

Instruction Manual 使用说明书

7700

**High Speed Overlock Sewing Machine
高速包缝机**

GB

CN



**Installation Instructions
安装须知**

**Operating Instructions
操作须知**

**Basic Service Instructions
基本维修须知**

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7700 - Basic Machines

7700 - 基本机型

7704-O42-M00P

Light and medium material 3-thread 1-needle standard overlock machine
薄至中厚料 3 线单针标准型包缝机

7714-B43-M00P

Light and medium material 4-thread 2-needle standard overlock machine
薄至中厚料 4 线双针标准型包缝机

7716-C42-M00P

Light and medium material 5-thread 2-needle safety seam machine
薄至中厚料 5 线双针标准型安全缝包缝机

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Foreword

This instruction manual is intended to help the user to become familiar with the machine and take advantage of its application possibilities in accordance with the recommendations.

The instruction manual contains important information on how to operate the machine securely, properly and economically. Observation of the instructions eliminates danger, reduces costs for repair and down-times, and increases the reliability and life of the machine.

The instruction manual is intended to complement existing national accident prevention and environment protection regulations.

The instruction manual must always be available at the machine/sewing unit.

The instruction manual must be read and applied by any person that is authorized to work on the machine/sewing unit. This means:

- Operation, including equipping, troubleshooting during the work cycle, removing of fabric waste,
- Service (maintenance, inspection, repair and/or
- Transport.

The user also has to assure that only authorized person network on the machine.

The user is obliged to check the machine at least once per shift for apparent damages and to immediately report any changes (including the performance in service), which impair the safety.

The user company must ensure that the machine is only operated in perfect working order.

Never remove or disable any safety devices.

If safety devices need to be removed for equipping, repairing or maintaining, the safety devices must be remounted directly after completion of the maintenance and repair work.

Unauthorized modification of the machine rules out liability of the manufacturer for damage resulting from this.

Observe all safety and danger recommendations on the machine/unit! The yellow-and-black striped surfaces designate permanent danger areas, e.g. danger of squashing, cutting, shearing or collision.

Besides the recommendations in this instruction manual also observe the general safety and accident prevention regulations!

General safety instructions

The non-observance of the following safety instructions can cause bodily injuries or damages to the machine.

1. The machine must only be commissioned in full knowledge of the instruction book and operated by persons with appropriate training.
2. Before putting into service also read the safety rules and Instructions of the motor supplier.
3. The machine must be used only for the purpose intended. use of the machine without the safety devices is not permitted. observe all the relevant safety regulations.
4. When gauge parts are exchanged (e.g. needle, presser foot, needle plate, feed dog and bobbin) when threading, when the workplace is left, and during service work, the machine must be disconnected from the mains by switching off the master switch or disconnecting the mains plug.
5. Daily servicing work must be carried out only by appropriately trained persons.
6. Repairs, conversion and special maintenance work must only be carried out by technicians or persons with appropriate training.
7. For service or repair work on pneumatic systems, disconnect the machine from the compressed air supply system (max. 7-10 bar). Before disconnecting, reduce the pressure of the maintenance unit. Exceptions to this are only adjustments and functions checks made by appropriately trained technicians.
8. Work on the electrical equipment must be carried out only by electricians or appropriately trained persons.
9. Work on parts and systems under electric current is not permitted, except as specified in regulations DIN VDE 0105.
10. Conversion or changes to the machine must be authorized by us and made only in adherence to all safety regulations.
11. For repairs, only replacement parts approved by us must be used.
12. Commissioning of the sewing head is prohibited until such time as the entire sewing unit is found to comply with EC directives.

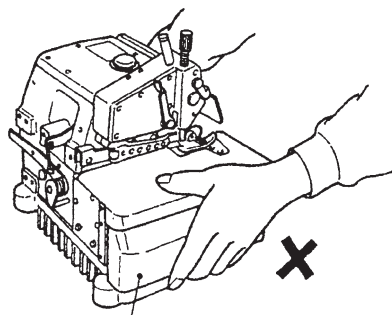


It is absolutely necessary to respect
the safety instructions marked by these signs.
Danger of bodily injuries!
Please note also the general safety instructions.



FOR SAFE OPERATION

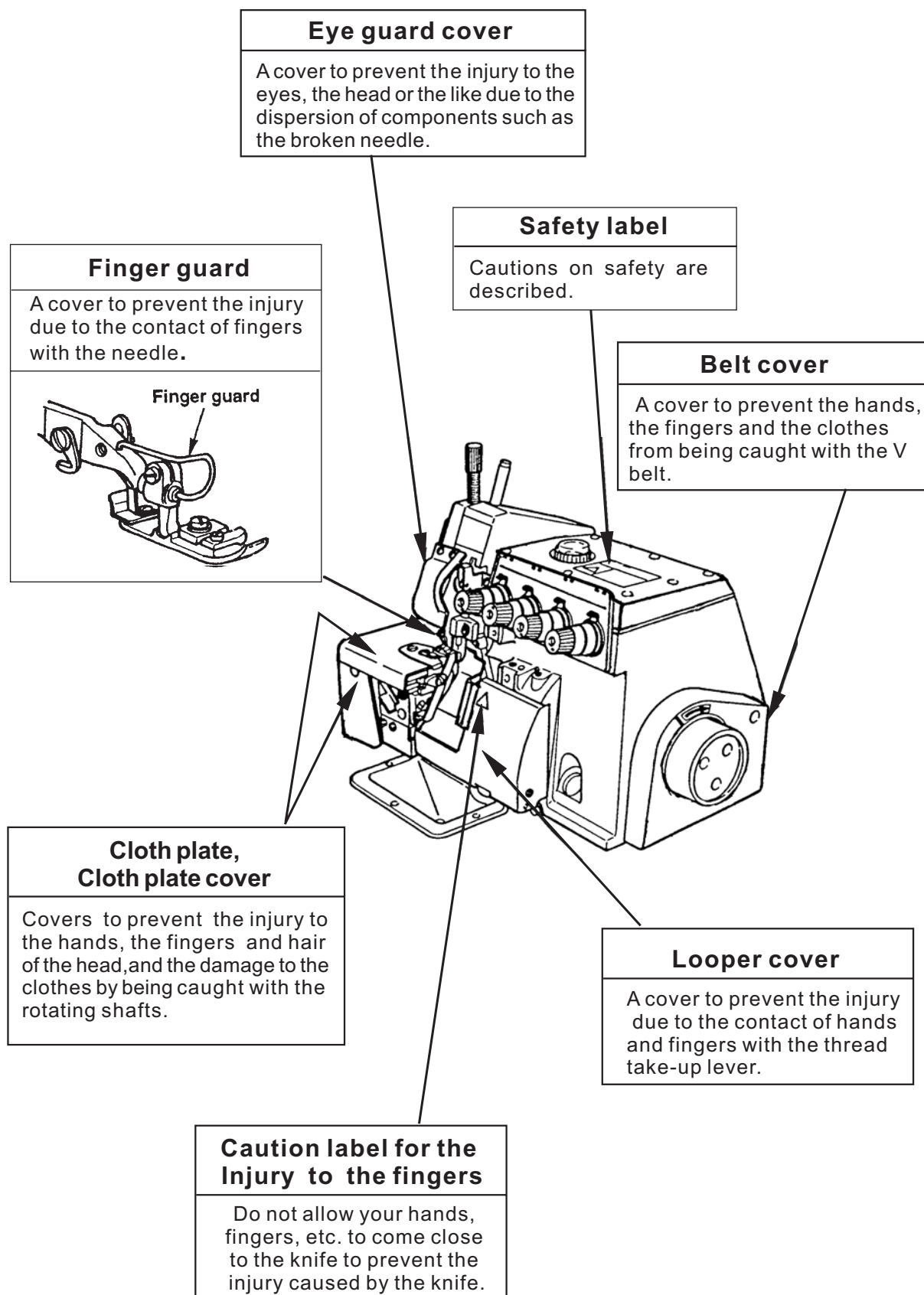
- So as to avoid electric shock hazards, do not open the cover of the electrical box of the motor or touch any part inside the electrical box with the power to the machine turned **ON**.
- To prevent possible personal injury, never operate the machine with the belt cover and the eye guard removed.
- To protect against possible personal injury resulting from being caught in the motor, use a motor that is provided with a motor pulley cover.
- To avoid electric shock hazards, never operate the machine with the ground wire for the power supply removed.
- During operation, be careful not to allow your or any other person's head, hands or fingers to come close to the handwheel, V belt and motor so as to prevent possible personal injury that may occur when your hands/fingers are caught in the machine. Also, do not place anything close to them.
- So as to avoid possible injury to your hands and fingers, do not put any of them near the cloth cutting knife and the needle when turning the power to the machine or while the machine is in operation.
- To prevent possible injury to your hands and fingers, do not put any of them inside the eye guard while the machine is in operation.
- To avoid electric shock hazards and accidents arising from damaged electrical components, be sure to turn **OFF** the power switch before inserting/detaching the power plug.
- So as to protect against possible personal injury resulting from abrupt start of the machine, make sure to turn **OFF** the power to the machine when you leave your machine.
- In the event of a power failure, be sure to turn **OFF** the power to the machine to protect against possible personal injury resulting from abrupt start of the machine.
- So as to protect against possible personal injury resulting from abrupt start of the machine, remove the belt cover, motor pulley cover and the V belt after turning **OFF** the power to the machine and confirming that the sewing machine will not run even by depressing the start pedal.
- Before inspecting, adjusting or cleaning the machine, threading the machine head or replacing the needle, so as to protect against possible personal injury resulting from abrupt start of the machine, be sure to turn **OFF** the power to the machine so as to prevent an accident and confirm that the sewing machine will not operate even when depressing the foot pedal of the sewing machine.
- To protect against personal injury resulting from possible drop of the machine, do not carry your machine by holding the cloth plate cover by hand. Doing so may cause the cover to open or break resulting in drop hazards.



