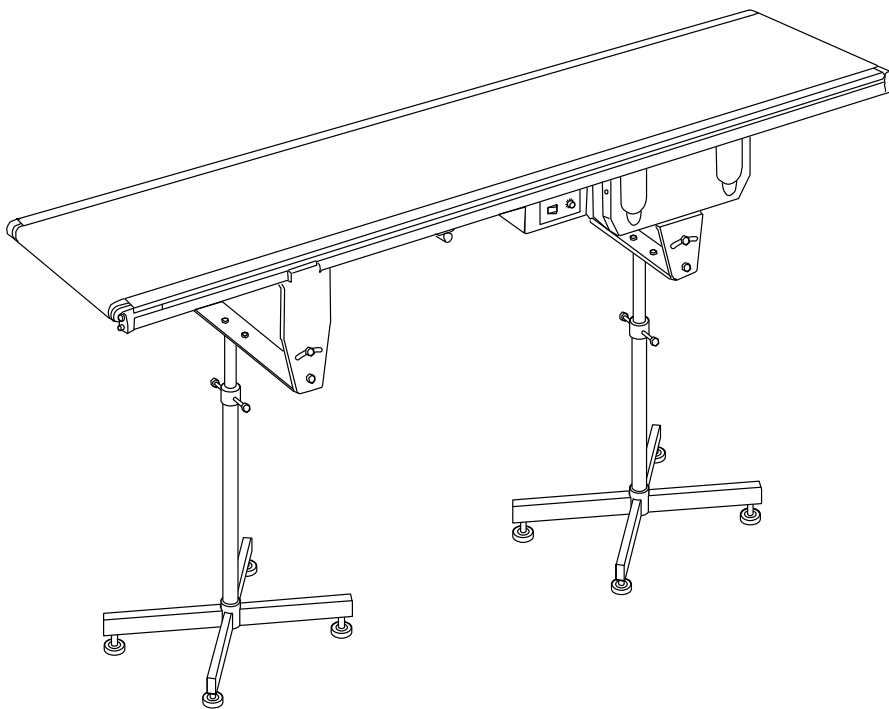


S-CON[®] MINI FRIC-TOUCH Series

OPERATING AND SERVICE MANUAL



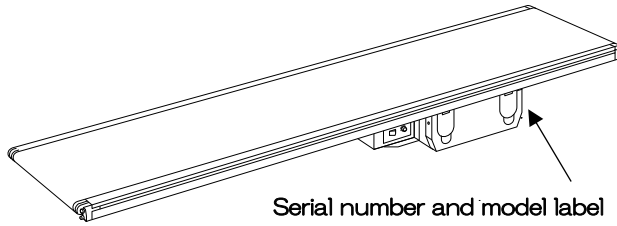
Thank you very much for purchasing our **S-CON®MINI FRIC-TOUCH** series. To use the machine properly, please read this operating and service manual carefully before use. Keep the manual where the machine is installed, so that it may be referred to when needed.



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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 lower cover)

Manufacturer's serial number

(refer to this number when contacting us)

[Example]

Date of production	20□□.□□
JOB No.	□□-□□□□□-□□□-□□
FT30-1.5 (C40-1A15.0) R-BG i=1/30	

Reduction gear ratio

FT 30 - 1.5 (C 40 - 1 A15.0) R - BG

Conveyor model code (FT)
Nominal belt width in cm (eg 30cm) (30)
Machine length in m (eg 1.5m) (1.5)
Motor type (eg Constant speed) (C)

Motor type	Code
Constant speed	C
Brushless-inverter variable speed	D
Speed-controller variable speed	V
Inverter variable speed	F

Motor output (eg 40W) (40)

Type of Motor	Motor output	Code
General motor	25W	25
	40W	40
	90W	90
Brushless motor	50W	50

Power source frequency and Belt speed (eg 50Hz 15m/min)
NOTE: For variable speed, maximum speed is shown.

Frequency	Code
50Hz	A
60Hz	B

Switch position (eg Right)

Switch position	Code
Right	R
Left	L

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

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

Belt specification

Code	BG	BW	SG	SW	XG	XW	XB	XX	NO
Specification	Standard		Sliding		Other				None
Color	Green	White	Green	White	Green	White	Blue	Other	-

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 to avoid physical injury or damage. Additionally when removing the drive unit, be sure to firmly support it with provisional stand etc.

**■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 conveyor dry at all times**

Use the conveyor indoors and prevent it from getting wet. Do NOT splash liquids onto the conveyor. Do NOT use or leave the conveyor outdoors. The machine is not waterproof. 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°C to +40°C
 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.
	■ 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.
	■ Toppling prevention 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.

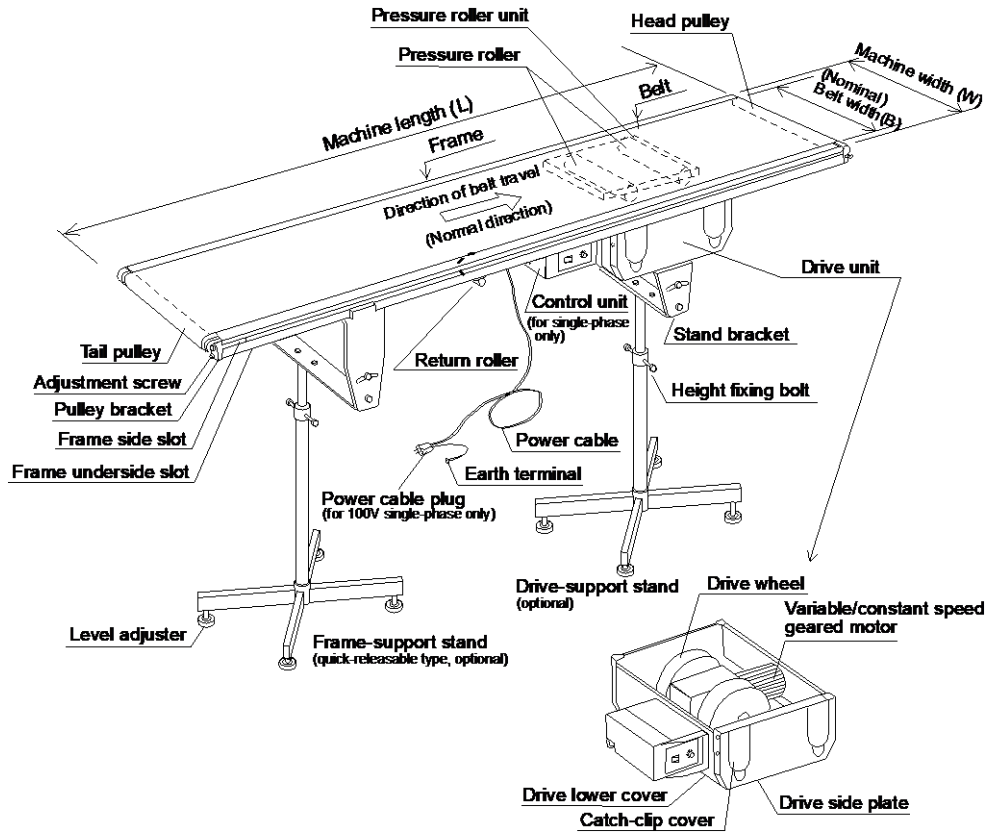
- NOTE : 1. Always use in accordance with the Occupational Safety and Health Act.
2. If the owner modifies the conveyor, any ill effects will fall outside the conditions of the guarantee.

2

COMPONENT NAMES

Applied models:

Frame depth	Model code
30	FT, FTF, FTL
60	FTH

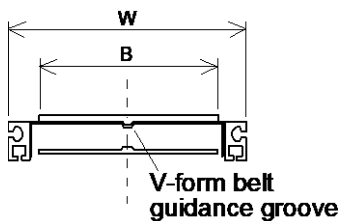


NOTE: For narrow-belt type, motor output is 25W or less and machine has only one drive wheel.

