



Service Manual

–900/16; /56; –966/05

for Pfaff Series 240 and 1240

Note:

The adjustments in this service manual apply to Pfaff machine classes 241, 242, 244, 245 and 246 (small vertical hook) and to classes 1241, 1242, 1243, 1244, 1245 and 1246 (large vertical hook).
Deviations in such data as needle rise and clearances are indicated as such in the various sections.

Needle rise positions:

Models A and B: 1.6 mm
Models B/C and C: 2.0 mm
Models C/D: 2.2 to 2.5 mm

Thread trim speed: 150 r.p.m.

Tools and other equipment for adjustment

Set of screwdrivers, blade width 2 to 10 mm

Set of allen keys from 2 to 6 mm

Set of open-ended spanners from 4 to 14 mm

Metal rule

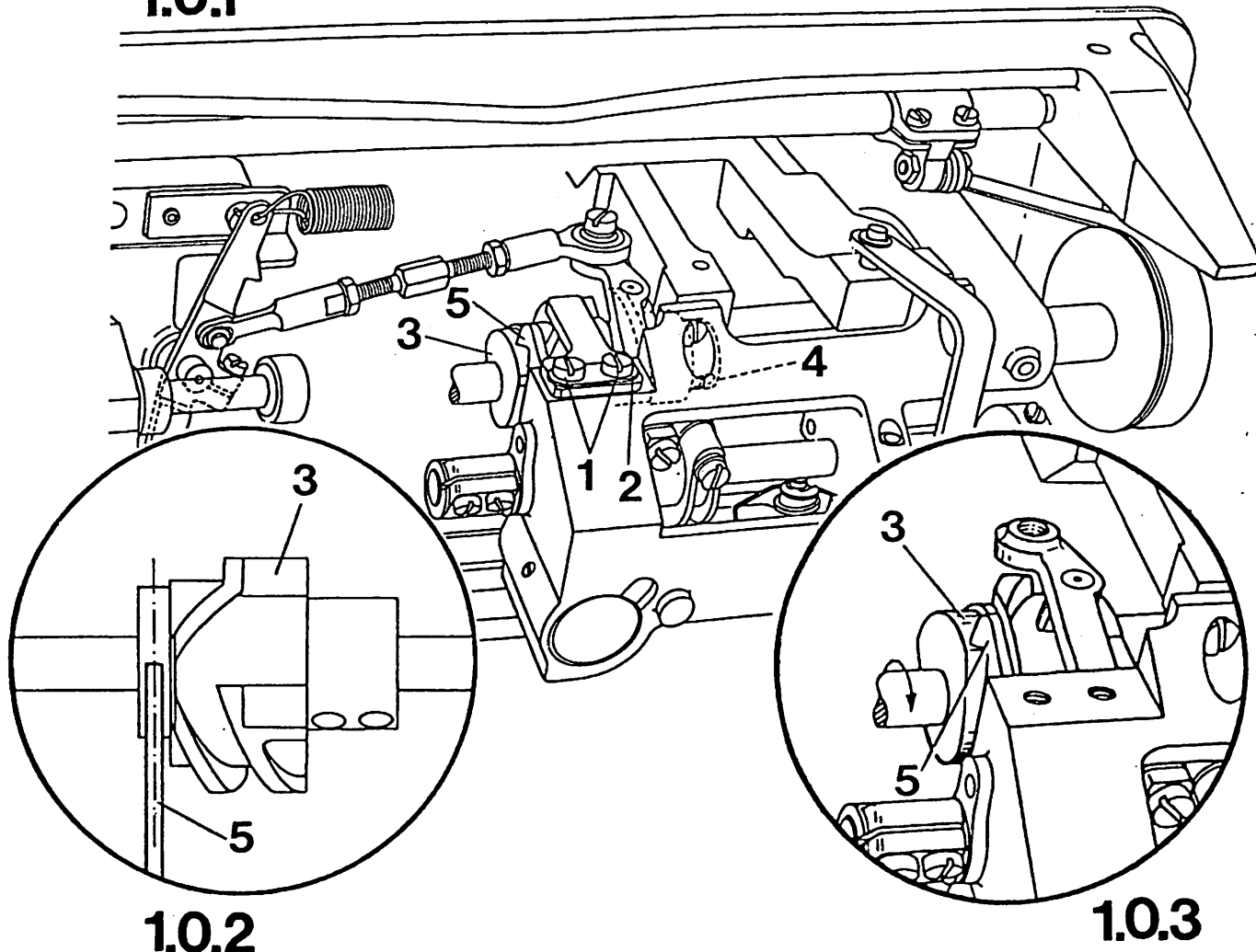
Sewing thread and material

1 Preliminary adjustment of control cam

Setting:

The eccentric track of control cam 3 must be positioned so that latch 5 is laterally centred on it (see Fig. 1.0.2).
When the take-up lever is at top dead centre, the tip of latch 5 must be at the beginning of the eccentric surface of the cam track, in sewing direction (see Fig. 1.0.3).

1.0.1



1.0.2

1.0.3

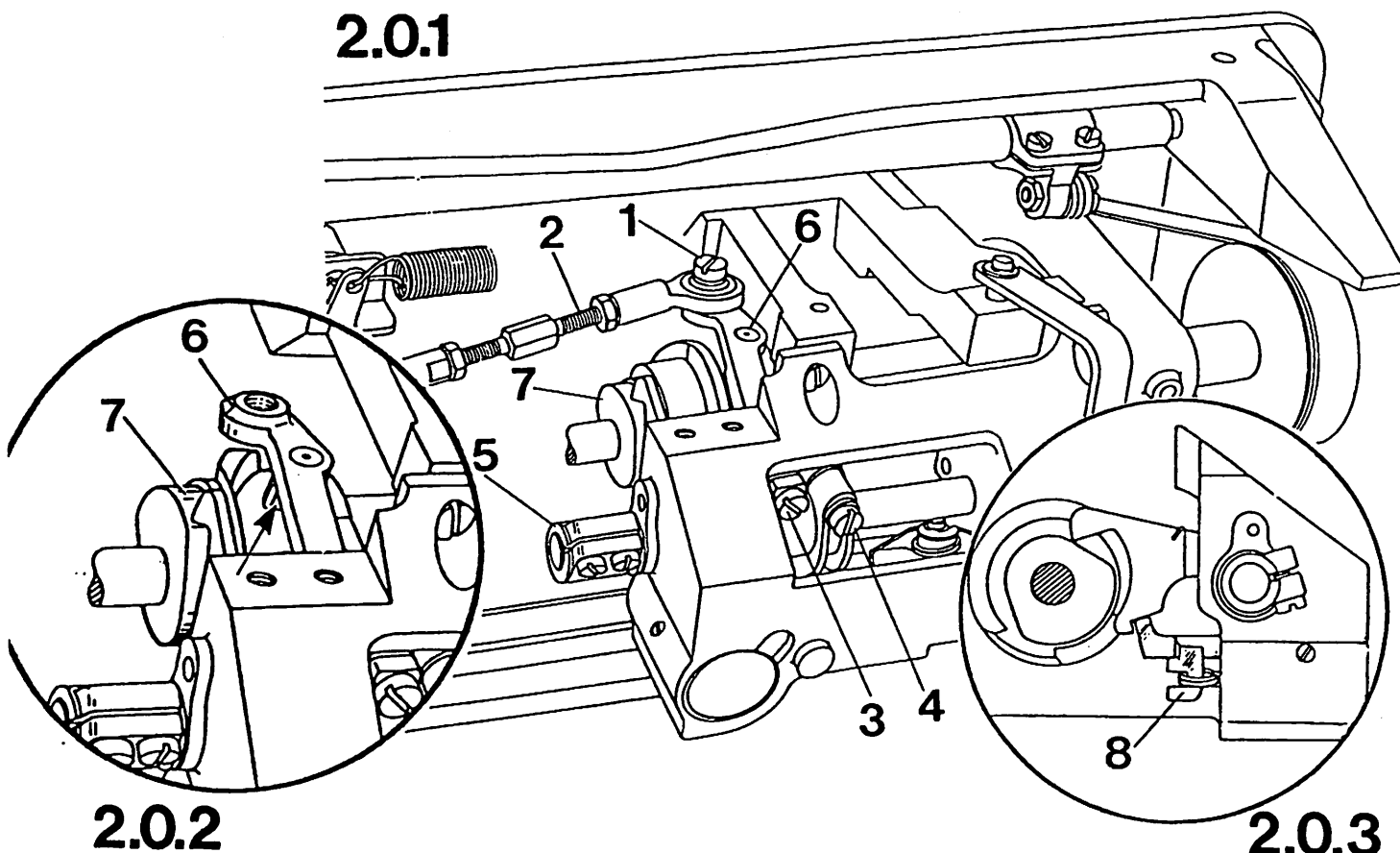
- 1.1 Take out screws 1 and remove locking finger 2 together with its cover tab.
- 1.2 Loosen the four screws of control cam 3.
- 1.3 Loosen the two screws of fixing collar 4.
- 1.4 Adjust control cam 3 laterally so that its eccentric track is centred with latch 5.
- 1.5 In this position move collar 4 up against cam 3 and tighten the screws of the collar.
- 1.6 Turn the balance wheel to position the take-up lever at top dead centre.
- 1.7 Making sure that cam 3 is still against fixing collar 4, turn the cam in the rotating direction so that the tip of latch 5 is at the beginning of the eccentric surface of the cam track (see Fig. 1.0.3).
- 1.8 In this position tighten the four screws of control cam 3.

Setting:

In the needle rise position the flat stud of control lever 6 (see arrow in Fig. 2.0.2) must drop freely into the track of control cam 7 when engaging lever 8 is operated.

Needle rise positions:	Models A and B:	1.6 mm
	Models B/C and C:	2.0 mm
	Models C/D and D:	2.2 to 2.5 mm

2.0.1



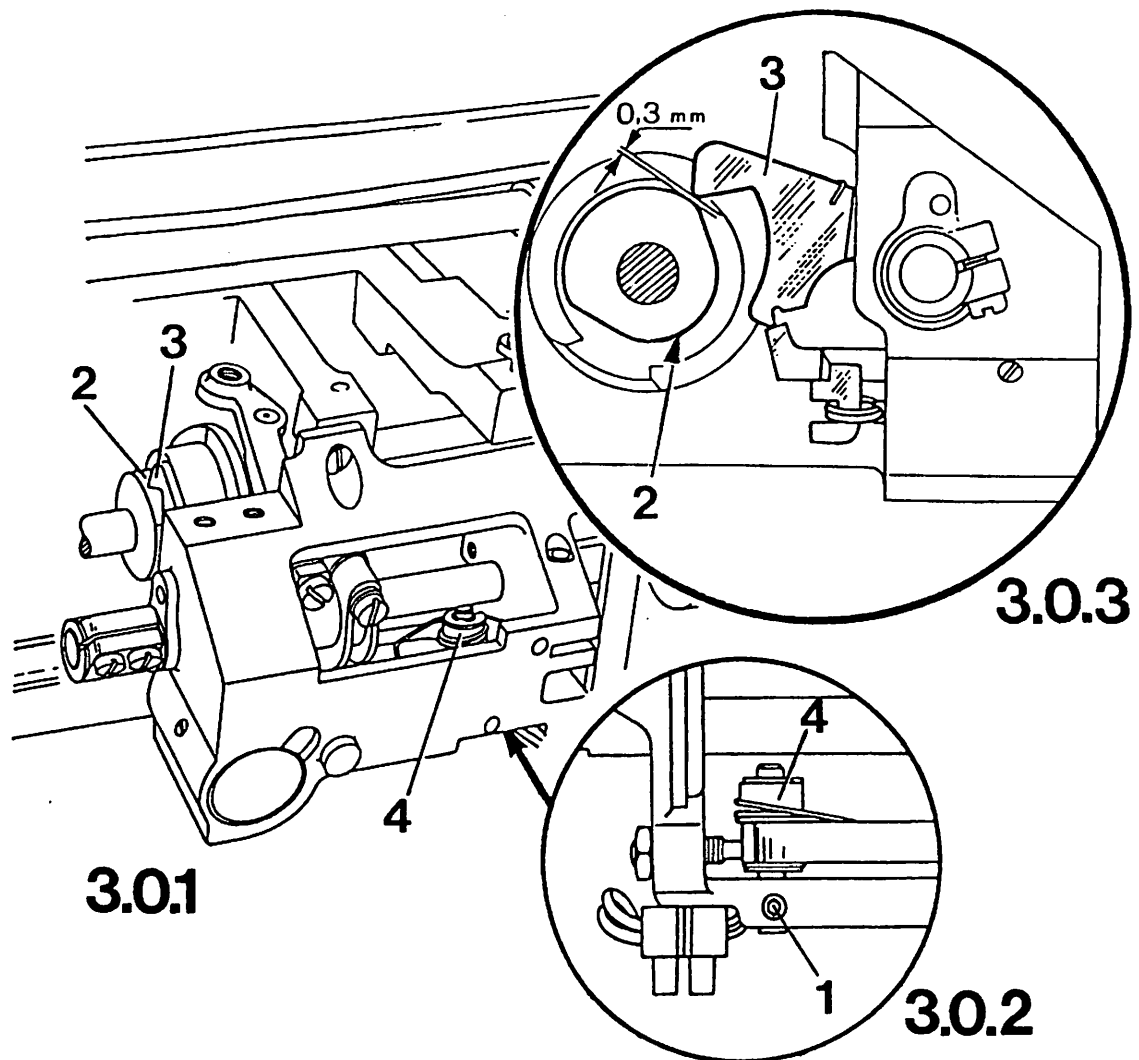
2.0.2

2.0.3

- 2.1 Take out screw 1 and swing out linkage 2.
- 2.2 Loosen clamp screws 3 and 4.
- 2.3 Turn the balance wheel to set the needle bar at the corresponding needle rise position (see above).
- 2.4 Move clamp 5 up against the housing, making sure that it is parallel with the bedplate. Retain this position and adjust control lever 6 laterally so that its flat stud drops into the track of control cam 7 when pushed lightly.
- 2.5 In this position hold control lever 6 against the bottom of the cam track and tighten clamp screw 3.
- 2.6 Carry out a check (see "setting").
Clamp screw 4 is left loose for adjustment of the release trip.

