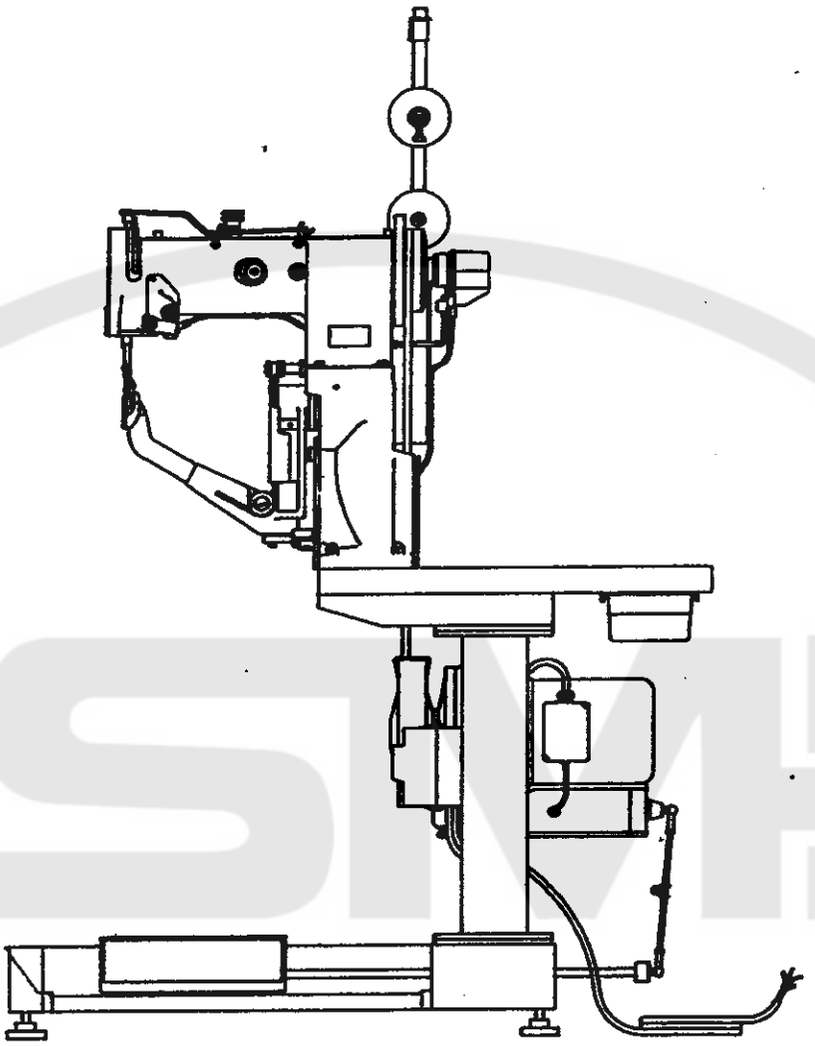
GLOBAL

WF 1555

instruction manual

Instructions handbook for a double thread sewing machine for shoes and ankle boots with box-soles



CONTENT

Important remarks for your reference to this handbook

1) The following points have been established in the paragraphs about the technical description:

- The location of accessories and of the various parts of the machine, is always indicated according to the operator's position: **"operator's side view"** (see the following page).

- GENERAL SWITCH in a rest position = on position **0**
  GENERAL SWITCH on = on position **1**

- Push the start pedal near the anterior edge (the one more distant from the operator) = **push the pedal forward** (with the tip of your foot).
  Push the start pedal near the posterior edge (the one closer to the operator) = **push the pedal backward** (with the heel).

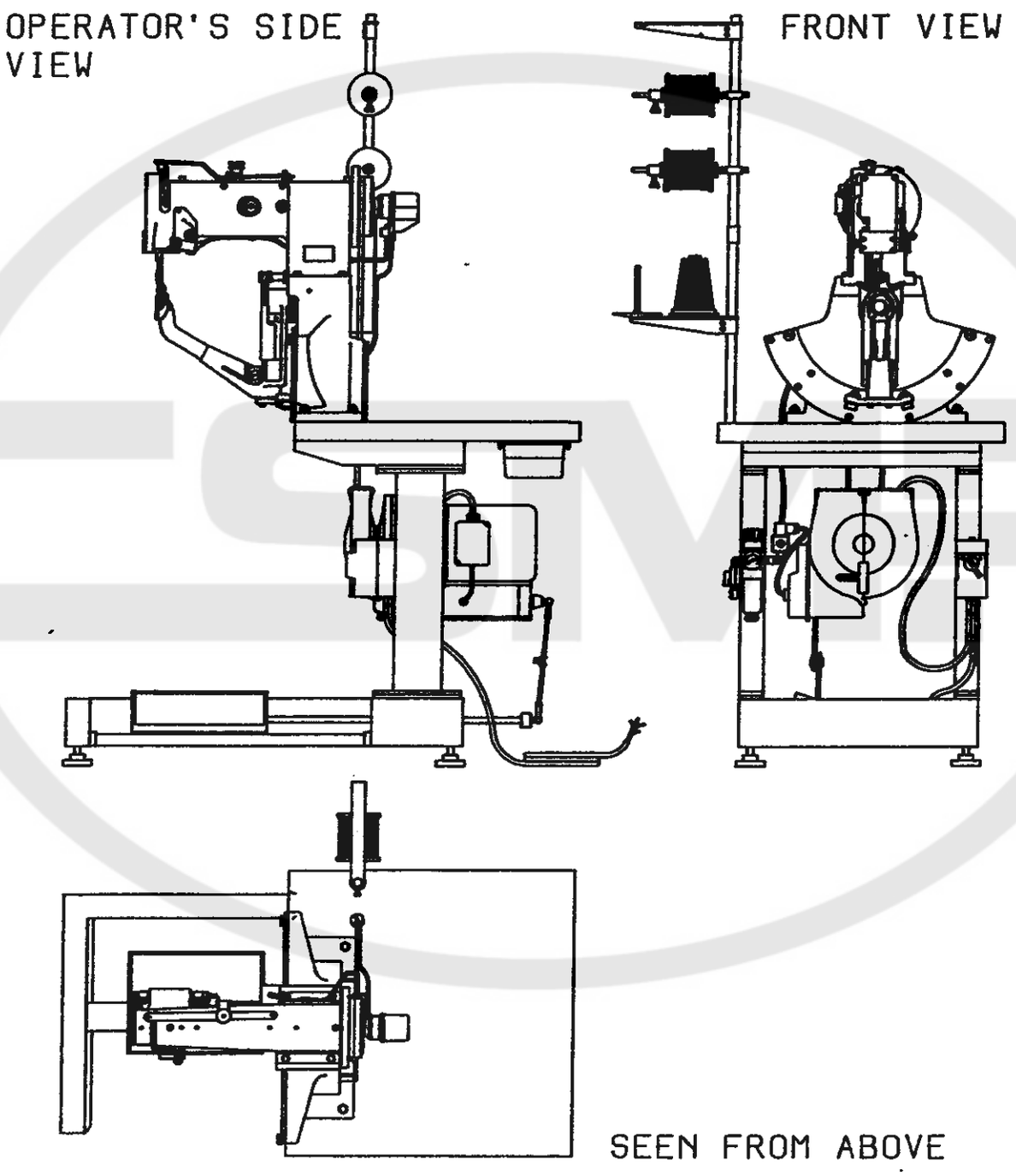
2) In the technical description, for a better reference to this handbook, the technical word of the mechanical parts taken into account every time, is followed by a particular number that distinguishes the part itself. These details are shown in the tables of the exploded view drawings, contained in the special catalogue supplied with the machine.

3) **All the operations described in this handbook apart from some specific cases must be perfomed on the machine under the following conditions:**
- **motor off** (GENERAL SWITCH on position 0),
- **electric system off,**
- **air on/off valve (cock) closed and discharged pneumatic system on the machine** (discharge the air of the tap for the condensate drainage placed under the filter-regulator group)

4) All the described adjusting and maintenance operations must be carried out by a skilled and qualified personnel in order to avoid any serious accident or damage to the machine.

1 DESCRIPTION OF THE MACHINE

The machine is a double thread sewing machine, equipped with an oscillating hook-holder horn to sew the shoes and ankle-boots with box-soles.
Sewing takes place by means of a needle-hook system, mechanically started by means of a transmission shaft system, cams and gears controlled by an asynchronous electronic motor and by a "V" belt.
The sewing machine is equipped with a work and control station; it has been conceived to work manually while the operator is sitting.



1.1 Protection and safety devices

The Builder has equipped the machine with the following safety devices:

1 - Protection carter of the driving belt: placed on the back side of the base, this carter is made up of two parts, one made of plexiglass placed near the space on the wood plane, the other, made of steel sheet, protects the entry of the "V" belt in the slot of the driven pulley that transmits the movement to all the other parts of the machine.

2 - Protection lid used as a closing device of the mechanical parts placed in the head of the sewing machine.

3 - Small lid placed as a closing device of the hook gears.

4 - Small lid placed as a closing device of the fixing cables of the checking ring.

5 - Upper protection carter for the kinematic motions that adjust the stitch length and the timing between the needle and the hook.

6 - Motor belt protection carter.

7 - Needle-feet area protection.

8 - Tension disc lever protection carter.

9 - Protection carter of the lever motor control.

10 - Lateral protection carter for levers transmission

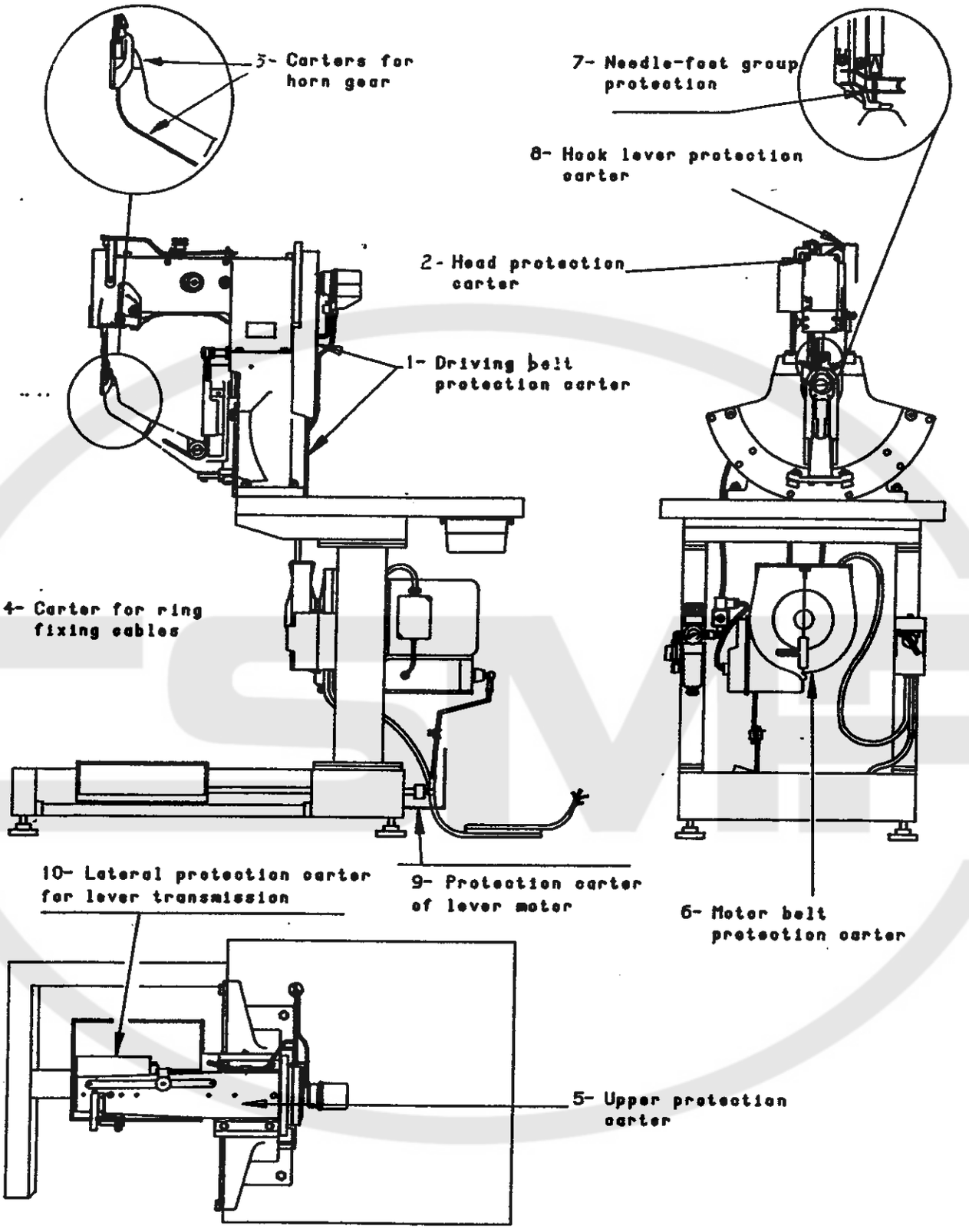
Warnigs

1) Protection devices are supplied by the Builder in order to safeguard the operator's life while carrying out his tasks. During the machine functioning, protections must not be removed for any reason at all.

2) *IT IS EXTREMELY IMPORTANT that the operator is very careful while using the machine, during all the sewing phases. Since it is impossible to assemble a protection device in the sewing area (hook/needle area), the operators authorized to use the machine must use it in a proper way, thus avoiding any sort of inattention.*
Never start, by mistake the pedal that controls the sewing speed when the motor is on.

3) *During the machine functioning, never put your hands near the following machine parts:*
- *Needle/hook device,*
- *Horn rotation mechanical stops,*
- *Electronic motor*
- *Hook lever*

The above-mentioned precautions are indispensable in order to avoid any accident to the operator, such as:
- *piercing of the upper limbs phalanxes because of the needle movement,*
- *crushing of the upper limbs phalanxes because of the feet movement.*


3- Carters for horn gear
7- Needle-feet group protection
8- Hook lever protection carter
2- Head protection carter
1- Driving belt protection carter
4- Carter for ring fixing cables
10- Lateral protection carter for lever transmission
9- Protection carter of lever motor
6- Motor belt protection carter
5- Upper protection carter

2 TECHNICAL FEATURES OF THE SEWING MACHINE

FEATURES	*TECHNICAL DATA*
<u>Sewing machine dimensions</u>	
Width	1070 mm
Depth	600 mm
Height without bobbin holder	1260 mm
Height with bobbin holder	1570 mm
<u>Dimensions with packing (cage or crate)</u>	
Width	1100 mm
Depth	650 mm
Height	1420 mm
Weight without packing	134 kg
Gross weight with cage	188 kg
Gross weight with crate	180 kg
Max. speed	800 stitches per minute,
Sewing machine control	through a variable speed electronic motor and needle stop in the right position
Foot lifting	through an automatic and manual pneumatic control ,
Bobbin winding	independent,
Stitch length	variable from 3 to 8 mm
Needle system	16x63 or 190 R

MAIN MOTOR TECHNICAL FEATURES (SEWING MACHINE CONTROL)

Asynchronous electronic motor	
Power	0.75 HP = 0.5625 KW
Power voltage	Volts.....
Power frequency	Hz.....

N.B. : As far as the features of the electric motor supplied with the machine are concerned, please refer to the data printed on the tag and to the relevant operating instructions.

3 ALLOWED AND FORBIDDEN USE OF THE MACHINE

The machine , is a double thread sewing machine for shoes and ankle-boots with box-soles.

3.1 Contra-indications and dangers caused by a forbidden use of the machine

- The position of the cams and of the kinematic control motions is adjusted at the Builder's factory. The work sequence is tested several times before sending the sewing machine to the User.

- The control drive pulley of the sewing machine is dimensioned in order to allow the machine to work under the best conditions and to reach a max. sewing speed so that the operator can work under the max. safety conditions.

The User is not absolutely allowed to replace the original driving pulley, with driving pulleys having a larger diameter, or with motors having a higher speed and power.
Any modification made in order to increase the sewing speed, exceeding the max. value indicated by the Builder, represents a modification to the original project and a danger for the operator using the machine.
This entails the consequent and immediate non-validity of the guarantee.

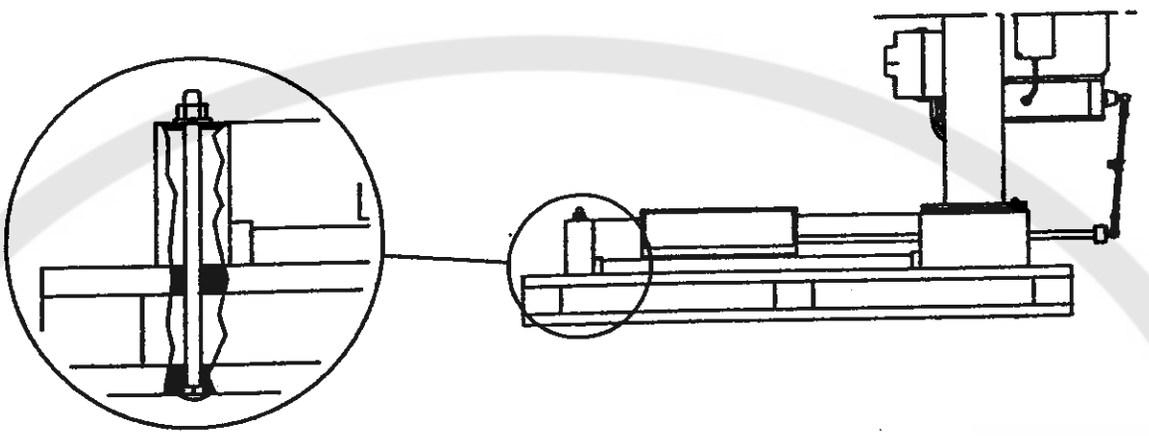
- **For any forbidden use of the sewing machine,** or however, for any modification to be made on one or more parts of the machine, **the User is obliged to ask the Builder about any eventual contra-indication or danger caused by the misuse of the machine.**

4 MACHINE HANDLING AND TRANSPORT

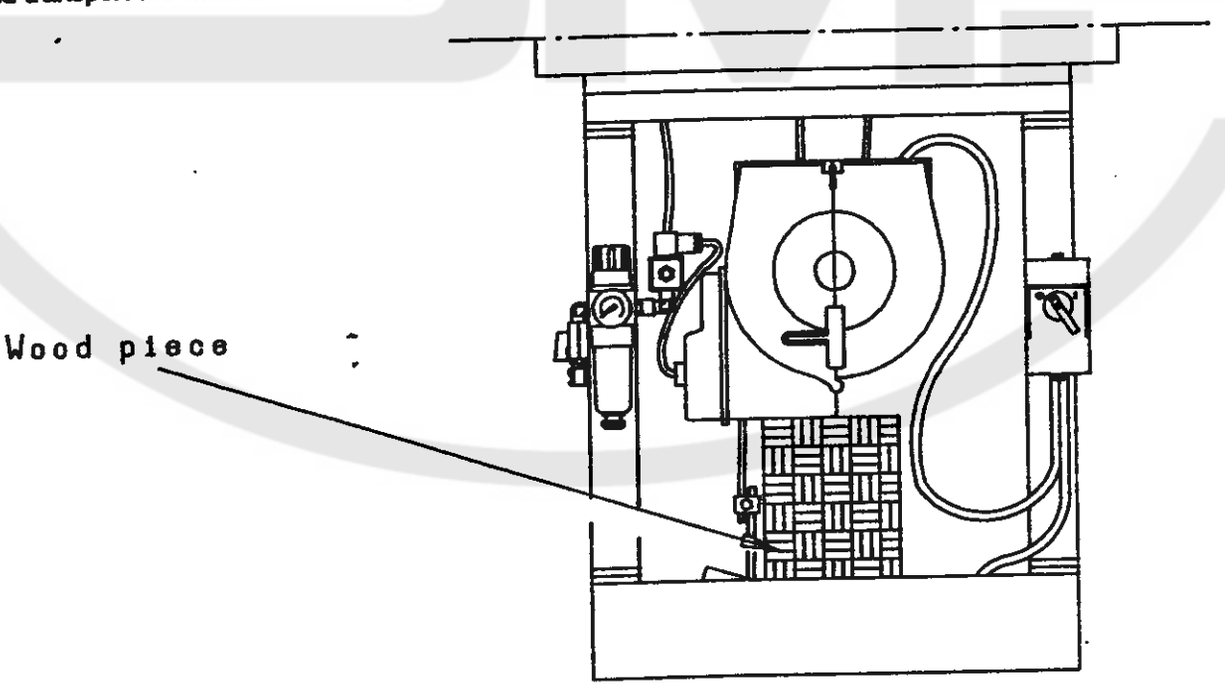
To ship the machine, operate in the following way:

- lift the machine and position it on the pallet.
- incline the machine in order to remove the 4 support feet.

Fixing to the pallet



- fix the machine to the pallet by means of 4 screws (M10), passing through the holes placed at the top of the metal framework of the support base and tighten the screws by means of the nuts,
- position a safety wood piece between the support table base plane and the control electronic motor,
- after packing the machine properly, put the lifting blades (lift truck or transpallet) under the pallet; handle and transport the machine according to the operator's needs.



Machine parts supplied separately:

- no. 4 support feet,
- bar and thread bobbins supporting journals,

Warnings

1) During the removal of the support feet, do not lift or incline the machine.
Use more operators for lifting operations and, ***during the unscrewing of the support feet, position some safety wedges in order to avoid any crushing.***

2) If the sewing machine is shipped in a cage or wood crate, handling must be carried out by slinging the packing properly.

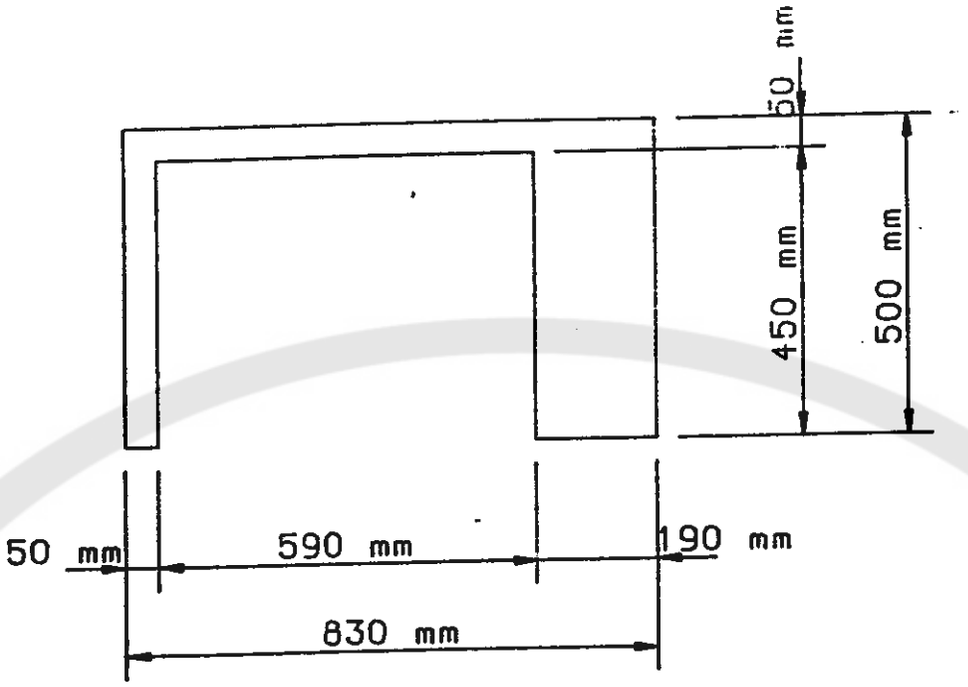
3) Spread all the external and non varnished parts, especially the needle/hook, the transport and the horn groups with protection oil.

