

Wrappers

Mini Micro New Product Management



THE FIRST CHOICE

Team Rules

- No Fartin'
- No Fightin'
- No Spitin'
- No Cussin'
- No Phones
 - Be Nice
 - Smile
- No ones input is better than anyone else's
- Must have group consensus



THE FIRST CHOICE

Mandate Boundaries

Reduce cost of wrapping pallets by 30% whilst maintaining pallet containment and integrity.

Recommend actions to the site Leadership Team

Complete within 12 weeks.

Standardise film used on all wrappers



Schedule



WRAPPERS - Plan

Action	Date			Scheduled			Completed		Late			
	14-May	21-May	28-May	4-Jun	11-Jun	18-Jun	25-Jun	2-Jul	9-Jul	16-Jul	23-Jul	30-Jul
1/2 Day Kick off W/S												
Confirmed Mandate, Formed Team and scope activities												
Measure Pre-stretch on store Fully Automatic machine												
Measure Pre-stretch on store 1 machine												
Measure Pre-stretch on store 5 machine												
Measure Pre-stretch on store 6 machine												
Measure Pre-stretch on Grease plant machine												
Measure Pre-stretch on Add. store machine												
Measure 20µm wrap tension & weight on Fully Auto												
Measure 20µm wrap tension & weight on store 1 machine												
Measure 20µm wrap tension & weight on store 5 machine												
Measure 20µm wrap tension & weight on store 6 machine												
Measure 20µm wrap tension & weight on store grease machine												
Measure 20µm wrap tension & weight on add store machine												
Trial 17µm wrap tension and weight on store 1 machine												
Trial 17µm wrap tension and weight on store 5 machine												
Trial 17µm wrap tension and weight on store 6 machine												
Road trial - send 17µm pallets to Victoria												
Modify Fully Auto machine												
Modify store 1,5 & 6 machine												
Modify grease plant machine												
Modify Standard procedures and Training of all operators												
Final Presentation												



Background Information Automatic Wrapper

- Fully automatic Inline wrapping machine located in filling hall being fed from 4 filling machines.
- Wrapping 500 pallets per week as an average .
- Machine wrap film settings were set by supplier at installation
- Vendor had advised at installation to use 23µm wrap to avoid breakage & tension issues with film.
- 23 µm film roll price \$66.50 per roll.



THE FIRST CHOICE

Can we reduce film gauge and amount of wraps ensuring product containment during transit?



THE FIRST CHOICE

Do we increase wrap count applied to pallet to provide containment?



THE FIRST CHOICE

Increasing number of wraps doesn't ensure product containment!!



THE FIRST CHOICE

CORRECT TENSION ENSURES CONTAINMENT!

Sourced tension tool for testing & verification of existing and new tension settings.



