



Automotive



Solutions that Drive Success.

Review of Application: An OEM manufactures parts washers for the Big Three automotive companies. They purchase stainless steel attachment chains through distribution. The chains they use are primarily C2060H and C2080H with BK1 or BK2 attachments and are used to convey camshafts, transmission parts, etc.

Review of Problem: Lead times were unpredictable from a competitor and pricing was 15% higher

Solution provided by Drives: Drives offered to inventory attachments specifically for the OEM which keeps lead times to 1-2 weeks versus 4-6 weeks.

Documented Savings: Reduced downtime and 15% cost savings

Automotive



Solutions that Drive Success.

Review of Application: After the rubber is blended and put through the calendar rolls, it is then dipped in a soapy water solution before being folded onto pallets and stored. Soap helps keep the rubber from sticking to itself before being fed into tire making machines. Rubber rides on the chain like a conveyor through the soap bath.

Review of Problem: Another manufacturer's Stainless Steel chain was being used due to the water and subsequent corrosion. There was also no way to lubricate the chain. Chain would last no more than 3 months, failing as a result of elongation.

Solution provided by Drives: Drives recommended #60 and 80 Silver Shield CR®. It has been installed and running for 10 months as of August '08. The previous manufacturer's chain would have been replaced twice in that time. Usage is 120 ft of each size, cost savings is \$19,000, not including downtime estimated at \$10,000/hour production cost and 2 workers to change out the chain at \$79/hour.

Building Materials



Solutions that Drive Success.

Review of Application: 50-3 attachment chain used on the extruder for window frames.

Review of Problem: The 50-3 chains run in parallel. The customer was having trouble with the chains not matching, thus causing the extruder to malfunction.

Solution provided by Drives: 50-3 attachment chain was pre-loaded and matched and tagged to a Class 2 standard. To improve wear performance, a 9A coating was also used on the pins and bushings.

Documented Savings: Documented savings is still under review.

Building Materials



Solutions that Drive Success.

Review of Application: Chain is used in a drying oven for ceiling tiles

Review of Problem: The elevated temperatures the 80 chain is exposed to causes the chain to develop stiff joints. They tried other manufacturers with no luck.

Solution provided by Drives.: Drives designed a special 80 chain which uses 80 sidebars, 80H roller links and 80H pins. This chain is designed to increase the lateral clearance between the sidebars by a factor of 2. The increased clearance will help prevent stiff joints. Another benefit to this design is that it increased the bearing area by 7% which will increase the wear life by 7%.

Documented Savings: Documented savings is still under review.

Building Materials



Solutions that Drive Success.

Review of Application: Wallboard Kiln Dryer

Review of Problem: Chain was worn out after 7 years and they were experiencing pin failures.

Solution provided by Drives: Drives manufactures 81XKD chain which was designed with special clearances for Kiln Dryer applications. The special clearances help prevent stiff joints at the elevated temperatures that these chains operate in. To solve the issue of the failing pins, Drives also used a through hardened pin to deliver a higher resistance to shock loads.

Documented Savings: Documented savings is still under review.

Building Materials



Solutions that Drive Success.

Review of Application: CA2060 used to carry concrete bricks from cutter to stacker

Review of Problem: Premature sidebar wear and elongation with current import chain

Solution provided by Drives: Replaced their imported chain with our standard CA2060.

Documented Savings: Customer says our chain has lasted three times longer and estimates the savings for down-time to be approximately **\$1,500**.

(Note: This was a result of follow-up after customer attended our training school)

Building Materials



Solutions that Drive Success.

Review of Application: In a polycarbonate resin thermoplastic sheet manufacturing facility, overhead chains used in a coating curing oven were causing product contamination. Temperatures were in the 350° F range and any type of lubricant would, over time, carbonize, with particles falling into the uncured coating causing the sheet to be rejected. The coating prevented regrinding and recycling of sheets for future use.

Solution provided by Drives: Drives assisted the user in this application by supplying chain with special hard chrome plated pins. Extended Life CHP[®] Series hard chrome plated pins possess standard steel's metallurgical properties for toughness and strength while delivering an extremely hard wear resistant pin surface, even in dry and abrasive environments. The life of the chain can be extended by 3X.

Documented Savings: \$30,000 cost savings on breakdown labor and PM based on \$40,000 average in the past years at a 75% savings switching to Extended Life CHP[®]

FOOD & BEVERAGE



Solutions that Drive Success.

Review of Application: Timing application for filling oatmeal pouches

Chain: 60-2 Extended Life CHP™ chain (hard chrome pin)

Review of Problem: Chain can not be lubricated and oatmeal dust, which is very abrasive, caused the chain to elongate. The continued chain elongation caused mistiming of the machine, resulting in the pouches not being filled properly.