4) During transport the horn must be assembled on the machine.
Please note that one part of the machine weight is located in the sewing machine head. Therefore while handling the machine do not incline it or oscillate it too much.
Do not unintentionally touch the needle-hook area.

5) Since it is necessary to slightly move the machine by pushing it, it is advisable to move the table without touching any part of the sewing machine.

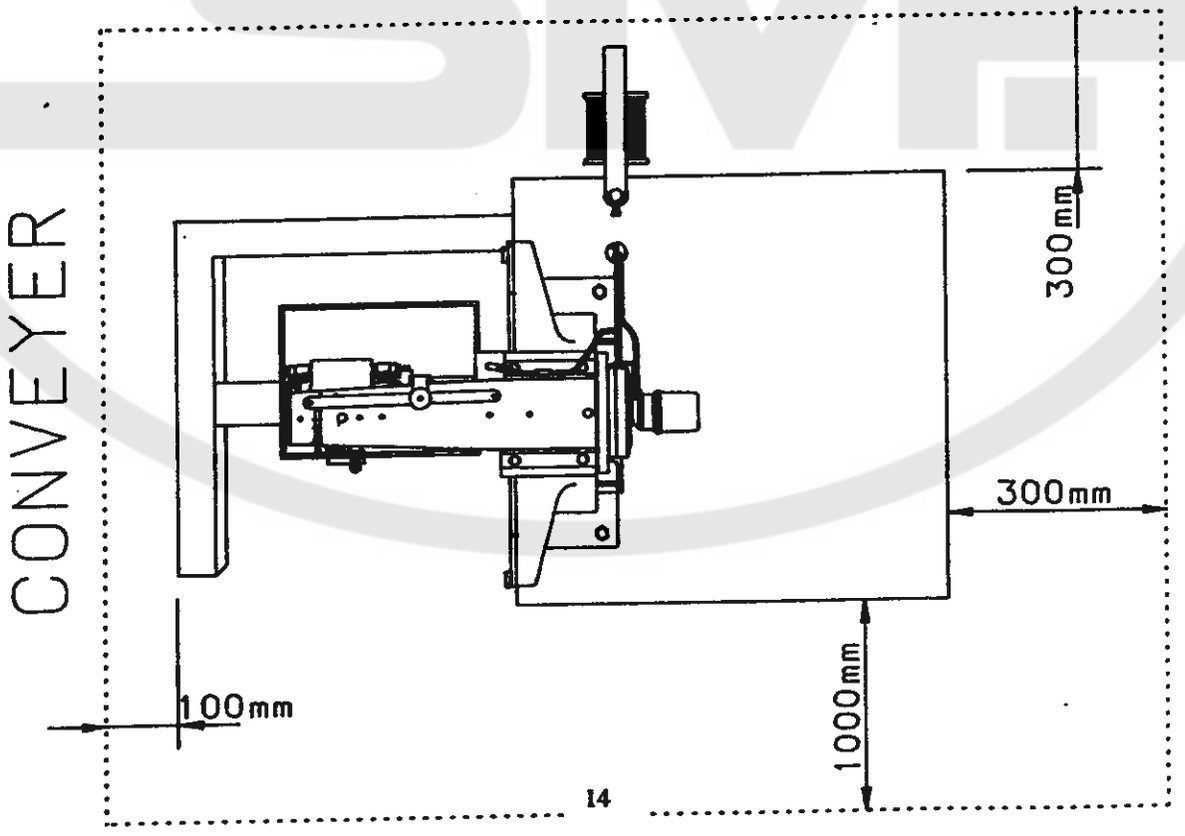
5.2 Foundation plan of the sewing machine

For a good functioning, the machine must no be fixed to the floor.



5.3 Free spaces to be observed

In order to allow a correct use of the sewing machine and an easy maintenance, under safety conditions, it is advisable to install it in such a position that takes into account the min. free spaces indicated in the picture herebelow:

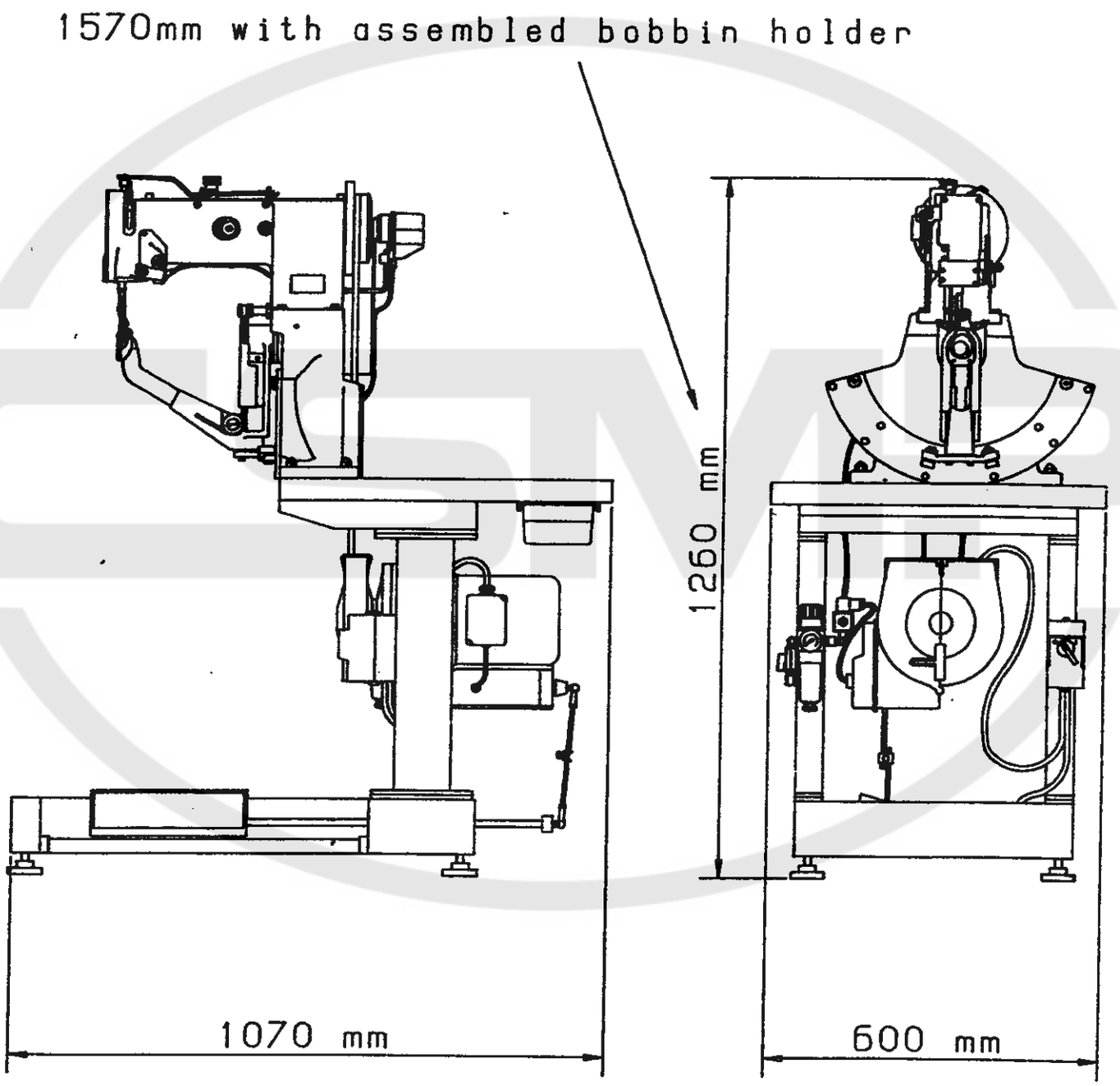


5 MACHINE INSTALLATION

The machine must be installed in a place where thermal and hygrometric conditions are observed for the operator's health, in order to reduce any fatigue at the minimum and to allow the operator to work under the best safety conditions.

5.1 Machine overall dimensions

The max. dimensions of the sewing machine are indicated in the picture herebelow:



6 ASSEMBLY AND PREPARATION OF THE MACHINE FOR ITS STARTING

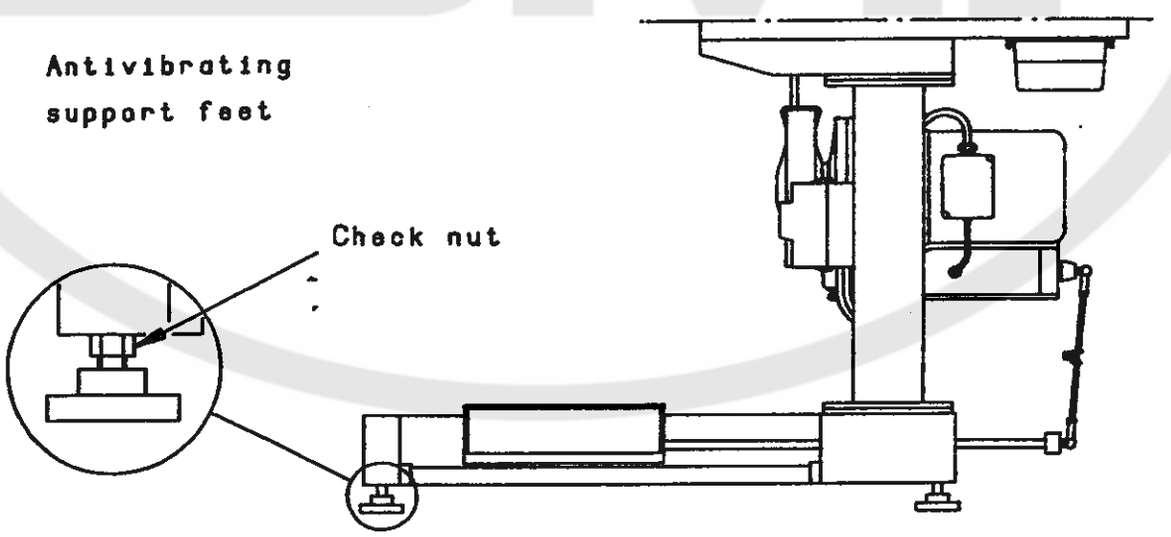
6.1 Preparation of the machine for its use

Operate in the following way:
- disassemble the eventual packing (cage or wood crate),
- release the machine from the 4 clamping through screws on the pallet,
- then lift and incline the machine in every direction, in order to screw the 4 support feet of the machine,
- put the lifting blades of the lift truck under the support base; one of the two blades must be positioned on the right side of the machine (operator's side view). The weight of the machine is moved towards the right side because of the presence of the motor, and of other parts,
- lift, handle and lay the machine on the floor in the most suitable position within the factory,
- remove the safety wood piece placed between the support table base plane and the control electronic motor,
- check that the "V" belt is stretched.

Warning
See the warnings indicated in paragraph no. ***4 - MACHINE HANDLING AND TRANSPORT.***

6.1.1 Adjusting of antivibrating support feet

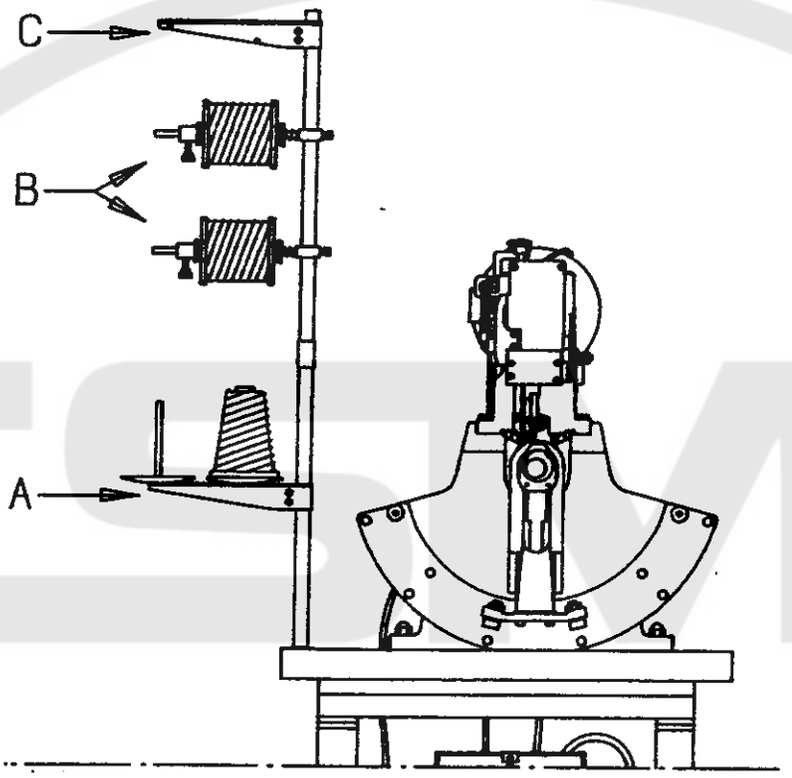
To run correctly, the sewing machine is equipped with no. 4 antivibrating rubber feet that, if conveniently adjusted, allow the operator to level the position of the machine and to avoid any vibration.
To adjust the machine, operate in the following way:
- loosen the check nut
- rotate the foot and adjust the height according to the operator's needs
- tighten the locking nut again



6.1.2 Assembly of the bobbin holder bar

To assemble the bobbin holder bar, operate in the following way:
- assemble the A vertical axis bobbin support on the lower tubular side of the bar
- screw the two tubular parts
- assemble the B horizontal axis supports on the upper side of the bar
- assemble the rail with C thread guide holes on the upper side of the bar
- put the bar in the special hole placed on the wood plane and fix it by means of the special nut.

Bobbin holder bar



6.2 Controls and preventive checks

When receiving the machine, it is advisable to:
. check if the User has received all the parts that make up the machine,
. carry out a series of preventive checks and controls as described in the following paragraph:

6.2.1 Control of any eventual damage caused to the machine

In order to detect any damage caused during transport, check that the following parts have not been endangered:
.pipelines and flexible pipes of the pneumatic system,
.protection devices placed on the machine,
.electric conductors, electric and pneumatic components,
. electronic motor,
."V" driving belt,
. horn,
.all protruding parts of the machine.

6.2.2 Cleaning of the machine

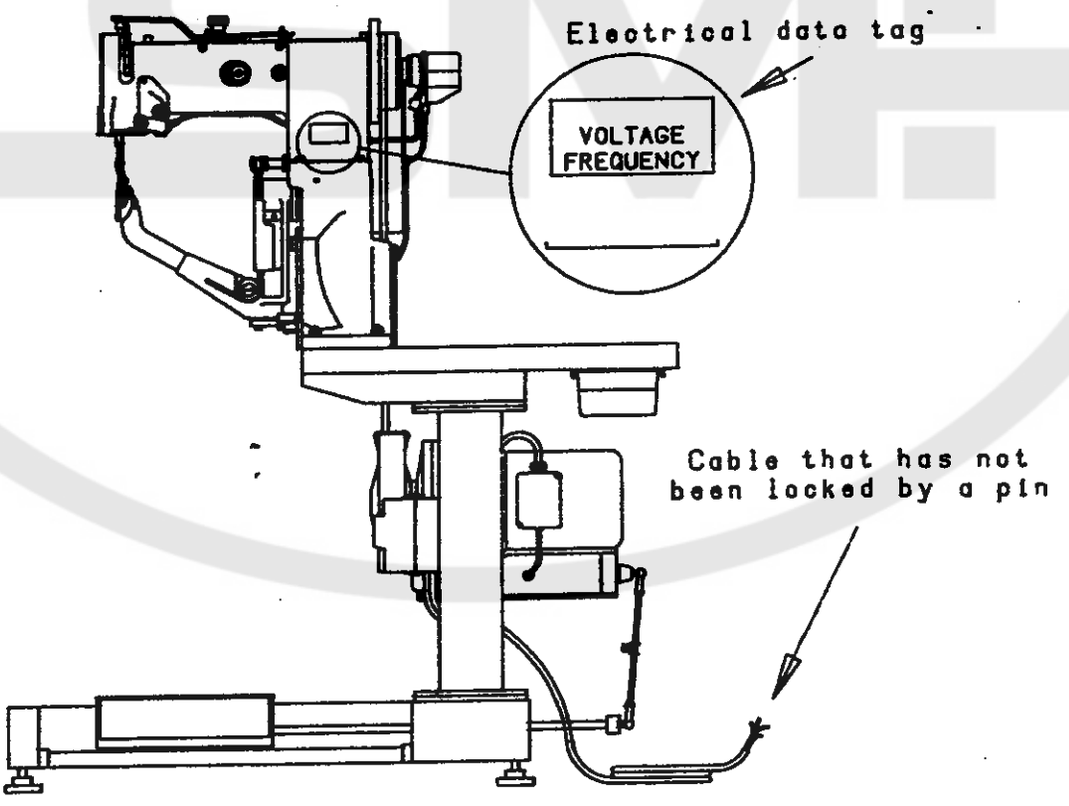
Clean the machine carefully, remove the dust as well as any dirtying and foreign substances that may have deposited during transport.
Remove the protection oil eventually spread on all the external or non-varnished parts.

Warning
To clean the machine, use gloves and dry clothes; disconnect the machine electric system, unplug it and discharge the compressed air from the pneumatic system.
*Then after draining the oil used to protect the external mechanical parts, lubricate them by using the lubricating oil supplied with the machine (see par. **12 Maintenance and repair**).*

6.3 Machine connection to external energy sources

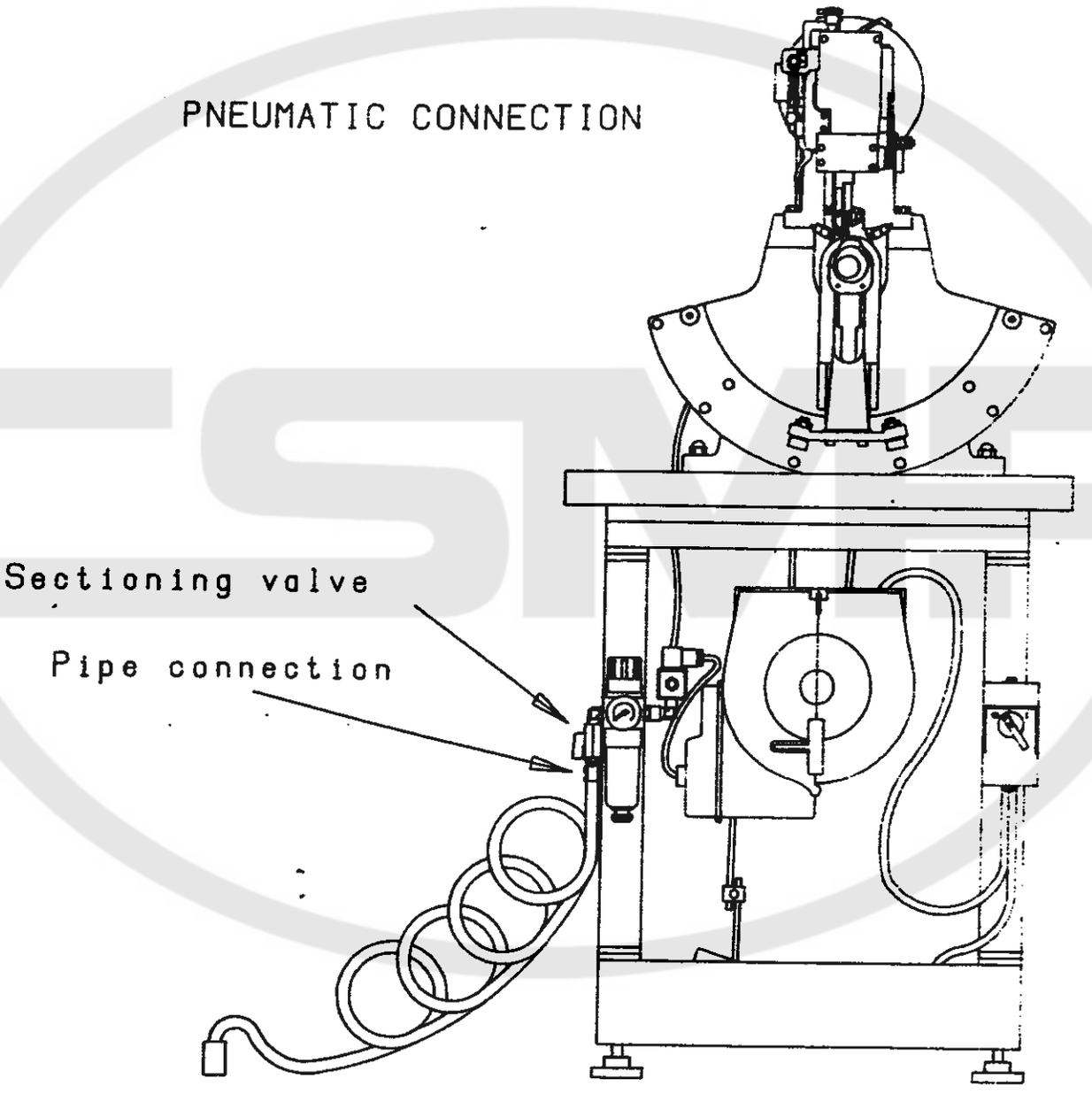
6.3.1 Electric connection

The machine is supplied with an electric power supply cable that is not locked by a pin.
It is therefore necessary to connect the cable that the User has suitably locked by a pin, to the main line socket, checking that the voltage and the power supply frequency of the motors and of the electric components assembled on the machine, correspond to the voltage or line frequency available at the User's premises.
The voltage and the power supply frequency the machine works with are indicated on a special metal tag placed on the sewing machine head, on the operator's side.