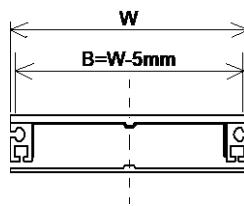
Narrow-belt type

Model code	Belt width (mm)
FT	50, 70, 100
FTF	90, 110, 140
FTL	140, 160, 190

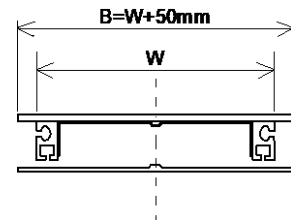
Standard type (FT model)
High performance type (FT model)
Reinforced type (FTH model)



Full belt type (FTF model)



Overhang type (FTL model)



Cross section

3

ASSEMBLY



CAUTION



■ Transport and assembly

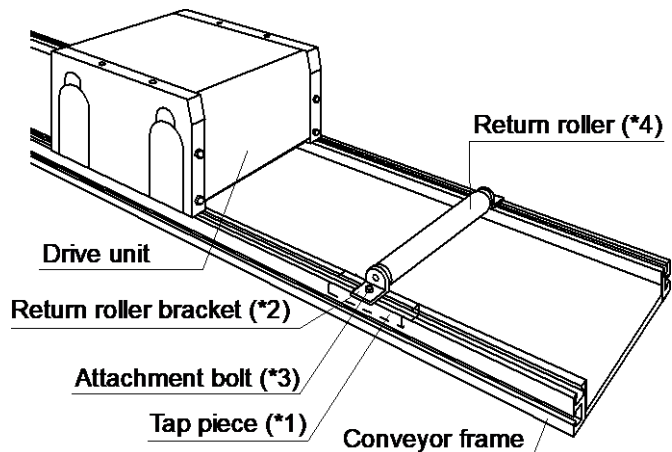
When transporting and assembling the conveyor, pay special attention not to drop it in order to avoid physical injury or damage. When lifting by crane, pay attention to the balance of the conveyor.

NOTE: When installing return rollers and stands(optional), it is recommended to place conveyor frame upside-down on table. Assembly is easier this way.

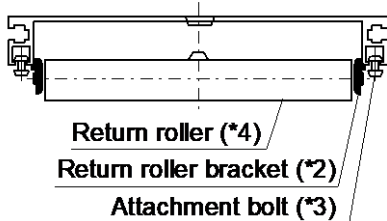
3-1. INSTALLING RETURN ROLLERS

Machines exceeding a specified length are delivered with return rollers attached under frame. Frames of longer machines are usually delivered divided, and to avoid damage in transit, return rollers are temporarily fixed beside drive unit in separate packaging. In this case install return rollers as follows: On both sides of conveyor, find tap pieces(*1) in frame underside slots, just under stickers “RETURN ROLLER FIXING POSITION” .

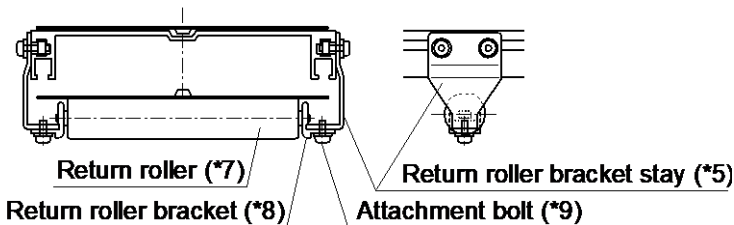
Fix return roller brackets(*2) to tap pieces(*1) with attachment bolts(*3). Before tightening the bolts(*3), insert return roller(*4) shaft ends into holes of brackets(*2), and make sure that return roller brackets(*2) are equally positioned on both sides.



FT/FTH model



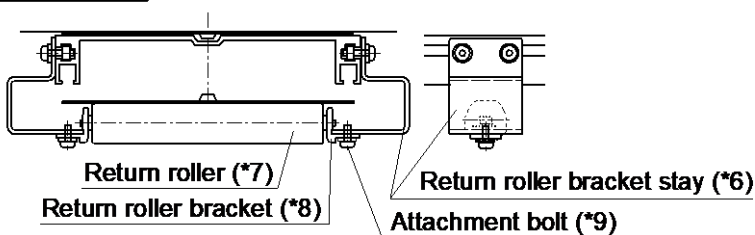
FTF model



■ Installing Return Rollers to FTF/FTL Model

Return roller bracket stays(*5 or *6) are attached in return roller fixing position. Fix return roller(*7) and brackets(*8) to lower parts of the stays(*5 or *6) with attachment bolts(*9).

FTL model



3-2. INSTALLING STANDS (OPTIONAL)

NOTE: 1. Stands are delivered in separate packaging.

2. Be sure to install drive-support stand (optional) under drive unit.

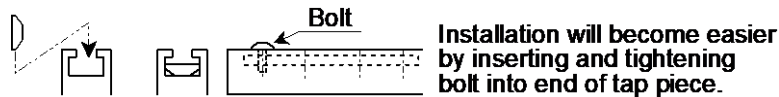
1. Installing Drive-support Stand (optional)

Drive unit has stand installation holes on bottom (2 holes on each side, with stand attachment bolts(*2) temporarily tightened). Install drive-support stand(*1) (optional) with bolts(*2) as shown in figure, below.

NOTE: When installing drive-support stand, it is recommended to place conveyor frame upside-down on table. Assembly is easier this way.

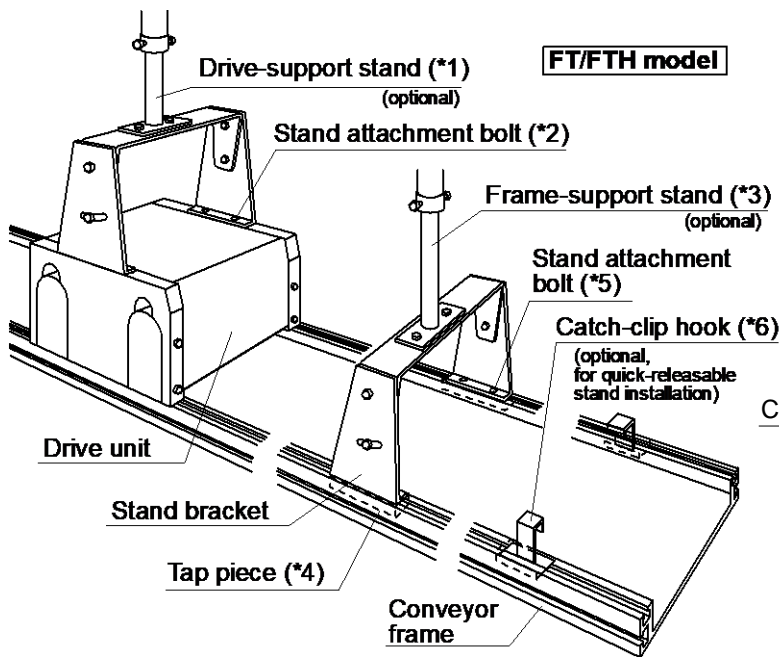
2. Installing Frame-support Stand (optional)

Insert stand tap pieces(*4) into frame underside slots as shown in figure below. Then install stand to frame with stand attachment bolts(*5). When installing, refer to “3. Standard installation positions of stands”, p.9.

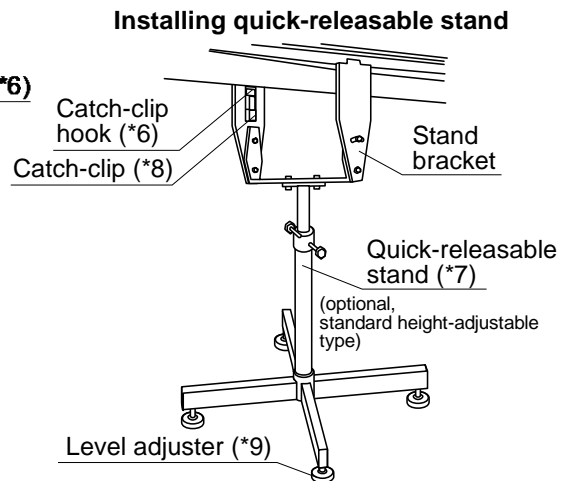


■ Installing Quick-releasable Stand (optional)

To prevent damage in transit, catch-clip hooks(*6) are temporarily fixed in frame underside slots beside drive unit. Slide them to stand installation position and fix with bolts. Before tightening bolts, make sure that catch-clip hooks(*6) are equally positioned on both sides. Fix quick-releasable stand(*7) by fastening catch-clips(*8) inside stand brackets to catch-clip hooks(*6).

