

MARUZEN

RIG LEADER
FOR POST DRIVER
MODEL KHL-800

OPERATING MANUAL

ORIGINAL INSTRUCTIONS



FOR THE PURPOSE OF SAFETY, PLEASE READ THIS MANUAL THOROUGHLY BEFORE ATTEMPTING TO USE THIS BREAKER. ANY INCORRECT OPERATING PROCEDURES WILL CAUSE DAMAGE TO THE MACHINE. ALWAYS KEEP THIS MANUAL IN AN EASILY ACCESSIBLE PLACE.



MARUZEN KOGYO CO., LTD.

FOREWORD

This manual is intended for use by those who have undergone training at the manufacturer or dealer.

This manual is an important part of your tool. It provides rules and guidelines that will help you to use this machine safely and effectively. You **MUST** familiarize yourself with the functions and operations by reading the manual thoroughly before you begin using this machine. For your safety, it is especially important that you read and observe all precautions in this manual and the labels on the machine. The precautions **MUST** be followed strictly at all times when performing operation and maintenance.

* Failure to follow the guidelines and safety alerts presented in the manuals and on the machine, or use of this machine for any other purpose than described in the manual, may result in system failure or serious personal injury.

Keep this manual with the tool and in an easily accessible place for future reference. Make sure all personnel involved in working on this machine can consult it periodically. In case this manual should be lost or damaged, immediately contact us or your dealer to purchase a new copy.

We recommend that you always use Maruzen genuine components and spare parts. Using components and spare parts from other sources may cause damage to this machine and endanger operators.

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SAFETY INFORMATION

To enable you to use this machine safely, safety precautions are presented in this manual and labels are affixed to the machine to provide explanations of situations involving potential hazards and how to avoid them.

SAFETY ALERT CLASSIFICATIONS

The following safety alert symbols are used to inform you that there is a potential hazardous situation that may lead to personal injury or damage.

In this manual and on machine labels, the following safety alert symbols are used to express the potential level of hazards.



Indicates an imminently hazardous situation which, if not avoided, **WILL** likely result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury.

**** Safety alert symbols are to emphasize all operations which, if not strictly followed, could result in a life-threatening situation, bodily injury or damage to tool.**

SAFETY ALERTS

DO NOT OPERATE THE MACHINE UNLESS THE FOLLOWING SAFETY INSTRUCTIONS HAVE BEEN THOROUGHLY READ AND UNDERSTOOD!

	Read and understand all of the instructions and safety information in this manual before operating.
	Wear eye protection.
	Wear ear protection.
	Wear a dust mask.
	Wear a helmet.
	Wear protective gloves.
	Wear foot protection boots.
	Do not touch oil with your bare hands.
	Main body will be hot during and after use. Do not touch it with your bare hands.
	Contains high pressure gas.

SAFETY PRECAUTIONS

Failure to observe following precautions can cause personal injury or damage to the tool.



DANGER

Keep this manual and its enclosures in a safe dry place, so they can be always available for future consultations.

【FAILURE TO OBSERVE THESE WARNINGS】

WILL likely result in death or serious injury.



WARNING

Wear appropriate clothing and safety protections for operation.

(1) Wear tight-fitting clothes and avoid operating with short pants or t-shirts, or other clothes which bare parts of the body is exposed. Pay attention to long loose hair and gather them to prevent them get in contact with moving parts or get trapped.

(2) ALWAYS wear following safety protections when operating.

①Helmet – To protect head from obstacles during work

②Protective shoes – To protect from falling objects

③Safety gloves – To protect against burns and bruises caused by hot part

④Ear protections – To protect from noise disturbance

【FAILURE TO OBSERVE THESE WARNINGS】

COULD lead to unexpected accidents.



WARNING

Do not operate the tool if:

- (1) you are taking medication, feeling drowsy, unwell, or tired.
- (2) you are under the influence of drugs or alcohol.
- (3) your hands, foot, lower back or other part of your body hurts or injured

【FAILURE TO OBSERVE THESE WARNINGS】

COULD result in serious injury or even cause death.