Setting:

When the eccentric section of cam track 2 is beneath the interlocking latch, with the trimmer in its resting position, there must be a clearance of 0.3 mm between locking latch 3 and cam track 2.

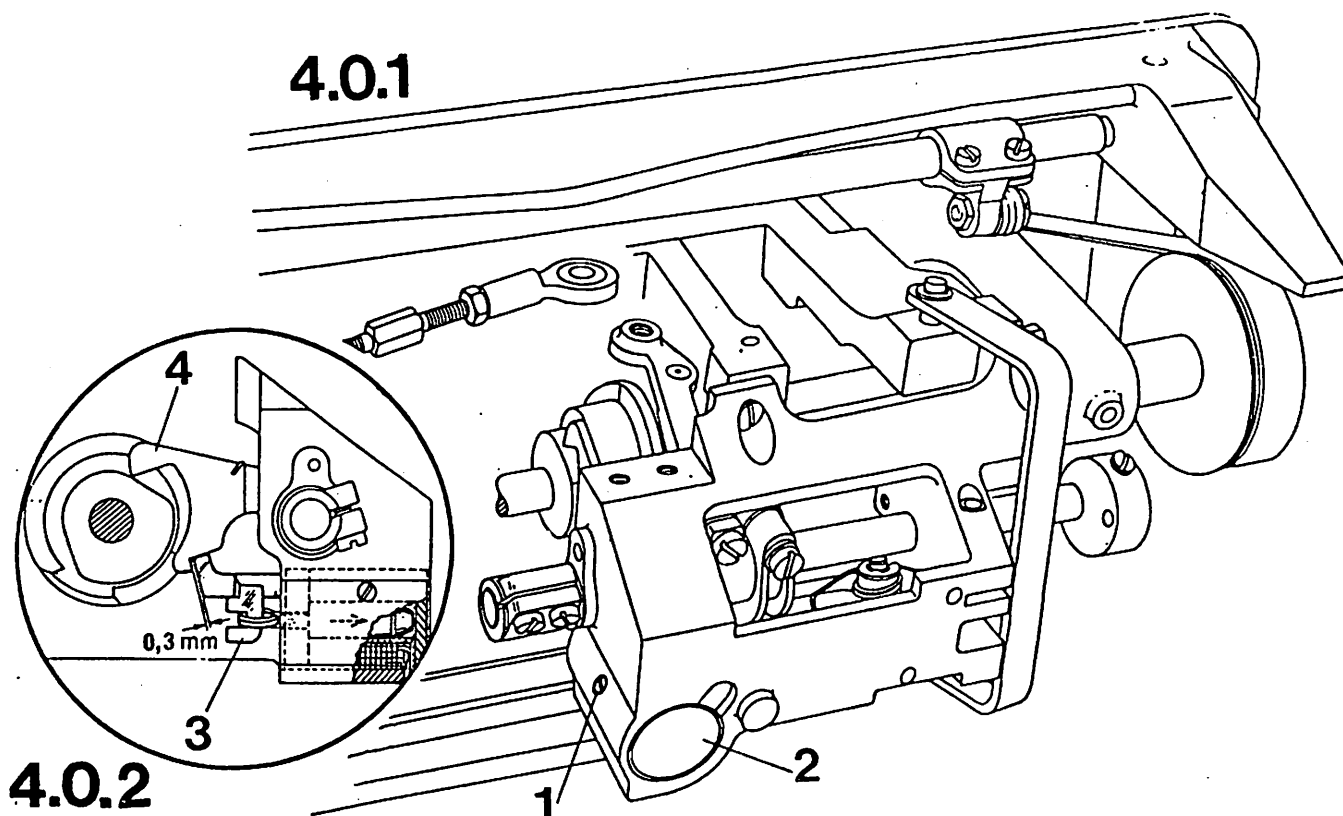


- 3.1 Loosen screw 1.
- 3.2 Turn the balance wheel to set the eccentric section of cam track 2 under latch 3.
- 3.3 Position bearing stud 4 so that there is a clearance of 0.3 mm latch 3 and cam track 2.
- 3.4 In this position tighten screw 1.
- 3.5 Carry out a check (see "setting").

Setting:

When the engaging solenoid is operated in the needle-rise position there must be a clearance of 0.3 mm between engaging lever 3 and interlocking latch 4.

4.0.1

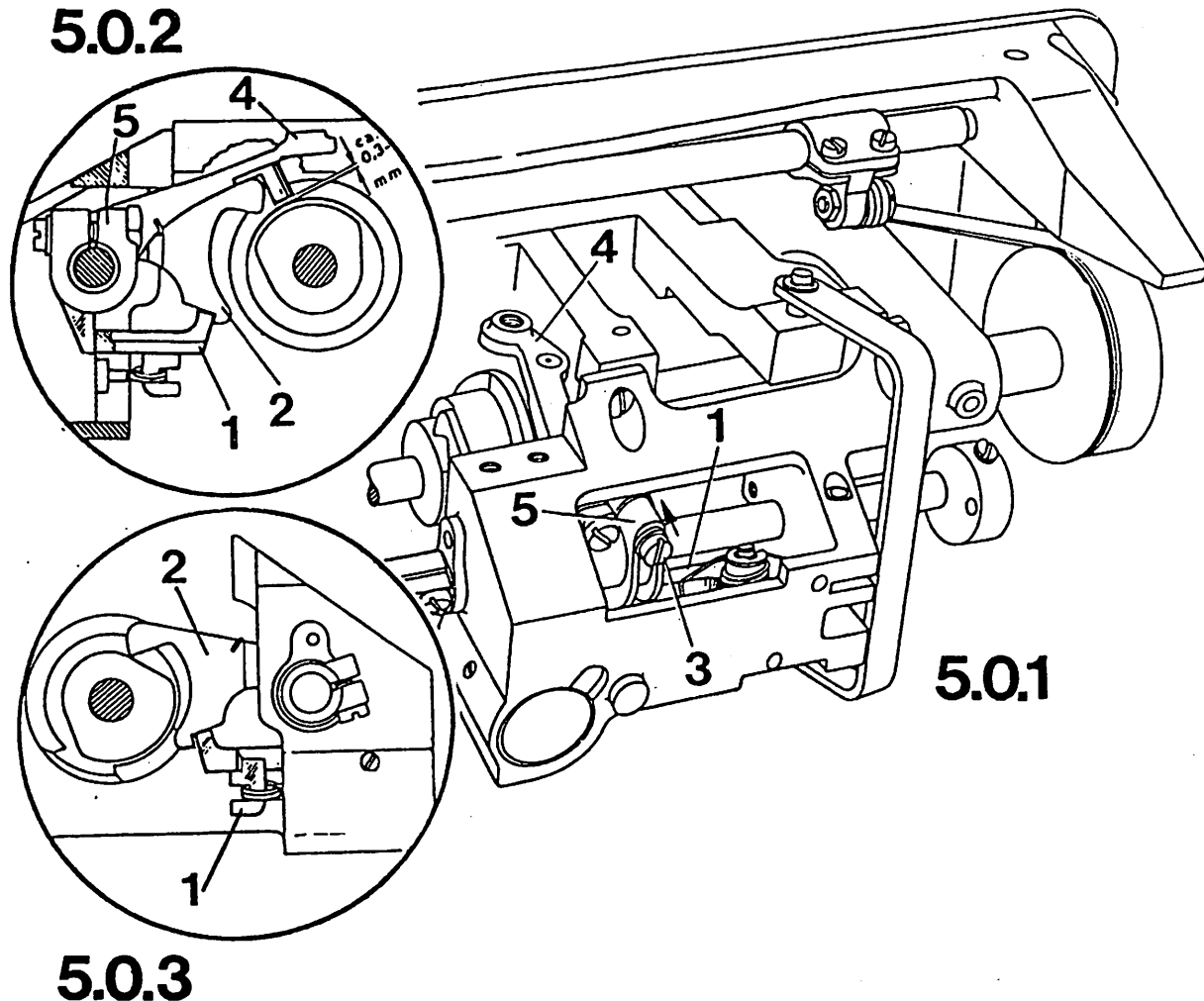


4.0.2

- 4.1 Turn the balance wheel to set the machine at the corresponding needle rise position (see page 2).
- 4.2 Loosen screw 1 just enough to allow engaging solenoid 2 to be moved.
- 4.3 Operate engaging lever 3 by hand, so that locking lever 4 engages.
- 4.4 Push the solenoid plunger fully into its housing and position the housing together with the plunger so that there is a clearance of 0.3 mm between engaging lever 3 and latch 4.
- 4.5 In this position, tighten screw 1.
- 4.6 Carry out a check (see "setting").

Setting:

In the needle-rise position and with control lever 4 engaged there must be a clearance of 0.3 mm between the pin of the control lever and the bottom of the cam track.

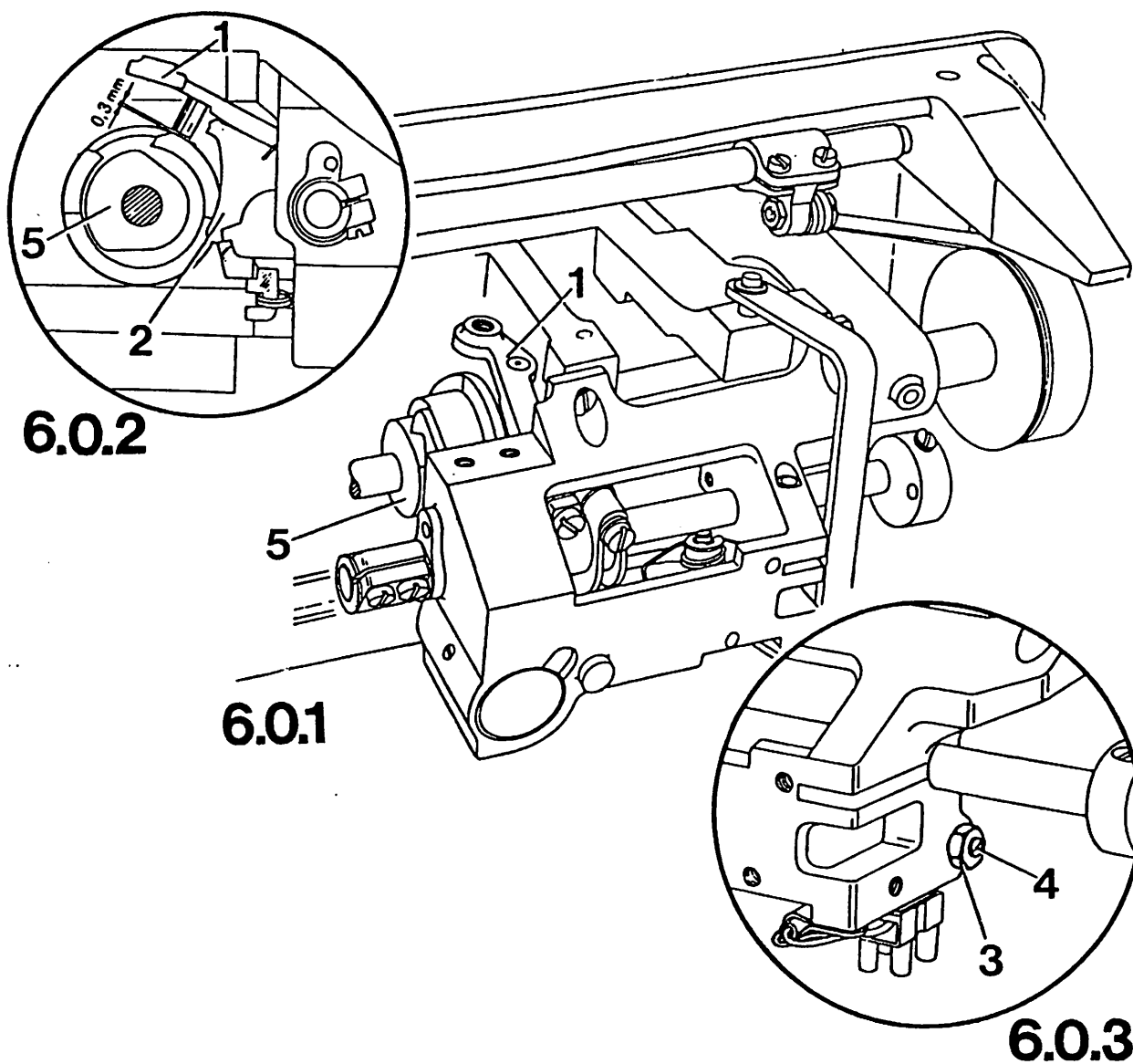


- 5.1 Turn the balance wheel to set the machine in the needle rise position (see Page 2).
- 5.2 Operate engaging lever 1 by hand (allow interlocking latch 2 to engage).
- 5.3 Making sure that clamp screw 3 is still loose, push control lever 4 to the bottom of the control cam track.
- 5.4 Retaining this position, push release trip 5 against engaging lever 1 and to the side against control lever 4, then tighten screw 3 lightly.
- 5.5 Tapping lightly against release trip 5 (in direction of arrow) and pushing control lever 4 at the same time, set a clearance of 0.3 mm between the pin of lever 4 and the bottom of the cam track.
- 5.6 In this position tighten clamp screw 3.
- 5.7 Carry out a check (see "setting").

