

Wear Protected Conveying Chains



For longer conveyor life and better product handling



Wear protected chains... reducing wear and improving life

For more than a decade Ramsey has worked with glass bottle producers around the world to develop and produce our unique line of wear protected glass conveying chains. Designed specifically to minimize or prevent the most common types of conveyor chain wear, Ramsey chains offer bottle producers a wide range of new options for reducing conveyor maintenance, improving product handling, and increasing productivity. With more patented wear protected chain designs than any other glass conveyor chain producer, and more than 100 years in the chain business, you can depend on Ramsey for your most demanding conveying applications.

HOW WEAR PROTECTED CHAINS WORK

In many production environments standard silent conveying chains perform admirably and can deliver years of trouble free service. However, in some situations, conveying chains can be exposed to conditions that create unusual wear, disrupt product transport, and lead to premature chain failure. Conveyor systems that experience these problems can often realize significant productivity gains by replacing standard conveyor chains with new wear protected chains that are designed to reduce, or prevent, specific types of chain wear.

Typical chains contain pins that extend from the sides of the chain (Figure 1). The ends of these pins, which are headed or riveted to hold the chain together, are vulnerable to several types of wear. They may rub against lateral guides or transfer plates, which can result in the gradual wearing of pin heads. Or, the exposed pin heads may snag or hang up on any protruding edges along the

conveyor's path. This snagging can lead to conveyor surging, product flow disruption, and the chipping or shearing away of the pin head. Once the pin head is worn away, or sheared off, there is nothing holding the chain together and it will start to come apart. If that occurs, the conveyor will need to be shut down so the chain can be repaired or replaced.

Operators may try to prevent pin snagging by creating a gap between the chain and transfer plate (Figure 1). In some instances this gap can interfere with the smooth transfer of items across the chain.

Ramsey Wear Protected Chains eliminate these typical chain problems. As shown in Figure 2, special wear protected side links fully enclose pin heads and guard against pin wear and chipping. This allows the chain to be operated in direct contact with lateral guides or transfer plates, eliminating gaps that can prevent smooth product transfer.

FIGURE 1 TYPICAL CONVEYOR CHAIN

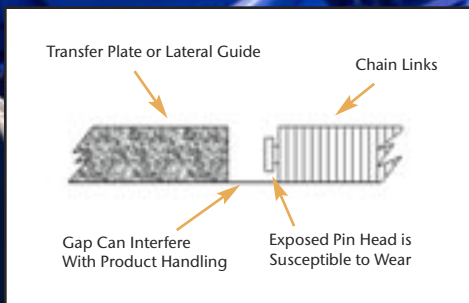
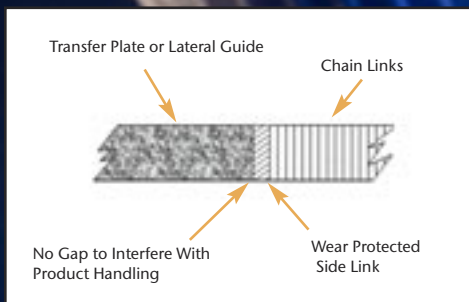


FIGURE 2 RAMSEY WEAR PROTECTED CONVEYOR CHAIN



A QUICK OVERVIEW OF OUR WEAR PROTECTED PRODUCTS

ALLGUARD FX™



Allguard FX chains are designed with unique, wear resistant links covering and protecting the chain. Allguard FX can run in direct contact with lateral guides, immune to the pin head wear which can destroy typical chains.

RAMSEY ALL-STEEL™



Ramsey All-Steel chains are wear protected chains made from 100% steel. Unlike other chains which use head protector links made from pressed metal and are susceptible to cracking, All-Steel chains use guard links made from 100% hardened, alloy steel.

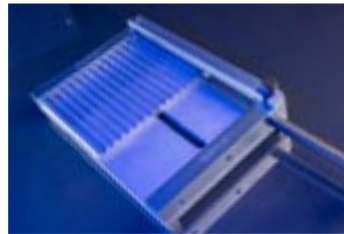
LIFEGUARD®



Lifeguard patented chains offer the most complete protection against lateral chain and pin head wear. They are equipped with unique, patented, interlocking side links that not only guard against

wear, but also greatly reduce the size of gaps between adjacent side plates, assuring smooth product transfer.

RKO KNOCK OUT TOOL®



Ramsey's patented RKO Knock Out Tool greatly simplifies the connection and disconnection of Ramsey's Wear Protected chains. This lightweight tool can be used with any width or style single pin conveying chain, including Allguard FX,

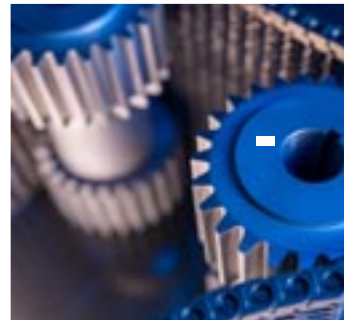
Lifeguard and All-Steel chains; and is now available in both standard and wide-body versions.

SENTRY®



Sentry chains combine the best features of Allguard FX and two pin conveying chains with features developed for high speed power transmission chains. The result is a chain with

recessed and staked pin heads, two pin chain joints and 100% steel alloy construction - no sintered metal - for an extremely durable long-lasting chain.



SPROCKETS

Ramsey produces a complete line of sprockets to fit our chains, as well as chains from other sources. Sprockets are typically alloy steel with heat treated teeth but are also available in other materials, including stainless steel. Sprockets are machined to fit customer specifications.

R-SELECT™



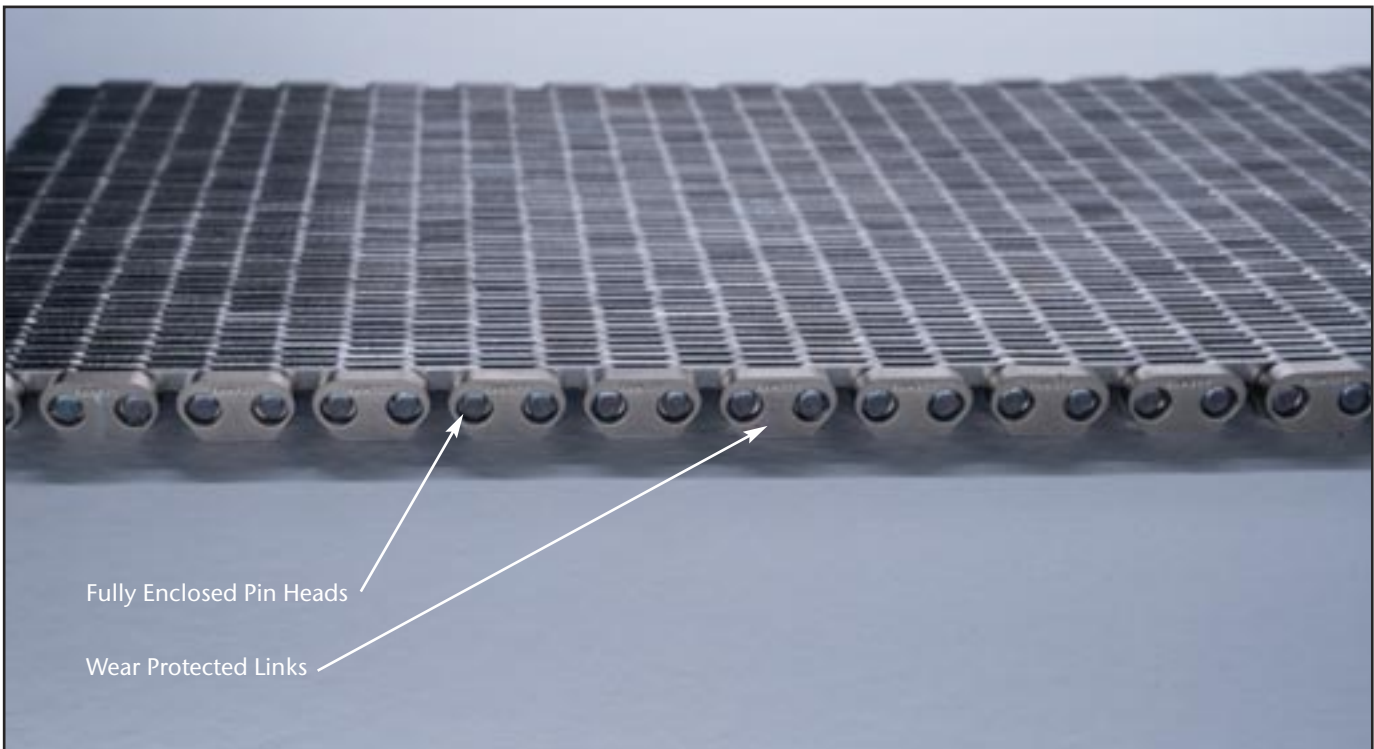
Ramsey's patented R-Select chains allow conveyor chain users to select exactly where they want to improve the wear resistance of a chain. During production, highly wear resistant links are

