

Asset Recovery Information

07/16/2007

Alvey 880 Palletizer
Serial Number #01-KH15
Asset # CP000153
Location: Ross Products Division, Columbus Plant
Contact: Kelly Niekamp 614-624-6213

Pictures:







Manufacturer Audit

FKI Logistex (Formerly Alvey) audit conducted and produced total repairs needed of **\$3,713.59**. Itemized parts pricing is displayed in the audit report below.

880 Palletizer

Serial Number #01-KH15

Specific Assessment / Recommendations:

5 Infeed Belt Assembly

a. Drive

- 1) The motor drive chain is rusted, in very bad condition, and needs to be replaced.
- 2) The drive sprocket is still okay, but the driven sprocket has worn teeth.
- 3) Lots of cleaning is needed in the infeed area.
- 4) Chains must be kept lubricated.



Infeed Assembly - Reference Drawing # 65-88950

| MK # | QTY | UOM | Part # | Description | Unit Price | Ext. Price |
|------|-----|-----|--------------|-----------------------------------|------------|------------|
| 45 | 1 | EA | 1226024-9303 | Sprocket | \$23.83 | \$23.83 |
| 46 | 1 | EA | 2155026-9303 | Bushing | \$10.44 | \$10.44 |
| 81 | 10 | FT | 1202060-9303 | #60 Chain 5' req. Sold in 10' min | \$2.56 | \$25.60 |
| 82 | 1 | EA | 1203060-9303 | #60 Chain coupling | \$0.43 | \$0.43 |

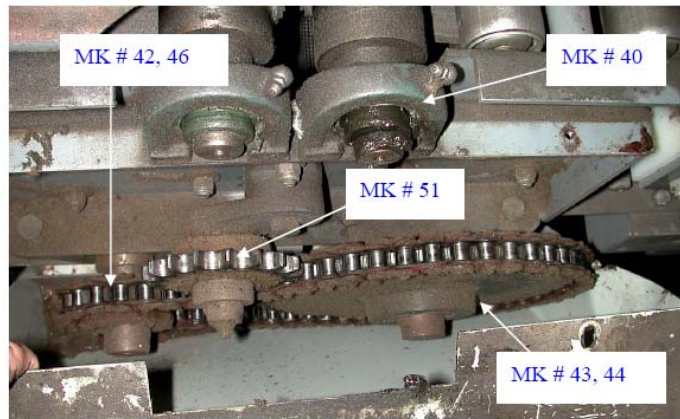
b. Belt

- 1) The incline belt is very worn. It is critical to the palletizer operation that the belt hold back the cases adequately. Smooth belts allow too much case back pressure against the cases crossing the spacer belt. Since the infeed was not provided by Alvey, part numbers are not provided. Nevertheless, the belt will need to be changed.
- 2) The tracking roller's mounting brackets are loose on both sides of the conveyor, especially on the left. The mounting brackets need to be tightened up. Loose mounting bolts will cause belt tracking problems.



3) Slave Drive unit

- a) The two belts feeding the palletizer are slaved together by sprockets and chain. The slave drive unit is very dirty. Cleaning is needed.
- b) The large driven sprocket has worn teeth and needs to be changed. The small sprocket is marginal.
- c) The chain tensioner has a worn sprocket that will need to be changed. The chain is worn, rusted, and stretched. New chain is needed.
- d) The pillow block bearings have blown seals. Once the seals are blown, the grease will tend to leak out. Aside from creating a mess, it should not create a problem if they are kept greased. FKI uses sealed-for-life bearings, so new bearings would not have to be greased. Considering the time and effort spent greasing bearings, it may be good to consider replacing the blown bearings for new.


Infeed Assembly - Reference Drawing # 65-88950

| MK # | QTY | UOM | Part # | Description | Unit Price | Ext. Price |
|------|-----|-----|--------------|-----------------------------------|------------|------------|
| 40 | 8 | EA | 0200113-9303 | Bearing | \$24.31 | \$194.48 |
| 42 | 1 | EA | 1226015-9303 | Sprocket | \$14.26 | \$14.26 |
| 43 | 1 | EA | 1218066-9303 | Sprocket | \$34.61 | \$34.61 |
| 44 | 1 | EA | 2155026-9303 | Bushing | \$10.44 | \$10.44 |
| 46b | 1 | EA | 2155019-9303 | Bushing | \$7.73 | \$7.73 |
| 51 | 1 | EA | 1293260-9303 | Sprocket | \$66.65 | \$66.65 |
| 81 | 10 | FT | 1202060-9303 | #60 Chain 5' req. Sold in 10' min | \$2.56 | \$25.60 |
| 82 | 1 | EA | 1203060-9303 | #60 Chain coupling | \$0.43 | \$0.43 |

6 Case Turner Assembly

a. Drive

- 1) The guard for the Cog Belt drive is missing. It needs to be replaced.



