

New Light

New Light Heald Frame ~ Instruction Manual (to be loaded on weaving machines of Toyota Industries Corporation)

综框使用说明书

(丰田自动织布机株式会社喷气式织布机装载用)

Use wisely for longer service life

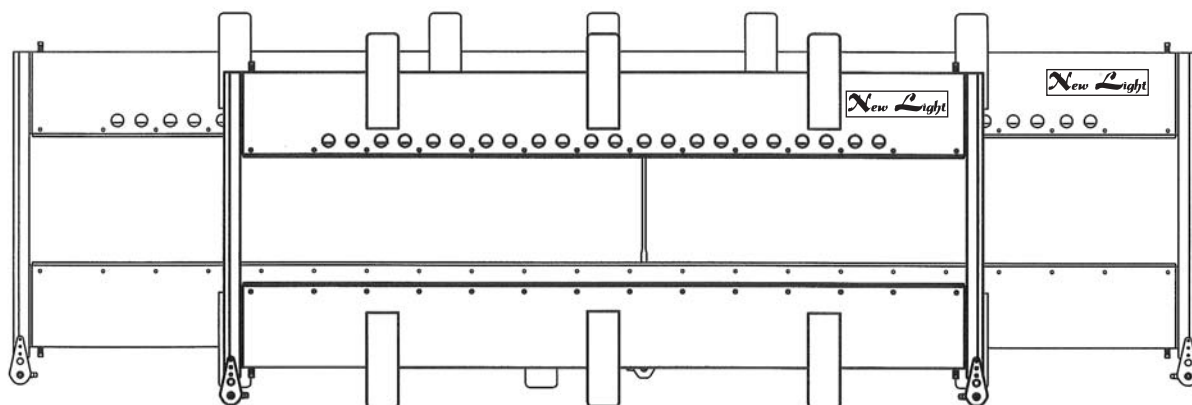
正确使用确保机器使用寿命

Thank you very much for purchasing a New Light heald frame this time.

The user is kindly requested to read this instruction carefully before using his heald frame for correct and safety use of the product.

承蒙您此次使用New Light综框,在此表示衷心地感谢。

综框只有正确地使用才能够确保和延长它的使用寿命,因此在使用之前,请务必仔细阅读本使用说明书。



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§1 Cautions

1.1 Cautions for storage

- ◆ Store in a well ventilated indoor place.
- ◆ Avoid storing in any place with unfavorable environment such as a place exposed to water, a place with high humidity, outdoors, a place subject to rain drops, a place with high temperature, etc.
- ◆ Avoid placing against a wall or stack on the floor face, but store on a special stand as much as possible. If you stack heald frames on the floor face, the one at the lowest stage may be broken because of a heavy weight imposed on it. In addition, it also presents a risk of damaging the heald frames, due to accidental contact with a folk lift or a beam truck passing close by.
- ◆ When placing the heald frame on a special frame, take care to hold the frame at a position as close to the side stay as possible.
- ◆ Do not put any heavy object on the heald frame, or get on or step on it, as it may cause deformation, breaking or damage.
- ◆ Wipe off any dirt found on the heald frame after each operation.
- ◆ Avoid washing the heald frame with water or any other solution, as it may cause rust, peeling of guide plate or deterioration of quality.

1.2 Cautions for carrying

- ◆ When carrying the heald frame, do not drop it or hit it against any object. Also take care to avoid applying any strong force on part of the heald frame.
- ◆ For carrying the heald frame. use a special trolley as much as possible.
- ◆ Avoid lifting the heald frame by grasping the guide plate.

§ 1 注意事项

1.1 保管时请注意

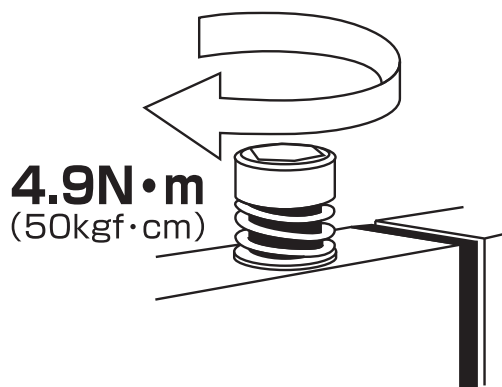
- ◆务必要在通风条件良好的室内环境下进行保管。
- ◆不可在容易溅水、潮气大、高温、野外以及漏雨之处等环境恶劣的场所进行保管。
- ◆不可靠立在墙壁或积压在地板上,请务必安放在专用的台、架上进行保管。如果将综框放在地板上积压的话,最下层的综框会因受压过重而造成损伤或损坏。另外,还会因从边上通过的上轴车或推车等的碰撞而造成综框的异常损坏。
- ◆将综框悬挂在专用的台架上时,尽可能将支架保持在靠近边梁的位置。
- ◆不可将重物放置在综框上,不可踩踏或坐在综框上,否则会造成综框变形、损伤以及异常损坏。
- ◆至于综框上的污垢,请在每次使用结束后将其擦干净。
- ◆不可用水洗或其它清洗液清洗,否则会引起生锈、导向板脱胶、脱落等现象,从而造成综框品质下降。

1.2 搬运时请注意

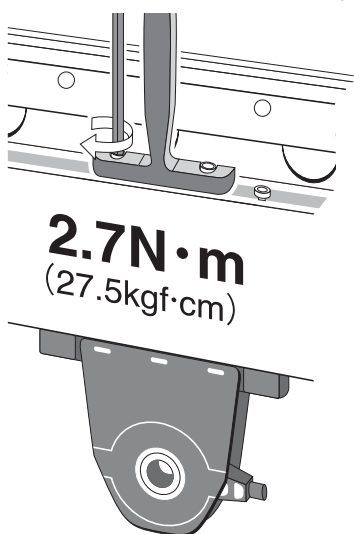
- ◆综框运送时,请务必小心仔细,不可掉落、不可碰撞综框、综框也不能让其受到强力的冲撞。
- ◆搬运综框时,必须使用专用的推车并小心移动。
- ◆不可抓住导向板来提、拎综框。

1.3 Cautions for using 1.3 使用时请注意

- ◆ Fasten the bolt on the frame stave by a torque of $4.9\text{N}\cdot\text{m}$ ($50\text{kgf}\cdot\text{cm}$). Every month and every time you change beam, take care for preventing the bolt from loosening. Excessive fastening and imperfect fastening may be led to breakage.
- ◆ 棕框撑杆连接部的螺丝请用 $4.9\text{N}\cdot\text{m}$ ($50\text{kgf}\cdot\text{cm}$)的扭矩扳子来安装、每个月或换盘纱时还需定期检查是否有松动、过度的扭紧和松动都会造成破损的原因

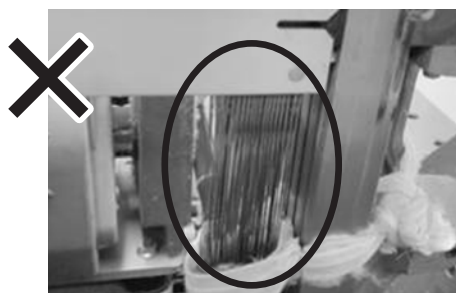
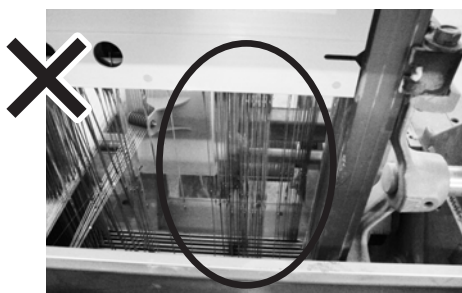


- ◆ Fasten the bolt of center stay by a torque of $2.7\text{N}\cdot\text{m}$ ($27.5\text{kgf}\cdot\text{cm}$). Every month and every time you change beam, take care for preventing the bolt from loosening. Excessive fastening and imperfect fastening may be led to breakage.
- ◆ 中间撑杆连接部的螺丝请用 $2.7\text{N}\cdot\text{m}$ ($27.5\text{kgf}\cdot\text{cm}$)的扭矩扳子来安装、每个月或换盘纱时还需定期检查是否有松动、过度的扭紧和松动都会造成破损的原因



