

# 1 BE SURE TO READ FOR YOUR SAFETY

Be sure to thoroughly read and understand the SAFETY PRECAUTIONS given in this section before using the equipment in order to operate the equipment correctly.

The precautionary measures described in this section are intended to prevent danger or damage to you or to others. The contents of this manual that could possibly be performed improperly are classified into two categories: **⚠ WARNING**, and **⚠ CAUTION**. The categories indicate the extent of possible damage or the urgency of the precaution. Note however, that what is included under **⚠ CAUTION** may at times lead to a more serious problem. In either case, the categories pertain to safety-related items, and as such, must be observed carefully.

- **⚠ WARNING** : Operating the equipment improperly by failing to observe this precaution may possibly lead to death or injury to humans.
- **⚠ CAUTION** : Operating the equipment improperly by failing to observe this precaution may possibly cause injury to humans and other physical damage.
- **NOTE** : Gives information that does not fall in the WARNING or CAUTION categories.
- **Explanation of Symbols:**


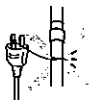







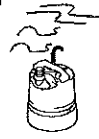




- ⚡ : The ⚠ mark indicates a WARNING or CAUTION item. The symbol inside the mark describes the precaution in more detail ("electrical shock", in the case of the example on the left).
- ⊘ : The ⊘ mark indicates a prohibited action. The symbol inside the mark, or a notation in the vicinity of the mark describes the precaution in more detail ("disassembly prohibited", in the case of the example on the left).
- ⬇ : The ● mark indicates an action that must be taken, or instructs how to perform a task. The symbol inside the mark describes the precaution in more detail ("provide ground work", in the case of the example on the left).

## PRECAUTIONS TO THE PRODUCT SPECIFICATIONS


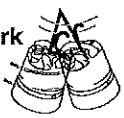



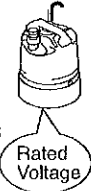



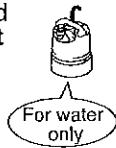









<b>⚠ CAUTION</b>	
	<ul style="list-style-type: none"> <li>● Do not operate the product under any conditions other than those for which it is specified. <b>Failure to observe the precaution can lead to electrical leakage, electrical shock, fire, or water leakage, etc.</b></li> </ul>

## PRECAUTIONS DURING TRANSPORT AND INSTALLTION












<b>⚠ WARNING</b>	
<ul style="list-style-type: none"> <li>● When transporting the product, pay close attention to its center of gravity and mass. Use an appropriate lifting equipment to lift the unit. <b>Improper lifting may result in the product damage, injury, or death.</b></li> </ul>	<ul style="list-style-type: none"> <li>● Install the product properly in accordance with this instruction manual. <b>Improper installation may result in electrical leakage, electrical shock, fire, water leakage, or injury.</b></li> </ul>
<ul style="list-style-type: none"> <li>● Electrical wiring should be performed in accordance with all applicable regulations in your country. Provide a dedicated earth leakage circuit breaker and a thermal overload relay for the pump. <b>Imperfect wiring or neglecting the installation of proper equipment will cause electrical leakage, fire, or explosion at worst.</b></li> </ul>	<ul style="list-style-type: none"> <li>● Provide a secure grounding dedicated for the product. Never fail to provide an earth leakage circuit breaker and a thermal overload relay in your starter or control panel (Both available on the market). <b>If an electrical leakage occurs by due to a product failure, it may cause electrical shock.</b></li> </ul>
<ul style="list-style-type: none"> <li>● Use a power outlet that has a sufficient rating and has been exclusively provided for the pump. <b>If the power outlet is shared with other equipment, it can lead to an abnormal heat of the outlet and can cause fire as a result.</b></li> </ul>	<div style="text-align: right;"> </div>

⚠ CAUTION	
 <p>● Be sure to provide a ground wire securely. Do not connect the ground wire to a gas pipe, water pipe, lightning rod, or telephone ground wire. <b>Improper grounding could cause electrical shock.</b></p> 	 <p>● Prevent a metallic object or dust from sticking to the power plug. <b>Adhesion of foreign object to the plug could cause electrical shock, short-circuit, or fire.</b></p> 
 <p>● Do not scratch, fold, twist, make alterations, or bundle the cable, or use it as a lifting device. <b>The cable may be damaged, which may cause electrical leakage, short-circuit, electrical shock, or fire.</b></p> 	 <p>● Do not use the cable, power plug, or power outlet if it is damaged or it is not closely fitted. Connect every conductor of the cable securely to the terminals. <b>Failure to observe this can lead to electrical shock, short-circuit, or fire.</b></p> 
 <p>● This pump is neither dust-proof nor explosion-proof. Do not use it at a dusty place or at a place where toxic, corrosive or explosive gas is present. <b>Use in such places could cause fire or explosion.</b></p> 	 <p>● When transporting or installing the pump, bring it with the handle. When lifting the product, tie a rope to the handle tightly. <b>Transporting or lifting the pump with its cable may damage the cable, which may cause electrical leakage, electrical shock, or fire.</b></p> 
 <p>● If a hose is used for the discharge line, take a measure to prevent the hose from shaking. <b>If the hose shakes, you may be wet or injured.</b></p> 	




