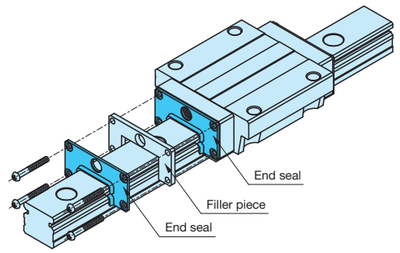
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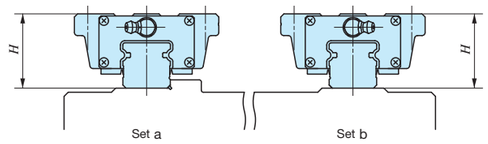
Double seals (Assembled set) /V /VV



Double end seals are mounted to the interchangeable specification assembled set or non-interchangeable specification product's slide unit to improve the dust protection property.

① /V Apply double seals to slide unit end nearest to both ends of the track rail. When only one slide unit is used, fit them to both ends of the track rail.
② /VV When two or more slide units are used, apply double seals to both ends of each slide unit.

A group of multiple assembled sets /W



Set the variation of H dimensions of the Linear Way and Linear Roller Way of multiple assembled sets on the same flat surface in the standard range.
The variation of H dimensions of the multiple assembled sets is the same as the accuracy of one set.
Indicate the number of sets after "/W" based on the number of units when specify.

Specified grease /YCG /YCL /YAF /YBR /YNG

The type of pre-packed grease can be changed by the supplemental code.

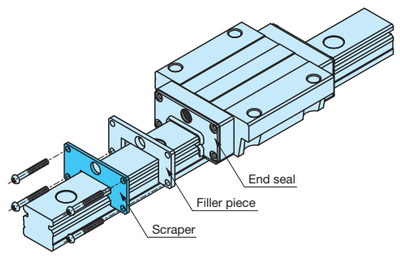
① /YCG Low Dust-Generation Grease for Clean Environment CG2 is pre-packed.
② /YCL Low Dust-Generation Grease for Clean Environment CGL is pre-packed.
③ /YAF Anti-Fretting Corrosion Grease AF2 is pre-packed.
④ /YBR MOLYCOTE BR2- Plus Grease [Dow Corning] is pre-packed.
⑤ /YNG No grease is pre-packed.

Scraper (Single unit) /Z /ZR /ZL

Mount a metal scraper to the interchangeable specification slide unit.
The scraper is non-contact type and effectively eliminate large foreign substances adhering to the track rail.

① /Z Mount scrapers to both ends of the slide unit.
② /ZR Fit a scraper to a right end surface of the slide unit seen from IKO mark of the slide unit.
③ /ZL Fit a scraper to a left end surface of the slide unit seen from IKO mark of the slide unit.

Scraper (Assembled set) /Z /ZZ



Mount a metal scraper to the interchangeable specification assembled set or non-interchangeable specification product's slide unit.
The scraper is non-contact type and effectively eliminate large foreign substances adhering to the track rail.

① /Z Fit a scraper to slide unit end nearest to both ends of the track rail. When only one slide unit is used, fit them to both ends of the track rail.
② /ZZ When two or more slide units are used, fit scrapers to both ends of each slide unit.

Precaution for Use

Operating temperature

The maximum operating temperature for linear motion rolling guide with integrated C-Lube is 80℃. The maximum operating temperature for linear motion rolling guide without integrated C-Lube is 120℃ and temperature up to 100 ˚C is allowed for continuous operation. When the temperature exceeds 100℃, please contact IKO.
When specifying special specification with C-Lube plate (supplemental code "/Q"), utilize it below 80℃.

Multiple slide units used in close proximity

When using multiple slide units in close proximity, greater load may be applied than the calculated value depending on the deviation of slide unit mounting accuracy for the machine or device. In such cases, allowance for greater applied load than the calculated value should be made.

Lateral or upside-down mounting

For lateral or upside-down mounting of the Linear Way E and Linear Way F, specify the special specification (supplemental code "/U") with under seal as necessary to prevent foreign substances from entering into the slide unit.

Operation velocity

Operation velocity limit value of the Linear Way and Linear Roller Way depends on operation conditions such as motion characteristics, applied load, lubrication status, mounting accuracy and environment temperature. Reference values based on actual performance and experienced values as a reference of maximum velocity under typical operating conditions are indicated in Table 19.

Table 19 Reference maximum velocity

Size	Maximum velocity m/min
35	180
45	120
55	100
65	75

Cleaning and removing fat

Never clean a linear motion rolling guide that has integrated C-lube with organic solvents or white kerosene with fat removing properties.

Lubrication oil supply point for oil lubrication

If the lubrication oil is supplied by a gravity drip system, enough lubrication oil may not be supplied to ways above the supply point, so lubrication path and supply point must be considered. For such applications, please contact IKO.

Precautions regarding oil components

Rust prevention oil or grease is used for the linear motion rolling guide. Therefore, oil may drip or spatter depending on the operating conditions. Consider installing a shielding plate if necessary.