THE FIRST CHOICE

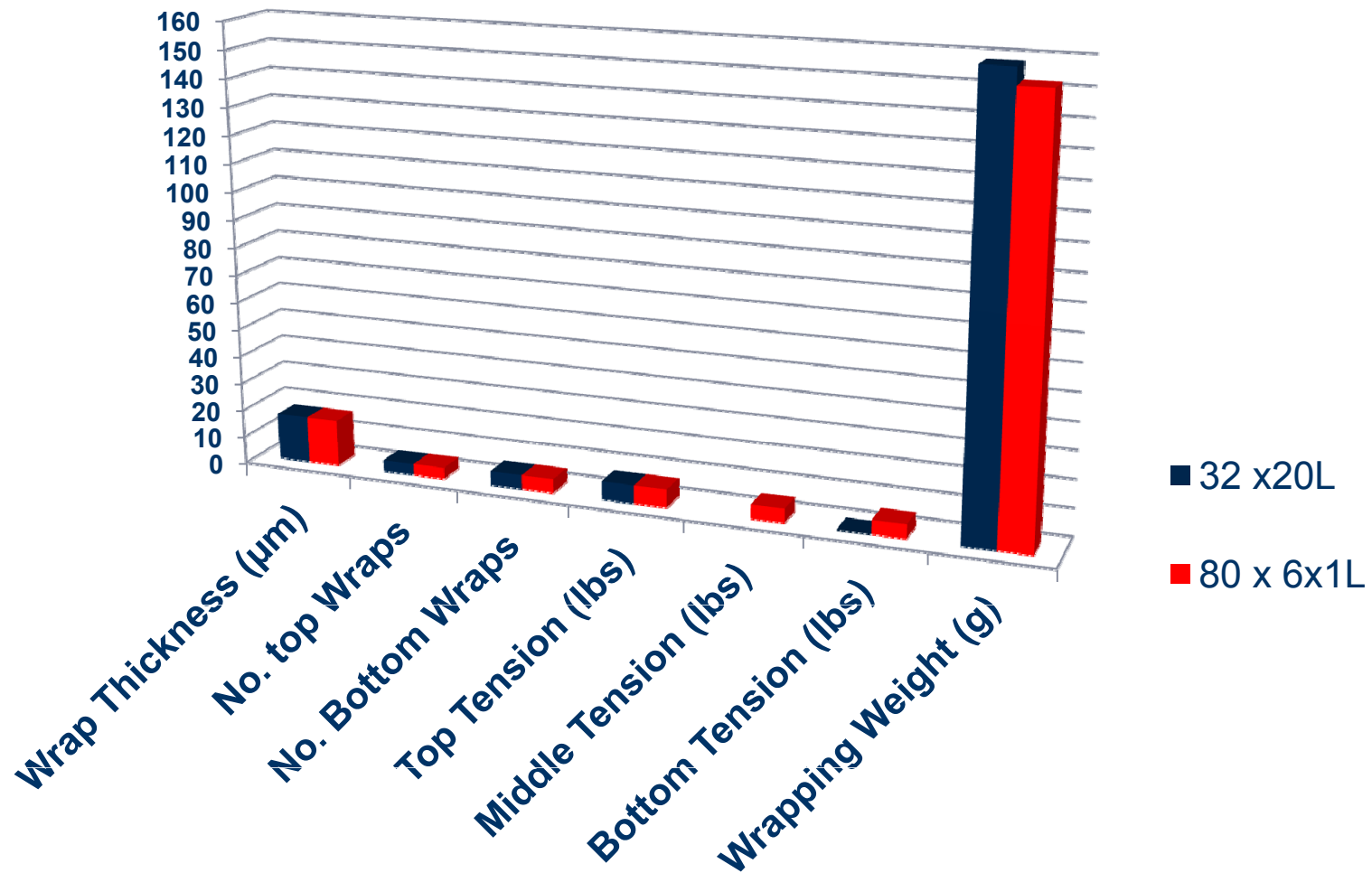
In-Line Tension settings prior to adjustments.

Test	Wrap Thickness (μm)	No. top Wraps	No. Bottom Wraps	Top Tension (lbs)	Middle Tension (lbs)	Bottom Tension (lbs)	Wrapping Weight (g)
32 x20L	23	8	6	8.2		11.6	448
32 x20L	17	8	6	3.3		2.1	236
80 x 6x1L	23	8	6	8.2	6.6	9.4	363
80 x 6x1L	17	8	6	3.3	2.1	2.8	236
80 x 6x1L	17	+2	+2	4.5	3.2	3	328



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In-line Setting Changes Results 17 μ m



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Adjustments to In-line

- Increase pre-stretch from 105% to 200%
- Gear ratio's changed, film pre-stretch of 200% achieved with no breakage during wrapping of product .
- Wrap tension increased from 60% to 70% (machine tension not pre-stretch)
- Increased film overlap speed to ensure middle of pallet was wrapped evenly.
- Decreased the number of wrapping rotations from 14 > 8



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23>17µm Film Savings on In-line Wrapper

- Wrap reduced from 448g to 158g per pallet of 32x20L
- Wrap reduced from 363g to 152g per pallet of 80x6x1L
- Manufactured Ratio 70% 32x20L & 30% 80x6x1L
- **Estimated saving in wrap per pallet = 266g**
- Approx 500 pallets per week
- Saving = 500pallets x 50 weeks x 266g
= 6,650,000g per year (or 6.65 tonnes)
- 1 roll of wrap weighs approx 15.5Kg and costs \$66.00 at the current rate.
- Approximate saving = $(6.65 / 0.0155) \times \$66.00$
=\$28,000 per annum.



