

# **GLOBAL**

**MEMBER OF THE IMCA-GROUP**

**WF 9955**

**HIGH SPEED SINGLE NEEDLE COMPOUND  
WALKING-FOOT NEEDLE FEED MACHINE**

**PARTSLIST  
&  
INSTRUCTION MANUAL**

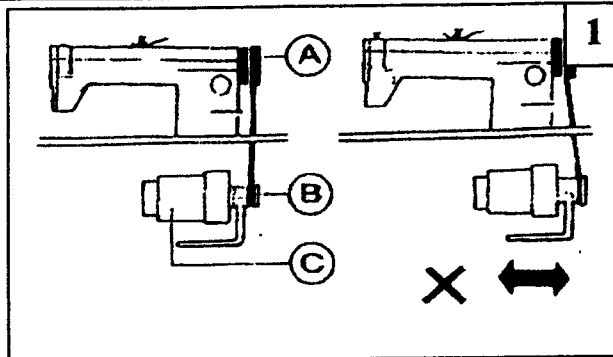
# **INSTRUCTION MANUAL**

## 1. MAIN SPECIFICATION

|                   |                             |                           |                       |
|-------------------|-----------------------------|---------------------------|-----------------------|
| Sewing speed      | 2000s.p.m.                  | Needle                    | DP×17 22 <sup>#</sup> |
| Stitch length     | 0 - 9mm                     | Lubrication               | Automatic             |
| Needle bar stroke | 33.2mm                      | Reverse feeding mechanism | Have                  |
| Presser foot lift | 8mm (Manual)<br>15mm (Knee) |                           |                       |

## 2. INSTALL THE MOTOR ( Fig.1 )

Align Motor Pulley Groove (B) and Balance Wheel Groove (A) by moving the Motor(C) leftward or rightward.



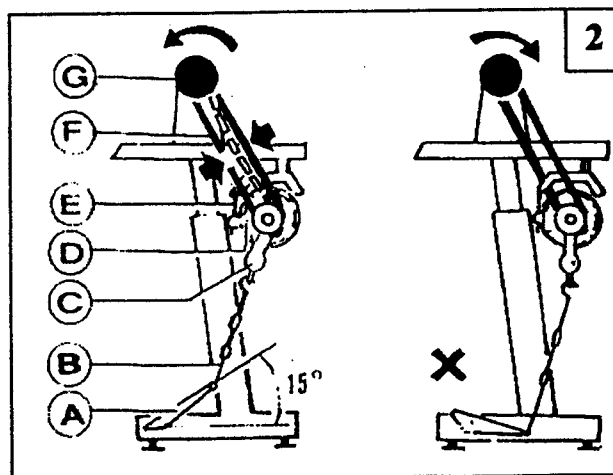
## 3. CONNECT THE CLUTCHLEVER WITH THE PEDAL ( Fig.2 )

1. The optimum tilt angle of Pedal (A) is approximately 15 degree.

2. Adjust Clutch Cover (D) so that Clutch Lever (C) and Draw Bar (B) run the line.

3. The balance wheel should rotate counter-clockwise when viewed from the outside of Balance Wheel (G). The direction of the motor pulley rotation can be reversed by reversing (turning over 180 degree) the power plug of the motor.

4. Adjust the tension of V-belt (F) by turning Motor Vertical Position Screw (E). The proper tension of the V-belt is a slack of 10-20mm when the belt is depressed at the center of the belt by finger.



## 4. PREPARATION AND LUBRICATION ( Fig.3 )

### 1) Cleaning the machine

Before leaving the factory, the machine parts are coated with rust-preventive grease, which may be hardened and contaminated by dust during storage and shipment. This grease must be removed with gasoline.

### 2) Examination

Although each machine is confirmed strictly and test before leaving the factory, the machine parts may be loose or deformed after long distance transportation with jolt. A thorough examination must be performed after cleaning the machine. Turn the balance wheel to see if there is running obstruction, parts collision, uneven resistance or abnormal noise. If these exist, adjustment must be made accordingly before run in operation.

### 3) Oiling

#### (1) Required amount of oil

Line (A) on the oil reservoir: Max. oil level

Line (B) on the oil reservoir: Min. oil level

If oil level goes down under Line (B), oil cannot be distributed to each part of the machine, thus

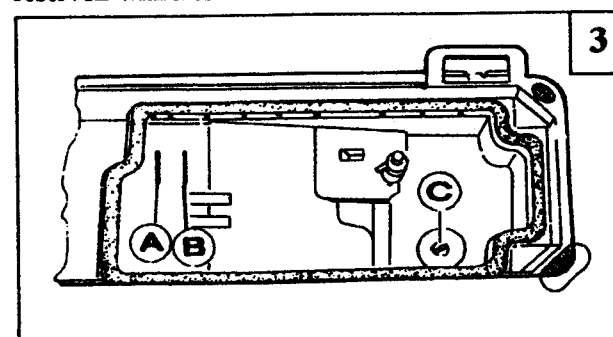
causing the parts a seizure.

#### (2) Replenishing

Always use only No.18 special machine oil for high speed sewing. Be sure to replenish oil to Line (A) before starting operation.

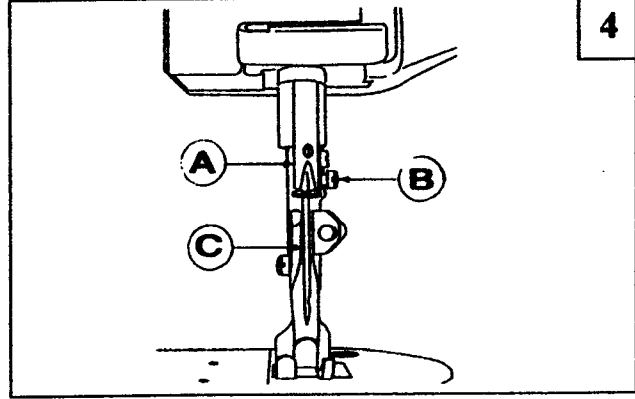
#### (3) Replacing oil

To replace oil, remove Screw (C) to drain oil. After completely draining off oil, clean the oil reservoir and securely tighten Screw (C), then fill the reservoir with fresh oil



## 5. REPLACE NEEDLE ( Fig.4 )

Turn the balance wheel to lift needle bar (A) to the upper end of its stroke. Loosen Needle Clamp Screw (B) while keeping the long groove of the needle(C) leftward, fully insert the needle shank up to the bottom of the needle socket. Then tighten Needle Clamp Screw (B).



## 6. RUN IN OPERATION ( Fig.5 )

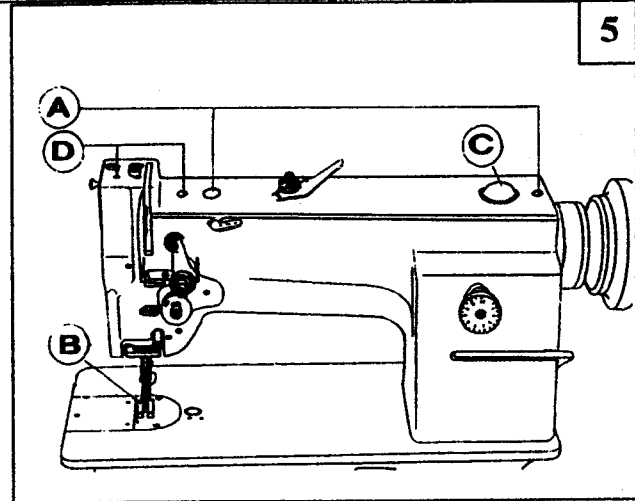
Run-in operation is required for a new sewing machine, or a sewing machine left out of operation for a considerable length of time.

1) Remove Rubber Plugs (A) on the top of the arm and replenish sufficient amount of oil, and also to the red oil hole (D).

2) Lift Presser Foot (B).

3) Run the machine at a low speed (1000-1500spm) to check oil distributing condition through Oil Check Window (C).

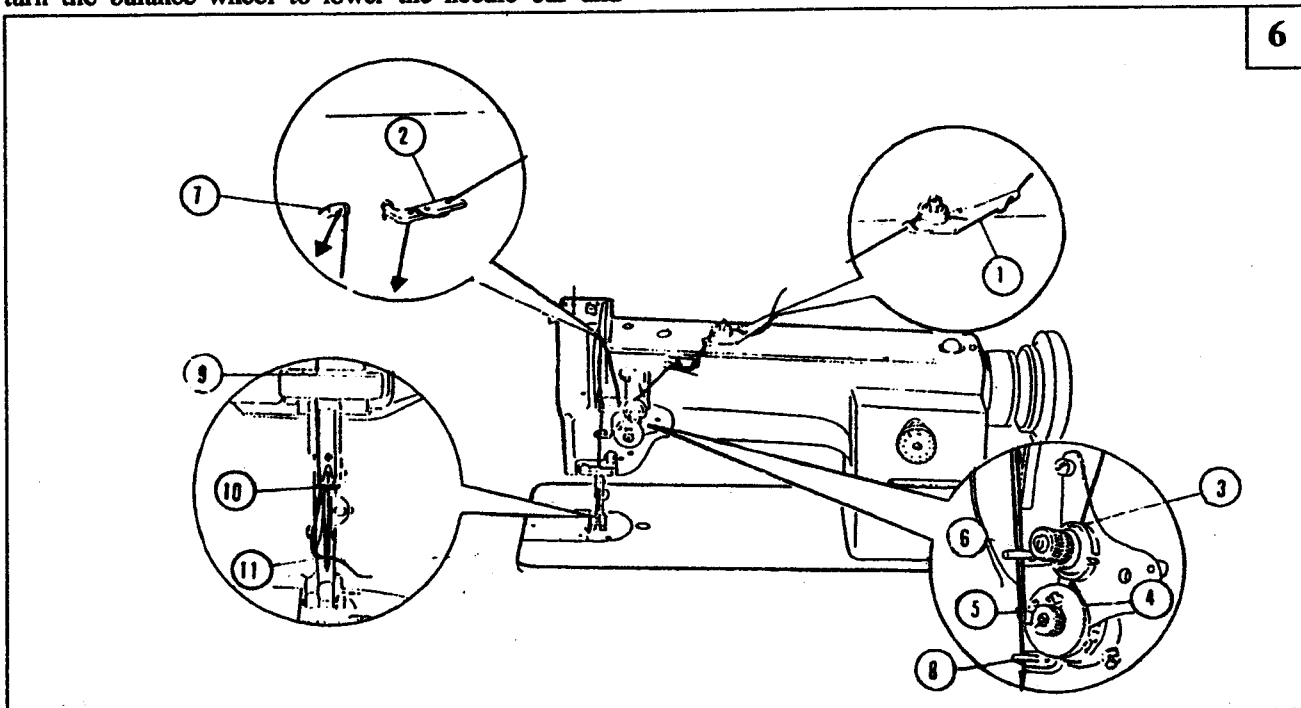
4) Perform run-in operation at 1000-1500spm for 30 minutes. After a lapse of one month of service during which the working speed is increased gradually and the machine runs sufficiently well, the high speed 2000spm can be adopted according to the nature of the work..



## 7. THREADING ( Fig.6 )

To thread the needle thread, raise needle bar to the upper end of its stroke, lead the thread from spool and perform threading as shown in Fig.6. To draw the bobbin thread, hold the end of the needle thread and turn the balance wheel to lower the needle bar and

then to lift it to its highest position. Pull the needle thread and the bobbin thread is drawn up. Put the ends of needle thread and bobbin thread frontward under presser foot.



## 8. WINDING ADJUSTMENT ( Fig.7 )

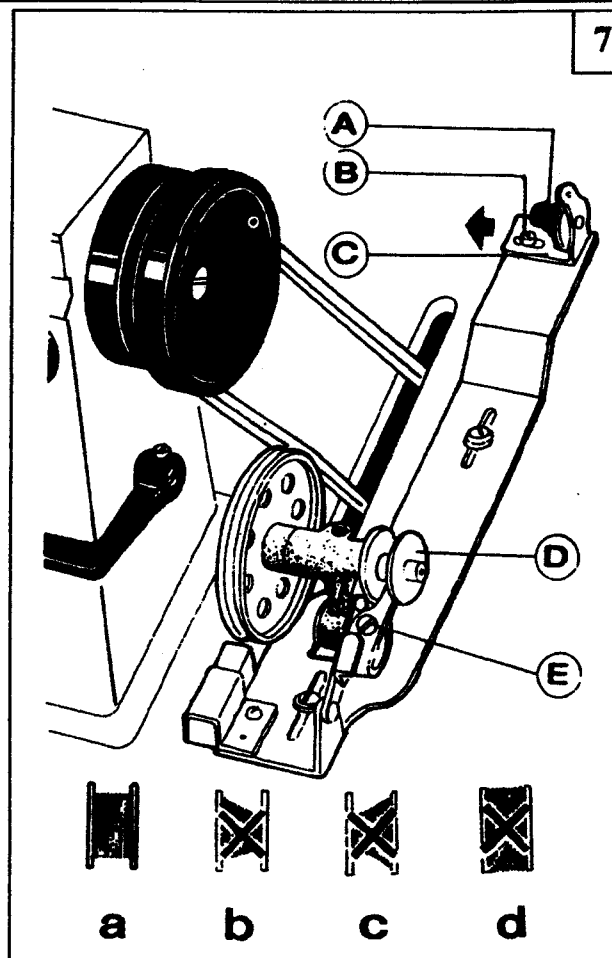
1) The wound bobbin thread should be neat and tight, if not, adjust the winding tension by turning Tension Stud Nut (A) of bobbin winder tension bracket.

Note: nylon or polyester thread should be wound with little tension, otherwise, Bobbin (D) might break or deform.

2) When the wound thread layer does not present a cylindrical shape as shown in Fig.7 (a), loosen Set Screw (B) of bobbin winder tension bracket and slide Bracket (C) leftward or rightward. If thread is wound as shown in Fig.7 (b), move the bracket rightward, but if thread is wound as shown in Fig.7 (c), move the bracket leftward.

After adequately positioning the bracket, tighten Set Screw (B).

