

# Safety Instructions

## Caution

Before going through this Safety Instructions, do not attempt any installation action or operate the **weaving** machine.

## Moving

Each **weaving** machine is equipped with a lifting picture in which the correct position for lifting the **weaving** machine is indicated, as per the figure of below.



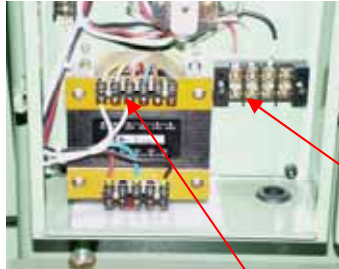
## Positioning

1. Each **weaving** machine must be supported by shockproof block and the levelness must be adjusted as well.
2. To adjust the levelness, adjust four screws of these four shockproof block located at the bottom of the **weaving** machine.
3. Before positioning, the customer must make sure if the floor is strong enough to sustain the weight of the **weaving** machine.
4. The weight of the knitting machine is approximately **550 kg**.



## Electrical works (device)

1. All the electrical works must be executed by a certified electrician who shall perform the work according to the wiring diagram.
2. Upon connecting power, make sure if the power is in conflict with the voltage of the **weaving** machine.
3. Power connection position: **R.S.T** (inside the control box) as per the figure of below.



**R.S.T.**

Voltage of the **weaving** machine.

## Operation

1. During the operation, all the protection cover must be fixed in place.
2. The **weaving** machine must not be operated by two persons simultaneously (one person push the start switch, while the other one adjust the machine or guide the yarn).
3. The operator wearing long hairs must put on a hat to include the hairs within, so that the hairs may not be caught and rolled into the **weaving** machine.

## Maintenance

1. Before executing the electrical or mechanical maintenance, be sure to switch off the power supplied to the knitting machine.
2. Upon carrying out the maintenance of parts replacement, care should be taken to avoid screw or smaller parts falling into the machine. Be sure to strictly memorize the position and direction of disassembly; if necessary, draw the relevant position on a paper.
3. Be sure to inspect the filter of automatic oil injector regularly, so as to clean up iron slag and lint.

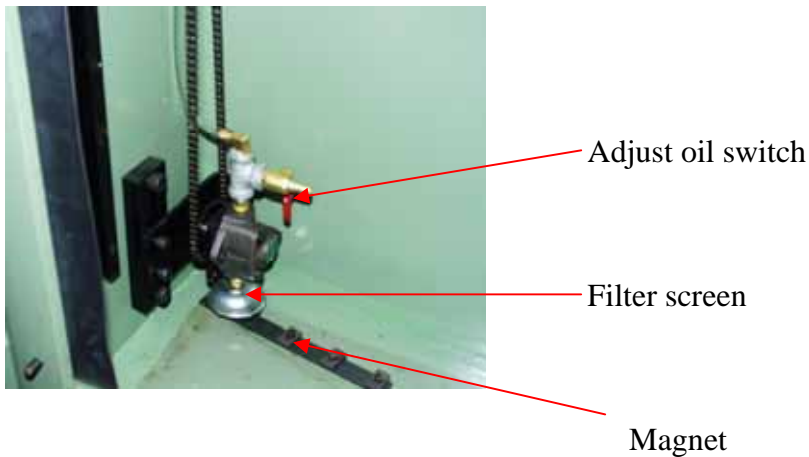
## Starting the **weaving** machine

1. Manually, turn the **weaving** machine or keep it run at lower speed (if such device is provided) and then check (especially after removing the parts) to see if parts are contacting with each other or if any sign of loosening.
2. Make sure the turning direction of the **weaving** machine.
3. If the direction is incorrect, switch any two **R.S.T.** electrical wires.

# Important Instructions

## Refueling the Engine Oil

1. Open the front cover and pour lubricant oil into the oil tank. The oil level must exceed the filter of automatic oil injector.
2. Adjust the oil-injection switch (red lever). Normally, there is no need to keep it fully open; instead, only allow  $1/2$  to  $1/3$  of oil into the **shedding lever** shaft as per the figure of below.
3. The magnet must be place underneath the oil screen.
4. Regularly, check to see if the circulating oil supply device is normal and this can be inspected from the oil tube on the upper right corner of front cover.
5. Replace the engine oil inside the oil tank regularly.



## Stop motion Device

Four **stop motion** devices of followings are installed in the **weaving** machine:

### 1. **Stop motion** device against the broken warp yarn:

When the warp yarn is broken, the **dropper** plate will fall on the **connect rail** to stop the **weaving** machine. Under normal operation, do not let the **dropper** plate contact the **connect rail**.

### 2. **Stop motion** device against the broken binder inserted thread

In case if the **binder inserted thread** is broken when being used for **weaving**, the **tension** spring will contact the **connect** rod to **stop** the machine. When the **binder inserted thread** is put aside, it is necessary to separate the **tension** spring and the **connect** rod.

### 3. **Stop motion** device against the broken weft yarn:

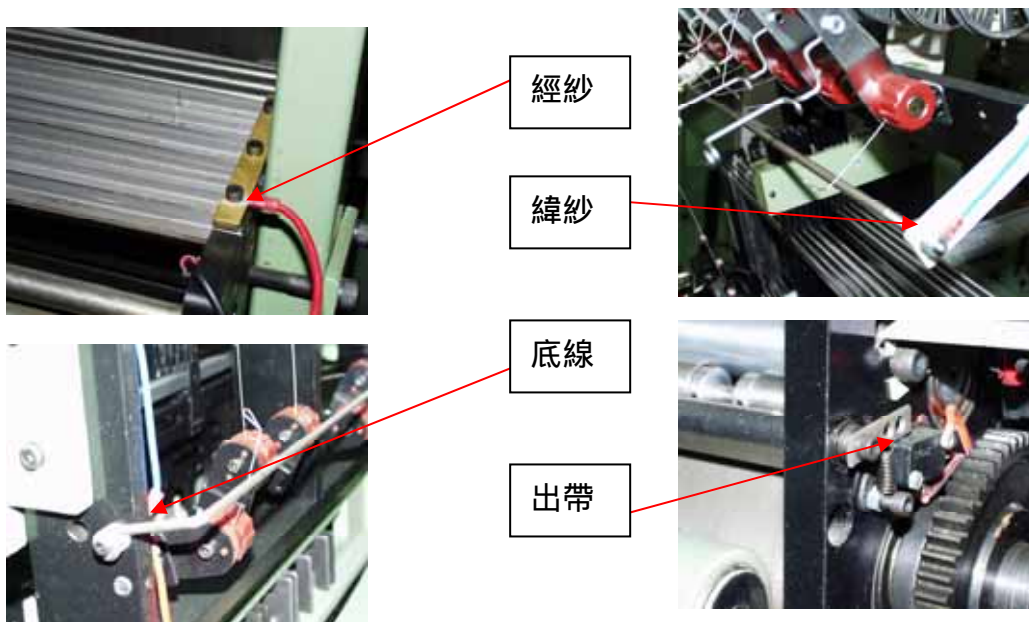
When the weft yarn is broken, the weft spring will contact the **connect** rod to stop the machine.

### 4. **Stop motion** device against the take-off roller:

To prevent the tape from **being rolled into the belt-feeding roller**, a microswitch is installed on the right side of the **piece/stop motion** by which, the **weaving** machine will stop when the **piece/**  
**Stop motion** detaches the microswitch as per the figure of below.

If the machine stops under normal operation, causing reasons can be located by the aforesaid position so as to overcome the problem.

If the aforesaid **stop motion** device should fail, do not attempt to switch on the machine continuously; instead, the causing reasons must be located immediately so as to overcome the problem.

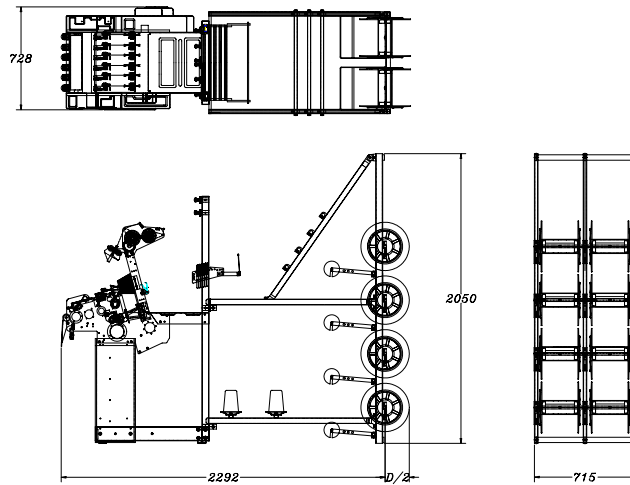


## **Cautions for maintenance**

1. If **cotton wadding** gathers on the machine after long period of using, be sure to clean regularly especially around the motor.
2. For this machine, please use **SAE-#40** engine oil.
3. Be sure to inject **E-P2** lubricant oil into the nozzles installed on the machine. As for the draw bar bearings, please use **CT-OUTEUR** lubricant oil.