6 Engaging lever

Setting:

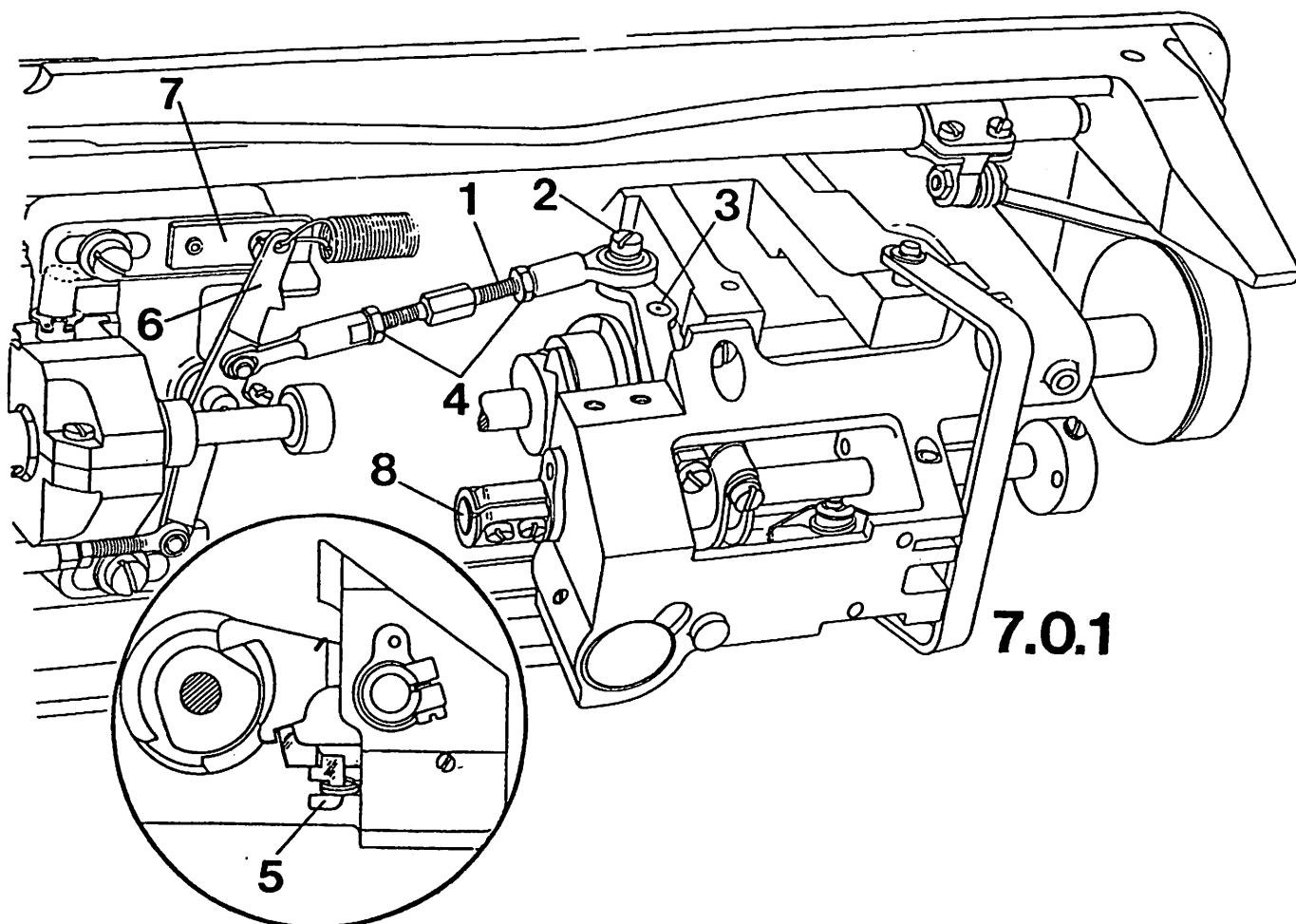
With the needle bar at top dead centre there must be a clearance of 0.3 mm between the pin of control lever 1 and the outer circumference of control cam 5.



- 6.1 Move control lever 1 to the basic position by lifting interlocking latch 2.
- 6.2 Turn the balance wheel to set the needle bar at top dead centre.
- 6.3 Loosen nut 3.
- 6.4 Turn adjusting screw 4 to set a clearance of 0.3 mm between the pin of control lever 1 and the outer circumference of control cam 5.
- 6.5 In this position lock adjusting screw 4 with nut 3.
- 6.6 Carry out a check by pushing control lever 1 (see "setting").

Setting:

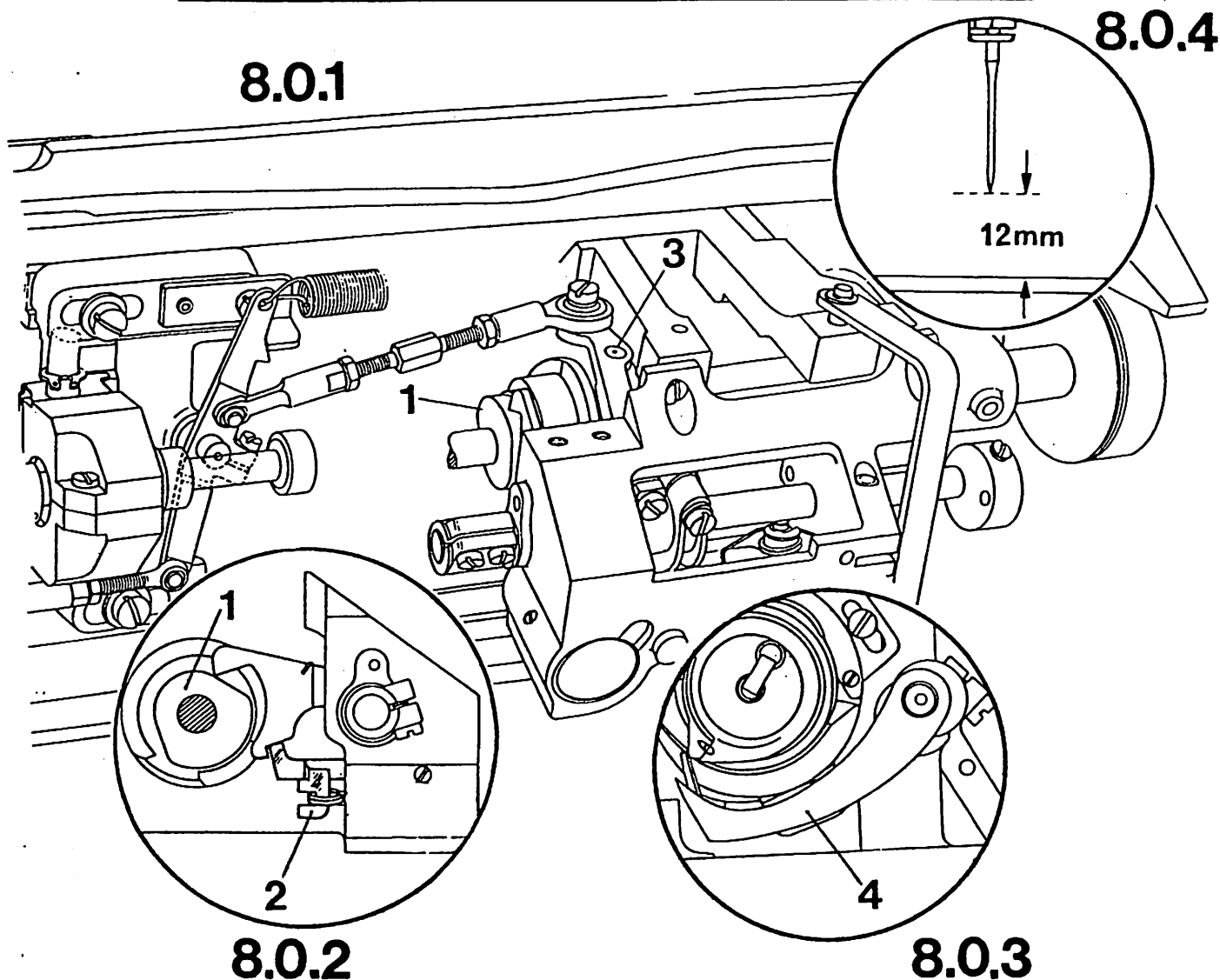
When shaft 8 begins its lengthwise motion, lever 6 must begin to lift itself from stop 7.

**7.0.2**

- 7.1 Secure actuating linkage 1 to control lever 3 with screw 2.
- 7.2 Loosen the two nuts 4 (right- and left-hand thread).
- 7.3 Turn the balance wheel to set the machine at the correct needle rise position (see page 2) and operate engaging lever 5.
- 7.4 Make sure that lever 6 is resting on stop 7. If necessary, shorten the linkage by turning it accordingly.
- 7.5 Turn the balance wheel farther until shaft 8 begins its lengthwise motion.
- 7.6 Retain this position and adjust linkage 1 so that lever 6 just begins to lift itself off stop 7.
- 7.7 In this position tighten the two nuts 4.
- 7.8 Carry out a check (see "setting").

Setting:

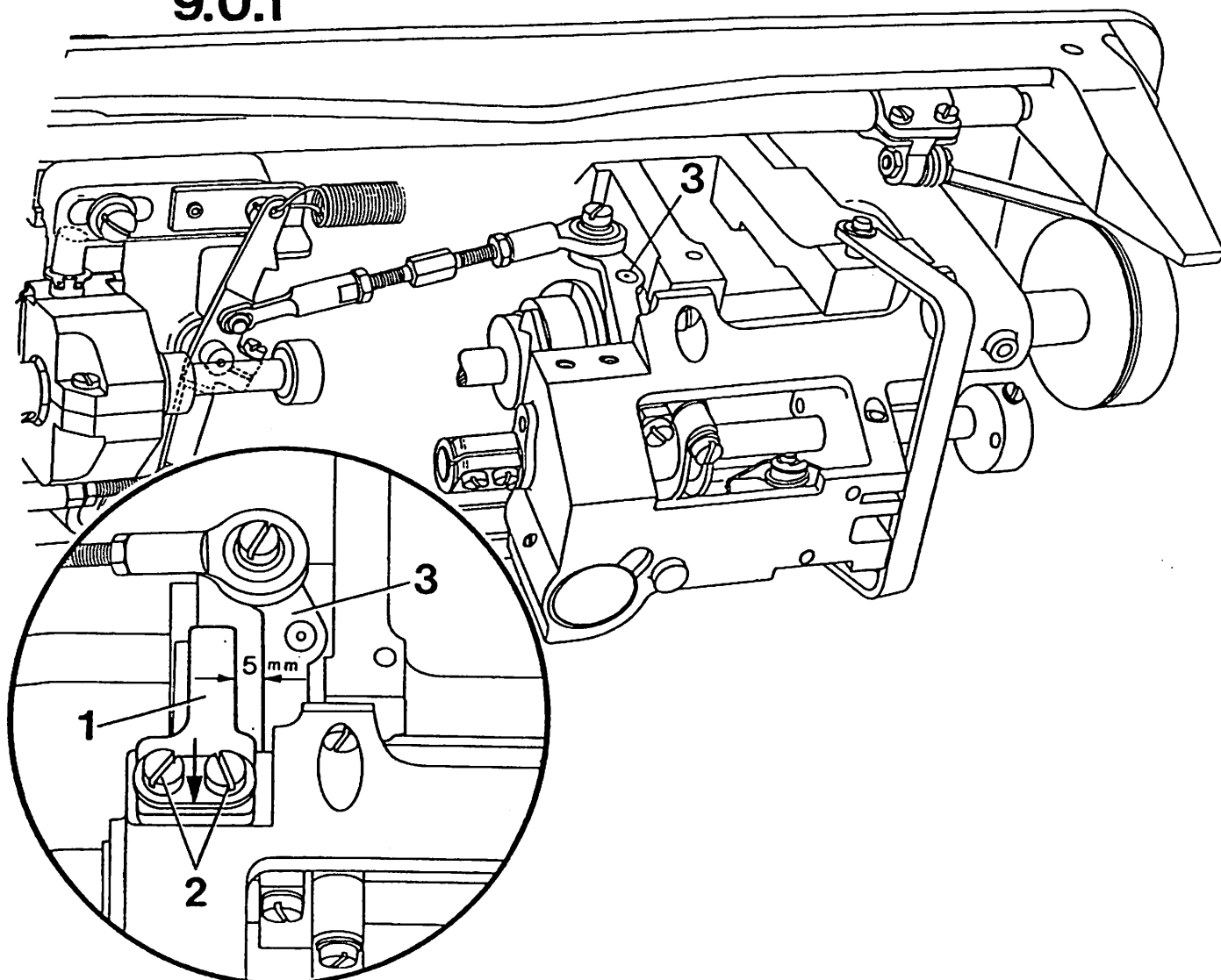
When control lever 3 is engaged and the needle, moving up from bottom dead centre, has reached a position 12 mm above the needle plate, the movement of catcher 4 must begin.



- 8.1 Turn the balance wheel to set the take-up lever a little past top dead centre. Loosen the two screws in control cam 1 which are now accessible.
- 8.2 Turn the balance wheel farther to set the machine at the needle rise position (see page 2). Operate engaging lever 2.
- 8.3 Make sure the control lever is engaged, then loosen the remaining screws of control cam 1.
- 8.4 Turn the balance wheel farther in sewing direction until the needle point is 12 mm above the needle plate.
- 8.5 Retain this position and turn control cam 1 in its rotating direction until you feel a resistance.
- 8.6 In this position tighten the accessible screws in control cam 1.
- 8.7 Turn the balance wheel to gain access to the remaining screws of control cam 1 and tighten these, too.
- 8.8 Carry out a check (see "setting").