Storage

Store the Linear Way/Linear Roller Way horizontally indoors in the IKO packing and packaging provided. Avoid high temperature, low temperature and high humidity. Lubricant will deteriorate over time in products stored for a long time. Be sure to reapply lubricant prior to use.

Precaution for Mounting

When mounting multiple assembled sets at the same time

● Interchangeable specification products
For interchangeable specification products, assemble a slide unit and a track rail with the same interchangeable code ("S1" or "S2").
● Non-interchangeable specification products
Do not change the combination of delivered slide unit and track rail.
● Product including multiple assembled sets
For special specification (supplemental code "/W") products with multiple assembled sets, the delivered combination is managed as a group for variation. So do not mix with different group for mounting.

Assembling of slide unit and track rail

When assembling the slide unit on the track rail, correctly fit the grooves of the slide unit and the track rail and move the slide unit softly in parallel direction. Rough handling may result in damaging of seals or dropping of steel balls and cylindrical roller.
For product including a dummy rail as a standard accessory, operation of the slide unit to the track rail can be made easier by using the dummy rail.
Though the dummy rail is included as an accessory of products indicated in Table 21.1 and Table 21.2, it is also available for other products. If these parts are necessary, please contact IKO.

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1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

Mounting accuracy

Deviation of accuracy of Linear Way and Linear Roller Way mounting surface or deviation of accuracy in mounting may generate large load over the calculated value. Note that such load could affect the life adversely. It enhances the reliability of Linear Way and Linear Roller Way to ensure high machining accuracy and assembly accuracy depending on operational conditions of the track rail and slide unit such as required motion accuracy and rigidity and to consider mounting structure that can maintain the accuracy and performance.
Typical reference values for mounting parallelism between multiple assembled sets used are shown in Table 20.

Table 20 Parallelism between two mounting surfaces unit: μm

Classification	Ordinary (No symbol)	High (H)	Precision (P)	Super precision (SP)	Ultra precision (UP)
Parallelism	30		20	10	6

Shoulder height and corner radius of the reference mounting surface

For the shape of opposite corner of the reference surface, it is recommended to have relieved fillet as indicated in Fig. 8, but you may also use it with providing radius at the corner. For recommended values for the shoulder height and corner radius of the reference mounting surface, see an explanation of each series.

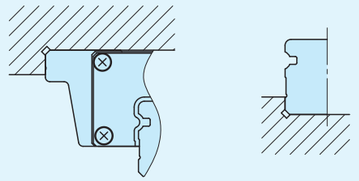


Fig. 8 Corner of the mating reference mounting

Table 21.1 Products appended with dummy rail ○: Appended

Series name and size		Interchangeable		Non-interchangeable specification
		Single unit	Assembled set	Assembled set
C-Lube Linear Way ML Linear Way L		○	See Table 21.2	See Table 21.2
C-Lube Linear Way MLV		–	–	
C-Lube Linear Way MV		–	–	–
C-Lube Linear Way ME Linear Way E		○	–	–
C-Lube Linear Way MH	8~12	○	○	○
Linear Way H	15~65	○	–	–
Linear Way F		○	–	–
C-Lube Linear Way MUL	25, 30	–	–	○
Linear Way U	40~86	–	–	–
C-Lube Linear Roller Way Super MX	10~30	○	○	○
Linear Roller Way Super X	35~65	○	–	–
	Extra long	○	○	○
	85, 100	–	–	–
Linear Roller Way X		–	–	–

Table 21.2 Appended dummy rail model number for C-Lube Linear Way ML, C-Lube Linear Way MLV and Linear Way L

C-Lube Linear Way ML		C-Lube Linear Way MLV	Linear Way L	
Standard type	Wide type	Standard type	Standard type	Wide type
–	–	–	LWL 2	LWLF 4
MLC 3	MLFC 6	–	LWLC 3	LWLFC 6
ML 3	MLF 6	–	LWL 3	LWLF 6
MLC 5	MLFC 10	–	LWLC 5···B	LWLFC 10···B
ML 5	MLF 10	–	LWL 5···B	LWLF 10···B
MLC 7	MLFC 14	MLV 7	LWLC 7···B	LWLFC 14···B
ML 7	MLF 14	–	LWL 7···B	LWLF 14···B
MLG 7	MLFG 14	–	LWLG 7···B	LWLFG 14···B
MLC 9	MLFC 18	MLV 9	LWLC 9···B	LWLFC 18···B
ML 9	MLF 18	–	LWL 9···B	LWLF 18···B
MLG 9	MLFG 18	–	LWLG 9···B	LWLFG 18···B
MLL 9	–	–	–	–
MLG 12	MLFG 24	–	LWLG 12···B	LWLFG 24···B
MLL 12	–	–	–	–
MLG 15	MLFG 30	–	LWLG 15···B	LWLFG 30···B
MLL 15	–	–	–	–
MLG 20	MLFG 42	–	LWLG 20···B	LWLFG 42···B
MLG 25	–	–	LWLG 25···B	–

Cleanup of mounting surface

Remove burrs and blemishes by using oil-stone, etc. and wipe off rust prevention oil and dust with clean cloth from mounting surface and reference mounting surface of the machine or device to which the Linear Way or Linear Roller Way are mounted.