6.3.2 Compressed air connection

To connect the machine to the compressed air distribution line, assemble the special pipe connector supplied with the machine, on a flexible pipe and couple it on the sectioning valve (cock), placed on the machine posterior side. In this way, the filter-regulator group (FR group) placed on the posterior support base stay, connected to the pneumatic system control electrovalve is fed

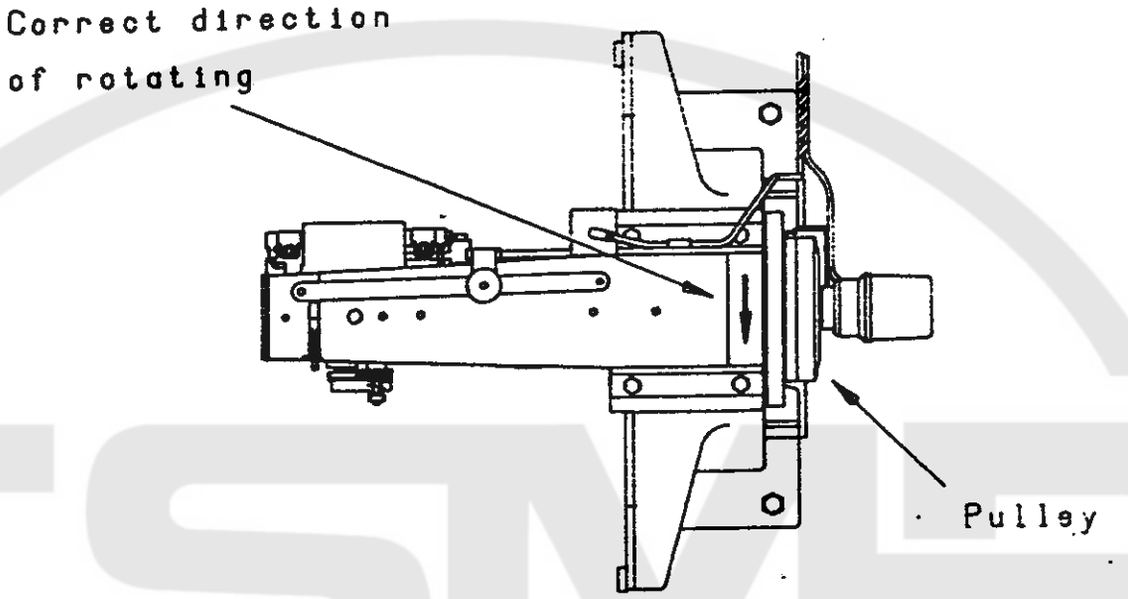


6.4 Controls and adjustments to be carried out.

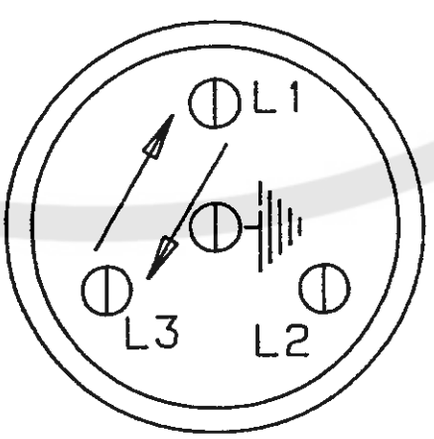
6.4.1 Control of the correct direction of rotation of the motor.

To carry out this control. operate in the following way

- remove the needle to avoid any breaking.
- turn the GENERAL SWITCH selector on position 1 the electric system on the machine will be connected to the line tension,
- check that the motor rotates in the correct direction. more precisely control that the direction of rotation of the main motor and of the "V" driving belt is the one indicated by the arrow placed on the machine upper carter.



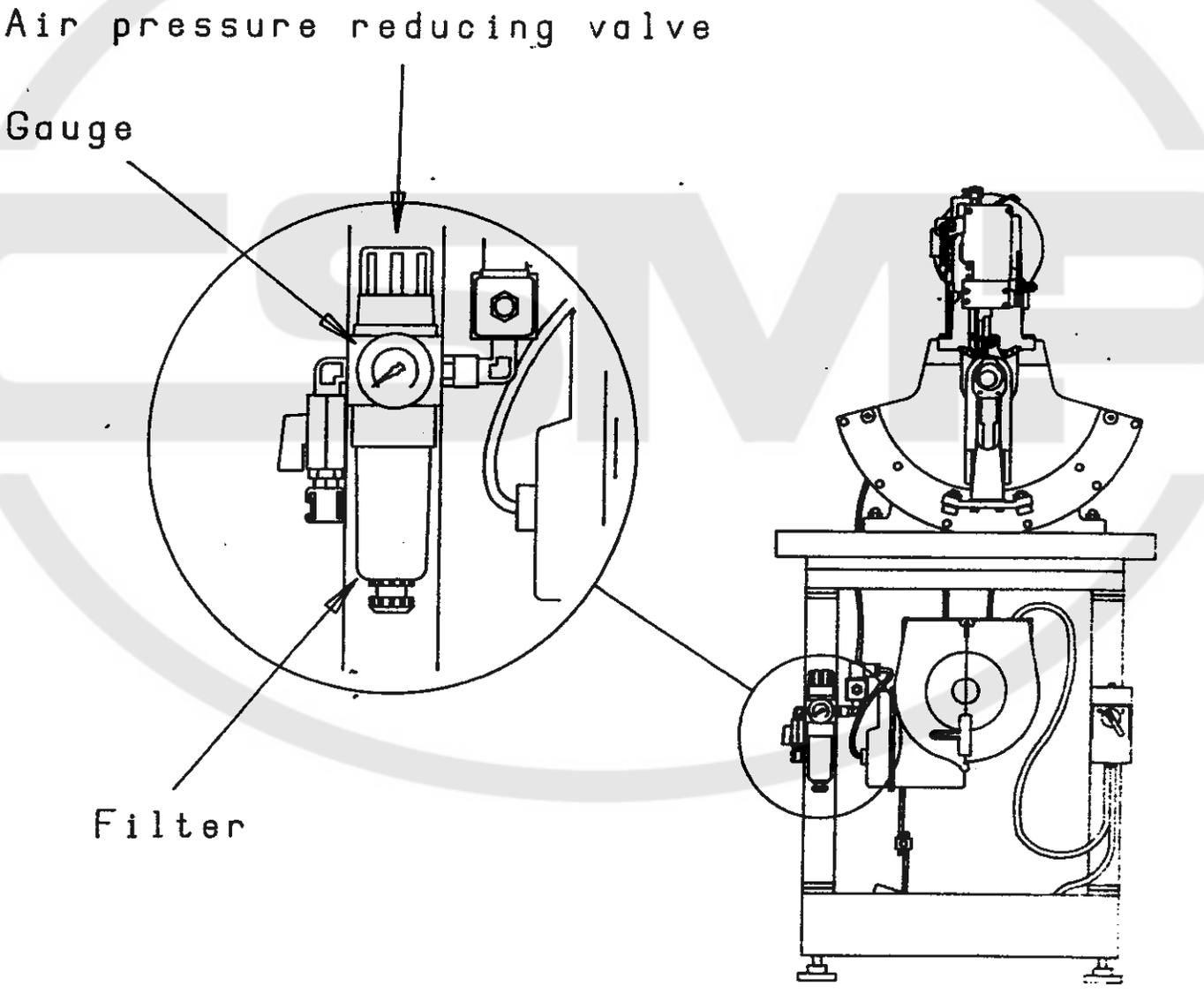
If the sewing machine does not function properly, as described here above, it will be necessary to exchange the two phase wires of the general power supply cable socket



6.4.2 Air pressure adjustment

When the machine is off, adjust the value of the pneumatic system supply air pressure. To adjust the pressure, after opening the sectioning valve (cock) operate on the pressure reducing valve knob placed on the posterior stay of the machine support base
The value of the pressure set can be read on the gauge display
The reducing valve placed on the FR group allows the operator to adjust the pressure value for
.upward movement of the presser foot thanks to the simple effect piston
.release of the thread tightener device by means of the simple effect piston
The downstroke of the presser foot is mechanical with carriage springs.

Warning:
Pressure suggested for air pressure reducing valve to the machine (placed on the FR group): 5 bars.



6.4.3 Electronic motor

The sewing machine is controlled by a speed continuous variation electronic motor The sewing speed depends on the position of the start pedal started by the operator by lowering the pedal with the tip of the foot, the speed increases.
The control electric circuits of the motor are placed in a gearcase fixed on one side of the motor

On the trigger box there is the control panel to regulate the operative parameters as
- Needle position **high / low**.
- Presser foot position **high / low**.
- Ect. etc.

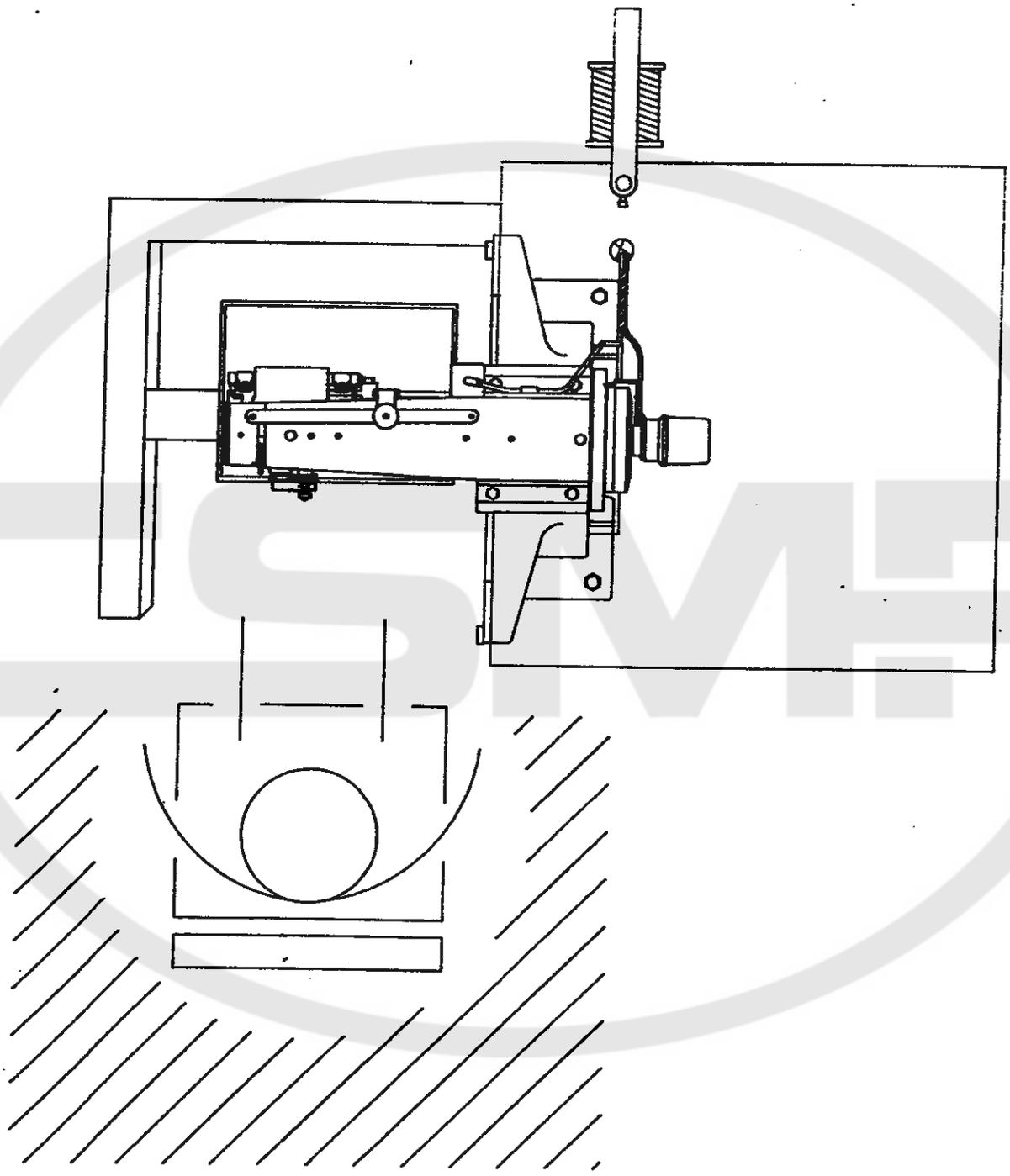
For the regulation of the parameters see the motopr instruction manual.

Warning

***It's only possible the regulation of the parameters which are accesible to the operator level** - see access code on the instruction manual.*

7 MACHINE STARTING

The machine is equipped with a control and a work station placed in front of the sewing machine



7.1 Electric controls

The sewing machine is equipped with the following electric controls:

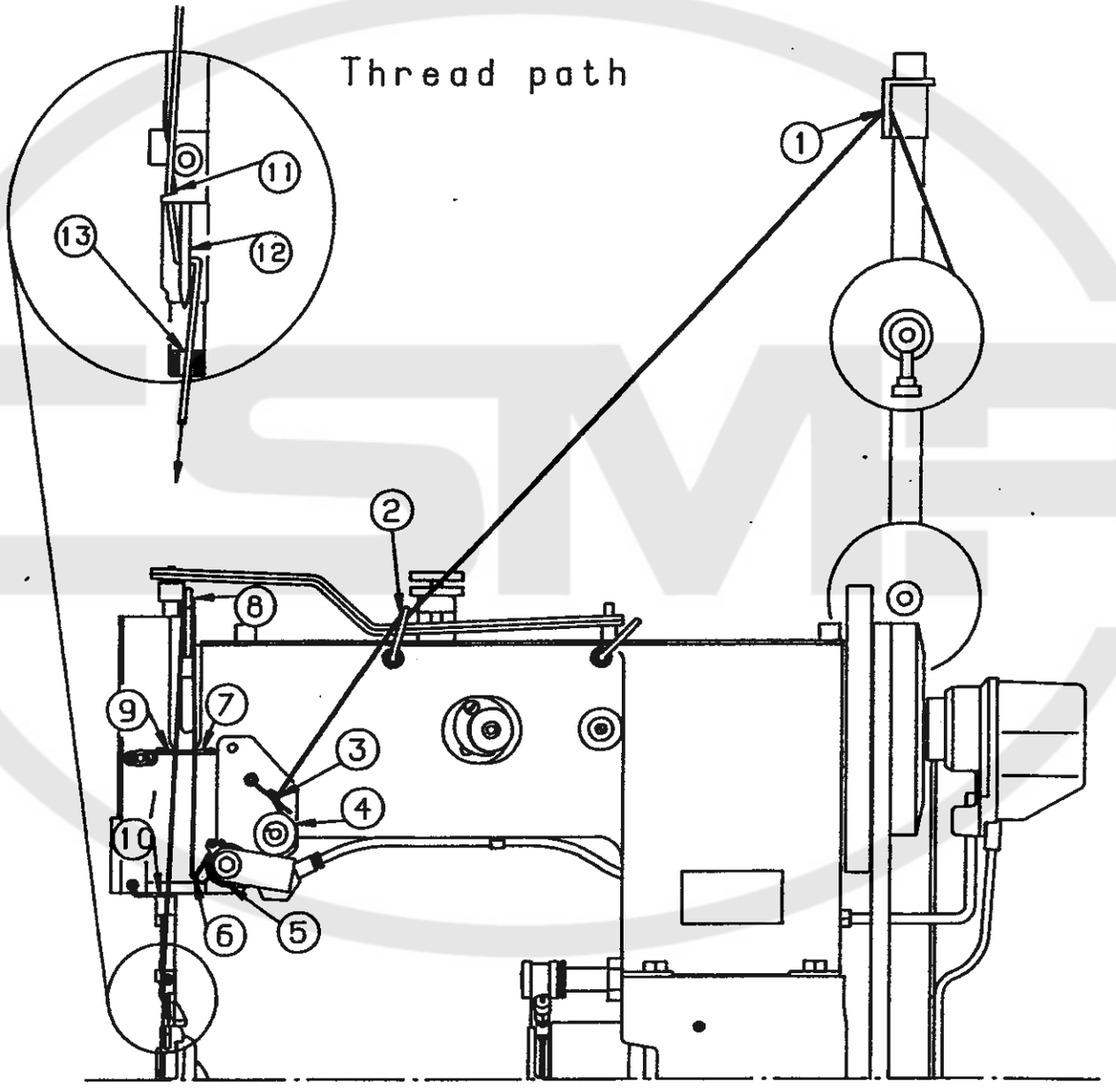
Reference	Function
1	GENERAL SWITCH - Two-position selector By rotating the selector to the right, on position 1, and the electric system placed on the machine will be connected to the line voltage. The main motor rotates at the the minimum speed, but since the electronic brake is engaged, transmission does not rotate
2	START CONTROL - Pedal The forward starting of the pedal controls the sewing machine start until reaching the desired sewing speed. The backward starting of the pedal controls the lifting of the feet and of the needle and the release of the thread tightener device.

7.2 Thread preparation for the sewing cycle

7.2.1 Needle thread preparation

To perform the operation, operate in the following way

- turn the GENERAL SWITCH on position 0. disconnect the plug from the main power supply line socket. close the air on/off valve on the FR group and discharge the air from the system on the machine
- provide a thread bobbin on the lower bobbin holder pin and fix it in the right position by means of the clamp made up of a bush no. 98-347 and of a knob no. 98-350: the bobbin resistance to unwinding. is adjusted by increasing or decreasing the load applied on the spring no. 98-349 by means of the clamp.
- unwind the end of the bobbin thread, by following the same path indicated in the picture herebelow



Components involved in the thread passage:

1 - thread support guide holes
2 - guiding slit
3 - 1° eye
4 - thread tightener device
5 - pulley
6 - return control spring
7 - 2° eye
8 - hook lever hole
9 - 3° eye
10 - 4° eye
11 - small hole on the needle bar point. Position the needle, manually, by operating on the pulley placed parallel to the control shaft, in the most suitable position to thread the small hole.
12 - Eye of the needle
13 - Needle guide foot hole

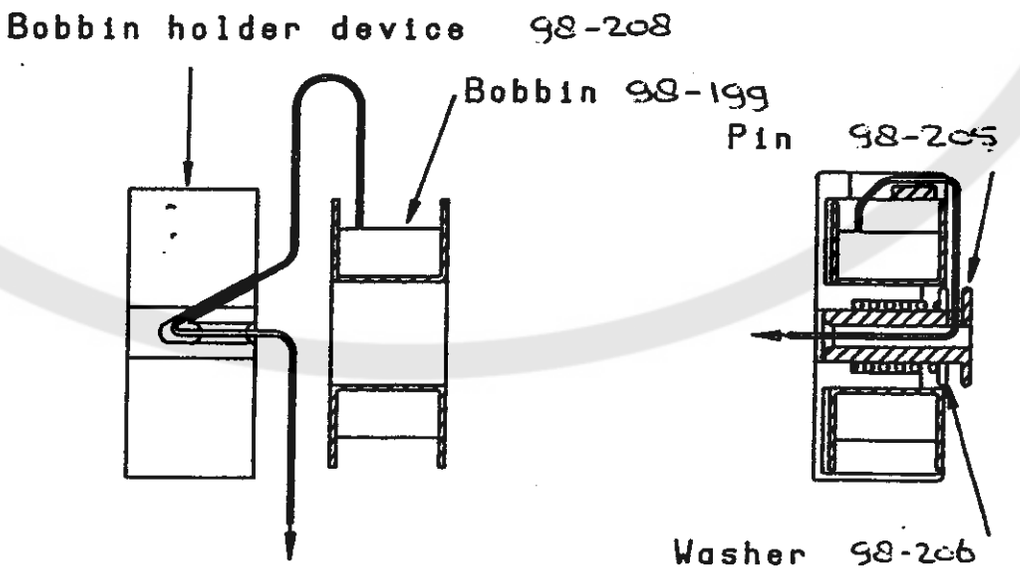
Warnings

1) Check that the thread follows since the beginning all the passages before threading the eye of the needle.
2) To replace the needle thread, when the bobbin has been used up, prepare a new bobbin on the special support pin and thread the new end in the above-mentioned way:

7.2.2 Preparation of the hook bobbin thread

To prepare the hook thread bobbin, operate in the following way:
- rotate the GENERAL SWITCH on position 0
- take out the bobbin holder device no. 98-208 by means of the pliers no. 98-209 supplied with the machine, by overcoming the stop action produced by the sealing device,
- remove the bobbin no. 98-199 that has been used up,
- place a new bobbin in the bobbin holder device. The bobbin thread end must come out of the bobbin-holder central hole and must follow the path as described in the picture,
- put the bobbin holder device in its seat; the guiding slit placed on the circular edge of the bobbin holder device must coincide with the reference on the hook. After having assembled the bobbin holder device, make it move forward inside the hook, avoiding that the bobbin holder device places itself transversally inside the hook.

N.B.: check that the thread lies between the pin no. 98-205 and the washer 98-206



Warnings

1) ***Never start the machine if the object to be sewed is not between the foot and the point of the horn.***
2) *To replace the hook thread, when the bobbin has been used up. perform the above-mentioned operations and replace the used up bobbins with a new one.*

7.3 Positioning of the object to be sewed

The object to be sewed must be placed between the point of the horn and the feet and must be kept with the left hand, while the horn must be handled with the right hand; the inclined side must be seized at 60°

8 USE OF THE MACHINE

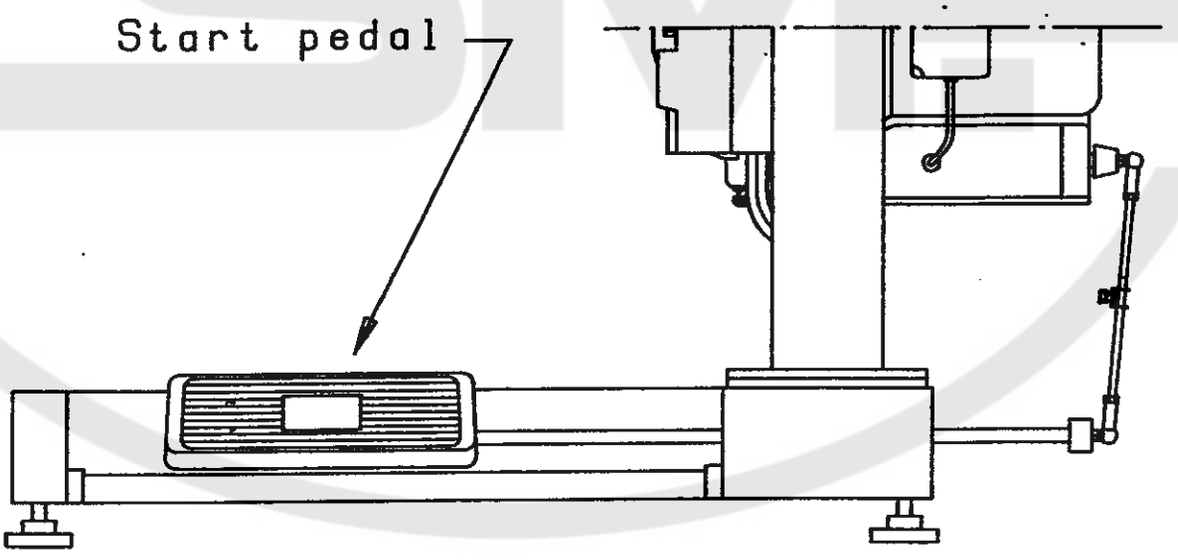
8.1 Start pedal - Action, —> Consequence.

The start pedal is a platform made of sheet, started by the operator's feet.

1 - The high needle position, the low foot and the thread tightener device correspond to the released pedal.

2 - By pressing the start pedal forward, by applying a gradual and progressive pressure, the following effects will be obtained:
—> proportionally to the pressure applied, the motor will uninterruptedly increase or decrease, the rotation speed, until reaching the desired sewing speed.

3 - By pressing the pedal completely backward, the following effect will be obtained:
—> the control shaft rotates forward bringing the needle and the foot in the higher position and releasing the object during the sewing phase.
—> The thread tightener device is released. The thread tightener device is engaged again as soon as the start pedal is released.