inserted throughout the chain, or in specific locations, depending on customer preference. As a result, enhanced wear resistance is available where you need it most.

Allguard FX

THE ALLGUARD FX™ ADVANTAGE

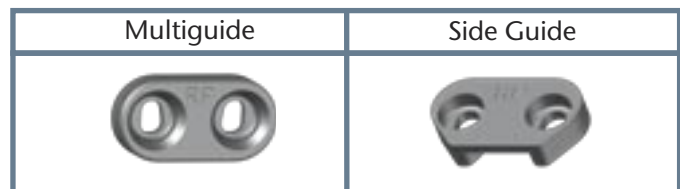
Ramsey's Allguard FX conveyor chain is designed to extend chain life and improve product handling, especially in applications where conveyors run in contact with lateral guides or transfer plates. As shown in below, special Allguard FX side links fully enclose pin heads and guard against pin wear and chipping. This allows Allguard FX chains to run in direct contact with lateral guides, immune to the pin head wear that can destroy typical chains. Wear protected links can be added to both sides of a chain, or only one side, depending on customer preference.



ALLGUARD FX CHAINS - 1/2 INCH AND 1 INCH PITCH - MULTIGUIDE, CENTER GUIDE AND SIDE GUIDE

Allguard FX chains are available to replace nearly all side guide, center guide, and multiguide chains. The design of the special Allguard FX links used in each style of chain differs slightly in order to provide the best fit with existing sprockets and conveyor wear plate dimensions. Chains can be selected to operate with existing sprockets, so sprocket modification is not required. All FX chains can be top ground to provide an extra smooth surface finish.

1/2 INCH PITCH



1 INCH PITCH

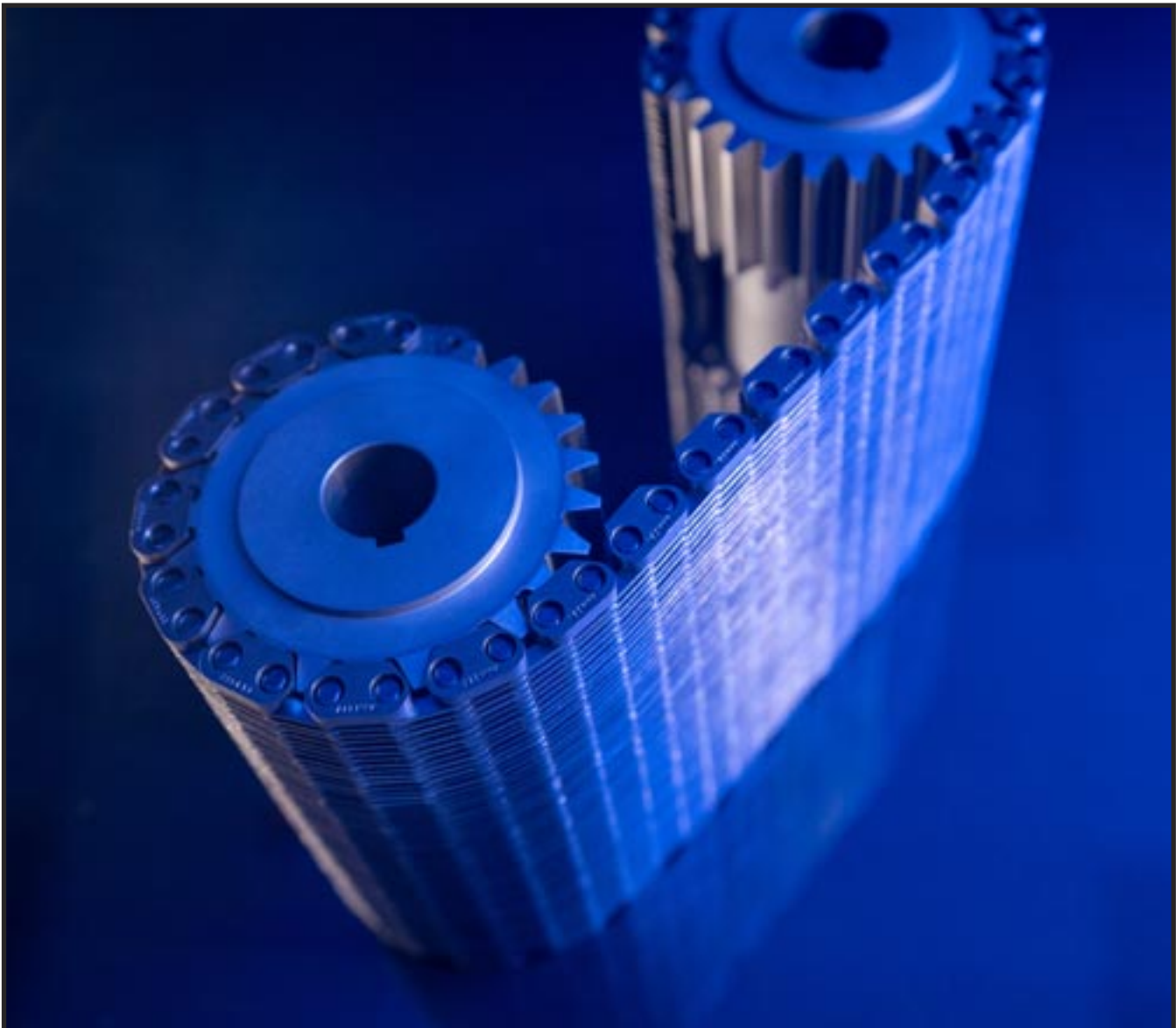


SIZES AVAILABLE TO FIT MOST CONVEYING SYSTEMS

Allguard FX chains are available to accommodate a wide range of conveying systems. They are available in widths ranging from less than one inch, to over 20 inches. Chains can be assembled with all links, or with link and spacers, depending on customer preference. Links can also be double stacked within the chain to achieve better air flow and bottle cooling.

