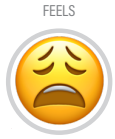


# KAI ZEN

CHANGE GOOD



We are taking too long to strap our pallets

## DESCRIBE THE PROBLEM

- OVERPRODUCTION
- TRANSPORTATION
- MOTION Searching for tools
- WAITING
- PROCESSING Taking more steps than is needed
- INVENTORY
- DEFECTS Rework when clamp doesn't hold

EFFORT  
(@ \$1 per min)

\$8,750

MATERIALS  
(Cost + 15%)

TOTAL WASTE  
\$8,750

## IDENTIFY/QUANTIFY WASTE

We have been using these strapping tools for 25+ years  
 We did not realize there was a tool available to make the job easier  
 We have never seen it or heard from others it was available  
 The old tools work if used properly  
 I saw the strapping tool while visiting Buzzi Space factory in the Netherlands

## POSSIBLE ROOT CAUSES

WE AGREE TO WORK ON THIS PROBLEM



Owner

*KG*

Mentor

*TJK*

TODAY'S FIX Let the shipping team know about the new strapping tool

### PREVENTATIVE ACTION

- Do nothing
- Ask the team to consider using the new strapping tool
- Ask the team to contact Uline rep to share more information on the new strapping tool
- Order the new strapping tool and train the team how to use it

COUNTERMEASURES WHICH WILL BE TAKEN

\$ 3,500 MATED SAVINGS

KNOW & SHOW THE TRUTH

WE AGREE TO WORK ON THIS PLAN

2, 3, 4

IMPROVE EVERYDAY

BEST FOR OUR BEST

Owner

*KG*

Mentor

*TJK*

Walked on

8/12/22

FEELS



Owner

*KG*

Mentor

*TJK*

### Old tools



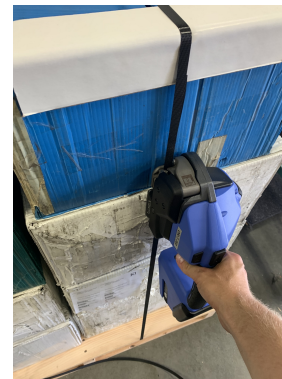
### Old method



Previous time to strap a pallet:

5 minutes per pallet  
 7 pallets / day x 5 minutes = 35 min/day  
 35 min / day x 5 days = 175 min / wk  
 175 min / wk x 50 wks = 8750 min/yr

### New method



New time to strap a pallet:

1 minutes per pallet  
 7 pallets / day x 1 minutes = 7 min/day  
 7 min / day x 5 days = 35 min / wk  
 35 min / wk x 50 wks = 1750 min/yr

New strapping tool \$3,500

OWNER Martin Cole

DEPT Frame

DATE 7/26/22



We will be over the BOO time for powder coat samples.

DESCRIBE THE PROBLEM

KAI ZEN CHANGE GOOD

EFFORT (@ \$1 per min)

801

MATERIALS (Cost + 15%)

TOTAL WASTE 801

Brand	Colour	Sample
Tiger	RAL 9002 Grey White	
Tiger	38/90009 Argento 307 Metallic	
Tiger	39/60020 Bronze Matte	
Tiger	RAL 9016 Traffic White	
Tiger	38/91020 Anodized Silver	
Tiger	38/90018 Argento 314 Metallic	
Tiger	61/80079 Black Anodized Effect	
Tiger	RAL 1002 Sand Yellow	
Tiger	RAL 3022 Salmon Pink	
Tiger	RAL 6021 Pale Green	
Tiger	RAL 6034 Pastel Turquoise	
Tiger	RAL 5009 Azure Blue	
Tiger	RAL 5008 Gray Blue	

BOO = 15 HRS

13 x 30 = 390 SAMPLES

. BATCHES OF 10

. 15 MIN BAKE

= 585 MIN BAKE TIME / 195 min

(10)

(30)

Δ 390 WAITING

OVERPRODUCTION

TRANSPORTATION

MOTION Using the oven 3x more than needed 390

WAITING For 3x as many bakes 390

PROCESSING

INVENTORY Energy 30kw x .10 x 7 hours = 21

DEFECTS

Can only bake 10 samples at a time.  
Not enough places to hang samples in the oven.  
Only have 2 bars up top.

