HZS180V Concrete Mixing Plant Technical Specification

Dear Users,

Thanks for choosing XCMG products. The technical specification aims to make users learn the design criterion, technical parameter and mainconfiguration of the product and work as the basis of product design, manufacture, installation, commissioning and delivery. To ensure your legitimate right, please carefully read it.

Xuzhou XCMG SCHWING Machinery, Co. Ltd.

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1. General introduction

HZS180V concrete mixing plant is a new generation batching plant upgraded from production efficiency, metering performance, intelligent control, safety and environmental protection, operating comfort and so on.

The machine is composed of aggregate burdening delivery system, powder storage supplying system, liquid storage supplying system, weighing system, mixing system, electric control system, monitoring system, lighting system and main tower steel structure. It is a kind of automation equipment that automatically weighs multiple raw materials (aggregate, cement, coal ash, water and additive) as per a formula, mixes through forced mixer and produces finished concrete meeting requirements.

HZS180V concrete mixing plant adopts the modular design method, and the modules such as aggregate、power、water and admixture are assembled and adjusted in the factory to reduce the hidden quality danger by site construction. product parts interchangeability, through the replacement, combination of different parts, complete deformation product design to meet various requirements of the customer, the spacious loading space reduces the possibility of the loader hitting the aggregate storage bin and improves the safety of the equipment, reliable belt conveyor type can save customer use and maintenance costs.

2. Design basis

2.1 Work environment

Environmental temperature：1～40℃；
Relative humidity：≤90%；
Max. snow load：800Pa；
Max. wind load：700Pa；
Altitude：≤2000m.

2.2 Power supply

Three-phase 380V±7%, frequency: 50HZ.

2.3 Work mode

Periodic mode.

2.4 Design standard

Effective technical documents signed by both parties;

GB/T 10171-2016 Building construction machinery and equipment--Concrete Mixing Plant (Tower).

2.5 Concrete production formula standards

Formula used by this plant conforms to *JGJ 55-2011 Specification for Mix Proportion Design of Ordinary Concrete*;

2.6 Raw material standards

Sand used by this plant conforms to relevant requirements of medium grades sand specified in *GB/T 14684-2012 Sand for Construction*;

Cobble and pebble used by this plant conform to *GB/T 14685-2012 Pebble and Crushed stone for Construction*;

Water used by this plant conforms to *JGJ 63-2006 Standard of Water for Concrete;*

Admixtures used by this plant conforms to *GB 8076-2008 Concrete Admixtures;*

2.7 Other standards

If there's special local policy, it needs to be proposed separately.

3. Technical parameters

Model		HZS180V
Theoretical production rate	180 m^3/h	Cycle period per pan time: 60s, Each pan: 3 m^3
Mixer type	Twin-horizontal shaft forced blade type	
Nominal volume of mixer	3000 L	
Volume of aggregate silo	4×25 m3	Density counted as per 1.4t/m3
Volume of powder silo	4×200 t	Density counted as per 1.35t/m^3
Volume of additive bin	2×5 t	Density counted as per 1.0t/m^3
Weighing range and accuracy of aggregate （stone）	(1080～3600)±2% kg	A single material≥30% of the weighing range, the bias of measuring sum of all the material of each pan concrete in one vehicle
Weighing range and accuracy of aggregate （sand）	(810～2700)±2% kg	
Weighing range and accuracy of cement	(540～1800)±1% kg	
Weighing range and accuracy of admixture	(540～1800)±1% kg	
Weighing range and accuracy of water	(240～800)±1% kg	
Weighing range and accuracy of additive	(18～60)±1% kg	
Max. diameter of aggregate	80mm	Raw materials exceeding the maximum aggregate size can lead to jams, reduced mixing efficiency and even equipment damage
Discharge height	4 m	Material receiving type: mixer

		truck
Installed capacity	Ca.265 kW	

Remarks: weighing range and accuracy refers to the dynamic weighing accuracy of equipments, and the *weighing range list in above table conform to Pattern Approval Certification of the Measuring Instrument of the People's Republic of China issued by Jiangsu Bureau of Quality and Technology Supervision.* Too small weighing value will cause too large error and overlarge weighing value will damage equipments.

