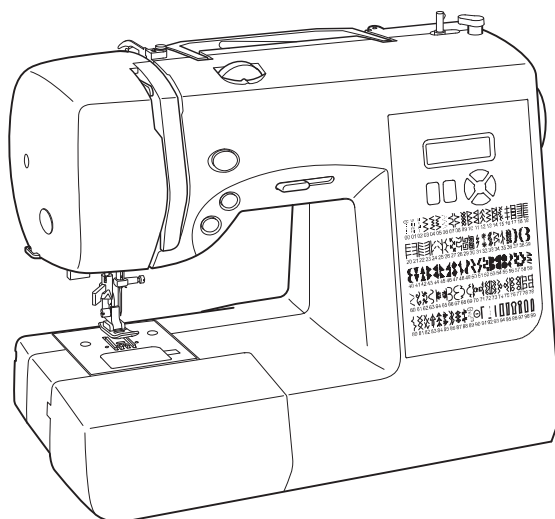




SINGER®

7256
7258
7258Q



Service Manual

® A registered trademark of The Singer Company Ltd. or its affiliates.
® *Una marca registrada de The Singer Company Ltd. o sus afiliados.*
® *Une marca déposée de The Singer Company Ltd. ou ses filiales.*

Service Manual

Original issue

January 2009

Page 2/37

INDEX

Model

COSMO-7/8
series

1. Disassembling of covers
2. Adjustment of feed dog height
3. Needle bar height
4. Needle threader height
5. Presser foot height and direction
6. Needle position at zigzag stitching
7. Clearance between needle and shuttle
8. Needle timing to feed dog
9. Needle timing to shuttle hook
10. Adjustment of thread tension
11. Tension of timing belt
12. Motor belt tension
13. Retaining bracket for bobbin case
14. Origin point positioning of zigzag bight
15. Stitch length
16. Needle stop at highest position
17. Electronic component area
 - *AC Power board
 - *CPU /switch board
18. Wiring diagram
19. Part list for feed control unit

Service Manual

Original issue

January 2009

Page 3/37

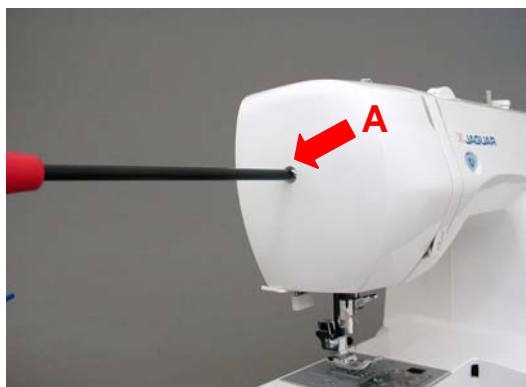
1. Disassembling of covers

Model

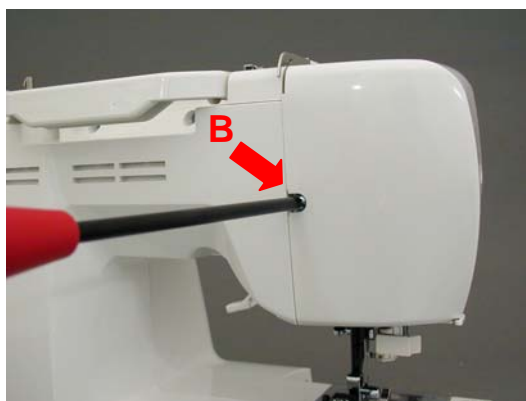
COSMO-7/8
series

(1) Face cover side

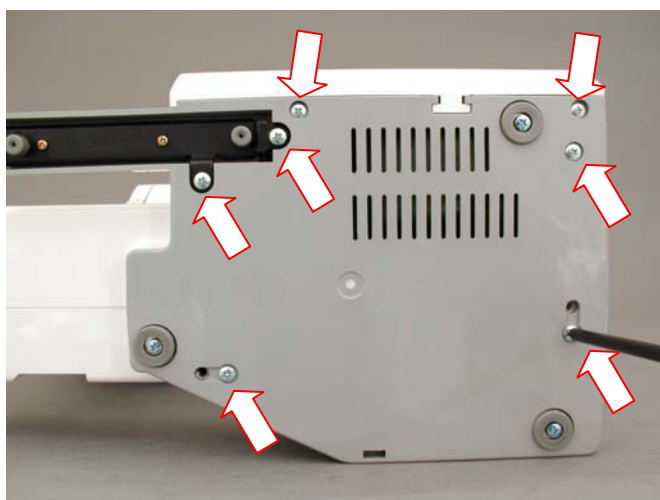
Remove screw A.



Remove screw B.



(2) Bottom cover side



Loosen seven screws.

Service Manual

Original issue

January 2009

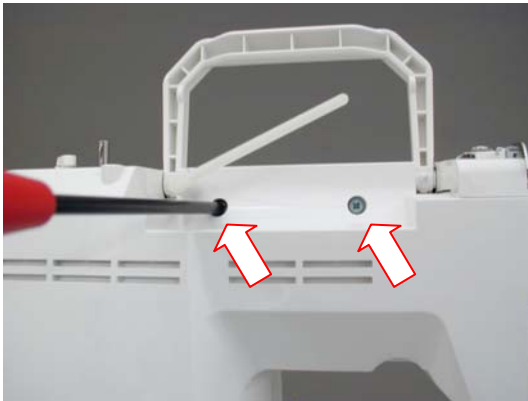
Page 4/37

1. Disassembling of covers –continued--

Model

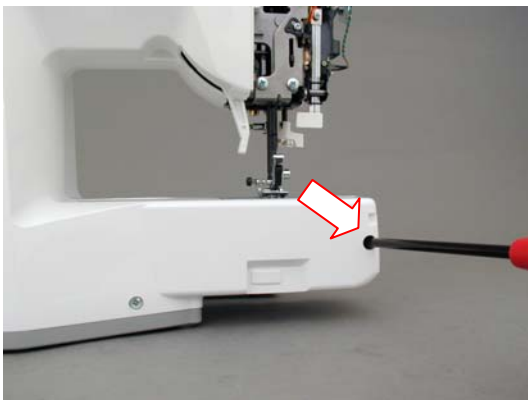
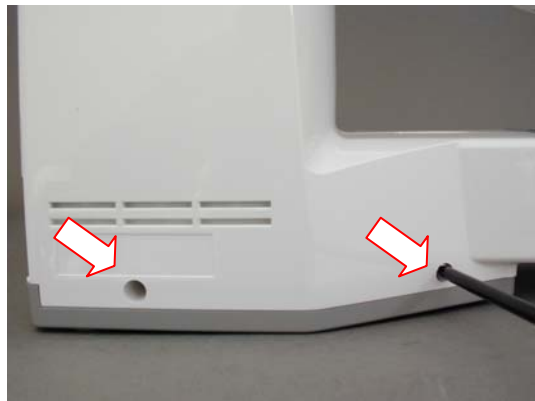
COSMO-7/8
series

(3) Back cover side



Remove two self-tapping screws.

Remove two screws.



Remove self-tapping screw.

Service Manual

Original issue

January 2009

Page 5/37

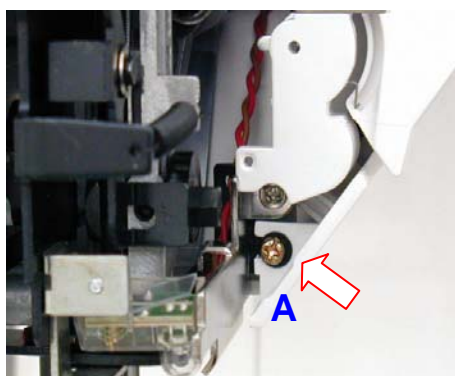
1. Disassembling of covers –continued--

Model

COSMO-7/8
series

(4) Front cover side

Loosen screw A.



Push up front cover to open inserting small screw driver between front and back covers.



Open back and front covers.

Service Manual

Original issue

January 2009

Page 6/37

1. Disassembling of covers –continued--

Model

COSMO-7/8
series

Pull out front cover.



Open mating portion of front and back covers using small screw driver.
Push back cover by small screw driver.

Force front cover open by small screw driver.



Service Manual

Original issue

January 2009

Page 7/37

1. Disassembling of covers –continued--

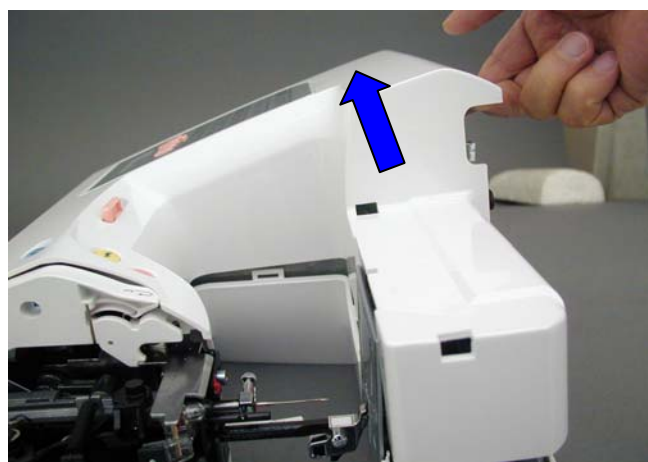
Model

COSMO-7/8
series

Force front cover open by small screw driver.



Lift up front cover as below.



