USERS MANUAL
FOR
INCLINE CONVEYOR
SERIES LSE

CUSTOMER:_____

_

SERIAL #:_____

DATE OF MFG:_____

CONVEYOR MODEL: _____

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crizaf
Automation Systems

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0. INTRODUCTION

This user manual will explain the specifications concerning the LSE series conveyor system. The user manual covers explanations from installation to operation of the LSE conveyor system.

A. DIMENSIONS

The LSE series conveyor is available in the following standard sizes:

Model	Usable Width	Length
LSE/1-A	12 inch	45 inch
LSE/1	16 inch	45 inch
LSE/N-A	12 inch	59 inch
LSE/N	16 inch	59 inch
LSE/2-A	12 inch	78 inch
LSE/2	16 inch	78 inch

Special dimensions available upon request.

B. SPECIFICATIONS

1.0 Frame

The conveyor frame consists of anodized extruded aluminum profile 80mm (3 inches) in height by 25mm (1¼ inch) thick. Furthermore steel parts are used in areas which require high strength (motor plate, telescopes, legs etc.). The belt support is made from galvanized sheet metal. The high quality ball bearings and hardened sprockets guarantee a long lasting maintenance free operation. Infeed hoppers are manufactured from aluminum 2 mm thick.

2.0 Belt

The standard belt consists of a non-slip (PVC) two ply fabric with double finger jointing to insure maximum belt life. The belt guidance is assured by the THRU self aligning design along the entire length on both sides of the conveyor. The belt laps ½" per side under the side rails. The belt tension is preset at the factory.

2.1 Optional belt types:

a) **Smooth endless Polyurethane belts, resistant up to 212°.**

b) **Smooth endless Polyurethane belts with/without cleats and/or SPONDAFLEX side wall design.**

Note:
For conveyors with cleats:
Keep enough clearance between the cleats of the belt and any container standing in front of the conveyor. This will extend the life time of the belt.

WARNING:
Over tightening of the belt may void warranty.

3.0 Legs

The legs are made from zinc plated perforated steel tubing to guarantee optimum resistance to corrosion and an easy height adjustment. They slide into steel telescopes, mounted to the conveyor frame. The models with 59" and 78" are equipped with a base made from steel tubing with (2) 2¼" casters and (2) steel posts for stability. The models with 45" length are equipped with one solid steel platform with nylon wheels 1 inch.

4.0 Drive

4.1. Motor

The standard gearmotor is a Dayton 1/6 HP, 110 VAC, 60 Hz single phase TEFC gear motor with fixed belt speed 20 fpm.

Optional motors:

- **90 VDC 60 Hz 1/8 HP, permanent magnet TENV gearmotor.**
- **260/440 VAC, 3-phase gear motor.**

Note:
Special motor HP, size and torque available upon request.

4.2. Control

The standard control is a single pole manual motor starter switch. This standard unit is overload protected and mounted inside a NEMA 1 enclosure.

Optional controls:

- **Variable speed control, to be used with a 90 VDC permanent magnet gearmotor.**
- **Three pole manual motor starter switch with overload protection, to be used with 3-phase gearmotor.**
- **230 VAC 60 Hz variable speed inverter HITACHI - SINGLE PHASE INPUT- (to be used with 3-phase gearmotor)**

Note:

Special control systems are available upon request.

4.3. Power transmission

A roller chain transmits power to the drive roller. The drive and idle rollers are mounted on ball bearings which are lubricated. The drive roller transmits the power to the belt.

C. INSTALLATION

Every conveyor is shipped pre-tested at the factory. All conveyors are shipped with a 15 feet cord terminating with a standard 3-prong plug ready to be plugged in any 110 VAC receptacle with ground. The direction of rotation is factory preset. The 3 phase models are shipped without receptacle unless specified by customer.

Note:

Conveyors with 3-phase gear motors might have the wrong direction of rotation preset at the factory, depending on the polarity of the 3-phase outlet. In order to set the direction, follow these instructions:

WARNING:
ALWAYS UNPLUG THE CONVEYOR FROM ITS POWER SOURCE BEFORE ANY MAINTENANCE IS DONE.