4. Configuration list

No.	Name		Qty	Unit	Spec.	Description	Manufacturer
1.	Aggregate storage system	Stone storage bin	2	Piece	Each silo: 25m^3	Particle diameter ≤ 80 mm，Without wear liner plate	
		Sand storage bin	2	Piece	Each silo: 25m^3	Without wear liner plate	
		Batch hopper	4	Piece		Without wear liner plate	
		Screen	4	Piece			
		Batching door	8	Set		Rotating discharge door, gas cut-off self-locking, anti scattering material	
		Material dredging device	4	Set	exciting force：2kN	Only with sand bin	
2.	Aggregate weighing system	Stone weighing hopper	2	Piece	Capacity: 3600kg	Without wear liner plate, Density counted as per 1.4t/m^3	
		Sand weighing hopper	2	Piece	Capacity: 2700kg	Without wear liner plate, Density counted as per 1.4t/m^3	
		Batching door	4	set		Rotating discharge door, gas cut-off self-locking, leak proof material	
		Material dredging device	2	set	exciting force：2kN	Only sand weighing hopper is equipped with one	
		Weighing sensor	12	Piece			AMCELLS/TONGLE/XCMG

No.	Name		Qty	Unit	Spec.	Description	Manufacturer
3.	Horizontal belt conveyer	Head driving device	1	Set	11 kW	Electric roller	huzhou
		Delivery belt	1	Strip	B1000 mm	EP100	THREE-V/Mingxin
		Rack	1	Set			
		Supporting roller assembly	1	Set	Diameter of supporting roller φ 108	35° U-shaped	
		Lower vertical roller to prevent deviation	1	Set		Curved roller surface, adjustable for correction, no damage the belt	
		bend pulley	1	Set			
		Head scrubber	1	Set			
		Scrubber for empty section	1	Set			
		wire switch	1	Set			
		Activate the security alert system	1	Set		An alarm is triggered before the belt starts, and the flat and inclined belts are shared	
4.	Inclined belt conveyer	Drive device	1	Unit	Φ630, 45kW	Rhombic encapsulation	
		Conveying belt	1	Strip	B=1000mm	NN200	THREE-V/Mingxin
		Rack	1	Set			
		Supporting roller assembly	1	Set	Diameter of supporting roller φ108	35° U-shaped delivery section	
		Lower vertical roller to prevent deviation	1	Set		Curved roller surface, adjustable for correction, no damage the belt	
		bend pulley	1	Set			
		Head scrubber	1	Set			

No.	Name		Qty	Unit	Spec.	Description	Manufacturer
		Scrubber for empty section	1	Set			
		Middle tensioning device	1	Set		Heavy hammer self-adjustment	
		Maintenance platform	1	Set	660mm	Set up on both sides, with guardrail	
		Belt conveyor rain cover	1	Set		Galvanized anti-corrosion substrate,Overall compression molding	
		Sand receiving plate	1	Set		Galvanized anti-corrosion, only double-deck rack with sand plate connection	
		Washing device	1	Set		Intermittent washing, synchronizing with water batching	
		wire switch	2	Set		both side independent	
5.	Aggregate temporary storage system	Hopper	1	Piece	Volume:6000kg	density counted as 1.4t/m^3)	
		Liner plate	1	set		Anti smashing design for impact areas, high lifespan	
		Discharging door	1	set		Rotating discharge door, gas cut-off self-locking, anti stuffiness machine	
		Material dredging device	1	set	exciting force：2kN		
		Dust collector	1	Unit	30m^2	Bag filter, back pulse jetting	
6.	Cement weigher	Cement weighing hopper	1	Piece	1800kg	Density counted as 1.35t/m^3	

No.	Name		Qty	Unit	Spec.	Description	Manufacturer
		Weighing sensor	3	Piece			AMCELLS/TONGLE/XCMG
		Discharge butterfly valve	1	Piece		Air cylinder driven	Zhuhai vogo
		Pneumatic vibrator	1	Piece	exciting force: 1kN		
7.	Admixture weigher	Admixture weighing hopper	1	Piece	1800kg	Density counted as 1.35t/m^3	
		Weighing sensor	3	Piece			AMCELLS/TONGLE/XCMG
		Discharge butterfly valve	1	Piece		Air cylinder driven	Zhuhai vogo
		Pneumatic vibrator	1	Piece	exciting force: 1kN		
8.	Water supply and weigher system	Reservoir	1	Piece	About 30m^3	Concrete structure	Self-supplied by customer
		water pump	1	Unit		Water supply	
		Pipeline	1	Set	3 inches	PPR	
		Pipeline fittings	1	Set			
		Water weighing hopper	1	Piece	800kg	Density counted as 1.0t/m^3	
		Weighing sensor	3	Set			AMCELLS/TONGLE/XCMG
		Pneumatic clip-on butterfly valve	1	Unit		Air cylinder driven	ARIKER
9.	Additive supply system and weigher	Storage bin	2	Piece	5t	PE	
		Additive supply pump	2	Unit			
		Pipeline and fittings	2	Set	1.5 inches	PPR	

