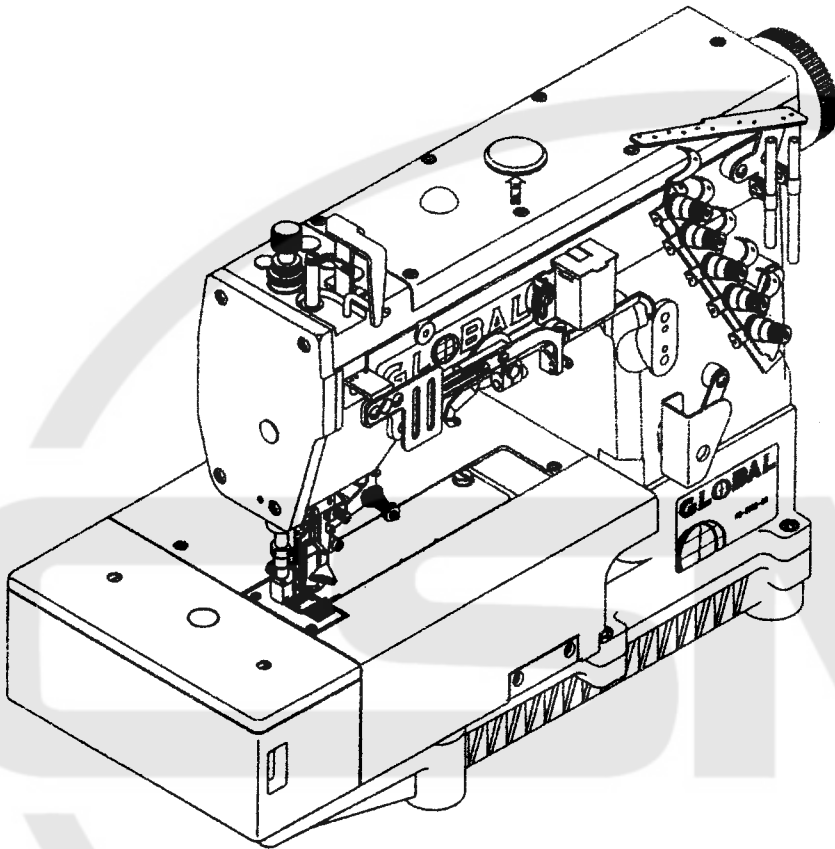




Ver. 1.1 2003.11  
NO. FT62E1-3-03-11



MODEL

**FB2502**  
**FB2503**

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**HIGH SPEED CYLINDER  
BED INTERLOCK MACHINE**

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**INSTRUCTION MANUEL**

**PREFACE:**

FB SERIES IS HIGH SPEED FLAT BED INTERLOCK MACHINE AND CAN ACHIEVE EXCELLENT EFFICIENCY, STABLE QUALITY AND DURABLE MACHINE LIFE.

**SAFETY NOTICE :**

1. BELT COVER MUST BE INSTALLED.
2. MAKE SURE THE MOTOR WIRING IS INSTALLED PROPERLY.
3. MAKE SURE TO CUT OFF THE ELECTRICITY AND WAIT TILL MOTOR STOPS COMPLETELY BEFORE CONDUCT PRE-OPERATION INSPECTION, CLEANING, THREADING AND CHANGING THE NEEDLES.
4. FOR NEW MACHINES, PLEASE DO NOT RUN EXCEED 4,500 SPM DURING THE FIRST MONTH USAGE.
5. DO NOT OVER-ADDING THE LUBRICATION OIL.
6. PLEASE DRIP ONE DROP OF OIL ON THE NEEDLE BAR BEFORE OPERATION.
7. PLEASE MAKE SURE THE NEEDLES ARE INSTALLED PROPERLY.
8. PLEASE MAKE SURE THE THREADING IS CORRECT.
9. PLEASE MAKE SURE TO CLEAN THE MACHINE AND SHUT OFF THE ELECTRICITY POWER AFTER DAILY OPERATION.

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**CSTMP**

## 1. BASIC SPECIFICATION:

### 1-1 SPECIFICATION:

MODEL -- FB2502, FB2503

STITCH TYPE.....ISO 406, 407, 602, 605, 607

APPLICATION -- GENERAL SEAMING OF KNITTED MATERIAL

SEWING SPEED -- 6000 RPM FOR BOTTOM COVERSTITCH ONLY.  
5500 RPM FOR TOP AND BOTTOM COVERSTITCH.

NEEDLE TO BE USED: SCHMETZ OR ORGAN UY 118 GAS #65-90

NEEDLE DISTANCE - FB-2502 : 4.0, 4.8, 5.6, 6.4 mm  
FB-2503 : 5.6, 6.4 mm

STITCH LENGTH -- 1.4 ~ 3.6 m.m  
STITCH NUMBER: 7~18 STITCH/INCH  
8-21 STITCH/30 m.m.

FEED REGULATION-----BY PUSH-BUTTON

DIFFERENTIAL RATIO -- MAX. NORMAL DIFFERENTIAL RATIO: 1:2.0  
MAX. REVERSE DIFFERENTIAL RATIO: 1:0.7

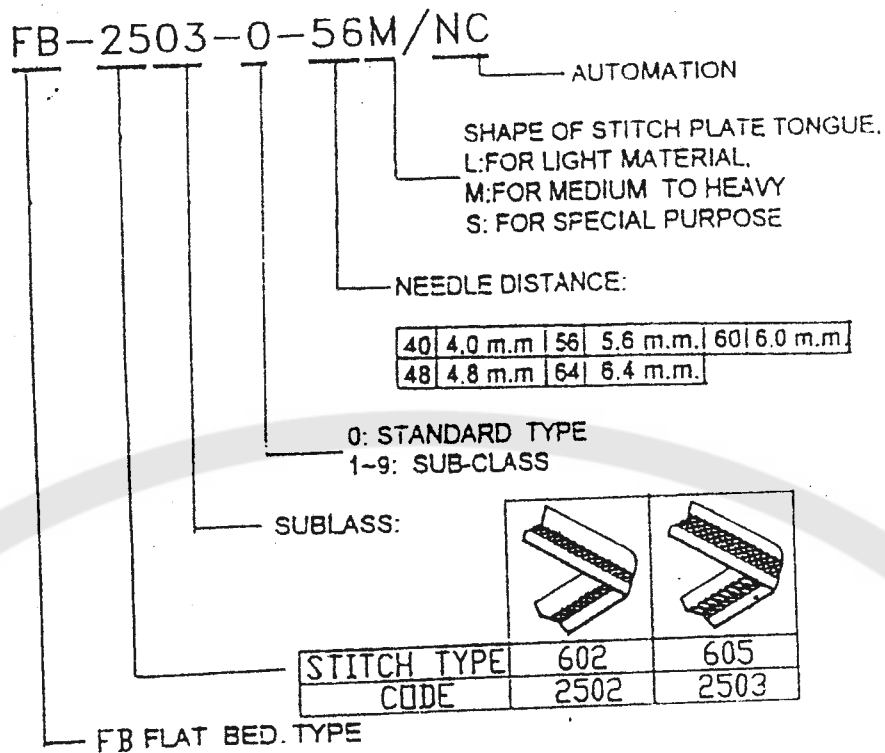
DIFFERENTIAL FEED REGULATION-- ADJUSTMENT DURING OPERATION IS  
POSSIBLE BY MOVING LEVER UP AND  
DOWN FROM OUTSIDE.

PRESSER FOOT LIFT ..... MAX. 7.0 m.m.  
(5.0MM FOR MACHINE WITH TOP COVER THREAD)

LUBRICATION OIL -----MOBIL #10 OR EQUIVALENT

LUBRICATION .. AUTOMATIC LUBRICATION BY OIL PUMP

1-2 SUB-CLASS:



2. INSTALLATION:

2-1. MOTOR, BELT AND BELT COVER

THE MAXIMUM SEWING SPEED OF THIS MACHINE IS 6000 S.P.M. AND ORDINARY SPEED IS 5000 S.P.M. DURING THE FIRST 200 HOURS ( OR FIRST MONTH) OF USING THE MACHINE, PLEASE DO NOT EXCEED 80% OF THE ORDINARY SPEED.

A. BELT: M TYPE V BELT AND BE SURE THT THE MOTOR RUNNING DIRECTION IS CLOCKWISE AND THE MOTOR BELT TENSION CAN BE PRESSED INWARD ABOUT 2 CM.

B. BELT COVER INSTALL BELT AS SHOWN IN THE ILLUSTRATION.

C. MOTOR: USE A CLUTCH MOTOR OF 3-PHASE, 2-POLE, 400 W( 1/2HP) FIX THE POSITION OF MOTOR SO THAT THE CENTERS OF MOTOR PULLEY AND MACHINE PULLEY ALIGN WHEN MOTOR PULLEY SHIFT TO THE LEFT BY PUSHING PEDAL.

CYCLE	DIA. OF PULLEY (MM)				
	85	90	100	110	120
50HZ			4600	5000	5500
60HZ	4600	4900	5500	6000	

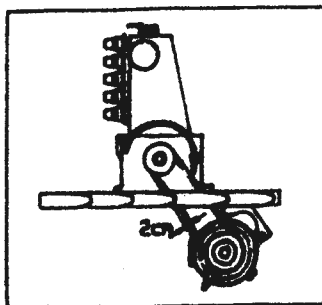


FIG. A

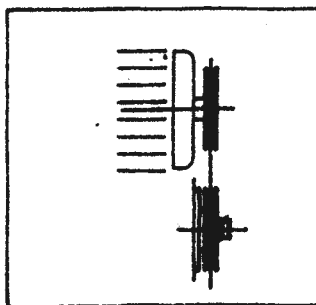


FIG. B

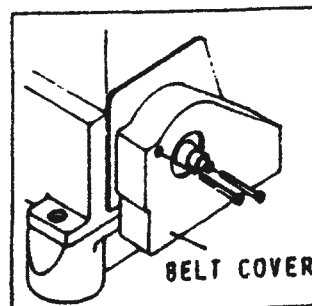
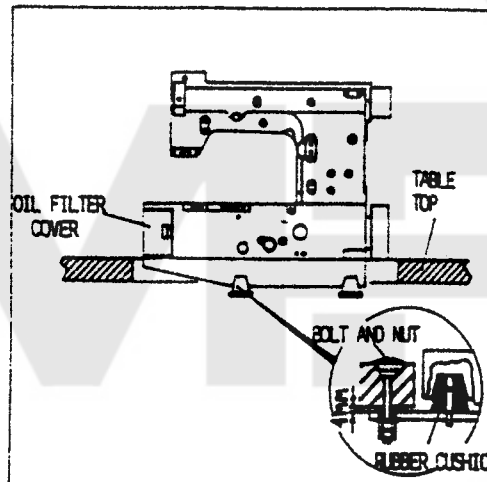
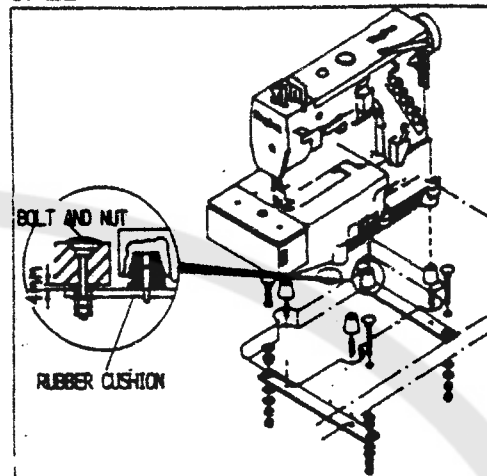


FIG. C

## 2-2 TABLE TOP INSTALLATION

INSTALL THE MACHINE CORRECTLY REFERRING TO THE ILLUSTRATION. SET BOLTS AND NUTS TO MACHINE TABLE AND PUT RUBBER CUSHIONS ON BOLTS AND REST THE MACHINE ON THEM SECURELY.

IF USING RUBBER CUSHION TO ADJUST THE HEIGHT OF MACHINE THEN, MUST MAKE SURE THERE IS NO INTERFERENCE BETWEEN MACHINE AND TABLE TOP, SO CAN OPEN UP THE OIL FILTER SIDE COVER WITHOUT ANY PROBLEM.



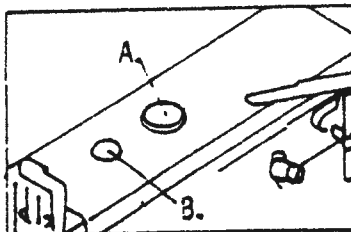
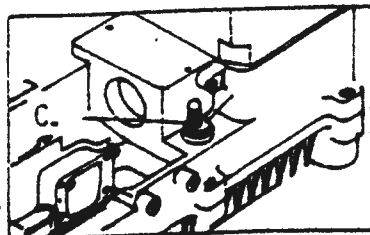
## 3. LUBRICATION OIL AND COOLING OIL

### 3-1. LUBRICATION OIL AND COOLING OIL

PLEASE USE MOBIL #10 OR EQUIVALENT OIL FOR LUBRICATION OIL AND USE SILICONE OIL FOR COOLING OIL.

### 3-2 FEEDING OIL

THE LUBRICATION OIL HAS BEEN DRAINED OFF COMPLETELY BEFORE DELIVERY. ADDING OIL TO THE UPPER LINE OF OIL GAUGE (C) BY REMOVING SEAL PLUG (A). ALSO, PLEASE MAKE SURE THE OIL FLOWS OUT OF NOZZLE (B) AT THE START OF OPERATION.

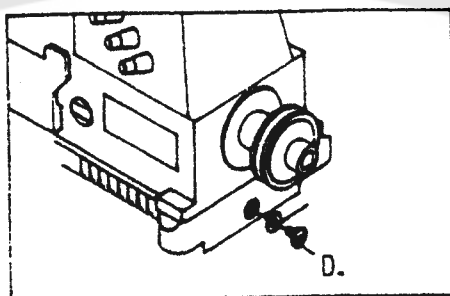


**\*BEFORE STARTING A BRAND NEW MACHINE OR A MACHINE WHICH HAS NOT BEEN USED FOR MORE THAN A COUPLE OF WEEKS, LUBRICATE THE NEEDLE BAR FIRST.**

### **3-3 CHANGING OIL**

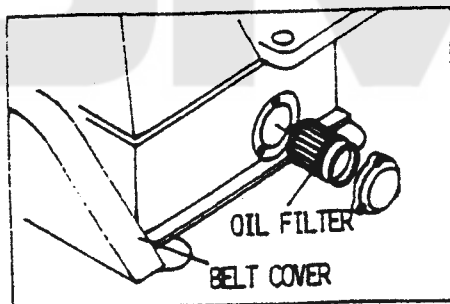
**FOR THE LONGER LIFE OF MACHINE, CHANGE LUBRICATION OIL COMPLETELY AFTER 250 HOURS (OR 4 WEEKS) OF INITIAL OPERATION.**

- A. AFTER TAKING OFF BELT COVER, REMOVE V-BELT FROM MOTOR PULLEY, AND REMOVE MACHINE HEAD FROM MACHINE TABLE.**
- B. LOOSEN SCREW (D) AND DRAIN OFF ALL THE OIL FROM THE MACHINE.**
- C. AFTAER DRAINING, TIGHTEN SCREW (D) BACK.**
- D. WHEN REPLENISHING OIL PLEASE REFER TO PARAGRAPH 3-2 "FEEDING OIL" ABOVE.**



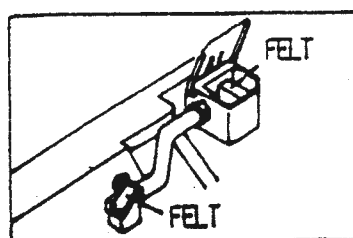
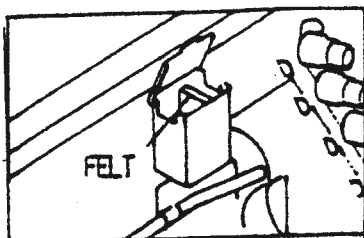
### **3-4 OIL FILTER**

**ALTHOUGH THE MACHINE IS USING OIL PUMP LUBRICATION AND SPLASHING LUBRICATION SYSTEMS, PLEASE CHECK AND CLEAN OIL FILTER EVERY MONTH, AND WHEN NO OIL OR VERY LITTLE OIL COMES OUT OF NOZZLE EVEN INDICATOR SHOWS NORMAL, PLEASE CHECK OIL FILTER AND REPLACE IT IF NECESSARY.**



### **3-5 ADDING COOLING OIL**

**AVOID NEEDLE BREAKING, STITCH JUMPING OR THREAD MELTING PROBLEMS ETC. PLEASE FILL COOLING OIL TANK AND FELT WITH SILICONE OIL UNDER SOME SPECIAL CIRCUMSTANCES, CAN NOT USE SILICONE OIL OR NO NEED TO USE SILICONE OIL THEN, YOU CAN TAKE FELT OFF FROM RESERVOIR.**



## 4. NEEDLE

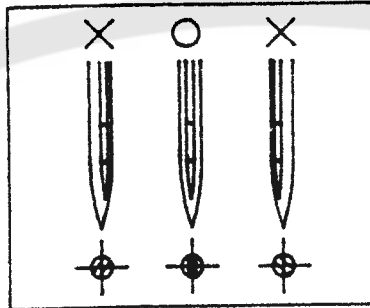
### 4-1 NEEDLE SELECTION

NEEDLE UY128GAS OF SCHMETZ OR ORGAN IS TO BE USED. THERE ARE MANY SIZES OF NEEDLE AND THE MOST SUITED NEEDLE, ACCORDING TO THE THICKNESS AND KIND OF FABRICS USED, THE MOST SUITED NEEDLE SHOULD BE SELECTED.

JAPANESE SIZE	9	10	11	12	13	14
METRIC SIZE	65	70	75	80	85	90

### 4-2 HOW TO REPLACE THE NEEDLES

REPLACING NEEDLE SHOULD BE MADE CORRECTLY WITH THE SCARF FACING RIGHTLY BACKWARD AS SHOWN IN THE ILLUSTRATION.

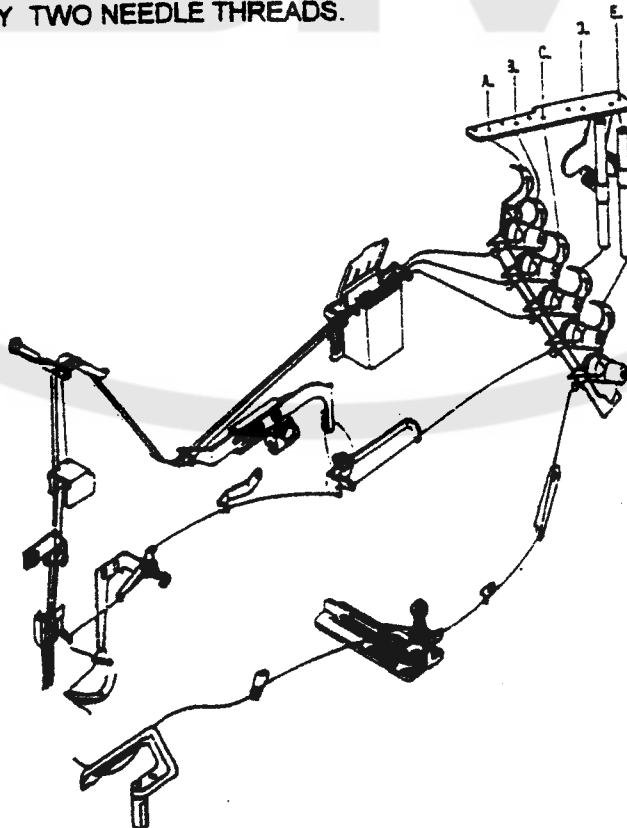


### 4-3 THREADING

THREADING SHOULD BE MADE CORRECTLY REFERRING TO THE ILLUSTRATION. IMPROPER THREADING MIGHT CAUSE SKIP STITCH, THREAD BREAKAGE AND UNEVEN SEAM ETC.

A,B,C ... NEEDLE THREAD    D... TOP COVER THREAD    E...LOOPER THREAD

THE THREADING FOR THREE NEEDLE MACHINE IS SHOWN IN THE ILLUSTRATION BELOW. FOR TWO NEEDLE MACHINE, THREADING IS THE SAME EXCEPT ONLY TWO NEEDLE THREADS.



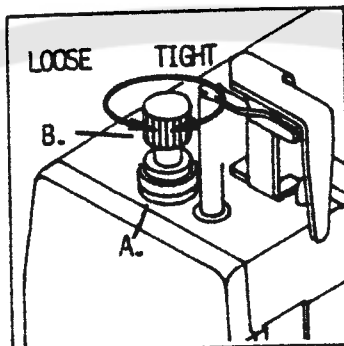


## 5. PROPER OPERATION ADJUSTMENT

DUE TO THE THICKNESS OF FABRICS, DIFFERENT MATERIALS DIFFERENT KINDS OF THREAD, DIFFERENT STITCH REQUIREMENTS THE CHANGES OF DIFFERENTIAL RATIO, ALL IS AFFECTING THE SWING PERFORMANCE. THUS, MUST CONDUCT THE PROPER OPERATION ADJUSTMENT IN ORDER TO GET BEST SEWING EFFECTS.