1. **Connect the conveyor to a 3-phase power source according to the motor wiring. (A wiring diagram is located on the inside of the cover of the electrical housing of the motor)**
2. **Lift up the PVC part retainer flap inside the hopper before you test the belt direction, to protect the belt and the flap!**
3. **Turn on the manual motor starter switch.**

a. If the belt runs from the "infeed" end towards the "discharge" end, the direction of the belt is correct. The flap may be released and the conveyor is ready to run.

b. If the belt runs from the "discharge" end towards the "infeed" end, the direction of the belt is incorrect.

- **Disconnect the conveyor from the power source!**
- **Open the enclosure of the motor starter switch.**
- **Swap two wires on the line side of the manual motor starter switch. (either L1 with L2, L1 with L3 or L2 with L3)**
- **Close the enclosure of the motor starter switch.**
- **Connect the conveyor to the power source.**
- **Turn the manual motor starter switch ON.**

WARNING:
THE CONVEYOR MUST BE CONNECTED TO GROUND, FOR THE SAFETY OF OPERATING PERSONEL!

D. OPERATION

WARNING:
Any height or angle adjustment of the of the conveyor should be made carefully. Avoid injuries by choosing a proper lifting device.

1. Conveyor angle adjustment.

The angle adjustment for the LSE models ranges from 0°(horizontal) to 45°.

1. **Turn the conveyor system OFF.**
2. **Loosen the handle(s) located on the swivel telescope.**
3. **Adjust the angle of the conveyor as desired.**
4. **Tighten the handle(s).**

2. Height adjustment of the conveyor legs

2.1. Conveyor height adjustment/down

1. **STOP the conveyor.**
2. **Remove the height adjusting pins.**
3. **Insert the pins in the proper hole setting and insert the safety pin.**

4. **Release the set knob in order to slide the telescopes down to the desired position.**
5. **Tighten the screw knob.**

2.2. Conveyor height adjustment/up

1. **STOP the conveyor.**
2. **Remove the height adjusting pins.**
3. **Release the set knob in order to slide the telescopes up to the desired position.**
4. **Insert the pins in the proper hole setting and insert the safety pin. Tighten the screw knob.**

Note:

The screw knob is not suppose to fit into the holes of the tubing.

3.0 To operate the LSE type conveyor, perform the following:

1. **Plug the power cord into a power source according to the motor voltage.**
2. **Adjust the conveyor in the desired angle.**
3. **Turn the manual motor starter switch to the "on" position.**

Note:

If the conveyor is equipped with optional s-style roller separators or a discharge chute, allow enough clearance between the belt and the devices to clear the cleats as they turn around the idle roller.

WARNING:
THIS CONVEYOR IS DESIGNED TO OPERATE IN A REASONABLY CLEAN, DUST-FREE AND MOISTURE-FREE INDUSTRIAL ENVIRONMENT !!! OPERATING THE CONVEYOR IN A WET ENVIRONMENT OR IN THE PRESENCE OF OIL, METAL SHAVINGS, ETC., IS DANGEROUS FOR THE OPERATOR !! THIS MAY CAUSE DAMAGE TO THE CONVEYOR AND VOID THE WARRANTY !!

E. PREVENTIVE MAINTENANCE

The LSE series conveyor is essentially maintenance free. However, a few easy preventive maintenance steps will increase the lifetime of the conveyor.

1. **Control the tension and the lubrication of the drive chain regularly. The tension is preset at the factory. If it's necessary to adjust the tension, turn off the conveyor and unplug from the power source. Loosen the four nuts (Pos.4) on the motor plate. Pull the motor vertically up or downward until the right tension of the chain is achieved. To test the right tension you should be able to pull the two ends of the chain as they lay around the motor sprocket with your fingers towards each other about ¼ to ½ inch from each side. Make sure that the motor sprocket runs parallel with the chain. Re-tighten the four nuts (Pos. 4). Do not over grease the chain.**

2. **Keep the conveyor clean! Especially moving parts including the belt. The rollers and chain can create an additional load on the motor if they are not clean. Make sure that no plastic parts are caught underneath the side rail. To clean the conveyor, do not use sharp cleaners or alcohol. Use a common household cleaner with warm water to clean the belt.**

3. **Attached with the conveyor spare parts list is a list of recommended items. Keeping these items in stock will reduce the down time of your conveyor, if it needs to be repaired.**

<u>BELT CHANGE:</u>

The following instructions describe the procedure for replacement of the belt on the LSE series conveyors. The mentioned part numbers refer to the attached spare parts drawing of the conveyor.

