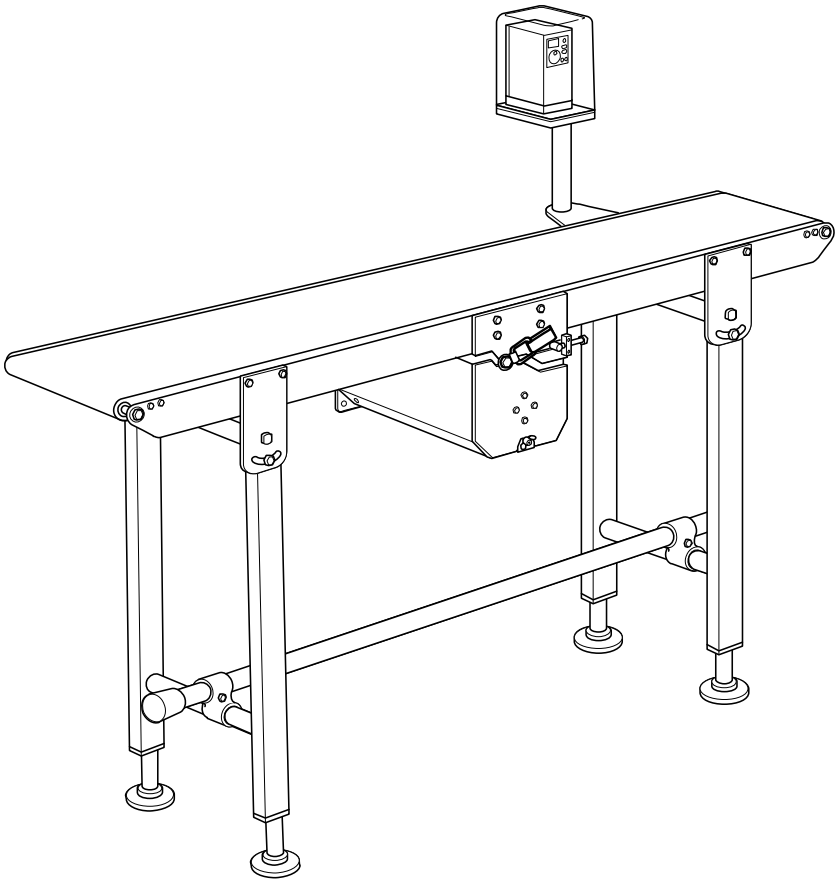
SANKI ENGINEERING CO., LTD.

SANITARY & WASHABLE CONVEYOR

SANI-VEYOR® KIREI

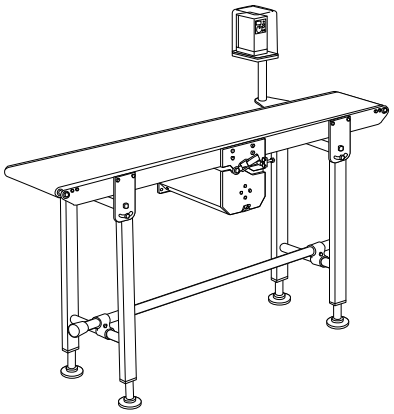
OPERATING AND SERVICE MANUAL



Thank you very much for purchasing our SANI-VEYOR® KIREI. To use the machine properly, please read this operating and service manual carefully before use. Keep the manual where the machine is installed, so that it may be referred to when needed.

TABLE OF CONTENTS

Upon delivery of this product, please check the package contents to ensure the product matches your order. If the delivered items do not match your order, please contact our local agent directly before use.



Serial number and model label
(affixed to side of drive unit)

Manufacturer's serial number
(refer to this number when contacting us)

[Example]

Date of production 20□□.□□
JOB №. □□−□□□□□−□□□−□□
W30-1.5C（F90-1A18.3）L-BW

W 30 - 1.5 C（F 90 - 1 A18.3 ）L - BW

Conveyor model code

Nominal belt width in cm
(eg 30cm)

Machine length in m (eg 1.5m)

Drive type (eg Center drive)

Drive type		Code
Center drive	Hollow shaft drive	C
	Chain drive	CC
Head drive	Hollow shaft drive	H
	Chain drive	HC

Motor type
(eg Inverter variable speed)

Motor type	Code
Constant speed	C
Inverter variable speed	F

Motor output
(eg 90W)

Motor output	Code
90W	90
0.1kW	01
0.2kW	02

Power source type
(eg 100V single-phase)

Power source type	Code
100V single-phase	1
200V single-phase	2
200V three-phase	3
other	0

Power source frequency and Belt speed
(eg 50Hz 18.3m/min)
NOTE: For variable speed, maximum speed is shown.

Frequency	Code
50Hz	A
60Hz	B

Motor position
(eg Left side of direction of belt

Motor position	Direction of belt travel	Code
Right	Normal direction	R
Left		L
Right	Reverse direction	RB
Left		LB

Belt specification
(eg Standard, White)
NOTE: see table below

Belt specification

Code	BG	BW	IG	IW	RG	EK	SG	SW	HW
Specification	Standard		Incline		Special rubber for inclines	Ultra anti-static	Sliding		Heat-resistant
Color	Green	White	Green	White	Green	Black	Green	White	White
Code	OG	OW	KW	KB	XG	XW	XB	XX	NO
Specification	Oil resistant		Antibacterial		Other				None
Color	Green	White	White	Blue	Green	White	Blue	Other	—

1 CAUTION WHEN HANDLING

FOR YOUR SAFE USAGE

A. Prior To Use

CAUTION : Improper handling of the conveyor may result in physical injury or damage!

■Transport and assembly
When transporting and assembling the conveyor, pay special attention not to drop it in order to avoid physical injury or damage. When lifting by crane, pay attention to the balance of the conveyor.

■Earth and leakage breaker
Ensure the conveyor is connected to earth at all times to prevent electric shock. Also ensure that an earth leakage breaker is connected to the power supply.

■Emergency stop
Install an emergency stop device to immediately stop the conveyor in emergency.

■Start alarm
If it is not possible to supervise the operation of the full length of the conveyor from the operating position, install a start alarm for increased safety.

■Keep the control unit etc. dry at all times
The control unit etc. are not waterproof or drip-proof. Be sure to attach the cover to the control unit so that it will not get wet. Do NOT touch electrical parts with wet hands.

■Do NOT use in an explosive atmosphere
(Avoid explosive gas, explosive dust, etc.)

□ When using in a high or inclined position:

■Lower cover and guard
Install the optional lower cover or guard in order to prevent entry under the conveyor.

■Guide rail, top and side covers
To prevent objects from falling off the conveyor, install the optional guide rail, top and/or side covers.

■Braking system
When using the conveyor on an incline, it is recommended that an optional braking system be installed, in order to prevent reverse or other incorrect running of the conveyor.

■Environmental conditions

Ambient temperature	: 0℃ to +40℃
Ambient humidity	: RH 90% max(Avoid condensation)
Atmosphere	: Indoor(Avoid corrosive gases, dust, etc.)
Elevation	: 1,000m or less

NOTE :

- Using the conveyor in a strong electric field (eg near broadcasting devices or high- frequency welding machinery/equipment) could cause the conveyor to malfunction. In this case, install the conveyor at a sufficient distance. Alternatively shield completely to avoid any interference with the conveyor.
- Using an inverter to this machine could cause other machines to get effects of high-frequency. In this case, install the conveyor at a sufficient distance or shield completely.

B. During Operation

WARNING : Improper handling of the conveyor could result in serious physical injury or damage!

■Do NOT touch the conveyor when it is running
There is considerable risk of being caught and injured by the conveyor.

■Do NOT ride on or climb on the conveyor／Do NOT go under the conveyor
There is considerable risk of falling or being caught and injured by the conveyor.

CAUTION : Improper handling of the conveyor may result in physical injury or damage!

■Beware of entanglement
When working close to the conveyor, take care not to get caught in the conveyor. There is considerable risk of being injured by the conveyor.

■Do NOT remove safety covers
There is a risk of getting caught in the rotating parts such as pulleys. Only remove in case of maintenance or inspection.

■Beware of heat. Do NOT touch the motor.
When the conveyor is running or immediately after it stops, do NOT touch the motor, control unit, etc. There is a risk of getting burned or injured by the heat.

■Do NOT start the conveyor while it is loaded
The motor may become damaged due to overload. Additionally, the motors of variable-speed type machines may burn out as a result of running at excessively low speeds for long periods. Use the conveyor within the specifications, indicated in the instructions for use, and in the catalogue.

■Do NOT apply force to ends of conveyor
Do NOT press down on, or hang off the sides of the conveyor. Injury may result from a toppling conveyor.

■Secure the conveyor to the floor/ground
When using the conveyor, be sure to secure it to the floor/ground with anchor bolts etc. to prevent it from toppling irrespective of indoor use or outdoor use.

C. After Use

CAUTION : Improper handling of the conveyor may result in physical injury or damage!

■Switch off the power after use
Ensure that the power is switched off when carrying out relocation, inspection, cleaning, etc. of the conveyor, otherwise there is a risk that the conveyor could start unexpectedly. When leaving the conveyor unused for a long period, take plug out of the outlet /connector to prevent electric shock or leakage.

NOTE: 1. Since salt and salt water cause stainless steel to get rusty and the belt to shrink, be sure to wash the conveyor with fresh water and completely dry it. Additionally, keep in mind that stainless steel may become rusty when it comes in contact with iron or iron powder.
2. Stainless steel is not used for the following parts. Keep in mind that these could rust: bearing, motor and electrical parts
3. Always use in accordance with the Occupational Safety and Health Act.
4. If the owner modifies the conveyor, any ill effects will fall outside the conditions of the guarantee.

■WARNING LABELS etc. AND ATTACHMENT POSITIONS

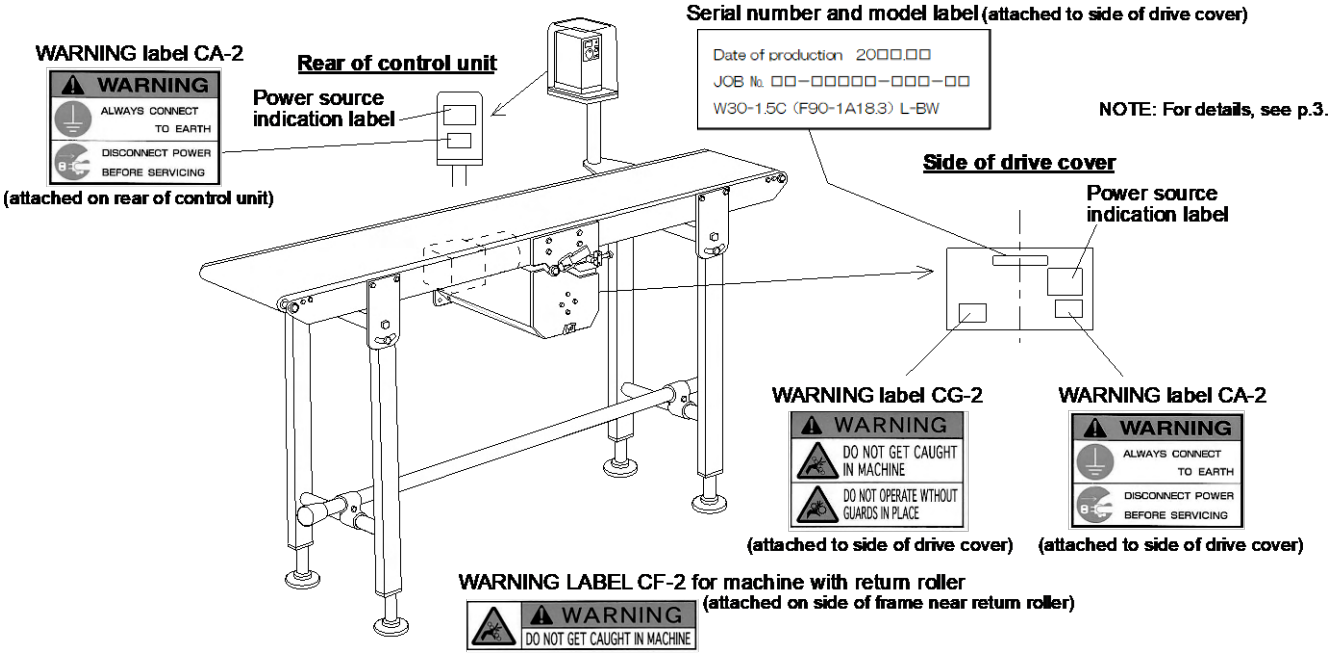
For standard machines, warning labels etc. and their attachment positions are as follows:

