SM-8275-A/2

CKD

INSTRUCTION MANUAL
MULTILEX VALVE
AB71-15～25

- Prior to using the Product, it is essential to read this INSTRUCTION MANUAL, especially the description of safety-use issue.
- For quick reference whenever necessary, keep this INSTRUCTION MANUAL in a good manner.

CKD Corporation

FOR SAFETY USE

The Product is to be used by those who has a basic knowledge about material, fluid, piping electricity regarding Control Valves (solenoid valves, motor valves, air operated valves and so on.)

Never use this Product by those who have no knowledge or are not well trained about Control Valves.

Should be any trouble or accident caused by a wrong selection and/or wrong use of the Product even by a person of basic knowledge about Control Valves, we are not responsible therefore.

Since any customer of the Product have a variety of its application, we are not in a position to get all the information on how and where the Product is used. There may be the cases where that the Product may not meet customers' requirement or may cause any trouble or accident, by fluid, piping or other condition that are not within the specifications of the Product.
Under such a circumstance, select with their responsibility the most suitable application and use of the Product according to the customers' requirements.

The Product incorporates a various safety arrangement, however miss-handling of the product may lead to any trouble or accident on customers side. **To avoid any possible trouble, read this INSTRUCTION MANUAL carefully and understand it fully.**

Pay your attention to the items described in this Text, as well as the items indicated below.

⚠ CAUTIONS

- **When energized, heat is generated at coil portion of solenoid valves and motor valves particularly "Class H" coil where may have a high temperature.**

- **There my have electric shock when wire connecting portion of solenoid valves or motor valves are touched. In case of disassembly or inspection, turn off power supply beforehand. Don't touch live portion by wet hands.**

- **Make piping so as not to have leakage and check for no leakage before use, because in case of control valves for high temperature fluid like steam, leakage may cause heat injury.**

Thank you very much for purchasing the CKD's type AB71,series Multilex Valve.

This MALTILEX VALVE is a fruit of our long years of accumulated experience.

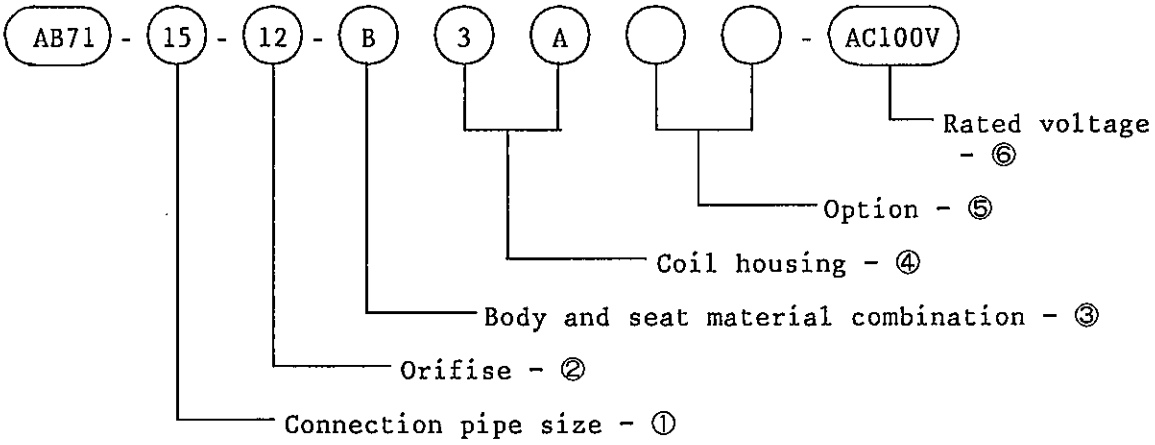
This INSTRUCTION MANUAL deals with the basic items reqarding the installation, operation, maintenance, etc. required for bringing the efficiency of the MALTILEX VALVE into full play.

Our products are produced under severe quality control

You are requested to thorouqhly go through this INSTRUCTION MANUAL before using the valve, and to perform correct operation and maintenance.

CONTENTS

1. HOW TO SEE MODEL NUMBER



Above model giver the followings : connection pipe size ; Rc1/2, orifise; Ø12, body material; Bronze, seal material; Fluorine rubber, open frame coil, and voltage AC100V 50/60Hz.