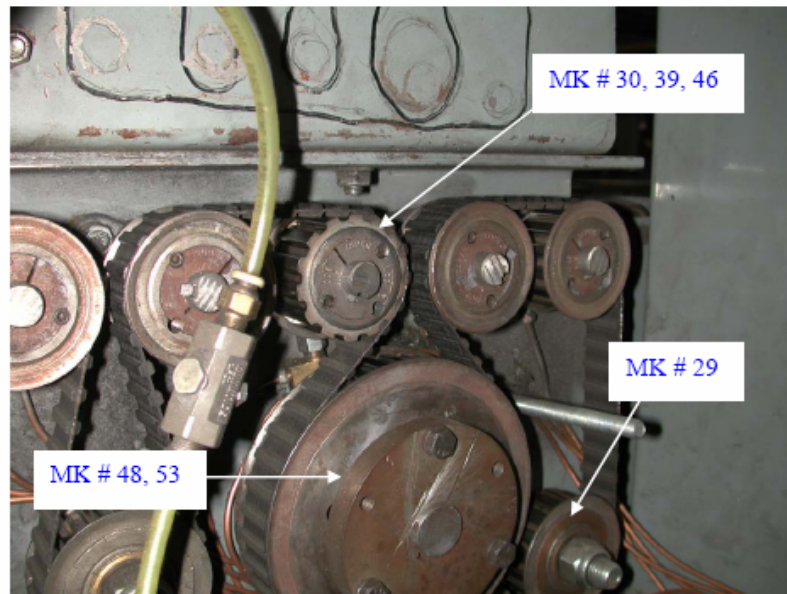
Case Turner / Live roller Assembly - Reference Drawing # 65-83512

| MK # | QTY | UOM | Part # | Description | Unit Price | Ext. Price |
|------|-----|-----|--------------|-------------|------------|------------|
| 16 | 1 | EA | 6550288-9303 | Guard | \$128.65 | \$128.65 |

- 2) The belt is too loose. It needs to be tightened up. There is some belt misalignment.



- 3) The large cog gear has a bent flange. Replacement would be the best option.
- 4) The lower left and right gear idlers have worn bearings. They need to be changed.
The lower right side idler is missing its flange.
- 5) The third from last gear idler (top row) is missing the flange.

