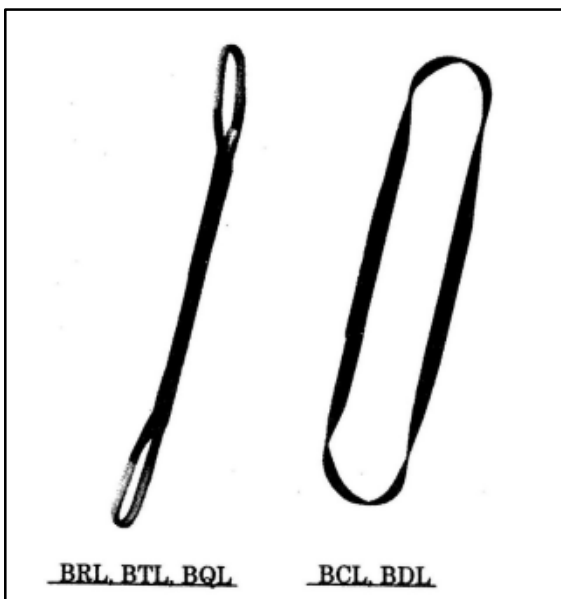


POLYESTER SLING

Owner's Manual

- BRL Series (single-layer belt type)
- BTL Series (triple-layer belt type)
- BQL Series (quadruple-layer belt type)
- BCL Series (single-layer belt endless type)
- BDL Series (double-layer belt endless type)

- 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.

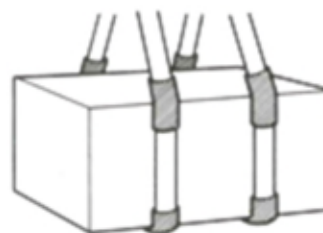
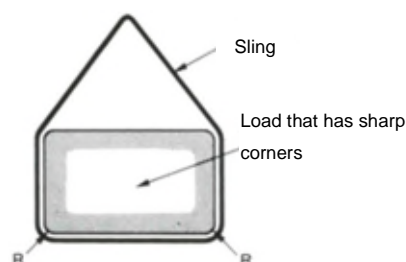
Keep in mind, however, that items marked with the  label also describe situations that can potentially result in serious accidents. Therefore, be sure to follow all of the safety instructions as they contain very important information.

Use Conditions



Make sure you properly understand the functions and characteristics of each sling type before choosing one that is suitable for your type of work.

- (Use period): Replace the equipment that has exceeded its use period limit even if there is no visible damage or defects.
Indoor use: 7 years after you start using the equipment
Regular outdoor use: 3 years after you start using the equipment
- (Weather resistance): You can use the equipment outdoors within the limits specified above.
- (Water resistance): Since polyester tends not to absorb water, any exposure to water will not affect the strength of the equipment's material.
- (Heat resistance): Do not expose the equipment to temperatures equal to or higher than 100°C. When using the equipment at temperatures between 50 and 100°C, reduce the working load by about 50%.
- (Cold resistance): You can expose the equipment to temperatures as low as -30°C.
- (Chemical resistance): Different chemicals affect the equipment to different degrees. Be sure to contact KITO before exposing the equipment to any chemicals. There is some optional equipment available for this type of work such as the acid-resistant sling.
- (Water resistance): Working with loads that have coarse surfaces, loads with sharp corners, or loads that tend to slip out of the sling sideways can affect the durability of the equipment. Use the optional protective corners according to the instructions in Table 4.



- (Safety factor): The safety factor for the straight slinging method is at least 6.

(Slings angle): The working load depends on the slinging method. Refer to the tables to choose the right sling for your type of work.

■ 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.

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



The working load depends on the slinging method and slinging angle. Be sure to choose the right sling for the load according to the slinging method and slinging angle.