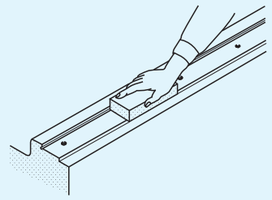


Fig. 9 Cleanup of mounting surface

Mounting of caps for rail mounting holes

When mounting the special specification caps for rail mounting holes (supplemental code "/F") on the track rail, use a flat applicator and stamp it by bits until it becomes plane with the track rail upper surface.

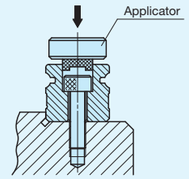


Fig. 10 Mounting of caps for rail mounting holes

Tightening torque for fixing screw

Typical fixing screw tightening torque to mount the Linear Way and Linear Roller Way is indicated in Table 22. When vibration and shock of the machine or device are large, fluctuating load is large, or moment load is applied, fix it by using the torque 1.2 to 1.5 times larger than the value indicated as necessary.
If the mating member material is cast iron or aluminum alloy, reduce the tightening torque depending on the strength characteristics of the mating member material.
For details, see an explanation of each series.
Though the track rail mounting bolts are appended as an accessory of products indicated in Table 23, it is also available for other products. If these parts are necessary, please contact IKO.

Table 22 Tightening torque for fixing screw

Bolt size	Tightening torque N · m			
	High carbon steel-made screw (Strength division 8.8)	High carbon steel-made screw (Strength division 10.9)	High carbon steel-made screw (Strength division 12.9)	Stainless steel-made screw (Property division A2-70)
M 1 ×0.25	–	–	–	0.04
M 1.4×0.3	–	–	–	0.10
M 1.6×0.35	–	–	–	0.15
M 2 ×0.4	–	–	–	0.31
M 2.3×0.4	–	–	–	0.49
M 2.5×0.45	–	–	–	0.62
M 2.6×0.45	–	–	–	0.70
M 3 ×0.5	1.3	–	1.8	1.1
M 4 ×0.7	2.9	–	4.1	2.5
M 5 ×0.8	5.7	–	8.0	5.0
M 6 ×1	–	–	13.6	8.5
M 8 ×1.25	–	–	32.7	20.4
M10 ×1.5	–	–	63.9	–
M12 ×1.75	–	–	110	–
M14 ×2	–	–	175	–
M16 ×2	–	–	268	–
M20 ×2.5	–	–	522	–
M24 ×3	–	749	–	–
M30 ×3.5	–	1 490	–	–

1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

Table 23 Specifications of appended track rail mounting bolts

Series	Size	Material type	Specifications of appended bolts: Type	Material	Class
C-Lube Linear Way ML Standard type(1)	1～ 3(2)	Stainless steel made	JCIS 10-70 Cross-recessed pan head screw for precision equipment	Stainless steel made	–
Linear Way L Standard type(1)	5	Stainless steel made	JCIS 10-70 Cross-recessed pan head screw for precision equipment	Stainless steel made	–
	7～ 25	Stainless steel made	JIS B 1176 Hexagon socket head bolt	Stainless steel made	Property division A2-70
	9～ 20	High carbon steel made	JIS B 1176 Hexagon socket head bolt	High carbon steel made	Strength division 8.8
C-Lube Linear Way ML Wide type(1)	4～ 10	Stainless steel made	JCIS 10-70 Cross-recessed pan head screw for precision equipment	Stainless steel made	–
Linear Way L Wide type(1)	14～ 42	Stainless steel made	JIS B 1176 Hexagon socket head bolt	Stainless steel made	Property division A2-70
	18～ 42	High carbon steel made	JIS B 1176 Hexagon socket head bolt	High carbon steel made	Strength division 8.8
C-Lube Linear Way MLV		Stainless steel made	JIS B 1176 Hexagon socket head bolt	Stainless steel made	Property division A2-70
C-Lube Linear Way MV(3)		High carbon steel made	JIS B 1176 Hexagon socket head bolt	High carbon steel made	Strength division 12.9
C-Lube Linear Way ME(3)		Stainless steel made	JIS B 1176 Hexagon socket head bolt	Stainless steel made	Property division A2-70
Linear Way E(3)		High carbon steel made	JIS B 1176 Hexagon socket head bolt	High carbon steel made	Strength division 12.9
C-Lube Linear Way MH(4)	8～ 30	Stainless steel made	JIS B 1176 Hexagon socket head bolt	Stainless steel made	Property division A2-70
Linear Way H(5)	12	High carbon steel made	JIS B 1176 Hexagon socket head bolt	High carbon steel made	Strength division 8.8
	15～ 65	High carbon steel made	JIS B 1176 Hexagon socket head bolt	High carbon steel made	Strength division 12.9
Linear Way F		Stainless steel made	JIS B 1176 Hexagon socket head bolt	Stainless steel made	Property division A2-70
		High carbon steel made	JIS B 1176 Hexagon socket head bolt	High carbon steel made	Strength division 12.9
C-Lube Linear Way MUL(3)	25	Stainless steel made	JCIS 10-70 Cross-recessed pan head screw for precision equipment	Stainless steel made	–
	30	Stainless steel made	JIS B 1176 Hexagon socket head bolt	Stainless steel made	Property division A2-70
Linear Way U(3)	40～ 86	High carbon steel made	JIS B 1176 Hexagon socket head bolt	High carbon steel made	Strength division 12.9
C-Lube Linear Roller Way Super MX(4)	10～ 65	Stainless steel made	JIS B 1176 Hexagon socket head bolt	Stainless steel made	Property division A2-70
Linear Roller Way Super X		High carbon steel made	JIS B 1176 Hexagon socket head bolt	High carbon steel made	Strength division 12.9
	85～100	High carbon steel made	JIS B 1176 Hexagon socket head bolt	High carbon steel made	Strength division 10.9
Linear Roller Way X	25～ 55	High carbon steel made	JIS B 1176 Hexagon socket head bolt	High carbon steel made	Strength division 12.9
	75	High carbon steel made	JIS B 1176 Hexagon socket head bolt	High carbon steel made	Strength division 10.9
Linear Way LM(6)		Stainless steel made	JIS B 1176 Hexagon socket head bolt	Stainless steel made	Property division A2-70
Linear Roller Way M(7)		High carbon steel made	JIS B 1176 Hexagon socket head bolt	High carbon steel made	Strength division 12.9