8.2 Description of the working cycle - Action —> Consequence

The working sequence is the following:

1) Start the GENERAL SWITCH placed on the front side of the table slightly on the right if compared to the operator; by rotating it on position 1 the motor will start without engaging the friction clutch.

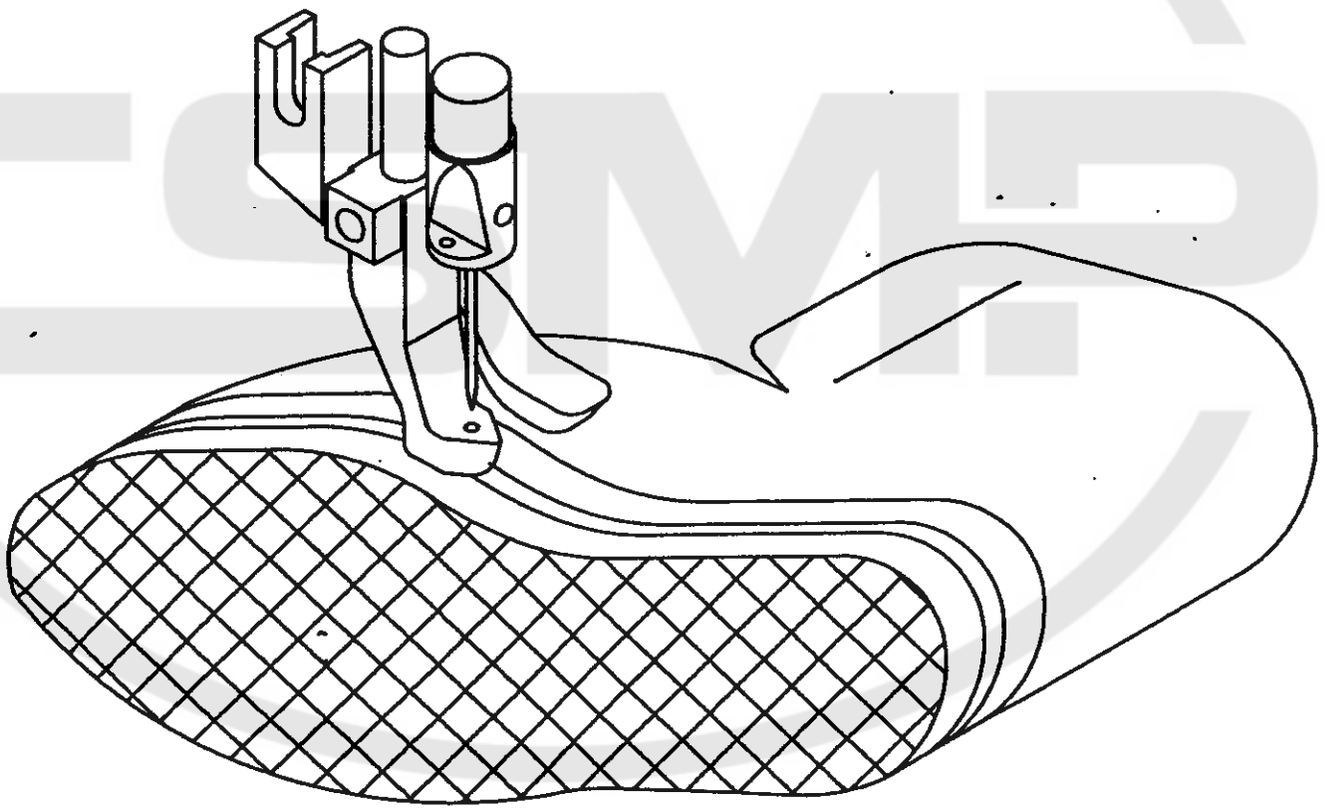
2) Check that outside the bobbin holder device there is a free piece of thread equal to 5 - 6 cm.

3) Press the start pedal completely, backward: the feet and the needle will lift up in the high position.

4) Seize the shoe with the left hand and put it on the horn.
Seize the horn with the right hand, and with the thumb of the same hand, keep the needle thread end steady against the horn.

5) Release the control pedal:
—> the foot will lower automatically and will lock the shoe in the sewing position.

Warning:
Check that the needle is centered with the sewing line



6) Gradually press the control pedal forward:

The machine start sewing at a speed which is proportional to the pressure applied on the pedal. With your left hand keep the shoe aligned with the needle. With your right hand move the horn no. 8.02.116 and follow the shoe bending proportionally to the sewing speed.

7) Once the sewing phase has come to an end, release the start pedal:
—> The friction clutch releases and the brake is engaged,
—> Sewing parts stop,

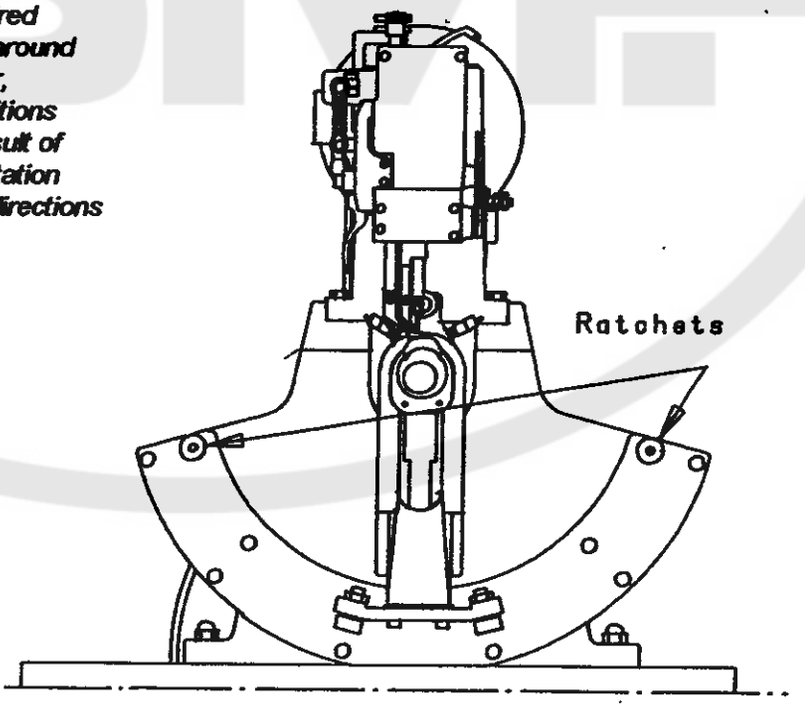
8) Press the start pedal completely, backward:
—> the feet and the needle will lift in a high position,
—> thread stretching decreases,

9) Remove the shoe, move it at the beginning toward the operator, until the small knife placed on the checking ring which cuts the bobbin thread intervenes; then cut the external thread leaving about 5-6 cm. come out of the needle.

To carry out another sewing cycle, repeat the above-mentioned sequence.

Warnings

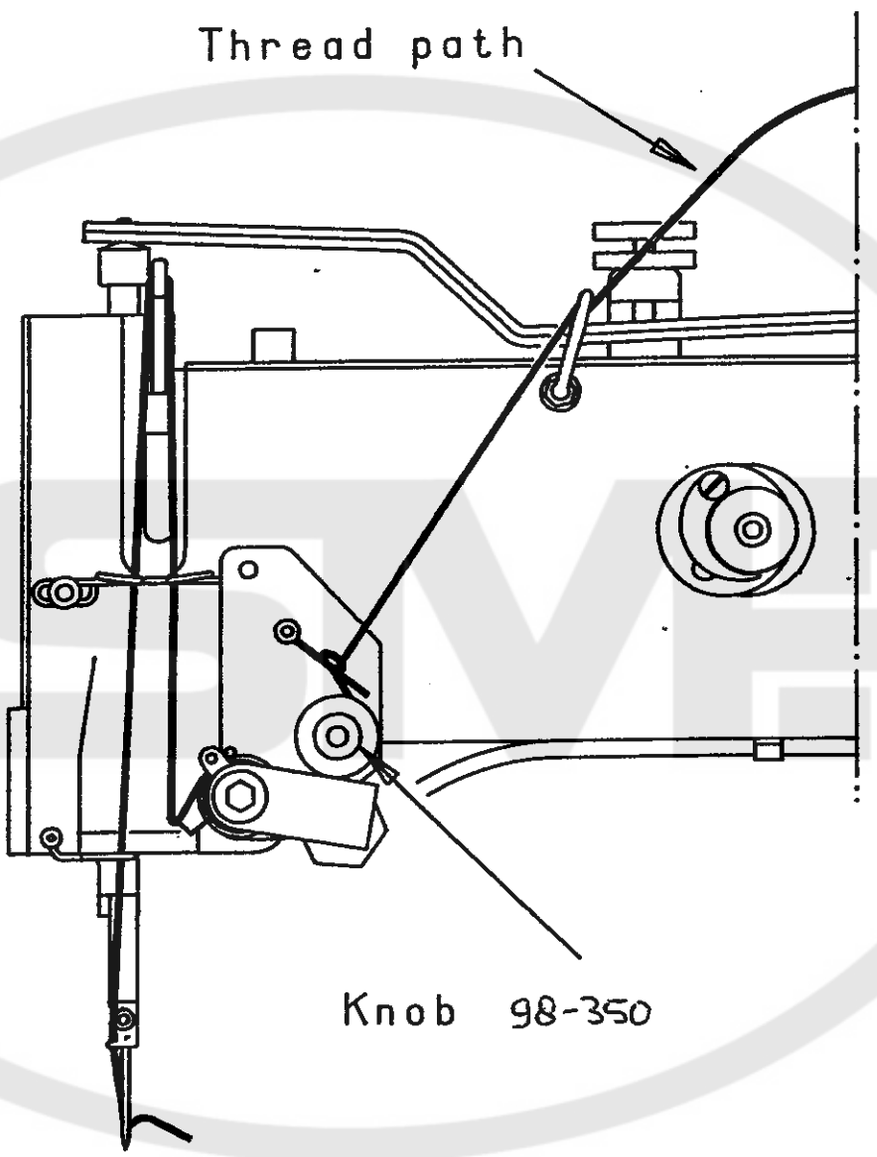
1) It is advisable to sew the shoe starting from the slot and finishing it on the initial stitches.
2) When shoe bending changes, rotate the horn.
3) During the machine functioning, it is absolutely forbidden to remove the protections assembled by the Builder in order to safeguard the operator's life.
4) The brake and the friction clutch that intervene during the starting or stopping phases of the sewing operations form a unique body with the motor.
5) Let the machine transport the shoe during the sewing phase: The shoe must not be pushed or hold, but you have to follow the motion, being careful to keep the desired sewing line. The horn, when rotating around its own axis controlled by the operator, gradually takes on all the angular positions suitable for a better and an easier result of the desired sewing. The max. horn rotation around its own axis is limited in both directions by two mechanical checking rings.



8.2.1 Adjustment of the needle thread stretch

Operate in the following way:

- after the thread has been prepared on the machine, according to the correct path, adjust the needle thread stretch by operating on the adjusting handwheel no.98-350, placed on the plate situated in front of the operator.



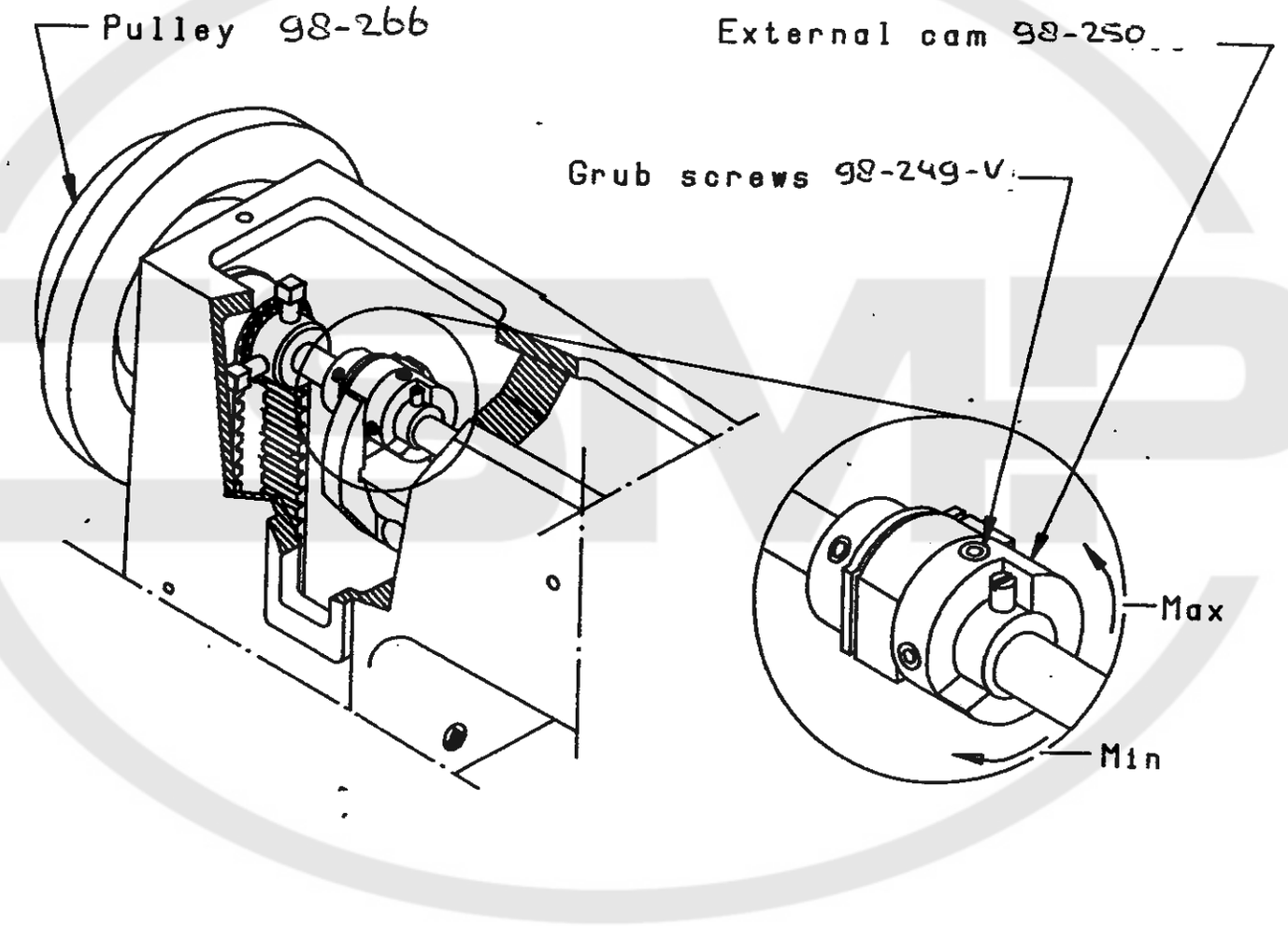
Warning:

By pressing the start pedal completely, backward, thanks to the action of a small simple effect pneumatic piston, the stretch of the needle thread is temporarily eliminated.

8.2.2 Adjustment of the stitch length

Operate in the following way:

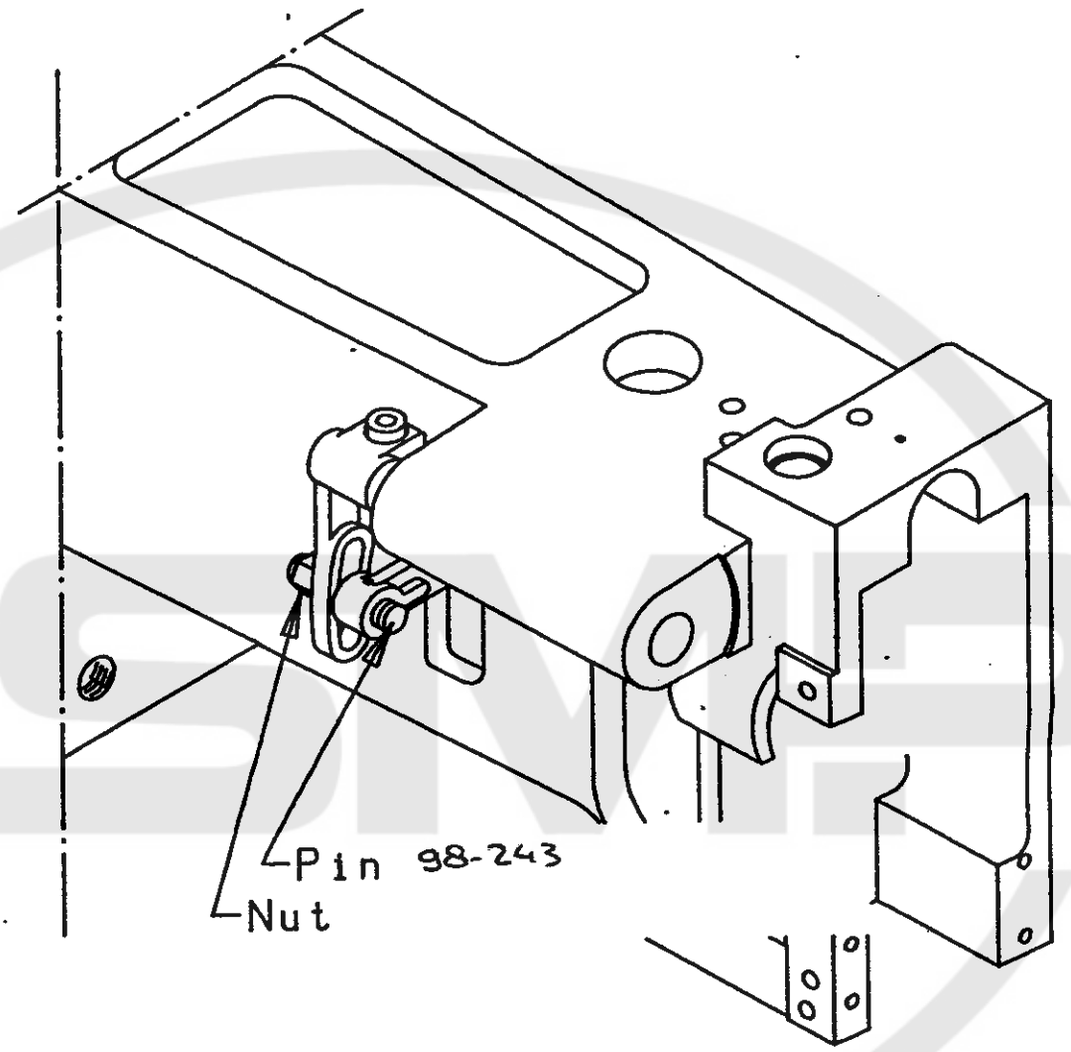
- turn the GENERAL SWITCH on position 0
- remove the upper carter
- loosen, by means of the special Allen wrench supplied with the machine, the two grub screws 98-249-V of the external stitch stretching cam 98-250
- Keep the pulley 98-266 steady by one hand and rotate the cam; lever it with the wrench and keep it in a grub screw, to increase or decrease the stitch length.
  By rotating the cam towards the operator it is possible to decrease the stitch length; viceversa, the length is increased.
- after adjusting the desired length, tighten the grub screws 98-249-V again, assemble the upper carter and start the working cycle again.



8.2.3 Adjustment of the foot jump

Operate in the following way:

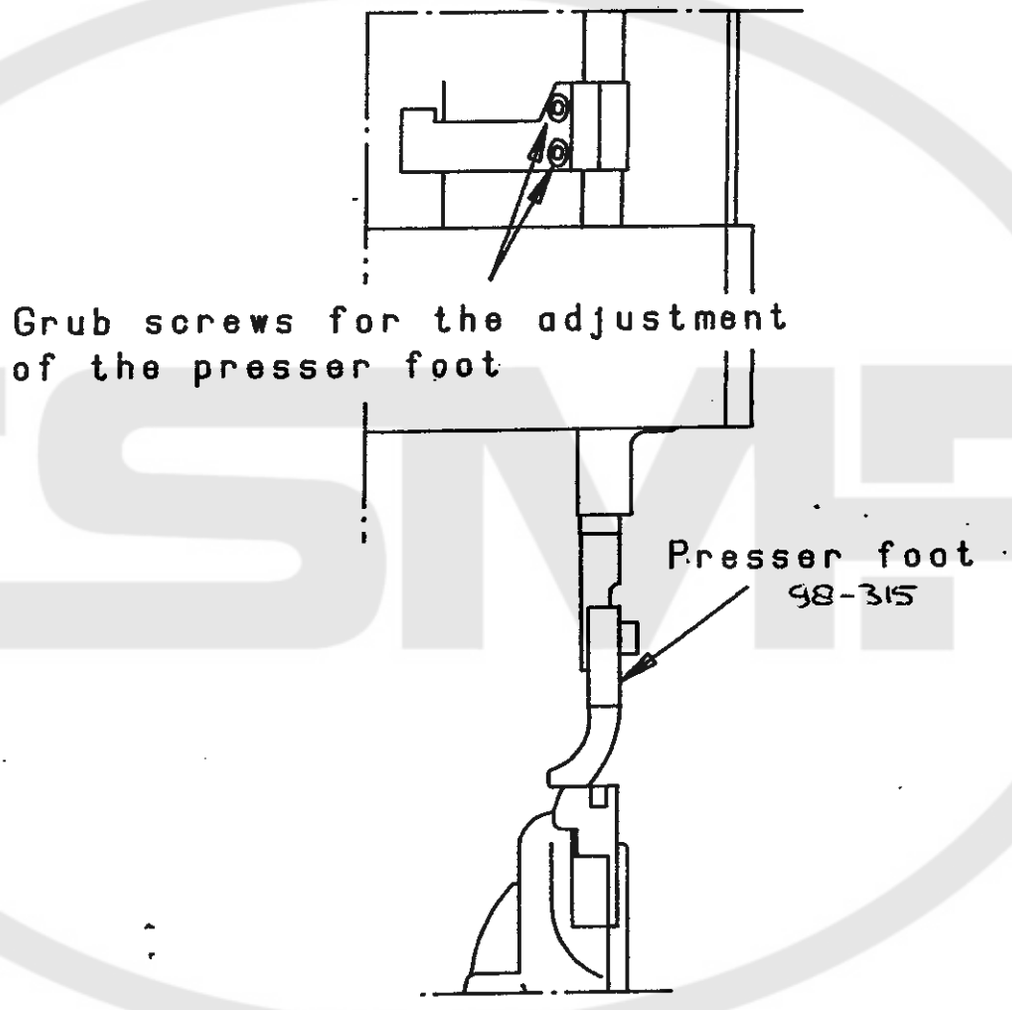
- turn the GENERAL SWITCH on position 0,
- loosen the clamping nut so that allowing the pin no. 98-243 can run free inside the buttonhole. If the pin slides downward, the foot jump is reduced while if it slides upward the foot jump increases, thus keeping the stitch length always steady,
- Once the adjustment has been carried out, tighten the check nut again.



