



# SFSA CASTEEL REPORTER

Steel Founders' Society of America

a monthly publication  
serving SFSA steel casting industry Members

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## November — 2007

### **Casteel Commentary Highlights:**

We need to do a better job at recruiting future leaders. The Schumo Interns available through SFSA are an example of our failure to optimize our recruiting of technical and management skills. It is key that we do this. In fact, we have a competitive advantage in the world with a large pool of qualified candidates but we need to become more effective at recruiting and retaining them.

### **Technical & Operating Conference**

The T&O conference has had strong registration and should again prove to be an exciting and useful meeting. One new feature is the inclusion of a meeting for future steel foundry leaders. In an effort to develop a network of friends and colleges, SFSA is trying to facilitate a regular meeting of newer leaders in our industry. If you are interested and were not able to attend the SFSA T&O you should contact Dave Poweleit. More details are attached to the PDF version of this newsletter.

### **Steel Casting Art Book**

Foundry Work is a new book being published by industrial photographer Mike Schultz. This book will be a high quality, visual representation of the spectacular nature of the work within foundries. It will be full color and contain approximately 80 images. Areas covered will include melting, casting, molding and finishing. This book was conceived with the desire to honor and celebrate the work/workers within foundries. The book will be available in a limited hard cover (signed and numbered) edition as well as a soft cover edition.

Michael Schultz has been photographing industry for the past 20 years. He is also a noted photographer with images in public and private collections, and has a reputation for his outstanding printing ability. His work is in the permanent collection of the St. Petersburg Museum of Art and the North Carolina Museum of Art. If you are interested in this project please email me and let me know.

### **Equipment Available**

An SFSA member has a large amount of equipment up for sale in an online auction scheduled to end December 6. Information is attached to the PDF version of this newsletter.

### **Free Trade**

The New York Times has a short video on their website about the overseas competition many casting producers face. It is available at [http://www.nytimes.com/packages/html/nyregion/20071126\\_MANHOLES\\_FEATURE](http://www.nytimes.com/packages/html/nyregion/20071126_MANHOLES_FEATURE)

### **Men Available**

A1221 is a master's program student in materials engineering with experience in metalcasting, NDE, Microstructural characterization and image processing.

### **SFSA Study Tour - Brazil**

We are organizing a study tour of steel foundries in Brazil. The tentative dates are April 5-15. More details are being developed. If you are interested please contact Malcolm Blair.

### **Specification Note**

High Alloy material specifications are not restrictive enough or complete enough to allow producers to make the materials successfully. It is possible to make material in spec and it fail to have the corrosion or creep properties required. Many of the older specifications were purposely written with wide ranges and low heat treating temperatures so that unqualified suppliers would make unsatisfactory material. Users have been unhappy with this approach and prefer to tighten the older specifications or develop newer specifications that assure performance. Unfortunately, there is often no consensus on what is needed. The developers and early qualified producers are interested in gaining market success based on their proprietary knowledge.

If a producer wishes to make any of the ASTM or other specified materials from common specification, he needs to investigate the situation. The alloy may be patented or proprietary and require a license. If no commercial requirement is imposed, the technical know how required still needs to be developed. Any capable foundry can develop processes for alloy production but no one should be misled into thinking that a specification book is a cook book and a grade's requirements are its recipe.

### **Innovation**

Most steel alloys have remarkable properties. One of the less common benefits of using steel is its plastic behavior, it stretches before breaking. Many strong materials do not stretch and break suddenly and unexpectedly. High strength steel alloys, (>150 KSI YS), do not have much plastic behavior. This limits their usefulness. Titanium and aluminum alloys have long been used even with less plastic capability than steel.

To get the most toughness and ductility, plastic behavior, for titanium or aluminum, the castings are often HIPed. Hot Isostatic Pressing is applied to improve the properties. In HIPing, the casting is heated

in a liquid bath and then subjected to high pressures. Like a rolling or forging operation, small porosity is "healed" and properties improve sometimes dramatically. Steel castings have not been HIPed because most alloys are ductile and would not see a great benefit and because HIPing was not able to reach the temperatures or pressures needed for steel.

