1. Needle in needle hole

Adjustment: The centre of the needle should be at a distance of 0.7 mm from the front edge of the needle hole (see Fig. 1.0.2).

1.1 Loosen the two screws of the faceplate somewhat, then take off the faceplate.

1.2 Take out the screws of the work support plate and remove the latter.

1.3 Take off the top feed foot and presser foot.

1.4 Loosen nuts 1 and 2.

1.5 Turn grub screw 3 fully clockwise.

1.6 Lower the needle into the needle hole.

1.7 Move nut 2 up against the needle bar guide.

1.8 Turn adjusting nut 1 so that the needle, crosswise to the feed direction, is exactly in the middle of the needle hole.

1.9 Set a distance of 0.7 mm between the front edge of the needle hole and the centre of the needle and lock adjusting nut 1 by means of nut 2.

1.10 Carry out a check (see "adjustment").
Feed dog in needle plate cutout

Adjustment: At stitch length setting "0" the feed dog should be in the middle of the needle plate cutout.

2.1 Set the stitch length to "0".

2.2 Loosen clamp screw 1.

2.3 Turn feed rock shaft 2 so that the feed dog is in the middle of the needle plate cutout.

2.4 In this position tighten fixing screws 1.
Needle height (preliminary adjustment)

Adjustment:

With the needle bar at top dead centre (t.d.c.) the clearance between needle and needle plate should be 15 mm.

3.1 Move the needle bar to t.d.c.

3.2 Loosen clamp screw 1 in the needle bar lug.

3.3 Set the height of the needle bar, without turning it, so that the clearance between needle point and needle plate is 15 mm.

3.4 In this position tighten clamp screw 1.
Hook clearance, needle rise and needle height

Adjustment: In the needle rise position (= needle bar 1.8 mm past bottom dead centre, b.d.c.), the hook point should be positioned at the middle of the needle and the distance between needle and hook point should be 0.1 mm.
In the same position the hook point should be 0.8 mm above the needle eye.

4.1 Remove the needle plate and feed dog.

4.2 Loosen the two hook fixing screws 1 and move the needle bar to b.d.c.

4.3 Push the 1.8 mm thick feeler gauge with its cutout up close against the underside of the needle bar bearing, move the c-clamp against the feeler gauge and screw it tight.

4.4 Pull out the feeler gauge and turn the balance wheel until the c-clamp is resting on the needle bar bearing.

4.5 Turn the sewing hook so that its point is at the middle of the needle.

4.6 In this position the hook point should be 0.8 mm above the needle eye (needle rise position); adjust needle height if necessary.

4.7 Position the hook on its shaft so that there is a clearance of 0.1 mm between hook point and needle.

4.8 In this position tighten fixing screws 1 securely.

4.9 Carry out a check (see "adjustment").
Clearance between presser foot and needle plate

Adjustment: With lifting lever 1 raised there should be a clearance of 8 mm between needle plate and presser foot.

5.1 Re-fit the needle plate and feed dog.

5.2 Position the feed dog so that it is in the middle of the needle plate cutout.

5.3 Re-fit the top feed foot and presser foot.

5.4 Raise lifting lever 1.

5.5 Loosen clamp screw 2 in the clamp of presser bar 3.

5.6 Adjust the height of the presser bar so that the clearance between needle plate and presser foot is 8 mm.

5.7 Make sure that the presser foot is parallel with the needle plate cutout, then tighten clamp screws 2.

5.8 Carry out a check (see "adjustment").
Top feed

Adjustment:
With the stitch length set to "0" and the gather set at the greatest amount, presser bar 5 should be exactly in the middle between needle bar guide and presser bar (see Fig. 6.0.3).

6.1 Loosen nut 1 and push connecting rod 2 upwards as far as it will go in slot 3.

6.2 In this position fully tighten nut 1.

6.3 Set the stitch length at "0".

6.4 Set the pedal for the largest amount of gather.

6.5 Loosen fixing screw 4 and position presser bar 5 exactly in the middle between needle bar guide and presser bar.

6.6 In this position tighten fixing screw 4.

6.7 Replace and screw on the arm cover.
Top and bottom feeding motions

Adjustment: With the needle bar at a position 33 mm above the needle plate surface on its downward stroke, neither the top feed foot nor the feed dog should make any feeding motion when the stitch length control lever is operated.

7.1 Set the longest stitch.

7.2 Loosen fixing screw 1 of eccentric 2 just enough to allow eccentric 2 to be turned.

7.3 Turn the balance wheel in sewing direction until the descending needle is 33 mm above the needle plate surface.

7.4 Turn eccentric 2 so that both the top feed foot and the feed dog make no feeding motion when the stitch length control lever is moved up and down.

7.5 In this position tighten fixing screws 1.

7.6 Carry out a check (see "adjustment").
Top feed stroke

Adjustment: When adjustment pin 2 is in the middle of the slot, the presser foot and the top feed should lift off by the same amount.

8.1 Set the stitch length at "0".

8.2 Loosen wing nut 1 and position adjustment pin 2 in the middle of the slot.

8.3 In this position tighten wing nut 1 again.

8.4 Lower the presser foot.

8.5 Turn the balance wheel in sewing direction until the top feed foot has reached its highest point.

8.6 Loosen clamp screw 3.

8.7 Turn crank 4 so that presser foot and top feed foot are raised from the needle plate by the same amount.

8.8 Tighten clamp screws 3.

8.9 Carry out a check (see "adjustment").
Top feed lifting motion

Adjustment: With the needle bar at a position 33 mm above the needle plate surface on its downward stroke, the top feed should not make any movement when adjustment pin 3 is moved up and down.

9.1 Loosen fixing screw 1 in lifting eccentric 2 just enough to allow the eccentric to be turned.

9.2 Turn the balance wheel in sewing direction until the descending needle bar is 33 mm above the needle plate surface.

9.3 Turn lifting eccentric 2 so that when adjustment pin 3 is moved up and down the top feed no longer makes any feeding movement (make sure that the second fixing screw 2 is visible when balance wheel is turned in sewing direction).

9.4 In this position tighten fixing screw 1.

9.5 Carry out a check (see "adjustment").
Adjusted:

With the lifting lever raised there should be a clearance of at least 0.5 mm between the two tension discs.

Note:

When the presser foot is lowered the tension must be fully active again.

10.1

Raise the foot with the lifting lever.

10.2

Check that the two tension discs are at least 0.5 mm apart.

10.3

If the clearance is too small or too large, remove tension bracket 1 and bend tension plate 2 accordingly.

10.4

After adjustment re-fit tension bracket 1.

10.5

Carry out a check (see "adjustment").
Thread check spring

Adjustment: The movement of thread check spring 3 must be completed when the needle point stitches into a workpiece of medium thickness (stroke of approx. 7 mm).

Note: It may be necessary to set the stroke of the thread check spring longer or shorter than this, depending on the application.

11.1 Thread the machine and place a piece of fabric under the presser foot.

11.2 Lower the presser foot onto the fabric.

11.3 Loosen screw 1 and set the tension of spring 3 according to the material by turning stud 2.

11.4 Tighten screw 1.

11.5 Loosen screw 4 in the elongated hole of stop 5.

11.6 Turn the balance wheel and make a few stitches, then set the take-up lever at the top of its stroke.

11.7 Turn the balance wheel further in sewing direction to allow the thread check spring to move back again by 7 mm.

11.8 In this position, move stop 5 against spring 3 and tighten screw 4.

11.9 Check this setting (see Adjustment).