

POLYESTER SLING

(BSL, RE, and EE Series)

Owner's Manual

- The operators and maintenance engineers of KITO POLYESTER SLING are requested to read this manual before operating and maintenance work.
- After reading, please keep this manual at hand for future use.



All products in this catalog are designed for use in Japan and their labels are also written in Japanese. In case they are used outside Japan, their working loads and operating methods should be understood. If you have any questions, please contact to KITO overseas partners (<https://kito.com/about/group>)

KITO

Purpose of Use

The KITO polyester slings are made from polyester and assembled with various metal fittings. Their design is ideal for a number of different slinging operations, particularly for operations with loads that need to be protected from damage.

Safety Information

Moving heavy loads is always dangerous, especially if the equipment used in the process is not handled correctly. In order to prevent accidents that can result in death or serious injuries, make sure you understand the characteristics of the product, use it correctly, and follow the right inspection procedures.


Descriptions of Warning Labels



Describes dangerous situations that can be caused by incorrect use of the equipment and can result in death or serious injuries.



Describes dangerous situations that can be caused by incorrect use of the equipment and can result in moderate or light injuries or lead to material damage only.

Keep in mind, however, that items marked with the  label also describe situations that can potentially result in serious accidents. Therefore, be sure to follow all of the safety instructions as they contain very important information.

*The KITO polyester slings (BSL Series) are JIS-certified products.

The instructions on the following pages cite the JIS standard text and refer to the BSL, RE, and EE Series as "belt slings" in accordance with the JIS standard unless specified otherwise.

Basic Instructions for Using Belt Slings

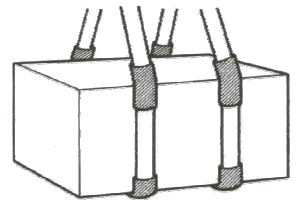
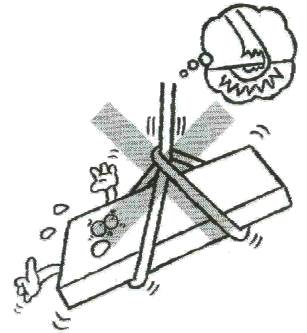
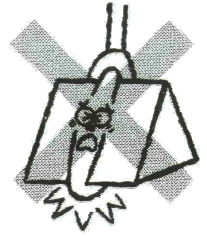


Incorrect use of the equipment may result in death or serious injuries. To avoid such hazards, be sure to follow the basic instructions provided below when using belt slings.

1. Instructions and Requirements

This section provides instructions and requirements related to belt slings.

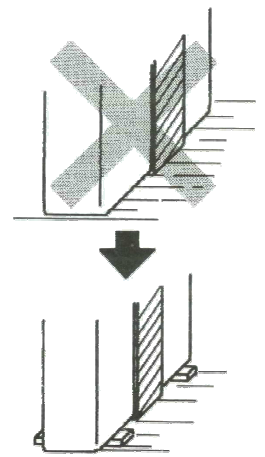
- a) Make sure you choose a belt sling that is suitable for the type of work you are going to perform.
- b) When handling chemical substances, make sure you use a belt sling that is specifically marked as suitable for use with chemical substances.
- c) When handling loads with sharp corners, make sure you use padding and prevent the load from slipping sideways. There are protective corners available as optional parts. Refer to Table 2 to see what types of protective corners you can add to your equipment.
- d) Make sure the working temperature does not exceed 100°C. If the working temperature is below -30°C or above 50°C, make sure you keep the working load at about 50%.
- e) Keep in mind that if the equipment comes into contact with water, oil, or other liquids, the load tends to slip out of the sling more easily.
- f) Make sure the load stays in balance when suspended.
- g) When using eye (choked) slings, make sure they are properly tightened.
- h) When using a belt sling together with other slinging equipment or auxiliary tools, make sure the belt sling does not get damaged in the connecting joints.
- i) Be careful not to damage the belt sling when you pull it from underneath the load.
- j) When storing a belt sling, make sure it is not exposed to heat, sunlight, chemicals, or similar influences.
- k) When using belt slings in pairs, make sure they are both made from the same material.
- l) If you are going to use a belt sling under any other special conditions, be sure to contact your nearest KITO dealer.



2. Prohibited Actions

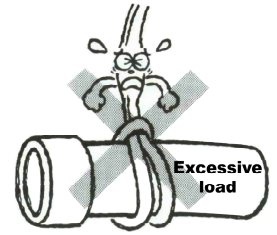
This section describes actions that you must not perform when using belt slings.