That has changed. HIPing is now able to reasonable and effectively treat steel. While ductile alloys are not benefited greatly, special high strength or other alloys may benefit. It is possible to double the toughness and elongation of some high strength steel castings with the use of HIPing. While this is no substitute for proper casting and heat treating, HIPing is another tool like heat treatment, to improve the capability of castings.

### **Market News**

Markets continue to slowdown in August and September. The combination of higher inflation, interest rates and uncertainty has led to a slowdown in the market. The SFSA trend cards show a continued drop in bookings while production remains flat. We see similar flat conditions for ferrous castings and steel shipments. Non-defense capital goods also show stable trends. Conventional forecasts express concern for the future citing the damage to financial institutions from subprime lending and the securitization of mortgage obligations.

Financial concerns have led to a small reduction in interest rates. Small price reductions from historic highs have mitigated some of the inflation indicators. Underlying economic growth should prevail and the slowdown that has hit the market should not prevail. In our industry, the high price for materials like oil and copper are likely to continue to support continued market demand. Large casting used in mining and transportation should remain strong. Moderating nickel prices will push ahead some investment in chemical and petroleum plants and support high alloy casting production.

While the dominant mood of concern remains, it seems reasonable to expect stable markets in smaller castings for the near term, through the first half of next year. Underlying strong economic conditions around the world coupled with higher prices for basic energy and materials will limit the downside. Capacity in some commodities has been installed but the supply chain for

equipment is not large enough to sustain the current production requirements. This suggests that market disruptions and supply shortfalls will result in strong market conditions going forward. Improved market conditions should be evident by the second half of the coming year.

The usual graphs are located in the PDF version of this newsletter.

### **Casteel Commentary**

Our steel casting industry faces a challenging future. We face a difficult global market, volatile and pricey materials and energy, demanding customers, and unfavorable public policies. These challenges are matched by historic opportunities. Strong market demands for large castings with stringent technical requirements give us a chance to grow and prosper. Lack of capacity in competitive processes like forging and in world supply for castings allows profitable growth for many members. While the short term outlook for next year is fuzzy, the medium term outlook is strong. One systemic challenge for our companies remains in our control and yet I think we are failing to meet it. We need to attract and retain technical and management talent for the future of our plants.

SFSA was fortunate to have visionary leadership that established a fund for the future. Bob Schumo, former SFSA president, contributed and established the SFSA Foundation. The Foundation has been renamed in his honor. Through the generosity of our members and others, the Foundation has over \$180,000 in reserves. The Foundation Board has directed these funds to support recruiting in the industry. For the past 5 years, SFSA has solicited members to sponsor an intern for the summer. These interns have done engineering projects and reported at the SFSA T&O conference. For the past 3 years, SFSA has also sponsored an intern so two positions are open. The successful interns have received a \$5,000 scholarship. This innovative program has been limited in three ways.

First, few members apply to sponsor an intern. Many plants are desperate for new employees, seeking to find recent graduates to fill opening and newly created positions, and interested in succession of key personnel. Many have their own internship program. And yet in the most recent SFSA solicitation, only two members applied to sponsor an intern. Plants with their own program would be able to attract better students if they had the scholarship and recognition of the SFSA program. Somehow, we have failed to communicate the opportunity and value of the program to our members.

Second, we do a poor job of recruiting the interns and others who have been involved in our research program. Our current salary structures are often not competitive, we are relatively inflexible in timing, and our requirements do not line up with graduate engineer skills. Worst we are not sophisticated or knowledgeable so we are too slow and non-responsive. We wait too late to recruit interns, coop students and engineers. By the time we begin the process, many of the best and brightest are taken. If anything we need to be aggressive if we are to compete with larger, better known and higher paying companies. Our recruiting efforts must take a longer systemic organizational view instead of a human resources filling a slot point of view.