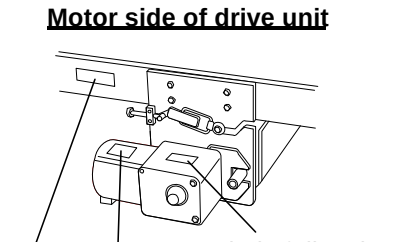
1. WARNING LABELS

Label classification	Label	Instruction
CAUTION or WARNING	CA-2 	■ALWAYS CONNECT TO EARTH Ensure the conveyor is connected to earth at all times to prevent electric shock. ■DISCONNECT POWER BEFORE SERVICING Ensure that the power is switched off when carrying out relocation, inspection, cleaning, etc. of the conveyor, otherwise there is a risk that conveyor may start unexpectedly.
	CE-2 	■HOT SURFACE, DO NOT TOUCH When the conveyor is running or immediately after it stops, do NOT touch the motor, control unit, etc. There is a risk of getting burned or injured by the heat.
	CF-2 	■DO NOT GET CAUGHT IN MACHINE When working close to the conveyor, take care not to get caught in it. There is a risk of being injured by the conveyor.
	CG-2 	■DO NOT GET CAUGHT IN MACHINE When working close to the conveyor, take care not to get caught in it. There is a risk of being injured by the conveyor. ■DO NOT OPERATE WITHOUT GUARDS IN PLACE Do NOT remove safety covers etc. There is a risk of getting caught in the rotating parts such as pulleys. Only remove in case of maintenance, inspection, etc. unexpectedly.

2. ATTACHMENT POSITIONS OF WARNING LABELS etc.

(eg Center drive type SANI-VEYOR® KIREI)





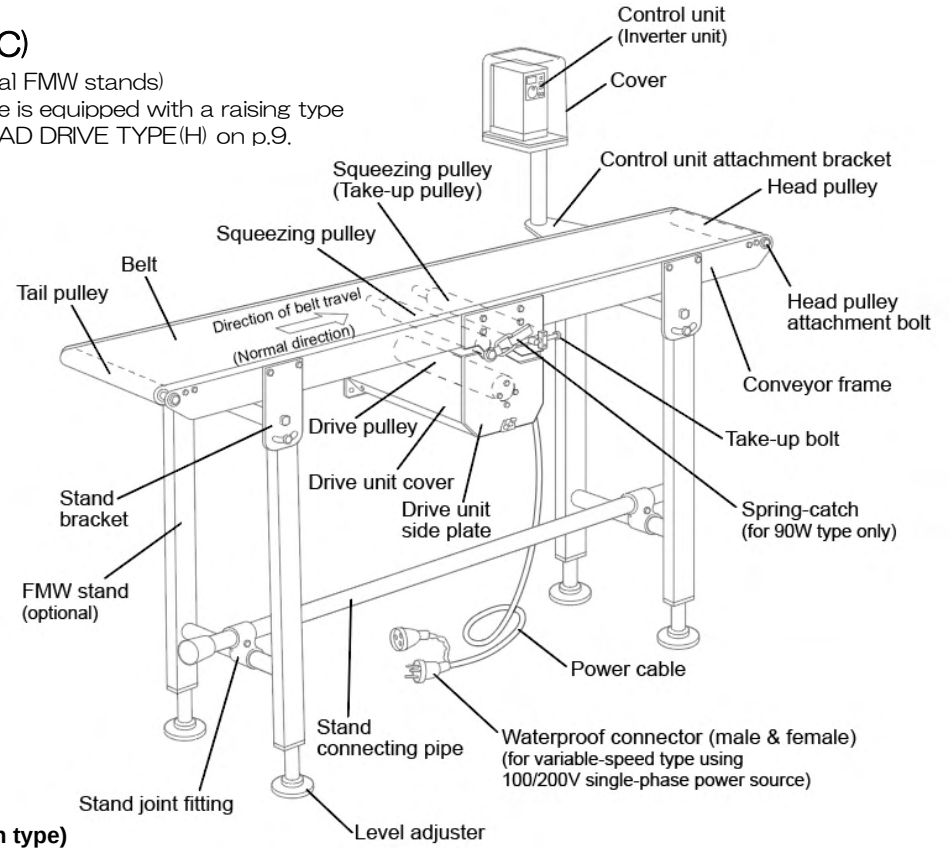
Power source indication label

100V single-phase source	200V single-phase source	200V three-phase source
100V SINGLE-PHASE POWER SOURCE Use connectors with an earth attached. Power cable Earth attached	**200V SINGLE-PHASE POWER SOURCE** Use connectors with an earth attached. Power cable Earth attached	**200/220V THREE-PHASE POWER SOURCE** For cable consisting of 4 wires, ground the green wire. For cable consisting of 3 wires, provide an earth on motor frame. Power cable Earth (green)

2 COMPONENT NAMES

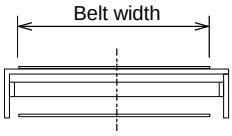
CENTER DRIVE TYPE (C)

(eg Variable-speed type with optional FMW stands)
NOTE: For high power type, machine is equipped with a raising type belt slackener, similarly to HEAD DRIVE TYPE(H) on p.9.

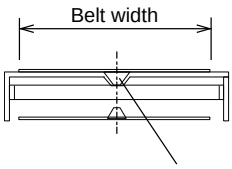


Cross section

W model



WV model (non-deviation type)



V-form strip and V-form belt guidance groove

NOTE: For 200V three-phase power source, standard machine has power cable with ring terminals. For constant-speed type using 200V three-phase power source, standard machine has motor cable of 2m with ring terminals.

fig. Rear of control unit

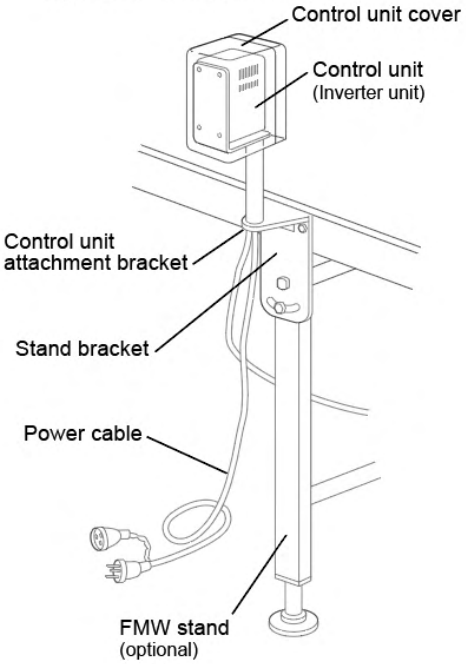


fig. Drive unit (motor side)

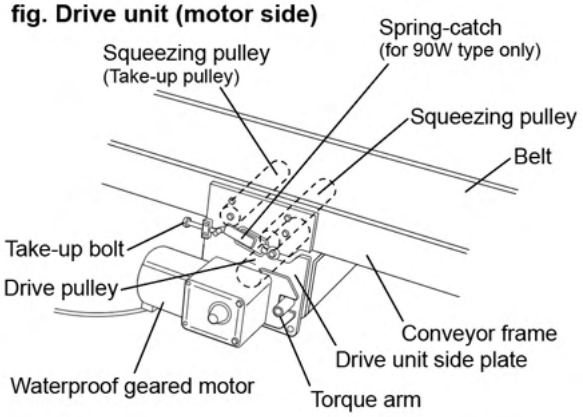
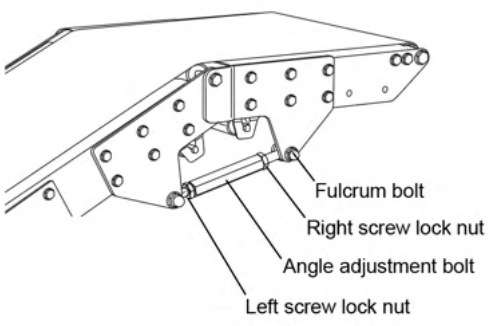
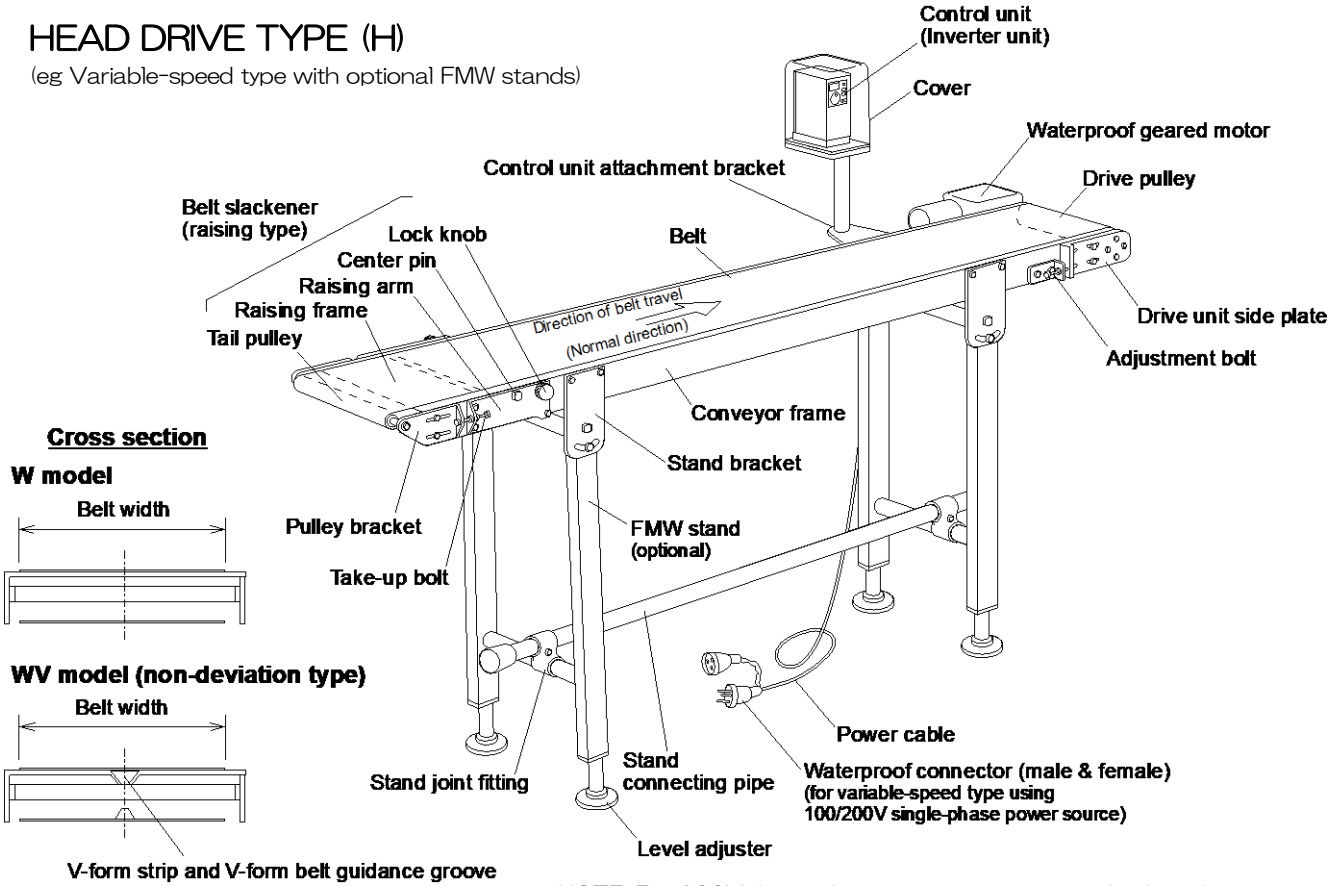


fig. Tilting unit of tilt model



HEAD DRIVE TYPE (H)