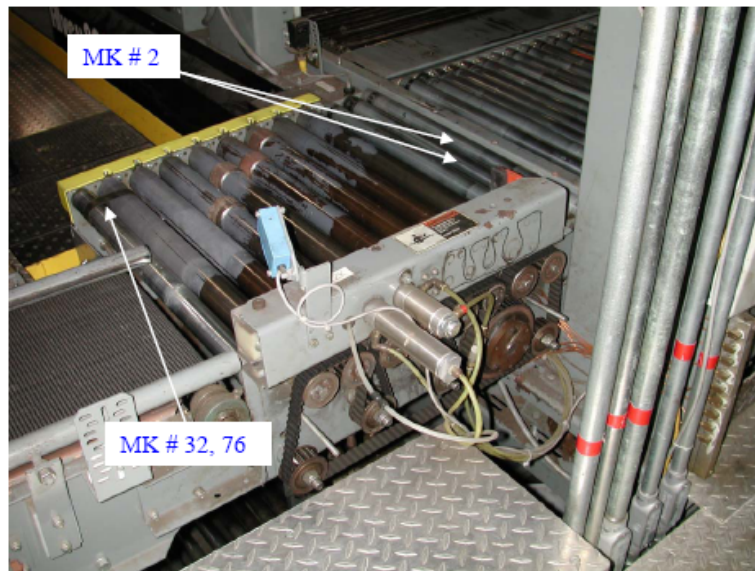


Case Turner / Live roller Assembly - Reference Drawing # 65-83512

| MK # | QTY | UOM | Part # | Description | Unit Price | Ext. Price |
|------|-----|-----|--------------|----------------|------------|------------|
| 29 | 2 | EA | 6557059-9303 | Gearbelt Idler | \$149.55 | \$299.10 |
| 30 | 1 | EA | 6552043-9303 | Key | \$4.67 | \$4.67 |
| 39 | 1 | EA | 2155007-9303 | Bushing | \$5.56 | \$5.56 |
| 46 | 1 | EA | 2309035-9303 | Pulley | \$22.53 | \$22.53 |
| 48 | 1 | EA | 2309038-9303 | Pulley | \$91.24 | \$91.24 |
| 50 | 1 | EA | 2406120-9303 | Belt | \$122.21 | \$122.21 |
| 53 | 1 | EA | 1399001-9303 | Key | \$0.41 | \$0.41 |

b. Rollers

- 1) The first roller is powered by slaving it off the powered rollers. The use of a tracking band, and activator band is required. The tracking band is missing, and the activator band is worn. Both need to be replaced.
- 2) The second from last roller has quite a bit of bearing wear. It is now marginal.
- 3) The third from last roller has an excessively worn bearing. It will need to be changed right away.

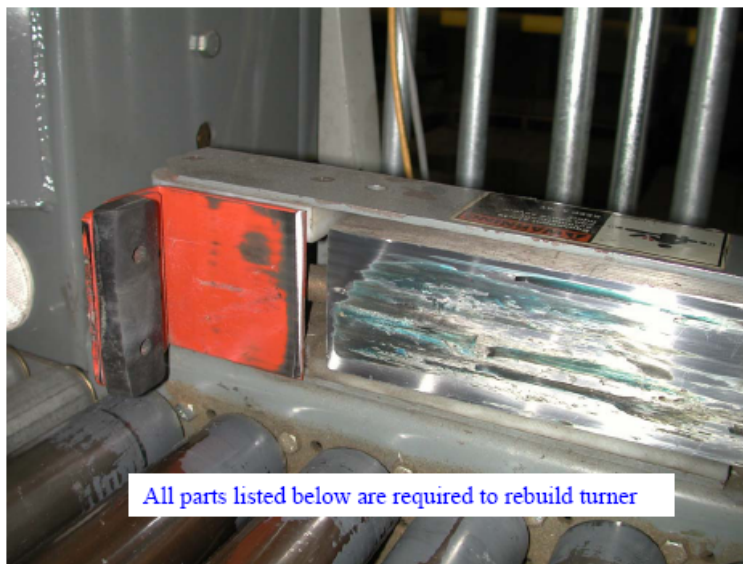


Case Turner / Live roller Assembly - Reference Drawing # 65-83512

| MK # | QTY | UOM | Part # | Description | Unit Price | Ext. Price |
|------|-----|-----|----------------|----------------|------------|------------|
| 2 | 2 | EA | 610001W28.00AX | Roller | \$9.41 | \$18.82 |
| 32 | 1 | EA | 2412301-9303 | Activator Belt | \$4.83 | \$4.83 |
| 76 | 1 | EA | 2412316-9303 | Tracking band | \$2.88 | \$2.88 |

7 Bump Turner

- a. The air cylinder mounting bracket is loose and needs to be tightened down.
- b. There is a rather severe air leak. It seems that the air cylinder seals might be leaking.
- c. The bump turner wear parts are now marginal and should be considered for replacement.
- d. The bumper pad is worn



Bump Turner Assembly - Reference Drawing # 65-89003

| MK # | QTY | UOM | Part # | Description | Unit Price | Ext. Price |
|------|-----|-----|--------------|---------------|------------|------------|
| 6 | 1 | EA | 6554001-9303 | Rod | \$20.29 | \$20.29 |
| 9 | 2 | EA | 6557013-9303 | Slide bar | \$17.87 | \$35.74 |
| 10 | 1 | EA | 6557002-9303 | Pivot filler | \$17.87 | \$17.87 |
| 11 | 1 | EA | 1301007-9303 | Roll pin | \$0.09 | \$0.09 |
| 16 | 1 | EA | 8022620-9303 | Air Cylinder | \$47.09 | \$47.09 |
| 24 | 1 | EA | 8700070-9303 | Rubber Bumper | \$3.67 | \$3.67 |
| 39 | 4 | EA | 1909367-9303 | Stop nut | \$0.02 | \$0.08 |
| 40 | 6 | EA | 1909460-9303 | Stop nut | \$0.02 | \$0.12 |

8 Live Roller Section

a. Drive / Snub Idlers / V-belt

- 1) The V-belt is cracked in many places. A new V-belt is needed.
- 2) The V-belt idlers are worn and need to be changed.