Third, we are failing to exploit the usefulness of the Foundation in recruiting. A company could sponsor a scholarship directly for their intern program through the Foundation. This

would provide tax benefits and the recognition. Companies could contribute so the Foundation could increase the number of interns each year. How can you utilize the Schumo Foundation as a recruiting tool for your company's needs?

Recruiting the next generation is a global problem. Successful companies will need to excel at their selection, recruitment and retention. We have talked with steel foundry leaders from Europe, the old Eastern Bloc, China, Mexico, India, etc. and all say they find it difficult to fill these critical leadership roles. We are blessed with a larger pool of candidates than most competitors. We need to capitalize on the competitive advantage of our culture by our development of our future leaders.

**Raymond**

STEEL FOUNDERS' SOCIETY OF AMERICA  
MEETINGS CALENDAR

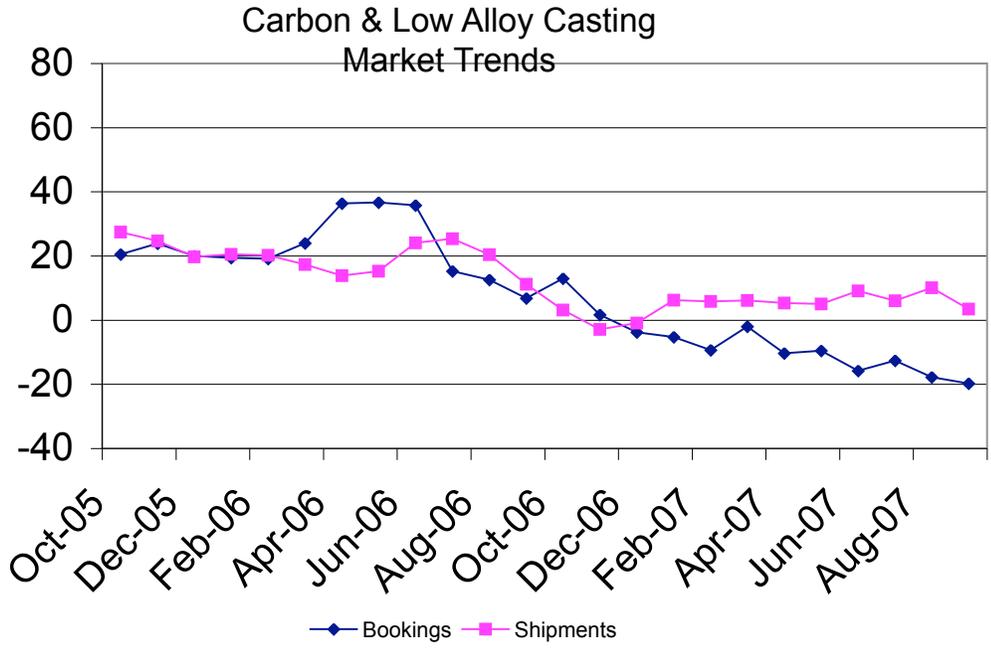
2007

December  
12/15

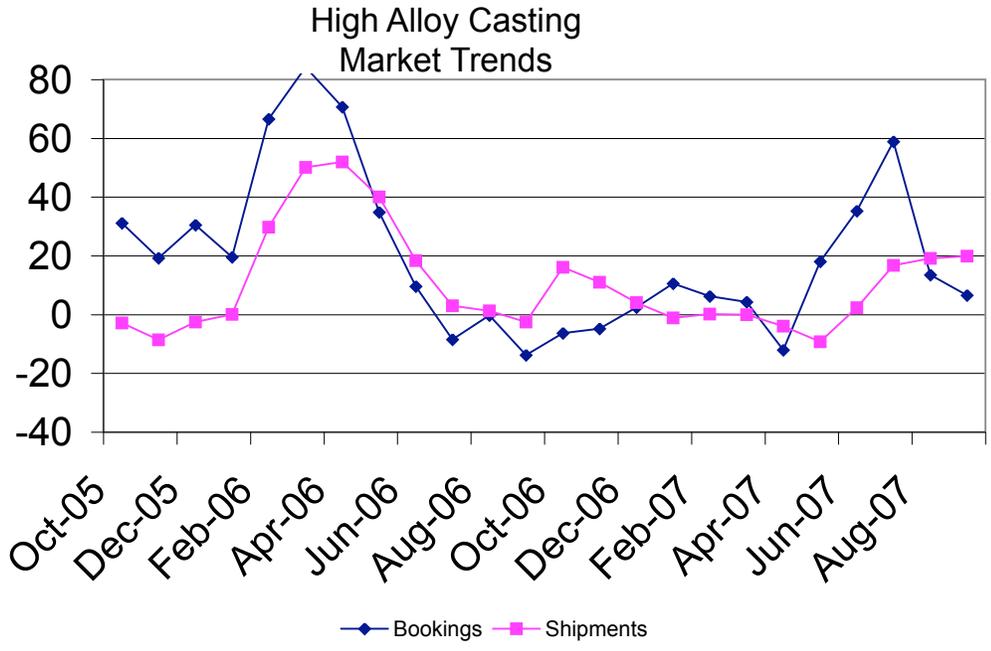
