Advantages

- **Upgrade surface quality**
  Immediately spray after mixing, viscosity fixed. fine atomization.
- **Save manpower. Reduce labor intensity.**
  Without extra work for measuring , mixing and agitating.
- **Reduce waste material, cost down.**
  To compare with pre-mix, it's only mixing required volume that greatly reduce the waste paint.
- **Environment protection**
  Greatly reduce the solvent for flushing. Simplified and shorten cleaning paint hose.
- **Upgrade quality**
  Computer monitoring inlet/outlet pressure of main component、 hardener ; to prevent unsufficient flushing 、 imprecise mixing.
- **Meet ISO9000 requirement**
 Base on the production management report of ISO 9000, paint volume can be managed.

Proportion and flow automatic control Explosion-proof type 2K machine

Model:GM210Ex.

Working theory

HMI Touch panel

Mix/Flush Control

Gear pump

Static maze

Servo motor

Spray gun

Hardener   Paint   Booth inside
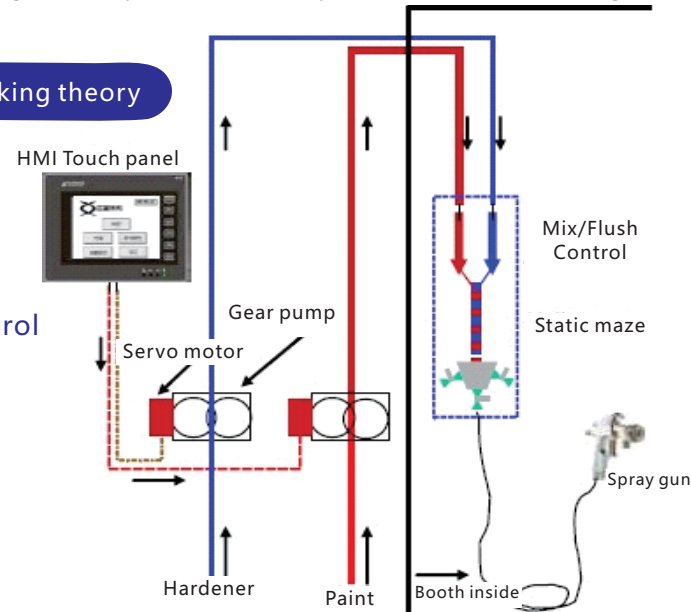
Comparison

Subject	Gear pump 2K	Flowmter 2K
Flow rate setting	CC/min.	No(only available high price model)
Mix&output accuracy	According to flow selection, the max. upto ±0.5%	max. upto ±1.0%
Proper vis. Ford 4#	10 sec. (Min.)	lower than 20 sec., poor mixing accuracy, unstable output.
Proper output range	Base on gear pump size 9~3000cc	lower than 100cc , poor mixing accuracy, unstable output.
Low flow rate、high mixing ratio	Able	The min. flow rate of hardener is 10cc/min.Over 10:1 is unstable
Operability	Easy installation, less variable factor.	The pressure comes from an external pump, and there are variables in pipe length.
Stable flow rate and mix ratio	The uniform discharge of gear pump has little effect on pressure, temperature and viscosity.	External pump pressure, switch gun pulse, dead cycle system corresponding time, temperature, viscosity etc. affect stability
Immediate pressure	The preset value is reached instantly when gun on/off, and robot spraying requires immediate pressure to shorten the trajectory and save paint and time.	External pump pressure, pipeline design, pipe wall friction and other factors, slow response, long robot trajectory, paint waste and reduced production capacity.
Continuous mixing	Two gear pumps operate continuously and mix continuously. It is relatively uniform and has guaranteed physical and chemical properties.	The main component and hardener are supplied alternately and intermittently, mixed in sections, and the uniformity is poor.
Coating thickness tolorance range	Small range. Occasions requiring high physical and chemical properties.	Big range. Occasions requiring high physical and chemical properties.
Solvent flushing time	Without pre-mixing design ,less usage, shorter time.	The pre-mixed design uses a large amount of solvent, and it is often not cleaned clearly, and particles are generated, and it is often disassemble and wash more than 1.5 hours.
EST gun with robot	Small size, fully insulated.	Large size, all metal
Price	High cost servo motor control and gear pump explosion-proof technology	Flow meter and valve combination, low cost.

