



Toll Free: 1-800-579-8088 Web: www.zinko.com

MODELS

ZPE-35RH-1M & ZPE-35RH-1MB

Electric/Hydraulic Pumps

Operation & Maintenance Manual

Safety Information

Read and follow all WARNINGS, CAUTIONS and INSTRUCTIONS included with each product to use the product correctly and to avoid personal injury or property damage during system operation. **ZINKO** will not be held responsible for damage or injury resulting from unsafe use of products, lack of maintenance or incorrect system application.

Caution Remarks Used In This Manual

! DANGER

As a result of incorrect use and/or disregard of this remark, imminent danger may occur resulting in serious injury or death.

! WARNING

As a result of incorrect use and/or disregard of this remark could cause serious injury or death.

! CAUTION

As a result of incorrect use and/or disregard of this remark, there is a possibility that an operator may receive an injury or material damage may occur.

Cautions When Installing Pump

Install a pump unit for better balance

Since the reservoirs of totally enclosed rubber structures are used in these series of pumps, the pumps can be placed for use in any position (slanted, inverted, or perpendicular). However, the pumps should be installed on stable places. When a pump is used aslant, make sure it is firmly affixed to prevent sliding which may result in damage or personal injury.

Prepare a suitable working environment

Make sure all system components are protected from external sources of damage such as excessive heat, flame, moving machine parts, sharp edges, or corrosive chemicals.

! CAUTION

1. DO NOT USE PUMP IN THE RAIN OR ON/IN WET AND DUSTY PLACES.
2. DO NOT EXPOSE HYDRAULIC SYSTEM TO THE DIRECT RAYS OF THE SUN. Be careful with unacceptable rise in hydraulic oil temperature, which can cause trouble in hydraulic equipment.
3. In the case pumps are used outdoors in extremely cold regions, exchange oil for hydraulic oil with the proper viscosity. Increased viscosity due to a drop in oil temperature may cause equipment to function improperly.

! WARNING

1. BE CAREFUL TO AVOID ELECTRIC SHOCK. Do not pull power plug out with a wet hand. Use a grounded outlet or a plug adapter with a grounding attachment in order to protect the operator from electric shock.
2. DO NOT OPERATE PUMP BY THE SIDE OF AN ELECTRIC WELDER.
3. DO NOT PLACE THE PUMP ON EARTHED MATERIALS OR EQUIPMENT.

Using the Pump

Be Sure to Take Appropriate Safety Measures

When hydraulic equipment is operated, protect yourself with a personal safeguard, working clothes and shoes, safety glasses, etc.

Always Check Pressure Limitations of the Hydraulic Circuit

Always confirm in advance that maximum permissible working pressure of a hydraulic pump is lower than the pressure rating of the lowest rated component connected in the system.

Power Supply

The power supply is AC110V or 220V 50/60Hz single phase. Make sure your line voltage is compatible with your pump. The wrong voltage connection or voltage drop of your line will cause burning or heating.

! CAUTION

1. BE CAREFUL ABOUT VOLTAGE DROP WHEN USED WITH AN ELECTRIC GENERATOR.
2. When the power supply is disconnected, ALWAYS GRASP THE POWER PLUG AND PULL IT OUT. Disconnect by grasping the cord and pulling it out will cause breaking of a wire or a short circuit.
3. When a supplement cord is used, use only three-wire grounded cords of such sufficient gauge as 1.25mm² or more with a maximum length of 10M. This will help to avoid voltage drop or damage of the solenoid valves or the electric motor.