WARNING!
ALWAYS UNPLUG THE CONVEYOR FROM ANY
POWER SOURCE BEFORE SERVICING!

1. **Take off all the roller guards, part # 17 (not Motor guard Part # 39)**
2. **Release Belt tension: (Note: Before you release the belt tension make a note of the dimension between the frame and the tensioning arms (#15) for easier re-assembly)**
3. **Loosen the nuts (#16) which tighten the tensioning arms (#15) against the frame.**

4. **Loosen the set screws (#10) to be able to take the shaft out of the roller assembly.**
5. **Take out the shaft (#49) and remove the idle roller (#42) The belt now is completely loose.**
6. **Remove one side rail (non-motor side #35)**
7. **Take the conveyor off the leg assembly and turn it motor side down.**
8. **Remove the two nuts (#27) which connect the Motor post (#29) with the frame (non-motor side)**
9. **Slide off the worn belt and slide on the new belt.**
10. **For the re-assembly use reversed order of above steps.**

BELT TENSIONING & TRACKING:

1. **Once the new belt is installed, set the tension by tightening the tensioning arms (#15) to approx. 2–3 mm below the dimension between frame and tensioning arms that you noted before you disassembled the conveyor. (Step 2. Above)**
2. **Connect the conveyor to proper power source and turn it on. (ATTENTION: THE ROLLER GUARDS ARE NOT INSTALLED YET. KEEP YOUR HANDS AWAY FROM ROTATING PARTS!!!)**
3. **How to track the belt: *The final belt tension is adjusted during the tracking process. The belt is always tracked from the idle end, NOT motor end!***
4. **The process of tracking the belt might take 10-20 minutes. Observe the motion of the belt. By adjusting the tensioning arms (#15) towards or away from the frame the tracking of the belt is influenced. To adjust the tensioning arms towards the frame, turn the nut (#16) that sits against the frame counter clockwise. To adjust the tensioning arms away from the frame, turn the nut clockwise. When turning the nut to track the belt use only half revolutions at a time and observe if the belt moves into the right direction.**
5. ***Adjust the tensioning arm away from the frame on the side where the belt tends to run to. If the belt runs to the right, bring out the right tensioning arm, if it moves to the left, bring out the left tensioning arm. Remember to do this cautiously in half revolutions with the nut (#16) to avoid an over tighten of the belt.***
6. **For Conveyors with Central V Guide Tracking System manual tracking is not necessary, since the V guide tracks the belt automatically. Ensure that the belt is not over tightened. The tension should just be enough to guarantee a motion without slip.**

F. ACCESSORIES

1. **Discharge chute. 16 gauge stainless steel chute with standard hardware for mounting on the discharge end of the conveyor.**

2. **Special side rails. 2½" (straight) or 6" side rails with PVC skirting to avoid parts jamming between the belt and the side rails.**