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Transport Containment Trial; QLD > Melbourne 29/1/2014



THE FIRST CHOICE

Transport Containment Trial; Product containment verification upon delivery to Melbourne



THE FIRST CHOICE



Background Information Semi Automatic Wrapper

- Presently 6 semi-auto machines located throughout facility of different models & ages 3 are leased.
- Currently wrapping 900 pallets per week as a average dependant on sales/seasonality .
- All tension, pre stretch & wrap patterns varied.
- Vendor had advised at time of installation to use 20µm wrap on all machines to avoid breakage & tension issues with film .
- 20µm roll price \$55.04



THE FIRST CHOICE

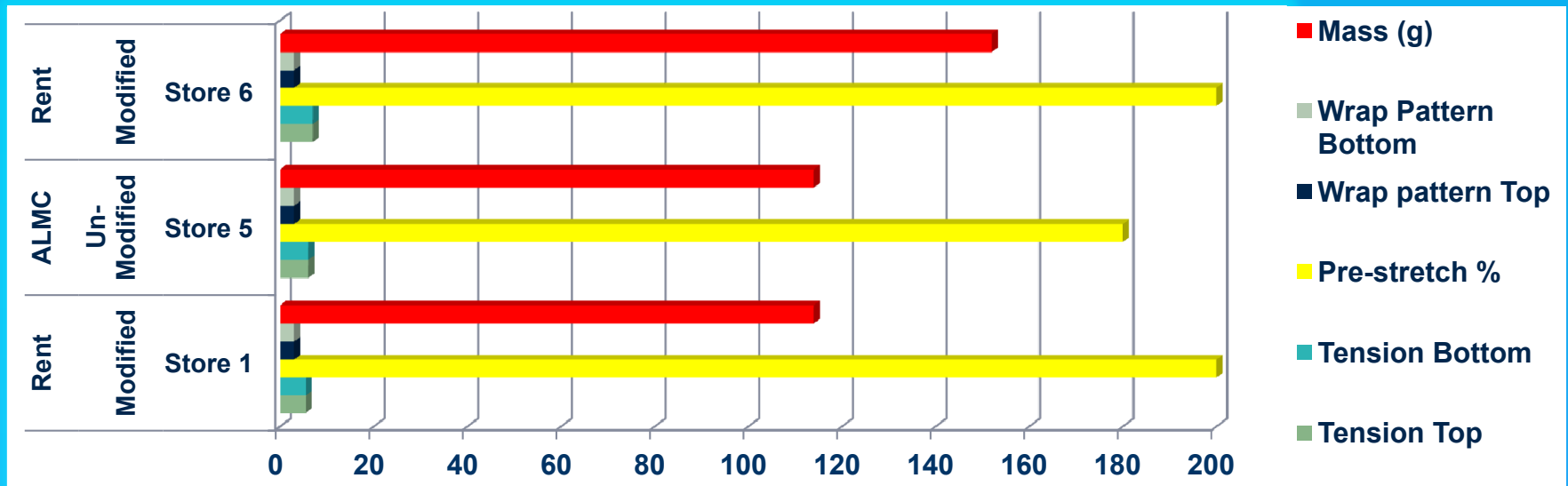
Standardise Semi-Automatic's for 17µm film

- Standardised rental & owned semi automatics
- All using 17 µm film
- Roll, turntable & carriage speeds set the same
- Wrap patterns 3 top, 3 bottom
- Tension 5.5 > 6.5 lbs / pre stretch setting 225%
- Film weight difference 121 grams – 129 grams within 10 grams across 5 machines

