

**6 Hallelujah!**  
Composer George  
Frideric Handel

**22 Thrills and Chills**  
Fun at family-owned  
amusement parks

**28 Protest Turns Deadly**  
The massacre at  
Tiananmen Square

**38 Sticking Power**  
A history of velcro

# BOSS

CONNECTING TO INDUSTRY

## PROVING ITS METAL

Copper mining continues  
to be an important  
and profitable industry  
around the globe

SPRING 2013  
ASIA/PACIFIC - FALL 2013



The Right Connection™

# Tap Into Dixon's Mobile App!



## Features:

- The King Crimp calculator allows the user to enter hose dimensions with a resulting crimp diameter and the corresponding sleeve, ferrule and fitting part numbers all linked to the product's specification page on the Dixon website.
- The Dixon Quick Coupling Global Interchange allows the user to quickly cross-reference Dixon Quick Coupling part numbers with those of other manufacturers.
- Available for iPhone®, iPad® and Android™
- For additional information, please contact Dixon at [advertising@dixonvalve.com](mailto:advertising@dixonvalve.com).



**Dixon**

800 High Street, Chestertown, MD 21620 • ph 877.963.4966 • fx 800.283.4966

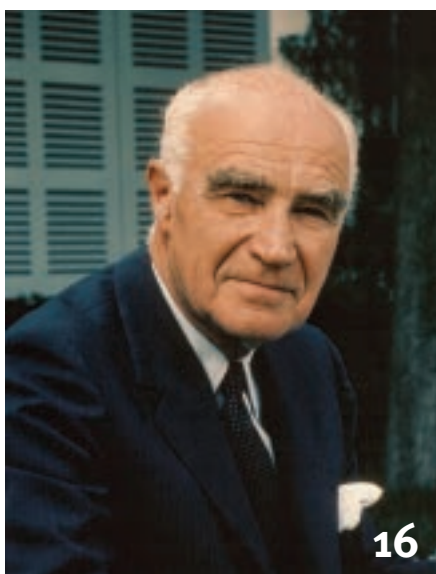
**dixonvalve.com customer service: 877.963.4966**



*The Right Connection™*

# BOSS

SPRING 2013  
ASIA/PACIFIC –  
FALL 2013



## FEATURES

- 8 PROVING ITS METAL**  
Copper mining continues to be an important and profitable industry around the globe.  
*By Alan H. Feiler*
- 16 A MAN OF HIS TIME**  
Henry Luce forever changed the way Americans get their news.  
*By Alan H. Feiler*
- 22 OLD-FASHIONED FUN**  
Small, family-owned amusement parks offer down-home charm for the whole family.  
*By Arthur Levine*
- 28 MASSACRE AT TIANANMEN SQUARE**  
On a spring day in 1989, a series of pro-democracy protests drew the ire of China's government—and ended in tragedy.  
*By Eugene Finerman*

## DEPARTMENTS

- 5 BUILDING CHARACTER**  
Words of Inspiration
- 6 PROFILE**  
George Frideric Handel
- 15 FACTS & FIGURES**  
A Global Look at Copper
- 21 THE DIXON DRILLER**
- 32 DIXON SPOTLIGHT**  
The Eagle Has Landed
- 34 KEEPING IT SAFE**  
Staying Current
- 36 HEALTH & FITNESS**  
Easy on the Eyes
- 38 INVENTIONS**  
Sticking Power



## NO MORE “ALMOSTS”

“Almost” can be a sad and empty word for many who did not fulfill what could have been possible. I almost got my degree. I almost spent more time with my family. I almost opened the new distribution point. I almost helped that person in need. One could go on and on about the “almosts” in our lives.

The people in history we admire the most, the ones who make the most lasting impact, are remembered for the things they accomplished—not the things they *almost* accomplished. In this issue, for example, we bring you the story of Henry Luce; he did not *almost* found *Time*, *Life* and *Sports Illustrated*. He was not afraid of his vision. You’ll also read about the great composer George Frideric Handel. At the lowest point in his life, it would have been for him to give in to ill health and despair; but instead he pushed forward, creating a masterwork for the ages.

