

Telescopic Belt Conveyor

Operation Instruction & Maintenance Manual

Manufactured by:

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Preface

Dear users,

- I. Thank you for choosing the telescopic belt conveyor products manufactured by APOLLO. We hope the belt conveyors you purchased would satisfy you.
- II. This operation manual consists of installation, detailed operation and maintenance rules in daily use.
- III. In case of any complex maintenance, please contact our company for getting more professional instruction or engineer assistance.
- IV. In case of any abnormal situation after received this machine, or damage during the transportation, please notify us immediately, we will solve it as soon as possible.
- V. Considering constant improvement for this equipment by our company, we reserve the right to modify the design version of the machines. In case of any difference on the configuration between this instruction and your purchased machines, please operate the machine according to real using condition or contact us for advice.
- VI. This document is used for guidance only. Copy right prohibited !

Warning: Without the consent of our company, it is prohibited to disassemble the telescopic belt conveyor. Our company will not be responsible for any abnormal operation.



Safety and Warning labels

Please pay attention to the safety tips and warning tips in operation



No Thoroughfare

No go through underneath the arm of telescopic belt conveyor



No Riding

Not allowed Riding on the telescopic belt conveyor



Watch Your Hand

Please be careful your hand, avoid finger pinch.



Dangerous Voltage.

Dangerous voltage. Make sure to cut off the power supply before maintenance.



High Pressure Prohibited

High pressure is prohibited on the telescopic belt conveyor when it is stored



Forklift Loading/Unloading

The position of the center of gravity corresponding to the forklift arm in case of the loading/unloading with forklift

Operation Manual

1. Power-on Process:

- ① Turn on the cam switch on the side of the cabinet.



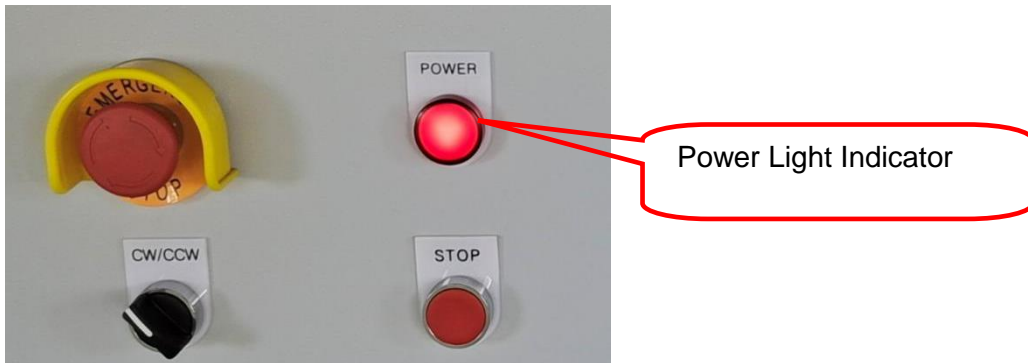
Master switch (OFF)



Master switch (ON)

- ② Open the cabinet, push all the air switches to be ON to get main power.

- ③ After the conveyor get power, the power indicator light on the electric cabinet will be red,



2.3 Possible trouble shooting and solutions:

After the initial access to the power supply, it may come some abnormal states:

Abnormal state	Possible reason	Treatment
Power light is on, but can not START the machine.	Emergency Stop were locked	Loose Emergency Stop
Can not EXTEND	Safety bar was pushed down	Push up the safety bar.
Can not UP the conveyor	Phase disorder sequence	Exchange any two lines of motor between U2, V2,W2