## Beam frame and machine Assembly

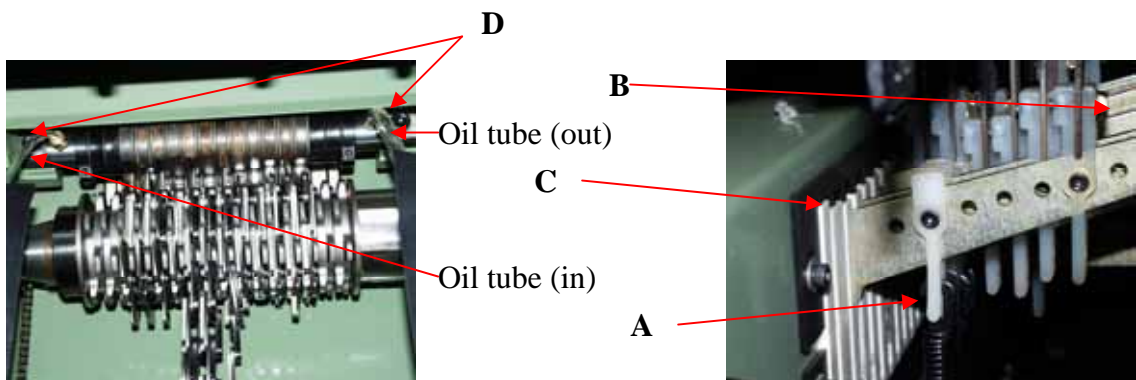
Please refer to the Assembly Diagram



## Replacement of the Shedding lever

### Disassembly of the **shedding lever**

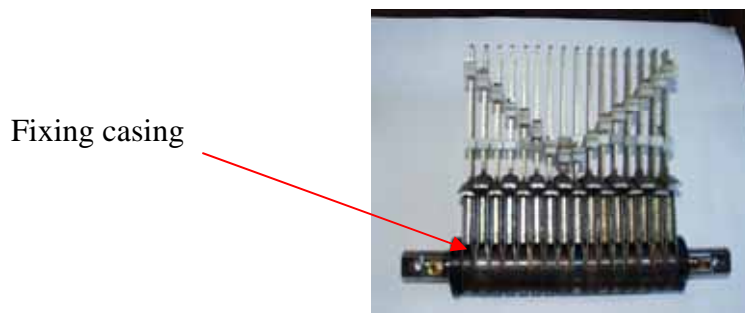
1. Remove all pattern chains.
2. Remove Spring of **shedding lever A** and oil tube connecting to the shedding lever's shaft.
3. Release Screw **B** connecting the **heald** frame and the shedding lever, and then fix the **heald** frame at the highest position.
4. Remove Oil Baffle **C** behind the **shedding lever**.
5. Use **8m/m** hexagonal wrench to remove two **10 m/m** Screws **D** on both sides of the **shedding lever** shaft so as to remove the entire set of **shedding lever**.



## Shedding lever Replacement

1. Use **5 m/m** hexagonal wrench to release the screw on the **set of shedding lever fixing casing** located on the left or right side of the **shedding lever** assembly so as to remove the fixing casing.
2. Remove the **shedding lever** to be replaced and mount a new **shedding lever** on.

**Note:** Do not wrongly confuse the position of **heald** frame **adjusting** (white) on the **shedding lever** and the types of **shedding lever**.



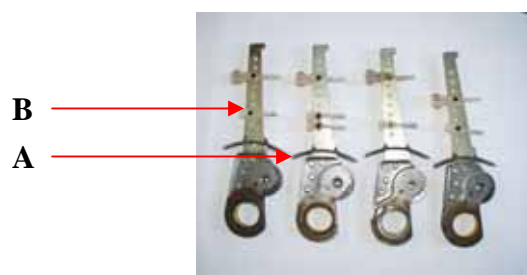
## Types of **shedding lever**

For this machine, four kinds of **shedding lever** are provided:

Rear and front **shedding lever** of Oil Baffle **A**.

Rear and front **heald** Frame Selection Holes **B**.

Total four kinds as per the figure of below.



## Reinstall the **shedding lever** to the **weaving machine**

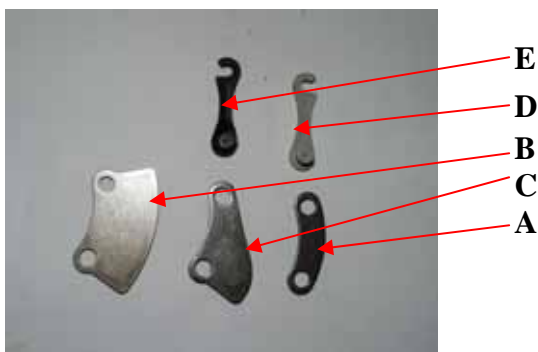
The reinstallation can be executed by the sequence **reverse** to disassembling the **shedding lever**.

## Recognition for the Pattern Plates

### **Pattern Plate**

In this machine, three kinds of pattern plates are used: (as per the figure of below)

1. Full Down **A**: Smallest in size. This plate controls the cutter remain at bottom position, which means the palm frame is located at the bottom part.
2. Full Up **B**: Biggest in size. This plate controls the cutter remain at upper position, which means the palm frame is located at the upper part.
3. Rise/Fall **C**: One end is bigger and the other, smaller. It controls the rise and fall of cutter separately. In the meantime, it can be used to change the direction of palm frame from bottom to top or from top to bottom.



### **Connecting plate for the Pattern Plate**

1. Gray **D**: Used on the left-hand side of the pattern plate, as per the upper figure.
2. Black **E**: Used on the right-hand side of the pattern plate, as per the upper figure.

## Chain Assembly by Pattern Plates

The sections of pattern chain used for this machine shall be at least **8** sections of which, the shortest chain shall be **18** sections while the longest shall be **48** sections.

The pattern plate is assembled with one on the left and the other one on the right and so on, which will be connected and fastened by a connecting plate.

1. Take a piece of pattern plate and gray left-hand connecting plate, then set the protrusion part of gray left-hand side connecting plate into the left-front hole of the pattern plate.
2. Take another pattern plate and place it on the right side behind the preceding pattern plate. Next, take another black right-hand side connecting plate and set its protrusion part into the front hole of such pattern plate and the rear hole of the previous pattern plate from the right side.
3. Fasten the left-hand connecting plate onto the protrusion of the right-hand side



connecting plate.

4. Connect the plate in the form of one for left and on for right, as per Figures A and B.

**Figure A**



**Figure B**



## **Cautions:**

1. The connection of the pattern plate must be top for top and bottom for bottom.
2. The connecting point of each pattern plate is the highest or the lowest point of the palm frame.
3. Confirm the connecting plate of the pattern plate, making sure that gray is on the left and black, on the right.
4. Check to see if any height difference between the pattern plate chain and if the connecting point of two pattern plates is uplifted or lowered abruptly.

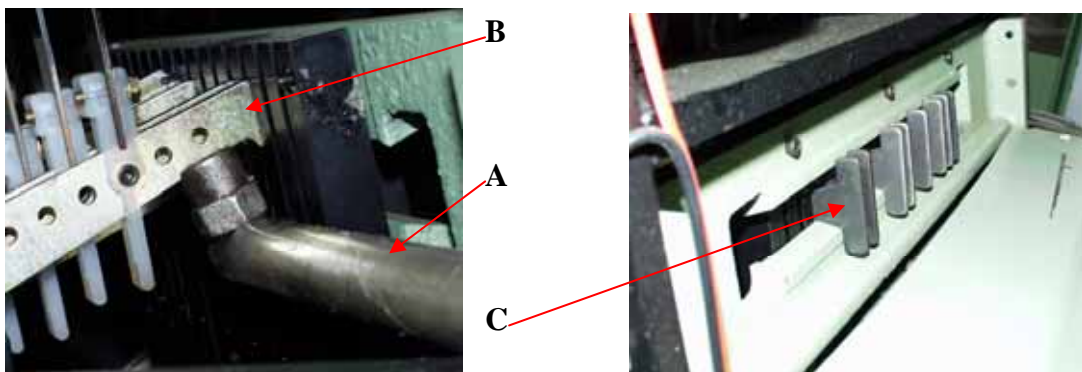
## **Installation of the Pattern Plate Chain**

Before installing the pattern plate chain on the pattern plate shaft, it is necessary to understand the position of the cutter.

15 • 13 • 11 • 9 • 7 • 5 • 3 • 1 • 2 • 4 • 6 • 8 • 10 • 12 • 14 • 16

The figures of above are the positions for arraying the cutters of the knitting machine of which, even numbers are on the left and odd ones, on the right. The positions of cutters are also those for palm frames. The operator will stand right in front of the knitting machine, and the first palm frame facing the operator is the first piece of palm frame driven by the first piece of cutter.

1. Place Cutter-Pushing Bar **A** on the left or right of the knitting machine, allowing the screw opening on the cutter-pushing bar facing upward, and insert into the bottom part of cutter plate in such a way that the screw opening will align with Cutter Plate **B**.
2. Use force to press one end of the pushing bar, making the palm frame rise to the highest point.
3. Insert Stopper **C** into the slip of bakelite guide plate located on the tip end of the cutter, assuring that the cutter is on the same position as the slip.
4. Repeat the actions described in the aforesaid Point **1** to Point **3** until all **16** cutters are raised.



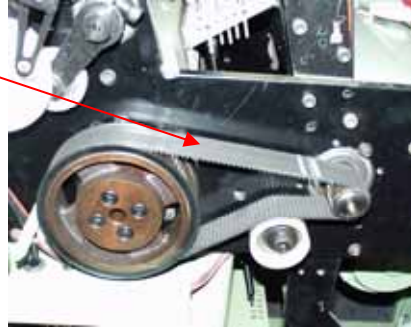
5. Align the pattern plate chain with the cutter bearing to be used and then press on the pattern plate shaft. At this time, turn the hand wheel in making the pattern plate chain orbit the pattern plate shaft for one round. Then, fasten the head and butt of the pattern plate chain securely as per the figure of below.
6. Place one piece of pattern plate presser wheel on the inner side of pattern plate chain. Press the pattern plate presser wheel down and lock these two screws on the presser wheel shaft.
7. Take out the used palm frame stopper.



## Important:

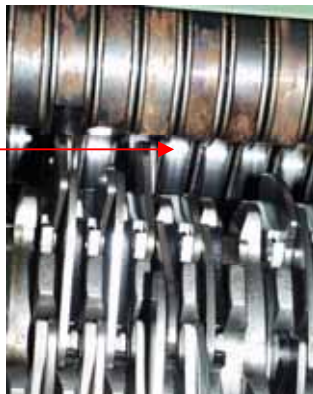
1. When the pattern plate chain is firstly installed on the pattern plate shaft, it must be pushed tightly against the shaft to avoid lifting so as to turn the hand wheel. The knitting machine cannot run if the cutter is jammed by the lifted pattern plate.
2. If the cutter is jammed, please loosen **800-5GT-40 Belt** on the right so as to reverse the knitting machine to remove the pattern plate chain for reinstallation.

