

- To the customer**
- Thank you for purchasing KITO Lifting Point.
 - Operators and maintenance engineers are requested to read this manual.
 - After reading, please keep this manual at hand for future use.

Introduction

The shackle of KITO Lifting Point moves in the loading direction freely to support horizontal hanging, oblique hanging, pull-up, and so on. The WLL (working load limits) of the LPA type is about 3 times the weight of the stationary type, and that of the LPS type is about twice the weight of the stationary type, therefore, you can minimize the screw hole process of the target object.

Safety Precautions

Using KITO Lifting Point wrongly can cause a dangerous situation such as the load falling, and so on. KITO Lifting Point bolts are consumables. You will need to replace them based on their conditions. If it is hard to judge when to replace them, contact KITO.

If the bolts are used repeatedly, they may break due to metal fatigue. Contact KITO or a distributor for an overhaul inspection depending on the (degree of) usage (applied load or frequency).

Flaw inspection is effective for checking if there are any cracks on the bolts. Contact KITO for such inspections.

Before use or maintenance and inspection, make sure you read this owner's manual thoroughly to understand this product, safety information, and all of precautions.

After reading keep this manual at hand for future use by the user.

Description of Signal Words

In this user's manual, precautions are divided into 3 categories of "Danger", "Warning", and "Notice".



⚠ Danger Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



⚠ Warning Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ Caution Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Further, the event described in CAUTION may result in serious accident depending on the situation. Both DANGER and CAUTION describe important contents. Please follow the instruction.


Description of Safety Symbols


 Means "Prohibited" or "You must not do". Prohibited action is shown in the circle or described near the circle. This Owner's Manual uses  as the general prohibition.

 Means "Mandatory Action" or "You must do". Required action is shown in the circle or described near the circle. This Owner's Manual uses  as the general instruction.


To use

⚠ Danger

 Do not disassemble or mend the product. Do not modify the product or accessories. You cannot use in alkaline or acidic atmosphere. Failure to comply with these instructions may result in death or serious injury.

 Read and understand this user's manual thoroughly before use. Make sure to use this product in the temperature range of between -40°C and 120°C and lower than 100 %RH . (You can use in the rain, but cannot use in water.) Failure to comply with these instructions may result in death or serious injury.

⚠ Caution

 When discarding the product, disassemble it such that it cannot be used and discard in accordance with the ordinances of local government or the rules specified by the business entity. Ask the local government or the relevant section for the details. Failure to comply with these instructions may cause bodily injury or loss of property.

Installation

⚠ Danger



This product is designed on the premise that it is used on materials with a tensile strength of more than iron. You cannot use this product for the material with a tensile strength of less than 400N/mm². Do not install inclusions such as a washer between this product and a load, or by tightening the nut of the steel plate with a hole. Failure to comply with these instructions may result in death or serious injury.

(1) Checking the thread part of the screw

To avoid rust, clean the thread part so that it does not have soil or contaminant, and then grease it.

⚠ Caution



Make sure that the thread part does not have soil or contaminant before use. Otherwise rust may be generated, causing the bolt to come off or the Proof stress may lower, which may lead to injury or property damage.

(2) Check the installation surface

1. Check that the installation surface is wider than the bearing surface of KITO Lifting Point.

⚠ Caution



Make sure that the installing surface is wider than the bearing surface of KITO Lifting Point before installing. Otherwise, bolts may become loose, bent, and ruptured, which may lead to an injury or property damage.

2. Check the WLL (working load limits).

⚠ Caution



Make sure you use WLL (working load limits) engraved on the shackle part. Failure to complying with this instruction may lead to an injury or property damage.

(3) Installing

1. Fasten the bold for KITO Lifting Point on the screw on the installation surface.

⚠ Warning



Do not use a washer and so on between the bearing surface and installation surface of this product when installing. Otherwise the bolt may deform or rupture, which may lead to a major accident such as death or serious injury.

⚠ Caution



Make sure you attach the bearing surface without a gap, and tighten the screw using an appropriate torque value. (Refer to "List of WLL by Slings Method" on the back) Failure to complying with this instruction may lead to an injury or property damage.