(eg Variable-speed type with optional FMW stands)



NOTE: For 200V three-phase power source, standard machine has power cable with ring terminals. For constant-speed type using 200V three-phase power source, standard machine has motor cable of 2m with ring terminals.

fig. Rear of control unit

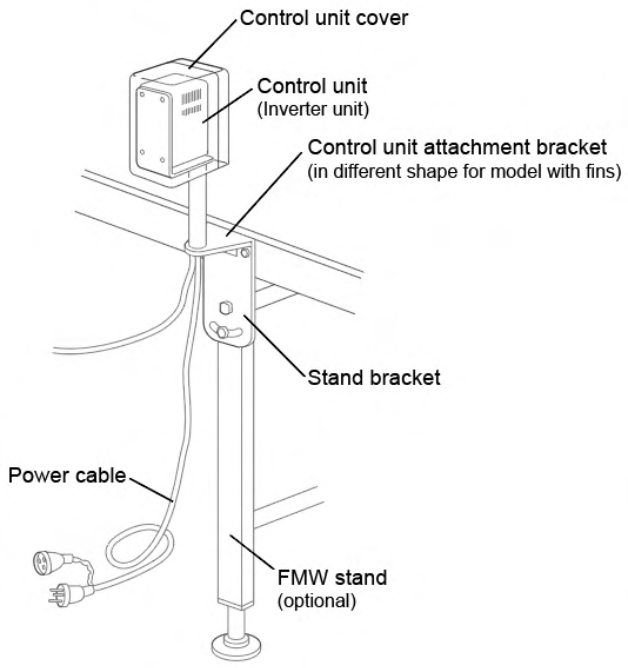


fig. Drive unit (motor side)

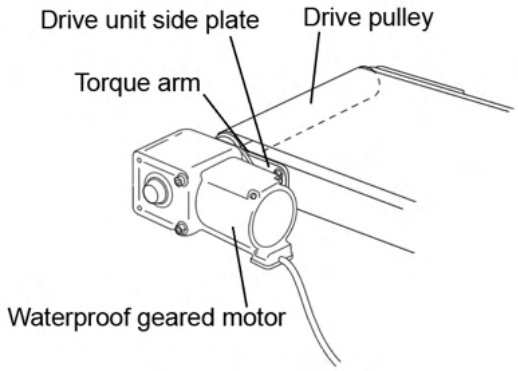
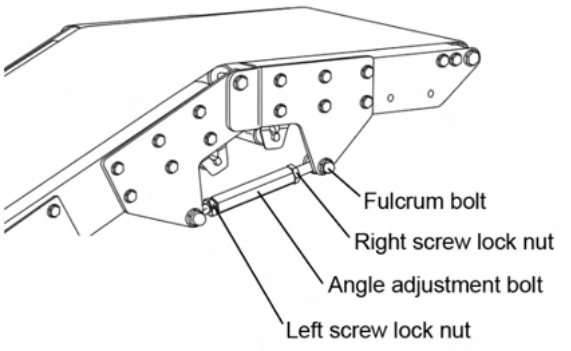


fig. Tilting unit of tilt model



3 ASSEMBLY

3-1. INSTALLING STANDS (OPTIONAL)

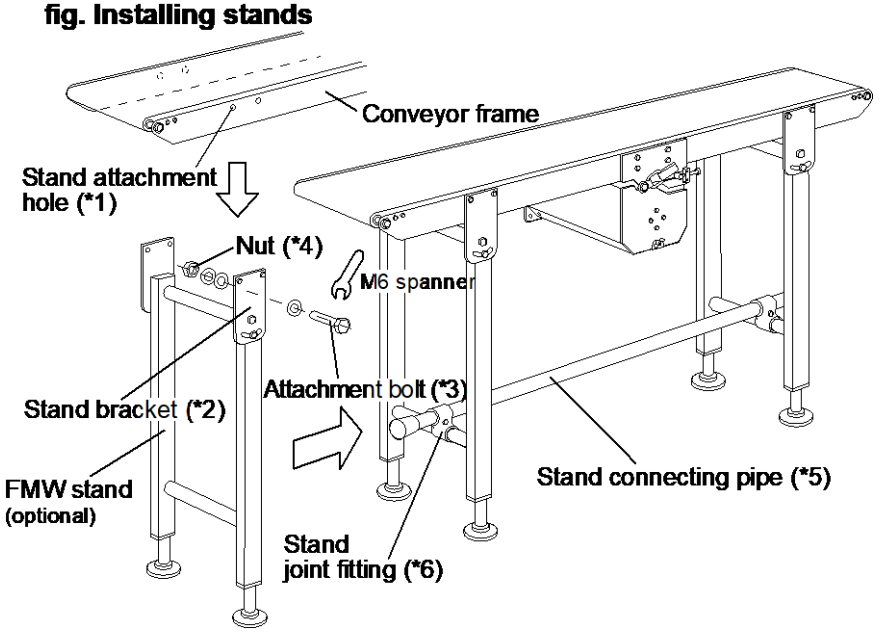
NOTE: If machine length exceeds 2m and frame is delivered divided, install stands after assembling joints of frame. (→See "3-2. JOINING FRAMES", p.11.)

Installing Stands

Set stand brackets(*2) to stand attachment holes(*1) on both sides of conveyor frame. Insert attachment bolts(*3) into holes(*1), and fix them by tightening nuts(*4) from inside of frame.

NOTE: For standard installation dimensions of stands and standard quantity of stands by machine length, see tables on next page.

fig. Installing stands



Installing Stand Connecting Pipe

After installing stands to conveyor frame, to prevent stands from shaking, install stand connecting pipe(*5) between stands as shown in figure below:

Put stand connecting pipe(*5) on lower braces of both stands, and fix them by pinching with stand joint fittings(*6). (Use attached hexagonal stick spanner 5.)

NOTE: If machine length exceeds 4m, 2 or more stand connecting pipes are used. In this case make them overlap each other on lower brace of intermediate stand as shown in below figure.

fig. Installing stand connecting pipe

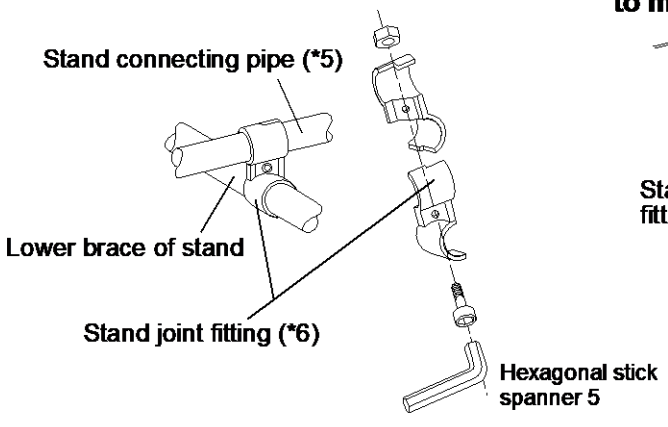
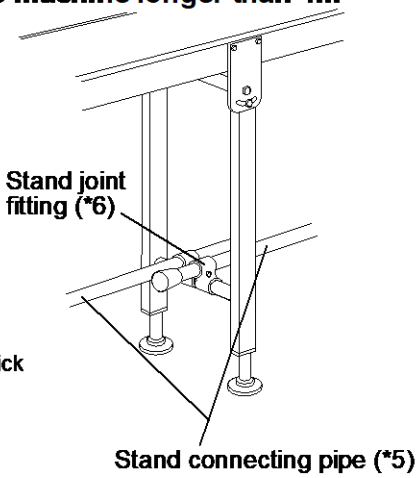
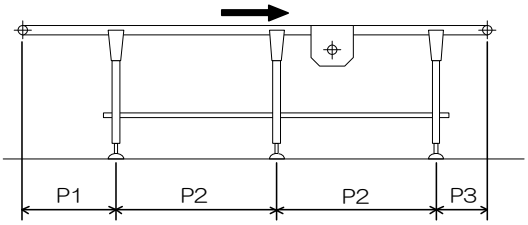


fig. Installing stand connecting pipes to machine longer than 4m

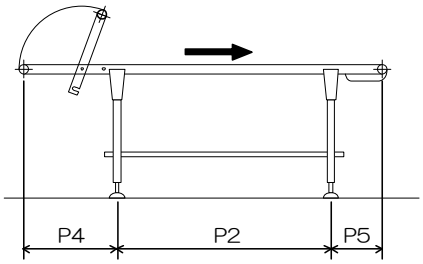


Standard Installation Dimensions of Stands

CENTER DRIVE TYPE
(For 90W type, belt slackener is attached to the drive unit; for high power type, it is attached on the end.)



HEAD DRIVE TYPE
(equipped with belt slackener on the end)



Standard installation dimensions of stands (mm)			
Pitch	Maximum stand installation pitches	Minimum stand installation pitches	
		90W type	High power type
P1	400	100	400
P2	1,400 or less	1,900 or less without drive unit	
P3	400	100	300
P4	400	350	400
P5	400	300	250 (Drive support) 400 (Frame support)

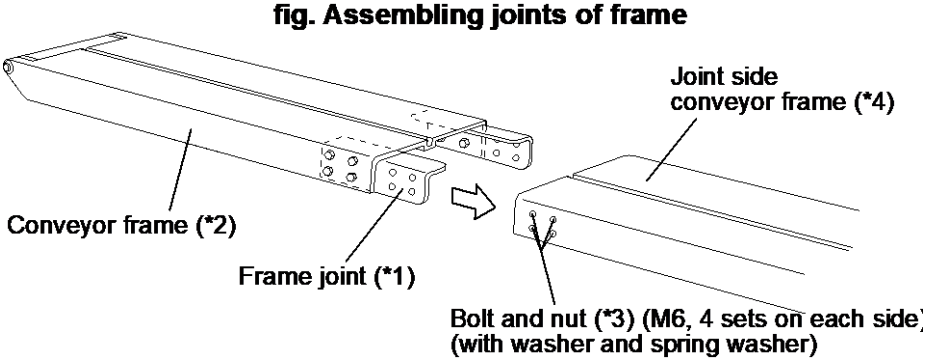
Standard quantities of stands and return rollers by machine length		
Machine length(m)	Quantity of return rollers	Quantity of stands
~2.0	0 (1)	2
2.05~2.5	1 (2)	2
2.55~4.0	2 (3)	3
4.05~6.0	3 (4)	4

NOTE: 1. Dimensions P1 to P5 show maximum and minimum stand installation pitches. For standard quantity of stands, see left table.
2. In the right table above, quantities of return rollers in ( ) are for high power head drive type.