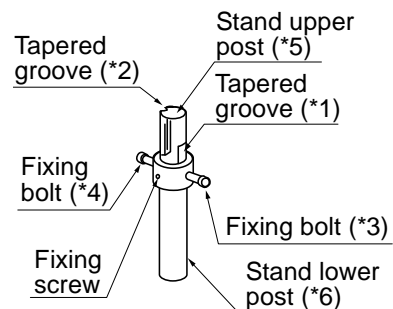


NOTE: When adjusting stand heights, take care not to pinch fingers. To prevent conveyor main body from rapidly going down, loosen fixing bolts little by little while supporting conveyor with the other hand.



■ Stand Height Adjustment

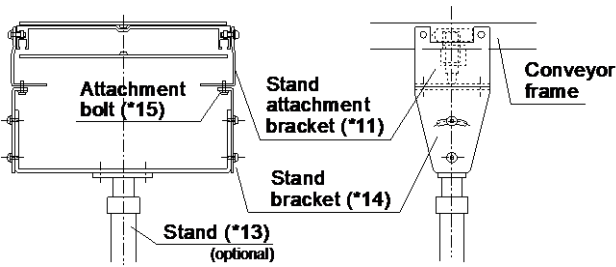
Before starting adjustment, ensure tapered grooves(*1, *2) and fixing bolts(*3, *4) are positioned correctly as shown in figure, right. To lower stand upper post(*5), loosen fixing bolt(*3). If tapered groove(*1) entirely goes down into stand lower post(*6) while lowering upper post(*5), tighten fixing bolt(*4) into tapered groove(*2). For more adjustment, loosen fixing bolt(*4) again. Once adjustment is completed, tighten fixing bolts(*3, *4). To finely adjust conveyor level, use level adjusters(*9) beneath stand.



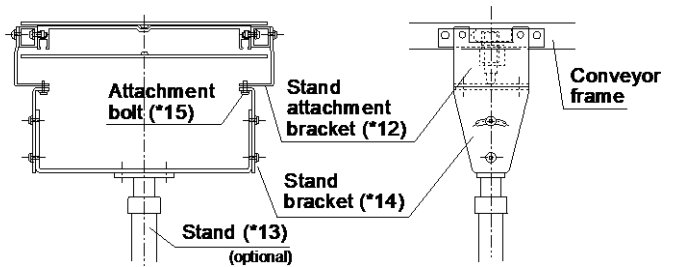
■ Installing Stands (optional) to FTF/FTL model

Stand attachment brackets(*11 or *12) are fixed in stand installation position. Fix stand(*13) (optional) and stand brackets(*14) to lower parts of stand attachment brackets(*11 or *12) with attachment bolts(*15).

FTF model



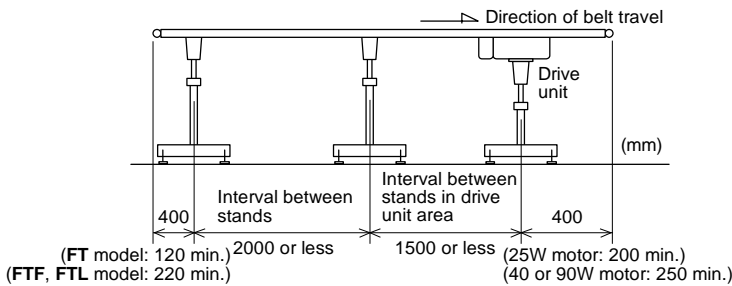
FTL model



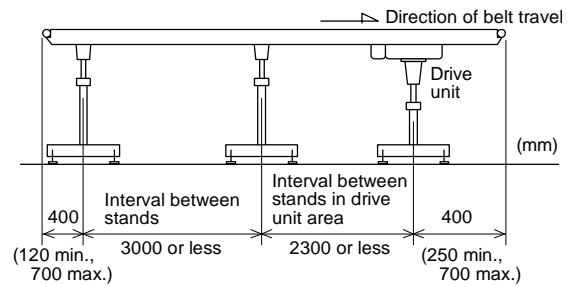
3. Standard Installation Positions of Stands

Considering frame depth and strength, installation positions of stands are determined as follows.

30mm-deep frame



60mm-deep frame



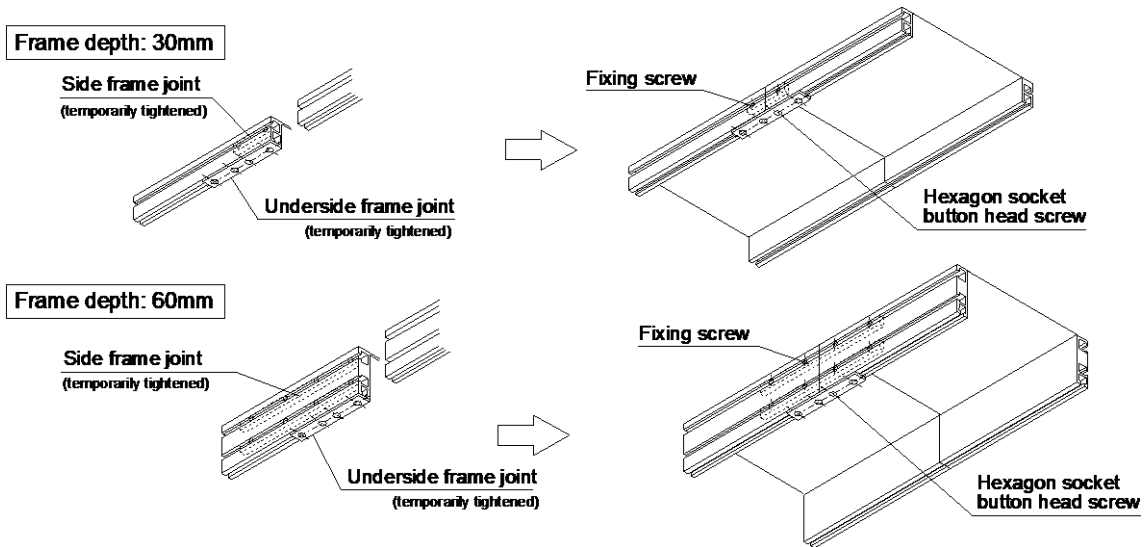
3-3. ASSEMBLING LONGER MACHINES

When conveyor exceeds 3m in length, it is delivered packed as shown below. Assemble conveyor following the procedure in table. (*Return rollers are individually packed and temporarily attached beside drive unit.)

MACHINE LENGTH	PACKAGING	ASSEMBLY METHOD
3.01 -6.0m Divided into 2 sections	<p>1 package</p>	<p>(1) Unfold belt and check installation positions of frames. (2) Join frames. → For joining method, see next page.</p>
6.01 -9.0m Divided into 3 sections 9.01 -12.0m Divided into 4 sections	<p>2 package</p>	

■ Joining Frames

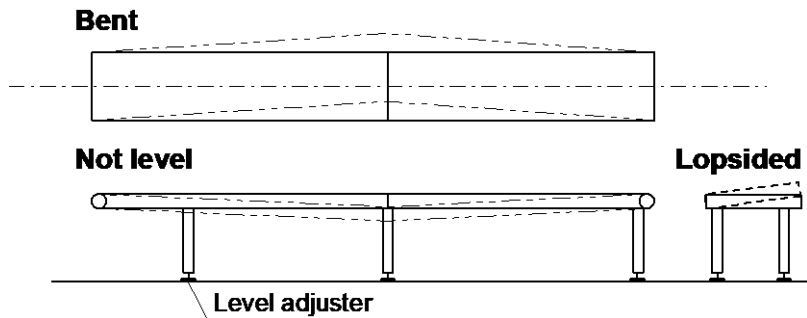
Frame joints are temporarily tightened to one side of frame. Correctly attach them using a hexagonal wrench as shown below:



■ Caution When Joining Frames and Setting up Conveyor

1. Install full length of frame straight, not bent in any place.
2. Finely adjust conveyor level. (Use level adjusters beneath stands.)

NOTE: If conveyor is bent or not level on top, belt may stray to one side or the other.

