

- This manual should be surely handed over to the users.
- The users of the chain lever hoist should thoroughly read this manual.

**CHAIN LEVER HOIST
MODELS Y II -10 Y II -15
OPERATION MANUAL(No.1)**



- Thank you for your purchase of our products.
- It is quite important that you carefully read this operation manual before using the chain lever hoist.
- This manual should be kept close to the chain lever hoist, as the maintenance and inspection works absolutely require it.
- Please consult distributors of our products about the inspection requiring dismantling and assembling of the unit.

I) SAFE OPERATING PRACTICES

Improper operation of the chain lever hoist will possibly cause a dangerous situation such as falling of lifted loads and so on. Carefully read this manual for proper operation before setting-up, installation, operation, maintenance and inspection of the chain lever hoist.

Do not begin to operate it before you have got familiar with its knowledge, safety information and all the special cares.

The cautions in handling the unit are classified into two levels in this manual;

	WARNING	This symbol is used to indicate that a death or serious injuries will be caused in all probability to the user or persons around when the products are improperly used.
	CAUTION	This symbol is used to indicate that damage may be caused to the user or persons around or only material loss will occur when the products are improperly used.

Even the matters indicated "Caution" may bring a serious result depending on the situation. Strictly observe both the notices as they contain very important matters.

EXAMPLES OF THE SYMBOL:

-mark indicates that there are warning/cautious matters. In a sketch a concrete warning ("Caution for falling of load" in case of the symbol on the left) is described.

-mark indicates actions to be prohibited. In a sketch or nearby a concrete warning is described.

-mark indicates that any action will be required or directed. In a sketch a concrete warning ("general duties for the operator" in the case of the symbol on the left) is described.

※ The manual must be kept in place where the operator can read it whenever he needs.

1. GENERAL

	WARNING	<ul style="list-style-type: none"> • The unit should be operated only by those who familiar with the manual and contents of the instructing label. • Do not lift a load which exceeds the rated load. • Do not stay under a suspended load and do not move a load over persons. • Do not use a chain lever hoist which was damaged or causes abnormal sound and/or vibration. • Do not use a chain lever hoist with twisted, kinked, damaged, severely worm, deformed, or elongated load chains. • Never manipulate the operation handle by connecting a pipe and the like to it or by foot. • Never make modifications to the chain lever hoist and its accessories. 	
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2. INSTALLATION AND SETTING-UP

	WARNING	<ul style="list-style-type: none"> • Inspection before operation and periodic inspection must be all means carried out. <ul style="list-style-type: none"> • The installation work should be performed only by the specialized contractor or experienced technician. • Make sure that a location on which the chain lever hoist is mounted has a sufficient strength. • Fix loads firmly on the bed of truck by the chain lever hoist and observe the Road Traffic Act on driving along a road. 	
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	CAUTION	<ul style="list-style-type: none"> • The chain lever hoist should not be installed in places deviated from the provision where it is, for example, exposed to rain or water. 	
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3. OPERATION AND HANDLING

	WARNING	<ul style="list-style-type: none"> • Do not get on a suspended load and do not use the chain lever hoist for carrying persons. • Do not allow your attention to be diverted from operating the chain lever hoist. • Do not use the chain lever hoist for the earth lifting(for example, hooking fixed objects such as houses or structures). • Do not carry out turnover of a suspended load. Turnover should be done only by a skilled person. • Make sure before operation that the operation handle properly functions. Do not operate the chain lever hoist when the lever is in disorder. • Make sure before operation that the brake properly functions. Do not operate the chain lever hoist when the brake is in disorder. • Do not apply the electric welding on a suspended load. • Do not allow the load chain to be used as a ground(earth) for the welding machine. • Do not allow the load chain to be touched with a live welding electrode. 	
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	CAUTION	<ul style="list-style-type: none"> • Do not use the chain lever hoist with a damaged safety latch of the hook. • Do not use the chain lever hoist with the nameplate and labels attached to the body removed or left unclear. • Operate the chain lever hoist only by means of a manual pulling force(of the operator). • Do not throw away or drag the chain lever hoist. 	
		<ul style="list-style-type: none"> • Stop lifting once when the load chain becomes tense to check safety. • In lifting a load with two chain lever hoists, select a chain lever hoist of which rated load exceeds the load to be lifted. • Always keep the hoist body and the load chain clean so that dust, sands and the like will not be deposited on them. • Make sure that the range of lift of the chain lever hoist is sufficient for the intended work. 	