ORDERING ALLGUARD FX FOR THE FIRST TIME?

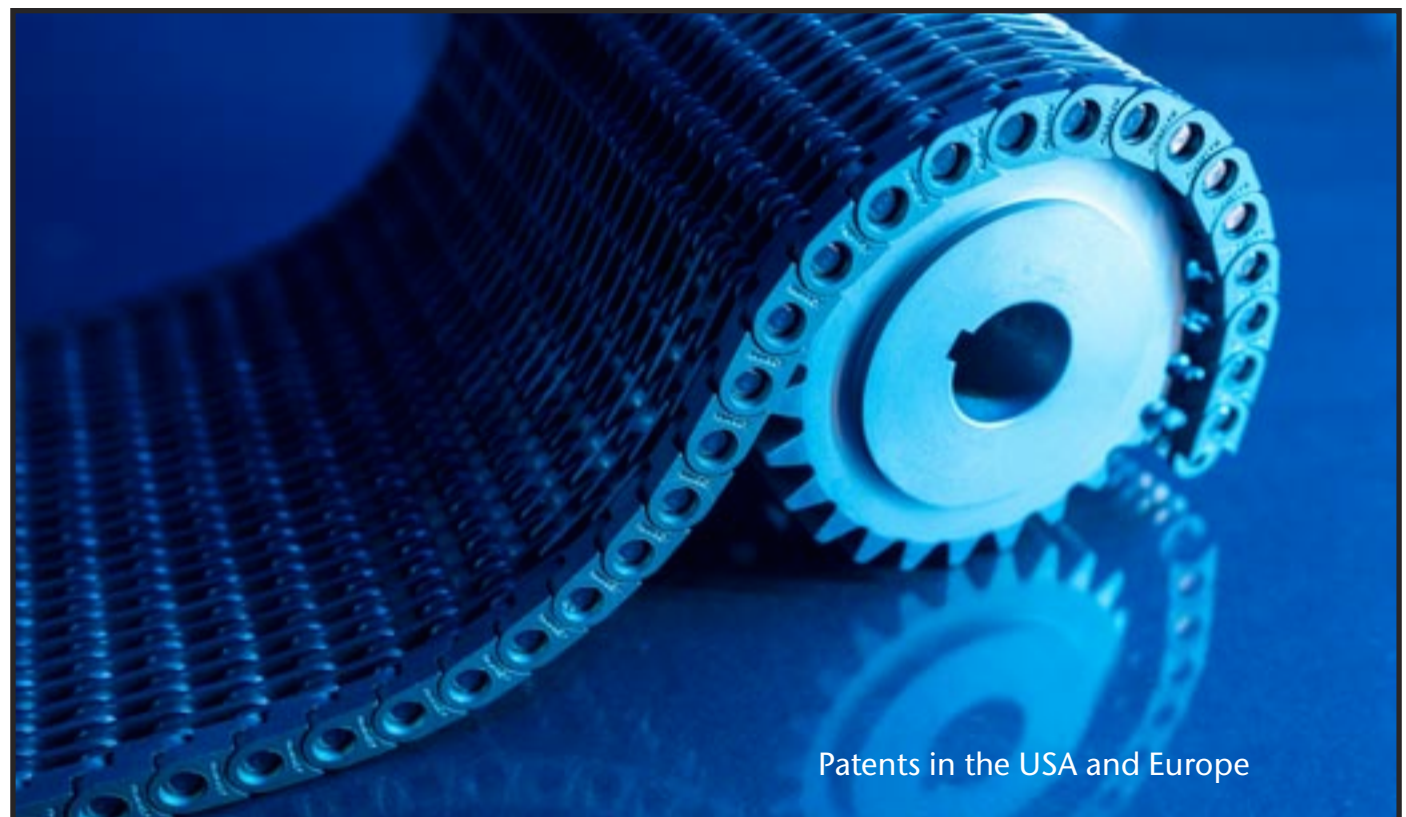
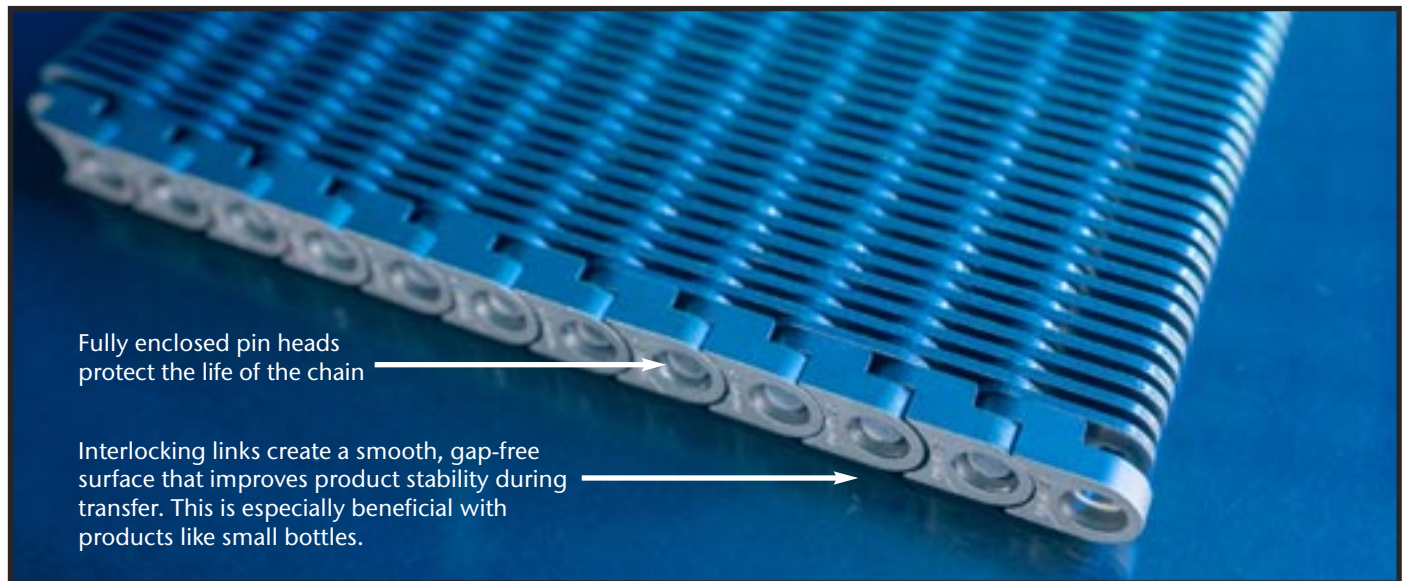
When placing an initial order, or replacing another style of chain with Allguard FX, we recommend that you contact a Ramsey customer service representative. They will assist you in determining which chain best fits your application. It will be helpful if you have the part number, length, and a description of the chain that you usually buy.