When lending the tools to someone:

Make sure the safety instructions have been thoroughly read and fully understood by the person who is going to use the tool.

【FAILURE TO OBSERVE THESE WARNINGS】

COULD result in serious injury or damage to the tool.

Avoid blank hammering

Operating the tool horizontally may cause sudden ejection of the pile.
Excessive blank hammering is considered tool abuse and may cause tool damages.

【FAILURE TO OBSERVE THESE WARNINGS】

COULD damage the tool.



WARNING

Pay special attention to high pressure gas.

- (1) High pressure gas is contained inside the accumulator of the post driver.
- (2) Do not loosen the nut unless it is necessary for maintenance.

【FAILURE TO OBSERVE THESE WARNINGS】

COULD result in serious personal injury.



CAUTION

1. DO NOT touch the tool with your bare hands.

- (1) When operating and after operating, oil temperature will increase and the tool will be hot. DO NOT touch with your bare hands or let your skin touch the tool.
- (2) The temperature of tool will also raise while or after operating. BE SURE that you always wear protective items when using the tool.

【FAILURE TO OBSERVE THESE WARNINGS】

Could cause serious burns.

APPLICATION

- 1. This rig leader is for post driver KH800 and is used for
 - (1) Attaching to hydraulic excavator.
 - (2) Hanging to crane.

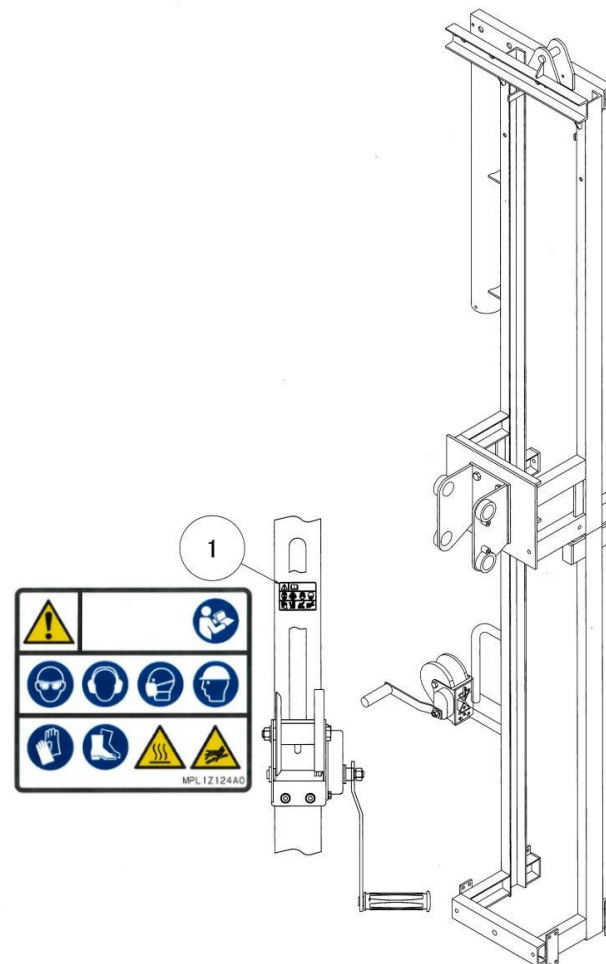
SAFETY LABELS

Precaution labels warn you to pay extra attention for potential hazards.

Ensure all decals are readable.

Replace to new one when needed.