National Technical & Operating Conference, The Drake Hotel, Chicago, IL

**STEEL FOUNDERS' SOCIETY OF AMERICA  
BUSINESS REPORT**

<b>SFSA Trend Cards</b> (%-12 mos. Ago)	12 Mo Avg	3 Mo Avg	Sep	Aug
<b>Carbon &amp; Low Alloy</b>				
Shipments	4.4	3.5	-6.5	5.2
Bookings	-10.4	-19.8	-15.0	-36.0
Backlog (wks)	11.1	11.2	10.0	12.0
<b>High Alloy</b>				
Shipments	6.6	19.9	12.8	8.1
Bookings	12.1	6.6	7.1	-23.0
Backlog (wks)	11.4	10.7	10.0	10.0
<b>Department of Commerce Census Data</b>				
<b>Iron &amp; Steel Foundries (million \$)</b>				
Shipments	1,592.1	1,612	1,633	1,581
New Orders	1,585.5	1,607	1,634	1,573
Inventories	2,415.8	2,541	2,533	2,545
<b>Nondefense Capital Goods (billion \$)</b>				
Shipments	66.3	67.1	67.6	67.5
New Orders	75.5	75.7	74.7	71.4
Inventories	118.7	122.7	123.1	122.7
<b>Nondefense Capital Goods less Aircraft (billion \$)</b>				
Shipments	61.0	61.3	62.1	61.5
New Orders	62.6	62.8	63.1	62.7
Inventories	97.4	98.7	99.1	98.7
Inventory/Orders		1.57	1.57	1.57
Inventory/Shipments		1.61	1.59	1.61
Orders/Shipments		1.02	1.01	1.02
<b>American Iron and Steel Institute</b>				
Raw Steel Shipments (million net tons)	8.7	8.8	8.5	9.2