Service Manual

Original issue

January 2009

Page 8/37

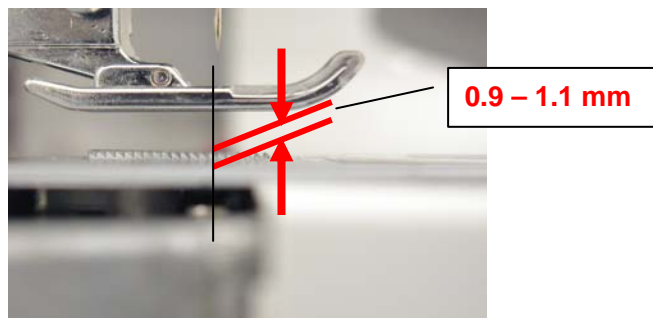
2. Adjustment of feed dog height

Model

COSMO-7/8
series

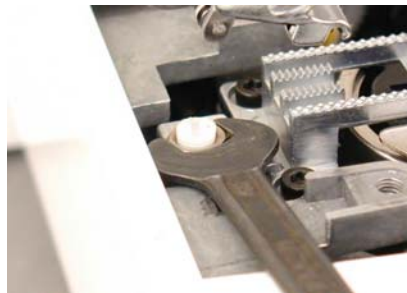
Checking:

1. Move feed dog to its highest position by turning hand wheel.
Check to see if feed dog height is as illustrated below.



Adjustment:

1. Remove needle plate. Loosen nut with wrench.



2. Adjust height by turning screw as illustrated. Tighten nut securely after adjustment.



Service Manual

Original issue

January 2009

Page 9/37

3. Needle bar height

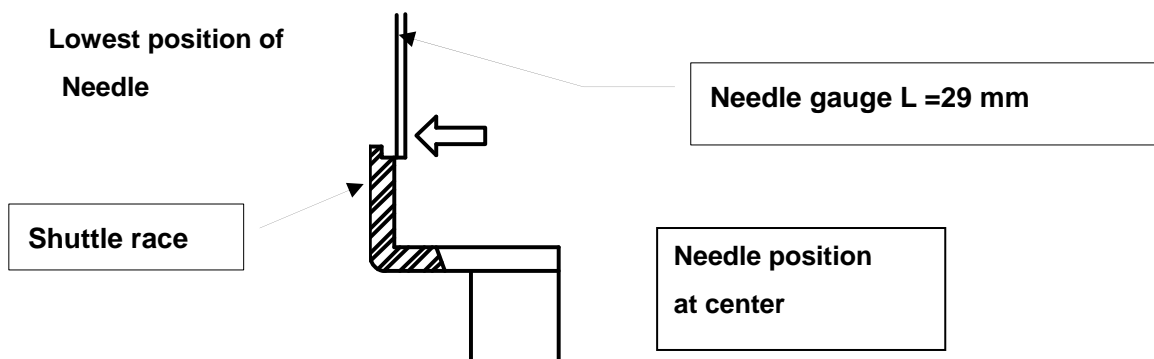
Model

COSMO-7/8
series

Note: Make this checking before checking “**Needle timing to shuttle**” and “**Feed-dog timing (vertical motion)**”.

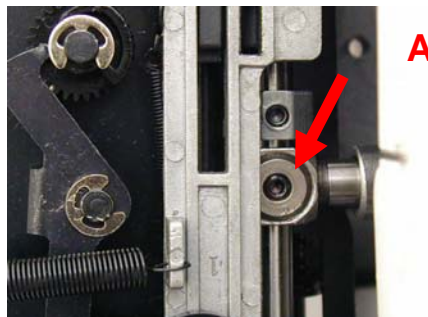
Checking:

1. Select straight stitch at center needle position.
2. Remove presser foot and needle plate, and then remove bobbin case.
3. Replace needle with special needle gauge (L=29 mm).
4. Lower the needle gauge to its lowest position by turning hand wheel by hand.
Check to see if the bottom of the needle gauge aligns with shuttle race pushing the needle lightly as shown by arrow mark.



Adjustment:

1. Remove face cover.
2. Loosen screw (A) of needle bar clamp using hex screw driver and adjust the height of needle bar.



Service Manual

Original issue

January 2009

Page 10/37

3. Needle bar height –continued--

Model

COSMO-7/8
series

3. Tighten the screw (A) securely after adjustment. Replace needle gauge with normal needle #90/14.
4. Check to see if needle threader operates correctly and there is not interference in vertical movement of needle bar.

Service Manual

Original issue

January 2009

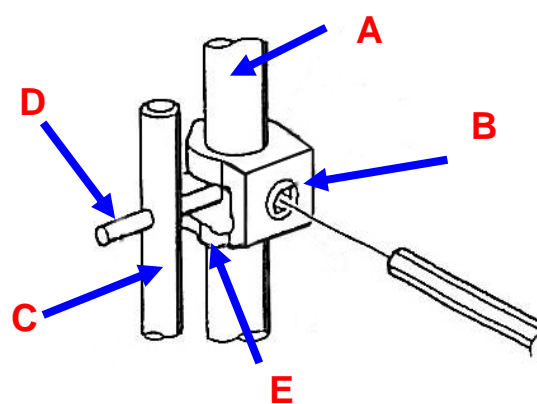
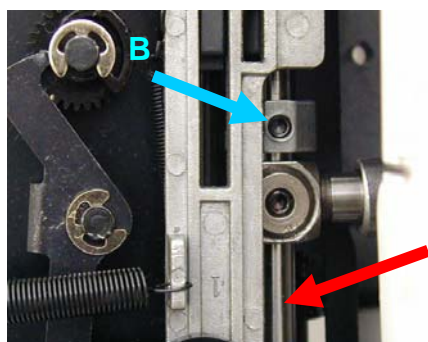
Page 11/37

4. Needle threader height

Model

COSMO-7/8
series

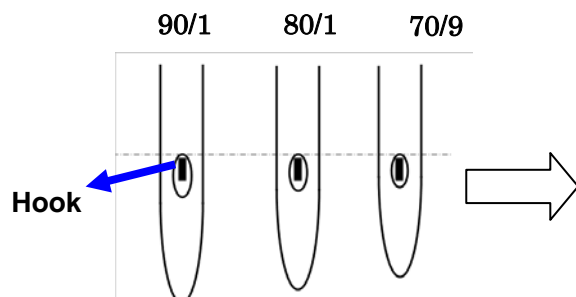
1. Use needle Singer 90/14.
2. Select straight stitch at center needle position.
3. Raise needle to its highest position by turning hand wheel toward you.
4. Lowering needle threader lever, check and see if hook is inserted into needle hole.



Adjustment

1. Remove face cover.
2. Turning hand wheel by hand, raise needle bar (A) to its highest position.
3. Loosen screw (B) of threader stopper.
4. Insert hook into the upper side of needle-hole moving the needle threader bar (C).
5. While holding the above situation, tighten the screw (B) attaching the stopper pin (D) onto threader stopper (E).
6. The direction of screw (B) on threader stopper (E) should be facing toward you so that it may not hit the needle support bracket.

* Insert the hook into the upper side of needle hole at all times as the smaller needle size, the shorter needle hole.



Insert the hook into the
upper side of needle hole.

Service Manual

Original issue

January 2009

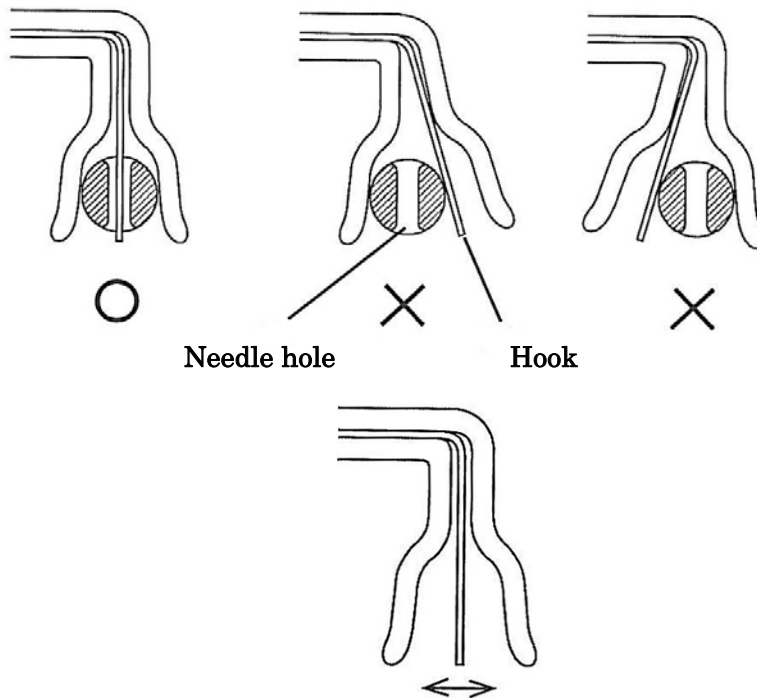
Page 12/37

4. Needle threader height --continued--

Model

COSMO-7/8
series

7. If the direction of insert hook is deviated from correct position, adjust the hook position with the small screw driver in the accessory.



8. Recheck that the needle threader works correctly.

Service Manual

Original issue

January 2009

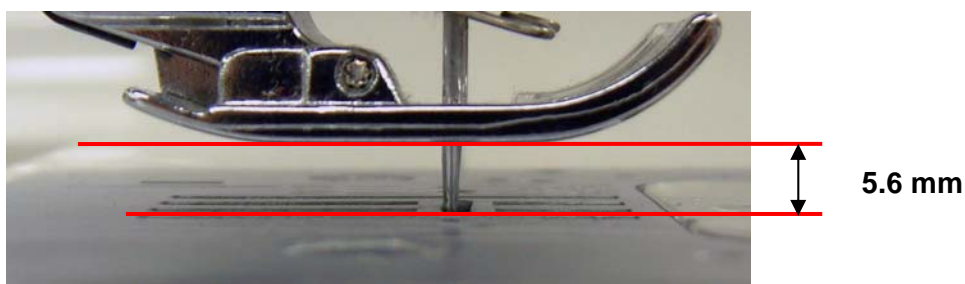
Page 13/37

5. Presser foot height and direction

Model

COSMO-7/8
series

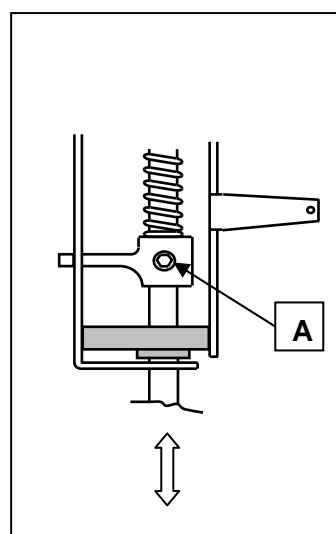
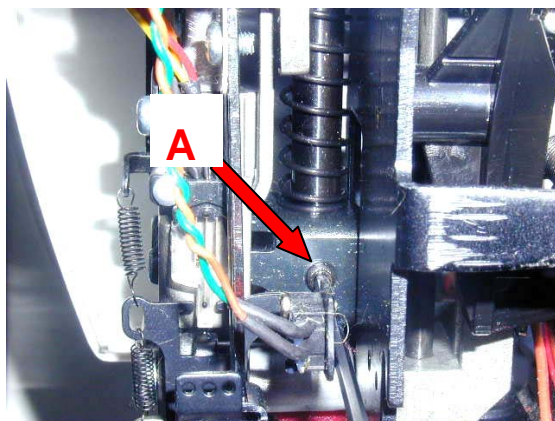
Checking



1. Lower the feed dog below the needle plate.
2. Raise the presser foot lever.
3. Check and see if clearance between the needle plate and the presser foot is about 5.6 mm.