- ◆ The breakage by a heald crack cannot take responsibility. Do not use heald of inferior quality (deformed heald, imitation heald etc.).
- ◆ 因为综丝破损的原因而造成的综框破损的原因、我司不承担责任。已经有变形弯曲的综丝、和假冒的综丝等不好的综丝请不要使用。

- ◆ Heald Frame will break, if a surplus heald is used. The breakage by a surplus heald cannot take responsibility.
- ◆ 由于多余的综丝放在综框上而造成综框的损坏、我司不承担责任。在综框使用中、多余的综丝放在综框上一一起使用、会造成综框的损坏。

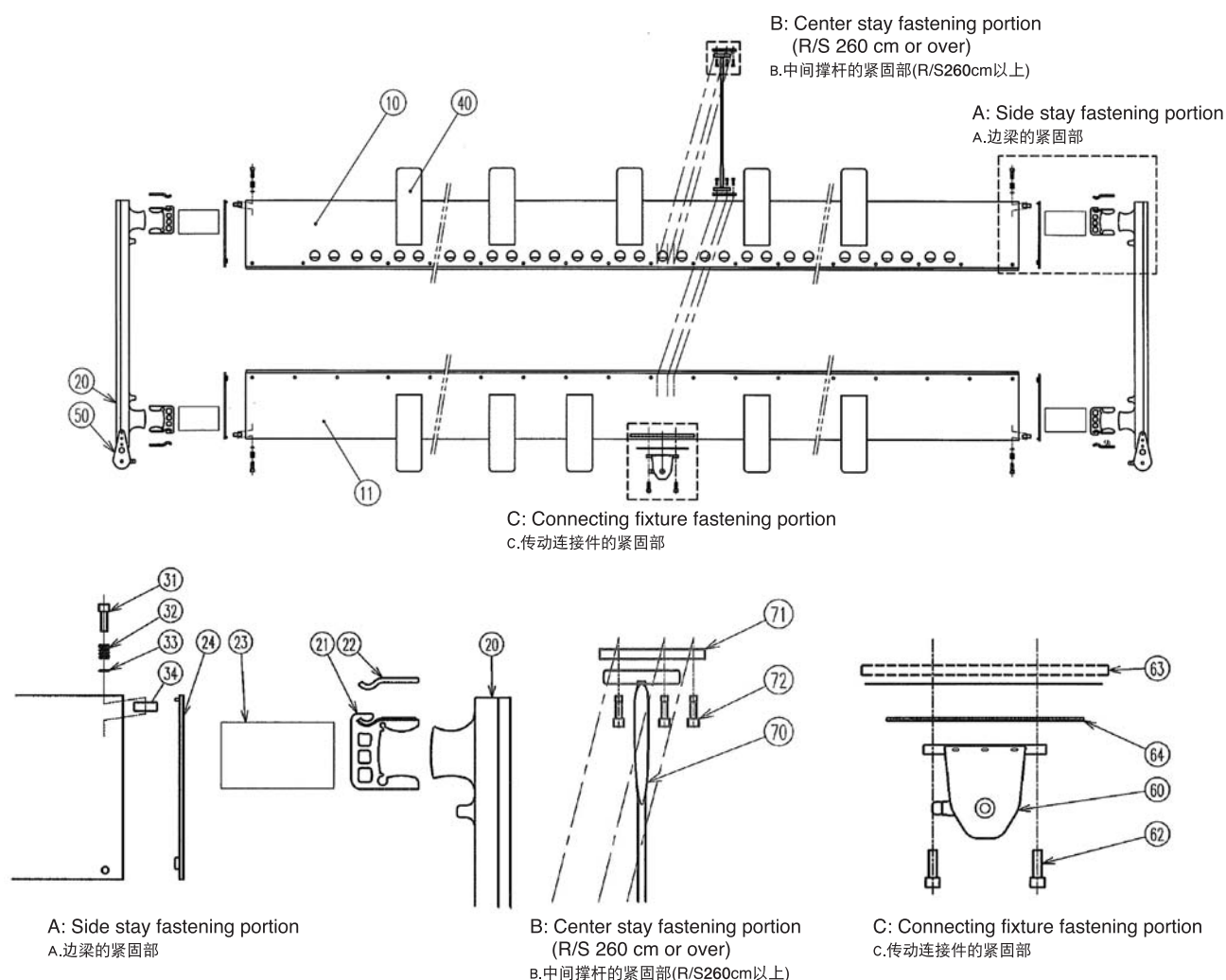


§2 Disassembled structural drawings

§ 2 分解结构图

2.1 Riderless type for positive shedding

2.1 积极开口用综直条一体型

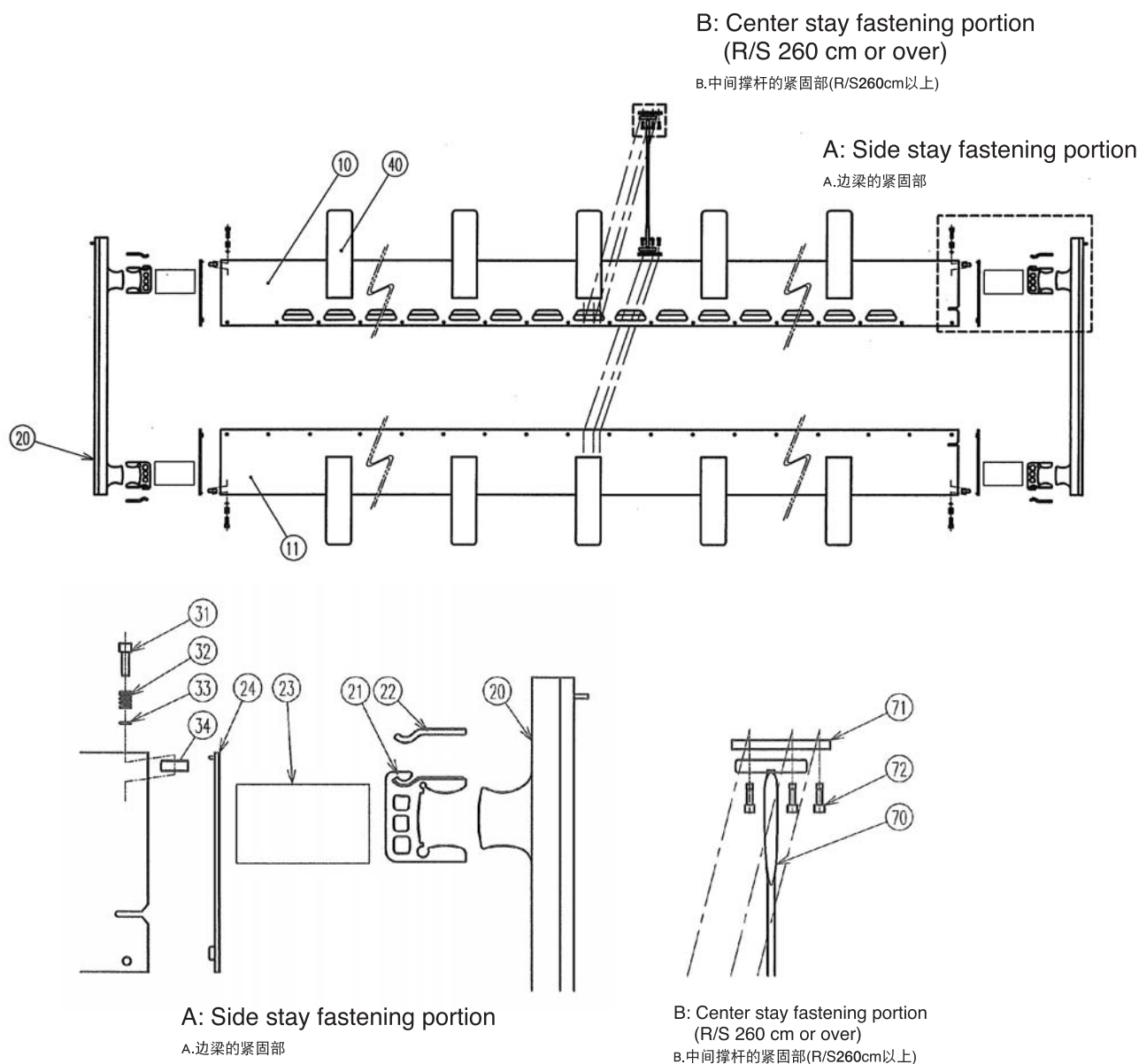


Model No.	Part name	Q'ty	Remarks
10	Upper stave	1	
11	Lower stave	1	
20	Side stay	2	
21	Side stay holder	4	
22	Pressure plate	4	
23	Protective sheet	4	
24	Side stay packing	4	
31	Side stay mounting bolt	4	
32	Spring	4	
33	Plain washer	4	
34	Side stay mounting insert nut	4	
40	Guide plate	-	The quantity varies depending on R/S, etc.
50	Connecting fixture 1	2	
60	Connecting fixture 2	1	R/S 260 cm or over
62	Connecting fixture mounting bolt	2	R/S 260 cm or over
63	Insert nut for connecting fixture 2	1	R/S 260 cm or over
64	Plate spring	1	R/S 260 cm or over
70	Center stay	1	R/S 260 cm or over
71	Insert nut for center stay	2	R/S 260 cm or over
72	Center stay mounting bolt	6	R/S 260 cm or over