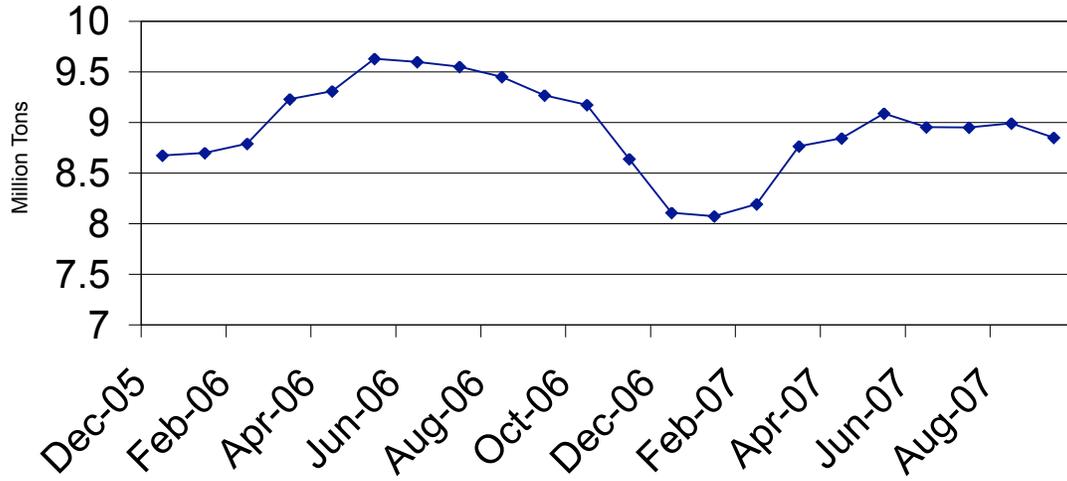
SFSA Postcards



SFSA Postcards

# Raw Steel Shipments

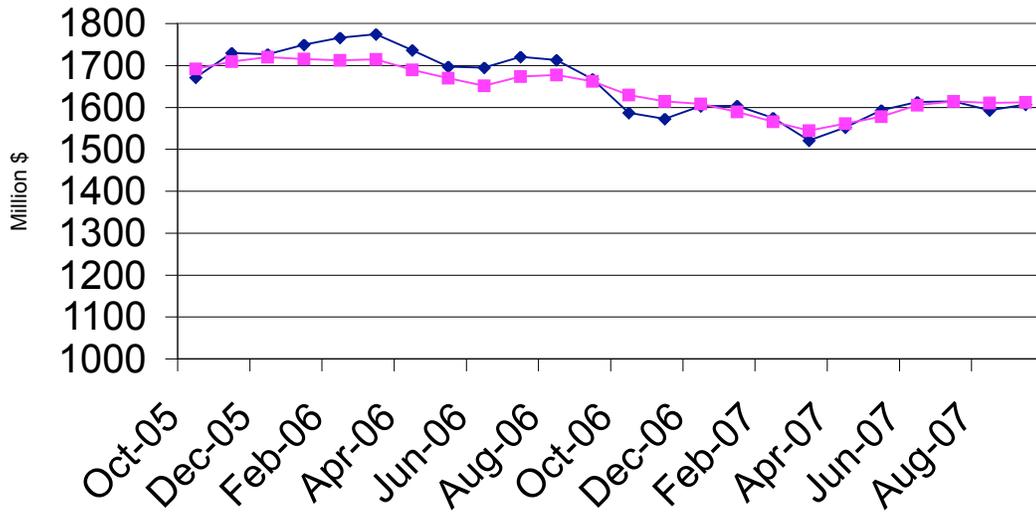
3 month average



AISI Data

# Iron and Steel Castings

3 month average

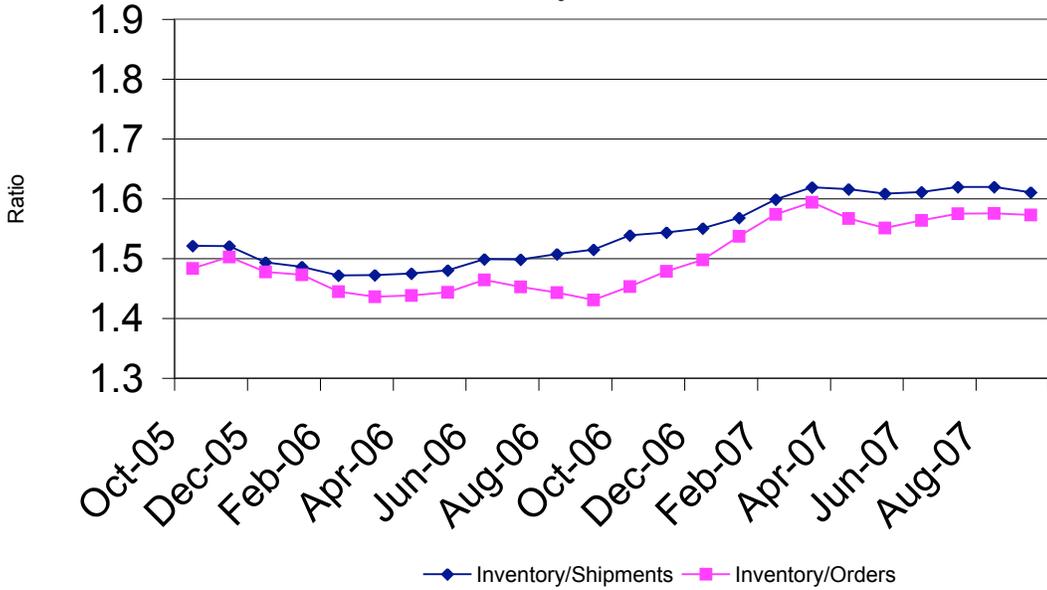


◆ New Orders    ■ Shipments

SFSA

### Nondefense Capital Goods less Aircraft

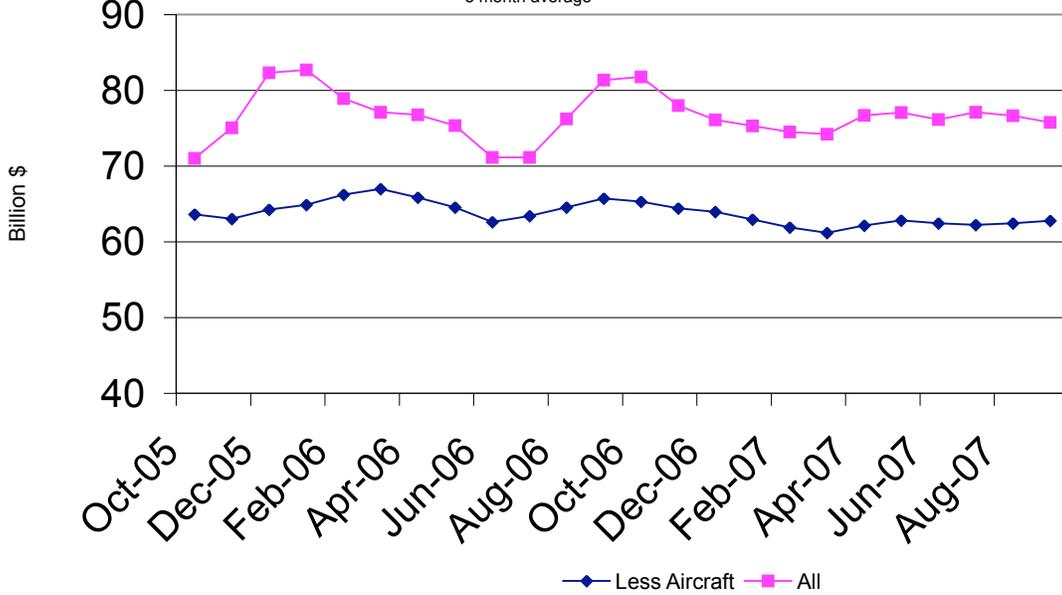
3 month average



Department of Commerce

### Nondefense Capital Goods New Orders

3 month average



Department of Commerce

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## *Future Steel Foundry Leaders*

If you are a part of this group, you are critical to the future of the industry! You will need to develop core knowledge of our industry and network with other future leaders. We want you to be successful.