Adjustment

1. Remove the face cover, and raise the presser foot lever.
2. Loosen the screw (A) and adjust the presser foot height moving the presser bar.
3. Tighten the screw securely after checking the presser foot is parallel with the holes for feed dog on the needle plate.



Service Manual

Original issue

January 2009

Page 14/37

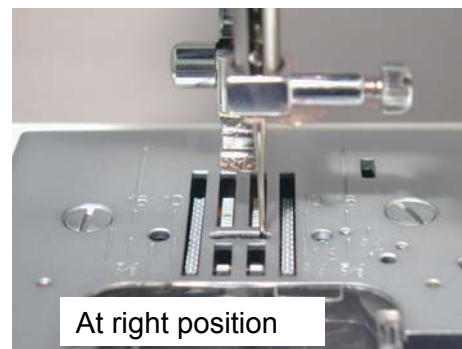
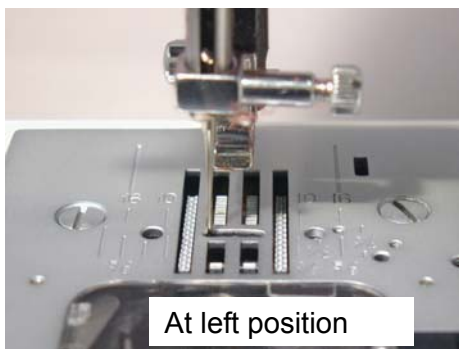
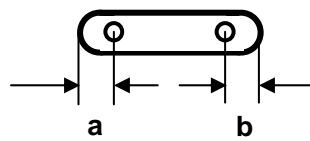
6. Needle position at zigzag stitching

Model

COSMO-7/8
series

Checking:

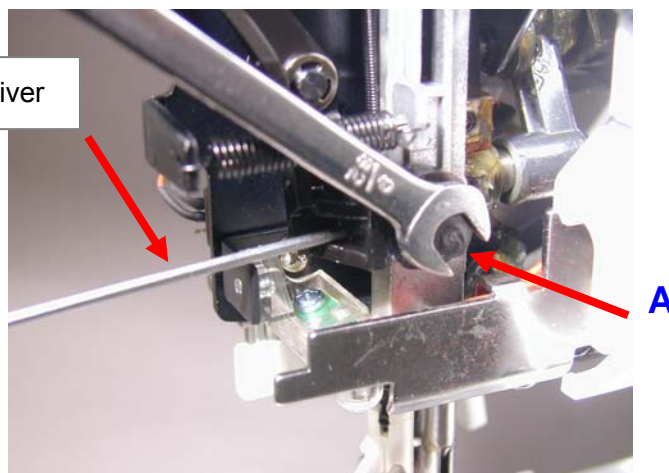
1. Select widest zigzag stitch.
2. Turn hand wheel by hand and see if needle leaves the same clearance at both right and left end of needle plate hole.



Adjustment:

1. Loosen screw by hex screw driver and adjust needle position by turning eccentric pin (A) using 7mm wrench.

Hex screw driver



Service Manual

Original issue

January 2009

Page 15/37

7. Clearance between needle and shuttle

Model

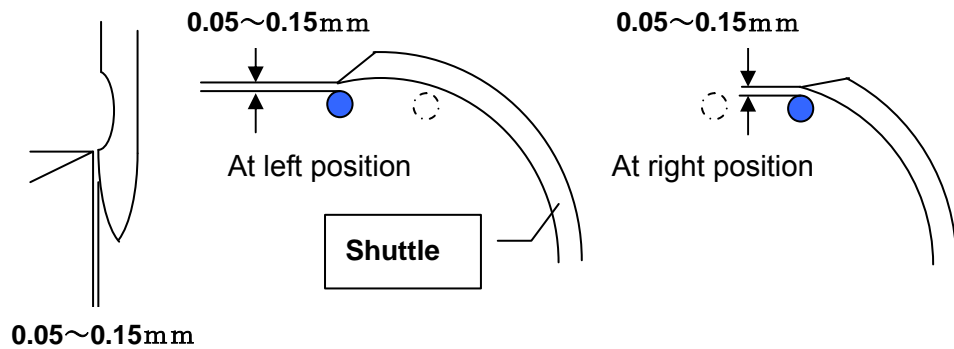
COSMO-7/8
series

Make this checking before checking “Needle timing to shuttle”.

Checking:

1. Select widest zigzag stitch.
2. Remove needle plate, bobbin case and face cover.
3. Shift shuttle hook at the rear of needle by turning hand wheel.

Check to see if needle clearance to shuttle is within 0.05 to 0.15 mm.



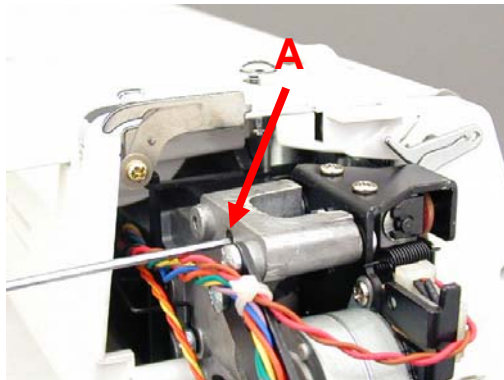
At left position



At right position

Adjustment:

1. Turn screw (A) to either direction as illustrated and adjust needle position by moving support shaft back and forth. To decrease clearance, turn screw counter-clockwise.



Service Manual

Original issue

January 2009

Page 16/37

7. Clearance between needle and shuttle --continued--

Model

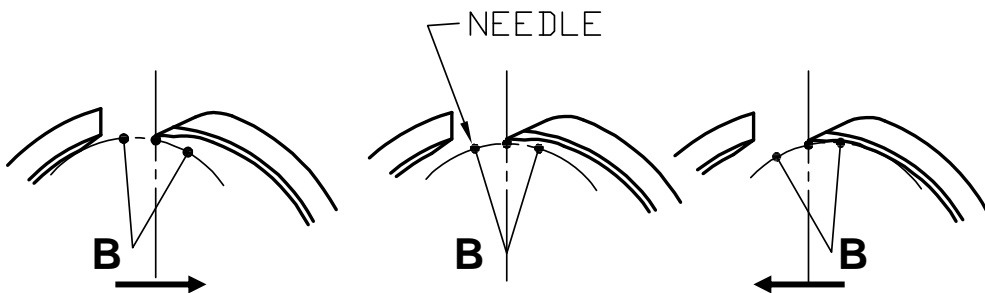
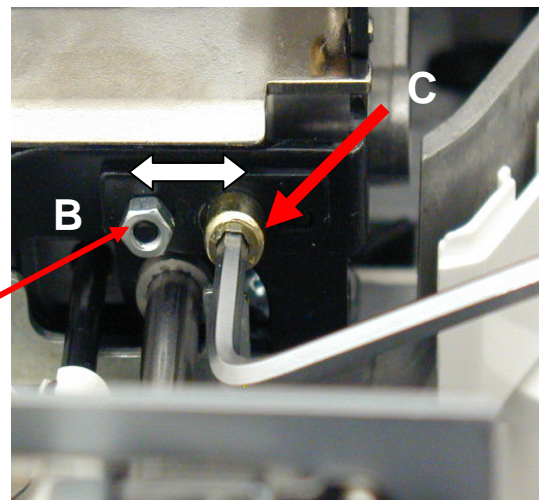
COSMO-7/8
series

2. If needle clearance to shuttle at right and left position is not same, adjust position of fulcrum for needle swing support .

Loosen bolt (A) located under bottom of support plate and adjust position of fulcrum.

Position of fulcrum (B)
for needle swing support .

Do not loosen this screw.



If needle touches with shuttle at left side,
adjust position of fulcrum (B) for needle
swing support to the right.

If it touches at right side, adjust position
of fulcrum (B) for needle swing support
to the left.

3. After adjustment, tighten the bolt (B) securely.

Service Manual

Original issue

January 2009

Page 17/37

8. Needle timing to feed dog

Model

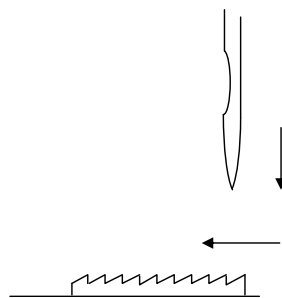
COSMO-7/8
series

Note: After adjustment, be sure to follow “**Needle timing to shuttle**”.

As horizontal and vertical feed motion is unitized on this model, adjustment of feed timing is as follows:

Checking:

1. Select straight stitch at maximum stitch length.
2. Bring needle bar to its highest position by turning hand wheel.
3. Check to see if feed dog starts to move when needle starts to go down by turning hand wheel towards you.



Feed dog starts to move a little bit earlier than when needle starts to go down.

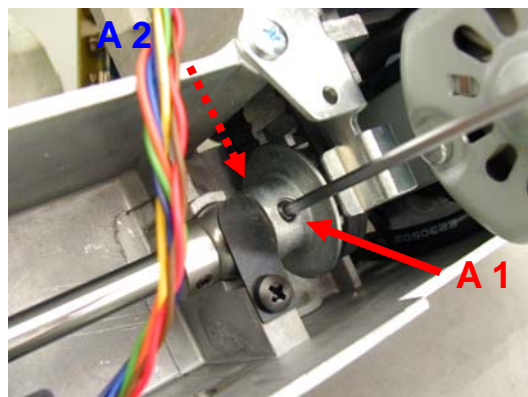
Adjustment:

1. Adjust the angle of timing gear to lower shaft with 2 screws (A1 & A2) on timing gear loosened and hex driver inserted into one of the screws by turning main shaft with hand wheel,.

If feed-dog motion too early → Turn hand wheel towards you.

If feed-dog motion too late → Turn hand wheel away from you.

2. Tighten one of two screws temporarily and check feed-dog motion.
3. After adjustment, tighten screws (A1 & A2) securely.



