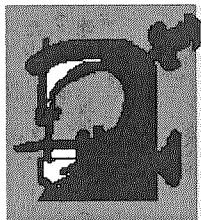


MANUAL AND  
SPARE PARTS LIST

GARUDAN®

GF-145-443 H/L50

GF-245-443 H/L50



anita

ANITA B, s.r.o.

Hliníky 2068

680 01 Boskovice

Czech Republic

tel: +420 516454774, 516453496

fax: + 420 516452751

e-mail: [info@anita.cz](mailto:info@anita.cz)

[www.garudan.cz](http://www.garudan.cz)

---

— INDEX —

Specifications . . . . .	1
Setting up the machine . . . . .	2
Caution before starting the operation . . . . .	2
Oiling . . . . .	2-3
Needle . . . . .	3
Thread . . . . .	4
Winding the lower thread on the bobbin . . . . .	4
Removing and inserting the bobbin . . . . .	4
Threading the needle . . . . .	5
Regulating the thread tensions . . . . .	5
Adjustment of the stitch . . . . .	6
Adjustment of the pressure . . . . .	6
Reverse stitching . . . . .	6

#### INSTRUCTIONS FOR ADJUSTMENT

Relative position of vibrating and lifting presser bar, also, of the needle and the needle hole of the feeder . . . . .	7
Adjustment of the height of the feed dog . . . . .	7
Timing between the hook and the needle . . . . .	8
Adjustment of bobbin case opener . . . . .	9
Adjustment of the height of the presser feet . . . . .	10
Timing of the vibrating and lifting presser feet . . . . .	10
Adjustment of the clearance for the vibrating and lifting presser feet . . . . .	10
Adjustment of the thread controller spring . . . . .	11
Replacement of the connection belt . . . . .	11-12
To re-engage the safety clutch . . . . .	13
Adjustment of the oiling for the hook saddle . . . . .	13
Treadle assembly complete set . . . . .	14

---

[www.garudan.cz](http://www.garudan.cz)

## OPERATING INSTRUCTIONS

This is a guide to use of GF-145-443 H/L50, GF-245-443 H/L50 Series model long-arm high speed for heavy-duty materials sewing machine with compound feed and walking foot feeding mechanism, under the best condition.

Please read this guide thoroughly so that you may expect good performance.

### Specifications

	SINGLE NEEDLE GF-145-443 H/L50	
MAX. SPEED (s. p. m.)	1,200	
MAX. STITCH (mm)	10	
MAX. LIFT OF FOOT (mm)	20	
NEEDLE	DY × 3 (standard No. 24) • SY5213 • 794	
BOBBIN SIZE (mm)	370 × 13	
WORKING SPACE (mm)	508 × 153	762 × 153
BED DIMENSION	846 × 230	1,100 × 230
POWER REQUIRED (W)	400w, 2p	
MOTOR PULLEY DIA. (mm)	70 Ø / 60 Ø (50 / 60Hz)	
NET/GROSS WEIGHTS M <sup>3</sup>	109/kgs.	151/kgs. 0.377 / M <sup>3</sup>

	TWIN NEEDLE GF-245-443 H/L50	
MAX. SPEED (s. p. m.)	1,200	
MAX. STITCH (mm)	10	
MAX. LIFT OF FOOT (mm)	20	
NEEDLE	DY × 3 (standard No. 24) • SY5213 • 794	
BOBBIN SIZE (mm)	370 × 13	
WORKING SPACE (mm)	508 × 153	762 × 153
BED DIMENSION	846 × 230	1,100 × 230
POWER REQUIRED (W)	400w, 2p	
MOTOR PULLEY DIA. (mm)	60 Ø / 50 Ø (50 / 60Hz)	
NET/GROSS WEIGHTS M <sup>3</sup>	112/kgs.	154/kgs. 0.377 / M <sup>3</sup>
NEEDLE SPACING	3/16" (4.7 mm), 2-3/8" (60 mm), Standard 1/4" (6.4 mm)	

### USE FOR

Tent, Sailcloth, Rubberized, Fabrics, Heavy Synthetic, Heavy Upholstery Materials, Fiber Plate, Leather, Etc.

---

## SETTING UP THE MACHINE ( Fig. 1 )

Setting up the machine on the table after removed two pieces of supporting bolts ( A ) under the bed.

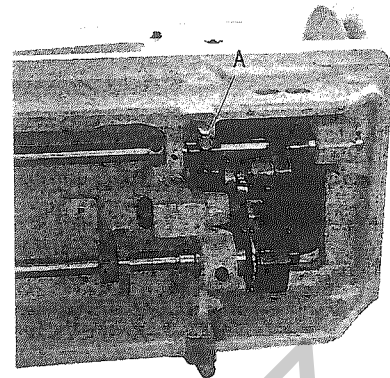


Fig.1

## CAUTION BEFORE STARTING THE OPERATION

1. Do not operate the machine, even if only for testing and or idling, unless it has been properly oiled at every spot and reservoir required lubrication.

During practice period the new machine should be oiled more frequency.

2. The machine pulley turns toward to the operator.

(The auxiliary hand wheel turns to clockwise.)

Do not operate the machine at maximum speed of 1,200 s.p.m., for starting operation. To take practice operation at speed of 1,000 s.p.m., but operating speed are to be changed to proper condition suitable for the materials in case by case.

## OILING ( Figs. 2、 3、 4 & 5 )

1. Oil should be applied at each of the place designated by arrows in Fig. 2, 3, 4&5.

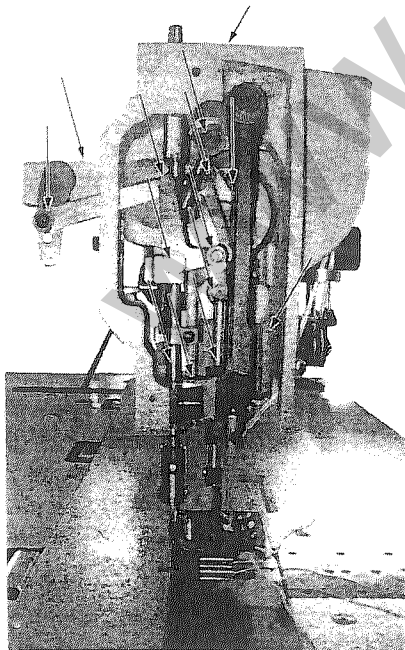


Fig.2

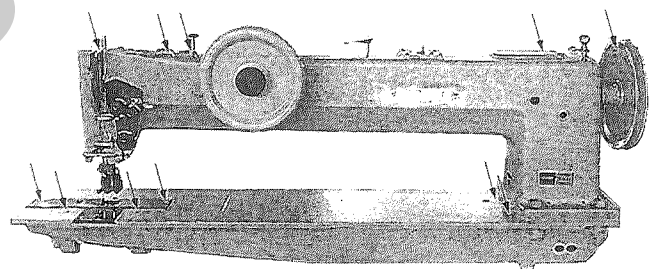


Fig.3

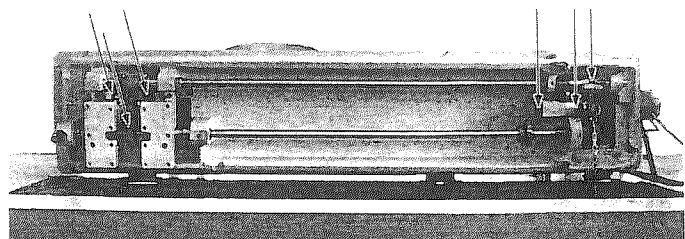


Fig.4

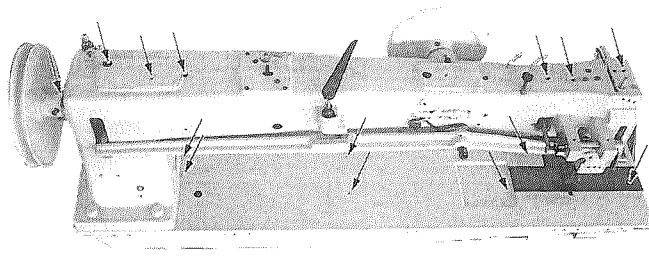


Fig.5

2. To fill the oil for reservoir of hook saddle from the hole after taken out the oil gauge ( Fig. 6 A ) and pour the oil until the oil level reached to the upper reference line of the oil gauge ( Fig. 6-1 B ) .
3. When in continuous use, it should be oiled at least twice a day.

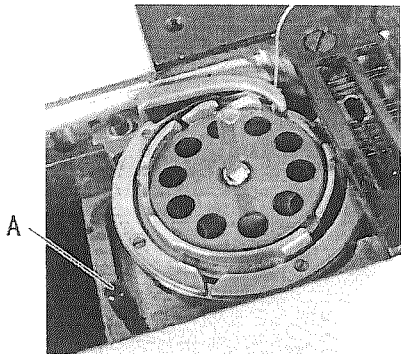


Fig.6



Fig.6-1

**NEEDLE ( Figs. 7 & 8 )**

1. series machines are set up to use standard needle of DY  $\times 3$  ( sandard No. 24 ) • SY5213 • 794.

The size of needle to be used should be determined by the size of thread, type and thickness of the sewing materials.

2. To insert the needle, turn the machine pulley over toward you until the needle bar moves up to its highest point, put the needle up into the needle bar as deeply as it will go, with the long groove of the needle faced outside.

Tighten the needle set screw securely.

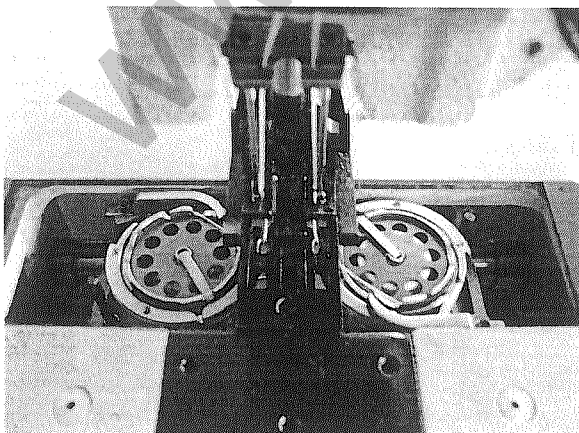


Fig.7

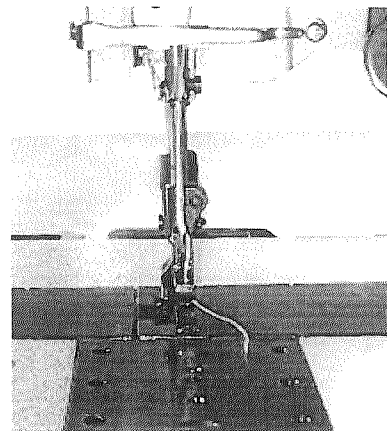


Fig.8

## THREAD ( Fig. 9 )

Normally, left twisted thread is used for upper ( needle ) thread. ( But, for left side needle of twin-needle machine, it can be finished in fine results with right twisted thread. )

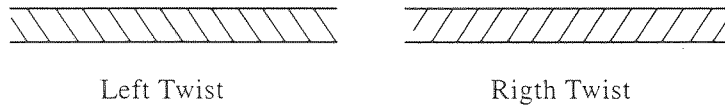


Fig.9

## WINDING THE LOWER THREAD ON THE BOBBIN ( Figs. 10 & 11 )

1. Pass the thread through ( 1 ) - ( 4 ) , and wind several times around the bobbin, which set up to the shaft of bobbin winder. ( 5 )
2. Press the lever ( 6 ) to arrow direction, then the bobbin winds the thread automatically, in engage with the operation of the machine.

The bobbin will automatically be stopped after the bobbin is filled with thread.