Setting:

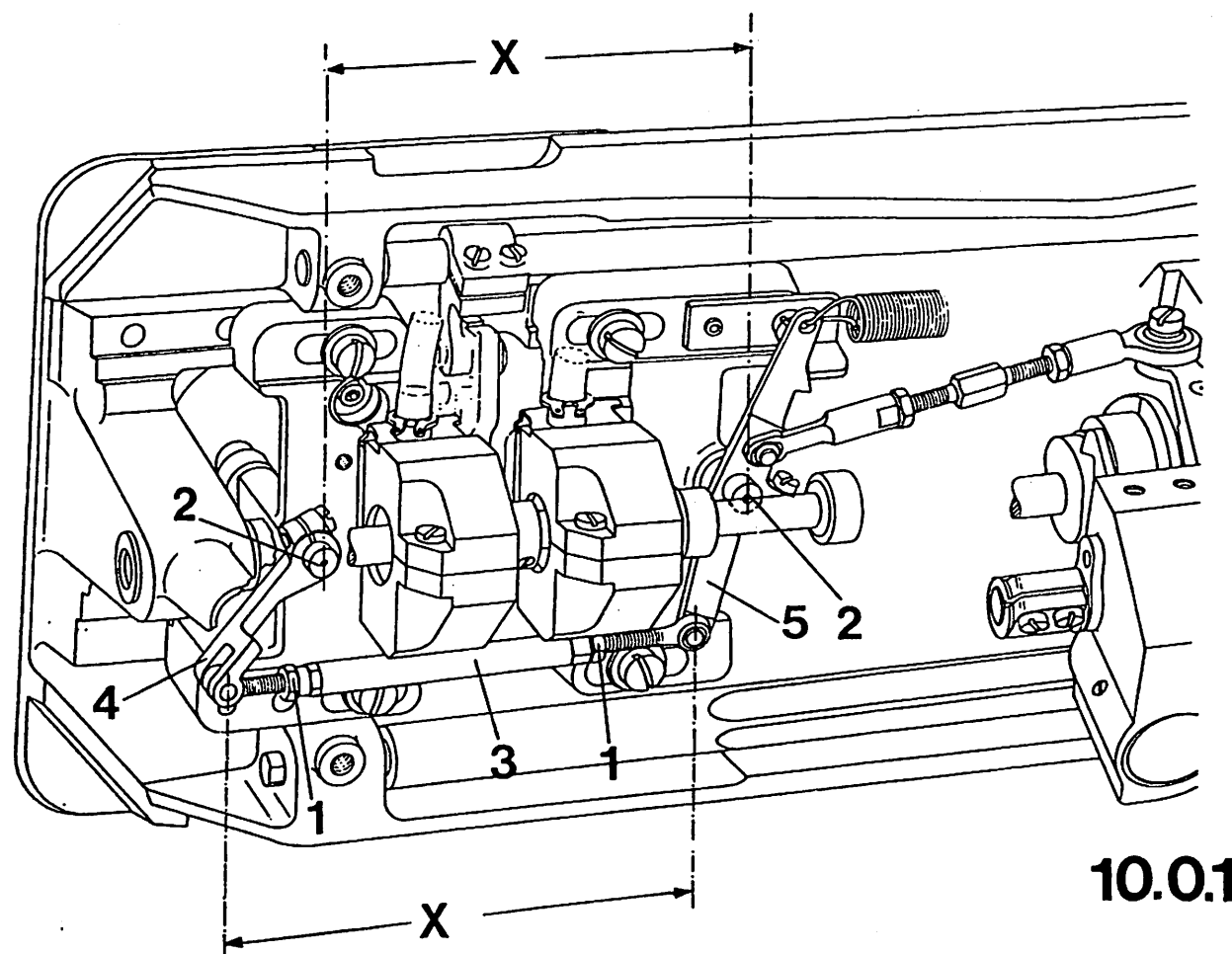
With the thread trimmer in its resting position there must be a clearance of about 5 mm between locking finger 1 and control lever 3.

9.0.1**9.0.2**

- 9.1 Fit locking finger 1 with its tab and tighten screws 2 just a little.
- 9.2 Push locking finger 1 fully in the direction of the arrow, then position it laterally so that there is a clearance of about 5 mm between the locking finger and control lever 3.
- 9.3 In this position fully tighten screws 2.
- 9.4 Carry out a check (see "setting").

Setting:

With the thread trimmer in its resting position the length of linkage 3 (from hole centre to hole centre) must correspond with the distance between the centres of shafts 2.

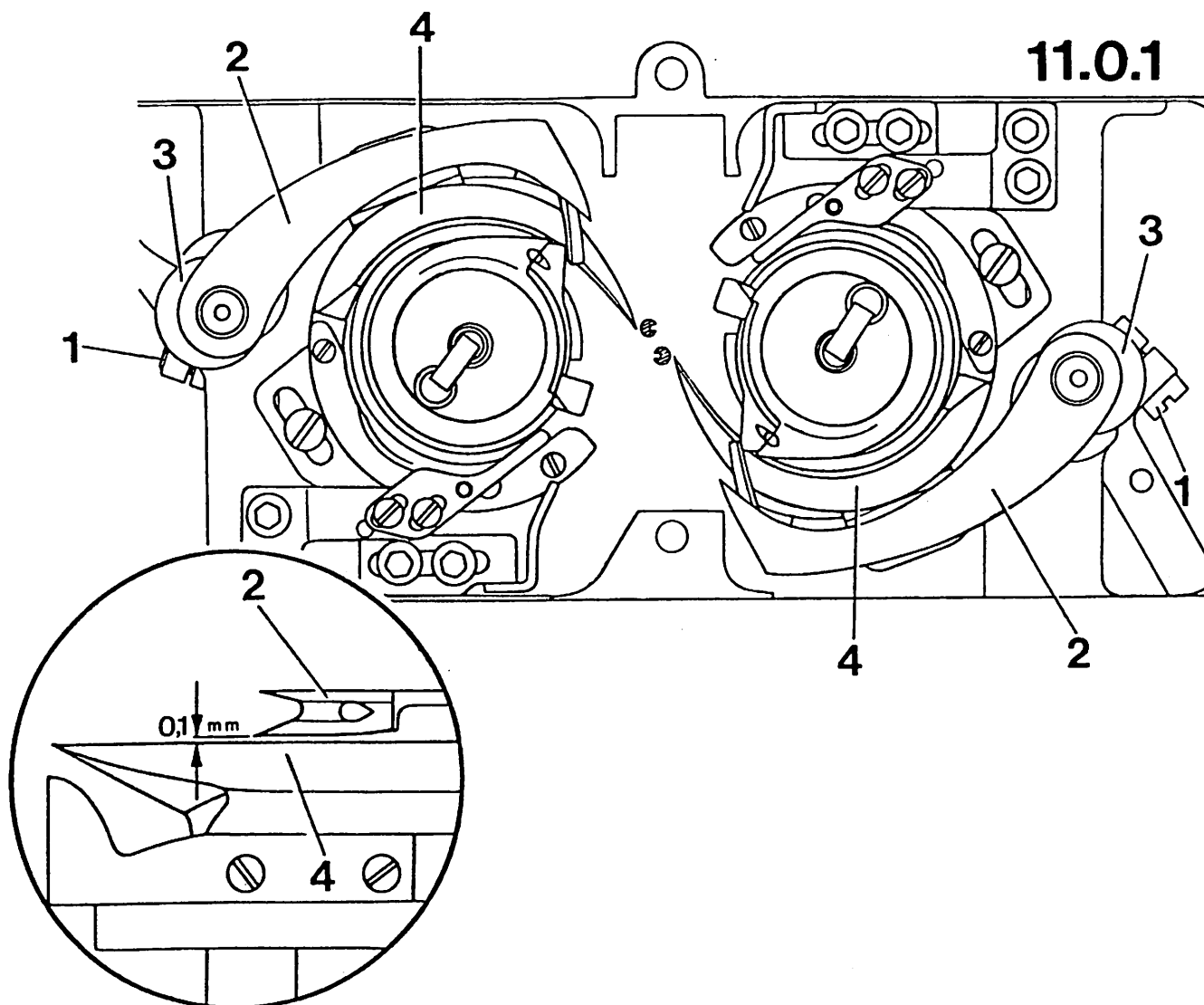


- 10.1 Make sure the trimming mechanism is in its resting position, then loosen the two nuts 1 (right- and left-hand thread).
- 10.2 Measure the distance between the centres of shafts 2.
- 10.3 Adjust the length of linkage 3 so that the distance between levers 4 and 5 (measured between the hole centres) corresponds with the distance between the centres of shafts 2.
- 10.4 In this position lock the two nuts 1.
- 10.5 Carry out a check (see "setting").

Adjustment to be made twice on two-needle machines

Setting:

When the take-up lever is at top dead centre and catcher 2 is pushed to its operating position by hand, the lower catcher point must clear the back of sewing hook 4 by 0.1 mm.



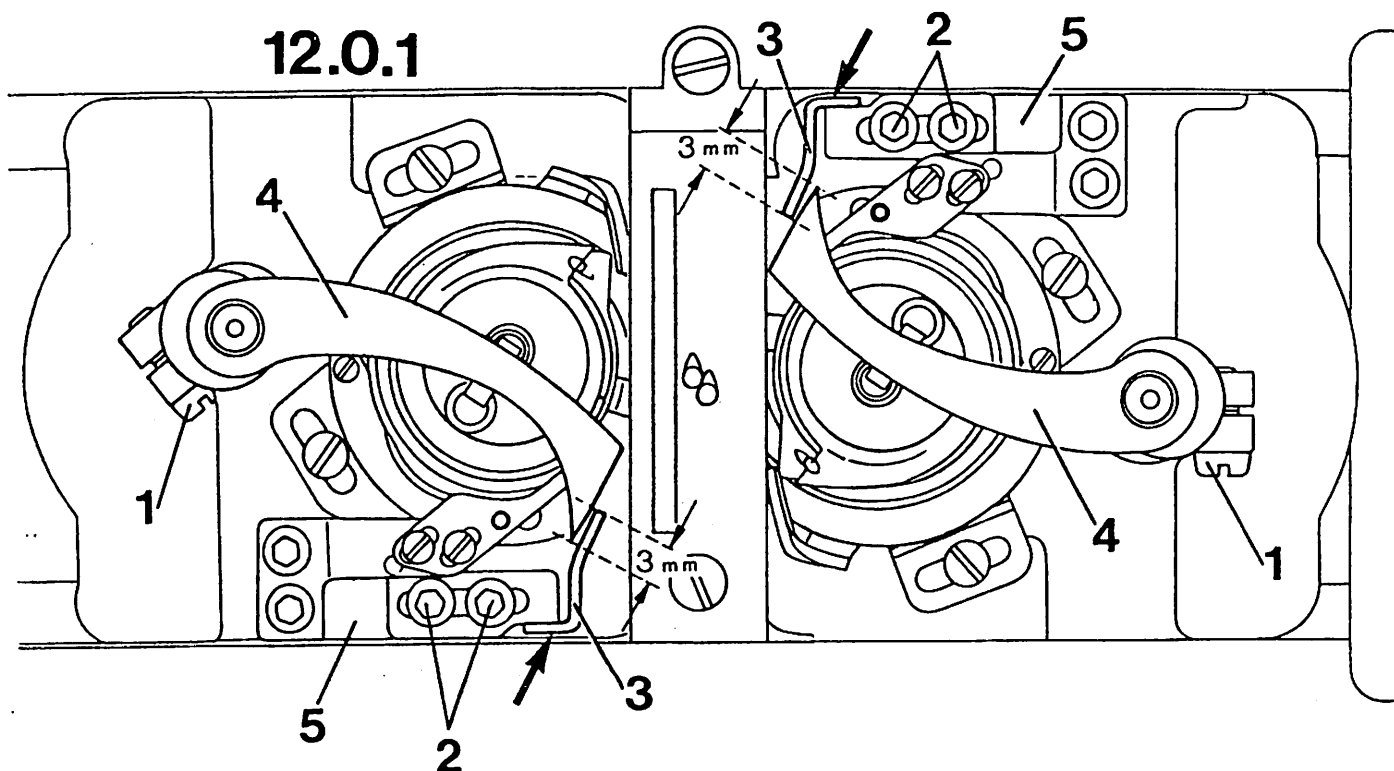
11.0.2

- 11.1 Loosen clamp screw 1 just enough to allow catcher 2 to turn.
- 11.2 Loosen the two screws in fixing collar 3.
- 11.3 Turn the balance wheel to set the take-up lever at top dead centre.
- 11.4 Set catcher 2 so that its lower point is 0.1 mm above the back of sewing hook 4.
- 11.5 In this position, fully tighten the screws of fixing collar 3, making sure that the latter is resting on the shaft bearing.
- 11.6 Carry out a check (see "setting").
Clamp screw 1 is left loose for the following adjustment.

Adjustment to be made twice on two-needle machines.

Setting:

The elongated hole of the knife must be parallel with knife bracket 5, but the knife must not touch the casting (see arrow).
When the point of catcher 4 has passed about 3 mm beyond the knife edge, knife 3 must rest lightly on the catcher.



