SCREW CONVEYOR

OPERATION MANUAL

ZTMT
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Important instruction:

1 This manual detailedly describes screw conveyor 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 USE AND FEATURES

1.1 Main Use

TWLL Screw Feeder, $TLSS_F$ Screw Conveyor and TLSS Screw Conveyor are horizontal conveying equipment and are used for conveying powder materials in various feed mills of different capacities. And TLSS Screw Conveyor can also be used for conveying powder and granular materials in cereal, oil and food processing plant, starch plant and other industries.

1.2 Performance Features

1.2.1 The machine has big feeding opening, same diameter and variable pitch;

1.2.2 With even feeding, the machine is especially suitable for the discharging opening of batching bins;

1.2.3 With compact structure, the machine can be hanged and also installed on the ground;

1.2.4 With multi-point feeding and multi-point discharging, the feeding and discharging mechanism is simple;

1.2.5 Reliable running, convenient maintenance and operation, lower cost.

2 TECHNICAL PARAMETERS AND PERFORMANCE INDEXES

Table 1 TECHNICAL PARAMETERS AND PERFORMANCE INDEXES

Model \ Items		Screw Diameter (mm)	Max. Lead (mm)	Rotational Speed (r/min)	Capacity (t/h)	Gap between Screw and Housing Wall(mm)
TWLL Screw Feeder	TWLL16	160	130	above 84	3-4	4
	TWLL20	200	160	above 84	5-7	4
	TWLL22.4	224	180	above 84	7-10	4
	TWLL25	250	200	above 84	10-13	4
	TWLL28	280	240	above 84	14-19	5
	TWLL30	300	260	above 84	17-21	5
	TWLL32	320	280	above 84	22-28	5
$TLSS_F$ Screw Conveyor	$TLSS_F25$	250	200	84	10-13、14-20	4
	$TLSS_F30$	320	280	64	17-21、22-28	5
TLSS Screw Conveyor	TLSS16	160	130	88	3-4	4
	TLSS20	200	160	88 above	8-12	4
	TLSS25	250	200	88 above	14-20	5
	TLSS32	320	260	88 above	25-30	5
	TLSS40	400	320	88 above	38-41	5
	TLSS50	500	400	88 above	60-70	5

3 MAIN STRUCTURE AND WORKING PRINCIPLE

Screw conveyor uses the rotation of screw paddle to drive the materials forward along the housing, thus fulfilling the conveying. Its working principle is: Screw rotates in the housing and drive the materials forward along the housing through overcoming the resistance such as gravity and friction to the housing.

3.1 The screw at the feeding section of TWLL Screw Feeder has features of same diameter and variable pitch, so the tail of screw is fitted with double screw to facilitate the discharging. The materials-sealing device of $TLSS_F$ Screw Conveyor consists of air-isolating chamber and movable retainer with good materials-sealing effect. Its air absorbing positions can be flexibly arranged according to the requirement of process.

3.2 Except that the length of main shaft of screw conveyor cannot exceed 5m due to frequent starting with full load, lengths of other two conveyors can be determined according to the requirement of process. In case length of conveyor exceeds 3m, the hanging bearing is available, generally one every 2-3m.

3.3 All models of conveyor consist of conveying housing, screw shaft, screw, bearing, hanging bearing, feeding opening, discharging opening and drive. The conveying housing is in shape of U.

3.4 The screw is welded to main shaft. Main shaft is made of seamless steel pipe and the driving shaft is solid. Spherical surface ball bearing, which has good self-adjusting and sealing performance and convenient assembling and disassembling, should be used.

4 INSTALLATION AND ADJUSTMENT

4.1 Materials-sealing conveyor and screw conveyor should have firm and reliable foundation. Feeder is generally installed at the bin outlet by hanging. Its feeding opening and bin outlet are connected by flange. There should be certain spacing 1.5 times the screw diameter between housing and top so as to guarantee the requirement of check and repair;

4.2 The allowance of coincident degree between shaft or shaft center line and housing center line is 0.5mm;

4.3 Reducer of drive of TLSS Screw Conveyor can adopt the direct-coupling way according to requirement. It should be guaranteed that shaft and reducer shaft are on the same axis. It would be better that chain driving be used for other conveyors;

4.4 After all sections of the machine are installed and adjusted and flange-connecting bolts of all housings are fastened, tighten the anchor bolts. It should be able to rotate by turning with hand. And check to see if there are sticking and friction;

4.5 The cover of housing should be well covered without dust leakage;

4.6 The feeding opening and discharging opening should closely stick to the flange of bin or flange of spout without gap;

4.7 The hanging bearing should be hung to the connecting shaft and mounted to the center of shaft without sticking of paddle;

4.8 The assembling of housing should conform to the following rules:

The straightness should not exceed 1/1000 of length and should not exceed 3mm totally;

The horizontal levelness should not exceed 2/1000 of width;

The allowance of gap at both sides between inner wall of housing and screw is 2mm, and the allowance of gap at the bottom between inner wall of housing and bottom is ±2mm;

The flange joint of all housings should closely stick each other without gap and the inner surface should not have obvious offset;

4.9 After 2 hours of unloaded trial run, rise of temperature of all bearings should not exceed 20℃. During the loaded trial run, rise of temperature of all bearings should not exceed 30℃. If finding excessive vibration, check the cause and make adjustment;

4.10 Adjust the axial seal ring properly.

5 OPERATION AND REPAIR

5.1 Prior to operation, read the operation manual, get familiar with the performance of the machine, know the structure of the machine and the adjusting method of all operating points;

5.2 Before starting the machine, make regular check, that is, check fasteners, drive, etc;

5.3 Check to see if there is any impurity in the housing, especially fiber impurity twisted at the hanging bearing;

5.4 The materials entering the machine should be cleaned for removing the large impurities so as to guarantee the normal running of the machine;

5.5 During the operation, firstly race the machine, then feed the materials. The feeding amount shall be increased gradually and properly;

5.6 In the running process, often pay attention to the lubrication of all bearings so as to prevent them from being worn too early due to the lack of lube. If the machine runs for 3 shifts, add common #2 lithium based grease to the bearings within 7-15 days; if the machine runs for 1 shift, add the lube once every 1-3 months. During the overhauling, disassemble it for cleaning and replacing the lube;

5.7 The cover should be covered tightly so as to prevent the dust from flying outwards and impurities from entering.

5.8 The machine cannot be stopped until the materials in the machine are completely discharged.

5.9 If the machine will be laid aside for a long time, all remainder in the machine should be discharged.

6 TRANSPORTATION AND STORAGE

6.1 When handling the machine, pay attention to the center of gravity. There should not be collision and pressure.

6.2 When the machine will be laid aside for a long time, it should be kept in a well-ventilated, dry and cool place, and there should be damp proof facilities.

7 VULNERABLE PARTS

Table 2 VULNERABLE PARTS

TWLL16	F90508	TLSS16	F90508
TWLL20	F90509	TLSS20	F90509
TWLL22.4	F90510	TLSS25	F90510
TWLL25	F90510		

8 CAUTION

8.1 During the operation of equipment, any parts of human body must not touch the rotating parts of equipment so as to avoid the human body injury accident.

8.2 To inspect or repair the equipment, equipment must be turned off.

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