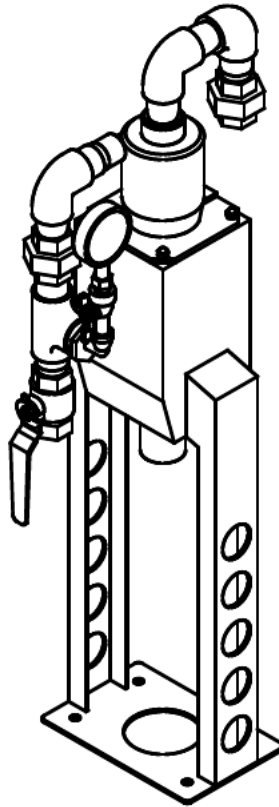


Instruction Manual

MACSPIN CL-**LW



Thank you for purchasing.
Please be sure to read these instructions before use.

MANUFACTURER: HAKUSANKIKO Co.,Ltd.

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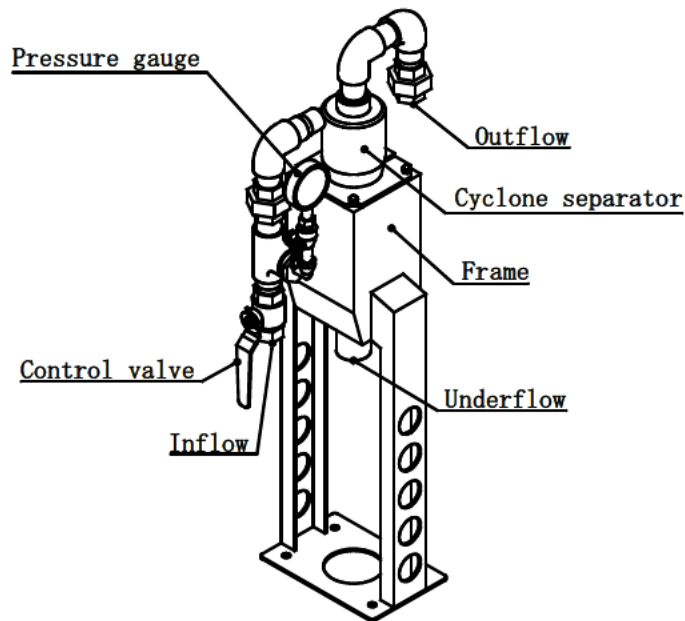
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1. Outline

This machine is a cyclone separator which separates particle of $20\ \mu\text{m}$ in the liquid. This unit is suitable to remove die chips, abrasive grains and iron cutting chips in coolant. ※ Specific gravity of object 2.7 or more

2. Part names



3. Specifications

3.1. Processing flow rate differs depending on the number of macspins used.

TYPE	Supply Pressure [MPa]	Supply Flow Rate [L/min]	Processing Flow Rate [L/min]
CL-30LW	0.15	25	22
	0.2	30	25
	0.3	35	30
CL-50LW	0.1	35	32
	0.2	45	40
	0.3	55	50
CL-70LW	0.1	55	50
	0.2	70	65
	0.3	85	75
CL-100LW	0.1	70	65
	0.2	95	90
	0.3	110	100
CL-200LW	0.1	150	135
	0.15	175	157
	0.2	205	185
	0.3	245	220
CL-300LW	0.1	215	195
	0.15	255	230
	0.2	290	260
	0.3	345	310

3.2. Separation Accuracy

90% removal particle diameter $20\ \mu\text{m}$ (Aluminum)

4. Pressure Setting

Be sure to set the pressure.

After starting the pump, set supplying pressure with the pressure control valve within the range shown in below.