①	Connection pipe size
15	Rc1/2
20	Rc3/4
25	Rc1

②	Orifise	AB71-15	AB71-20	AB71-25
12	Ø12	●	—	—
15	Ø15	—	●	—
18	Ø18	—	—	●

③	Body	Sttafing	Seal	Remarks
B	Bronze	Brass	Fluorine rubber	Air.Water.Kerosene
J	Bronze	Brass	Fluorine rubber	Prohibited oil is processed

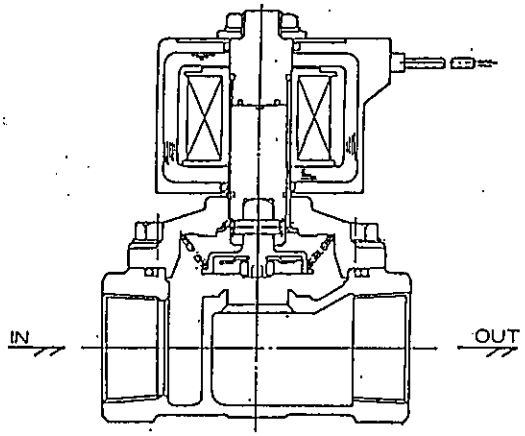
④	Option
2C	Grommet coil
2E	DIN terminal box(G1/2)
2G	DIN terminal box(Pg11)
2H	DIN terminal box with pilot lamp(Pg11)
3A	Open frame coil
3K	Terminal box(G1/2)+Coil with an open frame
3H	Terminal box with pilot lamp(G1/2)+Coil with an open frame
4A	Type H coil
4K	Terminal box(G1/2)+Type H coil
4H	Terminal box with pilot lamp(G1/2)+Type H coil
5A	Coil with diodes
5K	Terminal box(G1/2)+Coil with diodes
5H	Terminal box with pilot lamp(G1/2)+Coil with diodes

⑤	Option
D	Cable gland(a)
E	Cable gland(b)
F	Cable gland(c)
G	Conduit(CTC19)
H	Conduit(G1/2)

2. Working principle

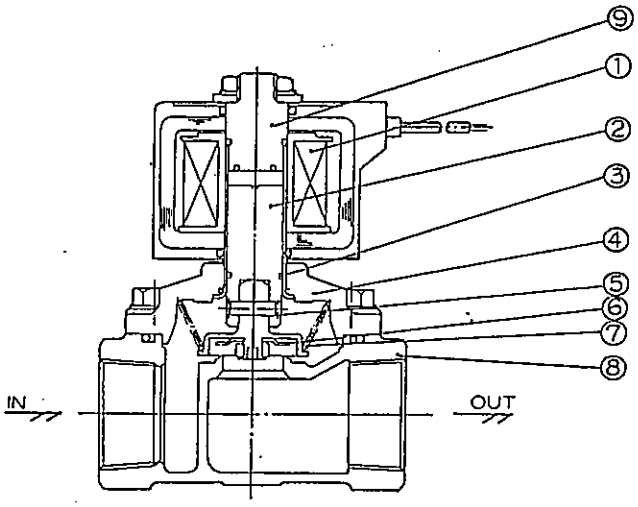
Interior Construction and Parts List

Opening Movement:



When Coil① is energized,
Core⑨ attracts Plunger②
and Main valve⑥ opens.

Closing Movement:



When Coil① is be-energized,
Main valve⑥ is pressed
against the valve seat by
means of Main valve spring⑦
and Main valve⑥ closes.

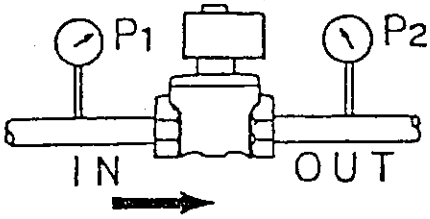
No.	Part Name	Material
1	Coil	Type B coil(Type H coil)
2	Plunger	SUS405
3	Teflon ring	PTFE
4	Staffing assembly	C3771BE
	(Core assembly)	SUS405,C1100P
5	Spring pin	SUS420
6	Main valve	SUS304,FKM
7	Main valve spring	SUS304WP-B
8	Body	CAC406 or CAC407
9	Core A (fixed iron core)	SUS405

3. Cautions for Use

3-1 Cautions for Operation

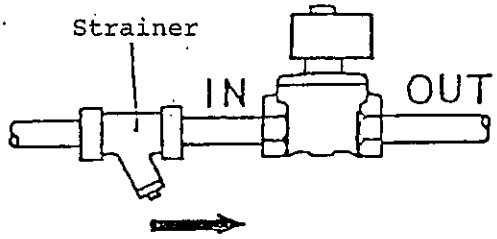
(1) Do not install the valve where there are much corrosive gas, explosive gas, or where rain water directly falls over such as outdoor.