8.2.4 Positioning of the presser foot

Operate in the following way:

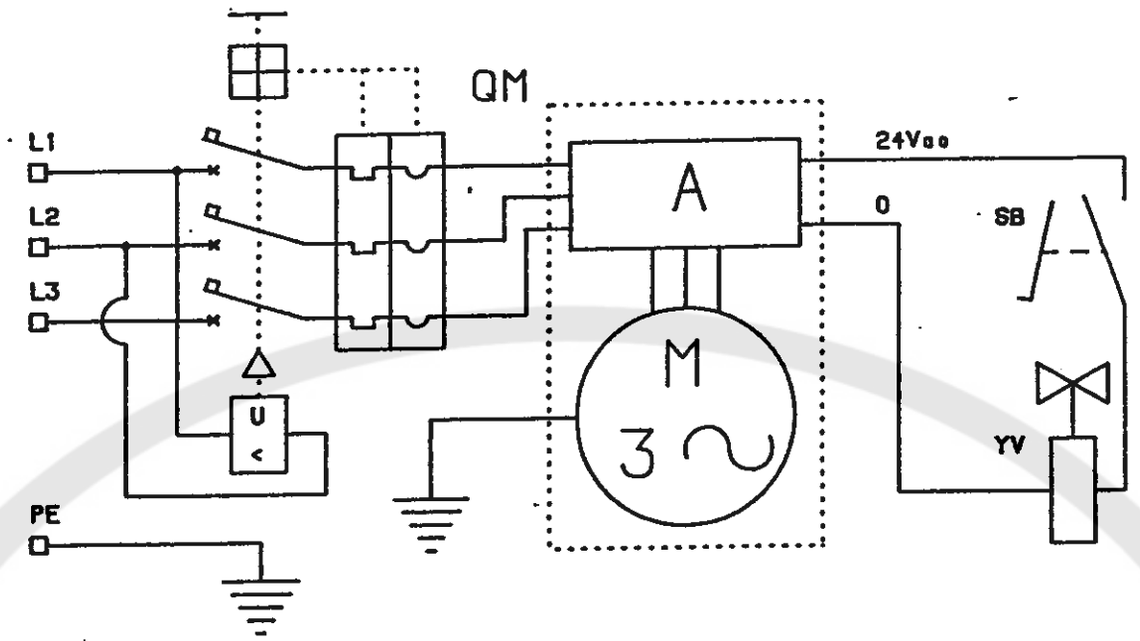
- turn the GENERAL SWITCH on position 0
- put the object to be sewed in the required position and position the needle near the sewing channel. The needle guide foot no. 98-298 must not lay on the material.
- Loosen the socket head grub screws on the support 98-289
- Rotate the presser foot and position it against the edge of the box-sole; during the working cycle, the foot will guide the sewing cycle by rubbing the edge of the box-sole.
- Tighten the security nuts again.



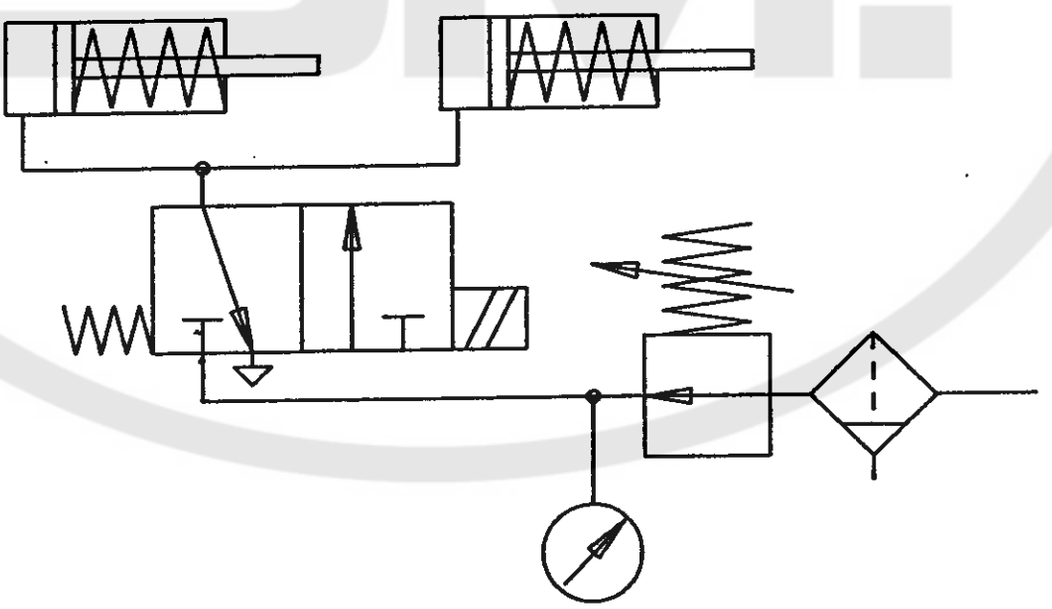
Warning:
Once adjusted, check that there are no collisions between the presser foot no. 98-315 and the needle guide foot no. 98-298

9 EQUIPMENT DIAGRAMS

9.1 Wiring diagram of the Sewing Machine



9.2 Pneumatic Diagram of the Sewing Machine

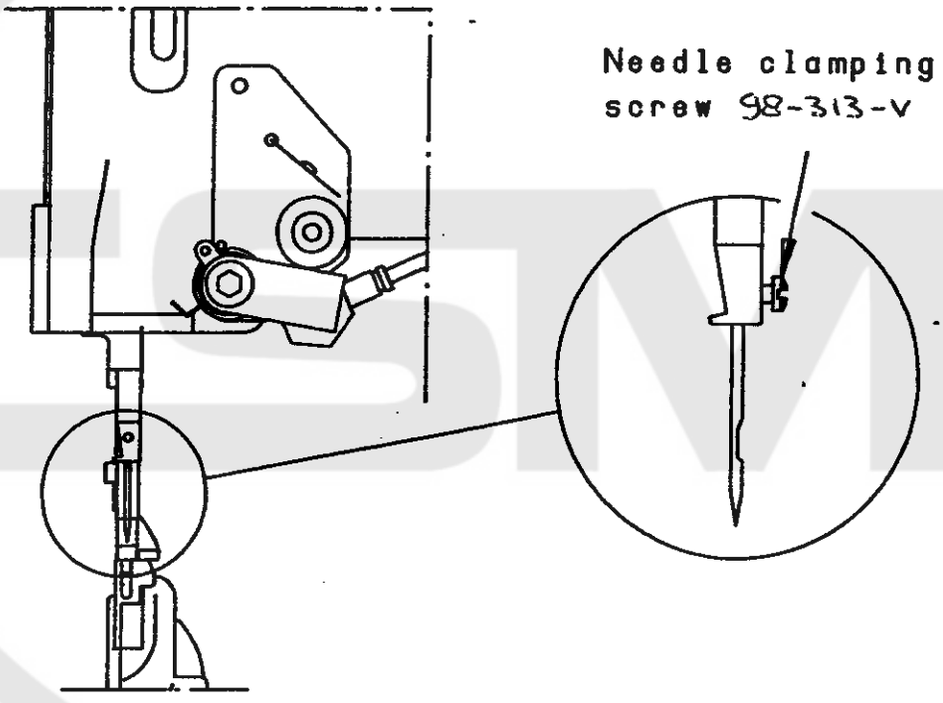


10 REPLACEMENT AND ADJUSTMENT

10.1 Needle replacement

Operate in the following way :

- turn the GENERAL SWITCH on position "O", unplug the main line socket, close the air on/off valve on the FR group and discharge the air from the equipment placed on the machine,
- manually rotate the pulley no. 5.09.107 until releasing the needle,
- loosen the clamping screw no. 8.02.171 as much as necessary,
- remove the needle to be replaced,
- put the new needle in the hole, pushing it upward until it stops,
- check that the discharge on the needle shank, just above the eye, is positioned on the right side from to the operator,
- tighten the screw no. 98-313-V



10.1.1 Tables of the needle guide foot to be used according to the size of the needle.

Needle	*Diam. of the needle guide foot hole (mm)*	*Type of needle guide foot*	*Thread diam. (mm)*
230	2,50	K	1,0
200	2,25	A	0,8
180	2,00	B	0,6
160	1,75	C	0,6
140	1,50	D	0,4

10.2 Hook replacement

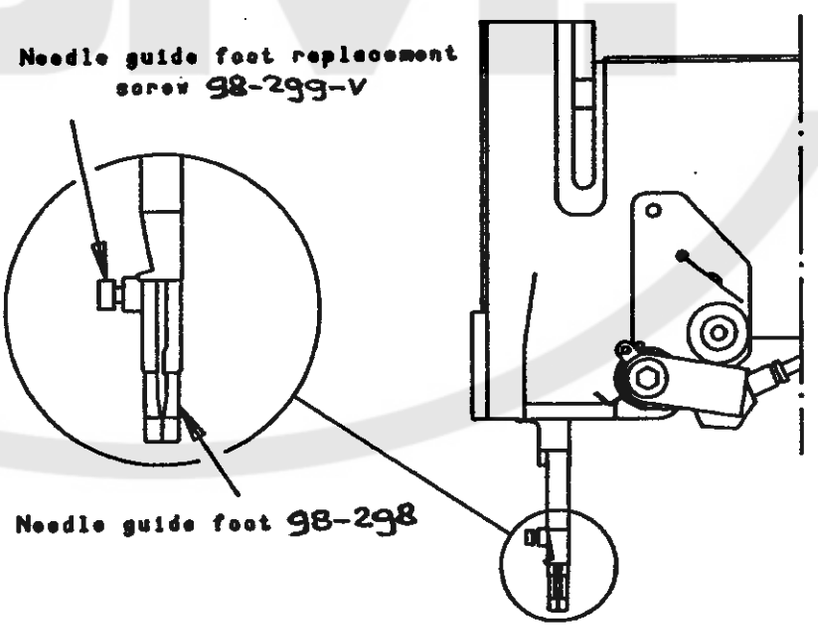
Operate in the following way:

- turn the GENERAL SWITCH on position 0, unplug the main power supply line socket, close the air on/off valve on the FR group and discharge the air from the system on the machine,
- release the needle and the foot by manually rotating the pulley no. 98-266
- remove the carter no. 98-197 (see page 3 of the Spare Parts Catalogue),
- remove the ring nut no. 98-167-V
- unscrew the screw no. 98-163 and remove the washer no. 98-162-P
- remove the bronze support no. 98-176 , assemble the teflon pulley no. 98-165 and the cable tighteners no. 98-179
- unscrew the two screws no. 98-196-V (see page 5 of the Spare Parts Catalogue),
- remove the part no. 98-195
- take from the hook holder box no. 98-182 the checking ring no. 98-194
- replace the hook,
- after replacing the hook, re-assemble all the pieces disassembled during the operation, and repeat the above-mentioned operations backwards,
- check that the needle-hook timing corresponds to the description at paragraph 10.6.

Warning:
During the assembly, lubricate the parts with some oil.

10.3 Replacement of the needle guide foot

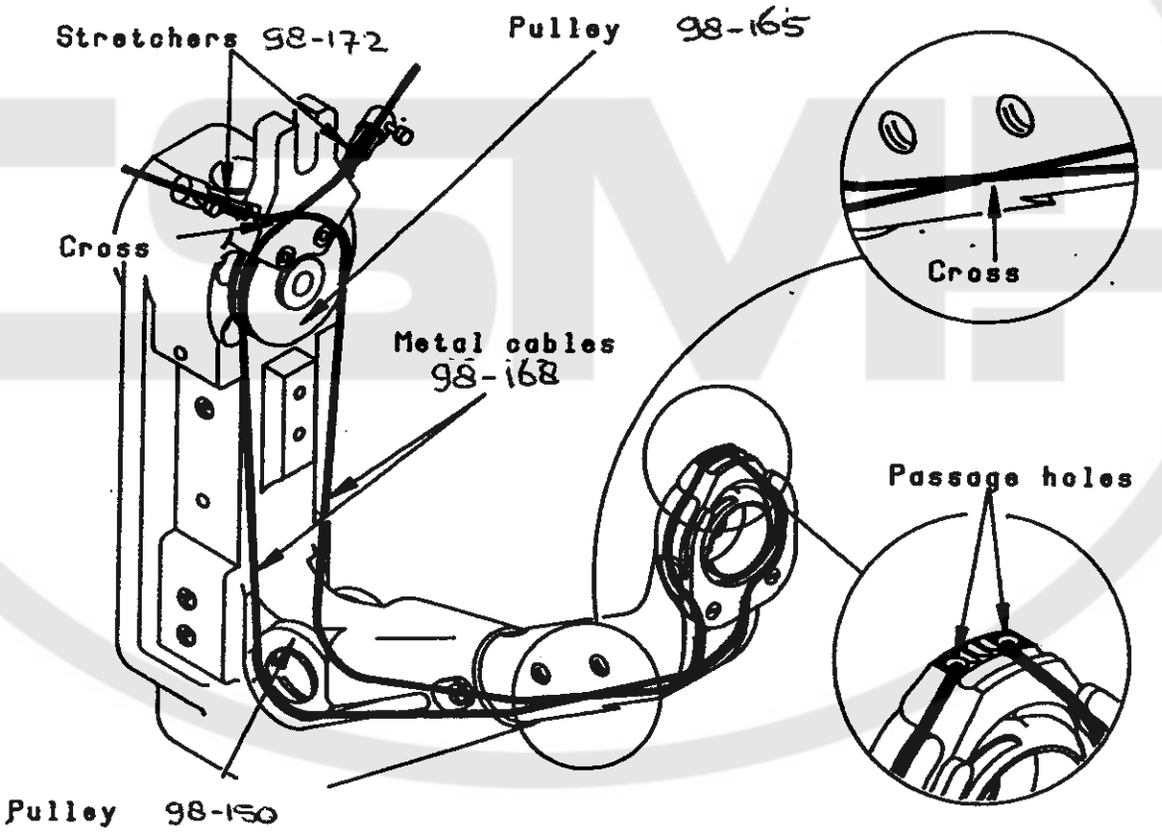
Operate in the following way:
- turn the GENERAL SWITCH on position 0, unplug the main power supply line socket, close the air on/off valve on the FR group and discharge the air from the system on the machine,
- manually rotate the pulley no. 98-266 until releasing the needle foot,
- loosen the clamping screw no. 98-299 V as much as necessary and remove the needle guide foot no 98-298
- assemble the new foot again, by centering the needle passage hole axis with the needle axis,
- tighten the clamping screw again.



Warning:
Once replaced, check that the position of the foot does not cause any flexure of the needle.

10.4 Replacement of the checking ring clamping metal cables

Operate in the following way:
- turn the GENERAL SWITCH on position 0, unplug the main power supply line socket, close the air on/off valve on the FR group and discharge the air from the system on the machine,
- unscrew the clamping screw and remove the plastic lid no. 98-197 placed under the horn,
- disassemble the plexiglass vertical carter no. 98-160 , unscrewing the two clamping screws,
- loosen the clamps no. 98-179
- remove any broken or worn out cable,
- pass the new metal cables no. 98-168 through the holes on the checking ring no. 98-194
- pass the cables through the new seat on the hook holder box no. 98-182
- bring the cable in the lower side of the horn, passing into the sheaths and passing them through the holes inside the horn itself. At this point, the cables path will have to be exchanged: the end of the cable passed through the right hole of the checking ring must come out at the base of the horn and wrap the pulley no. 98-150 placed on the left side, if compared to an observer in front of the hook. The same must be said for the other metal cable, that, when coming out of the horn, must wrap the pulley placed on the right side of the horn itself,
- the pulley no. 98-165 must be wrapped by the two cables: exchange the cables again,
- pass every cable through the clamp no. 8.02.415 and clamp the cable by means of the special screws,
- adjust the voltage by means of the stretcher no. 98-172
- fix in the right position by means of the lock nut ,
- assemble the lids again.



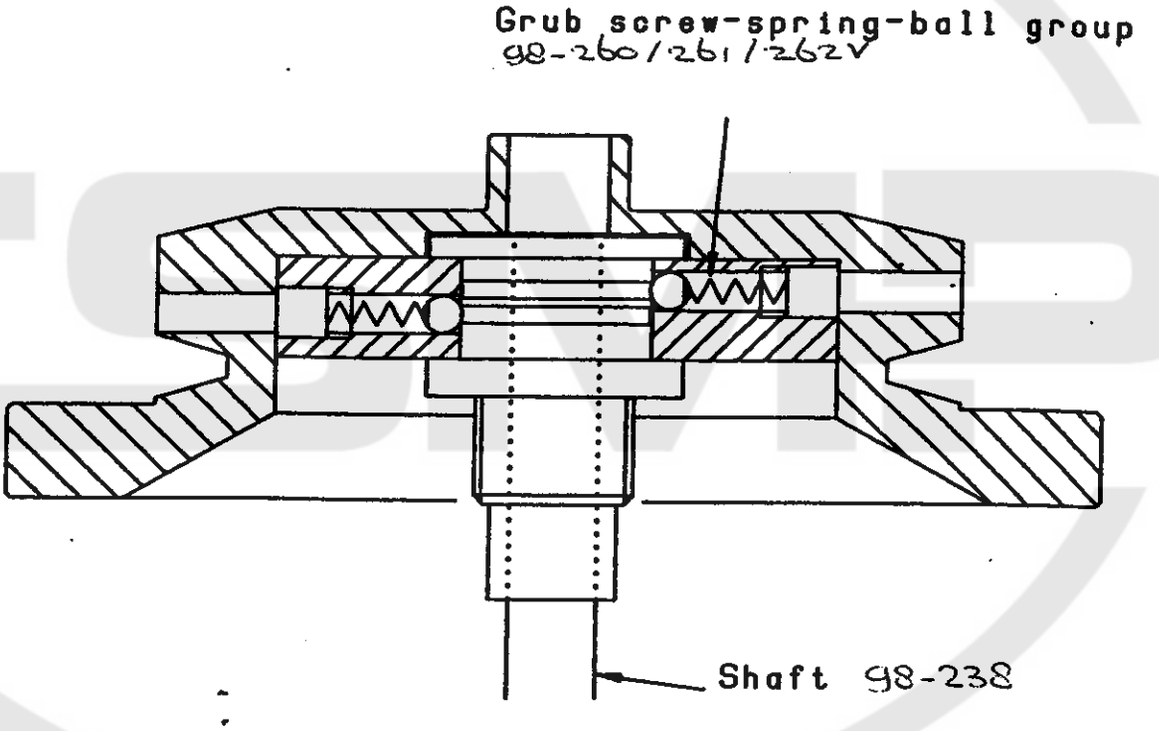
Warning:
During the various sewing phases, the checking ring is kept in a steady position, by the two metal cables. The horn position can instead vary continuously according to the operator's most natural sewing position
It is extremely important that there is always some daylight between the lateral edges of the horn and the edges of the checking ring, in order to avoid any sort of excessive stress and consequent breaking of the metal cables.

10.5 Adjustment of the safety clutch

Operate in the following way:

- turn the GENERAL SWITCH on position 0, unplug the main power supply line socket, close the air on/off valve on the FR group and discharge the air from the system on the machine,
- loosen the two adjusting grub screws no 98-262V by eans of the springs no. 98-261 and of the balls no. 98-260.; loosen the grub screws until releasing the balls from their seats on the bolt no. 98-264
- place an object to be sewed in the work position,
- tighten the grub screws no 98-262V until touching the springs no. 98-261 (the contact is signalled by when a greater resistance to the grub screw advance movement is detected)
- tighten the two grub screws by 1/4 rev.,
- try to sew by manually rotating the pulley and check whether the needle can work (drill the material) or not,
- if the needle cannot drill the material because of the clutch intervention, tighten both the two grub screws again by 1/4 rev, and check again if the needle can work,
- continue the operation until the needle drills the material. The clutch must not slide.

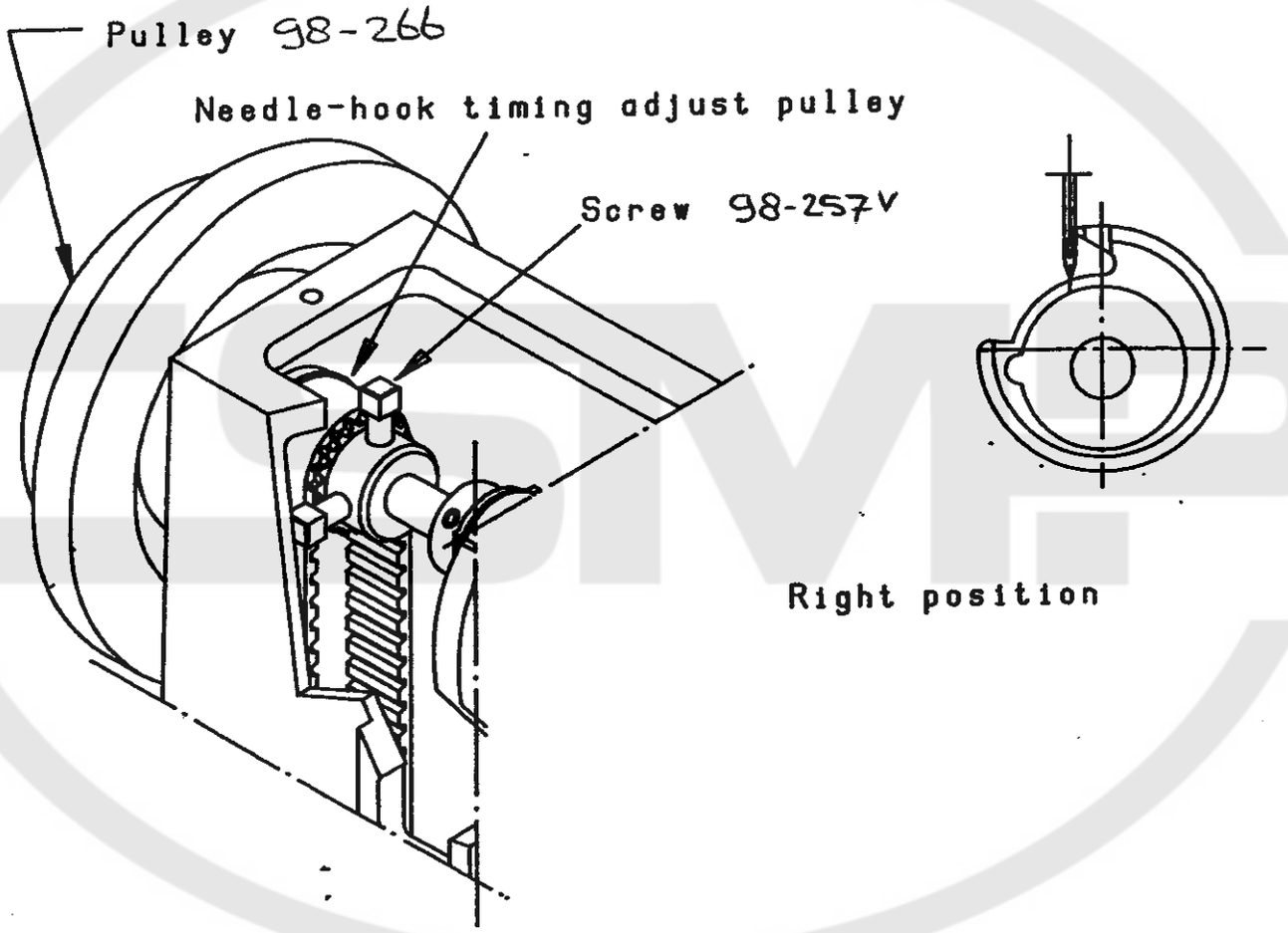
Warning:
as soon as the needle drills the material to be sewed, stop the tightening operation of the grub screws.