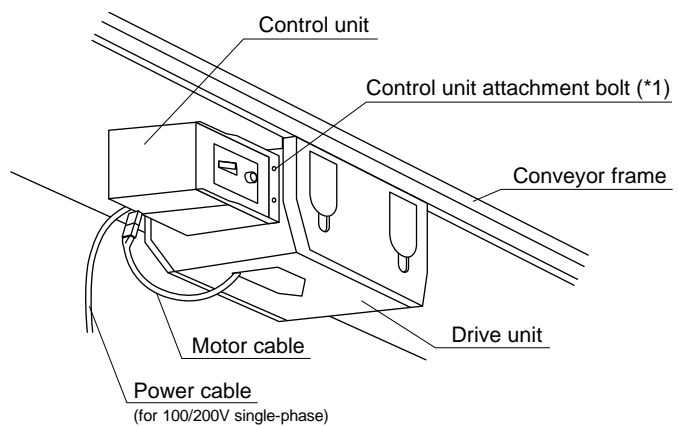


3-4. INSTALLING CONTROL UNIT

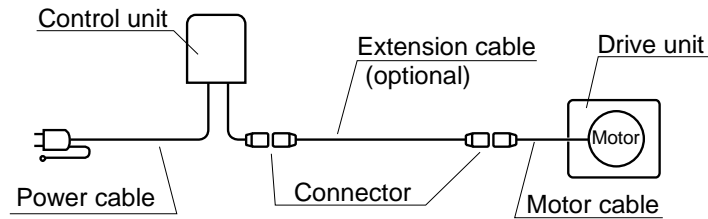
If control unit is delivered in separate packaging, install it as follows:

NOTE: For 200V three-phase power source, standard machine has only lead wire terminal of motor, control device is optional.

Install control unit by tightening attachment bolts(*1) into holes on side of drive unit.



- NOTE: 1. If it is necessary to install control unit separately from drive unit, use extension cable (optional) to make connection as shown in figure, right. (If necessary, remove control unit cover to connect connectors. In this case be sure to reinstall control unit cover.)
2. Do not install control unit to conveyor frame directly otherwise it will be difficult to attach /detach frame later.



3-5. INSTALLING GUIDE RAILS AND SKIRTS (OPTIONAL)

1. Installing Guide Rails

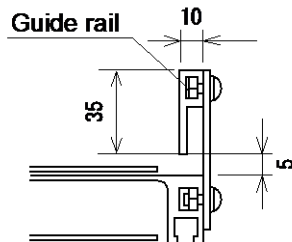
When installing, slightly raise guide rails, giving clearance to prevent belt from touching them. If there is no clearance, it may cause friction damage to belt and guide rails when belt deviates.

2. Installing Skirts

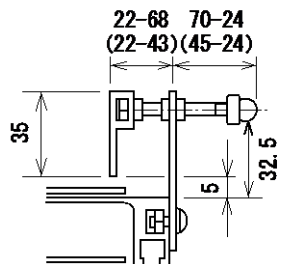
When installing, ensure skirts are properly touching belt. If belt deviates, to prevent friction damage of belt and skirt fitting pieces, reinstall skirt fitting pieces raised as required.

[Examples]

G-A1 model, fixed type

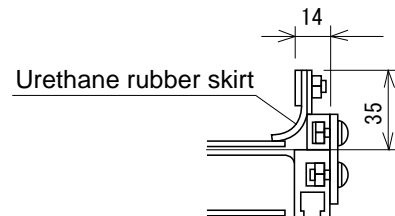


G-A2 model, adjustable type



Values in parentheses () are for belt width of 50 or 70cm.

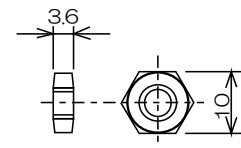
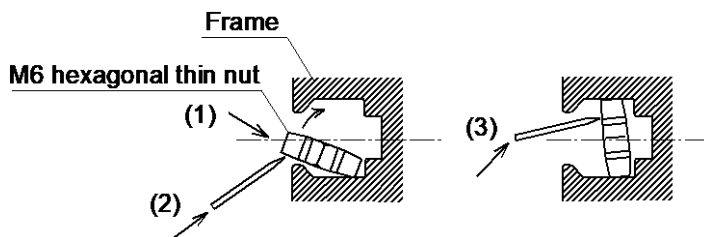
S-A1 model, fixed type



■ Insertion of Nuts

When installing additional attachments to frame, insert M6 hexagonal thin nuts into frame slots, as shown in figures, below.

NOTE: These nuts are delivered as spare parts in tool bag.



M6 hexagonal thin nut

- (1) Insert nut into slot diagonally from above.
- (2) Insert something cylindrical and pointed (eg tip of mechanical pencil) into nut hole, and lightly push nut upward.
- (3) Continue pushing nut this way until in position.

4

RUNNING THE CONVEYOR

4-1. BEFORE OPERATING THE MACHINE

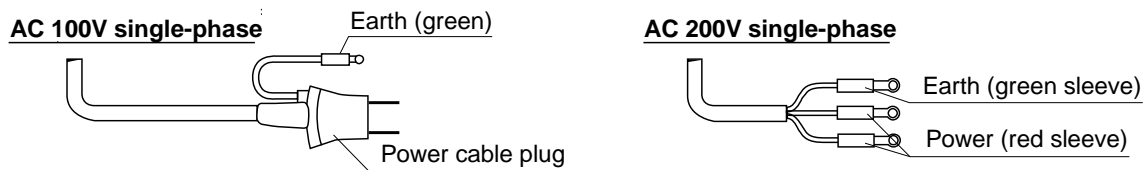
NOTE: Always use in accordance with the Occupational Safety and Health Act.

100V single-phase power source : Ground earth terminal (green) of power cable plug.

200V single-phase power source : Connect earth terminal (green) of power cable to power cable plug with an earth.

200V three-phase power source : Standard machine has only lead wire terminal of motor. Switch etc. are not provided. When wiring, properly provide an earth on motor or drive side plate.

● Power cable and terminals



NOTE: 1. Use power source specified in serial number and model label. → See p.3.
2. Ensure that an earth leakage breaker is connected to the power supply.

4-2. STARTING CONVEYOR

1. Constant-speed Type

- (1) To start conveyor, push RUN/STOP switch into “RUN” position.
- (2) To stop conveyor, push RUN/STOP switch into “STOP” position.

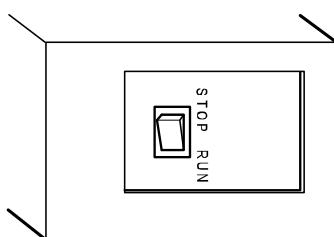
NOTE: This switch is not for turning power on and off. When leaving conveyor unused for a long period, make sure that it is unplugged or mains is off.

2. Speed-controller Variable-speed Type (motor output: 25W)

- (1) Make sure RUN/STOP switch on speed controller is set in “STOP” position. Turn on power supply and ensure that power-on indicator is illuminated.
- (2) Push RUN/STOP switch into “RUN” position. Motor will start rotating and conveyor will run.
- (3) To increase speed, turn speed control clockwise; to decrease speed, turn it counterclockwise. Set appropriate speed for intended use.
- (4) To stop conveyor, push RUN/STOP switch into “STOP” position.

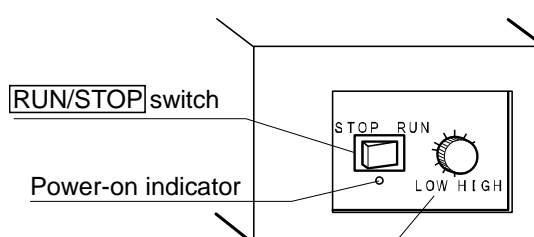
NOTE: This switch is not for turning power on and off. When leaving conveyor unused for a long period, make sure that it is unplugged or mains is off.

Constant-speed type



Control unit

Speed-controller variable-speed type



Speed controller of control unit

3. Brushless-inverter Variable-speed Type

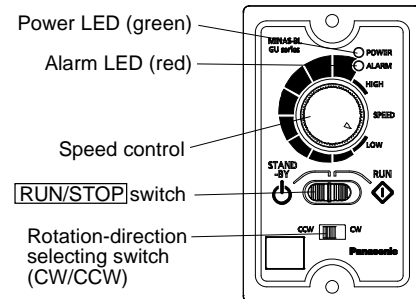
For brushless-inverter (inverter for brushless-motor variable-speed control) variable-speed type, operate machine as follows:

NOTE: 1. Be sure to combine brushless inverter with specified brushless motor.

2. Be sure to ground before use.

- (1) Make sure RUN/STOP switch on brushless-inverter operating panel is in “STOP” position. Turn on power supply and ensure that power LED (power-on indicator) is illuminated in green.
- (2) Set RUN/STOP switch to “RUN” position. Motor will start rotating and conveyor will run.
- (3) To increase speed, turn speed control clockwise; to decrease speed, turn it counterclockwise. Set appropriate speed for intended use.
- (4) To stop conveyor, set RUN/STOP switch to “STOP” position.