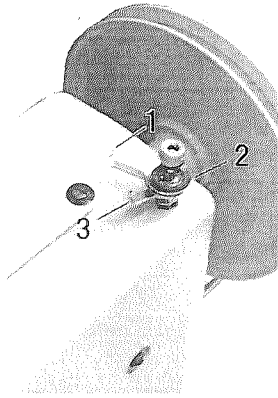


Fig.10

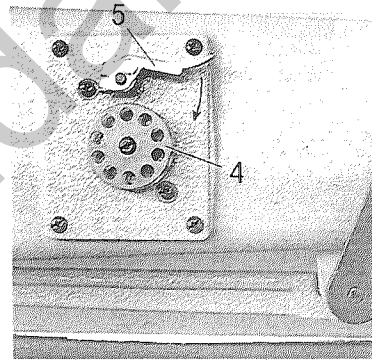


Fig.11

## REMOVING AND INSERTING THE BOBBIN ( Figs. 12 & 13 )

1. Draw back the side plate ( 1 ) on the bed of the machine, and raise the hinged latch ( 2 ) to a vertical position, then removes and insert the bobbin.
2. Insert the bobbin and pull thread out about 4-5cm ( 3 ) , then push down the hinged latch ( 2 ) and draw the thread end under the tension spring ( 4 ) .
3. When closing the side plate ( 1 ) , leave just enough space for the thread to pass through.

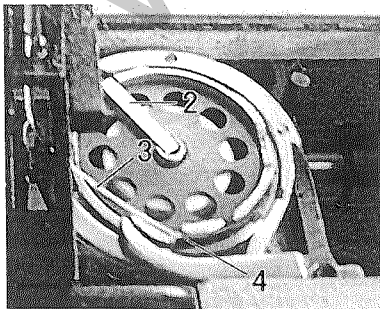


Fig.12

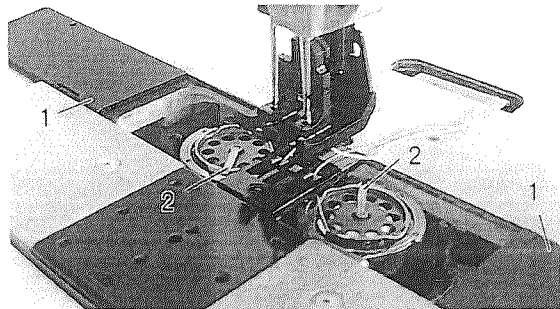


Fig.13



## THREADING THE NEEDLE

1. Pass the thread from thread guide (1) - eyelet (2) - tension disc (3) - tension thread guide (4) - guide (5) - thread take-up spring (6) - guide (7) - take-up lever (8) - guide (7) - lower guide (9) - self threading needle bar thread guide (10) - through the eye of the needle (11) .

(Remark) Wind the thread a single time to tension thread guide (4) .

2. With the left hand hold the end of the needle thread leaving it slack from the hand to the needle. Turn the machine pulley over toward you until the needle moves down and up again to its highest point, thus catching the bobbin thread, draw up the needle thread, and the bobbin thread will come up with it through the hole in the feed dog. Lay the threads back under the presser feet and close the slide.

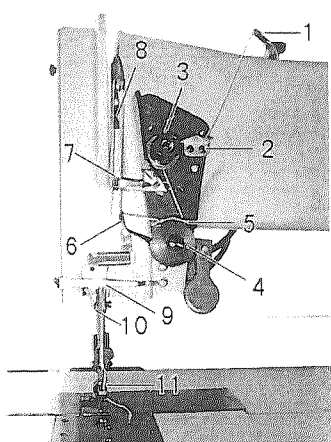


Fig.14

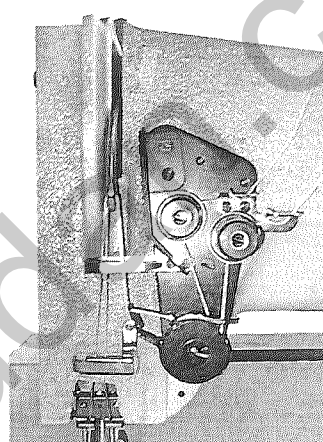


Fig.15

## REGULATING THE THREAD TENSIONS ( Figs. 16 & 17 )

1. The tension on the needle thread is regulated by the thumb nut ( Fig. 16A ) .
2. The tension on the bobbin thread is regulated by the screw of the tension spring on the outside of the bobbin case ( Fig. 17A ) .

To increase the tension, turn over nut or screw to the right, and to decrease the tension, turn over nut or screw to the left.

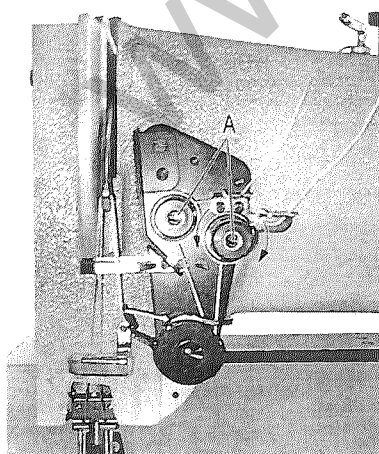


Fig.16

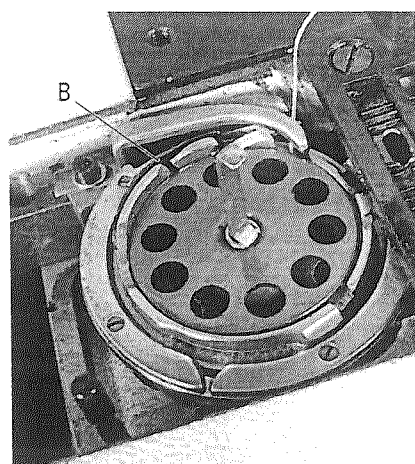


Fig.17

---

### ADJUSTMENT OF THE STITCH LENGTH ( Fig. 18 )

The length of stitch is regulated by pressing down the button (1) with left hand, while turning the machine pulley (2) slowly with right hand in the condition of setting the top of button (1) to the feed eccentric. To increase the length of stitch, turn the machine pulley over toward you. To decrease the length of stitch, turn the machine pulley to opposite direction.

When the desired length of stitch is obtained, operate the machine after fully confirmed releasing the button (1) to the original position.

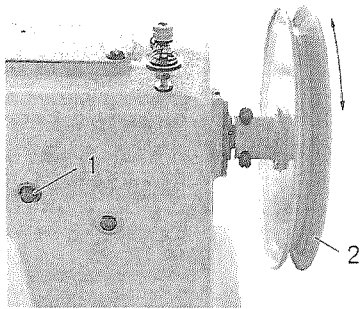


Fig.18

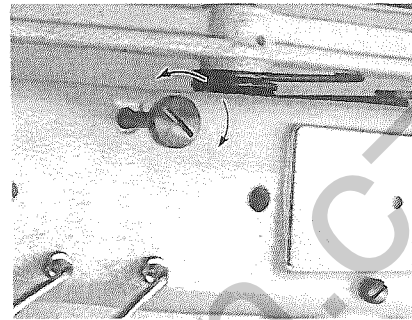


Fig.19

### ADJUSTMENT OF THE PRESSURE ( Fig. 19 )

The pressure of the presser feet is regulated by the adjusting screw.

To increase the pressure, turn the screw to clockwise, and decrease it, turn the screw to counter-clockwise.

### REVERSE STITCHING ( Fig. 20 )

The chain for the feed reversing pedal is connected to the hook of feed reversing lever (A) underneath of the bed of the machine.

To feed the work toward you, press down firmly on the feed reversing pedal, and do not stop to press down on the way.

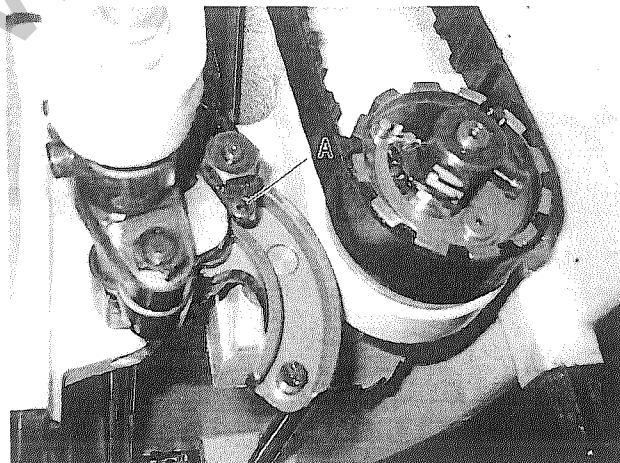


Fig.20

## INSTRUCTIONS FOR ADJUSTMENT

### RELATIVE POSITION OF VIBRATING AND LIFTING PRESSER BAR, ALSO, OF THE NEEDLE AND THE NEEDLE HOLE OF THE FEEDER ( Figs. 21 & 22 )

1. The distance between the vibrating presser bar (1) and lifting presser bar (2), after adjusting the feed eccentric so that there is no feed movement of the needle bar, should be 15.5 mm (one needle) and 14.5 mm (two needle) .

To adjust by the screws for connecting crank (3) .

2. Normally, relative position of the feed dog against the needle, the needle should be passed through the center of the needle hole of the feed dog.

To adjust by the screw for the feed rock shaft bell crank (4) .

3. Securely tighten the screws after finished adjustment.

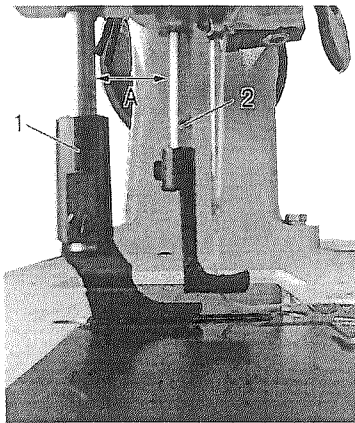


Fig.21

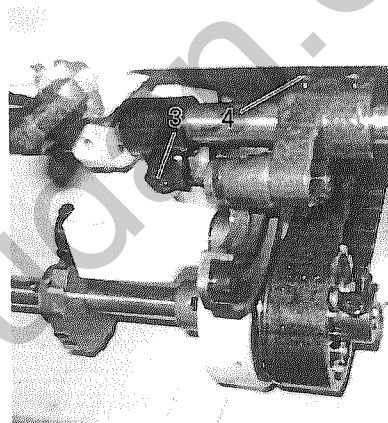


Fig.22

### ADJUSTMENT THE HEIGHT OF THE FEED DOG ( Figs. 23、 24 & 25 )

The maximum height of the feed dog from the surface of the needle plate is normally 1.3 mm.

To adjust this height by the screw on the feed lifting cam fork of the feed bar and raise or lower the feed dog, as may be required, and retighten the screw (1) .

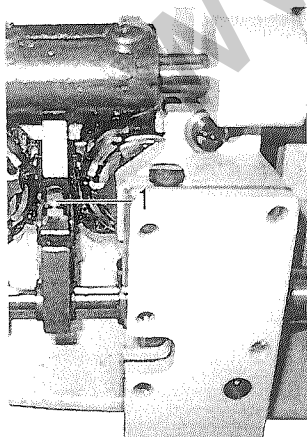


Fig.23

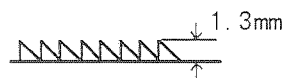


Fig.24

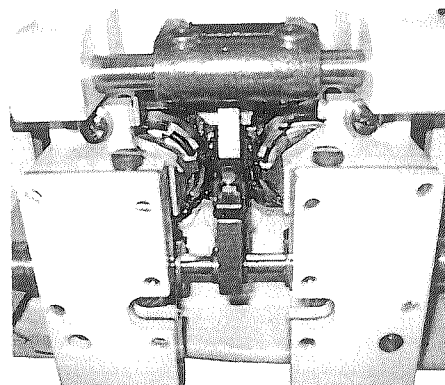


Fig.25

## TIMING BETWEEN THE HOOK AND THE NEEDLE ( Fig. 26 )

Set the feed eccentric with the button at no feeding position, and confirm the length between vibrating and lifting presser bar should be 15.5 mm.

1. If the needle bar and sewing hook are correctly timed, the point of the hook will be at the center of the needle when the needle raised 3.8 mm + 0.5 mm from the lowest point.

For the adjustment of timing, loosen 2 screws ( 1 ) for hook driving gear, and tap this gear to the right or left in clearance of 2 mm on the hook driving shaft until the point of the hook is at the center of the needle.

Tapping to the right gives an earlier hook timing, and to the left gives later hook timing.

Except the above case, to adjust in changing gear condition between hook driving gear ( 2 ) and hook shaft gear ( 3 ) .

Securely tighten the 2 set screws for hook driving gear after finished adjustment.

2. Normal clearance between hook point and scarf of the needle is in 0.02 - 0.1 mm

- ( 1 ) Loosen two screws ( 4 ) and ( 5 ) for hook saddle.
- ( 2 ) Move hook saddle to right or left, as may be required, until hook point is as close to needle as possible without striking it.
- ( 3 ) Then securely tighten two screws.
- ( 4 ) To check the needle with careful attention free from bent before adjustment.