4. MAINTENANCE, INSPECTION AND MODIFICATION

	WARNING	<ul style="list-style-type: none"> • Never use parts other than genuine ones made by us. • Never do shortening or lengthening of the load chain. • Do not lubricate oil or grease on the face of disc hub, ratchet wheel and friction disc. 	
		<ul style="list-style-type: none"> • Only specialists authorized by the employer may carry out the maintenance, inspection or repair. • Carry out the maintenance, inspection or repair with the chain lever hoist unloaded(e.g.without loads). • When any disorder is found in the maintenance or inspection, immediately make repair before re-operating the chain lever hoist. 	

	CAUTION	<ul style="list-style-type: none"> • Whenever carrying out the maintenance, inspection or repair, prepare a warning indication of "Under working" ("Under Inspection", etc.). 	
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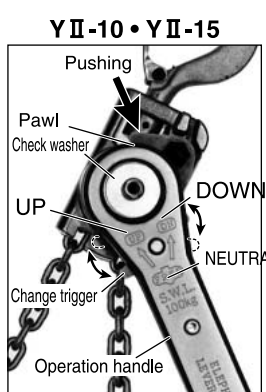
Notice: • Inspections requiring dismantling and assembling of the unit should be carried out by dealers of our products.

II) MOUNTING AND OPERATION

	WARNING	<ul style="list-style-type: none"> • The unit should not be operated by persons who have not fully understood this manual, instructions or plates on the unit. 	
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LIFTING AND LOWERING

Lifting and lowering can be done by moving the operation handle, that is, lifting is done with the change trigger set to the position "UP" and lowering is done with the change trigger set to the position "DOWN".



FLOATING OPERATION

It is possible to release the brake and to feed the load chain to the desired position by setting the change trigger to the position "NEUTRAL" when the lever hoist is not loaded and pushing the pawl toward the direction shown in the figures.

	CAUTION	<ul style="list-style-type: none"> • Never do floating operation when the lever hoist is loaded, as is quite dangerous.(Push ratchet) • Do not forget to set the change trigger to the position of "NEUTRAL" in floating operation. ※ It is quite dangerous to do floating operation with the change trigger set to the position of "UP" or "DOWN", because the operation handle then revolves rapidly as the chain moves. 	
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CAUTION ON CO-HOISTING BY MORE THAN 2 SETS OF CHAIN LEVER HOISTS

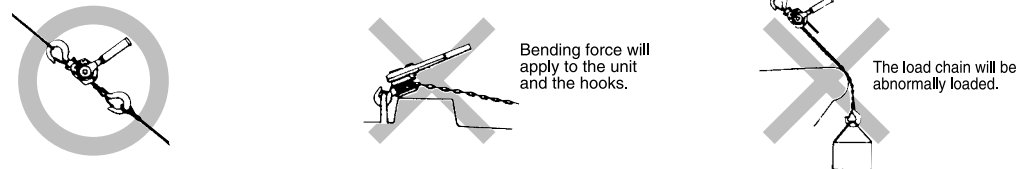
	CAUTION	<ul style="list-style-type: none"> • Co-hoisting by more than 2 sets of chain lever hoists may be very risky depending on installing and using them. ※ Pay attention to balancing of a load as stated below ; 	
		<ul style="list-style-type: none"> • When a combination of 2 lever hoists with different capacities is used, make sure that the hoist with a smaller capacity is not abnormally loaded. • When a load is lifted parallel by a number of chain lever hoists, make sure that the load is not unevenly carried by them. • When a number of chain lever hoists are used in a lengthwise row, select hoists with an equal rated load.. ※ A combination of hoists with different capacities will be very risky when a hoist with bigger capacity is operated. • Use wire ropes, clips, shackles, fitting pieces etc. which are sufficiently strong for slinging the top and bottom hooks of the chain lever hoists. • When it is used as an additional hoists for a big crane, select a chain lever hoist with a bigger capacity than the actual load. Furthermore, do not operate the crane in a manner of so-called earth-lifting. Otherwise, the chain lever hoists will be damaged. • When a number of chain lever hoists are used or one is used in combination with other machines, do not overload the chain lever hoists. Use the chain lever hoist in a well balanced condition, making sure the safety. 	

