



4B Components Ltd.  
729 Sabrina Drive  
East Peoria, IL 61611  
USA

A Worldwide Manufacturer of:  
High Quality, Technologically Advanced  
Material Handling & Electronic Components

For Sales or 24 Hour Technical Support: 309-698-5611

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TECHNOLOGY • INNOVATION • QUALITY • VALUE



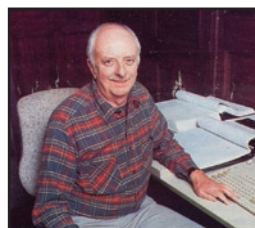
25th Anniversary  
1984 - 2009



25 years ago, 4B (Better Buckets, Belting and Bolts) Components Ltd. became the first overseas subsidiary of the 120 year old U.K. based material handling components company, Braime. With a small crew of transplanted European Engineers including: Nicholas Braime, Tor Hansson and Jim Mawson 4B started off in the U.S. with very humble beginnings, working out of rented offices and partnering with Federal Warehouse for distribution.



Nicholas Braime & Tor Hansson - 1984



Jim Mawson - 1984

Today, with our own office and warehouse facilities, clients and distribution throughout North, Central and South America, 4B USA has established itself as an industry leader, and 2009 marks the 25th anniversary here in the United States.

We would like to thank all of our customers for their business over the years, and look forward to working with you in the future.



4B Components, Limited - East Peoria, IL 309-698-5611

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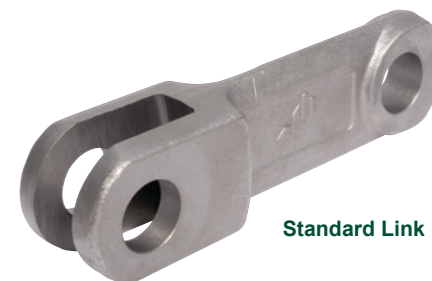
## 4B DROPPED FORGED CHAIN - NEW SIZES & STYLES AVAILABLE

The chain is the heart of the conveyor. With the right flight design, it can be used to move material by simply dragging it or, depending on the properties of the material, by moving it en-masse in a solid column. Material can be moved en-masse horizontally, on an incline, vertically and in different conveyor paths (i.e. L-path, Z-path, etc).

4B's forged chain design is derived from a standard European DIN metric chain developed many years ago for extreme applications. The chain is forged, machined to precise tolerances and case hardened to endure high temperature and highly abrasive applications. The recent inclusion of titanium to its special alloy steel composition toughened it even further, prompting 4B to specify minimum chain breaking loads instead of average chain breaking loads, considering that the chain is as strong as its weakest link.

Below is a list of industry users of 4B drop forged conveyor chain:

- Commercial Grain Terminals
- Commercial Grain Processing – Oils, Sweeteners, Ethanol, Flour, and Feeds
- Dewatered Sewage Sludge – Incineration
- Calcined Petroleum Coke
- Calcined Limestone – Calcium Carbonate
- Calcined Zinc
- Raw Gypsum (and DSG)
- Coal and Coal Ash
- General Ash Handling
- Refuse Incineration – Refuse Ash
- Cement Clinker, Meal and Portland
- Minerals and Ores
- Wood Chips and By-Products
- Pulp and Paper
- Clay and Kaolin Products
- Various Pellets and Prills
- Plastics
- Fertilizer



Standard Link



Double Link



Triple Link

In addition to the popular 102, 142, 216 and 260 mm chain pitches, 4B now manufactures 125, 150, 160, 175, 200 and 250 mm chain pitches as well. For specialized, high capacity, high temperature applications, ask us about our *double* and *triple* chain links. For more information or technical assistance, please contact us at 309-698-5611 or visit us at [www.go4b.com](http://www.go4b.com).



## EMPLOYEE PROFILE

David Byard



### Technical Sales Representative

Born and raised in the outskirts of Peoria I have lived in the area most of my life. I am 31 years old and have been married to my lovely wife Sarah for six years. We have two young boys Alexander who is 5 and Dominic who will be 3 in July.

