

Uniting water with an abundant lifestyle \*\*\*\*\* Kawamoto Pump

## Stainless Steel Hand Pump

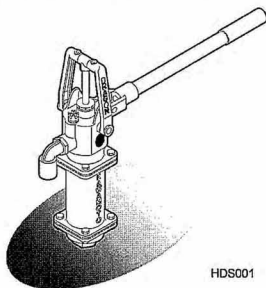
### Dragon HDS-type

## Instruction Manual

Thank you for purchasing the stainless steel hand pump.

Always read this manual thoroughly and fully comprehend the contents before starting use.

Please keep this instruction manual in a handy place for quick reference.



HDS001

### <Contents>



[1] Introduction.....	2	2-2 Usage Methods.....	5
1-1 Safety precautions .....	2	1. Pumping .....	5
1-2 Confirmation before use.....	2	2. Trial operation .....	6
1-3 Working environment and conditions ....	3	3. Draining the water .....	6
1-4 Names of each section.....	3	[3] Maintenance.....	7
[2] Installation and Usage.....	4	3-1 Replacing the consumable parts.....	7
2-1 Installation and piping .....	4	3-2 Troubleshooting .....	8

## [1] Introduction

### 1-1 Safety precautions

This manual lists the safety precautions which must be observed to ensure safe and correct use of the product and to prevent damage or injury to the user or other persons. These precautions are classified as "Warnings" or "Cautions". Please read and fully comprehend these precautions before starting use. The degree of risk alerted by these precautions is explained below.

Details of degree of risk alerted by "Warnings" and "Cautions"

 <b>Warning</b>	Indicates details which if ignored and handling is mistaken could lead to serious injury.
 <b>Caution</b>	Indicates details which if ignored and handling is mistaken could lead to personal injury or property damage.


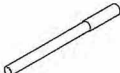

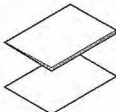
#### Special Precautions

- Do not use this product with any specifications other than the specified product specifications. Failure to observe this could result in faulty performance or faulty operation.
- Securely install the pump as indicated in the instruction manual. Improper installation could result in faulty performance or injury from dropping.
- Take care not to pinch fingers and hands between the discharge casing and lever arm during use. There is a risk of injury.
- Use by small children must always be supervised by an adult. Children must be instructed in safe usage methods.
- Do not apply body weight or forcibly operate the pump's handle. The pump could break and cause injury.
- Do not use the pump with the piping closed. The handle could return suddenly and cause injury.
- Do not connect the piping to city water piping. Well water could enter the city water piping, and contaminate the city water.

### 1-2 Confirmation before use

Check the following when the pump arrives. If there is any discrepancy, please contact your dealer.

- Read the nameplate to confirm that the ordered pump has been delivered.
- Check that no parts have been damaged during transportation, and that none of the bolts or nuts are loose.  
If any bolt or nut is loose, tighten it.
- Check that all of the ordered accessories are included.

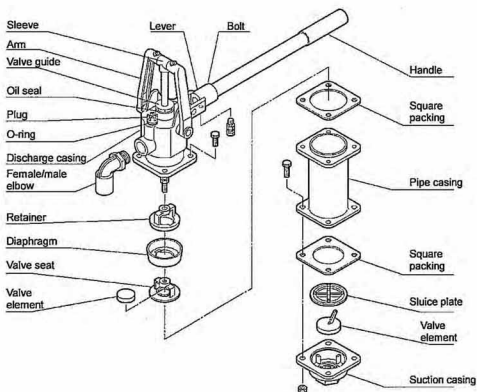
Pump body	Handle	Female/male elbow	Instruction Manual Warranty Card
 HDS002	 HDS011	 HDS012	 HDS013

### 1-3 Working environment and conditions

<b>⚠ CAUTION</b>	
<ul style="list-style-type: none"> <li>Do not use this product with any specifications other than the specified product specifications. Failure to observe this could result in faulty performance or faulty operation.</li> </ul>	

<b>Fluid quality</b>		Pure water, pH5.8 to 8.6
<b>Fluid temperature</b>		5 to 40°C
<b>Solid contents</b>	<b>Concentration</b>	50mg/l or less
	<b>Size</b>	0.3mm or less
<b>Installation place</b>	<b>Ambient temperature</b>	Indoors or outdoors (5 to 40°C)
<b>Suction conditions</b>		Suction total head : Within -8m
<b>Boost conditions</b>		Boost total head : Within 15m

### 1-4 Names of each section



HDS003

## [2] Installation and Usage

### 2-1 Installation and piping

#### ⚠ WARNING

- Securely install the pump as indicated in the instruction manual. Improper installation could result in faulty performance or injury if the handle or pump body dislocate.