Solution provided by Drives: In this application, where the chains can not be lubricated and there is abrasive material in the atmosphere, sinter bushed chain is not an option. The oatmeal dust will draw the lubricant out of the bushing, rendering it ineffective. The most effective option is to increase the hardness on the surface of the pin. Drives Extended Life CHP™ offers HRC 70-plus pin hardness and can improve wear life by a factor of three times.

FOOD & BEVERAGE



Solutions that Drive Success.

Review of Application: Bucket/Bin Dumper used to lift materials above worker's heads and deposit into mixing container.

Chain: 80

Materials, Coatings or Plating: Carbon Steel

Review of Problem: OEM had provided equipment with stainless steel lifting chains that were wearing out and in need of replacement.

Solution provided by Drives: Drives assisted in evaluating the application and recommended carbon steel chains. The new chains were provided in a timely manner, at a lower purchase cost and the carbon steel chains provided the user with significantly increased safety factors.

FOOD & BEVERAGE



Solutions that Drive Success.

Review of Application: Food processing production conveyor

Chain: ISO 16B

Materials, Coatings or Plating: 300 Series Stainless

Attachments: Bent Attachments

Review of Problem: Product conveyor was designed and produced using non-ANSI 304 grade stainless chain. Current off shore supplier could not meet required delivery schedule.

Solution provided by Drives: Drives was contacted and was able to produce this non-ANSI series of chain in 304SS in sufficient time to meet the needs of the production facility. Drives is now a domestic producer of this chain, removing the plant's need to source this chain overseas.

FOOD & BEVERAGE



Solutions that Drive Success.

Review of Application: Potato Chip production conveyor

Chain: Special MTO

Materials, Coatings or Plating: Nickel Plated

Attachments: Special MTO Pins or Attachments

Review of Problem: Critical process conveyor in the production of Potato Chips was supported by European chain manufacturer. Recent order was produced in error and long lead times were expected for a replacement chain.

Solution provided by Drives: Drives was contacted and produced the correct design to include extremely close matching requirements. Overall cost of product was reduced allowing the distributor to provide documented cost savings.

FOOD & BEVERAGE



Solutions that Drive Success.

Review of Application: Critical bucket conveyor used to transport finished product in chocolate facility

Chain: C-2052

Materials, Coatings or Plating: Carbon Steel

Attachments: Special MTO Pins or Attachments

Review of Problem: Customer was experiencing long lead times and high cost for this very important conveyor chain.

Solution provided by Drives: Drives was able to replicate the current design, produce the chains within the user's required time frame and at a purchase cost which allowed the distributor to document cost savings to the customer.

FOOD & BEVERAGE



Solutions that Drive Success.

Review of Application: Drag conveyor applications both horizontal & vertical in a highly corrosive grain handling environment where ethanol is produced. Chain WSX 132 Stainless Steel.

Review of Problem: Customer was experiencing pin breakage and long replacement lead times.

Solution provided by Drives: Drives Engineering did an analysis of the failed chain and made recommendations to reduce the hardness of the pin and bushings. Working with OEM, we are forecasting future needs along with improving lead times on orders.

Documented Savings: More up-time for the end user and not having to shut down plants for unscheduled down time. Engineering support along with a good business relationship is netting us the business at a premium with this customer. **Giving them Peace of Mind is the key!**

FOOD & BEVERAGE



Solutions that Drive Success.

Review of Application: Saran line which conveys trays of bacon to be wrapped and packaged is under heavy load. Currently using stainless steel chain for corrosion resistance during wash downs. Note: chain was not in direct contact with food.

Review of Problem: The stainless chain was in a difficult location to change out. Chain was elongating and wearing out every three months.

Solution provided by Drives: Through joint calls with a distributor, we convinced the customer to use Silver Shield w/CHP[®] chain in this application due to wash down, no lubrication and it's strength.

Documented Savings: The customer has saved over **\$3,000** in labor plus the material cost on this chain.



FOOD & BEVERAGE



Solutions that Drive Success.

Review of Application: Cooker drive on cereal oven

Review of Problem: Competitor's #100 chain was susceptible to corrosion in 6 months and required replacement

Solution provided by Drives: Silver Shield CR[®] chain provided double the life

Documented Savings:

- * 80,000 lb. cereal per day or 3, 333 lbs. an hour
- * Cost is \$4.00 per lb.
- * Chain change out was 3 hours
- * Production savings $3,333 \times \$4.00 \times 3 = \$39,996$
- * Labor 3 hours at \$40.00 = \$120.00
- * Chain cost - \$800 savings
- * Total Savings **\$40,916**



FOOD & BEVERAGE



Solutions that Drive Success.

Review of Application: Quality Issues with chain at base of spiral freezer (up to -40).
Chain runs horizontally. Lots of moisture.

Solution provided by Drives: Drives substituted USA large pitch chain with Silver Shield
CR[®] coating.

Documented Savings: Longer life because of better wear and corrosion resistance.

FOOD & BEVERAGE



Solutions that Drive Success.

Review of Application: Vertical Cookers – chain is on the top of the cooker which is 90-100' up in the air. There had been 3 previous chain suppliers tested.