Prior to coming to 4B I was a Technical Service Manager providing training and technical services to the Telecommunications Industry. During that time I assisted many business professionals as well as the general public with technical solutions to personal and business related problems. I trained all new Technicians in the Illinois/Wisconsin area and provided information to equipment manufacturers regarding software and hardware related issues. I look forward to using my past experiences and skills to assist in the continued growth of 4B.

On a personal note in my spare time I love riding and customizing my 2002 CBR 954RR sport bike and working on the various vehicles in my shop. My wife and I are currently customizing a Yamaha YX600 Radian for her first street bike. We plan to ride together as much as possible this summer and maybe spend some time at the drag strip racing my Honda. Although my boys are a little too young at the moment for motorsports, they still love cars and motorcycles and I am sure will be on wheels as soon as they can.



## PRODUCT UPDATE - WATCHDOG LOGGING & PRINTING SOFTWARE



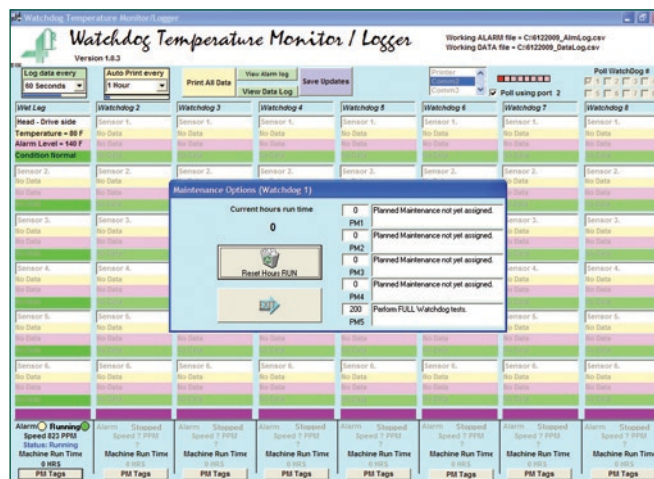
Watchdog™ Elite

Watchdog™ systems are widely used for hazard monitoring on bucket elevators and belt conveyors. With the release of the NTC Watchdog, we have added continuous bearing temperature monitoring in addition to belt speed and alignment monitoring (Plugschwitch and head pulley alignment monitoring are also available). With the addition of continuous bearing temperature monitoring, we have developed PC software that can log and print these temperatures at specified time intervals.

The Watchdog Logging and Printing software can monitor up to 8 Watchdog systems. It will keep a permanent record of every bearing sensor at a specified time interval and record every time that a bearing temperature reaches an alarm point. These values and alarms can also be printed for a hard copy if desired. This software offers flexibility of labeling equipment, individual sensors, maintaining machine run-time and alerting for preventative maintenance.

Wiring for the logging and printing software is easy, with a 4-wire RS-485 standard communications daisy-chained between the Watchdogs to a USB converter connected to the PC.

Software is available standalone or as a package including a PC, printer, and cables.



Screen shot of logging software -

- User adjustable data logs and auto printing
- View multiple Watchdog units with user assigned equipment names and sensor names
- View alarm logs
- View data logs
- Set up user defined maintenance (PM's) based on machine run time hours

## SPARKY'S SHOCKERS

## Touchswitch vs. Rub Block



### Brian Knapp Electronics Engineer

Belt misalignment is a common problem in belt conveyors and bucket elevators. When the belt is severely misaligned it can cause damage to the machine casing while generating dangerous heat in dust hazard environments. Two typical methods of detecting belt misalignment are the rub block and the Touchswitch.



Round Rub Block



Touchswitch

U.S. Patent #6,731,219

The Touchswitch design addresses these 3 issues. First, it detects the lateral force of the belt, and gives you an immediate voltage free relay contact change when the belt contacts it. Second, the face of the sensor is made of hardened stainless steel, which is much more resistant to wear than soft brass. Finally, each Touchswitch has a test knob and status LED, so you can tighten the test knob to simulate a belt misalignment and watch the LED go out followed by machine alarm/shutdown. When you loosen the test knob it simulates the belt moving off of the Touchswitch and the LED turns back on.