3) Do not overfill the bobbin. The optimum length of thread will fill about 80% of bobbin capacity. This can be adjusted by adjusting Screw (E) of bobbin winder stop latch.

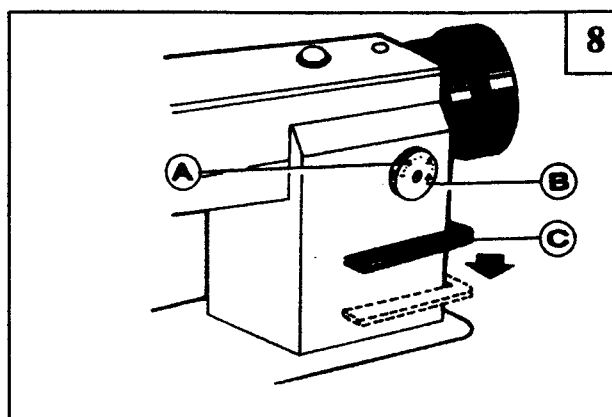


## 9. SET STITCH LENGTH AND REVERSE FEEDING ( Fig.8 )

1) Stitch length can be set by turning Dial (A).

2) The figures on face (B) of dial show stitch length in mm.

3) Reverse feeding starts when Reverse Feed Lever (C) is depressed, and the machine will feed forward again if Reverse Feed Lever (C) is released.



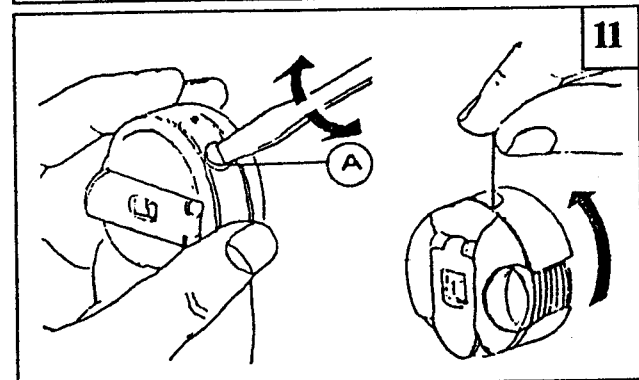
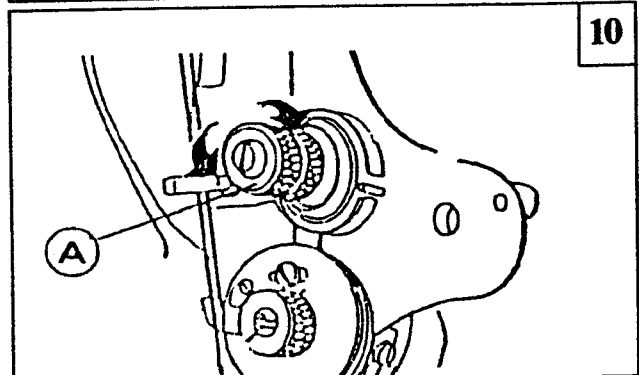
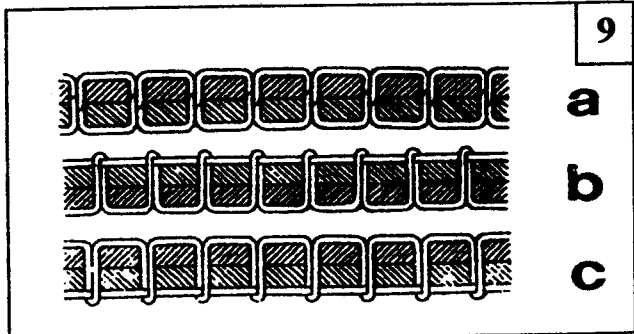
## 10. ADJUST THREAD TENSION (Fig.9,10,11)

Generally, the thread tension is to be adjusted according to the sewing materials and sewing conditions.

Fig.9 shows different stitch forms. Normal stitch form should be as shown in Fig.9 (a). When abnormal stitches cause puckering and thread break-age, the tension of needle thread and bobbin thread must be adjusted accordingly.

In case needle thread tension is too strong or bobbin thread tension is too weak, as shown in Fig.9 (b), turn the thumb nut counterclockwise to decrease the needle thread tension, or tighten the tension spring regulating screw of bobbin case to increase the bobbin thread tension (See Fig. 10,11)

In case needle thread tension is too weak or bobbin thread tension is too strong, as shown in Fig.9 (c), turn the thumb nut clockwise to increase the needle thread tension, or loosen the tension spring regulating screw of bobbin case to decrease the bobbin thread tension.



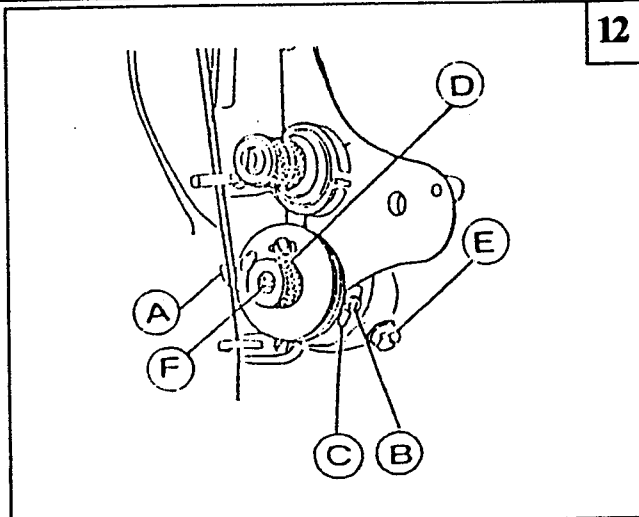
## 11. ADJUST THREAD TAKE-UP SPRING (Fig.12)

### 1. Adjustment of the thread take-up spring stroke

Loosen the stopper screw (B) and move the regulating ring (C) leftwards to decrease the stroke of the thread take-up spring, or move the regulating ring (C) rightwards to increase the stroke. After the adjustment, tighten the screw (B).

### 2. Adjustment of the thread take-up spring tension

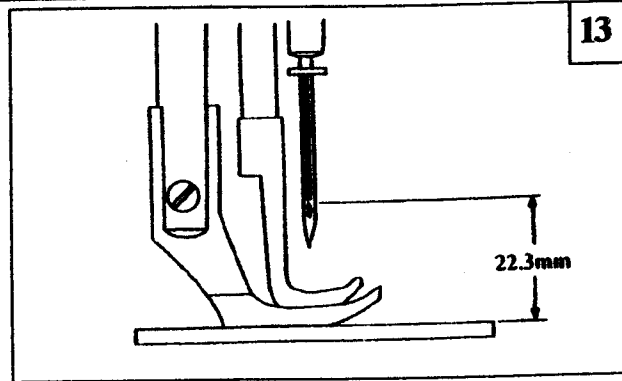
Loosen the nut (D) and screw (E) and turn the regulating screw (F) clockwise to decrease the tension of the thread take-up spring, or turn the regulating screw (F) counterclockwise to increase the tension. Then tighten the nut (D) and the screw (E).



## 12. TIME NEEDLE MOTION TO HOOK MOTION (Fig.13,14)

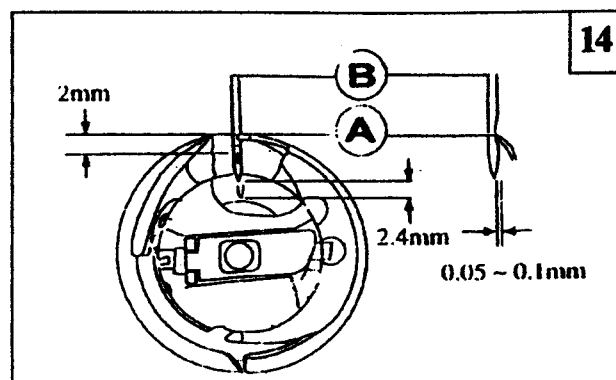
### 1. Adjusting the height of the needle bar (Fig. 13)

When the needle bar is at its highest point, normally the measurement between the surface of the needle plate and the upper end of the needle eye is 22.3mm.



### 2. Time needle motion to hook motion

Before adjustment, set stitch length to minimum, then turn the balance wheel toward you until the needle bar reaches its lowest point. Continue turning and allow the needle bar to raise about 2.4mm while on its upward stroke. With needle bar in this position, the hook point (A) should be at the center of the needle (B), and normally the measurement between the hook point and the upper end of the needle eye (C) should be 2mm, further the clearance between the hook point and the needle hollow should be about 0.05 to 0.1mm.



## 13. REPLACE ROTATING HOOK (Fig.15)

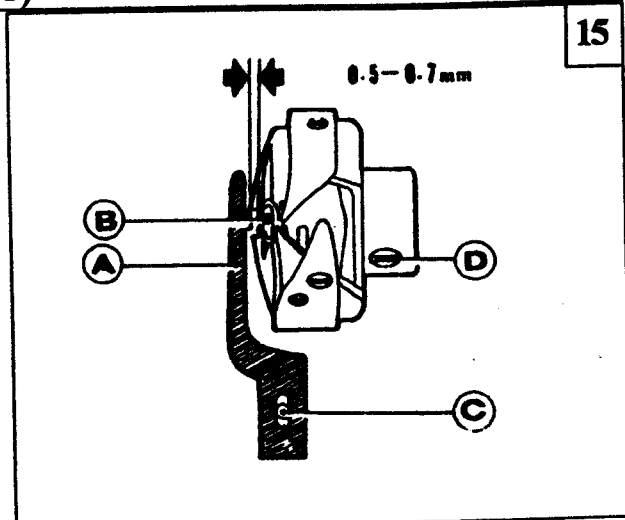
1) Lift needle bar to the highest position of its stroke.

2) Remove the throat plate and feed dog, take down needle and bobbin case

3) Loosen Screw (C) of hook positioner and take down Hook Positioner (A).

4) Loosen Screw (D) of rotating hook, then take down the rotating hook

5) Installing the hook can be done in reverse sequence. Note that Needle (B) and the convex surface of Hook Positioner (A) should align with a clearance of 0.5-0.7mm between them.



### 13. REPLACE ROTATING HOOK (Fig.15)

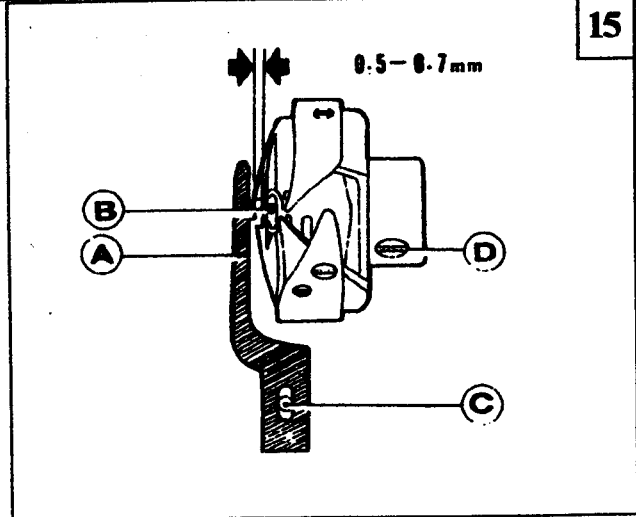
1) Lift needle bar to the highest position of its stroke.

2) Remove the throat plate and feed dog, take down needle and bobbin case

3) Loosen Screw (C) of hook positioner and take down Hook Positioner (A).

4) Loosen Screw (D) of rotating hook, then take down the rotating hook

5) Installing the hook can be done in reverse sequence. Note that Needle (B) and the convex surface of Hook Positioner (A) should align with a clearance of 0.5-0.7mm between them.

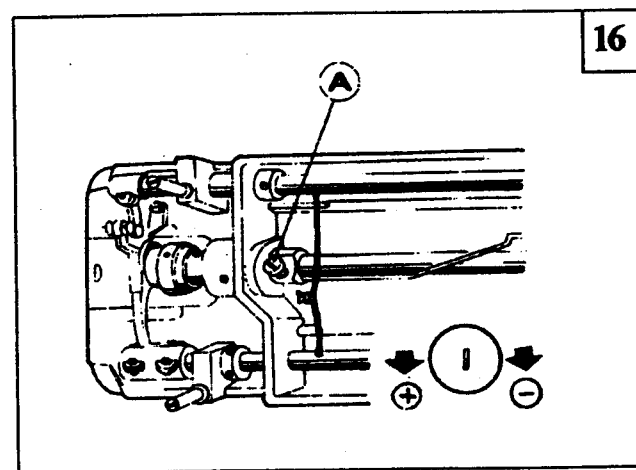


### 14. LUBRICATION ADJUSTMENT (Fig.16)

The lubrication of the rotating hook can be adjusted by Oil Adjusting Screw (A) as follows:

1) Turn Oil Adjusting Screw (A) clockwise to increase oil and turn Oil Adjusting Screw (A) counterclockwise to decrease oil

2) To adjust the amount of oil by turning the Screw (A) within 5 turns. When the Screw (A) is fully tightened, the oil amount is Maximum. When the Screw (A) is fully loosened, the oil amount is Minimum.





## 15. ADJUST PRESSER FOOT (Fig.17,18)

### 1. Lift adjustment of presser foot (Fig.17)

The normal height of the presser foot (A) should be 8mm, yet it can be adjusted, if necessary, according to actual requirement. Loosen the pressure regulating screw(C) and lift the presser bar lifter to raise the presser foot, loosen the screw (D) and move presser bar upwards and downwards to change the lift of the presser foot.

NOTE: The changeable lift of the presser foot (A) will result in the alternate movement height of the presser foot(A) and the walking foot(B), therefore, adjustment must be made to it accordingly. See procedure 3 stated below for proper way.

### 2. Pressure adjustment of the presser foot (A)(Fig.17)

Turn pressure regulating screw(C) clockwise to increase the pressure of the presser foot (A) and counterclockwise to decrease it if you desire.