Great ideas, at home and in business, are based on the successful accomplishment of a vision. I suggest that we work hard to eliminate the “almost.”

Thanks for reading,

*Dick Goodall*

# BOSS

SPRING 2013

ASIA/PACIFIC – FALL 2013

Publisher

**Dixon Valve & Coupling Company**

Editor

**Sue De Pasquale**

Editorial Board

**Richard L. Goodall**, CEO

**Bob Grace**, President, Dixon

**Taylor Goodall**, Vice President,  
Distribution, Dixon

**Scott Jones**, Vice President, Sales &  
Marketing, Dixon

**Hazen Arnold**, Vice President, Dixon

**Mark Vansant**, Vice President, Dixon

**Joseph Dawson**, Marketing Manager

**Bill Harr**, Global Marketing Director

**Karen R. Hurless**, Advertising &  
Communications Manager

Editorial & Design

**Clipper City Media**

Director of Custom Media

**Jeni Mann**

Creative Director

**Kim Van Dyke**

Graphic Design

**Jamie Conway**

**Cortney Geare**

Please submit address changes and requests for new subscriptions to:

**Clipper City Custom Media**

**Attn: Adrienne Gieszl**

**11459 Cronhill Drive, Suite A**

**Owings Mills, MD 21117**

**888-257-8558**

**Fax: 410-902-2338**

*BOSS* is produced three times a year by Dixon Valve & Coupling Company and Clipper City Custom Media. The acceptance of advertising does not constitute endorsement of the products or services by Dixon Valve & Coupling Company. The publisher reserves the right to reject any advertisement that is not in keeping with the standing or policies of Dixon Valve & Coupling Company. Copyright 2013, all rights reserved. Reproduction of any part of *BOSS* without written permission is prohibited.

**Dixon Valve & Coupling Company**

**800 High Street  
Chestertown, MD 21620**

**877-963-4966**

**Fax: 800-283-4966**

**www.dixonvalve.com**

Email questions or comments about *BOSS* to: [boss@dixonvalve.com](mailto:boss@dixonvalve.com)

# BUILDING CHARACTER /



Whether they were heroes, poets, scholars, or leaders, the brightest minds in human history have thought and written about values and their meanings. Excerpted from [www.values.com](http://www.values.com):

“How far you go in life depends on you being tender with the young, compassionate with the aged, sympathetic with the striving and tolerant of the weak and the strong. Because someday in life you will have been all of these.”

*George Washington Carver (1864-1943);  
Botanist, agricultural chemist,  
inventor, educator*

“It is impossible to go through life without trust: that is to be imprisoned in the worst cell of all, oneself.”

*Graham Greene (1904-1991);  
Novelist, playwright, critic*

“Humility, that low, sweet root from which all heavenly virtues shoot.”

*Thomas More (1779-1852);  
Poet, singer*

“I long to accomplish a great and noble task, but it is my chief duty to accomplish small tasks as if they were great and noble.”

*Helen Keller (1880-1968);  
Author, lecturer, activist*

“The best lightning rod for your protection is your own spine.”

*Ralph Waldo Emerson (1803-1882);  
Philosopher, poet, author, essayist*

“Character consists of what you do on the third and fourth tries.”

*James Michener (1907-1997);  
Author*

“It is good to have an end to journey toward; but it is the journey that matters, in the end.”

*Ursula K. Le Guin (born 1929);  
Author, poet, novelist*

“Courage is about doing what you're afraid to do. There can be no courage unless you're scared.”

*Eddie Rickenbacker (1890-1973);  
Medal of Honor recipient*

## Dixon Eagle Bellows Seal Valves

### Features:

- reduce fugitive emissions of toxic or regulated fluids
- minimize maintenance
- reduce life cycle costs in process plants including steam, cryogenic, heat transfer oil and vacuum systems
- available styles:
  - F and G series forged steel globe valves, welded and bolted bonnet
  - H and W series forged steel gate valves, welded and bolted bonnets
  - GY and GA series forged steel globe valves, welded bonnet and Y-pattern
  - J series cast steel globe valves
  - L series cast steel gate valves

To learn more about Dixon Eagle bellows seal valve products and solutions, call 800.314.9426 or e-mail your request to [eaglesales@dixonvalve.com](mailto:eaglesales@dixonvalve.com).