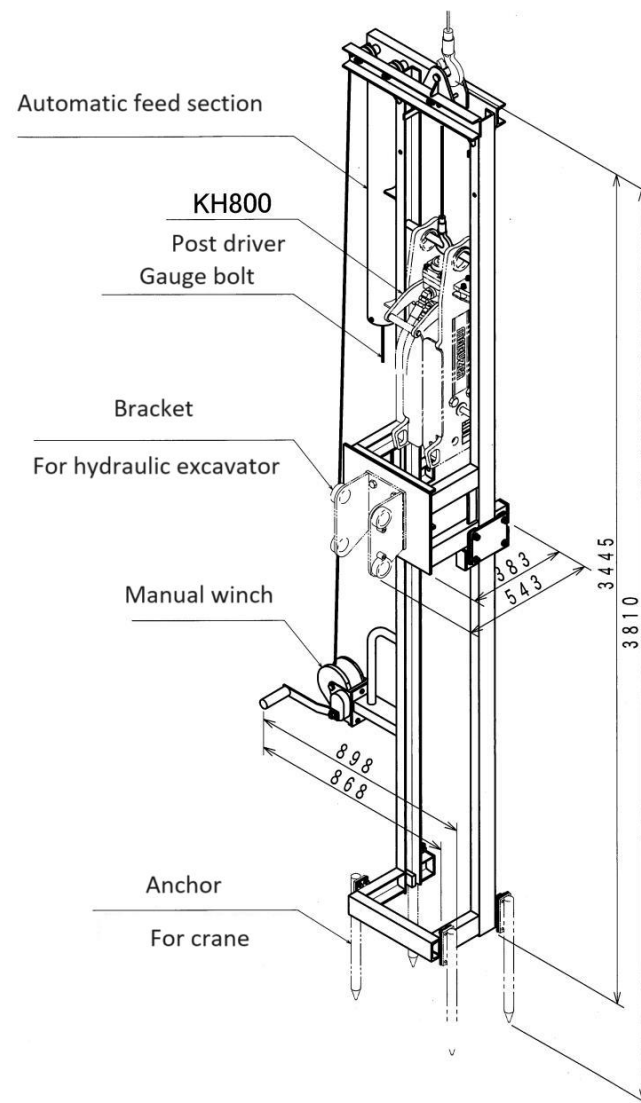
	Part No.	Part Name
①	MPL1Z124A	Label DK



SPECIFICATIONS & DESCRIPTIONS

MODEL KHL-800

Weight	130 kg For excavator 240kg (including KH800) For Crane 242kg (including KH800)
Dimensions	For excavator 3445 x 868 x 543 mm For crane 3810 x 898 x 383 mm
Driving stroke	1900mm
Others	Manual winch (with automatic mechanical brake)
Wire dia	φ 5mm
Automatic feed section	Refer to page7 and 8.

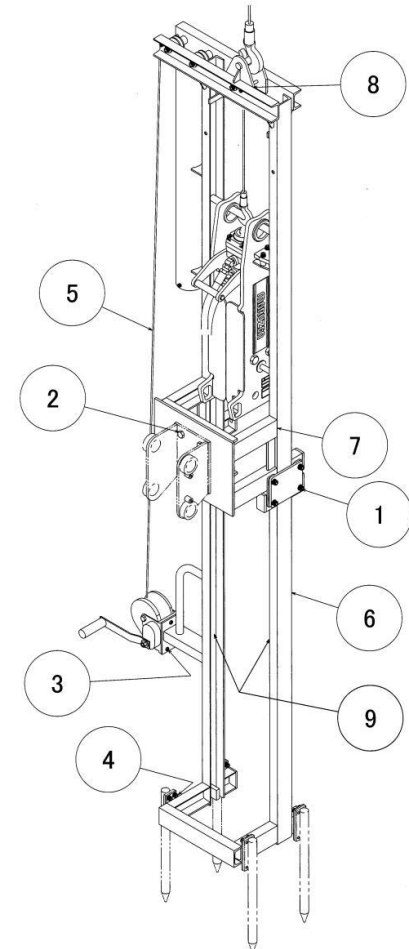


INSPECTIONS BEFORE EACH OPERATION

For the purpose of keeping the rig leader in good condition, make sure the following items should be inspected each time before using. (Refer the drawing below)

	Inspection Items	Countermeasures
①②③④	Loose of bolts.	Re-tighten
⑤	Damage of the wire	Replace
⑥	Damage or bend of the steel	Replace
⑦⑧	Damage of the welding part	Replace
⑨	No grease	Apply grease

***For detailed procedure, ask Maruzen dealer.**



Before start

1. There is a difference between for excavator and for crane.

- a) For excavator

Assemble bracket (refer to page 19)

Tighten bolt (42) and washer (43) to bracket (41).