Note:

Since they hold the V-belt against the bottom of the rollers, the snub idlers should be checked routinely. The reason is that, as the snubs wear, they press against the V-belt unevenly causing premature failure of the belt. Worn or incorrectly tensioned snubs will also contribute to roller bearing failure. By not keeping the proper tension on the rollers, the shafts can jump up and down. In a relatively quick time the shafts wallow out the side frames. Since the snub rollers are inexpensive, the recommendation is to replace them once a year regardless of how they appear.



Case Turner / Live roller Assembly - Reference Drawing # 65-83512

| MK # | QTY | UOM | Part # | Description | Unit Price | Ext. Price |
|------|-----|-----|--------------|---------------|------------|------------|
| 23 | 16 | EA | 6556029-9303 | Bushing | \$10.72 | \$171.52 |
| 33 | 16 | EA | 0110119-9303 | Idler | \$2.24 | \$35.84 |
| 59 | 16 | EA | 0504630-9303 | Bolt | \$0.18 | \$2.88 |
| 66 | 16 | EA | 1900706-9303 | 3/8" Lock Nut | \$0.07 | \$1.12 |
| 70 | 16 | EA | 2600404-9303 | Washer | \$0.16 | \$2.56 |
| 71 | 16 | EA | 2600302-9303 | Washer | \$0.03 | \$0.48 |
| 52 | 1 | EA | 2412150-9303 | V-belt | \$14.70 | \$14.70 |

b. Rollers

- 1) All the rollers need to be changed because of worn bearings. Some of the roller bearings are completely gone (e.g. 11th roller).

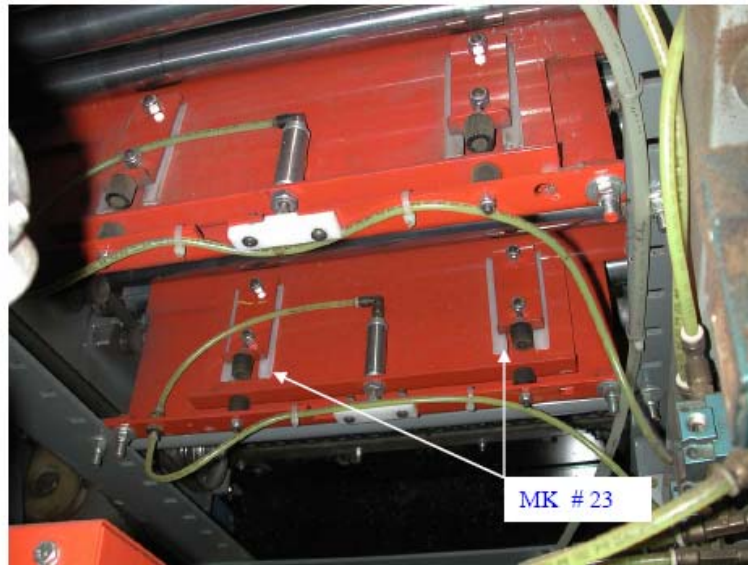


Case Turner / Live roller Assembly - Reference Drawing # 65-83512

| MK # | QTY | UOM | Part # | Description | Unit Price | Ext. Price |
|------|-----|-----|----------------|-----------------------------|------------|------------|
| 2 | 5 | EA | 610001W28.00AX | Roller 1.9 28"BF | \$9.41 | \$47.05 |
| 3 | 23 | EA | 6120073-9303 | Roller 1.75" 28" BF SL | \$20.32 | \$467.36 |
| 4 | 3 | EA | 6120081-9303 | Roller 1.75" 28BF w/o shaft | \$17.45 | \$52.35 |
| 12 | 3 | EA | 6554054-9303 | Hex Cross Shaft | \$44.23 | \$132.69 |
| 60 | 23 | EA | 1301001-9303 | Roll Pin | \$0.01 | \$0.23 |
| 66 | 23 | EA | 1900706-9303 | 3/8" Stop nut | \$0.07 | \$1.61 |

9 Case Stops

- a. New wearstrips are needed on the case stops. The blades are too loose. It is best if the stop blades do not contact the rollers. In the interim of replacing the wearstrips, tightening the mounting bolts may help.



| MK # | QTY | UOM | Part # | Description | Unit Price | Ext. Price |
|------|-----|-----|--------------|-------------|------------|------------|
| 23 | 8 | EA | 6557051-9303 | Wearstrip | \$3.63 | \$29.04 |

10 Pusher Bar**a. Guarding**

- 1) The guarding is not in the proper position. It will need to be put back on correctly before running the machine.