- 12.1 Make sure that clamp screw 1 is loose, then loosen the two screws 2.
- 12.2 First position knife 3 so that it cannot collide with catcher 4.
- 12.3 Position catcher 4 by hand so that its point protrudes beyond the knife edge by about 3 mm.
- 12.4 Push the knife lightly against the catcher and position it so that it does not touch the casting (see arrow) and its elongated hole is parallel with knife bracket 5.
- 12.5 In this position tighten the screws 2.
- 12.6 Carry out check (see "setting").

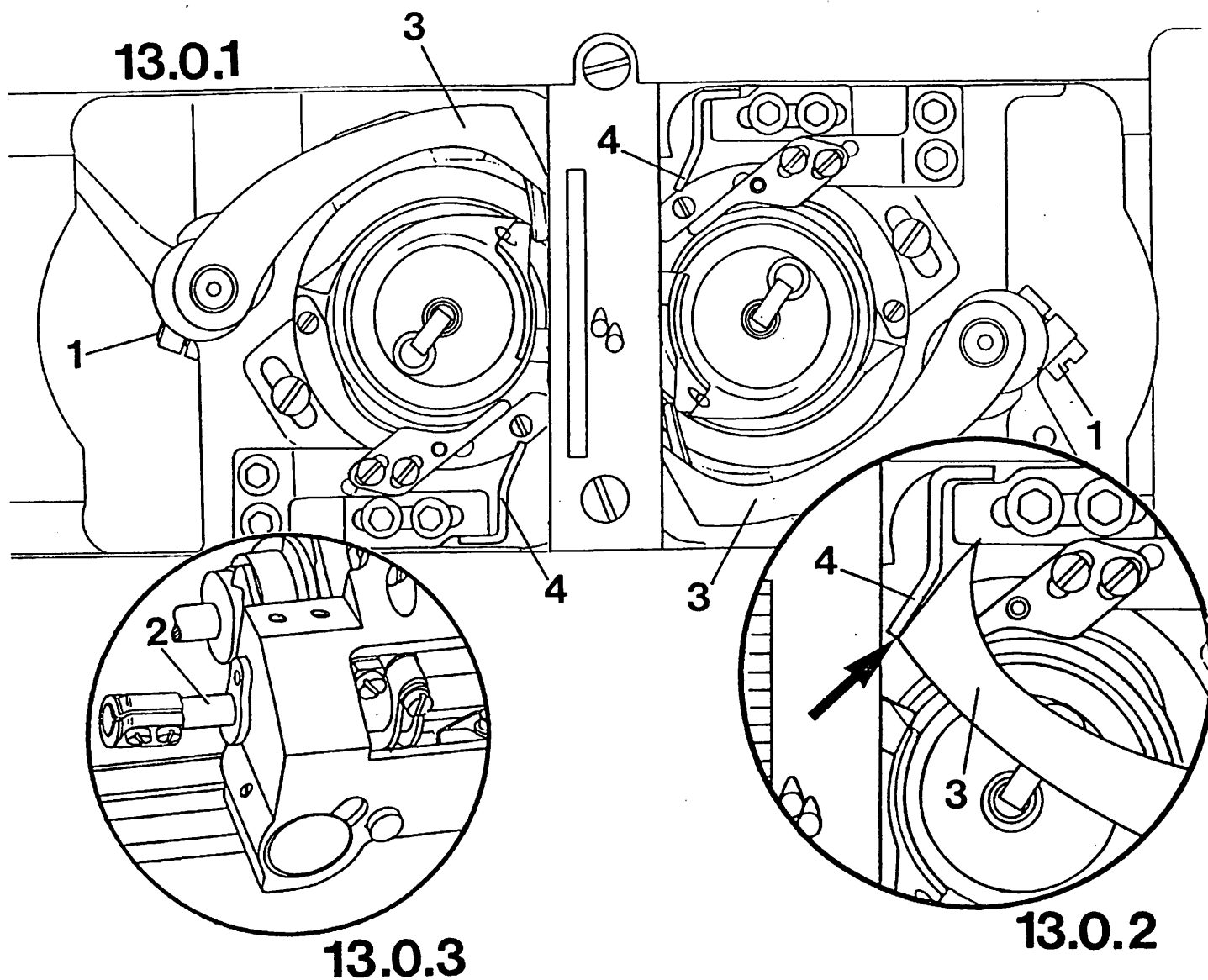
Adjustment to be made twice on two-needle machines.

Setting:

In the reversal position of catcher 3 its back edge must be flush with the cutting edge of knife 4 (see arrow in Fig. 13.0.2).

Note:

When clamp screw 1 is loosened, the following adjustments have to be made in order to check the "setting".

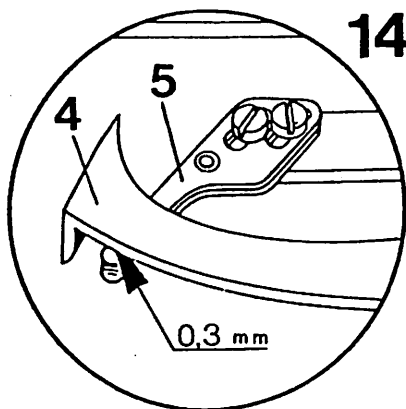


- 13.1 Make sure that clamp screw 1 is loose, then set the machine at the needle rise position and operate the engaging lever.
- 13.2 Continue turning the balance wheel to move engaging shaft 2 to its far left position.
- 13.3 Retain this position and set catcher 3 so that its back edge is flush with the cutting edge of knife 4 (see arrow in Fig. 13.0.2).
- 13.4 In this position tighten clamp screw 1, making sure there is no vertical play.
- 13.5 Carry out a check (see "setting").

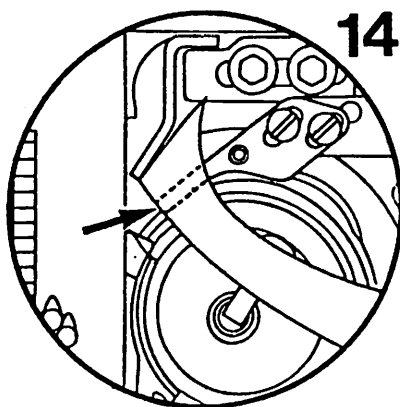
Adjustment to be made twice on two-needle machines.

Setting:

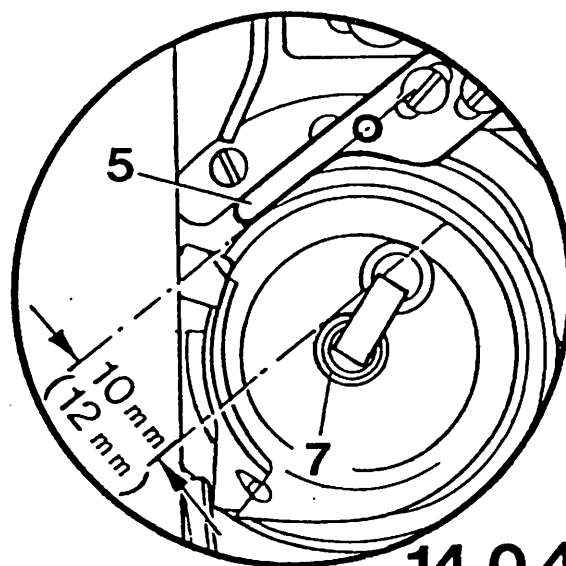
Between the underside of catcher 4 and trapper spring 5 there must be a clearance of 0.3 mm (see Fig. 14.0.2). When catcher 4 is in its reversal position the end of the trapper spring must be flush with the back edge of the catcher (see arrow in 14.0.3). The trapper spring must be set at a distance of 10 mm on series 240 machines (12 mm on series 1240), measured from the inside of spring 5 to hollow stud 7 (see Fig. 14.0.4). Also it must be possible to remove and replace the bobbin case without hindrance.