3. Height of the needle bar ( Fig. 27 ) .

Normal clearance between top of the eye of the needle and hook point is 2.2 mm.

In case the needle bar is incorrectly set, loose the needle bar connecting stud pinch screw ( A ) and place the needle bar in correct position as required above, then retighten the screw ( A ) .

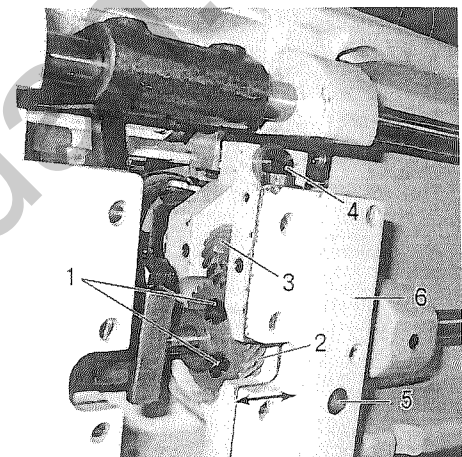


Fig.26

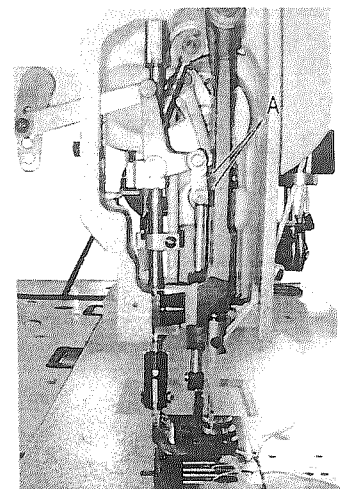
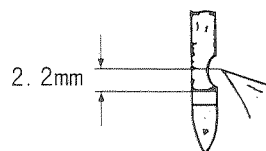


Fig.27

### ADJUSTMENT OF BOBBIN CASE OPENER ( Fig. 28 )

1. Turn the machine pulley or hand wheel ( Fig. 31 D & E ) until the top of the opener is located at the distance from the needle plate.
2. In this position, adjust it so that the clearance between the inside edge of the opener ( A ) and the top of the hook is about 0.3 - 0.8 mm.
3. Securely tighten the screw ( B ) after finished adjustment.

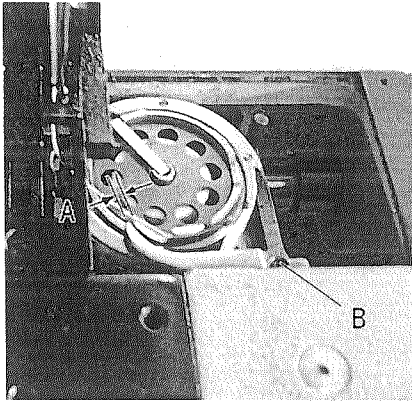


Fig.28

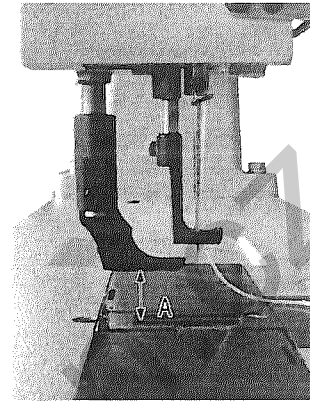


Fig.29

### ADJUSTMENT OF THE HEIGHT OF THE PRESSER FEET ( Figs. 29、 30 & 31 )

Normal distance between the surface of the needle plate ( A ) and vibrating presser foot at stopped position of the stop lever ( C ) is 19 mm.

When step on the lifting pedal, the stop lever ( C ) will be released by the lifting lever ( B ) .

1. To change the relative lift of the presser feet, loosen the screw ( 1 ) at the above condition.
2. The height of lift of the presser feet is adjustable by moving the screw of presser bar lifting bracket.
3. Normal distance between presser bar position guide bracket ( 3 ) and presser bar position guide ( 4 ) is 7 mm.

Position of the vibrating presser foot to shift in left and right is to be adjusted by the screw ( 2 ) for presser bar lifting bracket and the screw ( 5 ) for presser bar position guide bracket.

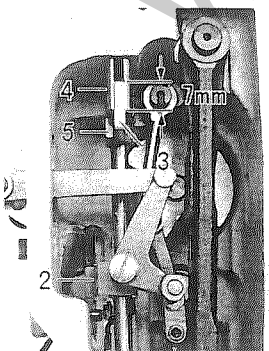


Fig.30

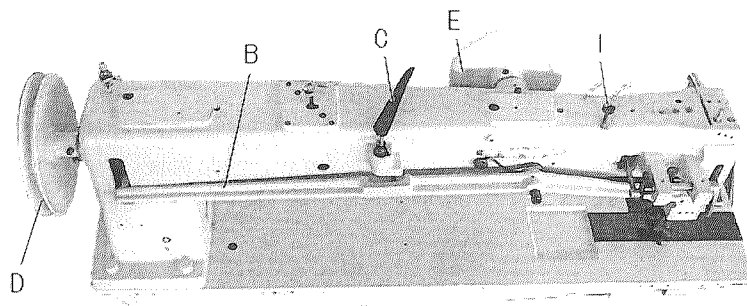


Fig.31

---

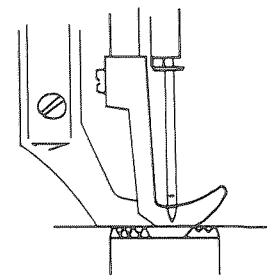
### TIMING OF THE VIBRATING AND LIFTING PRESSER FEET ( Fig. 32 )

The amount of lift of the vibrating and lifting presser feet should be regulated according to the thickness of materials being sewn.

The feet should lift just enough to clear the materials.

As a rule, the vibrating and lifting presser feet should lift an equal height, but some grades of work may require that they lift an unequal height.

To change the relative lift of the presser feet, loosen the screw ( A ) for lifting rock shaft crank and move the vibrating presser bar upward or downward as required, then securely tighten the screw ( A ) .



Upper Surface

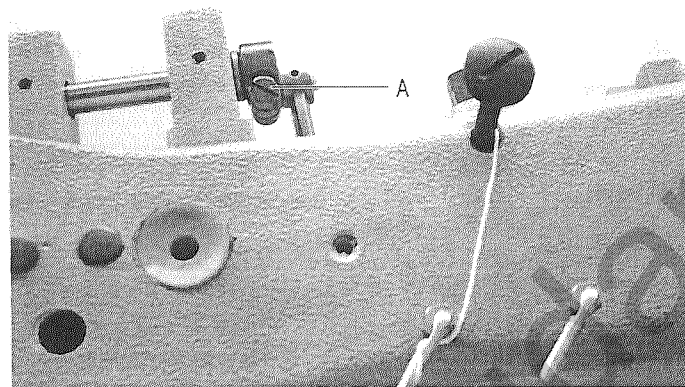


Fig.32

### ADJUSTMENT OF THE CLEARANCE FOR THE VIBRATING AND LIFTING PRESSER FEET ( Fig. 33 ) (RE-ADJUSTMENT THE TIMING OF THE VIBRATING AND LIFTING PRESSER FEET-Fig. 32)

The amount of the lift of the alternating feed for the vibrating and lifting presser feet are to be adjusted by the lifting bell crank link screw stud ( 1 ) .

To decrease the movement in setting the stud ( 1 ) at the upper position, and to increase the movement in setting the stud ( 1 ) at the lower position. After setting to the required position, securely tighten the stud ( 1 ) with nut ( 2 ) .

The clearance for the vibrating and lifting presser feet are being adjusted at maximum, so that the clearance of them should be adjusted according to the materials being sewn.

The timing position for the vibrating and lifting presser feet should be regulated by Fig. 32.

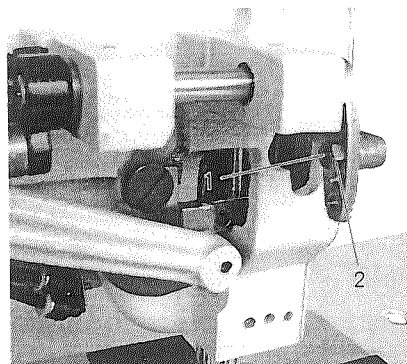


Fig.33

---

### ADJUSTMENT OF THE THREAD CONTROLLER SPRING ( Fig. 34 )

1. For more controller action on the thread, loosen the set screw ( 1 ) at the right of the controller and set the stop lever, and for less action set the stop higher.
2. To strengthen the action of the controller spring on the thread, loosen the spring stud screw ( 4 ) at the rear of the stop screw and turn the spring stud ( 5 ) slightly to the left with a screwdriver, or lighten its action turn to the right and securely retighten the spring stud screw.

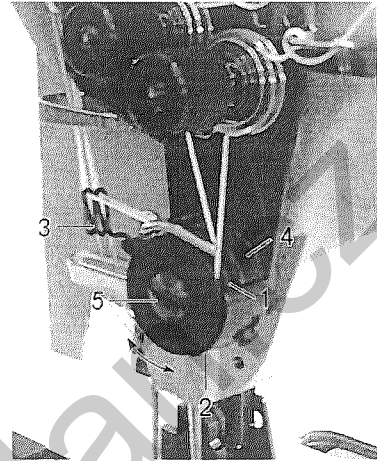


Fig.34

### REPLACEMENT OF THE CONNECTION BELT

- A. when the connection belt removed from the pulley for adjusting and or replacing purposes of the parts, it should be replaced by the processes, as followings: ( Figs. 35 & 36 )
1. Turn the machine pulley toward you so that placed the take-up lever ( A ) at the highest position.
  2. Turn the hook shaft with the fingers until the arrow mark on the hook driving shaft bushing collar ( 2 ) and the red point mark on the hook driving shaft bushing ( 1 ) are directly in line. Then replace the belt over the upper and lower pulley.

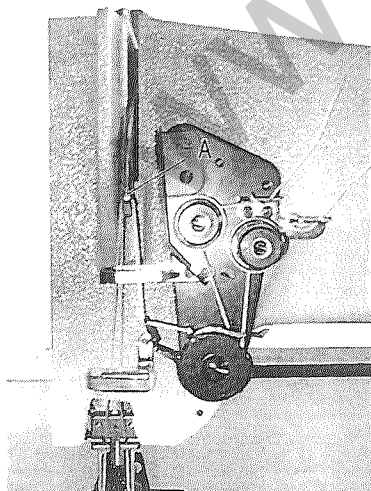


Fig.35

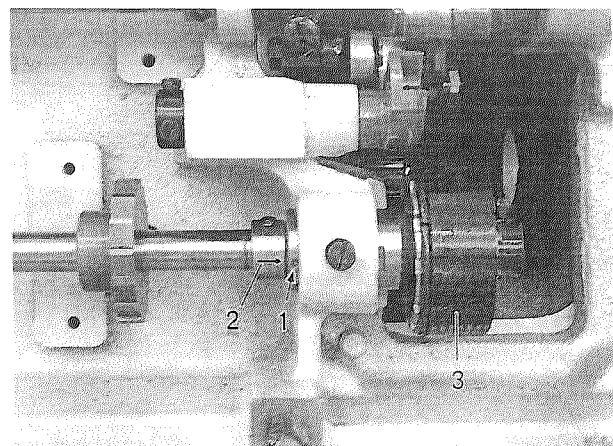


Fig.36

---

B. Replacement of the connection belt when damaged. ( Figs. 37 & 38 )

1. Remove the upper arm plate and reservoir.
2. Slide the connection belt ( A ) off from lower and upper belt pulley.
3. Loosen the machine pulley adjustment screw ( 2 ) and two set-screws for the machine pulley ( 3 ) , then remove the machine pulley.
4. Loosen the three screws in the arm shaft bushing ( 5 ) and remove the bushing ( 6 ) .
5. Lift the belt up through the arm cap hole after removed the bushing ( 6 ) as far as possible and draw it out through the space normally occupied by the bushing.
6. Replace the connection belt as opposite processes as above for removing it.
7. Securely tighten all the screws, so as to fit the arm shaft, firmly, free from looseness.