Cloth plate cover

SAFETY DEVICES

Safety devices herein described may differ in accordance with the destination and specifications.



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1. DESCRIPTION OF PROPER USE

The sewing unit 7700 is designed for the sewing of light weight material which generally consists of textile fibres or leather.

These material are commonly used in the garment and furnishing industries. furthermore the 7700 may also be employed to perform seams in so called technical textiles.

As these applications are relatively rare and extremely varied the user is advised to evaluate any possible danger arising from such applications DÜRKOPP ADLER AG will be pleased to assist.

Depending on the result of this evaluation suitable safety measures have to be taken.

In general the 7700 may only be used for dry material.

The material thickness must not exceed 6mm when compressed by the sewing foot.

The material must not contain any hard objects as otherwise the 7700 must be operated with an needle breakage protection shield.

Such needle breakage protection shield is not available at this time.

Usable threads are spun threads or bulk threads made of textile fibres with dimensions up to NM30/3.

Prior to the use of other threads any possible dangers arising there from have to be evaluated and appropriate safety measures must be taken if necessary.

The 7700 must only be installed and operated in a dry and clean environment.

Any use in other environments may necessitate further measures to be agreed upon. (see EN60204-3-1; 1990)

DÜRKOPP ADLER AG as a manufacturer of industrial sewing machines assume that all personnel operating our products are at least semi - skilled and all operations and, where applicable their dangers are presumed to be known.

2. SPECIFICATIONS

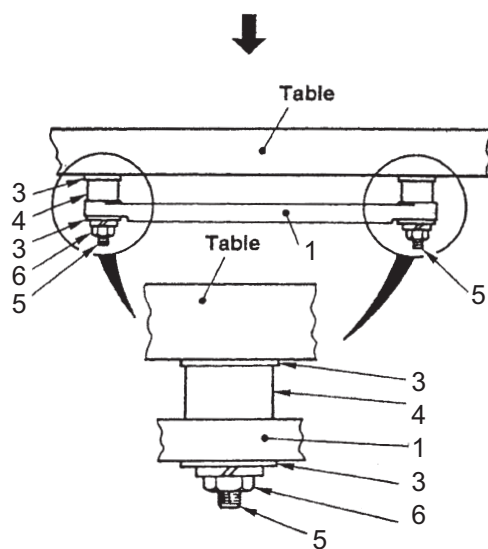
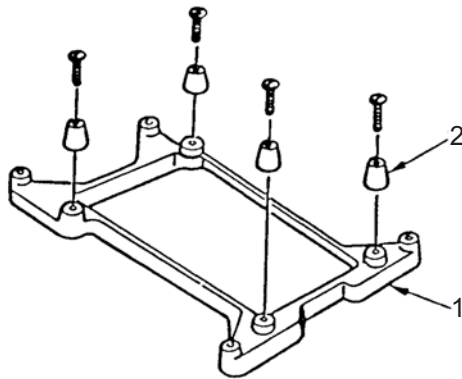
	7704	7714	7716
Sewing speed	Max.6,500 rpm		
	(Excluding some subclass models)		
Stitch length	1.0 to 3.6 mm		1.5 to 3.6 mm
Needle gauge	—	2.0mm	3.2, 4.8 mm
Overedge width	4.0mm		4.0, 4.8, 6.4 mm
Differential feed ratio	Gathering stitch 1:1.9 (Max. 1 : 2.9),Stretching stitch 1 : 08 (Max. 1 : 0.6)		
Needle	B-27 DC×27(Standard) DC×1 may be used.		
Presser foot lift	6.5mm		
	(Excluding some subclass models)		
Lubricating oil	DA32 oil		
Noise	Workplace-related noise at sewing speed n=5,000 min Noise measurement according to DIN 45635-48-a-1		

