1.0 General Introduction

1.1 Work Principle and Main Parameters

1.1.1 Work Principle

Sanhuan 1000Kg mixer is blade type paste mixer which is composed of ingredient weighing system, paste mixing system, paste storage system and control system. The addition of oxide, acid and pure water is completed automatically based on predetermined recipe and mixing process. The whole running procedure is controlled through PLC, it is provided with operational touch operation panel and multiple warning functions. Featured by reliable operation, stable paste quality and high efficiency, it forms a complete set of automatic production line when integrate with oxide conveying system and plate drying system, which are applicable equipment for medium and large battery factories.

1.1.2 Main Parameter

A. Equipment Parameter

a) Oxide Batcher

Volume:0.77m^3

Weighing Accuracy: 0 .5%

Power of mixing motor: 45KW

b) Acid/ water Batcher

Material: transparent PVC

Volume of acid weighing hopper: 180L

Volume of water weighing hopper:230L

Weighting Accuracy:0.5%

c) Mixing Tub

Capacity: 1000kg/batch (30-50minutes)

Main Power: 45kw

d) Cone Feeder

Volume:0.56m^3 , to store 1 T~1.5T paste

Power of motor: 4kw

e) Control Panel

Mitsubishi PLC, touch screen monitor

It can store 8 sets of paste formula.

f) Utility

Compressed air:>0.4MPa

Cooling Water: :>0.1MPa

Voltage:380V±10%

g)Air Chiller(optional)

Capacity:71000BTU(17892KCAL)/Hour

B. Process Parameter

Capacity:1000kg/batch It generally takes about 30-50 minutes for each cycle (depends on specific mixing process for individual factory).

Paste Discharging Temperature: generally below 49°C (depends on cooling condition)

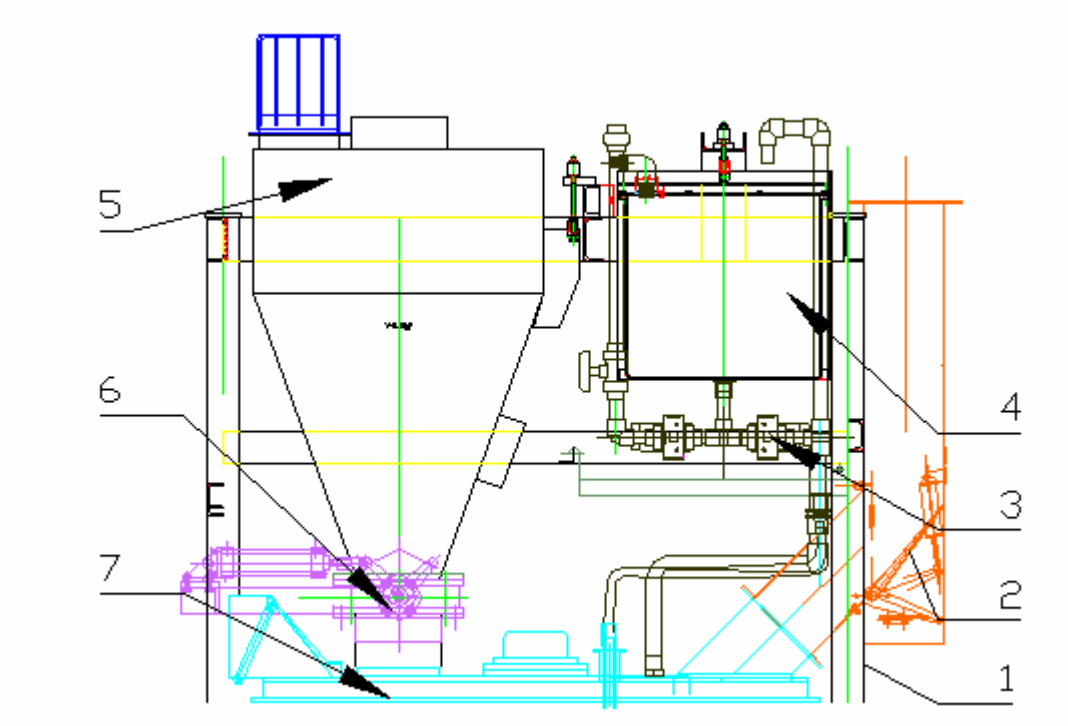
Operator:1 person

1.2 Composition of equipment

The paste mixer is composed of ingredient weighing system, paste mixing system, paste storage hopper. Each system forms a module in which electric circuit, control line, compressed-air line are pre-installed and tested, what we need to do during site installation is to joint three module interfaces together.

1.2.1 Ingredient weighing system

The module includes oxide weighing device, acid weighing device and pure water weighing device, which are hung on a steel frame. (see drawing 1)



Drawing 1: Ingredient Weighing System

1. Frame of Ingredient Weighing System 2. Exhaust Stacking 3.Acid Filling Pipeline

4. Acid Batcher 5.Oxide Batcher 6. Pneumatic Rotary Valve 7. Upper Lid of Mixing Tub.

a) Oxide batcher is hung by three load cells(TSC1000),it has carbon steel structure, with repeated accuracy of o.o1%, weighing accuracy of 5‰. Oxide dump is automatically operated through a specific butterfly controlled by magnetic switches on pneumatic cylinder.
b) Acid batcher is hung by a load cell (BSS500) with weighing accuracy of 5‰. Acid weighing and acid dump are controlled through two acid-proof ball valves with pneumatic executor, it is connected through 1″ acid-proof tube.
c) Water batcher is hung by a load cell (BSS500) with weighing accuracy of 5‰.Water weighing and water dump are controlled through two acid-proof ball valves with pneumatic executor, it is connected through 1.5″ acid-proof tube, a solenoid valve is also equipped for trim water.

1.2.2 Paste Mixing System

Inner wall of mixing tub, blade and scraper are all made of SSL. Mechanically machined tub wall and tub floor can ensure better paste mixing and clearing effect. The top of blades, scrapers where are in touch with tub wall and tub floor are lined with changeable high-molecular plates. It is fitted with water chilling and air chilling system, as well as temperature detection and upper safety lid device. (See drawing 2)