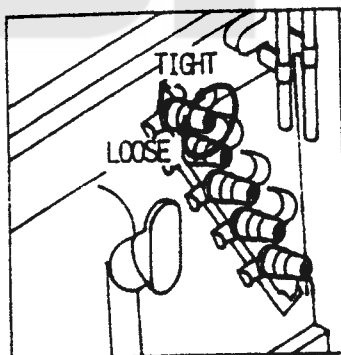
### 5-1 PRESSURE OF PRESSER FOOT

TO INCREASE THE PRESSURE OF PRESSER FOOT, TURN ADJUSTING SCREW(B) CLOCKWISE AFTER LOOSENING LOCK NUT (A) AND TO DECREASE, TURN IT COUNTERCLOCKWISE. PRESSURE OF PRESSER FOOT SHOULD BE AS WEAK AS POSSIBLE SO LONG AS PRESSER FOOT CAN OPERATE PROPERLY.



### 5-2 THREAD TENSION

DIFFERENT THREADS HAVE DIFFERENT TENSIONS AND EVEN SAME THREADS WILL HAVE DIFFERENT TENSIONS WHEN GO THROUGH DIFFERENT THREADING HOLES. EACH THREAD TENSION CAN BE ADJUSTED BY INDIVIDUAL TENSION NUT TO INCREASE THREAD TENSION, TURN TENSION NUT CLOCKWISE, TO DECREASE THREAD TENSION, TURN TENSION NUT COUNTERCLOCKWISE. PLEASE USE LEAST THREAD TENSION AS LONG AS IT WILL NOT AFFECT THE SEWING EFFECTS.



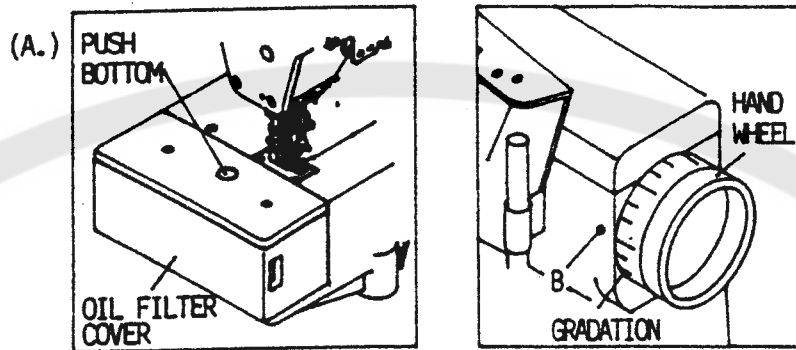
### 5-3 ADJUSTING STITCH LENGTH

ADJUSTMENT OF STITCH LENGTH CAN BE MADE STEPLESSLY FROM 1.4MM/PER STITCH TO 3.8 MM/PER STITCH.

THE TABLE BELOW SHOWS THE STITCH LENGTH

STITCH LENGTH	STITCH NUMBER	STITCH NUMBER
3.8 m.m.	7/PER INCH	8/PER 30 m.m.
2.4 m.m.	10.5/PER INCH	12.5/PER 30 m.m.
1.4 m.m.	18/PER INCH	21/PER 30 m.m.

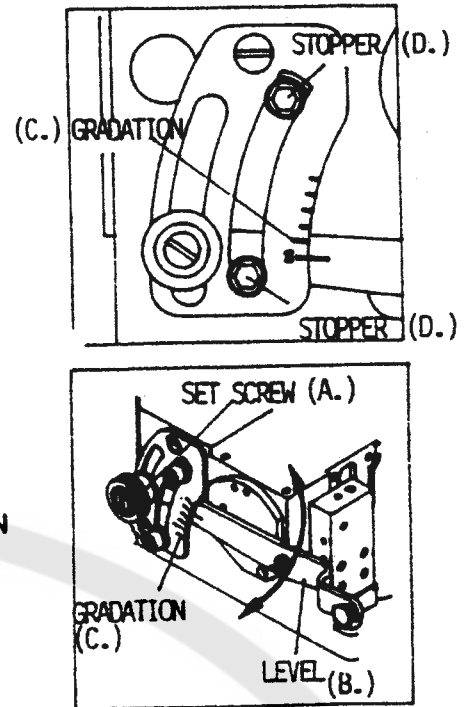
**PRESS PUSH BUTTON (A) WITH LEFT HAND LIGHTLY UNTIL ITS TIP CONTACT TO A PART INSIDE. KEEP PRESSING, TURN HANDWHEEL WITH RIGHT HAND UNTIL THE PUSH BUTTON GETS IN. AT THIS POINT, PRESS IN PUSH BUTTON STRONGLY AND TURN HANDWHEEL. ONE GRADUATION ON THE CIRCUMFERENCE OF HANDWHEEL INDICATES A STITCH LENGTH (mm). WHICH SHOULD BE ALIGNED WITH THE MARK (B). THEN RELEASE HAND.**



**NOTE : IN CASE OF MACHINE WITH UT DEVICE ( LOWER THREAD TRIMMER) WHICH IS EQUIPPED WITH A MOTOR WITH AUTOMATIC NEEDLE POSITIONING SYSTEM, MOTOR SWITCH MUST BE TURNED OFF WITHOUT FAIL WHEN CHANGING STITCH LENGTH.**

## 5-4 ADJUSTING DIFFERENTIAL FEED

- 1). NORMAL DIFFERENTIAL FEED (SHRINK SEWING)  
 LOOSEN NUT (A), MOVING LEVER (B) UP AND DOWN AND SET IT AT THE DESIRED POSITION BY TIGHTENING NUT (A).  
 WHEN LEVER IS SET AT GRADUATION (LONG) (C), THE RATIO OF MAIN FEED TO DIFFERENTIAL FEED. GRADUATION OF UPPER PART REPRESENT 1:1.25, 1:1.5, 1:1.75, 1:2 IN ORDER FROM THE BOTTOM.
- 2). REVERSE DIFFERENTIAL FEED (STRETCH SEWING)  
 WHEN THE LEVER IS LOWERED BELOW GRADUATION (LONG) (C), THE FEED BECOMES REVERSE DIFFERENTIAL FEED. WHEN IT IS SET AT "S", THE RATION OF MAIN FEED TO DIFFERENTIAL FEED IS 1:0.7.
- 3). ADJUSTMENT OF DIFFERENTIAL FEED DURING OPERATION  
 TO ADJUST DIFFERENTIAL FEED DURING OPERATION, CONNECT A CHAIN, ETC. TO LEVER.  
 FIX STOPPER (D) (2 PCS.) AT THE DESIRED POSITION TO SET UPPER AND LOWER LIMITS BETWEEN WHICH LEVER IS MOVED UP AND DOWN.



THE RANGE OF DIFFERENTIAL RATION VARIES ACCORDING TO THE STITCH LENGTH. REFER TO THE TABLE BELOW:

STITCH LENGTH	MAX. NORMAL DIFF.	MAX. REVERSE DIFF.
3.6 m.m.	1:1.1	1:0.3
2.5 m.m.	1:1.6	1:0.4
2.0 m.m.	1:2	1:0.5
1.4 m.m.	1:2.9	1:0.7

## 5-5 ADJUSTING THE NEEDLE THREAD TAKE-UP

DIFFERENT THREADS HAVE DIFFERENT STRETCH TENSION AND CAUSE SKIP STITCHING THREAD BREAKING AND UNSTABLE STITCHING EASILY. THIS MACHINE EQUIPPED WITH THREAD TAKE-UP, FRONT NEEDLE THREAD GUIDE, REAR THREAD GUIDE AND AUXILIARY THREAD TENSION CONTROL GUIDE IN ORDER TO GIVE LETTER CONTROL OF THE LOOPER THREAD TAKE-UP AND STABILIZE THE STRETCHING OF LOOPER THREAD.

A, B THE THREAD TAKE-UP AND REAR THREAD GUIDE WERE SET AT STANDARD POSITION BEFORE SHIPMENT. AS SHOWN ON FIGURE A/B. AND ALSO CAN BE ADJUSTED AS ARROW DIRECTIONS IF NECESSARY.

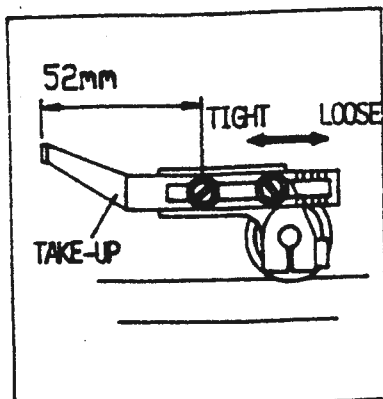


FIG. A

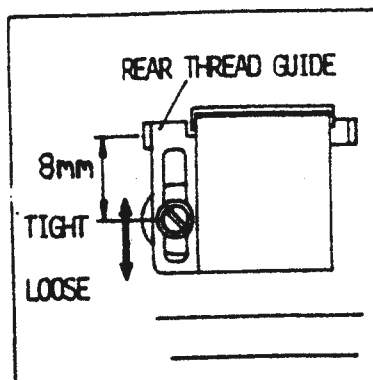


FIG. B

C. SOME TIMES, IT IS NOT SO EASY TO MAKE LOOP FOR SOME KINDS OF THREAD AND ALSO MAKE IT DIFFICULT FOR LOOPER TO CATCH THE NEEDLE THREAD, CAUSING SKIP STITCH. IN SUCH CASE, CAN USE AUXILIARY THREAD TENSION CONTROL GUIDE TO STABILIZE THE THREADS.

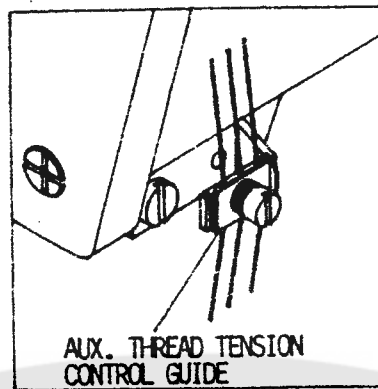


FIG. C

D. IN CASE THE FORMATION OF NEEDLE THREAD LOOP IS UNSTABLE WHEN USING STRETCHABLE THREAD, YOU CAN SOLVE THIS BY ADJUSTING THE HEIGHT OF FRONT NEEDLE THREAD GUIDE, ESPECIALLY WHEN LOOPER MOVE FROM RIGHT TO THE LEFT.

IF THE LEFT NEEDLE SKIP THE STITCH WHEN USING SYNTHETIC THREAD OR RIGHT NEEDLE INTERFERE WITH THE FORMATION OF THREAD LOOP WHEN USING BLENDED THREAD, YOU CAN USE FRONT NEEDLE THREAD GUIDE, WITH NEEDLE BAR AT THE LOWEST POSITION, THE CENTER OF THREAD HOLE OF REAR THREAD GUIDE EYELET SHOULD BE EVEN WITH THE SURFACE OF FRONT NEEDLE THREAD GUIDE AND FRONT NEEDLE THREAD GUIDE AND REAR THREAD GUIDE SHOULD BE PARALLEL WITH EACH OTHER.

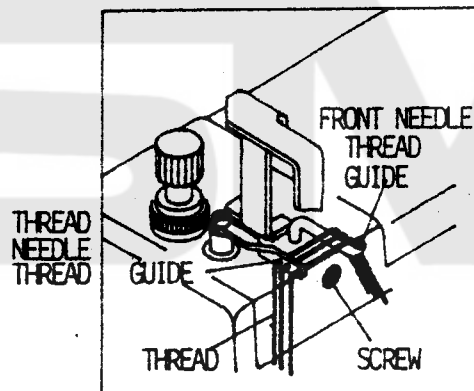


FIG. D

### 5-6 ADJUSTING THE LOOPER THREAD TAKE-UP

E/F. WHEN LEFT NEEDLE COMES DOWN TO THE HALF POINT, THE THREAD MUST GET OFF FROM THE HIGHEST POSITION OF LOOPER THREAD TAKE-UP. THE ADJUSTMENT IS MADE BY LOOSENING SCREW, TURN THE LOOPER THREAD TAKE-UP TO THE PROPER POSITION AND TIGHTEN THE SCREW.

G. TO DECREASE THE AMOUNT OF LOOPER THREAD IN THE SEAM MOVE THREAD GUIDE EYELET TO ALIGNING MARK TO INCREASE, MOVE IT BACKWARD.

H. FOR STRETCHABLE THREADS, MOVE RIGHT AND LEFT THREAD GUIDES TO ALIGNING MARK AND ALSO DO NOT PASS THE THREAD BETWEEN THREAD GUIDE.

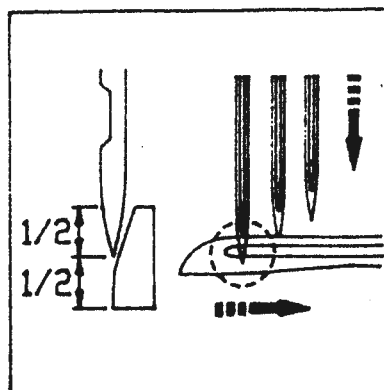


FIG. E

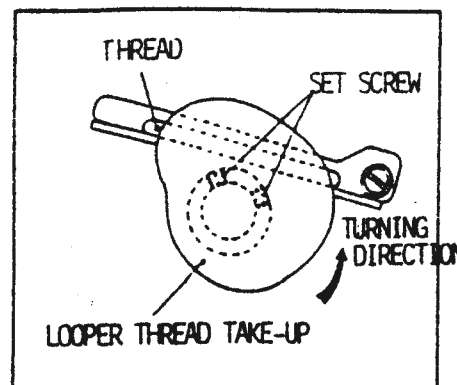


FIG. F

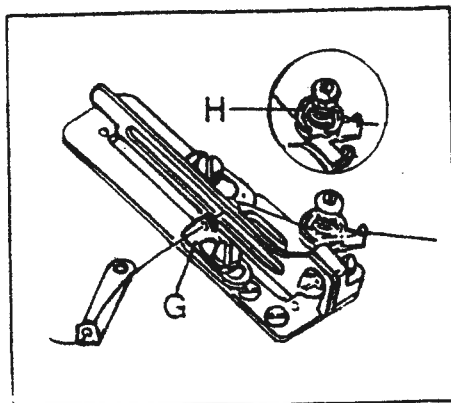


FIG. G/H

### 5-7 ADJUSTING SPREADER THREAD TAKE-UP

I. THE THREAD AMOUNT OF TOP COVER THREAD IS ADJUSTED BY SPREADER THREAD TAKE-UP.

FOR STANDARD POSITION, LOOSENING SET SCREW, PUSH THREAD GUIDE UPWARD TO ITS HIGHEST POSITION AS X DIRECTION SHOW. THEN TIGHTEN THE SET SCREW. FOR STRETCHABLE THREAD, PUSH THE THREAD GUIDE DOWNWARD AS Y DIRECTION AND THREAD MUST PASS THROUGH THE EYELET OF THREAD GUIDE.

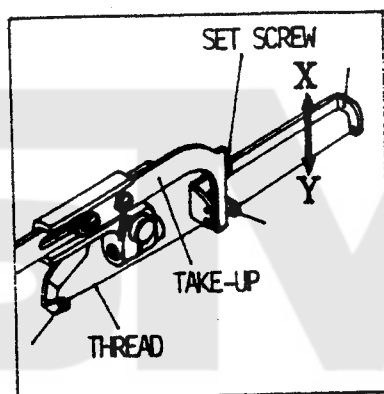


FIG. I

## 6. ADJUSTMENT OF MACHINE

THIS MACHINE WAS SENT TO THE STANDARD POSITION BEFORE DELIVERY AND IT'S UNNECESSARY TO RE-ADJUST UNLESS UNDER SOME SITUATION AS CHANGING THE NEEDLE, LOOPER, DIFFERENT KIND OF FABRIC OR DIFFERENT SEWING THREADS. PLEASE ADJUST ACCORDING TO FOLLOWING ITEMS :

### 6-1. ADJUSTING PRESSER FOOT AND SETTING THE HEIGHT OF PRESSER FOOT

IT WILL BE EASIER TO CONDUCT SOME ADJUSTMENTS BY TAKING OFF THE PRESSER FOOT AS FOLLOWS :

A / B LOOSED THE LIFTER ARM AND LOOSEN THE SCREW FROM PRESSER FOOT AND STOPPER, LIFTING UP THE PRESSER BAR, YOU CAN TAKE PRESSER FOOT VERY EASILY. AFTER CHANGING, REMEMBER PUT IT BACK IN REVERSE SEQUENCE.

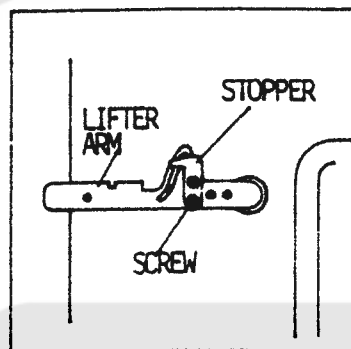


FIG. A

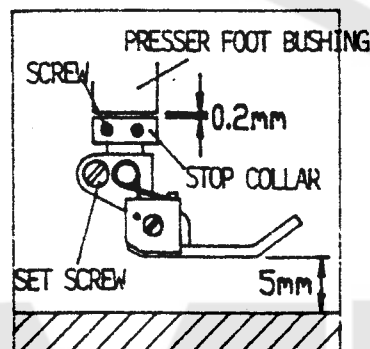


FIG. B

### 6-2 ADJUSTING THE HEIGHT OF NEEDLE BAR AND NEEDLE DROP POINT

- C. WHEN THE TIP OF LOOPER COMES TO THE CENTER OF LEFT NEEDLE. THE LOOPER SHOULD POSITION ABOVE THE UPPER END OF NEEDLE EYE BY 0.5 - 1.0 mm AS THIS IS THE STANDARD POSITION FOR NEEDLE BAR.
- D. LOOSEN THE SCREW OF NEEDLE BAR CLAMP AND ADJUST THE NEEDLE BAR TO GET PROPER HEIGHT.
- E. AFTER ADJUSTMENTS, TIGHTEN THE SCREW OF NEEDLE BAR CLAMP AND MAKE SURE THE NEEDLES ARE IN THE CENTER OF NEEDLE DROP HOLE OF NEEDLE PLATE.

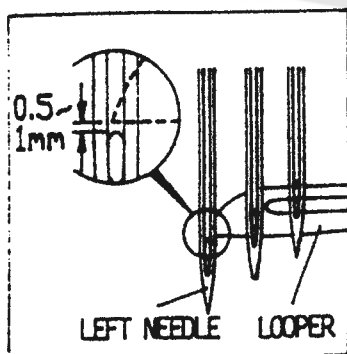


FIG. C

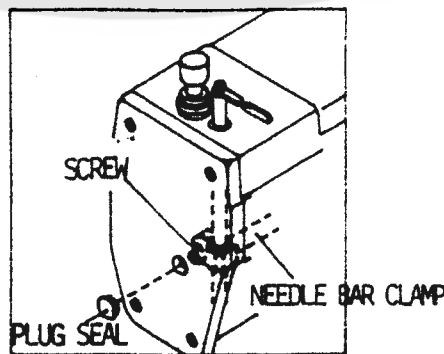


FIG. D

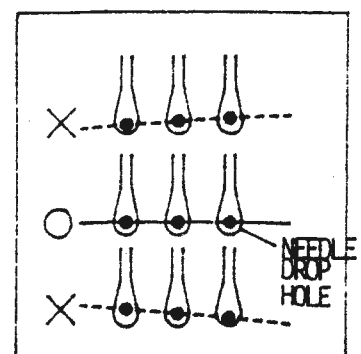


FIG. E

### 6-3. INSTALLING LOOPER

- F. INSERTING LOOPER ALL THE WAY INTO LOOPER HOLDER AND PLEASE MAKE SURE LOOPER IS FULLY FITTED INTO PROPER POSITION, THEN TIGHTENED SCREW (A).