- a) When using a crane or hoist for slinging operations, do not leave the equipment with the load suspended for long periods of time.
- b) When using belt slings, make sure they are not excessively twisted, knotted, or tangled with each other.
- c) Do not apply pressure to a belt sling for long periods of time if it is twisted, and do not allow any objects with sharp edges to press on a belt sling for long periods of time.
- d) Do not drag belt slings across the floor, and do not let any equipment with metal fittings fall down from a high location.
- e) If a belt sling needs to be discarded after undergoing inspection, do not try to reuse it by repairing it or reducing the working load.



3. Other Precautions

- a) The working load depends on the slinging method and slinging angle. Refer to Tables 1 and 2 to choose the right belt sling for your type of work.
- b) The load must not exceed the maximum working load of a belt sling.
- c) Avoid vertical slinging with a single eye sling.
 - *The load is only supported by the friction generated between it and the belt sling. That can cause the load to slip out and fall down.
- d) Make sure only operators with the qualifications specified in the Industrial Safety and Health Act carry out slinging operations.
- e) The safety factor for the working load is 6.



- See the product catalog for more information about the specifications.



If you are going to use the product under any special conditions, be sure to contact KITO first. We can provide you with chain slings and other products with special specifications.

Slinging Methods and Working Load Limits(W.L.L)



The working load depends on the slinging method, slinging angle, and the shape of the load edge. Be sure to choose the right belt sling for the load according to the slinging method, slinging angle, and the shape of the load edge.

Table 1 Slinging Method and Slinging Angle

Slinging method	Straight		Choked				Basket								*JIS label (Type)		
Angle of loading α	—	—	$\alpha=0^\circ$	$0 < \alpha \leq 45^\circ$	$45^\circ < \alpha \leq 90^\circ$	$90^\circ < \alpha \leq 120^\circ$	$\alpha=0^\circ$	$0 < \alpha \leq 45^\circ$	$45^\circ < \alpha \leq 90^\circ$	$90^\circ < \alpha \leq 120^\circ$	$\alpha=0^\circ$	$0 < \alpha \leq 45^\circ$	$45^\circ < \alpha \leq 90^\circ$	$90^\circ < \alpha \leq 120^\circ$			
Mode factor	1	0.8	1.6	1.4	1.1	0.8	2	1.8	1.4	1	4	3.6	2.8	2			
Type	Width (mm)	Working load (ton or less)															
BSL	BSL006	20	0.63	0.5	1.0	0.88	0.69	0.5	1.26	1.13	0.88	0.63	2.5	2.27	1.76	1.26	SIIE-20
	BSL008	25	0.8	0.64	1.28	1.12	0.88	0.64	1.6	1.44	1.12	0.8	3.2	2.88	2.24	1.6	IIIE-25
	BSL013	40	1.25	1.0	2.0	1.75	1.38	1.0	2.5	2.25	1.75	1.25	5.0	4.5	3.5	2.5	SIIE-40
	BSL016	50	1.6	1.28	2.56	2.24	1.76	1.28	3.2	2.88	2.24	1.6	6.4	5.76	4.48	3.2	IIIE-50
	BSL019	60	1.9	1.52	3.04	2.66	2.09	1.52	3.8	3.42	2.66	1.9	7.6	6.84	5.32	3.8	SIIE-60
	BSL025	75	2.5	2.0	4.0	3.5	2.75	2.0	5.0	4.5	3.5	2.5	10	9.0	7.0	5.0	IIIE-75
	BSL032	100	3.2	2.56	5.12	4.48	3.52	2.56	6.4	5.76	4.48	3.2	12.8	11.5	8.96	6.4	IIIE-100
	BSL050	150	5.0	4.0	8.0	7.0	5.5	4.0	10	9.0	7.0	5.0	20	18	14	10	IIIE-150
	BSL063	200	6.3	5.0	10	8.82	6.93	5.0	12.6	11.3	8.82	6.3	25.2	22.7	17.6	12.6	IIIE-200
	BSL100	300	10	8.0	16	14	11	8.0	20	18	14	10	40	36	28	20	IIIE-300
RE	RE010	30	1.0	0.8	1.6	1.4	1.1	0.8	2.0	1.8	1.4	1.0	4.0	3.6	2.8	2.0	
	RE020	38	2.0	1.6	3.2	2.8	2.2	1.6	4.0	3.6	2.8	2.0	8.0	7.2	5.6	4.0	
	RE032	47	3.2	2.56	5.12	4.48	3.52	2.56	6.4	5.76	4.48	3.2	12.8	11.5	8.96	6.4	
	RE050	52	5.0	4.0	8.0	7.0	5.5	4.0	10	9.0	7.0	5.0	20	18	14	10	
	RE080	70	8.0	6.4	12.8	11.2	8.8	6.4	16	14.4	11.2	8.0	32	28.8	22.4	16	
	RE100	80	10	8.0	16	14	11	8.0	20	18	14	10	40	36	28	20	
EE	EE005	65	0.5	0.4	0.8	0.7	0.55	0.4	1.0	0.9	0.7	0.5	2.0	1.8	1.4	1.0	
	EE010	75	1.0	0.8	1.6	1.4	1.1	0.8	2.0	1.8	1.4	1.0	4.0	3.6	2.8	2.0	
	EE020	100	2.0	1.6	3.2	2.8	2.2	1.6	4.0	3.6	2.8	2.0	8.0	7.2	5.6	4.0	
	EE030	125	3.0	2.4	4.8	4.2	3.3	2.4	6.0	5.4	4.2	3.0	12	10.8	8.4	6.0	
	EE050	150	5.0	4.0	8.0	7.0	5.5	4.0	10	9.0	7.0	5.0	20	18	14	10	