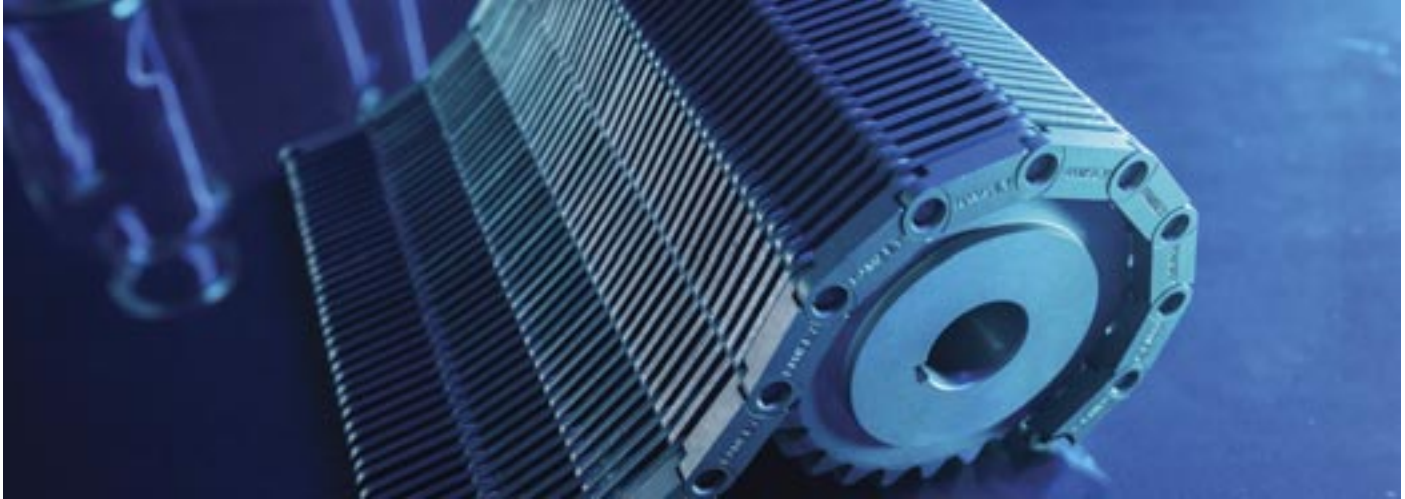


Lifeguard

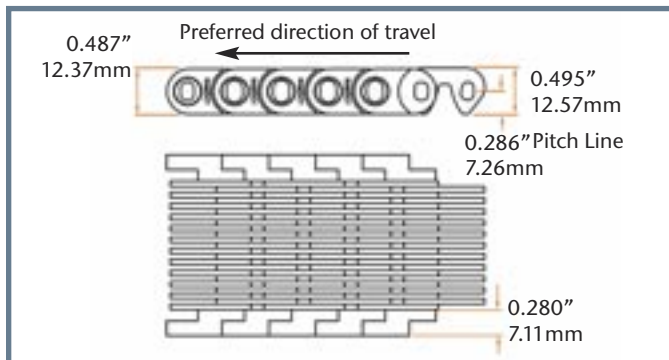
THE LIFEGUARD® ADVANTAGE

Ramsey's Lifeguard Wear Protected glass conveying chains are designed to prolong chain life by guarding exposed pin heads against wear and by preventing chain snagging. In addition, Lifeguard's special interlocking side links not only guard against pin head wear, but also greatly reduce the size of gaps between adjacent side plates. With smaller gaps between the links, the potential for snagging on lateral guides is significantly reduced.

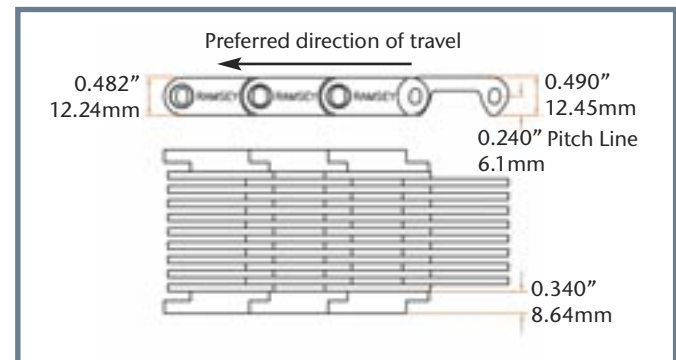




SINGLE PIN, 1/2 INCH PITCH



SINGLE PIN, 1 INCH PITCH



SINGLE PIN IN MULTIPLE PITCHES

Lifeguard single pin chains are available in both 1/2 inch and 1 inch pitch.

ADAPTABLE TO SIDE GUIDE OR CENTER GUIDE SPROCKETS

Lifeguard's special side links also serve to guide chains onto sprockets and maintain chain tracking. When ordering chain it is important to purchase compatible sprockets. If you plan to use existing Ramsey side guide sprockets, you should verify that the sprocket width is suitable for the chain width that you are buying. Ramsey customer service representatives can help you make this determination.

Center guide sprockets can also be used with Lifeguard, as long as the sprocket width is less than the chain's between guide dimensions.

DOUBLE OR SINGLE GUARD OPTIONS

Lifeguard is available with guard links on one side of the chain or on both sides of the chain. Single guard chain is less expensive, but double guard provides more complete chain protection.

EXCLUSIVELY FROM RAMSEY

Lifeguard chain is only available from Ramsey. There is no other chain like it, from any other supplier.

SIZES AVAILABLE TO FIT MOST CONVEYING SYSTEMS

Lifeguard chains are available to accommodate a wide range of conveying systems. They are available in widths ranging from less than one inch to over 20 inches. Chains can be assembled with all links to maximize surface area, or they can be produced with links and spacers to reduce overall weight and enhance cooling. Links can also be double stacked within the chain to achieve better air flow and bottle cooling.

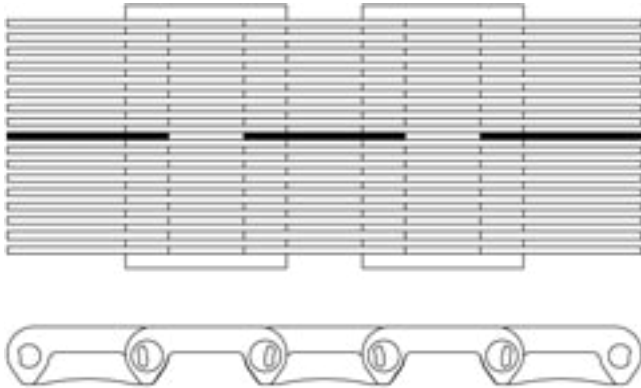
ORDERING LIFEGUARD FOR THE FIRST TIME

When placing an initial order, or replacing another style of chain with Lifeguard, we recommend that you contact a Ramsey customer service representative. They will assist you in determining which chain best fits your application. It will be helpful if you have the part number, length, and a description of the chain that you usually buy. Contact sales@ramseychain.com or call 704-394-0322.