(4) Checking after installation

⚠ Caution



Before hoisting, make sure that the shackle part can be freely rotated in all directions. Failure to complying with this instruction may lead to an injury or property damage.

Loading operation

⚠ Caution

- Make sure that a qualified service personnel performs the slinging work.
- Use this product within WLL (working load limits). Failure to complying with this instruction may lead to an injury or property damage.

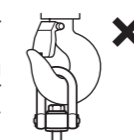
(1) Hanging a hook

1. Put a hook, Hanging a hook (and so on) to the shackle of KITO Lifting Point.

⚠ Warning



Do not directly use a hook that is larger than the inner diameter of the shackle. Otherwise, the shackle cannot swing and may damage on the shackle or trunnion, which may lead to a major accident such as death or serious injury.



(2) Checking before loading

1. Check the hooking condition of the hook for the shackle.

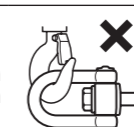
⚠ Warning



Before hoisting, make sure that the load is put in the longer direction of the shackle. Failure to complying with this instruction may lead to an injury or property damage.



Never lift from the side of the shackle as it may cause an accident. The shackle may come off the trunnion and may lead to a major accident such as death or serious injury.



2. Check the shackle rotation

⚠ Caution



Before lifting, make sure that the shackle part can be freely rotated in all directions. Failure to complying with this instruction may lead to an injury or property damage.

3. Check points for when using more than 2 KITO Lifting Points

⚠ Warning



Make sure that each KITO Lifting Point has an equal load. Failure to complying with this instruction may lead to a major accident such as death or serious injury.

⚠ Caution



Use this product within WLL (working load limits) considering the angle of loading. Refer to "List of WLL by Slings Method" on the back. Failure to complying with this instruction may lead to an injury or property damage.

(3) Loading

1. Lift the load slowly.

⚠ Danger



It is dangerous to lift from the ground suddenly. Make sure you lift slowly. Impact may cause the bolt or parts to break, which may lead to a major accident such as death or serious injury.

⚠ Warning



Be careful so that nobody goes under the load as well as the conveyance path. Failure to complying with this instruction may lead to a major accident such as death or serious injury.

List of WLL by Slings Method

Slings Method							
Number of items used				1	1	2	2
Angle of loading: θ				-	-	-	-
Mode factor: M				1	1	2	2
Bolt Size	Bolt Tightening torque (N·m)	Used Load (t)	Type	WLL by Slings Method (t)			
M8	7.8~14.7	0.3	LPA00308	≤ 0.3	≤ 0.3	≤ 0.6	≤ 0.6
M10	9.8~24.5	0.5	LPA00510	≤ 0.5	≤ 0.5	≤ 1.0	≤ 1.0
M12	14.7~39.2	0.8	LPA00812	≤ 0.8	≤ 0.8	≤ 1.6	≤ 1.6
M16	39.2~98	1.6	LPA01616	≤ 1.6	≤ 1.6	≤ 3.2	≤ 3.2
M20	68.6~147	2.5	LPA02520	≤ 2.5	≤ 2.5	≤ 5.0	≤ 5.0
M24	98~245	2.0	LPB02024	≤ 2.0	≤ 2.0	≤ 4.0	≤ 4.0
	98~245	2.8	LPB02824	≤ 2.8	≤ 2.8	≤ 5.6	≤ 5.6
	98~245	3.6	LPA03624	≤ 3.6	≤ 3.6	≤ 7.2	≤ 7.2
M30	118~343	3.2	LPB03230	≤ 3.2	≤ 3.2	≤ 6.4	≤ 6.4
	118~343	4.2	LPB04230	≤ 4.2	≤ 4.2	≤ 8.4	≤ 8.4
	118~343	5.8	LPA05830	≤ 5.8	≤ 5.8	≤ 11.6	≤ 11.6
M36	147~490	4.6	LPB04636	≤ 4.6	≤ 4.6	≤ 9.2	≤ 9.2
	147~490	6.5	LPB06536	≤ 6.5	≤ 6.5	≤ 13.0	≤ 13.0
	147~490	8.0	LPA08036	≤ 8.0	≤ 8.0	≤ 16.0	≤ 16.0
M42	177~588	7.0	LPB07042	≤ 7.0	≤ 7.0	≤ 14.0	≤ 14.0
	177~588	8.5	LPB08542	≤ 8.5	≤ 8.5	≤ 17.0	≤ 17.0
	177~588	10.0	LPA10042	≤ 10.0	≤ 10.0	≤ 20.0	≤ 20.0
M48	294~785	9.0	LPB09048	≤ 9.0	≤ 9.0	≤ 18.0	≤ 18.0
	294~785	12.0	LPB12048	≤ 12.0	≤ 12.0	≤ 24.0	≤ 24.0
	294~785	15.0	LPA15048	≤ 15.0	≤ 15.0	≤ 30.0	≤ 30.0
M64	294~785	20.0	LPB20064	≤ 20.0	≤ 20.0	≤ 40.0	≤ 40.0

