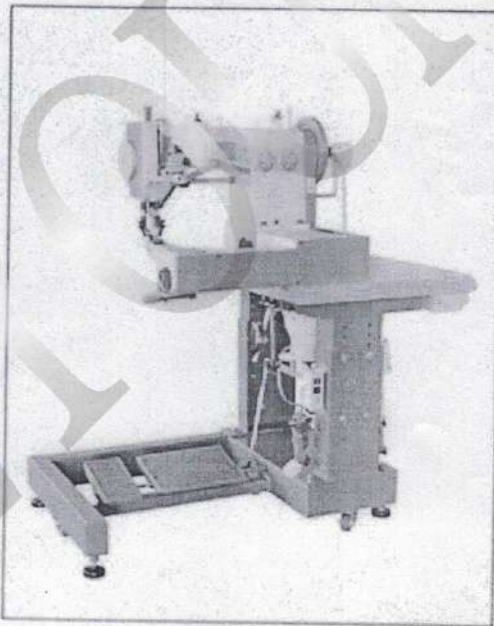


CN-05 DOUBLE NEEDLES
SEWING MACHINE



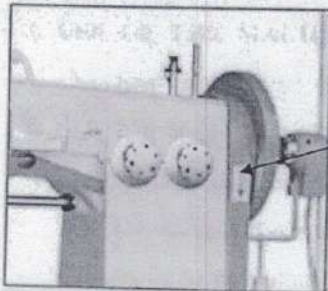
OPERATING INSTRUCTION MANUAL

Rev 201402

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Thank you very much for your choice of this double thread side seam sewing machine. Please read the manual carefully before use!



Ensure that the rotation of the pulley conformable to the red allow on the belt cover!

Notice: Replace or installation motor belt should pay attention and v-belts cannot be adjusted too tight, synchronous belt cannot be adjusted too loose!



The machine has passed CE!

Main Warnings:

- ♥It is extremely important that the electrical device must be soundly earthed!
- ♥It is absolutely forbidden to remove any protection system provided by manufacturer while machine is on!
- ♥All setting and replacement operation must be carried out only by the qualified expert personnell!
- ♥For repairs, all tools and replacement parts must be qualified by manufacturer!
- ♥Whenever, and whatever reason, the machine is to be demolished, certain basic rules must be observed to safeguard public health and the environment in which we live!

Thank you very much for choosing our machine. Please read the instruction book carefully before use!

1. MACHINE DESCRIPTION

781/2 double needle sewing machine is a specially designed machine for tubular moccasin-type sewing with miscellaneous sewing patterns. The machine is equipped with a skipping arm for tubular moccasin sewing. 12 sewing patterns can be set according to operator's requirement. The transport of material is carried out by left claw and right claw; two claws can be adjusted separately. According to different transport setting of two claws, the bending effect can be realized. The bending rate can be changed provisionally by pressing kneepad.

The machine is driven by the servo motor; the sewing speed can be changed stepless. The stop position of the machine is controlled by computer of the motor.

2. TECHNICAL FEATURES OF THE MACHINE

Max sewing speed:	400 RPM
Stitch length:	0-10mm
Needle distance:	6mm
Needle system:	DD×1
Thread:	MAX 1 mm waxed
Motor:	750W / 220V single-phase
Lighting lamp:	7W / 220V single-phase
Net weight:	About 132kg (N.W.)
Machine dimensions:	117cm×64cm×128cm (L.×W.×H.)

3. USE OF THE MACHINE

3.1 Start pedal

First of all, switch on the machine to watch if the rotation of motor is conformable to the red arrow on the belt cover. Then operate the pedal in three different movements (Fig 1)

- Stepping on forward (Position A) means advance. Stepping on lightly is slow and stepping on heavily is fast. Avoid stepping on heavily at the very beginning.
- Stop in the neutral position
- Stepping on backward (Position B) means lifting the presser wheel, so that it is easy to place the sewing material onto the stitching area.

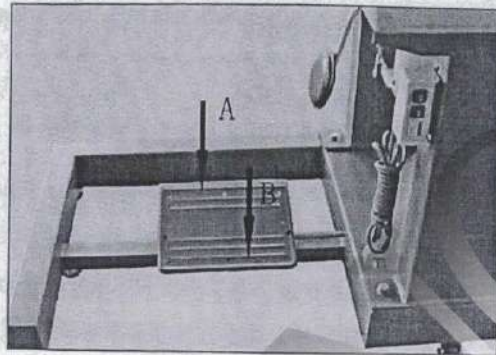


Fig.1

3.2 Threading needle thread

To prepare the needle thread, proceed as follows:

- Turn the pulley in the correct direction so that the needle comes to its highest position.
- Threading the needle thread by the path indicated in Fig.2

- (1)Thread wheel holder (2)Threading rod (3)Threading rod (4)Oil box (5)Threading rod
 (6)Tightener (7)Threading wheel (8)Take-up leaf (9)Take-up lever (10)Threading ring
 (11)Needle holder (12)Needle

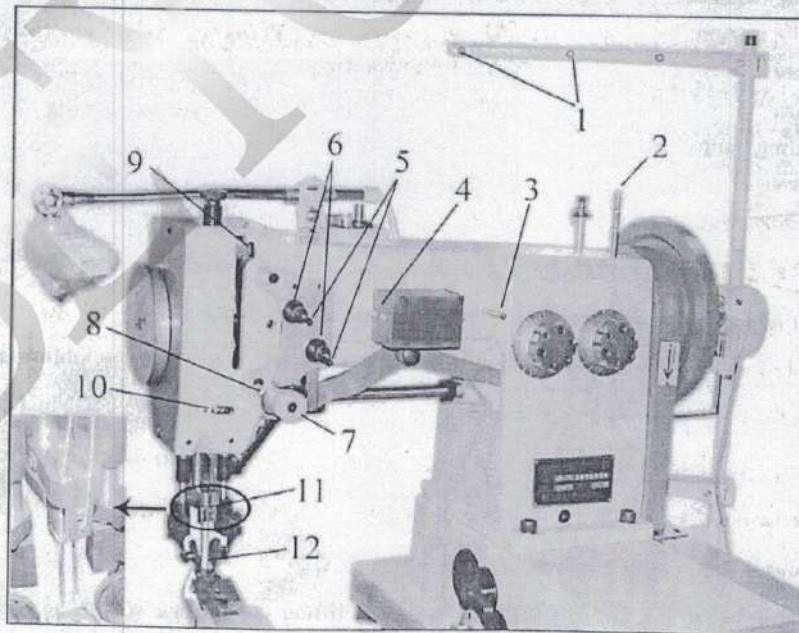


Fig.2

3.3 Tension adjustments setting of needle thread

The setting is to adjust the needle thread tension so that the stitching on the leather is neither too tight nor too loose.

To set the needle thread tension, proceed as follows (Fig 3)

- Rotate the thread tension nut 1 in the clockwise direction will tighten the tension of the needle thread, and vice-versa.
- Loosen the screw 2 and turn the thread tack-up spring shaft 3 in the anti-clockwise direction will increase the pressure of the tack-up spring 4, and vice-versa.
- Tighten the screw 2.

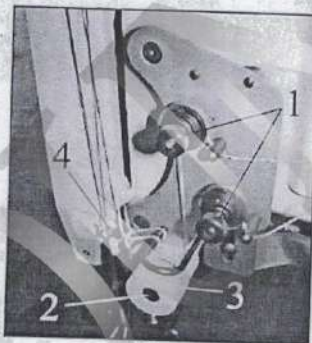


Fig.3

3.4 Threading and tension adjustment setting of bobbin thread

If 781-828A shuttle, 781-840A bobbin, 781-841A bobbin housing are assembled.

- (1) The bobbin thread is threaded according to the order ①-③ illustrated in Fig.4a.
- (2) The tension of bobbin thread is adjusted through the adjusting screw of bobbin housing. Turn the adjusting screw clockwise direction means tighten the bobbin thread; turn the adjusting screw counter-clockwise direction means loosen the bobbin thread. (Fig.5a)

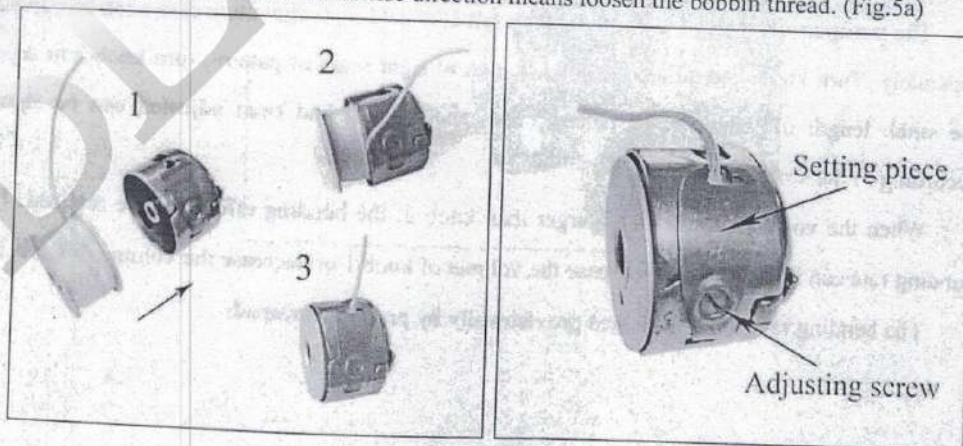


Fig.4a

Fig.5a

If **781-828** shuttle, **781-840** bobbin, **168-4048B** bobbin housing are assembled.