3-2. JOINING FRAMES

If machine length exceeds 2m and frame is delivered divided, assemble joints of frame as follows:
For shipment, frame joints(*1) are half attached to conveyor frame(*2). Remove bolts and nuts(*3) from joint side conveyor frame(*4). Insert frame joints(*1) into end of joint side conveyor frame(*4), and retighten bolts and nuts(*3).

fig. Assembling joints of frame

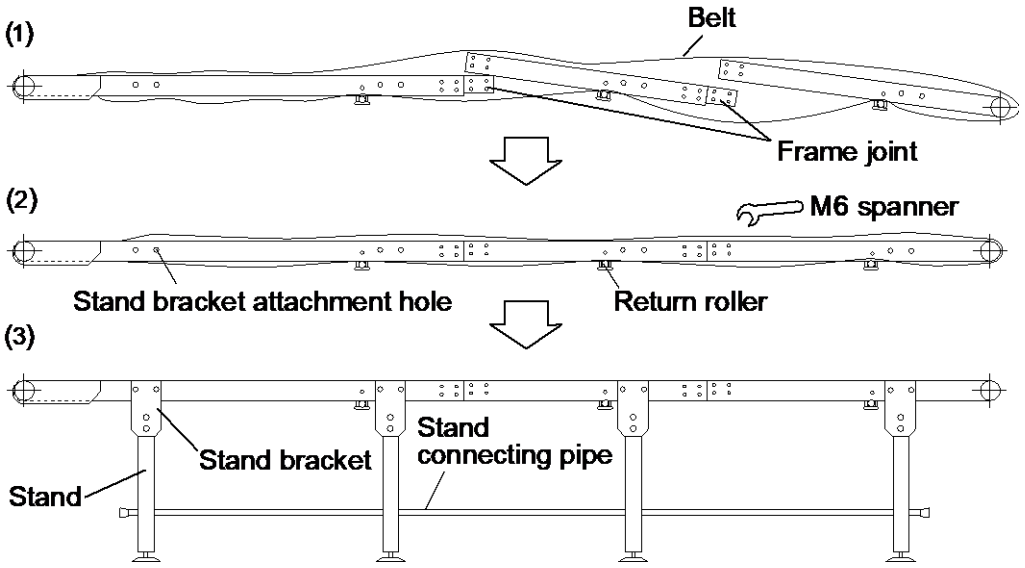


3-3. ASSEMBLY OF LONGER MACHINES

For machine length exceeding 2m, frame is delivered divided. In this case assemble machine as follows:

(1) Unpack machine. Unfold belt and place divided frames in order of assembly.
(2) Remove bolts and nuts temporarily tightened in frame joint positions. Correctly fit frame ends to frame joints and firmly retighten bolts and nuts.
(3) Install each stand in correct position (position of stand bracket attachment holes). (→See p.11.)
(4) Install each return roller in correct position. (→See p.13.)
(5) Properly take up belt and adjust belt alignment. (→See p.19-25.)

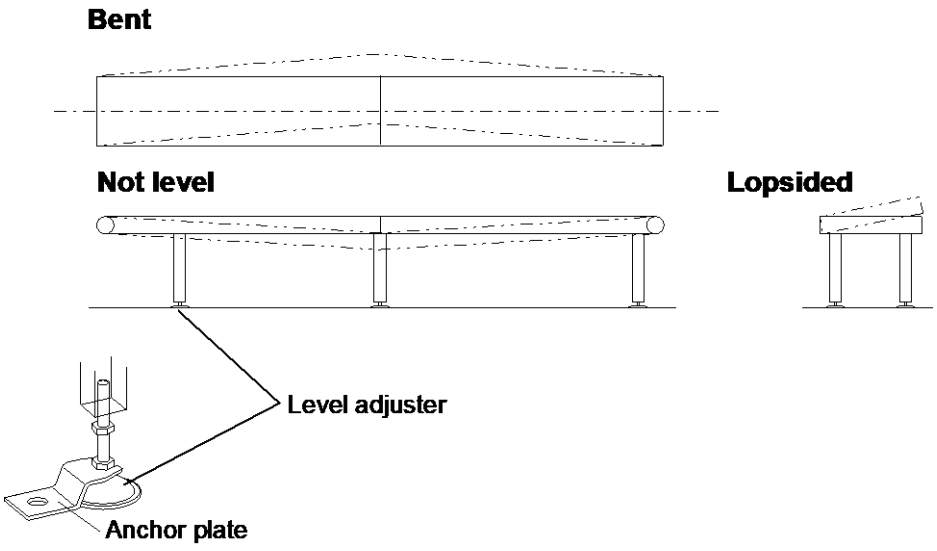
fig. Assembly of longer machines



Caution when assembling and installing frame

(1) Confirm full length of frame is straight and not bent in any place.
(2) Confirm full length of frame is level on top. (Adjust frame height with level adjusters under stands.)

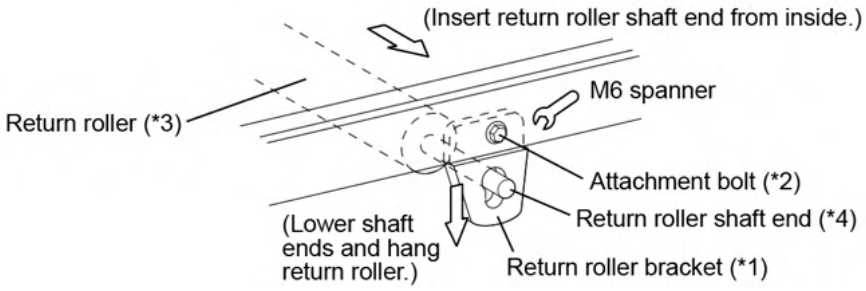
NOTE: If machine is unstable after assembling and installing frame, adjust level adjusters underneath the stands. Additionally it is possible to secure conveyor to the floor with anchor plates (optional).



3-4. INSTALLING RETURN ROLLERS

For machine length exceeding 2m, machine is provided with return rollers. If return rollers are delivered separately from frame, install them after assembling joints of frame, as follows:
On both sides of frame, install return roller brackets(*1) by tightening attachment bolts(*2) into attachment holes. From inside of frame, insert return roller shaft ends(*4) into brackets(*1), and hang return roller(*3).
NOTE: For machine length of 2m or less, machine does not have return roller.

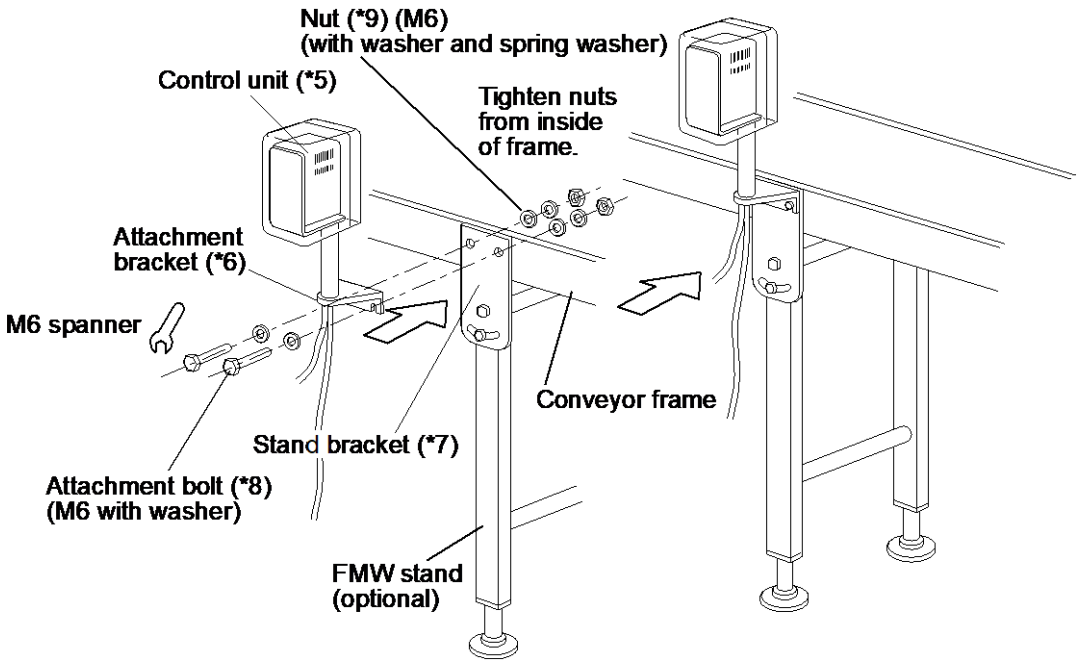
fig. Installing return rollers



3-5. INSTALLING CONTROL UNIT

Install attachment bracket(*6) together with stand bracket(*7) by tightening attachment bolts(*8) into conveyor frame. Then fix attachment bolts(*8) by tightening nuts(*9) from inside of conveyor frame.
When installing control unit(*5), face its operating panel towards conveyor belt.
For model with fins attached, the shape of attachment bracket(*6) is different from figure on the below.

fig. Installing control unit



4 RUNNING THE CONVEYOR

4-1. BE SURE TO GROUND MACHINE BEFORE OPERATION

For Variable-speed Type (For standard machines, speed is changed by inverter.)

(1) 100/200V single-phase power source

Waterproof connectors (male & female) with earth are attached to power cable. Be sure to ground machine by connecting earth terminal of waterproof connector on power source side (female connector).

(2) 200V three-phase power source

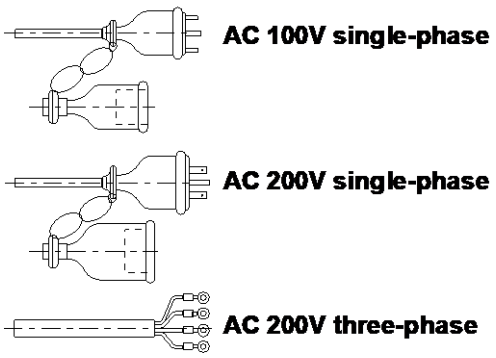
Power cable has ring terminals. When wiring, be sure to make proper earth wiring from earth terminal of power cable.

For Constant-speed Type

For standard machines, power source is 200V three-phase only and motor cable (2m, with ring terminals) is provided. When wiring, be sure to make proper earth wiring from earth wire of power cable. Control unit (switch etc.) is optional.

NOTE: For 100/200V single-phase power source, standard machines are not constant-speed type.

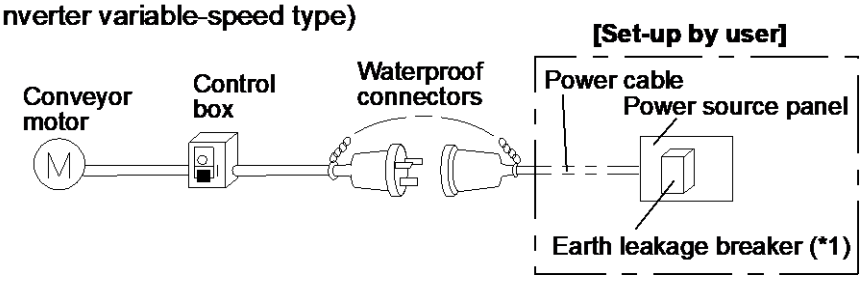
fig. Power cable and terminals (for inverter variable-speed type)



■ Installing Earth Leakage Breaker

Since this machine is usually used in wet or humid places, be sure to install an earth leakage breaker(*1) on power source side.

fig. Arrangement of control devices (eg Inverter variable-speed type)



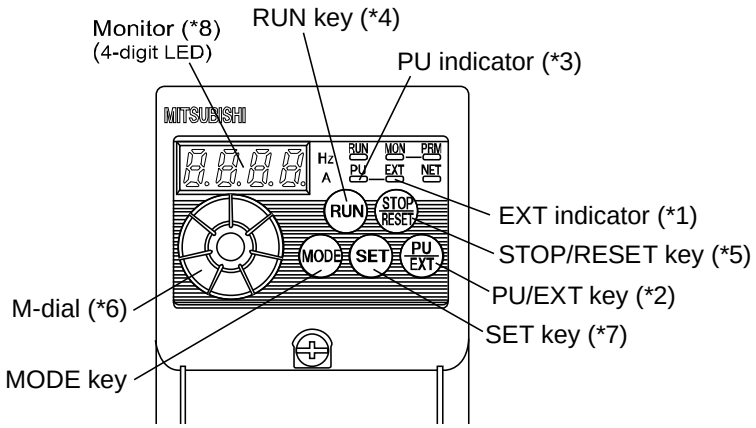
4-2. RUNNING THE CONVEYOR (for MITSUBISHI-inverter variable-speed type)

For standard machines of variable-speed type, speed is changed by inverter. Operate inverter as follows:

NOTE: To operate, remove cover of inverter operating panel. Reinstall cover after operating inverter.