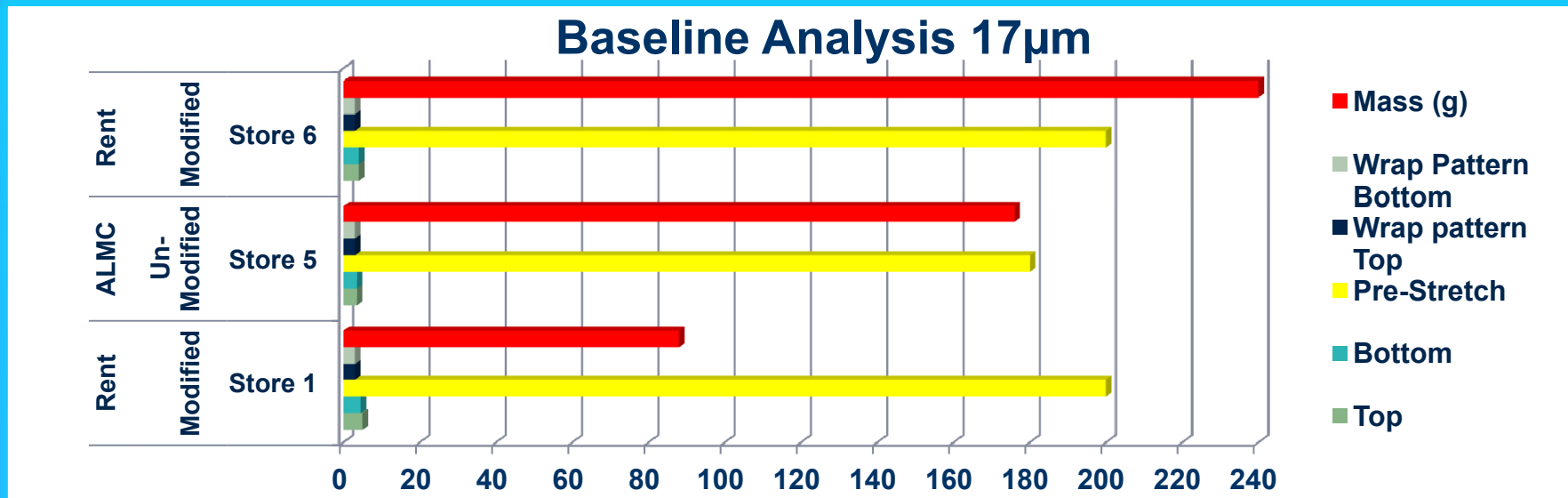


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Baseline Analysis 20µm

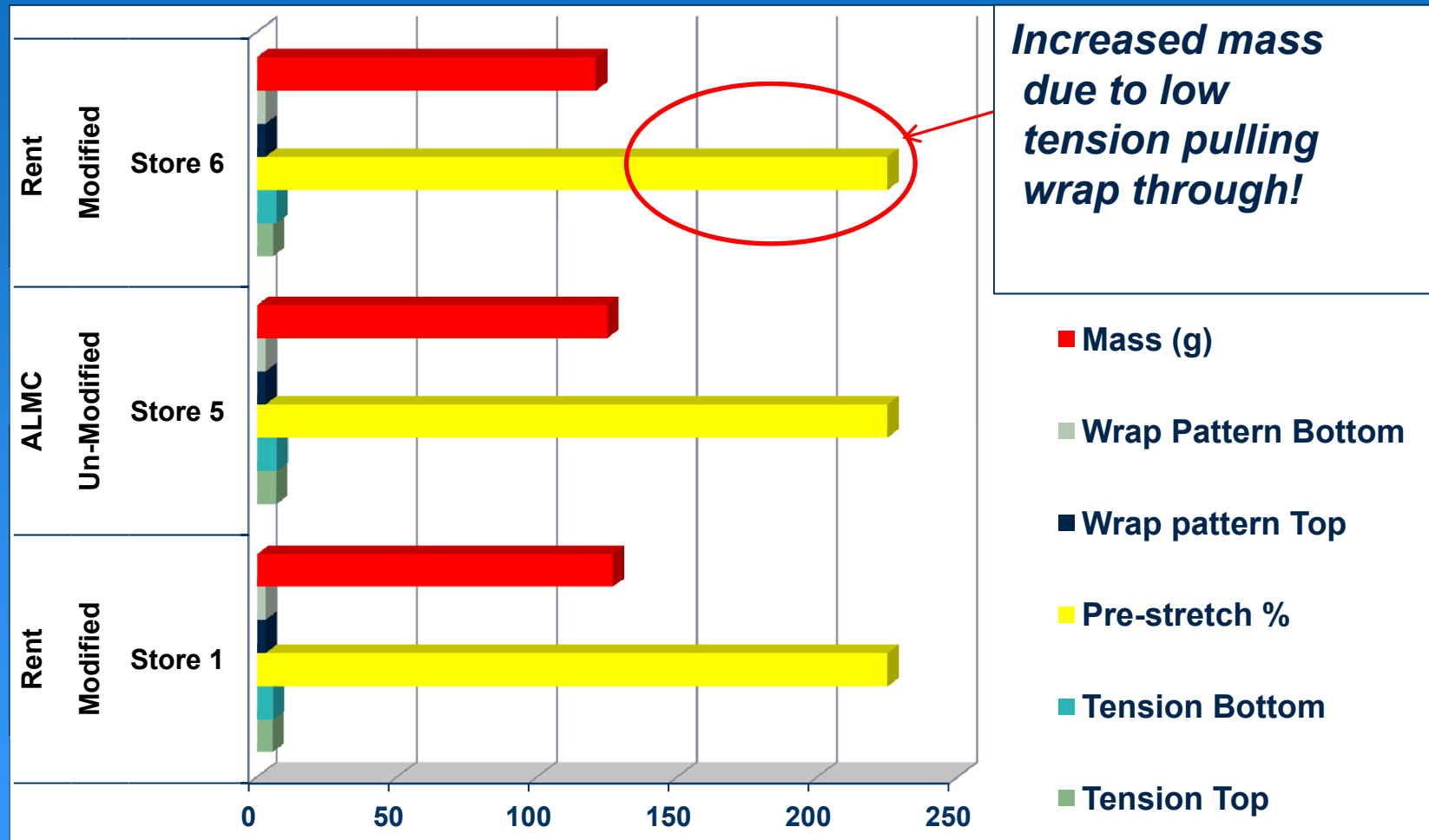


Baseline Analysis 17µm



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New Baseline 17 μ m Semi Auto



