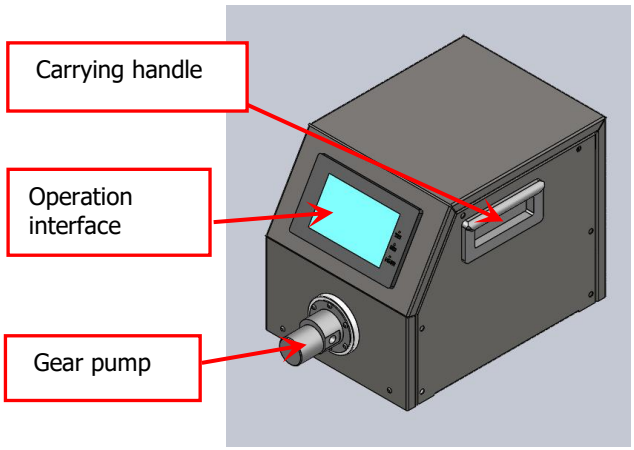
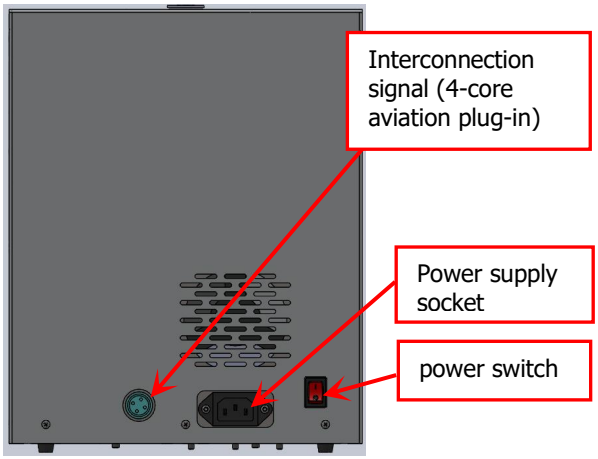
Quantitative control system of gear pump

instructions

一、 Product diagram and parts description



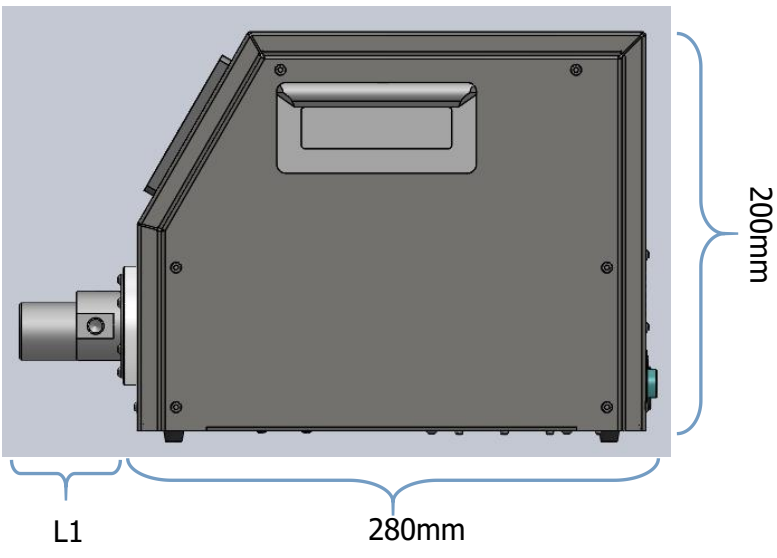
Pic.1 Product side view



Pic.2 Rear view

二、 Product size and configuration

Pic.3 Product front view



Pic. 4 Product right view

2-1 Product Size

Pump Displacement (ml/rev)	Motor Power (W)	L1±1 (mm)	inlet and outlet dimension	N.W.(KG)	Remarks
0.07	400	51.2	Rp1/8		
0.15/0.30	400	53.5	Rp1/8		
0.60	400	57.7	Rp1/8		
0.90	400	61.9	Rp1/8		Customizable Rp1/4
1.50	400	70.9	Rp1/4		

2-2 Product configuration

	Name	Quantity	Brand	Model	Remarks
System configuration	human-machine interface	1	Wecon/Dwin	PI3070IE/DMG80480C043-01W	
	PLC	1	Taiwan vigor	VS1-14MT	
	servo system	1	□Factkawa750W	EC-F1X20SN8*1，EC-F3CC075V-M2XN*K	
		1	☑Factkawa400W	EC-F1X15SN8*1，EC-F2CH040V-M2XN*K	
	power supply	1	Mean well	LRS-50-24	
	aviation plug	1		GC16-4	4 cores (one set of input and output)