Review of Problem: Longest life was 3 months on the primary drive due to elongation. Infrequent lubrication is a problem due to location of chain.

Solution provided by Drives: Drives recommended #140 CHP chain – it has been on test and has lasted over six months and is still running. The customer ordered 450 feet and made a total change out during the 4th of July '07 shutdown on all three (3) cookers.

Documented Savings: \$12,663.00 annual savings

FOOD & BEVERAGE



Solutions that Drive Success.

Review of Application: Filler line and Packing line. (Canned tomatoes – diced, sauce, etc.)
Mild chlorine wash/ acidic product.

Review of Problem: The acidic product was causing the chain to corrode and the user was replacing a competitor's carbon steel chain every three months

Solution provided by Drives:
Drives C2080H Silver Shield CR[®] chain
With D1pin every 4th pitch

Documented Savings:
Still running – targeted to last more than 1 year.



FOOD & BEVERAGE



Solutions that Drive Success.

Review of Application: Packer Phasing drive chain

Review of Problem: Timing is critical in this section of the equipment and the unit uses a competitive #60 riveted chain. When the chain elongates this section becomes out of time resulting in replacement of the chain every 3-4 months.

Solution provided by Drives: Drives suggested using 60 Silver Shield chain with CHP pins. The Silver Shield will prevent corrosion of the carbon steel components and the CHP will reduce the rate of wear and corrosion on the back side of the pin, allowing the phasing section to stay in Time.

Documented Savings: \$25,140

FOOD & BEVERAGE



Solutions that Drive Success.

Review of Application: Cooker Chain
Chain: C2082H Silver Shield CR®

Review of Problem: The chain brings the cans into the cooker where they pass through extreme heat and moisture. They are replacing their chain once a season due to corrosion.

Solution provided by Drives: Drives, LLC C2082H Silver Shield CR® was recommended for this tough application. Silver Shield CR® coated chains are designed with quality carbon steel components and environmental resistant coating to provide the best alternative to stainless steel in corrosive environments. It provides operating temperature ranges above and below where carbon steel base chains can operate.

Projected Savings: \$2,500 - \$7,500 when extending the service life to 3 years (seasons).

FOOD & BEVERAGE



Solutions that Drive Success.

Review of Application: Palletizer pusher

Review of Problem: Competitive chain was replaced every 18 months due to chain elongation

Solution provided by Drives: Customer tested both competitive and Drives standard 80 riveted chain. The competitive chain was replaced at 2%+ chain elongation (14M cases). Drives chain only elongated 1% (16M cases). Drives manufactures the components and assembles the chain in the USA. Drives chain is preloaded to 50% resulting in improved wear life. Estimated chain life is 2-3 times longer than the competitive chain .

Projected Savings: \$57,396

FOOD & BEVERAGE



Solutions that Drive Success.

Review of Application: The customer was using two strands of a standard import #50-1 D1 chain running on it's side with a round rubber tube to convey containers of baby formula. The centers on the dual strand conveyors were 75' each. The environment has high humidity and chlorine present, plus a chlorine foam was used to disinfect the retort room every two weeks. An overall total of 450' of #50-1R with D1 Every 2nd , standard and CHP were in play.

Review of Problem: The problem was typical in that lubrication was difficult. The chain had operated 4-5 years and money had been allotted for the replacement of the chain.

Solution provided by Drives: This customer has over 4000' of Drives CHP operating in the facility and are pleased with it's performance. We recommended CHP and also quoted standard Drives as an alternate based on lead time. The customer purchased the standard Drives product. Three weeks later, they received an additional allotment of dollars from corporate and purchased the CHP. The cost savings is based on using the standard product and outrunning the import three to one.

Documented Savings: \$8,840

FOREST PRODUCTS



Solutions that Drive Success.

Review of Application: Kiln Dryer Chain Application

Chain: Drives 81XKD

Review of Problem: The customer had a pin failure after the chain was in service for seven years. The chain was returned for analysis and it was determined that elongation exceeded 3%; the point at which chain is considered worn out. It was also determined that the pin failure was due to worn chain and a high shock load, resulting from a jam in the conveyor system.

Solution provided by Drives: Drives recommended the use of 81XKD with a through hardened pin. At the elevated operating temperatures of 650 degrees Fahrenheit, the surface hardness between a case hardened and through hardened pin is comparable. The fatigue resistance with a through hardened pin will be about 10% higher and the shock load capabilities will be 20% higher compared to case hardened pins. The 81XKD with through hardened pins will help prevent chains from failing due to shock load without sacrificing wear life. In addition, the 81XKD will be manufactured with increased transverse clearances between the plates, preventing stiff joints at elevated temperatures.

The image shows a log processing facility with a large pile of logs on the left and a conveyor system on the right. The text "FOREST PRODUCTS" is overlaid in a large, green, 3D-style font.