Zinko Hydraulic Jack

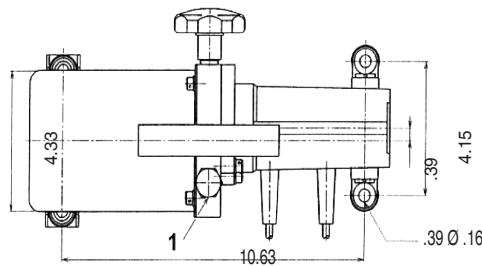
Models: ZPE-35RH-1M & ZPE-35RH-1MB

Specifications

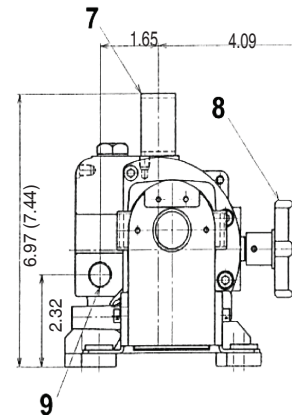
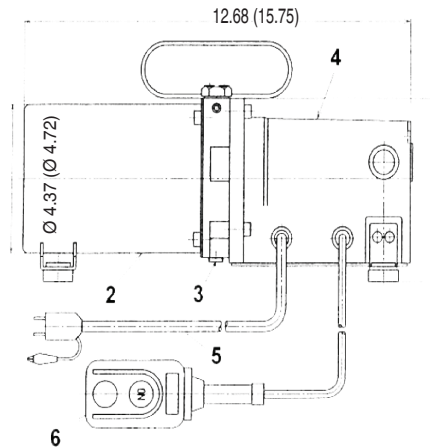
Model #	Electric Motor	Hydraulic Pump				Reservoir	Weight
ZPE-35RH-1M(L)	Commutator and open type, 0.35KW 110V or 220V 50/60Hz single phase, "E" type insulation 2000rpm	Maximum Work Pressure Mpa		Flow Rate L/min(50Hz)		Capacity 1.0L Usable 0.8L	17 lb.
		1st Stage	2nd Stage	1st Stage	2nd Stage		
		...	70	0.6	0.3		

*Remarks: 2L (usable oil: 1.6L) reservoir pumps are also available.

Description of Components



1. Oil Plug
2. Reservoir
3. Pump
4. Motor
5. Electric Cord
6. Switch
7. Handle
8. Release Valve
9. Output: 3/8" NPT



Instructions Before Use

1. Inspection of all components for shipping damage or oil leakage. If any shipping damage is found, notify carrier at once. Shipping damage is not covered by warranty. The carrier is responsible for all repair or replacement costs resulting from damage in shipment.
2. **CAUTION** Oil feeding plugs (Code No.5) are always shut tightly when in shipment and even in use because the tanks are completely enclosed. Use them together with quick couplers with check valves.
3. **WARNING** Check your power supply. Power supply is AC110V or 220V 50/60Hz single phase. Make sure that a grounded outlet or a plug adapter with a grounding attachment must be used.
4. **WARNING** Check hydraulic oil. Always check oil level before operation with the connected cylinders fully retracted (extend if pull cylinders). In case oil is added with cylinders fully extended and then cylinders are retracted, the returned oil will overflow in the reservoirs causing generation of high pressure in the reservoirs. Verify required oil volume in a reservoir as follows:
 - a) Retract the connected cylinder fully.
 - b) Pull power plug out.
 - c) Turn oil feeding plug counterclockwise and remove it.
 - d) Clean the oil gauge of the removed oil feeding plug with a piece of cloth and put it in the oil feeding port again to check oil level. BE CAREFUL WITH THE O-RING.

Zinko Hydraulic Jack

Models: ZPE-35RH-1M & ZPE-35RH-1MB

- e) It is OK if the reservoir is filled with oil reaching to the upper bound of the oil gauge. Replenish of oil is short (See *Maintenance* section) for hydraulic oil details.
- f) Replace the oil feeding plug and screw it in by turning counterclockwise.

Operation

When using a pump with an opened type, turn the oil supply cork twice counterclockwise at the time of use.

NOTE: TURN CLOCKWISE AT THE TIME OF CONVEYANCE AND FASTEN THE OIL SUPPLY CORK. When using a pump with a sealed type, use it with the oil supply cork fastened.

1. Close the release valve lever by turning clockwise and depress the "ON" switch to advance the plunger.
2. To retract the plunger, turn the valve lever counterclockwise to open the valve.

Maintenance

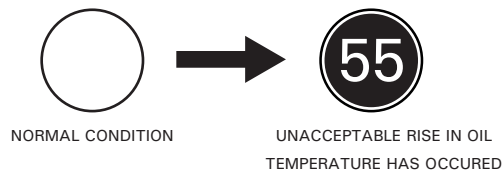
Hydraulic Oil

Use only ZINKO hydraulic oil or an approved high grade oil (ISO #32, viscosity: 32 cSt @40° C) with these pumps.

Oil Temperature

Aptitude temperature for use of hydraulic oil is maximum 55° C. If the color of the temperature seal attached to the tank has changed and indicated "55" as shown below, an unacceptable rise in oil temperature has occurred. STOP WORKING IMMEDIATELY to decrease the oil's temperature. Installation of an oil collar may be appropriate.