零件编号	零部件名称	数量	备注
10	上梁	1	
11	下梁	1	
20	边梁	2	
21	边梁支架	4	
22	小钢板(边梁支架用)	4	
23	粘纸	4	
24	密封垫条	4	
31	锁紧螺栓	4	
32	弹簧	4	
33	垫圈	4	
34	小螺母	4	
40	导向板	-	门幅不同数量有变化
50	传动金属连接件(DRC)	2	
60	传动连接件(中间DRC)	1	R/S260cm以上
62	传动连接件安装用螺栓	2	R/S260cm以上
63	传动连接件2用长螺母	1	R/S260cm以上
64	钢板	1	R/S260cm以上
70	中间撑杆	1	R/S260cm以上
71	中间撑杆用螺母	2	R/S260cm以上
72	中间撑杆固定用螺栓	6	R/S260cm以上

2.2 Riderless type for negative cam & electronic shedding

2.2 消极式凸轮和电子开口用综直条一体型

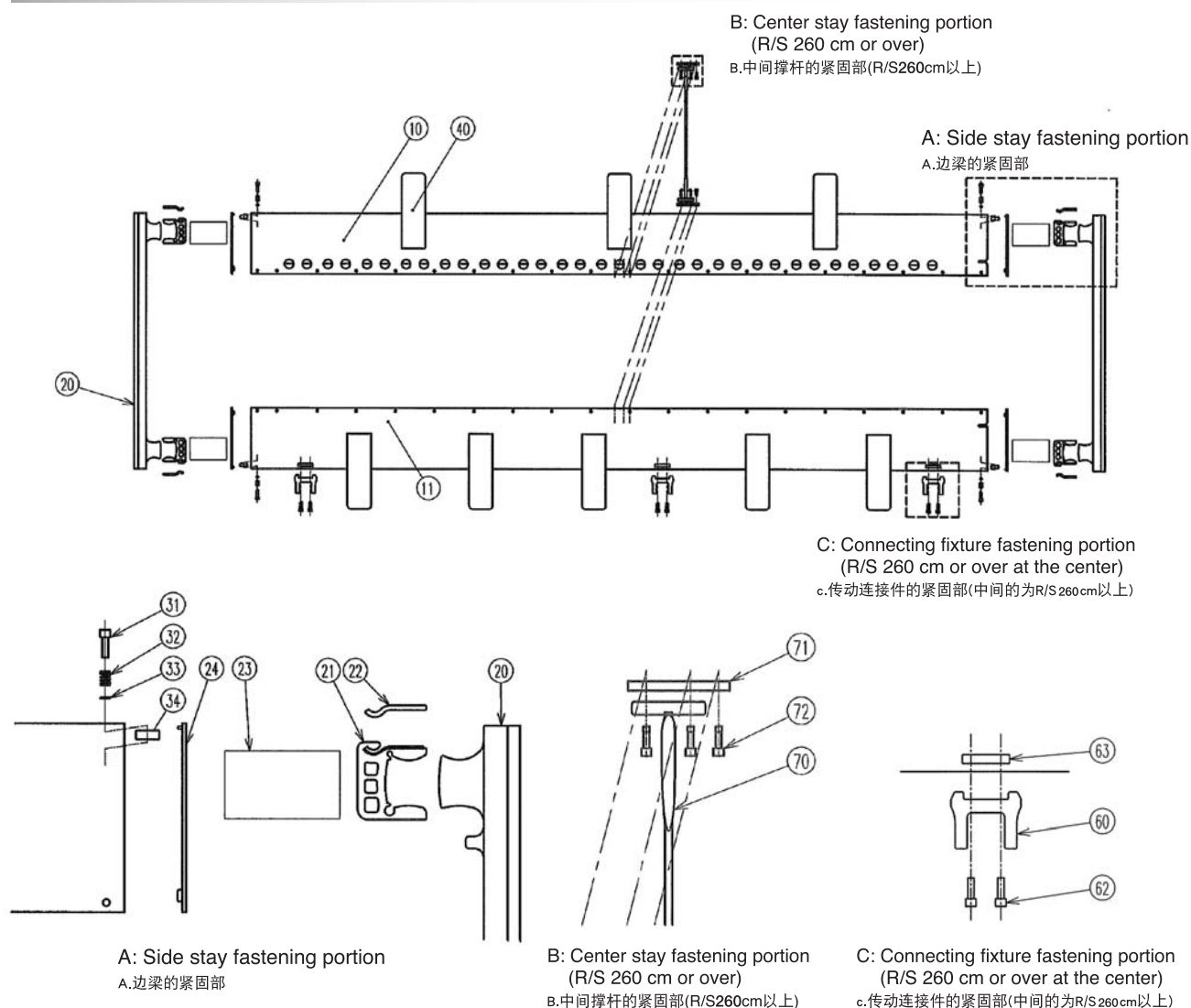


Model No.	Part name	Q'ty	Remarks
10	Upper stave	1	
11	Lower stave	1	
20	Side stay	2	
21	Side stay holder	4	
22	Pressure plate	4	
23	Protective sheet	4	
24	Side stay packing	4	
31	Side stay mounting bolt	4	
32	Spring	4	
33	Plain washer	4	
34	Side stay mounting insert nut	4	
40	Guide plate	-	The quantity varies depending on R/S, etc.
70	Center stay	1	R/S 260 cm or over
71	Insert nut for center stay	2	R/S 260 cm or over
72	Center stay mounting bolt	6	R/S 260 cm or over

零件编号	零部件名称	数量	备注
10	上梁	1	
11	下梁	1	
20	边梁	2	
21	边梁支架	4	
22	小钢板(边梁支架用)	4	
23	粘纸	4	
24	密封垫条	4	
31	锁紧螺栓	4	
32	弹簧	4	
33	垫圈	4	
34	小螺母	4	
40	导向板	-	门幅不同数量有变化
70	中间撑杆	1	R/S260cm以上
71	中间撑杆用螺母	2	R/S260cm以上
72	中间撑杆固定用螺栓	6	R/S260cm以上