Sentry

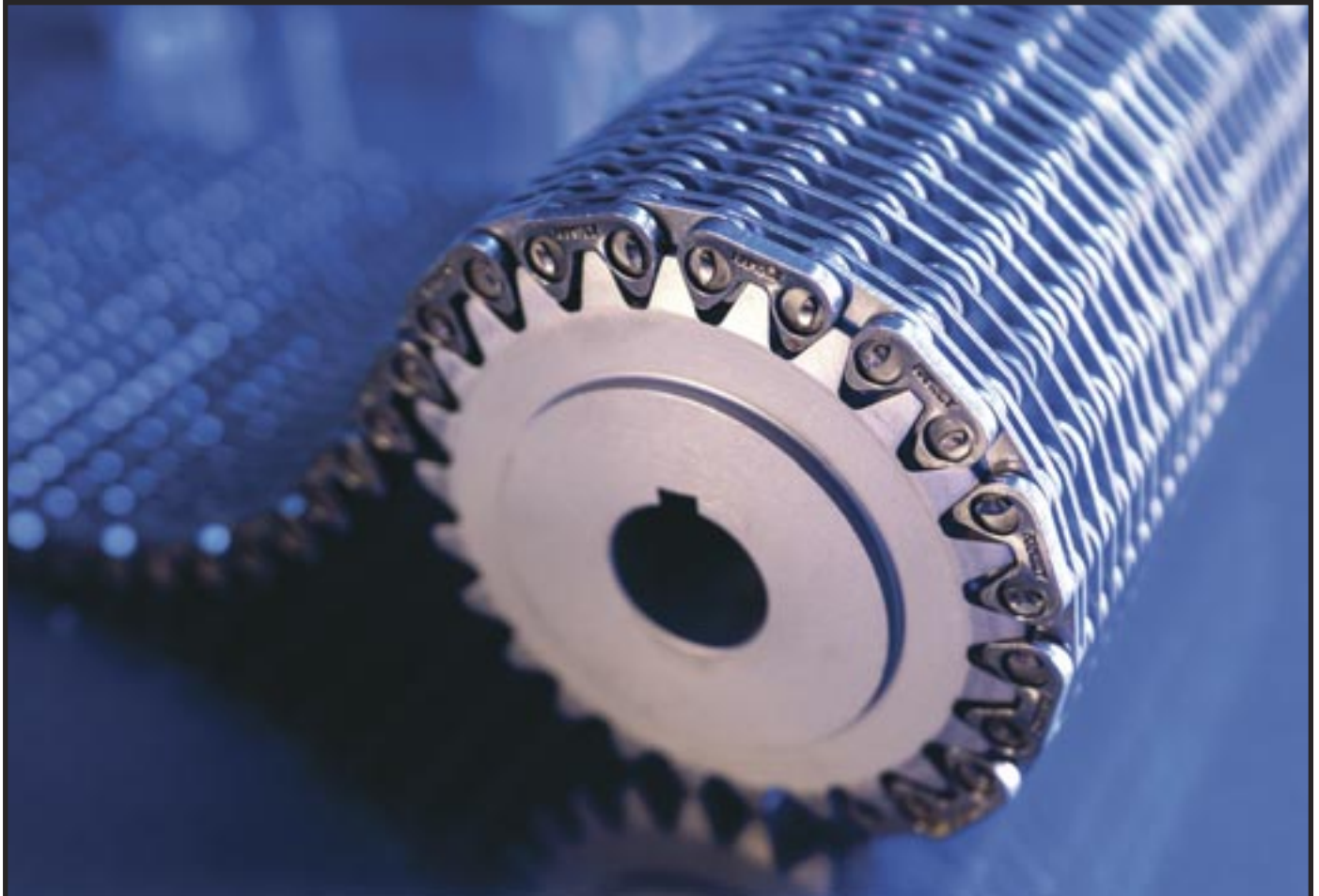
THE SENTRY® ADVANTAGE

Ramsey's popular line of wear protected chain products recently expanded to include a unique new conveying chain. Branded the Sentry line, this chain combines the best features of Ramsey's established Allguard FX and two pin conveying chains with features developed for high speed power transmission chain.



FEATURES OF RAMSEY'S NEW SENTRY CHAINS

- Guard Links with Fully Recessed Pin Heads
- 100% Hardened Alloy Steel Construction- No Sintered Metal
- Two Pin Chain Joints
- 1 Inch and 1/2 Inch Pitch Chain Design
- Staked Pin Heads
- Pre-Stressing for Reduced Chain Elongation





DEVELOPED ESPECIALLY FOR GLASS CUSTOMERS PREFERRING TWO PIN STYLE CONVEYING CHAINS

Following the success of Ramsey's established wear protected chains, our customers who prefer two pin chain designs challenged Ramsey's engineers to come up with a new chain. In response, Ramsey engineers developed an all steel, two pin chain design that offers the same wear protection as Lifeguard and Allguard FX.

EXCLUSIVELY FROM RAMSEY

Unique in the industry, Sentry chains blend features which have been successfully used in Ramsey glass conveying chain for decades with totally new features which are only available from Ramsey. No other company offers chains comparable to Sentry!

SENTRY - WEAR PROTECTION AND MUCH MORE

Sentry chains utilize time tested assemblies, two pin joint designs, and wear protected recessed pin heads to produce chains that are strong, durable, and resistant to wear. In addition, the pin heads in the chains are "staked" using

proprietary technology developed by Ramsey. Staked heads are very durable and more compact than heads formed by other methods. And since the pin heads are recessed, they will not wear like pin heads in laser weld style chains.

The guard links on Sentry chains are hardened alloy steel. No sintered metal parts are used in the chain. This results in a more robust and impact resistant chain. Lastly, Sentry chains are pre-stressed during manufacturing to fully seat components and to reduce chain stretch.

COMPATIBLE WITH EXISTING SPROCKETS

Ramsey's Sentry conveying chains can be made with or without spacers, and are fully interchangeable with similar existing chains and center guide sprockets.

ORDERING SENTRY FOR THE FIRST TIME

When placing an initial order, we recommend that you contact a Ramsey customer service representative. We can help you determine which chain best fits your application. Contact sales@ramseychain.com or call 704-394-0322.

R-Select Chains

THE R-SELECT™ ADVANTAGE: WEAR RESISTANCE, WHERE YOU NEED IT MOST

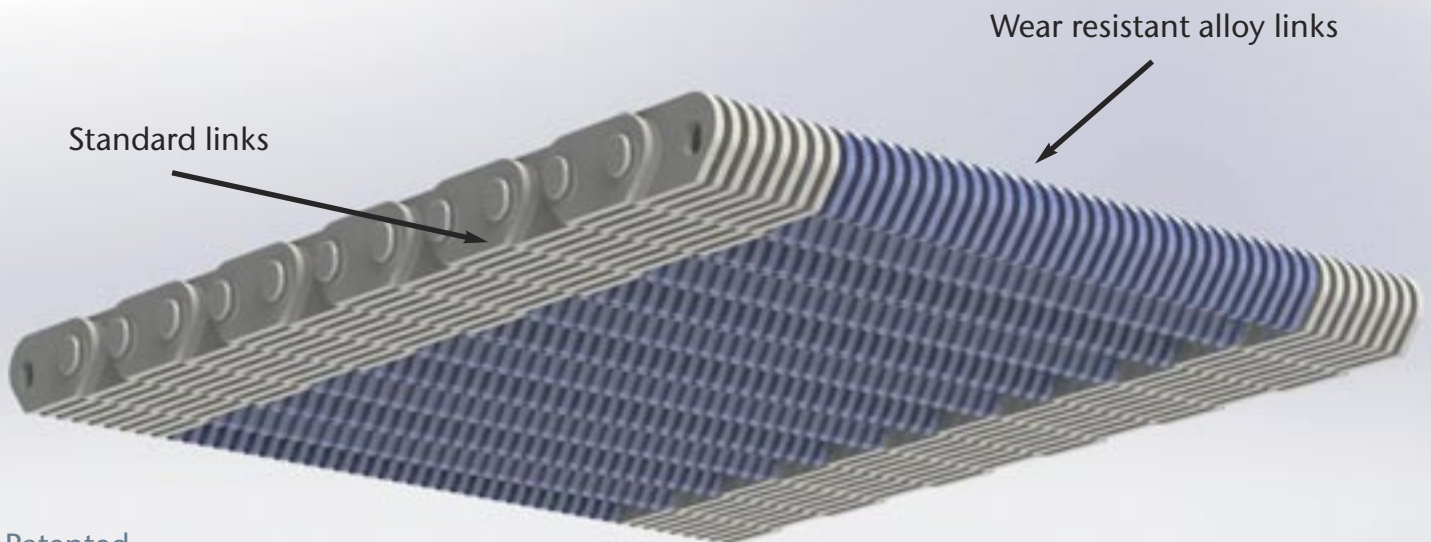
Over the years, customers have asked us if we could make conveying chains using wear resistant materials and also keep the chain cost down. R-Select chains are Ramsey's patented solution to this customer request.