### 3. Adjustment of the alternate vibrating height of the presser foot (A) and the walking foot (B) (Fig.17)

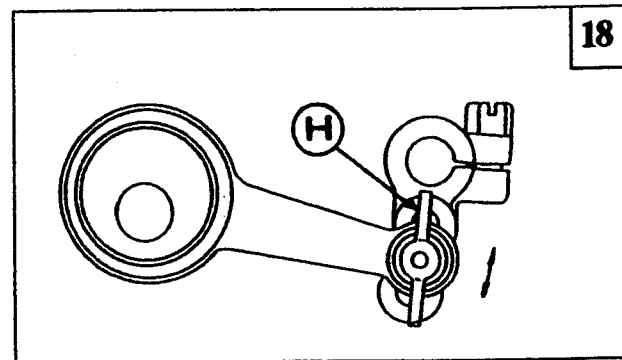
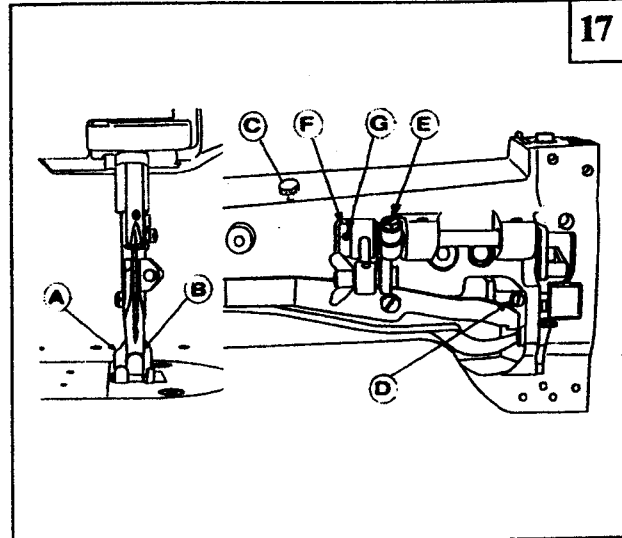
The presser foot (A) and the walking foot (B) vibrate alternately with equal height when machine is in operation, but it can be adjusted according to actual requirements. To increase vibrating height of the walking foot (B) and decrease vibrating height of the presser foot (A), adjust as follows: Down the presser bar lifter and turn balance wheel until the presser foot (A) is slightly separate from the needle plate, loosen screw (E) and depress the presser foot (A) to reach needle plate and then tighten the screw (E). To decrease vibrating height of the walking foot (B) and increase vibrating height of the presser foot (A): Turn balance wheel until the walking foot (B) is slightly separate from the needle plate, loosen screw (E) and depress the walking foot (B) to reach needle plate and then tighten the screw (E).

### 4. Movement height adjustment of presser foot and walking foot (Fig18)

The thickness of the material sewn should control the height of the lift of the presser foot and walking foot. The lift should be just enough for clearance of the material. To adjust, loosen the nut (H) move the crank rod upwards to increase the up and down movement, and downwards to decrease it, then tighten nut (H).

### 5. Time walking foot (B) to needle (Fig17)

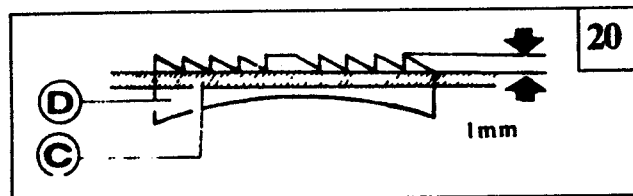
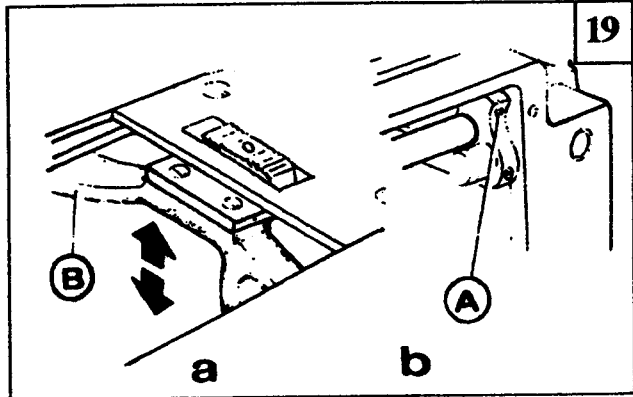
This is the normal timing when turn the balance wheel toward you, after lowering the presser bar lifter, the walking foot (B) should reach the feeder earlier than the needle eye comes to, and when the needle raises, the walking foot (B) should leave the feeder after the needle eye has left the feeder. This is due the reason that the walking foot (B) must tightly hold the goods while the needle is passing the goods for avoiding irregular stitches. To adjust this loosen the two screws (G) and adjust the rotating position of the cam (F) faster or slower as may be desired, and tighten the screws (G).



## 16. ADJUST FEED DOG (Fig.19,20,21,22,23,24)

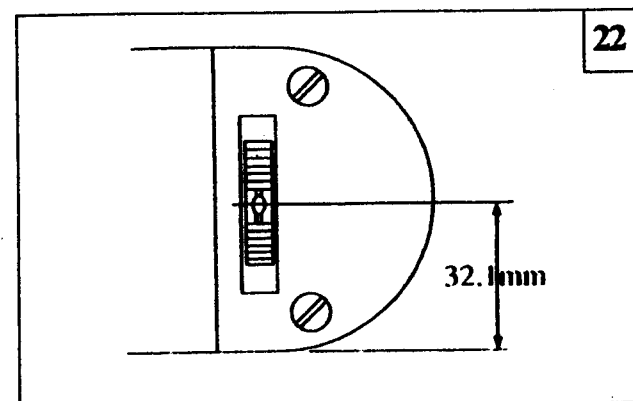
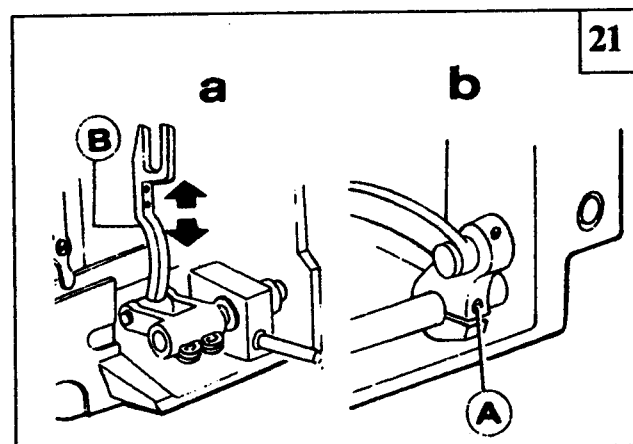
### 1. Adjustment of the height of feed dog (Fig.19,20)

- 1) Turn balance wheel until feed dog is lifted to its highest position.
- 2) Loosen the screw (A) of the feed lifting rock shaft crank (right).
- 3) Move the feed bar (B) in the direction shown by the arrow in Fig.19a to fix the height of the feed dog (C). the standard height of the feed dog (C) is that top of the feed dog is 1mm above the needle plate surface (D).
- 4) After the adjustment, be sure to tighten the screw (A).



### 2. Adjustment of the position of feed dog (Fig.21,22)

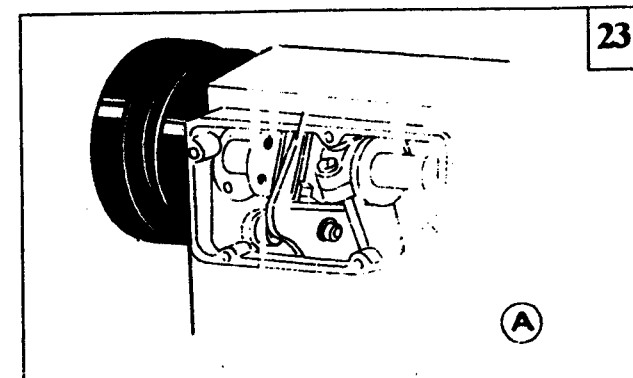
- 1) Minimize stitch length
- 2) Turn balance wheel to lift feed dog to its highest position.
- 3) Loosen the screw (A) of feed rock shaft crank and move the feed bar (B) in the direction shown in Fig.21a to fix the position of the feed dog. The standard position of the feed dog (C) is that the distance between the center of the needle hole on the feed dog (C) and the edge of the needle plate is 32.1mm.
- 4) After the adjustment, be sure to tighten the screw (A).



### 3. Relative position adjustment between needle and the needle hole in the feed dog.(Fig.23)

Make sure that needle can be descended to the center of the needle hole, if not, adjust it as follows:

- 1) Remove the arm side cover and loosen the screw (A).
- 2) Holding the needle bar and move it to the center of the needle hole in the feed dog, the tighten screw (A) and replace the arm side cover



#### 4. Time feed motion to needle motion (Fig.24)

The standard timing of feed motion to needle motion is that the feed dog starts moving forward when the needlepoint reaches the needle plate surface.

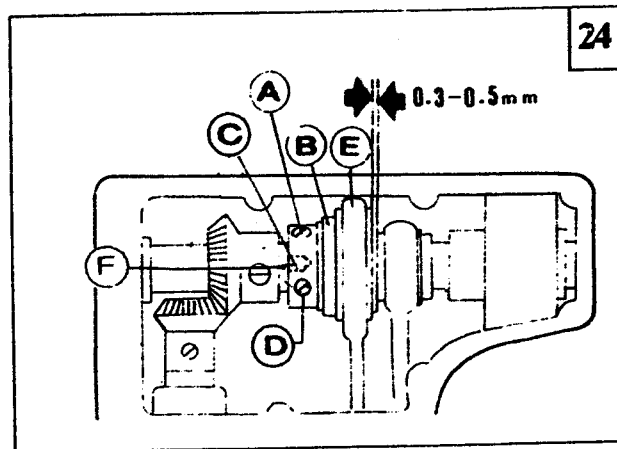
If feed motion is not timed to needle motion, adjust as follows:

1) Remove the arm side cover and loosen the screw (A), (D) of the feed and feed lifting eccentric.

2) Holding feed and feed lifting eccentric (B) and turn balance wheel slowly until the reference hole(C) on the feed and feed lifting eccentric aligns with mark (F).

When adjusting, the clearance between feed and feed lifting eccentric (B) and eccentric sleeve(E) should be 0.3-0.5mm.

After the adjustment, be sure to tighten the screw (A), (D).



### 17. REGULAR CLEANING (Fig.25,26,27)

#### 1. Cleaning feed dog

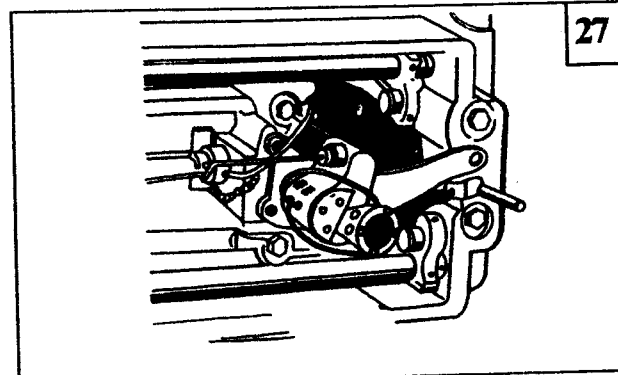
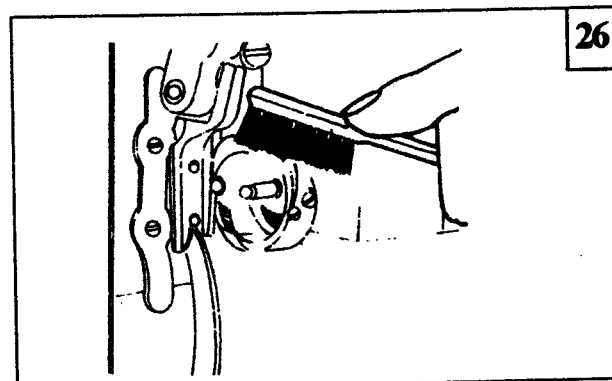
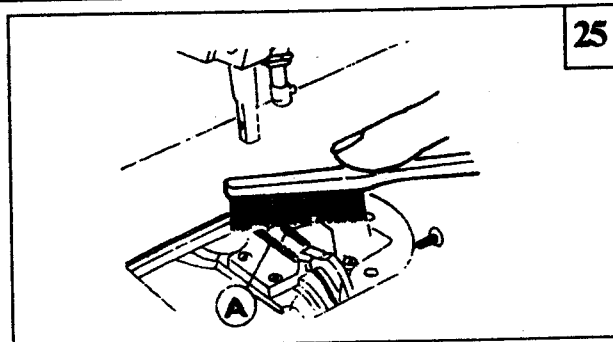
Remove the throat plate and clear off the dust and lint between the feed and teeth slots.

#### 2. Cleaning rotating hook

Swing out the machine head and clean the hook. Wipe the bobbin case with soft cloth.