Tightening torque: 170N · m

Set the rig leader in a floating position relative to the ground, as the weight of the hydraulic excavator can reduce rig leader sway during post driving.

- b) For crane

Assemble anchor. (refer to page 19)

Tighten bolt (39) and washer (2) to anchor (40).

Tightening torque: 65N · m

Set the rig leader to lower anchor into the ground by crane operation to reduce shaking during post driving.

*When setting KH800 Post driver to KHL800 Rig leader, work with 2 people and lay the post driver and rig leader on the ground to prevent falling.

Operation (refer to page 13)

2. Set the rig leader where to drive the post.

Make sure to hang by the crane with 2 people for preventing falling.

Before using, make sure to check the hook for hanging by the crane.

3. Operate the manual winch to raise the post driver to the height can set the post and set the post.
4. After setting the post, operate the manual winch to pull wire from the winch, and keep it on the automatic feed section.

Check the condition with gauge bolt. (refer to page 13)

5. Follow the instruction manual of KH800.

6. The wire is fed from the automatic feed section according to the amount of post to be driven.

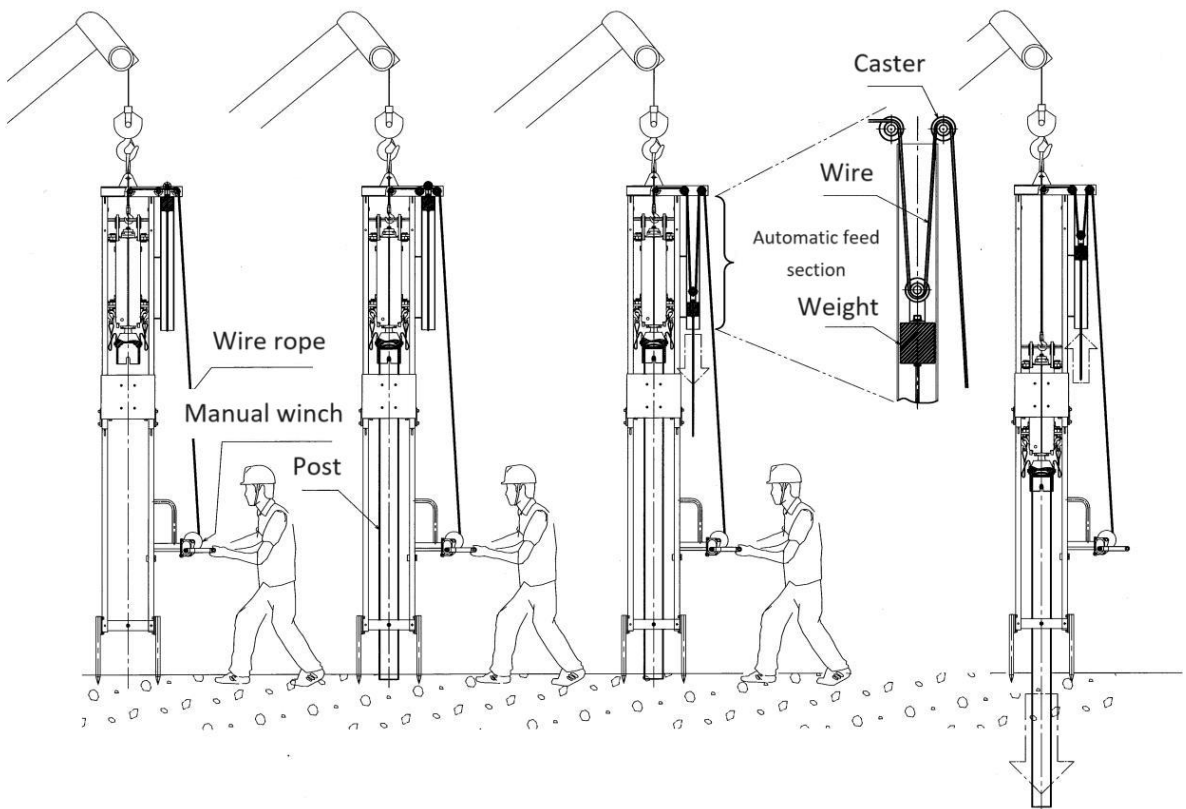
*Except for winch operator, make sure any worker is not around driving position.