III) INSTALLATION

1. INSTALLATION OF THE HOIST UNIT

	WARNING	<ul style="list-style-type: none"> • The support structure on which the hoist unit is installed is to bear loads more than 4 times the rated load. ※ It is very dangerous to use a support of which strength is not sufficient, as it may be damaged due to the load. In case that the chain lever hoist is used as auxiliary device for a crane, its safety factor should be 5. 	
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Make sure when setting the unit that a support can surely bear the load and set the unit such that the top and bottom hooks are in line with each other.



PROPER HANDLING AND CAUTIONS

1. SLINGING METHOD

	WARNING	<ul style="list-style-type: none"> • Inspect all the tools to be used on the day before use. Wrong slinging may cause quite dangerous situations. ※ Avoid slinging methods as shown below, which are very dangerous. 	
	※ The sling is set on an improper point of the hook.		※ Too wide slinging angle, it should be within 60° degrees.
	※ The safety latch does not properly function.		※ Only the tip of hook cannot bear a load.
	<ul style="list-style-type: none"> • The load chain twisted should not be loaded. Be sure to bring the load chain into straight state before applying a load in the lifting operation. Never wind the load chain directly around a load, since the intrinsic strength of the load chain and the hooks will be reduced, causing hazards. It is also dangerous to wind the load chain around the hook of a chassis etc., because the intrinsic strength of the chain will be reduced to 1/3 to 1/5 of the normal value. 		

IV) CAUTIONS DURING OPERATION

1. DANGEROUS OPERATION

	WARNING	<ul style="list-style-type: none"> • Never apply a load beyond the rated load to the unit (over-loading). • Do not perform over-lifting or over-lowering. • Do not give a shock to the chain lever hoist. • Do not get on a load to be lifted and do not stay under a load lifted. • Do not use a chain lever hoist which is not in order. ※ Do not use the chain lever hoist in an incorrect manner as shown below, which is quite dangerous. 	
1) Do not apply an overload to the chain lever hoist.	a) A given load can be lifted or drawn by operating the lever merely with one hand.		
	b) Do not operate the operation handle by inserting a pipe etc. into it.		
	c) Immediately stop operating the chain lever hoist whenever an enormous operating force is required in lifting or drawing of a load. The reason for that may be that the unit is overloaded by a load exceeding the rated load or that it is over-lifted or over-lowered.		
2) Do not perform over-lifting or over-lowering.	Over-lifting means winding up the bottom hook in excess of its limit and over-lowering means winding down the bottom hook in excess of its limit. Never perform such operation, because the ELEPHANT chain lever hoist will be damaged or an accident will be caused.		
3) Do not give an impact to the chain lever hoist. Do not support a load falling down abruptly regardless of the height by the ELEPHANT chain lever hoist. Any shock may give a bigger load than the actual weight to the chain lever hoist and lead to damages or deformation of it. A fierce shock will be very dangerous regardless of the weight of a load.			
4) Do not get on a load to be lifted and do not stay under a load lifted.	5) Others		
	• Never use a ELEPHANT chain lever hoist which is not in order.		
	• Make use of the chain lever hoist carefully and not throw it away from higher places.		

V) MAINTENANCE AND INSPECTION

DAILY INSPECTION

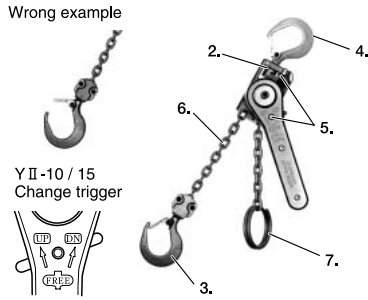
- For daily operation, be sure to carry out the following checks prior to operation.
 - In case of any abnormality, stop operating the chain lever hoist and take proper counter-measures in accordance with "the measures when abnormalities are found".
 - When a trouble cannot be solved, contact a dealer of our products.
- ※ Do not make continuous running under abnormal conditions as it is very dangerous and might lead to a severe accident.