FOREST PRODUCTS

The image shows a log processing facility with a conveyor system. The text "DRIVES" is overlaid in a large, white, 3D-style font with a yellow and black background. Below it, "USA CHAIN" is written in a smaller, white font.

DRIVES

USA CHAIN

Solutions that Drive Success.

Review of Application: Log Pusher Conveyor using #120 w/hard chrome pins

Review of Problem: Critical conveyor in harsh and dirty environment. User was considering sealed joint chains but cost and lead time was considerably higher than standard chains.

Solution provided by Drives: Drives introduced their standard chains assembled with hard chrome pins. Wear life is expected to be 2x or greater than std. chain. Lead time was 3-4 weeks and cost was slightly more than standard chain. Documented savings and lower cost of operation.



Review of Application: Board Edger in a sawmill

Review of Problem: High speed serpentine drive, competitor's chain lasting 2 mos.

Solution provided by Drives: 100 -1R Extended Life CHP®

Documented Savings: Extended chain life 3-4 times. Savings made in down-time & replacement costs

The image shows a collage of lumber products. On the left, there is a stack of logs. In the center, there are stacks of cut lumber. On the right, there is a large stack of lumber. The text 'FOREST PRODUCTS' is overlaid in a large, green, 3D-style font.

FOREST PRODUCTS

The image shows a close-up of a chain link. The text 'DRIVES' is overlaid in a large, white, 3D-style font with a yellow and black background. Below it, the text 'USA CHAIN' is overlaid in a smaller, white, sans-serif font.

DRIVES

USA CHAIN

Solutions that Drive Success.

Review of Application: Debarker Chain at a lumber company

Review of Problem: The customer was being supplied 120H-1R with case hardened pins from 2 competitors. The chain was only lasting 4 to 5 months. Shock load applications with pin breakage the problem.

Solution provided by Drives: Drives supplied 120HZ-1R with through hardened pins and a press fit connecting link. Drives also recommended that the end-user install new hardened tooth sprockets.

Documented Savings: The 120HZ-1R performed for 18 months without failure.



Review of Application: A board Planer in a sawmill

Review of Problem: The planer chain was being replaced every month due to wear. The mill was using a competitor's 140-1R.

Solution provided by Drives: The Mill replaced the chain with Drives USA high quality precision roller chain and extended their wear life to 3 months, tripling the life.

Documented Savings: \$6,592



Review of Application: An Edger used in timber processing is a machine having a battery of circular saws on one arbor (the shaft on which the saw blades are mounted). These saws cut the cants into smaller dimensions. 120H roller chain is driving the saw arbors.

Review of Problem: This is a tough application with high shock loads and extremely abrasive dust particles. The customer was getting 4 weeks life out of the competitive chain they were using before having to change out due to elongation.

Solution provided by Drives: Drives USA 120H standard roller chain was recommended as a solution. Due to all of the quality features built into the Drives chain, the customer is now getting 12 weeks life out of their chain and are very satisfied.

Projected Savings: \$6,500 annually

MINING



Solutions that Drive Success.

Review of Application: In an Agglomerator application (above ground mining for Taconite), twelve strands of 80-2 riveted chain are used to turn twelve large drums containing Taconite pellets.

Review of Problem: The end user was buying another manufacturer's chain and having to remove 1-2 links every 2-8 weeks due to chain elongation. This was an inconvenience to the customer and temporarily shut down the application for 30 mins.

Solution provided by Drives: By replacing their existing chain with Drives USA roller chain, the customer was able to significantly extend chain life by 7 times before replacement.

Documented Savings: Each individual drum produces \$5000 worth of product an hour with a labor cost of \$30-50 an hour. Customer stated it would take approx. 30 mins to remove the link(s) as needed to complete the repair. With the customer removing the links every 5 weeks (avg. occurrence of problem) or 10 times annually, they spend an avg. of \$25,000 on lost product and labor per year. Thus, Drives saved the customer approx. **\$17,640** over the last 9 months.

MINING



Solutions that Drive Success.

Review of Application: Special narrow chain is used on rock crushing and drilling equipment.

Chain: 240

Materials, Coatings or Plating: Silver Shield™ Coating

Review of Problem: MTO chain was historically available only from OEM or overseas supplier with high cost and long lead times.

Solution provided by Drives: Drives provided the special width MTO product - with Silver Shield™ protective coating - at a cost below the OEM and in a time frame necessary to meet critical shipment and maintenance schedules.

MINING



Solutions that Drive Success.

Review of Application: Phosphate mining – drill rig

Review of Problem: The drill rig was in for a rebuild and utilized 120 feet of #180 for the pull down apparatus. The lead time for the competitors product was several weeks from the OEM.

Solution provided by Drives: Drives shipped the product in 8 working days
(Options: HZ cut-to-length; Silver Shield CR®)

Documented Savings: \$5000



Solutions that Drive Success.