Fig. A  
(Worn Rub Block)



Touchswitch on  
Enclosed Conveyor

## ROGER'S REVIEW



### Roger Bruère Technical Sales Engineer

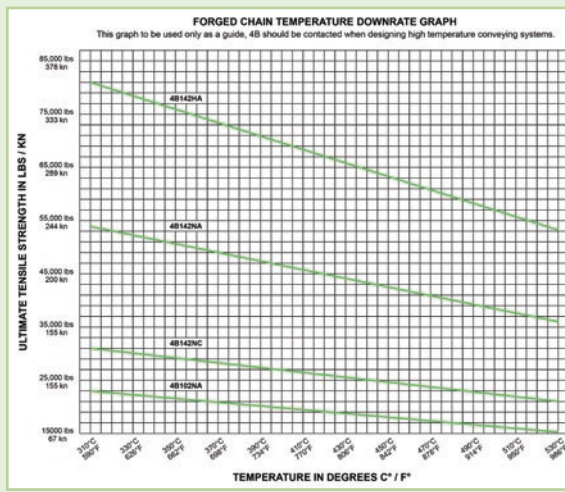
Whether the material is fine, granular or lumpy; free flowing or sluggish; abrasive or corrosive; hot or cold; 4B Forged Chain has effectively moved it. Such variety of environments requires careful flight design and material choice considerations. In high temperature applications, extra care during the design stage is required. One important factor to consider is how the flights will be attached to the chain links.

For example, even in dry high temperature applications, oxidation may compromise the weld integrity of mild steel welded flight attachments, resulting in potential breaking of flights. A cost-effective solution to this problem is to use 4B's Triple Chain Links, which use steel flights fastened by U-pins or bolts/nuts.

Tensile strength is also an important factor when choosing the appropriate chain design. 4B Forged Chain undergoes high temperature tests for quality assurance. The graph on the right shows the reduction in chain strength versus an increase in temperature. In a high temperature, chain pull calculation, the down-rated strength must be used with the desired safety factor. Consult 4B for design recommendations.

For enquiries or design consultations, please contact me directly by email: [rbruere@go4b.com](mailto:rbruere@go4b.com).

## 4B Forged Chain in High Temperature Applications



Triple Link Chain Assembly  
with U-pins and Flights

## INDUSTRY SPOTLIGHT

## U.S. Sugar Industry

The U.S. is the world's fifth largest producer of sugar, which is produced from sugarcane or sugar beets depending on the region of the country. Louisiana, Hawaii, Florida and Texas produce the United States' entire sugarcane crop. Sugar beets are grown in 14 states, from Michigan in the Great Lakes, Minnesota and North Dakota in the mid west to California on the west coast.

During the refining process, raw sugar is moved through the plant by belt / screw conveyors and bucket elevators. 4B has a free design service that can help OEM's and in-house maintenance departments design elevators and conveyors that move sugar through the plant with greater efficiency.



T500 Elite - Hotbus™

Once the raw sugar has entered the refinery it is turned into crystal sugar, which can become combustible and in turn start a fire and/or cause an explosion. The U.S. Chemical Safety Board (CSB) recently released a video, *Combustible Dust: an Insidious Hazard*. This video outlines how dust from industrial processing can become fuel for explosions. The first disaster profiled in the video occurred at the Imperial Sugar Refinery near Savannah, GA where 14 people lost their lives and 38 others were injured. To view the CSB safety video, go to the following link: [www.go4b.com/usa/hazard-monitors.asp](http://www.go4b.com/usa/hazard-monitors.asp)

The CSB video shows the importance of monitoring equipment used in hazardous areas. Typical equipment monitoring includes: belt under speed, belt misalignment, head pulley alignment and bearing temperature. 4B offers our Watchdog™ Elite Bucket Elevator and Conveyor Monitoring System as well as our T500 Elite Hotbus™ Monitoring System and other components / sensors to effectively and economically enhance plant safety programs.