(2) Be sure to operate within the specified pressure range. If not used within the specified pressure range, it may cause trouble.

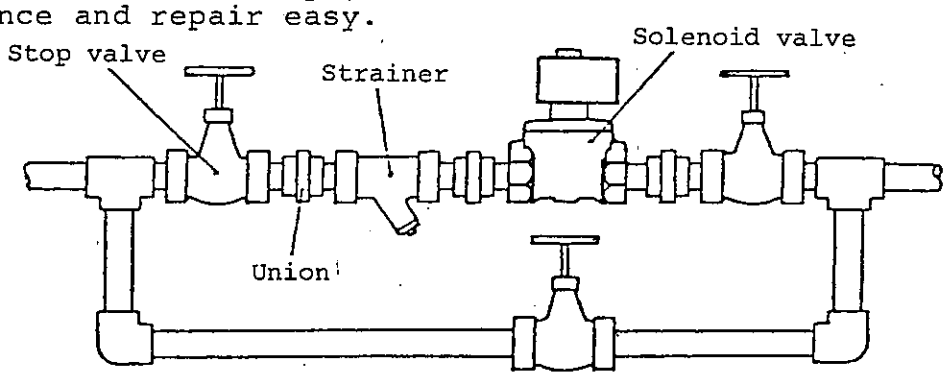


(3) Be sure to keep the ambient temperature and fluid temperature within the specified temperature range while in use. If there is a chance that the fluid may freeze, try to keep the temperatures within the specified range by using an heat insulating material.

(4) If there is a chance that the dust, foreign matter, etc. may be mixed in the fluid, or inside the pipe may easily rust, be sure to provide a strainer (filter) of 100 meshes at IN-side of the solenoid valve.

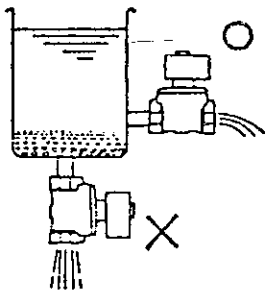


(5) For piping, use a by-pass circuit, which makes the maintenance and repair easy.



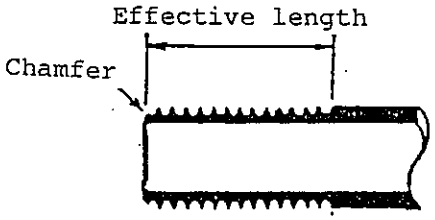
(6) For discharge control of the water in the tank, install the valve a little way up from the bottom. Installation of the valve to the same level with the tank bottom tends to cause valve failure due to the sludge accumulated on the tank bottom flown into the valve.

(7) Do not set the solenoid valve where more than 4G vibration is generated.

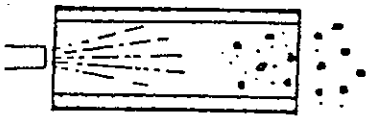


3-2 Cautions for piping

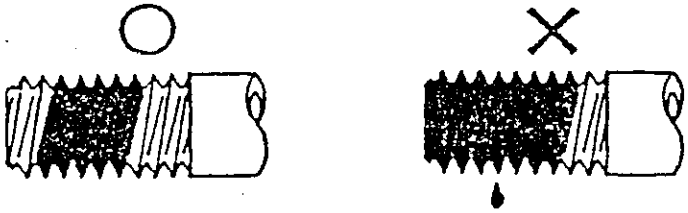
(1) Connect the pipe using the full effective screw length.
Also chamfer off about half a pitch of the screw at the pipe end.



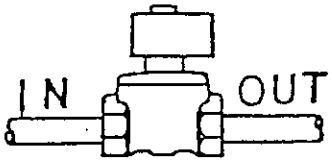
(2) Flush out foreign matter, chip etc. from the pipe.



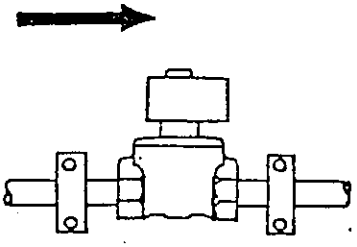
(3) When connecting the pipe with the valve, carefully see that sealnt or seal tape does not slip into the pipe.



(4) Match the flow direction of the fluid with "IN" and "OUT" of the solenoid valve.



(5) If the pipe vibrates due to the water hammer as you switch on or off the valve, fix the pipe firmly.



(6) After piping, check for leakage.