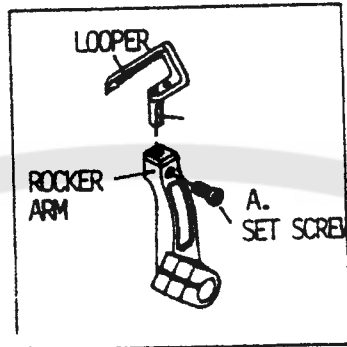


FIG. F

### 6-4. SETTING LOOPER

- G. THE LOOPER IS LOCATED AT THE EXTREME RIGHT WHEN NEEDLE BAR DECEMD TO IT'S LOWEST POINT. AND THE DISTANCE BETWEEN THE TIP OF LOOPER AND THE CENTER OF RIGHT NEEDLE IS VARIOUS ACCORDING TO THE NEEDLE DISTANCE. PLEASE REFER TO THE TABLE BELOW FOR ADJUSTMENT AND THE ADJUSTMENT IS MADE BY LOOSENING THE SCREW (B) OF LOOPER HOLDER

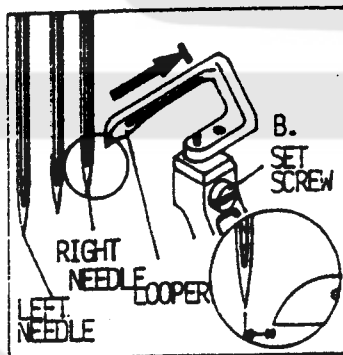


FIG. G

NEEDLE DISTANCE (m.m.)	LOOPER MOVEMENT TO THE RIGHT (m.m.)
4.0	4.0
4.8	3.6
5.6	3.2
6.4	2.8

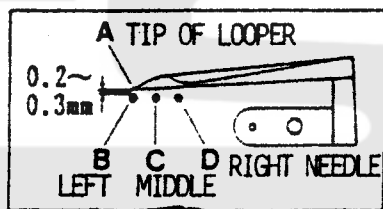
## 6-5. THE CLEARANCE BETWEEN LOOPER AND NEEDLE

### H. FB-2503 (3-NEEDLE)

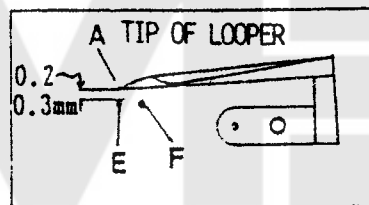
WHEN THE TIP OF LOOPER MEETS THE CENTER OF LEFT NEEDLE, THE CLEARANCE BETWEEN THEM SHOULD BE 0.2 - 0.3 mm.  
WHEN THE TIP OF LOOPER MEETS THE CENTER OF MIDDLE NEEDLE, THE CLEARANCE BETWEEN THEM SHOULD BE MINIMAL.  
WHEN THE TIP OF LOOPER MEETS THE CENTER OF RIGHT NEEDLE, GIVING THE CLEARANCE OF 0 - 0.05 mm BETWEEN THE TIP OF LOOPER AND NEEDLE BY PUSHING REAR NEEDLE GUARD 0.2 - 0.3 mm AGAINST THE NEEDLE. THE ADJUSTMENT IS MADE BY LOOSENING SCREW OF LOOPER HOLDER.

### FB-2502 (2-NEEDLE)

WHEN THE TIP OF LOOPER MEETS THE CENTER OF LEFT NEEDLE, THE CLEARANCE BETWEEN THEM SHOULD BE 0.2 - 0.3 mm.  
WHEN THE TIP OF LOOPER MEETS THE CENTER OF RIGHT NEEDLE, THE REAR NEEDLE GUARD SHOULD PUSH NEEDLE 0.2 - 0.3 mm IN ORDER TO GET THE CLEARANCE OF 0-0.05 mm BETWEEN THE TIP OF LOOPER AND NEEDLE.



FB2503



FB2502

## 6-6. THE RELATION BETWEEN NEEDLE AND REAR NEEDLE GUARD

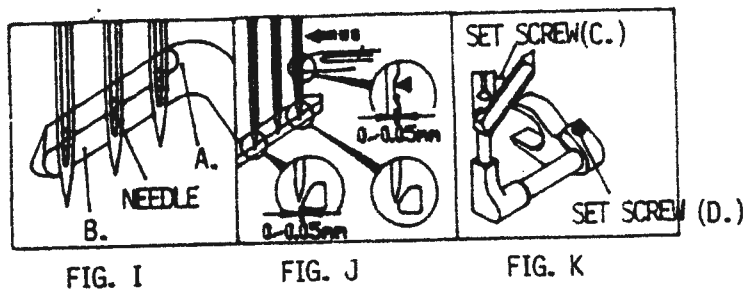
### I. SETTING THE HEIGHT OF REAR NEEDLE GUARD

WHEN NEEDLES DESCEND TO THE LOWEST POSITION LINE (A) OF REAR NEEDLE GUARD (B) ALIGN WITH THE CENTER OF THE EYE OF EACH NEEDLE. THE ADJUSTMENT OF THE HEIGHT OF REAR NEEDLE GUARD IS MADE BY LOOSENING THE SCREW.

### J/K. SETTING THE ANGLE AND TIMING OF REAR NEEDLE GUARD

WHEN THE TIP OF LOOPER PASSES THE CENTER OF RIGHT NEEDLE, THE REAR NEEDLE GUARD WILL SLIGHTLY PUSH THE RIGHT NEEDLE FORWARD ABOUT 0.2 - 0.3 mm. AND AT THIS TIME, THE CLEARANCE BETWEEN LOOPER AND RIGHT NEEDLE IS 0 - 0.05 mm AND LOOPER WILL TOUCH MIDDLE NEEDLE SLIGHTLY. AND THE CLEARANCE BETWEEN LOOPER AND LEFT NEEDLE IS 0 - 0.05 mm. THESE ADJUSTMENTS ARE MADE BY LOOSENING THE SCREWS (C) AND (D).





### 6-7. THE RELATION BETWEEN NEEDLE AND FRONT NEEDLE GUARD

SETTING THE ANGLE AND TIMING OF FRONT NEEDLE GUARD :

- A. WHEN THE TIP OF LOOPER COMES TO THE CENTER OF LEFT NEEDLE AND RIGHT NEEDLE, ADJUST THE CLEARANCES BETWEEN THOSE NEEDLES AND FRONT NEEDLE GUARD SHOULD BE 0 - 0.3 mm. THE ADJUSTMENTS ARE MADE BY LOOSENING SET SCREW (E) AND MOVE FRONT NEEDLE GUARD TO ITS PROPER POSITION. THEN, TIGHTEN THE SET SCREW (E).

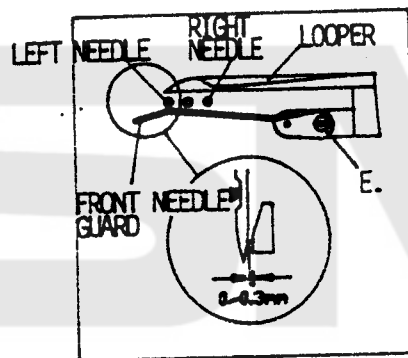


FIG. A

### 6-8. SETTING THE HEIGHT OF FEED DOG

- B. WHEN FEED DOGS RISE TO THE UPPER MOST, THEIR HEIGHT OF FEED DOGS IS 1 - 1.2 mm ABOVE THE SURFACE OF NEEDLE PLATE AND DIFFERENTIAL AND MAIN FEED DOG ARE PARALLEL TO THE SURFACE OF NEEDLE PLATE.

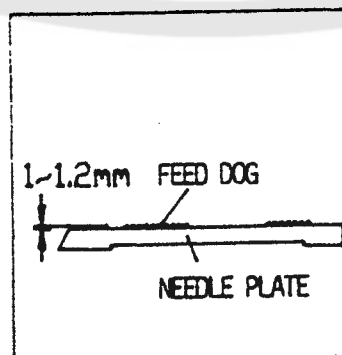
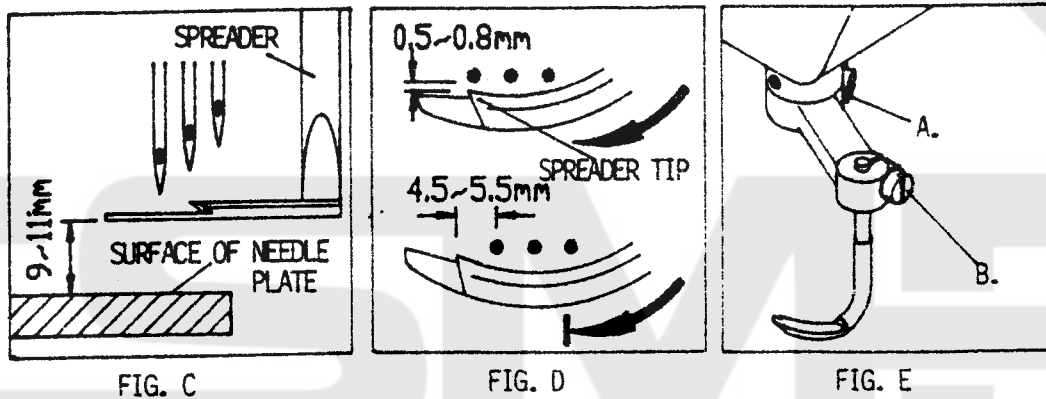


FIG. B

## 7. TOP COVERSTITCH

### 7-1. INSTALLING AND SETTING THE SPREADER

- C. THE HEIGHT OF SPREADER IS 9 - 11 mm ABOVE THE SURFACE OF NEEDLE PLATE.
- D. WHEN SPREADER MOVE TO THE LEFT AND PASSES BEHIND THE LEFT NEEDLE, THE CLEARANCE IS 0.5 - 0.8 mm. AND WHEN SPREADER REACHES THE EXTREME LEFT, THE DISTANCE BETWEEN TIP OF HOOKING PART AND THE CENTER OF LEFT NEEDLE IS 4.5 - 5.5 mm.
- E. THE ADJUSTMENTS ARE MADE BY LOOSENING SCREW (A) FOR THE HEIGHT OF LOOPER AND LOOSENING SCREW (B) FOR MOVING POSITION OF LOOPER.



### 7-2. SETTING THE TOP COVER THREAD GUIDE

- F. THESE MUST BE A CLEARANCE OF 0.5 mm BETWEEN THE BOTTOM OF THE TOP COVER THREAD GUIDE AND SPREADER AND WHEN SPREADER COMES TO THE EXTREME RIGHT, AND AT THIS POSITION, THE THREAD IS CAUGHT BY THREAD HOOKING PART PROPERLY. AND HANGING LOOSELY ON THE TOP COVER THREAD GUIDE.

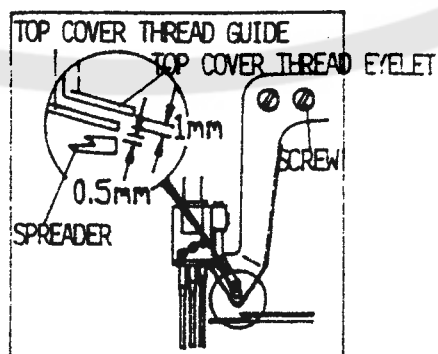


FIG. F

G. WHEN NEEDLE BAR AT THE LOWEST POSITION, THE CLEARANCE BETWEEN THE SURFACE OF TOP COVER THREAD GUIDE (A) AND THE UNDERSURFACE OF TOP COVER THREAD EYELET (B) IS 1.0 mm. SET THE THREAD HOLE OF TOP COVER THREAD EYELET ON THE CENTER LINE OF THE SLOT OF TOP COVER THREAD GUIDE, THEN TIGHTEN SCREW.

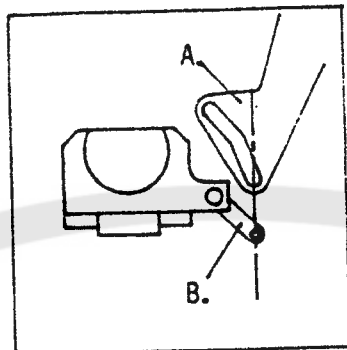
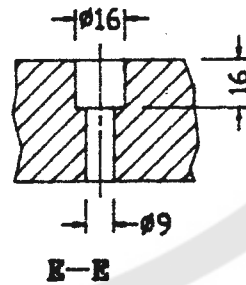
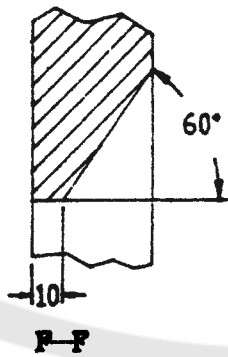
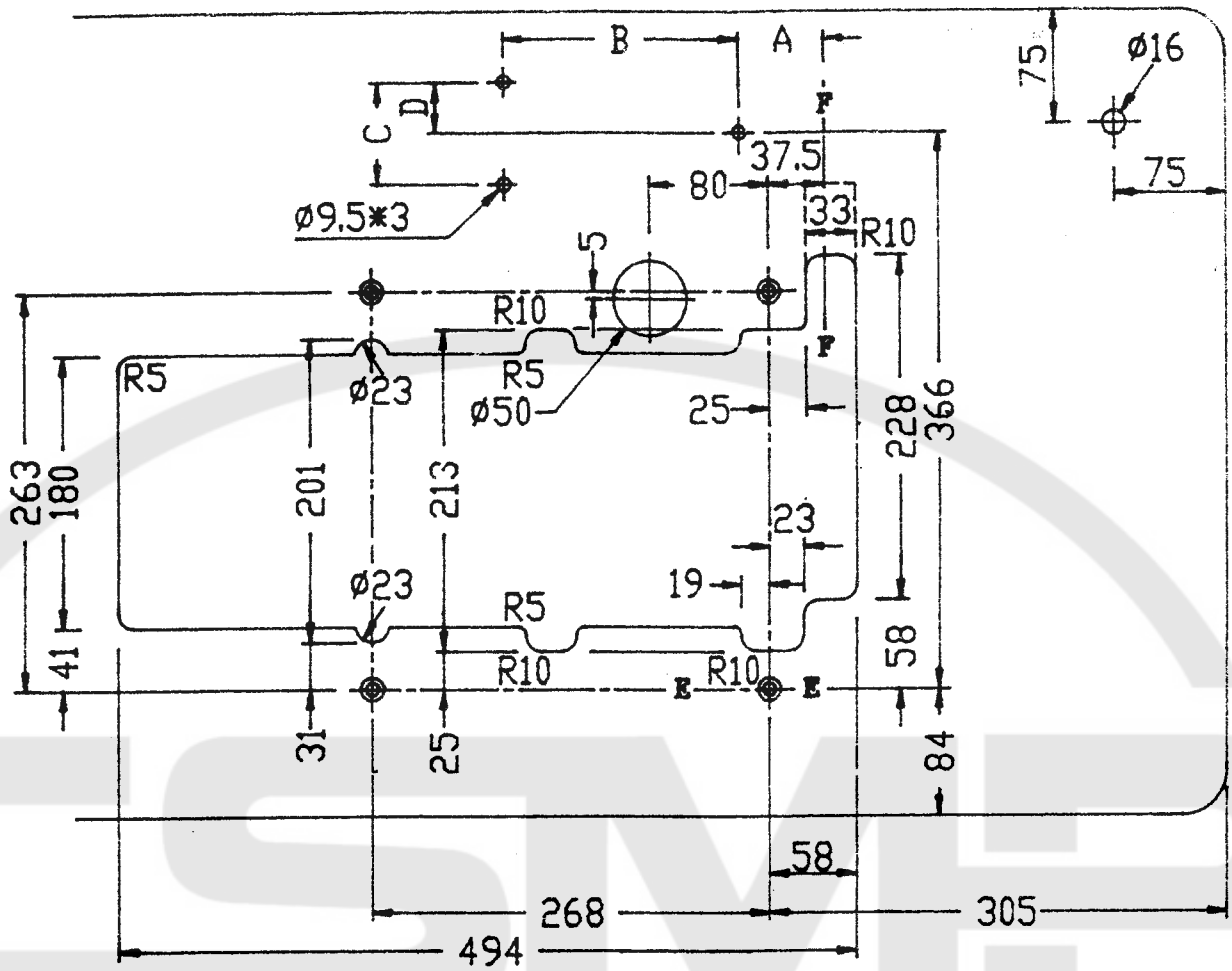


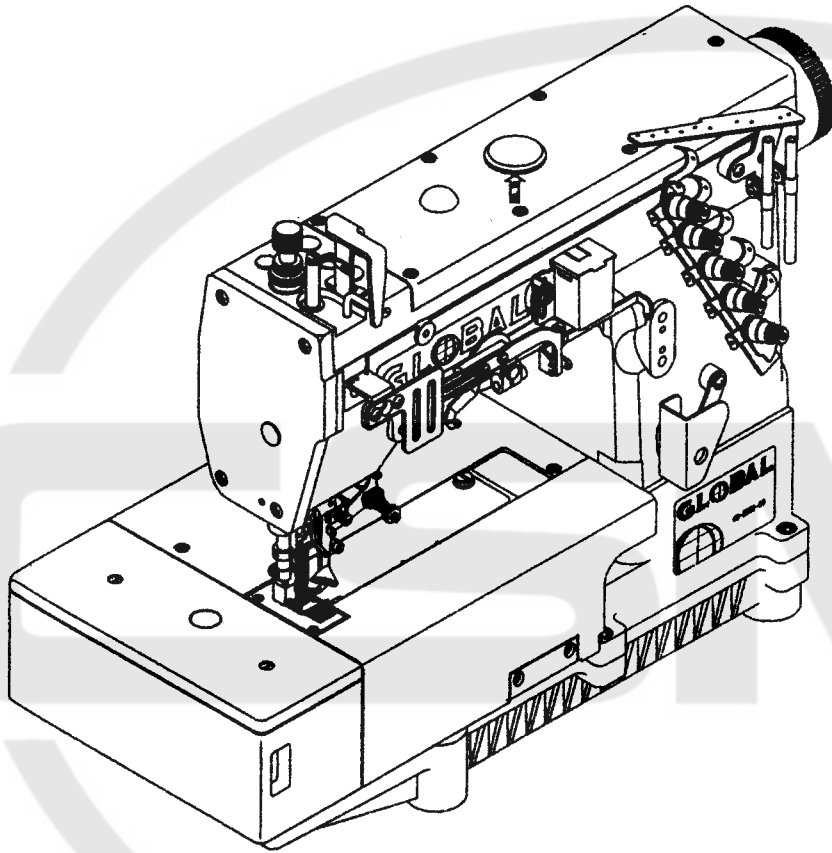
FIG. G

8. TABLE TOP CUT-OUT:





Ver. 2.0 2003.11  
NO. FT6301-1C-03-11



MODEL

**FB2502**

**FB2503**

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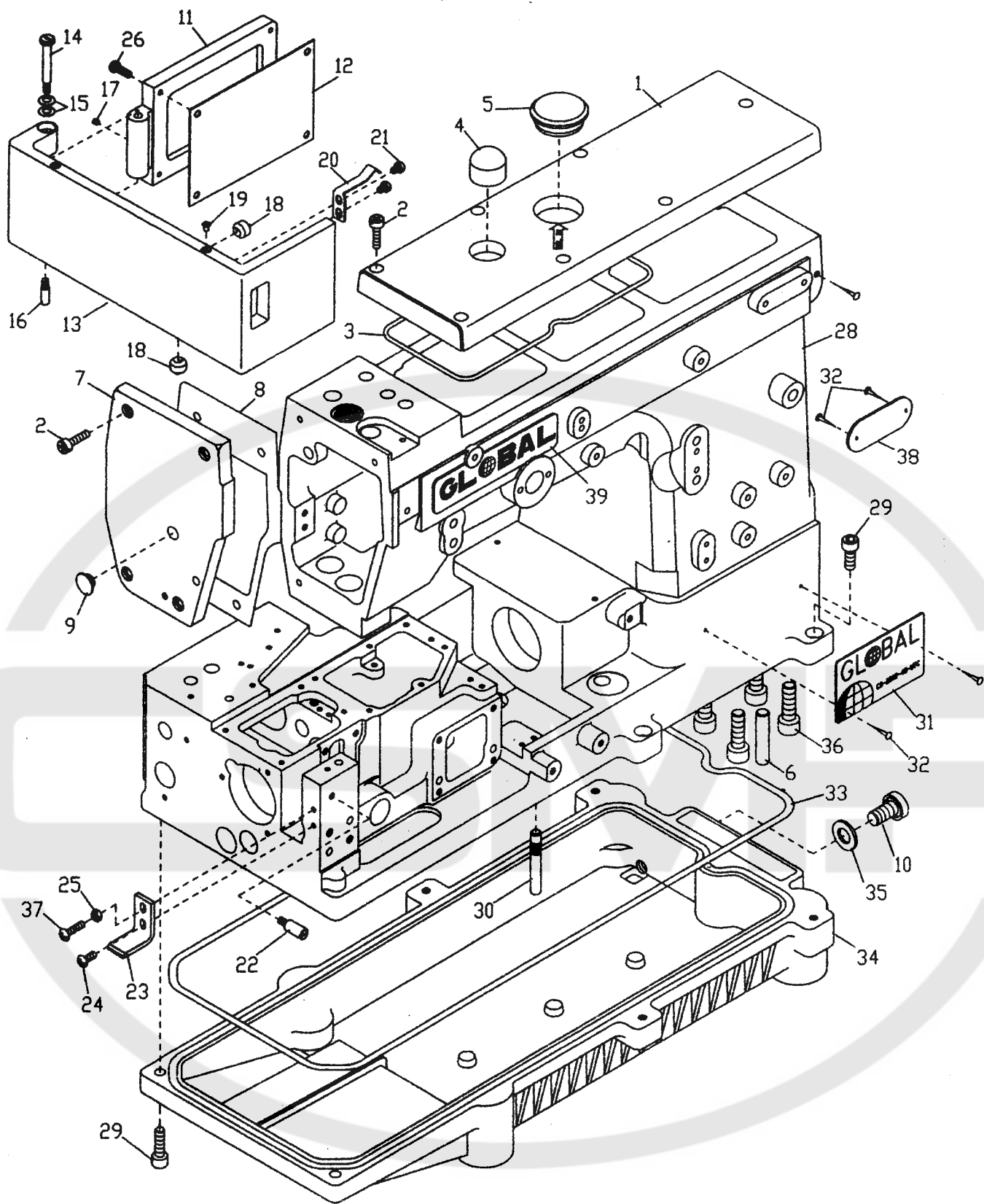
**HIGH SPEED FLAT BED  
INTERLOCK MACHINE**