10.6 Timing of the hook-needle position

Operate in the following way:

- turn the GENERAL SWITCH on position 0, unplug the main power supply line socket, close the air on/off valve on the FR group, discharge the air from the system on the machine,
- loosen the square head screws no. 98-257V
- use the special wrench to unscrew the screws, supplied with the machine, through the head of one of the two screws no. 98-257V and rotate the toothed pulley no. 98-256 keeping the main shaft no. 98-238 steady. To keep the main shaft steady, hold the pulley no. 98-266 with one hand.
  The hook will have to be positioned with reference to the needle as described in the following picture: the hook spout will have to be aligned with the needle axis, in the unloading area obtained on the shank itself, just above the eye of the needle.



11 OPTIONAL DEVICES

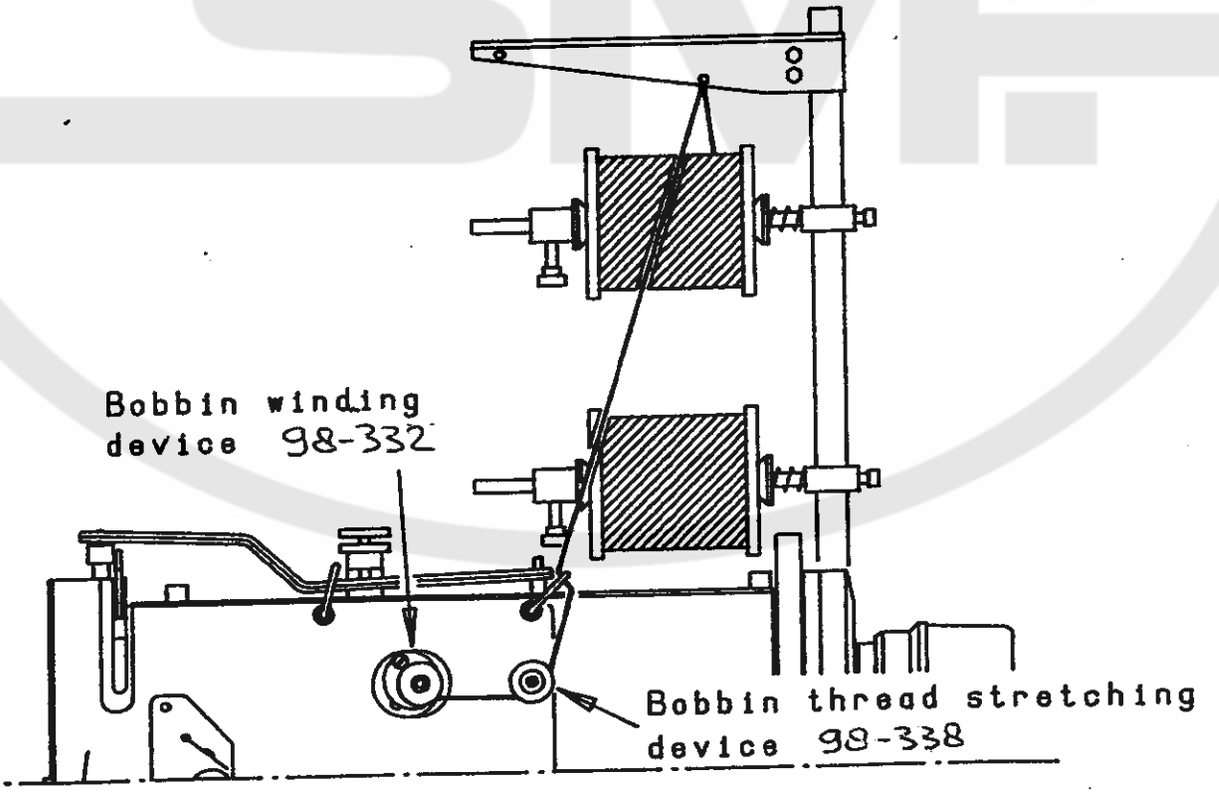
11.1 Preparation of the hook bobbins by means of a bobbin winding device

For the preparation, operate in the following way:

- put a bobbin on the upper bobbin holder pin and fix it in the right position by means of a clamp made up of a bush no. 5.08.305 and of a knob no. 5.08.306: the bobbin resistance to unwinding, is adjusted by increasing or decreasing the load applied on the spring no. 5.08.303 by means of the clamp,
- unwind the end of the bobbin thread, by following the path indicated in the picture.
- put the bobbin, on the supporting journal of the bobbin winding device no. 98-332
- press the bobbin winder completely, in order to engage the two conycal friction wheels placed inside the head of the sewing machine,
- start winding the end of the thread around the bobbin barrel and fix it by putting it in the slot on the bobbin wall,
- press the start pedal forward : the supporting journal starts rotating and the bobbin is dragged during the pin movement and the thread is winded up,
- once the bobbin has reached the desired diameter, which must not exceed the lateral edges of the bobbin, the small lever no. 8.07.106 will disengage the mechanical coupling which holds the couple friction wheels by stopping the bobbin,
- cut the thread, near the bobbin,
- remove the bobbin once it has been winded up from the supporting journal.

Warnings

1) To adjust the value of the thread stretch during the winding cycle, operate on the knob no. 98-338 placed on the right side of the bobbin winding device.
2) To adjust the quantity of winded thread, operate on the pin clamping screw no. 8.07.105 (see page 7 of the Spare Parts Catalogue)



12 MAINTENANCE AND REPAIR

All the operations indicated herebelow must be carried out on the machine only when the motor and the electric system are off and after having discharged the compressed air placed on the machine.

12.1 Maintenance

A careful mantenaince represents an important factor for a longer life of the machine under the best functioning and performing conditions and a guarantee of the safety conditions foreseen by the Builder.

12.2 Ordinary maintenance table

Operation	*Machine Part*	*Intervals*
Lubrication	.Some oil inside the hook	Daily
	.Little bar on the horn point	Daily
	.Horn gears and little shafts	Daily
	.Feet jump driving shaft	Daily
	.Mechanical parts inside the sewing head	Weekly
	.Driving shaft bearings	Daily
	.Horn support shaft bearings	Daily
	.Cam, rollers, pins and slides	Weekly
Visual control. of the conditions	.Pneumatic pipes and connections	Monthly
	."V" driving belt	Monthly
	.Toothed driving belt	Monthly
Filters inspection	.Compressed air inlet filter	Monthly
	.Machine compressed air supply line filter	Monthly
	.Motor Filter	Monthly
Condensate draina	.Condensate discharger placed on the machine	
	.compressed air supply line	Weekly
	.Condensate discharger placed on the machine	Weekly

12.3 Some information concerning the lubrication

The machine must be daily lubricated at the end of every shift. Rotating parts must be carefully and accurately lubricated.
The choice of the oil, which must not be too fluid or too thick, is very important. Please refer to the lubricant supplied with the machine.

Warnings:

1) Remove both the carters and the protections every three months and lubricate all the mechanical parts having flat holes.

2) At the end of the day clean and lubricate the hook with a drop of oil.

NEVER USE SILICONE OILS.

12.4 Operations to be carried out by skilled operators.

Maintenance operations requiring a specific technical experience that must be carried out by a highly skilled personnel are listed herebelow.
For any reason the User must not intervene on:
- Electronic card of the motor and of the synchronizing gear,
- Axis centering of the horn,
- Timing of the hook speed.

12.5 Defects that can be detected on the sewing machine

The causes and any eventual functioning defects that could arise from the use of the machine are listed herebelow.

FAILURE	CAUSE	REMEDY
MISSING POINTS	At the beginning of the working cycle the machine does not sew	Look up this handbook Par. 8.2
	Wrong use of the hook on the tip or on the heel	
	The needle-hook timing is not correct	Look up this handboook Par. 10.6
IRREGULAR STITCH	Wrong use of the hook	Look up this handbook Par. 8.2
	Shoe held or pushed during the sewing cycle	
	Obstacles inside the shoe	Check if nothing hinders the regular transport (folded linings, tacks, clips, etc.)
	Wrong use of the machine	Look up this handbook Par. 8.2
THREAD BREAKING	Wrong thread	Check if the needle-thread- foot ratio corresponds to the one described in the Table on Par. 10.1.1
	The quality of the thread does not meet the machine standard	Ask the Builder
	Defective needle	Needle replacement
	Wrong sequence of the passages during the threading	Look up this handbook Par. 7.2
	Replacement of the parts involved in the thread passage	Check if there are sharpening edges in the replaced parts, otherwise polish them with a cloth or an abrasive thread
NAIL BREAKING	Wrong use of the machine	Look up this handbook Par. 8.2
	Wearing of the needle guide foot	Replace it with a new one
	Breaking, wearing and/or wrong replacement of the steel cables 98-168	Look up this handbook Par. 10.4
	Obstacles inside the shoe	Check that nothing hinders the sewing operations (folded linings, tacks, clips, etc.)
	The needle-hook timing is not correct	Look up this handbook Par. 10.6

13 MAIN WARNINGS

1) All the operations described in this instructions handbook must be carried out when the machine is under the following conditions:
- motore off,
- electric system off,
- air on/off valve on the FR group closed and pneumatic system on the machine discharged (discharge the air from the plug for condensate drainage on the FR group).

2) Protections have been assembled by the Builder in order to safeguard the operator's life while performing his tasks. During the machine functioning, protections must not be removed for any reason at all.

3) It is extremely important that the operator pays attention while using the machine during all the sewing phases. Since it is impossible to assemble a protection device in the sewing area (needle/hook area), the operators authorized to use the machine are kindly requested to use it properly, thus avoiding any sort of inattention.

4) Never start by mistake the pedal that adjusts the sewing speed when the motor is on.

5) During the machine functioning do not put the hands near the following parts:
- needle / hook device,
- horn rotation mechanical stopping devices,
- electric motor,
- thread stretcher lever.

The above-mentioned precautions are indispensable to avoid any sort of accident, such as:
- drilling of the upper limbs phalanxes because of the needle movement,
- crushing of the upper limbs phalanxes because of the feet movement.

6) When removing the support feet, it is extremely important to lift up and to incline the machine properly. To perform this operation, it is necessary to use several operators to lift the machine. During the unscrewing of the support feet, position the security wedges in order to avoid any crushing.

7) If, when shipped, the sewing machine is packed in a cage or in a wood crate, check that it is fixed on a pallet.

8) Before shipping the machine, spread with some protection oil all the external and non varnished parts especially the following groups:
- needle/hook - horn and transport group.

9) During transport the horn must be assembled on the machine. Please note that one part of the machine weight is in the head of the sewing machine; therefore, do not incline or oscillate the machine excessively when handling it.
Never touch the needle hook area by mistake.

10) When it is necessary to slightly move and push the machine, it is advisable to push the small table without touching any part of the sewing machine.

11) By pushing the start pedal completely, backward, thanks to the action of a simple effect pneumatic small piston, the needle thread stretch is temporarily eliminated.

12) During the machine functioning it is absolutely forbidden to remove the protections assembled by the Builder in order to safeguard the operator's life.

13) *The brake and the friction clutch that intervene during the start or stop phases of the sewing operations are aligned with the main motor, thus forming a unique body with the motor itself.*

14) *Leave the machine transport the shoe during the sewing phase: the shoe must not be pushed, or hold; the operator only has to follow its motion, being careful to keep the desired sewing line.*
The horn, which rotates around its own axis and which is controlled by the operator, gradually takes on all the shapes suitable to allow a better and an easier achievement of the desired sewing process.
The horn max. rotation around its own axis is limited in both directions by two mechanical retainers.

15) ***Never start the machine if the the object to be sewed has not been positioned between the foot and the horn point.***

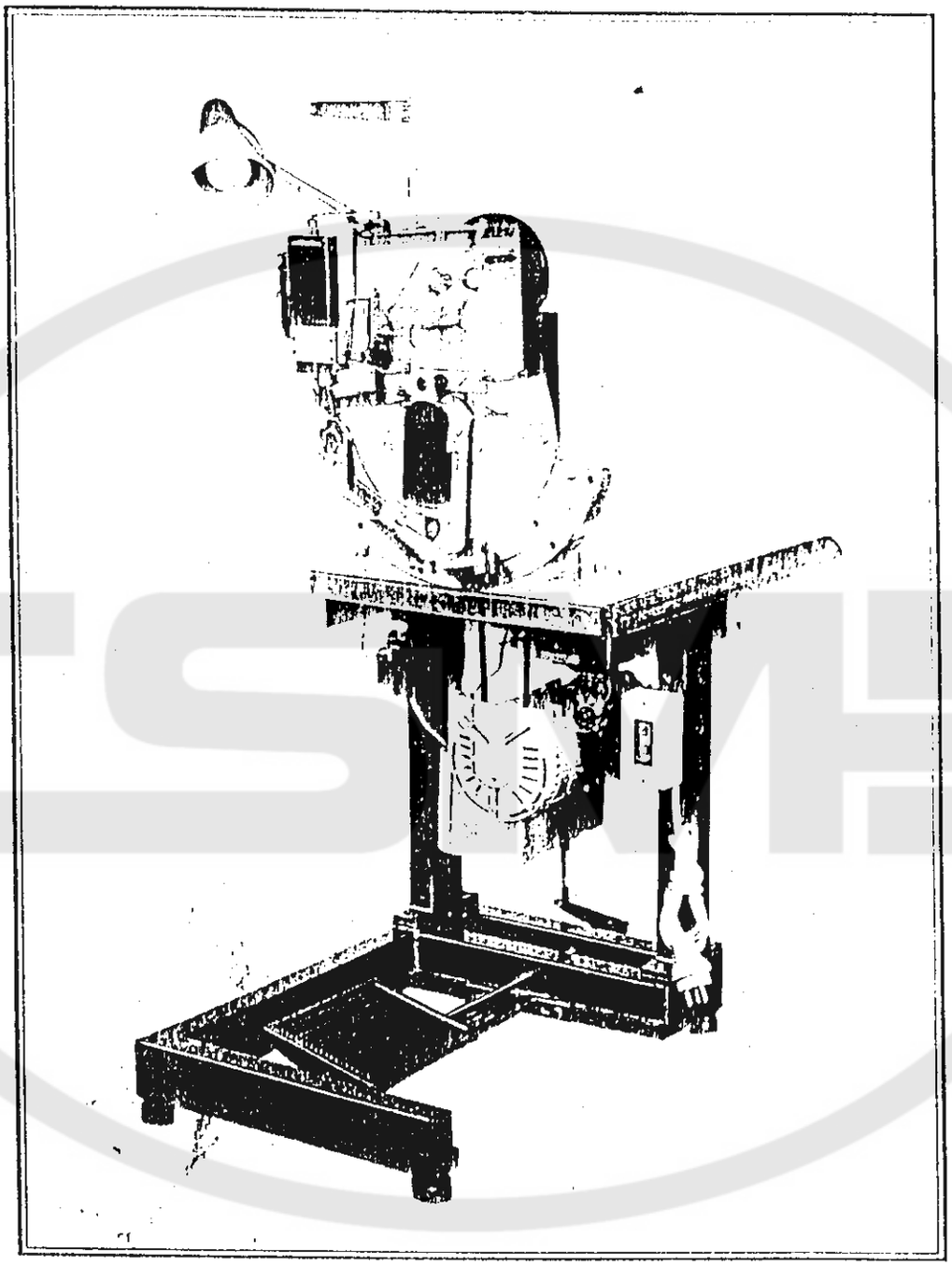
16) *During the various sewing phases, the checking ring is kept steady by the metal cables.*
The horn position, can instead vary continuously according to the operator's most natural sewing position.
It is extremely important that there is always some daylight between the lateral edges of the horn and the edges of the checking ring, in order to avoid any sort of excessive stress and consequent breaking of the metal cables.

17) *The operators will have to avoid any sort of intervention in the working area of the needle-hook device, for maintenance purposes; they can intervene only after having stopped the machine (GENERAL SWITCH selector on position 0), after having disconnected the power supply cable and discharged the compressed air from the system on the machine.*

18) *Remove the carters and the protections every month and* ***lubricate all the mechanical parts having flat holes.***

19) *The sewing speed depends on the start pedal position: by lowering the pedal, the speed will increase.*

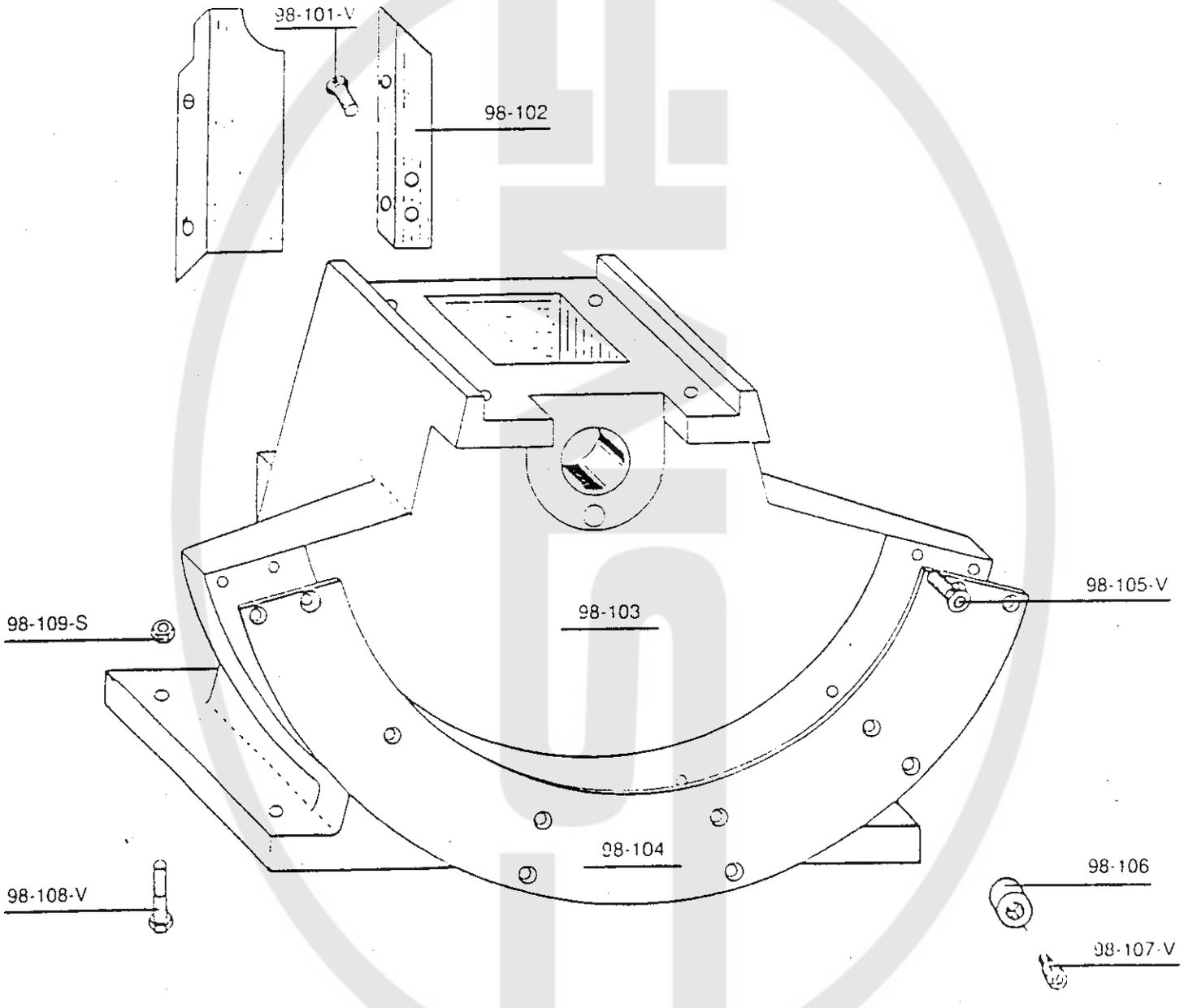
GLOBAL



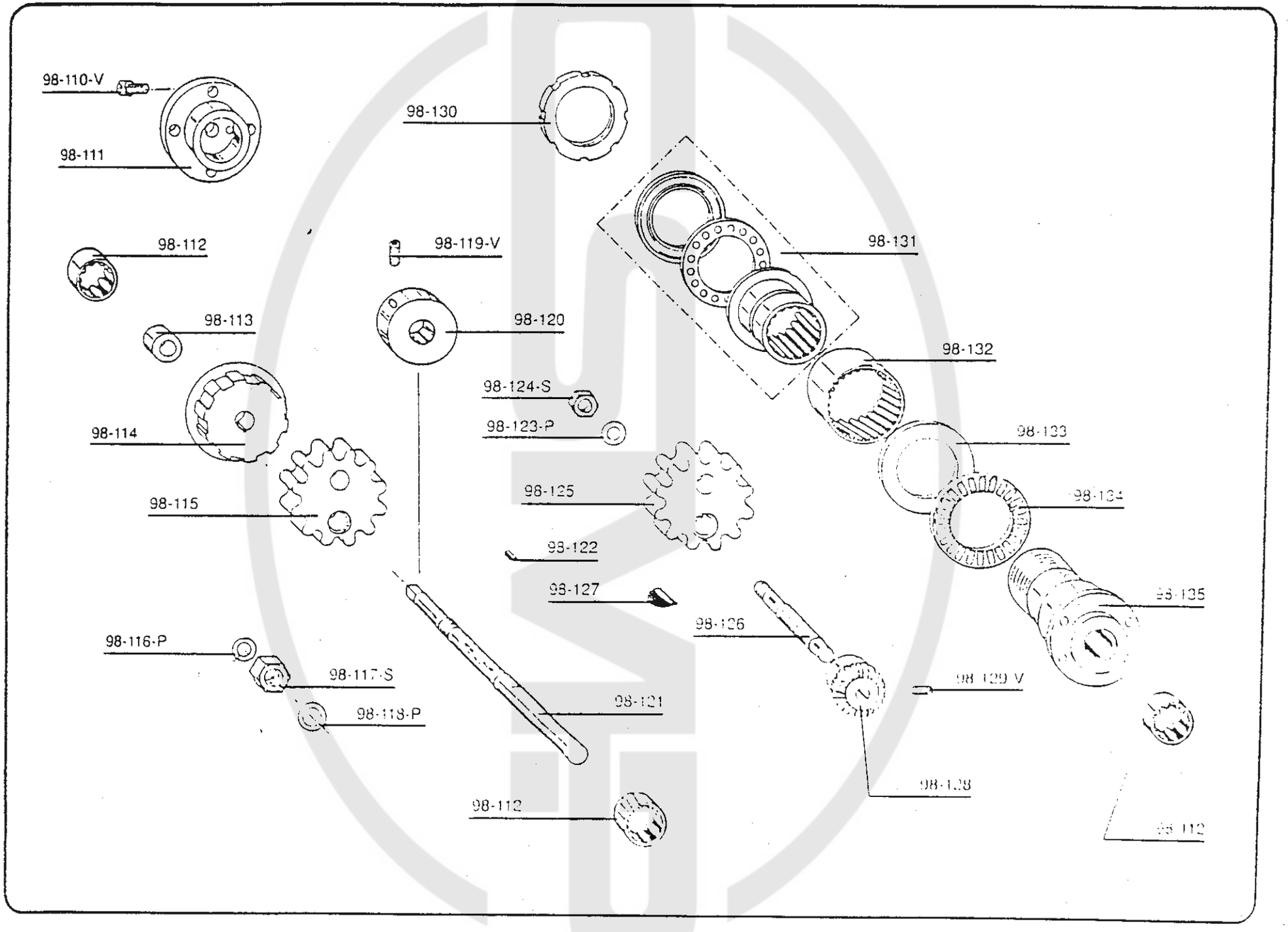
DOUBLE THREAD SHOE AND BASKET SOLE-SEWING MACHINE (LOCKSTITCH SEWING)