Can only cool 10 samples at a time  
Not enough places to hang samples to cool.  
Current setup is for one big piece

POSSIBLE ROOT CAUSES



WE AGREE TO WORK ON THIS PROBLEM



Owner

Martin Cole

Mentor



TODAY'S FIX Kaizen

PREVENTATIVE ACTION

- 1 Do nothing
- 2 Add bars to top of oven \$60
- 3 Build cooling rack - Creform adjustable
- 4 Repurpose a rack for cooling \$20

MEASURES WHICH CAN BE TAKEN

TRUTH · BIT · PULL

COUNTERMEASURES WHICH WILL BE TAKEN

\$ 721 ESTIMATED SAVINGS

KNOW & SHOW THE TRUTH

WE AGREE TO WORK ON THIS PLAN

2 IMPROVE EVERYDAY

Owner Martin Cole

Walked on 9/19/22

FEELS

BEST FOR OUR BEST

Mentor

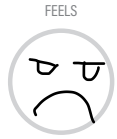
Owner

Martin Cole



# KAI ZEN

CHANGE GOOD



Machine section is not tour ready

## DESCRIBE THE PROBLEM

OVERPRODUCTION

TRANSPORTATION

MOTION

WAITING

PROCESSING Extra cleaning required daily/weekly

INVENTORY

DEFECTS Glue overspray on floor and nearby surfaces

## IDENTIFY/QUANTIFY WASTE

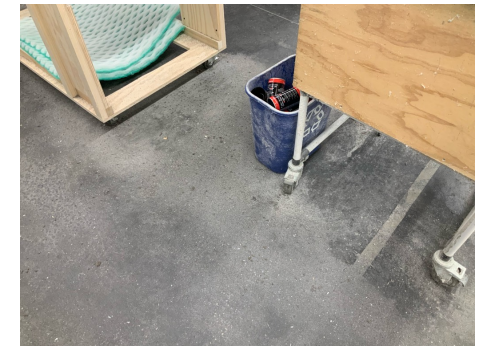
EFFORT  
(@ \$1 per min)

3000

MATERIALS  
(Cost + 15%)

TOTAL WASTE  
3000

Using too much glue  
Fans aren't pulling enough air  
Down draft table design is ineffective



Extra 10 minutes to clean everyday. Sometimes regular cleaning isn't enough. 50 x 50 = \$2500

Not tour ready = ~\$500

## POSSIBLE ROOT CAUSES

WE AGREE TO WORK ON THIS PROBLEM



Owner

CB

Mentor

SK

TODAY'S FIX Do Nothing

PREVENTATIVE ACTION

1. Do Nothing
2. Switch all haas machines to vacuum tables
3. Update down draft tables to include overspray protection
4. Purchase and install a professional spray booth for the entire machine/wrapping section
5. Deep clean the floor around the machine wrapping area

COUNTERMEASURES WHICH WILL BE TAKEN

\$ 2760 ESTIMATED SAVINGS

WE AGREE TO WORK ON THIS PLAN

Owner CB

Mentor SK

Walked on 9/27/22

Owner CB

Mentor SK

FEELS



Spent roughly 240 minutes cutting and assembling new stations.

OWNER Deven Fountaine DEPT Frame DATE 9/14/22



I injured my finger on the router

### DESCRIBE THE PROBLEM

# KAI ZEN

CHANGE GOOD

EFFORT  
(@ \$1 per min)

5030

MATERIALS  
(Cost + 15%)

29

TOTAL WASTE  
5059

Wood - 25  
Motion - 30  
L&I - 5000



OVERPRODUCTION

TRANSPORTATION

MOTION Stop, clean and bandage, chop saw, CNC, load program, flip, router

WAITING To recut the legs

PROCESSING Under - trying to take a shortcut with router

INVENTORY We lost a leg - prose chair

DEFECTS Bad leg, injured thumb

### IDENTIFY/QUANTIFY WASTE

My thumb came in contact with the bit  
My part was pulled into the bit  
I was moving my part the same direction as the spin  
Trying to take a shortcut and reduce time  
Hand placement was off the part

### POSSIBLE ROOT CAUSES

WE AGREE TO WORK ON THIS PROBLEM



Owner

*Deven Fountaine*

Mentor

*Masha Cole*

TODAY'S FIX Retrain

PREVENTATIVE ACTION

- 1) Do nothing
- 2) Review current router standard work
- 3) Create new standard work - router without fence 20
- 4) Add standard work to team train rotation

### COUNTERMEASURES WHICH CAN BE TAKEN

# TRUTH · BIT · PULL

COUNTERMEASURES WHICH WILL BE TAKEN

\$ 5039 ESTIMATED SAVINGS

KNOW & SHOW THE TRUTH

WE AGREE TO WORK ON THIS PLAN

3, 4 IMPROVE EVERYDAY

Owner *Deven Fountaine*

BEST FOR OUR BEST

Mentor *Masha Cole*

Walked on 9/28/22

FEELS

Owner *Deven Fountaine*

Mentor *Masha Cole*





EFFORT (@ \$1 per min)  
 \$180  
 MATERIALS (Cost + 15%)  
 \$850 wood  
 TOTAL WASTE  
 \$1030

Receive/store 1 hour  
 emails/convos 1 hour  
 Cutting wood 1 hour  
 = \$180

Wood Cost  
 \$742 + 15% = \$850



I bought \$750 of un-usable wood from the wrong wood order list.