Notes (1) The bolts are not appended for tapped rail specification.
(2) The bolts are not appended. Specifications in the table are the ones prepared by IKO.
(3) The bolts are not appended. Specifications in the table are the ones when special specification "/MA" (with track rail mounting bolts) is specified.
(4) The bolts are not appended in an assembled set. Specifications in the table are the ones when special specification "/MA" (with track rail mounting bolts) is specified.
(5) The bolts are not appended in LWH···MU.
(6) Slide member mounting bolts are not appended.
(7) Slide member mounting bolts are also appended.

Mounting surface, reference mounting surface and typical mounting structure

When mounting Linear Way and Linear Roller Way, properly align the reference mounting surface B and D of the track rail and slide unit with the reference mounting surface of the table and bed and fix them. (See Fig. 11)
The reference mounting surfaces B and D and mounting surfaces A and C are precisely ground. Machining the mounting surface of the table and bed, such as machine or device, to high accuracy and mounting them properly will ensure stable linear motion with high accuracy.

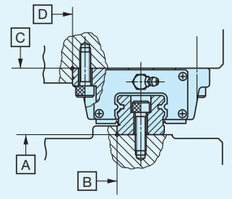


Fig. 11 Reference mounting surface and typical mounting structure of Linear Way and Linear Roller Way

Reference mounting surface of the slide unit is the opposite side of the IKO mark. The track rail reference mounting surface is identified by locating the IKO mark on the top surface of the track rail. It is the side surface above the mark (in the direction of the arrow). (See Fig. 12.)

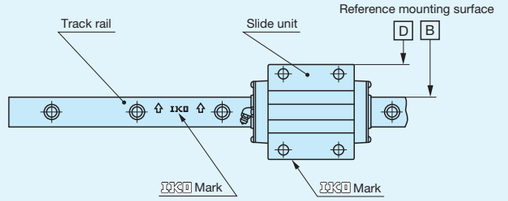


Fig. 12 Position of reference mounting surface of Linear Way and Linear Roller Way (Representative example)

Load direction and mounting structure

When lateral load, alternate load, or fluctuating load is applied onto the Linear Way or Linear Roller Way, securely fix the ends of slide unit and track rail as indicated in the Fig. 13 and Fig. 14.
When the load is small or operational conditions are not harsh, mounting methods indicated in Fig. 15 and Fig. 16 may be used.