Service Manual

Original issue

January 2009

Page 18/37

9. Needle timing to shuttle hook

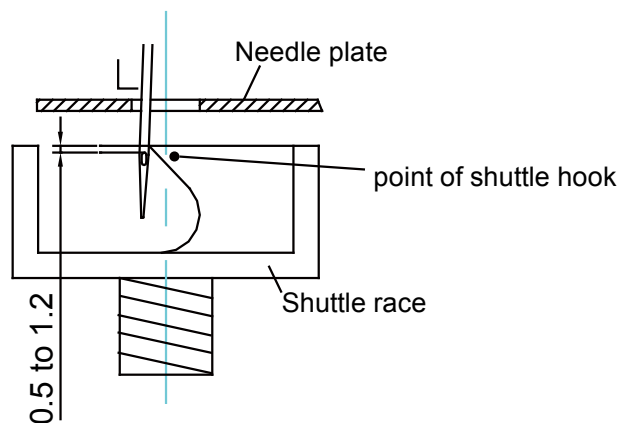
Model

COSMO-7/8
series

Check “Feed timing (vertical movement)” and “Needle height” beforehand.

Checking

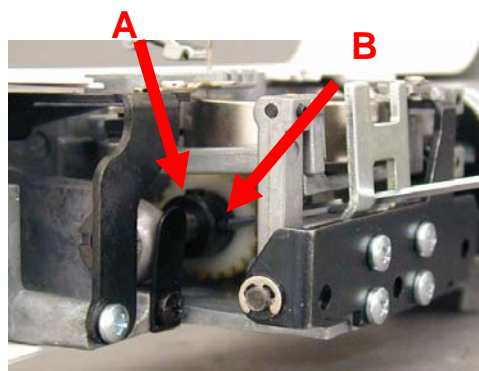
1. Select widest zigzag stitch.
2. Remove needle plate. Check to see if needle is not bent.
3. Move needle to left position by turning hand wheel. Raise needle from its lowest position slowly and check if distance is as illustrated below when point of shuttle hook aligns with right side of needle.



Adjustment

1. Remove front cover. Loosen two screws (A & B) on gear and adjust position of gear as illustrated below.

With one screw tightened temporarily, check to see if the distance is as illustrated above. Adjust it by turning main shaft with hand wheel, with screws loosened and hex driver inserted into one of the screws.



Service Manual

Original issue

January 2009

Page 19/37

9. Needle timing to shuttle hook --continued--

Model

COSMO-7/8
series

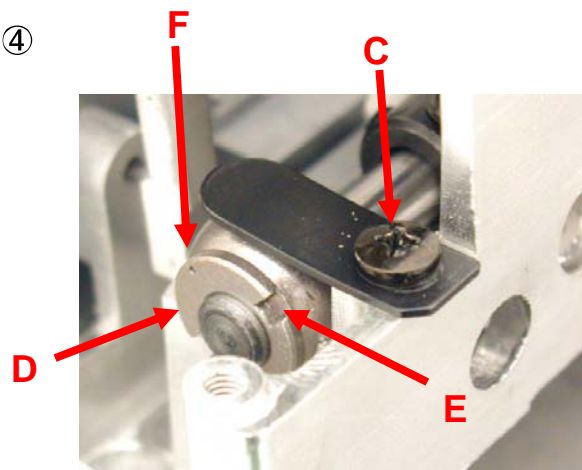
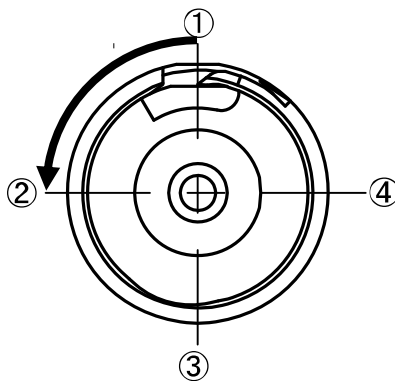
2. Tighten screws securely after adjustment.

Meshing condition of shuttle race gear and lower shaft gear

1. Check meshing condition of gear (A) after adjustment.

Check play of the gear at 4 positions –each 90 degree angle of 1 rotation of shuttle race.

No play on 2 positions to save too loose condition – play on other 2 positions to save too tight condition.



2. Adjustment of play between shuttle gear and lower shaft gear is made by turning eccentric ball bushing (D).

*loosen screw (C) on pressing plate so that the ball bushing (D) may be turned.

*Turn the ball bushing (D) in either way by using concave portion.

*The ball bushing is to be placed with mark (F) positioned at upper side within angle of 180 degrees

3. Tighten the screw (C) securely after adjustment.

Service Manual

Original issue

January 2009

Page 20/37

10. Adjustment of thread tension

Model

COSMO-7/8
series

Checking:

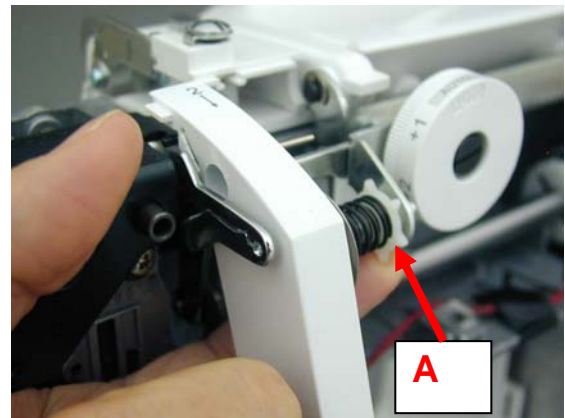
1. Set thread tension at the center of "AUTO" position.
 2. Pull thread between tension discs and check thread tension value with two twisted Polyester #50 thread.
 3. Measured value should be 40 to 50 g.
- * Bobbin thread tension should be 12 to 16 g.
- * For actual sewing, sew zigzag stitch and check balance of upper and lower threads.

Adjustment:

1. Raise take-up lever to its highest position by turning hand wheel by hand.
 2. Set thread tension at the center of "AUTO" position. Insert your forefinger from the rear of thread guide plate and rotate toothed plate (A) to adjust spring in either direction.
 3. Viewing the toothed plate (A) from face cover side,
- *Rotate it counter-clockwise when increasing thread tension.
- *Rotate it clockwise when decreasing thread tension.



Thread tension is increased



Position of spring adjustment plate (A)

Service Manual

Original issue

January 2009

Page 21/37

11. Tension of timing belt

Model

COSMO-7/8
series

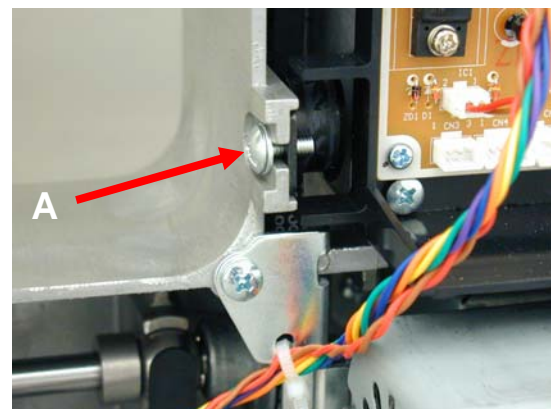
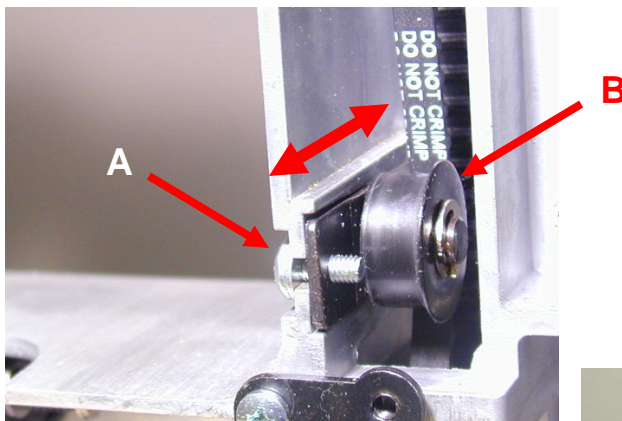
Note: This checking is needed before and after adjusting “Needle timing to shuttle”.

1. Timing belt is engaged with gears on main and lower shafts.

Too weak tension may result in slippage between shuttle gear and lower shaft gear due to thread jamming, bunching and fabric snagging.

Too strong tension may result in incorrect operation due to increased machine torque.

2. Loosen screw (A) on arm frame for idler pulley (B) and shift the position of idler pulley (B) for adjustment.
3. After adjustment, tighten screw (A) securely.



Note: Be sure to recheck “Needle Timing to shuttle” after adjustment.

Service Manual

Original issue

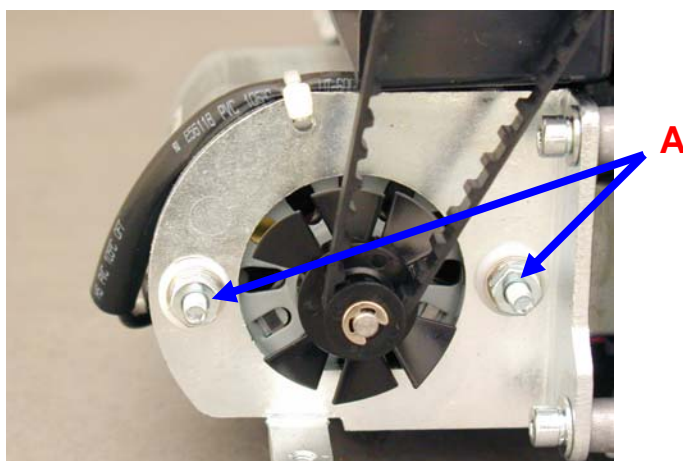
January 2009

Page 22/37

12. Motor belt tension

Model

COSMO-7/8
series



Adjustment:

1. Remove the front cover.
2. Loosen two nuts (A) and adjust belt tension so that belt may be bent about 5 mm when it is pushed by pressure of 100g between upper shaft and motor.
3. Tighten the two nuts after checking the belt tension.