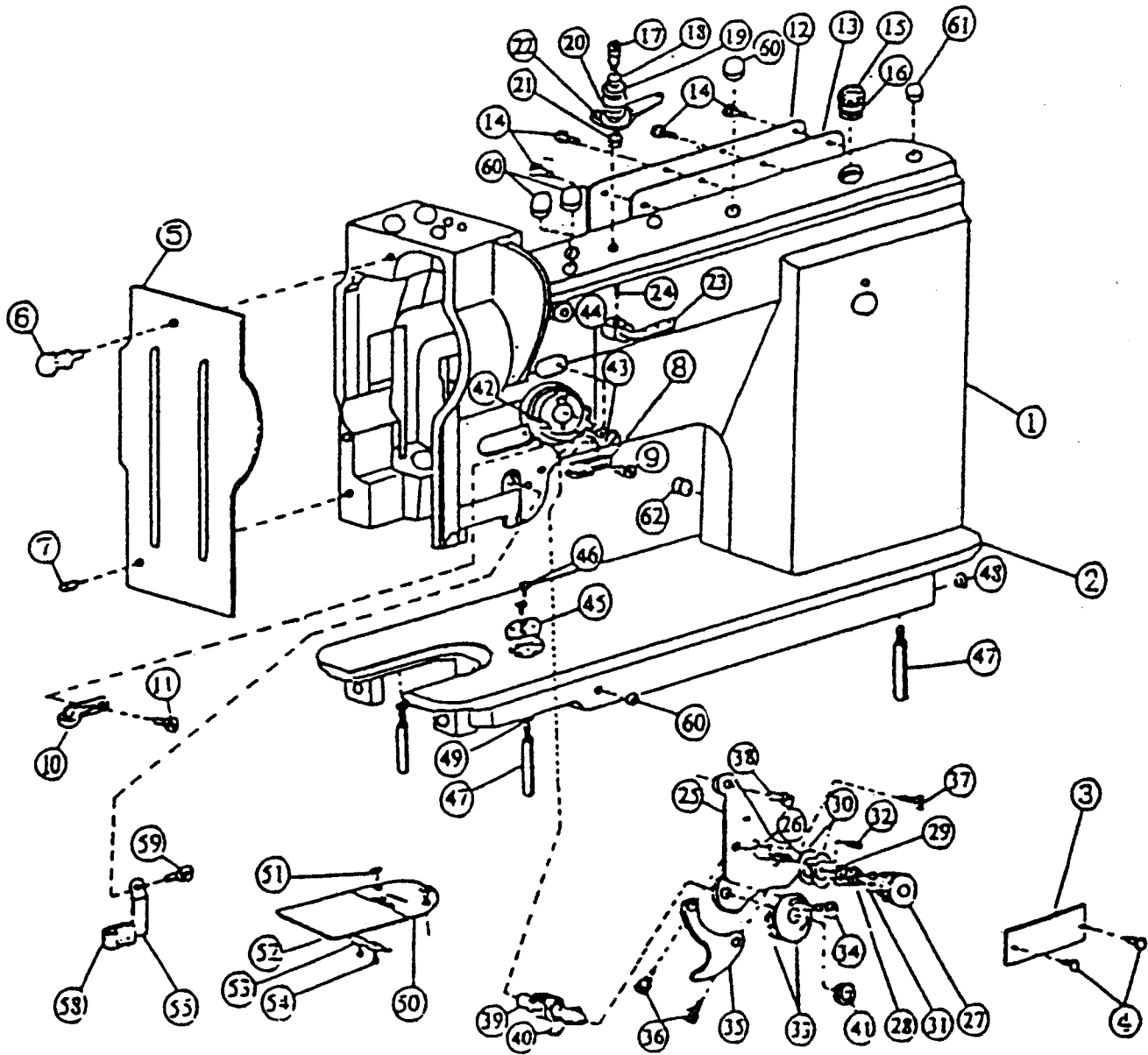
#### 3. Cleaning oil pump screen

Swing out the machine head and clean the dirt on the oil pump screen.



# **Partslist**

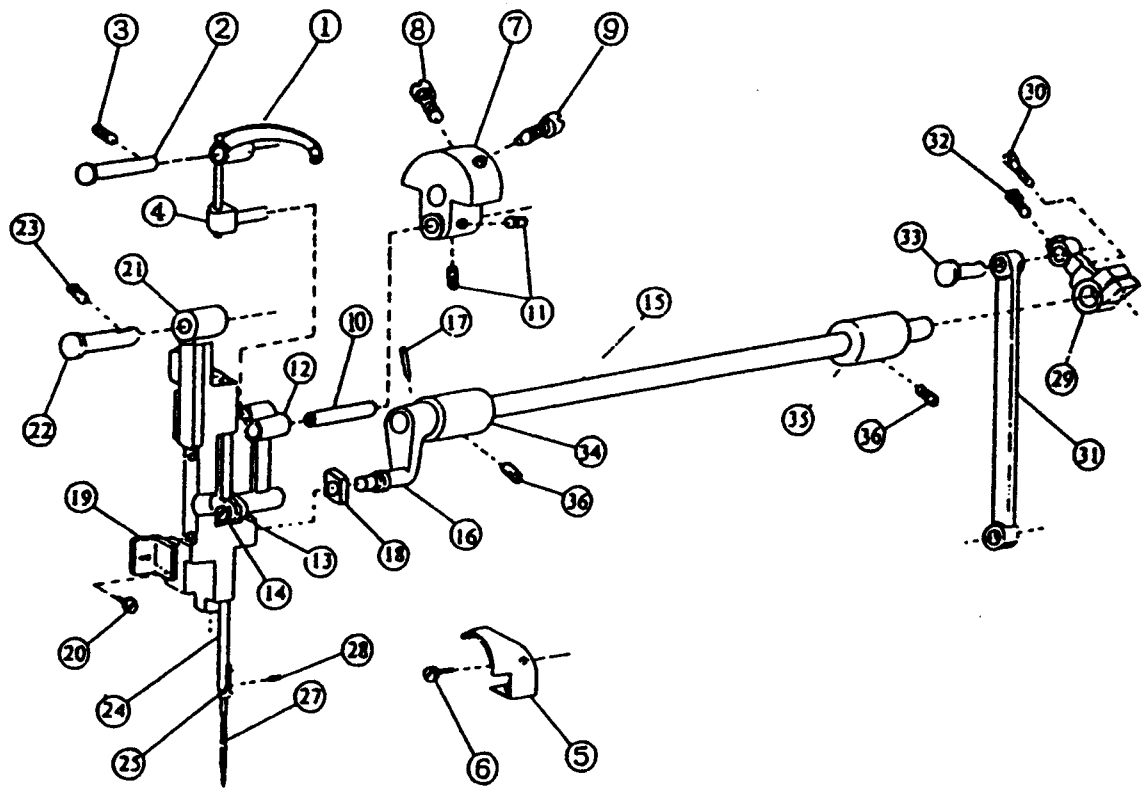
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### I. ARM BED AND ITS ACCESSORIES

| No. | Ref. No         | Description                   | Pieces | Remark                   |
|-----|-----------------|-------------------------------|--------|--------------------------|
| 1   | BM05-01-001A2   | Arm                           | 1      |                          |
| 2   | BM07-01-001B2   | Arm bed                       | 1      |                          |
| 3   | BM07-01-002     | Trade mark plate              | 1      |                          |
| 4   | GB827-86        | Trade mark plate rivet        | 2      | φ 2.5 × 5                |
| 5   | BM05-01-003     | Face plate                    | 1      |                          |
| 6   | BM05-01-004     | Set screw                     | 1      |                          |
| 7   | BM05-01-005     | Knock pin                     | 1      |                          |
| 8   | BM05-01-006     | Thread guide (up)             | 1      |                          |
| 9   | 22T1-003C6      | Set screw                     | 1      | SM9/64" (3.57) × 40/6    |
| 10  | 22T1-003C5      | Thread guide (middle)         | 1      |                          |
| 11  | 22T1-003C6      | Set screw                     | 1      | SM9/64" (3.57) × 40/6    |
| 12  | BM05-01-014     | Arm side cover                | 1      |                          |
| 13  | BM05-01-015     | Gasket for arm side cover     | 1      |                          |
| 14  | 72T1-017        | Set screw                     | 8      | SM11/64" (4.37) × 40/9   |
| 15  | 12H1-007C1      | Oil check window              | 1      |                          |
| 16  | 12H1-007C2      | O-ring                        | 1      |                          |
| 17  | 22T1-009E1      | Screw type tension stud       | 1      |                          |
| 18  | 22T1-009E2      | Spring for pretension         | 1      |                          |
| 19  | 22T1-009E3      | Disc for pretension           | 2      |                          |
| 20  | 22T1-009E4      | Space for pretension          | 1      |                          |
| 21  | GB896           | Stop ring                     | 1      | Ring 3                   |
| 22  | 22T1-009E5      | Pretension thread guide       | 1      |                          |
| 23  | 22T1-010        | Three-hole thread guide       | 1      |                          |
| 24  | 22T1-011        | Set screw                     | 1      | SM11/64" (4.37) × 40/5   |
| 25  | BM05-01-007C1   | Thread tension bracket        | 1      |                          |
| 26  | BM05-01-007C2   | Thread tension stud           | 1      |                          |
| 27  | BM05-01-007C3   | Tension regulating nut        | 1      |                          |
| 28  | 73T1-002C1      | Thread tension spring         | 1      |                          |
| 29  | BM05-01-007C4   | Thread tension releasing disc | 1      |                          |
| 30  | BM05-01-007C5   | Thread tension disc           | 2      |                          |
| 31  | BM05-01-007C6   | Stop disc                     | 1      |                          |
| 32  | BM05-01-007C7   | Pin                           | 1      |                          |
| 33  | BM05-01-007C8-1 | Thread controller disc        | 1      |                          |
|     | BM05-01-007C8-2 | Thread controller disc        | 1      |                          |
| 34  | BM05-01-007C9   | Screw                         | 1      | SM3/32" (2.38) × 56      |
| 35  | BM05-01-007C10  | Thread tension release plate  | 1      |                          |
| 36  | BM05-01-007C11  | Screw                         | 2      |                          |
| 37  | BM05-01-007C12  | Thread tension release pin    | 1      |                          |
| 38  | 72T1-013        | Screw                         | 1      | SM11/64" (4.37) × 40/5.5 |
| 39  | BM05-01-008     | Thread controller stud        | 1      |                          |
| 40  | BM05-01-009     | Thread take-up spring         | 1      |                          |
| 41  | BM05-01-010     | Tension thumb nut             | 1      |                          |
| 42  | BM05-01-011     | Thread take-up spring stop    | 1      |                          |
| 43  | BM05-01-016     | Screw                         | 1      | SM9/64" (3.57) × 40/6    |
| 44  | 22T1-011        | screw                         | 1      | SM11/64" (4.37) × 40/5   |
| 45  | 72T1-014        | Cloth guide plate             | 1      |                          |
| 46  | 72T1-013        | Screw                         | 2      |                          |
| 47  | 22T1-022        | Bed supportor                 | 3      |                          |
| 48  | 72T1-010        | Rubber Plug                   | 1      |                          |
| 49  | GB93            | Retaining washer              | 3      | Washer 6                 |
| 50  | BM07-01-003     | Needle plate                  | 1      |                          |
| 51  | 72T1-019        | Screw                         | 2      | SM11/64" (4.37) × 40/8   |
| 52  | 22T1-021G1      | Slide board                   | 1      |                          |
| 53  | 22T1-021G2      | Slide board spring            | 1      |                          |
| 54  | 22T1-021G3      | Screw                         | 2      | SM3/32" (2.38) × 56/2.2  |
| 55  | BM05-01-013     | Thread guide (lower)          | 1      |                          |
| 58  | BM03-02-001A3   | Felt for thread guide (lower) | 1      |                          |
| 59  | 22T1-003C6      | Set Screw                     | 1      | SM9/64" (3.57) × 40/6    |
| 60  | 72T1-004C4      | Rubber plug                   | 4      | φ 11.8                   |
| 61  | 72T1-011        | Rubber plug                   | 1      | φ 5.7                    |
| 62  | 72T1-009        | Rubber plug                   | 1      | φ 8.8                    |

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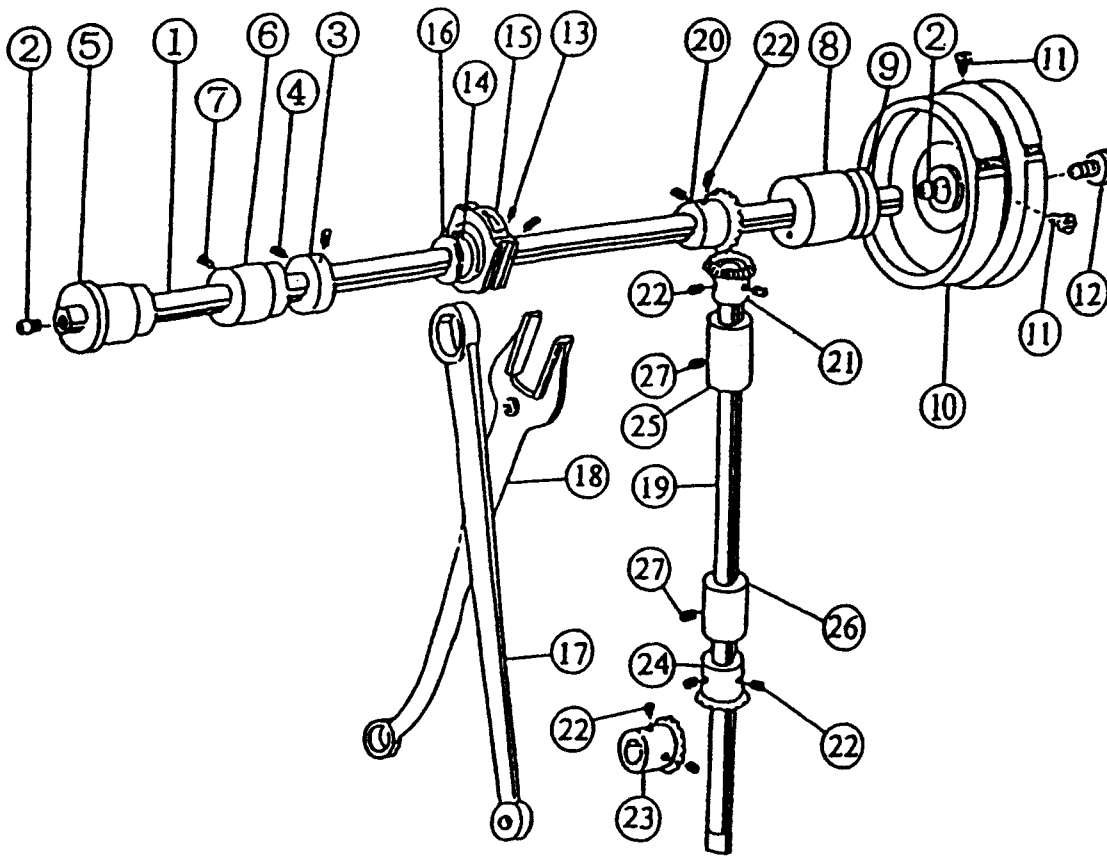