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**PARTS LIST**

# CONTENTS

序號 Ref. No.	名稱 Description	頁次 Page No.
1	本體外裝零件 Frame Components (一) -----	1
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	導針與張力調整零件 Thread Tension Mechanism (FB2502) -----	7
4	軸襯與油封 Bushing And Oil Seal -----	9
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7	針棒與相關零件 Needle Bar Mechanism -----	15
8	壓腳與相關零件 Presser Foot Mechanism -----	17
9	裝飾線驅動機構 Spreader Mechanism (FB2502/FB2503 Only) -----	19
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13	潤滑系統 Lubrication Mechanism -----	27
14	66707 線架 Thread Stand Mechanism -----	29
15	裝載附件 Supporting Board -----	31
16	工具及附件 Accesseries -----	33



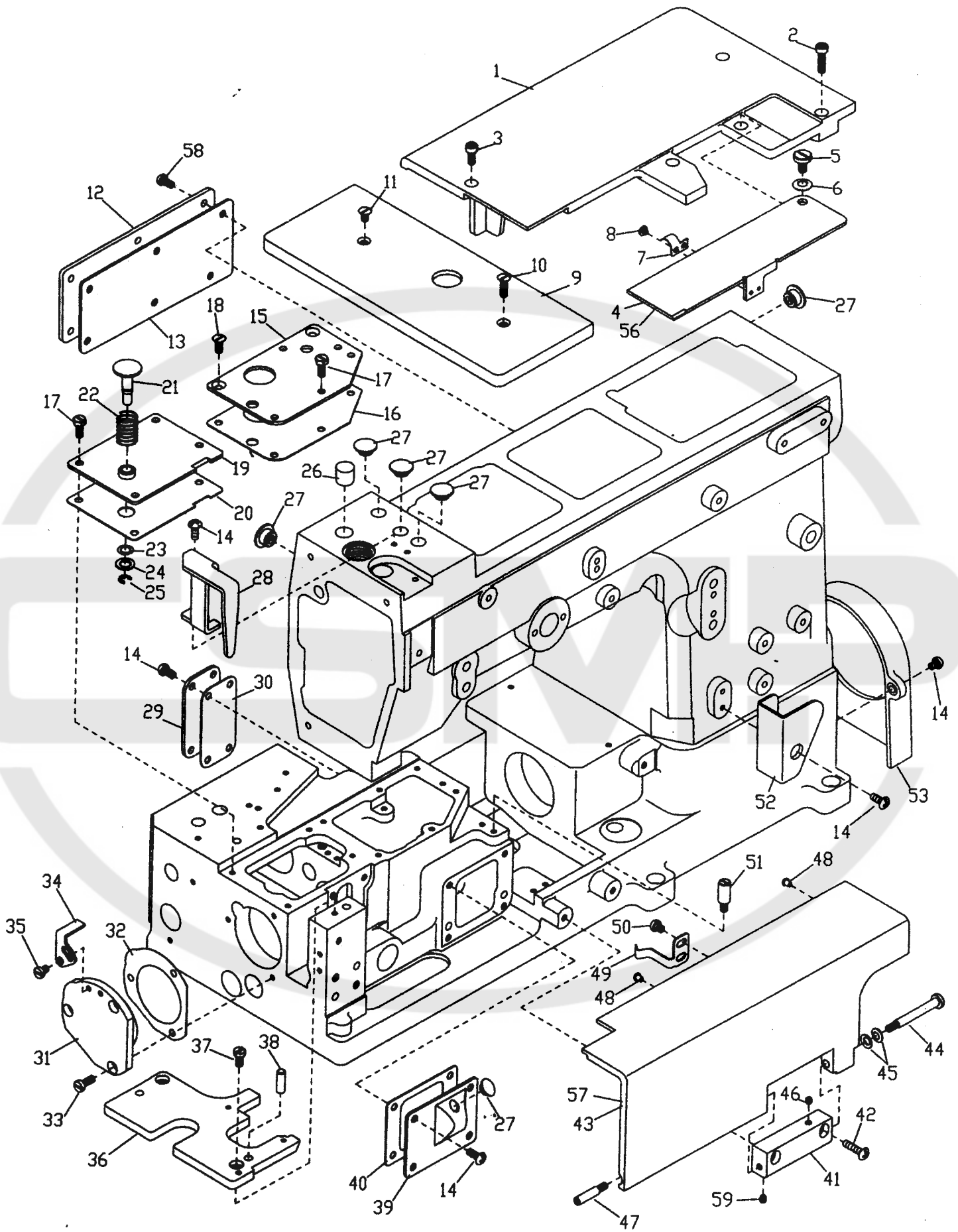
31. 車型銘板列表 Model Plate List

車型 MODEL	零件編號 PARTS NUM.
FB2502-40M	66474-6
FB2502-48M	66474-7
FB2502-56M	66474-8
FB2503-56M	66474-9
FB2556-64M	66474-10

# 1.本體與外裝零件 Frame Components(一)

序號 Ref. No.	物料編號 Parts No.	名稱 Description	單位用量 Amt.Req.
1	2200000101	上軸蓋 Top Cover -----	1
2	8MC04281407D	螺絲 Screw -----	11
3	2200000103	油封 Gasket -----	1
4	2200000104	油鏡 Oil Window -----	1
5	2200000105	孔塞 Plug -----	1
6	2200000139	定位銷 Knock Pin -----	2
7	2200000107	針棒蓋 Needle Cover -----	1
8	2200000108	油封 Gasket -----	1
9	2200000109	孔塞 Plug -----	1
10	8SM95281017A	螺樁 Stud -----	1
11	2210000111	封蓋 Oil Filter Cover -----	1
12	2210000112	油封 Gasket -----	1
13	2210000113	側蓋 Oil Filter Cover -----	1
14	8MB04283809E	螺樁 Stud -----	1
15	2200000228	孟形墊圈 Disk Washer -----	2
16	8MB04280605M	螺樁 Stud -----	1
17	8MN04280400A	螺絲 Screw -----	1
18	2210000118	減震橡膠 Rubber Cushion -----	2
19	2210000119	減震橡膠 Rubber Cushion -----	3
20	2210000120	夾簧 Latch Spring -----	1
21	8MC04280507D	螺絲 Screw -----	2
22	8MB04280707M	螺樁 Stud -----	1
23	2210000123	支架 Side Cover Holder -----	1
24	8MC04280807D	螺絲 Screw -----	4
25	8MA04280307A	螺帽 Nut -----	1
26	8MC04281407D	螺絲 Screw -----	4
27	2200000136	孔塞 Plug -----	1
28	2210000128	車頭 Frame Unit -----	1
29	8MM06402010A	螺絲 Screw -----	6
30	2210000130	下座腳樁 Supporting Bar -----	4
31	66474	車型銘板 Model Plate -----	1
32	66620	鉚釘 Rivet -----	5
33	2210000133	油封 Gasket -----	1
34	2210000134	油盤 Oil Reservoir -----	1
35	2100000244	油封 Seal -----	1
36	8MM10603016A	螺絲 Screw -----	4
37	8MB04281607A	螺絲 Screw -----	1
38	66474-11	機器號碼牌 Machine No. Plate -----	1
39		銘板 Name Plate -----	1



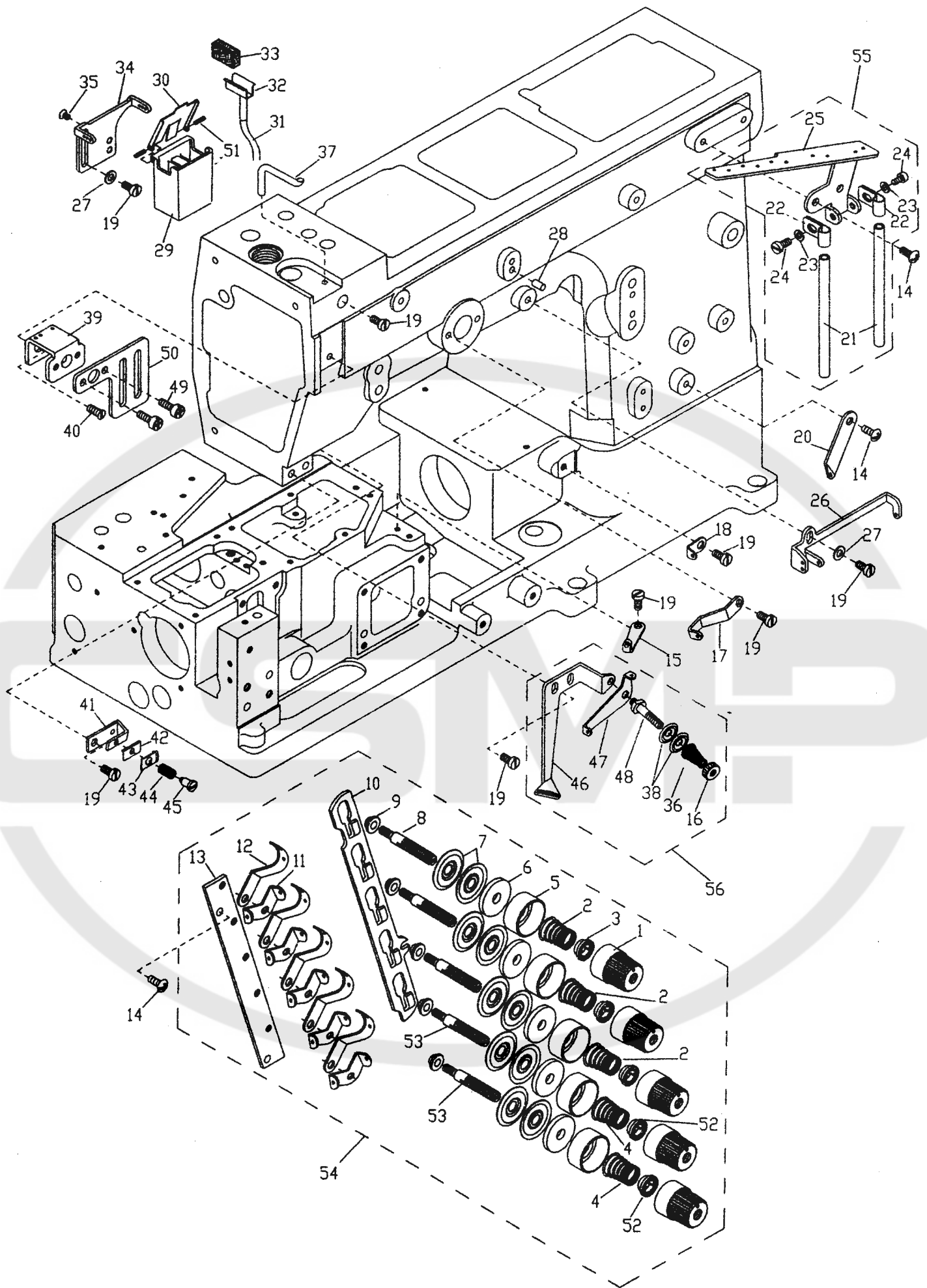


## 2.本體與外裝零件 Frame Components (二)

序號 Ref. No.	物料編號 Parts No.	名稱 Description	單位用量 Amt.Req.
1	2210000201	封蓋 Rear Cover -----	1
2	8MM04281607A	螺絲 Screw -----	3
3	8MM04281007A	螺絲 Screw -----	1
*4	2210000204	護線蓋 Cloth Plate -----	1
5	8MB95301011G	螺樁 Stud -----	1
6	2200001137	盂形墊圈 Disk Washer -----	2
7	2210000207	夾簧 Latch Spring -----	1
8	8MB03200306A	螺絲 Screw -----	2
9	2210000209	左布板 Cloth Plate -----	1
10	8ME04281408A	螺絲 Screw -----	1
11	8ME04280708A	螺絲 Screw -----	1
12	2200000210	封蓋 Rear Cover -----	1
13	2200000209	油封 Gasket -----	1
14	8MC04280807D	螺絲 Screw -----	13
15	2210000215	封蓋 Oil Filter Cover -----	1
16	2210000216	油封 Gasket -----	1
17	8MK04281007A	螺絲 Screw -----	8
18	8ME04281008A	螺絲 Screw -----	2
19	2210000219	封蓋 Oil Filter Cover -----	1
20	2210000220	油封 Gasket -----	1
21	2210000221	止動銷 Stopper Pin -----	1
22	2210000222	彈簧 Spring -----	1
23	90OR060	油環 OIL Rin -----	1
24	2200000910	墊圈 Washer -----	1
25	90ER040	E形扣環 E Ring -----	1
26	2200000208	孔塞 Plug -----	1
27	2210000227	孔塞 Plug -----	6
28	2200000212	針棒護蓋 Needle Bar Protector -----	1
29	2210000229	封蓋 Oil Filter Cover -----	1
30	2210000230	油封 Gasket -----	1
31	2210000231	軸承座 Crankshaft Bushing -----	1
32	2210000232	油封 Gasket -----	1
33	8MB04281007K	螺絲 Screw -----	3
34	2210000234	止動鉤 Pushbutton Stop -----	1
35	8MB04280507K	螺絲 Screw -----	2
36	2210000236	針板座 Needle Plate Seat -----	1
37	8MB04280807K	螺絲 Screw -----	2
38	2210000238	定位銷 Knock Pin -----	2
39	2210000239	封蓋 Oil Filter Cover -----	1
40	2210000240	油封 Gasket -----	1
41	2200000224	絞鏈 Hinge -----	1
42	8MC04281407D	螺絲 Screw -----	2
*43	2210000243	下座前蓋 Front Cover -----	1
44	8MB04284209E	螺樁 Stud -----	1
45	2200000228	盂形墊圈 Disk Washer -----	2
46	8MN04280400A	螺絲 Screw -----	1
47	8MB04280705M	螺樁 Stud -----	1
48	2210000119	減震橡膠 Rubber Cushion -----	2
49	2210000249	夾簧 Latch Spring -----	1
50	8MC04280507D	螺絲 Screw -----	2
51	8MB04280707M	螺樁 Stud -----	1
52	2200000243	底線護蓋 Thread Protect Plate -----	1
53	2210000253	冷卻風扇護蓋 Oil Cooling Fan Cuard -----	1
54	-----	-----	-
55	-----	-----	-
**56	2210000256	護線蓋 Cloth Plate -----	1
**57	2210000257	下座前蓋 Front Cover -----	1
58	8MC04281007D	螺絲 Screw -----	6
59	8MN04280600C	螺絲 Screw -----	1

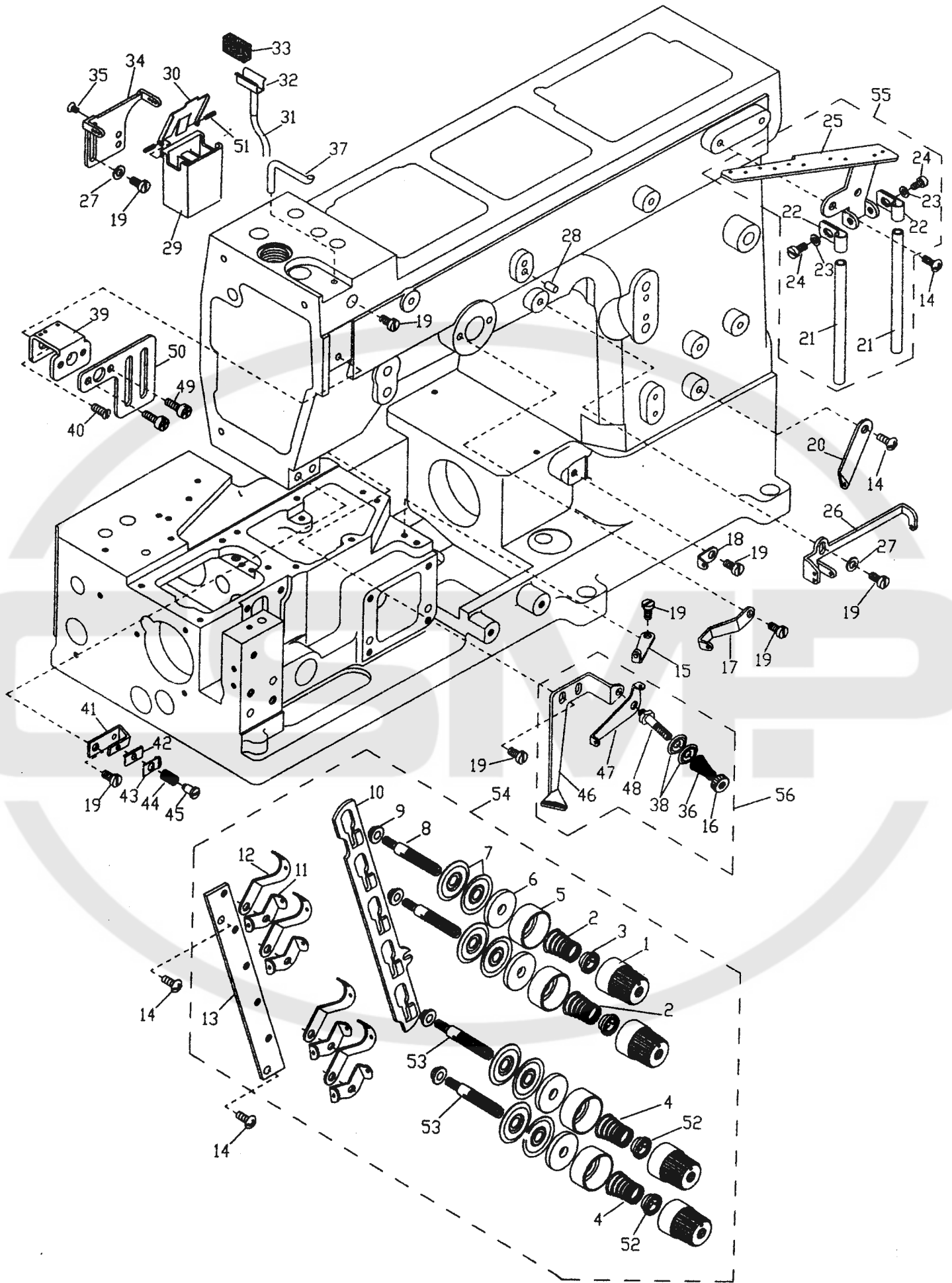
\* : 40M,48M,56M 用 For 40M,48M,56M

\*\* : 64M 用 For 64M



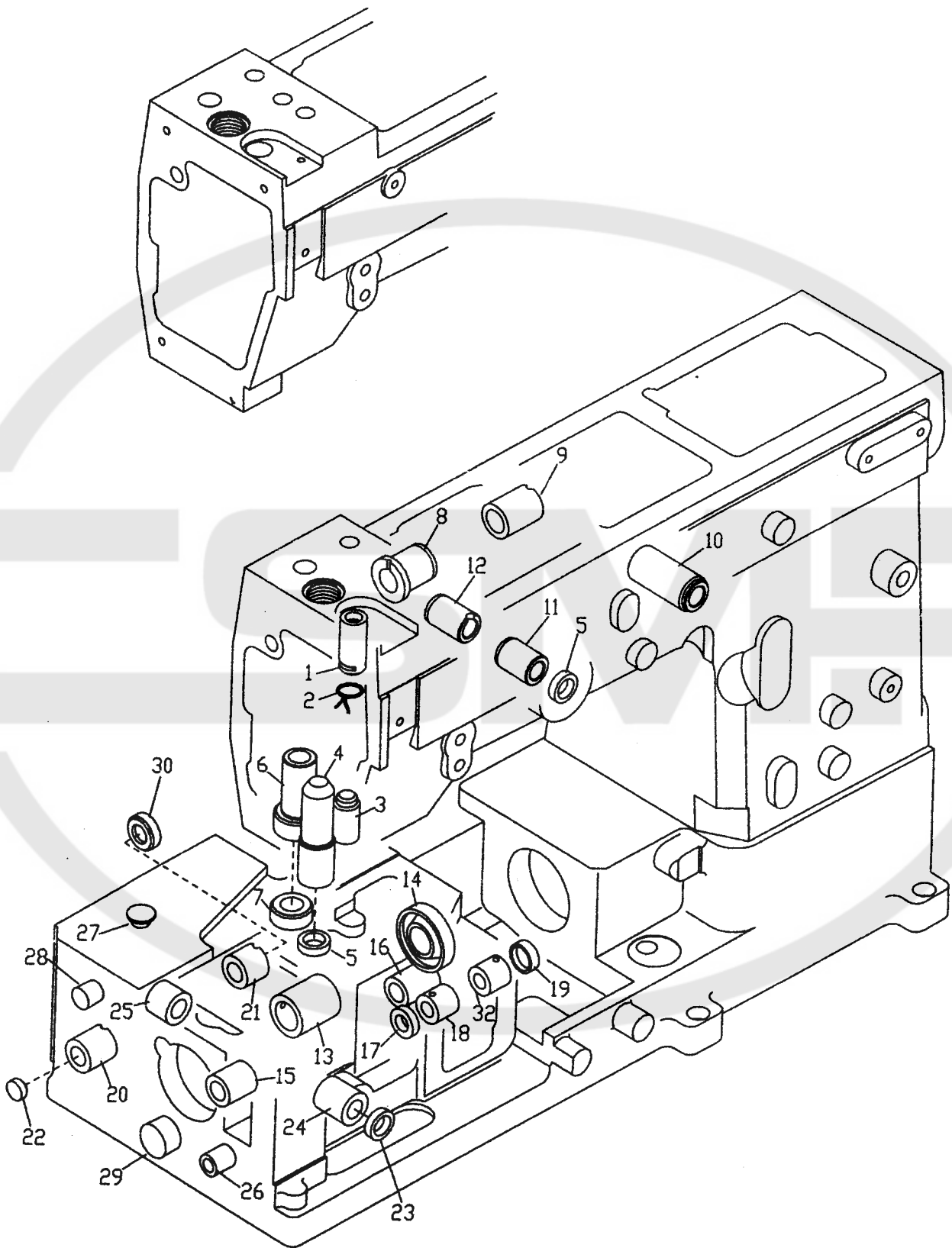
### 3. 導針與張力調整零件(FB2503用) Thread Guide And Tension Components (For FB2503)