Service Manual

Original issue

January 2009

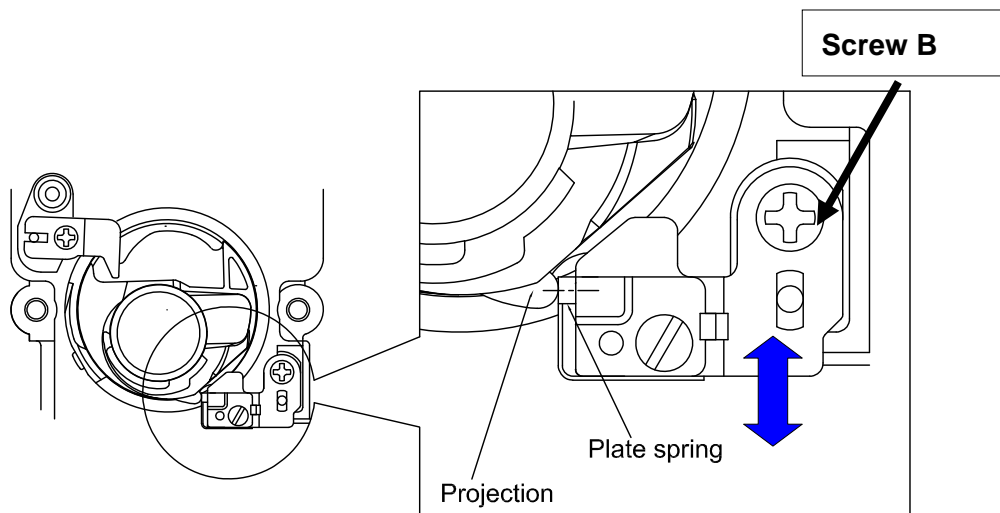
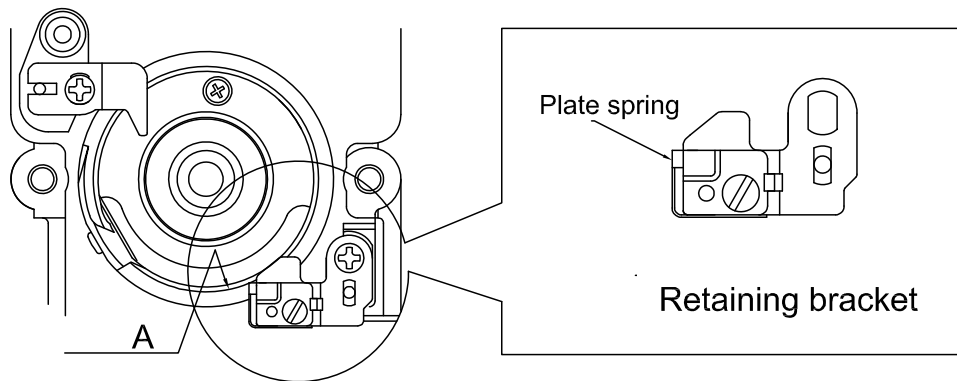
Page 23/37

13. Retaining bracket for bobbin case

Model

COSMO-7/8
series

1. Remove needle plate and bobbin case.
2. Check to see if corner of plate spring aligns with inside of wall (A) of shuttle race as illustrated below.
3. Loosen screw (B), move the retaining bracket in direction as illustrate by arrow and tighten screw (B) temporarily.



4. Insert the bobbin case into position and adjust the position of retaining bracket so that the projection of bobbin case may be positioned against the plate spring as illustrated above.
5. Tighten the fixing screw (B) securely.

Service Manual

Original issue

January 2009

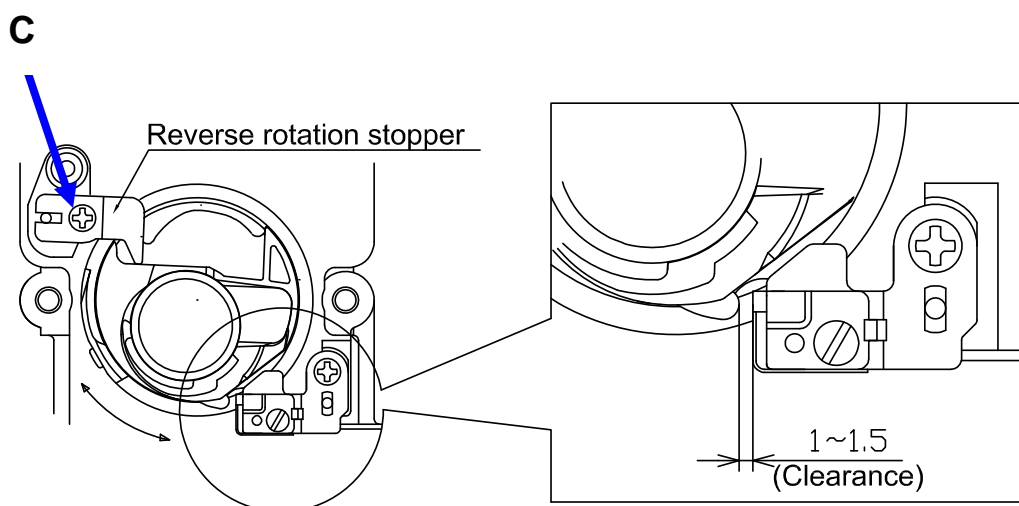
Page 24/37

13. Retaining bracket for bobbin case –continued --

Model

COSMO-7/8
series

6. Loosen screw (C) and adjust the position of reverse rotation stopper so that there may be a clearance of **1 to 1.5 mm** between the projection and plate spring while turning the bobbin case back and forth.



7. Tighten the screw (C) securely.
Place needle plate and bobbin cover plate into position.

Service Manual

Original issue

January 2009

Page 25/37

14. Origin point positioning of zigzag bight

Model

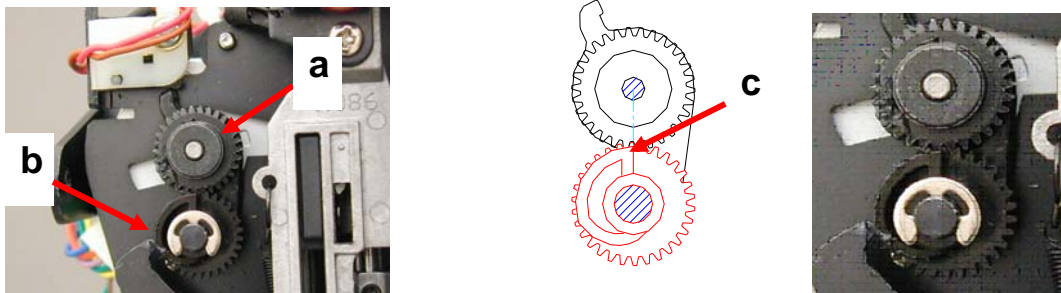
COSMO-7/8
series

(A) Checking meshing position of gears

This procedure is needed only when disassembling and re-assembling cams.

Checking

1. Remove face cover and turn off power switch.
2. Rotate gear (a) clockwise until it stops with long projection touched with shaft.
3. Check to see if end (c) of zigzag cam (b) aligns with center of gear (a).



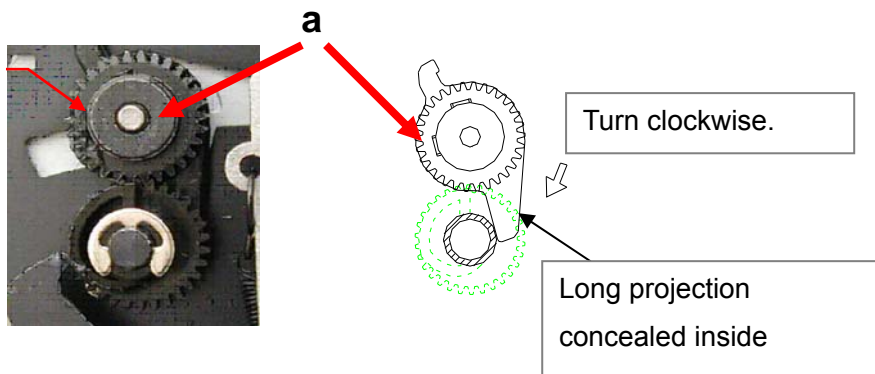
Disassembling and re-assembling

If meshing position of two gears is not correct, remove zigzag cam (b) from shaft and insert it into correct position.

(B) Origin point positioning of zigzag bight

1. Turn off power switch.
2. Loosen left side of two screws on gear (a).

Left side of two screws is to be loosened.



3. Turn on power switch. Loosen the screw tightened on gear (a) and rotate gear (a) clockwise until it touches with limiter and tighten two screws securely.

Service Manual

Original issue

January 2009

Page 26/37

15. Stitch length

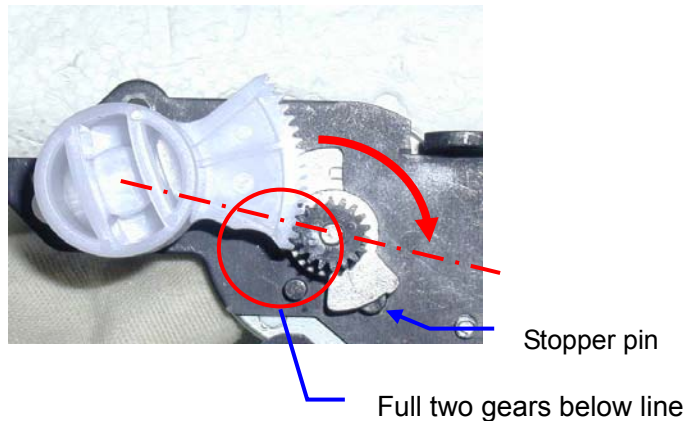
Model

COSMO-7/8
series

(A) Checking meshing position of gears

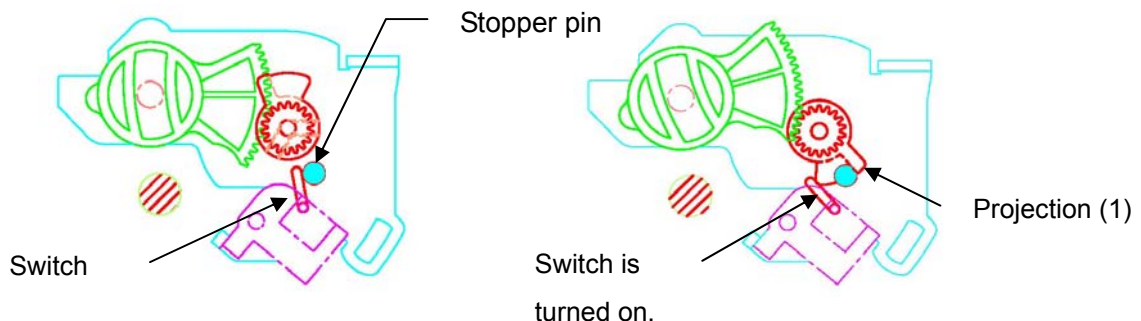
This procedure is needed only when disassembling and re-assembling cams.

Rotate motor gear clockwise to touch it with stopper pin and mesh these gears so that feed regulator gear may be positioned with full two gears below line from feed regulator to motor gear



(B) Origin point positioning of stitch length

Step motor rotates 7.5 degrees with one pulse and ratio of motor gear vs. feed regulator gear is 1:5. This amount of rotation makes feed regulator rotate 1.5 degree. This amount of rotation makes stitch length vary by 0.25 mm. 0.25 mm stitch pitch moves at each of 7.5 degree exciting position.