3. After Operation

- (1) After operation, stop using KH800 following instruction manual.
- (2) Clean rig leader.
- (3) Storage rig leader with laying.

*Be careful not to fall the rig leader when laying the rig on the ground from the crane or excavator.

*Make sure to remove KH800 from leader by 2 people preventing from falling.



GUIDELINE

While using power source, ask Maruzen or your dealers before the operation if it suits to this machine.

1. Always use Maruzen genuine tools. Using other than Maruzen genuine tools may cause damage of the tool and personal injury.
2. Make sure the power source is OFF when connecting the tool to the power source.
3. DO NOT operate the tool unless thoroughly trained or under the supervision of an instructor. Operators and maintenance personnel shall be physically able to handle the bulk, weight and power of the tool. Keep out of the reach of children.
4. DO NOT modify the tool. Modifications can reduce the effectiveness of safety measures and increase the risks to the operator.
5. Do not discard the safety instructions; give them to the operator.
6. Do not use the tool if it has been damaged.
7. Work in a well-ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.
8. For multiple hazards, read and understand the safety instructions before setting, operating, repairing, maintaining, changing accessories on, or working near the post driver. Use of the tool can expose the operator's hands to hazards, including cuts, abrasions and heat.
9. Make sure if there is no object underground. If there is, remove it or change the driving point.
10. Pay attention to the followings while operating the tool.
 - (1) Be careful for not being injured by the pile.
 - (2) Be careful for not being tripped or fallen by the extension hoses.
 - (3) Make sure there are no obstacles at jobsite. Clear the work area of objects which might cause operator to trip or fall. Be careful for not being tripped by obstacles while operating.
 - (4) Be careful not to fall over when changing position of driving.
 - (5) Make sure the post driver is set horizontally. Be careful for dropping post driver after the operation.
 - (6) Be careful for getting injure your back while lifting the tool.

- (7) When the pile does not be driven into soil for 1 minute, it might be some object in the soil. If keep driving, the post driver, pile or both of them could be damaged. Remove the object or change the place.
11. Connect male and female couplers on the same extension hoses together after disconnecting from power source and the post driver.
12. When the post driver does not stop after releasing the control valve, STOP the power source IMMEDIATELY.
Or if post driver stops suddenly, release the control lever.

You MUST bring the post driver to Maruzen dealers for repairing and inspection.
13. In case of sudden breakage of hydraulic hose occurs and oil blow out the hoses, STOP the power source IMMEDIATELY.
14. When disconnecting couplers, a small amount of oil may drip down. Make sure that surrounding area does not get dirty by oil.
15. When connecting and disconnecting couplers, make sure dirt, dust and other foreign material does not enter or stick to couplers and hoses.
16. If the oil temperature is below 10°C, warm up the power source by running it for a while before start operating.
17. DO NOT submerging part of the post driver or entire post driver into water or sea water.
18. Tools shall be inspected periodically to verify that the ratings and markings required by this part of ISO 11148 are legibly marked on the tool. The employer/user shall contact the manufacturer to obtain replacement marking labels when necessary.
19. Be aware that the failure of the workpiece, or accessories, or even of the inserted tool itself can generate high-velocity projectiles.
20. Ensure that the workpiece is securely fixed.
21. Appropriate controls to reduce the risk may include actions such as damping materials to prevent workpieces from ringing.
22. If the operator experiences symptoms, such as persistent or recurring discomfort, pain, throbbing, aching, tingling, numbness, burning sensations or stiffness, these warning signs should not be ignored. The operator should tell the employer and consult a qualified health professional.
23. If you experience numbness, tingling, pain or whitening of the skin in your fingers or hands, stop using the pie driver, tell your employer and consult a physician.
24. DO NOT use damaged hydraulic hoses or worn hydraulic hoses. It may cause burst of the hose when using damaged or worn hydraulic hose.