(1) Turn on power supply and ensure that EXT indicator(*1) is illuminated. Then press PU/EXT key(*2) and ensure PU indicator(*3) is illuminated. (PU operation mode)
(2) To start conveyor, press RUN key(*4); to stop conveyor, press STOP/RESET key(*5).
(3) To set speed, turn M-dial(*6) until the monitor(*8) shows intended frequency. Then press SET key(*7). (Only turning M-dial does not change speed. To complete speed setting, be sure to press SET key.)
(4) It is possible to change direction of belt travel or make external control by setting parameter. For details, refer to inverter instruction manual, appendix.

fig. Inverter operating panel



MITSUBISHI inverter FREQROL D700 standard specifications		
Applied motor		90W
Rated output voltage		AC 200V three-phase
Power source voltage		Type 710W: AC 100V single-phase 720S : AC 200V single-phase 720 : AC 200V three-phase
Permissible voltage variation		100V: 90-132V 200V: 170-264V
Power source frequency		50/60Hz ±5%
Environmental conditions	Temperature	-10℃ to +40℃ (Avoid freezing)
	Humidity	RH 90% or less (Avoid condensation)
	Atmosphere	Indoor, no corrosive/flammable gases, no oil mist or dust
	Elevation	1,000 m or less above sea level
	Vibration	5.9 m/s^2 or less

5 LOOSENING/REMOVING THE BELT

Since belt of SANI-VEYOR® KIREI can be easily loosened and removed, it is convenient when replacing belt or cleaning belt undersurface, bed, etc.

CENTER DRIVE TYPE

Loosening Belt

(1) Remove drive unit bottom cover(*1) by loosening 3 wing bolts. (When loosening bolts, firmly support the cover(*1) with your hand so that it will not fall.)
(2) Pull and unfasten right and left spring catches(*2) of drive unit. Shaft end hooks of squeezing pulley(*3) will then be released.
(3) To remove squeezing pulley(*3), move its shaft ends along slots(*4) of right and left drive unit side plates.
(4) To remove the other squeezing pulley(take-up pulley)(*5), move its shaft end along slot(*6) of drive unit side plate. (For this squeezing pulley, it is not necessary to move shaft end of motor side.) Belt will then be loosened.
(5) After cleaning/washing belt undersurface, bed, etc., take up belt in reverse order.

NOTE: 1. When unfastening spring catches(*2), be careful not to get injured by popping springs.
2. For removal of squeezing pulleys(*3, *5) of high power type, loosen belt in advance by operating belt slackener of tail unit. (→To loosen belt, follow the procedure on p.18.)

fig. Removal of squeezing pulley

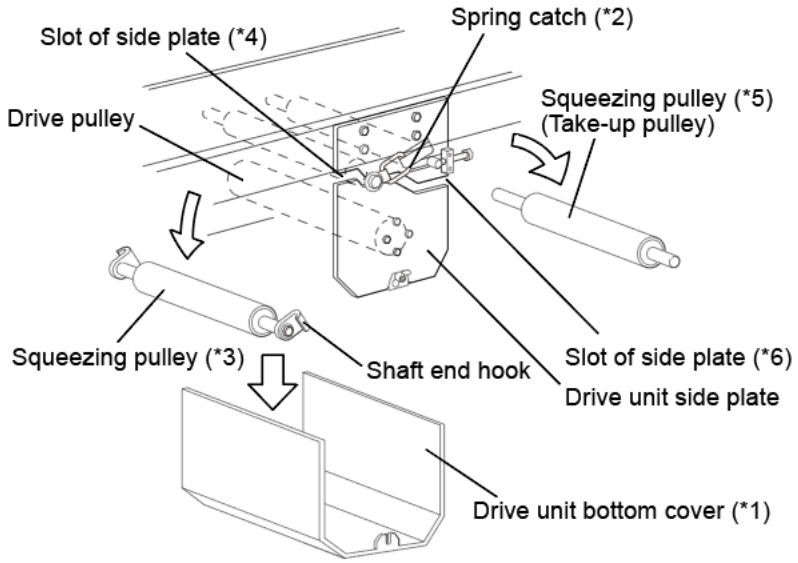
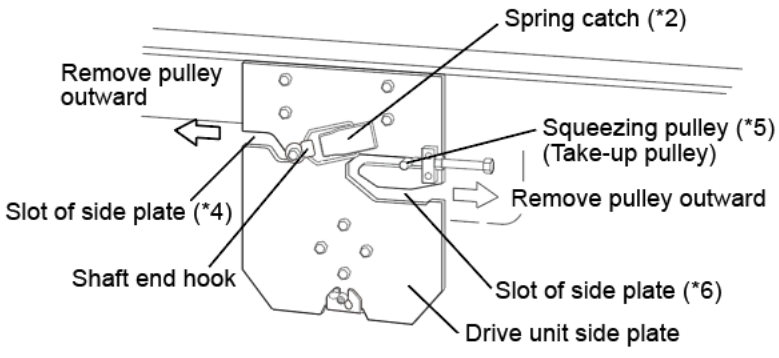


fig. Details of slots of drive unit side plate



CENTER DRIVE TYPE

Removing Belt

(1) Loosen belt following "Loosening Belt" on p. 16.
(2) Remove all the return rollers from conveyor frame, if any. (→See "3-4. INSTALLING RETURN ROLLERS", p.13.)
(3) If machine has stands, only on one side, remove all the stand brackets(*1) together with their attachment bolts(*2). Machine will then have a space to pull out belt.
NOTE: If machine is provided with belt removal stands(optional), loosen upper lock knob(*3) and lower lock knob(*4) of each stand by turning them counterclockwise with hand. To make a space to pull out belt, turn rotating bracket(*5) of each stand downward. (→See figure below.)
(4) Pull belt(*6) out of machine sideways.
(5) For belt reinstallation, perform in reverse order.

NOTE: 1. Be sure to stop conveyor and switch off power supply before loosening/removing belt.
2. Since drive unit of high power type or wide type is heavy, remove belt with the utmost care to avoid physical injury or damage. When removing belt, be sure to support conveyor frame on belt removal side.
3. Since control unit is not waterproof, pay attention not to splash liquids on it.
4. After washing, completely dry belt before reinstallation.
5. When reinstalling belt, confirm that arrow mark on belt undersurface correctly shows direction of belt travel.
6. If belt is loose in operation after reinstallation, take up belt slack. (→See p.19.) If belt is deviating in operation, adjust belt alignment. (→See p.21-22.)

fig. Removing stand brackets

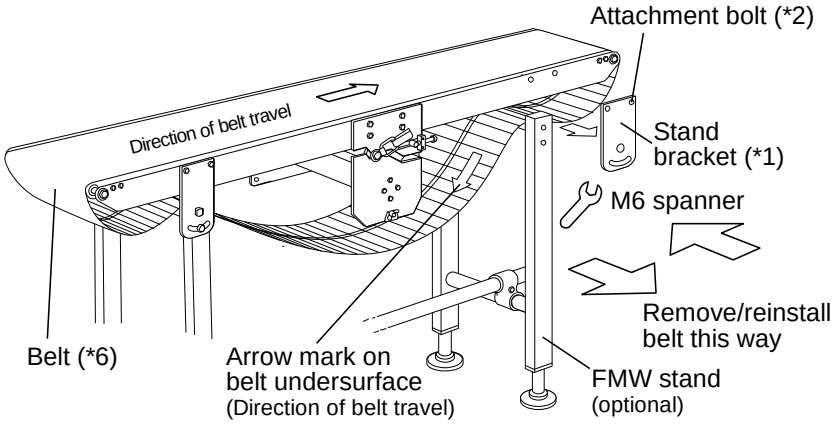
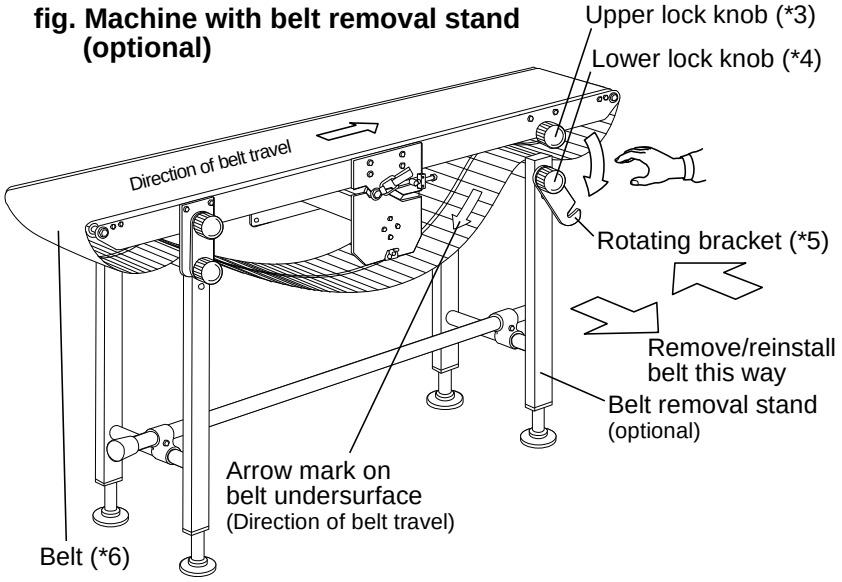


fig. Machine with belt removal stand (optional)



HEAD DRIVE TYPE

Standard head drive type machines are equipped with a raising type belt slackener in tail unit. Loosen belt by operating it as follows:

Loosening Belt

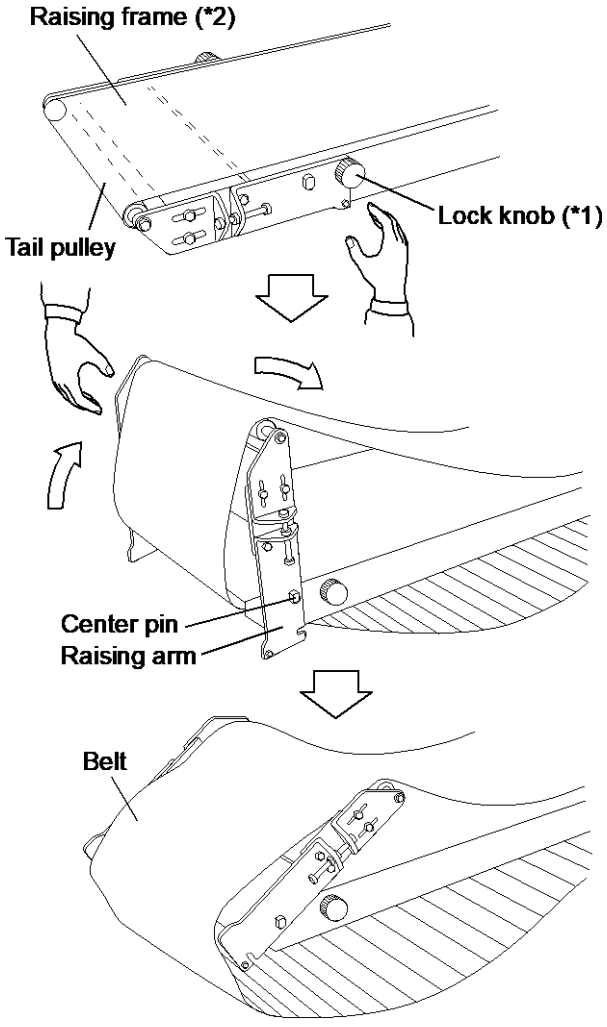
(1) To unlock raising frame(*2), turn right and left lock knobs(*1) counterclockwise.
(2) Gently raise and tilt raising frame(*2) with your hand. Belt will then be slackened off automatically.
(3) After belt cleaning, washing, etc., reset raising frame(*2) in reverse order and retighten lock knobs(*1).