- (1) The bobbin thread is threaded according to the order ①-③ illustrated in Fig.4b.
- (2) The tension of bobbin thread is adjusted through the shuttle spring leaf. Prize up the spring leaf with screwdriver and the bobbin thread will be tightened. (Fig.5b)
- (3) If it is too tight, flatten the hem of the shuttle spring leaf with screwdriver. (Fig.5b)
- (4) make sure that the spring leaf is not so flat that it can't get in touch with the shuttle. As a result, the bobbin thread can't be adjusted.

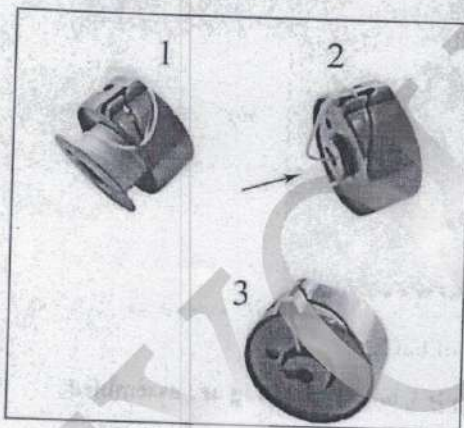


Fig.4b

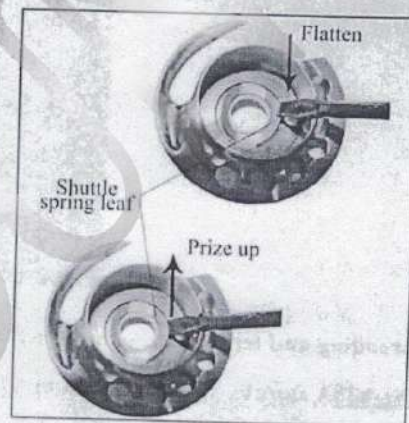


Fig.5b

3.5 Adjustments setting of stitch length and bending rate (Fig.6)

The transport of material is carried out by left claw and right claw; two claws can be adjusted separately. Turn knob 1 to adjust the stitch length of right seam of pattern; turn knob 2 to adjust the stitch length of left seam of pattern. The stitch length had been adjusted can be shown according to the scale of knobs.

When the volume of knob 1 is larger than knob 2; the bending effect will be realized. The bending rate can be increase by increase the volume of knob 1 or decrease the volume of knob 2.

The bending rate can be changed provisionally by pressing kneepad.

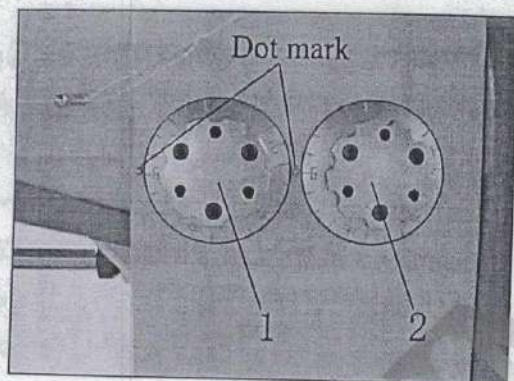


Fig.6



Fig.7

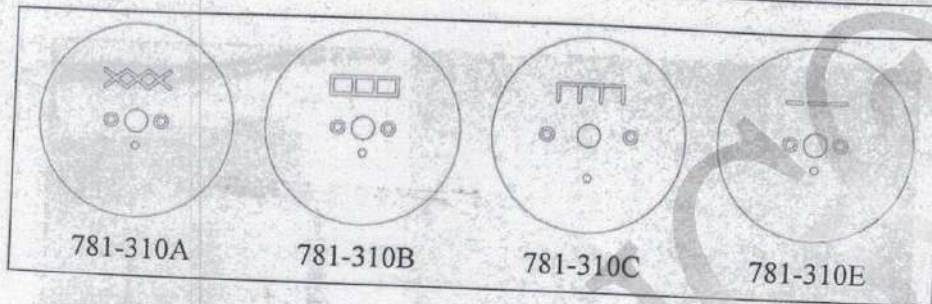
3.6 Pressure adjustment setting of presser wheel (Fig 7)

The pressure of presser wheel can be adjusted by turning the knob 1.

3.7 Setting sewing pattern

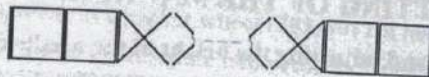
On this machine, one of 12 sewing patterns can be set according to operator's requirement. The sewing pattern can be set according to different pattern cam and feeding shift.





SEWING PATTERN	PATTERN CAM	FEEDING SHIFTER	1 OR 2 NEEDLES
	781-310A	1	2 Needles
	781-310A	3	2 Needles
	781-310A	1	1 Needle
	781-310A	3	1 Needle
	781-310A	4	1 Needle
	781-310B	1	2 Needles
	781-310B	3	2 Needles
	781-310B	1	1 Needle
	781-310B	3	1 Needle
	781-310C	4	1 Needle
	781-310E	1	1 Needle
	781-310E	1	2 Needles

Special combination pattern:



This pattern is realized by pattern cam(781-308B) and different feeding shift. The operation process as follows: (The needles must be stopped on its lowest position)

- Set the feeding shift at '3', square pattern will be done.
- After square pattern operation, stop machine when the marker '2' on pattern cam is located towards operator (as shown in Fig.8), then set the feeding shift at '2', Crossed pattern will be set.
- After the crossed pattern required is done, stop machine when the marker '3' on pattern cam is located towards operator (as shown in Fig.9), then set the feeding shift at '3', square pattern will be set. The last square pattern can be done.

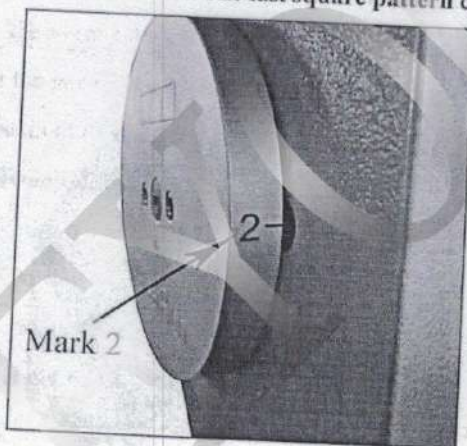


Fig.8

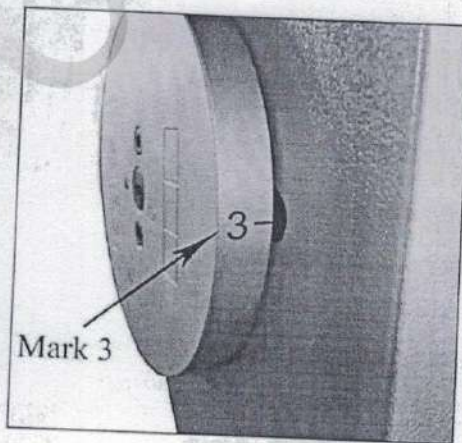


Fig.9

4. ADJUSTMENT SETTING OF THE MACHINE

4.1 Needle replacement and adjusting the height of the needle rod (Fig.10)

Replace the needles, procedure as follows:

- Loosen the screw 1 or 2, remove the old needle.
- Insert the new needle into the hole of needle holder, and then rotate the needle till the groove of needle towards the operator.
- Retighten the screw 1 or 2.

The correct height of the needle rod: (Fig.11)

- Turn the pulley by hand, till the needles come to the lower dead point.
- Ensure the distance from needlepoint to the lower side of needle plate is about 19mm.

