

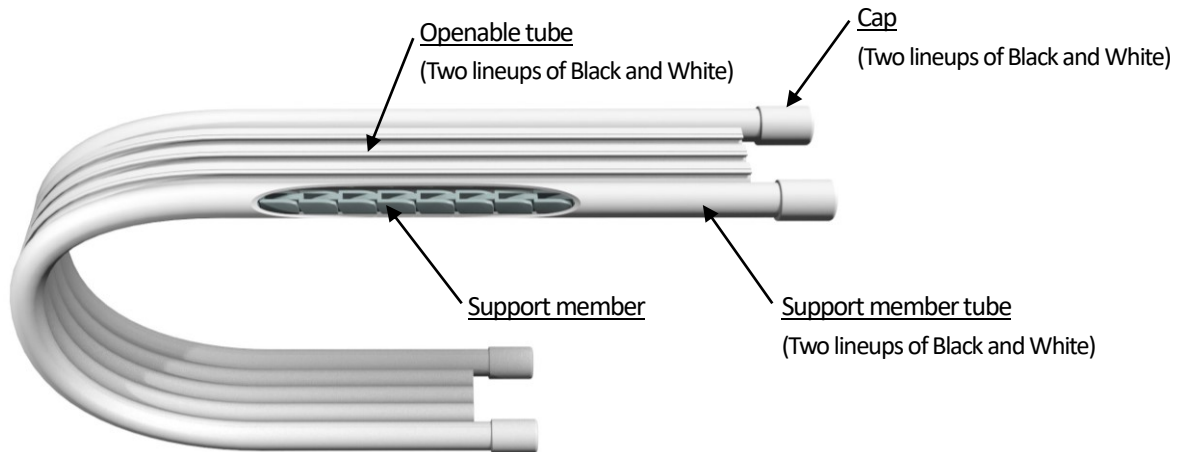
Tsubaki

Instruction Manual

FLATVEYOR ZP Type

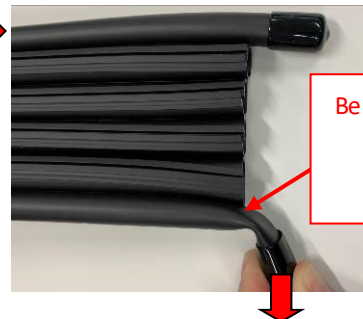
Caution: Always wear the appropriate protective gear (safety glasses, gloves, safety shoes, etc.) when working.

1 Construction ▪ Part name



2 Precautions

Since welded ends tend to peel off in the tearing direction, do not allow forces in the tearing direction to work on the welded ends.
Please handle cables and tubes with care when wiring or installing them in equipment.



Be careful not to allow forces in tearing direction.

Be sure to fix the device in a bent position with the locking part facing the outside.

Fixing one end (fixed or moving end) to the device while the Flatveyor is straightened may cause the support member to be fixed in the not bending direction. Bending in this condition could damage the support member.