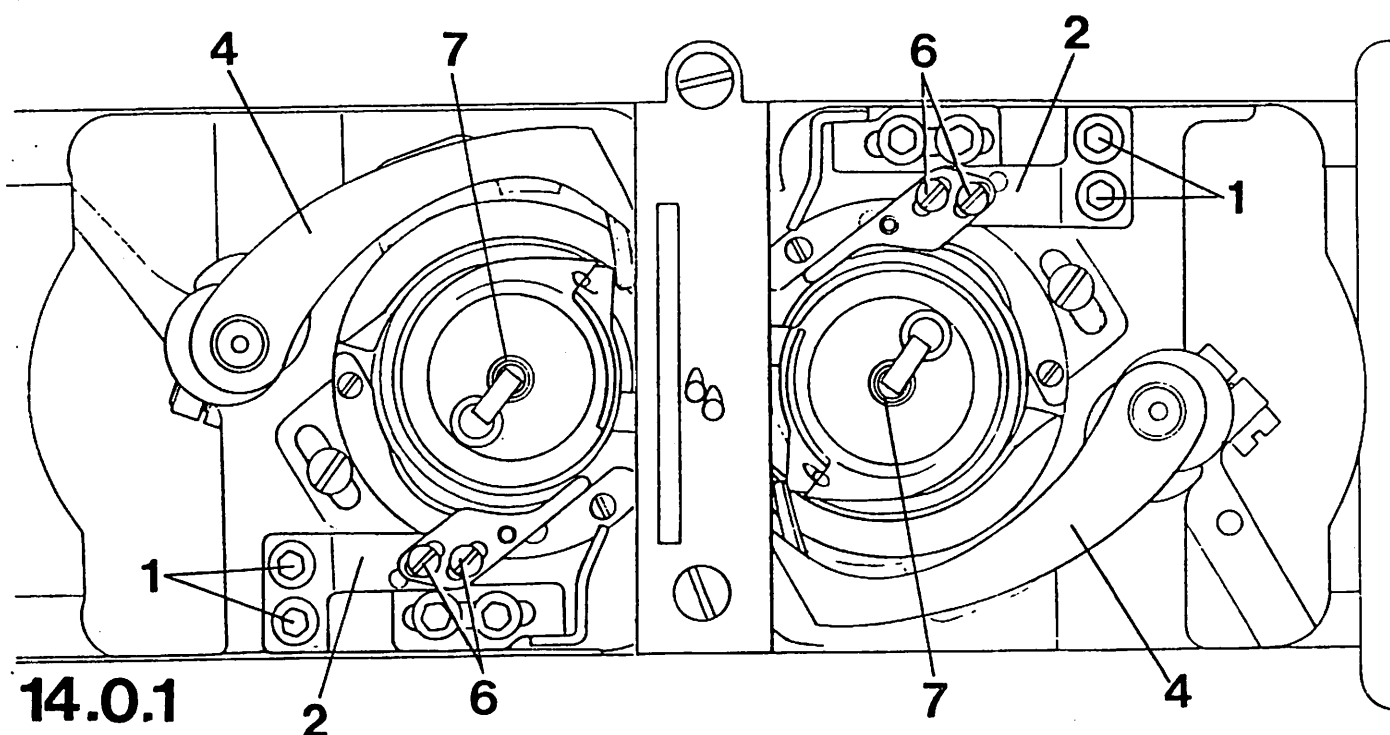
14.0.2



14.0.3

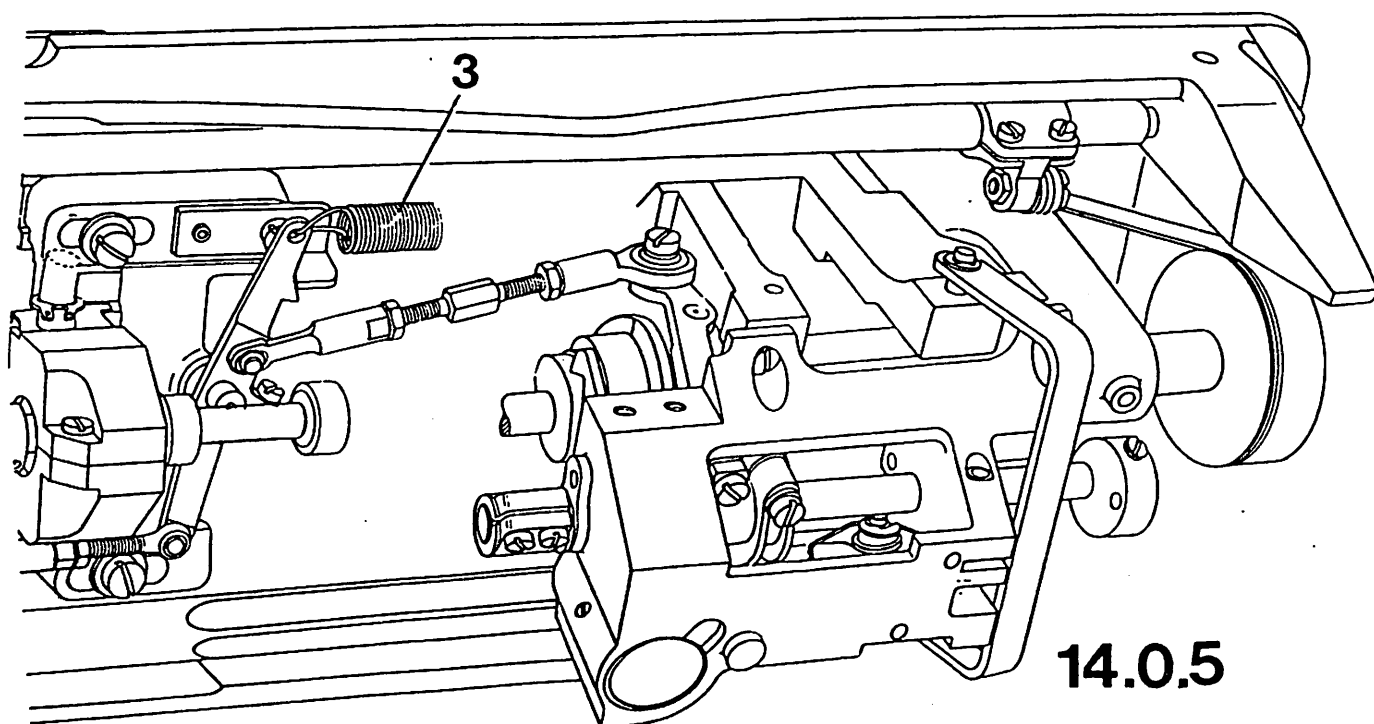


14.0.4



14.0.1

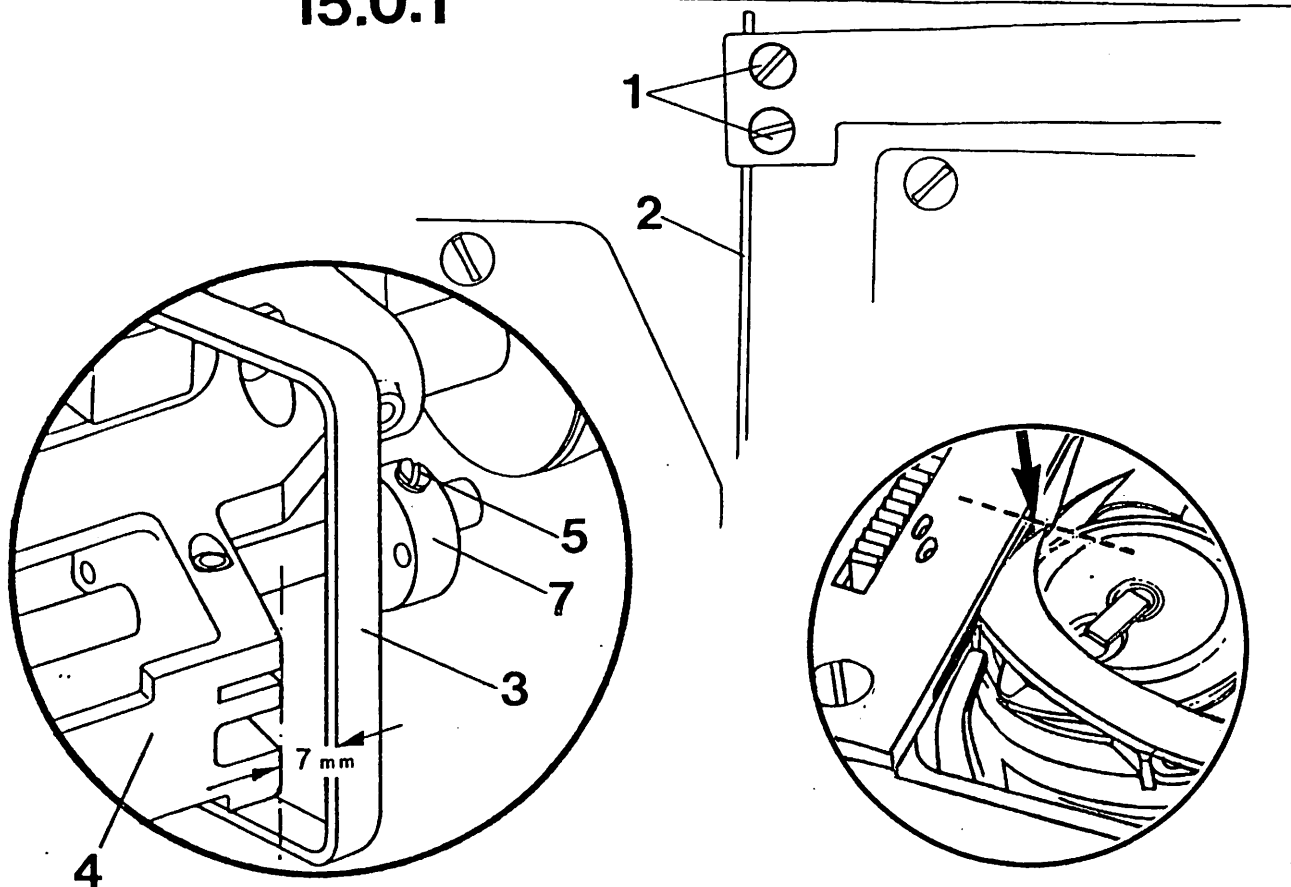
- 14.1 Loosen the two screws 1.
- 14.2 Position bracket 2 parallel with the bedplate of the machine and at the middle of its elongated holes.
- 14.3 In this position tighten the two screws 1 a little.
- 14.4 Disconnect spring 3 (Fig. 14.0.5).
- 14.5 Swing catcher 4 across trapper spring 5 by hand.
- 14.6 Retain this position and bend trapper spring 5 so that there is a clearance of 0.3 mm between the catcher and the spring (see Fig. 14.0.2).
- 14.7 Re-connect spring 3 (Fig. 14.0.5).
- 14.8 Set the machine at the needle rise position, operate the engaging lever, then turn the balance wheel to set catcher 4 at its reversal position.
- 14.9 Loosen screws 6.
- 14.10 Position trapper spring 5, and if necessary bracket 2, in the elongated hole so that the tips of the spring are flush with the back edge of catcher 4 (see arrow in Fig. 14.0.3) and the distance between the inside of the spring and hollow stud 7 is about 10 mm on Series 240 and 12 mm on Series 1240 (see Fig. 14.0.4).
- 14.11 In this position, tighten screws 1 and 6 securely, making sure that bracket 2 is still parallel with the machine bedplate.
- 14.12 Carry out a check (see "setting").



Setting:

With the trimmer in its resting position and the presser foot raised there must be a clearance of 7 mm between release bracket 3 and casting 4.
 With the presser foot lowered and the point of catcher 6 level with the edge of the rear positioning stop (see arrow in fig. 15.0.3) the tension discs must be released just enough to allow the thread to pass through freely.

15.0.1



15.0.2

15.0.3

- 15.1 Check that the trimmer is in its resting position and the presser foot is raised, then loosen the two screws 1.
- 15.2 Adjust the height of linkage rod 2 so that the clearance between release bracket 3 and the housing is about 7 mm.
- 15.3 In this position, tighten the two screws 1.
- 15.4 Loosen screw 5.
- 15.5 Turn the balance wheel to set the machine in the needle rise position and operate the engaging lever by hand.
- 15.6 Lower the presser foot onto the needle plate.
- 15.7 Turn the balance wheel farther to set the point of catcher 6 level with the back edge of the rear positioning stop.
- 15.8 Retain this position and push eccentric 7 (eccentric lobe facing downwards) towards the left together with release bracket 3 until the needle thread can be easily pulled through the discs of the thread tension.
- 15.9 In this position tighten screws 5.

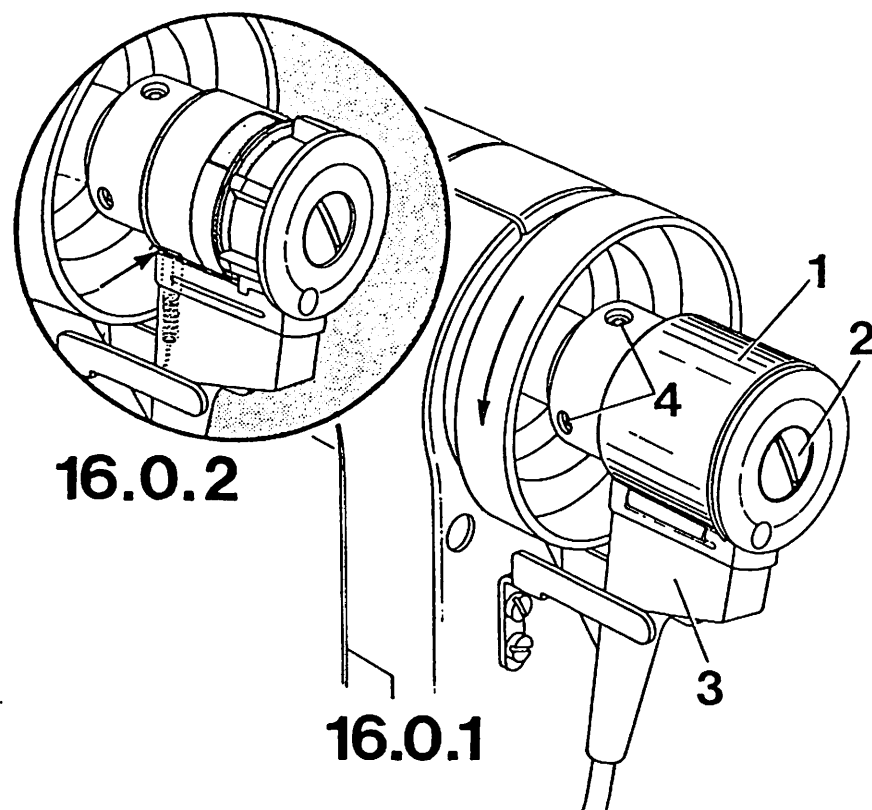
16 Adjusting the synchronizer

16.1 On single-needle machines with Quick lever-operated stop motor, type "700".

Adjustment also applies to two-needle machines with disengageable needle-bar halves (720/02).

Setting:

On sewing stops, the machine must halt with the needle bar 4 mm past bottom dead centre. After thread trimming the machine must position with the take-up lever at top dead centre.

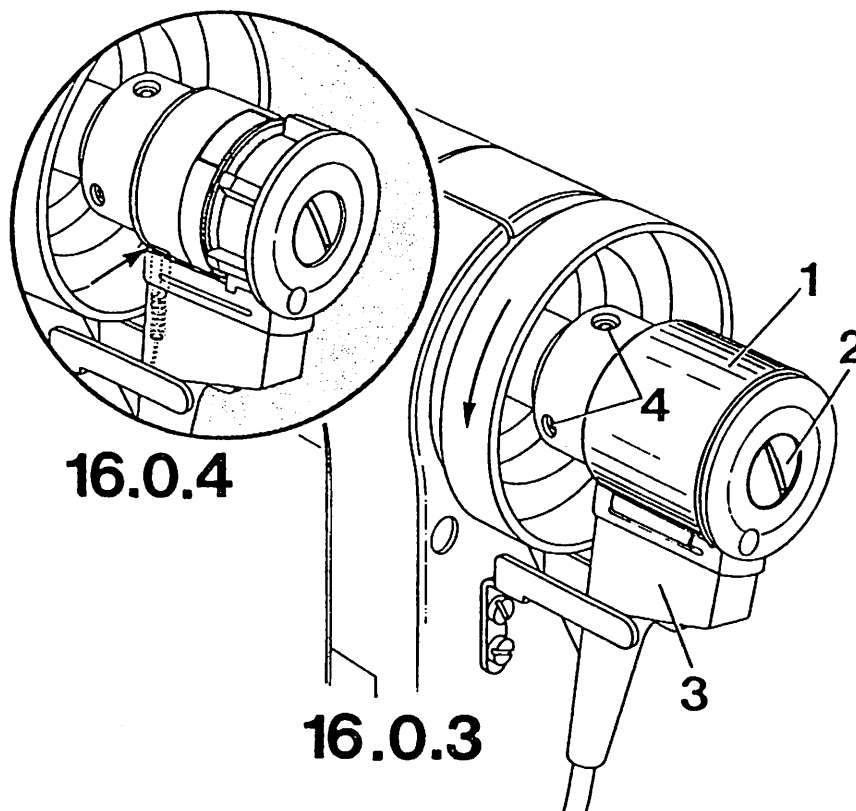


- 16.1.1 Remove cap 1 and loosen cap screw 2 of synchronizer 3.
- 16.1.2 Loosen the two retaining screws 4.
- 16.1.3 Turn the balance wheel to set the needle bar 4 mm past bottom dead centre.
- 16.1.4 Retain this position and set the middle of the insulated segment of the inner switch-off track exactly over the carbon brush, then tighten screws 4.
- 16.1.5 Turn the balance wheel (in sewing direction) to set the take-up lever at top dead centre.
- 16.1.6 Retain this position and set the middle of the insulated segment of the outer switch-off track exactly over the carbon brush, then tighten cap screw 2.
- 16.1.7 Switch on the machine, check the positioning accuracy and re-adjust if necessary.
- 16.1.8 Replace cap. 1.

16.2 On two-needle machines with Quick lever-operated Stop motor, type "700"

Setting:

On sewing stops and after thread trimming the machine must halt with the take-up lever at top dead centre.



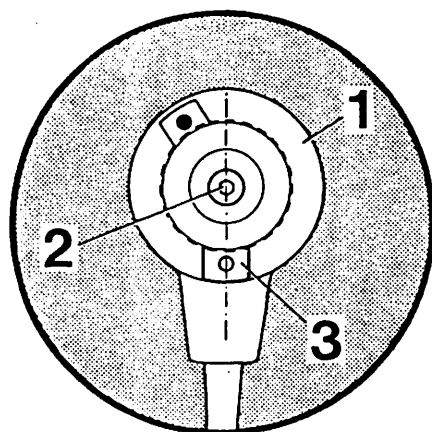
- 16.2.1 Remove cap 1 and loosen cap screw 2 of synchronizer 3.
- 16.2.2 Also loosen the two retaining screws 4.
- 16.2.3 Turn the balance wheel to set the needle bar at top dead centre.
- 16.2.4 Retain this position and set the end of the insulated segment of the inner switch-off track over the front end of the carbon brush holder (in sewing direction) (see arrow in Fig. 16.0.4), then tighten retaining screws 4.
(This adjustment does not set a stopping position.)
- 16.2.5 Turn the balance wheel to set the take-up lever at top dead centre.
- 16.2.6 Retain this position and set the middle of the insulated segment of the outer switch-off track exactly over the carbon brush, then tighten cap screw 2.
- 16.2.7 Switch on the machine and carry out a check (see "setting") and readjust if necessary.
- 16.2.8 Replace cap 1.