Removing Belt

Loosen belt by operating belt slackener as mentioned above. Then remove belt similarly to CENTER DRIVE TYPE. (→ See "Removing Belt", p.16.)

NOTE: 1. Be sure to stop conveyor and switch off power supply before loosening/removing belt.
2. Since control unit is not waterproof, pay attention not to splash liquids on it.
3. After washing, completely dry belt before reinstallation.
4. When reinstalling belt, confirm that arrow mark on belt undersurface correctly shows direction of belt travel.
5 If belt is loose in operation after reinstallation, take up belt slack. (→See p.20.) If belt is deviating in operation, adjust belt alignment. (→See p.21-24.)

fig. Raising type belt slackener



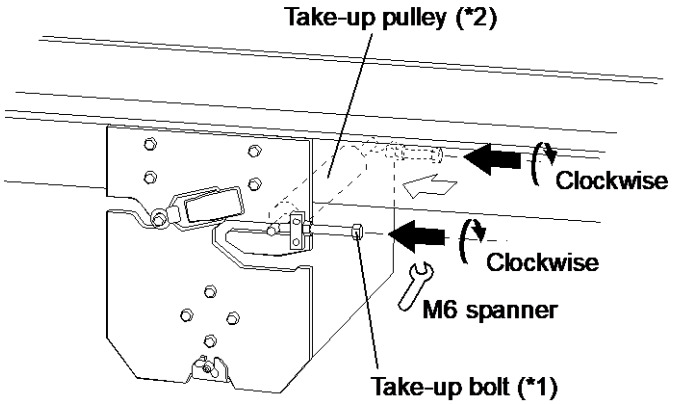
6 TAKING UP THE BELT

When belt is slackened off, take up belt as follows:

CENTER DRIVE TYPE

Turn right and left take-up bolts(*1) of drive unit clockwise, little by little, with a spanner. Take-up pulley(*2) will then be moved and belt will be taken up. When turning take-up bolts(*1), keep their movement lengths the same. If belt is taken up too much, properly adjust the tension by turning right and left take-up bolts(*1) counterclockwise.

fig. Drive unit



■ Belt Tension

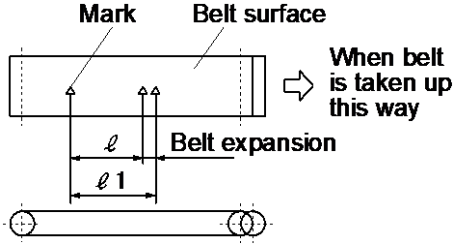
Do not take up belt too much, but only to extent that belt does not slip on drive pulley, i.e. enough to drive belt.

NOTE: 1. Belt occasionally shrinks depending on carried materials or type of belt. In this case make adjustment by turning take-up bolts counterclockwise.
2. Excessive belt take-up may overload motor or shorten service lives of belt, pulley, etc.

Standard belt expansion percentage

Nominal belt width (mm)	Expansion percentage (%)
～200	0.2
250～600	0.15～0.1
600～1,000 or Motor power of 0.2kW or more	0.1

How to calculate belt expansion percentage



1) Slacken belt.
2) Mark any two points on belt surface and measure length between them (ℓ).
3) Take up belt.
4) Measure length between two marks (ℓ1) again.

eg

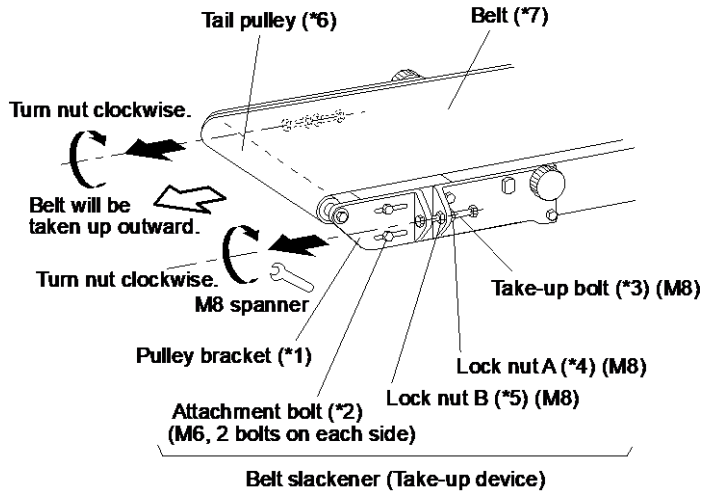
ℓ＝1000mm
0.2%＝2mm
ℓ1＝1002mm

HEAD DRIVE TYPE

Standard head drive type machines are equipped with a raising type belt slackener in tail unit, and take-up device is included in it. Take up belt as follows:

(1) Loosen attachment bolts(*2) of right and left pulley brackets(*1) with a spanner.
(2) Loosen lock nuts A(*4) of right and left take-up bolts(*3) by turning them clockwise with a spanner. To move tail pulley(*6) and pulley brackets(*1) outward, turn lock nuts B(*5) clockwise. Belt(*7) will then be taken up. When turning lock nuts B(*5), keep movement lengths of both pulley brackets(*1) the same. If belt is taken up too much, properly adjust the tension by turning lock nuts B(*5) counterclockwise.
NOTE: Take-up bolts(*3) do not rotate.
(3) Once belt is properly taken up, retighten right and left lock nuts A(*4). Then retighten all the attachment bolts(*2) of pulley brackets(*1).

fig. Belt slackener (Take-up device)

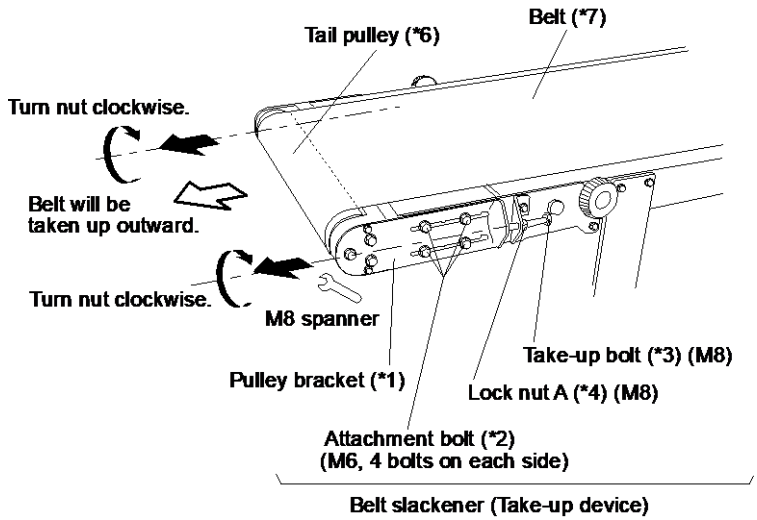


HEAD DRIVE TYPE (High power type)

Standard head drive type machines are equipped with a raising type belt slackener in tail unit, and take-up device is included in it. Take up belt as follows:

(1) Loosen attachment bolts(*2) of right and left pulley brackets(*1) with a spanner.
(2) Loosen lock nuts A(*4) of right and left take-up bolts(*3) by turning them clockwise with a spanner. To move tail pulley(*6) and pulley brackets(*1) outward, turn take-up bolts(*3) clockwise. Belt(*7) will then be taken up. When turning take-up bolts(*3), keep movement lengths of both pulley brackets(*1) the same. If belt is taken up too much, properly adjust the tension by turning take-up bolts(*3) counterclockwise.
(3) Once belt is properly taken up, retighten lock nuts A(*4) of right and left take-up bolts(*3). Then retighten all the attachment bolts(*2) of pulley brackets(*1).

fig. Belt slackener (Take-up device)



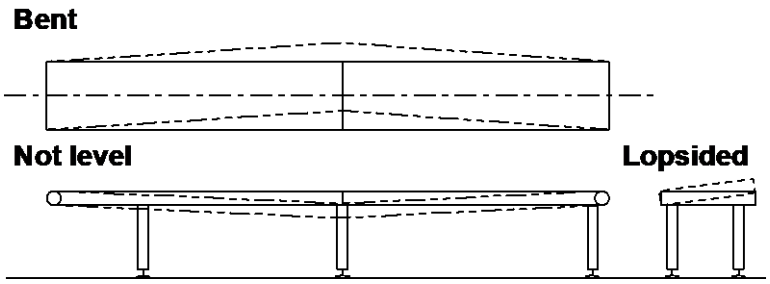
7 BELT ALIGNMENT ADJUSTMENT

When belt is not correctly aligned, make adjustments while running conveyor slowly, following procedures below:

PRIOR CHECKING

1. Frame Condition

Confirm full length of frame is level on top, straight and not bent in any place. → See p. 12.



2. Dirt on Pulleys

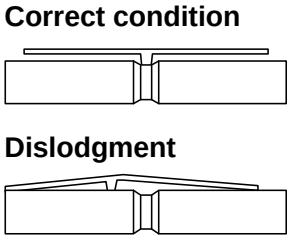
Check drive pulley, head and tail pulleys, etc. for dirt. Remove any dirt and clean. (Remove drive bottom cover to check.)

3. Loading Condition

Improper loading, i.e. not-centered, may cause belt deviation.

4. Dislodgment of V-form Strip

For non-deviation models(WV model, etc.), check if V-form strip on belt undersurface has dislodged from V-form belt guidance grooves on pulleys and rollers. (Remove drive bottom cover to check.)



Pulley of non-deviation model

5. Belt Deviation

Check how belt is deviating before adjustment. Correct positions of the following parts while running conveyor slowly, and then continue running it for a while to check any further belt deviation.

-Take-up devices: Position and adjust them equally on right and left sides.

-Head and tail pulleys: Set at right angle to frame.