3. INSTALLATION

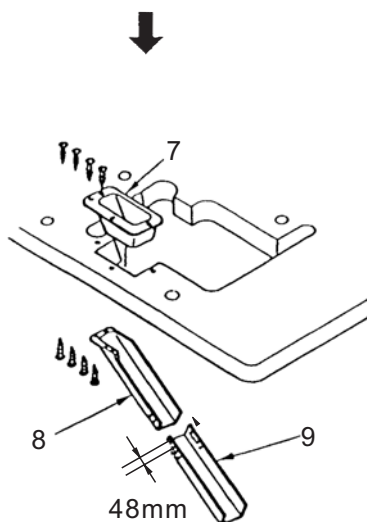
3.1 INSTALLING THE FRAME SUPPORT PLATE

Semi-submerged type

- Attach rubber cushion 2 to frame support plate 1



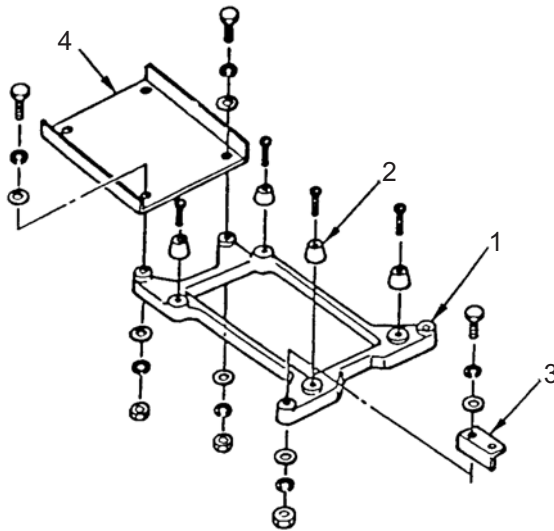
- Attach support plate washer 3 , support plate bolt spacer 4 , frame support plate 1 and support plate washer 3 in the written order to the machine table . Then fix the frame support plate to the machine table with support plate bolt A 5 and nut 6 .



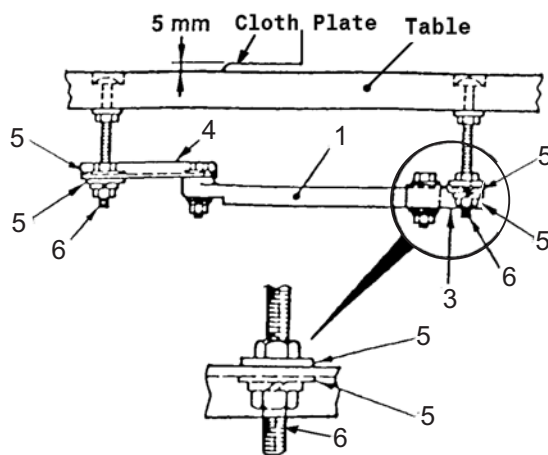
- Install waste chute opening 7 on the front side of the Upper surface of the table , and install waste chute (upper) 8 on the bottom face of the table.

- Install waste chute (lower) 9 on waste chute (upper) 8 .
The installation of the chutes can be adjusted within a length of 48 mm.

Fully-submerged type

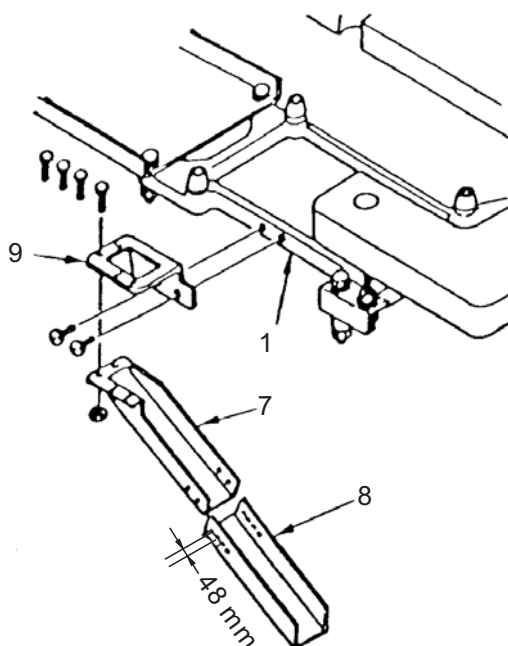


- Attach frame support plate joint A 4 , frame support plate joint B 3 and rubber cushion 2 to frame support plate 1 .



- Fix support plate bolt B 6 to the machine table
- Put frame support plate joint A 4 and frame support plate joint B 3 between support plate washers 5 respectively.

- Install frame support plate 1 so that the cloth plate is 5 mm higher than the upper surface of the machine table.



- Install waste chute stopper plate 9 on frame support plate 1 .
- Install waste chute (upper) 7 on waste chute stopper plate 9 .
- Install waste chute (lower) 8 on waste chute (upper) 7 .
- The installation of the chutes can be adjusted within a length of 48 mm.

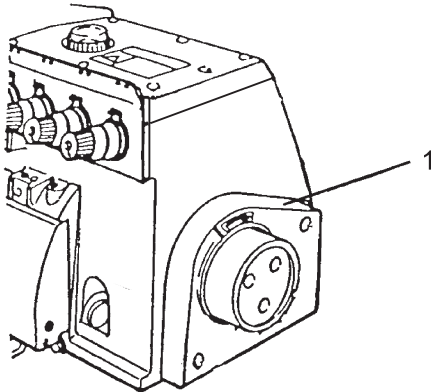
3.2 ATTACHING THE BELT COVER



Caution: Danger of injury!

To protect against possible person injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

- Attach belt cover 1 to the machine head.



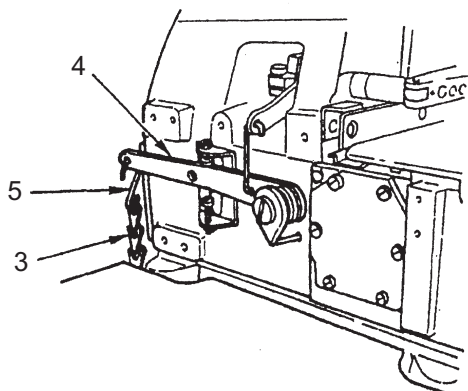
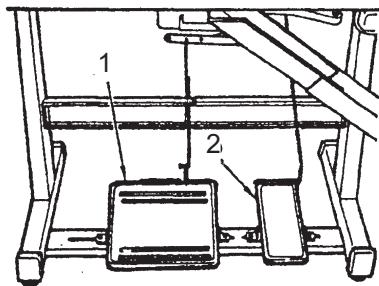
3.3 INSTALLING THE PEDALS



Caution: Danger of injury!

To protect against possible person injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

- Install starting pedal 1 on the left and presser lifter pedal 2 on the right as seen from the operator.



- Use an S-shaped hook 3 to connect chain 5 of the presser lifter pedal to the hole located in the top end of presser lifting lever 4.

4. PREPARATION AND OPERATION

To avoid malfunction and damage of the machine, confirm the following:

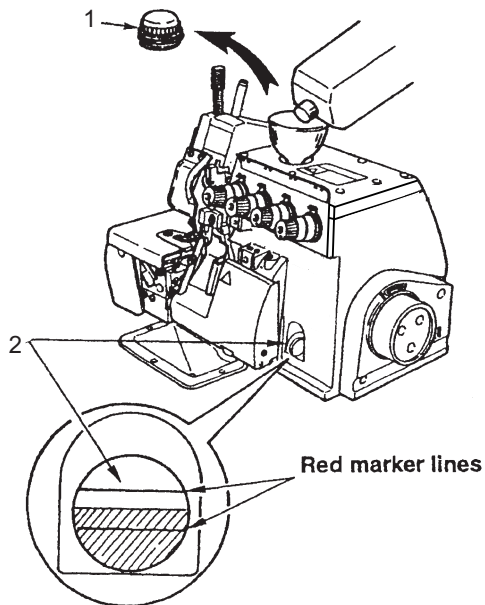
- Before you put the machine into operation for the first time after set-up, clean it thoroughly.
- Remove all dust gathering during transportation and oil it well.
- Confirm that the voltage has been correctly set.
- Confirm that the power plug has been properly connected to the power supply.
- Never use the machine in the state where the voltage type is different from the designated one.