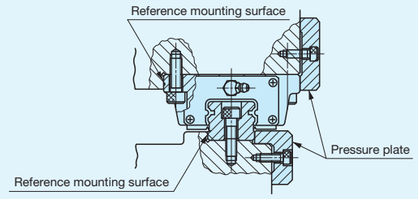


Fig. 13 Mounting example with pressure plate

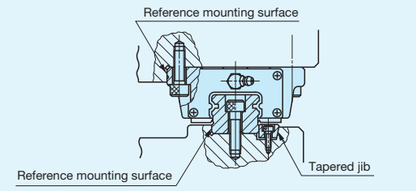


Fig. 14 Mounting example with tapered jib

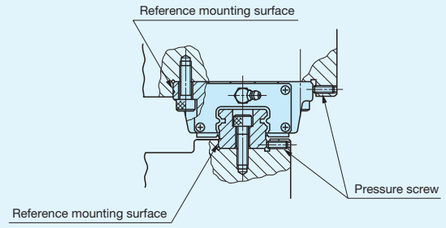


Fig. 15 Mounting example with pressure screw

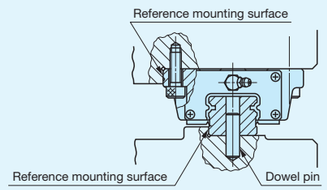


Fig. 16 Mounting example with dowel pin

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1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

Mounting Examples

Typical procedures to mount Linear Way and Linear Roller Way are described in Examples 1 to 4 using a Linear Way as a representative case.

Example 1. Typical operation

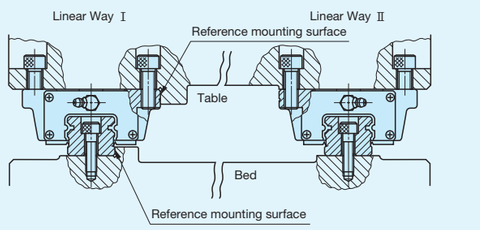


Fig. 17 Mounting example 1

For typical application without shock, reference mounting surface is prepared on each bed and table on the reference side. The mounting procedures are as follows. (See Fig. 17)

❶ Cleanup of mounting surface and reference mounting surface

- Remove burrs and blemishes by using oil-stone, etc. from reference mounting surface and mounting surface of the machine or the device to which Linear Way is mounted and wipe off with clean cloth. (see Fig. 18)
- Wipe off rust prevention oil and dust on the reference mounting surface and the mounting surface of the Linear Way with clean cloth.

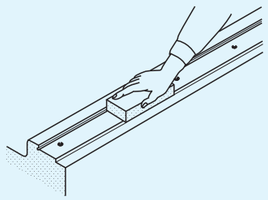


Fig. 18 Cleanup of mounting surface

❷ Temporary fixing of Linear Way Ⅰ and Ⅱ track rails

- Align and temporarily fix them with reference mounting surface of each Linear Way track rail. (See Fig. 19)
  At this point, ensure that the fixing bolt does not interfere with the mounting hole.
- Fix the Linear Way Ⅱ track rail to the bed.

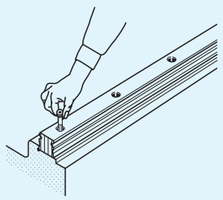


Fig. 19 Temporary fixing of track rail

❸ Fixing of Linear Way Ⅰ track rail

- Use small type vise or the like to stick track rail reference mounting surface to the reference mounting surface of the bed and tighten the fixing bolt at the same position. Repeat this method from one end to fix the track rail in order. (See Fig. 20)
- Linear Way Ⅱ track rail should be left temporarily fixed.

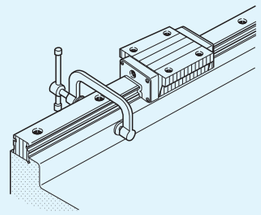


Fig. 20 Fixing of reference side track rail

❹ Temporary fixing of Linear Way Ⅰ and Ⅱ slide units

- Align the Linear Way with the mounting position of the table and load the table gently.
- Temporarily fix the Linear Way Ⅰ and Ⅱ slide units to the table.

❺ Fixing of Linear Way Ⅰ slide unit

- Align the reference mounting surface of the Linear Way Ⅰ slide unit with the reference mounting surface of the table correctly and fix them.

❻ Fixing of Linear Way Ⅱ slide unit

- Fix one of the Linear Way Ⅱ slide units in a motion direction correctly and leave the other slide units temporarily fixed. (See Fig. 21)

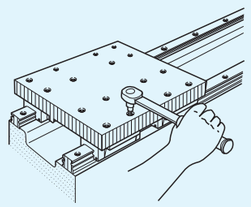


Fig. 21 Fixing of slide unit

❼ Fixing of Linear Way Ⅱ track rail

- Move the table and fix the Linear Way Ⅱ track rail ensuring smooth motion status. At this point, tighten each fixing bolt immediately after the fixed slide unit of the Linear Way Ⅱ passes on each of it. Repeat this method from one end to fix the track rail in order. (See Fig. 22)

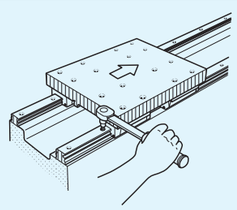


Fig. 22 Fixing of driven side track rail

❽ Fixing of Linear Way Ⅱ slide unit

- Fix the rest of the Linear Way II slide units.