● Brushless-inverter operating panel



- NOTE: 1. Be sure to confirm that the power source voltage is within the rated voltage range, before turning ON the power source.
2. Be sure to start and stop the conveyor with RUN/STOP switch. When starting and stopping the machine by external signals, use control circuit terminals on rear of inverter. (→See “Starting and Stopping the Conveyor by External Signals” , p.12.)
 3. When leaving the conveyor unused for a long period, make sure that the power supply is off. (The RUN/STOP switch is not for turning the power on and off.)
 4. Before turning off the power supply, be sure to set RUN/STOP switch to “STOP” position, otherwise there is a risk that the motor will restart rotating unexpectedly when powered. Moreover make sure that RUN/STOP switch is in “STOP” position before turning on the power supply.

Brushless-inverter standard specification		
Applied motor		Brushless motor 50W
Power source	Voltage	Single-phase AC100-120V Single-phase/three-phase AC200-240V
	Permissible voltage range	±10%
	Frequency	50/60Hz
Variable-speed range		General change gear ratio 1:76 (Maximum change gear ratio 1:100)
Environmental conditions	Ambient temperature	-10°C to +40°C (Avoid freezing.)
	Ambient humidity	Relative humidity 85% max. (Avoid condensation.)
	Atmosphere	Indoor (Avoid splash of liquids, corrosive/flammable gases, dust, etc.)
	Elevation	1000m or less

■ Variable-speed Range of Brushless-inverter

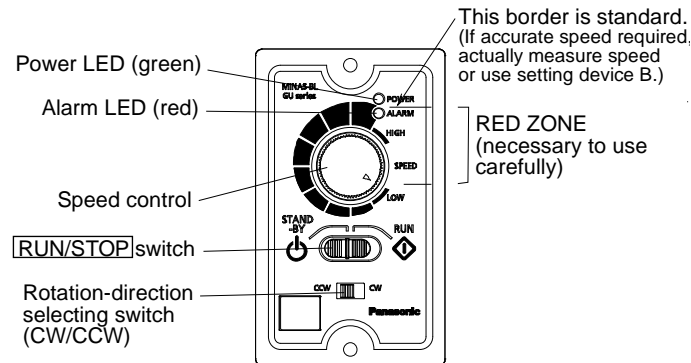
(Torque at high speed can be used at low speed as well.)

Nominal speed (motor rotation: 2300 r/min) is determined as the lower limit of RED ZONE. Variable-speed range up to the lower limit of RED ZONE is 1:76 (motor rotation: 30–2300 r/min).

By using RED ZONE up to the upper limit, it is possible to vary speed up to 1.3 times of nominal speed (variable-speed range: 1:100, motor rotation: 30–3000r/min).

NOTE: Since motor rotation increases as the speed gets closer to the upper limit of RED ZONE, this will increase noise and shorten service life of gear head. Use the machine at appropriate speed to avoid these troubles.

● Brushless-inverter operating panel

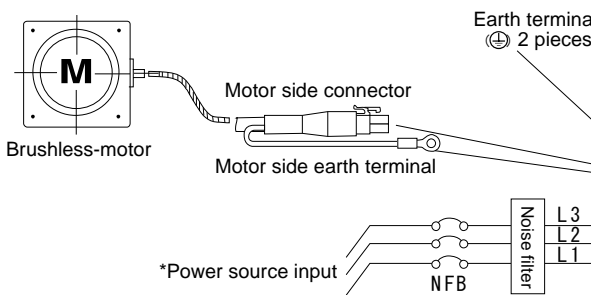


■ Starting and Stopping the Conveyor by External Signals

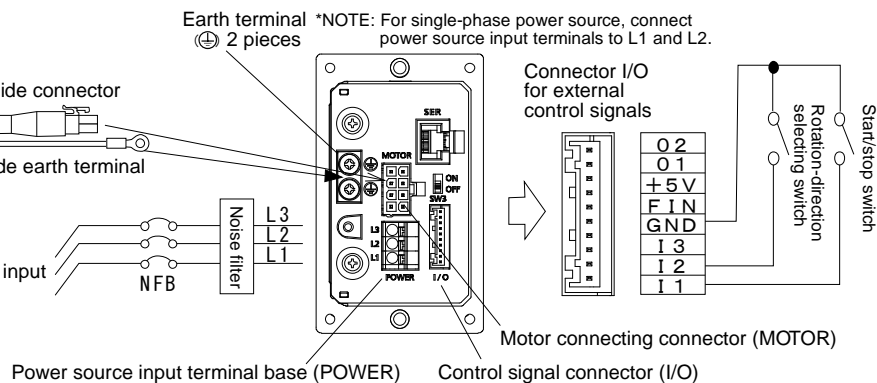
When starting and stopping the conveyor frequently in a short period (tact operation etc.), it is impossible to start and stop the machine by turning on/off the power supply. (The controller may get damaged and trip.) In this case be sure to start and stop the machine by external signals. For start and stop circuit by external signals, make connection to external control circuit terminals on rear of brushless inverter.

NOTE: Do not start and stop the conveyor excessively frequently. It may cause machine failure or shorten its service life.

● Standard connection diagram of brushless-motor and power source (eg 200V three-phase)



● Standard connection diagram for starting/stopping conveyor by external signals (eg Reversible operation)




When using connector I/O for external control signals, purchase "Cable for control signals (cable with I/O connector) Item number: DV0PM20076" sold separately.

NOTE:

1. Be sure to ground earth. (D-type grounding, 100Ω or less, ϕ 1.6mm or more)
2. Noise filter, NFB, etc. should be set up by user.
3. When making connection to external control terminals, use special cable for external control (optional).
4. For reversible operation by external signals, set rotation-direction selecting switch to CCW.

For details, refer to "Brushless-inverter instruction manual", appendix.

■ Caution When Using brushless inverter

 CAUTION	<ol style="list-style-type: none">1. Be sure to confirm that the power source voltage is within the rated voltage range, before switching ON the power source. (Voltage exceeding the rated voltage could cause fuming, abnormal noise, etc.)2. Be sure to start and stop the conveyor with RUN/STOP switch. If installing a separate RUN/STOP switch and operating the machine by external control, be sure to use the control circuit terminal on the rear of controller unit. (For reversible operation, set the reverse switch to CCW.)3. The RUN/STOP switch of control unit is not for turning the power on and off. When leaving the conveyor unused for a long period, make sure that the mains is off.4. Do not run the conveyor at excessively low speed for a long period, or start and stop the conveyor excessively frequently. These may cause machine failure or shorten its service life.5. Do not touch the inverter radiator of side of control unit, and do not allow any material to touch it, because of its high temperature.6. Use the control unit within the permissible range of ambient temperature (from -10°C to $+40^{\circ}\text{C}$). Avoid freezing.7. Pay special attention not to allow any foreign matter (dust, iron powder, etc.) to get into the control unit.8. Operating the motor using the inverter could cause noises from the inverter I/O cables, motor, etc. Keep in mind that these could interfere with the correct operation of other electronic devices. (In this case, noises and their effects can be suppressed to some extent by providing the inverter I/O with a filter or otherwise shielding the power cable.)
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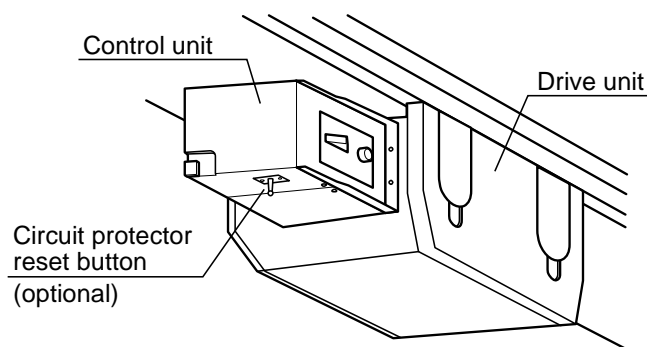
For details, refer to “Brushless-inverter instruction manual” , appendix.

■ Circuit Protector

1. Constant-speed Type/Speed-controller Variable-speed Type

To prevent motor from burning out due to overload etc., it is recommended to provide the machine with a circuit protector(optional). When protector is activated and conveyor stops, reset button pops out. In this case always switch off power and set RUN/STOP switch to “STOP” . Reset button may be pressed in to restore circuit, and machine can be restarted by setting RUN/STOP switch to “RUN” .