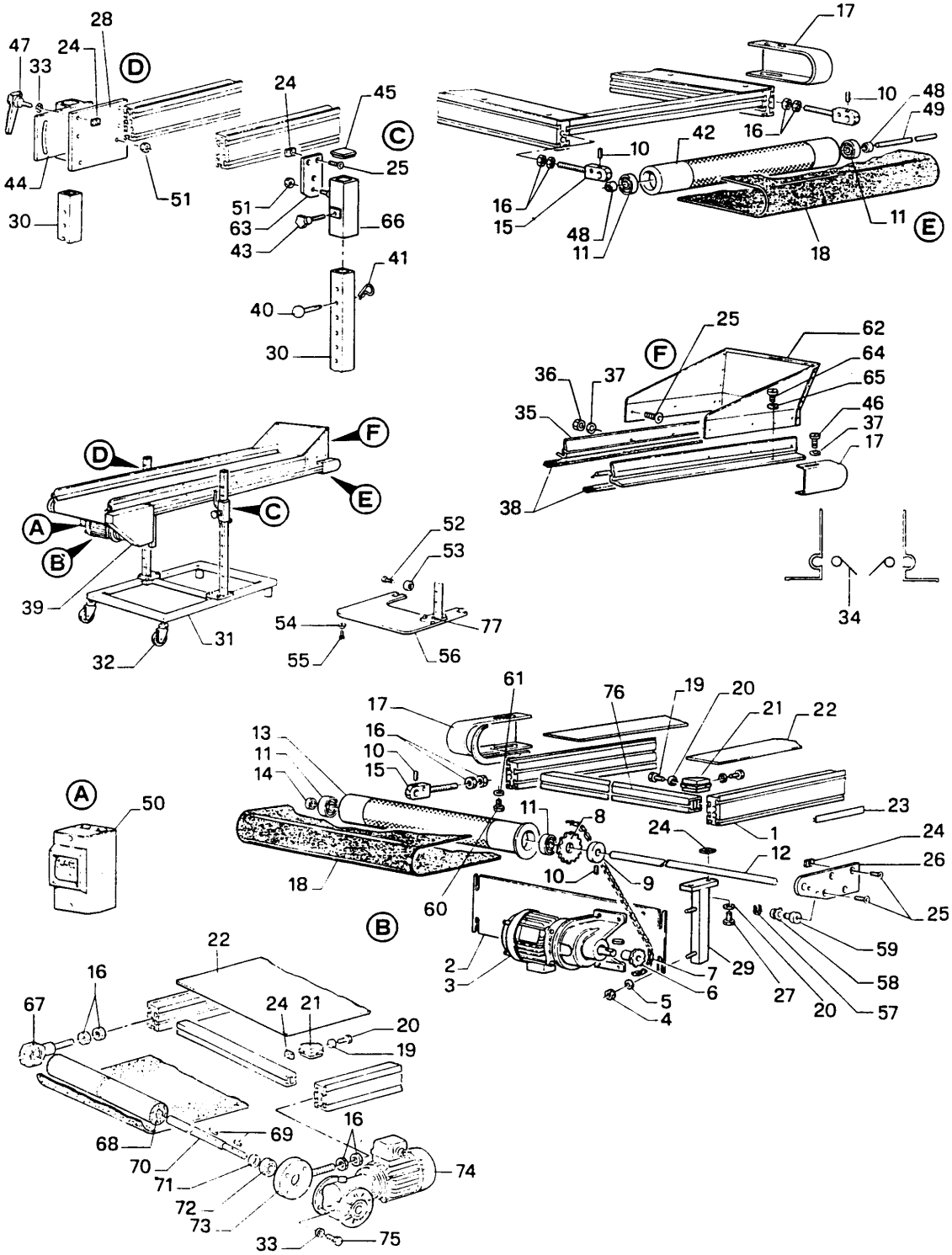
3. Part separator. The separators are mounted on the discharge end of the conveyor and are used to separate parts from runner systems. The separators are available in the following models:

- **S1, separator with one roller.**
- **S1-"finger", separator with "finger" type roller**
- **S1/2, separator with two rollers.**
- **S1/S, separator with one spiral roller.**
- **S1/2- star, separator with geared PVC sprockets.**

G. HOW TO ORDER SPARE PARTS:

1. **Determine the part number by utilizing the above spare part drawing and spare parts list.**
2. **To this number add the serial number of the conveyor.**
3. **Example: You want to order a conveyor belt for your conveyor with the serial # CE 000.**
   The Part number for a replacement belt is: LSE18
   The Serial number of the conveyor is: CE000