### Dixon Eagle

33 Plan Way - Building 5, Warwick, RI 02886 • ph 800.314.9426 • fx 401.732.2201

[www.eagle-america.net](http://www.eagle-america.net) • customer service: 800.314.9426



The Right Connection™

# Hallelujah!

From the depths of despair, Handel composed an oratorical masterpiece



> Since its premiere in 1742, George Frideric Handel's *Messiah* has become known as the greatest oratorio ever written—a piece synonymous with the Christmas holiday season. It possesses a Hallelujah Chorus so powerful that upon hearing it, Austrian composer Joseph Haydn reportedly wept. Haydn said of Handel, “He is the master of us all.”

On composing the Hallelujah Chorus in 1741, Handel said, “Whether I was in my body or out of my body as I wrote it I know not. God knows.”

*Messiah* is a remarkable piece, one of the best-known and most frequently performed choral works in Western music. And it's even more amazing when one considers that this sacred oratorio was almost never composed.

The story goes something like this: Handel was in the middle of a successful composing career when he suffered a cerebral hemorrhage, which paralyzed his right side. For four years he could neither walk nor write. He eventually managed to write several operas but fell into debt. With no hope that he would regain his health, the composer, only 60, thought his life was over.

When a friend challenged him to write a sacred oratorio, Handel accepted. For 24 days, he worked day and night, without eating, to create *Messiah*. “I did think I did see all Heaven before me and the great God Himself,” Handel said of composing the piece.

Six decades before that momentous musical creation, in 1685, Handel was born in Halle, Germany. His father, Georg, was a barber-surgeon, and his mother, Dorothea, was a pastor's daughter. As a

FOR 24 DAYS, HE WORKED DAY AND NIGHT, WITHOUT EATING, TO CREATE ‘MESSIAH.’ “I DID THINK I DID SEE ALL HEAVEN BEFORE ME AND THE GREAT GOD HIMSELF,” HANDEL SAID.

child, Handel's love of music was so strong—and in such opposition to his father's desire that he become a lawyer—that the boy was forbidden to play any musical instrument. One story has young Handel hiding a clavichord, a stringed keyboard instrument, in the attic and sneaking up to play when his family was asleep.

His formal training in music began as a teenager. Handel took lessons in

musical composition and keyboard technique from Friedrich Wilhelm Zachow, the organist of Halle's Market Church of Our Dear Lady, who composed music for services at the church. From Zachow, the young musician learned much by copying and analyzing scores.

In accordance with his father's wishes, Handel began studying law at the University of Halle in 1702. However, his interest in music had only intensified, and that same year he also took a position as an organist at the cathedral of Halle. From then on his career as a professional creator and performer of music was sealed. His first two operas were produced in 1705, and two more were produced three years later.

As was the custom at the time, Handel frequently borrowed from music that had been composed by others for his own music. He was unapologetic about the practice. When asked why he borrowed material composed by Italian baroque composer Giovanni Battista Bononcini, Handel is said to have replied, “It's much too good for him; he did not know what to do with it.”

He traveled to Italy, where he

composed church, secular and theater music and met a number of Italian composers who influenced his work, and then settled permanently in England, where his patrons over the years included Queen Anne and the very wealthy third Earl of Burlington. In 1719, Handel became the music director of the Royal Academy of Music, which had been recently launched to establish Italian opera in London.

During the decades that followed, Handel composed more than 30 operas. These pieces, along with the biblical dramatic oratorios and secular music pieces that he created, were performed and well received by audiences and composers alike. Wolfgang Amadeus Mozart is said to have remarked of Handel, "Handel understands effect better than any of us—when he chooses, he strikes like a thunderbolt ... though he often saunters, in the manner of his time."

However, not everyone approved of his work. For example, though *Messiah* was well received at its premiere in Dublin, it became the subject of great controversy at its London debut a year later, in 1743, because some people believed it was profane to use Scripture to create works meant to entertain.