Table 1 Slings Method and Slings Angle for the BRL Series

Slings method	Straight		Choked					Basket								
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)														
BRL	BRL003	20	0.31	0.24	0.49	0.43	0.34	0.24	0.62	0.55	0.43	0.31	1.24	1.09	0.85	0.62
	BRL004	25	0.4	0.31	0.63	0.56	0.43	0.31	0.8	0.71	0.56	0.4	1.6	1.4	1.12	0.8
	BRL006	40	0.63	0.5	1.0	0.88	0.69	0.5	1.25	1.13	0.88	0.63	2.5	2.26	1.76	1.25
	BRL008	50	0.8	0.64	1.28	1.12	0.88	0.64	1.6	1.44	1.12	0.8	3.15	2.88	2.24	1.6
	BRL010	60	0.95	0.75	1.52	1.32	1.04	0.75	1.9	1.7	1.32	0.95	3.8	3.4	2.64	1.9
	BRL013	75	1.25	1.0	2.0	1.75	1.37	1.0	2.5	2.25	1.75	1.25	5.0	4.5	3.5	2.5
	BRL016	100	1.6	1.28	2.56	2.24	1.76	1.28	3.15	2.88	2.24	1.6	6.4	5.76	4.48	3.15
	BRL025	150	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
	BRL032	200	3.15	2.5	5.0	4.41	3.46	2.5	6.3	5.67	4.41	3.15	12.6	11.3	8.82	6.3
BRL050	300	5.0	4.0	8.0	7.0	5.5	4.0	10	9.0	7.0	5.0	20	18	14	10	

BRL Series [Single-layer belt type]

One central belt

Table 2 Slinging Method and Slinging Angle for the BTL and BQL Series



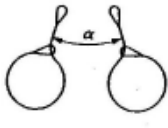
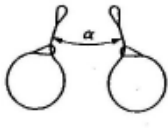
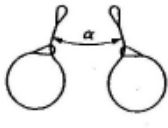
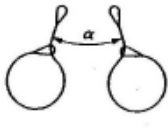








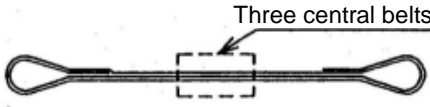
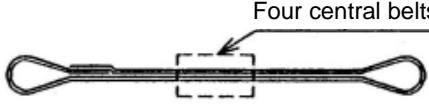
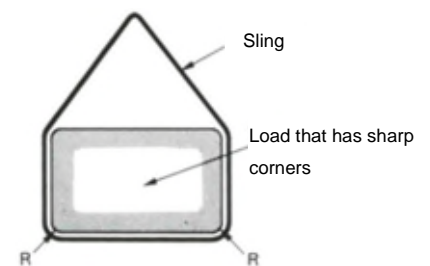
Slinging method	Straight		Choked					Basket								
																
Angle of loading α	—	—	$\alpha = 0^\circ$	$0 < \alpha \leq 45^\circ$	$45^\circ < \alpha \leq 90^\circ$	$90^\circ < \alpha \leq 120^\circ$	$\alpha = 0^\circ$	$0 < \alpha \leq 45^\circ$	$45^\circ < \alpha \leq 90^\circ$	$90^\circ < \alpha \leq 120^\circ$	$\alpha = 0^\circ$	$0 < \alpha \leq 45^\circ$	$45^\circ < \alpha \leq 90^\circ$	$90^\circ < \alpha \leq 120^\circ$		
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)														
BTL	BTL010	20	0.95	0.75	1.52	1.32	1.04	0.75	1.9	1.7	1.32	0.95	3.8	3.4	2.64	1.9
	BTL012	25	1.2	0.96	1.92	1.68	1.32	0.96	2.4	2.16	1.68	1.2	4.8	4.32	3.36	2.4
	BTL019	40	1.9	1.5	3.0	2.65	2.06	1.5	3.75	3.35	2.65	1.9	7.5	6.7	5.3	3.75
	BTL024	50	2.4	1.92	3.84	3.35	2.64	1.92	4.8	4.32	3.35	2.4	9.6	8.64	6.7	4.8
	BTL028	60	2.8	2.24	4.48	3.92	3.07	2.24	5.6	5.04	3.92	2.8	11.2	10	7.84	5.6
	BTL038	75	3.8	3.0	6.0	5.3	4.12	3.0	7.5	6.7	5.3	3.75	15	13.6	10.6	7.5
	BTL048	100	4.8	3.84	7.68	6.72	5.28	3.84	9.6	8.64	6.72	4.8	19.2	17.2	13.4	9.6
	BTL075	150	7.5	6.0	12.0	10.5	8.25	6.0	15	13.5	10.5	7.5	30	27	21	15
	BTL095	200	9.5	7.6	15.2	13.2	10.3	7.6	19	17	13.2	9.5	38	34	26.4	19
	BTL150	300	15	12	24	21	16.5	12	30	27	21	15	60	54	42	30
BQL	BQL013	20	1.25	1.0	2.0	1.75	1.37	1.0	2.5	2.25	1.75	1.25	5.0	4.5	3.5	2.5
	BQL016	25	1.6	1.28	2.56	2.24	1.76	1.28	3.15	2.88	2.24	1.6	6.4	5.76	4.48	3.15
	BQL025	40	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
	BQL032	50	3.15	2.5	5.0	4.41	3.46	2.5	6.3	5.67	4.41	3.15	12.6	11.3	8.82	6.3
	BQL038	60	3.8	3.0	6.0	5.3	4.12	3.0	7.5	6.7	5.3	3.75	15	13.6	10.6	7.5
	BQL050	75	5.0	4.0	8.0	7.0	5.5	4.0	10	9.0	7.0	5.0	20	18	14	10
	BQL063	100	6.3	5.0	10	8.82	6.93	5.0	12.5	11.3	8.82	6.3	25	22.6	17.5	12.5
	BQL100	150	10	8.0	16	14	11	8.0	20	18	14	10	40	36	28	20
	BQL125	200	12.5	10	20	17.5	13.6	10	25	22.4	17.5	12.5	50	44.8	35	25
	BQL200	300	20	16	32	28	22	16	40	36	28	20	80	72	56	40
BTL Series [Triple-layer belt type]								BQL Series [Quadruple-layer belt type]								
 <p>Three central belts</p>								 <p>Four central belts</p>								