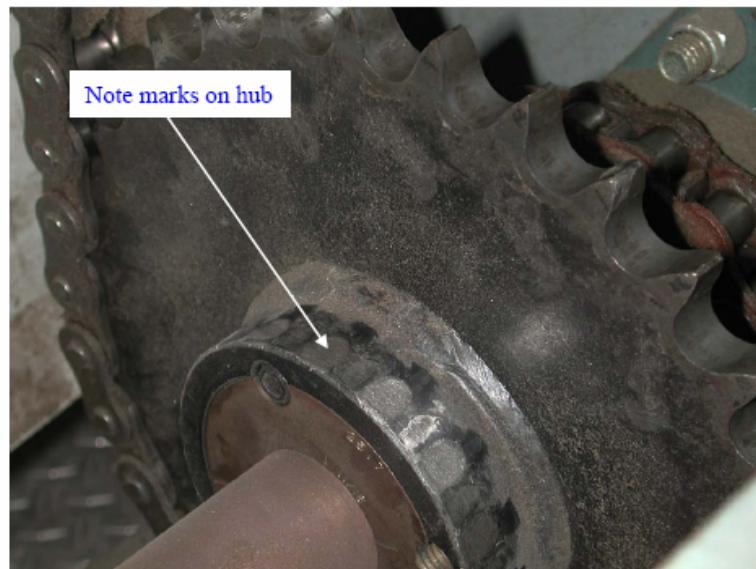


b. Drive

- 1) The hubs on the large drive sprockets are exhibiting wear marks indicating that they have been hit by the pusher bar clevis pins. This results when the pins are not installed in the correct direction. Please refer to the note about installation of pins under the section on the pusher bars. (Page 31).

Typically, when the pins are put in the wrong way, chain tension must also be loose, otherwise the chains will struggle to pull the clevis pin past the hub. It has been reported in some cases, that when the chains were tight, the clevis jammed on the hub, stalling the motor.

Running loose chains will result in shortened life of chains, guides, pusher bar end connection blocks, and chain tracks.



c. Chain and Idlers

- 1) The pusher bar chains are considerably too loose. They need to be tightened.

Note:

It is important that the chain tension is adjusted the same on both sides of the machine. Chains should be taut. A good measure is to pull the chain away from the end idler block. The chain should not be lifted off the idler block more than $\frac{1}{4}$ " or so with moderate finger pressure.

Please refer to the photo below.



d. Chain Tracks / Guides

Note:

The chain tracks needs to be kept tight to assure good operation. Loose tracks will enable premature wearing of the plastic chin guides.

- 1) The lower left metal chain track is loose. The mounting bolt is gone. It will need to be replaced.
- 2) The upper and lower right side chain tracks are loose.
- 3) The upper left track is bent and the plastic guide is gouged.

Note:

Bent tracks need to be changed. Although the metal can be bent back to proper position, once stressed, it will never be able to hold proper pressure on the guide. Because the metal is fatigued, it will quickly bend again. Changing the track is the only good solution.

- 4) All the plastic chain guides need to be changed.