LIST OF SPARE PARTS

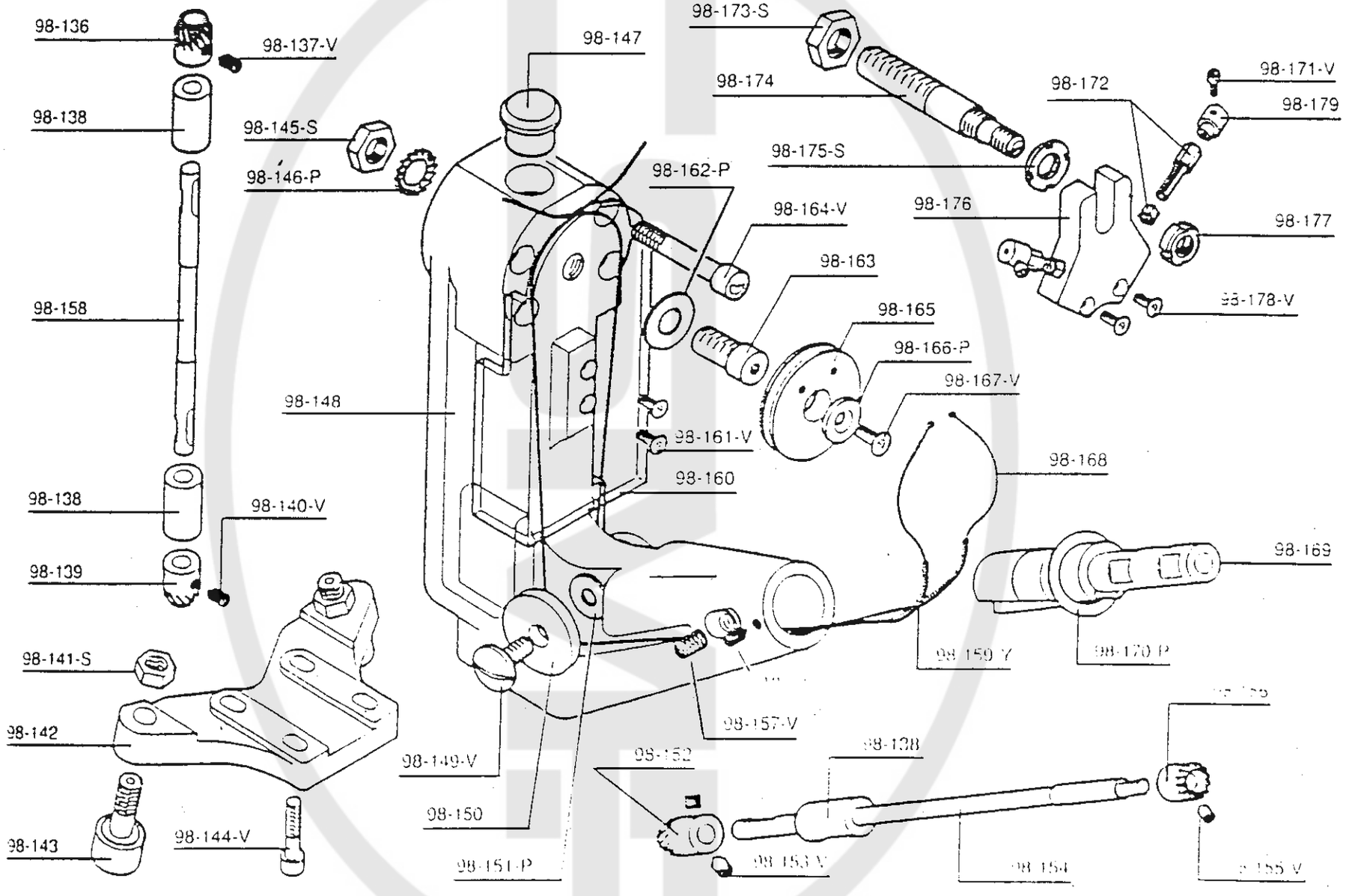
PART NO.	DESCRIPTION
98-101-V	SCREW
98-102	BRACKET
98-103	HEAD BASE
98-104	SLIDE PLATE
98-105-V	SCREW
98-106	ROL
98-107-V	STUD SCREW
98-108-V	SCREW
98-109-S	NUT


98-101-V
98-102
98-103
98-104
98-105-V
98-106
98-107-V
98-108-V
98-109-S

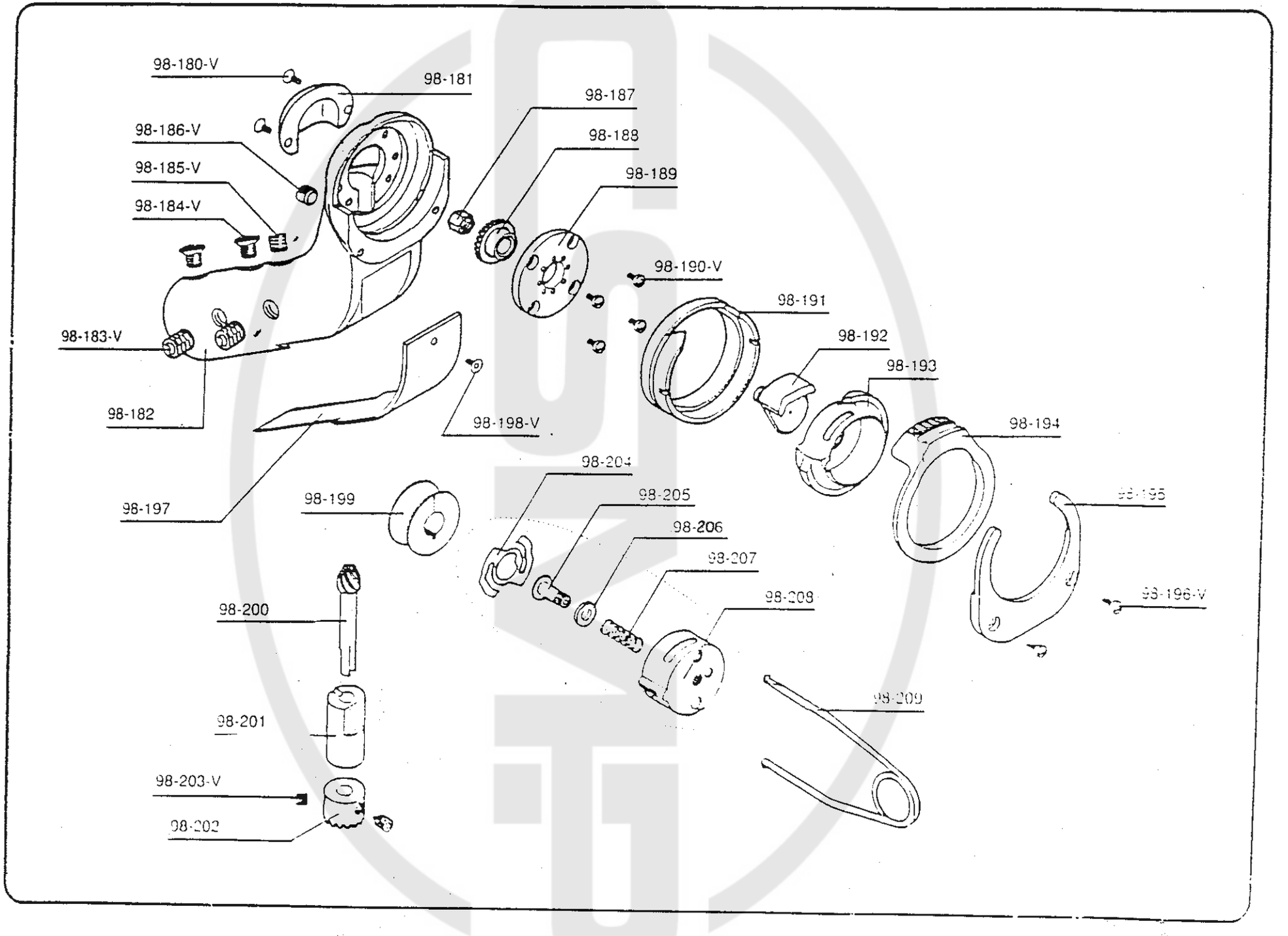
Part No.	DESCRIPTION
98-110-V	SCREW
98-111	BEARING HOLDER
98-112-R	NEEDLE BEARING
98-113	ROL
98-114	PULLEY
98-115	GEAR
98-116-P	SPRING WASHER
98-117-S	LOCK NUT
98-118-P	O-RING
98-119-V	SET SCREW
98-120	PULLEY
98-121	SHAFT
98-122	KEY
98-123-P	O-RING
98-124-S	LOCK NUT
98-125	GEAR
98-126	SHAFT
98-127	KEY
98-128	GEAR
98-129-V	SET SCREW
98-130	THREADED FLANGE
98-131-R	NEEDLE BEARING SET
98-132-R	NEEDLE BEARING
98-133-R	WASHER
98-134-R	NEEDLE BEARING
98-135	FLANGE
98-112-R	NEEDLE BEARING


98-110-V
98-111
98-130
98-112
98-119-V
98-131
98-113
98-120
98-132
98-124-S
98-114
98-123-P
98-133
98-125
98-115
98-134
98-122
98-127
98-135
98-126
98-116-P
98-117-S
98-129-V
98-121
98-118-P
98-128
98-112
98-112

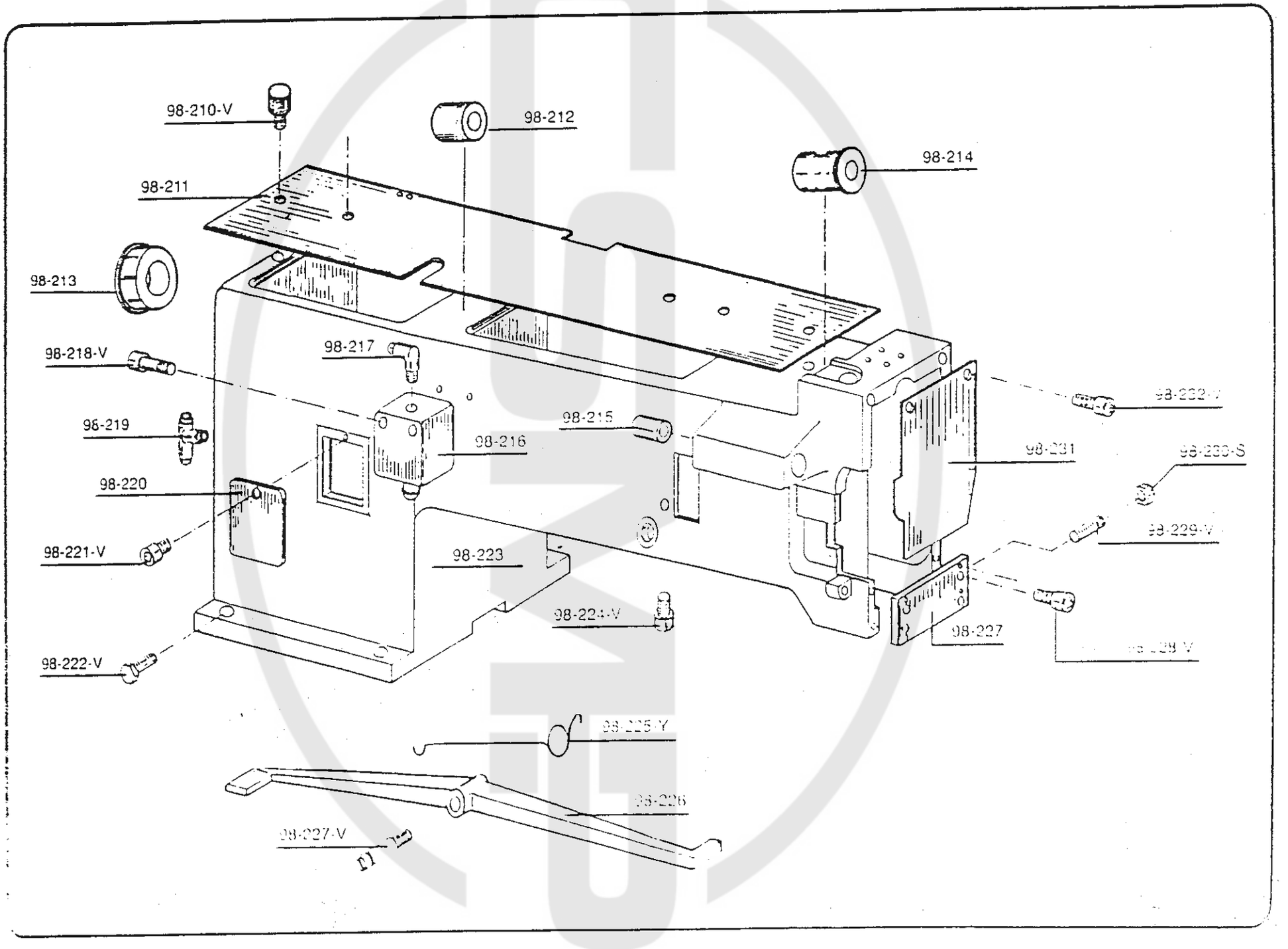
PART NO.	DESCRIPTION
98-136	GEAR
98-137-V	SET SCREW
98-138	BUSHING
98-139	GEAR
98-140-V	SET SCREW
98-141-S	NUT
98-142	BRACKET
98-138	BUSHING
98-143-R	ROLL STUD
98-144-V	SCREW
98-145-S	NUT
98-146-P	TOOTHED WASHER
98-147	CAP
98-148	ARM HOLDER
98-149-V	SCREW
98-150	WHEEL
98-151-P	WASHER
98-152	GEAR
98-153-V	SET SCREW
98-154	SHAFT
98-155	SET SCREW
98-138	BUSHING
98-156	GEAR
98-157	SET SCREW
98-158	SET SCREW
98-159-Y	CABLE TUBE
98-160	COVER
98-161-V	SCREW
98-162-P	WASHER
98-163	SCREW
98-164-V	SCREW
98-165	WHEEL
98-166-P	WASHER
98-167-V	SCREW
98-168	CABLE
98-169	SHAFT
98-170-P	WASHER
98-171-V	SCREW
98-172	SPECIAL SCREW
98-173-S	NUT
98-174	SHAFT
98-175-S	THREADED FLANGE
98-176	BRACKET
98-177	THREADED FLANGE
98-178	SCREW
98-179	COLLAR


98-136
98-137-V
98-138
98-145-S
98-146-P
98-158
98-138
98-140-V
98-139
98-141-S
98-142
98-143
98-144-V
98-147
98-148
98-149-V
98-150
98-151-P
98-152
98-153-V
98-154
98-155-V
98-156
98-157-V
98-159-Y
98-160
98-161-V
98-162-P
98-163
98-164-V
98-165
98-166-P
98-167-V
98-168
98-169
98-170-P
98-171-V
98-172
98-173-S
98-174
98-175-S
98-176
98-177
98-178-V
98-179

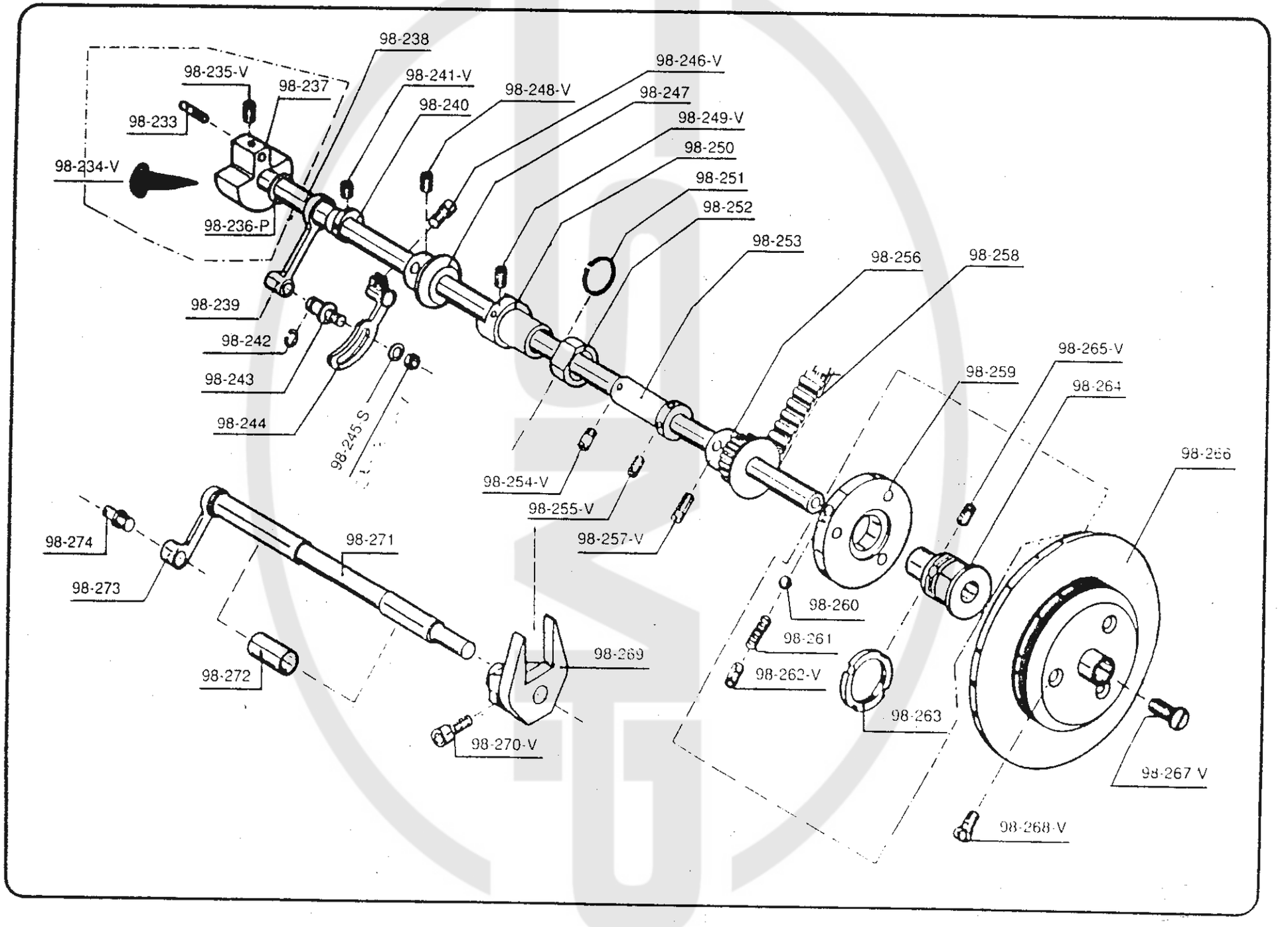
PART NO.	DESCRIPTION
98-180	SCREW
98-181	SPACER
98-182	SET SCREW
98-183-V	SCREW
98-184-V	SCREW
98-185-V	SCREW
98-186-V	SCREW
98-187-S	NUT
98-188	GEAR
98-189	PLATE
98-190-V	SCREW
98-191	RACE WAY
98-192	HOOK DRIVER
98-193	HOOK
98-194	FEED DOG
98-195	FEED DOG SUPPORT
98-196-V	SCREW
98-197	COVER
98-198-V	SCREW
98-199	BOBBIN
98-200	GEAR
98-201	BUSHING
98-202	GEAR
98-203-V	SCREW
98-204	BRAKE SPRING
98-205	SHAFT
98-206	WASHER
98-207	SPRING
98-208	BOBBIN CASE
98-209	BOBBIN CASE LIFTER


98-180-V
98-181
98-187
98-186-V
98-188
98-185-V
98-189
98-184-V
98-190-V
98-191
98-183-V
98-192
98-193
98-182
98-198-V
98-194
98-204
98-197
98-199
98-205
98-195
98-206
98-207
98-196-V
98-200
98-208
98-209
98-201
98-203-V
98-202

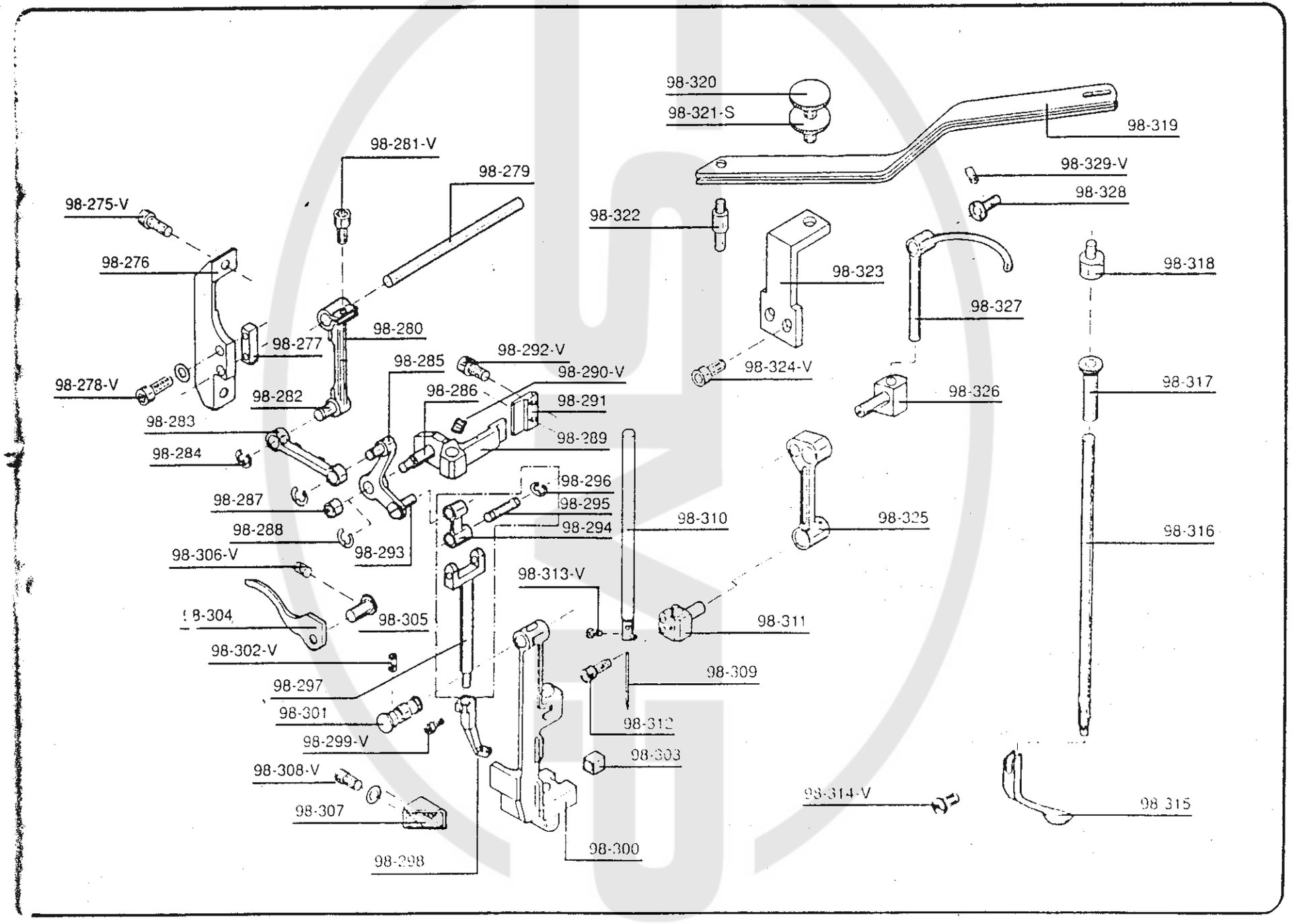
PART NO.	DESCRIPTION
98-210-V	SCREW
98-211	COVER
98-212	BUSHING
98-213-R	BEARING
98-214	BUSHING
98-215	BUSHING
98-216	CYLINDER
98-217	AIR CONNECTOR
98-218-V	SCREW
98-219	AIR CONNECTOR
98-220	COVER
98-221-V	SCREW
98-222	SCREW
98-223	CASTING
98-224-V	SCREW
98-225	SPRING
98-226	LEVER
98-227-V	PIN SCREW
98-227	PLATE
98-228-V	SCREW
98-229-V	SCREW
98-230-S	NUT
98-231	COVER
98-232-V	SCREW