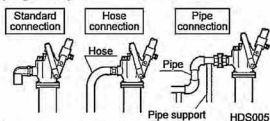
#### ⚠ CAUTION

- Always clean the well before installing the pump, and remove any foreign matter, such as sand which may be adhered inside or outside of the pipe. If foreign matter, such as sand is sucked up, pumping may be disabled because of caught sand, etc.
- When connecting the piping, connect the coupling mechanism (union, hose coupling, etc.) to the discharge port. If this is not observed, it may not be possible to disassemble the piping for maintenance and inspection.
- Do not connect the piping to city water piping. Well water could enter the city water piping, and contaminate the city water.

Install and pipe the pump as shown in the drawing following the matters below.

- Make sure that the suction total head is within 8m.  
The water level will drop when the well is empty, so set the suction total head using the empty timing as a reference.
- Keep the submersion to 10-fold of the pipe diameter and make sure that air is not sucked in.
- Maintain a depth of 30cm or more to the bottom of the well.
- Sufficiently tighten the pipe joints. Make sure that air is not sucked in, and that water does not leak.
- When connecting and extending the pipes, provide pipe supports so that the load of the pipes is not directly applied on the pump.

#### <Piping example>



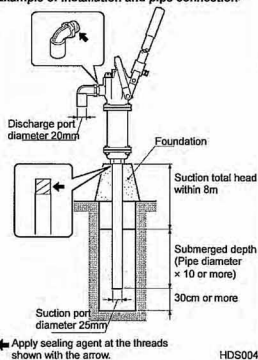
- Maintain the area around the well and pump so that rain water does not get into the well.  
The quality of the water will drop if contaminated by rain water.
- When using a mounting plate, make sure to securely fix it onto the dug well.

#### Winterizing measures

#### ⚠ CAUTION

- This pump has drain equipment to prevent freezing. If there is a possibility of freezing, always drain the water out of the pump. Failure to do this could cause the residual water in the pump to freeze and damage the pump.
- Even when the water is drained out, the diaphragm could harden or the handle movement could be impaired by freezing. In this case, fill warm water, etc., in from the priming port, and eliminate the frozen water. Forcibly moving the handle could damage the diaphragm and prevent pumping.

#### <Example of installation and pipe connection>



## 2-2 Usage methods

### WARNING

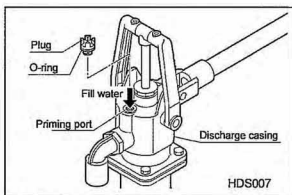
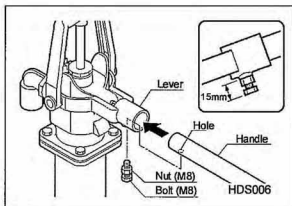
- Take care not to pinch fingers and hands between the discharge casing and lever arm during use. There is a risk of injury.
- Use by small children must always be supervised by an adult. Children must be instructed in safe usage methods.
- Do not use the pump with the piping closed. The handle could return suddenly and cause injury.

### CAUTION

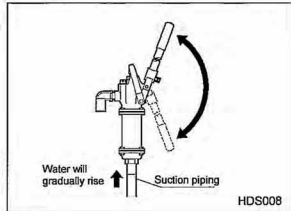
- Do not apply body weight or forcibly operate the pump's handle. The pump could break and cause injury.
- Do not use the pump without water in it. The diaphragm could wear out, and pumping faults could occur.
- Do not suck in sand or foreign matter. Failure to observe this could result in pumping faults or operation faults.

### 1. Pumping

- 1) Insert the handle into the lever, and align the hole on the handle with the bolt hole on the lever.
  - 2) Tighten the bolt so that the distance between the flat section of the lever to the end of the bolt is 15mm.
  - 3) Tighten and fix the nut so that the bolt does not loosen.
- 
- 4) Remove the plug from the priming port on the discharge casing, and fill water.
  - 5) Fill water in until it overflows from the discharge port or priming port. Then, securely tighten the plug.
    - Operate the handle, and confirm that water does not leak.



- 6) Move the handle up and down.  
The number of times that the handle needs to be moved up and down will differ according to the depth of the well. However, the water will gradually rise up the suction piping.



## 2. Trial operation

Once pumping has started, let the water flow out for a short time and check for sand in the water, for water leaks from the pipes, and for abnormal operation sounds. Foreign matter, such as sand, may enter the pipes in the beginning, but the water should be free of foreign matter after a short while.