3-3 Cautions for wiring

(1) Use the electric wire of nominal sectional area of more than 0.5 mm^2.
If the DIN terminal box is attached, use the electric wire whose nominal sectional area of 0.5 - 1.5 mm^2.
For waterproofing, use a cabtyre cord whose outer diameter is more than ø 9 and less than ø 11.

(2) Adoptthe switching circuit without chattering of contact points.

(3) Use 1A fuse.

(4) Apply voltage of ± 10% of the rated voltage.

(5) When a non-contact point relay circuit is used, be careful of its current leakage.
For the valve AC coil, select a relay of current leakage lower than 15% of the rated current. For the valve DC coil, select a relay of current leakage lower than 1% of the rated current.

4. Maintenance and inspection

4-1 Periodical inspection

(1) In order to use the solenoid valve in the best possible condition, perform inspection once or twice a year.

(2) What to be inspected.

(a) Check to see if no dust or foreign matter is accumulated or no high viscosity substance is adhered in the valve.
If such is observed, disassemble the valve and clean it.

(b) Check the stuffing assembly, main valve spring and plunger main valve assembly of the actuator for breakage or excessive wear.
If such is observed, replace the parts.

4-2 Disassembling - assembling - inspection

o Disassembling

(1) Turn off the power, and drain the fluid and pressure out before disassembling.

(2) When removing Coil⑥

Releasing Nut① allows Spacer②, Plain washer③, Nameplate④, Coil⑥, Bonnet base 15, and Wave washer⑦ to be removed.

(3) When removing Plunger main valve assembly ⑫

After removing four hex. bolts⑨, Stuffing assembly⑧ can be separated from Body 14 , allowing the removal of Plunger main valve assembly ⑫ and Main valve⑩.If the lead wires are free, there is no need to remove the coil.

Take care not to lose Main valve spring⑩.

(4) Clean each part with a neutral detergent or kerosene. Never use an organic solution which may expand the rubber parts.

○Assembling

(1) Reassembly should be carried out in the reverse order of the disassembly. Don't forget any parts during reassembly.

(2) When assembling Stuffing assembly⑧ into Body ⑭ , you don't have to pay attention to the IN or OUT direction. However, the distances between the four fixed bolts are not equal.

(3) All screw tightened parts shall be uniformly tightened with the torque below.

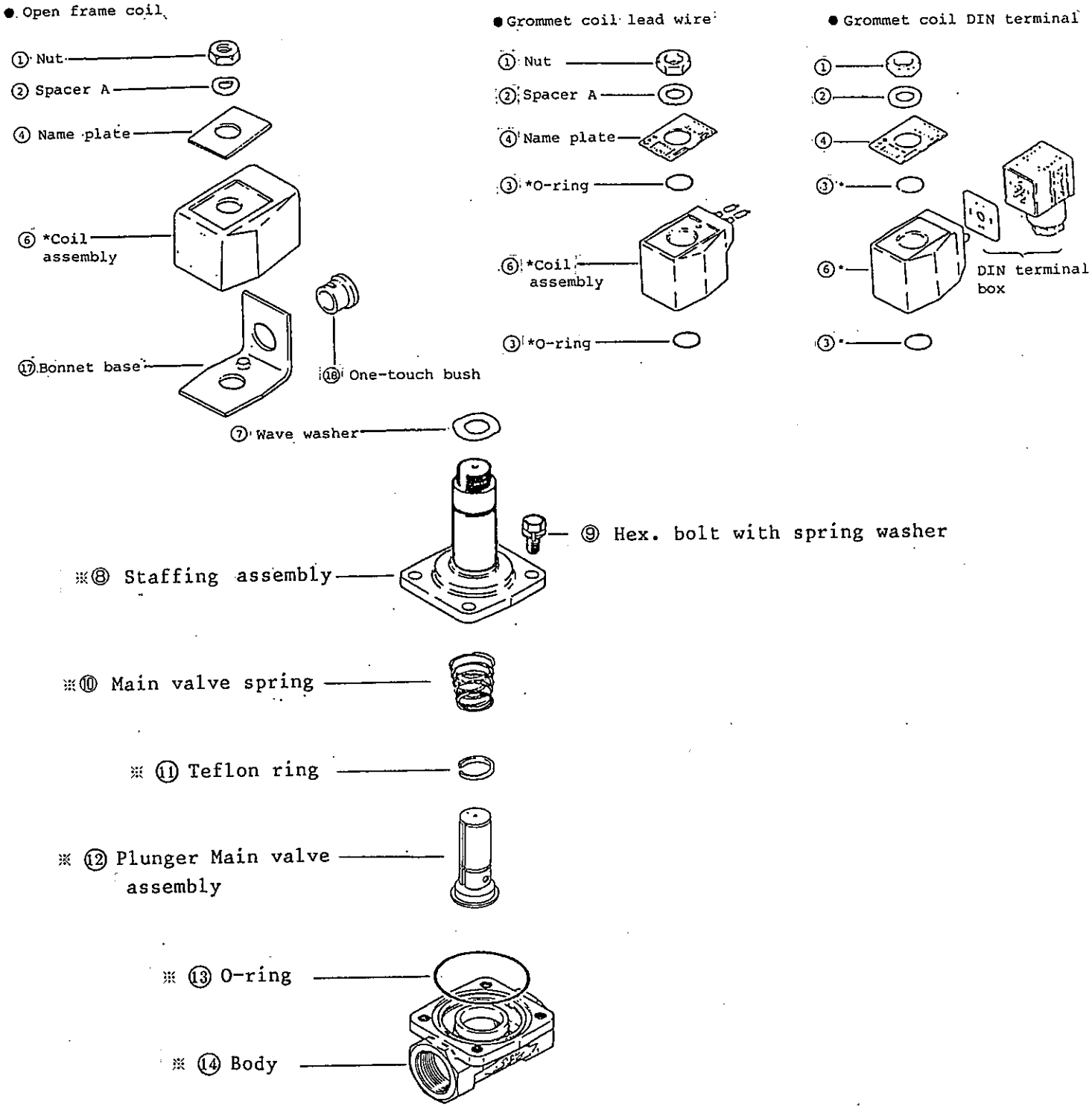
Part name	Tightening Torque	Model No.
Hex. bolt ⑨	40kg·cm or over	AB71-15-12
	67kg·cm or over	AB71-20-15 AB71-25-18
Nut ①	80~250kg·cm	