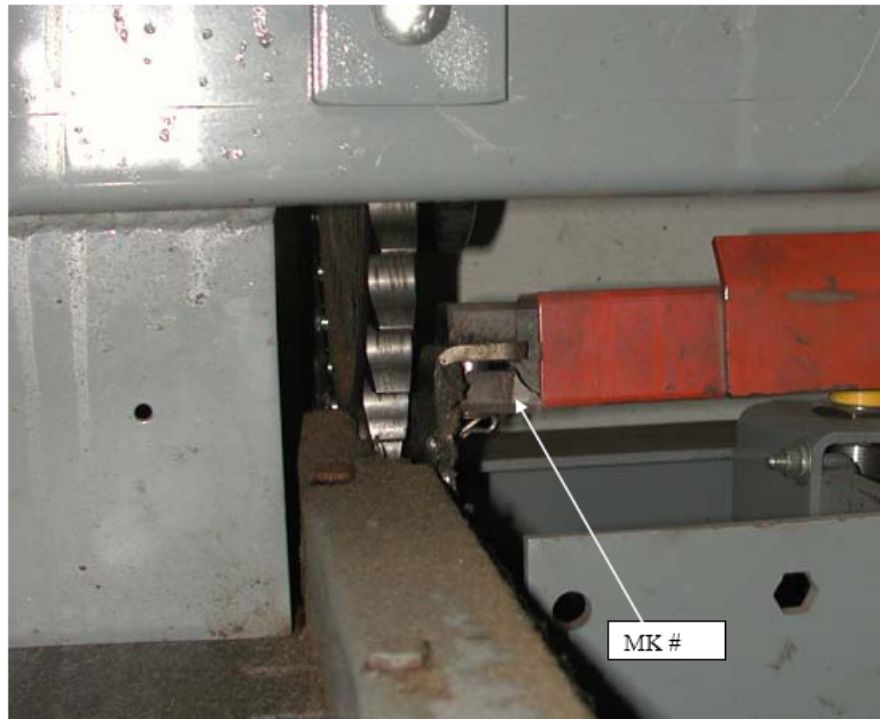


Assembly - Reference Drawing
65-81563

| MK # | QTY | UOM | Part # | Description | Unit Price | Ext. Price |
|------|-----|-----|--------------|---------------------|------------|------------|
| 41 | 1 | EA | 6555027-9303 | Upper chain track | \$61.68 | \$61.68 |
| 43 | 4 | EA | 6557100-9303 | Plastic chain guide | \$58.98 | \$235.92 |
| 44 | 2 | EA | 6557101-9303 | Plastic chain guide | \$82.12 | \$164.24 |
| 45 | 2 | EA | 6557102-9303 | Plastic chain guide | \$82.12 | \$164.24 |

e. Pusher Bars

- 1) One of the right side end connection blocks is broken. It needs to be changed immediately



Assembly - Reference Drawing
65-81563

| MK # | QTY | UOM | Part # | Description | Unit Price | Ext. Price |
|------|-----|-----|--------------|--|------------|------------|
| 47 | 1 | EA | CM00033-9303 | Connection Block and Attachment Kit (for two bars) | \$182.00 | \$182.00 |

f. Electrical Proximity Switch

- 1) The face of the proximity switch (controls stopping position of the pusher bar) has been hit by the pusher bar. This happens when the chains are too loose. The switch is working, but whether or not the life expectancy has been shortened, is questionable. The recommendation is to consider having a new switch on hand in case of failure.



g. Installation of pusher bar end connection blocks

- 1) Although at the time of the audit, the pusher bar end connection blocks were installed correctly, there is evidence that the machine has been running for some time with the connection blocks upside down. (Refer to the notes on the hub (Page 25).

The following is provided simply for reference purposes.

Note about the installation of the plastic pusher bar
end connection blocks:



The clevis pin is shown installed in the correct direction. When the pusher bar is in the top position (as shown in this photo), the clevis pin is installed from the bottom. The cotter pins should be showing on top. Failure to install the pin in this direction will cause the attachment links to break in a relatively short period of time. It will also gouge the sprocket.

For best results always use end connection blocks manufactured by FKILogistex.

11 Apron

a. Chains and Idlers

- 1) The right side chains are too loose. This must be corrected as soon as possible.
- 2) The right side end idler is worn and needs to be replaced right away.



Apron Assembly - Reference Drawing # 6581521

| MK # | QTY | UOM | Part # | Description | Unit Price | Ext. Price |
|------|-----|-----|--------------|-------------|------------|------------|
| 49 | 1 | EA | 2905106-9303 | Chain idler | \$27.97 | \$27.97 |



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b. Plate / Tubes

- 1) The apron plate is in good condition but it is closing too far. It needs to be adjusted so that it doesn't hit the tubes when closed.
- 2) The apron plate is out-of-square by about a half link. This could perhaps be accounted for by the right side chains being loose. Once the chains are tightened up, the plate should be checked to make sure it is square. If it isn't, perhaps the chain has stretched more on one side, or there may be an extra link on one side.
- 3) Counting from the pusher bar area, the 2nd, 8th, 9th, and 17th tubes are bent and will need to be changed. The 14th tube is marginal.