No.	Name		Qty	Unit	Spec.	Description	Manufacturer
		Additive weighing hopper	1	Piece	60kg	Accumulative weighing of two kinds of additive, density counted as 1.0t/m^3	
		Coarse and fine weighing device	2	Piece			
		Weighing sensor	1	Set			AMCELLS/XCMG
		Pneumatic clip-on butterfly valve	1	Piece		Air cylinder driven	ARIKER
10.	Mixer	Double-horizontal shafts mixer	1	Set	JS3000	Motor power:2x 55kW	
		Mixer cover	1	Set		Water pipe, discharge chute, discharge pipe, safety gate	
11.	Discharge hopper	Discharge hopper	1	Set	1.5 m^3		
		Liner plate	1	Set		Impact site to configure	
		Rubber pipe sleeve	1	Set	Φ500		
12.	Tower frame	Tower support	1	Set			
		Tower packaging	1	Set		t50 rock wool laminboard	
13.	Pneumatic system	air compressor	1	Unit	1.5 m^3/min		
		Large air storage tank	1	Piece	1.0m^3		
		Small air storage tank	1	Set			
		Pipeline	1	Set	1 inch	PPR	
		Automatic drain valve	1	Set		at the tail of the diagonal belt, Automatic drainage with gas cut-off,	

No.	Name		Qty	Unit	Spec.	Description	Manufacturer
						Anti freezing drainage	
		Pipe fittings	1	Set		Include filter, , etc.	
14.	Electrical control system	Control room	1	Piece		rock wool sandwich panel, Class A fireproof	
		Electric cabinet	1	Piece			
		Control software		Set			
		IPC	1	Unit			Advantech/EVOC
		Batching meter	1	Set			
		Computer desk	1	Piece			
		Button box	1	Piece			
		Printer	1	Piece			Well-known brands
		Air conditioner	1	Piece	1.5 P		Well-known brands
		Operation Display	1	Piece	22 inches	LCD face screen	Well-known brands
		Monitor display	1	Piece	22 inches	LCD face screen	Well-known brands
		HD Camera	2	Piece	2 million pixels	One at the corner of the belt and one at the discharge point	Well-known brands
		Hard-disc carving machine	1	Piece			Well-known brands
		Light	5	Piece	LED,50W, White light, with a flux of 4500 lumens	head of aggregate silo with1, tail of aggregate silo with1, discharge point with 1， mixing floor with 1, measuring floor with 1	Well-known brands
14.	Powder storage silo	Cement silo	2	Set	Capacity: 200t, density counted as 1.35t/m³	Sheet type silo	

No.	Name		Qty	Unit	Spec.	Description	Manufacturer
		Admixtures silo	2	Set	Capacity:200t , density counted as 1.35t/m³		
		Powder tube	4	Set	ϕ 114		
		Cage ladder I	1	Piece	Ground to maintenance platform		
		Cage ladder II	1	Piece	Maintenance platform to top of the silo		
		Broken device	4	Set			
15.	Powder silo accessories	Roof dust collector	4	Set	Natural ventilation: 24 m²	Filtering element type, vibration dust collection	
		Safety valve	4	Piece		Mechanical-type	
		Manual butterfly valve	4	Piece		With handle	Zhuhai vogo
		Material level gauge	4	Set	Anti-rotating level meter	1 high and low level meter for each set	
16.	Powder delivery device	Spiral conveyer	2	Strip	Φ273	Delivery capacity: 90t/h (Powder density counted as 1.35t/m³)	
		Spiral conveyer	2	Strip	Φ273	Delivery capacity: 90t/h (Powder density counted as 1.35t/m³)	

Note:

1、Motor energy efficiency class: YE3. If you need to replace the motor with a higher energy efficiency class, special instructions are required.

2、If using fine aggregate with high water content, high mud content and low modulus of fineness, it is recommended to choose air cannon, and the buyer shall bear the rectification cost due to the problems of arching, not feeding or poor feeding of fine aggregate.

3、If hard aggregates such as granite are used, optional wear-resistant liner plates are ecommended.

4、The buyer shall provide maintenance platforms, walkways, ladders, guardrails, etc. that are not listed.

5、The buyer shall provide their own concrete foundation, embedded parts, lightning protection