Review of Application: Conveying system used in the manufacturing and packaging of sand paper

Review of Problem: The chain cannot be lubricated due to the abrasive nature of the product. The sand generated in the process causes rapid elongation of the chain.

Solution provided by Drives: 50/C2050 & 60H/C2060H CHP chains with attachments. The 70HRC hardness of the chrome pins will resist the abrasive sand particles and extend the wear life of the chain by a factor of 2 or more.

Documented Savings: Documented savings is still under review.



Solutions that Drive Success.

Review of Application: 80-1R chain used in conveyor application to carry washing machine cabinets down the line – there was no guard to stop lube from getting on the product.

Review of Problem: Chain lube was collecting on the outside of the washing machine cabinets which resulted in a quality rejection.

Solution provided by Drives: Drives provided an 80-1R Extended Life CHP[®] chain with no lubrication. The chrome hardened pin allows the chain to operate without lubrication. The customer will yield better life than with previous chain.

Documented Savings: Estimated 45-50 cabinets per year @ \$50 each = **\$2,500**





Solutions that Drive Success.

Review of Application: A 60-1 chain is used on a palletizer that packages plastic water bottles.

Review of Problem: Chain cannot be lubricated and it starts and stops at high speeds. The customer was using Tsubaki Lambda chain (sinter bushed chain) and they were cracking the bushings. Sinter bushed chains do not perform well in high impact applications.

Solution provided by Drives: Drives suggested the use of 60 Extended Life CHP[®] chain, matched and tagged to a class 2 specification. The 60CHP chain uses the standard bushing which can handle the high impact load exerted on this chain. Estimated increase in life: 2-3 times longer than Tsubaki's 60 Lambda chain.

Documented Savings: Chain savings, per palletizer, was estimated at **\$2,180.00**.



Review of Application: Timing application for filling oatmeal pouches.

Review of Problem: Chain cannot be lubricated and since the dry oatmeal is very abrasive, the chain is elongating prematurely which causes the pouches to be filled incorrectly.

Solution provided by Drives: 60-2 Extended Life CHP[®] attachment chain was used with a Class 2 match. The 70HRC hardness of the chrome hardened pins will resist the abrasive particles that were causing the chain to elongate prematurely. Wear life will be extended by a factor of 2 or more.

Documented Savings: Documented savings is still under review.



Solutions that Drive Success.

Application: A spark plug manufacturer uses a conveyor to move the product through the last phase of the manufacturing process. The conveyor uses 80 extended pin chain for the application and timing is very critical.

Problem: The customer was using standard 80 with extended pins from a competitor. This chain was stretching prematurely and causing timing issues.

Solution provided by Drives: Drives supplied 80 Extended Life CHP® chain with extended pins to extend the life of the chain and to keep the critical timing of the process. The chain has been running for more than 1 year with no issues.



Solutions that Drive Success.

Review of Application: A small cup filling machine requires 16B with a special attachment.

Review of Problem: The user was ordering their replacement chain from a European source. The lead time was 16-18 weeks and it was very expensive.

Solution provided by Drives: Drives was able to manufacture the special 16B attachment chain at a cost savings to the customer in 8 to 10 weeks.

Documented Savings: \$31,000



Solutions that Drive Success.

Review of Application: Dual strands of #80-1R, D3 attachment chain handle wood pallets on the palletizer infeed and outfeed conveyors of a large brewery.

Review of Problem: Uneven chain elongation in the dual strands was causing the wooden pallets to twist. This made it difficult to load the cases of product on the pallet.

Solution provided by Drives: Drives suggested the use of matched and tagged strands of Drives #80-1R, D3 attachment chain with Extended Life CHP®. The chrome plated pins offer exceptional pin wear resistance reducing chain elongation. The pallets fed uniformly and there was minimum elongation of the chain.

Documented Savings: Documented Savings: 7 hours downtime, 2 men, 14 hours labor (\$420) and 7 hours downtime (\$7000), material GB (\$1000). Changed 3 times each year, cost savings were **\$25,260** (\$420+\$7000+\$1000x 3times per year).



Solutions that Drive Success.

Review of Application: A laundry detergent manufacturer is using 160 riveted chain with an extended pin on their capper equipment.

Review of Problem: The current chain wears out in approximately 18 months. The customer is looking for a chain that will last longer and not require them to change it out as often as well as reducing the amount of time spent on maintenance. The chain is critical in the timing of putting the caps in the bottles.

Solution provided by Drives: Drives recommended 160 riveted Extended Life CHP® chain. Extended Life CHP® chain offers outstanding wear life. Exceptional pin wear resistance reduces chain elongation and can increase wear life by 3 times. The Drives Extended Life CHP® chain has lasted twice as long as the previous chain in this application.

Documented Savings: \$7226



Solutions that Drive Success.

Review of Application: A laundry detergent manufacturer uses 160-1 riveted chain with a DD1 every 6th pin and the strand length is 12 pitches long including the C/L. This chain is used on machines that put the caps on the laundry detergent bottles. This particular machine requires 56 strands.