NOTE: Before restarting machine, carefully check for cause of stoppage and ensure it is removed.

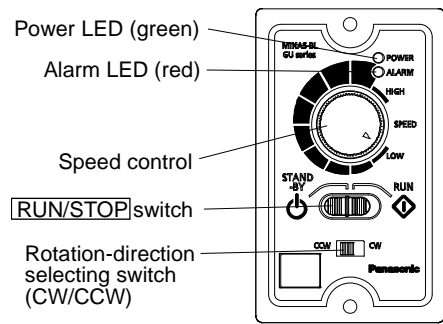


Circuit protector reset button of constant-speed type and speed-controller variable-speed type

2. Brushless-inverter Variable speed Type

Brushless-inverter has built-in protective function against overload, overcurrent, overheat, etc. In emergency, brushless-inverter trips and alarm LED is illuminated in red.

- NOTE: 1. When brushless-inverter trips, immediately set RUN/STOP switch to "STOP" position and turn off power supply. Before restarting machine, carefully check for cause of trip and ensure it is removed.
2. When voltage is insufficient, alarm LED is illuminated in red. However, brushless inverter does not trip in standard circuit.
3. For increased safety, separately install overcurrent protective device on power source side.



4-3. CHANGING DIRECTION OF CONVEYOR TRAVEL

■ Changing Electrical Wiring

If machine has no reverse switch, change direction of belt travel by changing connections of electrical wiring as follows:

NOTE: Keep in mind that conveying capacity of reverse operation is approximately one-third of normal directional operation's, according to machine structure.

1. Constant-speed Single-phase Motor

Remove control unit rear cover and find red connectors in electrical wiring. Disconnect them and change their "male-female" combination.

2. Speed-controller Variable-speed Type Single-phase Motor (output: 25W)

Remove controller unit rear cover. On speed controller rear panel, disconnect orange lead wire from CW terminal and connect it to CCW terminal.

3. Brushless-inverter Variable-speed Type

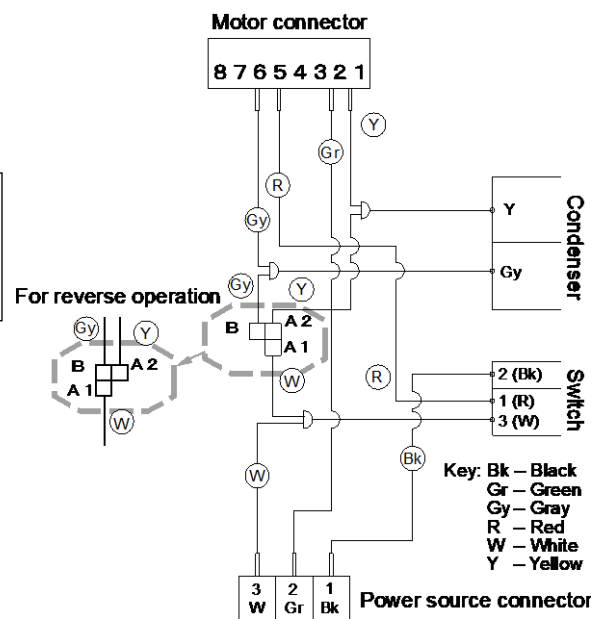
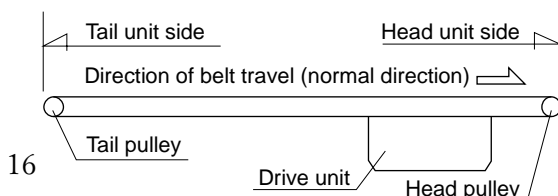
On brushless-inverter operating panel, slide reverse switch from CCW to CW (or from CW to CCW).

4. Three-phase Motor

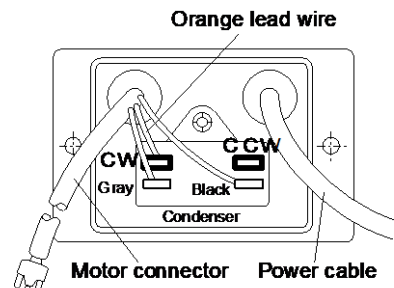
Switch positions of any two of three power supply wires.

NOTE: **Caution when changing direction of belt travel**

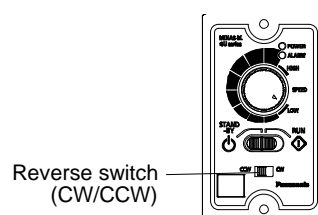
When changing direction of belt travel, position drive unit on head unit side, not on tail unit side. Especially, keep in mind that longer machines may not correctly operate if drive unit is positioned on tail unit side.



Control unit electrical wiring of constant-speed single-phase motor






Speed controller rear panel of single-phase motor (output: 25W)



Brushless-inverter operating panel

5

BELT REPLACEMENT

 CAUTION		<p>■ BE SURE TO SWITCH OFF POWER SUPPLY</p> <p>Before starting procedures below, be sure to stop conveyor and switch off power supply, otherwise there is a risk that conveyor could start unexpectedly.</p>
		<p>■ CAUTION WHEN REMOVING DRIVE UNIT</p> <p>Since drive unit is quite heavy, there is a risk of being injured if it is dropped. If drive unit has no support stand under it, pay special attention to the following items:</p> <ol style="list-style-type: none"> 1. When removing the drive unit, be sure to firmly support it with provisional stand etc. 2. When unfastening catch-clips, gently operate them.

1. Remove catch-clip covers(*1) on both sides of drive unit (2 covers on each side).
 NOTE: FTF and FTL models have no catch-clip covers.

■ Catch-clip Cover Removal

Insert your finger into recess of catch-clip cover(*1). Remove catch-clip cover(*1) by pulling it outward. When reinstalling, place it correctly and firmly press until a click is heard.

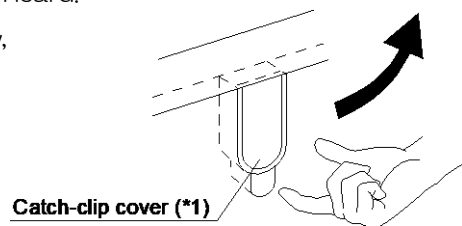
Next detach frame from drive unit following the procedure below, according to type of drive unit. (→ See figure, below.)

-Easy removable drive unit (standard):

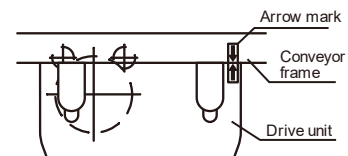
Unfasten all the catch-clips(*2) (2 clips on each side).

-Fixed drive unit (optional):

Remove fixing bolts of drive unit fixing brackets(*2') (2 bolts for each bracket). (These bolts are used as catch-clip hook fixing bolts also.)



Catch-clip cover removal

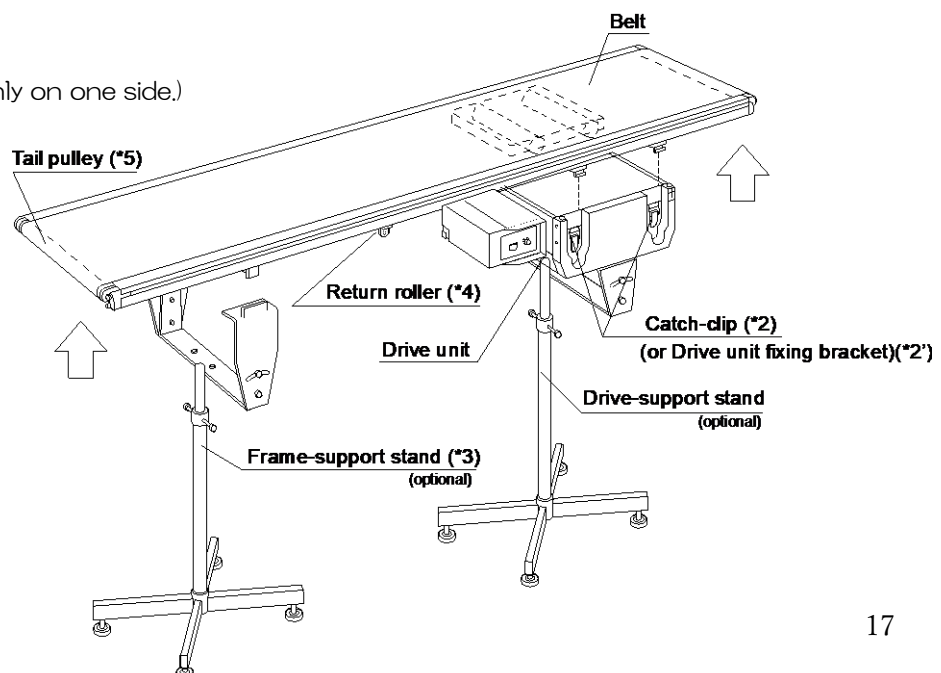


Arrow marks showing frame installation position.