4.1 LUBRICATION



Caution: Danger of injury!

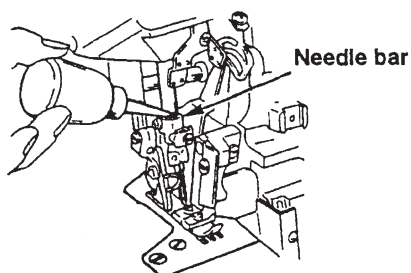
To protect against possible person injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



- Remove oil cap 1 .
- Pour DA32 Oil (Order No.9047 000032) into the oil reservoir.
- Supply oil until the oil surface reaches between the two red marker lines when oil gauge 2 is observed from the side.

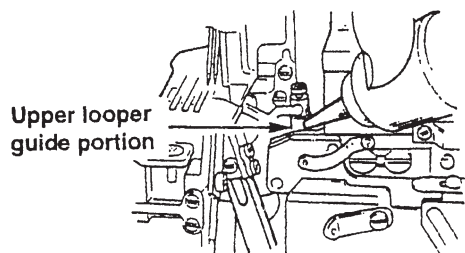
(Caution)

- Be careful not to supply oil above the upper red marker line, or else troubles due to excessive lubrication may result.
- Change oil when one month has passed after the set-up of the sewing machine. Then, change oil every six months.
- Supply oil if the oil surface comes down under the lower marker line when observing the oil gauge from the side.

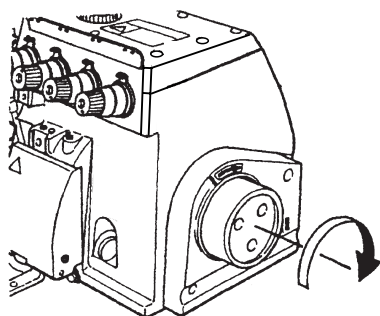


(Caution)

- Apply two or three drops of oil to the needle bar and upper looper guide portion when operating the machine for the first time after set-up or after or after a long period of disuse.



4.2 CHECKING THE DIRECTION OF ROTATION



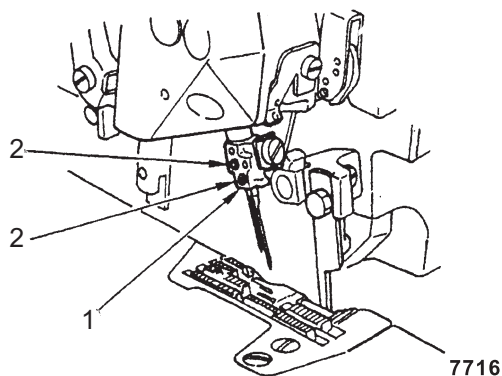
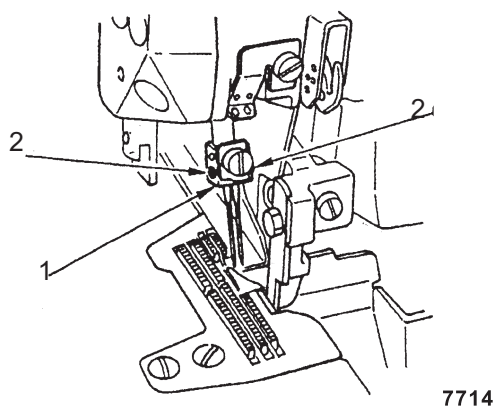
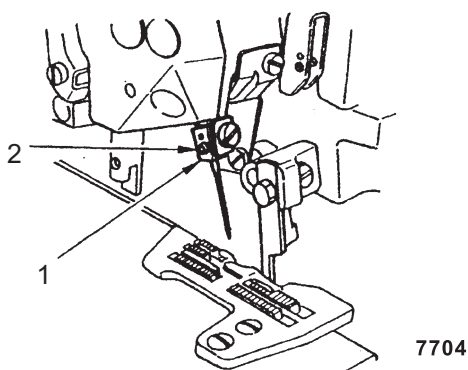
- The correct direction of rotation of the sewing machine is clockwise when observing the machine from the handwheel side. Never allow the machine to rotate in reverse direction. If the machine rotates counter clockwise, the oil pump will fail to function resulting in seizure.

4.3 ATTACHING NEEDLES



Caution: Danger of injury!

To protect against possible person injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



The standard needle is DC27 # 11/B27 Nm 75 (Order No.9092 002700 075S). You can also use the DC x 1 needle. In this case, however, the clearance provided between the needle and the looper may be required to be adjusted. If sewing needs to be carried with a finely adjusted thread tension, use the DC x 27 needle.

- Bring needle clamp 1 up to the highest position.
- Loosen needle screw 2, and fully insert the needle into the needle clamp hole with the needle recess facing backward as viewed from the operator's side.
- Tighten needle screw 2.

4.4 THREADING THE MACHINE

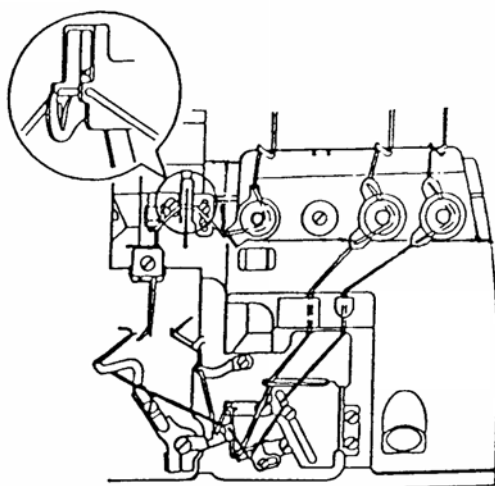


Caution: Danger of injury!

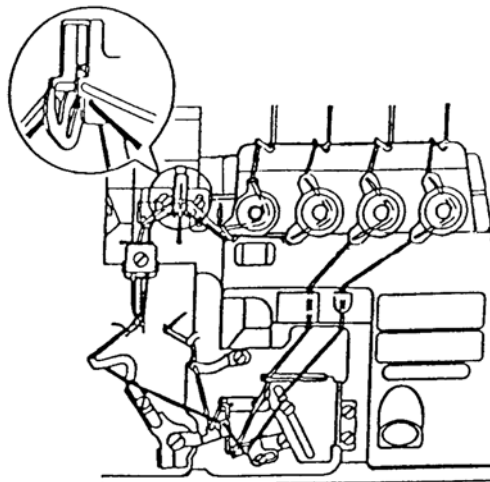
To protect against possible person injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

Thread the machine as shown in the figure. (Threading diagram is pasted inside the looper cover.)