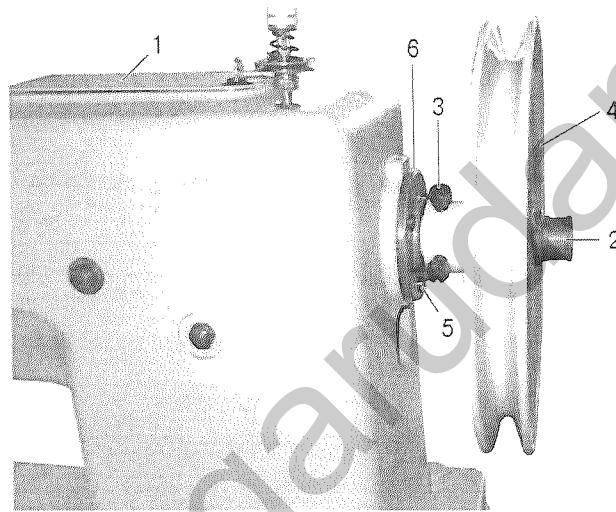


Fig.37

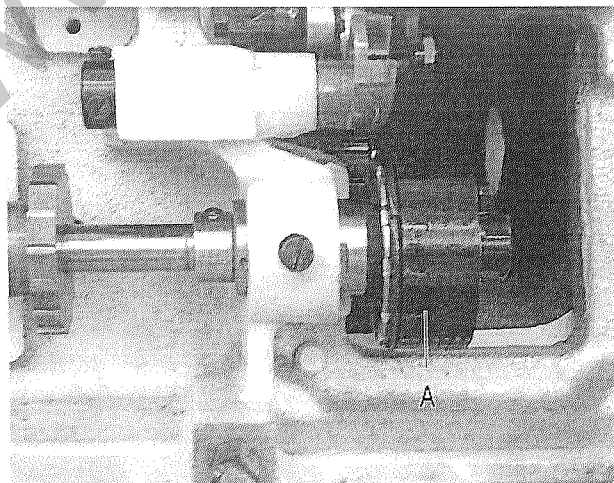


Fig.38



---

### TO RE-ENGAGE THE SAFETY CLUTCH ( Figs. 39 & 40 )

The hook driving shaft and the shaft of the sewing hook are splined to prevent the hook from getting out of time. The safety clutch located in the lower belt pulley prevents damage in the event of thread jamming in the sewing hook by releasing the locking lever in the pulley.

1. Take out jammed thread from the hook.
2. To re-engage the clutch, press down the lock stud ( A ) , near the base of the arm by left hand and turn the machine pulley backward slowly by right hand, then the safety clutch will be released.
3. In the case easily releasing the safety clutch, adjust the pressure by the screw ( B ) for lower belt pulley after removed connection belt ( C ) .

To increase the pressure in turning the screw ( B ) to clockwise and to decrease the pressure in turning the screw ( B ) to counter-clockwise.

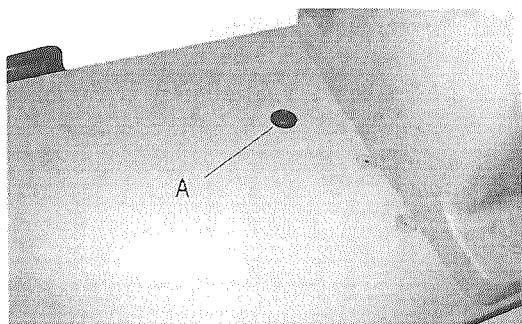


Fig.39

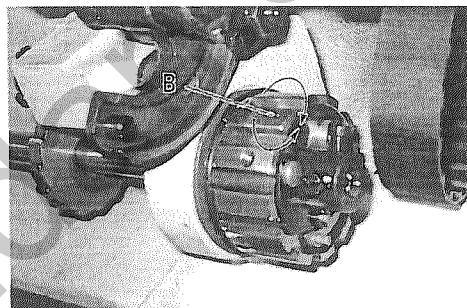


Fig.40

### ADJUSTMENT OF THE OILING FOR THE HOOK SADDLE ( Fig. 43 )

Loosen the screw for the oil adjustment dial ( 3 ) and adjust oil supply by turning the oil adjustment dial ( 2 ) . Maximum oil supply at the directly in line of the point mark ( 1 ) on the hook saddle and the center line of the dial ( 2 ) . Stop the oil supply at the vertical position of the center line of the dial ( 2 ) .

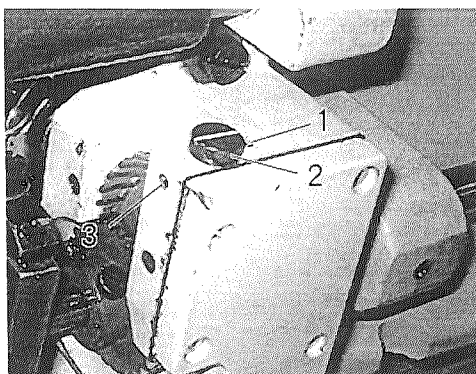
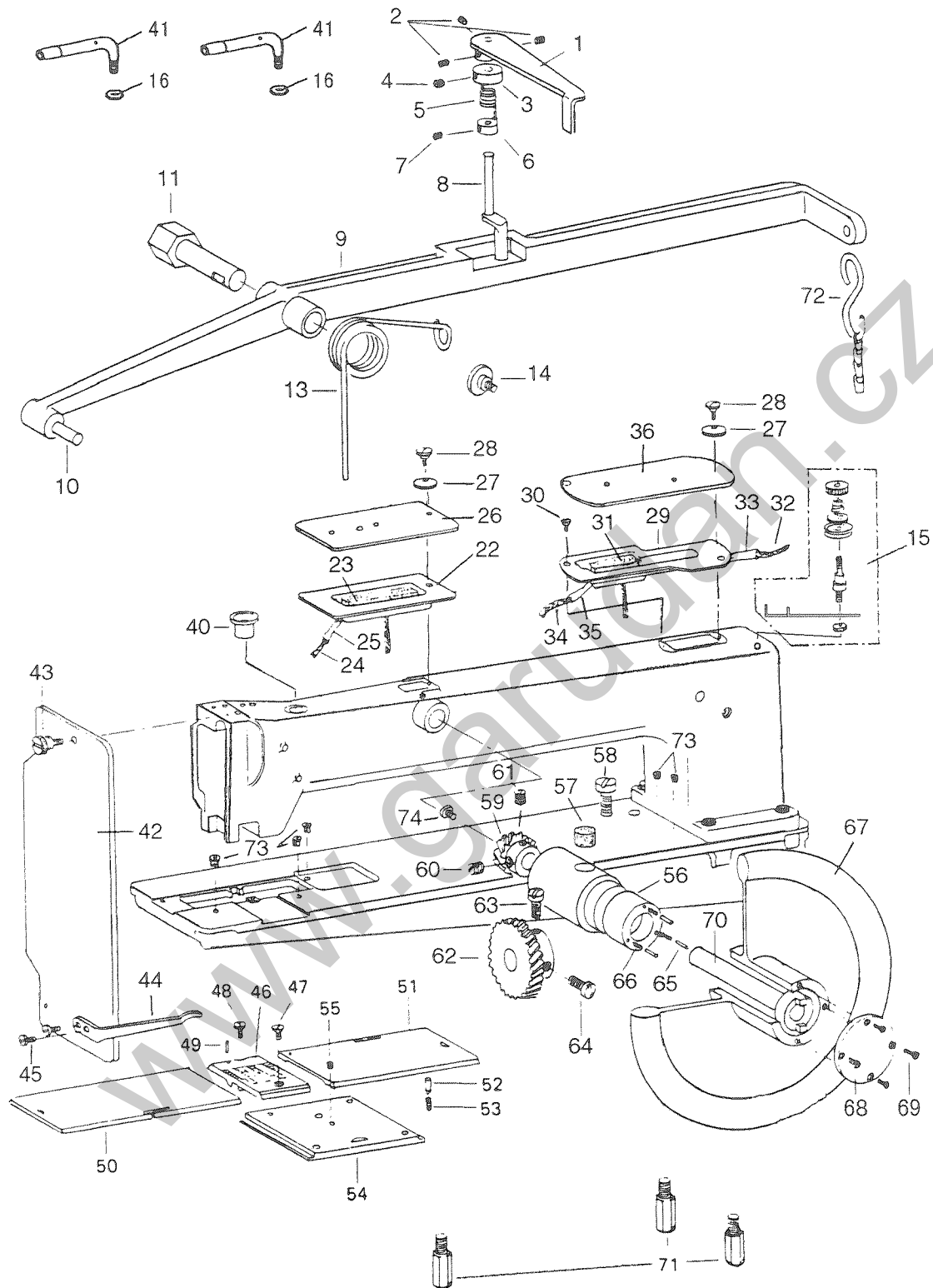