Service Manual

Original issue

January 2009

Page 27/37

15. Stitch length –continued--

Model

COSMO-7/8
series

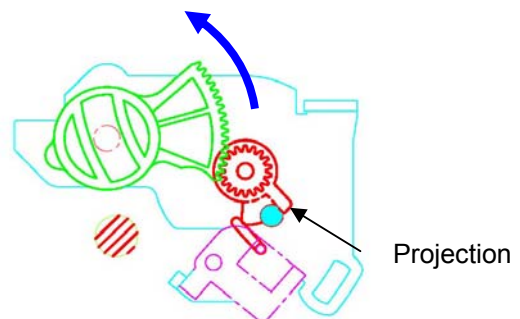
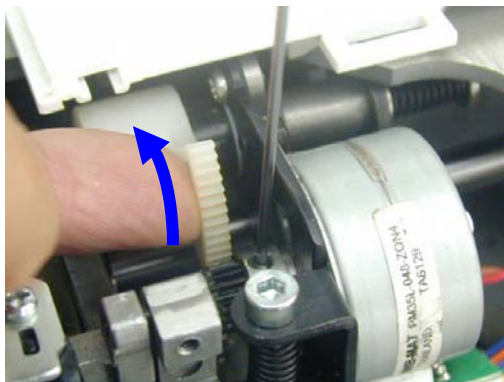
In case of large deviation, adjust as follows:

Setting

1. Turn off power switch.
2. Loosen one of two screws on motor gear.



3. Turn on power switch and rotate hand wheel towards you, and this motor shaft will be held at one of exciting position continuously after motor for stitch width is held at exciting position.
4. Loosen other screw on motor gear for adjustment and motor gear will become free from motor shaft.
5. Rotate gear of stitch regulator cam until projection of motor gear touches with stopper pin and you will get position for origin point positioning.



6. Temporarily tighten one screw which is located for easier access for adjustment.
This completes point positioning.

Service Manual

Original issue

January 2009

Page 28/37

15. Stitch length --continued--

Model

COSMO-7/8
series

(C) Stitch balance

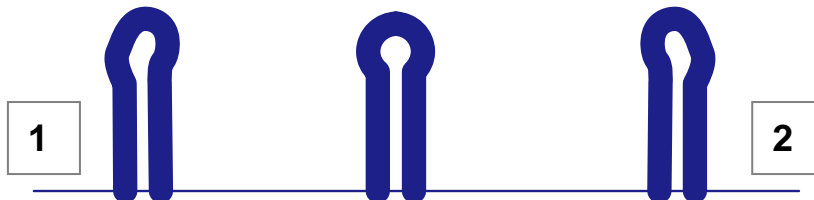
If forward and reverse stitch pitch is not balanced, adjust by changing position of motor.

*Check meshing of motor gears and origin point positioning before adjustment.

Checking

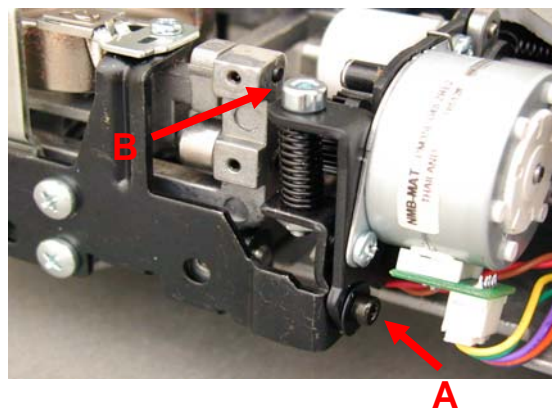
Keyhole buttonhole is used to adjust stitch length, since many stitch patterns are built in this model:

1. Select large size of keyhole buttonhole pattern.
2. Set buttonhole foot.
3. Thread the machine with thread "Coats & Clark No. 60 and sew the buttonhole on a demo swatch.
4. Check sewn result of top of buttonhole.
 - a. If it is shaped as "1" below, reverse stitch pitch is too small.
 - b. If it is as "2" below, forward stitch pitch is too small.



Adjustment

1. Loosen fixing bolt (A) on motor bracket using 2.5 mm hex driver.



Service Manual

Original issue

January 2009

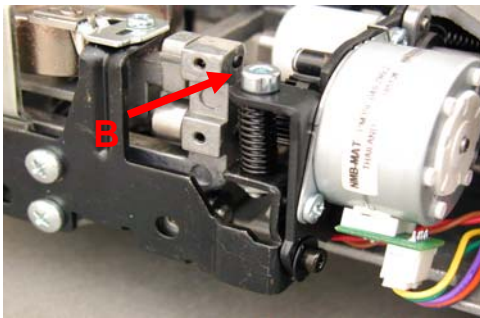
Page 29/37

15. Stitch length --continued--

Model

COSMO-7/8
series

2. Turn position adjusting bolt (B) on motor bracket in either direction using 3.0 mm hex driver.



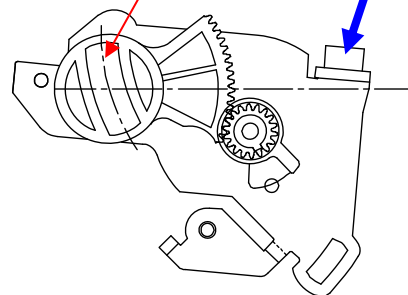
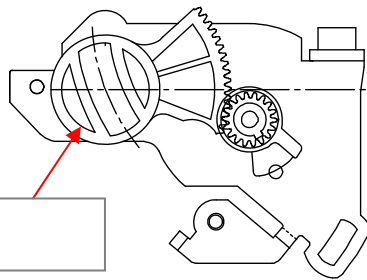
Change Inclination of feed regulator and stitch pitch will be varied:

*Lower motor unit to change reverse stitch pitch.

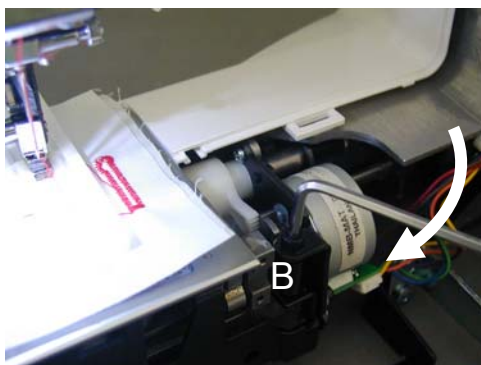
*Raise it to change forward stitch pitch.

Adjusting bolt (B)

Feed regulator



- a.** Rotate bolt (B) clockwise when the top of buttonhole is shaped as (1) illustrated in the [previous page](#)



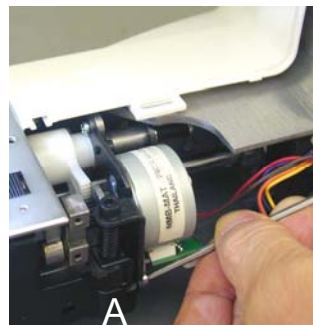
Reverse stitch pitch is too small.

Note:

*Loosen screw (A) beforehand.

*Don't overshoot.

*Test sewing after tightening screw (A) temporarily



Service Manual

Original issue

January 2009

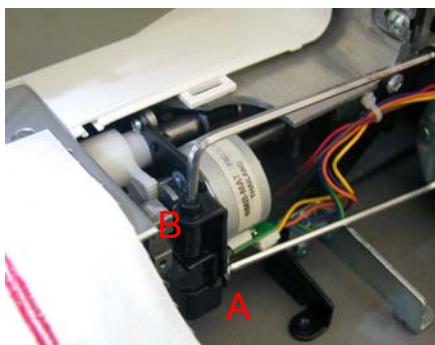
Page 30/37

15. Stitch length --continued--

Model

COSMO-7/8
series

b. Rotate bolt (B) counter clockwise when the top of buttonhole is shaped as (2) illustrated in the previous page



Forward stitch pitch is too small.

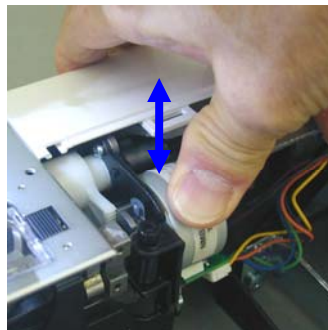
Note:

*Loosen screw (A) beforehand.

*Don't overshoot.

*When loosening bolt (B), try to push motor unit with finger against spring pressure so that it may follow the movement.

*Test sewing after tightening screw (A) temporarily



3. After adjustment, tighten screw (A) securely.

Service Manual

Original issue

January 2009

Page 31/37

16. Needle stop at highest position

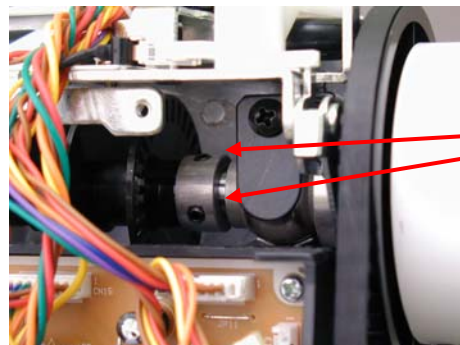
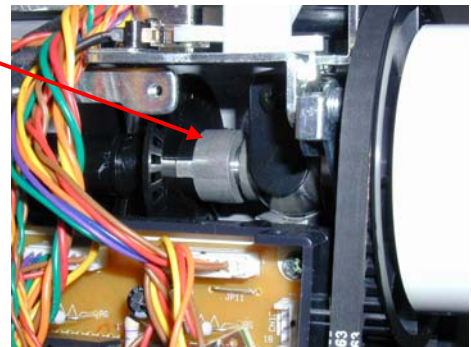
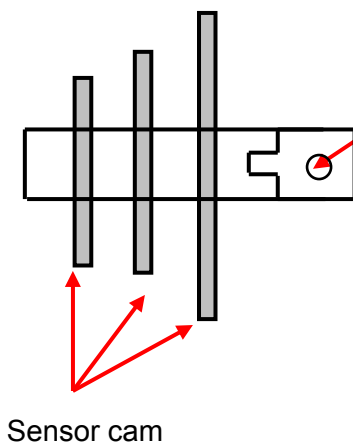
Model

COSMO-7/8
series

Needle always stops at its highest position. This is controlled by sensor cam and sensor located on main shaft.