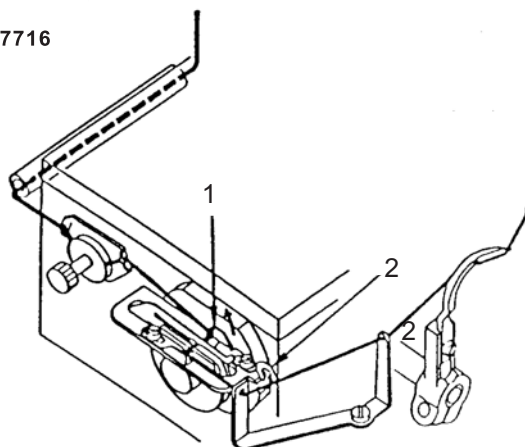
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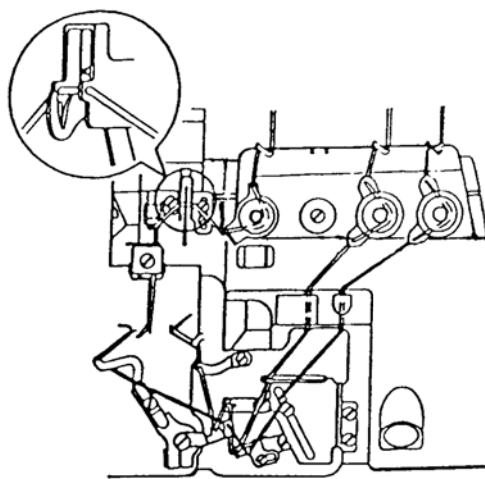
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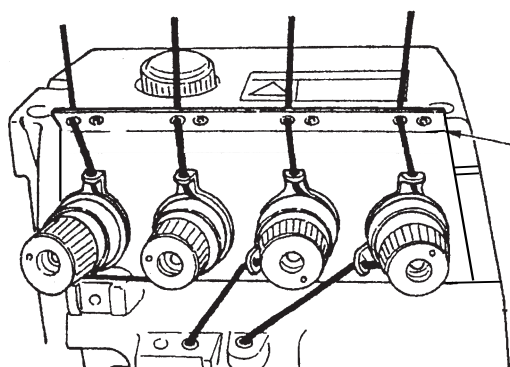
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Caution) Raise looper thread cam thread guide 1 and perform threading. Return looper thread cam thread guide 1 to its home position and securely fix it to thread guide spring 2.



(Caution) Be sure to pass the needle thread for double chainstitch through the needle thread take-up lever. (Pass the needle thread for overlocking through the thread take-up lever located outside.)



Intermediate thread guide

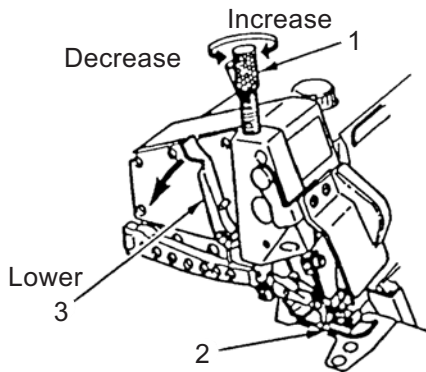
(Caution) When using an untwisted thread such as wooly nylon thread or weak thread, donot wind it round the intermediate thread guide.

4.5 ADJUSTING THE PRESSURE OF THE PRESSER FOOT AND MOVING THE PRESSER FOOT



Caution: Danger of injury!

To protect against possible person injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



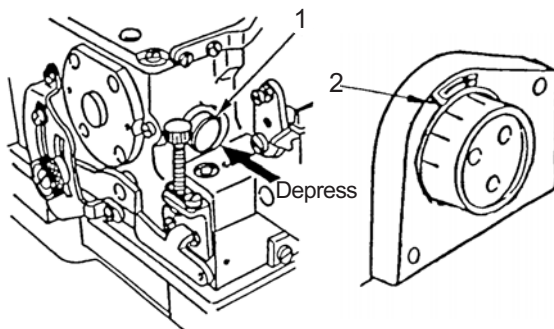
- Adjust the pressure of the presser foot by turning presser foot adjust screw 1. When the adjust screw is turned clockwise, the pressure will increase. When it is turned counterclockwise, the pressure will decrease.
- To open presser foot 2 sideward, raise the needle to the highest position of its stroke and lower presser bar lifting lever 3.

4.6 ADJUSTING THE STITCH LENGTH



Caution: Danger of injury!

To protect against possible person injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



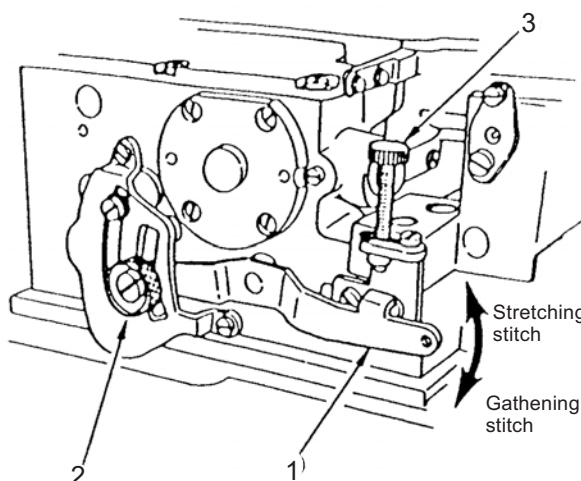
- Slowly turn the handwheel as you keep depressing pushbutton 1, and you will find a point at which the pushbutton goes in farther.
- With the above condition maintained, align the desired scale mark on the handwheel with mark 2 on the belt cover. Use the scale mark as reference.
- Reset pushbutton 1 after setting the scale mark.

4.7 ADJUSTING THE DIFFERENTIAL FEED



Caution: Danger of injury!

To protect against possible person injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



- Loosen differential feed lock nut 2. Move differential feed adjusting lever 1 up for stretching stitch or down for gathering stitch.
- When you want to move differential feed adjusting lever 1 only slightly, use differential feed fine adjustment screw 3.
- when the scale mark is set to -1, the machine will perform stretching stitch with a differential feed ratio of 1 : 0.8, and when it is set to 0, the differential feed ratio between the main feed dog and the differential feed dog will be 1 : 1.
- The maximum differential feed ratio for gathering is 1 : 1.9 (it can be set to 1 : 2.9 depending on the adjustment of the internal mechanism of the sewing machine). The scale marks beyond 0 are used as reference.

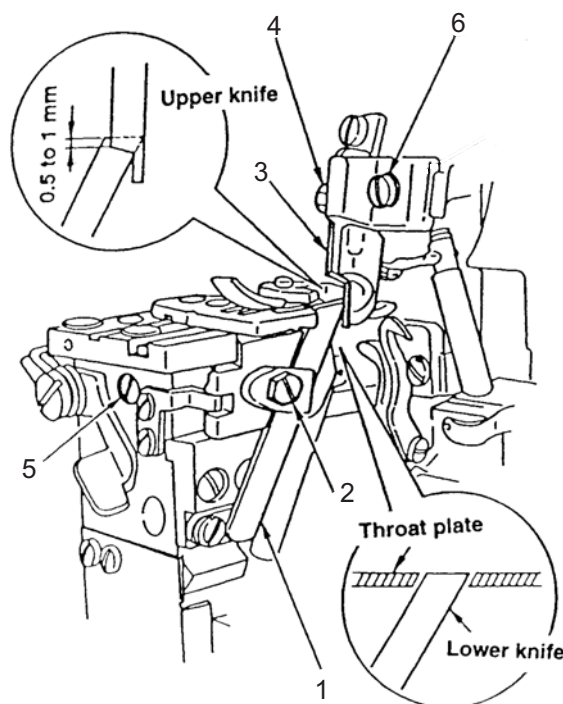
5. BASIC SERVICE INSTRUCTIONS

5.1 ADJUSTING THE KNIVES AND OVEREDGE WIDTH



Caution: Danger of injury!