## 2. NEEDLE BAR AND TAKE-UP MECHANISM

| No. | Ref. No       | Description                           | Pieces | Remark                 |
|-----|---------------|---------------------------------------|--------|------------------------|
| 1   | 31H-001       | Thread take-up lever                  | 1      |                        |
| 2   | BM05-02-002   | Hinge pin                             | 1      |                        |
| 3   | 22T2-002      | Set screw                             | 1      | SM15/64" (5.95)× 28/10 |
| 4   | 31H-004       | Thread take-up lever driving stud     | 1      |                        |
| 5   | BM05-02-004   | Oil-guard                             | 1      |                        |
| 6   | 22T8-011C4    | Set screw                             | 1      | SM9/64" (3.57)× 40/4.5 |
| 7   | BM05-02-005A1 | Needle bar crank                      | 1      |                        |
| 8   | 22T2-006      | Set screw                             | 1      | SM9/32" (7.14)× 28/13  |
| 9   | 22T2-007      | Set screw                             | 1      | SM9/32" (7.14)× 28/14  |
| 10  | BM05-02-006   | hinge pin                             | 1      |                        |
| 11  | 72T2-004B2    | Set screw                             | 2      | SM1/4" (6.35)× 40/6    |
| 12  | BM05-02-007   | Needle bar link                       | 1      |                        |
| 13  | BM05-02-008   | Needle bar adaptor                    | 1      |                        |
| 14  | 22T7-015      | Set screw                             | 1      | SM9/64" (3.57)× 40/11  |
| 15  | BM05-02-009B1 | Needle bar rock frame rock shaft      | 1      |                        |
| 16  | BM05-02-009B2 | Crank (left)                          | 1      |                        |
| 17  | GB117         | Pin for crank                         | 1      | Taper pin A3 × 16      |
| 18  | BM05-02-009B3 | Slide block for needle bar rock frame | 1      |                        |
| 19  | BM05-02-009B4 | Position bracket                      | 1      |                        |
| 20  | 72T2-003      | Screw                                 | 1      | SM11/64" (4.37)× 40/8  |
| 21  | BM05-02-010   | Needle bar rock frame                 | 1      |                        |
| 22  | BM05-02-011   | Hinge pin                             | 1      |                        |
| 23  | 22T2-002      | Screw                                 | 1      | SM15/64" (5.95)× 28/10 |
| 24  | BM05-02-012   | Needle bar                            | 1      |                        |
| 25  | BM05-02-017   | Thread guide for needle bar           | 1      |                        |
| 27  |               | Needle                                | 1      | DP × 17 22 #           |
| 28  | 22T2-017      | Needle clamp screw                    | 1      | SM1/8" (3.18)× 44/4.5  |
| 29  | BM07-02-001C1 | Crank (right)                         | 1      |                        |
| 30  | BM02-08-007   | Screw                                 | 1      | SM1/4" (6.15)× 24/16   |
| 31  | BM07-02-001C2 | Crank lever link                      | 1      |                        |
| 32  | 72T3-005D1a3  | Screw (right)                         | 1      | SM15/64" (5.95)× 28/6  |
| 33  | BM05-05-003   | Hinge pin (upper)                     | 1      |                        |
| 34  | BM05-02-015   | Bushing for rock shaft (left)         | 1      |                        |
| 35  | BM05-02-016   | Bushing for rock shaft (right)        | 1      |                        |
| 36  | 22T2-002      | Screw                                 | 2      | SM15/64" (5.95)× 28/10 |



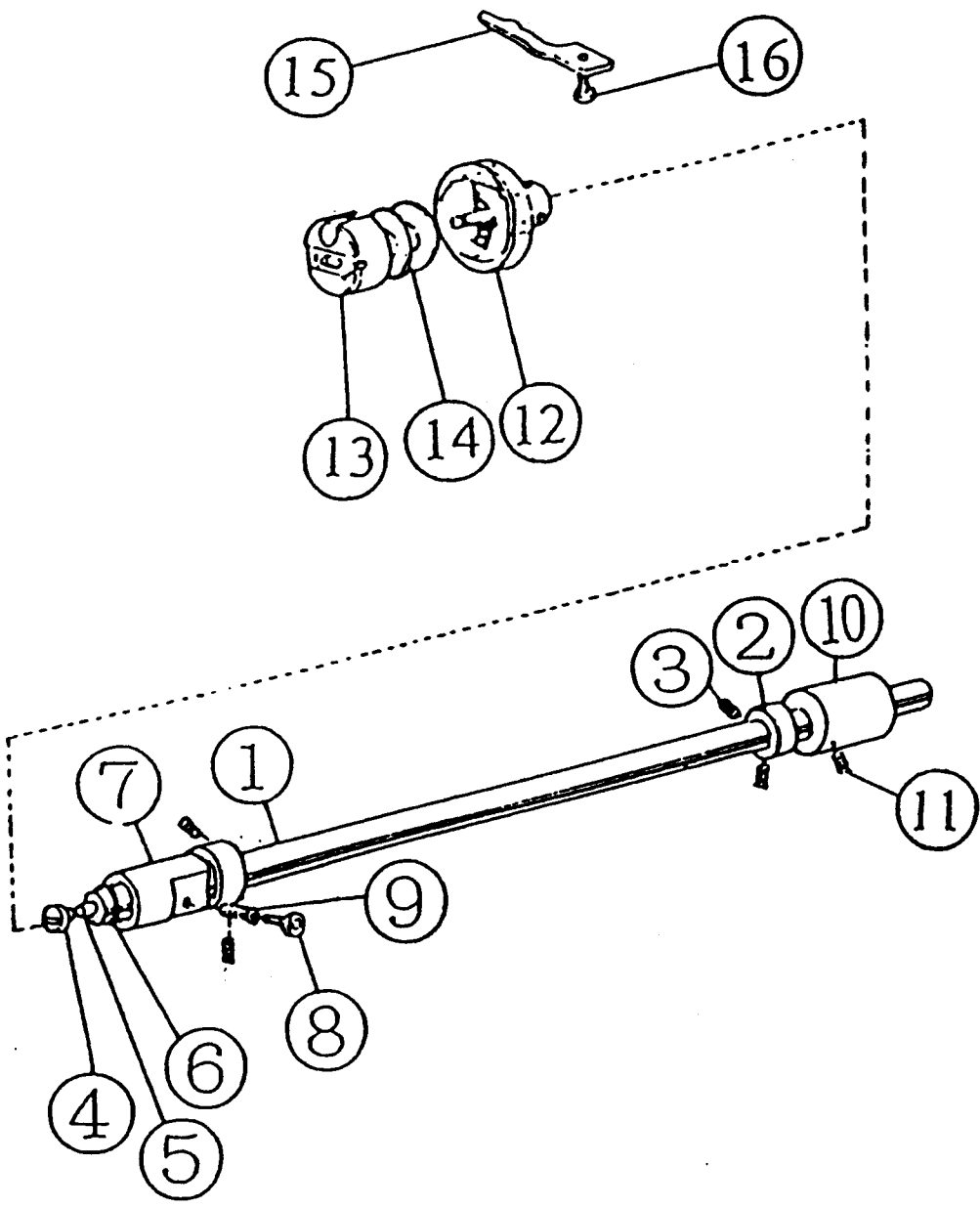
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### 3. ARM SHAFT AND VERTICAL SHAFT MECHANISM

| No. | Ref. No        | Description                           | Pieces | Remark                 |
|-----|----------------|---------------------------------------|--------|------------------------|
| 1   | BM05-03-001A1  | Arm shaft                             | 1      |                        |
| 2   | 22T3-001A2     | Rubber plug                           | 2      |                        |
| 3   | 22T6-005B1     | Collar for arm shaft                  | 1      |                        |
| 4   | 22T3-002B2     | Set screw                             | 2      | SM1/4" (6.35)× 40/4    |
| 5   | 22T3-003       | Arm shaft bushing (left)              | 1      |                        |
| 6   | BM05-03-007    | Arm shaft bushing (middle)            | 1      |                        |
| 7   | 22T2-002       | Set screw                             | 1      | SM15/64" (5.95)× 28/10 |
| 8   | BM05-03-006    | Arm shaft bushing (right)             | 1      |                        |
| 9   | 22T3-006F      | Oil seal                              | 1      |                        |
|     | 22T3-006F2     | Spring for oil seal                   | 1      |                        |
| 10  | BM02-03-001    | Balance wheel                         | 1      |                        |
| 11  | 22T3-007C2     | Set screw                             | 2      | SM15/64" (5.95)× 28/12 |
| 12  | 22T3-008       | Set screw                             | 1      | SM11/32" (8.73)× 28/10 |
| 13  | 72T3-005D1a3   | Set screw                             | 2      | SM15/64" (5.95)× 28/7  |
| 14  | 11H3-002B1a1   | Feed lifting eccentric                | 1      |                        |
| 15  | 72T3-005D1a2   | Eccentric sleeve                      | 1      |                        |
| 16  | 22T3-009D1b    | Retaining ring                        | 1      |                        |
| 17  | BM04-03-002A2  | Crank rod for feed lifting rock       | 1      |                        |
| 18  | BM07-03-001B2  | Feed forked connection                | 1      |                        |
| 19  | BM05-03-003    | Vertical shaft                        | 1      |                        |
| 20  | 22T3-010E2a1-2 | Bevel gear for arm shaft              | 1      |                        |
| 21  | 22T3-010E2a2-2 | Bevel gear for vertical shaft (upper) | 1      |                        |
| 22  | 22T2-005B3     | Set screw                             | 8      | SM1/4" (6.35)× 40/7    |
| 23  | 22T3-010E2b1-2 | Bevel gear for hook shaft             | 1      |                        |
| 24  | 22T3-010E2b2-2 | Bevel gear for vertical shaft (lower) | 1      |                        |
| 25  | BM05-03-004    | Vertical shaft bushing (upper)        | 1      |                        |
| 26  | BM05-03-005    | Vertical shaft bushing (lower)        | 1      |                        |
| 27  | 22T2-002       | Set screw                             | 2      | SM15/64" (5.95)× 28/10 |

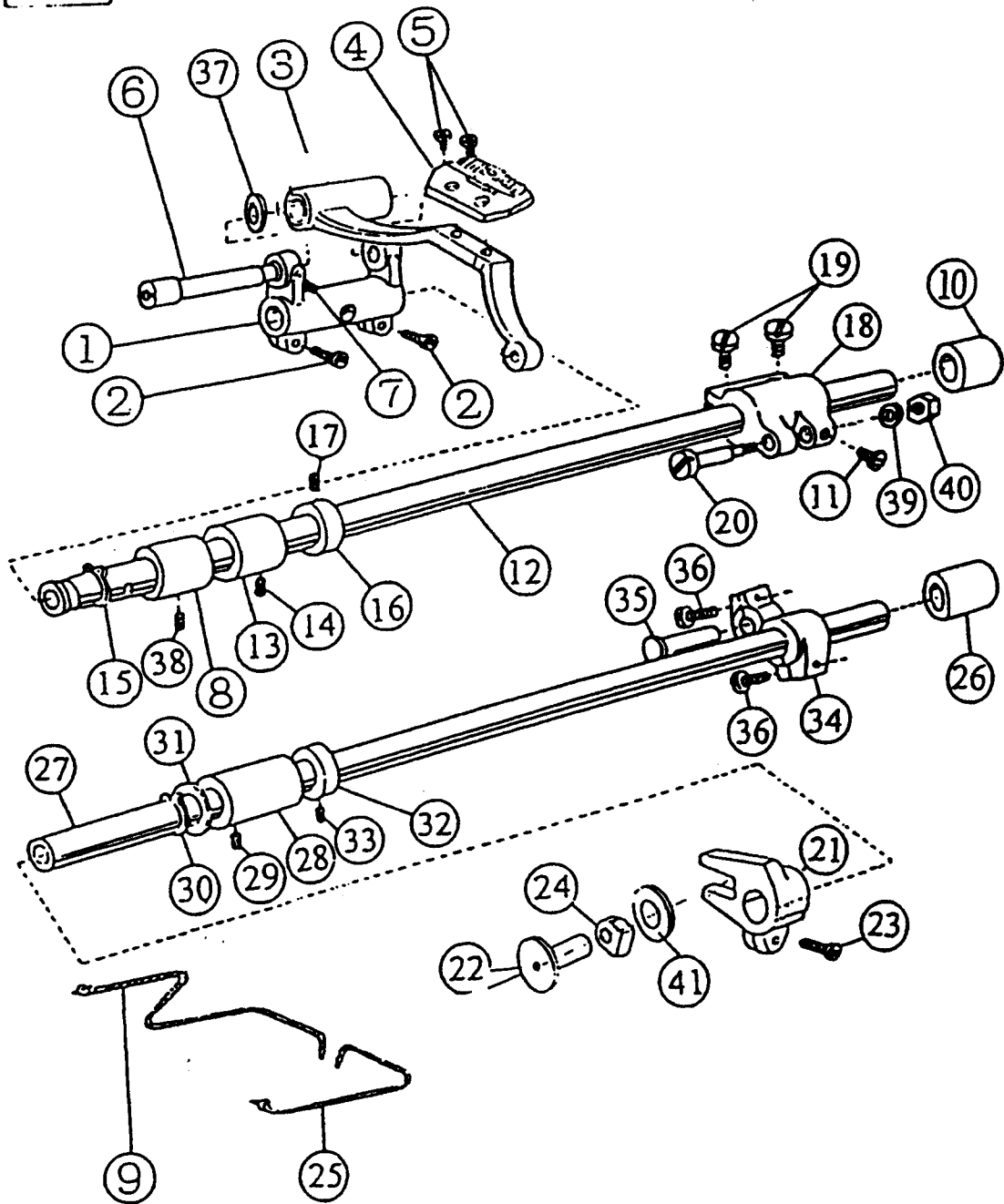
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#### 4. HOOK SHAFT MECHANISM

| No. | Ref. No      | Description                      | Pieces | Remark                  |
|-----|--------------|----------------------------------|--------|-------------------------|
| 1   | BM05-04-001  | Rotating hook shaft              | 1      |                         |
| 2   | 72T4-002B1   | Collar for hook shaft            | 2      |                         |
| 3   | 72T4-002B2   | set screw                        | 4      | SM15/64" (5.95)× 28/4.5 |
| 4   | 22T4-001A1a1 | Filter screw                     | 1      | SM3/16" (4.76)× 32      |
| 5   | 22T4-001A1a2 | Filter                           | 1      |                         |
| 6   | 22T4-003G    | Oil seal for rotating hook shaft | 1      |                         |
| 7   | 22T4-004     | Hook shaft bushing (left)        | 1      |                         |
| 8   | 72T4-003     | oil adjusting screw              | 1      |                         |
| 9   | 22T4-006     | Spring for oil adjuster          | 1      |                         |
| 10  | BM07-04-001  | Hook shaft bushing (right)       | 1      |                         |
| 11  | 22T2-002     | Set screw                        | 1      | SM15/64" (5.95)× 28/10  |
| 12  | HSM-A(5)     | Rotating hook complete           | 1      |                         |
| 13  | BC-STH       | Bobbin case                      | 1      |                         |
| 14  | 11H4-001     | Bobbin                           | 1      |                         |
| 15  | 74T4-004     | Rotating hook positioner         | 1      |                         |
| 16  | 22T4-015     | Set screw                        | 1      | SM11/64" (4.37)× 40/10  |