**800-5GT-40**



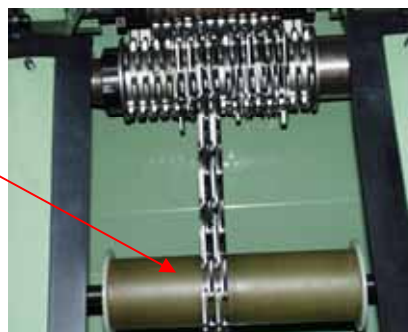
3. When the chain is installed on the pattern plate shaft, be sure to confirm that it has been aligned with the cutter bearing as per the figure of below.

**Cutter bearing**



4. It is recommended that the pattern plate chain shall be tight enough for turning the pattern plate roller by hand.
5. After operating the knitting machine for **100** hours, be sure to carefully check the tension of the chain. Following that, be sure to inspect once for every **100** hours.

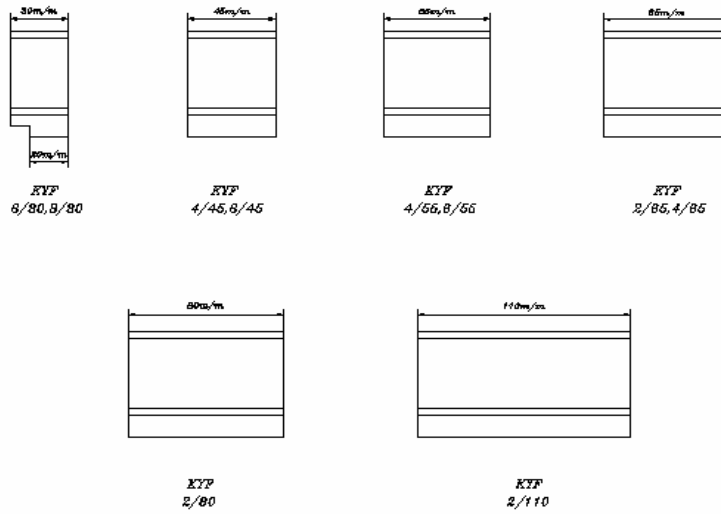
**Pattern plate roller**



# Applicable Models for Steel Reeds

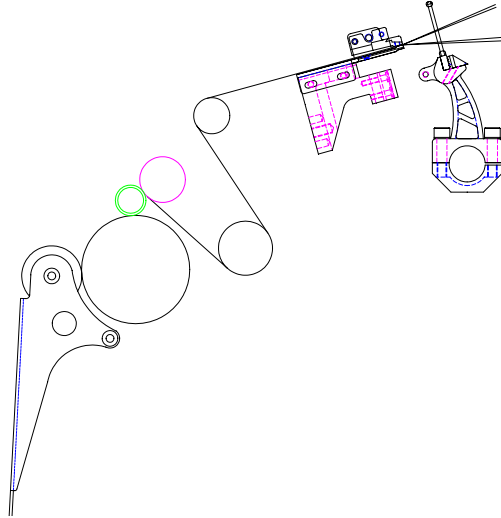
Stated below are models applicable for the width (the widest) of steel reeds.

## Steel Reed Size Chart



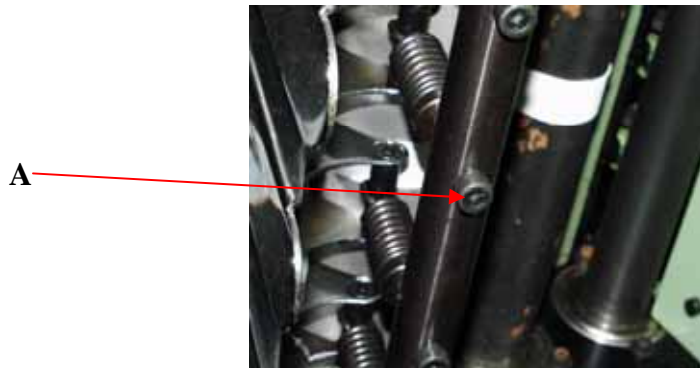
## Belt Feeding Device

Shown below is the completed belt feeding action.



### **Adjust the pressure of belt-feeding presser wheel:**

Screw A is installed underneath each belt-feeding presser wheel, and the pressure of belt-feeding presser wheel can be increased or reduced by such screw.

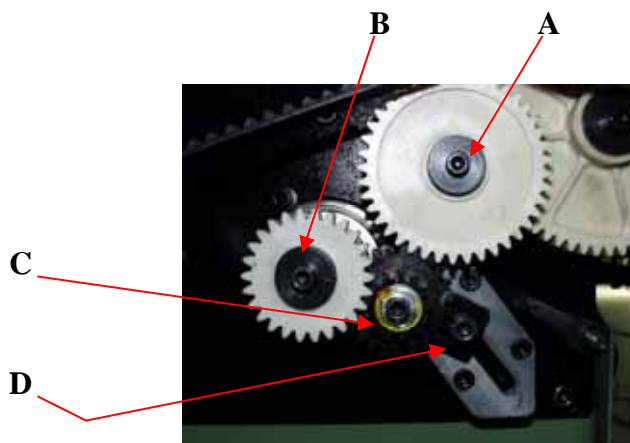
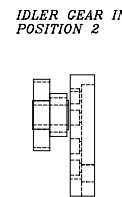
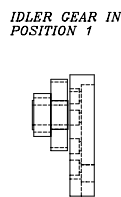
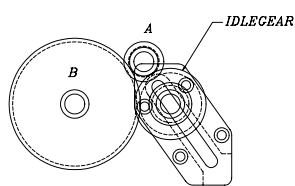


# Change of Weft Yarn Density

Before changing the weft yarn density, turn the hand wheel to allow steel reed get near the belt-passing plate. Based on Weft Yarn Density Gear Chart, select the gear of which the weft yarn density will be changed shown as per the figure of below.

1. Release the screws on gears **A**, **B**, **C** and **D**. Then remove Gears **A** and **B** and install the gears for replacement.
2. The Idler (**C**) can be used to use high or low weft yarn density. In low weft yarn density, smaller gears are arrayed outside with bigger ones located inside as per the chart on the right. In high weft yarn density, bigger gears are arrayed outside with smaller ones located inside as per the chart on the left.
3. Lock tight the screws on Gears **A**, **B** and **C**. Then move the idler in making it get close to Gears **A** and **B**, and then lock **D**.

IDLER GEAR POSITION 1								IDLER GEAR POSITION 2							
NO. TEETH B	NO. TEETH A	Picks /in	Picks /cm	NO. TEETH B	NO. TEETH A	Picks /in	Picks /cm	NO. TEETH B	NO. TEETH A	Picks /in	Picks /cm	NO. TEETH B	NO. TEETH A	Picks /in	Picks /cm
44	24	8.9	3.5	24	28	17.6	6.9	43	24	28.4	11.2	41	37	45.9	18.1
43	24	9.1	3.6	33	37	18.2	7.2	41	24	29.8	11.7	44	41	47.4	18.7
44	28	9.8	3.8	37	43	18.9	7.4	43	26	30.7	12.1	43	41	48.5	19.1
41	28	10.3	4.1	24	29	19.8	7.7	41	26	32.2	12.7	44	43	49.7	19.6
44	29	10.7	4.2	33	41	20.2	8.0	37	24	33.0	13.0	43	44	52.0	20.5
43	29	11.0	4.3	29	37	20.7	8.2	44	29	33.5	13.2	41	43	53.3	21.0
37	28	11.4	4.5	33	43	21.3	8.4	43	29	34.3	13.5	41	44	54.6	21.5
33	24	11.8	4.6	33	44	21.7	8.6	37	28	35.7	14.1	24	28	55.1	21.7
44	33	12.2	4.8	24	33	22.3	8.8	41	29	36.0	14.2	37	41	56.3	22.2
37	29	12.7	5.0	28	37	23.1	9.1	33	24	37.0	14.6	33	37	57.0	22.5
41	33	13.1	5.2	29	43	24.1	9.5	44	33	38.1	15.0	29	33	57.9	22.8
44	37	13.7	5.4	29	44	24.7	9.7	43	33	39.0	15.4	37	43	59.1	23.3
33	29	14.3	5.6	28	41	25.6	10.1	37	29	39.9	15.7	37	44	60.5	23.8
41	37	14.7	5.8	26	43	26.9	10.6	41	33	40.9	16.1	33	41	63.2	24.9
28	24	15.0	5.9	28	44	27.5	10.8	29	24	42.1	16.6	28	33	64.5	25.4
43	41	15.5	6.1	24	41	27.8	11.0	44	37	42.8	16.9	29	37	64.9	25.6
44	43	15.9	6.3	24	43	28.1	11.5	43	37	43.8	17.3	33	43	66.3	26.1
43	44	16.6	6.5	24	44	28.8	11.7	33	29	44.7	17.6	33	44	67.8	26.7
41	43	17.0	6.7					37	33	45.4	17.9	24	33	69.9	27.5



## Replacement of Conveying and Bottom Yarn Gears

### Conveying Gears

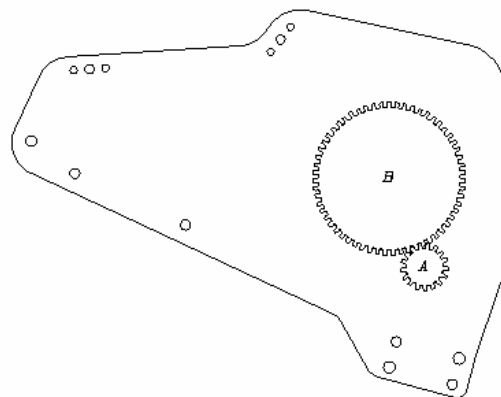
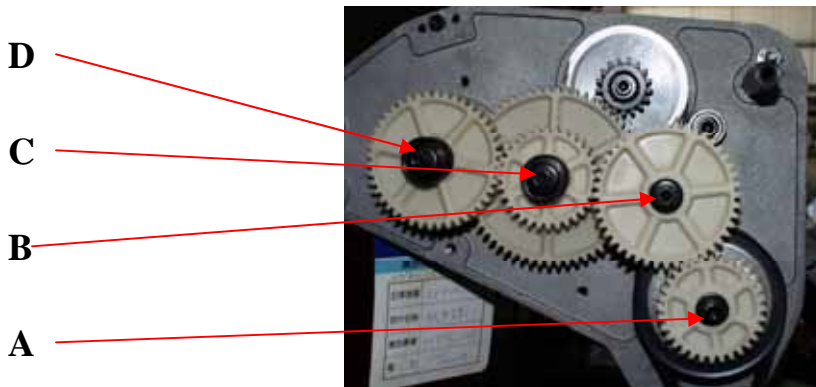
Before replacing the conveying gears, please refer to the Conveying Gear Chart for choosing conveying gears having appropriate width.