To protect against possible person injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



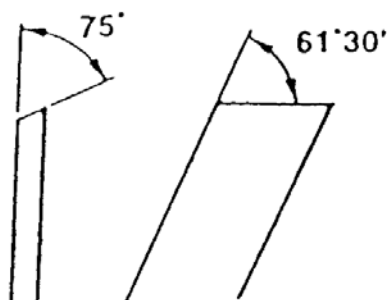
- Height of the lower knife
Loosen setscrew 2 and adjust the height of lower knife 1 so that its edge is flush with the throat plate surface.
- Height of the upper knife
Loosen setscrew 4 and perform adjustment so that upper knife 3 overlaps lower knife 1 by 0.5 to 1 mm when upper knife 3 is at its lowest position.
- Overedge width
Overedge widths of 1.6 through 6.4 mm are provided by changing the parts or by using subclass models. (The overedge width will be slightly larger than the knife cut width.)

To change the overedge width :

- Loosening setscrew 5 , push lower knife 1 to the left and fix it.
- Loosen setscrew 6 and move upper knife 3 as required, then fix it.
- Lower the upper knife to its lowest point and loosen setscrew 5 . Tighten setscrew 5 when the lower knife comes in contact with the upper knife.

(Caution)

- Be sure to tighten setscrew 5 before operating machine.
- After the completion of adjustment, make the knives cut a thread to make sure of sharpness of the knives.



- Resharpening the lower knife
When the lower knife has become dull , sharpen it as shown in the figure left.

5.2 CLEANING THE MACHINE HEAD



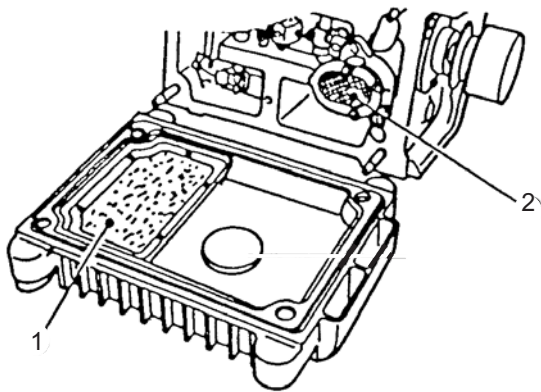
Caution: Danger of injury!

To protect against possible person injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

- Clear lint from inside the looper cover and the needle bar and components about one or twice a day. If not, oil may leak or the sewing material will be soiled.

(caution) Do not wipe the coated surface of the machine head with lacquer thinner. Doing so will damage the coated surface.

5.3 CLEANING THE FILTER AND PUMP NET



- To use the sewing machine for an extended period of time, clean filter 1 and pump net 2 periodically twice or three times a year. If the filter and pump net are clogged with dusts, the machine components may be seized or worn out extraordinarily. So, carefully check the filter and pump net.
- If the lubricating oil in the machine is stained, change the oil also at the time of cleaning.

5.4 MOTOR PULLEY AND V BELT

Number of revolutions of sewing machine(rpm)	50Hz			60Hz		
	Outer diameter of motor pulley(mm)	V belt (inch)		Outer diameter of motor pulley(mm)	V belt (inch)	
		Semi-sunken type	Fully-sunken type		Semi-sunken type	Fully-sunken type
6500	120	38	32	100	36	32
6000	110	36	32	95	35	30
5500	100	36	32	85	35	30
5000	90	35	30	80	34	30
4500	85	35	30	70	34	30

- Use a clutch motor of 1/2 HP (400W).
- Use an M type or a DIN 2215 standard V belt.
- Relations among number of revolutions of sewing machine, motor pulley, and length of V belt are as shown in the aforementioned table.
- Effective diameter of the handwheel of sewing machine head is 50.6 mm.

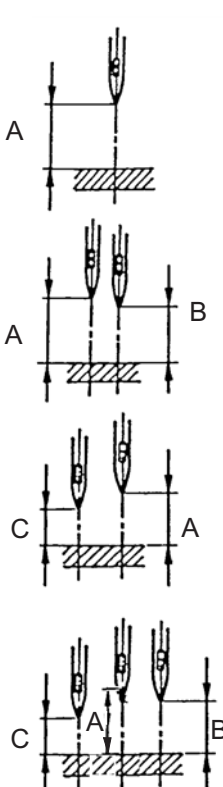
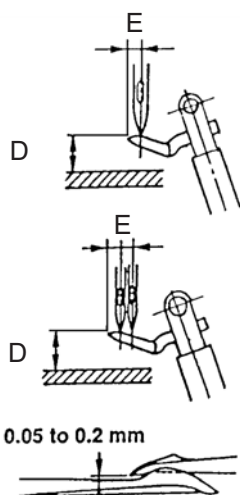
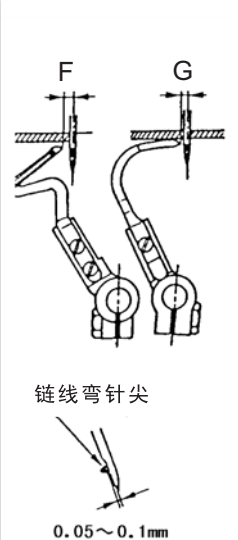
5.5 DIMENSIONS USED TO ADJUST THE LOOPER AND THE NEEDLE

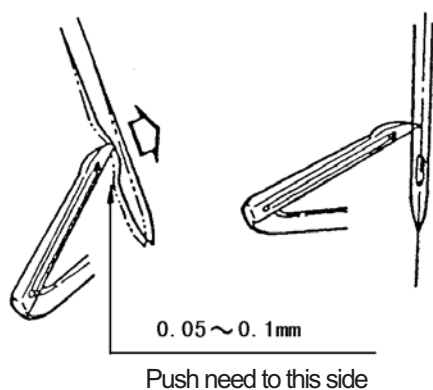
Caution: Danger of injury!



- To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.
- To avoid possible accidents due to unfamiliarity with the machine, get a maintenance man who has a good knowledge of the machine or serviceman of our distributor to adjust the machine or replace any of its parts.
- To avoid possible personal injury when the machine starts, it has to be ascertained in prior to the actuation of the machine that no screws are loosened and no components come in contact with one another.

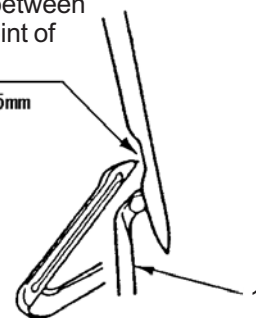
(Caution) The dimensions given in the table are standard ones to be used to adjust the looper. They are intended to be used for reference and should be changed more or less in accordance with the sewing products and thread to be used.