序號 Ref. No.	物料編號 Parts No.	名稱 Description	單位用量 Amt. Req.
1	2100001121	張力調整螺帽 Tension Nut	5
2	2100001123	彈簧 Spring (Red)	3
3	2200000303	套管 Bushing	3
4	2100001132	彈簧 Spring (Yellow)	2
5	2200000305	彈簧座 Spring Seat	5
6	2100001127	羊毛氈 Felt	5
7	2100001126	張力控制盤 Tension Disc	10
8	2200000308	螺樁 Stud	3
9	2200000309	隔環 Spacer	5
10	2200000310	鬆線滑板 Release Wedge	1
11	2200000311	導線 Thread Guide	5
12	2200000312	導線 Thread Guide	5
13	2200000313	張力控制組座 Tension Post Support	1
14	8MC04280807D	螺絲 Screw	5
15	2210000315	導線 Thread Guide	1
16	2200000357	螺帽 Nut	1
17	2210000317	導線 Thread Guide	1
18	2210000318	導線 Thread Guide	1
19	8MB04280807K	螺絲 Screw	9
20	2200000317	導線 Thread Guide	1
21	2200000327	導線管 Thread Guide Pipe	2
22	2100051110	導線管夾 Thread Guide Pipe Clamp	2
23	2100000223	墊圈 Washer	2
24	8MB04280807K	螺絲 Screw	2
25	2200000331	導線架 Thread Guide Plate	1
26	2210000326	導線 Thread Guide	1
27	2100000223	墊圈 Washer	2
28	90ST0410	定位銷 Knock Pin	1
29	2200000335	油杯 Cooler Oil Tank	1
30	2200000336	油杯蓋 Cooler Oil Tank Cover	1
31	66800	油線 Oil Wick	1
32	2200000338	線夾 Wick Clamp	1
33	2200000339	羊毛氈 Felt	1
34	2200000340	導線 Thread Guide	1
35	8ME03200506A	螺絲 Screw	2
36	2200000356	彈簧 Spring	1
37	2200000343	導線 Thread Guide	1
38	2200000355	張力控制盤 Tension Disc	2
39	2200000345	導線 Thread Guide	1
40	8ME04280708A	螺絲 Screw	1
41	2200000347	張力控制組座 Thread Retainer Support	1
42	2200000348	針線控制板 Thread Guide Plate	1
43	2200000349	針線控制壓板 Tension Control plate	1
44	2200000350	彈簧 Spring	1
45	8MC03200807G	螺樁 Stud	1
46	2210000346	導線 Thread Guide	1
47	2200000353	導線 Thread Guide	1
48	2200000354	螺樁 Stud	1
49	8MC04280507D	螺絲 Screw	2
50	2200000359	揚線臂護線罩 Takeup Arm Protect	1
51	90SP0206	彈簧銷 Spring Pin	2
52	2100001122	套管 Bushing	2
53	2200000361	螺樁 Stud	2
54	220A0000363	鬆線組 Thread Tension Mechanism Asm.	1
55	220A0000364	鬆線組 Thread Tension Mechanism Asm.	1
56	221A0000356	鬆線組 Thread Tension Mechanism Asm.	1



### 3.導針與張力調整零件(FB2502用) Thread Guide And Tension Components (For FB2502)

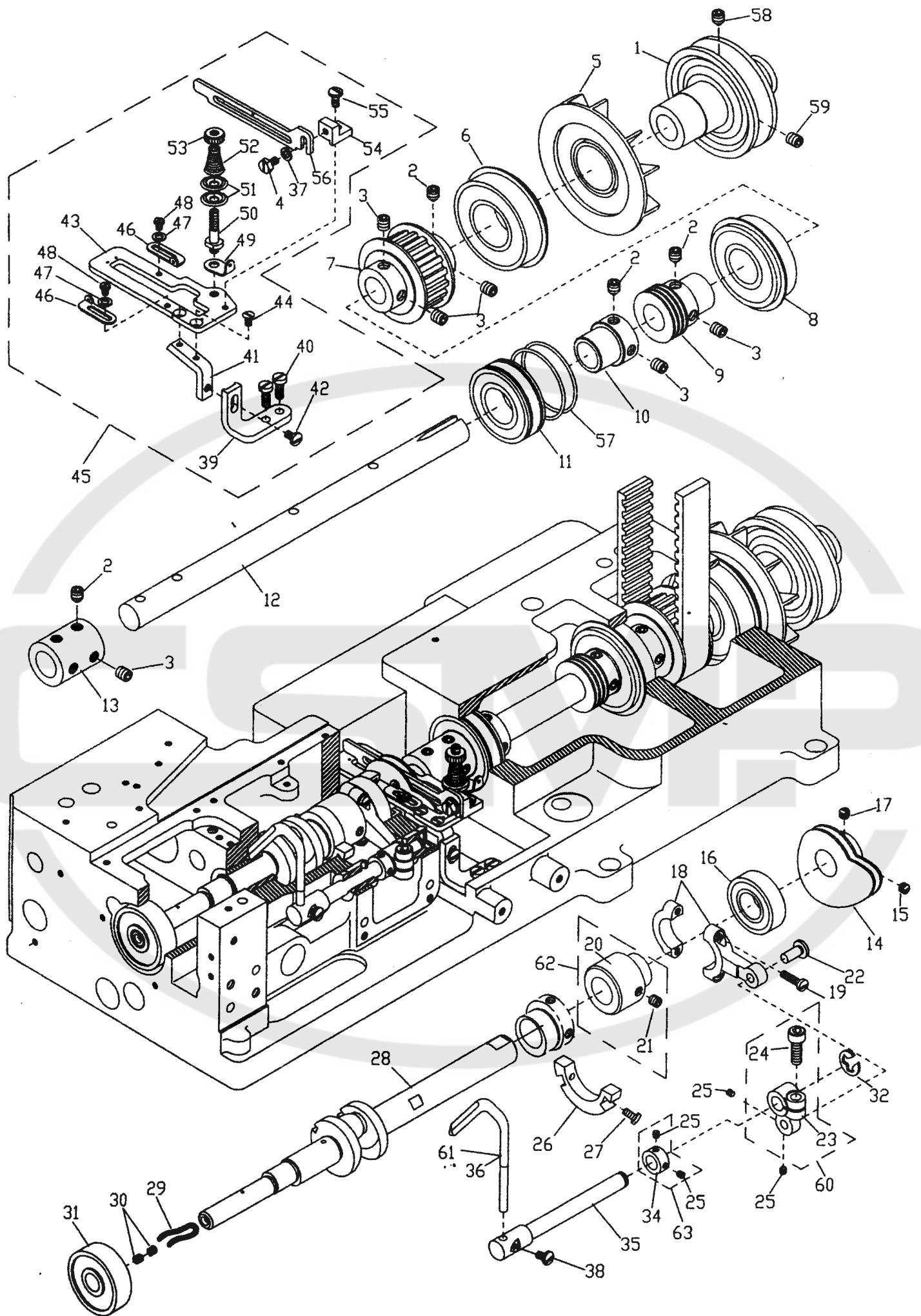
序號 Ref. No.	物料編號 Parts No.	名稱 Description	單位用量 Amt.Req.
1	2100001121	張力調整螺帽 Tension Nut	4
2	2100001123	彈簧 Spring (Red)	2
3	2200000303	套管 Bushing	2
4	2100001132	彈簧 Spring (Yellow)	2
5	2200000305	彈簧座 Spring Seat	4
6	2100001127	羊毛氈 Felt	4
7	2100001126	張力控制盤 Tension Disc	8
8	2200000308	螺樁 Stud	2
9	2200000309	隔環 Spacer	4
10	2200000310	鬆線滑板 Release Wedge	1
11	2200000311	導線 Thread Guide	4
12	2200000312	導線 Thread Guide	4
13	2200000313	張力控制組座 Tension Post Support	1
14	8MC04280807D	螺絲 Screw	5
15	2210000315	導線 Thread Guide	1
16	2200000357	螺帽 Nut	1
17	2210000317	導線 Thread Guide	1
18	2210000318	導線 Thread Guide	1
19	8MB04280807K	螺絲 Screw	9
20	2200000317	導線 Thread Guide	1
21	2200000327	導線管 Thread Guide Pipe	2
22	2100051110	導線管夾 Thread Guide Pipe Clamp	2
23	2100000223	墊圈 Washer	2
24	8MB04280807K	螺絲 Screw	2
25	2200000331	導線架 Thread Guide Plate	1
26	2210000326	導線 Thread Guide	1
27	2100000223	墊圈 Washer	2
28	90ST0410	定位銷 Knock Pin	1
29	2200000335	油杯 Cooler Oil Tank	1
30	2200000336	油杯蓋 Cooler Oil Tank Cover	1
31	66800	油線 Oil Wick	1
32	2200000338	線夾 Wick Clamp	1
33	2200000339	羊毛氈 Felt	1
34	2200000340	導線 Thread Guide	1
35	8ME03200506A	螺絲 Screw	2
36	2200000356	彈簧 Spring	1
37	2200000343	導線 Thread Guide	1
38	2200000355	張力控制盤 Tension Disc	2
39	2200000345	導線 Thread Guide	1
40	8ME04280708A	螺絲 Screw	1
41	2200000347	張力控制組座 Thread Retainer Support	1
42	2200000348	針線控制板 Thread Guide Plate	1
43	2200000349	針線控制壓板 Tension Control plate	1
44	2200000350	彈簧 Spring	1
45	8MC03200807G	螺樁 Stud	1
46	2210000346	導線 Thread Guide	1
47	2200000353	導線 Thread Guide	1
48	2200000354	螺樁 Stud	1
49	8MC04280507D	螺絲 Screw	2
50	2200000359	揚線臂護線罩 Takeup Arm Protect	1
51	90SP0206	彈簧銷 Spring Pin	2
52	2100001122	套管 Bushing	2
53	2200000361	螺樁 Stud	2
54	220A00003632	鬆線組 Thread Tension Mechanism Asm.	1
55	220A0000364	鬆線組 Thread Tension Mechanism Asm.	1
56	221A0000356	鬆線組 Thread Tension Mechanism Asm.	1



#### 4.軸襯與油封 Bushing And Seal

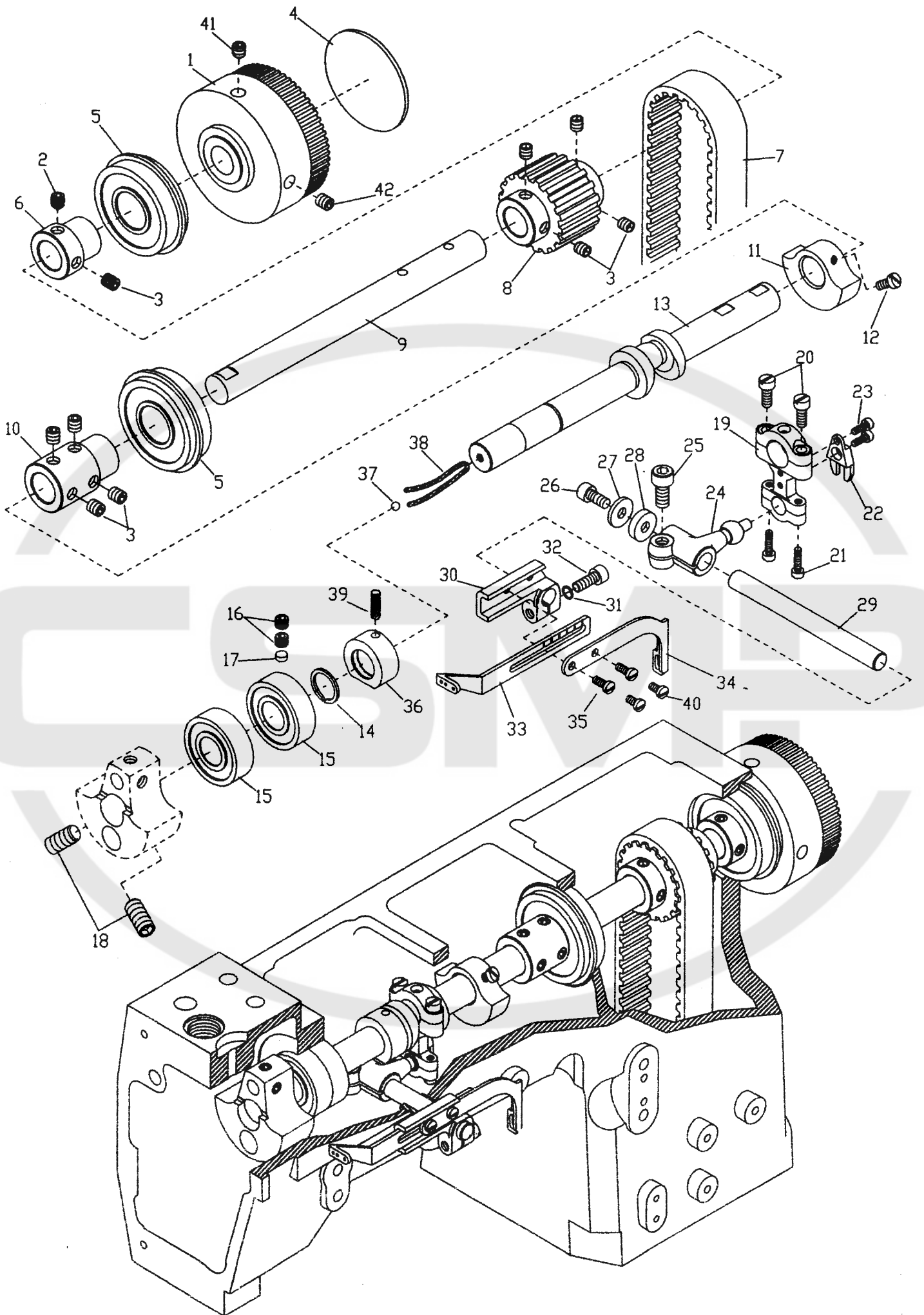
序號 Ref. No.	物料編號 Parts No.	名稱 Description	單位用量 Amt.Req.
1	2210000401	軸襯 Bushing -----	1
2	66800	油線 Oil Wick -----	1
3	2210000403	軸襯 Bushing -----	1
4	2210000404	軸襯 Bushing -----	1
5	2200000404	油封 Oil Seal -----	1
6	2200000405	軸襯 Bushing -----	1
7	2200000406	油封 Oil Seal -----	1
8	2210000408	軸襯 Bushing -----	1
9	2200000408	軸襯 Bushing -----	1
10	2200000409	軸襯 Bushing -----	1
11	2200000410	軸襯 Bushing -----	1
12	2200000411	軸襯 Bushing -----	1
13	2210000413	軸襯 Bushing -----	1
14	2210000414	油封 Oil Seal -----	1
15	2210000415	軸襯 Bushing -----	1
16	2210000416	軸襯 Bushing -----	1
17	2210000417	油封 Oil Seal -----	1
18	2210000418	軸襯 Bushing (Left) -----	1
19	2210000419	孔塞 Plug -----	1
20	2210000420	軸襯 Bushing -----	1
21	2210000421	軸襯 Bushing -----	1
22	2210000422	孔塞 Plug -----	1
23	2210000423	油封 Oil Seal -----	1
24	2210000424	軸襯 Bushing -----	1
25	2210000425	軸襯 Bushing -----	1
26	2210000426	軸襯 Bushing -----	1
27	2200000109	孔塞 Plug -----	1
28	2200000208	孔塞 Plug -----	1
29	2210000429	孔塞 Plug -----	1
30	2210000430	孔塞 Plug -----	1
31	-----	-----	1
32	2210000432	軸襯 Bushing (Right) -----	1





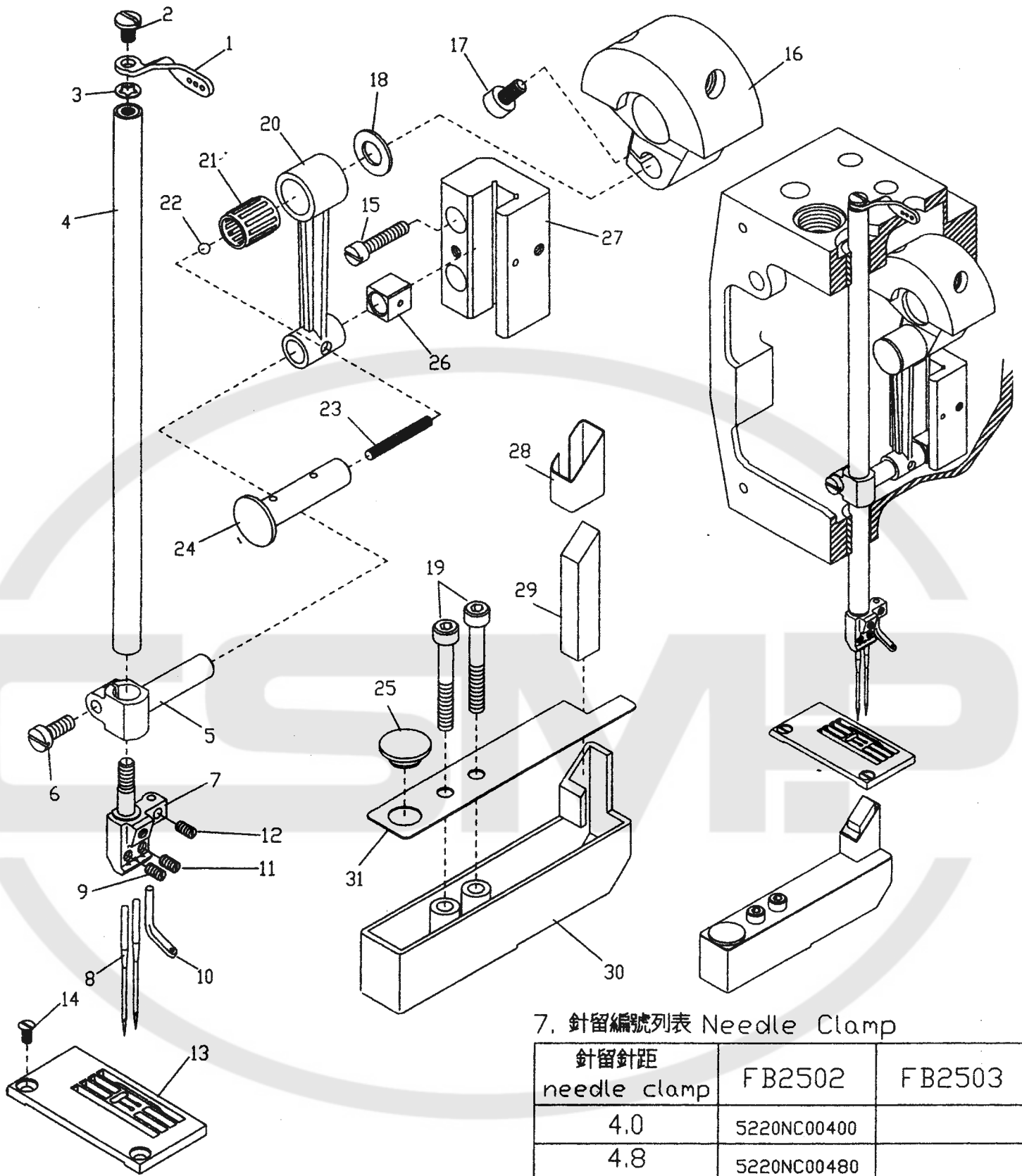
## 5. 下軸與相關零件 Lower Main Shaft Components