Review of Problem: The previous chain supplier was unable to meet the required delivery date so they called Drives.

Solution provided by Drives: Drives was able to manufacture these chains to the exact specifications and ship the 56 strands of chain out within 1 week. This allowed the user to keep their scheduled rebuild time and get the machine up and running quickly.

Documented Savings: \$7500



Solutions that Drive Success.

Review of Application: A laundry detergent manufacturer had a need for an 80-1 riveted chain with a D1 every 2nd pitch for a piece of their equipment. They needed 50' for this application.

Review of Problem: The customer didn't realize they needed this chain until two days before it was required for the job.

Solution provided by Drives: Drives was able to manufacture this made-to-order attachment chain and send it out to the user the next day. By meeting the customer's two day requirement, they were able to have their equipment up and running on-time, avoiding costly downtime.

Documented Savings: \$40,000 in reduced downtime.



Solutions that Drive Success.

Review of Application: Keg handling conveyor utilizing a #60 standard straight sidebar chain.

Review of Problem: Customer is replacing the chain after 3% elongation (610,560 kegs) and is trying to get to an 18 month preventative maintenance schedule. There is high shock loading on the chain.

Solution provided by Drives: Drives recommended #C60HZE-1R w/CHP. The Extended Life CHP® chain was selected for wear life and the through hardened pin design was selected to handle the shock loads. The Drives USA chain is scheduled to be installed in May/June of 2009. The expected life is 18 months **minimum**, at approximately 1,800,000 kegs.

Estimated Savings: \$9,140



Solutions that Drive Success.

Review of Application: The end user was using a competitors' #80-1R with an attachment on a palletizer pusher application.

Review of Problem: The customer was replacing the chain on an 18 month preventative maintenance schedule.

Solution provided by Drives: Six 10 foot strands of Drives standard #80-1R chain was supplied. The competitor's chain was replaced after 2% elongation, 14,039,396 cases. Drives is still operating with only 1% elongation, 16,012,962 cases. Based on these figures, the expectation is to see more than three times the life on chain and sprockets.

Estimated Savings: \$57,556



Solutions that Drive Success.

Review of Application: A carton erector using a competitor's #50 chain with attachments.

Review of Problem: The customer is replacing the chain every 26 weeks, 6,279,000 cases, and would like to extend the life of their chain to coincide with an 18 month preventative maintenance schedule.

Solution provided by Drives: Drives supplied #50 Extended Life CHP® chain with attachments. The chain is scheduled to be installed in May of 2009. The expectation is 18 months **minimum**, at approximately 20,000,000 cases.

Estimated Savings: \$267,780



Solutions that Drive Success.

Review of Application: A competitor's #60 chain controls the timing of three specific conveyors on a common shaft in a packaging machine.

Review of Problem: The customer is replacing the chain after 3-4 months and is resetting the timing monthly. They need to eliminate the monthly timing adjustments and get to an 18 month preventative maintenance schedule.

Solution provided by Drives: Drives supplied #60-1R with Silver Shield CR® and Extended Life CHP®. The chain was installed on 3/26/09. The expectation is 18 months minimum, without any timing adjustments prior.

Estimated Savings: \$25,140



Review of Application: A brewery was running a competitor's #80-1R with a D1 attachment in a palletizer pusher application.

Review of Problem: The customer replaced the chain on a 12 month cycle.

Solution provided by Drives: Drives standard #80-1R w/D1 attachment was supplied and it has been operating successfully for approximately 2300 hours (19 weeks). The expectation is to double the life to 24 months before replacement is needed.

Estimated Savings: \$57,556



Solutions that Drive Success.

Review of Application: A brewery was running a competitor's #80-1R in a palletizer hoist chain application.

Review of Problem: The customer was breaking the chain at the connecting links and replaced it on a 6 month cycle.

Solution provided by Drives: One strand of Drives standard #80-1R and one strand with Extended Life CHP® was supplied. It has been operating successfully for approximately 2600 hours (22 weeks). The expectation is to double the life with standard chain and four times with CHP months before replacement is needed.

Estimated Savings: \$5,920



Solutions that Drive Success.

Review of Application: A Packer Pocket Chain #60/#C2060 w/ special 2060 guide attachments.

Review of Problem: The customer is replacing the chain after 3.5" of elongation (25' of chain x 12" = 1% elongation), 10,177, 200 cases and is attempting to get to an 18 month preventative maintenance schedule.

Solution provided by Drives: Drives supplied #60/C2060H with Extended Life CHP® and attachments. The chain is scheduled to be installed later in 2009. The expectation is 18 months minimum, at approximately 30,000,000 cases.

Estimated Savings: \$267,780



Solutions that Drive Success.

Review of Application: Dual strands of #80-1R, D3 attachment chain handle wood pallets on the palletizer infeed and outfeed conveyors of a large brewery.