三、 Technical parameters

1、Input power：AC220V

2、Rated power：500W

3、Main technical parameters of gear pump

(1)displacement：0.07 ml/rev、0.15 ml/rev、0.30ml/rev、0.60ml/rev、0.90ml/rev、1.50ml/rev

(2)Sealing material：PTFE/FFKM

(3)Pump body material：316L stainless steel

(4)working temperature ： -30℃-70℃（Customizable 70℃-200℃）

(5)Pressure difference between inlet and outlet：8Bar（0.30Ml/rev）

(6)system pressure ： 12Bar

(7)Applicable medium: most solvents, weak acids, weak bases

4、Main technical parameters of servo motor

(1)Power：400W

(2)speed：0~3000R/M

(3)accuracy ： 17 Bit encoder

5、Main technical parameters of quantitative system

(1)Working mode: quantitative mode, Displacement mode

6、Sheet metal material: 304 stainless steel

bottom plate thickness:2mm，side plate thickness:1mm，and top plate thickness:1mm

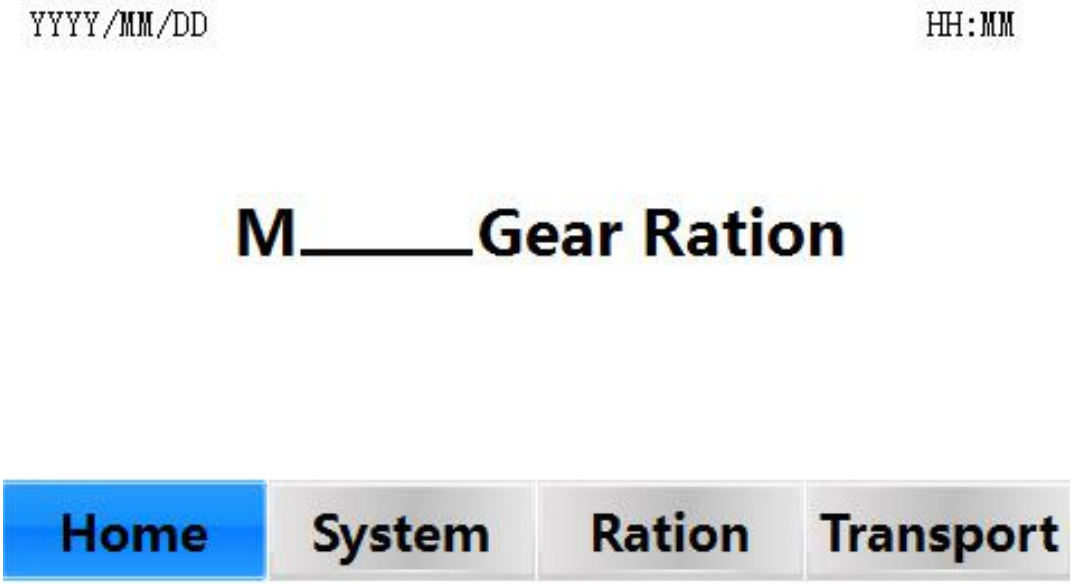
四、Operating instructions

1、Boot screen

Pic. 5 Boot sreen

The user can enter the corresponding Chinese or English operation page through the corresponding buttons at the bottom of the interface