Outside



Locking part



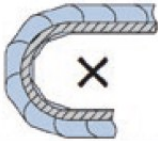

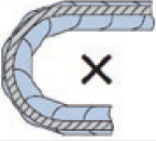

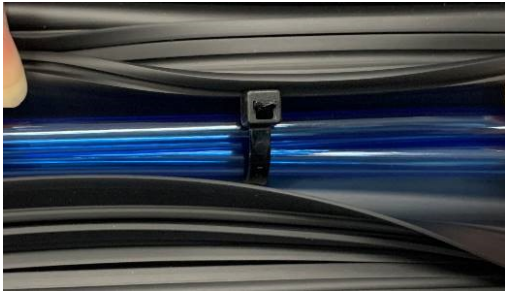

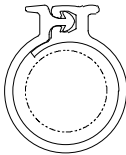
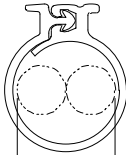
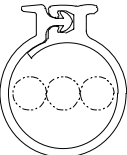
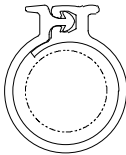
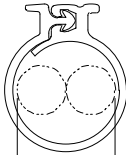
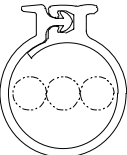
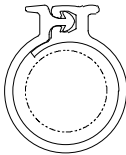
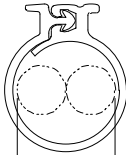
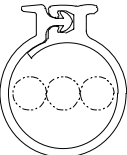
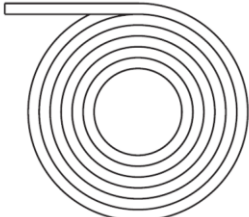

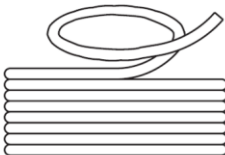



Do not fix one end of the Flatveyor while it is straightened.

When the support member is fixed in a direction that is not the bending direction, it will break if bent in that condition.


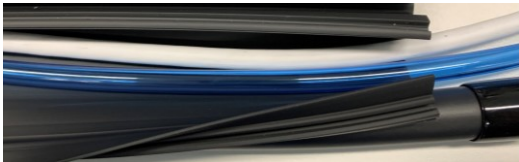

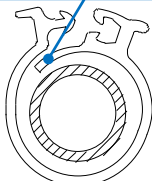
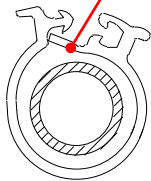
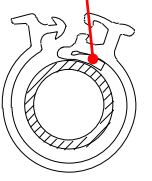

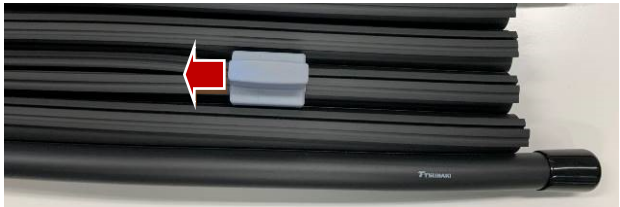
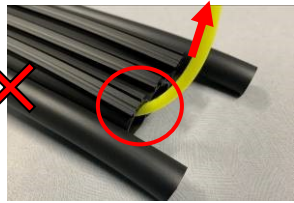

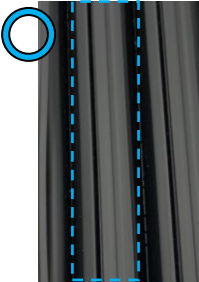
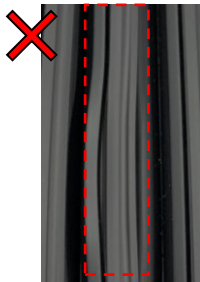
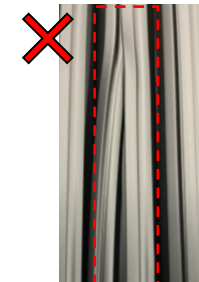


※Actual support member tube is black or white

<p>When fixing the cable/tube, make sure to provide a suitable amount of play.</p> <p>Otherwise, the openable tube could tear, or the locking part may open.</p>	<div><div><p>Suitable play</p></div><div><p>Too Tight</p></div><div><p>Too loose</p></div></div>									
<p>Do not fix the cable/tube inside the openable tube with a cable tie.</p> <p>It could tear the openable tube.</p>	<div></div>									
<p>Refer to the table on the right for the cable/tube to be installed in the openable tube.</p> <p>When multiple cables/tubes are to be installed, the difference in outer diameter should be 5 mm or less.</p>	<table><tr><th colspan="3">Number of cables/tubes stored</th></tr><tr><th>1 pc</th><th>2 pcs</th><th>3 pcs</th></tr><tr><td><p>φ11 or less</p></td><td><p>side-by-side 13mm or less</p></td><td><p>φ4 or less and 3 pcs or less</p></td></tr></table>	Number of cables/tubes stored			1 pc	2 pcs	3 pcs	 <p>φ11 or less</p>	 <p>side-by-side 13mm or less</p>	 <p>φ4 or less and 3 pcs or less</p>
Number of cables/tubes stored										
1 pc	2 pcs	3 pcs								
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<p>The Flatveyor may tilt due to the carling of the cable/tube.</p> <p>Cable/tube should be routed without twisting. Do not pull the cable/tube out from the drum or coil in a spiral pattern because this will cause the cable/tube to be routed with a twist.</p>	<div><div></div><div></div></div>									