WARNING

- Don't lubricate (grease up) on ratchet wheel, disc hub and friction disc.
- Please replace friction disc when it is smeared by oil or grease. It cause slip of brake even if friction disk is washed by thinner. Ratchet wheel & disc hub must be washed by thinner if it is smeared.

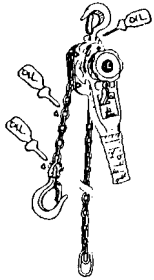
1. Check the following at least prior to operation.

- 1) Make sure that no visual deformations nor missing parts are found.
 - 2) Is any deformation of the portion found on which the top hook is mounted?
 - 3) Is the bottom hook not deformed?
Is the opening correct and is the hook not damaged?
 - 4) Is the top hook not deformed?
Is the opening correct and is the hook not damaged?
 - 5) Make sure by operating the change trigger and the pawl that they functions properly.
 - 6) Lubricate the load chain to extend its lifetime.
Is the chain not damaged, deformed nor worn out?
 - 7) Is the chain stopper not deformed?
 - 8) Make sure in lifting operation that the pawl rattles.
- Remark: Use the chain lever hoist only which has been confirmed as normal by the checking procedure as mentioned above.



2. Measures when abnormalities are found

- In case that parts are simply missing and any dismantling work is not required, the unit can be operated again by mounting genuine parts on the unit.
 - When the chain stopper is deformed or lubrication for the load chain is required, the unit can be also operated by exchanging the said piece and by lubricating the load chain respectively.
- ※ Make sure that the brake works when the chain lever hoist is again used after the remedy has been completed.



STORAGE

Wipe mud and water off the surface of the unit after it is used, and apply oil to the load chain and the neck of the hooks to keep it for storage.

VI) PERIODIC CHECKING

- In cases of troubles and/or any abnormality, stop operating the hoisting unit and consult a dealer of our products. It may happen that the load chain and the hooks fail in a dangerous state even if they show no remarkable changes in their function. It is therefore indispensable to make a periodic, measuring check. The periodic inspection should be normally made once a month. Observe the following "INSPECTION AND LIMITATION FOR USE".

VII) MAINTENANCE AND INSPECTION

WARNING

- Do not use parts and the chain lever hoist over the limit of use.
- In carrying out the daily and periodic inspections, if any wearing parts are found in excess of the standard limit of use, they should be replaced for sure.
- It is very dangerous to use parts over the standard limit of use.

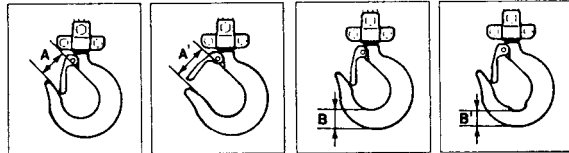
1. INSPECTION OF HOOK AND ITS LIFETIME (common items to both the top and bottom hooks)

The opening of hook becomes wider when the load much exceeding the rated load is hung or a heavy load is applied on the tip of it. Hooks with such a widened opening as the sketches cannot keep the required strength nor shock absorbing power as specified, and thus hooks having reached the dimension for exchange (A in the table below) should be replaced with new ones. It is very dangerous to use such hooks with widened opening again after heating and remedy. Be sure to scrap them and replace them with new ones. Periodically check the portion of the hook contacting with sling tools for its wear and replace the hook having reached the dimension for exchange (B in the table below) with a new one. Hooks showing either of following faults should be also scrapped:

- It has a flaw of 1mm or more in depth.
- It has a deformation such as bending and the like (to be visually noticed).