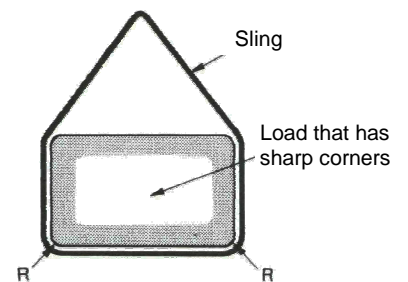
*This code applies to products manufactured with JIS dimensions.

Table 2 Working Loads Based on the Shape of the Load Edge in the BSL Series

R (mm)	Working Load	Protective Corners
More than 0 and less than 1	Not exceeding 50% of the values in Table 1	Required
Equal to or more than 1 and less than 3	Not exceeding 60% of the values in Table 1	Required
Equal to or more than 3 and less than 5	Not exceeding 80% of the values in Table 1	Required
Equal to or more than 10	Equal to the values in Table 1	Not required

Table 3 Working Loads Based on the Shape of the Load Edge in the RE and EE Series

R (mm)	Working Load	Protective Corners
More than 0 and less than 5	Not exceeding 30% of the values in Table 1	Required
Equal to or more than 3 and less than 5	Not exceeding 70% of the values in Table 1	Required
Equal to or more than 10 and less than 15	Equal to the values in Table 1	Required
Equal to or more than 15	Equal to the values in Table 1	Not required



The working load values in Table 2 apply when a load is suspended from a sling with its bottom in a horizontal position as shown in the figure above. If the R parts are facing downwards during work, the working load drops significantly. In that case, be sure to contact KITO beforehand.

Basic Instructions for Inspecting Belt Slings



Daily inspections represent the first step towards ensuring safety. Make sure all operators always carry out daily inspections before starting to work with the equipment.

Daily inspections and periodical inspections

Be sure to carry out daily ⁽¹⁾ and periodical ⁽²⁾ inspections on your belt slings before you use them.

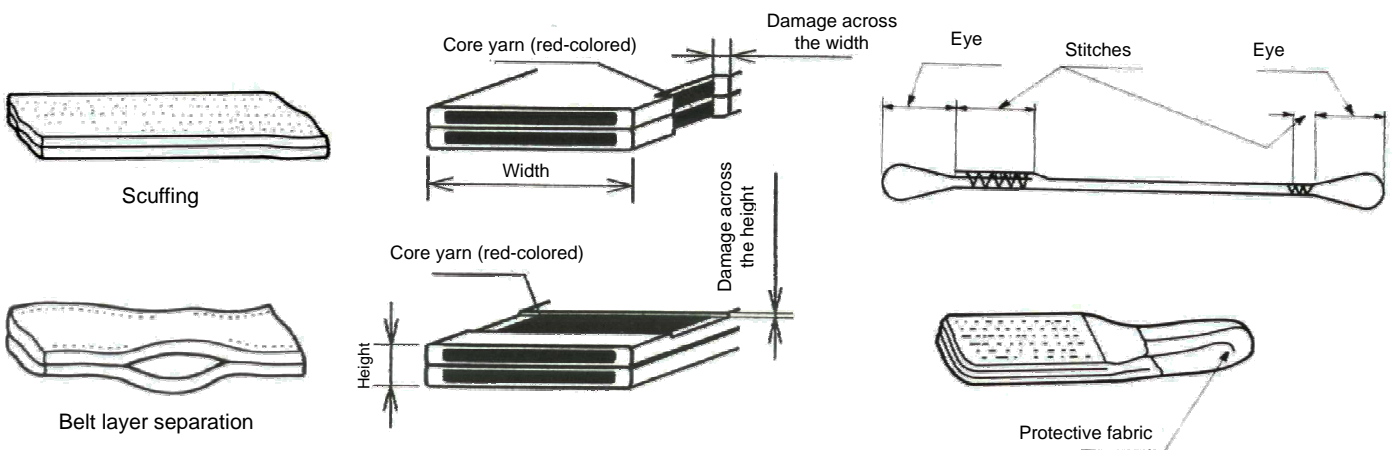
Notes: ⁽¹⁾ Refers to the inspections you need to carry out before using the equipment.