Review of Problem: Uneven chain elongation in the dual strands was causing the wooden pallets to twist. This made it difficult to load the cases of product on the pallet.

Solution provided by Drives: Drives suggested the use of matched and tagged strands of Drives #80-1R, D3 attachment chain with Extended Life CHP®. The chrome plated pins offer exceptional pin wear resistance reducing chain elongation. The pallets fed uniformly and there was minimum elongation of the chain.

Documented Savings: Documented Savings: 7 hours downtime, 2 men, 14 hours labor (\$420) and 7 hours downtime (\$7000), material GB (\$1000). Changed 3 times each year, cost savings were **\$25,260** (\$420+\$7000+\$1000x 3times per year).



Solutions that Drive Success.

Review of Application: The application being considered is a Lid Printer. A pair of roller chains is used in a printing application to position lids to have a label applied. The chain travels the length of the machine and it takes approximately an entire shift to change out one of these chains. There are 7 machines.

Review of Problem: The original equipment chain supplier caused extra cost and downtime for several reasons. First when replacing the chain, they faced a long lead time due to fact that the supplier did not manufacture in the USA. The lead time is 8-9 weeks. Secondly, when the chain was received it was supplied in small 9 pitch sections which required extra manpower to assemble. These assemblies require the installation of a master link which reduces the strength and accuracy of the chain. Also the chain sidebars were of poor quality and falling apart during installation. Finally, once they installed the OEM chain, it required frequent maintenance because of a lack of accuracy in the pair of chains resulting in misaligned labels on the lids.

Solution provided by Drives: Drives USA manufactures chain in Fulton, Illinois and can supply chain in 1-2 weeks. Drives has supplied a pair of chains that were cut to length, which means that there was only 1 master link required increasing strength and accuracy. Additionally this pair of chains was provided in a "matched and tagged" set (i.e. labeling each strand, left hand and right hand). By matching and tagging, Drives USA can provide a pair of chains to a specific tolerance for their overall length.

Documented Savings: \$1,600

Paper Products



Solutions that Drive Success.

Review of Application: Log Pusher - Conveyor

Chain: 120

Materials, Coatings or Plating: Carbon Steel Chain w/chrome pins

Review of Problem: Critical conveyor in harsh and dirty environment. User was considering sealed joint chains but cost and lead time was considerably higher than chains having standard construction.

Solution provided by Drives: Drives introduced their standard chains - assembled with hard chrome pins. Wear life is expected to be 2 - times or more than standard chain. Lead time was 3-4 weeks and cost was slightly more than standard chain. The results were documented savings and lower cost of operation.

Paper Products



Solutions that Drive Success.

Review of Application: Accumulator line for rolled paper products

Chain: 100

Materials, Coatings or Plating: Carbon Steel

Attachments: Special MTO Pins or Attachments

Review of Problem: These chains are a critical component of the production line. Lead time from current supplier was too long - potentially delaying a plant shut-down.

Solution provided by Drives: Drives was able to provide the replacement chains, with much improved length matching tolerances, lower overall purchase cost (documented cost savings) and in time to prevent a delay in the scheduled plant shutdown.

Paper Products



Solutions that Drive Success.

Review of Application: Paper Products - Conveyor

Chain: 80

Materials, Coatings or Plating: Carbon Steel Chain w/chrome pins

Review of Problem: Product conveyor operates in dirty, dusty and hard to maintain area of the plant. Currently using sealed chains from competitor. Current chain costs are excessive.

Solution provided by Drives: Plant is installing Drives standard attachment chains assembled with hard chrome pins. Wear life is expected to be 2 times or more than standard chain. Purchase cost was approximately 30% less than competition's sealed chain product resulting in documented savings and lower cost of operation.

Paper Products



Solutions that Drive Success.

Review of Application: Bindery Lines at a Printernormal maintenance on chain

Review of Problem: The chain was repaired by grinding, punching or chiseling the pins out of the side Plates. This was very time consuming and dangerous and also damages the chain.

Solution provided by Drives: Drives EZ Breaker provides a powerful cam-action that pushes both pins through the link plates with an easy pull of the handle.

Documented Savings: \$1500 every time they change out the chain (result of a Drives Lunch & Learn presentation)

Paper Products



Solutions that Drive Success.

Review of Application: Drive chain for conveyor that moves logs from the wood yard to the plant for debarking in a paper mill. Currently using 200R (142 pitches) chain from Rexnord.

Review of Problem: Currently using an oil bath drive. Customer wanted to eliminate the oil bath and move to a maintenance free chain.

Solution provided by Drives: Drives proposed 200R Extended Life CHP[®] chain without lubrication.

Documented Savings: The customer estimates the total savings to be **\$2,000** after eliminating the need for an oil bath system and the downtime required for maintenance.

Paper Products



Solutions that Drive Success.

Review of Application: Paper Products – Conveyor #80 & #100 Attachment Chains w/CHP

Review of Problem: Product conveyor operates in dusty and hard to maintain area of the plant. Currently using sealed chains from competitor. Current chain costs are too high.