Fig.43

# A. ARM BED AND ITS ACCESSORIES



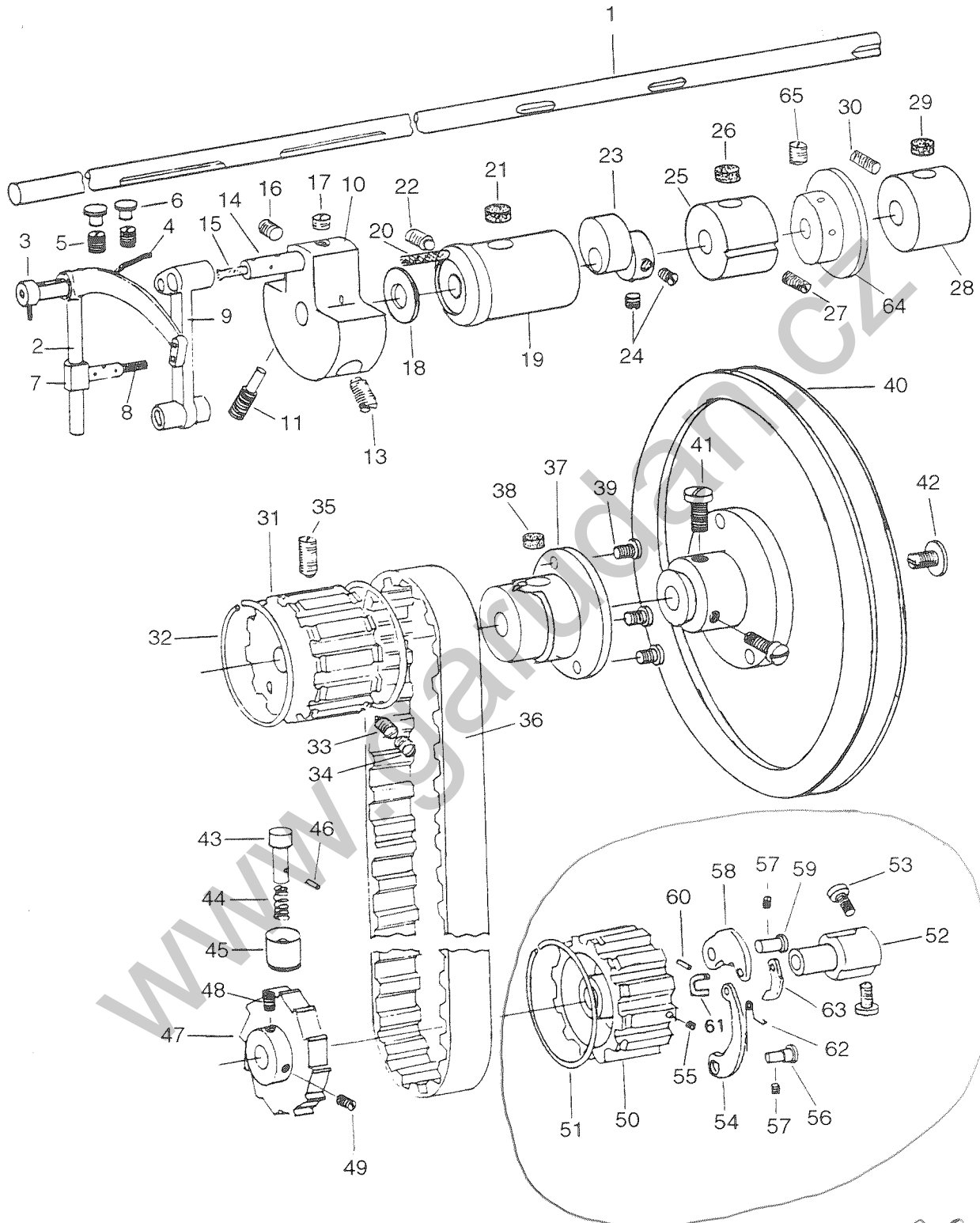
## A. ARM BED AND ITS ACCESSORIES

Fig. Nos.	Parts Nos.	Quantity	Description
1	HE924B7101	1	Foot lifter lifting lever latch handle.
2	HA100B2110	3	Set screw
3	HE913B8001	1	Collar (upper)
4	H7214H8001	1	screw
5	HE915B8001	1	Foot lifter lifting lever latch spring.
6	HE916B8001	1	Collar (lower)
7	HA100C2170	1	Set screw
8	HE917B8001	1	Foot lifter lifting lever latch.
9	HE918B8001	1	Foot lifter lifting lever.
10	HE919B8001	1	Pin
11	HE920B8001	1	Foot lifter lifting lever hinge stud.
13	HE921B8001	1	Foot lifter lifting lever spring.
14	HE048D8001	1	Screw
15	H7014D7101	1	Down-lead complete
16	HE021B8001	2	Nut
22	HE949B8001	1	Lubricating oil cup (front).
23	HE950B8001	1	Oil pad
24	HE930B8001	1	Oil wick (A)
25	HE931B8001	1	Vinyl tube (A)
26	HE951B8001	1	Arm cap (front).
27	HE045D8001	2	Washer
28	H2015I0065	1	Stop screw
29	HE928B8001	1	Lubricating oil cup
30	HE111F8001	1	Set screw
31	HE929B8001	1	Oil pad
32	HE932B8001	1	Oil wick
33	HE933B8001	1	Vinyl tube
34	HE930B8001	1	Oil wick
35	HE931B8001	1	Vinyl tube
36	HE934B8001	1	Arm cap
40	H7327B8001	1	Arm oil plug.
41	HE020B8001	2	Thread guide.
42	HE937B8001	1	Face plate.
43	HE938B8001	1	Face plate thumb screw.
44	HE939B8001	1	Thread guide (lower).
45	HE025C8001	2	Screw for 70080.
46	HE940B8001	1	Throat plate.
47	HE005H8001	1	Throat plate screw.
48	HE006H8001	1	Throat plate position screw.
49	H3200B2130	1	Throat plate stop.
50	HE942B8001	1	Bed slide (left).

## A. ARM BED AND ITS ACCESSORIES

Fig. Nos.	Parts Nos.	Quantity	Description
51	HE943B8001	1	Bed slide (right).
52	HE946B8001	1	Bed slide stop.
53	HE009H8001	1	Bed slide stop spring.
54	HE944B8001	1	Bed plate (front).
55	HE013H8001	1	Screw
56	HE957B8001	1	Arm cross shaft bushing.
57	HE014C8001	1	Oil wick
58	HE040D8001	1	Set screw
59	HE958B8001	1	Arm cross shaft gear.
60	HE017G8001	1	Position screw
61	HE023C8001	1	Position screw
62	HE959B8001	1	Hand wheel driving gear.
63	HE022G8001	1	Set screw
64	HE960B8001	1	Set screw
65	HE961B8001	3	Hand wheel disengaging spring plunger.
66	HE962B8001	3	Hand wheel disengaging spring.
67	HE963B8001	1	Hand wheel.
68	HE964B8001	1	Hand wheel engaging plate.
69	HA700F2100	4	Screw
70	HE965B8001	1	Arm cross shaft.
71	HE956B8001	3	Machine supporting bolt.
72	H8000H2070	1	Foot lifter lifting lever chain hook.
73	H2000M0090	5	Ball oiler.
74	HA700F2100	1	Screw

B. ARM SHAFT MECHANISM



CLUTCH AS17.

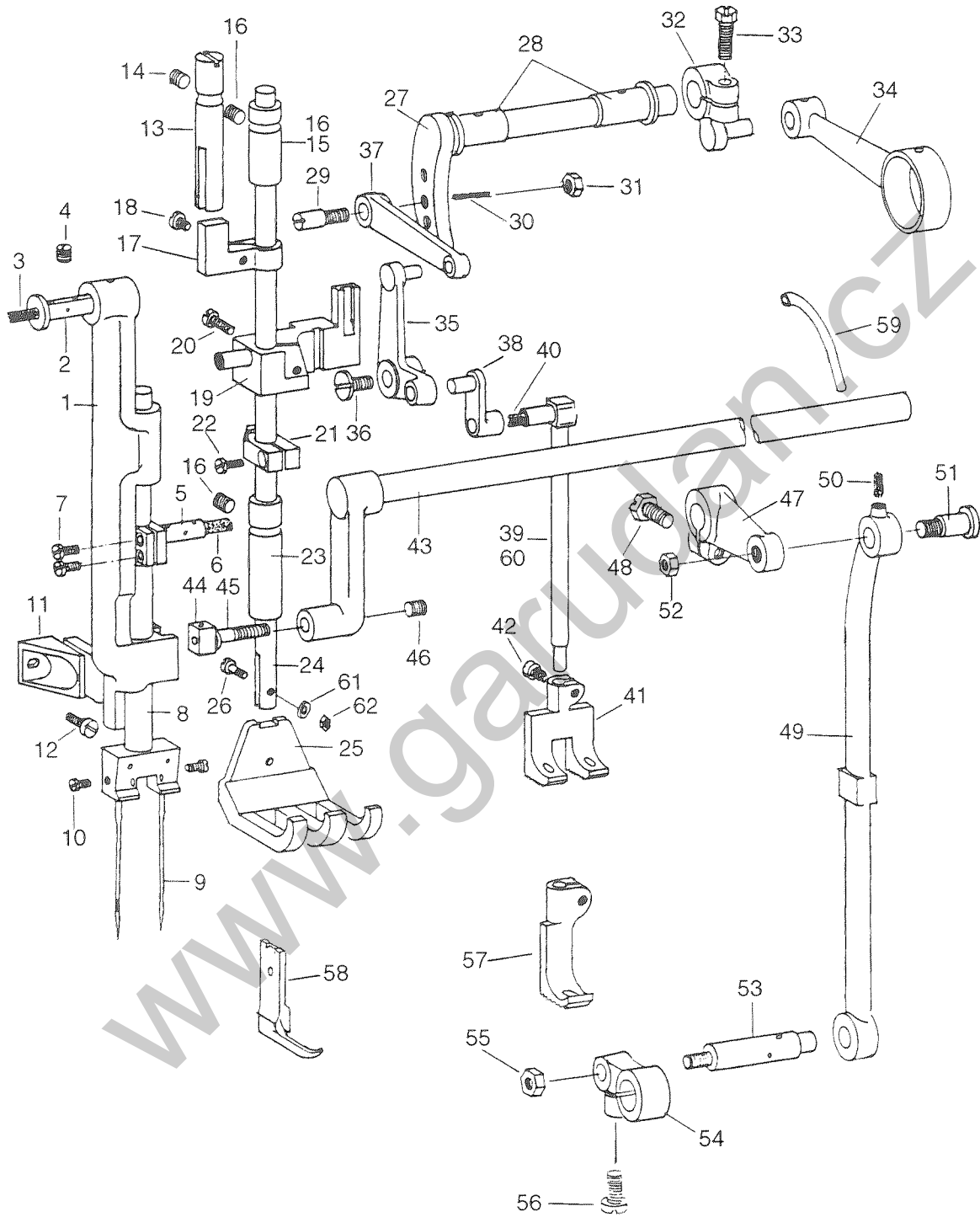
## B. ARM SHAFT MECHANISM

Fig. Nos.	Parts	Nos.	Quantity	Description
1	HE904C8001		1	Arm shaft.
2	HE905C8001		1	Take-up lever.
3	HE906C8001		1	Take-up lever hinge stud.
4	HE907C8001		1	Oil wick
5	HE020C8001		2	Set screw
6	HA100B2150		2	Cap
7	HE908C8001		1	Take-up lever driving stud.
8	HE035C8001		1	Oil wick
9	HE909C8001		1	Needle bar connecting link.
10	HE910C8001		1	Needle bar crank.
11	HA100C2070		1	Position screw
12	HE013C8001		1	Set screw
13	HA100C2060		1	Set screw
14	H3100C2070		1	Needle bar connecting link stud.
15	HE041C8001		1	Oil wick
16	HE013C8001		1	Set screw
17	HE911C8001		1	Set screw
18	HE011C8001		1	Needle bar crank friction washer.
19	HE912C8001		1	Arm shaft bushing (front).
20	HE014C8001		1	Oil wick
21	HE010G8001		1	Oil pad
22	HE028C8001		1	Set screw
23	HE914C8001		1	Feed driving eccentric.
24	HE023C8001		2	Set screw
25	HE915C8001		1	Arm shaft center bushing (front).
26	HE014C8001		1	Oil pad
27	HE020C8001		1	Set screw
28	HE916C8001		1	Arm shaft center bushing
29	HE014C8001		1	Oil pad
30	HE020C8001		1	Set screw
31	HE026C8001		1	Arm shaft connection belt pulley.
32	H3205C0661		2	Arm shaft connection belt pulley spring flange.
33	HE006D8001		1	Set screw
34	HE030C8001		1	Check screw
35	HE028C8001		1	Position screw
36	HE917C8001		1	Connection belt.
37	HE918C8001		1	Arm shaft bushing
38	HE014C8001		1	Oil pad
39	HE919C8001		3	Set screw
40	HE920C8001		1	Machine pulley.

## B. ARM SHAFT MECHANISM

Fig. Nos.	Parts Nos.	Quantity	Description
41	HE038E8001	2	Set screw
42	HE007C8001	1	Machine pulley adjusting screw.
43	HE921C8001	1	Hook driving shaft lock stud.
44	H4107D0672	1	Spring
45	HE922C8001	1	Socket
46	H601016100	1	Stop
47	HE923C8001	1	Hook driving shaft lock ratchet.
48	HE035G8001	1	Set screw
49	HE034G8001	1	Set screw
50	HE924C8001	1	Safety clutch pulley.
51	H3205C0661	1	Safety clutch pulley spring flange.
52	HE021G8001	1	Safety clutch hook driving shaft position collar.
53	HE022G8001	2	Set screw
54	HE925C8001	1	Safety clutch locking lever spring.
55	HE926C8001	1	Adjusting screw
56	HE927C8001	1	Stud
57	HE028E8001	2	Stop screw
58	HE028G8001	1	Safety clutch locking lever.
59	HE029G8001	1	Stud
60	H601012050	1	Safety clutch throw-in latch pin.
61	HE027G8001	1	Connecting link
62	HE026G8001	1	Safety clutch throw-in latch spring.
63	HE031G8001	1	Safety clutch throw-in latch.
64	HE939G8001	1	Bobbin winder driving gear
65	H6623C8001	2	screw