2.3 Riderless type for crank

2.3 曲柄开口用综直条一体型

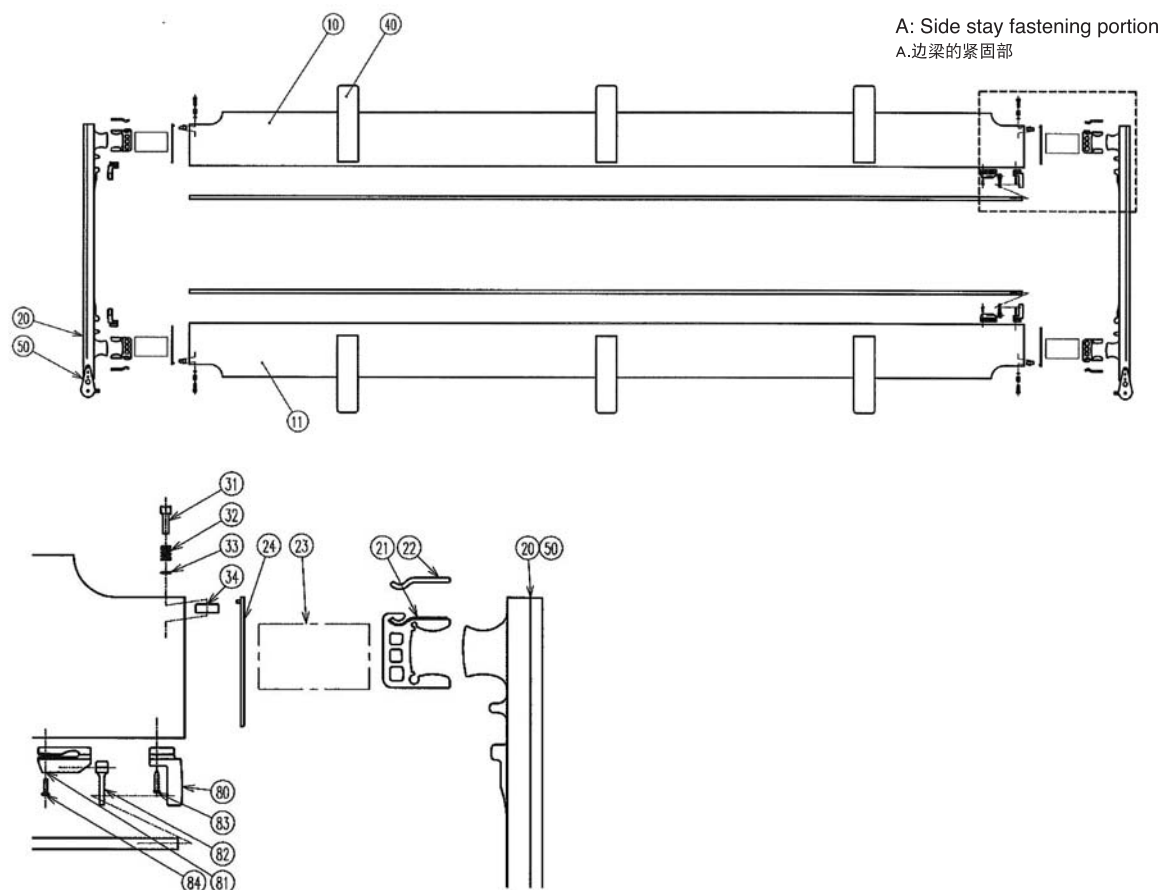


Model No.	Part name	Q'ty	Remarks
10	Upper stave	1	
11	Lower stave	1	
20	Side stay	2	
21	Side stay holder	4	
22	Pressure plate	4	
23	Protective sheet	4	
24	Side stay packing	4	
31	Side stay mounting bolt	4	
32	Spring	4	
33	Plain washer	4	
34	Side stay mounting insert nut	4	
40	Guide plate	-	The quantity varies depending on R/S, etc.
60	Connecting fixture	2	3 pcs for R/S 260 cm or over
62	Connecting fixture mounting bolt	4	6 pcs for R/S 260 cm or over
63	Insert nut for connecting fixture	2	3 pcs for R/S 260 cm or over
70	Center stay	1	R/S 260 cm or over
71	Insert nut for center stay	2	R/S 260 cm or over
72	Center stay mounting bolt	6	R/S 260 cm or over

零件编号	零部件名称	数量	备注
10	上梁	1	
11	下梁	1	
20	边梁	2	
21	边梁支架	4	
22	小钢板(边梁支架用)	4	
23	粘纸	4	
24	密封垫条	4	
31	锁紧螺栓	4	
32	弹簧	4	
33	垫圈	4	
34	小螺母	4	
40	导向板	-	门幅不同数量有变化
60	传动连接件	2	R/S260cm以上为3个
62	传动连接件安装用螺栓	4	R/S260cm以上为6个
63	传动连接件用长螺母	2	R/S260cm以上为3个
70	中间撑杆	1	R/S260cm以上
71	中间撑杆用螺母	2	R/S260cm以上
72	中间撑杆固定用螺栓	6	R/S260cm以上

2.4 Rod replacement type for positive shedding

2.4 积极开口用综直条可更换型



A: Side stay fastening portion

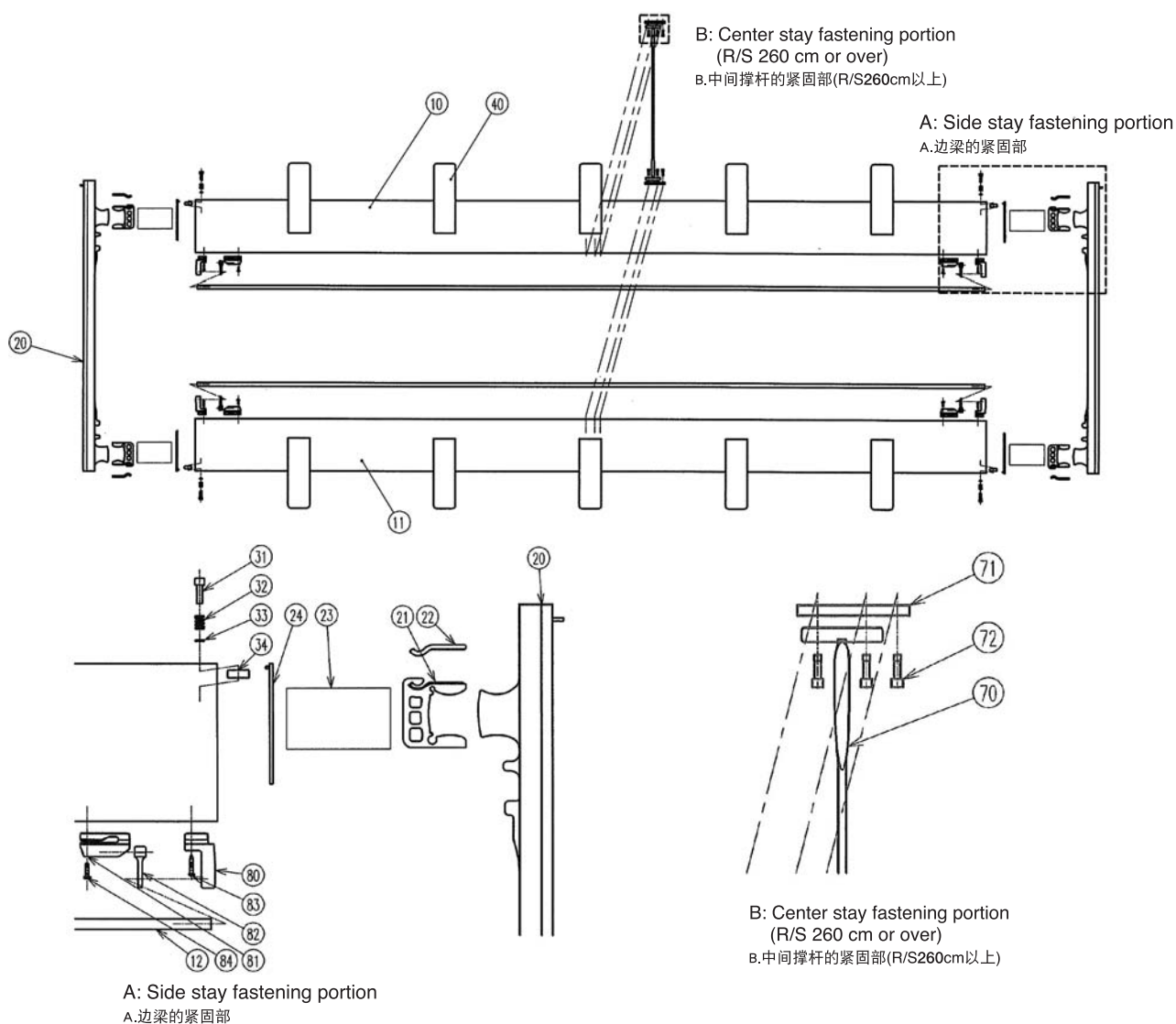
A.边梁的紧固部

Model No.	Part name	Q'ty	Remarks
10	Upper stave	1	
11	Lower stave	1	
12	Rod	2	
20	Side stay	2	
21	Side stay holder	4	
22	Pressure plate	4	
23	Protective sheet	4	
24	Side stay packing	4	
31	Side stay mounting bolt	4	
32	Spring	4	
33	Plain washer	4	
34	Side stay mounting insert nut	4	
40	Guide plate	-	The quantity varies depending on R/S, etc.
50	Connecting fixture 1	2	
80	Rod end holder	4	
81	Rod hook hanger	-	The quantity varies depending on R/S, etc.
82	Rod hook	-	The quantity varies depending on R/S, etc.
83	Screw for rod end holder	4	
84	Screw for rod hook hanger	-	The quantity varies depending on R/S, etc.