Solution provided by Drives: Plant is installing Drives standard attachment chains assembled with hard chrome pins. Wear life is expected to be 2x or greater than std. chain. Cost was 30% less than competition. Documented savings and lower cost of operation.

Paper Products



Solutions that Drive Success.

Review of Application: Paper residue in plant sticks to chain and wicks out lubrication.

Review of Problem: The chain wears out prematurely.

Solution provided by Drives: Substitute standard chain with Drives Extended Life CHP® chain with no lube and paper no longer sticks to chain. The chrome hardened pins add toughness and strength and can increase wear life by 3X over conventional premium chains.

Documented Savings: Chain life increased 2X and saved on lubrication because chain runs dry.

Paper Products



Solutions that Drive Success.

Review of Application: Serpentine Conveyor System that acts as a storage area, in-feed conveyor and out-feed conveyor for rolls of paper towels. Currently uses #100 foreign chain with D1 attachment.

Review of Problem: Had difficulty timing the conveyor properly to function with the associated equipment. Even though the chain was not technically worn out, they were not able to remove links and still time the conveyor properly.

Solution provided by Drives: Drives recommended 300 feet of #100 CHP chain with a D1 pin every 6th pin w/ chrome pins, class 2 match and tag in pairs. Drives chain is estimated to last 15 years.

Documented Savings: Estimated amortized first year savings \$13,757

Paper Products



Solutions that Drive Success.

Review of Application: C2080H chain with attachments every 20 inches moves a 2 ton load of baled paper going into the hydropulper via a 45 foot long conveyor.

Review of Problem: The chain was elongating too quickly and was causing the chain to jump teeth on the sprockets resulting in baled paper falling off the conveyor.

Solution provided by Drives: Drives USA dual strands of C2080H chain w/attachments and chrome hardened pins eliminated the early elongation and jumping of the sprocket teeth.

Documented Savings: \$52,500

(Downtime of 1 hour, 1/ week, after 3 months of operation. 1 person @ \$30/hr, downtime @ \$1000/hr. First year savings = \$50,000 in production, \$1000 in chain - \$52,500 total.)

Primary Metals

DRIVES
USA CHAIN

Solutions that Drive Success.

Review of Application: Chain cutting for applications in a Steel Mill

Review of Problem: When a grinder is used to cut the chain, abrasive dust falls on the chain and eventually works into the chain joint, resulting in premature wear of the chain.

Solution provided by Drives: Drives EZ Breaker – Once demonstrated, the maintenance supervisor ordered the EZ Breaker and 2 die sets on the spot.

Documented Savings: The Mill saves 20 minutes every time they use the EZ Breaker at \$30.00 an hour labor, 100pcs. of chain, 2 times per year bringing the total savings to **\$2,000** a year.

Primary Metals



Solutions that Drive Success.

Review of Application: 50' of Hitachi, then Link Belt 240-2C, hydraulic driven feeder delivers directly into a shredder

Review of Problem: Typical life was 6 months and the chain was failing due to fatigue of the sidebars

Solution provided by Drives: Drives explained the pre-stress, hole formation, and ballizing process and the proven higher quality and performance of the Drives Chain.

Primary Metals



Solutions that Drive Success.

Review of Application: 120H roller chain is used at a steel mill on a heat treat tempering furnace to drive rolls with 18 tooth sprockets in ten roll sections.

Review of Problem: The competitors roller chain was breaking due to fatigue every 3 to 5 months.

Solution provided by Drives: Drives replaced their current chain with **standard** 120H cottered chain. Drives produces USA roller chain with the same attention to detail that goes into all of our products. All ballized plates after heat treatment ensure maximum bearing area for optimum press fits improving fatigue life and working loads. All pins are precision hardened, micro ground and shotpeened to deliver extended wear and protection from unpredictable overloads. Drives USA roller chain is pre-loaded at 50% of tensile to minimize break-in elongation and provide longer in-service life. By building these features into all of our chain, Drives was able to increase the fatigue strength by approximately 25%.

Results: The steel mill purchased 120 feet of chain in January and another 120 feet in April, in addition, they switched all of their other drives over to Drives USA roller chain. The first chains were installed in February 2006 and were still operating as of October 2007. The Drives USA chains have outlasted the competition by four times.

Savings: \$15,000

New Business: \$175,000

Primary Metals



Solutions that Drive Success.

Review of Application: Live roller conveyor in a highly contaminated area of molten sand.

Review of Problem: Foundry coring line chain was elongating and had to be replaced every 6 months. Line had to be shut down for an extended period (minimum 2 days). Customer was looking for a chain that would extend the chain life to one year.

Solution provided by Drives:

Drives Extended Life CHP™

Documented savings:

CHP™ lasted 15 months or 2.5 times longer than competitor's chain.

Drives estimated at **\$25,000** plus.