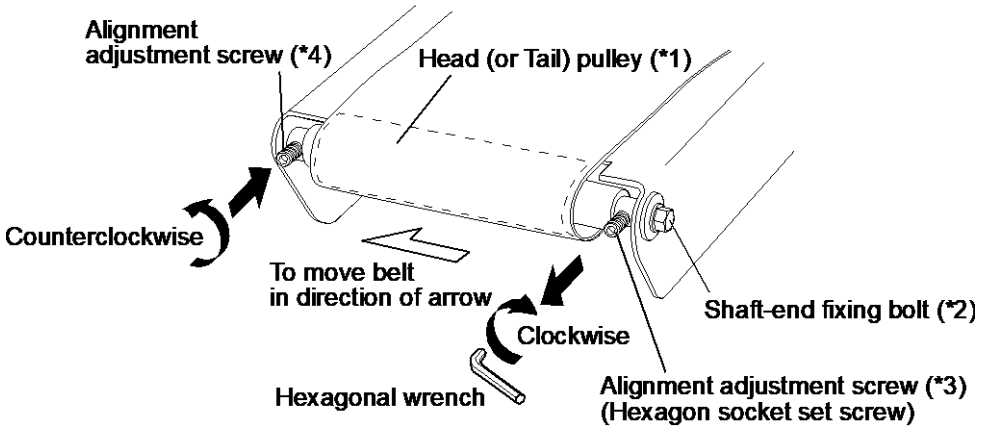
CENTER DRIVE TYPE

Adjustment Using Head or Tail Pulley (for 90W type)

On side to which belt is deviating, slightly loosen shaft-end fixing bolt(*2) with a spanner. Slightly turn alignment adjustment screw(*3) clockwise with hexagonal wrench. Head (or tail) pulley (*1) will then move outward on this side and belt will center itself. Alternatively adjust on opposite side. In this case slightly turn alignment adjustment screw(*4) counterclockwise. Head (or tail) pulley (*1) will then move inward on this side and belt will center itself. Once adjustment is complete, be sure to retighten shaft-end fixing bolt(*2) with a spanner.

NOTE: For **high power type**, see p.24,
for **roller-edge type**, see p.24,
for **knife-edge type**, see p.25.

fig. Adjustment using head or tail pulley

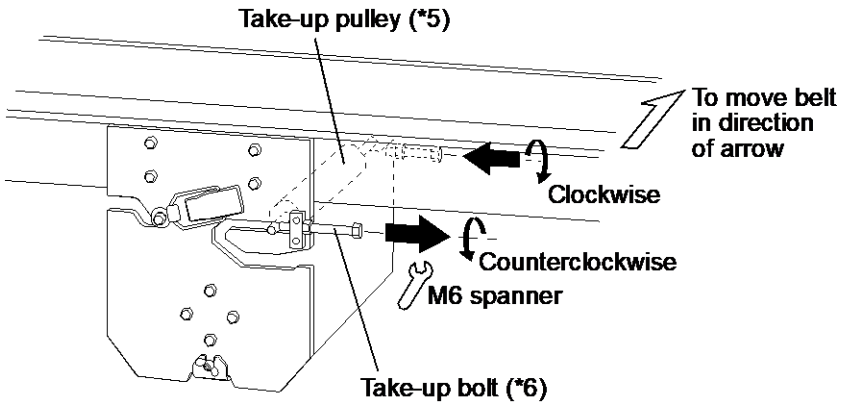


Adjustment Using Take-up Pulley

On side to which belt is deviating, slightly turn take-up bolt(*6) of drive unit counterclockwise with a spanner. Take-up pulley(*5) will then move outward on this side and belt will center itself. Alternatively adjust on opposite side. In this case slightly turn take-up bolt(*6) clockwise with a spanner. Take-up pulley(*5) will then move inward on this side and belt will center itself.

NOTE: It is necessary to wait until belt running stabilizes after each adjustment step and to adjust belt alignment little by little. Belt running will not change immediately.

fig. Adjustment using take-up pulley



HEAD DRIVE TYPE

Adjustment Using Tail Pulley (for 90W type)

It is possible to adjust tail pulley with take-up device included in belt slackener of tail unit.

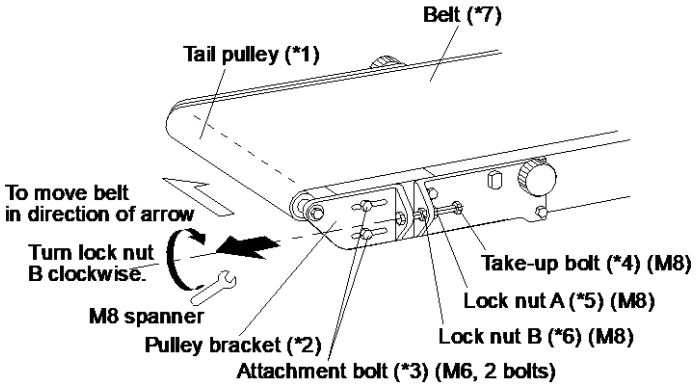
(1) On side to which belt is deviating, loosen attachment bolts(*3) with a spanner.

(2) On the same side, loosen lock nut A(*5) with a spanner and slightly turn lock nut B(*6) clockwise. Tail pulley(*1) and pulley bracket(*2) will then move outward on this side and belt(*7) will center itself. Alternatively adjust on opposite side. In this case slightly turn lock nut B(*6) counterclockwise. Tail pulley(*1) will then move inward on this side and belt(*7) will center itself.

(3) Once adjustment is complete, be sure to retighten lock nut A(*5), lock nut B(*6) and all the attachment bolts(*3).

NOTE: For **high power type**, see p.24,
for **roller-edge type**, see p.24.

fig. Adjustment using tail pulley



Adjustment Using Head Pulley (Drive Pulley)

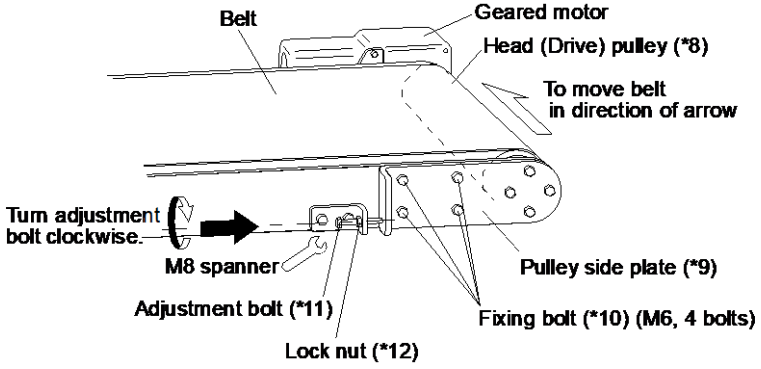
On opposite side of geared motor, make adjustment depending on direction of belt deviation, as follows.

NOTE: It is impossible to make adjustment on geared motor side.

When belt is deviating towards opposite side of geared motor: Loosen fixing bolts(*10) of pulley side plate(*9). Then loosen lock nut(*12) and slightly turn adjustment bolt(*11) clockwise with a spanner. Head (drive) pulley will then move outward on this side and belt will center itself.

When belt is deviating towards geared motor side: Loosen fixing bolts(*10) of pulley side plate(*9). Then loosen lock nut(*12) and slightly turn adjustment bolt(*11) counterclockwise with a spanner. Head (drive) pulley will then move inward on this side and belt will center itself. Once adjustment is complete, be sure to retighten lock nut(*12) and all the fixing bolts(*10) of pulley side plate(*9)

fig. Adjustment using head pulley (drive pulley)



NOTE: It is necessary to wait until belt running stabilizes after each adjustment step and to adjust belt alignment little by little. Belt running will not change immediately.

HIGH POWER TYPE (Common to HEAD DRIVE TYPE and CENTER DRIVE TYPE)

Adjustment Using Tail Pulley

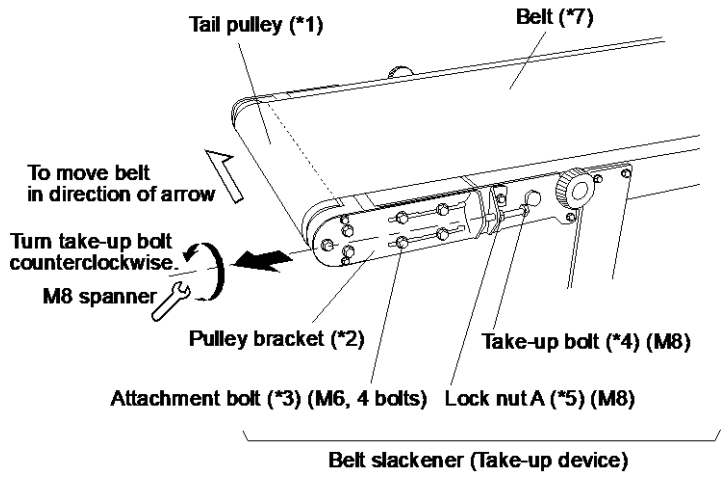
It is possible to make adjustment using take-up device included in belt slackener of tail unit.

(1) On side to which belt is deviating, loosen attachment bolts(*3) of tail pulley bracket(*2) with a spanner.

(2) On the same side, loosen lock nut A(*5) of take-up bolt(*4) with a spanner. Then slightly turn take-up bolt(*4) counterclockwise. Tail pulley(*1) and pulley bracket(*2) will then move outward on this side and belt(*7) will center itself. Alternatively adjust on opposite side. In this case slightly turn take-up bolt(*4) clockwise. Tail pulley(*1) will then move inward on this side and belt(*7) will center itself.

(3) Once adjustment is complete, be sure to retighten lock nut A(*5) and all the attachment bolts(*3).

fig. Adjustment using tail pulley



ROLLER-EDGE TYPE (Common to HEAD DRIVE TYPE and CENTER DRIVE TYPE)

Adjustment in Tail Unit

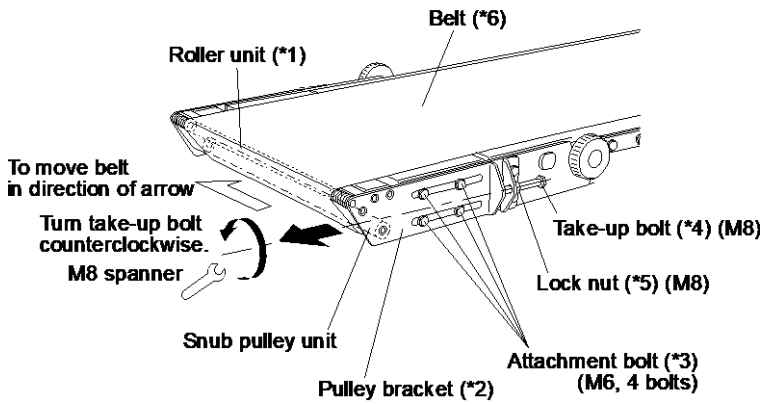
For head drive type, it is possible to make adjustment using take-up device included in belt slackener of tail unit. For center drive type, also adjust head unit similarly.

(1) On side to which belt is deviating, loosen attachment bolts(*3) of tail pulley bracket(*2) with a spanner.

(2) On the same side, loosen lock nut(*5) of take-up bolt(*4) with a spanner. Then slightly turn take-up bolt(*4) counterclockwise. Roller unit(*1) and pulley bracket(*2) will then move outward on this side and belt(*7) will center itself. Alternatively adjust on opposite side. In this case slightly turn take-up bolt(*4) clockwise. Roller unit(*1) will then move inward on this side and belt(*7) will center itself.

(3) Once adjustment is complete, be sure to retighten lock nut(*5) and all the attachment bolts(*3).

fig. Adjustment in tail unit

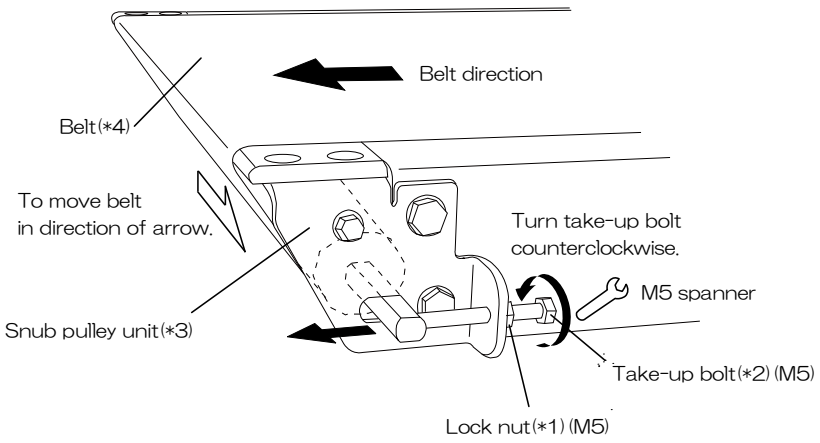


KNIFE-EDGE TYPE

Adjustment in snub pulley of knife-edge unit

(1) Loosen lock nut(*1) on the opposite to the side where the belt is deviating in the belt direction (downstream side of the conveyor). Then slightly turn take-up bolt(*2) counterclockwise, One end of Snub pulley unit(*3) will then move outward on this side and belt(*4) will center itself.

