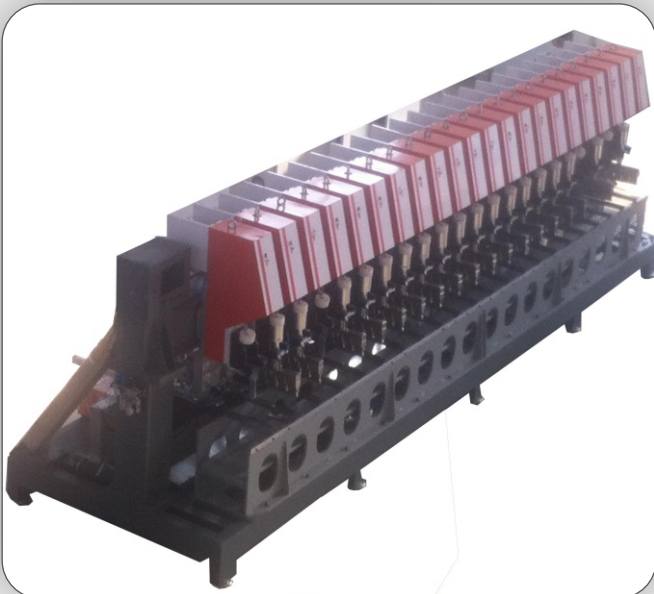


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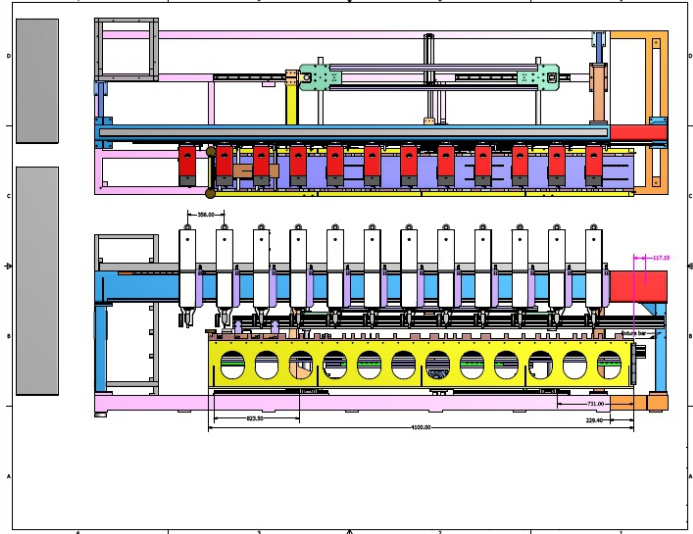


Ultrasonic Automated
Welding System for
Geocell



Overview

Multiple Head Geocell Ultrasonic Welding Line (MHGUWL) is a semi-automatic geocell ultrasonic welding line. It can be used to weld plastics through ultrasonic energy. Ultrasonic welding boosts of high quality and speed, cleanness and low cost. It adopts the updated series of ultrasonic welding machine with proportional valve, Siemens Programmable Controller & HMI man-machine interface. Flexible integrated design is adopted for the whole unit with leading technology, reliable operation and stable performance, as well as wide application in production of civil engineering materials.



Structure Features and Working Principle

MHGUWL mainly consists of a number of ultrasonic plastic welding machines, main frame, moving system of workbench, pneumatic control system, program control system, electronic protection system and operation system.

Mechanical structure

Rigid machine frame , weld construction out of steel profiles, adjustable machine feet with Castor & forklift holes.

Electric portion

Electric portion is mainly composed of four parts: electric cabinet, operation panel and protective circuit of individual control. Installed in the electric cabinet power supply for production line, all the ultrasonic welding machines and ultrasonic generator, and PLC and all final control relay; protective circuit of individual control is installed in the cabinet of each ultrasonic welding machine.

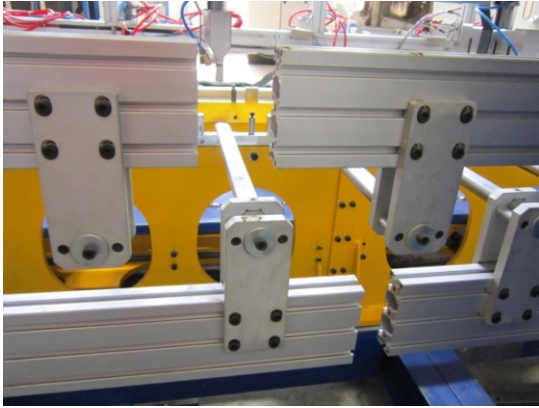
Power detection

Power detection cover two key parts: signal acquisition and signal processing. Signal acquisition is built in ultrasonic generator while signal processing stays on logical control panel of individual unit. Real-time inspection can be conducted on ultrasonic wave generating power to check if power is too small or zero.

Instruction for welding process of production line

Welding process of production line is divided into individual unit and on-line unit, and selection can be made through selector switch of "Operating Mode" on the panel of each individual unit. In the state of individual unit, operating tools are in a position of reaching out and lowering on the touch screen, commissioning and repair welding can be made by the corresponding individual unit of the production line. When an individual unit in automatic state is selected, an operator just needs a manual loading and press "Master Operation" button, the production line will make operation of each process covering automatic shifting →welding. And it will automatically get into unloading state waiting for unloading when reaching the set layer.

Fixture



The concept of fixturing for geocell welding system is that it needs a rigid base wherein the pneumatic press comes down and welds each geo in a sequential operation. The number of fixture rods depends on the number of heads & the sequential operation that needs to be carried out.

When there is no bed movement in linear direction, fixture rods are connected with individual cylinders for a sequential process. When a bed movement is required, the rod comes in series of 4/6 supported with pneumatic cylinder.



The working bed is equipped with encoder & motor for vertical up-down movement.

Sonotrode / Horn

The sonotrode is made out of Titanium alloy, the dimension of which is 200x25, 250x25 or 325x25 with serrations /dots at the surface.



Ultrasonic Generator

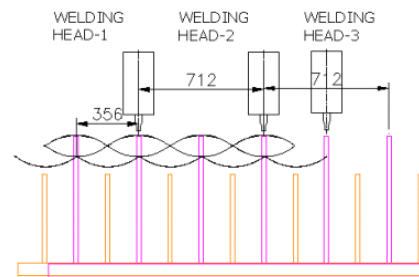


The SG-22 series generator has amplitude regulated power system with LED display of output power, amplitude, overload indication and frequency. It has a potentiometer to control the amplitude manually. It is stacked as per the quantity. The output power of the generator is 3000W/ 4000W/4500W.

Technical Specifications

Geocell Welding Machine	RTUL-1212	RTUL 1809	RTUL1818	RTUL-2211	RTUL 2222
No.of Welding heads (units)	12	18	18	22	22
Max. Power (KW)	54	45	90	56	100
Ultrasonic Generator Power SG-22-3000/SG-22-4500	48 KW- 12 Nos	36KW- 9 Nos	72KW- 18 Nos	44KW- 11 Nos	88KW- 22 Nos
Size of the equipment (L*W*H) mm	6000x2000x 2250	7000x2000x 2250	7000x2000x 2250	7500x2000x 2250	9000x2000x 2250
WEIGHT (Tons)	1.5	2	2	2.5	3

Geocell Strip Width	::300 mm max
Welding Distance Scope	::176 - 1000 mm
Power	::AC 3 Phase 50HZ- 440V
Air Requirement	:: 6-8 Kg / Cm ² / 8-10 CFM



NOTE: Technical specifications are subject to change without prior notice due to continuous upgradation.

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