Temperature Seal



Oil Exchange

CAUTION The frequency of oil change depends upon general working conditions, severity of use, and overall cleanliness. 300 hours (working time) of use or about 3 months is considered as a standard change interval. Periodically compare samples of the reservoir oil with new oil. Inspect oil color for contaminants or differences.

Remove oil feeding plug and tilt the pump to drain out old oil. Be careful that impurities such as dust do not enter into the reservoir and that new oil is filled up to the gauge level mark indicated in the pump. Precautions for oil change are:

- a) Retract all cylinders fully to the return position.
- b) Do not fill with even a small quantity of replenishment of different kinds of oil.
- c) Be careful that impurities or foreign matter do not enter into new oil.

Oil Safety Notes

WARNING When oil enters into the eyes, wash it away fully with clean water and consult a doctor immediately. In case oil enters into an open wound, wash it away with soapy water and quickly consult a doctor.

Pressure and Piping

1. **WARNING** **Composition of hydraulic equipment system.** When a pump, high pressure hose(s), cylinder, valve, or couplings are connected together, always check product limitations regarding pressure ratings and load capacities. The system operating pressure must not exceed the pressure rating of the lowest rated component in the system.
2. **Pressure gauges.** Always install or prepare a pressure gauge in-line from the pump in order to monitor pressure.
3. **CAUTION** **Piping.** Use wrapping of teflon tape on hose fittings, valves and couplers. Make sure all hose connections are tight - use proper tools to tighten connections with reference to the following table.
DO NOT OVERTIGHTEN CONNECTIONS.

NPT, PT SIZES	TIGHTENING TORQUE N-m (kgf-m)
1/8"	13-14 (1.3-1.4)
1/4"	30-40 (3.0-4.0)
3/8"	60-70 (6.0-7.0)
1/2"	100-110 (10.0-11.0)

*Make sure that tape does not shed into the hydraulic system causing damage. Trim loose ends.

Zinko Hydraulic Jack

Models: ZPE-35RH-1M & ZPE-35RH-1MB

High Pressure Hoses

1. **WARNING** **Hose Installation.** Install hoses leaving something in the reserve because high pressure hoses expand and contract more or less when full pressure is applied. Be careful that the hoses do not rub against other solid materials. Never allow the hoses to kink, twist, curl or bend so tightly that oil flow within hoses are blocked or restricted. DO NOT CLAMP THE HOSES. Clamping the hoses can cause problems.

Hose Handling

DANGER Never drop heavy things against the hoses. This can cause bursting of the hoses resulting in serious accident or injury. Do not subject the hoses to any potential hazard (fire, extreme heat or cold, heavy impact, or sharp surfaces), which may rupture or weaken the hoses. Never pull hoses to move or lift equipment connected with hoses.

Should a hose ever burst or rupture, STOP OPERATING THE PUMP IMMEDIATELY before attempting to remedy the situation. Never attempt to grasp a leaking hose under pressure with your hands. The force of the escaping hydraulic fluid could cause serious permanent injury.

Quick Couplers

Connections

Make sure that all couplers are connected properly. Incomplete coupling connections might cause partial or complete blockage of oil flow resulting in trouble of hydraulic system.

Handling

WARNING If the coupler becomes damaged, stop operating the pump. The damaged coupler can cause a serious accident. DO NOT DISCONNECT COUPLER SETS, they are under pressure.

Bleeding Air From the System

CAUTION Reservoirs of ZPE-35RH series pumps are made of totally enclosed rubber tanks and tank covers. Rubber tanks are filled with oil making no room for air accumulation. However, in case a new cylinder and/or new hose is connected with the pump or oil is exchanged, air may accumulate in the hydraulic system. This air will prevent the pump from delivering oil or cause the cylinder to respond in an unstable or slow manner. Be careful with air accumulation in the system. To remove air:

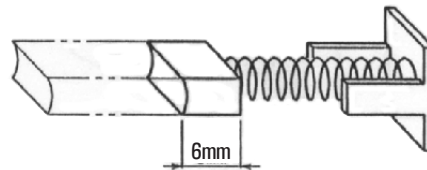
- a) Make sure the tank is full with oil. Open the oil supply cork on the upper part of the pump, check the quantity of oil and carry out until full.
- b) When oil does not come out or pressure does not rise when a return valve is opened, push the button on the operation switch about 10 times and perform air omission of the pump.
- c) Air may accumulate in the pump (rubber tank) when hydraulic equipment is connected. Always check and confirm that the oil tank is full before use.

