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Technical Specification for TY-XC80 Self-Propelled Conveyer-Belt Loader



1 Product Name: Self-Propelled Conveyer-Belt Loader

2 Product Model: TY-XC80

3 Product Introduction:

TY-XC80 self-propelled conveyer-belt loader is a new luggage transporter designed and manufacture by Jiangsu Tianyi Special Equipment Co., Ltd.. Its chassis is self-made. The product is advanced and concise in product design, safe, reliable, reasonable in structure design, safe and convenient in operation, advanced in process, beautiful

in appearance, highly reliable and easy to maintain. It can provide safe and efficient luggage conveying operation for all aircraft types.

Excellent Features: High loading capacity of front axle (3tons), remarkable grade ability, superior low-speed stability (when interfacing with an aircraft).

4 Product Standard

IATA AHM 925 Functional Description of of Power-Driven Conveyer Belt Loader

IATA AHM 913 Basic Safety Requirement for Airport Ground Support Equipment

IATA AHM 910 Basic Safety Requirement for Airport Ground Support Equipment

5 Major Performance and Technical Parameters

Height Range of Conveyer Belt's Front End (mm):	1200~4325
Height Range of Conveyer Belt's rear End (mm):	525~1670
Width of Conveyer Belt (mm) :	700
Maximum Uniform Load of Conveyer Belt (kg/m) :	135
Maximum Mass of Single Cargo (kg) :	400
Maximum Inclination of Conveyer Belt :	29°
Conveying Speed of Conveyer Belt (m/s) :	0.25~0.5m/s
Maximum Travel Speed (km/h) :	25
Wheelbase (mm) :	3000
Minimum Turning Radius (mm) :	6600

Ground Clearance (mm) :	170
Approach Angle :	10°
Departure Angle :	15°
L×W×H (mm) :	8130*1980*2096
Vehicle Curb Weight (kg) :	3700

6 Major Structure and Configuration

TY-XC80 self-propelled conveyer-belt loader primarily consists of body, conveying rack, chassis power drive system, front and rear lifting mechanisms, hydraulic operating system, electrical system and other components.

6.1 Body

Its body is made by welding 4.0 thick high-quality steel plate. The product has the following features: reasonable arrangement, welding as a whole and lower body center of gravity, good stability. An enclosed cab can be installed. It also has wide field of vision.

6.2 Conveying Rack

The conveyer belt support primarily consists of main frame, load-bearing roller, stainless steel slide block, drive roller, driven roller, adjusting roller, and drive motor. The control switch and emergency stop switch are installed respectively at the front and rear ends. The drive motor drives the belt through the driven roller to load up or unload down. The driven roller and the adjusting roller can be used to adjust the belt's tension, deflection and deviation. The conveying rack is intended to

increase the structural strength. The main frame uses channel beam structure. Buffer rubber blocks are mounted respectively onto the conveying rack's front and rear end.

Made of seamless steel pipe, the load bearing roller is durable. A variable cross-section structure is adopted for drive and driven roller, thereby eliminating the conveyor belt's deviation factors and making it easy to adjust.

100mm high deflector gates are installed respectively at both side of conveyor belt to prevent luggage from slipping out of the conveying rack; both the left and right gates are movable and below the conveying surface when put down.

6.3 Front and Rear Lifting Mechanisms

Both the front and rear lifting mechanism are propped up by a single cylinder, and can adjust the height of the conveyor belt support's front and rear ends respectively. You can install an adjustable throttle valve and control the lifting speed to ensure smooth lifting. Its lifting can only be controlled by the cab. The lifting mechanism hydraulic system is fitted with an electromagnetic ball valve to prevent the conveying rack from sliding when the hydraulic system fails. The conveying mechanism is fitted with a mechanical protection latch to prevent cylinders from leaking and conveying rack from lowering down.

6.4 Chassis Power Drive System

A self-made chassis with hydraulic transmission drive system; the

engine is directly connected with the hydraulic transmission and transmits the power to the wheels via drive shafts and rear axles to realize stepless speed change.

Engine: ISUZU engine AK-C240 PKJ-30

Type : Four-cylinder, water-cooled, in-line

Power: 35.7 KW/2600 rpm

Maximum Torque: 143Nm/1800rpm

Generator: 12V, 65A

Transmission : Auto transmission, model PST2, 2 forward gear positions and 1 reverse gear position

Steering System: Hydraulic steering gear from Zhenjiang

Brake System: Front-disc, rear-drum dual-line brake system, hand brakes

Front Axle: A steering axle with disc service brake

Rear Axle: A drive axle with drum service and parking brakes

Engine and Transmission Options: Cummins C240 engine + Japanese transmission

6.5 Hydraulic Operating System

The hydraulic operating system consists of hydraulic pump, cycloid motor, front and rear lifting cylinders hydraulic valve, oil piping and other components . When installing a front outrigger, the emergency hand operated pump installed in the product can retract the outrigger in an emergency manner when the engine fails to run normally or the power fails, so that the self-propelled conveyer-belt loader can be evacuated

from the airplane timely.

Solenoid valve blocks are sourced from international brands.

Imported balance valves are installed in the conveying system to prevent bulky cargoes from being unloaded too fast and causing danger.

Hydraulic pipe fittings are joints and seamless galvanized steel pipes sourced from domestically renowned brands.

The volume of hydraulic oil tank is 70L.

6.6 Electrical System and Safety Device

The electrical control system includes travel signal and control, engine electrical, conveyor belt lifting and travel control. The product's electrical control circuit is controlled via relays; it is neat in circuit layout and reliable;

An engine tachometer and hour meter, fuel level gauge, high engine coolant temperature indicator, turn indicator, parking indicator, low oil pressure indicator, outrigger retracted-in-place indicator, emergency stop button, lifting switch for conveying rack's front and rear ends, engine start switch and lifting switch are mounted in the instrument panel.

The system voltage is DC 12V.

6.7 Main configuration:

No.	Item	Type	Brand	Note
1	Chassis	Self-made	china	
2	Cabin	left drive	china	
3	Engine	404D-22	Perkins (England)	Europe III
		AK-C240PKJ-30	ISUZU(Japan)	Europe III

		QSF2.8	Cummins(USA)	
4	Transmission	PST2	Graziano (Italy)	
		Y43280E	Japan	
5	Front and rear axles		China	
6	Gear pump	CBHZ-F25	China	
7	Tire		China	
8	Feed belt	700mm	USA	
9	Hydraulic cylinder		China	
10	Hydraulic block	RPE3-063	ARGO	Option
		DSG-01-3C4	China	
11	Conveyor motor	JS-250	EATON(USA)	
12	Check valve	VUR380	Oleoweb(Italy)	Option
		CIT-06-04-50	China	Standard
13	Balance valve	MM-OMP/OMR	EATON(USA)	
14	Magnetic ball valve	EDT6	Oleoweb(Italy)	
15	Hydraulic steering gear	XCEL45	EATON(USA)	Option
		101S-1	China	Standard
16	Hose fitting		Parker	
17	Relay	RH4B-UL	Japan	
18	Relay socket	PTF14A-E	Japan	
19	Button	YWIB-A1E10	Japan	
20	Travel switch	WLNJ-30	Omron	
21	Emergency switch	YW1B-V4E10R	Japan	
22	Alarm lamp	FL-4871	Japan	
23	Indicator lamp		Japan	