⁽²⁾ Refers to the inspections you need to carry out periodically. These inspections are usually carried out monthly, although that depends on how frequently the equipment is used.

The table below lists the inspection items, inspection methods, and criteria for discarding equipment.

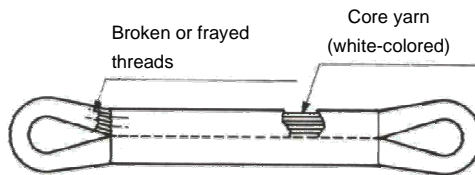
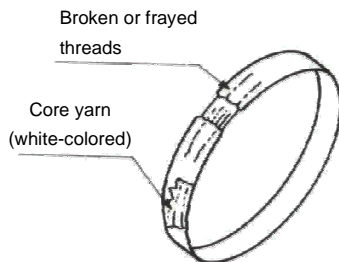
Inspection Criteria (BSL Series Belt Slings)

Inspection Items		Inspection Type		Inspection Method	Criteria for Discarding Equipment
		Daily	Periodical		
Level of damage (worn out or torn parts and torn stitches)	a) Eye	○	○	Visual	1) The fabric is too scuffed for the weave patterns to be recognizable, and the warp yarns are visibly damaged. 2) There is a significant amount of cuts, scratches, or rips. 3) The threads are torn, and the shape of the eye is irregular. 4) The protective fabric is torn, and there is damage all the way to the belt main unit.
	b) Stitches	○	○	Visual	1) There is a significant amount of cuts, scratches, rips, or other damage. 2) The threads are torn, and the belt layers are separating, even if only to a limited extent.
	c) Main unit	○	○	Visual	1) Across its entire width, the fabric is too scuffed for the weave patterns to be recognizable, and the warp yarns are visibly damaged. 2) There are visible cuts, scratches, rips, or other damage, and the red core yarn (limit warning sign) is exposed. 3) The threads are torn, and the belt layers are separating across a length equal to or greater than the belt width.
	d) Exposure of the use limit markings (limit warning signs)	○	○	Visual	The use limit markings (limit warning signs) are exposed due to the wear or damage in the stitches or main unit.
Other visible abnormalities		○	○	Visual	There is heavy discoloration, staining, fusion, or melting damage caused by heat, chemicals, or other factors.
Use period		—	○	Checking the management records, indicators, and other information	The use period of the belt sling has exceeded any of the following limits under certain use conditions even though there is no visible damage or abnormalities. Indoor use 7 years after its first use Regular outdoor use 3 years after its first use
Padding		○	○	Visual	There are significant deformations or damage.



Inspection Criteria (RE and EE Series Round Slings)

Inspection Items	Inspection Type		Inspection Method	Criteria for Discarding Equipment
	Daily	Periodical		
Surface fabric damage	○	○	Visual	<ul style="list-style-type: none"> The surface fabric on the eyes, main unit, and other parts is damaged to the point of exposing the core (core yarn).
Damaged threads in the junctions and connections	○	○	Visual	<ul style="list-style-type: none"> The threads in the surface fabric junctions and connections are frayed to the point of exposing the core (core yarn).
Other visible abnormalities	○	○	Visual	<ul style="list-style-type: none"> There is heavy scuffing, discoloration, staining, fusion, melting, or corrosion damage caused by friction, heat, chemicals, or other factors in the surface fabric on the eyes, main unit, and other parts. The equipment is too dirty to determine whether it is suitable for use or not.
Core (core yarn) abnormalities	○	○	Tactile	<ul style="list-style-type: none"> The core (core yarn) is stiff in some parts and varies in thickness significantly.
Use period	—	○	Checking the management records, indicators, and other information	<ul style="list-style-type: none"> The use period of the round sling has exceeded any of the following limits under certain use conditions even though there is no visible damage or abnormalities. <ul style="list-style-type: none"> Indoor use 7 years after its first use Regular outdoor use 3 years after its first use
Padding	○	○	Visual	There are significant deformations or damage.



Management

Moving heavy loads is always dangerous, especially if the equipment is not used correctly or if daily inspections are not carried out properly. Correct use and management of the equipment are crucial for ensuring safety.



- Appoint a person in charge of managing the equipment.
- Specify work and inspection standards that are suitable for the workplace.
- Set up training courses to make sure all work standards are adhered to.
- Specify an ID number for each belt sling, and keep a record of those numbers.
- Belt slings are consumables. Therefore, make sure you determine a use period for your belt slings according to the characteristics of your work environment and discard or replace the belt slings as necessary.



Refer to this instruction manual when determining your work and management standards. Be sure to contact KITO if you require more information.

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<https://www.kito.co.jp/en/>