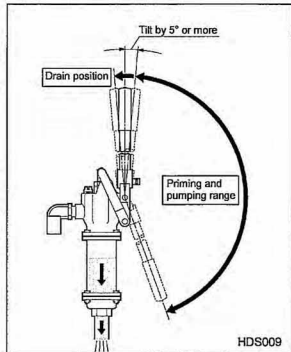
## 3. Draining the water

Lift the handle up until it moves no more.

- When the handle is raised to the drain position, the valve element will open, and the water in the pump will be drained out.
- When using the pump again after draining the water, prime the pump again.

### CAUTION

- If the handle is raised to the drain position during priming or pumping, the valve element will open, and priming and pumping will be disabled. Always operate the handle within the priming and pumping range.
- For safety purposes, always remove the handle when not using the pump.



### [3] Maintenance

#### 3-1 Replacing the consumable parts

#### ⚠ CAUTION

- If a pump performance fault or operation fault, etc., occur, stop use immediately, and inspect and repair the pump. Continued use in an abnormal state or improper repairs could result in trouble.
- Always drain the water from the pump when suspending use for a long time, or when there is a possibility of freezing. The pump could freeze and be damaged in cold climates and even in warm climates should there be a sudden cold wave.

- The diaphragm ⑫ and oil seal ② are consumable parts. These parts must be replaced with new parts periodically.
- When suspending use for a long time, disassemble the pump, and check for the adherence of foreign matter inside the pump. Clean the pump and replace the consumable parts (diaphragm and oil seal).

The following parts are consumable parts. Refer to the replacement timing guide, and replace these parts.

Part No.	Part name	Replacement reference	State reference
30501510	Diaphragm	2 years	When pumping becomes unstable
30201810	Oil seal	2 years	When water leaks increase

#### CAUTION

The precautions given in this instruction manual do not cover all possible states. Person using this pump, or inspecting and servicing this pump must pay special attention to safety.

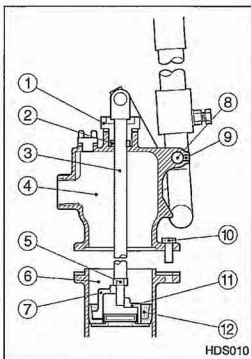
#### ■ Replacement methods (disassembly and assembly)

- 1) Drain the water from the pump, and remove the suction piping (for boost type).
- 2) Remove the bolt ⑩ fixing the discharge casing ④ and pipe casing ⑥, and separate the discharge casing from the pipe casing.
- 3) Remove the retainer ⑦, valve seat ⑪ and diaphragm ⑫ set and the nut ⑤.
- 4) Loosen the cup point fixing screw ⑨, remove the parallel pin ⑧, and pull out the valve rod ③.
- 5) Remove the valve guide ① with a screwdriver, etc., and pull out the oil seal ②.
- 6) Replace the diaphragm ⑫ and oil seal ② with new parts. The diaphragm ⑫ and oil seal ② can be inserted easily by wetting the periphery with water.

#### ⚠ CAUTION

- Take care not to damage the sliding surface (diaphragm: outer periphery, oil seal: inner periphery) when inserting the diaphragm and oil seal.

- 7) Assemble the parts following the disassembly procedure in reverse.



### 3-2 Troubleshooting

**⚠ CAUTION**

- If any abnormality is sensed, stop use immediately to prevent accidents. Always contact your dealer for inspections and repairs.

If there is any abnormality even after inspecting the following items, contact your dealer or your nearest Kawamoto Pump Sales Office.

Symptoms	Cause	Measures	Reference page
Water is not discharged (water is not pumped)	Air is being sucked in from the suction pipe	Check the suction pipe seams for damage.	-
	There is foreign matter in the pump	Overhaul the pump and remove all foreign matter.	7
	Water drops from the pump	Overhaul the pump and remove all foreign matter.	7
		Replace the valve element	-
		If the handle is at the drain position, change the handle position and prime the pump	5, 6
	Incomplete priming	Prime the pump	5
	Empty well	Lower the piping to the empty water level	4
Freezing in pump or piping	Provide freezing prevention measures	4	
Poor water discharge	Foreign matter adhered in pump or piping	Overhaul the pump and remove all foreign matter.	7
	Worn diaphragm	Replace the diaphragm	7
Water leaks from valve guide	Worn oil seal	Replace the oil seal	7
Handle cannot be moved	Freezing in pump or piping	Provide freezing prevention measures	4
	Misalignment of movable parts	Contact your dealer for inspections and repairs	-

Unexpected trouble could occur. However, it is important to take appropriate measures immediately when an abnormal condition is found. If the cause of the trouble is not clear, contact your dealer or your nearest Kawamoto Pump Sales Office. Notice the pump type, serial No. and trouble (fault) state making an inquiry.

**Kawamoto Pump Mfg.Co.,Ltd.**

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