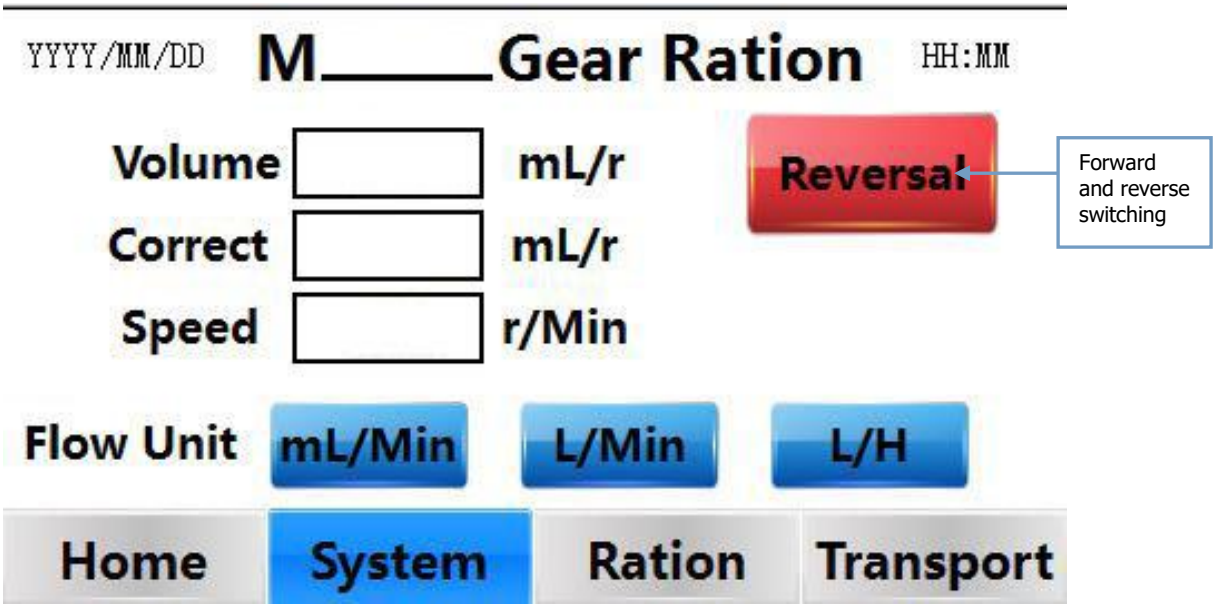
2、Home page



Pic.6 Home page

The user can enter the corresponding operation page through the corresponding buttons at the bottom of the interface.

3、system setting



Pic. 7 System setting

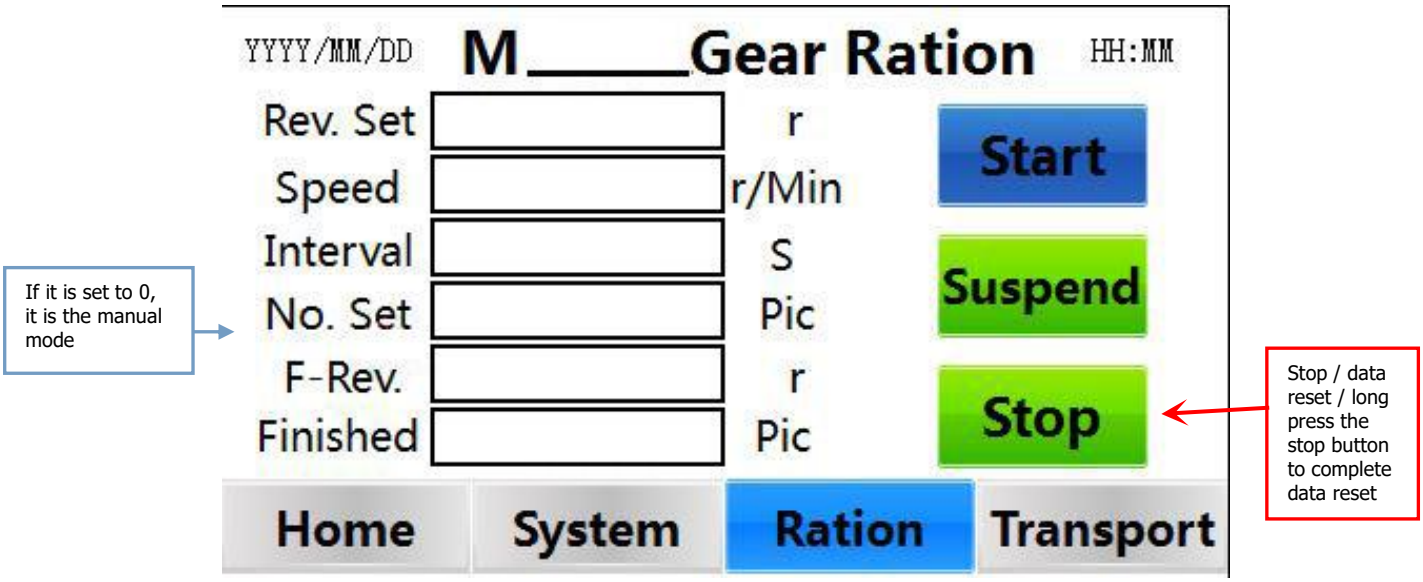
(1)**Rated displacement**: the rated displacement of gear pump in current system.

(2)**Compensation displacement**: flow compensation under conveying mode; A value of + means positive compensation, and a value of - means negative compensation.