Carbon Brushes

WARNING Always check the wearing condition of the carbon brushes. When the carbon brushes have been worn down and replacing them is necessary, the motor will stop automatically. Replace when a brush has been worn down to 6mm in length as shown below, or working time of the motor is 500 hours or more (NOTE: Carbon brush replacement times may depending on the conditions of use). Use only **ZINKO** approved brushes with these pumps to extend the life of the unit(s). When they have been worn down the spring exerts insufficient pressure to hold brush against the commutator.

How To Change

- 1) Disconnect the power supply.
- 2) Remove rubber caps on two places and loosen (Code No. 1-21).
- 3) Remove fitting screws inside with a screwdriver so the carbon brush can be taken out.
- 4) Replace brushes with new ones and reattach the screws and rubber caps.



Relief Valve Adjustment

Range of standard pressure adjustment available is from 58.8 to 68.6MPa. Loosen lock screw on the high pressure relief valve and turn the adjusting screw a few turns counterclockwise to decrease pressure setting to a lower desired pressure. Clockwise rotation of the adjusting screw will increase pressure. After setting pressure, replace the lock screw. NOTE: A different kind of spring is needed to adjust and set at a low pressure than standard. Consult a **ZINKO** authorized dealer.

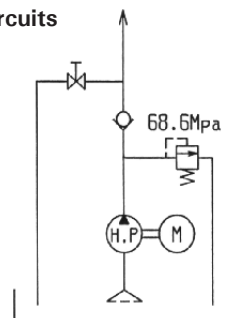
Zinko Hydraulic Jack

Models: ZPE-35RH-1M & ZPE35RH-1MB Parts Description

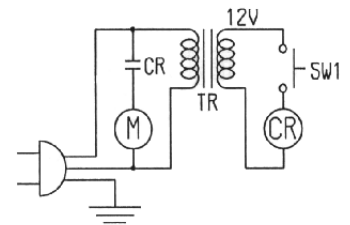
Parts Description

CODE #	DESCRIPTION	CODE #	DESCRIPTION
Driving Portion		Relief Valve Portion	
1-1	Base Plate	3-1	Steel Ball
1-2	Oil Seal	3-2	Ball Receiver
1-3	Eccentric Collar	3-3	Relief Spring
1-4	Ball Bearing	3-4	O-ring
1-5	Spring Pin	3-5	Relief Spring
1-6	Shaft	3-6	Screw
1-7	Motor	3-7	Lock Screw
1-8	Gear	Return Portion	
1-9	Key	4-1	Steel Ball
1-10	G-ring	4-2	Valve Screw
1-11	Bearing	4-3	O-ring
1-12	Thrust Bearing	4-4	Stopper Screw
1-13	Thrust Washer	4-5	Lock Screw
1-14	Set Screw 1	4-6	Handle
1-15	Set Screw 2	4-7	Spring Pin
1-16	Blind Rubber Plug	Tank Portion	
1-17	Leg Stay	5-1	Rubber Tank
1-18	Fitting Bolt	5-2	Tank Cover
Pump Portion		5-3	Leg Stay
2-1	High Press. Piston	5-4	Rubber Leg
2-2	Spring	Electrical Parts Portion	
2-3	Copper Packing	6-1	Power Cord
2-4	Blind Cover	6-2	Protection Tube
2-5	Screw 1	6-3	Pendant Switch
2-6	Spring	6-4	Cord Clip
2-7	Steel Ball	6-5	Fitting Screw
2-8	Copper Packing	6-6	Muffler
2-9	Screw	6-7	Fitting Screw
2-10	Filter	6-8	Dashboard 1
2-11	Steel Ball	6-9	Dashboard 2
2-12	Spring	6-10	Hand Grip
2-13	Copper Packing	6-11	Fitting Screw
2-14	Retainer C	6-12	Spring Washer
2-15	Screw 2	6-13	Fitting Screw
2-16	Blind Plug	6-14	Oil Feeding Plug