Table 3 Slinging Method and Slinging Angle for the BCL and BDL Series

Slinging method	Straight		Choked				Basket									
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)														
BCL	BCL006	20	0.63	0.5	1.0	0.88	0.69	0.5	1.25	1.13	0.88	0.63	2.5	2.26	1.76	1.25
	BCL008	25	0.8	0.64	1.28	1.12	0.80	0.64	1.6	1.44	1.12	0.8	3.15	2.88	2.24	1.6
	BCL013	40	1.25	1.0	2.0	1.75	1.37	1.0	2.5	2.25	1.75	1.25	5.0	4.5	3.5	2.5
	BCL016	50	1.6	1.28	2.56	2.24	1.76	1.28	3.15	2.88	2.24	1.6	6.4	5.76	4.48	3.15
	BCL19	60	1.9	1.50	3.0	2.65	2.06	1.5	3.75	3.35	2.65	1.9	7.5	6.7	5.3	3.75
	BCL025	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
	BCL032	100	3.15	2.5	5.0	4.41	3.46	2.5	6.3	5.67	4.41	3.15	12.6	11.3	8.82	6.3
	BCL050	150	5.0	4.0	8.0	7.0	5.5	4.0	10	9.0	7.0	5.0	20	18	14	10
	BCL063	200	6.3	5.0	10	8.82	6.93	5.0	12.5	11.3	8.82	6.3	25	22.6	17.5	12.5
BDL	BDL013	20	1.25	1.0	2.0	1.75	1.37	1.0	2.5	2.25	1.75	1.25	5.0	4.5	3.5	2.5
	BDL016	25	1.6	1.28	2.56	2.24	1.76	1.28	3.15	2.88	2.24	1.6	6.4	5.76	4.48	3.15
	BDL025	40	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
	BDL032	50	3.15	2.5	5.0	4.41	3.46	2.5	6.3	5.67	4.41	3.15	12.6	11.3	8.82	6.3
	BDL038	60	3.8	3.0	6.0	5.3	4.12	3.0	7.5	6.7	5.3	3.75	15	13.6	10.6	7.5
	BDL050	75	5.0	4.0	8.0	7.0	5.5	4.0	10	9.0	7.0	5.0	20	18	14	10
	BDL063	100	6.3	5.0	10	8.82	6.93	5.0	12.5	11.3	8.82	6.3	25	22.6	17.5	12.5
	BDL75	120	7.5	6.0	12	10.5	8.25	6.0	15	13.5	10.5	7.5	30	27	21	15
	BDL100	150	10	8.0	16	14	11	8.0	20	18	14	10	40	36	28	20
	BDL125	200	12.5	10	20	17.5	13.6	10	25	22.4	17.5	12.5	50	44.8	35	25
BCL Series [single-layer belt endless type]								BDL Series [double-layer belt endless type]								

Table 4 Working Loads Based on the Shape of the Load Edge

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 60% of the values in Table 1	Required
Equal to or more than 5	As specified in Tables 1 to 3	Not required



The working load values in Table 4 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.

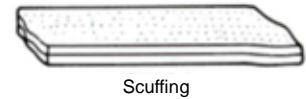
Basic Instructions for Inspecting Belt Slings

⚠ DANGER

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.