R-Select chains put hardened, highly wear resistant chromium alloy links in the parts of the chain which are expected to wear the most. Other parts of the chain, which are less subject to wear, are made with standard, heat treated steel links. Because, the chain is not made entirely of the more costly wear resistant links, the overall cost of the chain can be as little as 20% more than the cost of a standard chain. Alternatively, those customers who are looking for optimum wear characteristics, and are less concerned about the added cost, can have chains made entirely from wear resistant alloy links.

With R-Select, you choose where in your chain you want to enhance wear resistance. For example, someone who uses 6" wide all link multiguide chain on their cross conveyor may find that the link tips in the central portion of the chain wear more rapidly than the guide links on the

outside edges of the chain. Over time, this can create an unwanted dip in the middle of the chain which may interfere with product handling. To prevent this problem, R-Select allows the customer to specify the central portion of the chain be made of wear resistant alloy links. The rest of the chain will be made from standard heat treated links and all the chain dimensions will remain the same as before. The result is a wear resistant chain that is fine tuned for this particular application, at only a slightly higher cost.

Almost any style of Ramsey conveying chain can be made using the R-Select process. This includes single pin and two pin chains, chains with or without spacers, side guide, center guide, or multiguide chains. Lifeguard and Allguard FX chains can also be customized with R-Select to achieve optimum wear resistance.



Patented
Multiguide Chain With Wear Resistant Alloy Links

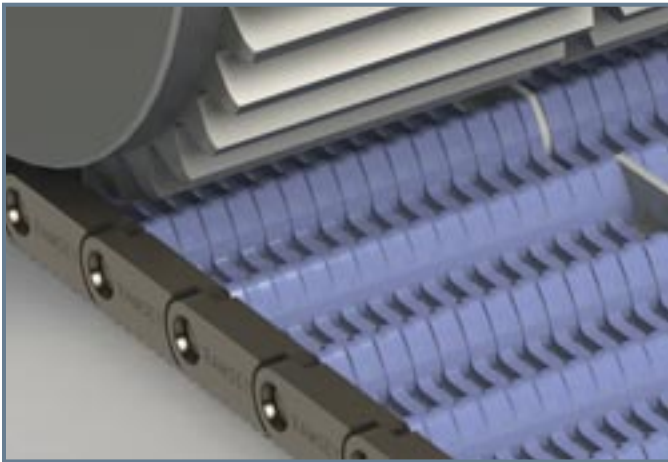
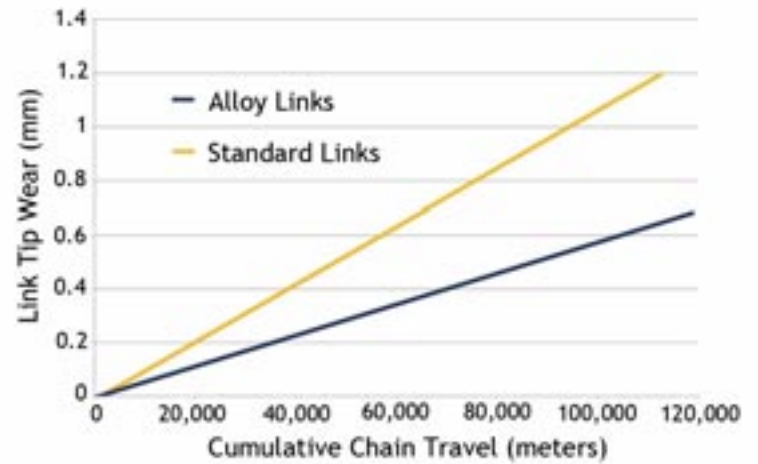
EXCLUSIVELY FROM RAMSEY

R-Select chains are unique in the industry. No other company offers R-Select chains.

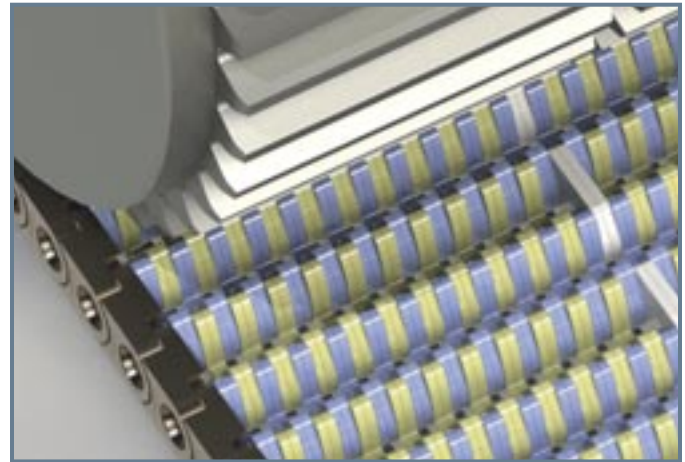
ORDERING R-SELECT CHAIN FOR THE FIRST TIME

When placing an initial order, we recommend that you contact a Ramsey customer service representative. It will be helpful if you have a general idea of the size and type of chain you want to buy and some idea of where in the chain you want to improve the wear resistance. We can then help you determine which chain best fits your application. Contact sales@ramseychain.com or call 704-394-0322.

Improved Wear Resistance of Alloy Links



100% R-SELECT



50% R-SELECT



Ramsey All-Steel Chains

THE RAMSEY ALL-STEEL® ADVANTAGE: SINGLE PIN CHAINS FOR HIGH SPEED AND HIGH IMPACT APPLICATIONS

Ramsey's 100% steel chains are tough enough for the most demanding applications. Protected against lateral chain and pin head wear by all steel, hardened, alloy side links, the links in this chain will never crack under pressure. So if you have tried other chains and had problems with sintered metal links cracking, those days are over.