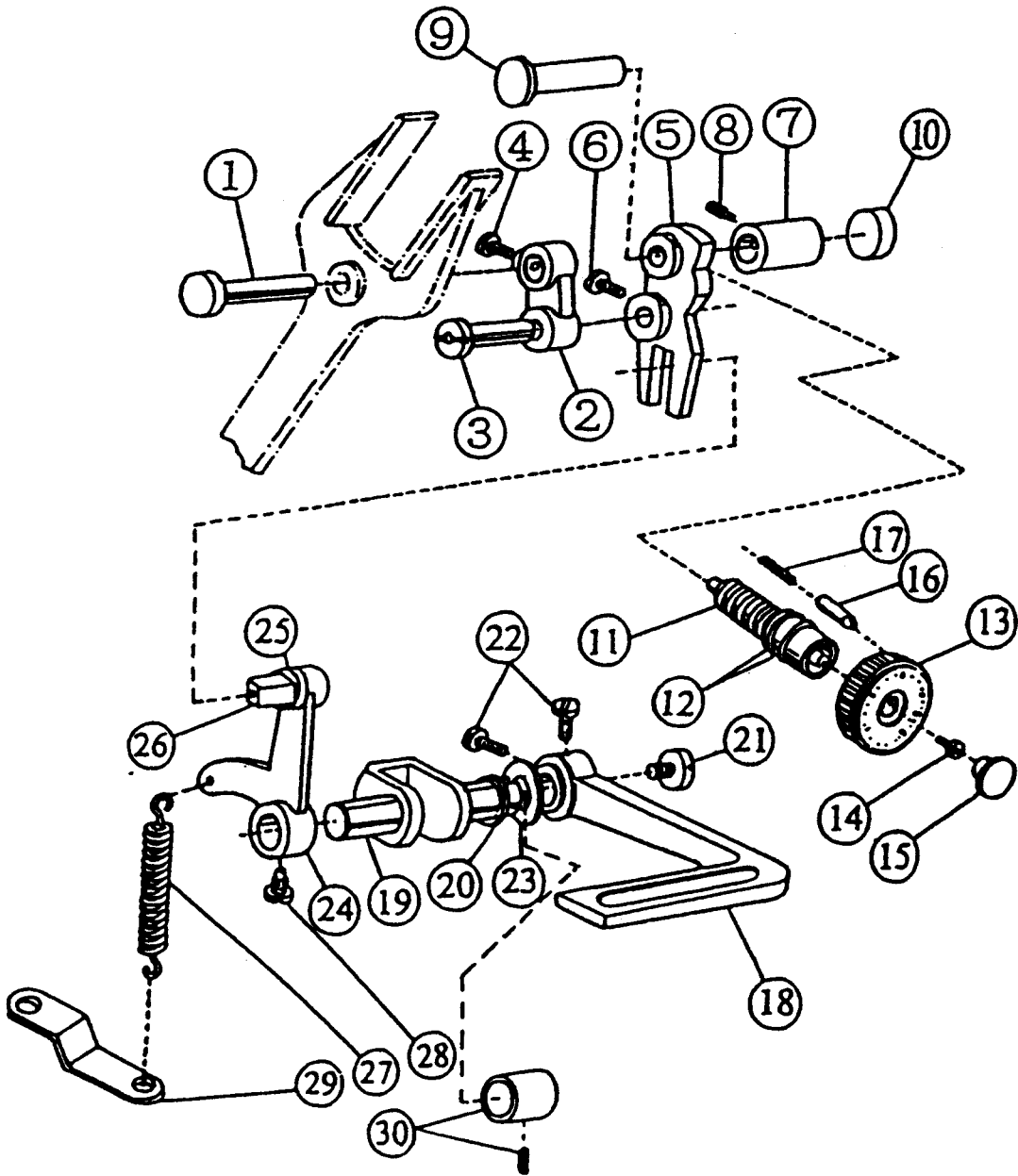
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### 5. FEED LIFTING MECHANISM

| No. | Ref. No       | Description                                 | Pieces | Remark                  |
|-----|---------------|---|--------|-------------------------|
| 1   | 22T6-001A1a   | Feed bar crank                              | 1      |                         |
| 2   | 72T6-001A6    | Screw                                       | 2      | SM3/16" (4.76)× 28/15   |
| 3   | BM11-06-001A1 | Feed bar                                    | 1      | HG128-C                 |
| 4   | BM07-05-001   | Feed dog                                    | 1      |                         |
| 5   | 22T6-001A4    | Screw                                       | 2      | SM1/8" (3.18)× 44/6     |
| 6   | 11H6-004      | Shaft for feed bar                          | 1      |                         |
| 7   | 22T2-019      | Screw                                       | 1      | SM11/64" (4.37)× 40/8   |
| 8   | 11H6-007      | Bushing for feed rock shaft (left)          | 1      |                         |
| 9   | 72T6-001A5    | Oil braid                                   | 1      | 2.5 × 315               |
| 10  | 11H6-006      | Bushing for feed rock shaft (right)         | 1      |                         |
| 11  | 22T5-001A4    | Screw                                       | 1      | SM15/64" (5.95)× 28/10  |
| 12  | 11H6-001      | Feed rock shaft                             | 1      |                         |
| 13  | 11H6-008      | Bushing for feed rock shaft                 | 1      |                         |
| 14  | 72T4-002B2    | Screw                                       | 1      | SM15/64" (5.95)× 28/4.5 |
| 15  | GB894         | C-type stop ring                            | 1      | ring 15                 |
| 16  | 22T6-005B1    | Collar for feed rock shaft                  | 1      |                         |
| 17  | 22T3-002B2    | Screw                                       | 2      | SM1/4" (6.35)× 40/4     |
| 18  | BM07-05-003   | Feed rock shaft crank                       | 1      |                         |
| 19  | 22T6-001A1b   | Screw                                       | 2      | SM3/16" (4.76)× 28/12   |
| 20  | BM07-05-002   | Hige pin                                    | 1      |                         |
| 21  | 31H4-014      | Feed lifting rock shaft crank (left)        | 1      |                         |
| 22  | 72T6-002B1b   | Hinge pin                                   | 1      |                         |
| 23  | GB70          | Screw                                       | 1      | M5 × 12                 |
| 24  | 72T6-007D1a   | Feed lifting connection sleeve              | 1      |                         |
| 25  | 72T6-002B4    | Oil braid                                   | 1      | φ 2.5 × 265             |
|     | 72T6-002B2    |   | 1      |                         |
| 26  | 11H6-010      | Bushing for feed lifting rock shaft (right) | 1      |                         |
| 27  | 54T6-002      | Feed lifting rock shaft                     | 1      |                         |
| 28  | 22T6-012      | Bushing for feed lifting rock shaft         | 1      |                         |
| 29  | 22T2-002      | Screw                                       | 1      | SM15/64" (5.95)× 28/10  |
| 30  | GB894         | C-cype stop ring                            | 1      | ring 15                 |
| 31  | 22T6-013      | Washer                                      | 1      |                         |
| 32  | 22T6-005B1    | Collar for feed lifting rock shaft          | 1      |                         |
| 33  | 22T3-002B2    | Screw                                       | 2      | SM1/4" (6.35)× 40/4     |
| 34  | 72T6-003C1    | Feed lifting rock shaft crank (right)       | 1      |                         |
| 35  | 22T6-007      | Hinge pin                                   | 1      |                         |
| 36  | 22T6-001A1b   | Screw                                       | 2      | SM3/16" (4.76)× 28/12   |
| 37  | 22T6-001A6    | Washer                                      | 1      |                         |
| 38  | 72T4-002B2    | Screw                                       | 1      | SM15/64" (5.95)× 28/4.5 |
| 39  | BM02-08-012   | Washer                                      | 1      |                         |
| 40  | BM02-08-048   | Screw nut                                   | 1      | SM15/64" (5.95)× 28     |
| 41  | 72T6-007D1b   | Washer                                      | 1      |                         |

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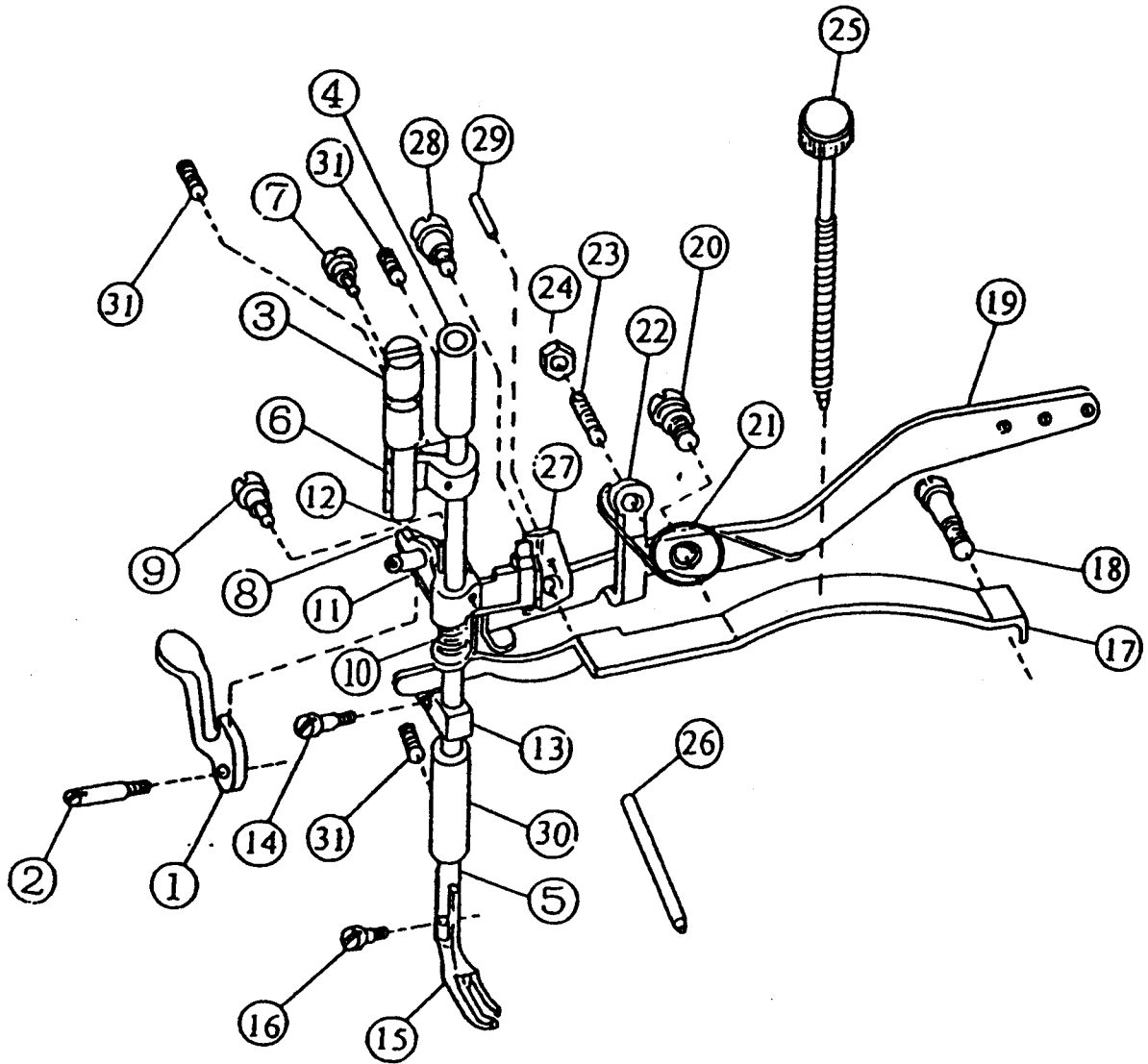