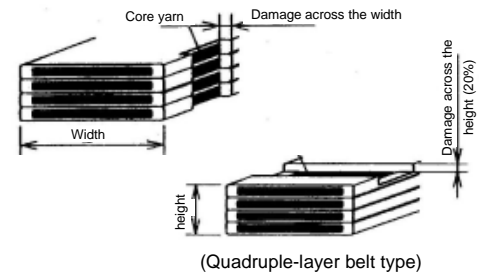
■ Make sure the surface is not scuffed.

- Discard the sling if the fabric is too scuffed for the weave patterns to be recognizable or if the warp yarns along the belt length are visibly damaged.



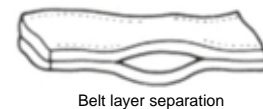
■ Check the belt for damage.

- Discard the sling if the belt is cut, ripped, or otherwise damaged across its width and the red core yarn is exposed.
- Discard the sling if approximately 20% of the belt surface is cut, ripped, or otherwise damaged along its height.
(In this case, you do not need to discard the sling even if the red core yarn is exposed unless at least 20% of the belt surface is damaged.)



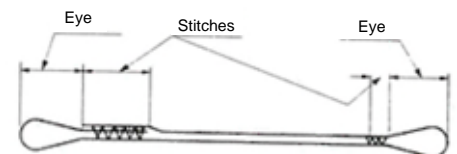
■ Check if the belt layers are separating.

- Discard the sling if the threads are torn and the belt layers are separating across a length equal to or greater than the belt width.



■ Check the stitches for defects.

- Discard the sling if there are any visible cuts, scratches, or rips.
- Discard the sling if the threads are torn and the belt layers are separating, even if only to a limited extent.

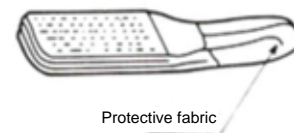


■ Check the eyes for defects.

- Discard the sling if the protective fabric is torn and if there is damage all the way to the belt main unit.

■ Check the equipment for any other visible defects.

- Discard the sling if you notice any heavy discoloration, fusion, or melting damage.

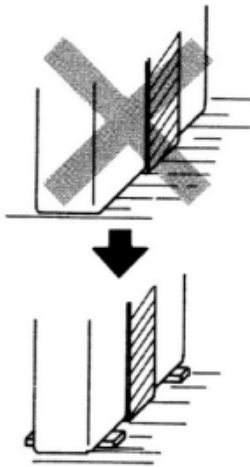
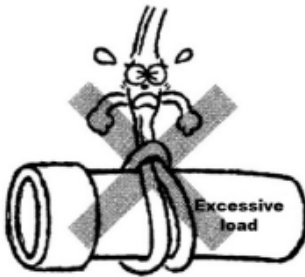


■ Make sure the tags and other indicators are clearly visible.

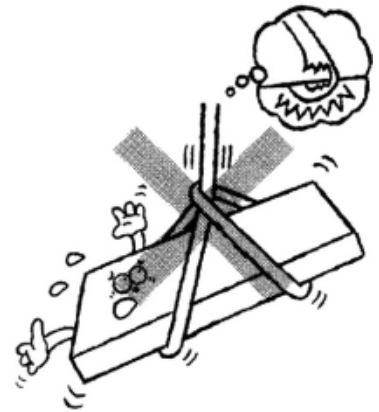
Precautions for Use

DANGER

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



- Make sure only operators with the qualifications specified in the Industrial Safety and Health Act carry out slinging operations.
- The load must not exceed the maximum working load of a sling.
- Do not suspend loads with sharp corners without protecting the sling.
- Make sure the load does not slip sideways.
- Never expose the load to high temperatures (100°C or more).
- Wipe off any water or oil from the surfaces before using the sling.
- Make sure the load stays in balance when suspended.
- When using eye (choked) slings, make sure they are properly tightened.
- Do not leave the equipment with the load suspended for long periods of time.
- Do not suspend the load with the sling twisted.
- Do not place or leave the load on the floor with the sling attached.
- When moving equipment, do not drag it across the floor or throw it.
- Do not expose the equipment to chemicals (acids, alkalis, etc.).
- When you finish using a sling, store it in a location where it will not be exposed to heat, sunlight, chemicals, or similar influences.
- If a sling needs to be discarded after undergoing daily inspection, do not try to reuse it by repairing it or reducing the working load.
- Avoid vertical slinging with a single eye sling.
*The load is only supported by the friction generated between it and the sling. That can cause the load to slip out and fall down.



Managing

CAUTION

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.

CAUTION

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

KITO

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