### PRECAUTIONS DURING TEST OPERATION AND OPERATION

⚠ WARNING	
 <p>● Never start the pump while it is suspended, as the unit may jerk and could lead to injury.</p> 	 <p>● When inspecting the pump, be sure to turn off the power supply (earth leakage circuit breaker, etc.) so that the pump may not start accidentally. <b>Failure to do so may lead to a serious accident.</b></p> 
⚠ CAUTION	
 <p>● Do not operate the product under any voltage other than described on the nameplate with the voltage variation limit within <math>\pm 10\%</math>. If it is operated with a generator, it is strongly suggested not to operate other equipment with the same generator. <b>Failure to observe this caution may cause malfunction and breakdown of the product, which may lead to electrical leakage or electrical shock.</b></p> 	 <p>● Do not touch the product with bare hands during or immediately after the operation, as the product may become very hot during operation. <b>Failure to observe this caution may lead to being burned. Especially, when opening the priming plug, pay attention to a phenomenon that hot water may spout from the pump.</b></p> 
 <p>● Do not use the product in a liquid other than water. <b>Use in oil, salt water or organic solvents will damage it, which may lead to electrical leakage or electrical shock.</b></p> 	 <p>● Do not run the product dry or operate it with its valve (sluice or gate valve) closed, as <b>doing so will damage the product, which may lead to electrical leakage or electrical shock.</b></p> 
 <p>● Do not use the product for hot or warm liquid over 40°C, as <b>doing so will damage the product, which may lead to electrical leakage or electrical shock.</b></p> 	 <p>● When operating the pump with its valve (sluice or gate valve) closed, it may become very hot. <b>Be careful not to contact the pump accidentally to avoid being burned.</b></p>
 <p>● Do not allow foreign objects (metal objects such as pins or wires) to enter the suction inlet of the pump. <b>Failure to observe this caution could cause it to malfunction or to operate abnormally, which may lead to electrical leakage or electrical shock.</b></p> 	 <p>● When the product will not be used for an extended period, be sure to turn off the power supply (earth leakage circuit breaker, etc.). <b>Deterioration of the insulation may lead to electrical leakage, electrical shock, or fire.</b></p> 




## PRECAUTIONS DURING MAINTENANCE AND INSPECTION

⚠ WARNING	
	<p>● Absolutely turn off the power supply before starting maintenance or inspection, and perform the work after making sure that the impeller has stopped completely. Do not work with wet hands. <b>Failure to observe these cautions may lead to electrical shock or injury.</b></p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;"> <p>OFF</p>  </div> <div style="margin: 0 10px;">  </div> <div style="text-align: center;"> <p>STOP</p>  </div> </div>
	<p>● In case any abnormality (excessive vibration, unusual noise or odor) is found in the operation, turn the power off immediately and consult with the dealer where it was purchased or Tsurumi representative. <b>Continuing to operate the product under abnormal conditions may result in electrical shock, fire, or water leakage.</b></p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;"> <p>OFF</p>  </div> <div style="margin: 0 10px;">  </div> </div>
	
<p>● Do not disassemble or repair any parts other than those designated in the operation manual. If repairs are necessary in any other than the designated parts, consult with the dealer where it was purchased or Tsurumi representative. <b>Improper repairs can result in electrical leakage, electrical shock, fire, or water leakage.</b></p> <div style="text-align: right;">  </div>	
⚠ CAUTION	
	<p>● After reassembly, always perform a test operation before resuming use of the product. <b>Improper assembly can result in electrical leakage, electrical shock, fire, or water leakage.</b></p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;"> <p>Test operation</p>  </div> </div>

## PRECAUTION TO POWER OUTAGE

⚠ WARNING	
	<p>● In case of power outage, turn off the power supply. <b>The product will resume operation when the power is restored, which presents serious danger to people in the vicinity.</b></p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;"> <p>power outage</p>  </div> <div style="margin: 0 10px;"> <p>OFF</p>  </div> </div>

## OTHER PRECAUTION

⚠ CAUTION	
	<p>● Never use the product for potable water. <b>It may present a danger to human health.</b></p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;">  </div> <div style="margin: 0 10px;"> <p>Potable Water</p>  </div> </div>