16.3

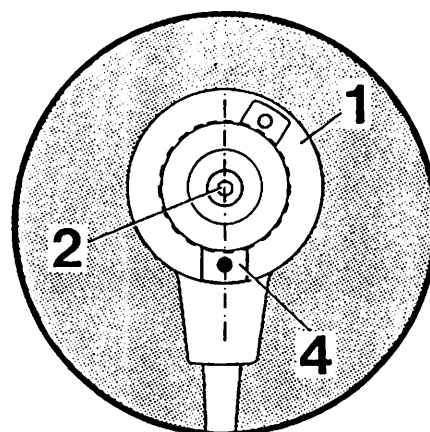
On single- and two-needle machines with Quick electronic stop motor, type "800".

Setting:

On sewing stops the machine must halt with the needle bar 4 mm past bottom dead centre. After thread trimming the machine must position with the take-up lever at top dead centre.



16.0.5



16.0.6

- 16.3.1 Remove the cap of synchronizer 1 on the balance wheel.
- 16.3.2 Loosen retaining screw 2.
- 16.3.3 Set the take-up lever at top dead centre.
- 16.3.4 Set outer magnet tab 3 with the yellow magnet at its opposite pole at the bottom.
- 16.3.5 Set the needle bar 4 mm past bottom dead centre.
- 16.3.6 Set inner magnet tab 4 with the red magnet also at its opposite pole at the bottom.
- 16.3.7 In this position tighten retaining screw 2.
- 16.3.8 Switch on the machine.
- 16.3.9 Check the two positions by operating the pedal, and re-adjust if necessary.
- 16.3.10 Replace the cap on synchronizer 1.

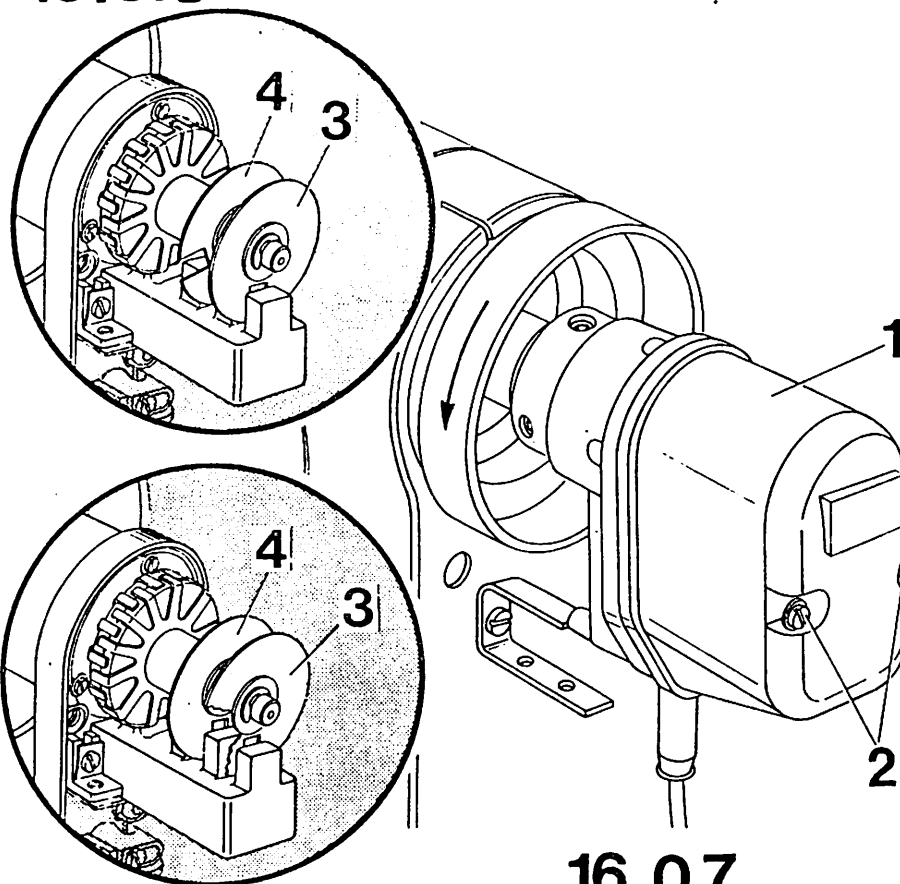
Note: A toggle switch makes it possible to switch off the function "4 mm past b.d.c. of needle bar" (two-needle machines); the machine will then only position with the take-up lever at t.d.c.

16.4 On single- and two-needle machines with Efka Variostop motor, type "V".

Setting: On sewing stops the machine must halt with the needle bar 4 mm past bottom dead centre.
After thread trimming the machine must position the take-up lever at top dead centre.

Note: If fitted, set the toggle switch on the motor, for selecting needle position "4 mm past b.d.c." at "unten" (= down).

16.0.9



16.0.7

16.0.8

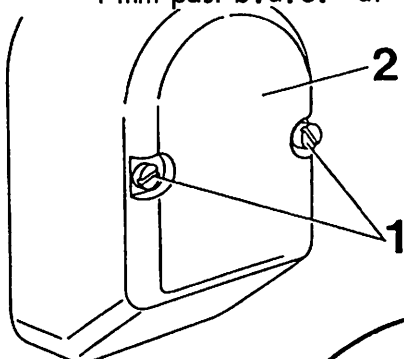
- 16.4.1 Loosen the two retaining screws 2 and remove cover 1 of the synchronizer.
 - 16.4.2 Turn the balance wheel to set the take-up lever at top dead centre.
 - 16.4.3 In this position turn the outer control disc 3 so that its slot is at the bottom between the two projections of the switch.
 - 16.4.4 Set the needle bar 4 mm past bottom dead centre.
 - 16.4.5 In this position turn inner control disc 4 so that its slot is at the bottom between the two switch projections.
 - 16.4.6 Switch on the machine.
 - 16.4.7 Check the two positions by operating the pedal, and re-adjust if necessary.
 - 16.4.8 Replace cover 1.
- Note: A toggle switch makes it possible to switch off the function "4 mm past b.d.c. of needle bar"(two-needle machines); the machine will then only position with the take-up lever at t.d.c.

16.5 On single- and two-needle machines with Posistop motor, type "POK"

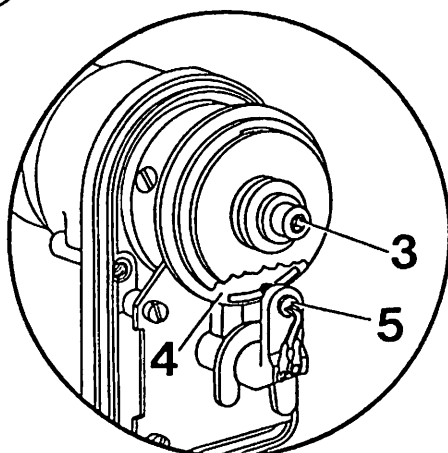
Setting:

On sewing stops the machine must halt with the needle bar 4 mm past bottom dead centre.
After thread trimming the machine must position the take-up lever at top dead centre.

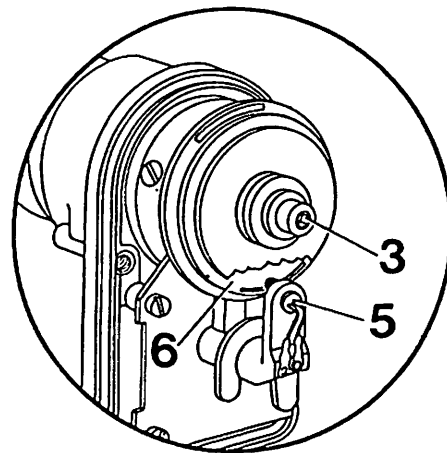
Note: If fitted, set the toggle switch on the motor, for selecting needle position "4 mm past b.d.c." at "unten" (= down).



16.0.10



16.0.11



16.0.12

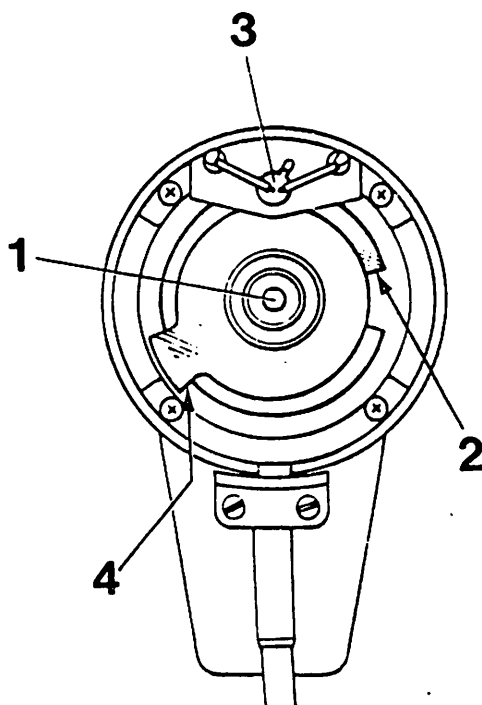
- 16.5.1 Loosen the two screws 1 and remove cover 2.
- 16.5.2 Loosen allen screw 3.
- 16.5.3 Turn the balance wheel to set the needle bar 4 mm past bottom dead centre.
- 16.5.4 In this position hold the balance wheel firmly and turn the large control disc 4 so that the middle of its slot is positioned at diode 5.
- 16.5.5 Turn the balance wheel to set the take-up lever at top dead centre.
- 16.5.6 In this position hold the balance wheel firmly and turn the small control disc 6 so that the middle of its slot is positioned at diode 5.
- 16.5.7 Tighten allen screw 3.
- 16.5.8 Switch on the machine and check the two positions (see "setting"), by operating the pedal, and re-adjust if necessary.
- 16.5.9 Replace cover 2 and secure it with screws 1.

Note: A toggle switch makes it possible to switch off the function "4 mm past b.d.c. of needle bar"(two-needle machines); the machine will then only position with the take-up lever at t.d.c.

16.6 On one- and two-needle machines with Posistop motor, type 880

Setting: When sewing is interrupted, the machine should stop with the needle bar 4 mm past bottom dead centre. After thread trimming the machine should stop with the takeup lever at top dead centre.

Note: If applicable, turn down the toggle switch on the motor for selecting the needle position, i.e. 4 mm past bottom dead centre.



16.0.13

- 16.6.1 Remove cover of synchronizer and loosen screw 1. Make sure that diode 3 is not influenced by sunlight.
- 16.6.2 On machines with automatic backtacking, switch off "backtacking" on the motor control box.
- 16.6.3 Turn the balance wheel to set the needle bar 4 mm past top dead centre.
- 16.6.4 In this position, turn the inner control disc in such a way that its edge 2 is positioned behind diode 3.
- 16.6.5 Turn the balance wheel to set the takeup lever at top dead centre.
- 16.6.6 In this position, turn outer control disc in such a way that its edge 4 is positioned behind diode 3.
- 16.6.7 Tighten screw 1.
- 16.6.8 Switch on the machine and check both positions by means of the pedal (see "Setting"); re-adjust, if necessary.
- 16.6.9 Replace cover of synchronizer.

