

TUBULAR MAGNET

OPERATION MANUAL



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JIANGSU ZHONGTIAN AGRO MACHINERY CO.,LTD

Important instruction:

1 This manual detailedly describes tubular magnet of each system structure, function and use and maintenance method. Before installation and use of the machine , customer should read the manual, and have a full understanding of the ministries and its structure and function ,then have operation and maintenance of the machine. Due to the continuous improvement of product structure, after a certain time period, the manual of narrative content and the actual situation of the products will have small changes.Users should pay attention to it.

2 Please propose your advice to us for melioration when finding quality problem or others.Thanks !

1 GENERAL INTRODUCTION

1.1 Main Use and Applicable Scope

TCXT Series Tube Magnet is mainly used to separate the magnetic metal impurities in the raw materials. It is applicable to feed mill, grain and oil processing mill, etc. It is generally installed in the processing line.

1.2 Features

The magnetic core of this equipment is made of newly developed rare-earth permanent magnetic material with magnetic induction intensity up to 200-380Mt and service life up to 6-8 years. The technical indexes reach the world advanced level. It has features of fine appearance, high dedusting efficiency, less floor space, no need of power.

1.3 Specification, Main Technical Parameters and Performance Indexes

Model Specification		TCXT15	TCXT20	TCXT25	TCXT30	TCXT40
Diameter of Permanent Magnet (mm)		φ150	φ200	φ250	φ300	φ400
Diameter of Tube (mm)		φ300	φ400	φ480	φ540	φ680
Height (mm)		740	740	874	920	1190
Capacity (t/h)	Powder Materials	10	20	35	55	80
	Granular Materials	15	30	50	70	100
Iron Removing Efficiency		≥99%				
Intensity of Magnetic Field		≥0.3T				

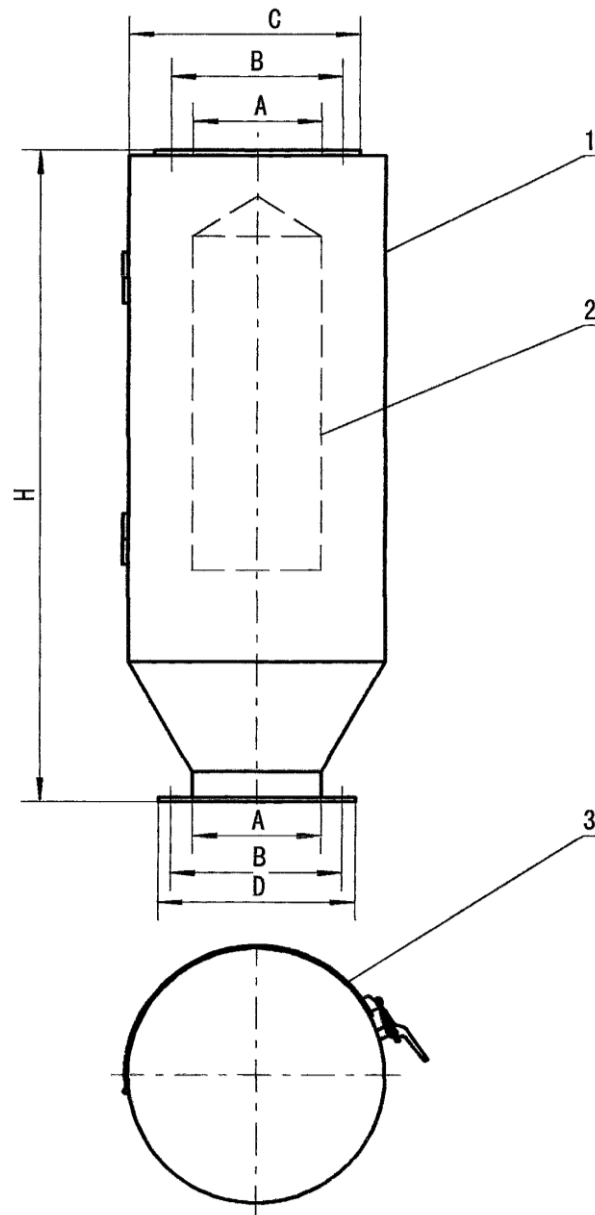
2 MAIN STRUCTURE AND WORKING PRINCIPLE

2.1 Main Structure

TCXT Series Tube Magnet mainly consists of tube, permanent magnet and door. The main structure is as shown in Figure 1.

2.1.1 Tube

Tube is mainly used as support and to form a passage for materials. It is completely made of stainless steel plate (or steel plate) by welding. Raw materials inlet and outlet with diameters φ150, φ200, φ250, φ300, and φ400 are available.



1、Tube 2、Permanent Magnet 3、Door

Item Spec.	TCXT15	TCXT20	TCXT25	TCXT30	TCXT40
A1	φ300	φ400	φ480	φ540	φ680
B1	740	740	848	920	1180
C1	φ150	φ200	φ250	φ300	φ400
D1	φ195	φ244	φ290	φ340	φ440
E1	φ225	φ270	φ320	φ380	φ480

Figure 1 Structure of TCXT Series Tube Magnet

2.1.2 Permanent Magnet

Permanent magnet consists of tube, magnetic block and magnetic pole plate. Tube is stainless steel and magnetic block is high performance compound permanent magnetic material. See Figure 2 for the structure.

2.1.3 Door

Door is used to fix the permanent magnet. Periodically open the door and the metal impurities sticking on the surface of pole plate can be cleared off.

2.2 Working Principle

Material falls to the surface of cone at the top of magnet from the inlet and spreads around, then slides along the surface of magnet. With high gravity, iron impurities rebound to the inner wall of tube after being stopped by the surface of cone. Under the action of counterforce of tube wall and gravity, iron impurities fall along the magnetic line of force and accordingly are easy to be attracted by magnet. Non-magnetic material will be discharged from the outlet, thus finishing the separating of materials from the iron impurities.

3 INSTALLATIONS

3.1 The equipment is generally installed behind the screener to prevent large impurities from entering the equipment and causing blockage.

3.2 The equipment should be installed in the vertical line and the length of vertical pipe above the equipment should be more than 500mm.

3.3 The impacting strength of material against the equipment has certain influence on the magnetizing efficiency, so a buffer should be installed above the equipment. The flowing speed of material should not be larger than 1m/s.

4 POINTS FOR ATTENTION IN OPERATION

4.1 Permanent magnet is brittle, so it should not be knocked during the installation.

4.2 The equipment has intense magnetic field, so it is prohibited to place objects easily to be magnetized such as electrical meters around the equipment.

4.3 Adjust the position of magnetic switch so that the equipment turns to be in position.

5 MAINTENANCE

5.1 To ensure the iron removing effect and prevent material from blocking due to excessive metal impurities sticking on the surface of permanent magnet, door should be opened and the sticking materials and other impurities on the permanent magnet should be cleared off manually every shift.

5.2 Generally the equipment need not be re-magnetized within about ten years. If finding the magnetism reduces obviously, re-magnetize it or replace the magnetic block in time.

5.3 The top of magnet and magnetic pole plate are directly impacted by the materials, so replace them in time if finding they are worn seriously during the use.

6 CAUTION

Permanent magnet is brittle, so it should be prevented from fierce vibration, damp and being pressed during the transportation and storage.



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