GUIDE FOR HOOK REPLACEMENT

Rated load (kg)	100kg • 150kg
Standard value A (mm)	19
Limit value A' (mm)	21
Rated load (kg)	100kg • 150kg
Standard value B (mm)	11
Limit value B' (mm)	10



2. CHECKING THE LOAD CHAIN AND ITS LIFETIME

Limitation of the deformed load chain for use

Rated load	Wire diameter (mm)		Pitch (Px5) (mm)	
	Standard value	Limit for use	Standard value	Limit for use
100kg • 150kg	3.1	2.9	46.5	48.5

Check the load chain not partly but for the whole length in a careful manner. For checking the elongation, measure the inner length of 5 links, that is, the sum of 5 pitches with a vernier caliper as the above sketch shows. It is normally sufficient to check the links in a distance of every 30cm but check them by making the measuring distance shorter when the elongation of the chain is close to the limitation for use stated in the above Table so that none of them should exceed the limitation for use. Scrap the load chain which is found to have one or several links of which wire diameter has been reduced to 95% or less (the smallest value should be measured) of the initial wire diameter due to worn connecting portion of links or flaws.

- Welded portion of the chain link shows a flaw bigger than 0.5mm in depth.
- The chain link has been deformed.
- The chain link has been exposed to a high temperature, as it shows, for example, welding spatters.

Scrap load chains which show any one of the 3 faults as mentioned above.

VIII) CRITERIA FOR USING AND CHECKING CHAIN LEVER HOISTS (BASED ON JIS B 8819)

WARNING (1. Criteria for use)

The following shall be observed in using the chain lever hoist.

- (1) The chain lever hoist should not be used to lift a load exceeding the rated load except for testing purpose.
- (2) Do not use a load chain other than ones manufactured by us.
- (3) Do not operate the chain lever hoist in such a manner as a sudden load is applied to it.
- (4) Do not use the chain lever hoist of which range of lift is not sufficient for the work.
- (5) Do not use hooks which are not equipped with a safety latch or of which latch has no safety effect.
- (6) Do not use a load chain which is not equipped with a chain stopper.
- (7) Do not wind the load chain directly around a load.
- (8) Do not hang a load on the tip of the hook.
- (9) Do not operate the operation handle by connecting it to a longer bar etc.
- (10) Do not operate the operation handle by foot.
- (11) Do not perform over-lifting and reversing.
- (12) Do not walk below a suspended load.
- (13) Never use the floating mechanism with a load suspended.
- (14) Do not leave the chain lever hoist for many hours with a load suspended. If such a handling cannot be avoided, set the change trigger to the position of "UP" and fix the operation lever to the load chain bearing the load by means of a rope.
- (15) Don't lubricate on ratchet wheel, disc hub and friction disc.

- (16) Before operation, check the load chain for twisting or tangling. The chain lever hoist can be used only after such twisting and tangling is corrected.
- (17) When the chain lever hoist is used in special conditions such as lower or higher temperatures, or corrosive atmosphere, etc., consult us before use.
- (18) The chain lever hoist should not be modified by the users. If any modification is required, it should be done by us.

CAUTION (Criteria for use)

- (19) Make a routine inspection (1) before use and carry out a periodic inspection (2) on occasion.
- (20) Immediately stop operating the chain lever hoist when an abnormally big hand force is required.

- (21) Do not drop the chain lever hoist from a higher place.
 - (22) Apply a lubricant to the load chain before use.
 - (23) Use the chain lever hoist, applying lubricants to its gears, bearings and points which are liable to wear.
 - (24) The chain lever hoist should be applied with antirust to be kept unused for a long period.
 - (25) Consult us whenever any special usage of the chain lever hoist is required.
- Notes;
- (1) Means an inspection before use.
 - (2) Means a regular inspection to be carried out every 6 months or one year depending on the working frequency.

2. Criteria for check

- (1) Refer to Table 1(3) which gives check items, check methods and check criteria to be applied in the daily check. However, items other than those specified should be also checked, when the chain lever hoist is frequently used, or in special cases.
- (2) The periodic inspection should be made in accordance with the table 1(3).
- (3) When the chain lever hoist is repaired, check it on periodic check items given in Table 1(3) after its repair, and make sure that it works in a normal state.
- (4) Use genuine spare parts only made by us.