							
	A	B	C	D	E	F	G
7704 7705	11	—	—	11.8	4.8	4	—
7714	11	10.1	—	11.8	4.8	4	—
7716	11	—	9.5	11.8	4.8	4	1.8
7743	11	10.1	9.5	11.8	4.8	4	1.8
7714-O42-M09P	11	—	—	10.5	4.9	4	—
7716-D ⁵³ ₇₃ -X00P	12.6	—	11.1	12.8	4.9	3	1.8
7743	11	10.1	9.5	11.8	4.8	4	1.8



clearance provided between
needle and blade point of
lower looper

0 ~ 0.05 mm



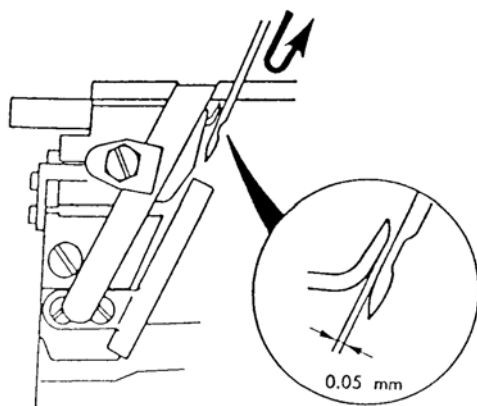
- Adjust the lower looper so that the needle is pushed by 0.05 to 0.1 mm to this side by the blade point of lower looper in the state where the blade point of lower looper is aligned with the center of needle.

- Then, adjust traveling needle guard 1 so that the clearance provided between the needle and the blade point of lower looper should be 0 to 0.05 mm in the state where the needle is pushed to this side by traveling needle guard 1.

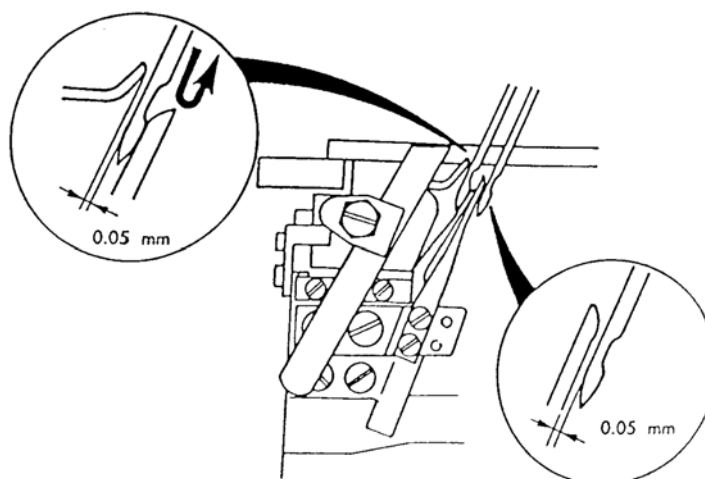
- For the 2-needle over lock machine, adjust both the left and right needles in the same manner.

Needle guard components

7704/7705/7714



7716



5.6 DIMENSIONS RELATED TO THE POSITION OF THE THREAD TAKE-UP AND THE LOOPER THREAD CAM (STANDARD ADJUSTMENT)

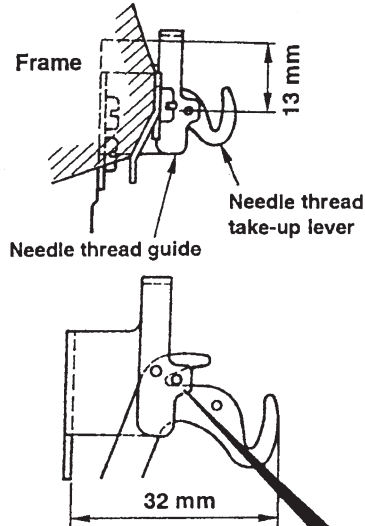


Caution: Danger of injury!

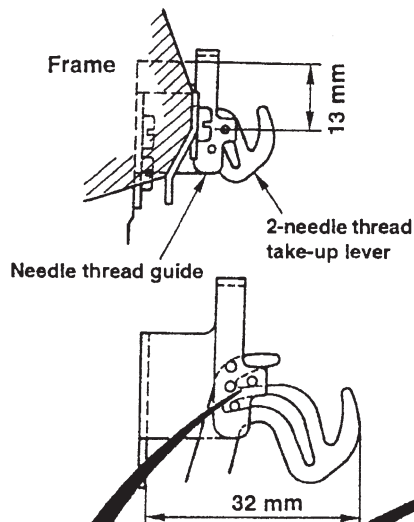
To protect against possible person injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

Position of the needle thread take-up lever and the needle thread guide

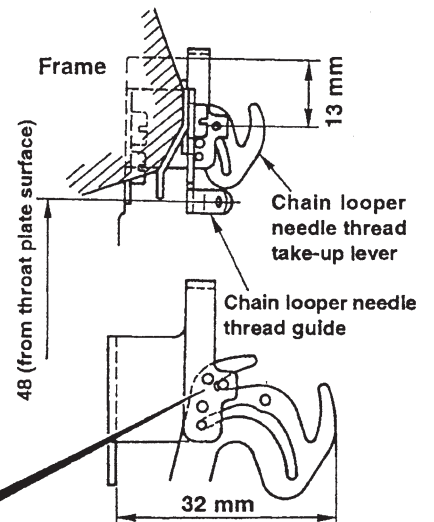
7704/7705



7714



7716

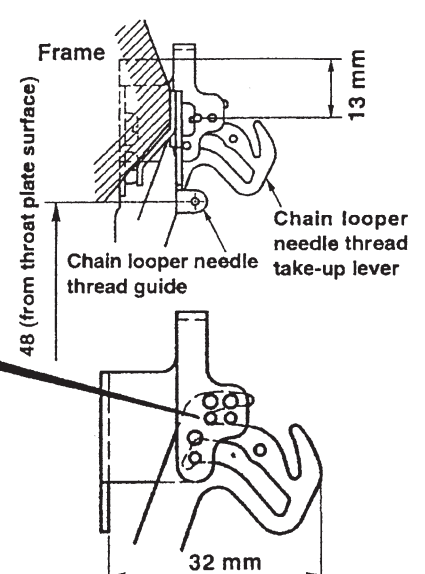


Position at which the lower end of thread hole of the needle thread guide is aligned with the edge line of the needle thread take-up lever.

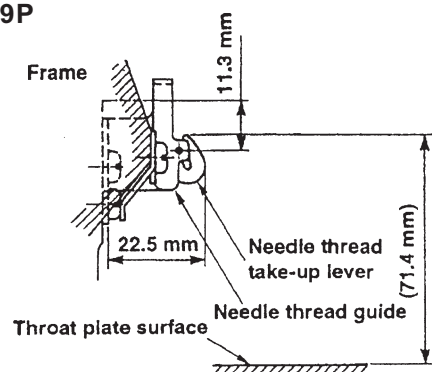


(Caution) The needle thread take-up lever shall be positioned at the lower dead point.