Example 2. Operation for linear motion with accuracy and rigidity

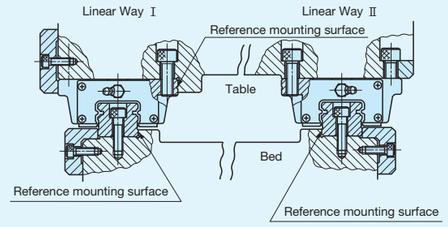


Fig. 23 Mounting example 2

If accuracy and rigidity of linear motion are required, prepare two reference mounting surfaces on the bed and one reference mounting surface on the table. The mounting procedures are as follows. (See Fig. 23)

❶ Cleanup of mounting surface and reference mounting surface

- Remove burrs and blemishes by using oil-stone, etc. from reference mounting surface and mounting surface of the machine or the device to which Linear Way is mounted and wipe off with clean cloth. (see Fig. 24)
- Wipe off rust prevention oil and dust on the reference mounting surface and the mounting surface of the Linear Way with clean cloth.

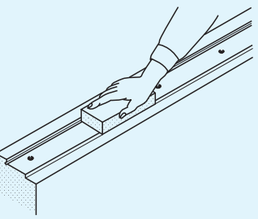


Fig. 24 Cleanup of mounting surface

❷ Temporary fixing of Linear Way Ⅰ and Ⅱ track rails

- Align and temporarily fix them with reference mounting surface of each Linear Way track rail. (See Fig. 25)
  At this point, ensure that the fixing bolt does not interfere with the mounting hole.

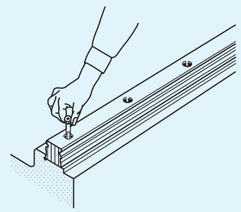


Fig. 25 Temporary fixing of track rail

❸ Fixing of Linear Way Ⅰ and Ⅱ track rails

- Stick the track rail reference mounting surface of the Linear Way Ⅰ to the reference mounting surface of the bed with pressure plate or pressure screws and tighten the track rail fixing bolt at the same position. Repeat this method from one end to fix the track rail in order. (See Fig. 26)

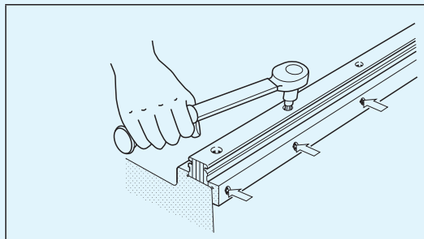


Fig. 26 Fixing of track rail

❹ Temporary fixing of Linear Way Ⅰ and Ⅱ slide units

- Align the slide unit with the mounting position of the table and load the table gently. Temporarily fix the Linear Way Ⅰ and Ⅱ slide units to the table.

❺ Fixing of Linear Way Ⅰ slide unit

- Align the reference mounting surface of the Linear Way Ⅰ slide unit with the reference mounting surface of the table correctly and fix them with pressure plate or pressure screws.

❻ Fixing of Linear Way Ⅱ slide unit

- Move the table ensuring smooth motion status, and fix the Linear Way Ⅱ slide unit. (See Fig. 27)

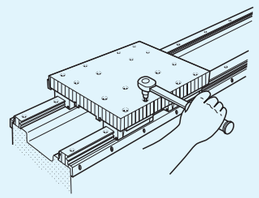


Fig. 27 Fixing of slide unit

1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

Example 3 Operation in case the slide unit is fixed separated from the track rail

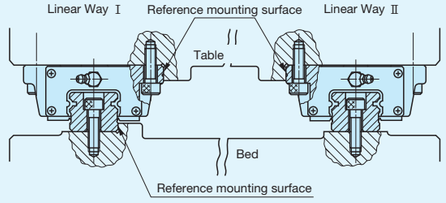


Fig. 28 Mounting example 3

If it cannot be fixed securely with the table loaded, prepare one reference mounting surface on the bed and two reference mounting surfaces on the table. The mounting procedures are as follows. (See Fig. 28)

❶ Cleanup of mounting surface and reference mounting surface

- Remove burrs and blemishes by using oil-stone, etc. from reference mounting surface and mounting surface of the machine or the device to which Linear Way is mounted and wipe off with clean cloth. (see Fig. 29)
- Wipe off rust prevention oil and dust on the reference mounting surface and the mounting surface of the Linear Way with clean cloth.

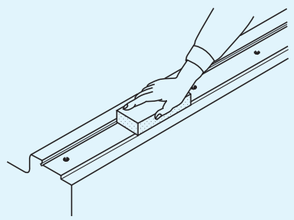


Fig. 29 Cleanup of mounting surface

❷ Temporary fixing of Linear Way Ⅰ and Ⅱ track rails

- Align and temporarily fix them with reference mounting surface of each Linear Way track rail. (See Fig. 30)
  At this point, ensure that the fixing bolt does not interfere with the mounting hole.

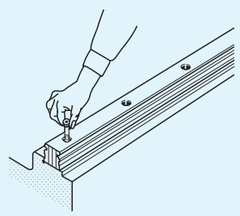


Fig. 30 Temporary fixing of track rail

❸ Fixing of Linear Way Ⅰ track rail

- Use small type vise or the like to stick track rail reference mounting surface to the reference mounting surface of the bed and tighten the fixing bolt at the same position. Repeat this method from one end to fix the track rail in order. (See Fig. 31)
- Linear Way Ⅱ track rail should be left temporarily fixed.

