SM-5894-A

INSTRUCTION MANUAL
FOR

HB3,HB4

CKD Corporation

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INSTRUCTION MANUAL
FOR
SOLENOID VALVE
MODEL : HB3,4

This manual is your introduction to CKD HB3,4 and will give valuable information on the installation,operation and maintenance servicing of those types Solenoid Valve.

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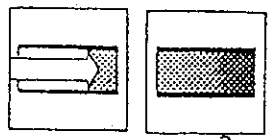
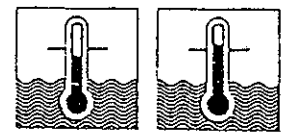
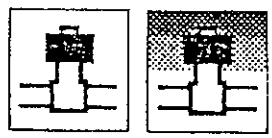


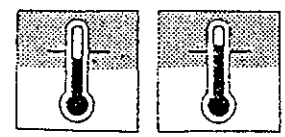
○ Perform flushing at 3kgf/cm^2 before connecting the pipe, and remove all dirt, metal powder,seal tapes and rusts.



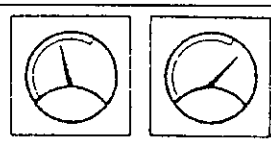
○ Always use the fluid temperature below 60°C. Use the specified coil (option : H type coil kit) if 60°C or higher.



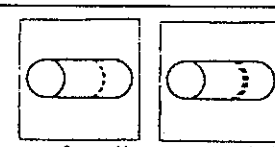
○ Don't use in the corrosive or explosive gas atomsphere. Select suitable valve materials for operation in the corrosive gas atmosphere.



○ Always use the ambient temperature below 60°C. Use H type coil (option) if 60°C higher.

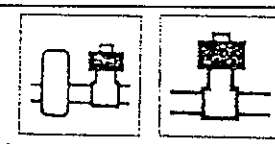


○ Always use below the pressure rating. If the valve is used above the pressure rating, it may lead to malfunction. Also the service life may be shortened extermely.

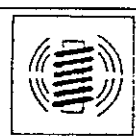


○ Excessive use of sealing material (seal tape, jelly like seal material, etc), when piping, may lead to entry of it into the solenoid valve whitch disturbes normal operation.

○ In case the solenoid valve is equipped,use within the voltage fluctuation range, otherwise the valve may malfunction and the coil may be burned.



○ Dusts, foreign materials, etc in the fluid may disturb normal function of the solenoid valve.In stall filter in the case of air and a strainer in the case of fluid.



○ Solenoid coil is operable with continous rating. Though the temperature of coil.surface increases high and contacting with hand gives hot feeling it is a normal condition of operation.

·Maintenance servicing

-1. Periodical check
1-2 times periodical check in one year leads to its long life operation. Be cautious of obstruction of rust in the pipes , oil oxide , carbon and coaltar in the compressor , and dust , due to smooth operation and long life operation.

-2. Maintenance instruction

1) Electric power , pressure and fluid should not be supplied at disassembed.

2) Disassemble method should be refered to attached disassemble drawing.
   a) Unfasten and take off the nut ① , then ②③④⑤ can be taken off.

   b) Unfasten and take off the core assembly ⑥ , then ⑦⑧⑨ can be taken off. However , in this case , note that core assembly should not be turned while seized at the pipe of core assembly.

3) Clean each parts with carbon tetrachloride , herosene or equivalent.
   Note : Rubber parts should be replaced due to possible swelling by the solvent.

4) Consumable parts which are ※ maked on disassemble drawing are prepared as one kit.

5) Consumble part

	HB3	HB4
⑦⑧⑨	PLUNGER ASS'Y	

6) Reassembling is the reversal of the disassemble.
Note : Coil ④ can be rotated freely.