No.	Name	Qty	Unit	Spec.	Description	Manufacturer
system, and grounding.						
6、The buyer shall provide their own distribution room and power cables to the strong electrical cabinet of the mixing station.						
7、The buyer shall be responsible for the weights required for calibration and the weight calibration and certification costs carried out by authoritative institutions.						
8、If the above configuration fails to pass the safety and environmental protection acceptance due to the buyer's failure to inform the local safety, environmental protection and other policies with special requirements in advance, the relevant rectification costs shall be borne by the buyer.						
9、If the mixing station is built in corrosive environments such as coastal areas, chemical plants, and power plants within 100km, anti-corrosion paint must be used, and the cost shall be borne by the buyer; If the buyer does not agree to use anti-corrosion paint, the seller cannot guarantee the quality of the paint.						
10、The components of the designated brand by the buyer shall be insured by the designated manufacturer and shall be guaranteed by the designated manufacturer.						
11、Items not specified as manufacturers are manufactured or supervised by the seller.						
12、Any requirements beyond the above configuration shall be borne by the buyer.						
13、Due to continuous updates in product technology, there may be changes in product configuration, specifications, and brand. However, the seller promises that the actual delivered product performance will not be lower than the performance of the configurations listed above. Please refer to the actual product.						
14、If the actual capacity of the equipment deviates from the theoretical capacity due to the buyer's failure to meet the rated						

5. Schematic diagram of equipment

Refer to the attachment for details. And the foundation loading diagram finally signed by the buyer should prevail.

6. Foundation loading diagram of equipment

The scheme should be signed for confirmation before exporting foundation loading diagram. And the foundation loading diagram finally signed by the buyer should prevail.

7. Painting scheme

7.1 Painting scheme of overall machine

No.	Position	Color
1	Main color	gray
2	External packing of tower (if so)	White
3	Belt scale idler	Black

4	guardrail	Yellow
5	Silo	Refer to standard painting scheme of silos for details (The buyer's signature confirmation or on-site confirmation shall prevail)

7.2 Standard painting scheme of silos

(1) The top cover、 silo middle and silo vertebrates are sprayed with white； The top ring and bottom ring are sprayed with green； silo leg, platform, including ladder and powder pipe are sprayed with gray. guardrails are sprayed with yellow.

(2) The logo of Xu gong Group and the words "XCMG" is painted on the top ring of the silo, which locates the front end of the equipment. The height of the LOGO and words "XCMG" is 600. The font and height/width ratio are selected in accordance with XCMG standard VI. The color is white.

(3) The customer mark is painted on the front of the middle part of the front end silo body, with a height of 1000. The word count depends on silo height and the agreement with customer on site. The font, height/width ratio and color (according to Standard GSB G51001-94 color code) are selected in accordance with customer's requirements confirmed during signing the contract and thus the model should be provided by the customer.

(4) Refer to the following figure for the painting positions of marks:



Fig. 7- Painting positions of marks on powder silo

8. List of supplied tools

No.	Name	Spec.	Unit	Qty.	Remarks
1	Alloy nipple pliers	6 inches	Piece	1	
2	Diagonal cutting nippers	6 inches	Piece	1	
3	Wire-cutter	7 inches	Piece	1	
4	Screwdriver with torpedo handle (Plain screwdriver)	6×150	Piece	1	
5	Screwdriver with torpedo handle (Cross screwdriver)	6×150	Piece	1	
6	Inner-hexagon spanner	3mm	Piece	1	
7	Inner-hexagon spanner	4mm	Piece	1	
8	Inner-hexagon spanner	5mm	Piece	1	
9	Inner-hexagon spanner	6mm	Piece	1	
10	Inner-hexagon spanner	8mm	Piece	1	
11	Inner-hexagon spanner	10mm	Piece	1	
12	Inner-hexagon spanner	12mm	Piece	1	
13	Inner-hexagon spanner	14mm	Piece	1	
14	Inner-hexagon spanner	17mm	Piece	1	
15	A-type adjustable spanner	8 inches	Piece	1	
16	A-type adjustable spanner	12 inches	Piece	1	
17	Dead smooth ring spanner	6×7mm	Piece	1	
18	Dead smooth ring spanner	8×10mm	Piece	1	
19	Dead smooth ring spanner	10×12mm	Piece	1	
20	Dead smooth ring spanner	12×14mm	Piece	1	
21	Dead smooth ring spanner	14×17mm	Piece	1	
22	Dead smooth ring spanner	17×19mm	Piece	1	
23	Dead smooth ring spanner	19×22mm	Piece	1	
24	Dead smooth ring spanner	22×24mm	Piece	1	
25	Dead smooth ring spanner	24×27mm	Piece	1	
26	Dead smooth ring spanner	30×32mm	Piece	1	
27	Dead smooth open spanner	6×7mm	Piece	1	
28	Dead smooth open spanner	8×10mm	Piece	1	
29	Dead smooth open spanner	10×12mm	Piece	1	
30	Dead smooth open spanner	12×14mm	Piece	1	
31	Dead smooth open spanner	14×17mm	Piece	1	
32	Dead smooth open spanner	17×19mm	Piece	1	
33	Dead smooth open spanner	19×22mm	Piece	1	
34	Dead smooth open spanner	22×24mm	Piece	1	
35	Grease gun	400MM	Piece	1	
36	Tool box		Piece	1	