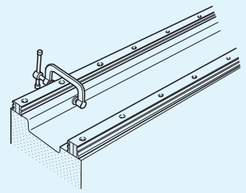


Fig. 31 Fixing of track rail

❹ Separation of track rail and slide unit

- After checking the combination and positions of Linear Way Ⅰ and Ⅱ track rails and slide units, separate each slide unit from the track rail.

❺ Fixing of Linear Way Ⅰ and Ⅱ slide units

- Align with the reference mounting surface of the Linear Way Ⅰ and Ⅱ slide units correctly, and fix them. (See Fig. 32)

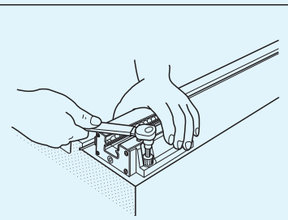


Fig. 32 Fixing of slide unit

❻ Setting of track rail and slide unit

- Insert and assemble the slide unit fixed to the table slowly with care while aligning it with the track rail fixed and temporarily fixed to the bed to maintain parallelism.

❼ Fixing of Linear Way Ⅱ track rail

- Move the table and fix the Linear Way Ⅱ track rail ensuring smooth motion status. At this point, tighten each fixing bolt immediately after the fixed slide unit of the Linear Way Ⅱ passes on each of it. Repeat this method from one end to fix the track rail in order.

Example 4. Operation of Linear Way Module

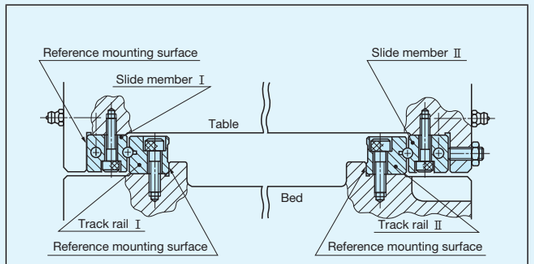


Fig. 33 Mounting example 4

For the Linear Way Module, normally 2 sets are used in parallel as indicated in Fig. 33. For the mounting, typically follow the procedure below (see Fig. 33).

❶ Cleanup of mounting surface and reference mounting surface

- Remove burrs and blemishes by using oil-stone, etc. from reference mounting surface and mounting surface of the machine or the device to which Linear Way Module is mounted and wipe off with clean cloth (see Fig. 34).
- Wipe off rust prevention oil and dust on the reference mounting surface and the mounting surface of the Linear Way Module with clean cloth.

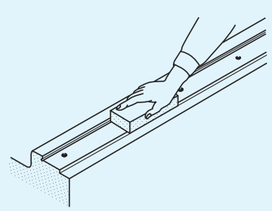


Fig. 34 Cleanup of mounting surface

❷ Fixing of track rail

- Align the reference mounting surfaces of track rails Ⅰ and Ⅱ with the reference mounting surfaces of the bed correctly, stick them by using small type vise, and tighten the fixing bolts at the same position (see Fig. 35).

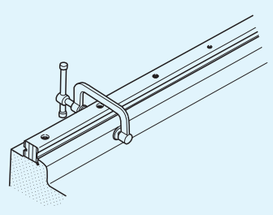


Fig. 35 Fixing of track rail

❸ Fixing the slide member

- Align the reference mounting surface of the slide member Ⅰ with the reference mounting surface of the table correctly, tighten the fixing bolt to fix them, and temporarily fix the slide member Ⅱ (see Fig. 36).

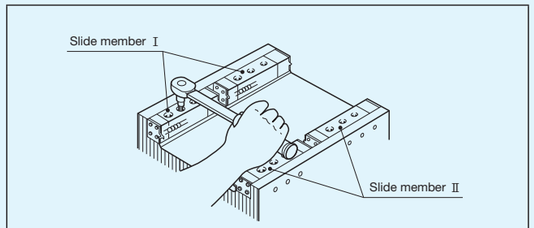


Fig. 36 Fixing of slide member

❹ Setting of table and bed

- Insert and assemble the slide member fixed to the table slowly with care while aligning it with the track rail fixed to the bed to maintain parallelism.

❺ Fixing the slide member Ⅱ

- As indicated in Fig. 37, tighten the preload adjusting screw at the center first and then all the rest preload adjusting screws in order while measuring the clearance by using the dial gauge.
- The position where the dial gauge deflection stops after moving the table to right and left indicates zero preload or slight preload state.
- After preload adjustment, tighten the fixing bolt to fix them.

