

DESIGN AND DEVELOPMENT OF GLUE SPRAY MACHINE

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ABSTRACT

Now a day's spraying machine is very important factor in any field but in industries spray machine is also important to spray any type of liquid or semi liquid on our work piece or material. we use spray machine with robotic arm but it is time consuming then we developed a new spraying machine in company with multiple spraying guns for spraying glue on lather or whatever you are requirement in industries .in this machine also heating and cooling section to heat and cool the work piece after spraying a glue . This machine is very much profitable for companies to improve their production rate, reduced cycle time ,also glue wastage can be minimize and combines productivity, high flexibility and reliability, limited investment and economy in use. This spraying machine is suitable for spraying of all types of water or solvent. in this paper we define how we implement this thing by using multiples spraying guns

Keywords: - *Glue Spray using highly automated gun, improve heating and cooling section*

1. INTRODUCTION

The glue spray is a reciprocating machine with plastic conveyor of belt that combine productivity, high flexibility, economy use this spraying machine is suitable for spraying of all type of liquid or glue. The glue spraying machine is ideal for company wish into being automatic spraying for the first time in order to take the advantages of increased productivity ,lacquer saving and constant panel quality .the patented JIT kit further enhances fast change over for small batches with different colors. The continuous belt conveyer system combined with the disposable paper conveyor provides a self-cleaning machine that practically eliminates cleaning and serving times. The spray system utilizes inverter driven reciprocating trolley equipped with a quick change coupling system and with electronic control of the reciprocating speed. In that machine the only one robotic arm is used. Hence we use more spray guns for that machine because of improving the productivity within same time, for example if we spray 20 pieces in 1 min then after using gun we spray 40 to 50 pieces per minute And heating section heat at up to 120 degree temperature and cool atmospheric temperature. We also provide sensors adjustment with gun which sense the object and guns are automatically spray glue.

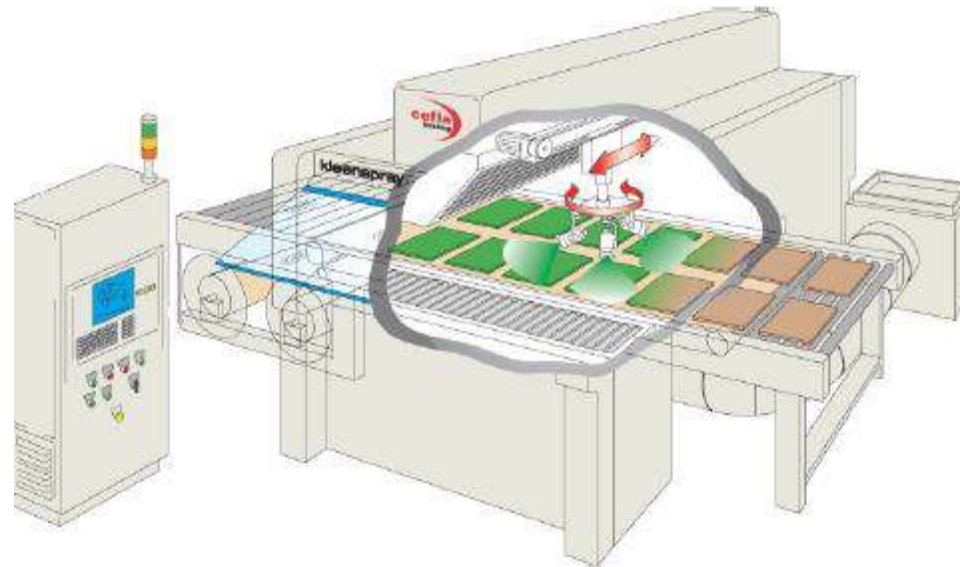


Fig no 1. Glue spray machine

2. CONSTRUCTION

2.1 machine structure

We design as well as developed the machine, iron material use for construct machine. The dimensions of machine are 202.5 cm wide and 840.5 cm length of machine. In this machine three section, in first section the glue can spray on work piece after spraying glue on work piece will be pass on heating section and then cooling section .in summer the atmospheric temperature is more then for artificially cooling is provided by fan .heating section cover and if artificially cooling required then cooling section also cover by casing .

2.2 motor selections

For glue spray machine we are required to select the signal phase AC motor with specification of 60 watt power and Speed range 0-1440 rpm (variable)

2.3 selection of belt

Many papers have been published over the last two decades to describe spraying machine most commonly used power-transmitting device in a belt-type cvt is either a steel belt or a rubber belt .In this we cannot use rubber belt or v-belt because of on glue spray machine the glue was spray on belt and glue has some amount heat so we cannot use the rubber belt it will react some amount. By using plastic belt it will helpful for us it will also useful for cleaning purpose.

2.4 selection of gear

Because of we use plastic conveyor belt then gear material also plastic. This very economical it help to reduce cost of machine. If we use metal gear the gear teeth will wear also noise will be also created .

2.5 Heating section

Glue spray machine consist of heating section for heating work piece at 120 degree. After the glue spray on work piece heating required because glue layer required will perfectly fix on work piece.

2.6 Cooling section

Cooling system is provided in machine to cool work piece after heating .by providing cooling section work piece will use frequently. In cooling section if atmospheric temperature is more artificially cooling is provide by using fan.

3. SPRAY GUN



Fig no 2. Spray gun

Fig no. 2 shows spray guns, this gun we use to spray the glue on work piece. This is walther pilot spray gun with internal and external control. Plot WA 900 is Standard internal control and Pilot WA 950 Standard external control. It consists of adapter plate one is high profile and one is low profile plate. High Profile adaptor plate is Nickel , Aluminum and Low Profile adaptor plate is Stainless Steel. in this spray gun separate adjustment is provide for external and internal control because of using spray guns our work flexibility increase, our production rate will increase also glue wastage minimize. Glue can spray with high compress air .the glue will store in can .the operating speed can be control by program or pneumatic system. Number of guns we will use at time thus we complete our operation.

4. CONCLUSIONS

In this paper we studied how we developed n design glue spray machine and how it is useful and profitable for us by using spray gun thus increasing production rate, by reducing wastage of glue, also by using of plastic conveyor belt cleaning of belt easy.

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