98-210-V
98-212
98-214
98-211
98-213
98-218-V
98-217
98-219
98-216
98-215
98-220
98-231
98-221-V
98-223
98-224-V
98-227
98-222-V
98-225-Y
98-226
98-227-V

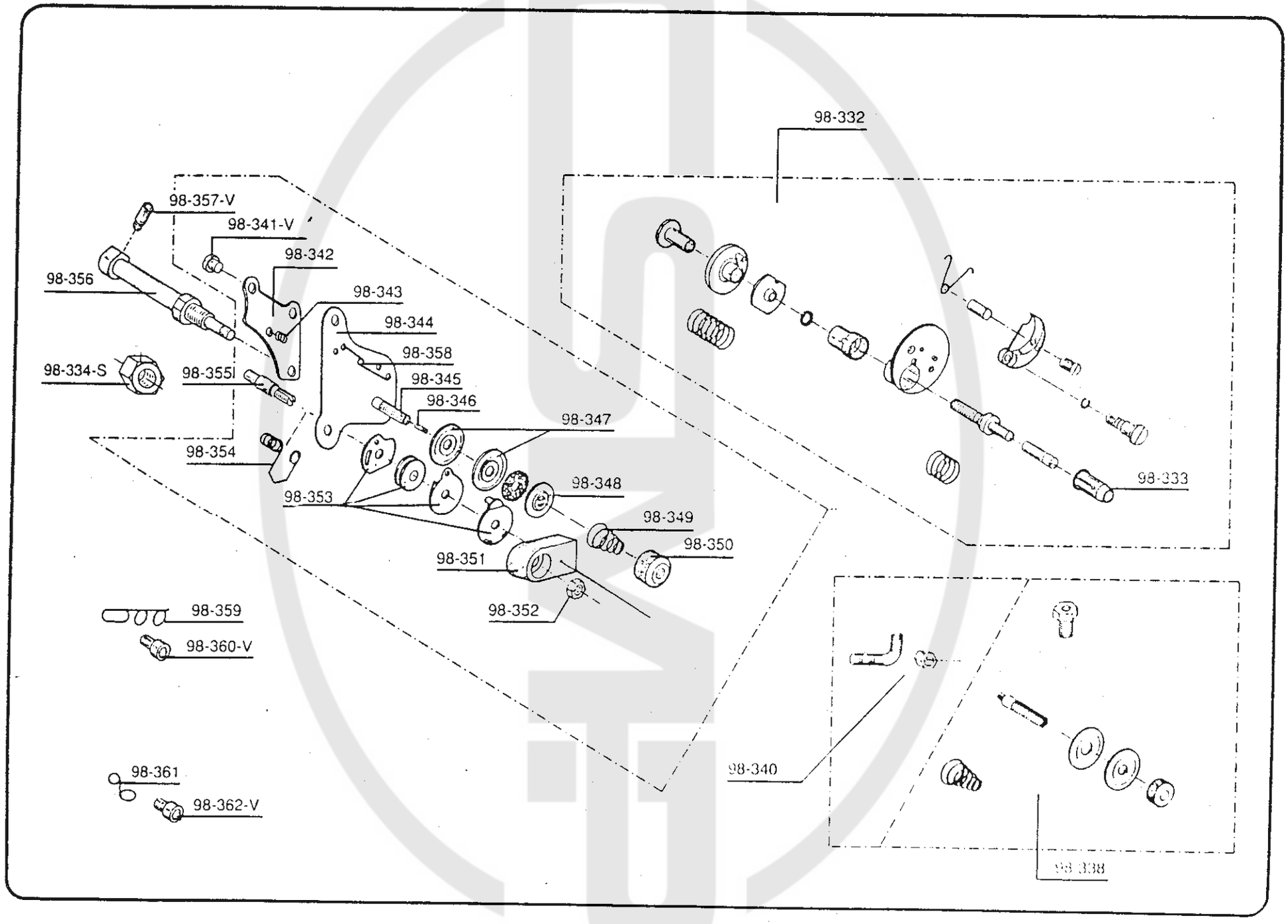
PART NO.	DESCRIPTION
98-233	PIN
98-234-V	PLUG
98-235-V	SET SCREW
98-236-P	RING
98-237	COUNTER WEIGHT
98-238	SHAFT
98-239	EXCENTRIC LEVER
98-240	EXCENTER
98-241	SET SCREW
98-242	RETAINING RING
98-243-V	DRIVE ROD
98-244	LEVER
98-245-S	WASHER
98-246-V	NUT
98-247	DRIVER
98-248-V	SET SCREW
98-249-V	SET SCREW
98-250	EXCENTER
98-251	RETAINING RING
98-252	EXCENTER
98-253	EXCENTER
98-254-V	EXCENTER
98-255-V	SET SCREW
98-256	TOOTHED PULLEY
98-257-V	SET SCREW
98-258	TOOTHED BELT
98-259	SUPPORT
98-260	BALL
98-261	SPRING
98-262-V	SCREW
98-263	THREADED FLANGE
98-264	FLANGE
98-265-V	SET SCREW
98-266	HAND WHEEL
98-267	STOP SCREW
98-268	SCREW
98-269	GUIDE FORK
98-270-V	SCREW
98-271	SHAFT
98-272	BUSHING
98-273	LEVER
98-274-V	STUD


98-238
98-235-V
98-237
98-241-V
98-240
98-248-V
98-246-V
98-247
98-249-V
98-250
98-251
98-252
98-253
98-233
98-234-V
98-236-P
98-239
98-242
98-243
98-244
98-245-S
98-254-V
98-255-V
98-257-V
98-256
98-258
98-259
98-265-V
98-264
98-266
98-274
98-273
98-271
98-272
98-269
98-270-V
98-260
98-261
98-262-V
98-263
98-267-V
98-268-V

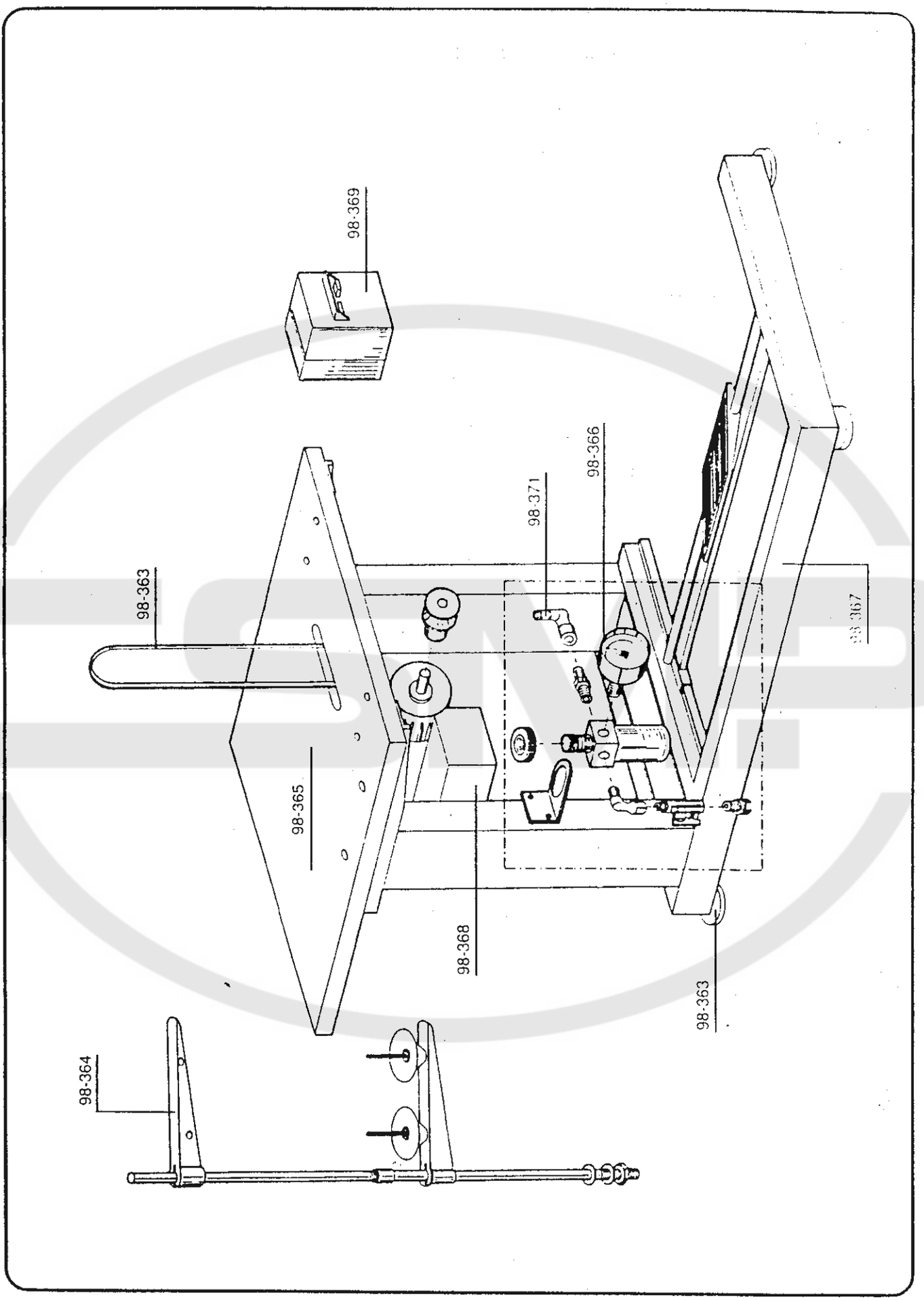
PART NO.	DESCRIPTION
98-275-V	SCREW
98-276	GUIDE
98-277	SPACER
98-278	SCREW
98-279	SHAFT
98-280	LEVER
98-281-V	SCREW
98-282	PIN
98-283	LEVER
98-284	RETAINING RING
98-285	LEVER
98-286	PIN
98-287	ROLL
98-288	RETAINING RING
98-289	LEVER
98-290-V	SCREW
98-291	GUIDE
98-292-V	SCREW
98-293-V	STUD SCREW
98-294	LEVER
98-295	PIN
98-296	RETAINING RING
98-297	PRESSERFOOT BAR
98-298	INNER PRESSERFOOT
98-299-V	SCREW
98-300	NEEDLE BAR GUIDE
98-301	PIN
98-302-V	SCREW
98-303	SLIDE BLOCK
98-304	PRESSERFOOT LIFTER
98-305	PIN
98-306-V	SCREW
98-307	GUIDE
98-308-V	SCREW
98-309	NEEDLE
98-310	NEEDLE BAR
98-311	CONNECTING STUD
98-312	SCREW
98-313	SCREW
98-314	SCREW
98-315	OUTER PRESSERFOOT
98-316	PRESSERFOOT BAR
98-317	BUSHING
98-318	PLUG
98-319	SPRING PLATE
98-320-V	REGULATING SPRING
98-321-S	NUT
98-322	PIN
98-323	SUPPORT
98-324	SCREW
98-325	LEVER
98-326	SLIDE BLOCK
98-327	THREAD TAKE-UP LEVER
98-328	PIN
98-329-V	SCREW

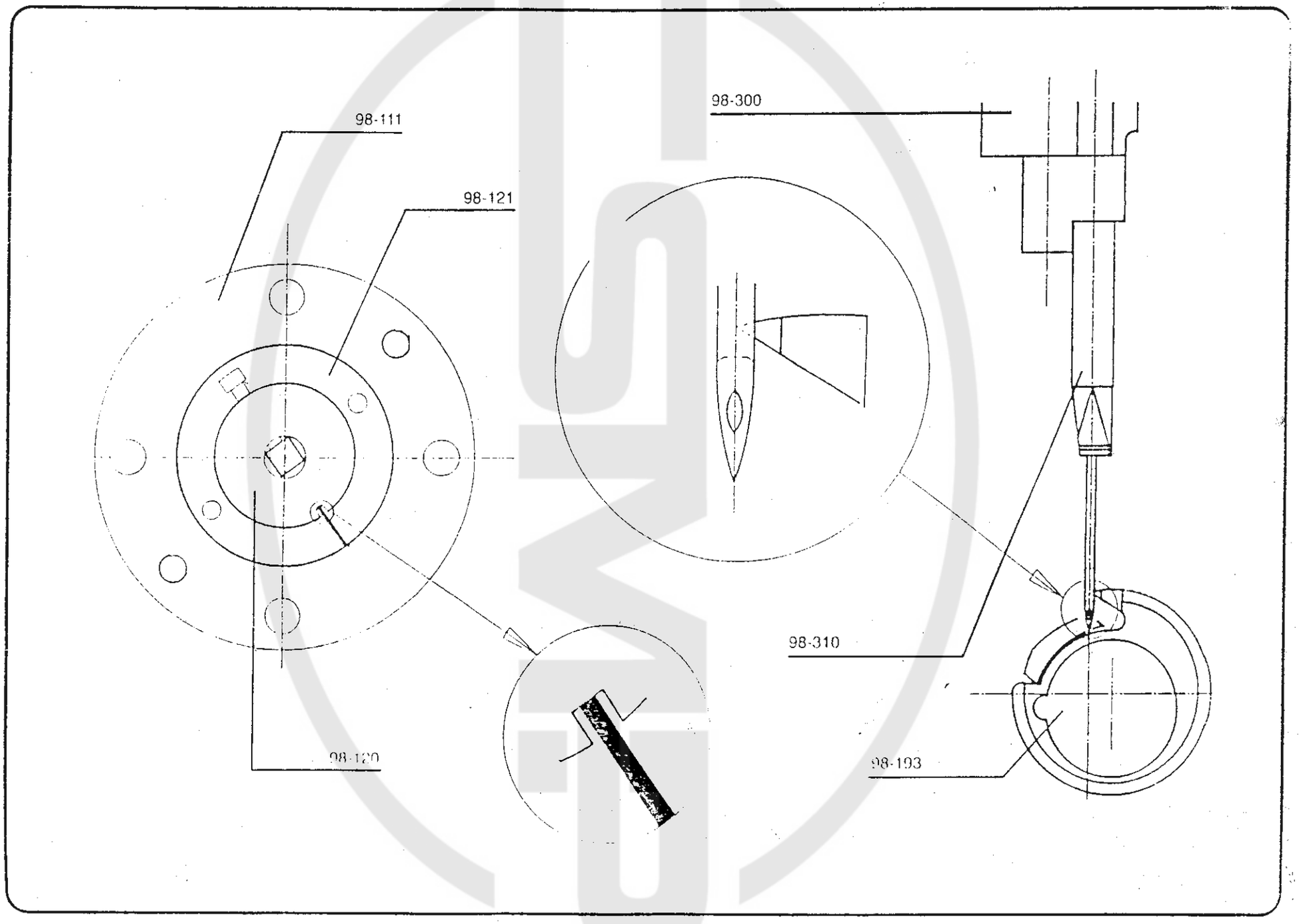

98-320
98-321-S
98-319
98-329-V
98-328
98-281-V
98-279
98-275-V
98-322
98-323
98-318
98-276
98-327
98-280
98-277
98-292-V
98-285
98-290-V
98-324-V
98-278-V
98-286
98-291
98-326
98-317
98-282
98-283
98-289
98-284
98-296
98-287
98-295
98-325
98-310
98-316
98-288
98-294
98-293
98-306-V
98-313-V
98-304
98-305
98-311
98-302-V
98-309
98-297
98-312
98-301
98-303
98-299-V
98-308-V
98-314-V
98-315
98-307
98-300
98-298

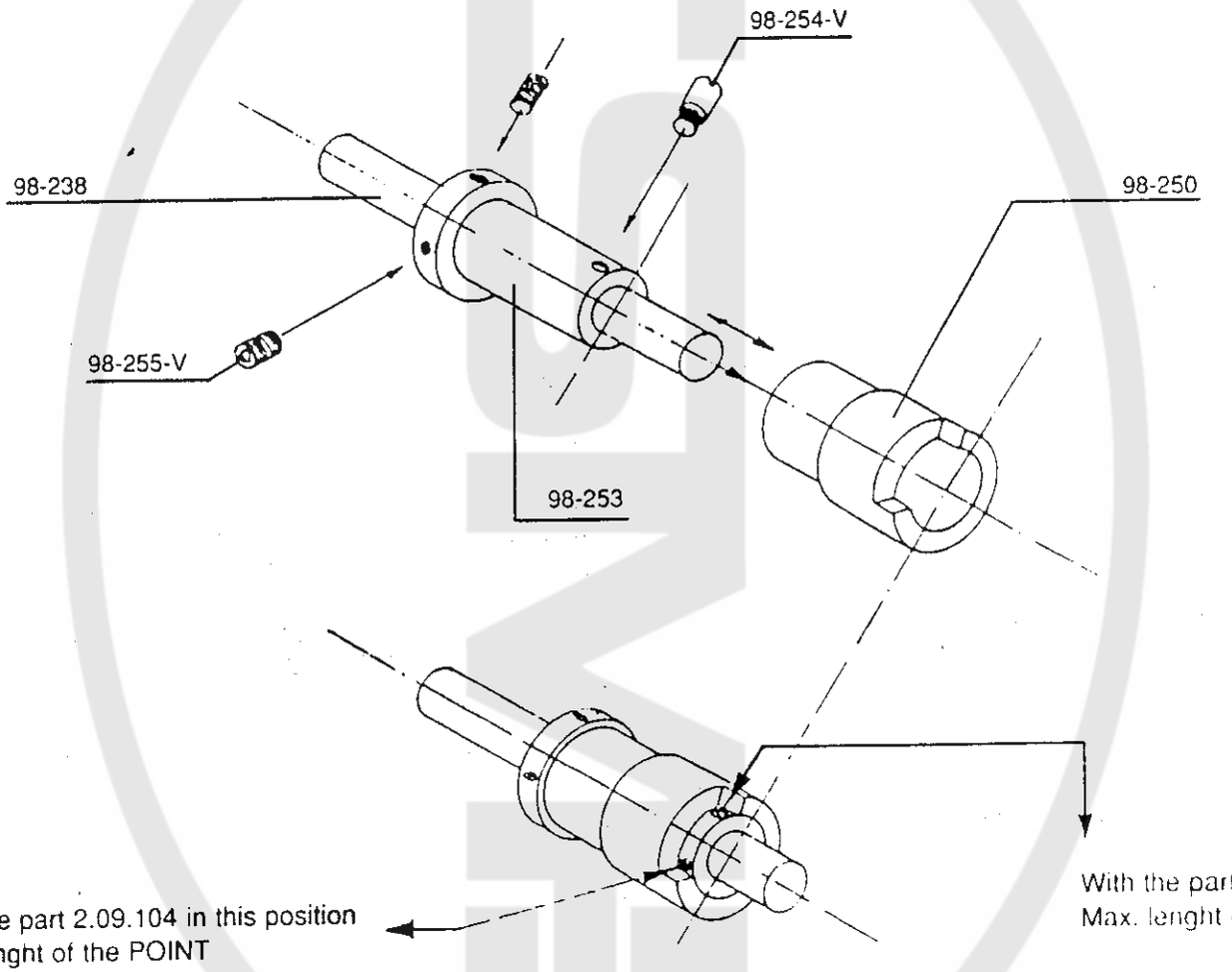
PART NO.	DESCRIPTION
98-332	BOBBIN WINDER ASM.
98-333	PIN
98-334-S	NUT
98-338	TENSION ASM.
98-340	THREAD GUIDE
98-341-V	SCREW
98-342	PLATE
98-343-Y	SPRING
98-344	PLATE
98-345	STUD
98-346	PIN
98-347	TENSION WASHER
98-348	THREAD RELEASE WASHER
98-349	TENSION SPRING
98-350	TENSION NUT
98-351	STUD
98-352-S	NUT
98-353	THREAD GUIDE ASM.
98-354	TAKE-UP SPRING
98-355	STUD
98-356	CYLINDER
98-357-V	AIR CONNECTOR
98-358	SPRING
98-359	THREAD GUIDE
98-360-V	SCREW
98-361	THREAD GUIDE


98-332
98-357-V
98-341-V
98-342
98-356
98-343
98-344
98-358
98-334-S
98-355
98-345
98-346
98-347
98-354
98-353
98-348
98-349
98-350
98-351
98-352
98-333
98-359
98-360-V
98-361
98-362-V
98-340
98-338

PART NO.	DESCRIPTION
98-363	V-BELT
98-364	THREAD STAND
98-365	TABLE TOP
98-366	AIR PRESSURE METER
98-367	STAND
98-368	MOTOR
98-369	MAIN SWITCH
98-370	PULLEY
98-371	AIR SUPPLY UNIT


98-369
98-366
98-371
98-363
98-365
98-368
98-363
98-364


98-111
98-121
98-120
98-300
98-310
98-193


98-254-V
98-238
98-250
98-255-V
98-253
With the part 2.09.104 in this position
Min. lenght of the POINT
With the part 2.09.104 in this position
Max. lenght of the POINT

/ TECHNICAL DATA

	Max. sewing speed (Stitches/Min.)	850
	Min.-max. stitch lenght	3-12 mm
	Needle system	3355-01 SET R 135 17 200.15
DPX17		
	Max. diameter interlaced thread	0.8 mm
	Motor Power	1.2 (HP)
	Min.-Max. daily production pairs	1000
	Over-all dimensions	120-110-60 cm.