# C. PRESSER FOOT MECHANISM





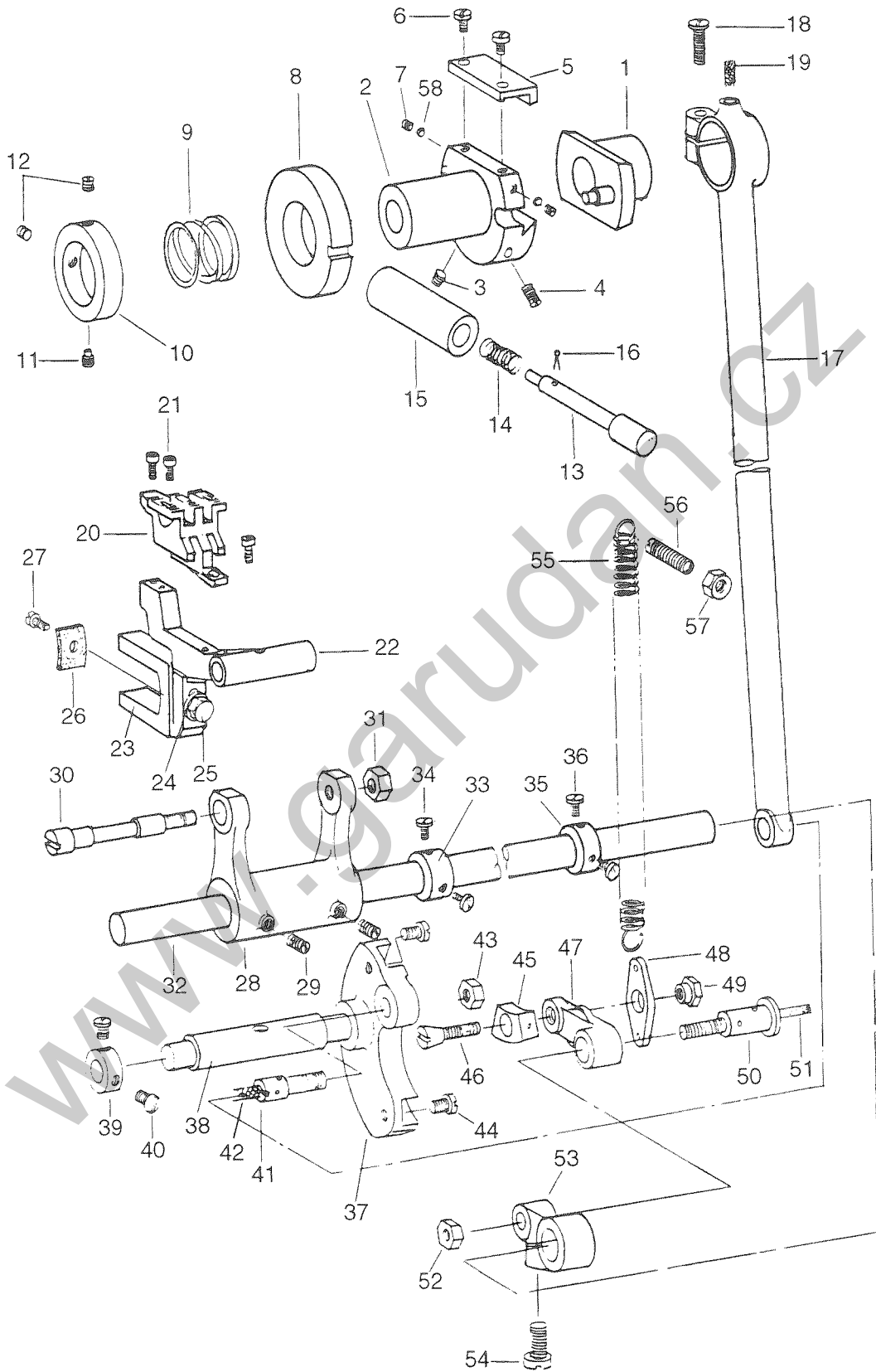
### C. PRESSER FOOT MECHANISM

Fig. Nos.	Parts Nos.	Quantity	Description
1	HE904D8001	1	Needle bar rock frame.
2	HE905D8001	1	Needle bar rock frame hinge stud.
3	HE035C8001	1	Oil wick
4	HE009G8001	1	Set screw
5	HE907D8001	1	Needle bar connection stud.
6	HE041C8001	1	Oil wick
7	HE119E8001	2	Pinch screw for 70022.
8	HE908D8001	1	Needle bar.
9	HE909D8001	2	Needle.
10	HE910D8001	2	Needle set screw.
11	HE911D8001	1	Needle bar rock frame position bracket.
12	HE022K8001	1	Screw
13	HE912D8001	1	Presser bar position guide.
14	HE006D8001	1	Set screw
15	HE007D8001	1	Presser bar bushing (upper).
16	HE006D8001	2	Set screw
17	HE913D8001	1	Presser bar position guide lever.
18	HE009D8001	1	Pinch screw
19	HE914D8001	1	Presser bar lifting bracket.
20	H3107G0661	1	Pinch screw
21	HE915D8001	1	Presser bar spring bracket.
22	HE916D8001	1	Pinch screw
23	HE007D8001	1	Presser bar bushing (lower).
24	HE918D8001	1	Presser bar.
25	HE919D8001	1	Lifting presser foot.
26	HE920D8001	1	Pinch screw for lifting presser foot.
27	HE921D8001	1	Lifting rock shaft.
28	HE024D8001	2	Lifting rock shaft bushing.
29	HE025D8001	1	Screw stud
30	HE035C8001	1	Oil wick
31	H3112F0662	1	Nut
32	HE922D8001	1	Lifting eccentric.
33	HE038E8001	1	Position screw
34	HE923D8001	1	Lifting eccentric connection.
35	HE924D8001	1	Lifting bell crank.
36	H3107G0662	1	Set screw
37	HE925D8001	1	Lifting bell crank link.
38	HE926D8001	1	Vibrating presser bar connecting link.
39	HE927D8001	1	Vibrating presser bar.

### C. PRESSER FOOT MECHANISM

Fig. Nos.	Parts Nos.	Quantity	Description
40	HE035C8001	1	Oil wick
41	HE928D8001	1	Vibrating presser foot.
42	HE929D8001	1	Set screw for vibrating presser foot.
43	HE930D7101	1	Needle bar rock frame rock shaft.
44	H3100F2270	1	Needle bar rock frame slide block.
45	HE027E8001	1	Screw stud
46	HE028E8001	1	Set screw
47	HE933D8001	1	Needle bar rock frame rock shaft crank.
48	HE038E8001	1	Pinch screw
49	HE934D8001	1	Needle bar rock frame rock shaft crank connection.
50	HE035C8001	1	Oil wick
51	HE935D8001	1	Hinge screw
52	HE936D8001	1	Nut
53	HE937D8001	1	Feed reversing crank screw stud.
54	HE938D8001	1	Feed reversing crank.
55	HE926E8001	1	Nut
56	HE038E8001	1	Stop screw
57	HF207D8001	1	Vibrating presser foot.
58	HF304D8001	1	Lifting presser foot.
59	HE939D8001	1	Vinyl tube.
60	HF209D8001	1	Vibrating presser bar.
61	HE044J8001	1	Washer
62	HE940D8001	1	Nut

# D. STITCH REGULATOR MECHANISM



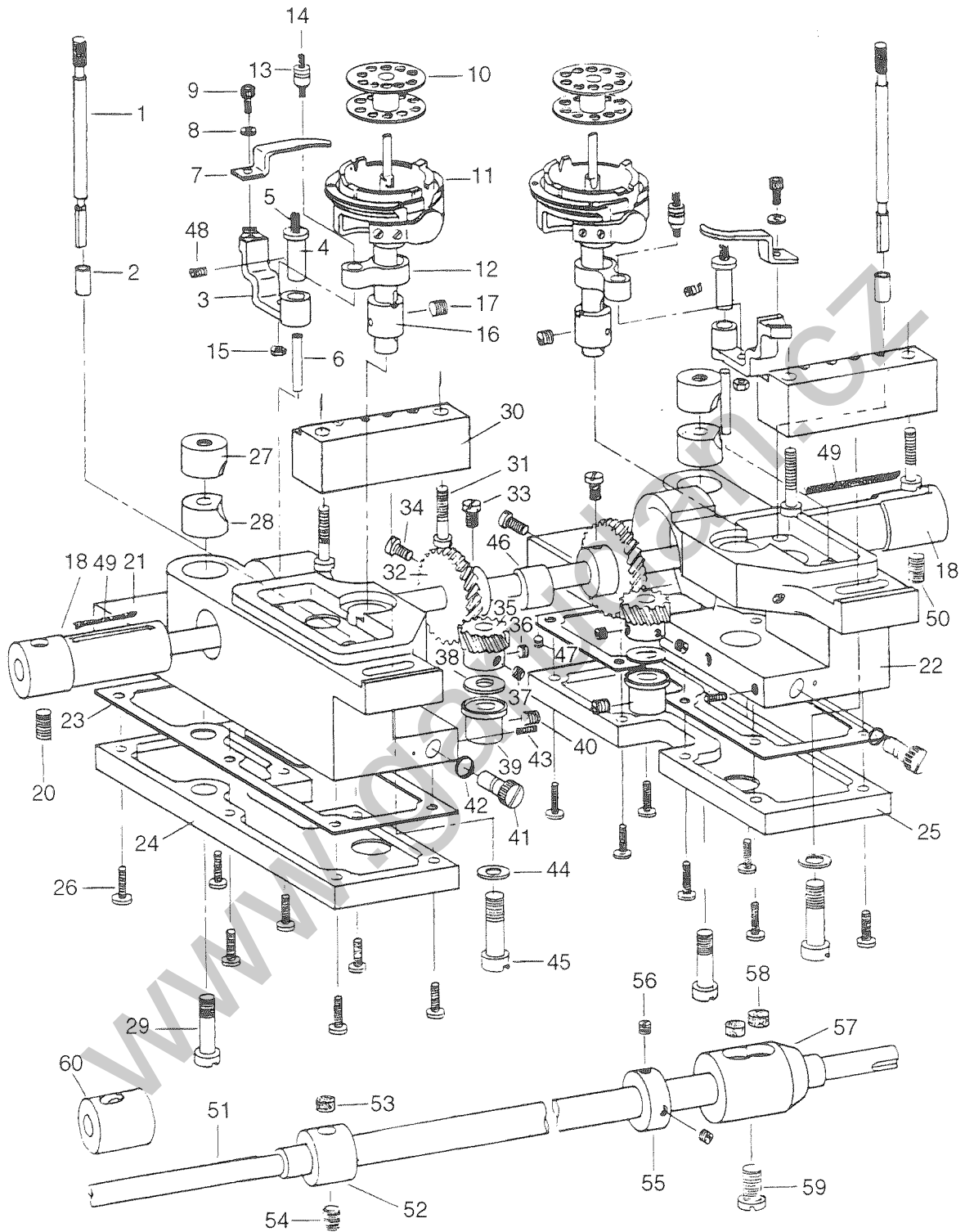
## D. STITCH REGULATOR MECHANISM

Fig. Nos.	Parts Nos.	Quantity	Description
1	HE946E7101	1	Feed driving eccentric.
2	HE905E8001	1	Flange
3	HE906E8001	1	Set screw
4	HE907E8001	1	Set screw
5	HE908E8001	1	Friction plate.
6	HE909E8001	2	Stop screw
7	HA100B2110	2	Set screw
8	HE910E8001	1	Feed driving eccentric adjusting disc.
9	HE911E8001	1	Spring
10	HE912E8001	1	Collar
11	HE035G8001	1	Position screw
12	HE023C8001	2	Set screw
13	HE913E8001	1	Feed regulating stud.
14	HE914E8001	1	Spring
15	HE915E8001	1	Bushing
16	H601016100	1	Retaining spring
17	HE916E8001	1	Feed driving connection.
18	H4753E8001	1	Pinch screw
19	HE035C8001	1	Oil wick
20	HE917E8001	1	Feed dog .
21	HE918E8001	3	Feed dog set screw.
22	HE919E8001	1	Feed bar
23	HE920E8001	1	Feed lifting cam fork.
24	H2013J0065	1	Washer
25	HE022H8001	1	Screw
26	HE020H8001	1	Oiling pad
27	HE025B8001	1	Screw
28	HE921E8001	1	Feed bar crank.
29	HE922E8001	2	Set screw
30	HE923E8001	1	Feed bar hinge screw.
31	HE131E8001	1	Nut
32	HE925E8001	1	Feed driving rock shaft.
33	HE033H8001	1	Feed driving rock shaft stop collar
34	HE034H8001	2	Set screw
35	HE033H8001	1	Feed driving rock shaft stop collar
36	HE034H8001	2	Set screw
37	HE943E7101	1	Feed reversing lever.
38	HE928E8001	1	Feed reversing lever bushing.
39	HE929E8001	1	Collar

## D. STITCH REGULATOR MECHANISM

Fig. Nos.	Parts Nos.	Quantity	Description
40	HE012E8001	1	Set screw
41	HE930E8001	1	Hinge screw
42	HE035C8001	1	Oil wick
43	HE941E8001	1	Nut
44	HE931E8001	2	Stop screw
45	HE932E8001	1	Feed reversing lever slide block.
46	HE933E8001	1	Hinge screw
47	HE934E8001	1	Feed reversing link.
48	HE935E8001	1	Spring and treadle connecting link for 70165.
49	HE936E8001	1	Hinge screw nut
50	HE937E8001	1	Hinge screw
51	HE035C8001	1	Oil wick
52	HE926E8001	1	Nut
53	HE938E8001	1	Feed reversing crank.
54	HE939E8001	2	Bracket screw
55	HE945E8001	1	Feed reversing lever slide block spring.
56	HE940E8001	1	Connection sollar
57	HE941E8001	1	Nut
58	HE942E8001	2	Lining metal f