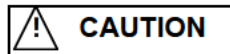
TYPE	Pressure Setting Range [MPa]	Recommendation Range [MPa]
CL-30LW	0.15 ~ 0.3	0.2 ~ 0.3
CL-50LW	0.1 ~ 0.3	0.2 ~ 0.3
CL-70LW	0.1 ~ 0.3	0.2 ~ 0.3
CL-100LW	0.1 ~ 0.3	0.2 ~ 0.3
CL-200LW	0.1 ~ 0.3	0.2 ~ 0.3
CL-300LW	0.1 ~ 0.3	0.2 ~ 0.3

5. About "Underflow adjustment valve"

"Underflow adjustment valve" sticks to a specific model.

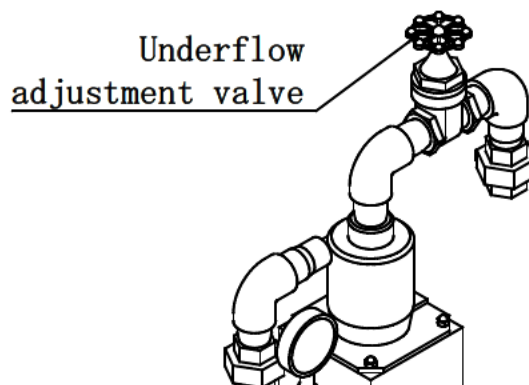
(Standard in CL-100LW, CL-200LW, CL300LW)

Please adjust "Underflow adjustment valve" only when underflow is not performed appropriately. (Please usually open it up all the way)



CAUTION

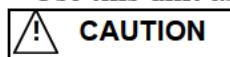
When I close "Underflow adjustment valve" too much, processing flow quantity decreases.



6. Precautions

6.1. Usage

Use this unit as a secondary filtration unit.

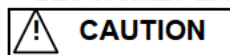


CAUTION

Liquid should be treated to be of 500 μ m or less before it is supplied to this unit.

6.2. Coolant

The coolant used in this unit should be water-soluble type.



CAUTION

Oily liquids cannot be used in this machine.

6.3. Underflow Piping

When large sized particles are included or the particle concentration is very high, the underflow piping may be clogged.



CAUTION

When the underflow piping is clogged, effective separation is not available. Remove clogging immediately.

Please soak the end of the underflow piping in the liquid level of the tank.



CAUTION

Please note that the liquid might cause the siphon phenomenon when the pump stops.

6.4. Overflow Piping

Please do not thin an overflow pipe. Please connect pipes more than 32A in the case of CL -70/100LW. Please connect pipes more than 50A in the case of CL -200/300LW.



CAUTION

When a pressure loss of the overflow plumbing is big, quantity of underflow increases. (Processing flow quantity decreases)

6.5. Daily Inspection

Check the following while the machine is operating.

- Pressure
Check that pressure gauges show the designated values.
- Clogging of the underflow piping
Check the drain hose for leakage.



WARNING

When it is necessary to disassemble the machine for replacement of the parts, be sure to stop the machine prior to disassembly.

7. Warranty

- The warranty period on this equipment is one year from the date of shipment from the factory. If machine faults or malfunctions occur within this one year period, despite proper use of the equipment, the corresponding parts will be repaired or replaced free of charge. However, this warranty is limited to those mechanical parts that have failed or malfunctioned, and no guarantees are provided in relation to expenses or losses incurred as a result of faults, malfunctions or downtime.
- Regardless of the warranty period, expenses(Technical staff callout , repair, replacement, etc)arising in relation to faults and other problems due to the following causes are not covered by the warranty.
 - 1) Precautions and procedures relating to installation, wiring, operation, and maintenance and inspections were not observed(required tasks not performed or prohibited actions carried out);
 - 2) Repairs or modifications carried out without approval;
 - 3) Problems caused by devices not supplied by us;
 - 4) Problems due to disasters or accidents resulting from natural disasters or natural phenomena:
 - 5) Use of the equipment in a manner other than set out in the specifications(e.g., use of different coolants, exceeding the flow rate, etc)
- In the event that the cause or causes are unclear, a course of action will be decided on based on discussion and consultation.

(MACSPIN)
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