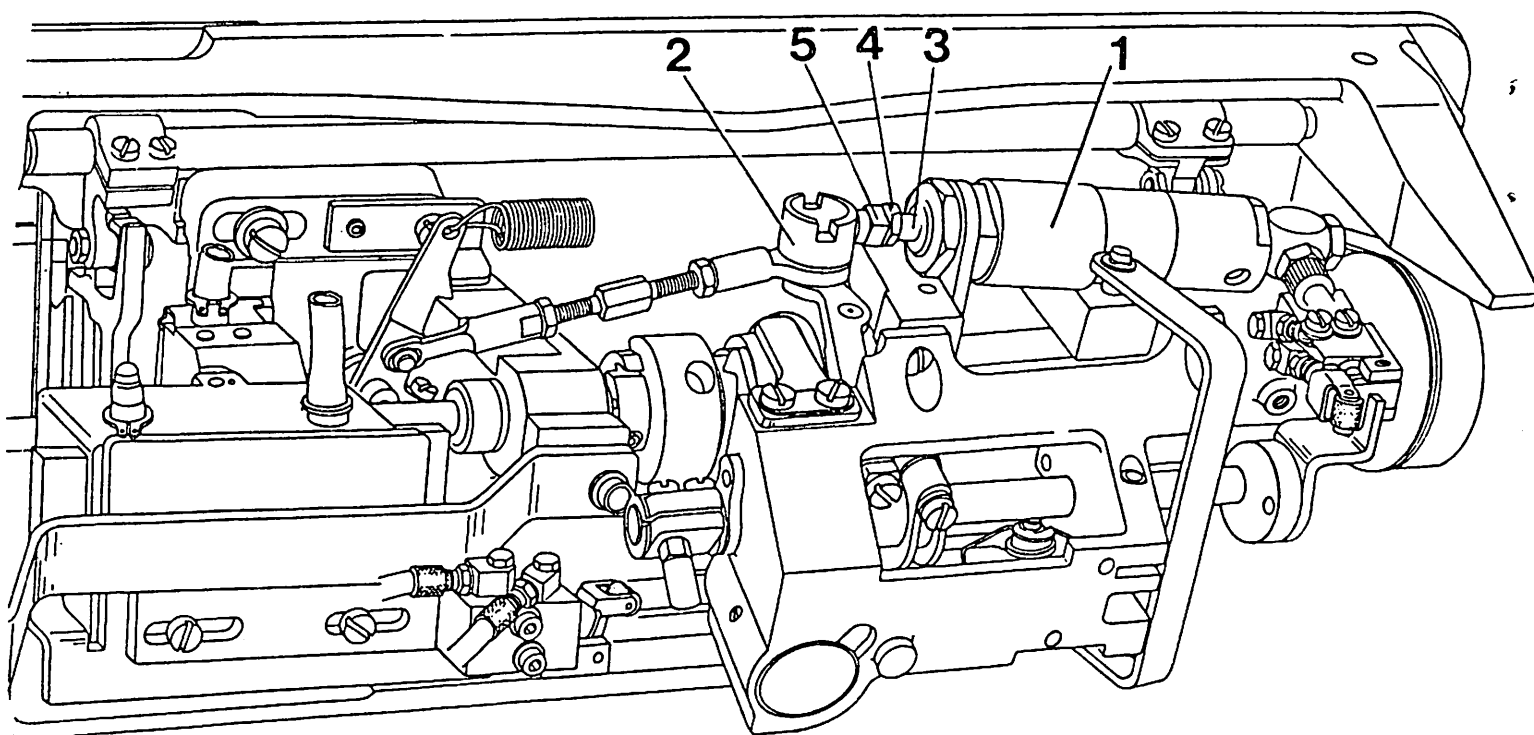
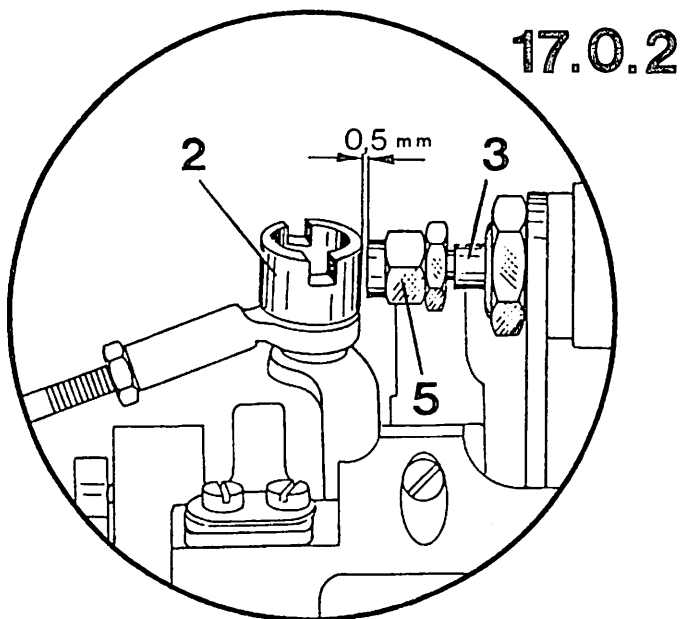
Note: By means of a toggle switch the position "4 mm past bottom dead centre of needle bar" (on two-needle machines) can be eliminated so that the machine always stops with the takeup lever raised.

Appendix

for machines with pneumatic servo unit - 966/05

Correct
setting:

With the thread trimmer at rest and the piston of cylinder 1 fully retracted there should be a clearance of abt. 0.5 mm between castellated screw 2 and stop 5 on piston rod 3 (Fig.17.0.2).



17.0.1

To adjust, loosen nut 4 and turn stop 5 accordingly.

After the adjustment, lock-tighten nut 4 and check this adjustment (see "Correct setting").

Correct
setting:

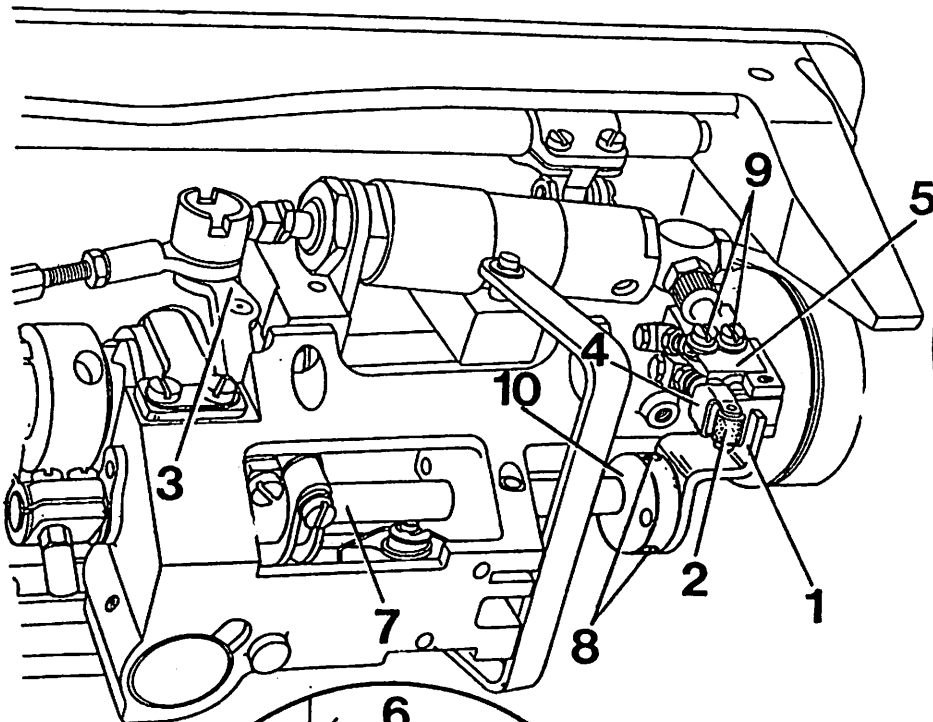
With the thread trimmer at rest and the piston of the cylinder fully retracted there should be a clearance of 0.2 mm between actuating lever 1 and switch roller 2 (Fig. 18.0.2).

When control lever 3 contacts the bottom of the cam track while the needle bar is at bottom dead center, the inner edge of actuating lever 1 should be in line with the center line of switch roller 2 (Fig. 18.0.3).

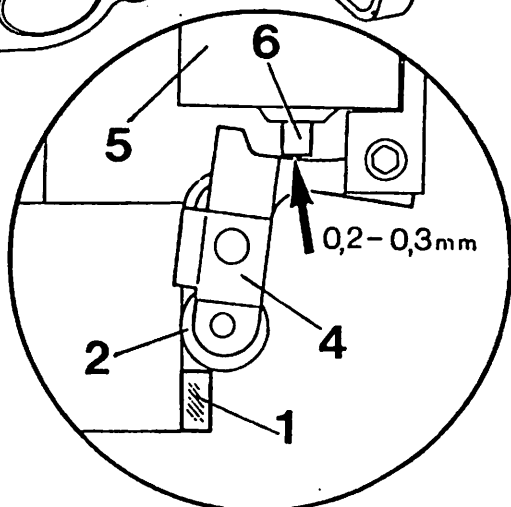
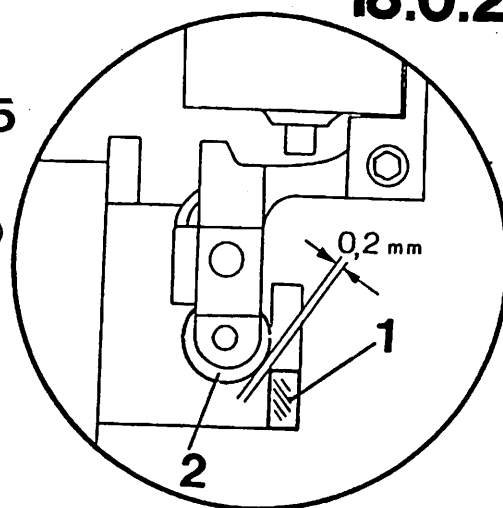
When lever 1 has fully operated switch roller 2, it should be possible to depress plunger 6 another 0.2 to 0.3 mm when roller carrier 4 is operated (toward switch housing 5). (See Fig. 18.0.4).

Furthermore, switch roller 2 should reliably drop down over actuating lever 1 when shaft 7 has moved abt. 10 mm (switch inoperative).

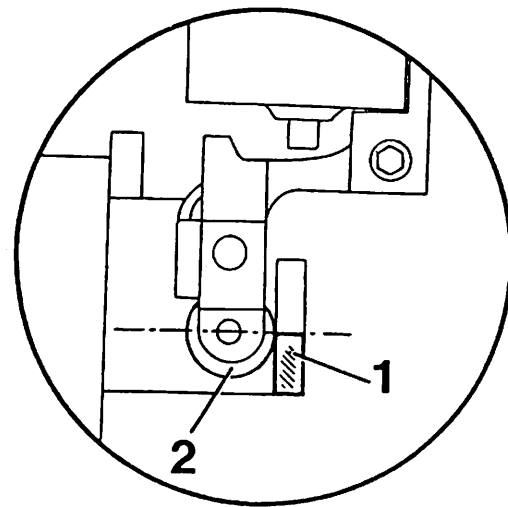
18.0.1



18.0.2



18.0.4



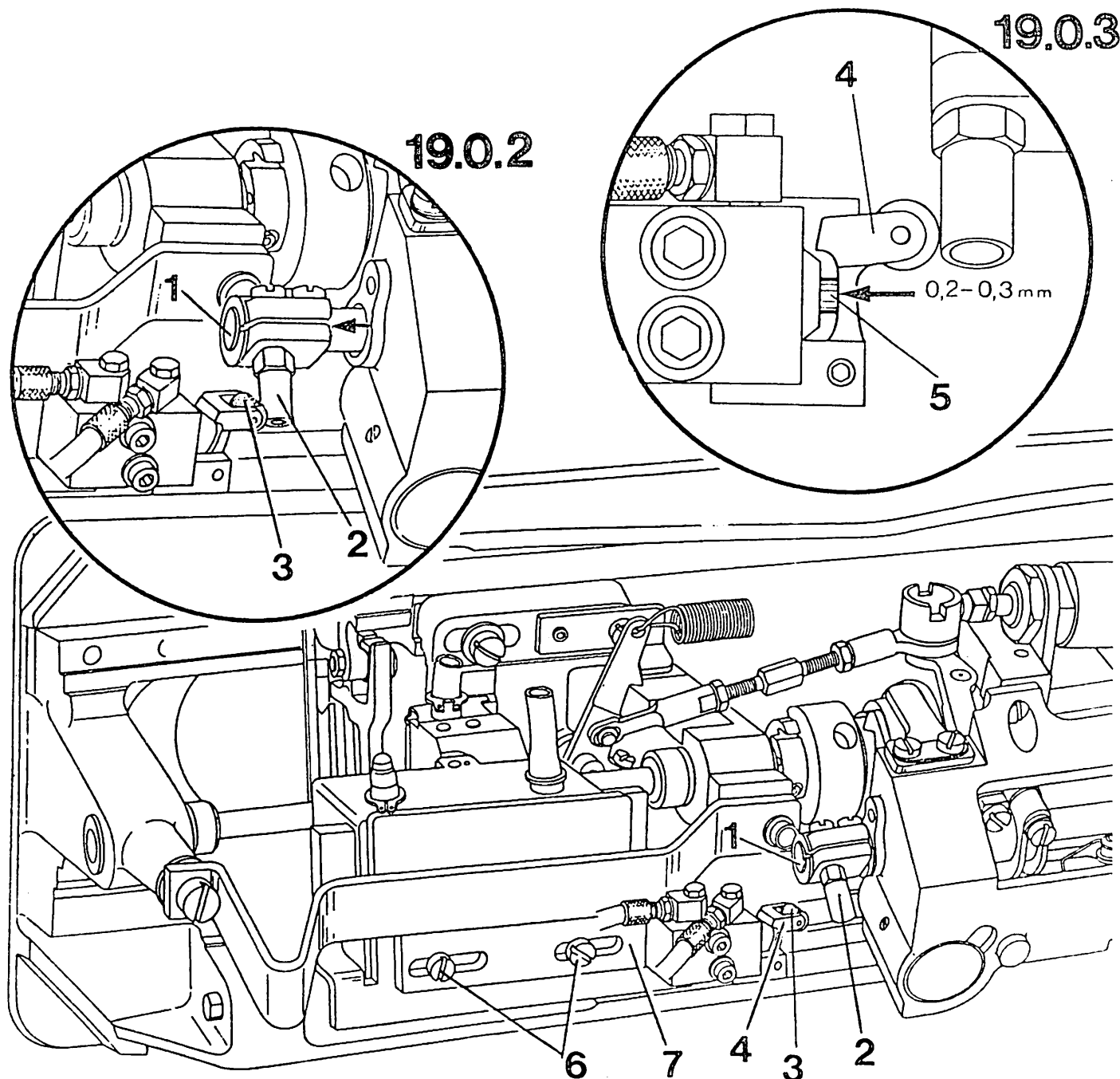
18.0.3

To adjust, loosen screws 8 and 9 and turn collar 10 (do not move it!), then adjust the position of switch housing 5.

After the adjustment, tighten screws 8 and 9 and check this adjustment (see "Correct setting").

Correct
setting:

When shaft 1 has moved abt. 10 mm in the direction indicated by an arrow, actuating sleeve 2 should begin to press against switch roller 3 (Fig.19.0.2). Furthermore when operating roller carrier 4 with shaft 1 at its point of reversal (after having moved abt. 14 mm), it should be possible to depress plunger 5 another 0.2 to 0.3 mm (Fig.19.0.3).



19.0.1

To adjust, loosen screws 6 and adjust the position of switch carrier 7 accordingly.

After the adjustment, tighten screws 6 and check this adjustment (see "Correct setting").

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