



Vacuum Distillation Unit

Waste liquid reduction – dramatic cost drop
Recycled water for circular economy



1. Waste water classification

1. The classification is based on the chemical property of main pollutants contained in the waste liquid.



Inorganic waste liquid



Organic waste liquid



Mixed inorganic & organic waste liquid



Toxic heavy metal liquid



Radioactive waste liquid



Heat pollution cooling water

2. Industrial waste liquid treatment technology has been developed since early 19 century. Since the waste liquid composition are complicated, some waste liquids are still not treated properly.

3. If enterprises are not able to treat the waste liquid by themselves, they will out-source the treatment to qualified waste liquid treatment companies. Due to the strict environmental regulations, the cost of waste liquid treatment gradually increases the operation cost of enterprises.

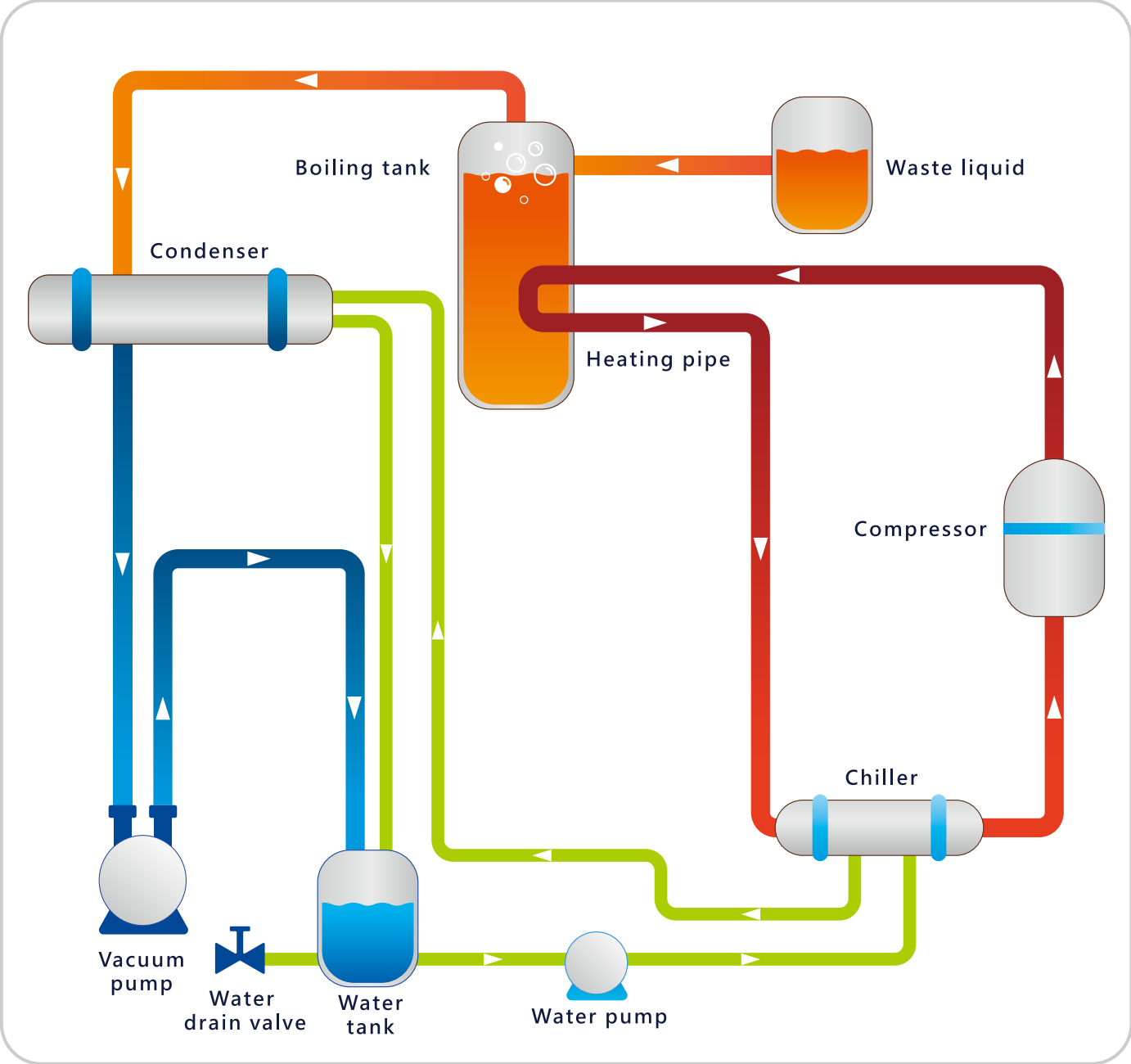
4. By removing the water in the waste liquid, enterprises can reduce the waste liquid volume and the cost of treatment.

2. Vacuum distillation Principle

Vacuum distillation is a method of distillation by reducing environmental pressure which leads to a lower boiling point of liquid. The water in the waste liquid starts to evaporate at 60 °C if the pressure is pumped down to -80 kPa by the vacuum distillation machine.