25. Make sure the followings have been done before storing the post driver for a long term.

- (1) Wipe entire body of the post driver with wet cloth with hydraulic oil.
- (2) Put a cover on the post driver and store at the dry place.

26. Proceed with care in unfamiliar surroundings. There can be hidden hazards, such as electricity or other utility lines.

27. Ensure that there are no electrical cables, gas pipes, etc., that can cause a hazard if damaged by use of the tool.

28. Use only clean oil.

29. Ensure that couplings are clean and correctly engaged before operation.

30. Do not install or remove the tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury.

31. Be sure all hoses connections are tight.

32. Wipe all couplers clean before connecting. Failure to do so can result in damage to the quick couplers and cause overheating.

DUST AND FUMES

1. Dust and fumes generated when using the post driver can cause ill health (for example, cancer, birth

defects, asthma and/or dermatitis); risk assessment and implementation of appropriate controls for these hazards are essential.

2. Risk assessment should include the dust created by the use of the tool and the potential for disturbing existing dust
3. Operate and maintain the post driver as recommended in these instructions, to minimize dust and fume emissions.
4. Where dust or fumes are created, the priority shall be to control them at the point of emission.
5. All integral features or accessories for the collection, extraction or suppression of airborne dust and fumes should be correctly used and maintained in accordance with the manufacturer's instructions.
6. Select, maintain and replace the consumable/inserted tool as recommended in the instructions handbook to prevent an unnecessary increase in dust or fumes.

PROTECTION EQUIPMENT

1. Use hearing protection in accordance with employer's instructions and as required by occupational health and safety regulations.
2. Use respiratory protection in accordance with employer's instructions and as required by occupational health and safety regulations.

3. Wear warm clothing when working in cold conditions and keep your hands warm and dry.
4. Always wear impact-resistant eye protection during the operation of the tool. The grade of protection required should be assessed for each use.
5. Wear suitable gloves to protect hands.

SOUND

1. Exposure to high noise levels can cause permanent, disabling hearing loss and other problems, such as tinnitus (ringing, buzzing, whistling or humming in the ears). Therefore, a risk assessment and implementation of appropriate controls for these hazards are essential.
2. Operate and maintain the post driver as recommended in the instruction handbook, to prevent an unnecessary increase in the noise level.
3. Select, maintain and replace the consumable/inserted tool as recommended in the instruction handbook, to prevent an unnecessary increase in noise.

VIBRATION

1. Exposure to vibration can cause disabling damage to the nerves and blood supply of the hands and arms.
2. Operate and maintain the post driver as recommended in the instruction handbook, to prevent an unnecessary increase in vibration