## 6. STITCH LENGTH REGULATING MECHANISM

| No. | Ref. No       | Description                          | Pieces | Remark                 |
|-----|---------------|--------------------------------------|--------|------------------------|
| 1   | BM01-06-001A1 | Hinge pin                            | 1      |                        |
| 2   | BM01-06-001A2 | Feed connecting link                 | 1      |                        |
| 3   | BM01-06-003   | Hinge pin for feed connecting link   | 1      |                        |
| 4   | 22T5-001A4    | Set screw                            | 1      | SM15/64" (5.95)× 28/10 |
| 5   | 73T5-002B1    | Feed regulator                       | 1      |                        |
| 6   | 22T5-001A4    | Set screw                            | 1      | SM15/64" (5.95)× 28/10 |
| 7   | BM05-06-001   | Feed regulator bushing               | 1      |                        |
| 8   | BM05-06-005   | Set screw                            | 1      | SM15/64" (5.95)× 28/15 |
| 9   | BM05-06-007   | Hinge pin for feed regulator         | 1      |                        |
| 10  | 72T5-003      | Rubber plug                          | 1      | φ 20 × 4               |
| 11  | 73T5-003C1    | Feed regulator screw bar             | 1      |                        |
| 12  | 22T5-006C4    | O-ring                               | 2      | 14 × 2.4               |
| 13  | BM03-05-001   | Dial                                 | 1      |                        |
| 14  | 22T5-006C3    | Screw                                | 1      | SM3/16" (4.76)× 28/8   |
| 15  | 72T5-005      | Rubber plug                          | 1      |                        |
| 16  | 22T5-008      | Stopper pin                          | 1      |                        |
| 17  | 22T5-009      | Spring for stopper pin               | 1      |                        |
| 18  | 72T5-006C1    | Reverse feed lever                   | 1      |                        |
| 19  | BM07-06-002D1 | Reverse feed lever shaft             | 1      |                        |
| 20  | 22T5-010D2b   | O-ring                               | 1      | 9 × 1.9                |
| 21  | 22T5-010D3    | Screw                                | 1      | SM3/16" (4.76)× 28/6.5 |
| 22  | 22T5-001A4    | Screw                                | 2      | SM15/64" (5.95)× 28/10 |
| 23  | 22T5-011      | Washer                               | 1      |                        |
| 24  | 22T5-012E1    | Reverse feed crank                   | 1      |                        |
| 25  | 22T5-012E1a1  | Slide block pin                      | 1      |                        |
| 26  | 22T5-012E1a2  | Slide block                          | 1      |                        |
| 27  | BM02-05-002   | Spring for reverse feed crank        | 1      |                        |
| 28  | 22T5-013      | Screw                                | 1      | SM15/64" (5.95)× 28/14 |
| 29  | 22T5-014      | Bracket for spring                   | 1      |                        |
| 30  | BM05-06-003   | Bushing for reverse feed lever shaft | 1      |                        |
| 31  | 22T1-011      | Screw                                | 1      | SM11/64" (4.37)× 40/5  |



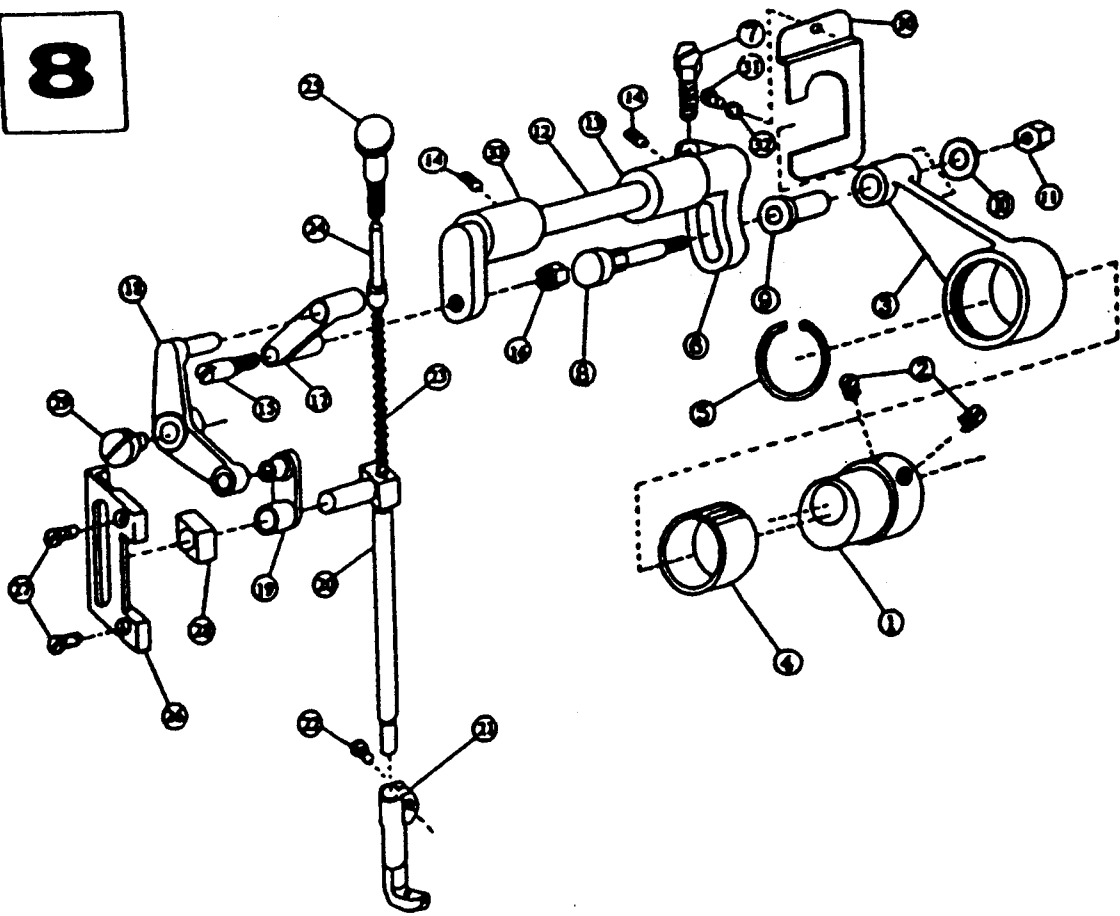
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## 7. PRESSER FOOT MECHANISM

| No. | Ref. No       | Description                          | Pieces | Remark                   |
|-----|---------------|--------------------------------------|--------|--------------------------|
| 1   | BM05-07-001   | Presser foot lifter                  | 1      |                          |
| 2   | BM05-07-002   | Set screw                            | 1      |                          |
| 3   | BM05-07-003   | Presser bar position guide           | 1      |                          |
| 4   | BM05-07-004   | Presser bar bushing (upper)          | 1      |                          |
| 5   | BM05-07-005   | Presser bar                          | 1      |                          |
| 6   | BM05-07-006   | Presser bar position guide bracket   | 1      |                          |
| 7   | 22T2-001A9    | Screw                                | 1      | SM 9/64" (3.57) × 40/6   |
| 8   | BM05-07-007   | Presser bar lifting bracket          | 1      |                          |
| 9   | 22T6-008D3    | Screw                                | 1      | SM 11/64" (4.37) × 40/12 |
| 10  | BM05-07-008   | Presser bar spring                   | 1      |                          |
| 11  | BM05-07-009A1 | Thread tension release slide         | 1      |                          |
| 12  | BM05-07-009A2 | Pin for thread tension release slide | 1      |                          |
| 13  | BM05-07-010   | Bracket for presser bar spring       | 1      |                          |
| 14  | BM05-07-021   | Screw                                | 1      | SM 9/64" (3.57) × 40/10  |
| 15  | BM05-07-012   | Out presser foot                     | 1      |                          |
| 16  | BM05-07-013   | Screw                                | 1      |                          |
| 17  | BM05-07-014   | Presser bar spring (flat)            | 1      |                          |
| 18  | BM05-07-015   | Screw                                | 1      |                          |
| 19  | BM05-07-016   | Knee lifter lifting lever            | 1      |                          |
| 20  | 22T7-005-001  | Screw                                | 1      |                          |
| 21  | BM05-07-017   | Retracting spring for lever          | 1      |                          |
| 22  | BM05-07-018   | Retracting spring bracket            | 1      |                          |
| 23  | 22T9-001A9    | Screw                                | 1      | SM 15/64" (5.95) × 28/28 |
| 24  | 22T9-001A10   | Nut                                  | 1      | SM 15/64" (5.95) × 28    |
| 25  | BM05-07-019   | Pressure regulating screw            | 1      |                          |
| 26  | BM05-07-020   | Thread tension release pin           | 1      |                          |
| 27  | BM05-07-022   | Presser bar lifting bracket guide    | 1      |                          |
| 28  | BM02-08-007   | Screw                                | 1      | SM 1/4" (6.35) × 24/16   |
| 29  | BM05-07-023   | Pin                                  | 1      |                          |
| 30  | BM05-07-011   | Presser bar bushing (lower)          | 1      |                          |
| 31  | 22T2-002      | Screw                                | 3      | SM 15/64" (5.95) × 28/10 |

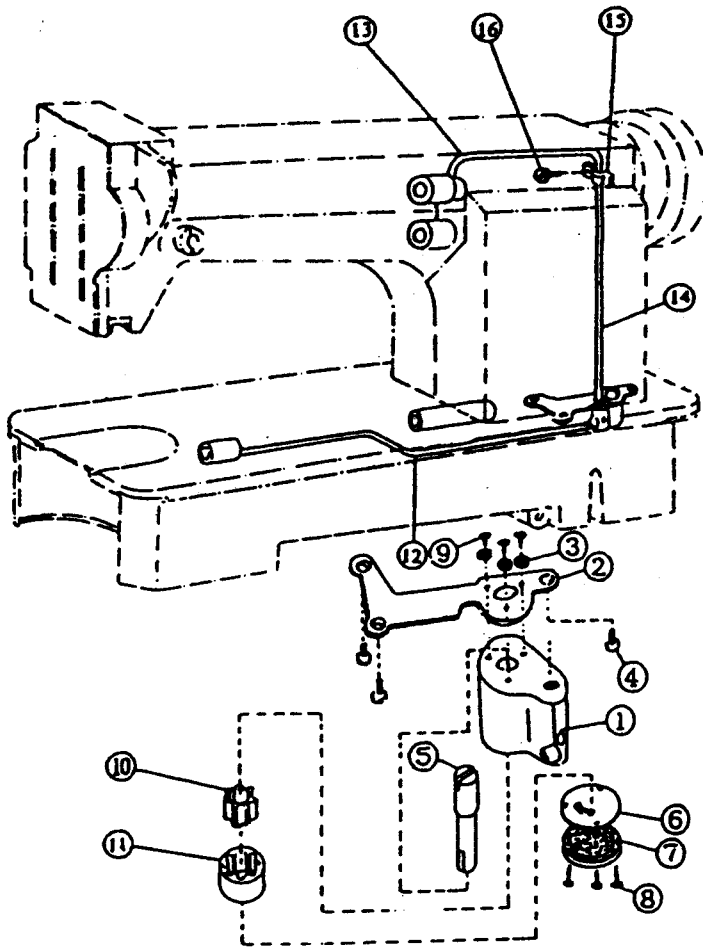
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### 8. PRESSER LIFTING MECHANISM

| No. | Ref. No       | Description                                   | Pieces | Remark                   |
|-----|---------------|---|--------|--------------------------|
| 1   | BM05-08-001A1 | Lifting eccentric                             | 1      |                          |
| 2   | 22T3-002B2    | Screw   | 2      | SM 1/4" (6.35)× 40/4     |
| 3   | BM05-08-001A2 | Lifting eccentric connection                  | 1      |                          |
| 4   | BM05-08-001A3 | Needle bearing                                | 1      |                          |
| 5   | GB893         | Retaining ring                                | 1      | Ring 30                  |
| 6   | BM05-08-002B1 | Adjusting crank for eccentric connection      | 1      |                          |
| 7   | BM05-08-002B2 | Set screw                                     | 1      |                          |
| 8   | BM05-08-003   | Screw for lifting eccentric connecting collar | 1      |                          |
| 9   | BM05-08-004   | Lifting eccentric connecting collar           | 1      |                          |
| 10  | BM05-08-005   | Washer  | 1      |                          |
| 11  | BM05-08-006   | Nut   | 1      | SM 3/16" (4.76)× 28      |
| 12  | BM05-08-007   | Lifting rock shaft                            | 1      |                          |
| 13  | BM02-08-004   | Lifting rock shaft bushing (right)            | 1      |                          |
| 14  | 22T1-011      | Screw   | 2      | SM 11/64" (4.37)× 40/5.5 |
| 15  | BM05-08-008   | Hinge pin                                     | 1      | SM 1/4" (6.35)× 40       |
| 16  | BM05-08-009   | Hinge pin nut                                 | 1      |                          |
| 17  | BM05-08-010   | Lifting bell crank link                       | 1      |                          |
| 18  | BM05-08-011   | Lifting bell crank                            | 1      |                          |
| 19  | BM05-08-012   | Presser lifting link                          | 1      |                          |
| 20  | BM05-08-013   | Vibrating presser bar                         | 1      |                          |
| 21  | BM05-08-014   | Vibrating presser foot                        | 1      |                          |
| 22  | 22T2-001A9    | Screw   | 1      | SM 9/64" (3.57)× 40/6    |
| 23  | BM05-08-015   | Vibrating presser bar spring                  | 1      |                          |
| 24  | BM05-08-016   | Spring guide rod                              | 1      |                          |
| 25  | BM05-08-017   | Adjusting bolt                                | 1      |                          |
| 26  | BM05-08-018   | Guide for slide block                         | 1      |                          |
| 27  | 22T2-001A9    | Screw   | 2      | SM 9/64" (3.57)× 40/6    |
| 28  | BM05-08-019   | Slide block for vibrating presser bar         | 1      |                          |
| 29  | BM05-08-020   | Screw   | 1      |                          |
| 30  | BM05-08-021   | Oil seal plate                                | 1      |                          |
| 31  | 22T2-004      | Screw   | 1      | SM 11/64" (4.37)× 40/5.5 |
| 32  | GB97          | Washer  | 1      | Washer 5                 |
| 33  | BM05-08-022   | Lifting rock shaft bushing (left)             | 1      |                          |