Model selection:

Model	Flow rate CC/min.	Mixing ratio	Pump A CC/Rev.	Pump B CC/Rev.	Suitable application
GM-XXX-30*	3~30	100:5~100:100	1.2	0.3	M/P, digital product, camera
GM-XXX-50	5~50	100:5~100:100	1.8	0.6	M/P, digital product, camera
GM-XXX-100	10~100	100:8~100:100	1.8	1.8	M/P, digital product, camera, NB
GM-XXX-200	20~200	100:7~100:100	3	3	NB, LCD, car interior parts
GM-XXX-400	50~400	100:4~100:100	6	3	Car bumper, furniture
GM-XXX-800	100~800	100:4~100:100	6	3	Body, Underbody Parts, Furniture
GM-XXX-1000	200~1000	100:3~100:100	6	6	Furniture

*GM: GearMix, XXX:application and installation, 30: max.flow rate. cc/min.
The mixing ratio will affect the flow rate, please confirm with us in advance about the mixing ratio and flow rate requirements.

Automatic mixer, Fixed viscosity, Good atomization
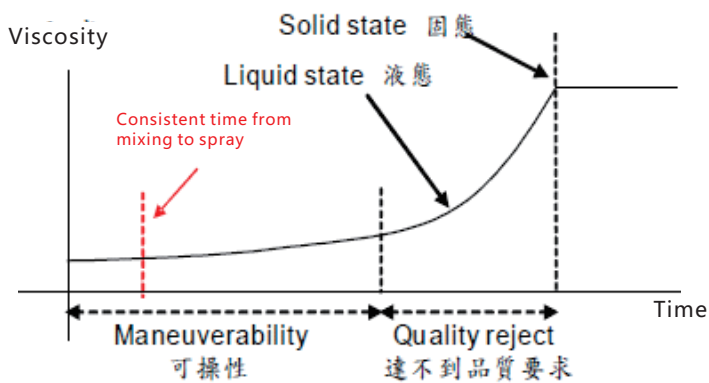
Trial calculation for investment & payback time:

|	Pre-mix	Flowmeter	Gear pump
Paint Consumption:			
Batch q'ty change color per day	4	4	4
Solvent usage per batch (liter)	3.88	0.97	0.30
Unusable paint per batch (liter)	1.53	0.34	0.12
CC	Paint tank1000	mixing block50	mixing block50
CC	Pump 300	Mixing maze 25	Mixing maze 25
*Lenght (ø6mmx8M) CC	Paint hose 226	Paint hose 226	Paint hose
CC		Other 40	Other 40
Analysis:			
Total annual loss of paint	374,968	83,806	28,256
Total annual loss of solvent	95,211	22,803	7,371
Total waste disposal cost per year	132,708	32,183	10,197
Pre-mixed salary charges for a full year	15,000	0	0
Total cost	617,888	139,792	45,824
Payback on investment:			
2K machine input cost	RMB	309,690	350,000
2K machine can save/year	RMB	478,096	572,063
Payback time		7.8 Months	7.3 Months

Robot or other automatic spray machine connection methods

1. Digital signal connection: Directly input the paint volume(cc) ,the signal transmission has zero error.
2. The analog signal is connected to the voltage output, and the voltage input is read. There is an electrical error of ±3% and mechanical error, which is about ±4% in total.
3. Brush type connection: Connecting to GearMix output with several different pre-set brush types, the robot call brushes with no electrical error.
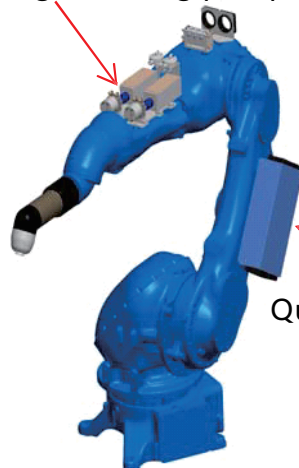
Application cases

Wall mount small size explosion proof robot

2K mixing metering pump GM320
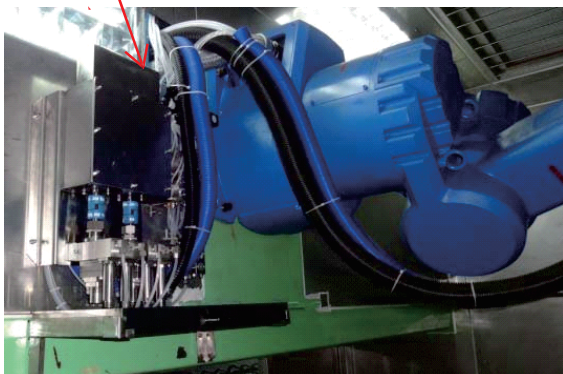
Middle size explosion proof robot

2K mixing metering pump GM330

Flushing valve
Quick color change valve

Large size explosion proof robot

2K mixing metering pump GM340

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