

# **OPERATION    MANUAL**

**OF REVERSE DRUM CONCRETE MIXER  
MODEL JZC350 / RDCM350-6E**



## CONTENTS

1. Preface
2. Specification
3. Main system
4. Preparing for the first operation
5. Operation
6. Attentions
7. Bearings
8. Accessories
9. Spare parts
10. Trouble shooting

## 1. PREFACE

The concrete mixer is of small capacity, self-falling type. It is suitable for mixing plastic and low-slump concrete. The raw materials are smaller than 60 mm in grain size.

The drum revolves for mixing and reverses for discharging. The rated output capacity of this machine is 0.35 cubic meter.

It has the advantages of simple construction, higher reliability, thorough mixing, greater output, easy operation, flexible transposing, etc. The mixer is widely used in general construction site, road and bridge engineering, and many other branches of civil engineering.

## 2. SPECIFICATION

Model	JZC350/RDCM350-6E
Type	Self-falling
Towing	Two-towing wheels
Capacity of loading	560L
Capacity of discharging	350L
Capacity of water tank	110L
Power	5.5Kw
Max towing speed	20 km/h
Max. Aggregate size	60mm
Output	10-14cubic meter/hour

Hopper lifting model	Wire rope hoisting tipping hopper
Tire	6.50-16
Overall dimension(L×W×H)	2765×2140×3000mm
Total weight	1420kg

### **3. MAIN SYSTEM**

This mixer consists of the mixing system, charging system, water supplying system, the frame and electric system. (Fig. 1)

#### **3.1 Mixing system**

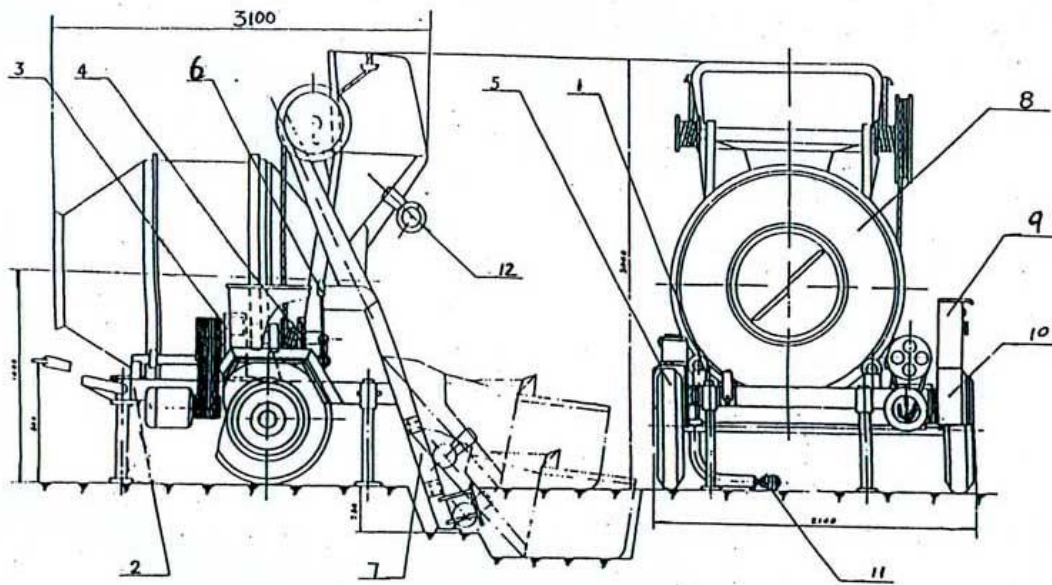


Fig. 1. VIEW OF REVERSE CONCRETE MIXER

1. Front support wheel    2. Loading track    3. Chassis    4. Gear box    5. Clutch  
 6. Operating lever    7. Wheel  
 8. Support wheel    9. Mixing drum    10. Electric control box    11. Shield    12.  
 Water supply system    13. Loading system