零件编号	零部件名称	数量	备注
10	上梁	1	
11	下梁	1	
12	综直条	2	
20	边梁	2	
21	边梁支架	4	
22	小钢板(边梁支架用)	4	
23	粘纸	4	
24	密封垫条	4	
31	锁紧螺栓	4	
32	弹簧	4	
33	垫圈	4	
34	小螺母	4	
40	导向板	-	门幅不同数量有变化
50	传动金属连接件(DRC)	2	
80	定位帽	4	
81	综夹座	-	门幅不同数量有变化
82	综夹	-	门幅不同数量有变化
83	定位帽用螺丝	4	
84	综夹座用螺丝	-	门幅不同数量有变化

2.5 Rod replacement type for negative cam & electronic shedding

2.5 消极式凸轮和电子开口用综直条可更换型

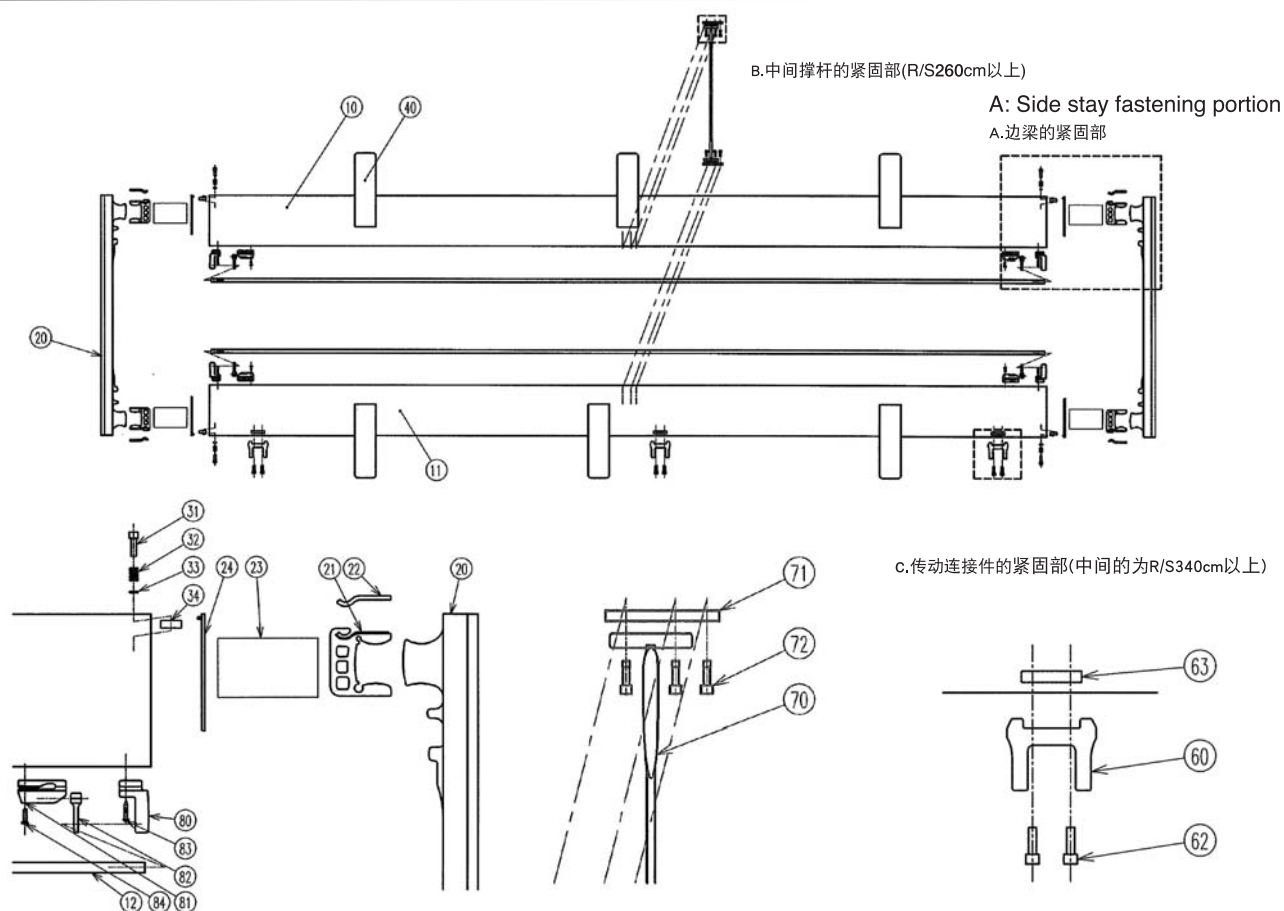


Model No.	Part name	Q'ty	Remarks
10	Upper stave	1	
11	Lower stave	1	
12	Rod	2	
20	Side stay	2	
21	Side stay holder	4	
22	Pressure plate	4	
23	Protective sheet	4	
24	Side stay packing	4	
31	Side stay mounting bolt	4	
32	Spring	4	
33	Plain washer	4	
34	Side stay mounting insert nut	4	
40	Guide plate	-	The quantity varies depending on R/S, etc.
70	Center stay	1	R/S 260 cm or over
71	Insert nut for center stay	2	R/S 260 cm or over
72	Center stay mounting bolt	6	R/S 260 cm or over
80	Rod end holder	4	
81	Rod hook hanger	-	The quantity varies depending on R/S, etc.
82	Rod hook	-	The quantity varies depending on R/S, etc.
83	Screw for rod end holder	4	
84	Screw for rod hook hanger	-	The quantity varies depending on R/S, etc.

零件编号	零部件名称	数量	备注
10	上梁	1	
11	下梁	1	
12	综直条	2	
20	边梁	2	
21	边梁支架	4	
22	小钢板(边梁支架用)	4	
23	粘纸	4	
24	密封垫条	4	
31	锁紧螺栓	4	
32	弹簧	4	
33	垫圈	4	
34	小螺母	4	
40	导向板	-	门幅不同数量有变化
70	中间撑杆	1	R/S260cm以上
71	中间撑杆用螺母	2	R/S260cm以上
72	中间撑杆固定用螺栓	6	R/S260cm以上
80	定位帽	4	
81	综夹座	-	门幅不同数量有变化
82	综夹	-	门幅不同数量有变化
83	定位帽用螺丝	4	
84	综夹座用螺丝	-	门幅不同数量有变化

2.6 Rod replacement type for crank

2.6 曲柄开口用综直条可更换型



A: Side stay fas

A.边梁的紧固部

B.中间撑杆的紧固部(R/S260cm以上)

C.传动连接件的紧固部(中间的为R/S340cm以上)

Model No.	Part name	Q'ty	Remarks
10	Upper stave	1	
11	Lower stave	1	
12	Rod	2	
20	Side stay	2	
21	Side stay holder	4	
22	Pressure plate	4	
23	Protective sheet	4	
24	Side stay packing	4	
31	Side stay mounting bolt	4	
32	Spring	4	
33	Plain washer	4	
34	Side stay mounting insert nut	4	
40	Guide plate	-	The quantity varies depending on R/S, etc.
60	Connecting fixture 2	2	3 pcs for R/S 340 cm or over
62	Connecting fixture mounting bolt	4	6 pcs for R/S 340 cm or over
63	Insert nut for connecting fixture 2	2	3 pcs for R/S 340 cm or over
70	Center stay	1	R/S 260 cm or over
71	Insert nut for center stay	1	R/S 260 cm or over
72	Center stay mounting bolt	6	R/S 260 cm or over
80	Rod end holder	4	
81	Rod hook hanger	-	The quantity varies depending on R/S, etc.
82	Rod hook	-	The quantity varies depending on R/S, etc.
83	Screw for rod end holder	4	
84	Screw for rod hook hanger	-	The quantity varies depending on R/S, etc.