TABLE 1 CRITERIA FOR CHECK

Type of check		Check items	Check method	Check criteria WARNING (devices and parts out of the following criteria should be replaced or scrapped as waste.)
Daily check	Periodic check			

MARKING AND THE LIKE

○	○	Marking (nameplate)	Visual	Presence of marking (nameplate), exchange it with a new one if unreadable.
-	○	Grade of the load chain	Visual	Check for the grade of the load chain

FUNCTION

○	○	Lifting and lowering function	Lifting and lowering without a load	(1) Smooth ratchet should must be heard in lifting. (2) Lifting and lowering function can be smoothly carried out. (3) The brake shows no abnormality in lowering.
-	○	Function (4)	Test for 1.25 times load and 30 cm distance	(1) The operation handle functions smoothly. (2) The load sheave and load chain or the idle wheel are well engaged respectively. (3) The brake functions properly. (4) The load chain shows no twisting or tangling in lifting and lowering operations. (5) The hand (operation) force should not extraordinarily change.
○	○	Change device for lifting and lowering operations	Operation	The change device should be smoothly operated.
○	○	Floating device	Operation	The floating device should be smoothly operated.

HOOK

○	○	Opening of hook	Check visually in daily check and by measurement in periodic check.	No deformation should be found when its dimensions are compared with standard dimensions (A list of major dimensions of hooks should be prepared before their use.)
○	○	Deformation	Visual	Free from bend and distortion.
○	○	Deformation of Shank	Check visually in daily check and by measurement in periodic check.	There should be no big clearance between hook fitting and shank.
○	○	Wear and corrosion	Check visually in daily check and by measurement in periodic check.	Free from severe wear and corrosion.
○	○	Flaws and other harmful defects	Visual (5)	Free from cracks and other harmful defects.
○	○	Latch	Visual Function	Free from severe wear or deformation and operates properly.

LOAD CHAIN

○	○	Pitch elongation	Check visually in daily check and by measurement in periodic check.	Don't use load chains with pitch elongation of 5% minimum (Prepare a list of standard dimensions before use.)
○	○	Wear	Check visually in daily check. Measurement in periodic check.	Don't use load chains which are worn in diameter by 10% or more. (Refer to "the limit of the load chain for use")
○	○	Deformation	Visual	Free from deformation.
○	○	Flaws and other harmful defects	Visual (5)	Free from cracks and other harmful defects.
○	○	Corrosion	Visual	Free from serious rust.

BODY

○	○	Frame	Visual	Free from deformation and severe corrosion.
○	○	Gear case	Visual	Free from severe deformation and corrosion.
-	○	Gears	After dismantling check them visually or by measurement.	(1) Free from severe wear (2) Free from breakage.
-	○	Load sheave and idle sheave	After dismantling check them visually or by measurement.	(1) Free from severe wear and deformation. (2) Free from cracks and breakage.
-	○	Operation handle	Visual after dismantling or by measurement.	(1) Free from severe wear and deformation (2) Free from flaws and breakage.
-	○	Bearings	Visual or by measurement	Free from harmful defects such as wear, cracks, breakage, etc.
○	○	Chain stopper	After dismantling check them visually.	(1) Presence of the clamp (2) Free from deformation

BOLTS AND NUTS

○	○	Bolts, nuts, rivets, split pins, snap rings, etc. at all the components	Visual	(1) In daily check, the presence of nuts, rivets, split pins, etc. which can be seen from outside should be checked and nuts, rivets, snap rings, etc. should not get loose. (2) In periodic check, abnormality of the said parts should be checked internally and externally.
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BRAKE

-	○	Wear of brake linings	By measurement	Free from severe wear (based on the maker's instructions)
-	○	Brake screws	Visually or by measurement	Free from severe wear
-	○	Ratchet and ratchet wheel	Visually or by measurement	Free from severe wear

Note:

- (3) Inspect the items with o-mark in Table 1.
- (4) Inspect the function again after dismantling and assembling.
- (5) In periodic check, the magnetic particle test prescribed in JIS G0565 or the liquid penetrant test in JIS Z3443 should be carried out when necessary.

INSPECTION CERTIFICATE

The goods had passed rigid inspection by us ahead of delivery in accordance with our standard in terms of test load and all other respects in good and satisfactory condition.

INSPECTOR T. Uesugi



ELEPHANT CHAIN BLOCK CO., LTD. Osaka, JAPAN

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