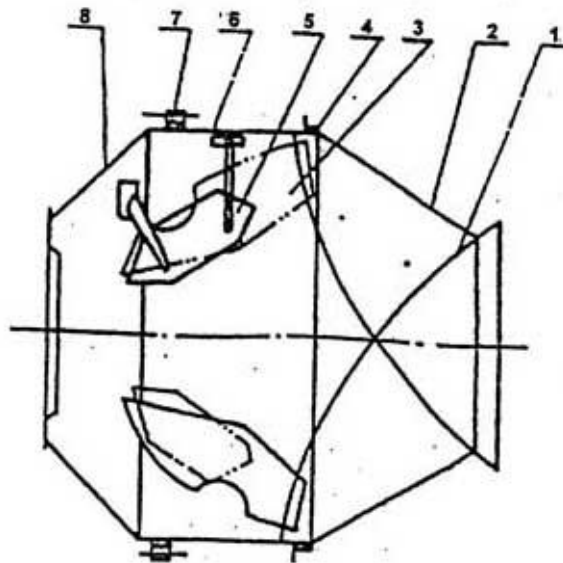


Fig.2. VIEW OF MIXING

1. Discharging blade    2. Discharging cone    3. Lower blade    4. Rolling track    5. Higher blade    6. Drum    7. Open gear    8. Charging cone

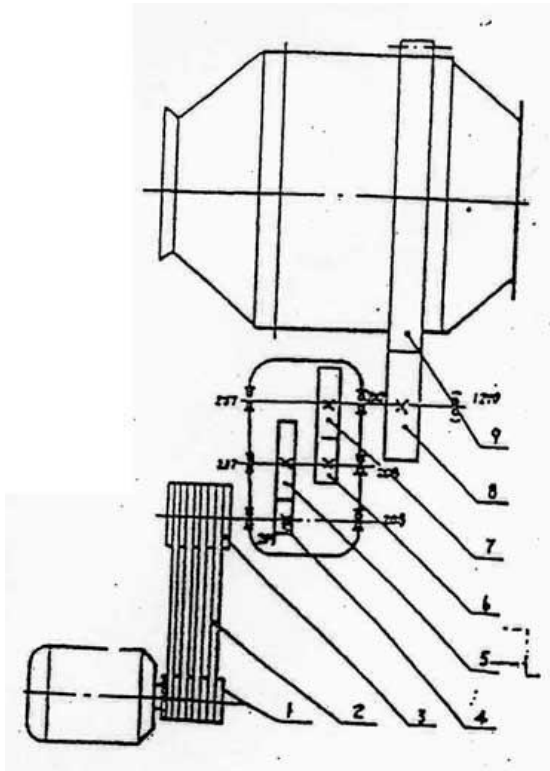
The mixing system consists of the mixing drum. Supporting roller, blades, etc.

As show in Fig. 2, the mixing drum is one of the working parts of the mixer, it is in the shape of double-cone. Two pairs of high and low blades for mixing are welded in the drum body. They are crossed at an angle with the axis of the mixing drum. While the drum is rotating, the raw materials not only move up and down, but also slide axially along the blades. Therefore, the mixing movement is stronger. The mixing of homogeneous concrete can be finished in only 35-45 seconds.

A pair of discharging blades is welded on the discharging cone of the mixing drum. After the mixing of the concrete is finished, the rotational direction of the mixing drum is changed by controlling the handle of the directional clutch, the concrete is discharged out along the discharging blades through the low blades.

The mixing drum is supported on four supporting rollers. This mixing drum is rotated by the power from the ring gear. So it can reliably serve in foggy and rainy days.

Transmission system (Fig. 3) is finished by steps reduction of speed in the gear box, the transmission ratio is 6.04248, the pulley ratio of v-belt is 2.3912, the ratio of ring gear speed is 7.1111, the sum of ratio is 102.7467. The rotation direction of the mixing drum can be changed by changing the rotating direction of the main motor.