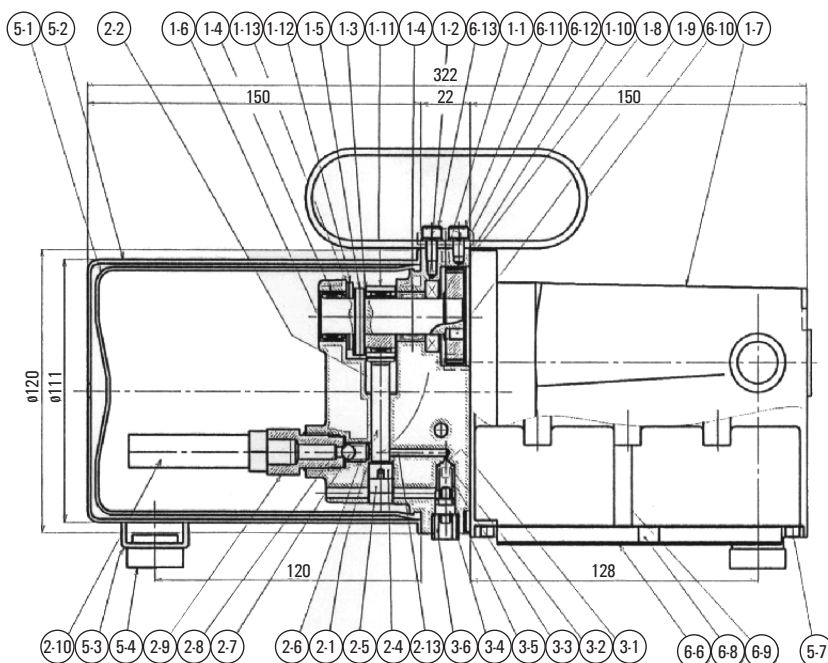
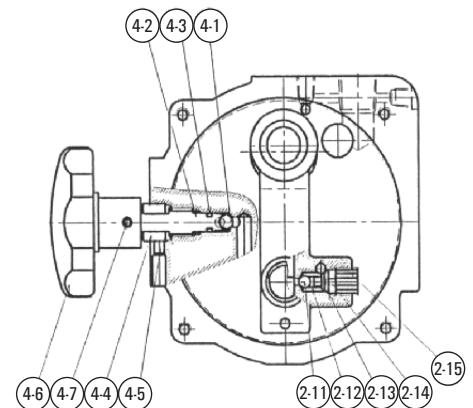
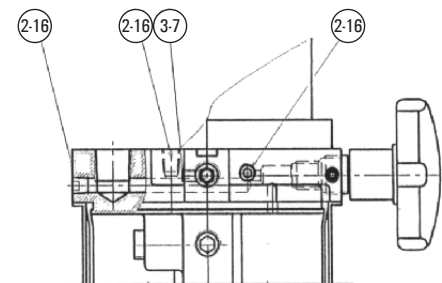
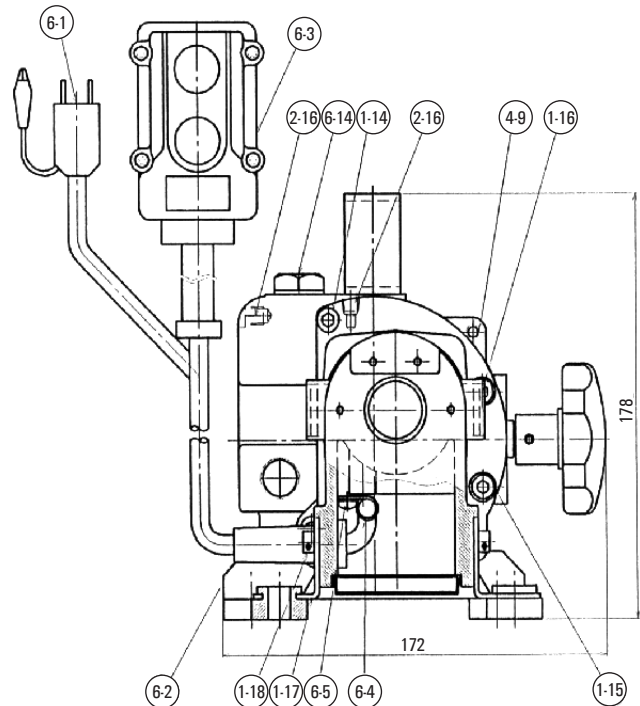
Circuits