SFSA is interested in developing a group for future foundry industry leaders. Member companies want you to enjoy our industry, make important new friendships, and learn how to succeed. The initial plan is to meet at least once a year at member plants and to start with working through a lean activity at that plant. By participating you will:

- meet and work with other up and coming leaders
- gain a better understanding of our industry
- provide value for the host plant through on-site discussions
- develop ideas to bring back to your foundry

We want your input on forming this activity, developing a program of topics and maximizing the benefit. **A kick-off meeting is planned to immediately follow the Friday luncheon at this year's T&O.** This meeting will determine the level of interest and establish plans for future activity.

For additional information, please contact David Poweleit at SFSA (815-455-8240 or [poweleit@sfsa.org](mailto:poweleit@sfsa.org)). If you are not able to attend the T&O in person but have an interest in this group, please let us know.



## Online Auction

Complete Aluminum Scrap

Preparation And Remelt Facility

Bidding Ends Thursday, December 6, 2007

### ***Featuring:***

1998 GILLESPIE & POWERS Side Well Reverb Furnace, 125,000 LB. Hold Capacity, 12,000-15,000 LBS./HR Melt Rate. Powered by (2) North American TwinBed II Regenerative Burners (Replacement Cost for Burners \$125,000 each). These are The Most Fuel Efficient Burners Made Today. Burners and Controls Can Be Sold Separately Due to Cost of Removal of Furnace.

1992 GILLESPIE & POWERS Delacquering Kiln, Control Updated in 1998, Including 309 Stainless Steel Drum, Heat Exchanger, and After Burner System, Rated at 12,000 Lbs/Hour.

AMERICAN PULVERIZER Hammer Mill, Size 48 x 60, 400HP Drive, "with Soft Start" Controls.

AMERICAN PULVERIZER Auto Shredder, 100HP Drive, with "Soft Start" Controls.

Pre-Mill Discharge Vibrating Conveyor, 18' 8" Long, 9' 6" Tapered to 7' ID, 1/4" Pan, 3' 8" Tall, 10HP Drive.

Sec. Mill Feed Conveyor (Tech-Weight Conveyor Scale), 46' 9" Long x 62" Wide, 5HP Gear Motor.

Sec. Mill Discharge (Vibrating Conveyor), 17' 10" Long x 4' 4" Wide x 3' 10" High, 7 1/2 HP.

Transfer Conveyor 24' 6" Long x 3' Wide, 3HP.

Horizontal Transfer Conveyor (Mag Head Pulley) 11' 8" Long x 26" Wide, 2 HP

Aluminum Pan Section 5' Long x 24" Wide.

Ferrous Conveyor INDUSTRIAL MAGNETS, INC. (Over Belt Mag Separator) 46" Long x 20" , 2 HP.

Re-Entry Conveyor, 9' Long x 6' Wide x 4' 6" High, 2 HP.

Cold Storage Conveyor, 48' Long x 32" Wide x 30" High, 7 1/2 HP.

Weight Belt Conveyor 10' 6" Long x 32" Wide x 30" High, MILLTRON 30" Conveyor Belt Scale 2HP.

Transfer Inclined Conveyor, 30' Long x 32" Wide, 69' Corrugated Side Belt, 3 HP.

Delacq. Feed Inclined Conveyor, 44' 4" x 32" Wide Corrugated Side Belt, 3 HP.

Storage Conveyor (Vibrating Conveyor) 40' Long x 5' 4" Wide x 5' Tall x 24" Deep, with Cover, 20 HP, 40,500 Static Load.

Furnace In-Feed Conveyor (Vibrating Conveyor), 11' 9" Long x 48" Wide x 21" Deep, 3 HP.

Vibrating Conveyor 44' 6" Long x 6' Wide x 4' 4" High, 15 HP.

ALL VIBRATING CONVEYORS ARE BALANCED AND DO NOT NEED FOUNDATIONS.

1998 DIDION Media Drum Model MD100-II, 30 HP Not Included in System.

***For More Information call Harvey Richman at 818-508-7034 ext. 17 or email [hrichtman@biditup.com](mailto:hrichtman@biditup.com)***

[www.biditup.com](http://www.biditup.com)