1. Pulley of motor(Diameter 125mm)
2. B-belt (Length1400mm )
3. Big pulley (Diameter 300mm)
4. Little gear ( $m=3, z=17$  )
5. Big gear ( $m=3, z=43$  )
6. Little gear ( $m=3, z=18$  )
7. Big gear ( $m=3, z=43$  )
8. Output gear ( $m=12, z=43$  )
9. Open gear ( $m=12, z=128$  )

Fig. 3. Transmission system

### 3.2. Charging system

Charging system consists of the loading hopper, ladder, extension track, and ground support track. (Fig. 4)

The charging processing is as following steps:

Loading the material in the hopper,the steel wire will draw the hopper up along the track by functioning the inner brake.the hopper will tilt.

When it reaches to the upper turn-point of the track, it touches the limit device at the angle of  $48^\circ$ ,as the slide piston is disengaged.the material in the hopper drops into the drum,the hopper will be auto back to home position by release the inner brake,when the hopper is empty.(caution:the speed of sliding down do not exceed 3m/s)

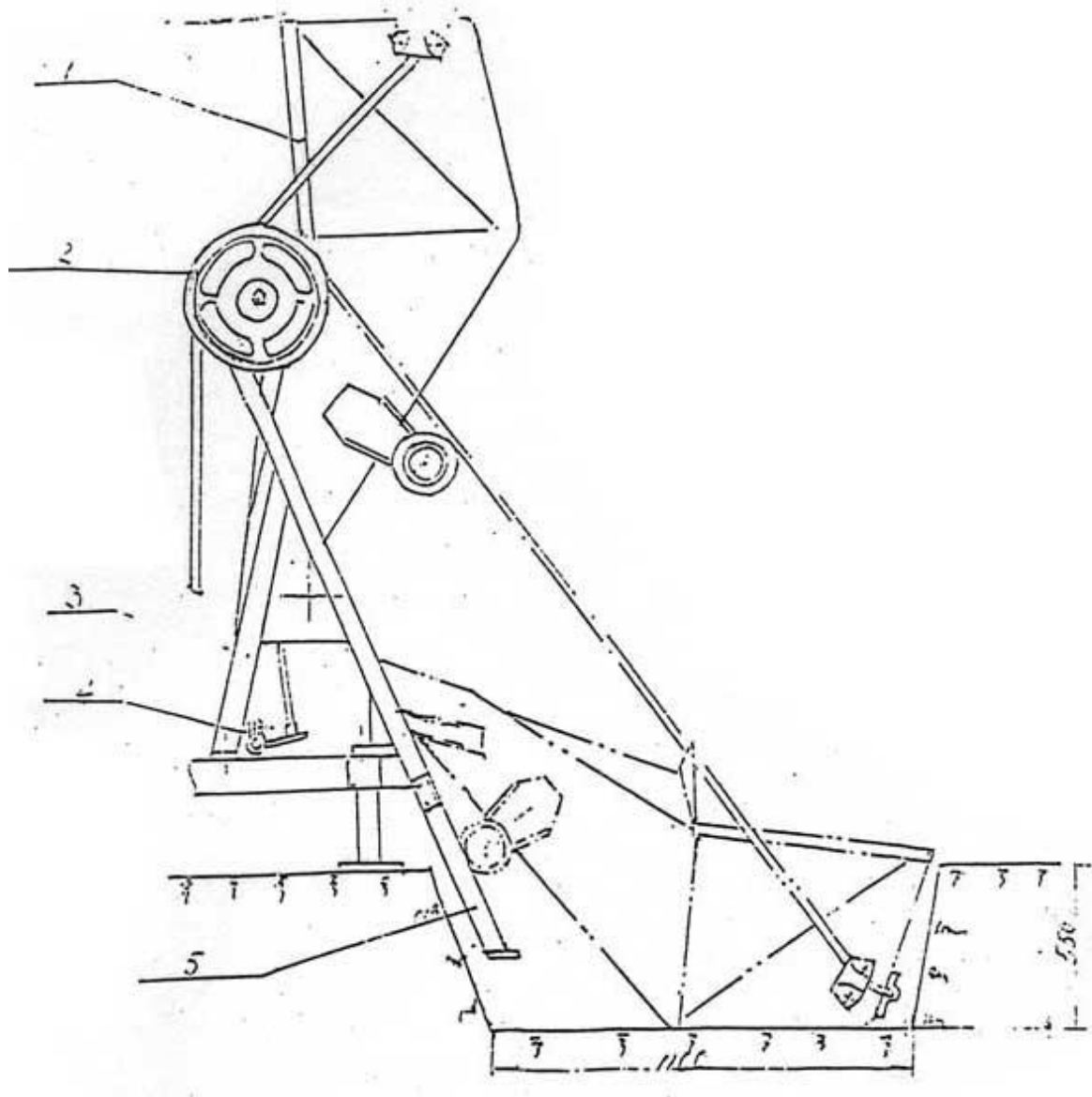


Fig.4 Charging system

1. Loading hopper 2. Ladder 3. Extension track 4. Ground support track



## **4. Preparing for the first operation**

The operator should check the new mixer carefully, and to be familiar with this manual. Do remember to take the test run before being put in service.

4.1. Start the mixing motor, conform that the direction of mixing drum is along with the arrow pointer on the mixing drum, otherwise the wires connection ways of the motor should be exchanged.

4.2. Maintain the mixing drum rotate in both directions for 15 minutes, each direction one-minute, then change the rotating direction. See carefully if there are shocking and abnormal noise, and whether the motor, gearbox, hoisting and lowering of the hopper work properly

4.3. When the hopper reaches to its topmost position, does the limit device work reliability.

### **4.4. Water supply system**

4.4.1. Firstly, make a touch push of the button and check whether the rotating direction of the pumping motor is correct, otherwise, exchange the wires connection of the pumping motor to correct the rotating direction, then pull the sucking pipe upper and down times, the water pump will supply water normally.

4.4.2. The check of the water supply accuracy, user can recheck the water supply if they suspect it.

(1) Prepare a bucket, remove the end of the rubber pipe which link with the water supply pipe of the mixing drum and put it into the bucket.