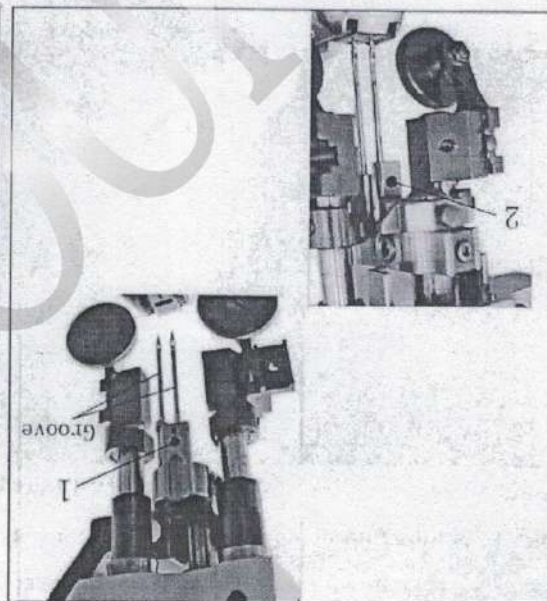


Fig.10

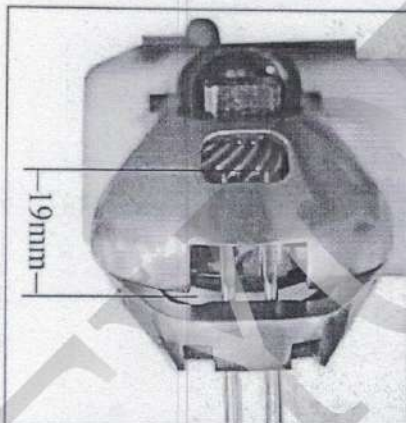


Fig.11

4.2 Adjusting the exchange of needles (Fig.12, Fig.13)

This process must be carried out by the qualified personnel. Proceeds as follows:

- Turn the pulley by hand, till needles come to the upper dead point.
- Adjust the cam (781-206), till the alignment mark on the side of cam (781-206) is in alignment with the alignment mark on the main shaft. (Fig.12)
- Loosen 2 screws on sprocket wheel (781-302), turn the outer flange (781-306) till the alignment mark on its surface is alignment with the alignment mark on the front flange (781-305). Retighten 2 screws on sprocket wheel (781-302) at last. (Fig.13)
- Loosen 2 screws on sprocket wheel (781-301), turn the inner flange (781-309) till the

alignment mark on its surface is alignment with the alignment mark on the outer flange (781-306). Retighten 2 screws on sprocket wheel (781-301) at last. (Fig.13)

-- At the end, turn the pulley by hand; to ensure two needles can be changed smoothly.

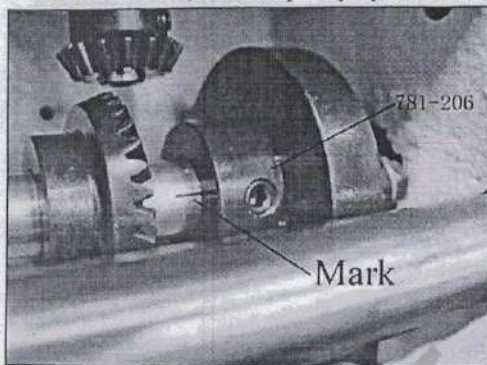


Fig.12



Fig.13

4.3 Adjustment setting of shuttle's swinging (Fig.14)

The correct action of shuttle's swinging is as follows: turn the pulley in correct direction, just when the needle rod beginning to move up from its lower dead point, at the same time the shuttle just begin to rotate in the clockwise direction from its dead point.

To adjust it, proceed as follows:

- Turn the pulley by hand, till the needle rod move up to its upper dead point.
- At this time, the connecting lever (781-506) that connected with sprocket wheel (781-504) should be on the upper dead point in vertical line.
- If not correct, you can adjust it by set two adjusting screws on driving sleeve (781-205-2).

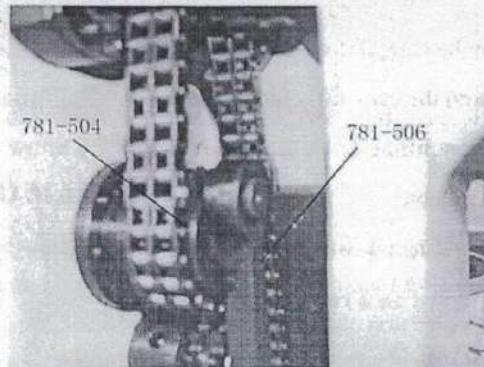


Fig.14

4.4 Adjustment setting of shuttle's position (Fig.15、 Fig.16)

The correct position of shuttle: when the needles move down to the lower dead point, the shuttle should rotate in anticlockwise direction to the dead point. At this time, the tip of shuttle should be in a distance of 6mm from left needle.

In case of necessity of changing this position, proceed as follows:

- Loosen two screws on sleeve (781-812).
- Turn the shuttle to its correct position.
- Tighten two screws on sleeve (781-812) after adjusting.

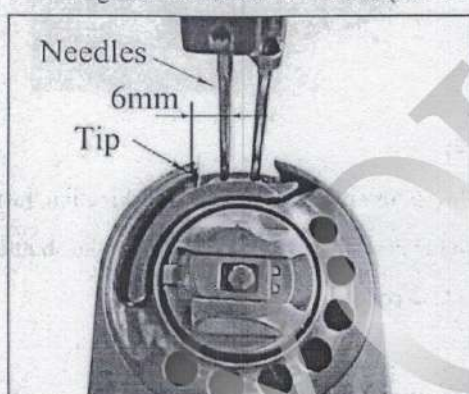


Fig.15

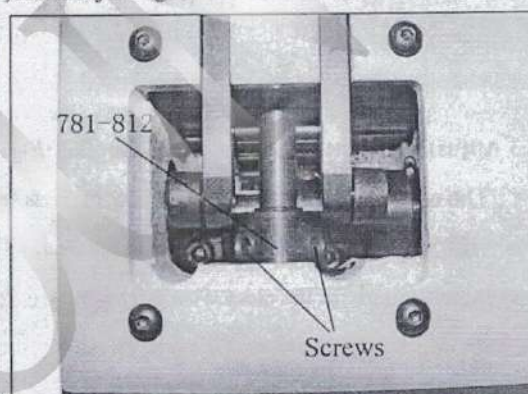


Fig.16

4.5 Adjusting the height of claws (Fig.17、 Fig.18)

When the sewing material is changed, you will need to adjust the height of claw. To adjust it, procedure as follows:

- Turn the pulley in the correct direction, till the claws come to its highest position. (Fig.17)
- Loosen the screw on the claw lifting lever (781-805) as shown in Fig.18.
- Lift the end of claw lifting lever (781-805) follow the arrow as shown in Fig.16, till the height of claw is suitable.
- Retighten the screw after adjusts.

Another claw is adjusted on a reverse position.



Fig.17

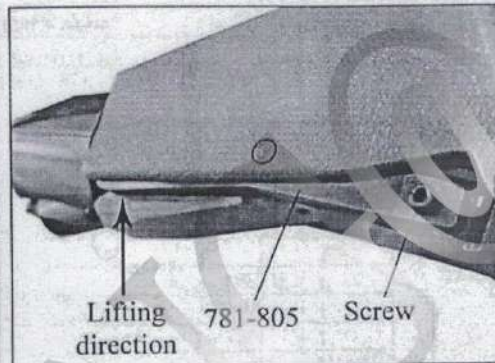


Fig.18

4.6 Adjustment setting of stopping position (Fig.19)

The positioner is used to control the stopping position of the machine. Normally, when the machine stop each time the take-up lever can stop nearby its highest position. To adjust the stopping position, proceed as follows:

- Loosen the two fixing screws of the positioner.
- Adjust the relative position between the positioner and the main shaft.
- Tighten the two fixing screws after adjustment.

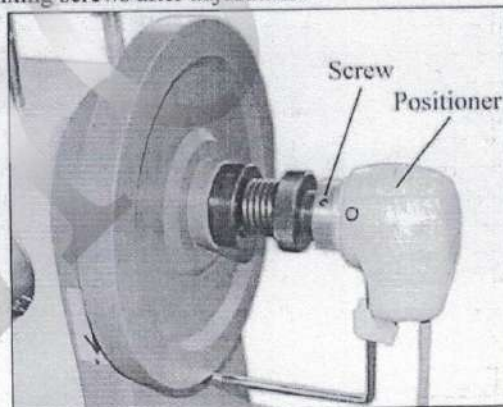


Fig.19

5. LUBRICATION AND MAINTENANCE

The machine must be daily lubricated at the end of every shift. Rotating parts and all lubricate eyes on the machine must be carefully and accurately lubricated daily. Always keep the machine clean and clean the presser wheel, shuttle and shuttle seat every shift.