For good product transfer (especially small cases), it is important that the tubes be perfectly straight and spin freely.

- 4) The tubes ends are showing some wear, but do not have to be changed yet.



Apron Assembly - Reference Drawing # 6581521

| MK # | QTY | UOM | Part # | Description | Unit Price | Ext. Price |
|------|-----|-----|--------------|---------------|------------|------------|
| 18 | 5 | EA | 6556096-9303 | Apron tube | \$61.42 | \$307.10 |
| 19 | 5 | EA | 6554041-9303 | Tube end plug | \$35.33 | \$176.65 |

12 Hoist

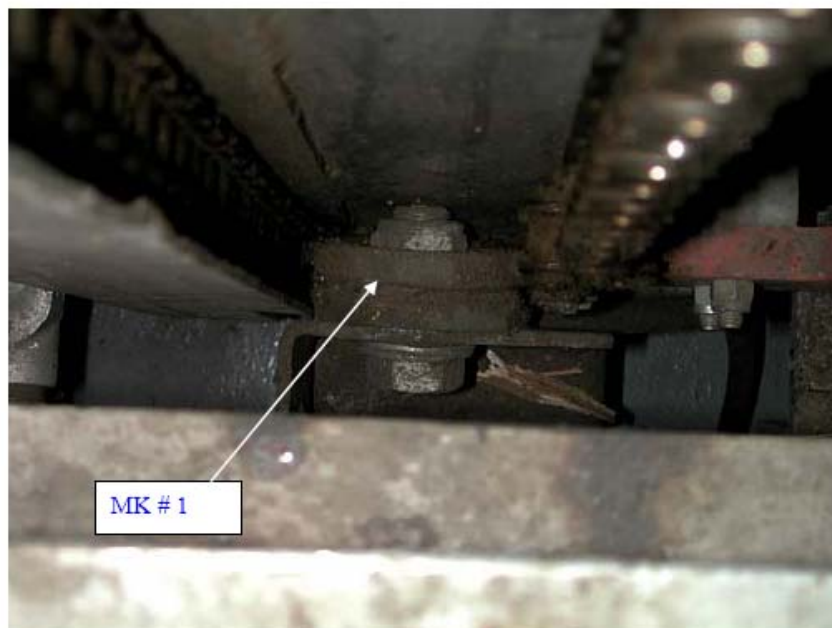
- a. The hoist table guides are very worn and will have to be changed.



Hoist Assembly - Reference Drawing # 65-89310

| MK # | QTY | UOM | Part # | Description | Unit Price | Ext. Price |
|------|-----|-----|--------------|-------------|------------|------------|
| 77 | 2 | EA | 6557005-9303 | Guide | \$11.34 | \$22.68 |

- b. The table is out-of-level. For best operation, it should be leveled.
- c. The lower right side hoist chain idler has a bent bracket and is worn. The bracket must be fixed and a new idler installed.
- d. The transition rollers between the hoist table and the full load discharge section are sitting crooked. It seems that the frame is bent. This is probably not a major problem but it will, of course, push the load to one side while exiting the machine. It can be easily fixed if it becomes a problem.



Base Frame Weldment Assembly - Reference Drawing # KH15-2K

| MK # | QTY | UOM | Part # | Description | Unit Price | Ext. Price |
|------|-----|-----|--------------|-------------|------------|------------|
| 1 | 1 | EA | 2905120-9303 | Idler Wheel | \$15.02 | \$15.02 |

13 Electrical

- a. The door handle on the main disconnect on the electrical enclosure under the case infeed area, is broken. A new handle is needed.



Electrical Enclosure Assembly

| MK # | QTY | UOM | Part # | Description | Unit Price | Ext. Price |
|------|-----|-----|--------------|------------------------------|------------|------------|
| 300 | 1 | EA | 1708118-9303 | Disconnect switch and handle | \$156.31 | \$156.31 |

14 Pallet Dispenser

- a. The pallet dispenser and conveyor leading to the machine are not manufactured by FKI Logistex (or previously Alvey). They are provided by third party, and as such, are outside the scope of the audit or parts/service support.