Adjustment:

1. Raise needle to its highest position.
2. Loosen two screws (B1 & B2) on collar (A) fixing sensor cam.
3. Turn collar (C) in either direction until needle stops at its highest position.
4. Check to see if take-up lever stops at the position for threading easy after adjustment.
5. If there is no problem, tighten two screws (B1 & B2) securely.



B1 & B2

Service Manual

Original issue

January 2009

Page 32/37

17. Electronic component area

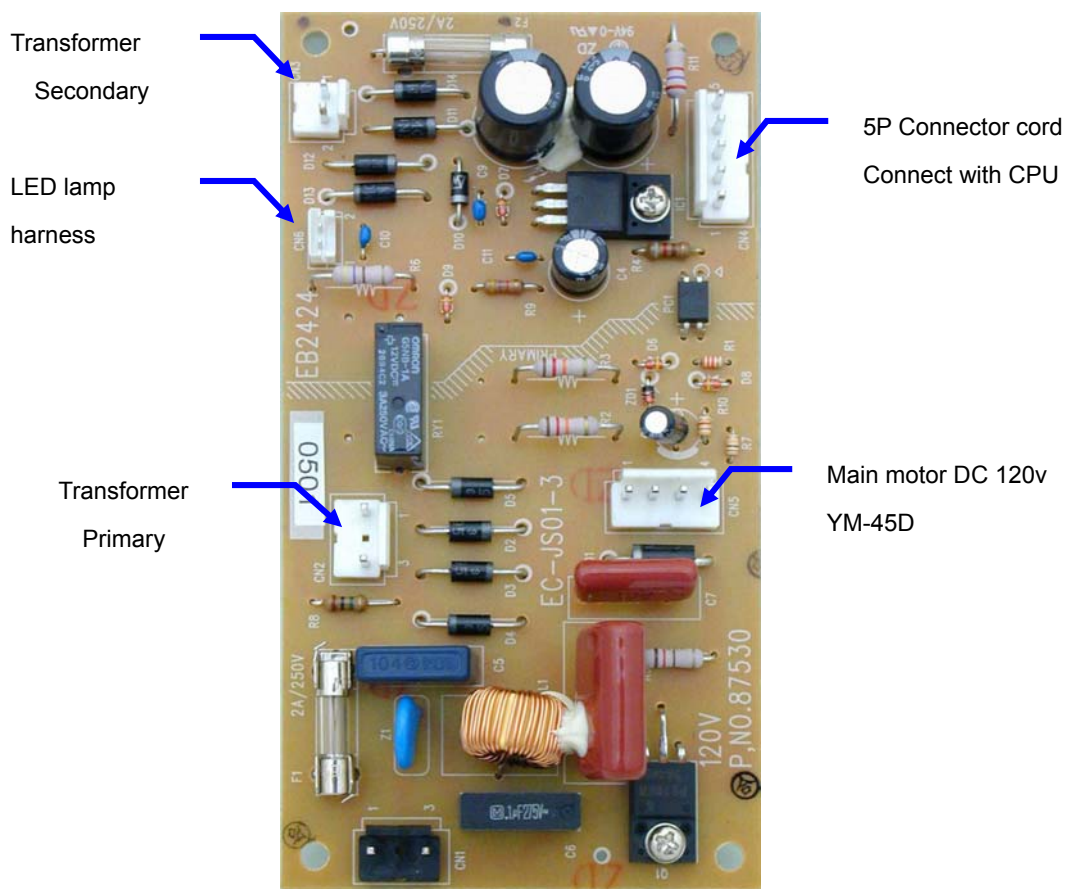
Model

COSMO-7/8
series

AC Power Board

Component number is **87530** for 120V spec. and **87553** for 230V spec.
Be sure to check number printed on board.

87530 & 87553



Service Manual

Original issue

January 2009

Page 33/37

17. Electronic component area -- continued --

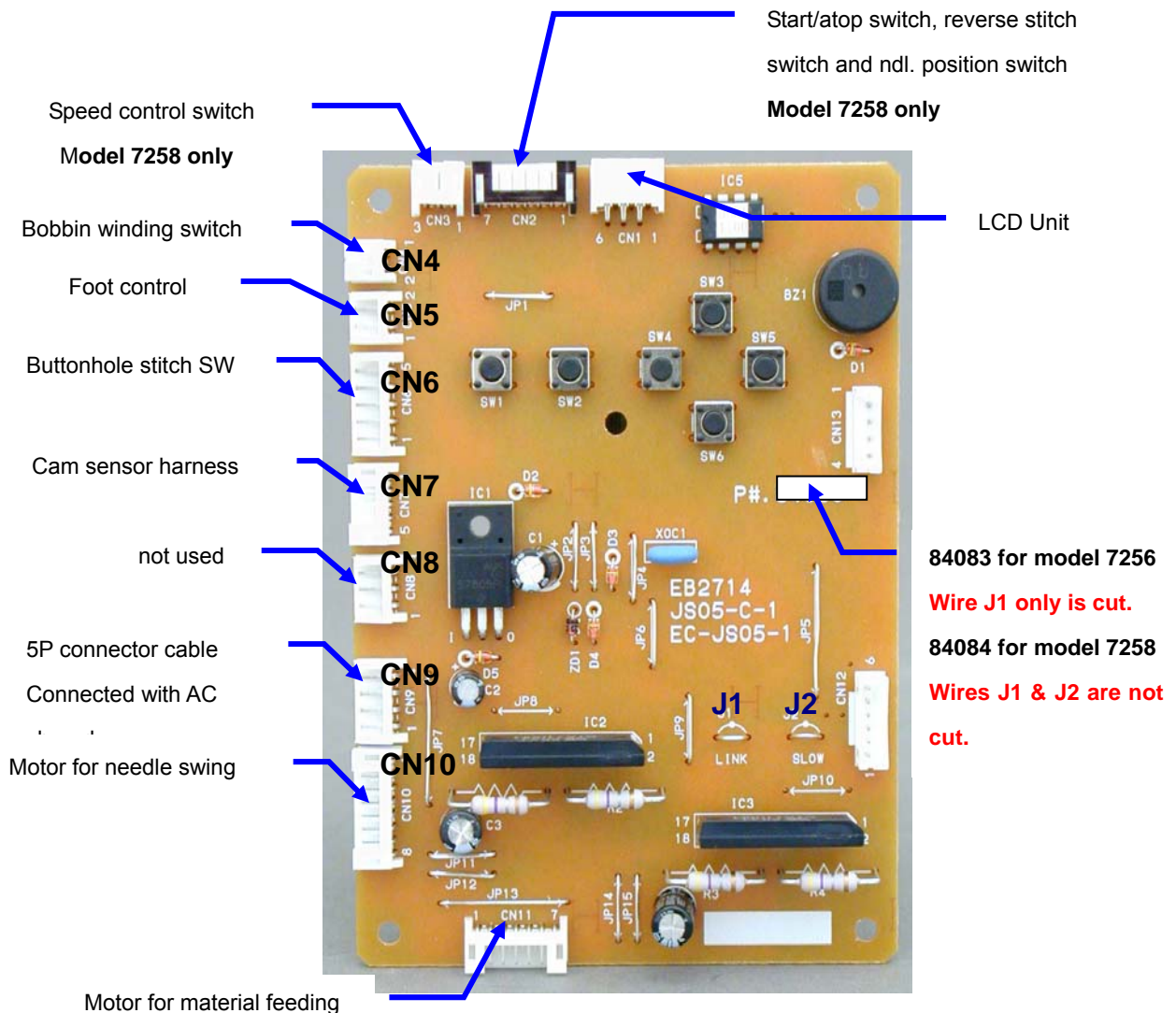
Model

COSMO-7/8
series

CPU board and SW board are unitized and located on control panel in this model.

Be sure to check number printed on board.

84083 for model 7256, 84084 for model 7258



Service Manual

Original issue

January 2009

Page 34/37

17. Electronic component area -- continued --

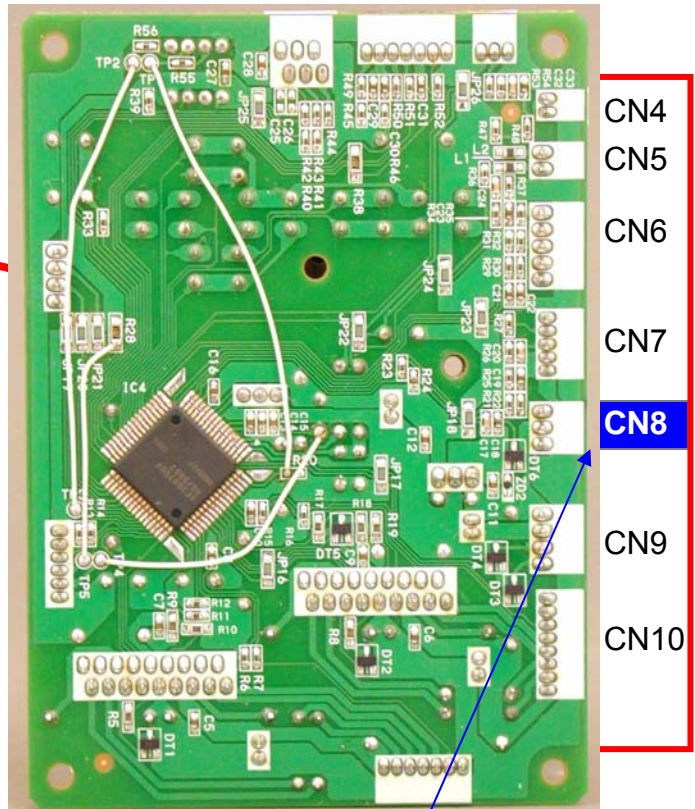
Model

COSMO-7/8
series

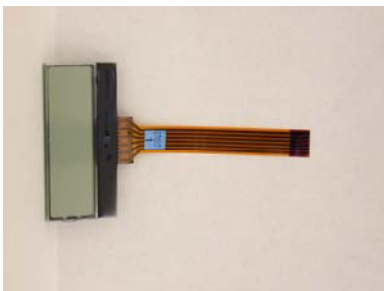
Harnesses are connected to red framed position of CPU board