# E. HOOK SADDLE MECHANISM



## E. HOOK SADDLE MECHANISM

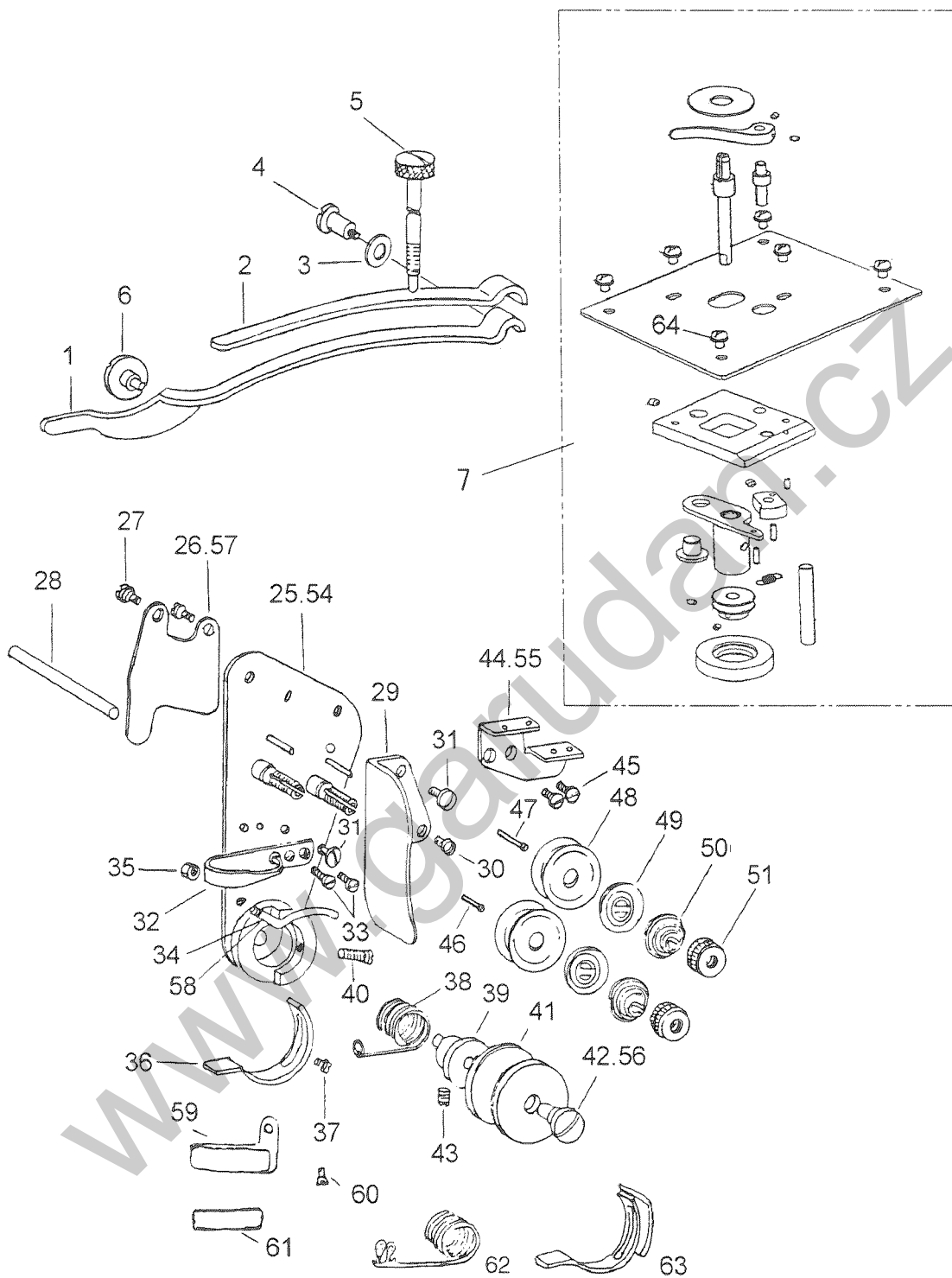
Fig. Nos.	Parts Nos.	Quantity	Description
1	HE904F8001	2	Oil gauge.
2	HE039J8001	2	Oil gauge guide.
3	HE905F8001	2	Bobbin case opener lever.
4	HE906F8001	2	Bobbin case opener lever hinge stud.
5	HE018J8001	2	Oil wick
6	HE020J8001	2	Oil wick vinyl tube
7	HE907F8001	2	Bobbin case opener.
8	H005004060	2	Washer
9	HE909F8001	2	Screw f
10	HE933F7101	2	Bobbin.
11	HE911F8001	2	Hook.
12	HE912F8001	2	Bobbin case opener lever link.
13	HE017J8001	2	Bobbin case opener lever driving screw stud.
14	HE018J8001	2	Oil wick
15	HE019J8001	2	Nut
16	HE913F8001	2	Hook bushing (upper).
17	HE009J8001	2	Set screw
18	HE914F8001	2	Hook driving shaft bushing (front).
20	HE020C8001	2	Set screw
21	HE915F8001	1	Hook saddle (left).
22	HE916F8001	1	Hook saddle (right).
23	HE005J8001	2	Gasket for hook saddle.
24	HE052J8001	1	Oil reservoir (left).
25	HE006J8001	1	Oil reservoir (right).
26	HE017B8001	14	Screw for 15091.
27	HE046J8001	2	Hook saddle screw collar
28	HE046J8001	2	Hook saddle screw collar
29	HE048J8001	2	Hook saddle screw.
30	HE918F8001	2	Bed block.
31	HE919F8001	4	Bed block screw.
32	HE055G8001	2	Hook driving gear.
33	HE920F8001	2	Set screw
34	HE921F8001	2	Set screw
35	HE010J8001	2	Hook driving pinion.
36	HE017G8001	2	Set screw
37	HE012J8001	2	Set screw
38	HE013J8001	2	Hook driving pinion thrust washer.
39	HE014J8001	2	Hook bushing (lower).
40	HE009J8001	2	Set screw
41	HE040J8001	2	Oil adjusting dial.
42	HE041J8001	2	O-ring
43	HE045G8001	2	Set screw

## E. HOOK SADDLE MECHANISM

Fig. Nos.	Parts Nos.	Quantity	Description
44	HE049J8001	2	Washer
45	HE050J8001	2	Hook saddle screw.
46	HE058G8001	1	Feed lifting cam.
47	HE017G8001	1	Set screw
48	HE053C8001	2	Set screw
49	HE010G8001	2	Oil wick
50	HE040D8001	1	Set screw
51	HE922F8001	1	Hook driving shaft.
52	HE923F8001	1	Hook driving shaft bushing (center).
53	HE007G8001	1	Oil pad
54	HE034G8001	1	Set screw
55	HE924F8001	1	Hook driving shaft collar.
56	HE034H8001	2	Position screw
57	HE925F8001	1	Hook driving shaft bushing (back).
58	HE926F8001	2	Oiling pad
59	HE927F8001	1	Set screw
60	HE914F8001	1	Lower shaft front metal. (for Single needle 20" & 30")



# F. THREAD TENSION REGULATOR MECHANISM



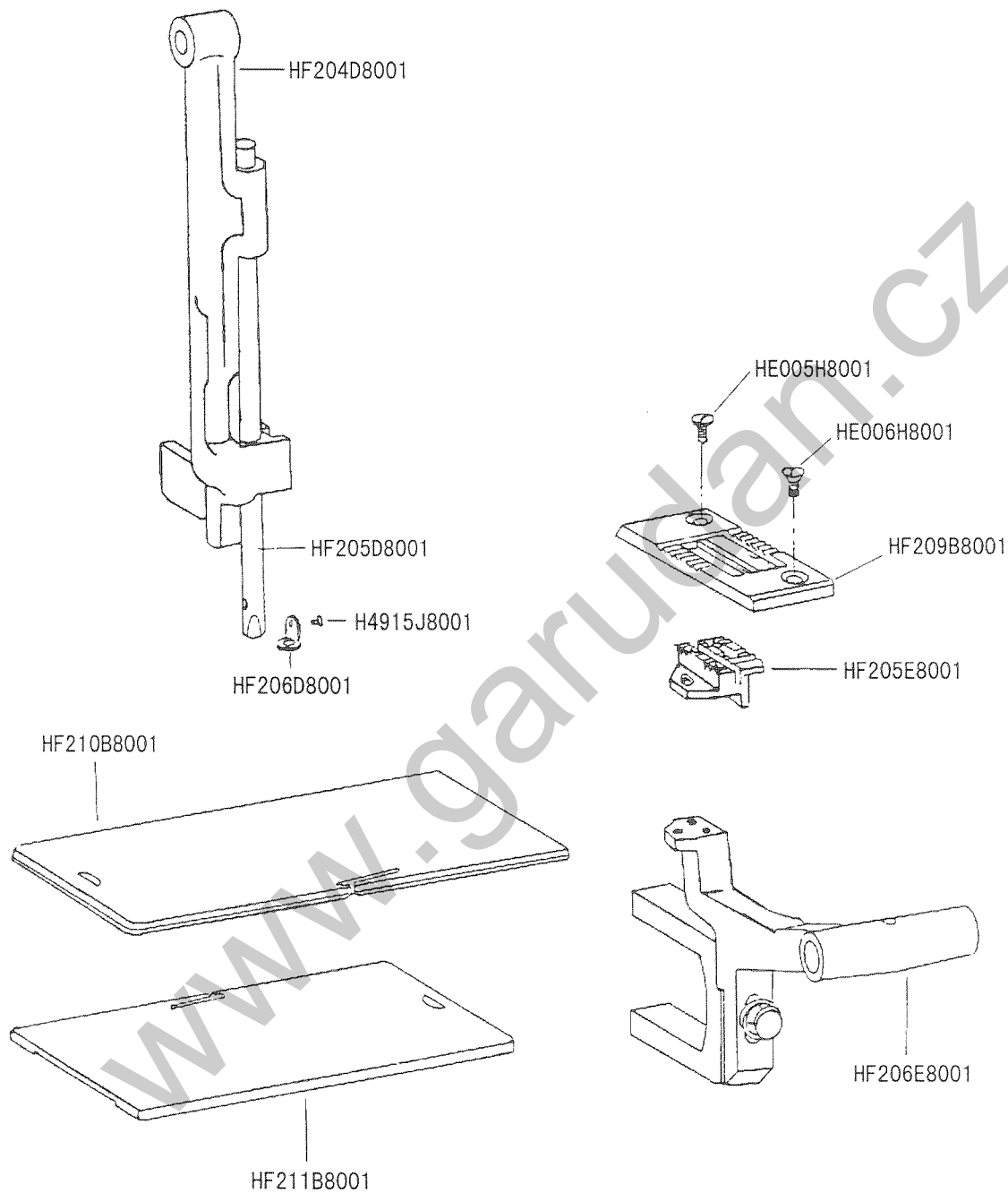
## F. THREAD TENSION REGULATOR MECHANISM

Fig. Nos.	Parts Nos.	Quantity	Description
1	HE904G8001	1	Presser bar spring (flat).
2	HE905G8001	1	Presser bar spring (auxiliary).
3	H005006080	1	Presser bar spring support screw washer.
4	HE907G8001	1	Presser bar spring support screw.
5	HE908G8001	1	Presser bar spring regulating screw.
6	HE048D8001	1	Presser bar lifting bracket guide screw.
7	HE933G7101	1	Bobbin complete.
25	HE925G8001	1	Tension bracket.
26	HE910G8001	1	Tension release lever.
27	HE019K8001	2	Screw for tension release lever.
28	HE912G8001	1	Tension release plunger.
29	HE913G8001	1	Thread controller covering plate.
30	HE046C8001	1	Stop screw
31	HE012E8001	2	Stop screw
32	HE914G8001	1	Thread guide (lower).
33	HE915G8001	2	Screw
34	HE916G8001	1	Thread controller thread guide (lower).
35	HE018H8001	1	Nut
36	HE931G8001	1	Thread controller spring stop.
37	HE046C8001	1	Stop screw
38	HF205G8001	1	Thread controller spring.
39	HE917G8001	1	Thread controller spring stud.
40	HE022K8001	1	Set screw
41	HE918G8001	1	Thread controller disc.
42	HE919G8001	1	Thread controller stud.
43	HE920G8001	1	Set screw for thread controller stud.
44	HE921G8001	1	Thread controller thread guide.
45	HE915G8001	2	Set screw
46	HE922G8001	1	Tension release plunger (short).
47	HE923G8001	1	Tension release plunger (long).
48	HA310B0705	4	Tension disc.
49	HA310B0702	2	Tension disc.
50	H2206B0671	2	Tension spring.
51	HA310B0701	2	Tension thumb nut.
54	HF206G7101	1	Tension bracket.
55	HF208G8001	1	Thread controller thread guide.
56	HF209G8001	1	Thread controller stud.
57	HF210G8001	1	Tension release lever.
58	HF211G8001	1	Thread controller thread guide (lower).