Release and remove screws and gears from Gears **A** and **B**. Install gears to be replaced and then restore Screws **A** and **B**. The total number of Gears **A** and **B** shall be **76** gears as per Figure **A** and Figure **B**.

### Bottom Yarn Gears

Before replacing the conveying gears, please refer to the Conveying Gear Chart for choosing conveying gears having appropriate weft yarn density.

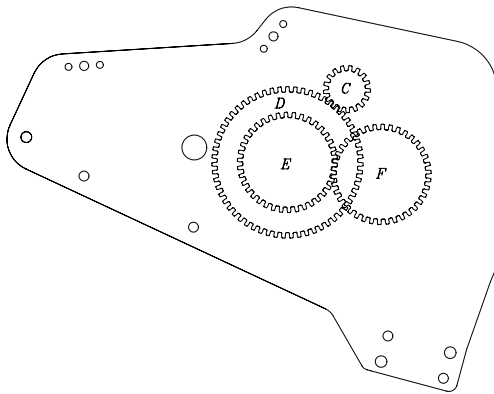
Release and remove screws and gears from Gears **C** and **D**. Install gears to be replaced and then restore Screws **C** and **D**. The total number of Gears **C** and **D** shall be **76** gears as per Figure **C** and Figure **D**.



CHANGE GEAR DATA		
SHAFT		TAPE WIDTH (MM)
A	B	
20	56	(07-13)
26	50	(10-20)
32	44	(17-25)
37	39	(22-35)
39	37	(25-38)
44	32	(30-47)
50	26	(39-60)
56	20	(61-110)

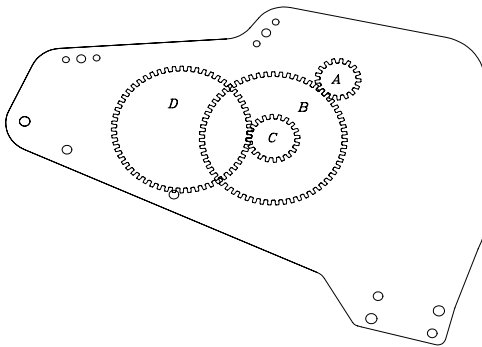


## Position and Gear Chart of Weft-Sending Gear below 7m/m



CHANGE GEAR DATA				
SHAFT				TAPE WIDTH (MM)
C	D	E	F	
17	59	20	56	(1.6-2.5)
17	59	37	39	(2.5-7)

## Gear Position and Gear Chart of Bottom Yarn



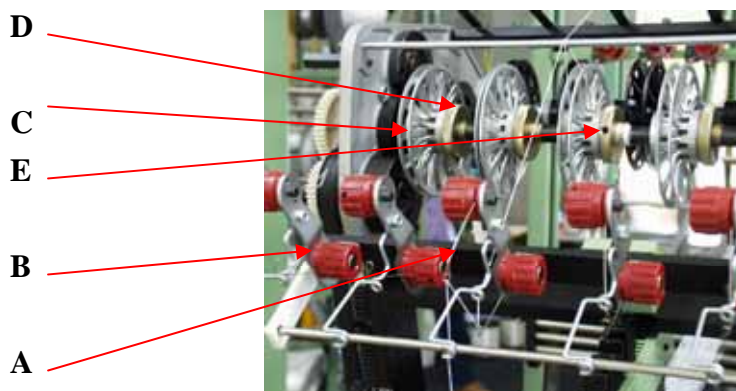
SHAFT				FEED RATE
A	B	C	D	
17	59	32	44	3.6-7.2MM / PICK
17	59	20	56	1.8-3.6MM / PICK

## Conveying Volume Adjustment for the Weft Yarn and the Bottom Yarn

To provide better edge finish for the fabrics, such conveying device must be used during the knitting. This device comprises two parts: The adjustment of weft yarn application and the adjustment of bottom yarn application.

### **During the knitting (weft yarn)**

1. Based on the Weft Yarn Gear Comparison Chart, choose gears that are appropriate and meeting the belt width.
2. The tension of the weft yarn is adjusted by the up-and-down motion of Weft Spring **A**. The force of tension spring can be increased or reduced by turning Red Turning Lever **B**. The tensions of weft yarns entering and exiting Umbrella Wheel **C** shall be equal.
3. Adjust top and bottom tension springs, making the elasticity at top and bottom equal. Thinner the weft yarn, lighter the elasticity; coarser the weft yarn, stronger the elasticity.
4. If the conveying volume of weft yarn appears insufficient or too much, then use Adjusting Nut **D** on the right side of the turning umbrella wheel for making up or reducing.
5. Before turning the adjusting nut, it is necessary to release Screw **E** inside the nut so as to turn the adjusting nut.
6. Lock tight the screw inside the nut to avoid the dislocation of the setting.



### **During the knitting (bottom yarn)**

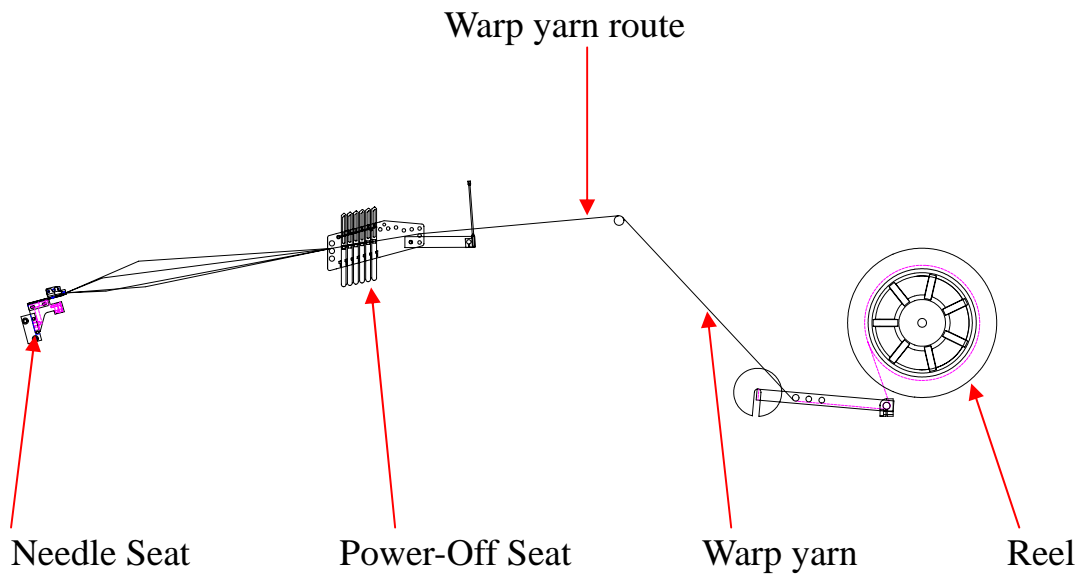
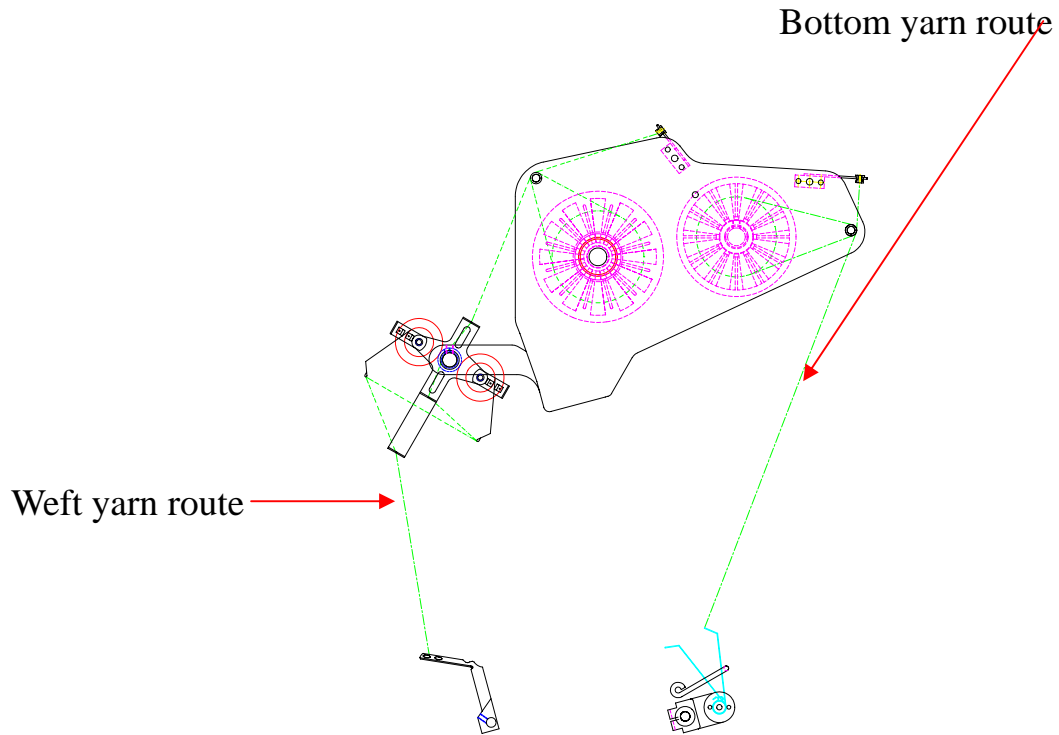
1. Based on the Bottom Yarn Gear Comparison Chart, choose gears that are appropriate and meeting the weft yarn density.
2. One unit of bottom yarn tension spring is provided only, and the elasticity of

tension spring will be adjusted according to the thickness of yarn.