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Installation of
reduction gears to
allow the use of
17µm film across all
wrappers at no cost

Modifications Needed

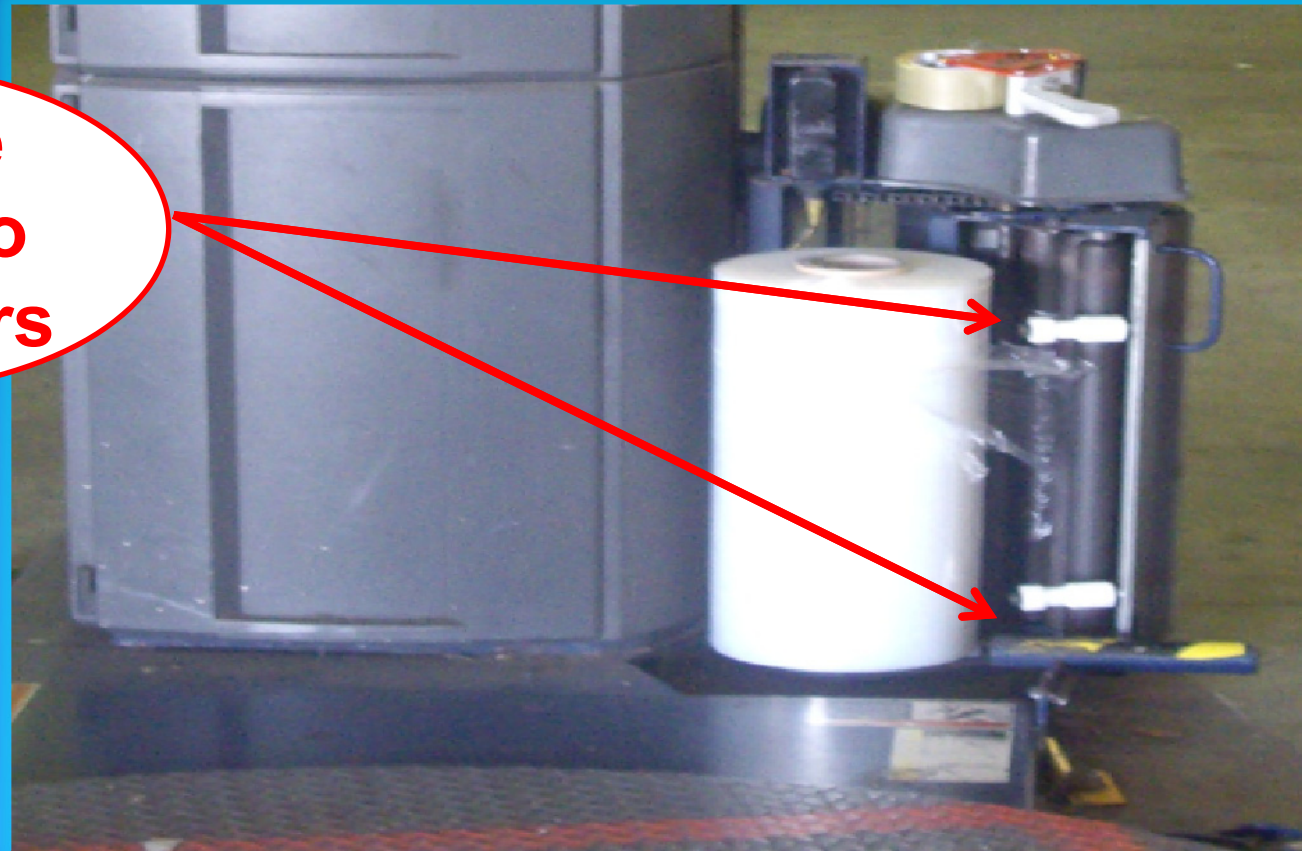
You can't see
them but
they're in
there!