HYDRAULIC CIRCUIT



ELECTRIC CIRCUIT



Models: ZPE-35RH-1M & ZPE-35RH-1MB Troubleshooting

Troubleshooting

PROBLEM	CAUSE	SOLUTION
<p>Motor Does Not Run.</p> <div style="border: 1px solid black; padding: 2px; display: inline-block;"> ⚠ WARNING </div> <p>Disconnect Power Supply Before Disassembly or Repair.</p>	<ol style="list-style-type: none"> 1. No supply voltage. 2. Broken lead wire or defective power cord plug. 3. Defective switches. 4. Worn carbon brushes. 5. Defective motor. 6. Defective remote switch. 7. Unit is not plugged in. 	<ol style="list-style-type: none"> 1. Check line voltage. 2. Replace defective part. 3. Check switches. 4. Replace carbon brushes (see page 4). 5. Repair or replace motor. 6. Repair or replace switch. 7. Plug in unit.
Abnormal Noise From Motor.	<ol style="list-style-type: none"> 1. Damage to pump or motor. 2. Damage of ball bearings, etc. 	<ol style="list-style-type: none"> 1. Repair or replace unit. 2. Replace ball bearings.
Motor Runs, But Cylinders Do Not Advance or Retract.	<ol style="list-style-type: none"> 1. Damage of release valve. 2. Oil level is too low. 3. Air in the system. 4. Filter plugged or dirt in the pump. 5. Damage of the pump body. 6. Relief valve out of adjustment. 	<ol style="list-style-type: none"> 1. Repair or replace release valve. 2. Fill reservoir to 1/2 of level gauge with all cylinders retracted. 3. Bleed the system (see page 4). 4. Pump filter should be dismantled and cleaned if necessary. 5. Repair pump. 6. Readjust as needed.
Cylinders Work, But Full Pressure is Not Reached.	<ol style="list-style-type: none"> 1. Damage of release valve. 2. Air in the system. 3. Damage of the pump body. 4. Lowering of set pressure. 	<ol style="list-style-type: none"> 1. Repair or replace release valve. 2. Bleed the system (see page 4). 3. Repair pump. 4. Readjust set pressure.
Cylinders Work, But Speed is Too Slow or Erratic.	<ol style="list-style-type: none"> 1. Damage of release valve. 2. Air in the system. 3. Unacceptable rise in oil temperature. 4. Damage of the pump body. 	<ol style="list-style-type: none"> 1. Repair or replace release valve. 2. Bleed the system (see page 4). 3. Stop operation or install oil cooler. 4. Repair pump.
Cylinders Do Not Retract.	<ol style="list-style-type: none"> 1. Damage of release valve. 2. Damaged cylinder return springs or damaged quick couplers. 	<ol style="list-style-type: none"> 1. Repair or replace release valve. 2. Repair or replace springs or couplers.
Leaking Oil.	<ol style="list-style-type: none"> 1. Damaged seals, seats, or steel balls. 	<ol style="list-style-type: none"> 1. Replace damaged component(s).
Short Circuit.	<ol style="list-style-type: none"> 1. Damaged cords. 2. Bad insulation of electric parts. 	<ol style="list-style-type: none"> 1. Replace damaged component(s). 2. Locate and replace damaged component(s).

If the above procedures do not correct the problem, contact your nearest **ZINKO** service facility. When submitting any jack or equipment to be repaired, be sure to state the nature of the problem and indicate whether an estimate of the repair cost is needed.

WARRANTY

Warranty period is for one year from purchase. All **ZINKO** products and parts, with the exception mentioned below, are warranted against defects in materials and workmanship, which results in damage to products and parts. This warranty shall cover repair and/or replacement of the products or components/parts free of charge. To qualify for warranty consideration, return the **ZINKO** product, freight prepaid, to a **ZINKO** service facility.

Warranty Exceptions

No warranty claim will be accepted for damage or breakdown arising for any of the following reasons:

"Abuse or improper use, fair wear and tear, faulty or negligent operation, improper storage, chemical/electrical influences or climatic or other effects which can not be related specially to faults in manufacture."

No liability is accepted for packing seals, springs, and/or the like, and the following: □

- Alterations or remodeling on the products undertaken by the purchasers without any prior notice and □ agreement to **ZINKO**. □
- Severe and very highly frequent use, deviating from product specifications. □
- Damage due to faulty installation or assembly by purchasers or third parties. □
- Damage from natural disaster. □
- Damage from such accidents as fire, submersion, dropping, etc.