Handel weathered the storm of criticism about his work, but he was less successful at battling the physical illnesses that plagued him in later years. In addition to enduring a number of serious strokes, he suffered from serious cataracts. The operations he had to restore his vision resulted in blindness.

Handel died in 1759 at the age of 74 and was buried at Westminster Abbey. More than 3,000 people attended his funeral.

His work lives on, not only through its performances but in the inspiration it has provided generations of composers. "Handel is the greatest composer that ever lived," Ludwig van Beethoven once said. "I would uncover my head and kneel down on his tomb." ■

**Introducing Dixon's**

# Two-Piece Hammer Union Nut

**New  
for  
2013**



#### Features:

- 4 hammer lug design; enables more surface area to hammer
- repair nut that is pinned and bolted for perfect alignment
- nut is installed without complete installation of male hammer union assembly
- nut forged to ASTM 105N standards; 2,000 PSI cold working pressure
- 4" Fig. 200/206 nut is interchangeable with reliable brands
- 8" Fig. 100/200/206 nut is interchangeable with reliable brands
- available in other series and sizes, consult Dixon

Note: Dixon recommends using Loctite® Threadlocker Red 271™ when bolting together two-piece hammer union nuts to ensure that bolts do not loosen when in service. Option two is to weld the seams of the split nut. Bolt torque recommendation is 60 foot pounds.

*Call or click to learn more!*

#### Dixon

800 High Street, Chestertown, MD 21620  
ph 877.963.4966 • fx 800.283.4966

**dixonvalve.com**  
customer service: 877.963.4966



# PROVING

Copper mining continues to be an important and profitable industry around the globe

BY ALAN H. FEILER

**N**ot far from where I live, among the hills of jagged rock formations and winding creeks nestled amid suburban sprawl, are the remnants of the Bare Hills Mining Co. Bare Hills was a copper mine that was founded in 1845 and closed four decades later, only to reopen for a short period around 1905. In its day, the Maryland mine reportedly produced 32,500 tons of copper and featured a 900-foot shaft.

Today, the mine at Bare Hills is long built over (a massive apartment complex sits where it once was located), and the only indications that copper minerals were ever extracted in the region are a few allusions among the local street signs, such as Coppermine Terrace and Copper Ridge Drive.

**A view of Bare Hills Copper Mine, drawn by engravers Schmidt and Trowe, ca. 1870.**



Occasionally, you might spot a few old-timers and mineral enthusiasts combing the area, searching for chromite and magnetite crystals and other relics of a bygone era.

For years, Harold D. Levey, a mineral enthusiast since age 14, spent his off-hours poking around Bare Hills. “It was quite an extensive mine in its day,” says Levey, a retired quality control manager for an electronics company. “By the time I started collecting there as a youngster during the Depression, the mine shaft was long gone.”

His friend and fellow amateur geologist Jake Slagle recalls, “It looked like a big garbage dump, but with rocks on top of it. As a child, I went there to collect minerals, some of which I still have and sell today.”

Levey adds with a chuckle, “I’m 87, so I spend my days raking leaves now. I don’t get over there much anymore. But at one time, Maryland was a big mining state. Of course, now there’s nothing.”

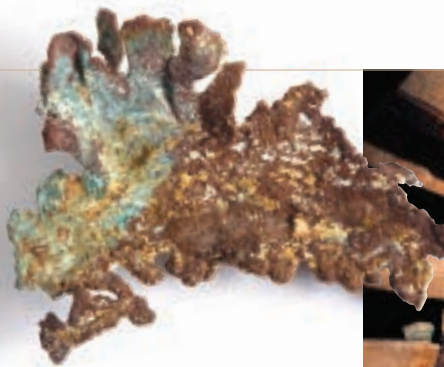
That may be largely true for the Old Line State, but copper mining continues to be a major industry throughout the United States and across the world. In 2011, according to the U.S. Geological Survey (USGS), the U.S. produced 1.1 million metric tons of copper—worth an estimated \$10 billion—placing the U.S. as the



# ITS METAL



Transporting heavy loads at  
a copper mine in Utah.