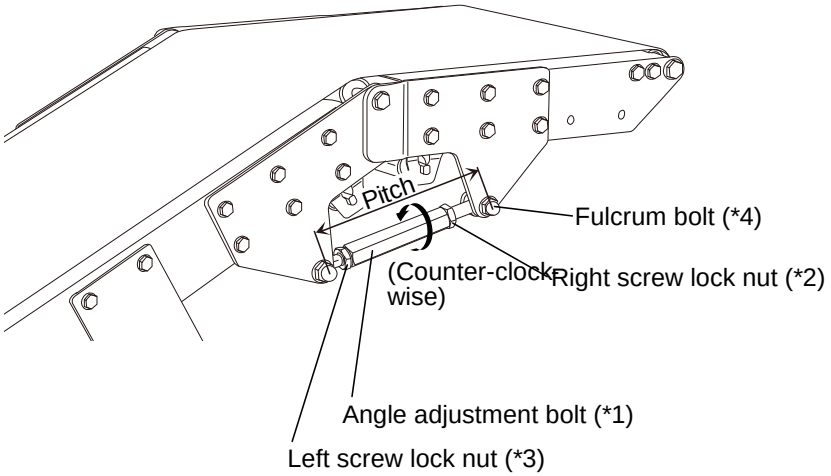
(2) Once adjustment is complete, be sure to retighten lock nut(*1).



8 ANGLE ADJUSTMENT OF TILTING UNIT

On both sides of conveyor, loosen right screw lock nuts(*2) and left screw lock nuts(*3). To make angle larger (closer to horizontal), turn angle adjustment bolts(*1) counterclockwise; to make angle smaller, turn them clockwise. Once adjustment is complete, retighten right screw lock nuts(*2) and left screw lock nuts(*3).

NOTE: When adjusting angle, make sure that pitches of fulcrum bolts(*4) are equal on both sides of conveyor, otherwise belt may deviate in operation.



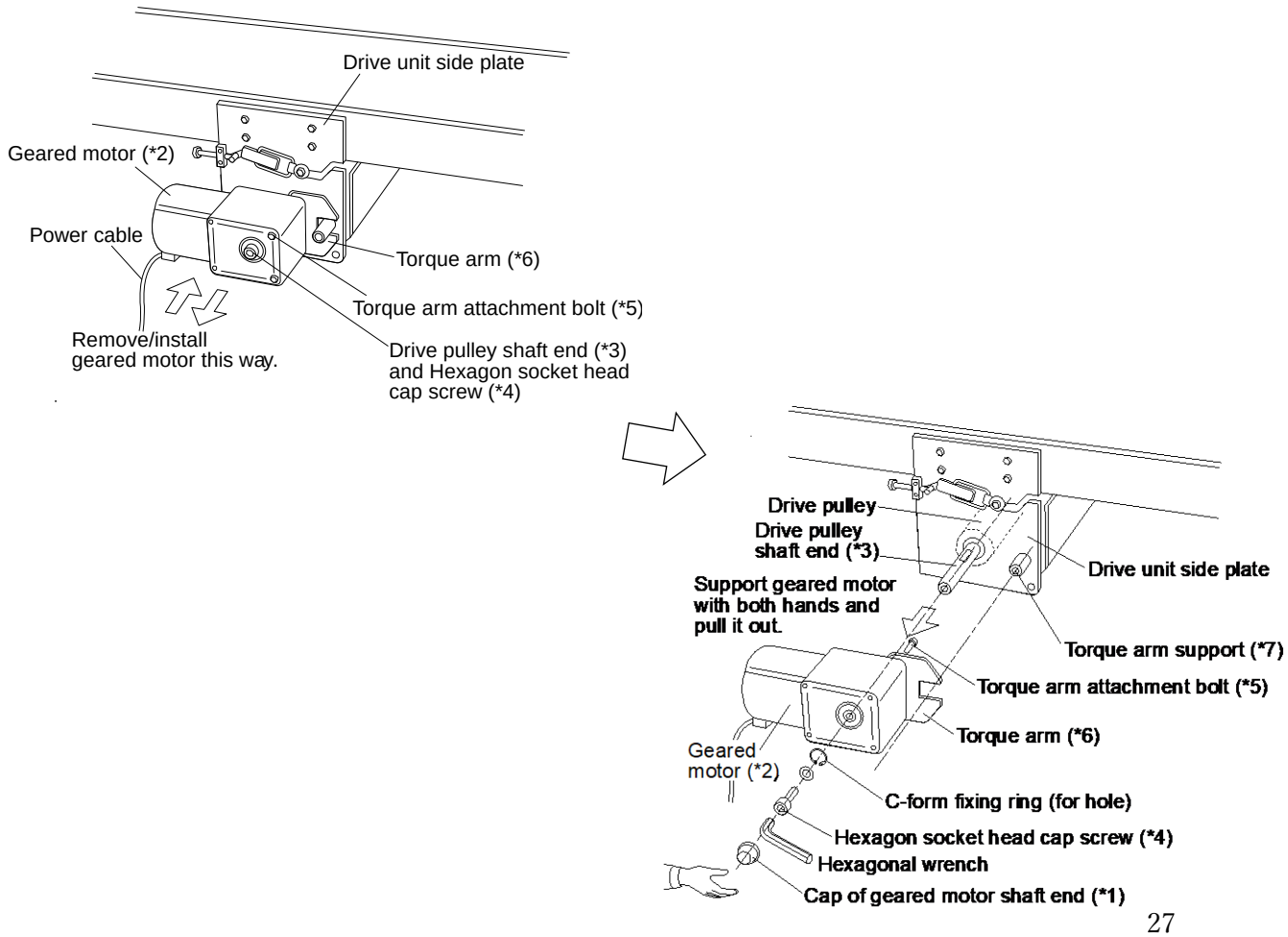
9 GEARED MOTOR REPLACEMENT

The geared motor is hollow shaft type and attached to drive pulley shaft end. Be sure to switch off power supply and replace geared motor as follows:

Common to HEAD DRIVE TYPE and CENTER DRIVE TYPE

(1) Remove cap of geared motor shaft end(*1) with your fingers.
(2) Remove hexagon socket head cap screw(*4) and washer from drive pulley shaft end(*3) with a hexagonal wrench.
(3) Support geared motor(*2) with your both hands and pull it out of drive pulley shaft end(*3).
(4) Remove torque arm(*6) by loosening torque arm attachment bolts(*5) with a hexagonal wrench.
(5) Remove C-form fixing ring (for hole) from inside of hollow shaft of the removed geared motor(*2), with a ring remover.
(6) Attach the removed C-form fixing ring to replacement geared motor.
(7) Correctly attach the removed torque arm(*6) to replacement geared motor with torque arm attachment bolts(*5).
(8) Support replacement geared motor with your both hands and correctly insert it to drive pulley shaft end(*3). When inserting, fit key of drive pulley shaft end(*3) to key groove of geared motor(*2) hollow shaft, and also insert slot of torque arm(*6) into torque arm support(*7) of drive unit side plate.
(9) Retighten hexagon socket head cap screw(*4) and washer to drive pulley shaft end(*3).
NOTE: Keep in mind that excessive tightening of hexagon socket head cap screw(*4) may cause deformation of C-form fixing ring (for hole).
(10) Reattach cap of geared motor shaft end(*1) in initial position.

fig. Geared motor replacement (eg Center drive type)



10 INSPECTION AND MAINTENANCE

10-1. PROBLEMS AND REMEDIES

PROBLEM	原　　因	処　　置
1. Conveyor does not run. (Conveyor cannot be turned on.)	(1) Power plug is not properly connected to the mains. (2) Power switch is not turned on. (3) Inappropriate power source	(1) Inspection, correction (2) Inspection, correction (3) Check power source. → See p.14
2. Conveyor is turned on, but motor will not run.	(1) Disconnection or breakage in wiring (2) Too slow conveyor speed (for variable-speed type) (3) Motor protective circuit or emergency stop switch has been activated. (4) Failure inside control device	(1) Check and repair wiring. (2) Reset to appropriate speed. (3) Restore protective circuit or emergency stop switch. (4) Inspection and repair or replacement
3. Motor runs, but belt does not move.	(1) Belt has been slackened off. (2) Belt has been trapped after misalignment. Foreign substances (3) Overload (4) Failure of geared motor	(1) Take up belt. → See p.19-20. (2) Adjust belt alignment. → See p.21-25 Clean and remove any foreign matter. (3) Check and reduce load. (4) Inspection and repair or replacement
4. Belt runs, but speed cannot be changed. (for variable-speed type)	(1) Disconnection or breakage in wiring of motor and controller (2) Inappropriate setting of controller or inverter (3) Failure of controller or inverter	(1) Inspection, repair (2) Inspection, correction (3) Inspection and repair or replacement
5. Conveyor will not start running unless belt is pulled.	(1) Belt has been taken up too much. (2) Belt has been trapped after misalignment. Foreign substances	(1) Loosen belt to proper tension. → See p.19-20. (2) Adjust belt alignment. → See p.21-25 Clean and remove any foreign matter.
6. Electric shock is received from conveyor.	(1) Static electricity has been charged in frames. (2) Electric leakage	(1) Check and correctly ground machine. → See p.14 (2) Inspection, correction

10-2. ITEMS FOR REGULAR INSPECTION

CHECKING PERIOD	PART TO CHECK	THINGS TO CHECK FOR	CHECKING METHOD	REMEDY
Daily	Belt	Foreign substances on surface and undersurface	Visual inspection	Clean and remove any foreign matter.
		Dislodgment from V-form belt guidance groove	Visual inspection	Inspection, adjustment
		Getting jammed	Visual inspection	Inspection, adjustment
	Drive pulley and other pulleys	Foreign substances	Visual inspection	Clean and remove any foreign matter.
Monthly	Drive pulley and other pulleys	Wear of surface, rotation malfunction	Visual inspection and manual check	Inspection and adjustment or replacement
Three monthly	Geared motor	Rotation malfunction, Inappropriate installation	Visual inspection and manual check	Inspection, adjustment
		Overheat, abnormal noise	Manual check and listening	Inspection and adjustment or replacement
Six monthly	Frame and stand units	Loose attachment bolts	Visual inspection and manual check	Inspection, adjustment Tighten loose bolts.
	Attachments	Damage of each part	Visual inspection and manual check	Inspection and repair or replacement

NOTE: Since salt and salt water cause stainless steel to get rusty and the belt to shrink, be sure to wash the conveyor with fresh water and completely dry it. Additionally, keep in mind that stainless steel may become rusty when it comes in contact with iron or iron powder.

MEMO

MEMO

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- Particular attention is given to the manufacture and transportation of SANKI conveyors. However, if you need any information about the use or failure of the machine or any other matters, please contact our customer service. Also do not hesitate to ask us for information about conveyors in general.
- The specification given in this manual are subject to change without notice.

Manual Code　KIREI-008　'24/08