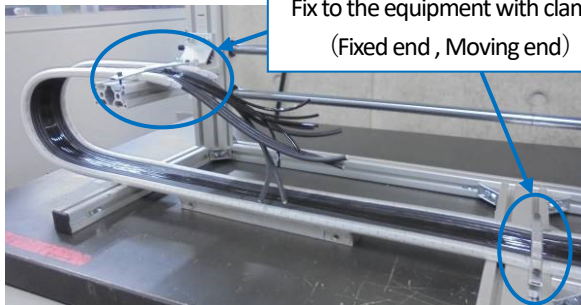
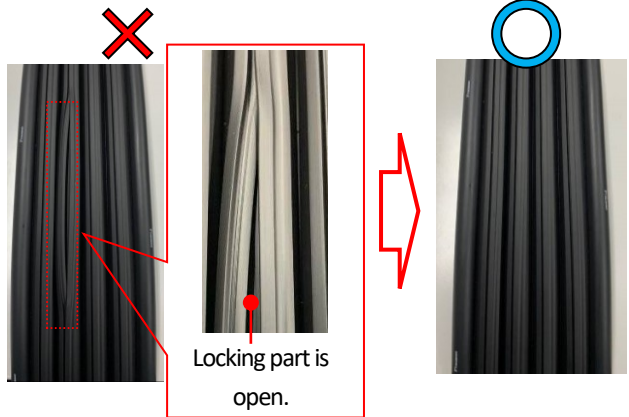
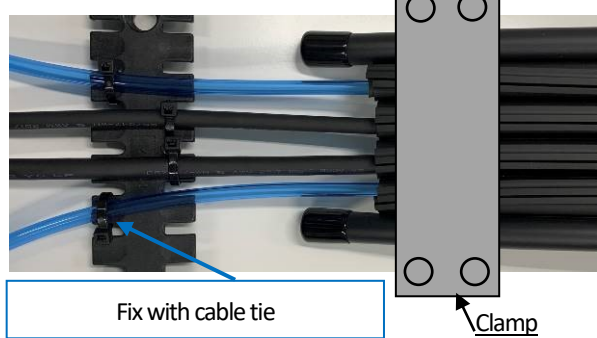
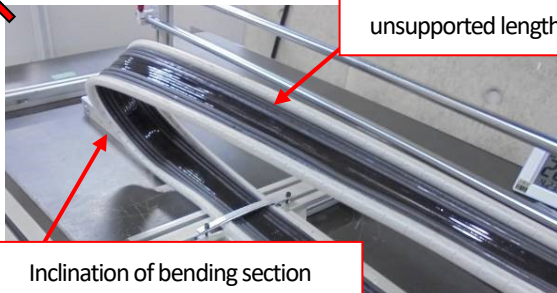
- Use cables/tubes that are flexible, repeatedly bendable, durable, and slippery.
- For installation of cables/tubes, ensure that the cable weight is symmetrically distributed across the width of the Flatveyor.
- Please remove any inclusions on the floor or operating area where the Flatveyor is installed, as they may cause damage.
- Do not install any object on the inner side of the Flatveyor that may contact it.
- Periodically check that the locking part of the openable tube is not open, that there are no inclusions that could damage on the floor or operating area where the Flatveyor is installed, and that the cable/tube is not pulled into the openable tube. If any abnormality is found during the inspection, maintenance should be performed.