(2) Dial the pointer of the control timer to a certain time, start the pump motor and work to it, the motor stop supply of water, and check whether the water quantity is similar with the giving Time-Water Quantity Curve.

(3) Let the pointer of the water pump run at the same time. The pump

(4) Weigh the water in the bucket, check whether it is the same as the given quantity, if it's tolerance is bigger than  $\pm 2\%$ , inspect the leakage of the pipe line and the valve. If it is necessary, the valve can be adjusted till the normal water supply, till the water supply quantity is conformity with the curve.

## **5. Operation**

### **5.1. Check items before each operation**

5.1.1. Check whether machine is stable, and sure that the four stabilizers have all support the mixer firmly, and the supporting of the ladder is stable too.

5.1.2. Check whether the machine runs normally when it is unloaded.

5.1.3. Start the pump motor, check it and sure the water supply of water is

normal.

5.1.4. Check whether the earth-line is well connected.

## 5.2. Attentions

5.2.1. The max quantity of raw material you charge is 780kg, and must be loaded after the previous mixing concrete discharge completely.

5.2.2. The loaded hopper could be lowered generally, if it is necessary, it must be lowered slowly with brake.

5.2.3. To reduce the adhering of the material on the drum, the charging steps of the raw material should be cobblestone, concrete, and sand, or sand, concrete, cobblestone.

5.2.4. To reduce the mixing time and rising of dust, the water fill in time is important during the charging process.

5.2.5. Person accessing under the loading hopper is prohibited, the empty hopper must be lowered slowly due to its durability.

5.2.6. The operating handle can not be moved except the operators.

5.2.7. Safe from the electricity, keep the electric parts from the water, avoid the any damage of these parts.

5.2.8. When the electric current is cut down, the mixing material can be discharged by handle.

## 5.3. Maintenance

5.3.1. Before stop the machine, run the mixing drum with a moderate amount of cobblestones and water for 3-5 minutes, then remove it, repeat this several times to clear away the concrete remaining on the mixing drum. The concrete remaining on the mixing drum should be thoroughly rinsed off after use every time.