DESCRIBE THE PROBLEM

- OVERPRODUCTION
- TRANSPORTATION: Extra truck delivery of unnecessary wood. Storing excess wood.
- MOTION: Walking downstairs to wood frame. Mike walking upstairs to correct problem.
- WAITING: Waited 3 business days for correct wood order
- PROCESSING: Mike cutting the extra wood to make some usable. Discussing problem.
- INVENTORY: Storing un-usable white oak in the wood annex.
- DEFECTS

IDENTIFY/QUANTIFY WASTE

POSSIBLE ROOT CAUSES

Before purchasing wood, I clicked the wood order excel sheet titled "wood annex"  
 I saw "wood" on the excel doc name and mistook it for the wood order excel doc which was titled "9-7"  
 I didn't review wood order standard work recently enough to remember the name of the folder.  
 The two excel docs are right next to each other in the wood order folder.

WE AGREE TO WORK ON THIS PROBLEM

STOP  
 Owner *J. Glesener* Mentor *Mike*

TODAY'S FIX Canceling and re-ordering, cutting wood down to make usable and storing excess wood.

- PREVENTATIVE ACTION
- Fail safe. Move the "wood annex" doc to another folder to confuse it. *\$0*
  - Review wood order standard work in team train. *\$30 for 30 min prep + present.*
  - Rename wood order to "wood order 9-7"
  - Delete wood annex doc *\$0*

COUNTERMEASURES WHICH WILL BE TAKEN **\$ 1,000 SAVINGS**

2, 4 KNOW & SHOW THE TRUTH

IMPROVE EVERYDAY

BEST FOR OUR BEST

WE AGREE TO WORK ON THIS PLAN

Owner *J. Glesener* Mentor *Mike*

Walked on *m* 9/29/22

FEELS

OWNER Melanie DEPT HR DATE 9/21/21

**KAIZEN**  
CHANGE GOOD



There were hundreds of errors in the time ticket import today

OVERPRODUCTION

TRANSPORTATION

**MOTION**

Walking to accounting, sales, and IT to get help and explain issues

**WAITING**

Waiting for help and accounting waiting for me to finish

**PROCESSING**

Processing errors, trying to figure out what each warning means and the cause

INVENTORY

**DEFECTS**

Completed out of sequence, errors don't import, jobs closed

EFFORT (@ \$1 per min)  
\$480 +  
\$555?  
MATERIALS (Cost + 15%)  
Ø  
TOTAL WASTE \$480+ Risk

- Invoices processed before time ticket import
- Email flag ineffective
- Not next to team
- Two teams completing tasks
- Importance of sequence forgotten or not understood
- Leads didn't process exceptions before 8 am

POSSIBLE ROOT CAUSES

WE AGREE TO WORK ON THIS PROBLEM

Owner MLG17 | Mentor ST585

TODAY'S FIX Work with IT, Acct, & Sales to fix errors & import

PREVENTATIVE ACTION

- 1) Nothing
- 2) Have team that is invoicing do time tickets
- 3) Change notice from email to text, in-person, or Trello or other visual
- 4) Move next to invoicer
- 5) Retrain standard work for invoicers & lead import when
- 6) Remind leads daily to check exceptions time tickets are done

COUNTERMEASURES WHICH WILL BE TAKEN

- 7 KNOW & SHOW THE TRUTH
- 5, 8 IMPROVE EVERYDAY
- 6 BEST FOR OUR BEST

SAVINGS \$ 450  
WE AGREE TO WORK ON THIS PLAN  
Owner MLG17  
Mentor K6

Walked on 9/25/22 FEELS  
Owner MLG17  
Mentor ST585



We learn "deep problem-solving skills" together

42108Kkaastailored

2 hrs x 4 people = \$480 processing + waiting

Impact to leads

Tools not showing accurate data

Impact to financial statements

Impact to BOO budgeting