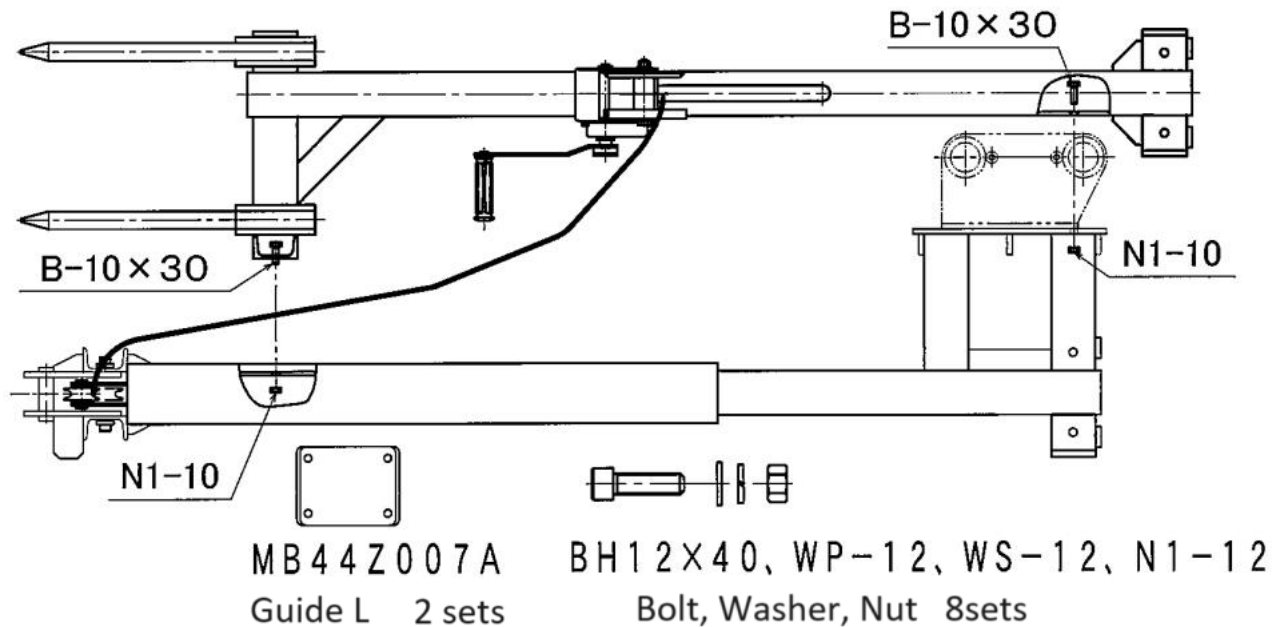
levels.

3. Do not allow the inserted tool to chatter on the workpiece, as this is likely to cause a substantial increase in vibration.
4. Select, maintain and replace the consumable/inserted tool as recommended in the instructions handbook to prevent an unnecessary increase in vibration levels.
5. Hold the tool with a light but safe grip, taking account of the required hand-reaction forces, because the risk from vibration is generally greater when the grip force is higher.