3. The conveying volume of bottom yarns can be increased or reduced by turning the adjusting nut located beside the bottom yarn umbrella wheel.
4. Before turning the adjusting nut, it is necessary to release the screw inside the nut. Lock tight the screw inside the nut to avoid the dislocation of the setting.

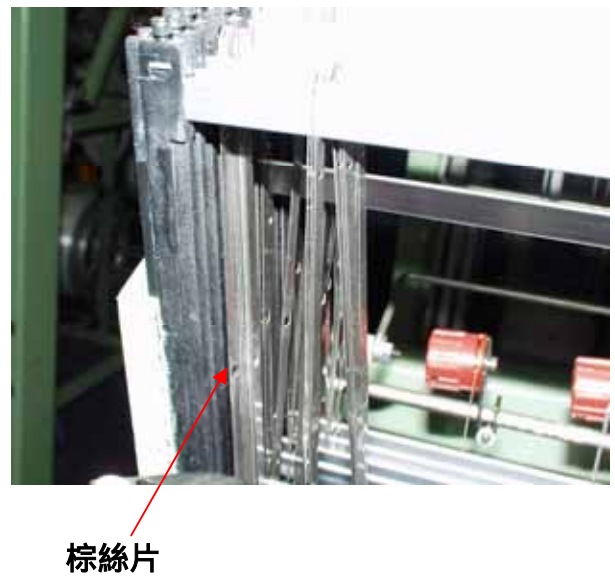
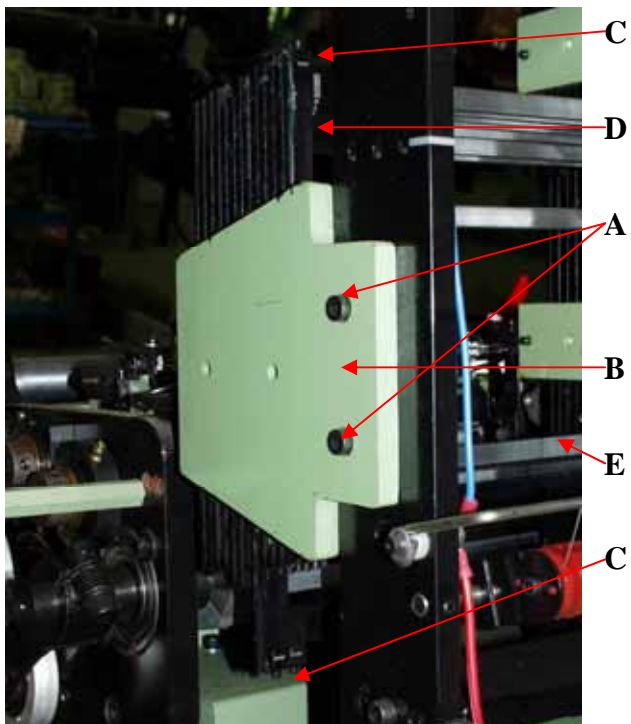


# Bottom yarn tension spring Screw Adjusting nut



## Addition, Removal of Palm Tissues

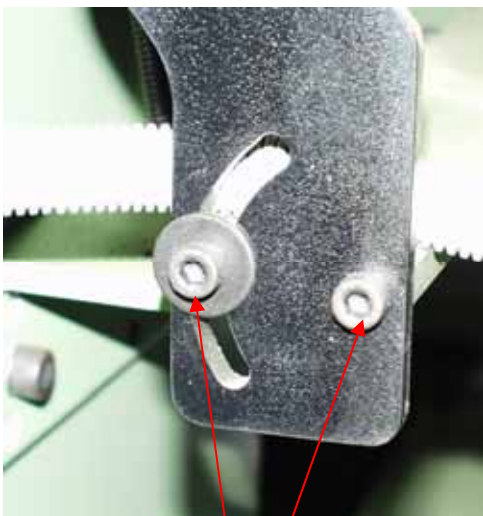
1. Use **5m/m** hexagonal wrench to release these two **6 m/m** Screws **A** on the palm frame guide plate located at both sides of the knitting machine. Then, remove Palm Frame Guide Plate **B**.
2. Use **2.5m/m** hexagonal wrench to release one top screw and two bottom screws **C** on the palm frame rod. Then, remove Palm Frame Vertical Rod **D**.
3. Remove the vertical rod from the palm frame being used. Then load into Palm Frame Horizontal Rod **E** by the number of palm frame plates that will be used.
4. The tip end of palm plates shall face upward with the slant side facing the front.
5. It is necessary to remove the excessive and the unused palm plates from the palm frame.



## Change of the Knitting Machine Speed

Please follow the procedures of below to change the speed of the knitting machine:

1. Release **8 m/m** Screws **A**, two each on both sides of the motor towing frame, and then adjust these two **8 m/m** Screws **C** on the arm.
2. Push the motor toward the direction of heard, and then lock tight Screw **C** and remove the **V**-shape belt roller.
3. Release Stop Screw **D** on the **V**-shape belt roller (smaller one).
4. Turn the **V**-shape belt roller (smaller one) clockwise to increase the speed of the knitting machine and counter clockwise, for speed reducing.
5. After the **V**-shape belt roller is properly adjusted, lock Stop Screw **D** once again (do not forget).
6. Restore the **V**-shape belt.
7. Hold on the motor and release Screw **C**.
8. Press the motor downward and lock tight Screws **A**, **B** and **C**.