序號 Ref. No.	物料編號 Parts No.	名稱 Description	單位用量 Amt. Req.
1	2210000501	皮帶輪 Belt Pully	1
2	8MN06400800C	螺絲 Screw	5
3	8MN06400600A	螺絲 Screw	9
4	8MK85240607A	螺絲 Screw	1
5	2210000505	冷卻風扇 Oil Cooling Fan	1
6	90BB2552154	滾珠軸承 Ball Bearing	1
7	2200000505	齒形皮帶輪 Timing Pulley	1
8	90BB2047144	滾珠軸承 Ball Bearing	1
9	2210000509	蝸桿 Worm	1
10	2200000606	套管 Bushing	1
11	90BB2042126	滾珠軸承 Ball Bearing	1
12	2210000512	軸 Shaft	1
13	2210000513	連軸器 Shaft Joint	1
14	2210000514	揚線凸輪 Looper Thread Takeup Cam	1
15	8MH05320400A	螺絲 Screw	1
16	90BB153209	滾珠軸承 Ball Bearing	1
17	8MH05320400A	螺絲 Screw	1
18	2210000518	連桿 Connecting Rod	1
19	8MB85241306K	螺絲 Screw	2
20	2210000520	偏心輪 Eccentric	1
21	8MN05320500E	螺絲 Screw	2
22	2210000522	連結銷 Connecting Pin	1
23	2210000523	曲柄 Lever	1
24	8MM05321209A	螺絲 Screw	1
25	8MN03200300A	螺絲 Screw	4
26	2210000526	配重環 Counterweight	1
27	8MB03200606K	螺絲 Screw	2
28	2210000528	曲軸 Crank Shaft	1
29	66800	油線 Oil Wick	2
30	8MN04280400A	螺絲 Screw	2
31	90BB103511	滾珠軸承 Ball Bearing	1
32	90ER060	E形扣環 E Ring	1
33	-----	-----	-
34	2210000534	定位環 Collar	1
35	2210000535	後導針器驅動軸 Driving Shaft	1
36	5221NG00560	後導針器 Needle Guide	1
37	2100000223	墊圈 Washer	1
38	8MB85240407A	螺絲 Screw	1
39	2210000539	支架 Support	1
40	8MB04280807K	螺絲 Screw	2
41	2210000541	承扳支臂 Support	1
42	8MB04280807K	螺絲 Screw	1
43	2210000543	導線承板 Thread Guide Seat	1
44	8ME03200606A	螺絲 Screw	2
45	221A0000545	導線組 Thread Guide Asm.	1
46	2210000546	導線 Thread Guide	2
47	2210000547	墊圈 Washer	2
48	8MB03200405A	螺絲 Screw	2
49	2210000318	導線 Thread Guide	1
50	2200000354	螺樁 Stud	1
51	2200000355	張力控制盤 Tension Disc	2
52	2200000356	錐形彈簧 Spring	1
53	2200000357	螺帽 Nut	1
54	2210000554	支架 Support	1
55	8MB85240807K	螺絲 Screw	1
56	2210000556	導線 Thread Guide	1
57	2200000547	O形油環 O Ring	2
58	8MN06401100C	螺絲 Screw	1
59	8MN06400800A	螺絲 Screw	1
60	221A0000560	曲柄組 Collar Asm.	1
61	5221NG00562	後導針器 Needle Guide	1
62	221A0000562	偏心輪組 Eccentric Asm.	1
63	221A0000563	定位環組 Collar Asm.	1



## 6.上軸與相關零件 Upper Main Shaft Components

序號 Ref. No.	物料編號 Parts No.	名稱 Description	單位用量 Amt.Req.
1	2210000601	手輪 Handwheel -----	1
2	8MN06400800C	螺絲 Screw -----	2
3	8MN06400600A	螺絲 Screw -----	9
4	2210000604	軸端封蓋 Cover -----	1
5	90BB2047144	滾珠軸承 Ball Bearing -----	2
6	2200000606	套管接頭 Joint -----	1
7	2200000607	齒形皮帶 Timeing Belt -----	1
8	2200000608	齒形皮帶輪 Timeing Pulley -----	1
9	2200000609	軸 Shaft -----	1
10	2200000610	套管接頭 Joint -----	1
11	2200000509	平衡錘 Balance Weight -----	1
12	8MB04280807K	螺絲 Screw -----	2
13	2210000613	曲軸 Crank Shaft -----	1
14	90SCR150	C形軸用扣環 C Ring -----	1
15	90BB1535115	滾珠軸承 Ball Bearing -----	2
16	8MN06400500A	螺絲 Screw -----	2
17	2200000617	墊片 Rubber Seat -----	1
18	8MN08401600E	螺絲 Screw -----	2
19	2200000619	連桿 Connecting Rod -----	1
20	8MB95301407K	螺絲 Screw -----	2
21	8MB85241006K	螺絲 Screw -----	2
22	2200000622	定向導軌 Orient Guide -----	1
23	8MB03200806K	螺絲 Screw -----	2
24	2200000624	曲柄 Ball Lever -----	1
25	8MM06401610A	螺絲 Screw -----	1
26	8MM05321009A	螺絲 Screw -----	1
27	2200000627	墊圈 Washer -----	1
28	2200000628	隔環 Spacer -----	1
29	2200000629	軸 Shaft -----	1
30	2200000630	承座 Bracket -----	1
31	90SW050	彈簧墊圈 Spring Washer -----	1
32	8MM05321409A	螺絲 Screw -----	1
33	2200000633	針線揚線桿 Thread Take-up -----	1
34	2210000634	裝飾線揚線桿 Thread Take-up -----	1
35	8MB85240806K	螺絲 Screw -----	2
36	2210000636	聚油環 Oil Sleeve -----	1
37	2100001404	孔塞 Plug -----	1
38	66800	油線 Oil Wick -----	1
39	66800	油線 Oil Wick -----	1
40	-----	-----	2
41	8MN06401100C	螺絲 Screw -----	1
42	8MN06400800A	螺絲 Screw -----	1



13. 針板編號列表 Needle Plate

針板針距 thread plate	FB2502	FB2503
4.0	5220TP00400	
4.8	5220TP00480	
5.6	5220TP00561	5220TP00561
6.4		5220TP00641

7. 針留編號列表 Needle Clamp

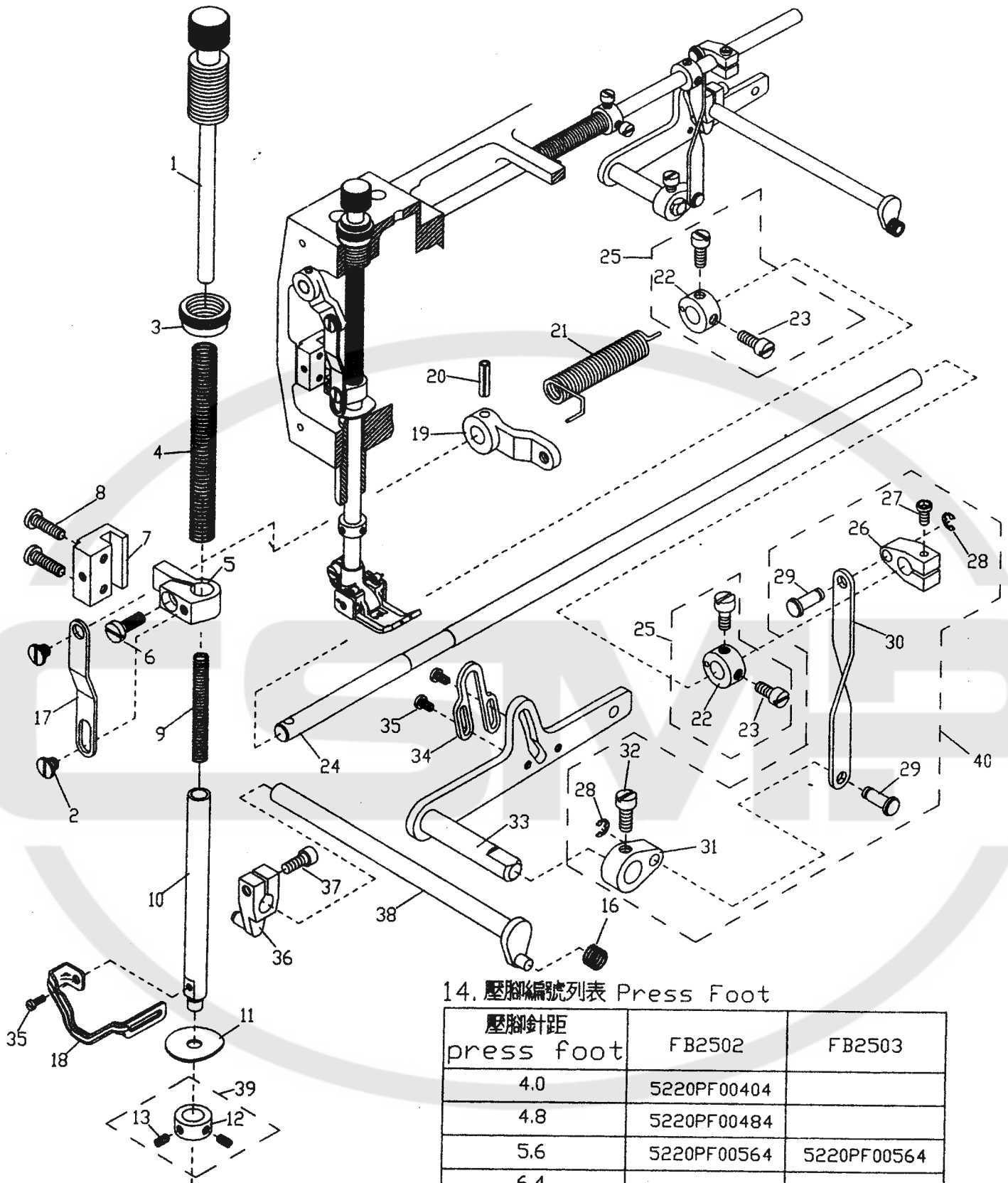
針留針距 needle clamp	FB2502	FB2503
4.0	5220NC00400	
4.8	5220NC00480	
5.6	5220NC00561	
6.4		5220NC00641

8. 縫針用量列表 Needle Req.

針號 UY128GAS	FB2502	FB2503
數量 Amt. Req.	2	3

## 7.針棒與相關零件 Needle Bar Components

序號 Ref. No.	物料編號 Parts No.	名稱 Description	單位用量 Amt.Req.
1	2210000701	導線 Thread Guide -----	1
2	8MB85240607K	螺絲 Screw -----	1
3	2200000704	墊圈 Washer -----	1
4	2210000704	針棒 Needle Bar -----	1
5	2210000705	針棒驅動銷 Needle Bar Clamp -----	1
6	8MB95301107K	螺絲 Screw -----	1
7	-----	針留 Needle clamp -----	1
8	-----	針 Needle -----	-
9	8SH32440300A	螺絲 Screw -----	1
*10	2210000710	導線 Thread Guide -----	1
11	8SH32440300A	螺絲 Screw -----	1
12	8SH32440300A	螺絲 Screw -----	1
13	-----	針板 Needle Plate -----	1
14	8SF36400706C	螺絲 Screw -----	2
15	8MB04281607A	螺絲 Screw -----	2
16	2210000716	平衡錘 Balance Weight -----	1
17	8MM05321209A	螺絲 Screw -----	1
18	2200000716	墊圈 Washer -----	1
19	8MM04282507B	螺絲 Screw -----	2
20	2210000720	連桿 Connecting Rod -----	1
21	90NB081113	滾針軸承 Ball Bearing -----	1
22	2100001404	孔塞 Plug -----	1
23	66800	油線 Oil Wick -----	1
24	2210000724	曲柄銷 Rod Pin -----	1
25	2200000109	孔塞 Plug -----	1
26	2200000722	滑塊 Slide Block -----	1
27	2210000727	滑道 Guide Block -----	1
28	2210000728	羊毛氈扣環 Felt Guard -----	1
29	2210000729	羊毛氈 Felt -----	1
30	2210000730	冷卻油槽 Cooler Oil Tank -----	1
31	2210000731	冷卻油槽蓋 Cooler Oil Tank Cover -----	1

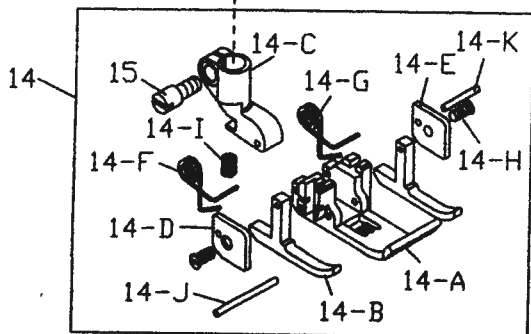


14. 壓腳編號列表 Press Foot

壓腳針距 press foot	FB2502	FB2503
4.0	5220PF00404	
4.8	5220PF00484	
5.6	5220PF00564	5220PF00564
6.4		5220PF00644

14-9. 壓腳底編號列表 Press Foot Guide

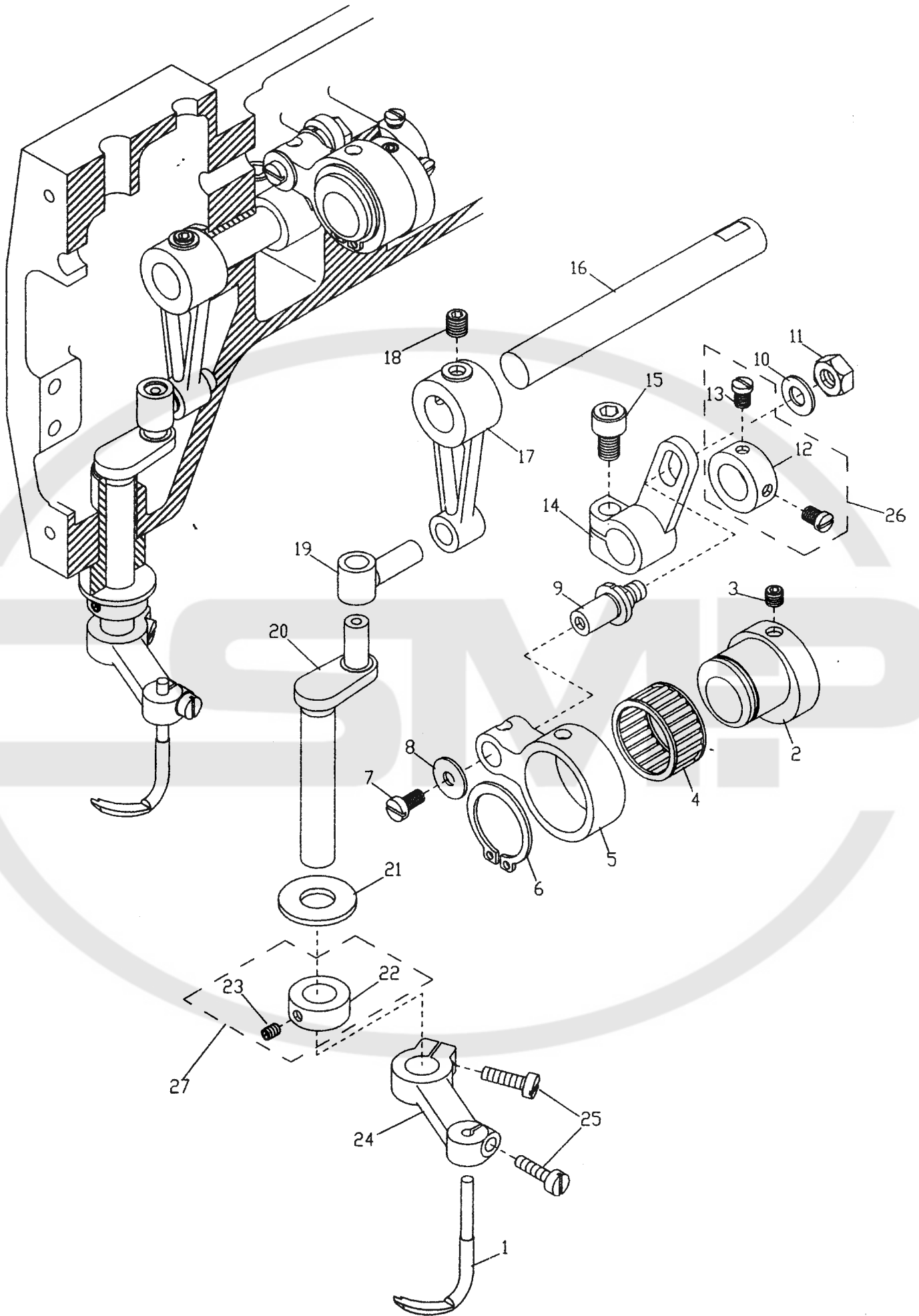
壓腳針距 press foot	FB2502	FB2503
4.0	5220PF00401A	
4.8	5220PF00481A	
5.6	5220PF00561A	5220PF00561A
6.4	5220PF00641A	5220PF00641A



## 8.壓腳與相關零件 Presser Foot Components

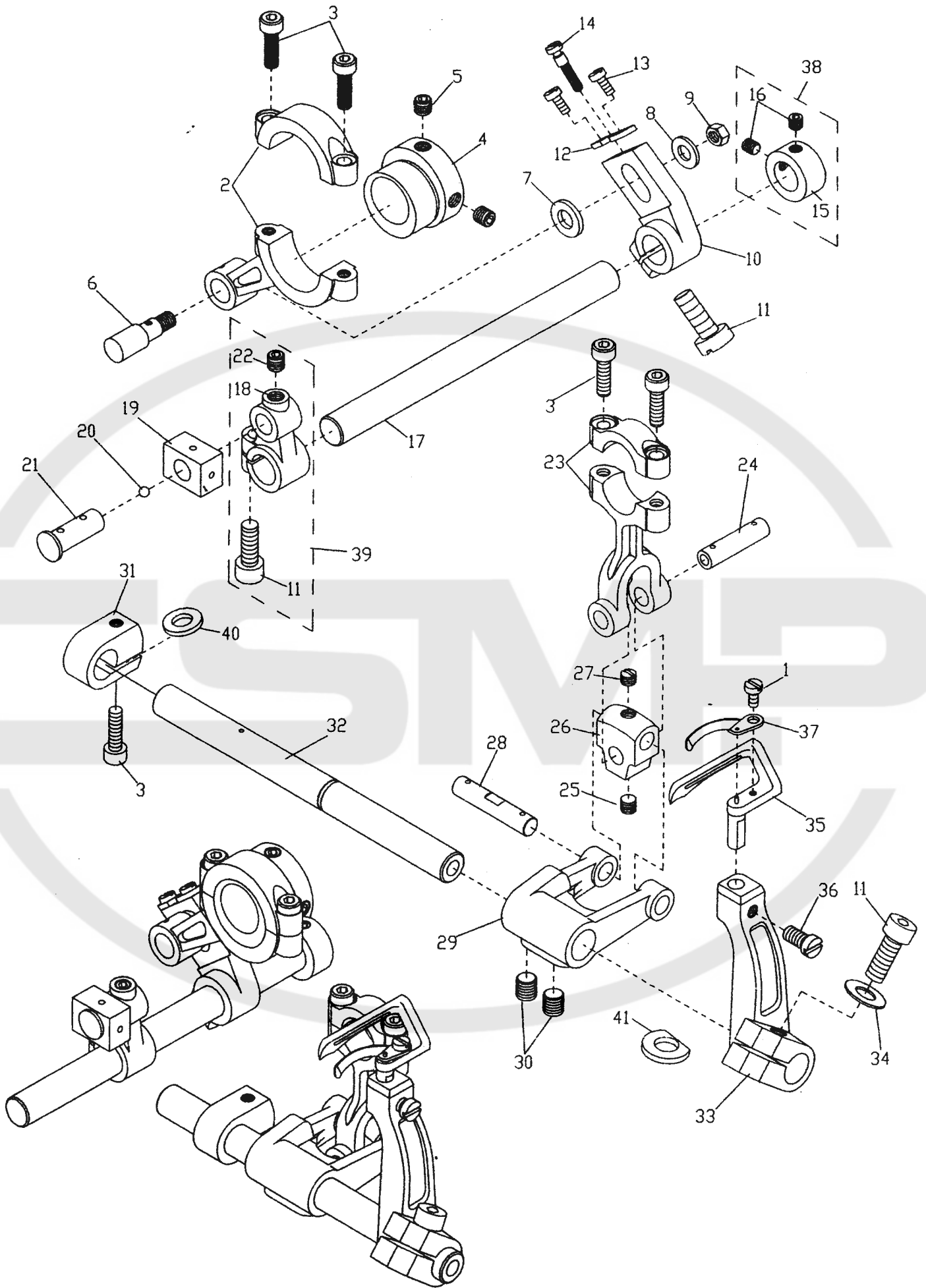
序號 Ref. No.	物料編號 Parts No.	名稱 Description	單位用量 Amt.Req.
1	2210000801	壓力調整螺椿 Spring Regulator	1
2	8MB05320509G	螺絲 Screw	2
3	2200000803	螺帽 Nut	1
4	2210000804	彈簧 Spring	1
5	2200000805	壓腳棒連結臂 Presser Bar Clamp	1
6	8MC95300808E	螺絲 Screw	1
7	2200000807	滑道 GuideBlock	1
8	8MB95301407K	螺絲 Screw	2
9	2210000809	彈簧 Spring	1
10	2200000810	壓腳棒 Presser Bar	1
11	2200000811	阻油片 Oil Separator	1
12	2200000812	限動環 Stop Collar	1
13	8MH85240300A	螺絲 Screw	2
14	-----	壓腳 Presser Foot	1
14-A	-----	壓腳底 Presser Foot Guide	1
14-B	5220PF00561B	輔助壓腳底 Presser Foot Guide	1
14-C	5220PF0056C	壓腳柄 Press Foot Arm	1
14-D	5220PF0056D	側蓋 Filter Cover	1
14-E	5220PF0056E	側蓋 Filter Cover	1
14-F	5220PF00561F	彈簧 Spring	1
14-G	5220PF00561G	彈簧 Spring	1
14-H	8SE24560504A	螺絲 Screw	2
14-I	5220PF0056I	彈簧 Spring	1
14-J	5220PF0056J	結合銷 Pin	1
14-K	5220PF0056K	結合銷 Pin	1
15	5220PF0356M	螺絲 Screw	1
16	2200000816	彈簧 Spring	1
17	2200000817	連桿 Link	1
18	2220000818	護指擋片 Safety Plate Holder	1
19	2200000819	連桿 Lever	1
20	90SP0416	彈簧銷 Spring Pin	1
21	2200000821	彈簧 Spring	1
22	2200000822	定位環 Collar	2
23	8MC95300606F	螺絲 Screw	4
24	2200000824	軸 Shaft	1
25	220A0000825	定位環組 Collar Asm.	2
26	2200000826	連桿 Lever	1
27	8MM05321409A	螺絲 Screw	1
28	90ER030	E形扣環 E Ring	2
29	2200000829	連結銷 Connecting Pin	2
30	2200000830	連桿 Link	1
31	2200000831	連桿 Lever	1
32	8MC06401008E	螺絲 Screw	1
33	2210000833	揚昇臂 Lifter Arm	1
34	2210000834	揚昇臂限位片 Stopper	1
35	8MB85240607K	螺絲 Screw	3
36	2200000836	曲柄 Drive Arm	1
37	8MK95301407A	螺絲 Screw	1
38	2200000838	曲軸 Shift	1
39	220A0000839	限動環組 Stop Collar Asm.	1
40	220A0000840	連桿組 Link Asm.	1