2. Equipment Operation:

- ① **START:** Press the “START” button on the control cabinet or in front of the conveyor, the belt start running.
- ② **CW/CCW:** Switch the CW/CCW to CW position, the conveyor will run as clockwise direction. If you want to switch to the CCW direction, you need to press STOP button firstly, then switch to CCW.
- ③ **STOP:** Press the “STOP” button, the running belt will stop immediately.
- ④ **EXTEND and RETRACT:** Press the “EXTEND” button according to the loading demand for the carriage, so that the telescopic belt conveyor will extend to the required position; and press the “RETRACT” button to retract the conveyor (The extend and retract function is momentary and will immediately stop when the buttons are released).
Remark: When the conveyor is in horizontal status, then can allow to retract the conveyor. Forbidden to retract conveyor with fast speed when the conveyor is in UP status.
- ⑤ **UP and DOWN:** This functions enable the operator could adjust the height of the telescopic belt conveyor in the carriage at any time according to the stacking height of the cargo in the carriage, through press “UP” and “DOWN
- ⑥ **LIGHT:** turn on the LIGHT” switch and the LED lamp is on.
- ⑦ **SAFETY BAR:** There is a safety bar at the front of the conveyor, it will stop extending if touch it



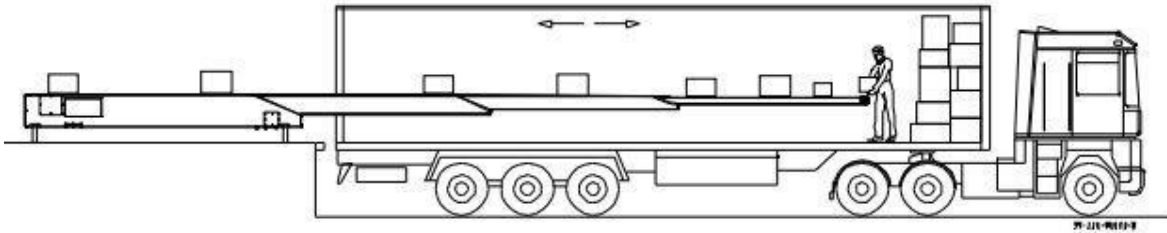
- ⑧ **EMERGENCY STOP:** in case of any abnormal emergency situation, push “Emergency Stop” button to stop the conveyor, after the abnormal situation has been solved, release the “Emergency Stop” button and all the buttons enabled.



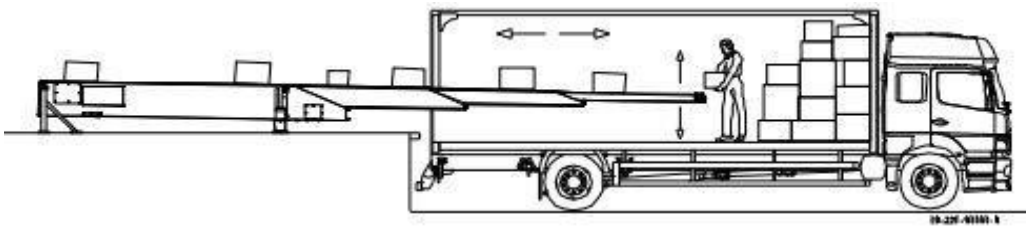
Immediately press the emergency stop button in case of emergency to protect the safety of personnel and equipment;

Operation examples

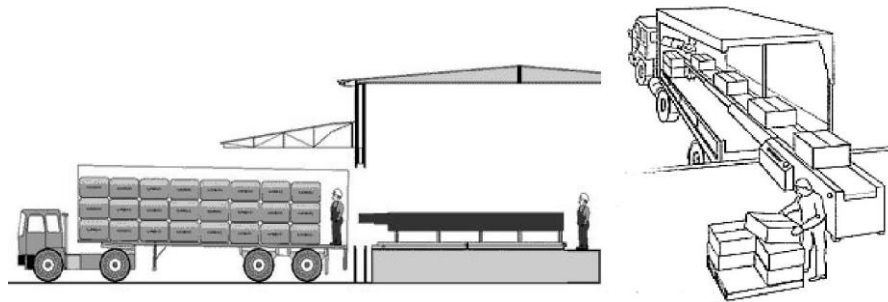
When loading or unloading, under the use of the telescopic belt conveyor, the operator shall control the telescopic belt conveyor from the front so that the belt conveyor is always at the correct position.