Check and oil the machine carefully when it is reused after a long time. Test run and running slowly are required.

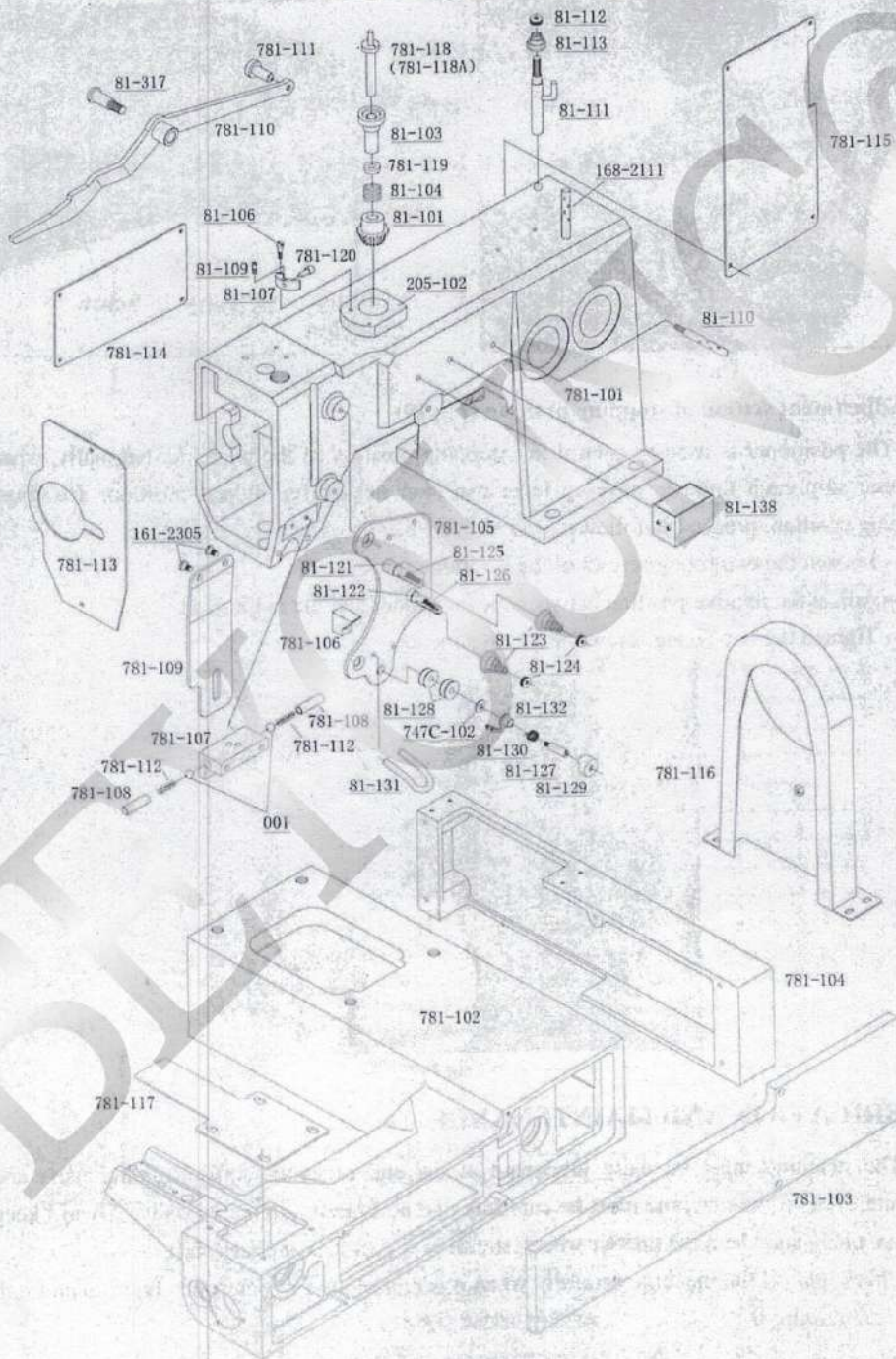


Fig. No.	Part's name	Quantity
781-101	Machine body cap	1
781-102	Machine body stand	1
781-103	Front cap	1
781-104	Chain cloth	1
781-105	Threading plate	1
781-106	Thread loosen block	1
781-107	Threading block	1
781-108	Column	2
781-109	Thread loosen plate	1
781-110	Presser foot lifting rocker arm	1
781-111	Sleeve	1
781-112	Spring	2
781-113	Cover plate	1
781-114	Cover plate	1
781-115	Cover plate	1
781-116	Belt cover	1
781-117	Cover plate	1
781-118(781-118A)	Wind bobbin spindle	1
781-119	Washer	1
781-120	Cutting lever	1
81-101	Bevel gear	1
81-103	Sleeve	1
81-104	Spring	1
81-106	Spindle for cutting blade	1
81-107	Cutting blade	1
81-109	Screw	1
81-110	Threading rod	1
81-111	Winding amount adjusting rod	1
81-112	Nut	3
81-113	Cone spring	1
81-121	Rod of thread tighter(long)	1
81-122	Rod of thread tighter(short)	1
81-123	Cone spring	2
81-125	Thread guiding rod(long)	1
81-126	Thread guiding rod(short)	1
81-127	Thread take-up spindle	1
81-128	Threading wheel	1
81-129	Capsule	1
81-130	Torsion spring	1
81-131	Thread carrier	1
81-132	Thread take-up piece	1
81-138	Oil box	1
81-317	Screwing pin	1
747C-102	Washer	1
168-2111	Threading rod	1
205-102	Bracket of bobbin winding	1
161-2305	Screw	2
001	S Φ6 steel ball	2