THE FIRST CHOICE

Modifications Needed

**Upgrade
semi auto
with ropers**



THE FIRST CHOICE

Modifications Needed



**Film Roper
installed**



**No Film
Roper
installed**



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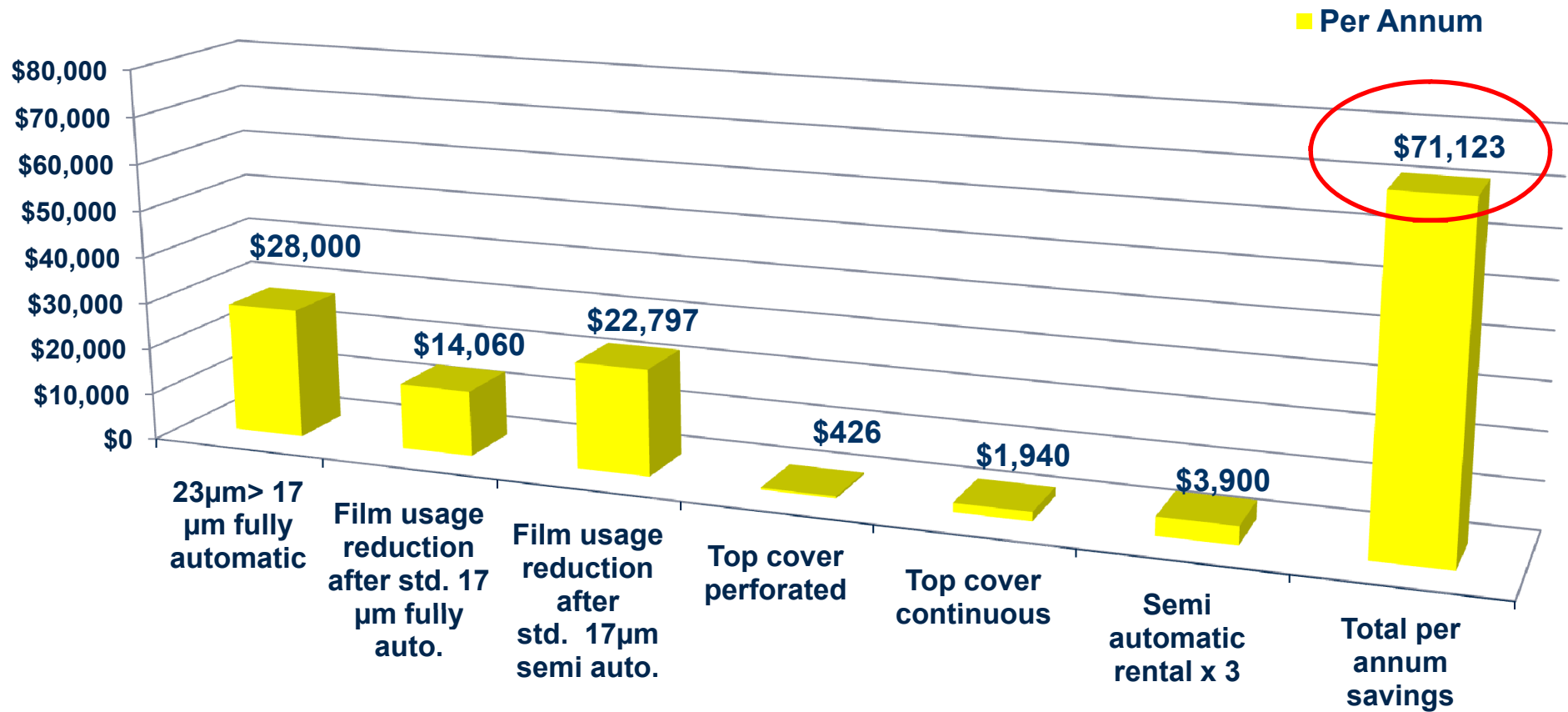
Film & Rental Cost Savings