AVAILABLE ONLY FROM RAMSEY

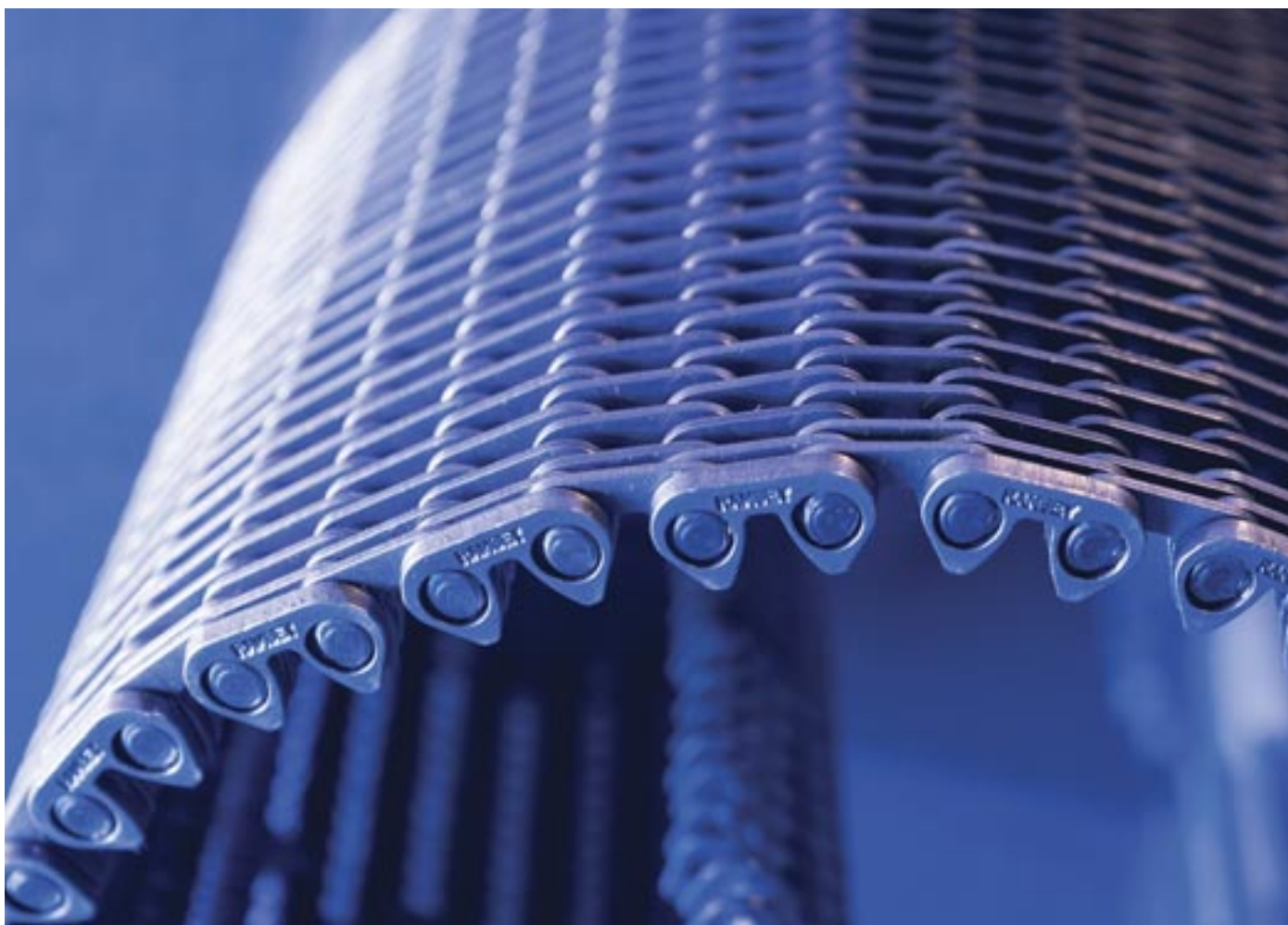
Ramsey All-Steel guard links can be added to almost any style of single pin center guide conveying chain. This product breakthrough may change the way you look at wear protected chains.



Pressed Metal

OPTIONS INCLUDE:

- Available in 1/2 inch pitch
- Chain widths from less than 1 inch to over 20 inches
- Assemblies include: all links (maximum surface area), link-spacer construction (reduced weight and enhanced cooling), or double stacked (better air flow and bottle cooling)
- Chain surfaces can be ground for the ultimate in smooth transport



ALL-STEEL



SOLID, HARDENED, ALLOY STEEL. AVAILABLE IN CENTER GUIDE, SIDE GUIDE AND MULTIGUIDE



Ramsey RKO Knock Out Tool

THE RKO TOOL® ADVANTAGE: SAVE TIME CONNECTING AND DISCONNECTING CHAINS

Connecting and disconnecting conveying chains can be tedious and time consuming. This is especially true with wear protected chains like Allguard FX, Lifeguard and All-Steel, where pin heads are recessed below chain link surfaces. Ramsey engineers have come up with a solution for this problem, the Ramsey RKO tool.

THREE DISTINCT WORK STATIONS

- The first station of the RKO tool uses a ram screw to remove the pin head.
- Second station maintains link alignment for easy pin removal or new pin insertion.
- Third station provides for insertion of drive pin chain connector.