零件编号	零部件名称	数量	备注
10	上梁	1	
11	下梁	1	
12	综直条	2	
20	边梁	2	
21	边梁支架	4	
22	小钢板(边梁支架用)	4	
23	粘纸	4	
24	密封垫条	4	
31	锁紧螺栓	4	
32	弹簧	4	
33	垫圈	4	
34	小螺母	4	
40	导向板	-	门幅不同数量有变化
60	传动连接件(中间DRC)	2	R/S340cm以上为3个
62	传动连接件安装用螺栓	4	R/S340cm以上为6个
63	传动连接件2用长螺母	2	R/S340cm以上为3个
70	中间撑杆	1	R/S260cm以上
71	中间撑杆用螺母	1	R/S260cm以上
72	中间撑杆固定用螺栓	6	R/S260cm以上
80	定位帽	4	
81	综夹座	-	门幅不同数量有变化
82	综夹	-	门幅不同数量有变化
83	定位帽用螺丝	4	
84	综夹座用螺丝	-	门幅不同数量有变化

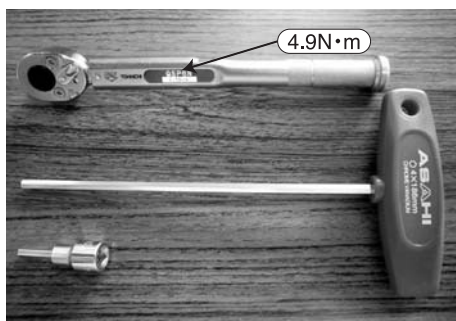
§3 Disassembling & assembling procedure

§ 3 拆卸和组装要领

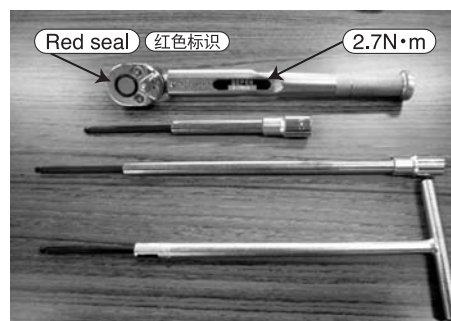
3.1 Heald frame tool

3.1 综框专用工具

Side stay assembling tool
边梁的组装用工具



Center stay assembling tool
中间撑杆的组装用工具



NOTE Use a T-wrench for loosening the bolts, but avoid using any torque wrench. Do not use the torque wrench except for assembling the side stay and the center stay.

注意 松退螺栓时, 请使用T型扳手, 切勿使用定力扳手, 否则会造成定力扳手的损坏。

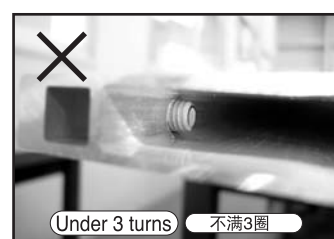
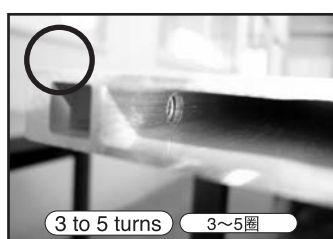
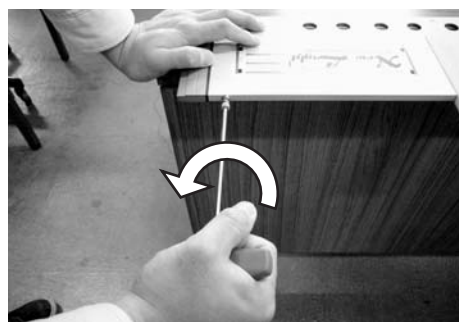
3.2 Side stay removing procedure

3.2 边梁的拆卸要领

① Loosen the side stay set bolt by 3 to 5 turns by means of a T-wrench (4 points).
If loosened by 3 to 5 turns, the bolt gets out of the holder completely but cannot be detached from the nut, and the side stay can be removed smoothly.

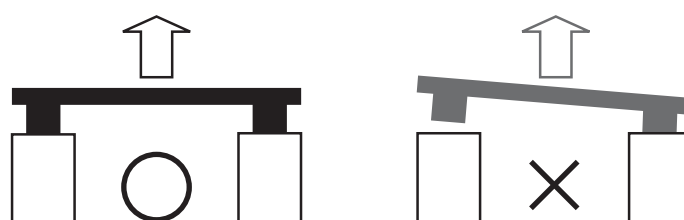
① 用T型扳手将边梁的锁紧螺栓松退3~5圈。(4处)

松退3~5圈后, 螺栓就会从边梁支架上完全分离, 但螺栓和螺母的配合不会脱落, 这样就可以十分简单地将边梁与综框分离、拆下。



② Draw out the side stay straight, while keeping the lower stave horizontal. If you draw the side stay forcibly in an oblique state, it may cause damage to the side stay holder, the protective sheet or the stave.

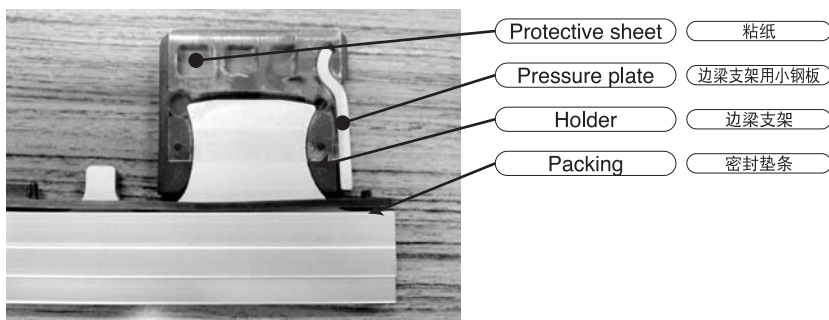
② 请在将下梁保持平行的状态下, 垂直取下边梁, 否则如果倾斜状态下用力拆下的话, 将不可避免地造成支架、密封垫条、横梁的异常损坏。



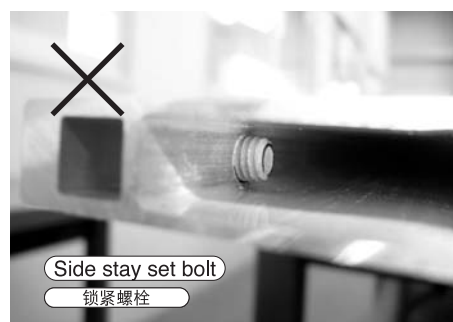
3.3 Side stay assembling procedure

3.3 边梁的组装要领

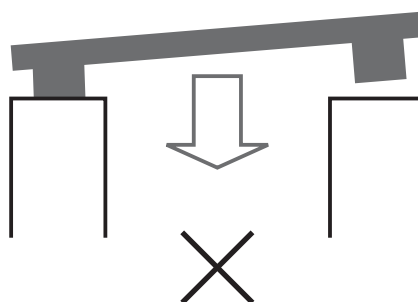
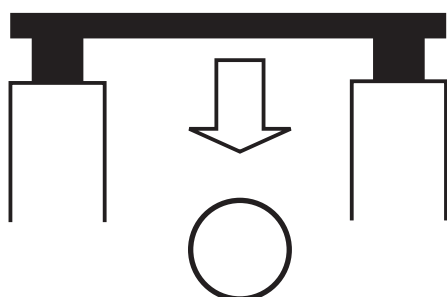
- ① Check if the side stay packing, the side stay holder, the pressure plate and the protective sheet are loaded on the side stay. If you insert the side stay in the stave in a state without any of the parts, it may lead to breaking of the stave, the side stay holder or the side stay.
- ① 请确认边梁上是否安装了密封垫条、支架、边梁支架用小钢板、粘纸。边梁如果在未将上述零件全部装全的情况下插入横梁，都会造成横梁、边梁支架、边梁等异常损坏。



- ② Look into the stave, to make sure that the tip of the side stay set bolts does not protrude.
- ② 从横梁的侧面检查一下确认边梁的锁紧螺栓是否有突出现象。



- ③ Insert the side stay straight, while keeping the upper and lower staves horizontal. If you insert the side stay forcibly in an oblique state, it may cause damage to the side stay holder, the protective sheet or the stave.
- ③ 请将上、下横梁保持平行，垂直插入边梁，否则，如果在倾斜状态下，用力按入时，则将会造成支架、密封垫条、横梁的异常损坏。



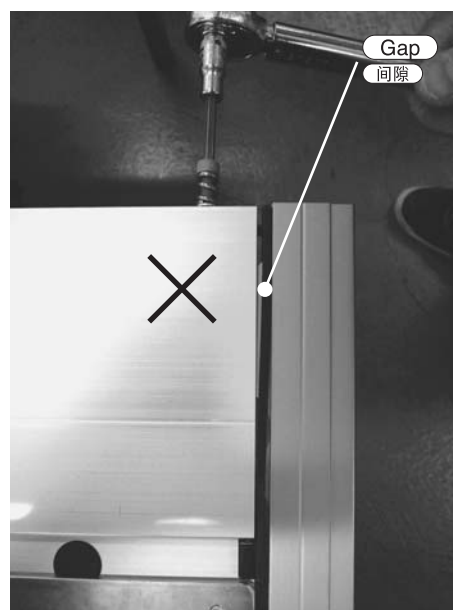
④Insert accurately up to close contact so that no gap may be produced among the stave, the packing and the side stay.