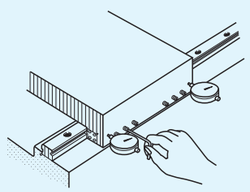


Fig. 37 Preload adjustment

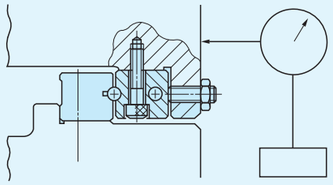


Fig. 38 Example of preload adjustment check method

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1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

Mounting of reference side track rail

Mounting methods of reference side track rail are indicated below. Select a method suitable for the specifications of your machine or device.

❶ Method to use reference mounting surface

・Stick track rail reference mounting surface to the reference mounting surface of the bed by using a pressure plate or small type vise, and tighten the fixing bolt at the same position. Repeat this method from one end to fix the track rail in order.

❷ Method to use temporary reference surface

・Prepare temporary reference surface around the mounting surface of the bed, temporarily fix the track rail, fix the measurement stand on the upper surface of the slide unit as indicated in Fig. 39, place an indicator onto the temporary reference surface, and fix them from one end of the track rail in order while maintaining straightness.

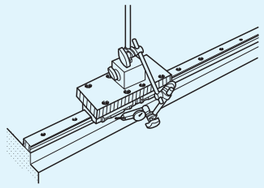


Fig. 39 Method to use temporary reference surface

❸ Method with straight-edge

・After temporary fixing of the track rail, apply an indicator to the reference mounting surface of the track rail as indicated in Fig. 40 and fix them from one end of the track rail in order referring to the straight-edge while maintaining straightness.

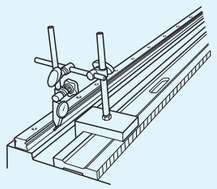


Fig. 40 Method with straight-edge

Mounting of driven side track rail

Mounting methods of driven side track rail are indicated below. Select a method suitable for the specifications of your machine or device.

❶ Method to use reference mounting surface

・Stick track rail reference mounting surface to the reference mounting surface of the bed by using a pressure plate or small type vise, and tighten the fixing bolt at the same position. Repeat this method from one end to fix the track rail in order.

❷ Method to follow the reference side track rail

・Correctly mount the reference side track rail and one of the driven slide units in motion direction, temporarily fix the rest of slide units and track rails, and fix them from one end of the driven side track rail in order ensuring smooth motion status.

❸ Method with straight-edge

・After temporary fixing of the track rail, apply an indicator to the reference mounting surface of the track rail as indicated in Fig. 40 and fix them from one end of the track rail in order referring to the straight-edge while maintaining straightness.

❹ Method to use reference side Linear Way

・Fix a measurement stand onto the upper surface of the reference side slide unit as indicated in Fig. 41, place an indicator onto the reference mounting surface of the driven side track rail, and fix them from one end in order while maintaining parallelism.

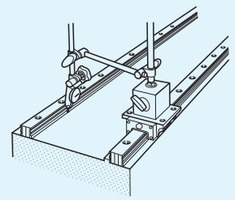


Fig. 41 Method to use reference side Linear Way

Mounting procedures when track rails are butt-jointed

When multiple track rails are butt-jointed, it is necessary to specify special specification butted track rails (non-interchangeable specification, supplemental code "/A") or butt-jointing track rails (interchangeable specification, supplemental code "/T").
Butt-jointing track rails have a butt-jointing mark on the track rail end surface as indicated in Fig. 42. Typical method to butt-joint the track rails is as follows.

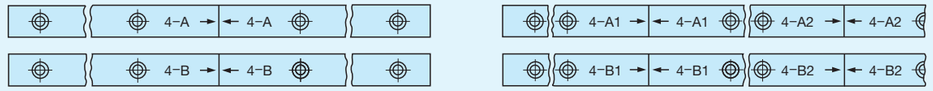


Fig. 42 Butt-jointing mark

❶ Align the butt-jointing mark on the track rail end surface and temporarily fix it. Since butt-jointing track rails are interchangeable, no butt-jointing position is specified.

❷ Correctly align the reference mounting surface of the track rail with that of the bed in order. At this point, use a small type vise or the like to stick the reference mounting surfaces of the bed and track rail together so as to eliminate any step at the joint part of the track rail. (See Fig. 43)

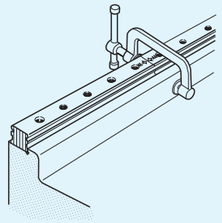


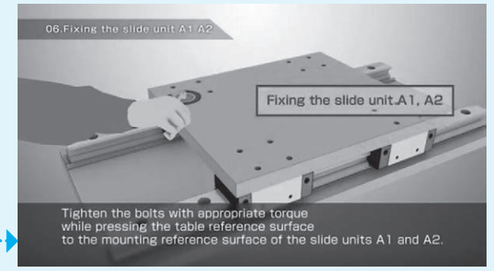
Fig. 43 Method to butt-joint track rails

Guide to Mounting Videos

Instructional videos about the mounting methods for linear motion rolling guides are available on the IKO website. Please utilize them when necessary.

https://www.ikont.co.jp/eg/





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