- 17 μ m film roll price \$58.35
New price = \$54.80
- Top Cover Continuous (fully auto) = \$219.80
New price = \$192.85
- Top Cover Perforated (semi auto) = \$77.90
New price = \$74.35
- 3 x rental semi auto machines = \$525
New Price = \$450 per week



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Cost Saving Analysis



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Unintended Benefits

Able to Scan barcodes through wrap now!



THE FIRST CHOICE

By not wrapping to the bottom of the pallet; film structural integrity strength is maintained ensuring containment.

Unintended Benefits

**Before
Standardisation**



**After
Standardisation**



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Key Learning's to Date

- Stretch wrap contract reviewed & stretch wrap roll price renegotiated – great savings made.
- Question the norm, vendor had advised at start of contract to use 20µm wrap. Due to improvements & advances in film & semi auto stretch wrappers technology. We are able to use 17µm wrap at a considerable cost saving.
- Simple fix in the past to achieve product containment on pallet increase number of wraps or adjust tension setting & not understanding the changes we were making .
- Too much wrap may be as bad as too little from a cost and containment perspective.



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Inefficiencies Semi Automatic

- Wrap 800 pallet weekly Operator Takt time 3 minutes each pallet
 $800 \times 3 = 2400$ minutes
= 40 hours savings
- 40 Operator Hours x \$40 = \$1,600 per week
= \$83,200 per annum savings
- Removal of 3 x rental machines = \$450 per week
= \$23,400 per annum
- Potential savings:
\$106,600 per annum reduction of 1 operator



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- Purchase price = **\$150,000**
- Installation price = **\$40,000**
- Saving = **\$106,600 per annum**
- Pay back in less than **2yrs.**

Way Forward

Q-Automatic Series



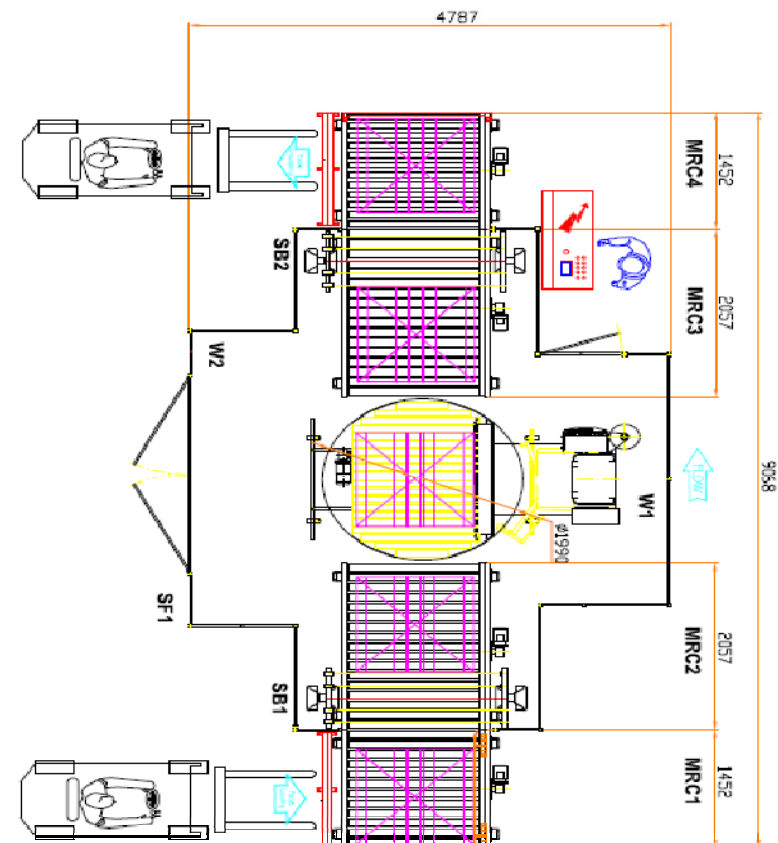
Productivity Maximized

- Operator Friendly Design
- Efficient Load Handling
- 45-60 loads per hour
- Eliminates Fork Truck Jams

*Standard Safety
Fencing included
Not not shown

Safety Always "Standard"

- Safe, Convenient Film Load with unobstructed access to film carriage
- "Touchless" Film Cutting System with cutter wire safely guarded and heated only when necessary.
- Clean Design with no trip, burn, pinch hazards.