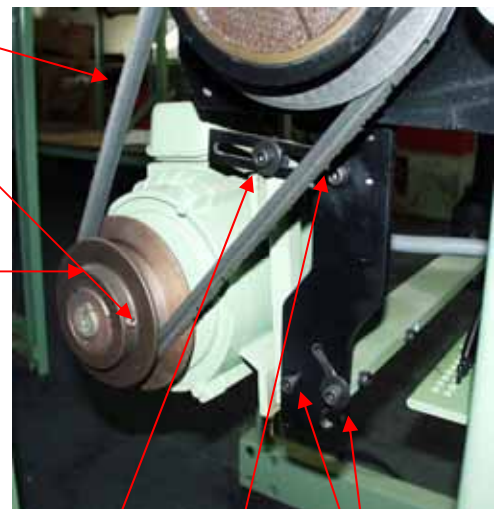


**A**

**V**-shape belt

**Stop Screw D**

**V**-shape Belt  
**Roller**



**C**

**B**

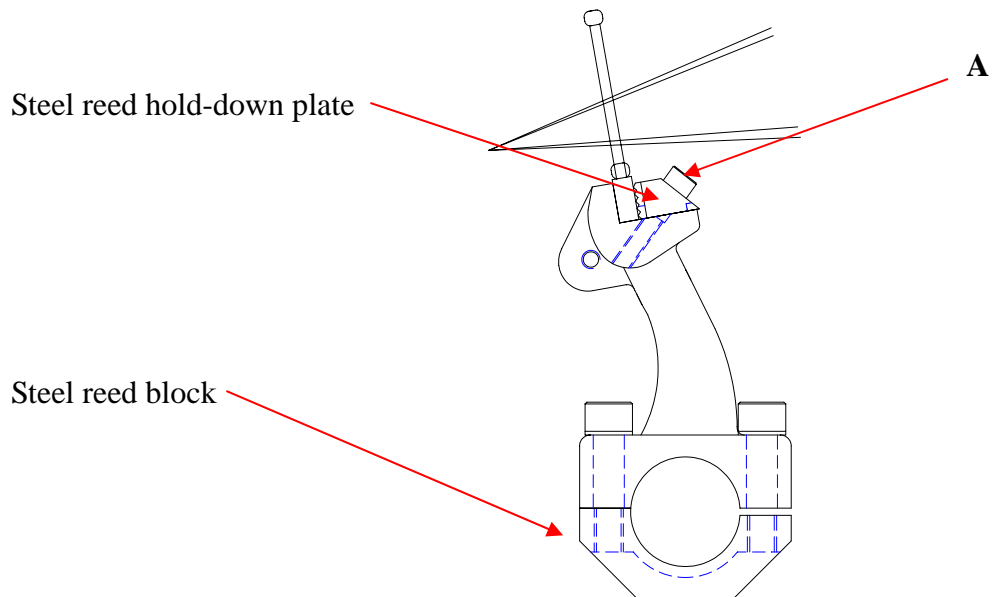
**A**

## Adjustment of Ordinary Knitting

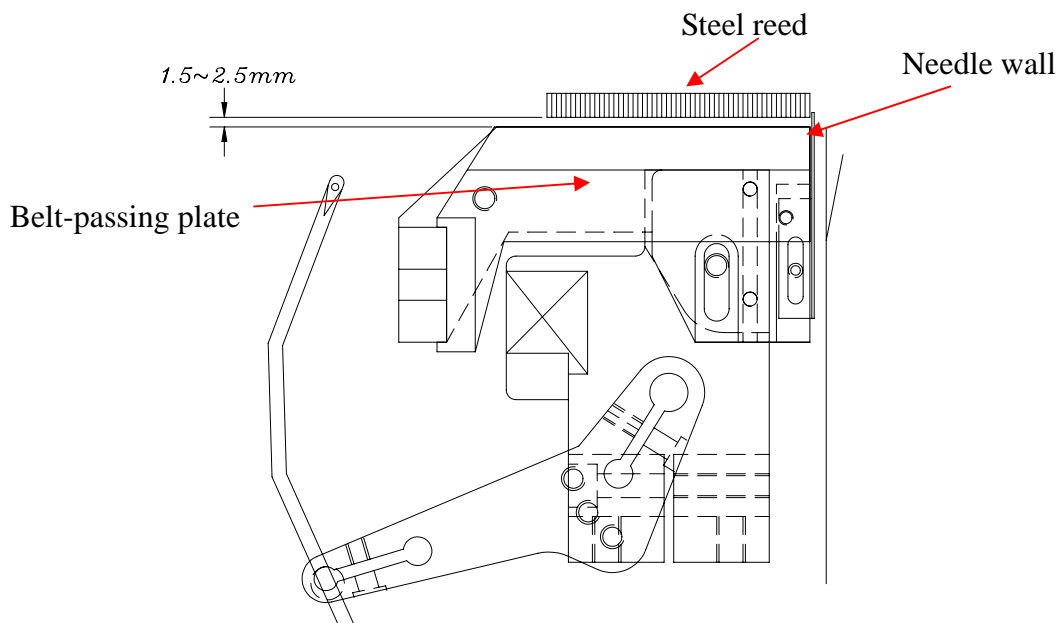
### **Steel reed block and the position of steel reed**

The steel reed block on the knitting machine does not require adjustment, because the optimal position has been tuned before the delivery.

The left and right positions of steel reed will be adjusted depending on the fabrics. Normally, the first steel plate of steel reed is used to align with the needle wall or the inner side of needle wall. Use **4 m/m** hexagonal wrench to release Screw **A** on the hold-down plate of steel reed, shown as per the figure of below.



Move the steel reed in making the first steel plate align with the needle wall or the inner side of needle wall (as per the figure of below), and then lock Screw **A** as per the figure of above.



## Belt-passing Plate

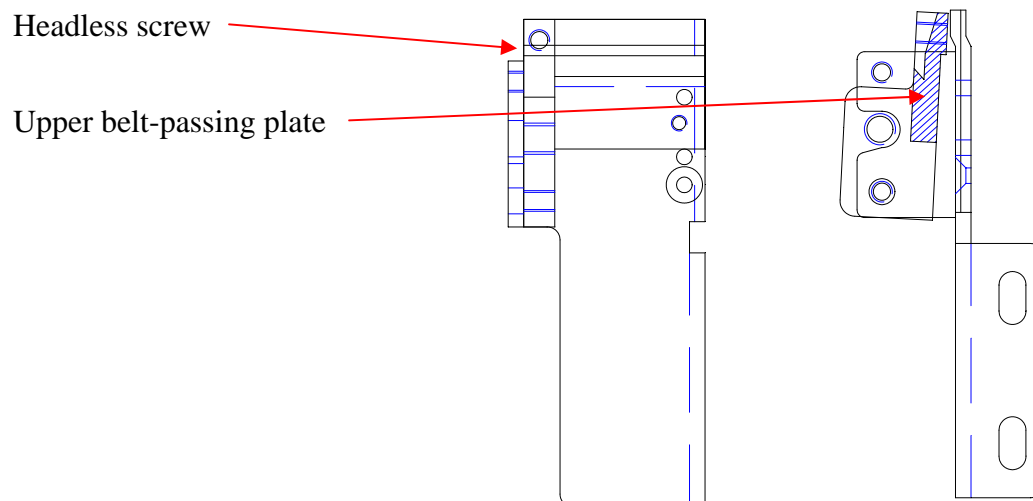
Normally, the distance between the belt-passing plate and the weft yarn steel reed is approximately **1.5 to 2.5 m/m** as per figure of above.

Upon turning the hand wheel to the point where the steel reed is the closest to the belt-passing plate (graduation indicating **0**), release the screws on top or the right of the belt-passing plate and move the belt-passing plate to the required position.

## Gap between upper and lower belt-passing plates

The gap between upper and lower belt-passing plates will be adjusted by the thickness of fabrics. Such gap must be slightly wider than the fabrics to facilitate the fabrics passing through between upper and lower belt-passing plates.

Use **2.5 m/m** hexagonal wrench to turn the headless screw on the left of upper belt-passing plate, shown as per the figure of below. The gap increases by turning clockwise, while counter clockwise is for reducing. Before adjusting the gap, be sure to separate upper and lower belt-passing plates.



## Needle edge

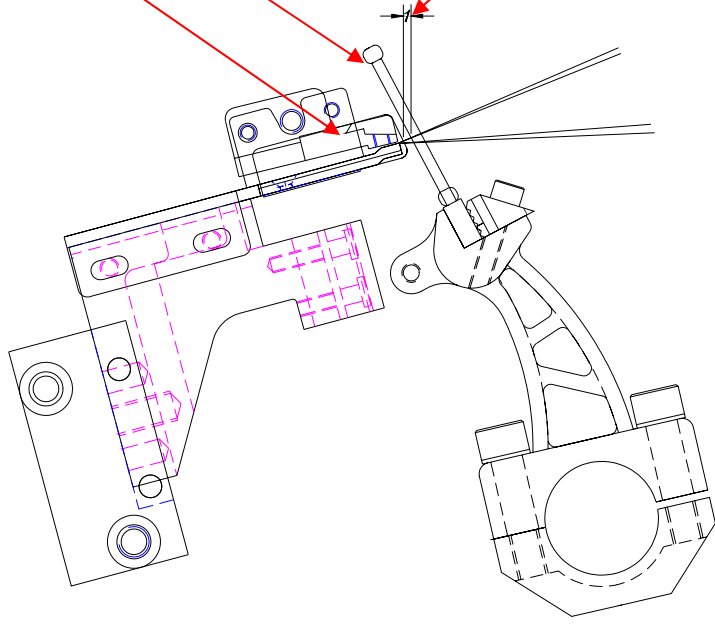
Upon turning the hand wheel to the point where the steel reed is the closest to the belt-passing plate (graduation indicating **0**), release the screws on the needle edge and then adjust the edge in making it keep **0.5 m/m~1.0 m/m** to the steel reed shown as per Figure C.



Steel reed

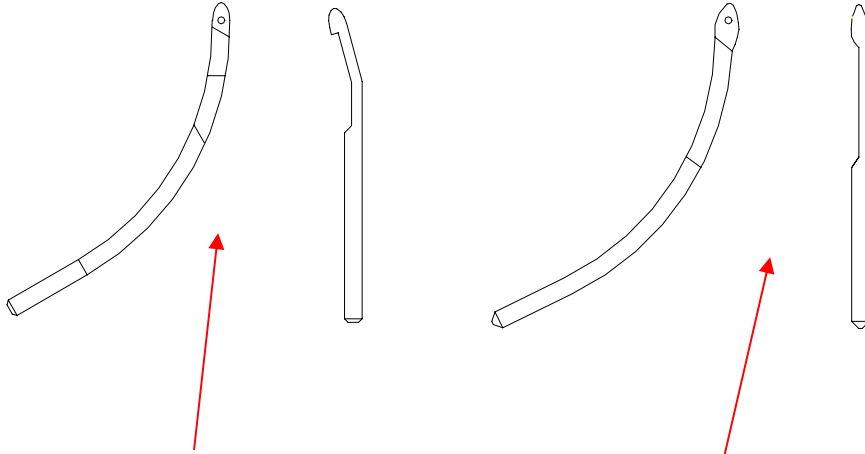
Spacing **0.5 m/m~1.0 m/m**

Needle edge



## Weft Yarn Hooks

The machine is provided with two weft yarn hooks as per the figure of below.

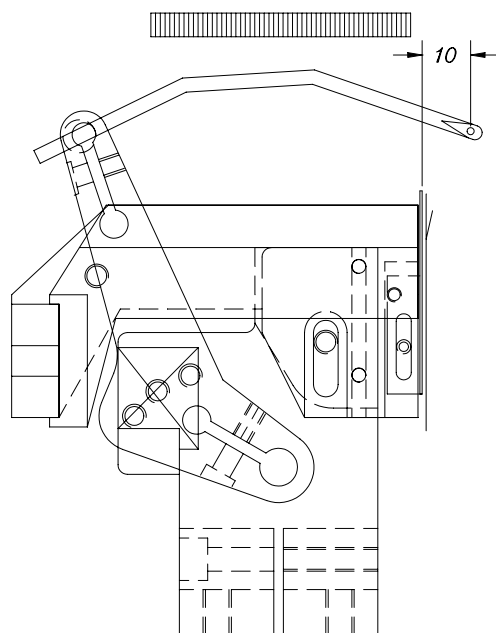


Applicable for the knitting using the bottom yarn

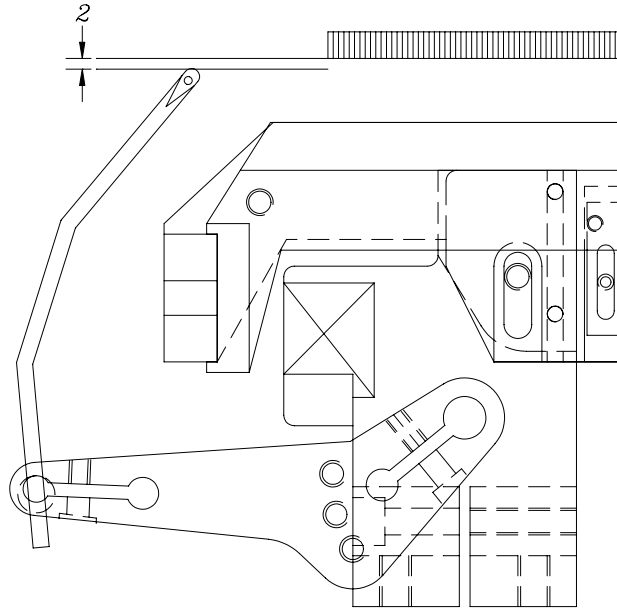
Applicable for the knitting without using the bottom yarn