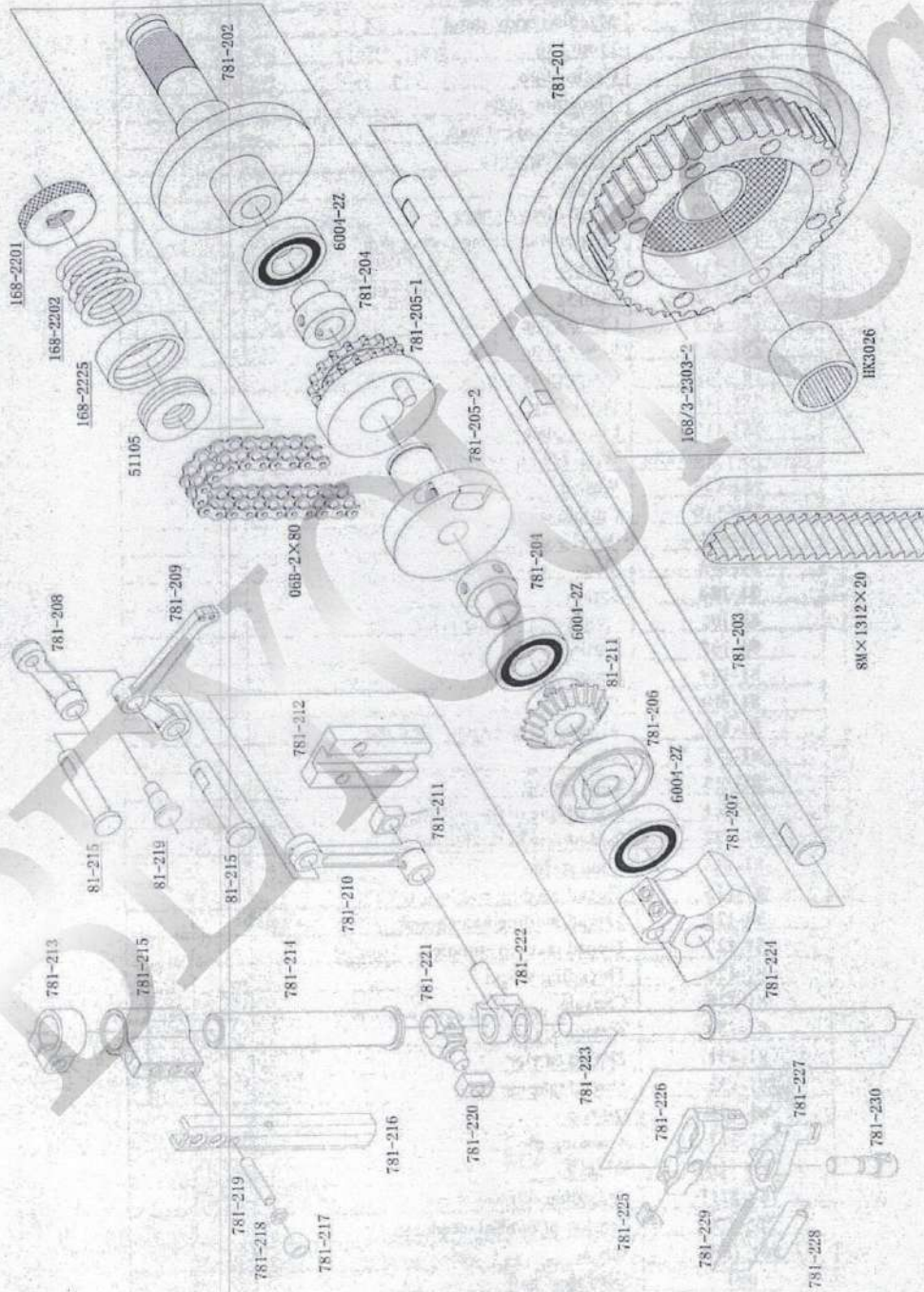


Fig. No.	Part's name	Quantity
781-201	Pulley	1
781-202	Clutch sleeve	1
781-203	Main shaft	1
781-204	Sleeve	2
781-205-1	Sprocket wheel P3/8"×17 (06B-2)	1
781-205-2	Driving sleeve	1
781-206	Cam	1
781-207	Crank	1
781-208	Connecting lever	1
781-209	Thread take-up lever	1
781-210	Connecting lever for needle rod	1
781-211	Slider	1
781-212	Runner for needle rod guide	1
781-213	Clamp ring	1
781-214	Sleeve	1
781-215	Swing block	1
781-216	Runner for needle rod	1
781-217	Ball roller	1
781-218	Washer	1
781-219	Pin	1
781-220	Slider	1
781-221	Collet for needle rod	1
781-222	Spindle with warp for needle rod	1
781-223	Needle rod	1
781-224	Lower sleeve for needle rod	1
781-225	Needle connection plate hook	1
781-226	Needle holder	1
781-227	Crossed needle holder	1
781-228	Spindle with spring slot	1
781-229	Spring	1
781-230	Spindle for needle holders	1
81-215	pin	2
81-219	pin	1
81-211	Bobbin thread winding gear	1
168/3-2303-2	Synchronous belt wheel	1
168-2201	Round nut	1
168-2202	Spring	1
168-2225	Bearing protect circle	1
06B-2×80	Double chain P3/8"×80 (06B-2)	1
8M×1312×20	Synchronous belt (8M×1312×20)	1
51105	Thrust bearing (51105)	1
6004-2Z	Bearing (6004-2Z)	3
HK3026	Needle roller bearing (HK3026)	1

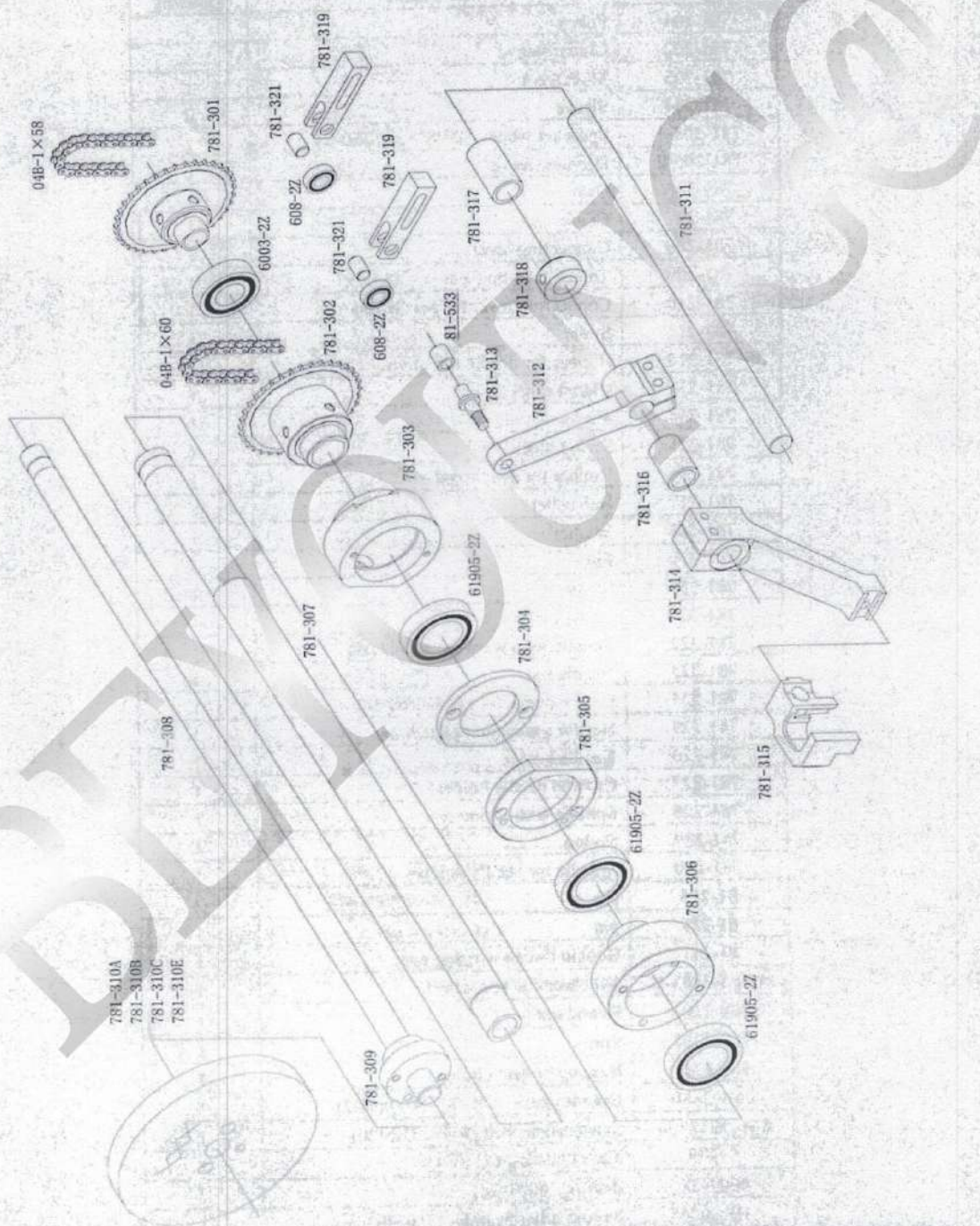


Fig. No.	Part's name	Quantity
781-301	Sprocket wheel P6×36 (04B-1)	1
781-302	Sprocket wheel P6×36 (04B-1)	1
781-303	Rear flange	1
781-304	Cover ring	1
781-305	Front flange	1
781-306	Outer flange	1
781-307	Hollow pole	1
781-308	Internal shaft	1
781-309	Inner flange	1
781-310A	Pattern cam	1
781-310B	Pattern cam	1
781-310C	Pattern cam	1
781-310E	Pattern cam	1
781-311	External shaft	1
781-312	Rocker arm	1
781-313	Roller spindle	1
781-314	Rocker arm	1
781-315	Needle changing fork	1
781-316	Copper sleeve	1
781-317	Copper sleeve	1
781-318	Supporting ring	1
781-319	Support for chain stretcher	2
781-321	Bearing spindle for chain stretcher	2
81-533	Roller	1
04B-1×60	Chain P6×60(04B-1)	1
04B-1×58	Chain P6×58(04B-1)	1
6003-2Z	Bearing (6003-2Z)	1
61905-2Z	Bearing (61905-2Z)	3
608-2Z	Bearing (608-2Z)	2

