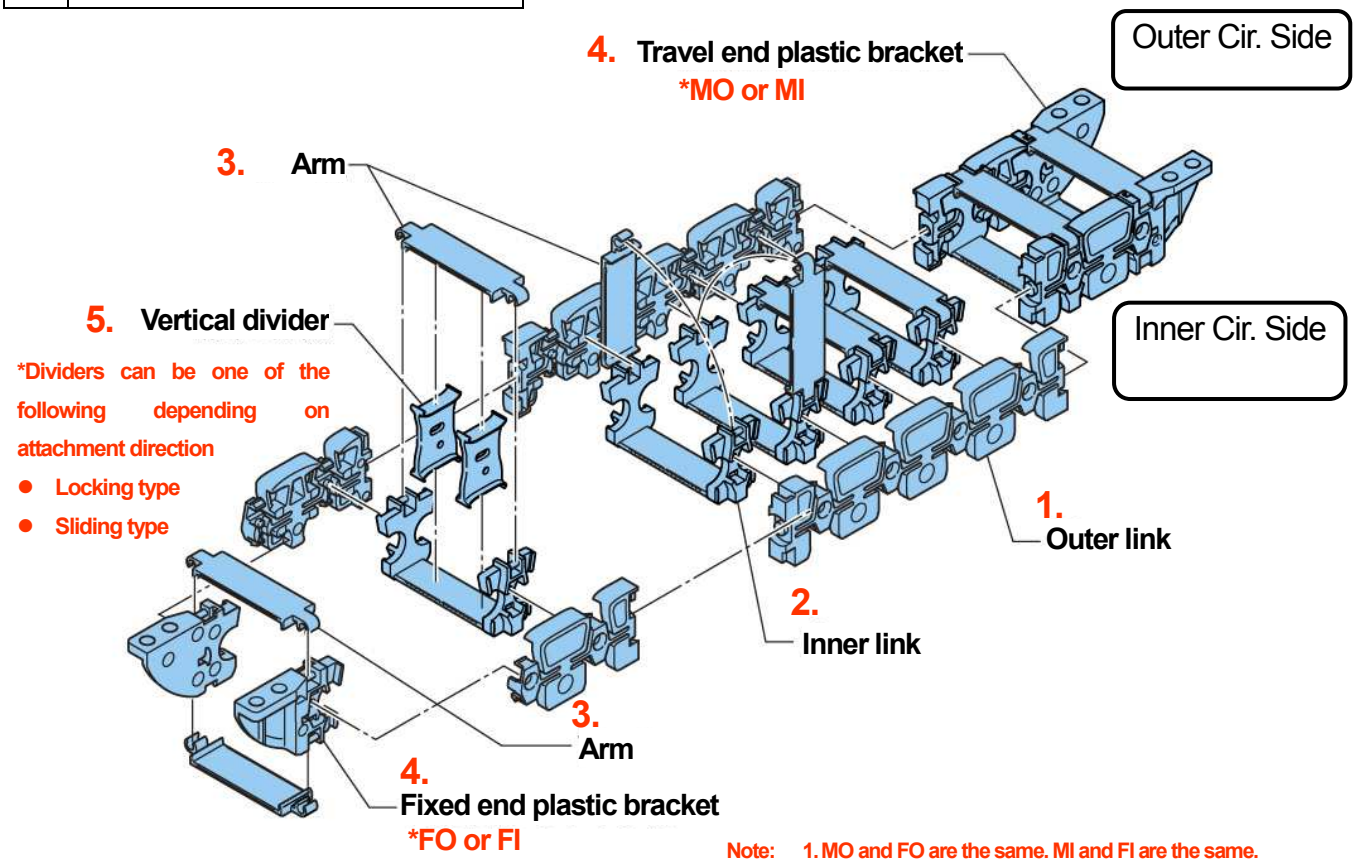
Innovation in Motion TSUBAKI

Tsubaki Cableveyor®

Instruction Manual

TKR15H22

1 Construction/Part Names



Note: 1. MO and FO are the same. MI and FI are the same.

2. Cableveyor link's arms and bracket arms are the same.

2 Attaching Dividers

Dividers are attached when inserting cables and hoses.

Note: Dividers are attached on every two inner links. Check the amount attached at any one location. (Dividers cannot be attached to bracket arms.)

- Attaching locking dividers
  Attach with the side with the "LOCK" stamp to the inner link stay.