   THE ORDER NUMBER IS: LSE 18 CE000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Pos.	Description	Order #	Recommended Spare Parts
01	Anodized extruded aluminum profile type L	LSE 01	
02	Motor mounting plate	LSE 02	
03	Gearmotor (refer to QC sheet)	LSE 03	
04	Nut, M8	LSE 04	
05	Lock washer, ∅8 mm	LSE 05	
06	Gearmotor sprocket, 13 teeth	LSE 06	1
07	Chain (sold in 10ft. incl. (3) master links)	LSE 07	1
08	Drive Roller sprocket, 21 teeth	LSE 08	1
09	Locking collar, ∅10-25 mm	LSE 09	
10	Set screw, M6 x 10	LSE 10	
11	Roller bearing, 6202 ZZ	LSE 11	4
12	Shaft for drive roller, ∅15 mm	LSE 12	1
13	Drive roller ∅ 60 mm	LSE 13	1
14	Spacer, 5 mm	LSE 14	1
15	Tensioning arm LSE, LH	LSE 15	
15 A	Tensioning arm LSE, RH	LSE 15 A	
16	Nut, M14	LSE 16	
17	Roller guard	LSE 17	
18	Endless belt (refer to QC-sheet)	LSE 18	1
19	Hex head screw, TE M8 x 20	LSE 19	
20	Lock washer, ∅ 8 mm	LSE 20	
21	Angle bracket -- transverse support	LSE 21	
22	Galv. belt pan sheet metal	LSE 22	
23	Plastic cover for channel	LSE 23	
24	Square nut, M8	LSE 24	
25	Screw, TPSCE M8 x 18	LSE 25	
26	Support bracket for drive roller	LSE 26	
27	Hex head screw, TE M8 x 20	LSE 27	
28	Support bracket for adjustable swivel telescope LSE	LSE28	
29	Support for motor mounting plate	LSE 29	
30	Perforated leg for LSE	LSE 30	
31	Base for LSE (length 59“ and 78.7“)	LSE 31	
32	Caster, ∅ 50 mm	LSE 32	2
33	Washer, ∅ 12 - 24 mm	LSE 33	
34	PVC Skirting (only with 3.5 & 6 inches (80/150mm) Side rail)	LSE 34	
35	Side rails (refer to QC-sheet)	LSE 35	
36	Nut, M4	LSE 36	
37	Washer, ∅ 4 -16 mm	LSE 37	
38	Wear strip LOFRENE	LSE 38	
39	Chain guard for LSE	LSE 39	

Pos.	Description	Order #	Recommended Spare Parts

40	Pin with plastic ball	LSE 40	
41	Safety pin	LSE 41	
42	Idle roller ∅ 60 mm	LSE 42	1
43	Screw knob, ∅40 M10 x 15	LSE 43	
44	Adjustable swivel telescope for LSE	LSE 44	
45	Plastic cap for leg tubing	LSE 45	
46	Screw, TC M4 x 20	LSE 46	
47	Handle, M12 x 30	LSE 47	
48	Spacer, 4 mm	LSE 48	2
49	Shaft for idle roller, ∅15 mm	LSE 49	1
50	Manual starter 110 VAC switch	LSE 50	
51	Flat head nut, M12 DIN 439	LSE 51	
52	Hex head screw, TE M5 x 50	LSE 52	
53	Nylon caster for base LSE / 1(LSE /1-A) ∅30mm	LSE 53	
54	Rubber pad	LSE 54	
55	Screw, TC M6 x 12	LSE 55	
56	Base for LSE /1 (LSE /1-A)	LSE 56	
57	Seeger ∅15 mm OD	LSE 57	
58	Chain tensioning roller - nylon	LSE 58	1
59	Shaft for chain tensioning roller	LSE 59	
60	Hex head screw, TE M8 x 16	LSE 60	
61	Washer, ∅ 8 mm	LSE 61	
62	Aluminum part retainer LSE	LSE 62	
63	Support bracket swivel telescope LSE small	LSE 63	
64	Screw, TC M4 x 16	LSE 64	
65	Washer ∅ 4 x 16 mm	LSE 65	
66	Swivel Telescope LSE	LSE 66	
67	Self aligning support KOYO (RT angle motor only)	LSE 67	
68	Drive roller (RT angle motor only)	LSE 68	1
69	Spline, 6 x 30 mm (RT angle motor only)	LSE 69	2
70	Shaft for drive roller (RT angle motor only)	LSE 70	1
71	Spacer, ∅12-25 mm (RT angle motor only)	LSE 71	1
72	Roller bearing 6202 ZZ (RT angle motor only)	LSE 72	1
73	Flange (RT angle motor only)	LSE 73	
74	RT angle Gearmotor RNI 40 F1	LSE 74	
75	Screw, TE M8 x 25 (RT angle motor only)	LSE 75	
76	Transverse aluminum support	LSE 76	
77	Screw, TE - M10 x 25	LSE 77	