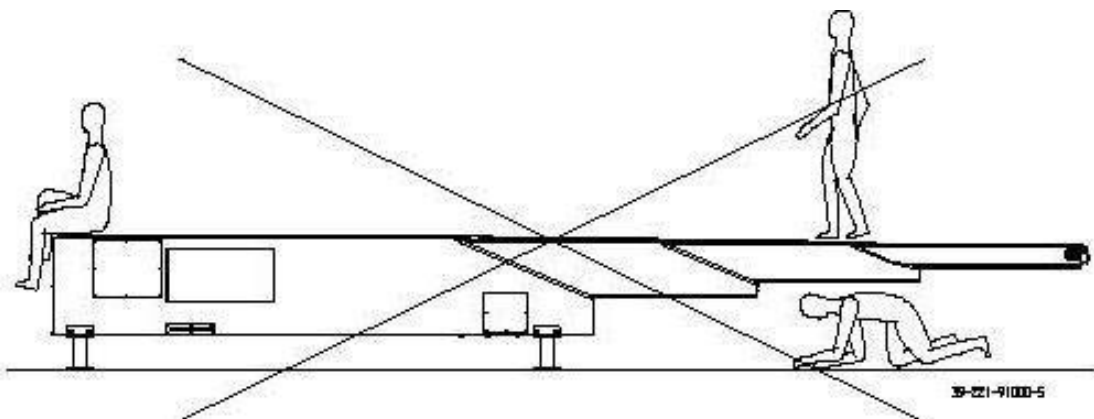
If the telescopic belt conveyor is featured with the hydraulic incline function, the operator may adjust the height of conveyor to a required level. For easy loading and unloading, please try to put the goods in the center of the belt.



Schematic diagrams for the loading process



Below actions are forbidden:



Maintenance Manual

Maintenance schedule

Checking time		Checking parts	Abnormal condition or related solutions
Days or Hours			
Every day		Whole machine	Unusual noise or vibration. Other visible damage. All protective device is in place. Make sure the front safety anti-collision bar is working properly. No leakage from the hydraulic system. Check that all the buttons are normal and free from damage.
		Belt	Check the belt if there is deviation Check the belt if scratched or damaged
Every month	160 Hours	Roller	Check roller and bearing block for debris, such as tape, paper which are easily stacked around the roller. When this happens, stop the machine and carefully remove the debris. Check for abnormal wear and noise.
		Other parts	Check visible cable, wire direction. Check the drive chain.
		Buttons	Check the response sensitivity of each button to ensure that it can be used normally.
Every 6 months	1000 Hours	All chains	Apply the cloth to the chain with oil and lubricant Inspect chain and sprocket teeth to see wear condition.
		All bearings	Check for visible bearing wear condition
Every year	2000 Hours	Control system	Check the limit switch if reasonably fixed to the specified position.
		Hydraulic system	Check hydraulic pump station and cylinder if happen oil leakage
Every 3 years	15000 Hours	Motor	Replace the oil inside the unit. Clean and adjust the boom of driven motor, which requires special skills and expertise.

1. Daily Care

- 1) When telescopic conveyor works, must monitor the running of the machine during operation, the normal range of the belt moves to both sides at +/- 20mm, if the belt moves to one side more than 30-40mm, please immediately stop machine and adjust belt.
- 2) Please do not overload; the maximum load capacity is 50 kg / m. Cargo shall be put onto the machine softly, the shock vibration will reduce the life of machine.
- 3) During telescopic conveyor in working, please do not walk or crawl under the telescopic conveyor, do not put your fingers under the belt. Do not touch anything beneath the cantilever.
- 4) Check out every day to see whether extend / retract smoothly, whether there is abnormal sound, shaking, vibration and so on, if happen abnormal phenomenon, be sure to stop machine to check problem.
- 5) Check daily whether buttons, switches, emergency stop, the safety anti-collision strip response well, if abnormal, please replace then use telescopic conveyor.
- 6) Check daily hydraulic pump station, oil leakage, any abnormal sound, the operation response, if the above phenomenon occurs, be sure to stop machine to check problem.
- 7) Every month, check roller and bearing block for debris, such as tape, paper which are easily stacked around the roller. When this happens, stop the machine and carefully remove the debris.
- 8) Check out the chain tension every week, every 6 month, moistened with oil cloth to wipe the chain, and coated with lubrication oil.
- 9) Maintain electrical control box wires neat, no messy, keep the box clean and free of debris.
- 10) Check weekly for the machine screw fasteners to see whether there is loose, add lubrication oil for bearing.