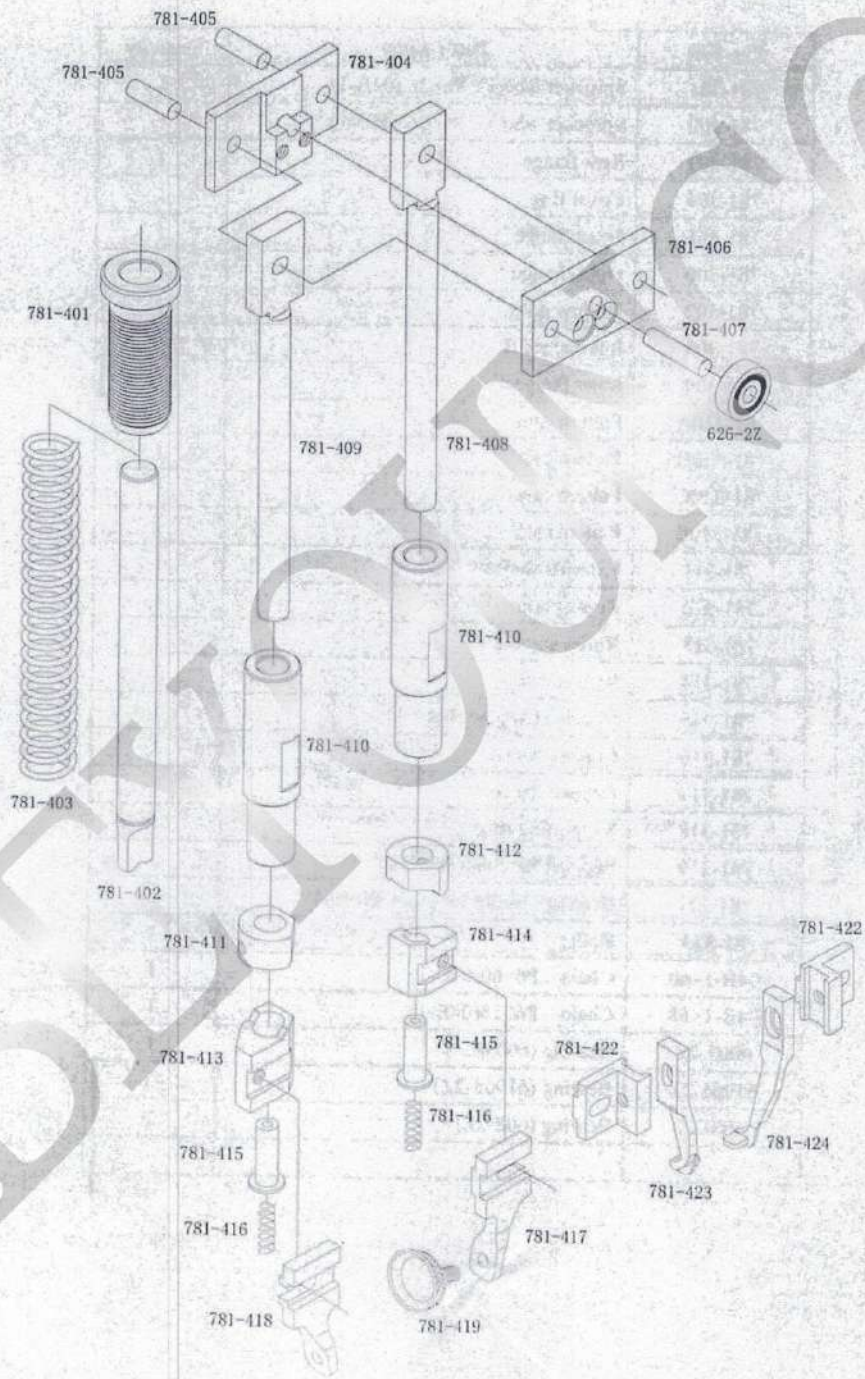


Fig. No.	Part's name	Quantity
781-401	Knob nut	1
781-402	Pressing spindle	1
781-403	Spring	1
781-404	Bracket for presser wheel bar	1
781-405	Pin	2
781-406	Cover plate	1
781-407	Pin	1
781-408	Right presser wheel bar	1
781-409	Left presser wheel bar	1
781-410	Adjustable sleeve	2
781-411	Left thrust ring	1
781-412	Right thrust ring	1
781-413	Holder for left presser wheel	1
781-414	Holder for right presser wheel	1
781-415	Stretching sleeve	2
781-416	Spring	2
781-417	Right wheel fork	1
781-418	Left wheel fork	1
781-419	Presser wheel	2
781-422	Optional holder for leather direction foot	2
781-423	Optional left leather direction foot	1
781-424	Optional right leather direction foot	1
626-2Z	Bearing (626-2Z)	1

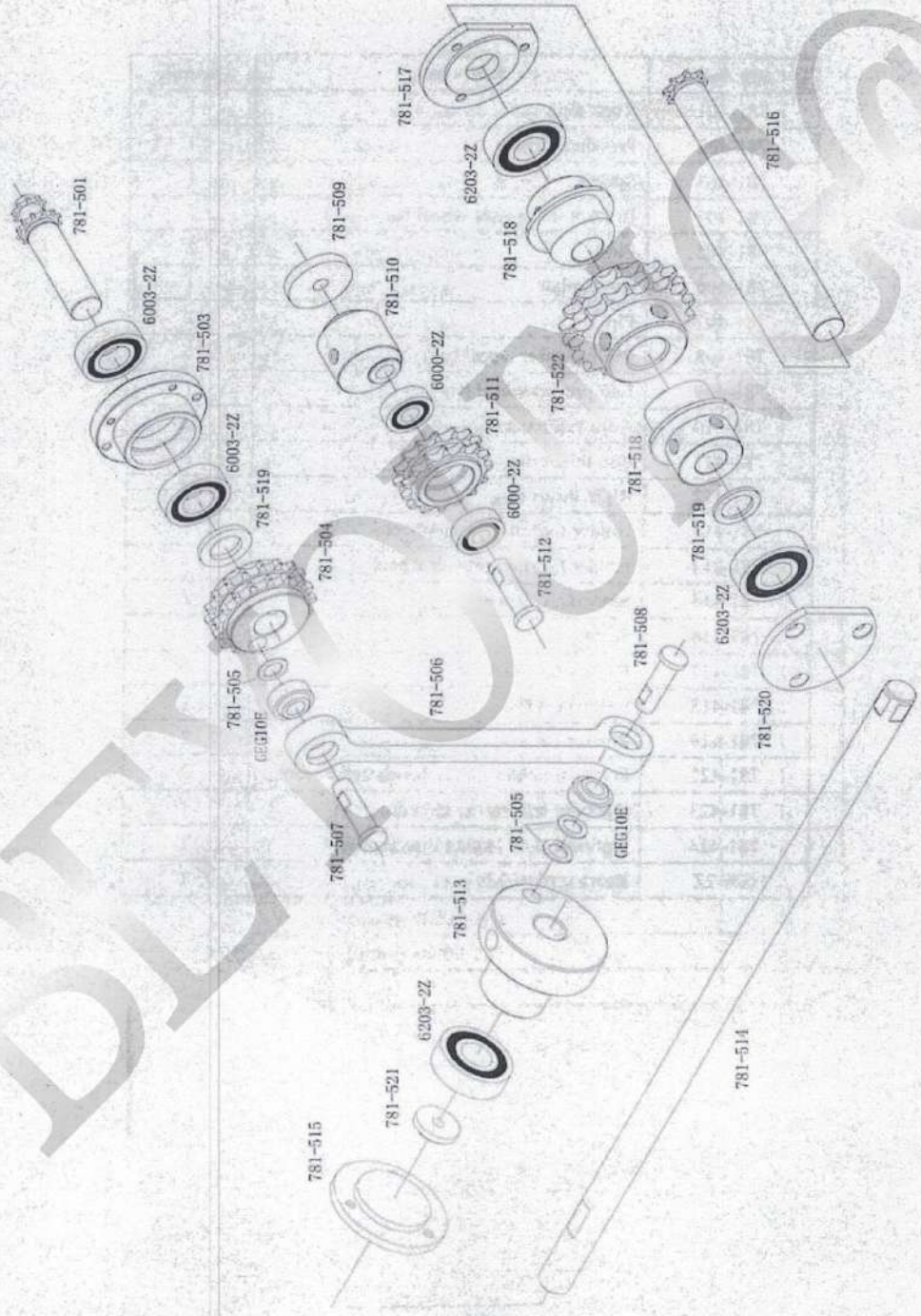


Fig. No.	Part's name	Quantity
781-501	Axis with sprocket P6×9, P6×12 (04B-1)	1
781-503	Flange	1
781-504	Sprocket wheel P3/8"×17 (06B-2)	1
781-505	Washer	4
781-506	Connecting lever	1
781-507	Upper spindle	1
781-508	Lower spindle	1
781-509	Supporting washer	1
781-510	Chain stretcher eccentric	1
781-511	idler sprocket wheel P3/8"×15 (06B-2)	1
781-512	Spindle	1
781-513	Crank	1
781-514	Lower shaft	1
781-515	Cover plate	1
781-516	Axis with sprocket P8×8 (05B-1)	1
781-517	Cover plate	1
781-518	Cam	2
781-519	Washer	2
781-520	Cover plate	1
781-521	Washer	1
781-522	Sprocket wheel P3/8"×17 (06B-2)	1
6003-2Z	Bearing (6003-2Z)	2
GEG10E	Spherical plain bearing (GEG10E)	2
6203-2Z	Bearing (6203-2Z)	3
6000-2Z	Bearing (6000-2Z)	2