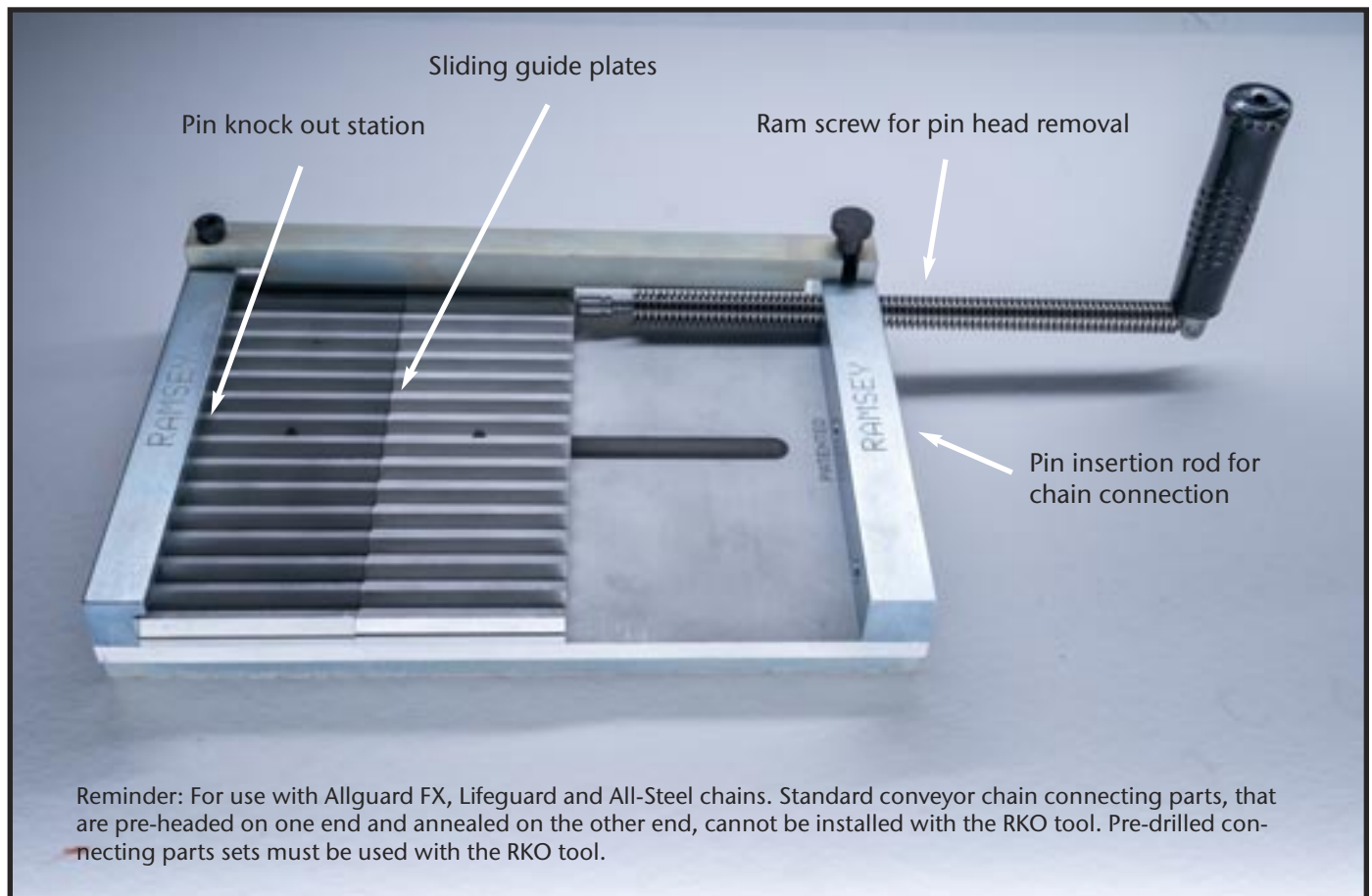
QUICK AND EASY DISCONNECTION

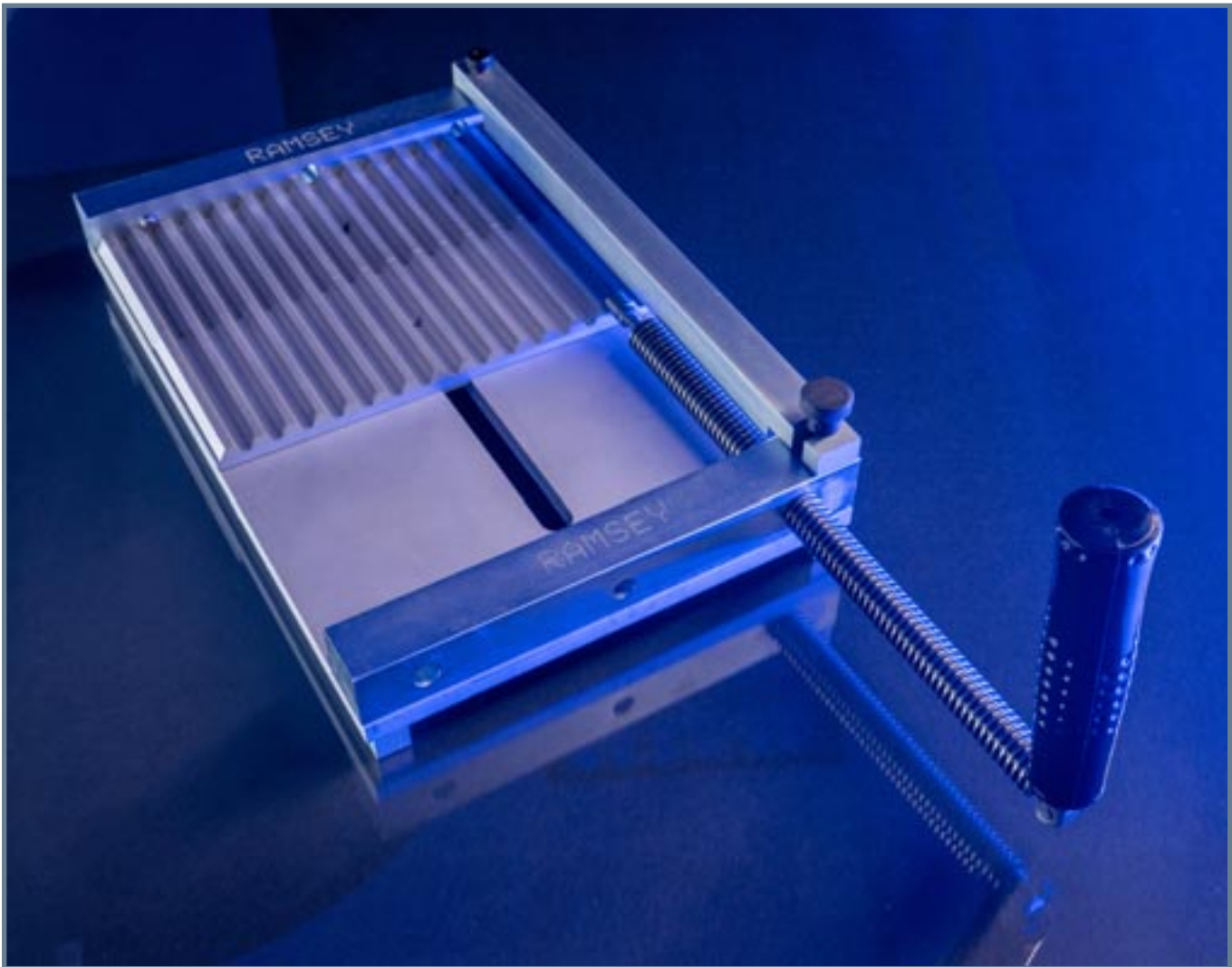
The RKO tool, or “Ramsey Knock Out” tool, is designed to quickly and easily remove pins wherever a chain must be disconnected. Simply place your chain on the tool and turn the ram screw until the pin head breaks away. The pin can then be easily removed and the chain is disconnected.

TROUBLE-FREE CONNECTION

During reconnection of the chain, the RKO tool maintains chain link and spacer alignment to make inserting a drive pin simple. In addition, the tool provides an easy method for heading the pin during chain connection.

Patented in the US and Europe

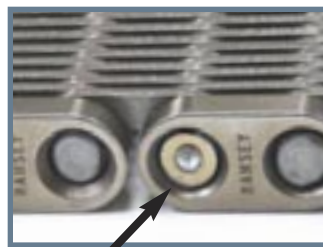




RKO chain connections are made fast and easy with the use of pre-drilled conveyor connecting pins and tough, heat treated washers and drive screws. To use this type of connection, be sure to order pre-drilled connecting parts sets for the chain that you wish to connect. If you prefer to use standard annealed type connecting pins, you can still use the RKO tool to disconnect chain, and the tool's toothed guide plates will help maintain link and spacer alignment during the connecting process. Just remember, with standard connecting pins you will still need to peen the ends of the connecting pins with a hammer.

RKO tools are equipped with modular guide plates that allow the tool to be adapted to almost any Allguard FX,

Lifeguard, or All-Steel chain. Just specify which type of chain you are using and the RKO tool will be delivered already set up to fit your exact chain. Alternatively, you can order the modular guide plates individually, and configure the tool for any chains that you wish.



RKO chain connection



Sprockets

All Ramsey Wear Protected conveyor chains, both 1/2 inch pitch and 1 inch extended pitch, operate on sprockets cut with a 1/2 inch pitch tooth profile. Sprockets are typically manufactured from medium carbon, alloy steel and are heat treated to provide hardened tooth surfaces. Materials, other than steel, are available upon request.

Sprockets can be fully machined with finished bore and set screws, or they can be supplied with an unfinished bore to allow further machining. Specialized machining is available to accommodate a customer's exact specifications.

Sprocket Tooth profiles are cut to established standards to assure proper meshing of the sprocket and chain. Chain and sprocket dimensions must be compatible for proper operation. We recommend purchasing chain and sprockets from the same source.



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