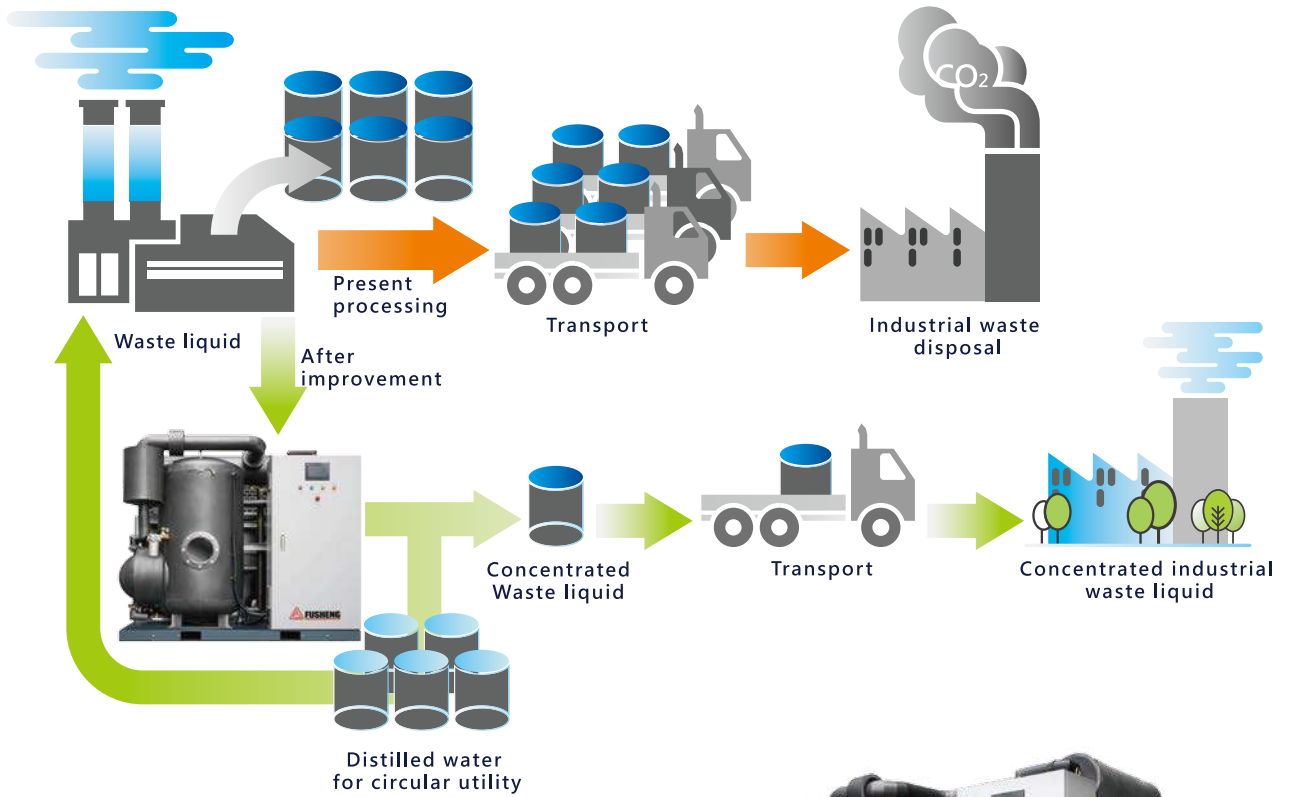


3.HD system flow chart



FUSHENG is able to provide tailor-made models to meet different requirement of waste liquid treatment for customers.

4. Waste liquid treatment system



5. Vacuum distillation machine

● Technical features

1. Applying the latest vacuum distillation technology
2. Adopting a high efficiency heat pump compressor
3. Using the environmentally friendly R134a heat pipe heating design
4. Equipped with the liquid ring sealed vacuum pump which uses safe and purified water
5. Achieving a low temperature vacuum distillation operation mode
6. Fully automatic and stable discharge of water
7. Minimal space requirement for the machine
8. Minimizing operation cost
9. Significantly reducing the COD value
10. Recycling water resource in circular economy



● HD series specifications

Item	unit	HD012	HD050	HD090	HD240	HD350	HD500
Capacity	L/hr	12	50	90	240	350	500
Evaporating method	-	Vacuum distillation					
Condensing method	-	Water cooling					
Heat pump	-	Scroll heat pump			Screw heat pump		
Refrigerant	-	R134a					
Vacuum pump	-	water ring sealed					
Vacuum	mmHg(kPa)	-714~-600(-95~-80)					
Boiling point	°C	30~60					
Power consumption rate	kWh/L	0.4	0.25				
Evaporator material	-	SUS316L(with copper or titanium tubes)					
Pipe material	-	SUS316L					
Feature	-	automatic feeding					
Waste liquid	-	Process waste liquid, water soluble cutting fluid, waste water, plating waste liquid					
Outline dimension(L/W/H)	m	1.5/1.0/1.9	2.1/1.7/2.0	2.3/1.7/2.0	3.0/2.0/2.7	4.0/2.0/3.0	5.0/2.0/3.2
Space	m ²	1.5	3.6	3.9	6.0	8.0	10.0
Weight	kg	760	2000	2500	2800	3700	5000

Remarks:

1. The actual capacity will vary, depending on the water content and the composition, concentration, impurities, crystal, distillation time etc. in the waste liquid.
2. Tailor-made models are available to meet customer demands.

● Main application:



Metal cutting waste liquid



Plating waste liquid



Finishing industry



Surface treatment



Degreasing industry



Water soluble waste liquid



HD Series - Vacuum Distillation Unit

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