④将边梁装入横梁直至横梁密封垫条,边梁之间没有间隙为止。



⑤Tighten the center stay set bolt at $4.9\text{N}\cdot\text{m}$ by using a $4.9\text{N}\cdot\text{m}$ torque wrench contained in the head frame tool box. A "click" sound is heard when the prescribed torque $4.9\text{N}\cdot\text{m}$ is reached, and the tightening is completed. Avoid any excessive or insufficient tightening as it may cause damage to the holder, the side stay or the stave. About the method of use of the torque wrench, rigorously observe the contents described in §5 "Handling of torque wrench."

⑤使用综框工具箱内综框专用工具 $4.9\text{N}\cdot\text{m}$ (50kg)定力扳手,锁紧状态为 $4.9\text{N}\cdot\text{m}$,当达到额定扭矩 $4.9\text{N}\cdot\text{m}$ 时,就会发出“咔哒”声。此时,已表示紧固工作完成。过度的锁紧或锁紧不足都将会造成横梁、边梁、边梁支架的异常损坏。有关定力扳手的使用方法,请参照 § 5 定力扳手的使用方法的內容。



3.4 Center stay removing procedure

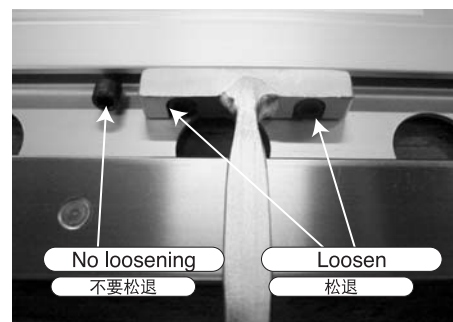
3.4 中间撑杆的拆卸要领

Lower the heald frame from the weaving machine, before removing the center stay.

拆卸中间撑杆的工作必须在综框从织布机上卸下后进行。

① Check the center stay fastening portion. Three hexagon socket head cap screws are seen on one side, but do not loosen the screws at the left end of the upper stave and at the right end of the lower stave.

① 确认中间撑杆的紧固部。每一侧都有3个内六角螺栓，请不要松退上梁左端和下梁右端的螺栓。

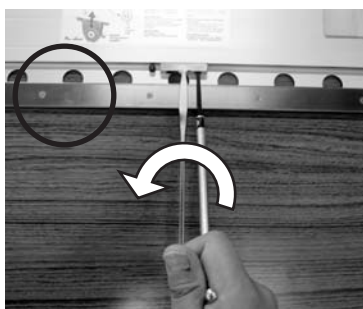


② Loosen the center stay set bolt by 2 to 3 turns by using the T-wrench contained in the heald frame tool box (4 points at the top and the bottom).

② 用综框工具箱内的T型扳手，松退中间撑杆用固定螺栓2~3圈。(上下共4处)

Avoid turning the bolt by 4 or more turns, as it may cause damage to the aluminium stave.

螺栓不可松退4圈以上，否则可能会损伤横梁。



Keep the T-wrench in parallel with the center stay as much as possible, and avoid inserting it obliquely, as it may lead to breaking of the bolt.

使用T型扳手时要尽量与中间撑杆保持平行，不可倾斜插入，否则会造成内六角螺栓的内六角接触面损坏。



③ Remove the center stay.

③ 取下中间撑杆。



3.5 Center stay assembling procedure

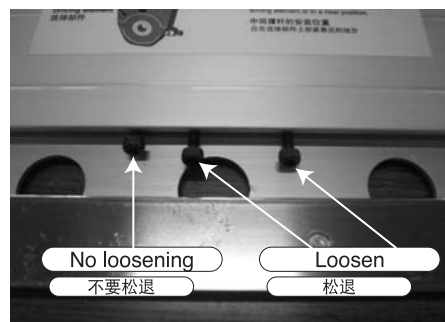
3.5 中间撑杆的安装要领

Assemble the center stay, before loading the heald frame on the weaving machine.

安装中间撑杆必须在综框装上织布机之前进行。

① Check the center stay fastening portion. Three hexagon socket head cap screws are seen on one side, but do not loosen the screws at the left end of the upper stave and at the right end of the lower stave.

① 确认中间撑杆的紧固部,每一侧都有3个内六角螺栓,请不要松退上梁左端和下梁右端的螺栓。



② Mount the center stay. At that time, insert the center stay accurately. If you mount it in a state of insufficient insertion, the center stay may fall off, leading to breaking of the heald frame and the weaving machine.

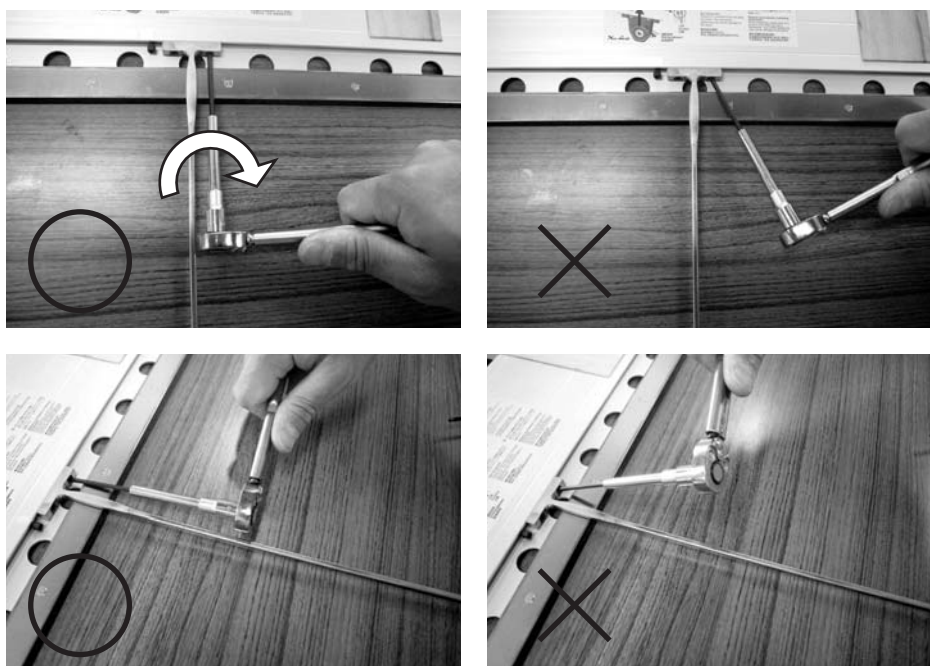
② 安装中间撑杆。

此时,确认中间撑杆是否安装到位,如果插入安装不到位,太浅的状态下锁紧,在工作中就有可能发生中间撑杆脱落、滑出,因而造成综框及织布机的异常损坏。



③Tighten at $2.7\text{N}\cdot\text{m}$ by using a $2.7\text{N}\cdot\text{m}$ torque wrench (provided with a red seal) contained in the heald frame tool box. Insert the hexagon bit in parallel to the center stay as much as possible, in the same way as at the time of removal. A "click" sound is heard when the prescribed torque $2.7\text{N}\cdot\text{m}$ is reached, and the tightening is completed. Avoid any excessive or insufficient tightening as it may cause damage to the center stay, the bolt, the heald frame or the weaving machine.