NOTE: Arrow marks are affixed on frame and drive unit as shown in figure, right. When reinstalling frame to drive unit, fit these marks to each other.

2. Remove the following parts, if any.

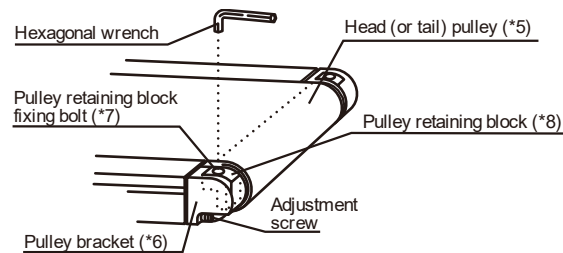
- Frame support stand(*3)
- Return roller(*4)
- Guide rail etc. (Remove only on one side.)



3. For FT and FTH models, remove either head or tail pulley(*5) from frame end.

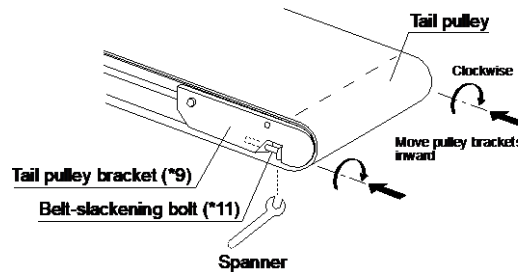
■ Head/tail Pulley Removal (for FT and FTH models)

Loosen pulley retaining block fixing bolts(*7) on tops of pulley brackets(*6) with a hexagonal wrench. Remove pulley retaining blocks(*8) upwards. Pulley may then be removed upwards.



■ Slackening Belt (for FTF and FTL models)

Loosen frame attachment bolts(*10) of right and left tail pulley brackets(*9). Turn belt-slackening bolts(*11) clockwise with a spanner. Pulley brackets(*9) will then move inward and belt will be slackened off.



4. Remove belt sideways and install replacement belt.

NOTE: In advance, check replacement belt for length, straightness, etc. When installing, pay attention to direction of belt travel.

5. Reinstall parts in reverse order.

NOTE: After replacing the belt, make sure that it is correctly aligned. Make adjustments if necessary.

→ See p.21.

6

DRIVE UNIT RELOCATION

Be sure to switch off power supply before moving the drive unit.

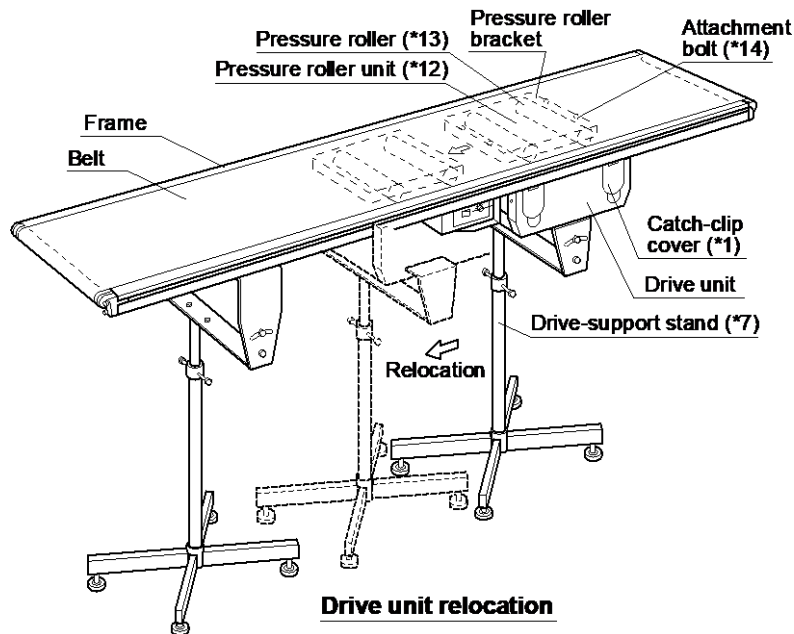
1. Remove catch-clip covers(*1) on both sides of drive unit (2 covers on each side). (→ See “■ Catch-clip Cover Removal” , p.18.)

NOTE: FTF and FTL models have no catch-clip covers.

Next detach frame from drive unit following the procedure below, according to type of drive unit.

-Easy removable drive unit (standard): Unfasten all the catch-clips(*2) (2 clips on each side).

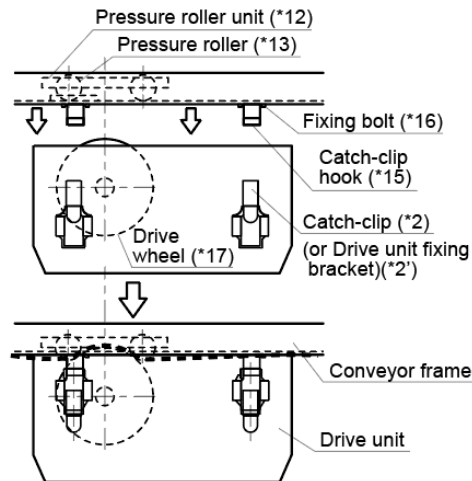
-Fixed drive unit (optional): Remove fixing bolts of drive unit fixing brackets(*2') (2 bolts for each bracket). (These bolts are used as catch-clip hook fixing bolts also.)



2. Remove belt from frame. (For belt removal, see p.17-18.)

3. Pressure roller unit(*12) (consisting of 2 pressure rollers and their brackets) is attached inside frame. Loosen attachment bolts(*14) of pressure roller unit(*12), and slide pressure roller unit(*12) to intended position, along slots inside frame. Then retighten attachment bolts(*14).

4. Reinstall belt to frame. (→ See p.17-18.)



Attachment of drive unit and frame

5. Loosen fixing bolts(*16) and slide catch-clip hooks(*15) to intended position of drive unit, along frame slots. (For fixed drive unit (optional), fixing bolts have been already removed in step 1 above.) Position all the catch-clip hooks(*15) approximately equally on both sides and temporarily fix them.

NOTE: When sliding catch-clip hooks(*15), loosen fixing bolts of the following parts and slide them together.

-FTF model: Stopper plates(*18)

-FTL model: Side plate liner brackets(*19) with stopper plates(*18) attached

6. Move drive unit and support stand(*7) to intended position. Gently put frame on drive unit and make adjustments so that drive wheels(*17) will be positioned between 2 pressure rollers(*13).

7. Correctly position catch-clip hooks(*15) and the following parts, according to type of drive unit.

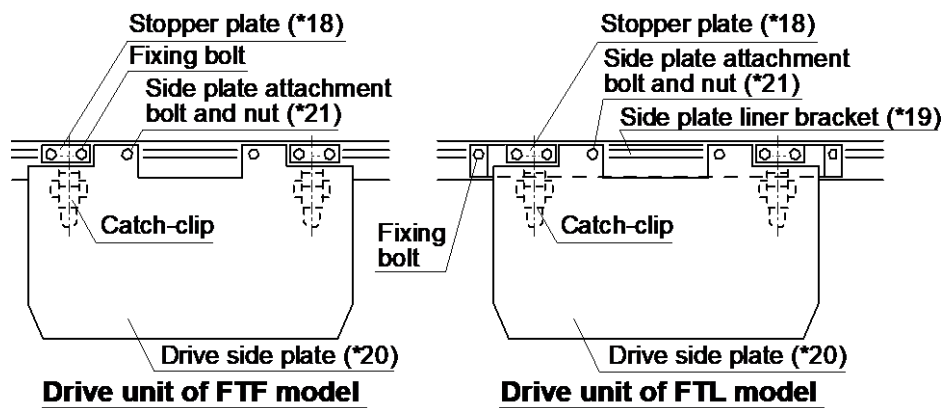
-Easy removable drive unit (standard): Catch-clips(*2)

-Fixed drive unit (optional): Drive unit fixing brackets(*2)

Fix catch-clip hooks(*15) to frame by tightening fixing bolts(*16). Particularly, for easy removable drive unit, to correctly fit catch-clip hooks(*15) to catch-clips(*2), be sure to fasten catch-clips(*2) to hooks(*15) before tightening fixing bolts(*16). (→ See figure, p.19.)