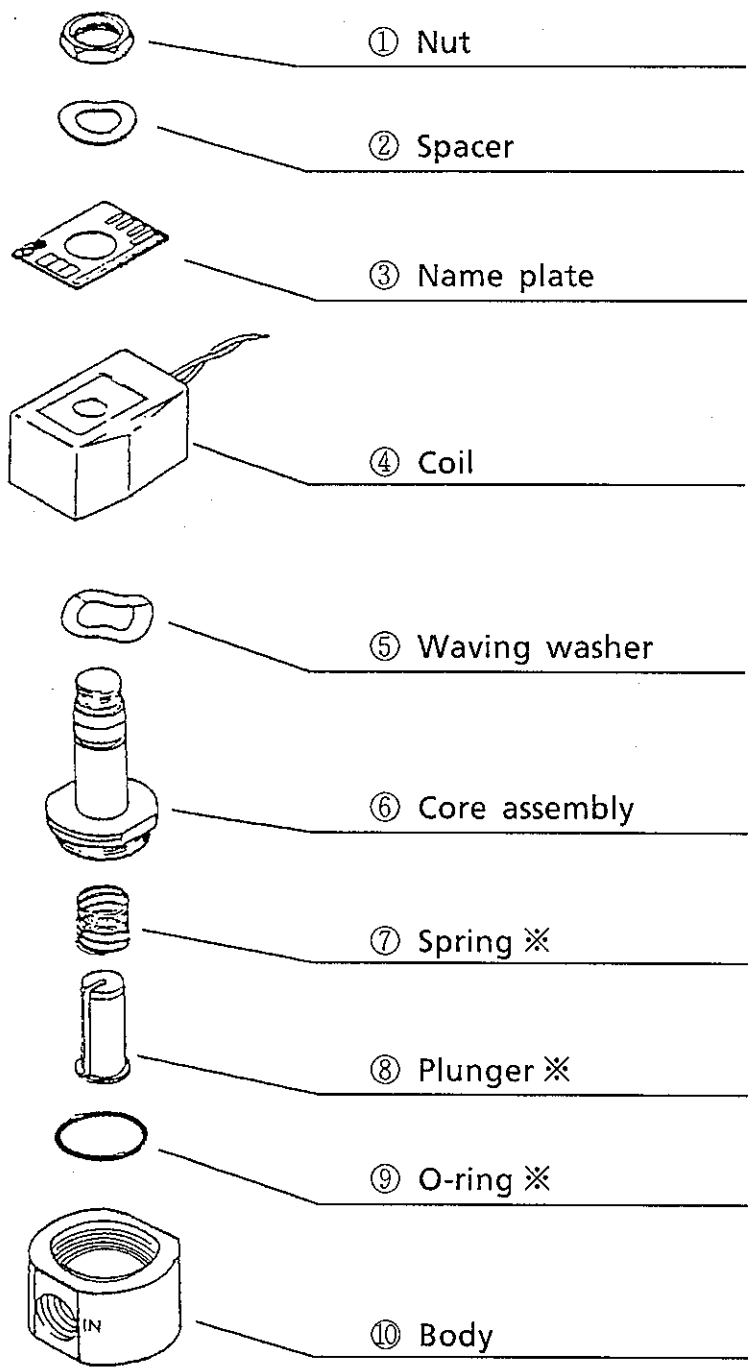
7) Inspection after reassembly.
a) Electrical check : By switching ON / OFF , operation sound shall be checked.

b) Leakage check : Check leakage by suppling pressure.

c) Operation check : By switching ON / OFF , correct operation shall be checked.