(3)**Rated speed**: current system servo motor rated speed.

(4)**Flow unit**: the unit of instantaneous flow in conveying mode.

4、Quantitative model



Pic. 8 Quantitative model

(1)**Revolution number setting**: The number of turns of the motor in the quantitative mode. Theoretical number of turns = theoretical volume / rated displacement, for example: rated displacement 6.00ml/rev, quantitative 100ml, theoretical number of turns = 100 / 6 is 16.7 turns; When the number of turns is set, it can be adjusted up and down from 16.7 turns

(2)**Speed setting**: motor speed in quantitative mode, not higher than rated speed.

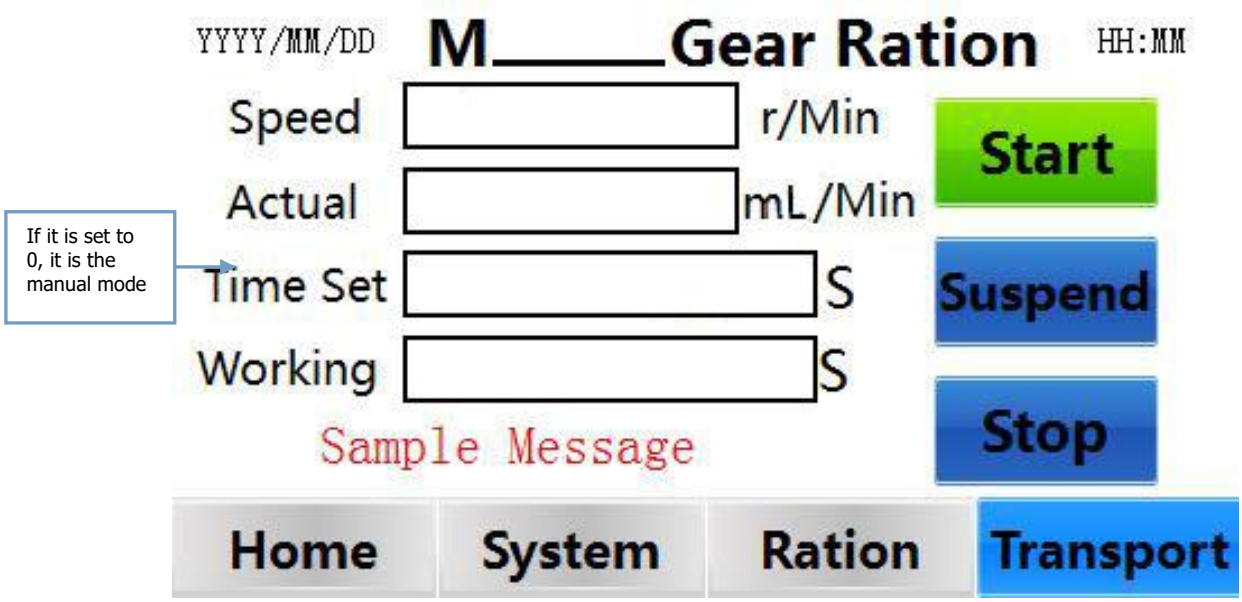
(3)**Interval time**: delay time between completion of each quantitative filling in automatic mode.

(4)**Quantity setting**: the total number of filling required in automatic mode, and the machine will stop automatically after reaching the set value. If it is set to 0, it is the manual mode, Press start once to complete parameter setting only once; At this time, the external switch signal can also control the program.

(5)**Revolution completed**: the number of revolution completed currently.

(6)**Completed quantity**: the number of completed work in automatic mode or manual mode. In the automatic mode, when the set quantity is reached, stop and press the stop key to clear the quantity.

5、Displacement mode



Pic. 9 Displacement mode

(1) **Speed setting**: the speed of motor in Displacement mode.

(2)**Instantaneous flow**:In the conveying mode, the theoretical flow is calculated by multiplying the real-time speed of the motor and the displacement of the pump.Due to the structural characteristics of the gear pump, the greater the inlet and outlet pressure difference, the smaller actual flow is less than the theoretical flow.

(3)**Setting time**: the total running time set for the conveying mode. When the time is up, the machine stops working. If set to 0, it will run continuously after startup.At this time, the external switch signal can also control the program

(4)**Working time**: the current running time of Displacement mode

6、 External control mode

(1) **In quantitative mode**: start using when the quantity is set to 0.。

(2) **In conveying mode**: start using when the time setting is all 0.

五、Product picture