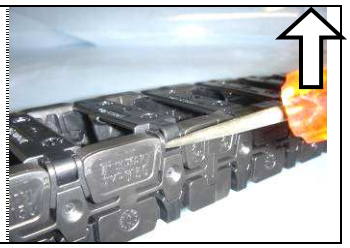
- Attaching sliding dividers
  Attach with the side with the "TKR0150" stamp to the inner link stay.

3 Opening and Removing Arms

Follow the steps below to open and remove arms.
Arms can be opened from either left or right.

Note: Use a flat head screwdriver with a tip width of 3mm or less.

1. Insert a flat head screwdriver into the gap on the inner link side face and pry in the direction of the arrow to unlatch.
2. Open the arm and pull along its axis.
3. Pull until the arm is directly vertical, then pull laterally to remove.



4 Removing Brackets (removing inner links)

Follow the steps below to remove the brackets. Inner links can be removed using the same steps.
To remove a bracket on one side, first unlatch at two locations on the inner/outer side.

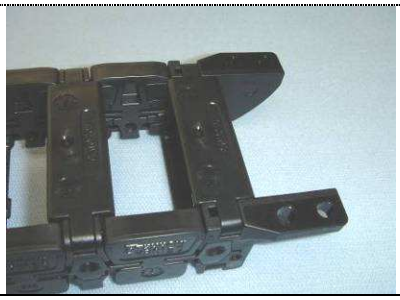
*Refer to 3 above for steps to remove arms.

1. Remove arms on the inner/outer sides*. Insert a flat heat screwdriver into the gap on the outer side of the bracket and pry in the direction of the arrow to unlatch. The bracket has been unlatched when the outer link lifts up about 2mm.	2. Repeat step 1 on the inner side to unlatch the inner side. Remove the bracket.	3. Repeat steps 1 and 2 on the opposite side to remove the other bracket.
		

Note: 1. Lifting the outer link more than 3mm may damage the Cableveyor.
2. Use a flat head screwdriver with a tip width of 3mm or less.

5 Attaching Brackets (attaching inner links)

Follow the steps below to attach the brackets.
Inner links can be attached using the same steps.

1. Insert the latch on the outer side of the outer link into the gap on the outer side of the bracket.	2. Press the latch in while inserting it into the gap on the inner side of the bracket. Take the outer link and bracket between your fingers and push to snap together.	3. Repeat steps 1 and 2 with the bracket on the opposite side. Attach the inner/outer side arms.
		

6 Shortening the Length of the Links

Follow the steps below to shorten link length.

1. Remove the arms from the inner/outer side of the bracket and two arms (total of 5) from before and after the location where you wish to cut.
   (Refer to 3 above for removing arms.)
2. Remove the brackets. (Refer to 4 above for removing brackets.)
3. You will need to unlatch the inner link where you wish to cut (both sides) and the inner links both before and after (total of 6) before removing the inner link where you wish to cut.

Location to cut on the outer link

4. Insert a flat head screwdriver into the gap on the outer side side of the inner link and twist in the direction of the arrow to unlatch.
   The link has been unlatched when the outer link lifts up about 2mm.

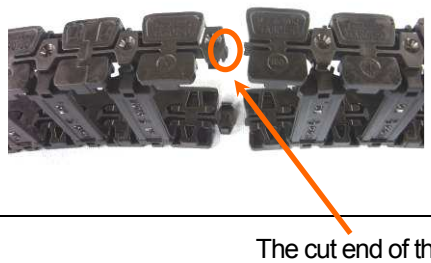
5. Insert a flat head screwdriver into the gap on the inner side side of the inner link at the same position as in step 4 and twist to unlatch.

Note: 1. Lifting the outer link more than 3mm may damage the Cableveyor.
2. Use a flat head screwdriver with a tip width of 3mm or less.

6. Unlatch three links before and after where you wish to cut as in steps 4 and 5 above, unlatch where you want to cut on the opposite side, and remove the inner link.