### Installation of weft yarn hook

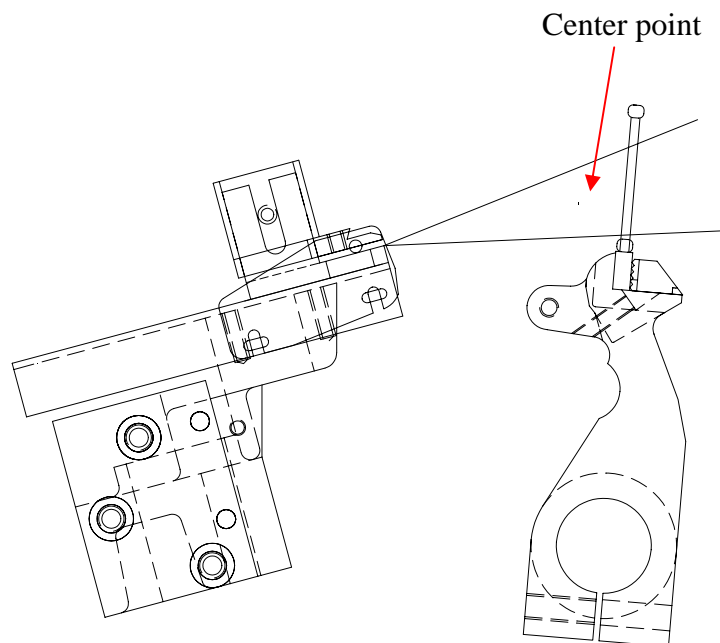
1. Soon after the weft yarn hook is fully fed in, as with most of the fabrics, the center of the round hole on the front part of weft yarn hook shall be **8 to 10 m/m** away from the needle and such distance will become **10 to 12 m/m** if the bottom yarn is used for the knitting, as per Figure **D**.



1. If wider steel reed is used, at the time to feed in the weft yarn hook, the distance between the front part of weft yarn hook and the first steel plate (left) of the steel reed shall be at least **2 m/m** shown as per the figure of below.

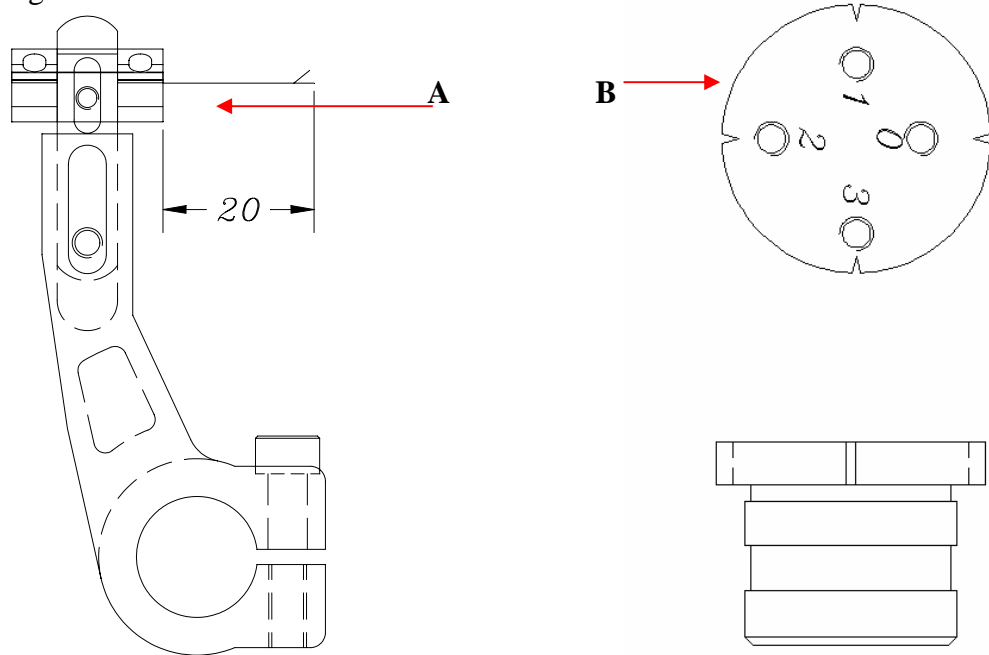


2. Adjust the height of the weft yarn hook when it is about to enter the opening. Normally, the optimal position will be between the upper and lower warp yarns of the opening shown as per the figure of below.



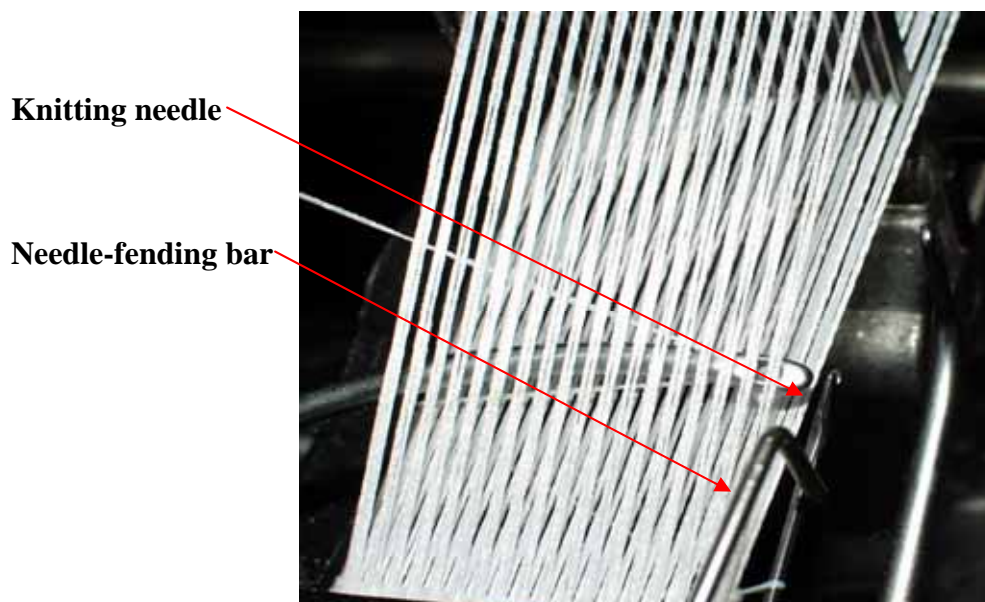
## Travelling distance of knitting needles

During the knitting, the travelling distance of the needle shall not exceed **20 m/m** shown as per Figure A. If longer or shorter travelling distance is required, then the distance may be adjusted through four eccentric holes on the eccentric wheel shown as per Figure B. In this regard, “0” means the shortest; “1”, shorter; “2”, longer; and “3”, the longest.



## Needle-fending bar

When the knitting needle detaches, it is used to avoid the bouncing back of needle cover that may cause the returned knitting needle unable to catch the weft yarn. For this purpose, the needle-fending bar shall be placed next to the needle cover action point, keeping a distance about 0.5 m/m to the needle to avoid the impact, when the needle cover detaches from the weft yarn.

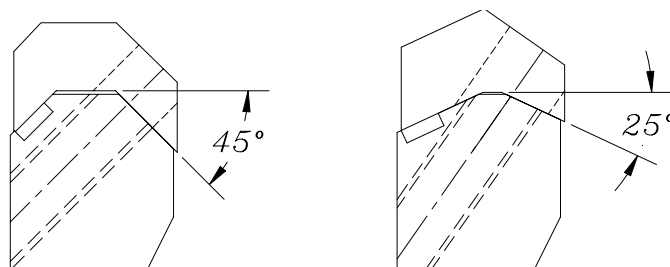


## Knitting needle fixing block

The machine is provided with two kinds of knitting needle fixing blocks.

**A:  $45^{\circ}$**  is applicable for the knitting using the bottom yarn.

**B:  $25^{\circ}$**  is applicable for the knitting without using the bottom yarn.



## Setting of the Angle

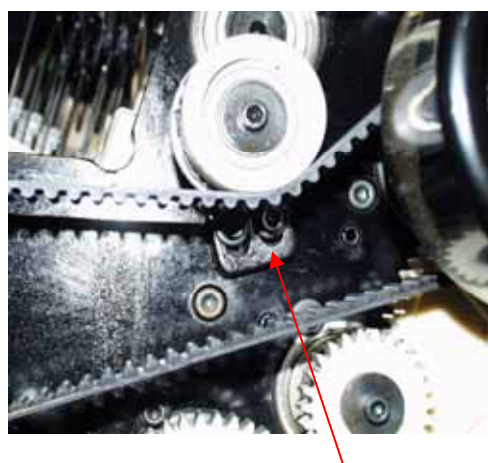
### Opening setting

When the palm frames meet horizontally, the graduation will be **290** degrees.

### Procedure setting

1. Turn the hand wheel, making upper and lower palm frames meet horizontally. Then release Screws **A** and **B** on the belt-pressing wheel, as per Figure **A**.
2. Separate the belt and gears on the hand wheel, and then turn the hand wheel to graduation **290** degrees for aligning with **A** shown as per Figure **B**.
3. Install gears on the belt and push down the belt-pressing wheel. Lock tight Screws **A** and **B**

Figure A



Screws A, B.