5.3.2. Clear away the dirt and concrete remaining on the mixer.

5.3.3. Locate the loading hopper on the transporting position and put the safe guard rods on.

5.3.4. Turn off power supply, locking the electric control box.

5.3.5. Drain off water in water supply system in winter,

5.3.6. Lubricate the parts when it is necessary.

## 5.4. Transportation

5.4.1. Check the connecting parts of moving system and ensure its connected firmly, and use steel wire to fasten the mixing drum with the frame.

5.4.2. The max trailing speed is 20 km/h.

## 6. Attentions when trailing

6.1. The brake lining of the charging clutch must be replaced with new ones, when it is worn out.

6.2. Check whether the trailing system and the front support wheel are damaged.

6.3. The routine maintenance must be carried every year, and the major repair should be done after 4000 hours' service.

#### 6.4. Lubrication

Item No.	Lubricate Points	Lubricant	Frequency	Remarks
1	Support wheel, rubber wheel of hopper, reeling wheel shaft of steel wire,	Calcium grease	2 times per month	
2	Wheel track of mixing drum, open gear	Engine oil	2 times per work shift	
3	Gear box	Gear oil	1 times half year	

#### 7. List of bearings \*not include in the whole set

No.	Parts No.	Bearing	Quantity	Assembly
1	GB301-84	8108	1	Front support wheel
2	GB276-82	209	1	Gear box
3	GB276-82	208	2	Gear box
4	GB276-82	207	2	Gear box
5	GB276-82	210	1	Gear box
6	GB286-82	1210	1	Gear box
7	GB278-84	60110	2	Clutch
8	GB297-84	7506	2	Wheel
9	GB276-82	7507	2	Wheel
10	GB276-82	210	8	Support wheel
11	GB276-82	306	2	Loading system

#### 8. Accessory and tools \*include in the whole set

No.	Assembly	Tools	Qty.	Remarks
1		Grease gun	1 piece	
2		12" Adjustable wrench	1 piece	
3	Chassis	Rod	1 piece	
4	Gear box	Handle	1 piece	
5	Electric control box	Key	2 pieces	
6		6" Screw	1 piece	

#### 9. Spare parts \*not include in the whole set

Parts No.	Descriptions	Quantity.
JZC350.4-08	Input shaft	1
JZC350.4-10	Middle shaft	1
JZC350.4-11	Gear of Middle shaft	1
JZC350.4-13	Output shaft	1
JZC350.4-14	Gear of output shaft	1
JZC350.4-17	Gear	1
JZC350.8-04	Support wheel	2
JZC350.5.1	Inner brake band	1

JZC350.5.2	Outer brake band	1
JZC350.5-08	Adjusting screw	1
JZC350.5-09	Fixing support	1
JZC350.5-13	Slide piston ring	1
JZC350.5-14/16	Upper slide piston	1
JZC350.13.-04	Rolling wheel of the shovel	1
Φ9*36	Steel wire (13m)	1
ZC.MC(CJ10-20)	AC Contactor	2
JS11-21	Control timer	1
QC(CJ10-10)	AC Contactor	1

### 10. Troubles & Remedies

Item No.	Trouble	Remedy
1.	The mixing drum jumps with noise	The frame of the mixer is on a water-level, it can be solved by adjusting the four supports.
2.	Difficult to lift the hopper up along the track	1. Check if any jam between hopper roller and track 2. Check if the motor run in wrong direction move down from the topmost position
3	The material drops slowly from the hopper	The upper limit rod is too low, adjust it higher.
4.	The hopper is down freely	Adjust outer brake, or replace it with new one
5.	AC contactor can not be switched on.	1. Check the voltage(350~410v) 2. Check the contactor point(any born0 3. Check the coil of the contact.
6.	No water supply from water pump	1.Check the wire connection to be right 2.Check if any air in the pump.
7.	AC contactor for water pump trips	1.Check if the time relay being set on zero