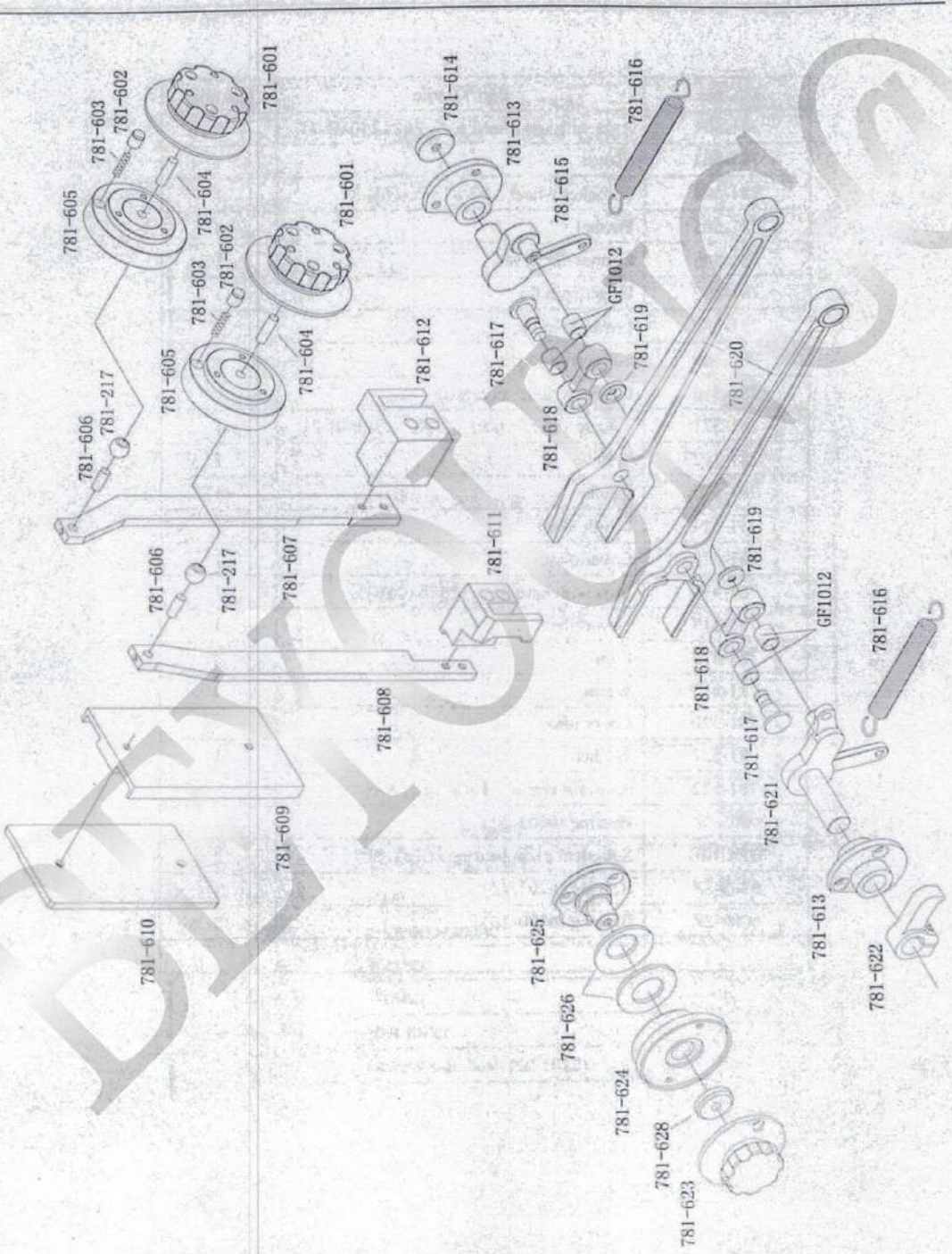


Fig. No.	Part's name	Quantity
781-601	Adjusting knob for stitch length	2
781-602	Nylon column	2
781-603	Spring	2
781-604	Pin	2
781-605	Cam	2
781-606	Pin	2
781-607	Right connecting lever	1
781-608	Left connecting lever	1
781-609	Block with slot	1
781-610	Cover plate	1
781-611	Left pressing block	1
781-612	Right pressing block	1
781-613	Flange	2
781-614	Washer	1
781-615	Right rocker	1
781-616	Spring	2
781-617	Spindle	2
781-618	Connecting lever	2
781-619	Washer	2
781-620	Forked lever	2
781-621	Left rocker	1
781-622	Lever with hammer	1
781-623	Side adjusting knob	1
781-624	Cam	1
781-625	Support spindle	1
781-626	Washer	2
781-628	Washer	2
781-217	Ball roller	2
GF1012	Oilless side bush (GF1012)	4

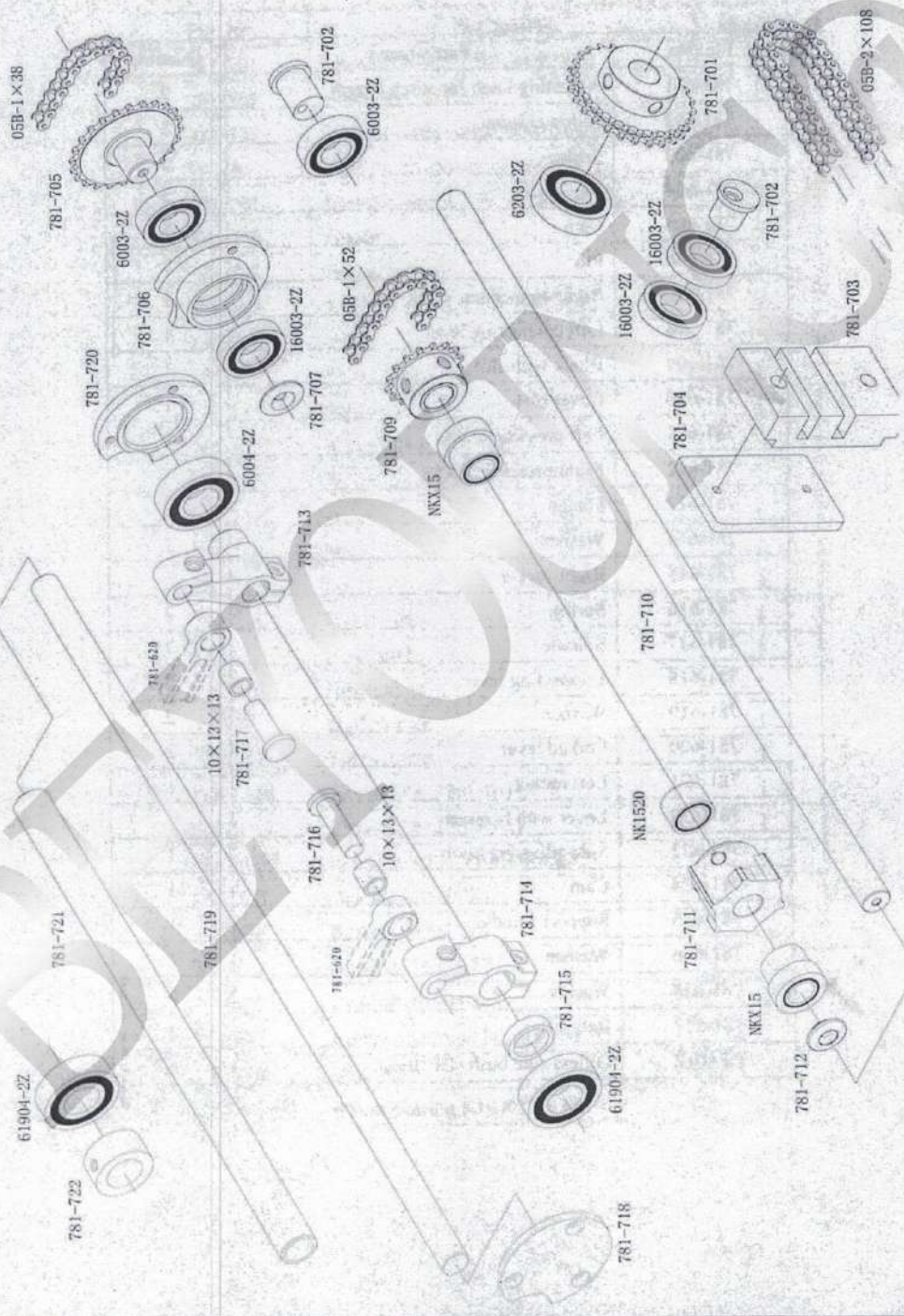


Fig. No.	Part's name	Quantity
781-701	Sprocket wheel P8×26(05B-2)	1
781-702	Side chain stretcher	2
781-703	Foot for chain connection system	1
781-704	Plate for chain connection system	1
781-705	Sprocket wheel P8×8,P8×24(05B-1)	1
781-706	Flange	1
781-707	Special washer	1
781-709	Sprocket wheel P8×16(05B-1)	1
781-710	Shaft	1
781-711	Claw lifting cam	1
781-712	Special washer	1
781-713	Rocker lever	1
781-714	Rocker lever	1
781-715	Ring	1
781-716	Pin	1
781-717	Pin	1
781-718	Cover plate	1
781-719	Inner shaft	1
781-720	Cover plate	1
781-721	Hollow polo	1
781-722	Support ring	1
05B-1×38	Chain P8×38(05B-1)	1
05B-1×52	Chain P8×52(05B-1)	1
05B-2×108	Double chain P8×108(05B-2)	1
6003-2Z	Bearing (6003-2Z)	3
6004-2Z	Bearing (6004-2Z)	1
16003-2Z	Bearing (16003-2Z)	3
61904-2Z	Bearing (61904-2Z)	2
NKX15	Compound roller bearing (NKX15)	2
NK1520	(NK1520)	1
10×13×13	Roller bearing K10×13×13	2