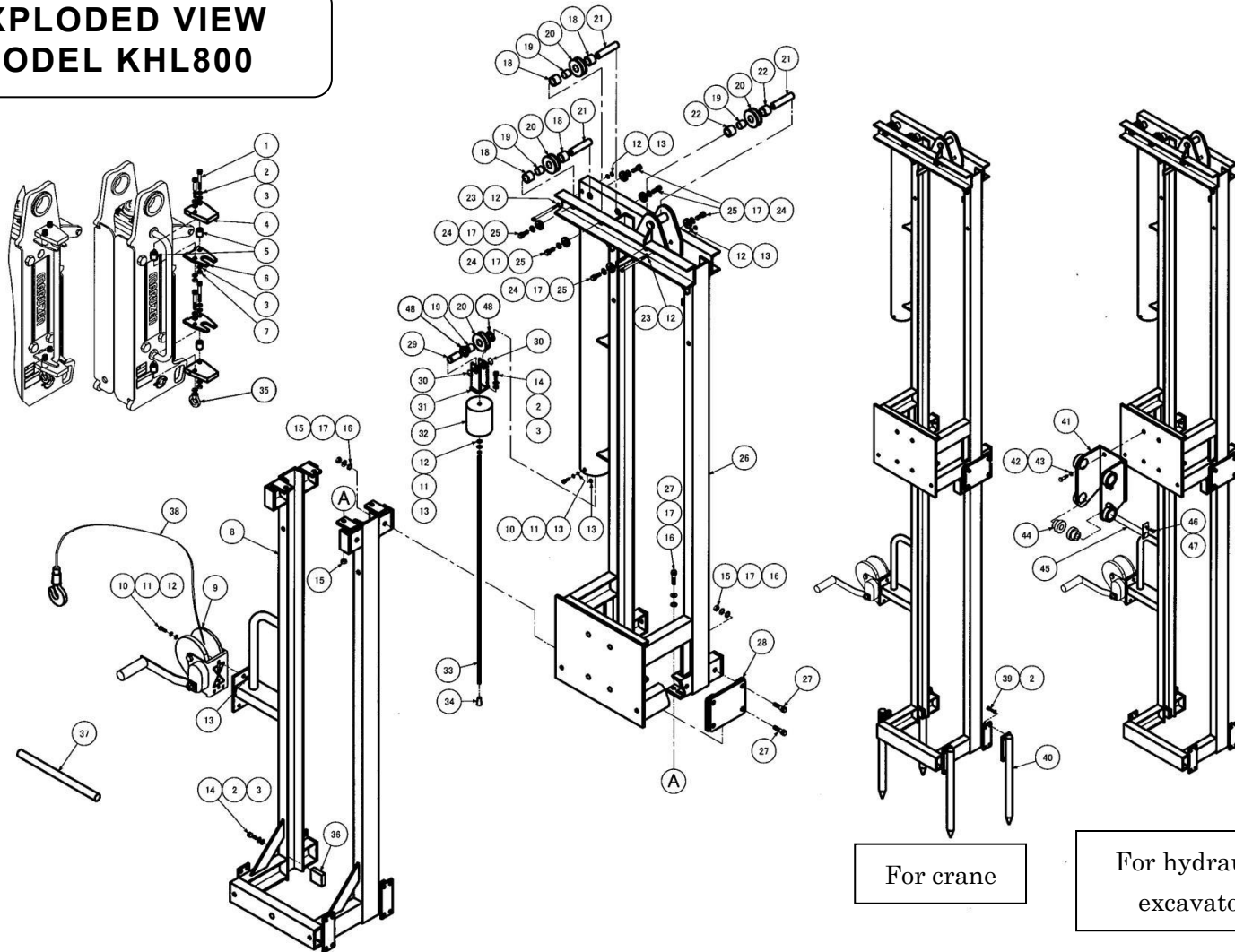
MAINTENANCE

For long term shortage, take following steps.

1. Apply grease to sliding part of rig leader.
2. Clean the surface of rig leader with oiled cloth. Cover and store in a dry place.
3. Rig leader can be store in two pieces. Leader A (26) and leader B (8) can be split by removing the guide L (28) that holds them together. Stack the divided leaders A and B as shown in the figure, and fix them with bolts (B-10 x 30, 4 pcs).
4. Check if the remote valve moves smoothly.



EXPLODED VIEW MODEL KHL800



No.	Part No.	Part Name	Q'ty	No.	Part No.	Part Name	Q'ty
1	BH-10x65	Bolt	8	22	MB44Z008A	Collar 2	2
2	WS-10	Washer	28	23	BH-8x100	Bolt	2
3	WP-10	Washer	11	24	BH-12x25	Bolt	6
4	MB44Z003A	Slide Resin	4	25	MB44Z011A	Washer	6
5	MB44Z006A	Caster	8	26	MB44W001A	Leader A	1
6	MB44Z005A	Guide	4	27	BH-12x40	Bolt	12
7	N1-10	Nut	6	28	MB44Z007A	Guide L	2
8	MB44W002	Leader B	1	29	5070-519	Pin A	1
9	PM-200	Mini Max pull winch	1	30	CS-20	Retaining ring	2
10	BH-8x20	Bolt	4	31	MB44Z012A	R Bracket	1
11	WS-8	Washer	5	32	MB44Z014A	Weight	1
12	WP-8	Washer	8	33	MB44Z013A	Gauge bolt	1
13	N1-8	Nut	7	34	C-10-MC-8	Cap	1
14	BH-10x25	Bolt	3	35	NE-10	Eye nut	2
15	NN-12	Nylon nut	12	36	MB44Z015A	Stopper	1
16	WP-12	Washer	12	37	MB44Z004A	Bar	1
17	WS-12	Washer	18	38	MK03Z031A	Wire cable with hook (10m)	1
18	MB44Z009A	Collar 1	4	39	BH-10x20	Bolt	16
19	K5B2020	DU Bush	4	40	MB44Z016A	Anchor	4
20	5070-522	Roller	4	41		Bracket	1
21	MB44Z008A	Shaft	3	42	B-14x40 (10.9T)	Bolt	4

