



# CMEP-OL

**Oil Less Explosion Proof Recovery Pump**

## Operation Manual



CM Refrigeration  
Nanjing Wonfulay Precision Machinery Co., Ltd  
2017.version

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## Important Safety Instructions

R600/R600a/R290 belong to flammable substance, so when they are recycled, special attention has to be paid to the following safety precautions:

1. The overfilling of recycled tanks may cause violent explosion, leading to personal injury or death.
2. All hoses may contain liquid refrigerant under pressure. Contact with refrigerant may cause injury. Always wear safety goggles and exposure suit when working with refrigerants. Disconnect hoses with caution
3. Don't use this unit in a small, unventilated room or stuffy environment
4. The connection of the recovery machine and pipelines has to be reliable and tight.
5. The gas tightness inspection has to be implemented every time before the recovery machine is used.
6. It has to be checked whether the power supply line connection wire is damaged or not before the recovery machine is used and if it is, it cannot be used.
7. Don't use this device to recycle the substance R600/R600a/R290 in the environment with sparks and inflammable substance.
8. Before the operation, please read the instructions carefully and relevant operating manual and comply with the safety precautions in the manual.

If you have any questions before using the equipment, please contact your supplier or equipment manufacturer.

## OPERATING NOTE

The CMEP-OL is specially designed for R600/R600A/R290, use it recovery any other unauthorized solvent, it may caused equipment damaged or personal injured or death

### WARNING

Although the equipment is designed to meet the requirements of recovering HC flammable and explosive refrigerants, but there are still many uncertain factors in the real working place. So in order to improve the operation safety, make sure the ventilation of the surrounding when recovering HC refrigerants. Especially in a narrow space, additional ventilation is required. Besides, please make sure your recovery piping connections are secure and do not leak. It needs to pay more attention to this point, otherwise there is a risk of explosion.

(Warning: HC refrigerants and some new liquid refrigerants have low density, so the traditional float switch may not act until the refrigerant reaches 80%. It can't protect, so you need a digital refrigerant charging scale to make sure the cylinder is not overfilled. )

## Specification

Model	CMEP-OL
Application	R600/R600A/R290
Compressor	Oil-free lubrication
Gas displacement	1.25CFM
Maximum recovery rate	2.63lb/min
Horsepower	1HP
Voltage	115VAC/60HZ
High pressure protection	2.5Mpa
Ultimate vacuum	0.05inHg
Weight	43kg/94lb

Remark: the maximum recovery rate is measured by manufacturer when R290 was 50°C. The numerical value may vary based on different condition



## Introduction

The CMEP-OL recovery machine was specially designed for R600/R600A/R290 and all the parts was designed according to ExdiiAT3 explosion-proof standard, including the UL listed explosion-proof motor, stainless steel compressor, condenser, pipeline and PTFE seals. Especially the twin-cylinder high efficiency compressor make the recovery rate very fast. The UL, ETL certificate and patent is pending



1. Outlet pressure gauge
2. Inlet pressure gauge
3. High voltage protective reset switch
4. Power switch
5. Inlet connection
6. Outlet connection
7. Power supply connection
8. Inlet valve
9. Outlet valve

## Recovery Operation

1. Connect the pipelines according to the actual need and pump out the air
2. Connect the power line of the machine with the terminal block
3. Switch on the inlet and outlet valves of the recovery machine
4. Switch on the power switch of the recovery machine and start
5. When recovering to the needed vacuum degree, switch off the recovery machine and its valves.
6. Recovery rate can be adjusted by adjusting the inlet valve

## Routine Maintenance

### Daily inspection

1. Check whether the power line is damaged or not everytime before it is running
2. Check whether the gas tightness of the machine is favorable everytime before it is running.
3. If this device is put away and not going to be used for an extended period of time, suggest rinsing the interior pipelines of the machine with dried nitrogen.
4. Always pay attention to the machine's running sound whether it's normal, if it's abnormal please check and repair your machine immediately

### Periodic inspection

Item	maintenance cycle		
	6months	12months	Recovery refrigerant for 300 times
Piston ring	○	○	▲
Cylinder head valve core	▲	○	▲
Compressor bearing	▲	○	▲
Shaft seal	▲	○	▲
Motor bearing	▲	▲	▲

Remark: ○-Must be replaced    ▲-be replaced when require

Note: the maintenance cycle sheet is only for your reference, the actual cycle depends on How often you use the machine

## Gas Leakage Inspection

1. Switch off the outlet valve of the recovery machine and fill it from the inlet valve with any of the gas R600/R600A/R290 with certain pressure and then check whether the inside of the machine is leaking.