Slings Method									
Number of items used				2			3 or 4		
Angle of loading: θ				60°	90°	120°	60°	90°	120°
Mode factor: M				1.7	1.4	1	2.5	2.1	1.5
Bolt Size	Bolt Tightening torque (N·m)	Used Load (t)	Type	WLL by Slings Method (t)					
M8	7.8~14.7	0.3	LPA00308	≤ 0.5	≤ 0.4	≤ 0.3	≤ 0.8	≤ 0.6	≤ 0.4
M10	9.8~24.5	0.5	LPA00510	≤ 0.9	≤ 0.7	≤ 0.5	≤ 1.3	≤ 1.1	≤ 0.7
M12	14.7~39.2	0.8	LPA00812	≤ 1.4	≤ 1.1	≤ 0.8	≤ 2.0	≤ 1.7	≤ 1.2
M16	39.2~98	1.6	LPA01616	≤ 2.7	≤ 2.2	≤ 1.6	≤ 4.0	≤ 3.4	≤ 2.4
M20	68.6~147	2.5	LPA02520	≤ 4.3	≤ 3.5	≤ 2.5	≤ 6.3	≤ 5.3	≤ 3.7
M24	98~245	2.0	LPB02024	≤ 3.4	≤ 2.8	≤ 2.0	≤ 5.0	≤ 4.2	≤ 3.0
	98~245	2.8	LPB02824	≤ 4.8	≤ 3.9	≤ 2.8	≤ 7.0	≤ 5.9	≤ 4.2
	98~245	3.6	LPA03624	≤ 6.1	≤ 5.0	≤ 3.6	≤ 9.0	≤ 7.6	≤ 5.4
M30	118~343	3.2	LPB03230	≤ 5.4	≤ 4.5	≤ 3.2	≤ 8.0	≤ 6.7	≤ 4.8
	118~343	4.2	LPB04230	≤ 7.1	≤ 5.9	≤ 4.2	≤ 10.5	≤ 8.8	≤ 6.3
	118~343	5.8	LPA05830	≤ 9.9	≤ 8.1	≤ 5.8	≤ 14.5	≤ 12.2	≤ 8.7
M36	147~490	4.6	LPB04636	≤ 7.8	≤ 6.4	≤ 4.6	≤ 11.5	≤ 9.7	≤ 6.9
	147~490	6.5	LPB06536	≤ 11.1	≤ 9.1	≤ 6.5	≤ 16.3	≤ 13.7	≤ 9.7
	147~490	8.0	LPA08036	≤ 13.6	≤ 11.2	≤ 8.0	≤ 20.0	≤ 16.8	≤ 12.0
M42	177~588	7.0	LPB07042	≤ 11.9	≤ 9.8	≤ 7.0	≤ 17.5	≤ 14.7	≤ 10.5
	177~588	8.5	LPB08542	≤ 14.5	≤ 11.9	≤ 8.5	≤ 21.3	≤ 17.9	≤ 12.7
	177~588	10.0	LPA10042	≤ 17.0	≤ 14.0	≤ 10.0	≤ 25.0	≤ 21.0	≤ 15.0
M48	294~785	9.0	LPB09048	≤ 15.3	≤ 12.6	≤ 9.0	≤ 22.5	≤ 18.9	≤ 13.5
	294~785	12.0	LPB12048	≤ 20.4	≤ 16.8	≤ 12.0	≤ 30.0	≤ 25.2	≤ 18.0
	294~785	15.0	LPA15048	≤ 25.5	≤ 21.0	≤ 15.0	≤ 37.5	≤ 31.5	≤ 22.5
M64	294~785	20.0	LPB20064	≤ 34.0	≤ 28.0	≤ 20.0	≤ 50.0	≤ 42.0	≤ 30.0

WLL by slings method is calculated by WLL (working load limits) times mode factor (=M).