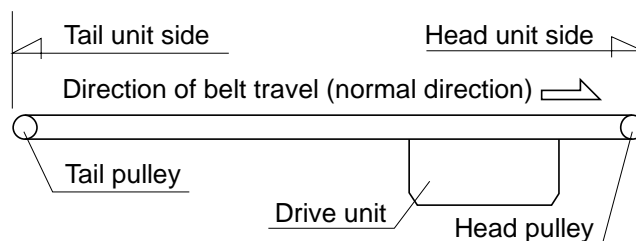
NOTE: For FTF and FTL models, fix frame to drive unit by tightening bolts and nuts(*21) into attachment holes of drive side plate(*20).

8. If machine condition is unstable in operation, remove frame from drive unit and readjust installation position.



NOTE: Caution when relocating drive unit

When relocating, position drive unit on head unit side, not on tail unit side. Especially, keep in mind that longer machines may not correctly operate if drive unit is positioned on tail unit side.



NOTE: Large relocation is occasionally impossible depending on positions of other attachments.

7

BELT ALIGNMENT ADJUSTMENT

7-1. PRIOR CHECKING

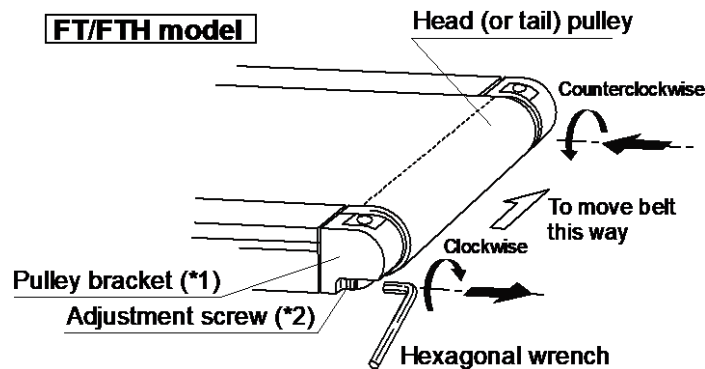
1. Check frame for level, straightness, etc. → See p.10.
2. Check drive unit for position. → See p.20.
3. Check drive wheels, pulleys, etc. for dirt. → Clean and remove any foreign matter.
4. Check if V-form strip on belt undersurface has dislodged from belt guidance grooves.
→ Correct belt condition.

7-2. BELT ALIGNMENT ADJUSTMENT

FT/FTH model

Adjustment using head (or tail) pulley:

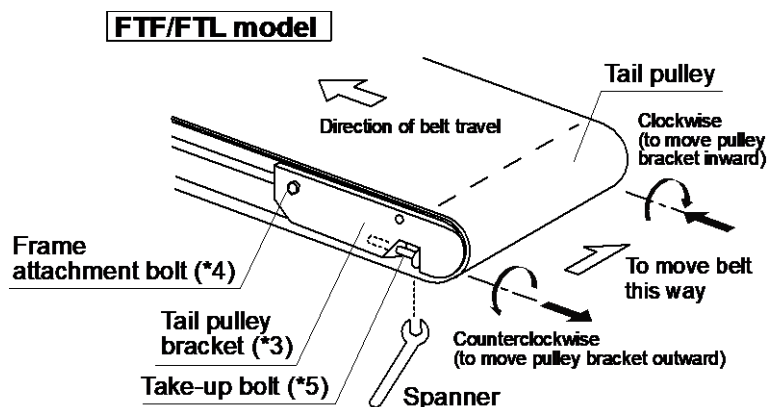
On side to which belt is deviating, turn adjustment screw(*2) clockwise. Pulley will then move outward on this side and belt will center itself. Alternatively, on opposite side, if there is a space between pulley bracket and frame, make adjustment on this side. In this case turn adjustment screw(*2) counterclockwise to move pulley inward.



FTF/FTL model

Adjustment using take-up bolt of tail unit:

On side to which belt is deviating, loosen frame attachment bolt(*4) (one bolt on one side). Turn take-up bolt(*5) counterclockwise with a spanner. Pulley bracket will then move outward on this side and belt will center itself. Alternatively, on opposite side, loosen frame attachment bolt(*4) and turn take-up bolt(*5) clockwise. Pulley bracket will then move inward on this side and belt will center itself. Once adjustment is completed, retighten frame attachment bolt(*4).






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.

8-1. PROBLEMS AND REMEDIES

PROBLEM	CAUSE	REMEDY
1. Conveyor does not run when switched on.	(1) Power plug is not properly connected to mains. (2) Power switch is not turned on. (3) Inappropriate power source	(1) Inspection, correction (2) Inspection, correction (3) Check power source. → See p.12.
2. Conveyor is turned on, but motor will not run.	(1) Disconnection or breakage in wiring (2) Conveyor speed is set too slow. (3) Circuit protector or emergency stop switch has been activated. (4) Failure of control unit	(1) Inspection, repair (2) Reset to appropriate speed. (3) Restore protection circuit or emergency stop switch. → See p.15-16. (4) Inspection and repair or replacement
3. Motor runs, but belt does not move.	(1) Inappropriate attachment of drive unit and frame (inappropriate arrangement of drive wheels and pressure rollers) (2) Foreign substances on drive roller (3) Foreign substances on belt surface/undersurface (4) Belt is trapped after dislodgement from V-form belt guidance grooves. (5) Overload	(1) Inspection, correction → See p.19-20. (2) Clean and remove foreign substances. (3) Clean and remove foreign substances. (4) Inspection, correction (5) Check and reduce load.
4. Abnormal noise or vibration	(1) Loose fixing bolts of drive wheels (2) Geared motor is not fixed firmly. (3) Rotation malfunction of rollers and pulleys	(1) Tighten fixing bolts. (2) Tighten attachment bolts. (3) Inspection, replacement
5. Overheat or burnout of motor	(1) Inappropriate power source (2) Overload (3) Conveyor runs too quickly or too slowly. (4) Belt is trapped after dislodgement from V-form belt guidance grooves.	(1) Check power source. (2) Check and reduce load. (3) Reset to appropriate speed, or replace reduction gear. (4) Inspection, correction
6. Electric shock is received from conveyor.	(1) Static electricity has been charged in frames. (2) Electric leakage	(1) Properly ground the machine. → See p.10. (2) Inspection, investigation

8-2. 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 foreign substances
		Dislodgment from V-form belt guidance grooves	Visual inspection	Inspection, adjustment
		Getting caught	Visual inspection	Inspection, adjustment
	Drive wheels, pulleys	Foreign substances	Visual inspection	Clean and remove foreign substances
Three monthly	Geared motor	Rotation malfunction, loose attachment bolts	Visual inspection and manual check	Tighten loose bolts.
		Overheat, abnormal noise	Manual check, listening	Inspection, replacement
Six monthly	Drive wheels	Wear of surface, rotation malfunction	Visual inspection and manual check	Inspection, replacement
	Pulleys and rollers	Rotation malfunction, loose attachment bolts	Visual inspection and manual check	Inspection, repair Tighten loose bolts.
		Overheat of bearings, abnormal noise	Manual check, listening	Inspection, replacement
	Frame, stands, attachments	Loose attachment bolts	Visual inspection and manual check	Tighten loose bolts.
		Damages	Visual inspection	Inspection, replacement

 CAUTION	 <p> ■ BE SURE TO SWITCH OFF POWER SUPPLY Before starting procedures below, be sure to stop conveyor and switch off power supply, otherwise there is a risk that conveyor could start unexpectedly. </p>
	 <p> ■ CAUTION WHEN REMOVING DRIVE UNIT Since drive unit is quite heavy, there is a risk of being injured if it is dropped. If drive unit has no support stand under it, pay special attention to the following items: <ol style="list-style-type: none"> 1. When removing the drive unit, be sure to firmly support it with provisional stand etc. 2. When unfastening catch-clips, gently operate them. </p>

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Contact us

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- The specification given in this manual are subject to change without notice.