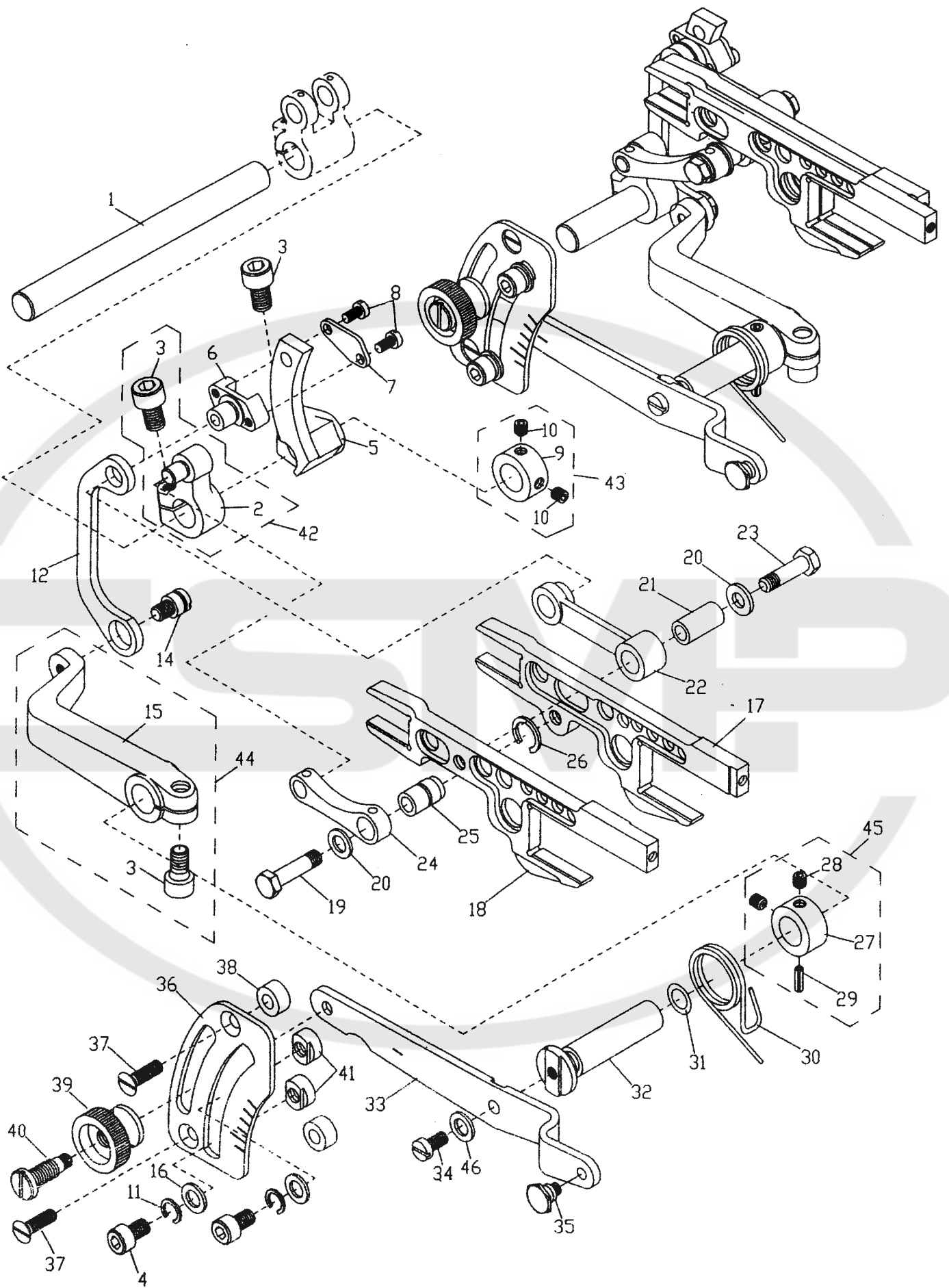
9. 裝飾線驅動機構 Spreader Mechanism  
 FB2502,FB2503專用 FB2502,FB2503 Only

序號	物料編號	名稱	單位用量
Ref. No.	Parts No.	Description	Amt.Rcq.
1	5221SL00560	裝飾線結線鉤 Spreader -----	1
2	2200000902	偏心輪 Eccentric -----	1
3	8MN05320500E	螺絲 Screw -----	2
4	90NB222613	滾針軸承 Needle Bearing -----	1
5	2200000905	連桿 Connecting Rod -----	1
6	90SCR220	軸用C形扣環 C Ring -----	1
7	8MB04280807K	螺絲 Screw -----	1
8	2200000908	墊圈 Washer -----	1
9	2200000909	曲柄銷 Rod Pin -----	1
10	2200000910	墊圈 Washer -----	1
11	8MA06400510A	螺帽 Nut -----	1
12	2200000912	定位環 Collar -----	1
13	8MC95300606F	螺絲 Screw -----	2
14	2200000914	變距曲柄 Lever -----	1
15	8MM06401610A	螺絲 Screw -----	1
16	2200000916	軸 Shaft -----	1
17	2200000917	連桿 Connecting Rod -----	1
18	8MN06400600A	螺絲 Screw -----	2
19	2200000919	連桿銷 Rod Pin -----	1
20	2200000920	曲軸 Crank Shaft -----	1
21	2200000921	墊圈 Washer -----	1
22	2200000922	定位環 Collar -----	1
23	8MH85240500A	螺絲 Screw -----	2
24	2200000924	擺動臂 Spreader Arm. -----	1
25	8MB04281207K	螺絲 Screw -----	2
26	220A0000926	定位環組 Collar Asm.-----	1
27	220A0000927	定位環組 Collar Asm.-----	2



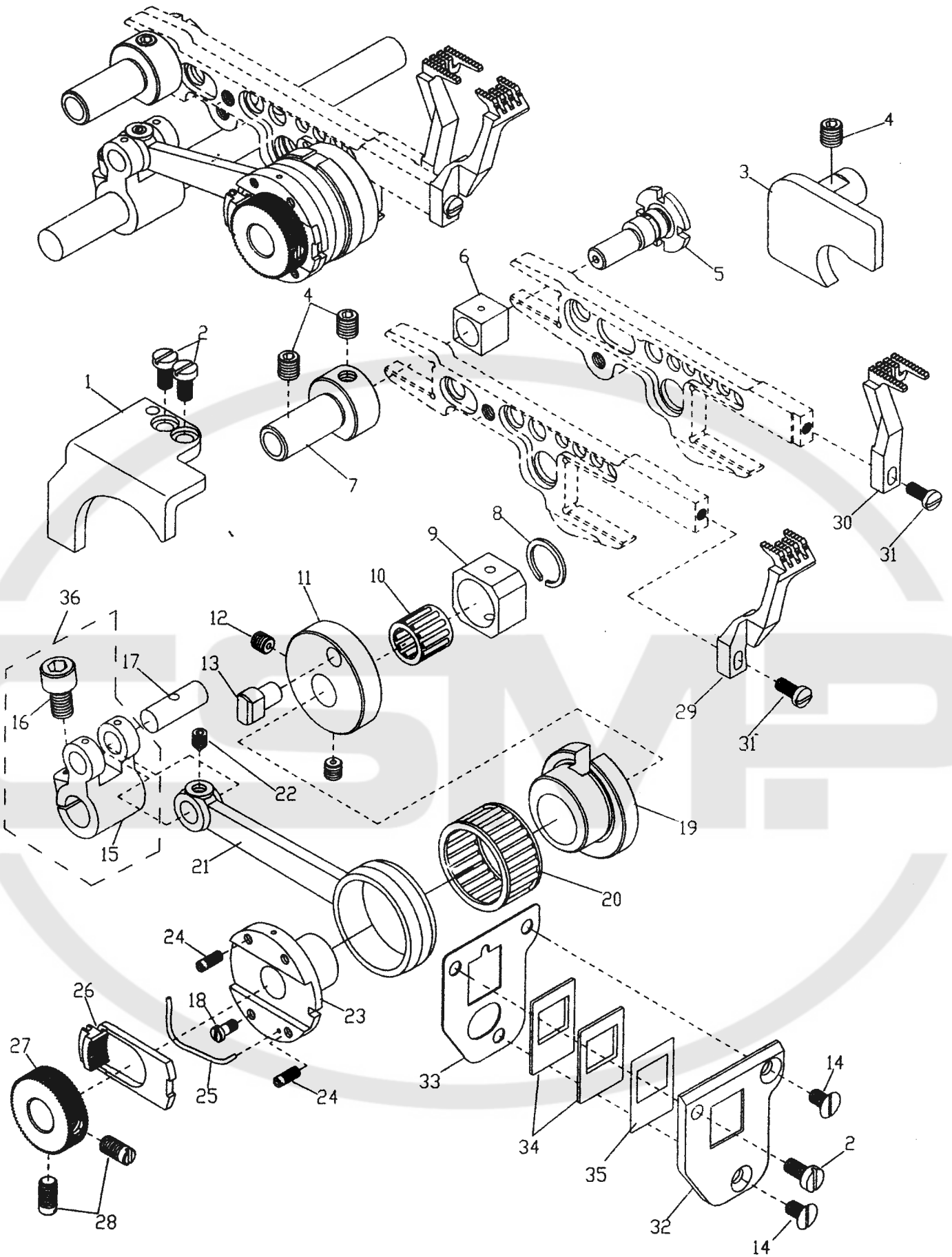
## 10. 結線鉤驅動機構 Looper Driving Mechanism

序號 Ref. No.	物料編號 Parts No.	名稱 Description	單位用量 Amt.Req.
1	8SB24560405A	螺絲 Screw -----	1
2	2210001002	連桿 Connecting Rod -----	1
3	8MM04281407A	螺絲 Screw -----	5
4	2210001004	偏心輪 Eccentric -----	1
5	8MN05320500E	螺絲 Screw -----	2
6	2210001006	曲柄銷 Lever Pin -----	1
7	2210001007	隔環 Spacer -----	1
8	2200001025	墊圈 Washer -----	1
9	8MA05320408A	螺帽 Nut -----	1
10	2210001010	變距曲柄 Adjusting Lever -----	1
11	8MM05321209A	螺絲 Screw -----	3
12	2210001012	卡桿 Adjusting Guide Plate -----	1
13	8MB75180405A	螺絲 Screw -----	2
14	2210001014	變距螺樁 Adjusting Stud -----	1
15	2210001015	定位環 Collar -----	1
16	8MN04280400A	螺絲 Screw -----	2
17	2210001017	軸 Shaft -----	1
18	2210001018	曲柄 Lever -----	1
19	2210001019	驅動滑塊 Slide Block -----	1
20	2100000403	孔塞 Plug -----	1
21	2210001021	曲柄銷 Lever Pin -----	1
22	8MN05320500E	螺絲 Screw -----	1
23	2210001023	連桿 Rod -----	1
24	2210001024	連結銷 Connecting Pin -----	1
25	8MN95300600A	螺絲 Screw -----	1
26	2210001026	十字接頭 Lever Link -----	1
27	8MH95300400A	螺絲 Screw -----	1
28	2210001028	連結銷 Connecting Pin -----	1
29	2210001029	曲柄 Lever -----	1
30	8MN06400600A	螺絲 Screw -----	2
31	2210001031	止推夾環 Collar -----	1
32	2210001032	軸 Shaft -----	1
33	2210001033	擺動臂 Rocker Arm -----	1
34	2210001034	墊圈 Washer -----	1
35	5221LL00560	下結線鉤 Looper -----	1
36	8MB04280705K	螺絲 Screw -----	1
37	5221NG00561	前導針器 Needle Guide -----	1
38	221A0001038	定位環組 Collar Asm. -----	1
39	221A0001039	曲柄組 Lever Asm. -----	1
40	2100000223	墊圈 Washer -----	1
41	2210001041	墊片 Washer -----	1



# 11.進給變換機構 Feed Control Driving

序號 Ref. No.	物料編號 Parts No.	名稱 Description	單位用量 Amt.Req.
1	2210001101	軸 Shaft -----	1
2	2210001102	曲柄 Lever -----	1
3	8MM06401210A	螺絲 Screw -----	3
4	8MM05320809A	螺絲 Screw -----	2
5	2210001105	差動變距滑道 Differential Rocker -----	1
6	2210001106	差動變距滑塊 Slide Block -----	1
7	2210001107	滑塊檔板 Slide Block Cap -----	1
8	8MB03200606K	螺絲 Screw -----	2
9	2210001109	定位環 Collar -----	1
10	8MN05320500E	螺絲 Screw -----	2
11	90SW050	彈簧墊圈 Spring Washer -----	2
12	2210001112	連桿 Link -----	1
13	-----	-----	-
14	2210001114	連結銷 Connecting Pin -----	1
15	2210001115	差動變換臂 Differential Lever -----	1
16	2200001025	墊圈 Washer -----	2
17	2210001117	主送齒驅動座 Feed Dog Seat -----	1
18	2210001118	副送齒驅動座 Feed Dog Seat -----	1
19	8MK05201808G	螺絲 Screw -----	1
20	2200001025	墊圈 Washer -----	2
21	2210001121	套管 Bushing -----	1
22	2210001122	連桿 Rod -----	1
23	8MK05202108G	螺絲 Screw -----	1
24	2210001124	連桿 Rod -----	1
25	2210001125	套管 Bushing -----	1
26	2210001126	C形同心扣環 C Ring -----	1
27	2210001127	定位環 Collar -----	1
28	8MN04280400A	螺絲 Screw -----	2
29	90SP0416	彈簧銷 Spring Pin -----	1
30	2210001130	回復彈簧 Spring -----	1
31	90OR070	O形油環 O Ring -----	1
32	2210001132	差動游標軸 Shaft -----	1
33	2210001133	差動變換桿 Lever -----	1
34	8MB04280807K	螺絲 Screw -----	1
35	2210001135	懸掛螺樁 Stud -----	1
36	2210001136	差動刻記板 Regulator Plate -----	1
37	8ME04281408A	螺絲 Screw -----	2
38	2200001141	隔環 Spacer -----	2
39	2210001139	鎖緊螺帽 Nut -----	1
40	8MB06401910Q	螺樁 Stud -----	1
41	2200001142	止動環 Stopper -----	2
42	221A0001142	曲柄組 Lever Asm.-----	1
43	221A0001143	定位環組 Collar Asm.-----	1
44	221A0001144	差動變換臂組 Differential Lever Asm.-----	1
45	221A0001145	定位環組 Collar Asm. -----	1
46	2100000223	墊圈 Washer -----	1



30. 主送齒編號列表 Main Feed Dog

主送布齒 main feed dog	FB2502 FB2503
4.0 4.8 5.6	5221FD00563
6.4	5221FD00643

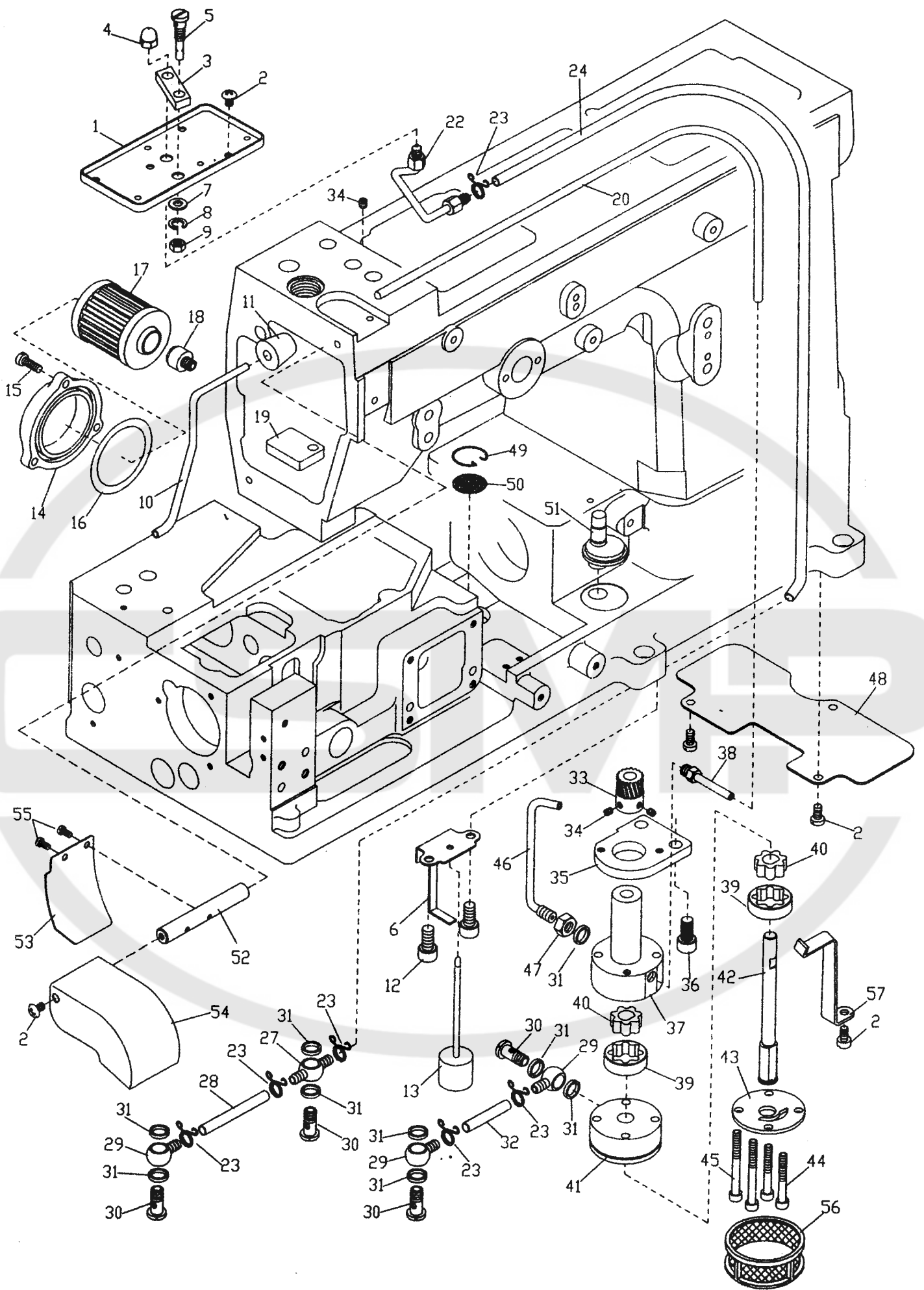
29. 副送齒編號列表 Diff. Feed Dog

副送布齒 diff. feed dog	FB2502 FB2503
4.0 4.8 5.6	5221DF00563
6.4	5221DF00643

## 12.導針與送布齒驅動機構 Needle Guide And Feed Dog Driving

序號 Ref. No.	物料編號 Parts No.	名稱 Description	單位用量 Amt. Req.
1	2210001201	送布齒座導軌 Feed Bar Guide -----	1
2	8MB04280807K	螺絲 Screw -----	3
3	2210001203	送布齒座導軌 Feed Bar Guide -----	1
4	8MN06400600A	螺絲 Screw -----	3
5	2210001205	送布齒台調整軸 Feed Adjusting Shaft-----	1
6	2200001245	滑塊 Slide Block -----	1
7	2210001207	懸臂 Guide -----	1
8	2210001208	C 型同心扣環 C Riing -----	1
9	2210001209	滑塊 Slide Block -----	1
10	90NB121510	滾針軸承 Needle Bearing -----	1
11	2210001211	變距銷座 Eccentric Pin Holder -----	1
12	8MN05320500E	螺絲 Screw -----	2
13	2210001213	變距銷 Eccentric Pin -----	1
14	8ME04280708A	螺絲 Screw -----	2
15	2210001215	曲柄 Shaft -----	1
16	8MM06401210A	螺絲 Screw -----	1
17	2210001217	曲柄銷 Shaft Pin -----	1
18	8MB03200605B	螺絲 Screw -----	1
19	2210001219	進給偏心輪 Eccentric -----	1
20	90NB242810	滾針軸承 Needle Bearing -----	1
21	2210001221	連桿 Rod -----	1
22	8MN04280600C	螺絲 Screw -----	1
23	2210001223	變距偏心輪 Regulating Eccentric -----	1
24	8MB03200403F	螺絲 Screw -----	2
25	2210001225	彈簧 Spring -----	1
26	2210001226	離合齒片 Regulating Plate -----	1
27	2210001227	離合齒輪 Regulating Gear -----	1
28	8MB05320805F	螺絲 Screw -----	2
29	-----	副送布齒 Diff. Feed Dog -----	1
30	-----	主送布齒 Main Feed Dog -----	1
31	8MB85240807K	螺絲 Screw -----	2
32	2210001232	滑動油封座 Rubber Case -----	1
33	2210001233	輔助油封座 Gasket -----	1
34	2210001234	從動式油封 Rubber -----	2
35	2210001235	墊片 Washer -----	1
36	221A0001236	曲柄組 Crank Asm. -----	1