Figure B

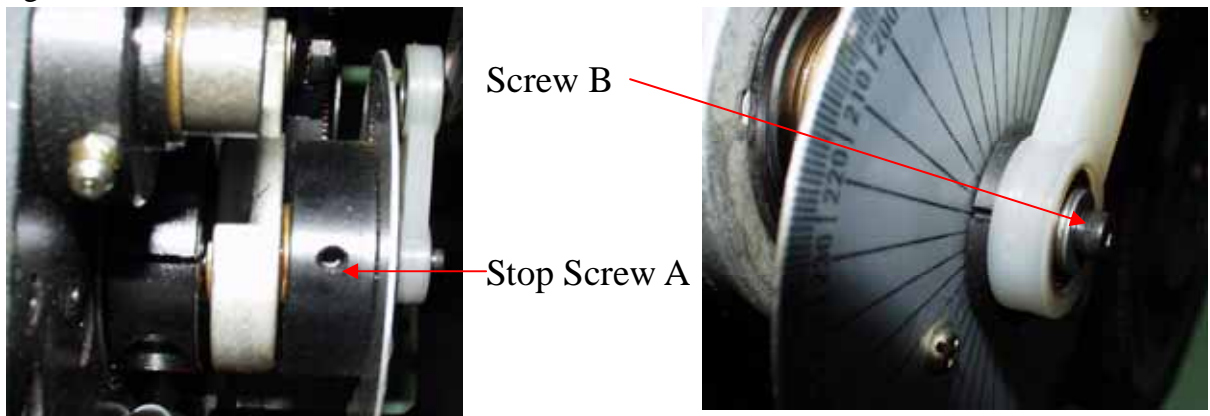


## Knitting using the bottom yarn

The action angle of the knitting needle is between **217~220** degrees (applicable for eccentric wheels **0, 1, 2, 3**), and that of the bottom yarn is **180** degrees (the highest)

### Knitting needle

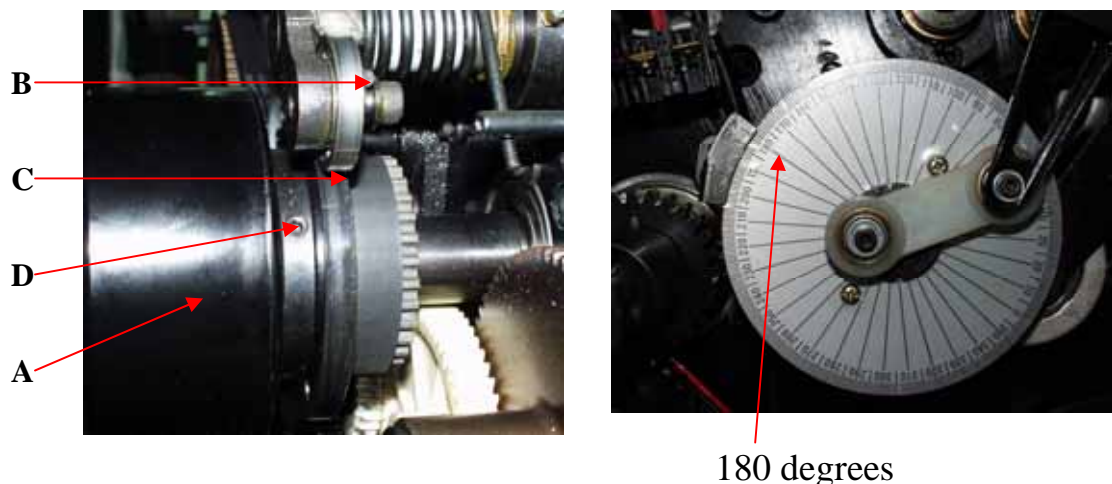
Use 3 m/m hexagonal wrench to release Stop Screw A. Then use the same wrench to insert into Screw B and turn the wrench, setting the marking line of eccentric wheel at between graduation 270 ~ 220 degrees. Turning clockwise to reduce the graduation and turning counter clockwise, increase the graduation. Finally, lock tight Screw A.



### Bottom yarn

Turn Hand Wheel A, making Bearing B reaches the lowest point (bottom yarn hook is at the highest point) of Cam C. Release Screw D.

Turn the hand wheel and set the graduation at 180 degrees, and then lock tight Screw D.



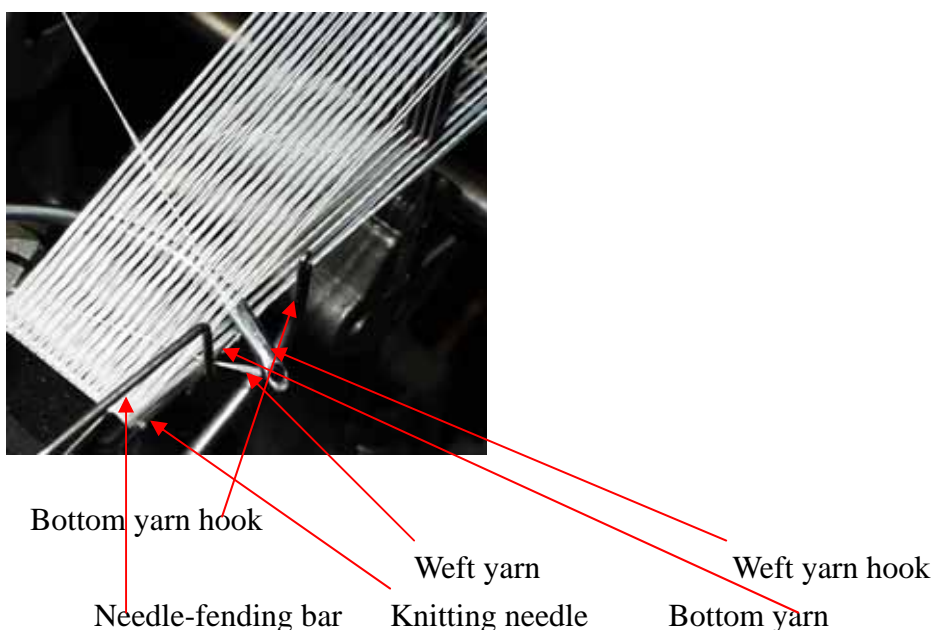
## **Knitting needle**

When the bottom yarn is not used for knitting, set the eccentric wheel at the graduation of **185** degrees.



## **Instructions of using** **weft yarn hook, bottom yarn hook and the knitting needle** **Knitting using the bottom yarn**

Soon after the weft yarn hook enters the opening and advances to the far right, the knitting needle will enter from above the weft yarn and from under the weft yarn hook respectively. At this time, the bottom yarn raises from the right side of the needle and contacts the weft yarn hook accordingly. When the above three actions reach the end point, the returning action will follow by retreating the weft yarn hook and the needle to hook the bottom yarn, making the bottom yarn hook descend. Careful adjustment must be performed during the entire action and further, do not let these three parts collide with each other.

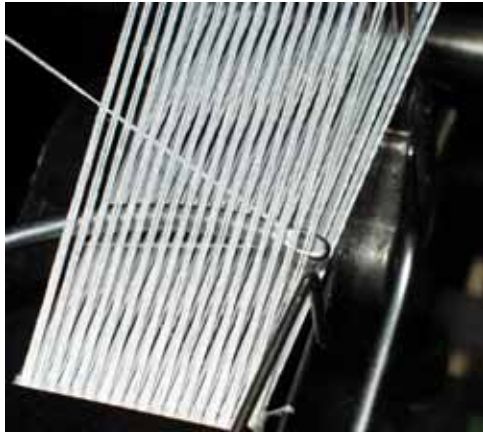




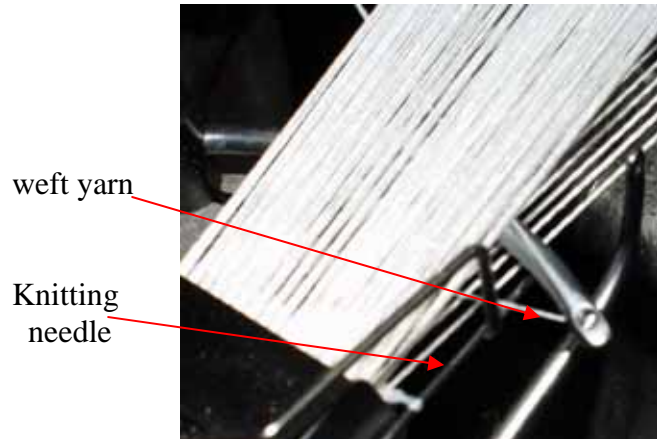
## **Knitting without using the bottom yarn**

The knitting needle goes out and the weft yarn hook passes from between the upper part of needle head and the needle cover. After the outgoing action of the knitting needle is ended, the needle begins to return and hook the weft yarn shown as per Figure B.

**Figure A**



**Figure B**



### **Important:**

When the needle goes out, the weft yarn that winds around the needle must be removed from the needle cover in order to carry on the hooking of next weft yarn. Upon hooking the next weft yarn and returning backward, the weft yarn being removed from the needle cover previously must be stripped before the needle head. Prior to stripping the needle head, the needle cover will get onto the head so as to detach the needle.

## **Maintenance and Lubrication**

### **Maintenance**

1. The machine body and the protection cover shall be cleaned on regular and irregular basis (schedule subject to individual plan).
2. The environment around the machine shall be kept clean at all times without oil leakage accordingly (note the place near around the motor).
3. After parts replacement, be sure to wipe out oil stains attached to the machine body or the protection cover.

### **Lubrication**

Pouring of engine oil: Open the front cover and pour engine oil into the oil tank, and the oil level must exceed the filter screen of the oil injector. Then, place the magnet beside the oil filter screen.

Weekly: check to see if the oil is flowing inside the circulation oil tube located at the upper right corner of the front cover (visual check during the operation).

Weekly: Check to see if there is any clogging in the oil filter screen.

Weekly: Inject oil from two small holes on the palm frame guide plate to lubricate the palm from.

Monthly: Once per month, refuel lubricant oil for all lubricant oil nozzles installed on the machine.