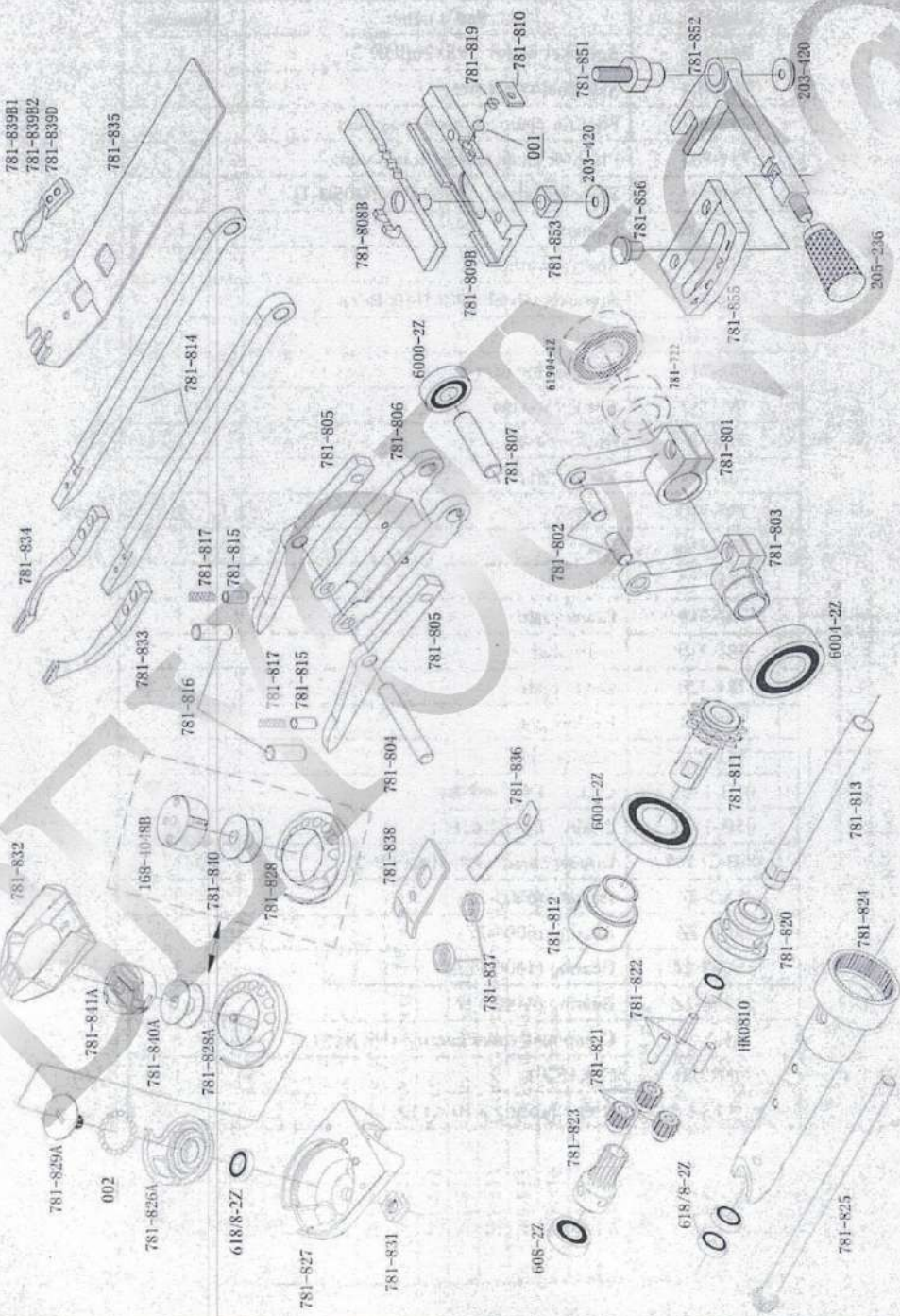


Fig. No.	Part's name	Quantity	Fig. No.	Part's name	Quantity
781-801	Rocker lever	1	781-829A	Center spindle	1
781-802	Pin	2	781-831	Nut	1
781-803	Rocker lever	1	781-832	Needle plate	1
781-804	Pin	1	781-833	Left claw	1
781-805	Claw lifting lever	2	781-834	Right claw	1
781-806	Arm-pit lever	1	781-835	Cover plate	1
781-807	Pin	1	781-836	Spring Piece	1
781-808B	Slider	1	781-837	Washer	2
781-809B	Track of slider	1	781-838	Pressing plate	1
781-810	Cover plate	1	781-839B1/B2/D	Separator	1 each kind
781-811	Sprocket wheel P8×11(05B-2)	1	781-840	Bobbin	1
781-812	Sleeve	1	(781-840A)	(Bobbin)	
781-813	Connection shaft	1	168-4048B	Bobbin housing (include 168-4048-2)	1
781-814	Connect lever for feeding	2	(781-841A)	(Bobbin housing)	
781-815	Nylon column	2	781-851	Pin	1
781-816	Small piston	2	781-852	Adjusting lever	1
781-817	Spring	2	781-853	Slider	1
781-819	Spring	1	781-855	Bracket	1
781-820	Geared flange	1	781-856	Slider	1
781-821	Planet gear	3	203-420	Washer	2
781-822	Pin	3	205-236	Handle	1
781-823	Center gear	1	608-2Z	Bearing (608-2Z)	1
781-824	Planet carrier sleeve	1	618/8-2Z	Bearing (618/8-2Z)	2
781-825	Inner gear	1	HK0810	Needle roller bearing (HK0810)	1
781-826A	Shuttle driver	1	6004-2Z	Bearing (6004-2Z)	2
781-827	Shuttle holder	1	6000-2Z	Bearing (6000-2Z)	1
781-828	Shuttle (include 168-4046-2 spring leaf)	1	001	Φ6 steel ball	1
(781-828A)	(Shuttle)		002	Φ2.5 steel ball	26

Parameter Setting of the Motor (HVP-90 for 781/2)

Parameter Mode A: Press 'P' key to enter Parameter Mode A

PARAMETER CODE	DEFAULT	DESCRIPTION
001	400	Maximum sewing speed, Recommended speed less than 500RPM.
007	400	Soft start speed adjustment, don't adjust is recommended.
046	CW	Direction of motor rotation.

Parameter Mode B: Turn off the motor, press and hold the 'P' key, then turn on the power to enter Parameter Mode B.

PARAMETER CODE	DEFAULT	DESCRIPTION
049	156	Setting machine pulley dimension, don't adjust is recommended.
050	65	Setting machine pulley dimension, don't adjust is recommended.
060	150	Setting acceleration curve, recommended value less than 200.
065	55	For solenoid's switching power adjustment, recommended value less than 55. Wrongly adjustment will cause the solenoid unable to lift or over-heating!
067	OFF	Keep lifting when presser foot active is stop.
069	0	Time setting between sewing stop active to presser foot active.
072	ON	

Parameter Mode C: Turn off the motor, press and hold the 'S' key, then turn on the power to enter Parameter Mode C.

PARAMETER CODE	DEFAULT	DESCRIPTION
168	20	Setting needle stop torsion, recommended value less than 30.
246	OFF	Keep lifting when presser foot active is stop.

Reset to the motor's factory defaults:

Turn off the motor, press and hold the key 'A' and 'B' together, and then turn on the main switch to reset the motor.