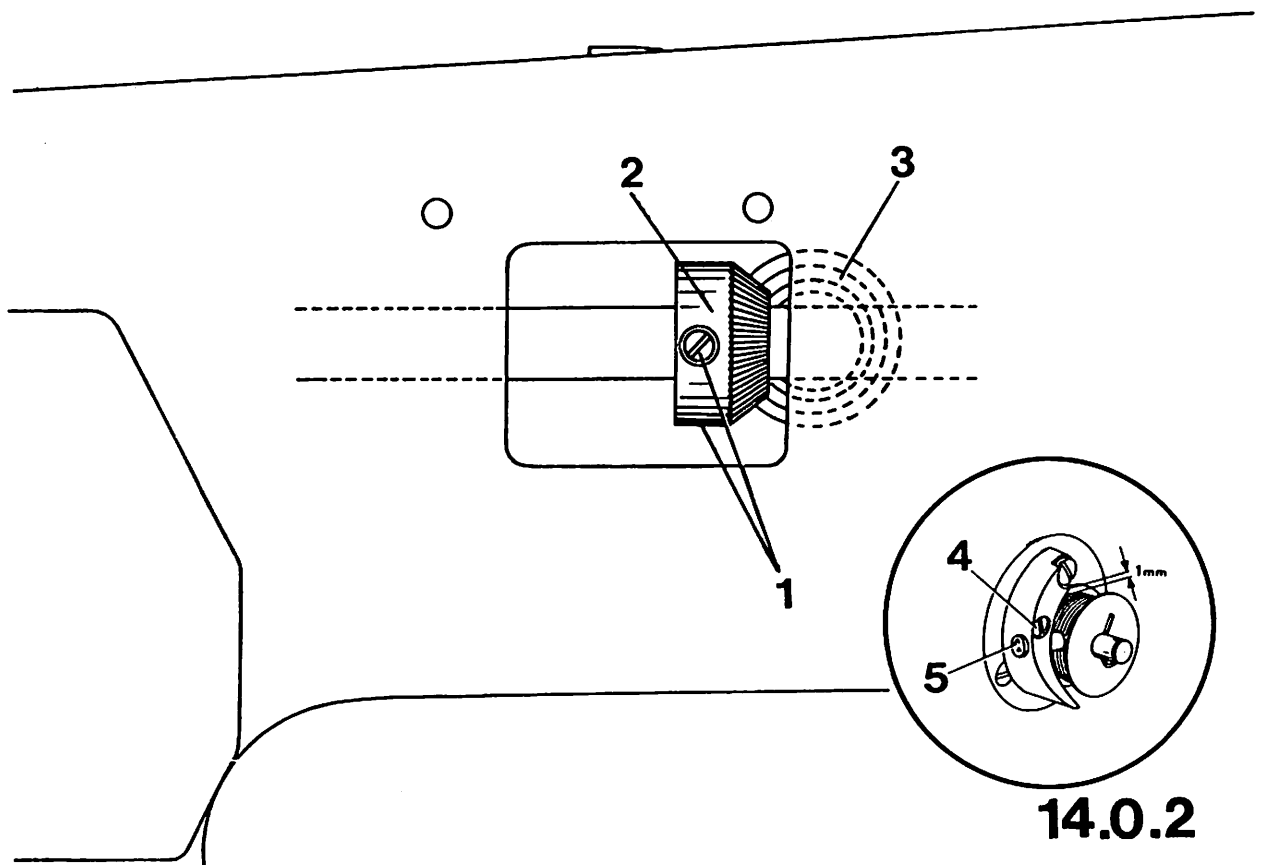
Special sewing operations may make it necessary to set the check spring for a shorter or longer stroke.



- 13.1 Make sure the machine has been threaded, then place a piece of fabric under the presser foot and lower the latter.
- 13.2 Loosen screw 1.
- 13.3 Turn the balance wheel to sew a few stitches, then bring the take-up lever to its highest point.
- 13.4 Continue turning the balance wheel in its normal direction until the thread check spring has receded to the starting position of its 7 mm stroke.
- 13.5 In this position, push stop 2 up against the thread check spring and tighten screw 1.
- 13.6 Check this adjustment (see "Correct setting").

Correct  
setting:

When the bobbin winder is engaged the winder spindle should be driven reliably; when the bobbin winder is disengaged, however, friction wheel 3 must not contact drive wheel 2. The bobbin winder should stop automatically when the thread wound on the bobbin has reached a point about 1.0 mm below its rim.



### 14.0.1

- 14.1 Engage the bobbin winder.
- 14.2 Loosen screws 1.
- 14.3 Adjust the position of the arm shaft to set drive wheel 2 so close to friction wheel 3 that the latter will be driven reliably when the balance wheel is turned, but will not be driven when the bobbin winder is disengaged.
- 14.4 In this position, tighten both screws 1.
- 14.5 Loosen screws 4.
- 14.6 If the bobbin is too full, push stud 5 toward the right, if it is not full enough, push the stud toward the left and tighten screw 4.
- 14.7 Check this adjustment (see "Correct setting").

- 15                    **Final worksteps**
- 15.1                **Replace and screw on the face and all other covers.**
- 15.2                **Replace and screw on bevel gear housing (on 2-needle machines both of them)below bedplate.**
- 15.3                **Make a sewing test and at the same time regulate the presser bar pressure by turning screw 1 in or out (Fig. 8.0.1) until proper feeding is ensured even at top speed.**

**PFAFF®**

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