2. Regular Maintenance (Every three months)

	Maintenance Item	Maintenance measures
1	Check the tension status of belt	Adjust tension device of roller
2	Check whether there is a conveyor belt deviation phenomenon	To ensure that the belt is in the intermediate position
3	Check whether extension, retraction is smooth running	Lubricate chain, sprocket position,
4	Check button switches, emergency stop whether in sensitive response	If abnormal, replace the new electrical components
5	Check rotation of each roller if smooth	If abnormal, make adjustment
6	Check whether the machine screws are loose	Reinforced checking
7	Check if there is sagging for telescopic boom	If occur this phenomenon, fine-tune the correction to the state level
8	Check the drive sprocket, the chain if loose	If occur this phenomenon, please adjust the tensioned state to the normal
9	Check the wiring of the driven motor for loose	If occur this phenomenon, fastened to a safe state
10	Check whether the motor wiring if loose	If occur this phenomenon, fastened to a safe state
11	Check telescopic rail guide wheel if normal	Check the running condition, guarantee smooth guide pulley
12	Check whether the retractable cable if damaged / broken	If occur this phenomenon, replace with the new cables
13	Checking the operation of limit switch	To test and ensure the normal response sensitive state
14	Check the status of safety back-up limit switch	Ensure normal response when back-up
15	Check the control box for the operating state of the electrical component	To ensure that all components are working properly
16	Clean machine like the debris, dust, etc.	Ensure that the inside of the machine clean and free of foreign material
17	Clean electronic control box like debris, dust etc	Electronic control components ensure no dust cover
18	Check if safety warning labels is damaged, torn, altered etc.	If occur this phenomenon, please paste the new label to ensure a security warning and reminder

3. Electrical Maintenance:

Problem	Possible reason	Corrective measures
No control power supply	Fuse failure	Replace the fuse
	PLC failure	Replace PLC
No response of the buttons at front	The contactor of buttons failure	Replace the contactor of buttons
	Signal wires failure	Check the failure, connect the signal wires or replace new wire.
Motor no response when start machine	E-stop button locked	Loose all E-stop buttons
	Frequency converter failure	Check the failure code of frequency converter, solve problem then power off and power on again.
	The contactor of START button damaged	Replace the contactor of START button
	Control wire damaged	Replace the control wire
	PLC failure	Replace new PLC
	Motor failure	Replace new motor
Can not EXTEND	The EXTEND button failure	Replace the new EXTEND button
	Anti-collision bar got problem	Repair the anti-collision bar
	Front limit switch damaged	Replace the new front limit switch
	Brake not opened	Check problem and solve
	Frequency converter problem	Replace new frequency converter
	Connection wire failure	Repair or replace new wire
	Motor failure	Replace the motor

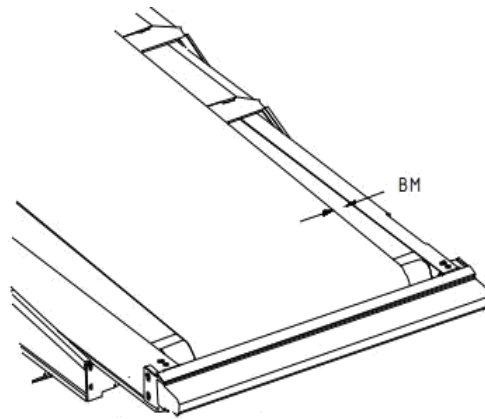
Can not RETRACT	The RETRACT button failure	Replace the new RETRACT button
	Rear limit switch damaged	Replace the new rear limit switch
	Brake not opened	Check problem and solve
	Frequency converter problem	Replace new frequency converter
	Connection wire failure	Repair or replace new wire
	Motor failure	Replace the motor
Can not UP	The UP button failure	Replace the new UP button
	The phase sequence of motor was wrong	Exchange any two wires of hydraulic pump motor
	Thermorelay overload	Press the blue button to reset thermorelay
	Hydraulic oil shortage	Refuel the oil
	Hydraulic oil was contaminated	Checking mechanical operation of solenoid valve
	Pump core failure	Replace the pump core
	The oil outlet of pump was blocked	Clean the module of pump
	Hydraulic motor failure	Replace new hydraulic motor
Can not DOWN	The DOWN button failure	Replace the new DOWN button
	Solenoid valve failure	Replace the solenoid valve
	Oil return port of pump was blocked	Clean the module of pump