Disassemble drawing

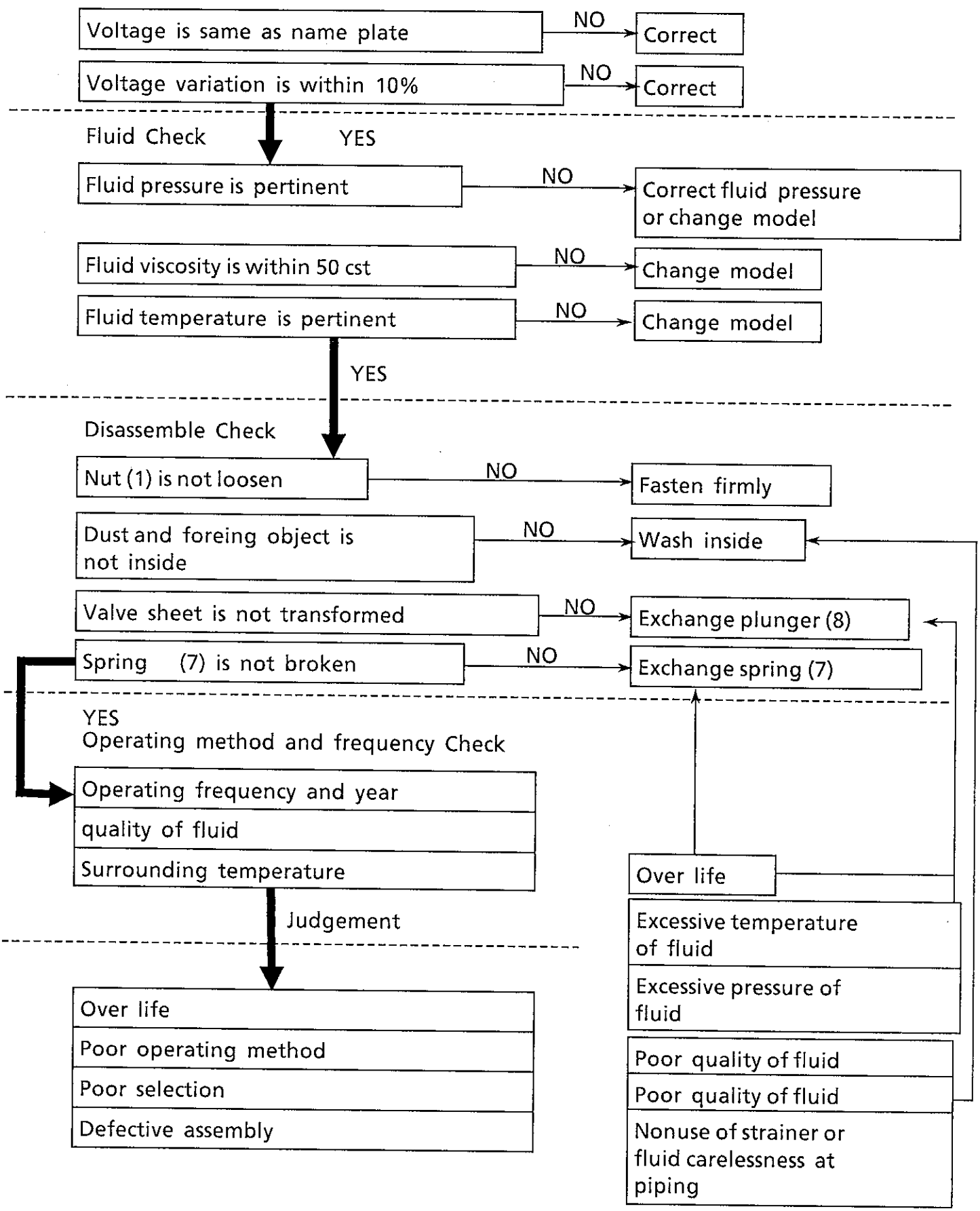
Model : HB3 HB4



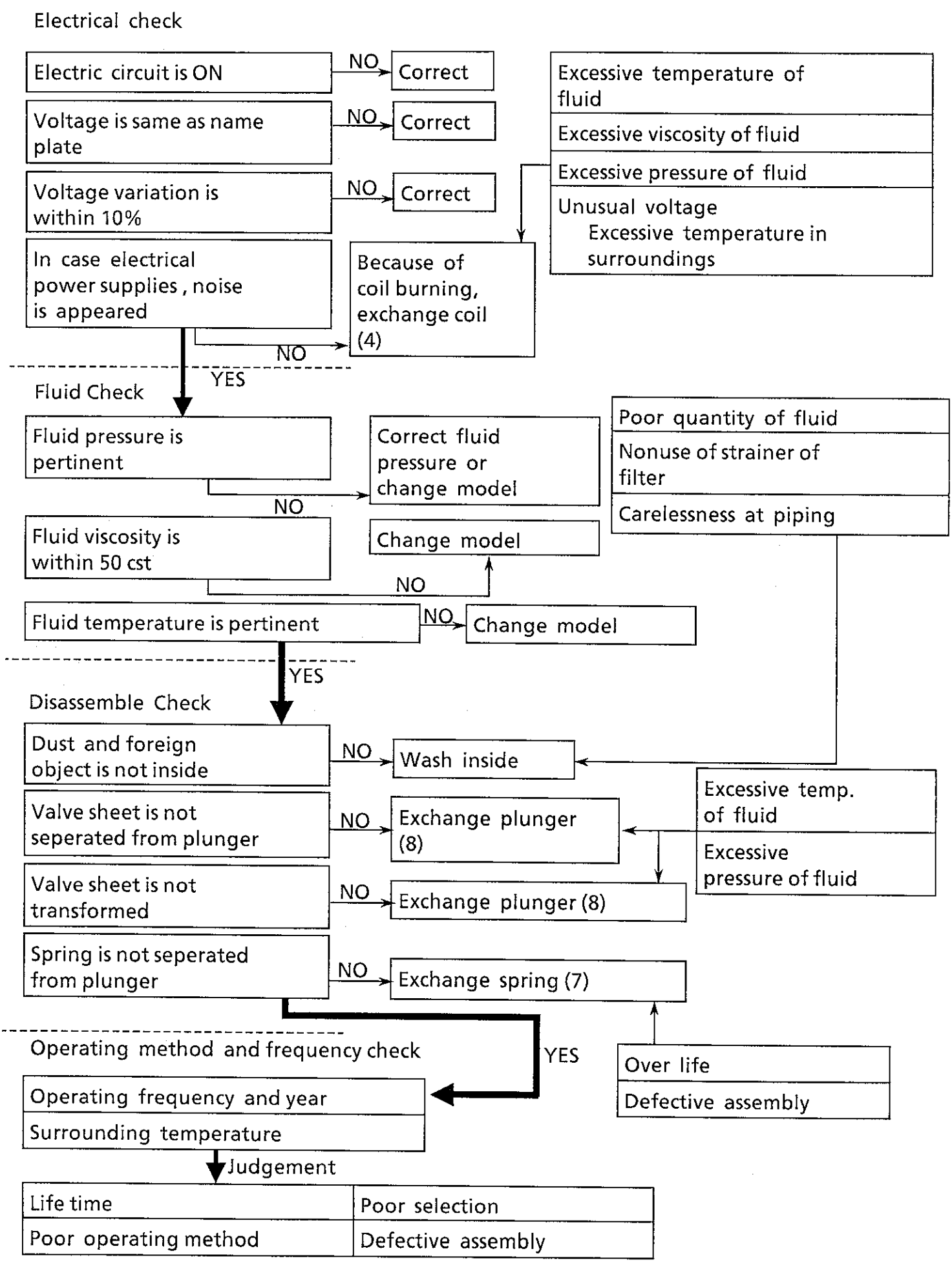
Disassemble tools

Parts name	Tool	Standard
Nut	Spanner	17mm
Core assembly	Spanner	27mm

·Noise is appeared in case electric power supplies followings should be checked.



Fluid is not flowed
Followings should be checked :



Flowing fluid is not stopped
Followings should be checked :

Piping check

Piping method is right — NO → Correct

Excessive temp. of fluid
Excessive viscosity of fluid
Excessive pressure of fluid
Unusual voltage
Excessive temp. in surroundings

YES ↓

Electrical check

Electric circuit is OFF — NO → Correct

In case electrical power supplies, noise is appeared — YES ↓ / NO → Because of coil burning, exchange coil (4)

Fluid check

Fluid pressure is pertinent — NO → Correct fluid pressure or change model

Fluid viscosity is within 50 cst — NO → Change model

Fluid temperature is pertinent — NO → Change model

Nonuse of strainer or filter
Carelessness at piping

YES ↓

Disassemble Check

Dust and foreign object is not inside — NO → Wash inside

Poor quality of fluid

Plunger (8) is not adhered — NO → Wash the core assembly, and exchange plunger (8) and spring (7)

Intermixture of dust and foreign object
Broken spring
Excessive viscosity of fluid

Valve seat is not wounded — NO → Exchange body (10)

Valve sheet is not seperated — NO → Exchange plunger(8)

Valve sheet is not wounded — NO → Exchange plunger(8)

Intermixture of dust and foreign object

Valve sheet is not transformed — NO → Exchange plunger(8)

Over life
Excessive temp. of fluid

Spring is not broken — NO → Exchange spring(7)

Operating method and frequency check

Over life
Continuous voltage is too long

Operating frequency and year

YES

Surrounding temperature → Judgement

Over life	Poor selection
Poor operating method	Defective assembly