Inspection

- Only a qualified service personnel can perform maintenance including disassembling. Contact KITO.
- Before and after use, make sure you perform an inspection based on the following chart. If this product is in a condition outside the criteria, it may lead to a major accident. Follow the countermeasures when the condition is outside the criteria.

Caution

! Mandatory

- If the bolts are used repeatedly, they may break due to metal fatigue. Contact KITO or a distributor for an overhaul inspection depending on the (degree of) usage (applied load or frequency).
- For the regular inspection points (inspection method and frequency) based on each location's use method or frequency, refer to the following chart.

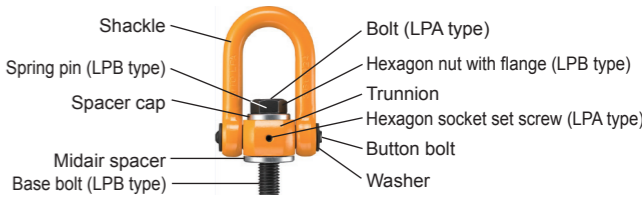
Failure to complying with this instruction may lead to a major accident such as death or serious injury.





⊘ Prohibited

- When the inspection result shows "Do not reuse" (outside the criteria), never use the product.
- When the inspection result shows "Contact KITO" (outside the criteria), never use the product and contact KITO right away.

Failure to complying with this instruction may lead to a major accident such as death or serious injury.

Names of parts used in the explanation of the following inspection chart are shown here.



Item	Check method	Criteria	When failed
Check the engraved content	• Visually check the engraved display on the shackle. Example: KITO LPA 1.6t M16	• Marks can be seen clearly	Do not reuse. Dispose.
Swing of the shackle	 • Move the shackle by hand.	• Check that it moves smoothly. Or that the washer has not come off. Check that the gap on both sides of trunnion is appropriate. If there are any foreign objects in the moving part, it will not move smoothly.	After removing the foreign object by washing, use the grease spray containing molybdenum to grease, and then attach the washer.
Deformation of the shackle	• Check visually	• Check that both sides of the shackle are not largely deformed as shown in the right diagram. This often happens when hoisting a load that is massively exceeding the loading capacity, and you cannot correct deformation.	 Do not reuse. Dispose.
Deformation of the midair spacer	• Check visually	• Check that a part of the washer is not squashed and deformed.	Do not reuse. Dispose.
Wearing of the shackle	 • Measure A and B using a caliper.	• Make sure the wearing using $(A-B)/A \times 100 =$ Less than 10 %.	Do not reuse. Dispose.
Wearing, rust, and scratch of the thread of bolts	• Check visually • Put through a new metric coarse nut.	• Check that there is no abrasion, rust, or flaws on the thread. When the rust part on the engagement part of the thread exceeds 10 %, you need to replace it. • Check that it goes through smoothly.	If there is abrasion, rust, or flaws on the thread, or the new metric coarse nut does not go through smoothly, you need to replace the bolt. To replace, contact KITO.
Bolt thread elongation	 • Place a new metric coarse bolt on top to check the gap visually. • Put through a new metric coarse nut.	• Check that there is no gap. • Check that it goes through smoothly.	If there is a gap, or the new metric coarse nut does not go through smoothly, you need to replace the bolt. To replace, contact KITO.
Bolt warping	• Check visually • Put through a new metric coarse nut.	• Check that the bolt is not warped. • Check that it goes through smoothly.	If it is warped, or a new metric coarse nut does not go through smoothly, you need to replace the bolt. To replace, contact KITO.
Bolt cracking	• Check visually	• Check that there are no cracks.	If there are any cracks, you need to replace the bolt. To replace, contact KITO.

KITO

Global Website: kito.com