③请使用综框工具箱内专用定力扳手, $2.7\text{N}\cdot\text{m}$ (带有红色标识)紧固为 $2.7\text{N}\cdot\text{m}$ 状态,与拆卸时相同,尽量使六角锁头插入时保持与中间撑杆平行,当达到规定扭矩 $2.7\text{N}\cdot\text{m}$ 就会发出咔哒声,此时,已表示紧固完毕,过度的锁紧或锁紧不足都将会造成中间撑杆、螺栓、中间撑杆固定螺母、综框、织布机的异常损坏。



④Make sure that the center stay and the metal fixture at the center are found on one same straight line.

④请务必确认中间撑杆与中间传动连接件(中间DRC)是否在同一直线上。



§4 Handling of rod replacement type heald frame

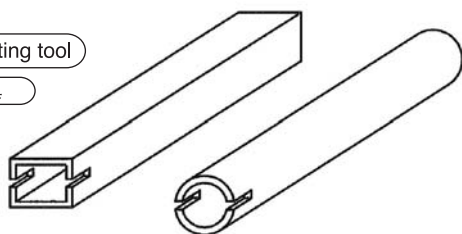
§ 4 综直条可更换型综框的使用方法

Insert the rod hook accurately to the depth of the rod hook hanger, by using a special tool.

使用专用工具将综夹安装推至综夹座的底处。

Rod hook mounting tool

综夹安装专用工具



Avoid striking in the rod hook with a spanner, etc.

不可用扳手等工具以敲击的方法安装综夹。

Avoid hooking the heald at a wrong position, as it may cause wear of heald rod, etc.

不可将综丝挂错位置,否则会造成综直条异常磨损。

Inspect the fastening screws of rod hook hanger and rod end holder regularly.

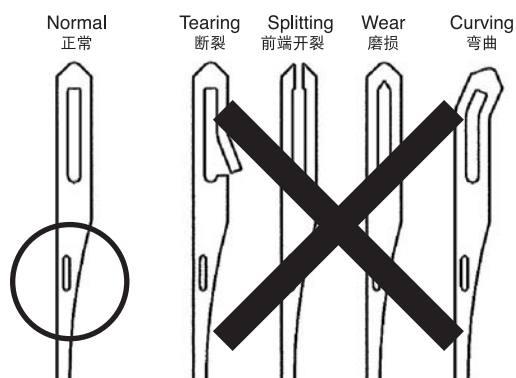
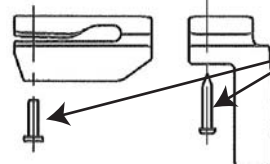
应定期检查综夹座、定位帽的固定用螺丝的紧固状况。

Rod hook hanger
综夹座

Rod end holder
定位帽

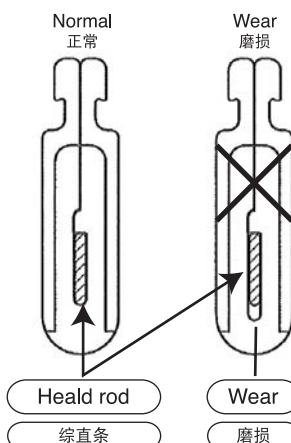
Fastening screw

固定用螺丝



Do not use any deformed, worn or broken heald. It not only makes any normal weaving impossible, but may also cause damage such as breaking of heald rod, etc.

不可使用变形、磨损、破损的综丝,否则会影响正常织造,以及综直条的异常磨损等。



Heald rod

综直条

Wear

磨损

Do not use any worn or deformed rod hook, as it may cause damage to the heald rod.

不可使用磨损或变形的综夹,否则会造成综直条异常磨损和断裂。

Do not use any worn heald rod, as it may cause damage to the rod hook, the heald, etc.

不可使用磨损的综直条,否则会造成综夹、综丝异常磨损。



§5 Handling of torque wrench

§ 5 定力扳手的使用方法

◆ Method of use

- ① Insert the socket in the square drive. (Fig. 1)
- ② Insert the socket in the head of the bolt.
- ③ Tighten by turning the torque wrench to the right. Stop when a "click" sound is heard, and the tightening is completed.

◆ 使用方法

- ①将六角锁头正确地安装在方形的扳手上。(图1)
- ②将六角锁头正确地插入内六角螺栓头部。
- ③将定力扳手向右边顺时针方向旋转锁紧，直至发出“咔哒”声为止，到此螺栓 紧固完毕。

◆ How to apply force

- ① Tighten gently without exerting any momentum. The torque value may shift at the position where a force is applied. Grip the effective length line of the knurl. (Fig. 2)
- ② Avoid using the torque wrench by extending it with a pipe, etc. (Fig. 3)
- ③ Direction of force
 - A. It is the direction of the arrow mark ↓ only (tightening direction only). (Fig. 4)
 - B. Apply force at right angle against the torque wrench (allowance $90^{\circ} \pm 15^{\circ}$). (Fig. 5)

◆ 用力方法

应轻轻地锁紧，不可快速、大力地紧固。

- ①在紧固螺栓时，用力点不同，扭力值会有偏差，务必请握在滚花部中间有效线处。(图2)
- ②不可用管子等工具接长定力扳手把柄从而进行锁紧。(图3)
- ③用力方向
 - a. 只限箭头所指↓方向。(只限紧固方向)(图4)
 - b. 用力时定力扳手与用力方向应该呈直角进行锁紧。(允许误差值为 $90^{\circ} \pm 15^{\circ}$)(图5)

◆ Cautions for the handling

- ① The torque wrench is also a precision measuring tool. Avoid throwing or using it in place of a hammer.
- ② If you continue tightening even after hearing a "click" sound, it may cause damage to the torque wrench with an overtorque.
- ③ For the tightening, use only in the direction of arrow mark. Although it is also possible to use in the opposite direction by means of the switch lever, no "click" is heard even when the prescribed torque value is exceeded. If you continue tightening even after hearing a "click" sound, it may cause damage to the torque wrench with an overtorque. Limit the use in the opposite direction only to the case where the actual torque is apparently under the prescribed torque value.

◆ 使用上的注意事项

- ①定力扳手为精密工具，不可随手乱扔或代替榔头、锤子使用。
- ②当发出第一声咔哒声后仍继续锁紧的话，则会因扭力过大而造成定力扳手的损伤，定力偏差，无法修正。
- ③仅限于箭头所指↓方向锁紧
通过扳手上的锁键进行切换也可逆时针方向使用，但逆时针方向使用时即便超过规定扭力也不会发出“咔哒”之声，这也会造成定力扳手的损伤，逆时针方向只有在知道扭力在定力扳手规定值以下使用。

Fig. 1

图1

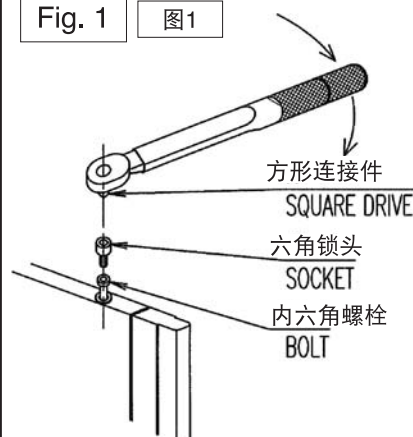


Fig. 2

图2



Fig. 3

图3

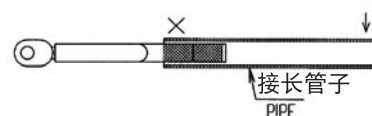


Fig. 4

图4

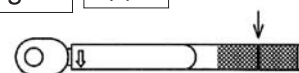
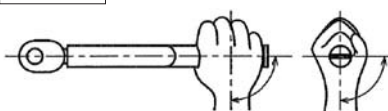


Fig. 5

图5



90° ± 15° 以内 / 90° WITHIN 15°



Headquarters 〒598-8580 Japan Osaka Prefecture Izumisano City 1 chome
TEL (072) 463-2721
FAX (072) 463-2303
<http://www.nankai-industrial.co.jp>

邮编 598-8580 大阪府泉佐野市湊1丁目3番1号
电话 (072) 463-2721
传真 (072) 463-2303
<http://www.nankai-industrial.co.jp>