

6. CAUSE OF TROUBLE AND REMEDY

⚠ CAUTION

- * *Daily operation should be thoroughly attended and whenever abnormality is encountered, compressor should be immediately stopped and checked for the fault.*
- * *If trouble occurred, investigate the cause accurately and remedy that portion. Do not disassemble in haste.*

No.	Condition	Cause	Remedy
1	Abnormal sound around cylinder	Ingress of foreign matter into cylinder	Check inside of cylinder and repair.
		Worn cylinder and larger clearance against piston	Replace cylinder, piston and piston ring.
		Defective cylinder head gasket	Replace.
		Damaged air valve (valve plate and valve spring)	Check air valve and replace if necessary.
2	Abnormal sound in crank case	Wear of piston pin bushing	Replace bushing.
		Wear of main bearing	Replace.
		Wear of rod metal	Replace metal.
		Connecting rod bolt has become loose	Tighten to specified torque.
3	High temperature of delivery air	Damaged delivery valve or leak from it	Check and repair, or replace.
		Back current due to faulty valve seat gasket	Replace.
		Carbon deposit on air valve	Check and clean.
		Defective cooling and decrease of cooling water quantity	Check and clean cooling system (jacket, cooler, pump).
4	Too much carbon deposit on the valve	Large consumption of oil	Replace oil scraper ring. Reduce oil in crank case to specified level H.
		Oil is not proper	Replace with oil recommended by manufacturer.
		Deterioration of oil	Replace with new oil.
5	Pressure does not rise.	Leakage on piping	Repair the leak.
		Damaged air valve	Check and clean, or replace.
		Wear of piston ring	Check and replace if necessary.
		Clogged suction filter	Replace element.
		Defective operation of unloader (magnetic valve)	Check and clean, or replace.

Table. 5-1

No.	Condition	Cause	Remedy
6	Oil pressure does not rise.	Reverse rotational direction	Correct to normal rotational direction.
		Defective pressure gauge	Replace.
		Clogging of oil filter Clogging of oil screen	Replace element. Clean and replace oil.
		Insufficient oil (omission of oil supply)	Replenish oil up to specified level H.
		Ingress of air into oil system	Extract air.
		Worn metal and consequential increase of clearance	Replace metal.
		Accumulated dust in oil system	Clean oil screen, oil pipe.
7	Amount of oil consumption has increased.	Wear of piston ring and oil ring	Replace.
		Wear of piston and cylinder	Replace.
		Too much oil quantity in crank case	Extract oil to specified level H.
8	Too much vibration	Defective alignment	Adjust. (See page 3-9)
		Fixing bolt has become loose	Tighten enough.
		Wear of metal	Replace.
9	Ingress of bubbles into cooling water	Cylinder head bolt has become loose	Tighten enough. Replace cylinder head gasket.
		Cooler cover tightening bolt has become loose	Tighten enough. Replace cooler cover gasket.
		Cooler pipe has corroded	Block corroded pipe. Replace cooler.
10	Seizure of piston	Ingress of foreign matter into cylinder	Clean inside of cylinder, replace piston.
		Insufficient oil pressure	See item 6 "Oil pressure does not rise."
		Insufficient lubricating oil to low pressure cylinder	Check lubricator piping. Replace lubricator.
11	Blowout of safety valve (1st stage)	Omission of installing valve seat gasket (2nd stage) or improper loading	Install correctly.
		Damaged air valve (2nd stage) plate	Disassemble and replace.
		Inverted installation between inlet and outlet of air valve (2nd stage)	Install correctly.
	Blowout of safety valve (2nd stage)	Setting error of pressure switch	Set correctly.
		Shut-off valve on delivery pipe is closed	Open the valve.
		Inverted installation between inlet and outlet of check valve	Install correctly.
12	Failure of water pump	Occurrence of freezing, rusting	Clean up inside of casing.
		Ingress of air	Extract air.
		Inclusion of foreign matter	Clean up inside of casing.
		Failure of pump driving parts	Check and replace drive gear.

Table. 5-2

No.	Condition	Cause	Remedy
13	Emulsification of lubricating oil	Humid environment of setting room	Improve ventilation and dry. (*1)
		Excessive cooling of compressor	Adjust quantity and temperature of cooling water. (* 2)
		Poor discharge of drain generated in compressor	* Adjust intermittent timer for drain discharge magnetic valve. (*3) * Make the drain piping so as to discharge to atmosphere. * Make the drain piping to be not affected by the function of other machines. (* 4)



Emulsification

When the air is compressed, a part of water contained in the air as the saturated steam is condensed to generate condensed water particle in the compressor.

If this condensed water is mixed with the lubricating oil, it is emulsified to cause deterioration in life of lubricating oil and lubricating quality.

- * 1 ... Do not install the compressor on the wet floor or at the side of the equipment that generates steam.
- * 2 ... Cooling condition is determined based on the relation between quantity and temperature of the cooling water.
Standard of difference of temperature at the cooling water inlet and outlet is approx. 5°C when temperature of cooling water is between 36°C and 45°C.
- * 3 ... Drain is often generated in rainy season of high humidity.
Adjust the intermittent timer to discharge for 5 to 10 seconds in interval of 10 to 15 minutes as the standard.
If amount of drain generated is large, this interval must be shortened.
- * 4 ... If the drain piping are collected, the drain discharged from the compressor in operation may blow into the compressor that is in stop.
Set the downstream of collecting point to become atmospheric pressure so that the drain is quickly discharged out of the equipment.

Table. 5-3