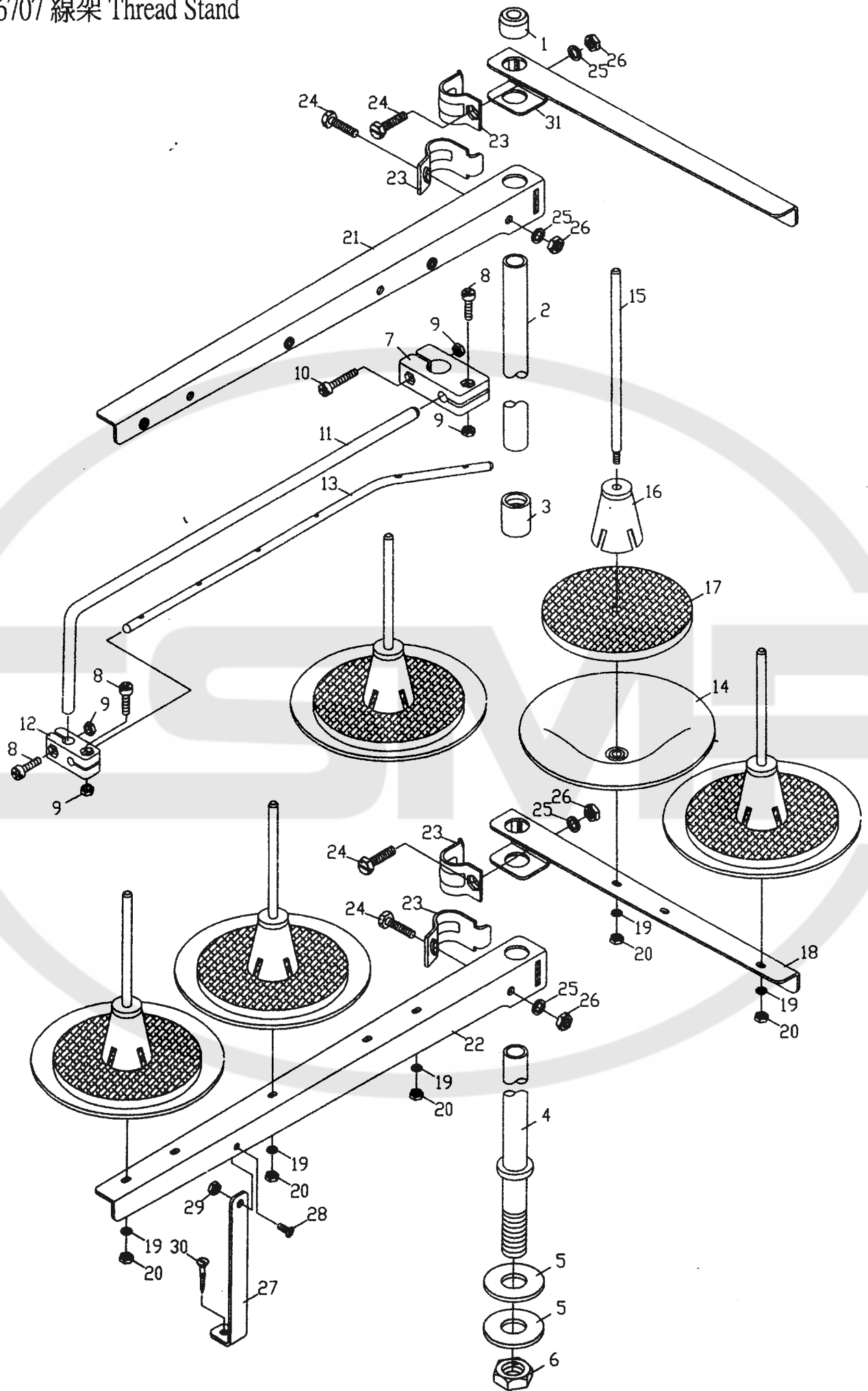




### 13.潤滑系統 Lubrication System

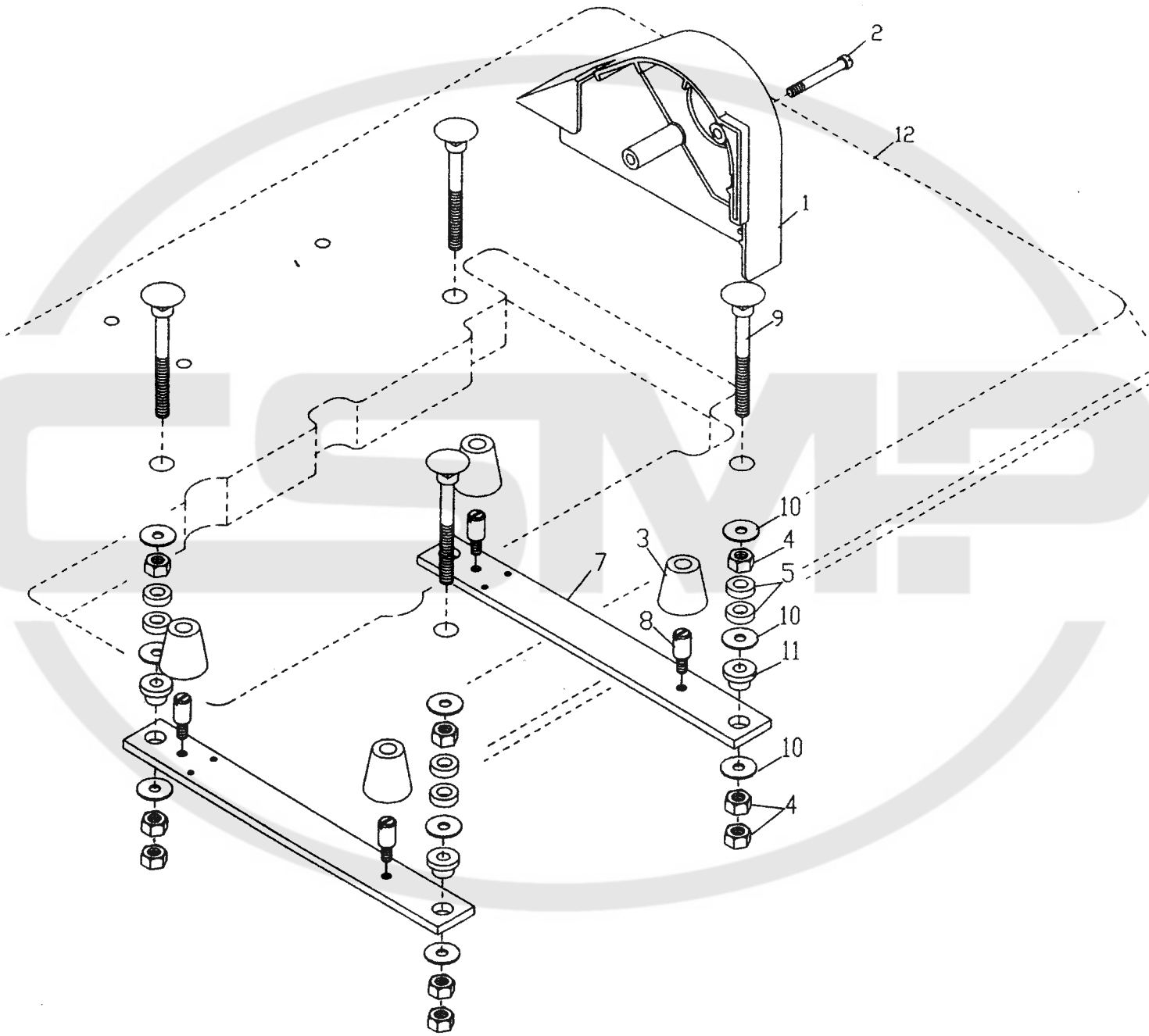
序號 Ref.No.	物料編號 Parts No.	名稱 Description	單位用量 Amt.Req.
1	2210001301	承油盤 Oil Receiver	1
2	8MC04280507D	螺絲 Screw	7
3	2210001304	噴油嘴 Nozzle	1
4	2210001354	防油蓋 Cover	1
5	8MN04280400A	螺絲 Screw	1
6	2210001352	軸 Shaft	1
7	2210001353	防油蓋 Cover	1
8	2210001311	孔塞 Plug	1
9	2210001310	油線 Oil Tube	1
10	8MM04284007B	螺絲 Screw	2
11	2200001311	封蓋 Oil Filter Cover	1
12	8MB04281207K	螺絲 Screw	3
13	2200001313	O形油環 O Ring	1
14	2100001521	過濾器 Oil Filter	1
15	2200001315	過濾器接頭 Oil Filter Joint	1
16	2200001316	扣簧 Filter Screen Clamp	1
17	2200001317	網板 Filter Screen	1
18	2200001318	羊毛氈 Felt	1
19	66792	油管 Oil Tube	1
20			
21	2210001322	噴油嘴 Nozzle	1
22	66790	油管 Oil Tube	1
23	2100001536	夾簧 Latch Spring	10
24	2200001324	油面浮標 Indicator	1
25			
26			
27	2200001327	油管接頭 Oil Tube Joint	1
28	2100001541	油管 Oil Tube	1
29	2100001535	油管接頭 Oil Tube Joint	4
30	2200001330	噴油嘴 Nozzle	1
31	2200001331	浮標座 Indicator Support	1
32	2100001541	油管 Oil Tube	1
33	2200001333	油管 Oil Tube	1
34	2100001541	油管 Oil Tube	1
35	8MB04280807K	螺絲 Screw	1
36	2100001533	螺槽 Stud	3
37	2100001534	墊圈 Washer	10
38	2200001338	螺槽 Stud	1
39	8MC04280507D	螺絲 Screw	2
40	2100000320	O形油環 O Ring	1
41	2200001341	蝸母 Worm Gear	1
42	8MN04280400A	螺絲 Screw	2
43	8MM06401610A	螺絲 Screw	2
44	2200001344	油管 Oil Tube	1
45	8MA06400510A	螺帽 Nut	1
46	2200001346	噴油嘴 Nozzle	1
47	2200001347	隔板 Separate	1
48	2200001348	油管支持臂 Oil Tube Holder	1
49	2200001349	油面計 Oil Gauge	1
50	8MN06400600A	螺絲 Screw	1
51	8MB03200506K	螺絲 Screw	2
52	2200001352	泵座 Pump Seat	1
53	2200001353	回收泵 Pump Body	1
54	2200001354	外轉子 Outside Rotor	2
55	2200001355	內轉子 Inside Rotor	2
56	2200001356	壓出泵 Rotor Case	1
57	2200001357	軸 Shaft	1
58	2200001358	封蓋 Cover	1
59	8MM04283007B	螺絲 Screw	2
60	2210001305	注油管 Oil Pipe	1
61	2210001303	導油歧管 Lubricant Guiding Block	1
62	2200001025	墊圈 Washer	1
63	90SW050	彈簧墊圈 Spring Washer	1
64	8MA05320408A	螺帽 Nut	1
65	2200001365	油管 Oil Tube	1
66	2200001366	油網 Oil Mesh	1

14.66707 線架 Thread Stand



14. 66707 線架 Thread Stand

序號 Ref. No.	物料編號 Parts No.	名稱 Description	單位用量 Amt.Req.
1	667051	柱帽 Rod Cup -----	1
2	667052	上柱 Upper Thread Stand Rod -----	1
3	667053	接頭 Joint -----	1
4	667054	下柱 Lower Thread Stand Rod -----	1
5	667055	墊圈 Washer -----	2
6	667056	螺帽 Nut -----	1
7	667057	接頭 Bracket -----	1
8	667058	螺絲 Screw -----	3
9	667059	螺帽 Nut -----	4
10	6670510	螺絲 Screw -----	1
11	6670511	旋臂 Arm -----	1
12	6670512	接頭 Bracket -----	1
13	6670513	導線桿 Thread Guide -----	1
14	6670514	線盤 Spool Set for -----	5
15	6670515	線盤軸 Spool Pin -----	5
16	6670516	定心錐 Spool Retaining Fig -----	5
17	6670517	緩衝墊 Seat -----	5
18	667061	線盤座 Spool Set Bracket -----	1
19	6670519	彈簧墊圈 Spring Washer -----	5
20	6670520	螺帽 Nut -----	5
21	6670521	導線臂 Thread Guide -----	1
22	6670522	線盤座 Spool Set Bracket -----	1
23	6670523	夾板 Clamp -----	4
24	6670524	螺絲 Screw -----	4
25	6670525	彈簧墊圈 Spring Washer -----	4
26	6670526	螺帽 Nut -----	4
27	6670527	撐桿 Support Rod -----	1
28	6670528	螺絲 Screw -----	1
29	6670529	螺帽 Nut -----	1
30	6670530	木螺絲 Wood Screw -----	1
31	6670531	導線 Thread Guide -----	1

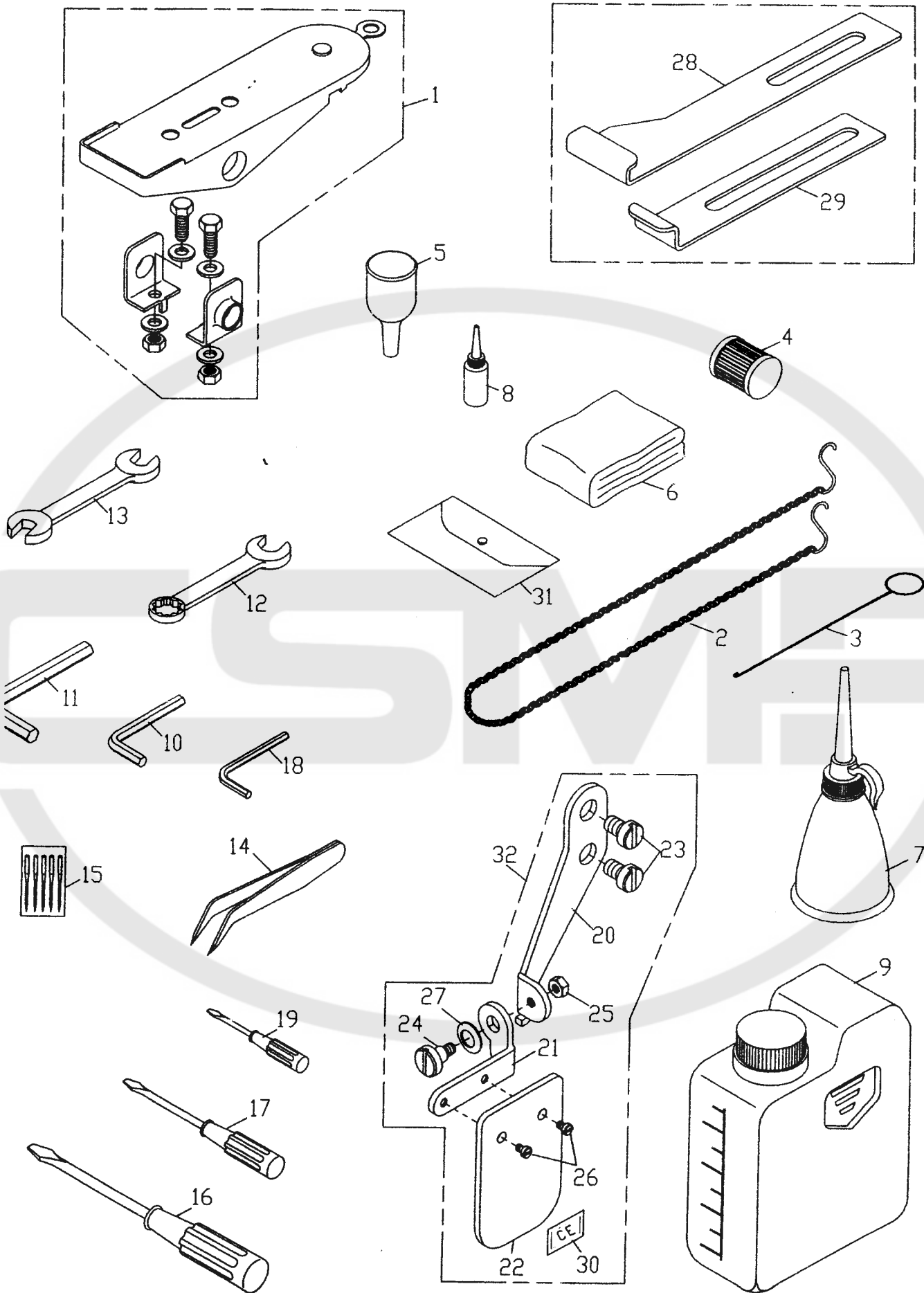


## 15.裝載附件 Table Components

序號 Ref. No.	物料編號 Parts No.	名稱 Description	單位用量 Amt.Req.
1	2200001501	皮帶蓋 Belt Cover -----	1
2	8MB06404609S	螺絲 Screw -----	2
3	66945	減震橡膠 Rubber Cushion -----	4
4	8SA79180613A	螺帽 Nut -----	12
5	2210001505	隔環 Spacer -----	8
6	-----	-----	-
7	2210001507	車頭承板 Supporting Board -----	2
8	8MB06401012M	螺樁 Bolt -----	4
9	8SC79189627B	懸吊螺樁 Bolt -----	4
10	2200001510	墊圈 Washer -----	12
11	2200001511	橡膠環 Rubber Washer -----	4
12	66812-1	車板 Table -----	1

CSMP

16. 工具及附件 Accessories



## 16.工具及附件 Accessories

序號 Ref. No.	物料編號 Parts No.	名稱 Description	單位用量 Amt.Req.
1	66700	踏板組 Pedel Complete -----	1
2	66695	鍊條組 Chain Set -----	1
3	66840	穿線鋼絲 Threading Bar -----	1
4	2100001521	過濾器 Oil Filter -----	1
5	66720	漏斗 Oil Funnel -----	1
6	66846	防塵罩 Mechine Cover -----	1
7	66721	油壺 Oiler -----	1
8	66722	矽油 Silicon Oil -----	1
9	66715	油罐 Oil Container -----	1
10	66636	六角扳手 Spanner 3MM -----	1
11	66637	六角扳手 Spanner 4MM -----	1
12	66612	梅花扳手 Wrench 10MM -----	1
13	66613	開口扳手 Wrench 7/8MM -----	1
14	66690	鑷子 Tweezer -----	1
15	66725-10	備用針 Retainer Needle -----	5
16	66665	長起子 Screw Driver (Large) -----	1
17	66666	中起子 Screw Driver (Medium) -----	1
18	66639	六角扳手 Spanner 1.5MM -----	1
19	66667	小起子 Screw Driver (Small) -----	1
20	2200001620	護目鏡座 Safety Plate Support -----	1
21	2200001621	護目鏡架 Safety Plate Holder -----	1
22	2200001622	護目鏡 Safety Plate -----	1
23	8MC06401008E	螺絲 Screw -----	2
24	8SB36400810E	螺絲 Screw -----	1
25	8SA36400406A	螺帽 Nut -----	1
26	8MB03200405A	螺絲 Screw -----	2
27	2200000228	墊圈 Washer -----	1
28	66857	左導模 Fabric Guide (L) -----	1
29	66858	右導模 Fabric Guide (R) -----	1
30	66451	貼紙 Paster -----	1
31	66831	工具袋 Tools Bag -----	1
32	220A0001632	護目鏡組 Safety Plate Asm.-----	1