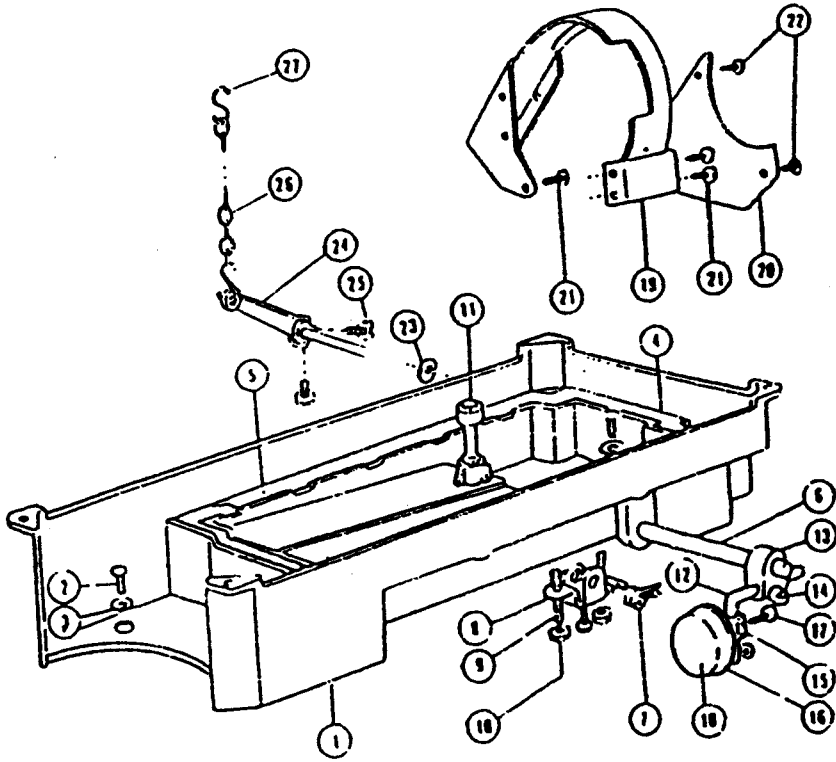
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### 9. LUBRICATING MECHANISM

| No. | Ref. No       | Description                    | Pieces | Remark                |
|-----|---------------|--------------------------------|--------|-----------------------|
| 1   | BM03-09-001   | Oil pump body                  | 1      |                       |
| 2   | BM07-09-002   | Oil pump body plate            | 1      |                       |
| 3   | 22T1-007      | Washer                         | 3      |                       |
| 4   | 72T2-003      | Screw                          | 3      | SM11/64" (4.37)× 40/8 |
| 5   | BM03-09-002   | Oil pump shaft                 | 1      |                       |
| 6   | BM03-09-003   | Oil pump body guide plate      | 1      |                       |
| 7   | 11H8-008B1    | Oil pump screen                | 1      |                       |
| 8   | 11H8-010      | Set screw                      | 3      | SM1/8" (3.18)× 44/8   |
| 9   | 72T2-003      | Set screw                      | 3      | SM11/64" (4.37)× 40/8 |
| 10  |               | Gear (inner)                   | 1      |                       |
| 11  |               | Gear                           | 1      |                       |
| 12  | BM07-09-003A1 | Oil pipe for hook shaft        | 1      |                       |
|     | 22T8-010B1    | Pipe connection for hook shaft | 1      |                       |
| 13  | BM05-09-001   | Oil pipe for arm shaft (upper) | 1      |                       |
| 14  | BM07-09-004B1 | Oil pipe for arm shaft (lower) | 1      |                       |
|     | 22T8-013D2    | Pipe connection for arm shaft  | 1      |                       |
| 15  | BM01-08-004   | Pipe hold for arm shaft        | 1      |                       |
| 16  | 72T2-003      | Set screw                      | 1      | SM11/64" (4.37)× 40/8 |

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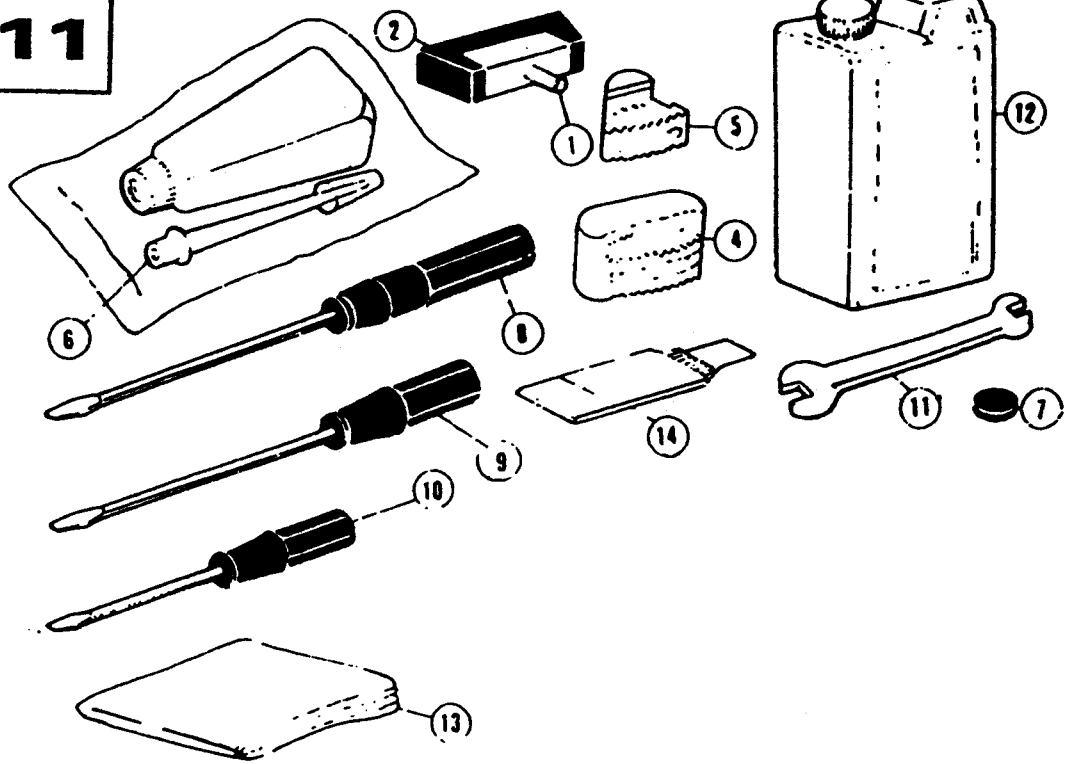


### 10. OIL RESERVOIR AND OTHER ACCESSORIES

| No. | Ref. No     | Description                       | Pieces |
|-----|-------------|-----------------------------------|--------|
| 1   | 74T9-001A1  | Oil reservoir                     | 1      |
| 2   | 22T9-001A2  | Oil drain screw                   | 1      |
| 3   | 22T9-001A3  | Washer                            | 1      |
| 4   | 22T9-001A4  | Gasket for oil reservoir (big)    | 1      |
| 5   | 22T9-001A5  | Gasket for oil reservoir (small)  | 1      |
| 6   | BM05-10-001 | Hinge pin for knee lifter         | 1      |
| 7   | 22T9-001A7  | Retracting spring for knee lifter | 1      |
| 8   | 22T9-001A8  | Knee lifter stop bracket          | 1      |
| 9   | 22T9-001A9  | Adjusting screw                   | 2      |
| 10  | 22T9-001A10 | Lock nut                          | 2      |
| 11  | 22T9-003B1  | Knee lifter lifting rod           | 1      |
| 12  | 22T9-003B2  | Knee lifter bell crank            | 1      |
| 13  | 22T9-003B3  | Joint for knee lifter bell crank  | 1      |
| 14  | 72T9-018    | Set screw                         | 2      |
| 15  | 22T9-003B6  | Bracket for knee lifter plate     | 1      |
| 16  | 22T9-003B5  | Knee lifter plate                 | 1      |
| 17  | 22T9-003B7  | Set screw                         | 1      |
| 18  | 22T9-003B8  | Pad for knee lifter plate         | 1      |
| 19  | 22T9-004C1  | Belt cover bracket                | 1      |
| 20  | 22T9-004C2  | Belt cover plate                  | 1      |
| 21  | 72T1-017    | Screw                             | 3      |
| 22  | 72T9-028    | Screw                             | 3      |
| 23  | GN896       | Stop ring                         | 1      |
| 24  | BM05-10-002 | Knee lifter rod crank             | 1      |
| 25  | GB84        | Set screw                         | 2      |
| 26  |             | Chain                             | 1      |
| 27  | GN1-1       | Chain hook                        | 2      |



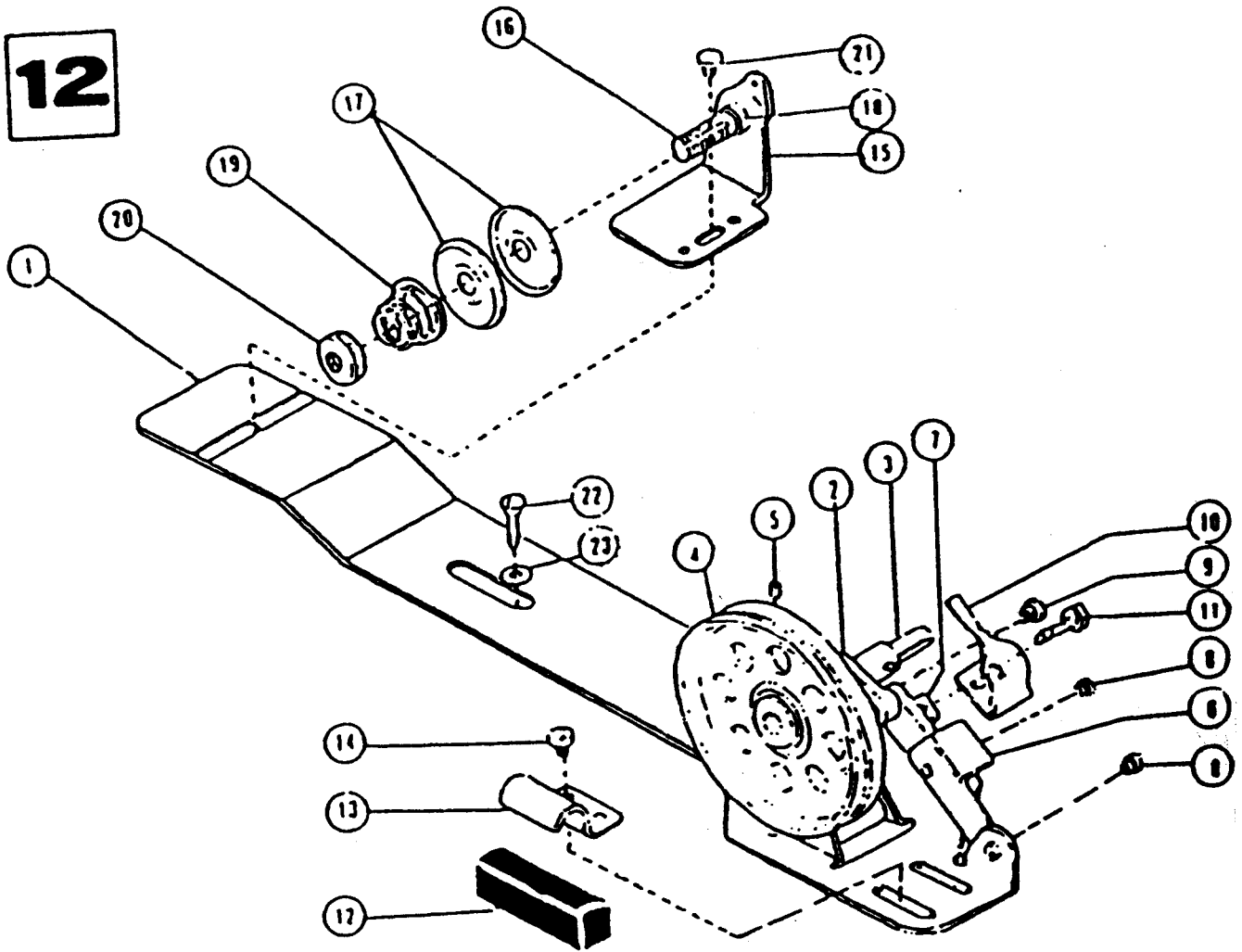
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**11. ACCESSORIES**

| No. | Ref. No     | Description             | Pieces |
|-----|-------------|-------------------------|--------|
| 1   | 22T9-007F1  | Hinge of machine head   | 2      |
| 2   | 72T9-004C1  | Rubber socket for hinge | 2      |
| 4   | 72T9-005    | Rubber cushion (big)    | 2      |
| 5   | 72T9-006    | Rubber cushion (small)  | 2      |
| 6   | 22T9-011    | Oiler                   | 1      |
| 7   | 22T9-012    | Magnet                  | 1      |
| 8   | 72T9-007    | Screw driver (long)     | 1      |
| 9   | 72T9-020    | Screw driver (medium)   | 1      |
| 10  | 72T9-021    | Screw driver (short)    | 1      |
| 11  | 72T9-022    | Double-end wrench       | 1      |
| 12  | 22T9-017    | Oil container           | 1      |
| 13  | 22T9-018    | Vinyl cover             | 1      |
| 14  | DP × 17 22# | Needle                  | 4      |

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## 12. BOBBIN WINDER MECHANISM

| No. | Ref No      | Description                    | Pieces |
|-----|-------------|--------------------------------|--------|
| 1   | 22T9-006D1  | Bobbin winder base             | 1      |
| 2   | 22T9-006D2  | Bobbin winder arm              | 1      |
|     | 22T9-006D3  | Shaft for bobbin winder arm    | 1      |
|     | 22T9-006D4  | Spring                         | 1      |
| 3   | 22T9-006D5  | Bobbin winder spindle          | 1      |
| 4   | 22T9-006D6  | Bobbin winder pulley           | 1      |
| 5   | 22T9-006D7  | Screw                          | 1      |
| 6   | 22T9-006D8  | Bobbin winder stop latch lever | 1      |
| 7   | 22T9-006D9  | Bobbin winder connecting bar   | 1      |
| 8   | 22T9-006D10 | Rivet                          | 2      |
| 9   | 22T9-006D11 | Screw                          | 1      |
| 10  | 22T9-006D12 | Bobbin winder stop latch       | 1      |
| 11  | 22T9-006D13 | Adjusting screw                | 1      |
| 12  | 22T9-006D14 | Stopper block                  | 1      |
| 13  | 22T9-006D15 | Fixture for stopper block      | 1      |
| 14  | 22T9-006D16 | Set screw                      | 1      |
| 15  | 22T9-006D17 | Bobbin winder tension bracket  | 1      |
| 16  | 22T9-006D18 | Bobbin winder tension stud     | 1      |
| 17  | 22T9-006D19 | Bobbin winder tension disc     | 2      |
| 18  | 22T9-006D20 | Tension stud bushing           | 1      |
| 19  | 22T9-006D21 | Bobbin winder tension spring   | 1      |
| 20  | 22T9-006D22 | Tension stud nut               | 1      |
| 21  | 22T9-006D23 | Tension bracket screw          | 1      |
| 22  |             | Wood screw                     | 2      |
| 23  |             | Washer                         | 2      |