Reverse side of CPU /Switch board



LCD Unit p.no. 84082



not used

Service Manual

Original issue

January 2009

Page 35/37

18. Wiring diagram

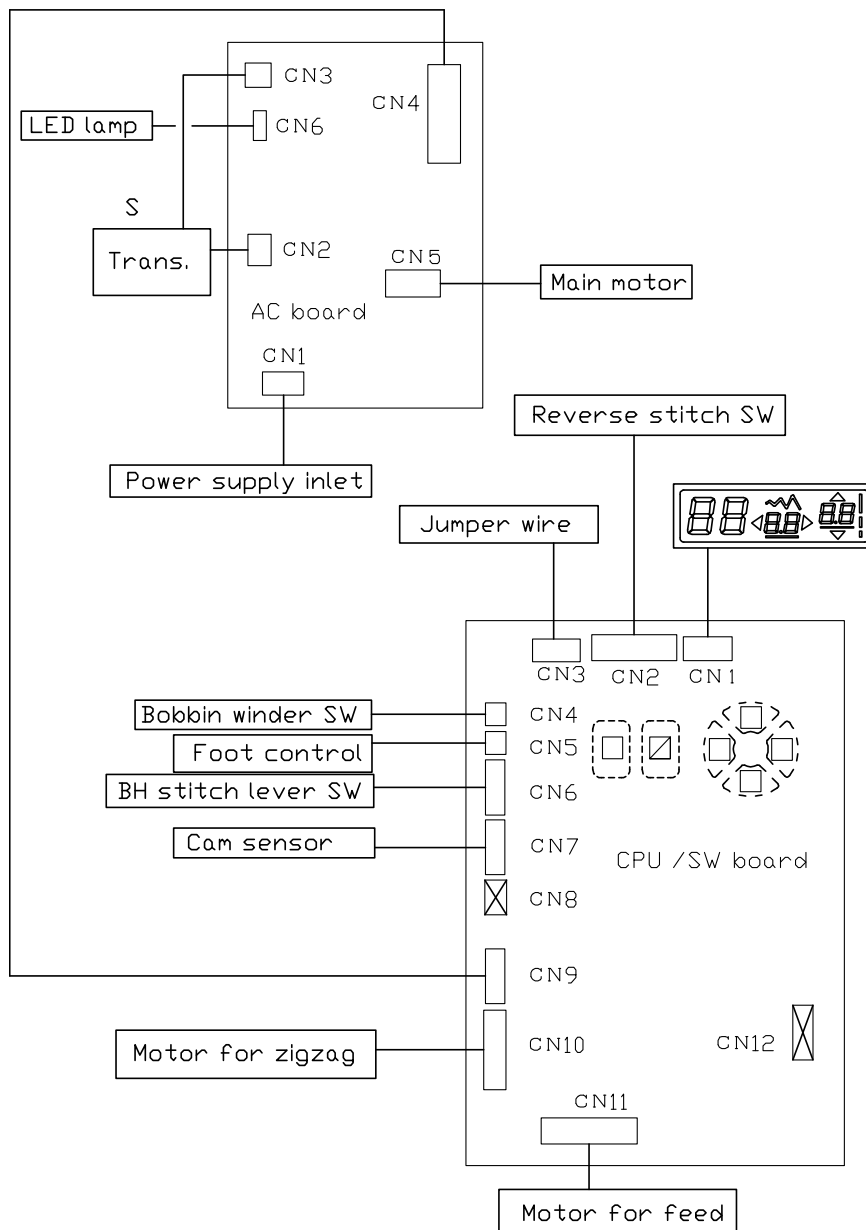
Model

COSMO-7/8
series

Model 7256

Model CB-0 7/8

Model 7256 (70 patterns)



Service Manual

Original issue

January 2009

Page 36/37

18. Wiring diagram – Continued--

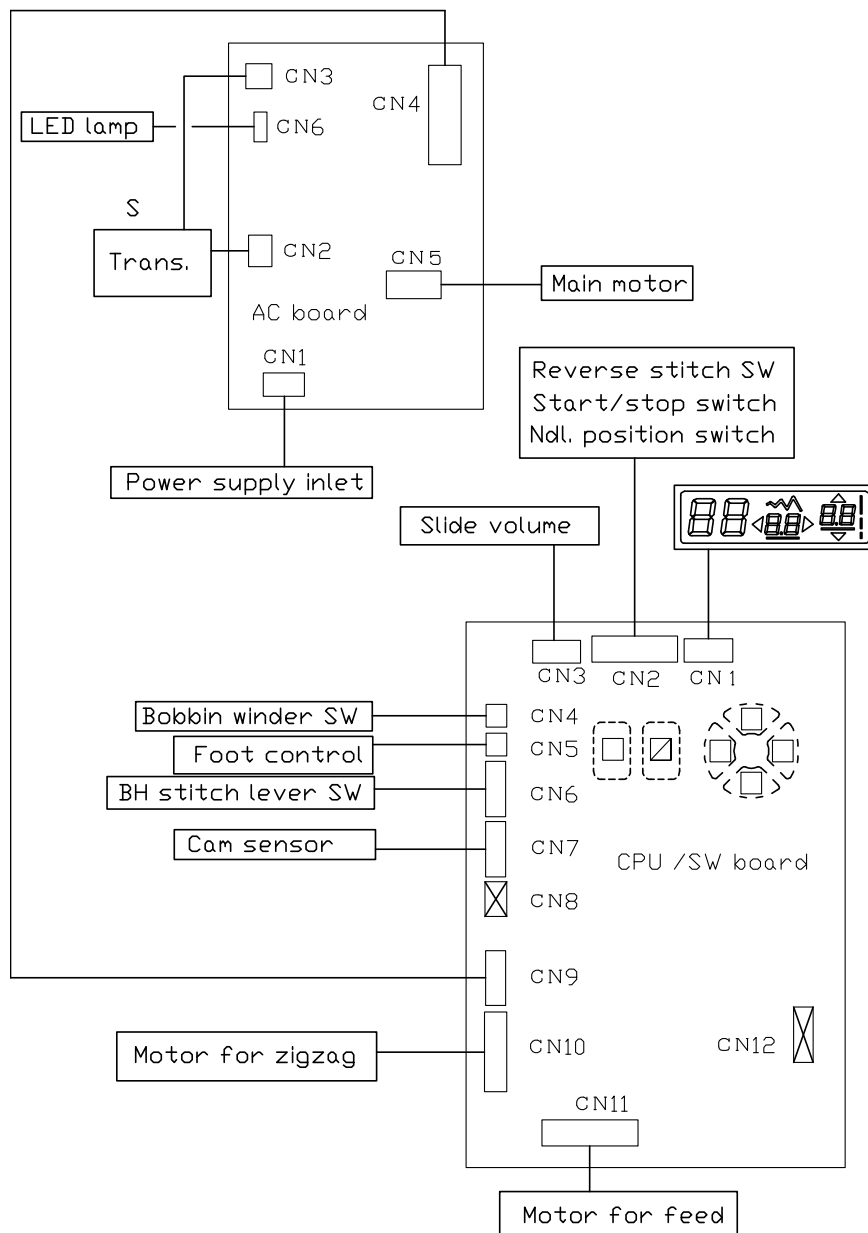
Model

COSMO-7/8
series

Model 7258

Model CB-0 7/8

Model 7258 (100 patterns)



Service Manual

Original issue

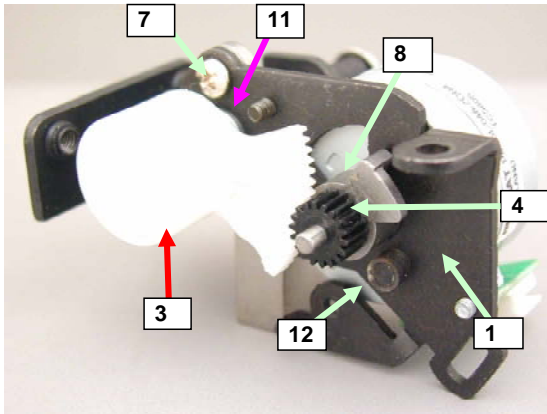
January 2009

Page 37/37

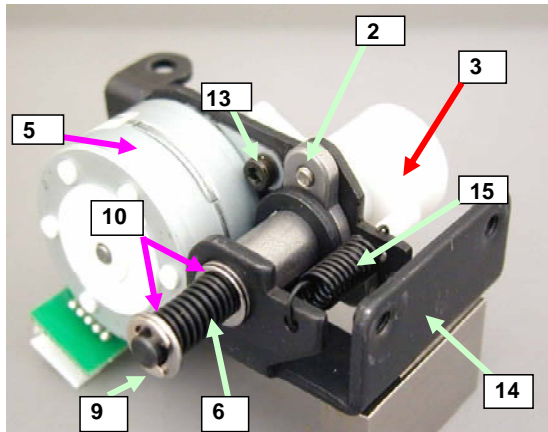
19. PART LIST FOR FEED CONTROL UNIT

Model

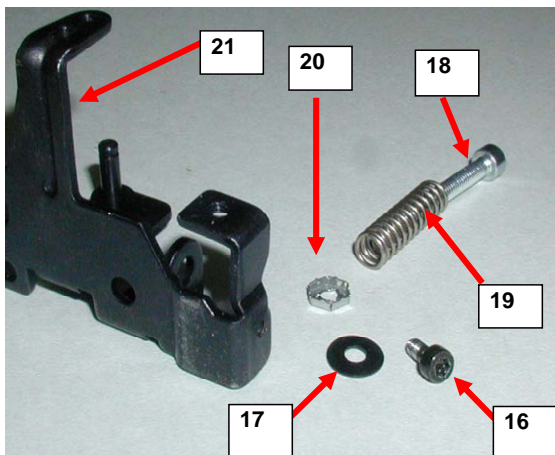
COSMO-7/8
series



NO.	Name	Part no.	
1	Motor bracket	87148	1
2	Metal bush	87178	1
3	Feed regulator	87254	1
4	Pinion gear	87253	1
5	Pulse motor	87600	1
6	Compression spring	87191	1
7	M4 Phillips screw	76317	2
8	M3 screw	64653	2
9	Clip-on-washer E4	1513	1
10	Washer 1	59221	2
11	Washer 2	2206	1
12	Vinyl tube(3.5mm)	87273	1
13	M3 socket screw	80110	2
14	Support bracket	87146	1
15	Tension spring	87188	1



NO.	Name	Part no.	
*	Switch	87516	1
*	Switch cover	77527	1
*	M3 screw	63796	1



NO.	Name	Part no.	
16	M3 CP screw	87262	1
17	Washer	31246	1
18	M4 CP bolt	87255	1
19	Compression spring	87189	1
20	AR nut	73299	1
21	Securing bracket	87145	1