○: Unlatch here (six links)

7. Use a clipper or box knife to cut the outer link (both sides) into the shape shown below.



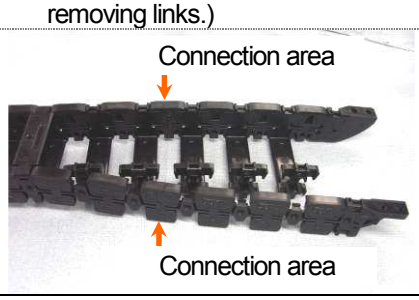
The cut end of the link element should be 1mm or less

8. Attach the inner links, arms, and brackets.
   (Refer to 3 and 5 above for attaching these parts.)

7 Extending Links

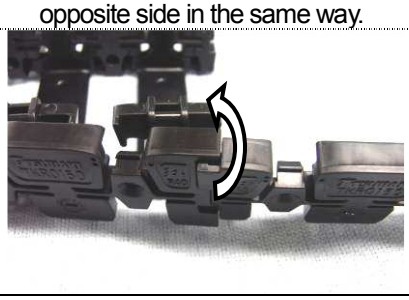
Follow the steps below to extend the links.

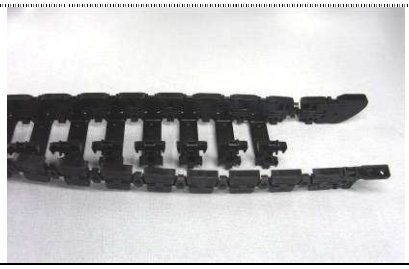
1. Remove all the bracket inner/outer side arms and all arms from the bracket to the first outer link connection. Remove an additional two arms from that point back as well. (Refer to 3 above for removing arms.)
2. Unlatch the outer/inner links around the area to connect, and further unlatch two additional inner links.
   Unlatch the links on the opposite side in the same way and remove the inner link. (See 4 above for removing links.)



3. Twist and rotate the outer link connection point and separate from the outer link. Do the same on the opposite side.

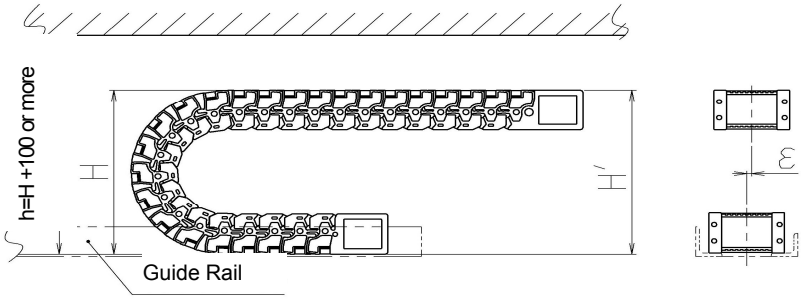
Press the additional outer link into the outer link connection and twist 90° clockwise to connect. (Connect the outer links removed in step 3 above to the additional outer link.) Connect the outer links on the opposite side in the same way.



5. Insert the latch on the outer side of the outer link into the gap on the outer side of the inner link.	6. Press the latch on the inner side of the outer link in while inserting it into the gap on the inner side of the inner link. Take the outer and inner links between your fingers and snap in. Attach all inner links to the outer links on the opposite side in the same way.	7. Attach the outer links to all of the inner links on one side as in steps 5 and 6 above.
		
8. Attach all of the outer links to all of the inner links on the opposite side as in step 7. Cut the outer links to achieve the specified number of links. (Refer to 6.4. for cutting.)		
9. Replace the bracket, and attach all arms and bracket arms (inner/outer side). (Refer to 5.3 for attaching.)		

8 Caution

Depending on the application, pretension and sag may appear in the free span. However, if selected within Tsubaki's performance graph then there will be no problems with use.



1. Machine travel end installation height (H') should be Cableveyor height H + (10-30).
2. Cableveyor space height (h) is H + 100.
3. Install a guide rail.
4. The difference (ε) in the travel end and fixed end bracket attachment sides should be less than 4mm.
5. Use travel cables/hoses with excellent bending and wear properties.
6. Avoid using cables/hoses with wire braiding, as they are easily damaged.
7. Cables/hoses wear easily when used stacked onto of one another. Lay horizontally or use horizontal dividers.
8. Set cables and hoses in the Cableveyor so that they have some play, and clamp both ends.
9. Remove foreign objects from guide rails, as they may cause damage.
10. The following are shipped unassembled and will require assembly when installing the Cableveyor.

9 Caution when Mounting

Any unevenness on the plastic bracket installation surface may damage the bracket. Ensure that the installation surface is as smooth as possible. Over-tightening the installation bolts can also damage the plastic bracket. Please use the following recommended tightening torque.

Bolt Size	Recommended Tightening Torque
M4	6kg·cm

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