3 Cable/tube installation

<p>① Open the locking part from the end of the openable tube.</p>	
<p>② Install the cable/tube inside the openable tube. When installing multiple cables/tubes in one openable tube, keep the cables/tubes aligned. Storing with twist may cause premature wire breakage due to entanglement of cables in the openable tube.</p>	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">○</div>  </div> <div style="display: flex; align-items: center; margin-top: 10px;"> <div style="margin-right: 10px;">✗</div>  <div style="border: 1px solid red; padding: 2px; margin-left: 5px;">Routed with twist</div> </div>
<p>③ To close the openable tube properly, make sure that section A in the right figure of the locking part is correctly overlapped and does not come outside of the openable tube. It is important that the section A is properly overlapped around the cable/tube over the entire length of the Flatveyor. If not properly overlapped, the locking part could open.</p>	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <div style="margin-bottom: 5px;">○</div> <div style="border: 1px solid blue; padding: 2px; width: 100px;">Section A is correctly overlapped.</div>  </div> <div style="text-align: center;"> <div style="margin-bottom: 5px;">✗</div> <div style="border: 1px solid red; padding: 2px; width: 100px;">Section A is caught on the arrowhead side.</div>  </div> <div style="text-align: center;"> <div style="margin-bottom: 5px;">✗</div> <div style="border: 1px solid red; padding: 2px; width: 100px;">Section A is bent.</div>  </div> </div>
<p>④ Tighten the openable tube temporarily by hand and close the locking part with closing tool from the end. (Also closable by hand.) After closing the locking part, ensure that the cable/tube does not exert any outward force on the end of locking part. Otherwise, the locking part could open.</p> <div style="text-align: center; margin: 10px 0;">  <p><u>Closing tool</u></p> </div> <p>※ Closing tool is not included. Please order separately.</p>	 <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> <div style="margin-bottom: 5px;">✗</div>  </div> <div style="text-align: center;"> <div style="margin-bottom: 5px;">✗</div>  </div> </div>
<p>⑤ Make sure that the locking part is closed properly. If the gap between the locking part is not uniform or if a locking part opens, section A may not be overlapped correctly. Correctly overlap section A and close the locking part again.</p>	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <div style="margin-bottom: 5px;">○</div>  <div style="border: 1px solid blue; padding: 2px; width: 100px;">Uniform gap</div> </div> <div style="text-align: center;"> <div style="margin-bottom: 5px;">✗</div>  <div style="border: 1px solid red; padding: 2px; width: 100px;">Gap is not uniform</div> </div> <div style="text-align: center;"> <div style="margin-bottom: 5px;">✗</div>  <div style="border: 1px solid red; padding: 2px; width: 100px;">Open</div> </div> </div>

4 Installation procedure

When installing, mount the clamp in the position indicated in our drawing or catalogs

<p>① After inserting cable/tube and before fixing it to the equipment, make sure that the locking part of the openable tube is facing the outside and Flatveyor should be bent as shown on the right before fixing</p>	<p>Locking part to face outside</p> 
<p>② Fix the fixed end and moving end in bent position to the equipment with clamp.</p>	 <p>Fix to the equipment with clamp. (Fixed end , Moving end)</p>
<p>③ Make sure that the locking part of openable tube is properly closed. Close properly if it is open.</p>	 <p>Locking part is open.</p>
<p>④ Fix each cable/tube near the exit of the openable tube with a cable tie, etc. at both fixed end side and moving end side, so that unnecessary tension is not applied on it. Fixing them under tension and operating could cause the openable tube to tear.</p>	 <p>Fix with cable tie</p> <p>Clamp</p>
<p>⑤ After fixing the fixed and moving ends, check that there is no tilt in the bending section of the Flatveyor and that the unsupported length is not twisted. Then, move the Flatveyor slowly and check that each cable/tube is not pulled into the openable tube. Also, check that there are no other abnormalities in operation.</p>	 <p>Inclination of bending section</p> <p>Twisting of unsupported length</p>