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Recycling of Plastic and figures of plastic



➤ Some interesting facts around plastics:

- The world-wide production of plastic is currently at **35 kilogram per year per person**. On average, it is increasing by 3% per year.
- Most of the plastic is used for packaging (35%), followed by the construction sector and vehicle construction.
- About **40%** of the produced plastic is being disposed within 1 year (primarily packaging material).
- The average lifetime of plastic is 12 years.
- Recycling of plastic saves on average about **2.5 kg CO2 per kg of plastic**. Thus recycled plastic produces **about 3.5 kg CO2** compared **to 6 kg of CO2** for new plastic (production and incineration).

Source: Pusch, Thema Umwelt



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We estimated **6,650,000 g** per year of savings in plastic wrap.
Recycling saves on average approximately **6 kg of CO2**.
Our saving equals =



39,900 kg of CO2 emissions



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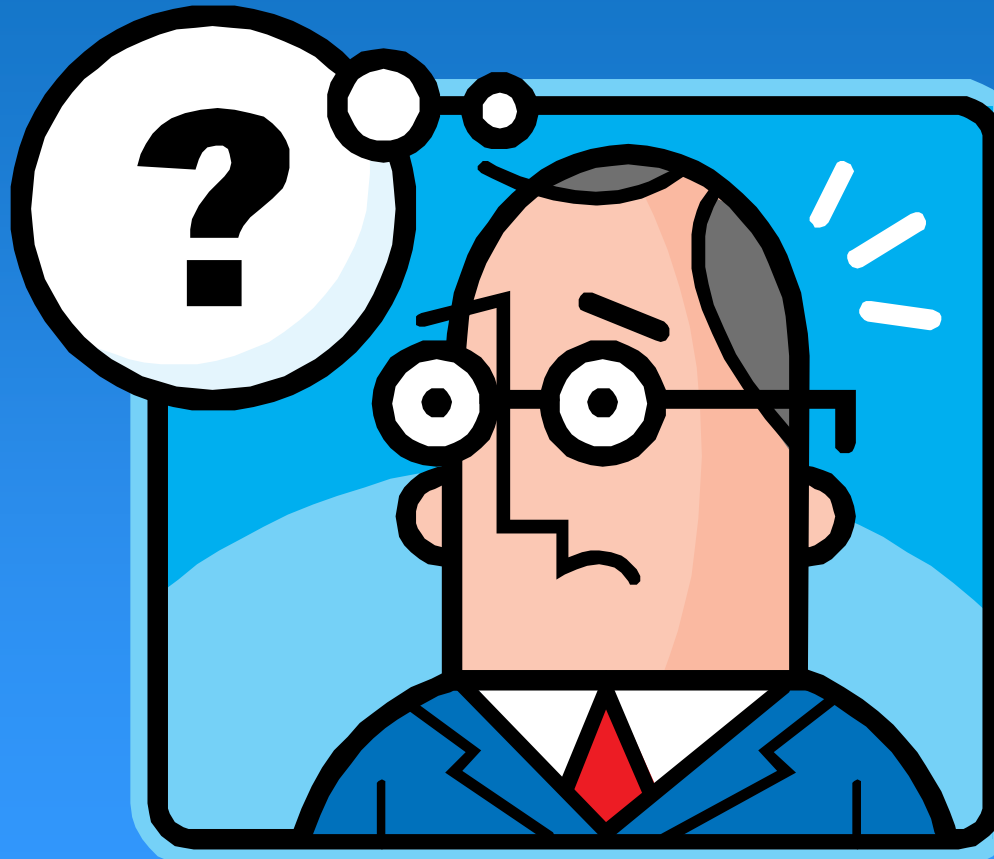


Sustainability is about ensuring a better
quality of life for everyone, now and for
generations to come

**ALMC we focus our Environmental Sustainability efforts on
improvements that matter , to make the most meaningful impact we can.**



Questions??



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