o Inspection

(1) Check the valve main body for external and internal leakages by applying rated voltage.

(2) Then check to see if the valve.

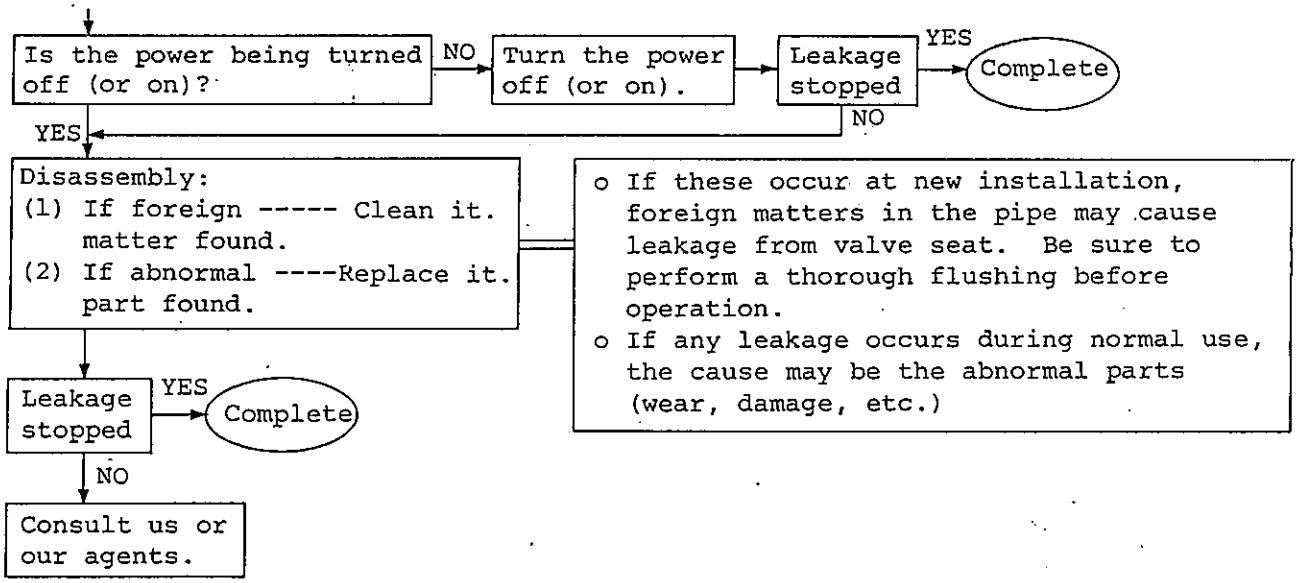
o Exploded view



The parts with asterisks are expendable parts.

4-3. Troubleshooting

1) Valve does not close or it leaks.



2) Valve does not open or fluid does not flow out.