4. Driven parts Maintenance

Problem	Possible reason	Corrective measures
Driven motor no action	Failed power supply	Check motor power supply
Belt is not properly tracked	Belt received external force torque	Check whether the goods on the belt seriously off-centre
	Belt roller position	Check whether the adjustment roller is adjusted
	None of the above	Readjust the belt
The edges of the belt damaged	Belt friction in the chain drive	repair or replace the belt
Deep notch on the belt	Load damaged	Repair belt
	Other objects damaged	Find and remove the damaged objects, repair or replace the belt
Belt disjointed	Not repaired the old incision yet	Removing the damaged objects Repair or replace the belt
Chain no action	Chain sprocket not seized	Tighten the chain
	Chain joints off	Re-install chain joints
The noise from the belt drive	Object stuck in the belt path	Remove the object, and if necessary, repair the belt
	Noise from one sprocket	Replace the sprocket or bearing
	Bearing damage	Replacement of bearings

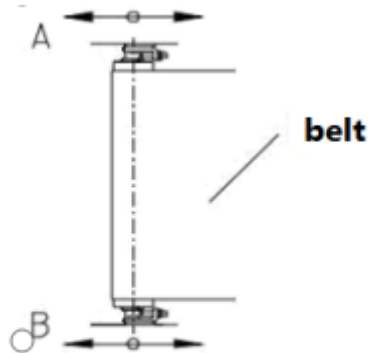
Belt deviation adjustment method

Belt adjustment requires skill and experience, only can be adjusted by trained personnel. Telescopic conveyor belt has a rated tension coefficient, for the standard conveyor belt and the conveyor belt after 500 hours use, the stretching amount is about 9mm stretch, we must adjust the tension of the telescopic conveyor, in order to pull the normal load, and there will be no slipping phenomenon.



During the normal operation of the telescopic conveyor, the side movement of the belt is allowed to be $\pm 20\text{mm}$. If the belt moves more than 30-40mm to the side and the belt is not damaged, the belt should be stopped immediately and adjusted.

If point A has tension, the belt should run towards the other side with tension. At this time, the roller needs to be adjusted. Only $1/4$ turn of adjustment screws can be turned at every time, and the adjustment effect can be observed after 15 minutes.



Note: if the belt is allowed to run in reverse, it must be adjusted in both directions to achieve the correct belt tracking, this is a time-consuming job.

5. Hydraulic lift maintenance

Problem	Possible reason	Corrective measures
pump motor no action	power supply	Check the motor power supply
No pressure	Pump rotating backwards	Check the direction of rotation of the pump Check coupling, pump and motor Check the oil level Check hose positioning Check valve function, detect leaks
	Pump does not rotate	
	The oil level is too low	
	Oil flows from the tank or defective cylinder valve	
Oil contamination	After repair, the component is not properly cleaned	Cleaning Components
Pump noise is too high, cavitation	Vacuum leak; Release or discharge valve is set too high	Repair or replace the leaking line Reset or replace the valve
Pump unable to supply oil	Low level in the tank	Add liquid
	congestion of oil suction pipe Air leakage	Clean or replace the filter Repair or replace the leaking line
Excessive pump wear	Wear dirt in the hydraulic oil	Change the oil
	Oil viscosity is too low	Change the oil
The boom began raising or lowering, then stopped	Cylinder speed valve trip, if the oil flow rate is kept too fast, the speed of the valve will be closed,	Slowly moves the boom in the opposite direction ; Reset speed valve

Remark: If machine comes any problem, please contact Apollo timely for recommended solutions.

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