2. Switch on the inlet and outlet valves of the recovery machine, discharge the residual gas inside the machine and start the recovery machine. After 1 minute, switch off the outlet valve and the gauge hand of the outlet pressure gauge of the recovery machine rises. When it rises to about 2.5 Mpa, the high voltage switch switches off and the machine stops. Then connect the exit and entrance with a soft pipeline and switch on the outlet valve to let air in the inlet valve after the connection. About 5 minutes later, the low pressure area and the high pressure area in the compressor of the machine are in a balance in pressure. Switch off the inlet and outlet valves and observe whether the inlet pressure gauge and outlet pressure gauge are leaking. If in a shorter time, there is a sharp drop, it means that the inside of the machine is leaking. If there is no sharp drop, it means it can be used normally without any repair. Reset the high voltage switch after the leakage checking.





## Troubleshooting Tips

Failure	Cause	Solution
<b>The power connecting the machine doesn't work</b>	Power supply cord not attached or no power	Check the wires
	Voltage is incorrect	Check voltage
	High pressure switch is cut or damaged	Reset or replace a new one
	Power switch is broken	Replace a new one
	Motor damaged	Replace a new one
	Relay damaged	Replace a new one
<b>Compressor noisy</b>	Bearing broken	Replace a new one
<b>Motor noisy</b>	Bearing broken	Replace a new one
<b>Slow recovery rate</b>	hose blocking up	Check the connecting hose.
	Low inlet pressure	Rise solvent pressure
	Outlet pressure overhigh	Clean condenser or too much air in receiver tank
	Piston ring damaged	Replace a new one
	Cylinder head suction and discharge valve wearing	Replace a new valve
<b>Motor moves hard</b>	Compressor abnormal	Compressor rebuild required.

If your pump was broken, please check the pump failure according to this sheet, and you can also contact with your Pump supplier.

## Warranty

Since 1<sup>st</sup> March 2017 who purchased CM products and complete the warranty registration will be in accordance with our one year warranty policy.

CM product is warranted to be free from defects in workmanship, materials, and components for a period of one year from date of purchase. But wearing parts are not covered by this limited warranty, it includes: bearing, piston ring, shaft seal, cylinder head suction and discharge valve, gasket and packing.

1. The limited warranty is only for the original buyer who complete the warranty Registration and purchase the machine from authorized distributor.

2. The manufacturer shall not be responsible for any additional cost associated with product failure including, but not limited to, loss of work time, loss of refrigerant, and unauthorized shipping or labor charges.

3. All warranty service claims must be made within the specified warranty period. Proof-of-purchase date must be supplied to the manufacturer.

### **This limited warranty does not apply if :**

- The product or product part is broken by accident.
- The product is misused, tampered with or any accessories are not manufactured by CM but furnished with CM products
- The product is used for recovering any substance other than the specific refrigerant type.
- The product is not purchased from CM authorized distributor
- The product is not completed with warranty registration

We reserve the right to explain the terms of the event

**Warranty registration procedure:**

1. fill in the warranty card
2. Please fill in the warranty card then login in CM website for registration or you can also take a picture of the card and send it to CM customer service email  
Email: [cs@chinachunmu.com](mailto:cs@chinachunmu.com)

**After sale service procedure:**

please contact with your equipment supplier or send a email to CM customer service by [cs@chinachunmu.com](mailto:cs@chinachunmu.com)

**How to purchase CM rebuild kits?**

1. buy from CM authorized distributor, for distributor list, please contact with CM
2. Buy from CM website store

# Warranty Card

Customer name: \_\_\_\_\_

Telephone: \_\_\_\_\_

Email: \_\_\_\_\_

Date purchased: \_\_\_\_\_

Price purchased: \_\_\_\_\_

Purchased from: \_\_\_\_\_

Model NO.: \_\_\_\_\_

Serial NO.: \_\_\_\_\_

Distributor Telephone: \_\_\_\_\_

**Please fill in the warranty card then login in CM website for registration or you can also take a picture of the card and send it to CM customer service email**

**Email: [cs@chinachunmu.com](mailto:cs@chinachunmu.com)**

**Contact:**

CM Refrigeration

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