7743

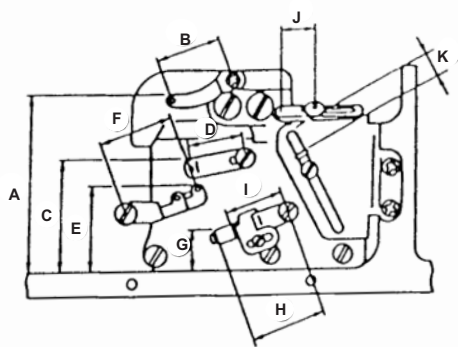


7704-O42-M09P



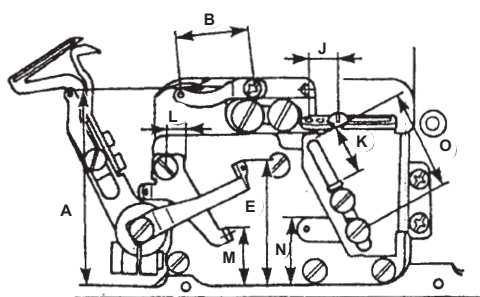
(Caution) The needle thread take-up lever shall be positioned at the lower dead point.

Position of the looper thread take-up lever and the looper thread guide



	A	B	C	D	E	F	G	H	I	J	K
7704	68	25	44.5	22	37	26	9	26	22	12	6
7714	↑	↑	↑	↑	↑	↑	8	27	23.5	↑	↑
7716	↑	↑	↑	↑	↑	↑	9	26	22	↑	↑
7705	↑	↑	↑	↑	↑	24	8	26	19	15	18.5
7716 ^{D53} _{D73} -H00P	↑	↑	↑	↑	↑	26	↑	30	26.5	12	6
7716 ^{D53} _{D73} -X00P	↑	↑	↑	↑	↑	↑	10	↑	↑	↑	↑
7743	↑	↑	↑	↑	↑	↑	8	27	23.5	↑	↑

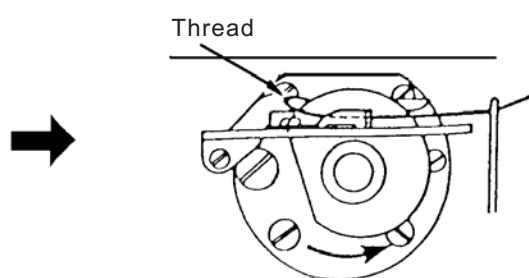
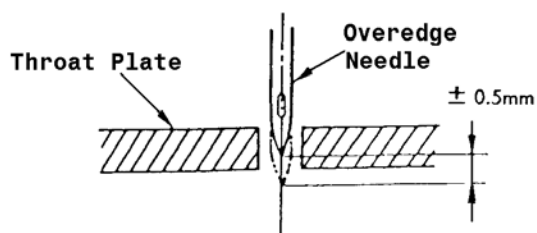
【For -042-M09P only】



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
7704-042-M09P	68.5	24	-	-	43	-	-	-	-	10	17	6.8	20	23.5	35

Dimensions of E and G are adjustment values when the upper looper is at rightmost point.

Adjustment value for the looper thread cam (7716)

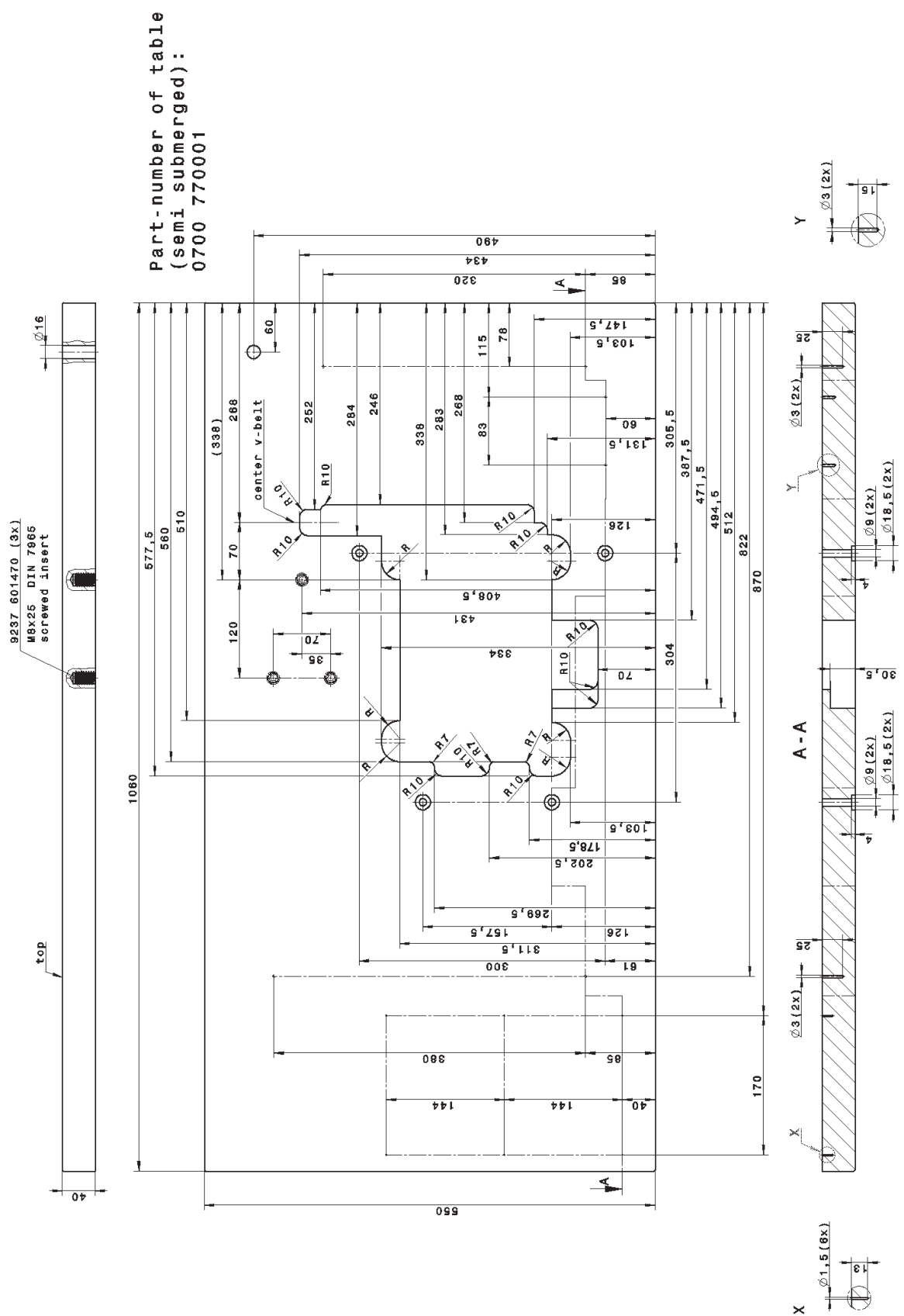


Make sure that the looper thread cam releases the looper thread when the needle tip is positioned ± 0.5 mm against the bottom face of the throat plate

5.7 CONVERSION TABLE OF THE NEEDLE NUMBER

JAPAN (ORGAN)	GERMAN (SCHMETZ)
DC x 27 # 9	B-27 Nm 65
DC x 27 # 11	B-27 Nm 75
DC x 27 # 14	B-27 Nm 90
DC x 27 # 16	B-27 Nm 100
DC x 27 # 18	B-27 Nm 110
DC x 27 # 19	B-27 Nm 120
DC x 27 # 21	B-27 Nm 130

6. TABLE CUTOUT SEMI SUBMERGED ASSEMBLY



7. TABLE CUTOUT FULLY SUBMERGED ASSEMBLY