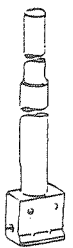
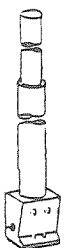
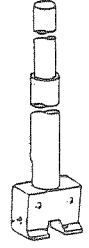
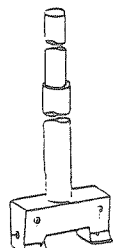
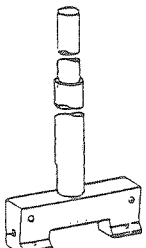




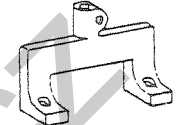
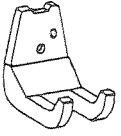
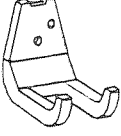
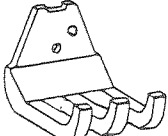
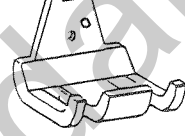
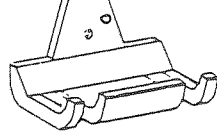








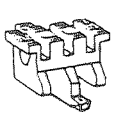
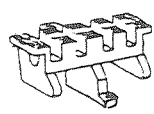


## F. THREAD TENSION REGULATOR MECHANISM

Fig. Nos.	Parts Nos.	Quantity	Description
59	HE033B8001	1	Thread guide.
60	HE032B8001	1	Set screw
61	H3108B0692	1	Felt.
62	HE929G8001	1	Thread controller spring.
63	HE930G7101	1	Thread controller spring stop.

www.garudan.cz

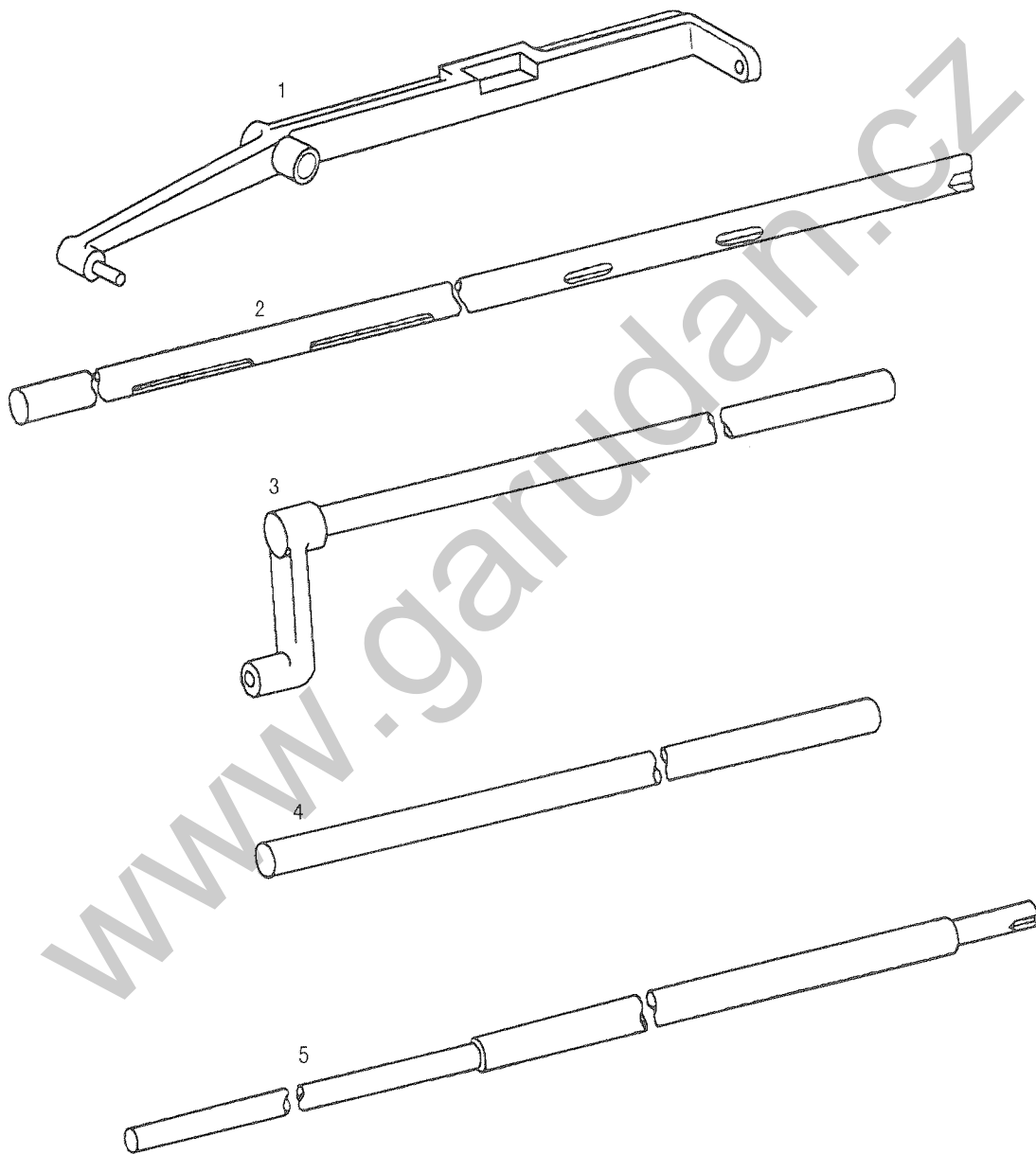


# H. FOR 2-NEEDLE

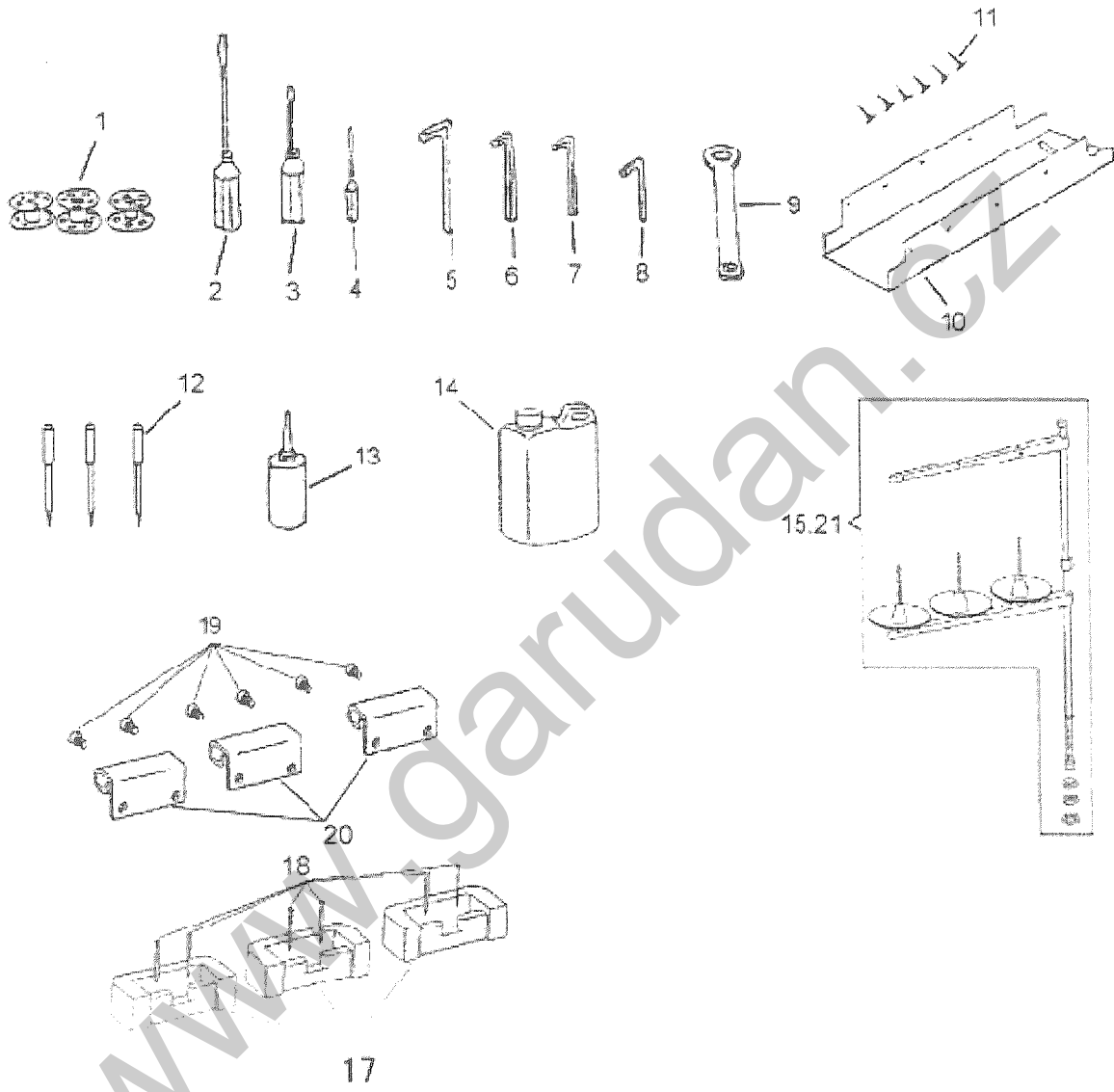
					
1/4"	3/8" 1/2"	3/4" 7/8"	1"      1-1/4"	1-1/2" 1-3/4"	
					
1/4"	3/8" 1/2"	3/4" 7/8"	1"      1-1/4"	1-1/2" 1-3/4"	
					
1/4"	3/8" 1/2"	3/4" 7/8"	1"      1-1/4"	1-1/2" 1-3/4"	
					
1/4"	3/8" 1/2"	3/4" 7/8"	1"      1-1/4"	1-1/2" 1-3/4"	
					
1/4"	3/8" 1/2"	3/4" 7/8"	1"      1-1/4"	1-1/2" 1-3/4"	
					
1/4"	3/4"	1-1/2"	1/2"	3/4"	1-1/4"
1/2"	7/8"	1-1/4"	1/4"	7/8"	1-1/2"
3/8"	1"	1-3/4"	3/8"	1"	1-3/4"

# I. SPECIAL PARTS FOR 20"

Fig. Nos.	Parts Nos.	Quantity	Description
1	HF410B8001	1	Lifting lever.
2	HF404C8001	1	Main shaft.
3	HF404D7101	1	Needle bar frame rock shaft.
4	HF404E8001	1	Feed driving rock shaft.
5	HF404F8001	1	Hook driving shaft.



K. ACCESSORIES



## K. ACCESSORIES

Fig. Nos.	Parts Nos.	Quantity	Description
1	HE933F7101	3	Bobbin.
2	HA300J2070	1	Screw driver (large).
3	HA300J2200	1	Screw driver (middle).
4	HA300J2210	1	Screw driver (small).
5	HB00001040	1	Wrench 4.0 mm
6	HB00001030	1	Wrench 3.0 mm
7	HB00001025	1	Wrench 2.5 mm
8	HB00001015	1	Wrench 1.5 mm
9	HA300J2220	1	Double head wrench.
10	HE905H8001	1	Oil pan.
11	016250	10	Nail
12	HE909D8001	1	Needle DY×3 (satandard No.24) • SY5213 • 794
13	H200400069	1	Oiler.
14	HA300J2170	1	Oil.
15	H3200L0120	1	Thread stand. (for Single needle).
17	HA307J0671	1	Vibration preventing rubber
18	016250	6	Nail
19	HE010M8001	6	Screw
20	HE009M8001	3	Bed hinge.
21	H3200L0120	1	Thread stand.