## COPPER

Chemical symbol – Cu

Atomic number – 29

Relative atomic mass – 63.546

Density (at 20 c) – 8.96 (g/cm<sup>3</sup>)

Melting point – 1083.4 c

Boiling point – 2567 c

Source: World Book 2012



world's fourth leading copper producer, after Chile (5.42 million metric tons), Peru (1.22 million metric tons) and China (1.19 million metric tons).

Among the leading copper-producing U.S. states are Arizona, Utah, New Mexico, Nevada and Montana, according to the USGS.

Since prehistoric times, copper has been essential to human existence and it has played a critical role in the development of many civilizations, from the ancient Egyptians and the Romans to Native American tribes and contemporary cultures.

In his new book *Boom, Bust, Boom: A Story About Copper, The Metal That Runs the World* (Scribner, 2012), Bill Carter writes: "For the greater part of human history, getting copper from the ground involved people picking up the red metal and beating it with a rock or hammer to separate the metal from the rock. Mining got more serious around 5,000 years ago, with a steady supply of slave labor in place to beat the metal out of the rocks on a large scale. Remember the Romans roaming Europe and northern Africa looking for gladiators,

women and wine? They were also looking for metal, specifically tin and copper. All those quarries that exist in biblical tales and in movies about Spartacus and gladiators are mostly copper or tin mines. Carthage, in modern-day Tunisia and the namesake of the famous battles with Rome, was home of a large copper mine, the very reason the Romans wanted to conquer it."

### ORE WHAT?

So what's the big deal about copper? After all, mention copper to most people and the first thing they usually think of is the penny bearing Abe Lincoln's visage.

But copper's significance goes a lot further back than old Honest Abe. For millennia, copper has been used for medicinal purposes, even as a "cure" for such health woes as mental illness and hangovers. Some hospitals today are using anti-microbial copper to fight off *Staphylococcus aureus*, a staph infection that kills 20,000 each year, according to the Copper Development Association, a U.S.-based nonprofit organization

representing the interests of the global copper industry.

Copper and its alloys have been used as a pesticide and fungicide, as a lining for wooden ships (used by Columbus, as well as the British Armada), for weaponry, for tools and household items (cups, platters, plates and goblets), for electricity and modes of communication (just ask Thomas Edison and Samuel "What hath God wrought?" F. B. Morse), for construction and transportation. Even for electronic guidance for space rockets. You name it.

And copper is a part of us. *Literally*. We have copper coursing through our veins and in our blood, and without copper we would cease living (and with too much of it we would perish as well).

Also, copper is a part of our diets. It's found in such foods as shrimp, beans, mushrooms, walnuts, almonds and sunflower seeds. And it's in the clean water that we drink.

Simply put, copper is *everywhere*. And it's indispensable.

"Copper is invaluable to our lives or, more accurately, to our lifestyles,"



Left to right: A mine with a hand-dirt machine; a giant electric shovel that can scoop 98 tons of ore per shovelful; copper sulphide slurry pours from a machine in a processing facility at Katanga Mining Ltd.'s copper and cobalt mine in Kolwezi.

writes Bill Carter. “That much is simple. Without it, we would have to agree, collectively, to give up all our modern appliances and almost all forms of electricity. There would be no Internet without copper because there would be no satellites, electric cables or computers. ... We would be a civilization of walking beings and, as in the Dark Ages, isolated within our small communities.”

#### FROM THE GROUND UP

Of course, getting the red stuff out of the earth has never been an easy feat. Back in the old, old days, copper mining was done via drilling by hand and by blasting with black powder. This was dangerous, tedious, time-consuming work, often requiring many hours of labor with precious little in the way of results. Premature explosions were always a risk when drilling holes and tamping in fuses.

With the advent of the Industrial Age (and particularly in the latter half of the 19th century), copper

productivity increased when mining companies developed new equipment and techniques. Safety guidelines improved as profits began to soar. Many mining outfits began using dynamite for blasting, and the excavation and

**Back in the old, old days, copper mining was done via drilling by hand and by blasting with black powder. This was dangerous, tedious, time-consuming work with precious little in the way of results.**

production of copper was accelerated by the usage of compressed air “one-man” drills, steam and gasoline engines. Illumination in the mines improved with electric lights and headlamps, and communication was greatly enhanced with telephones and other means.

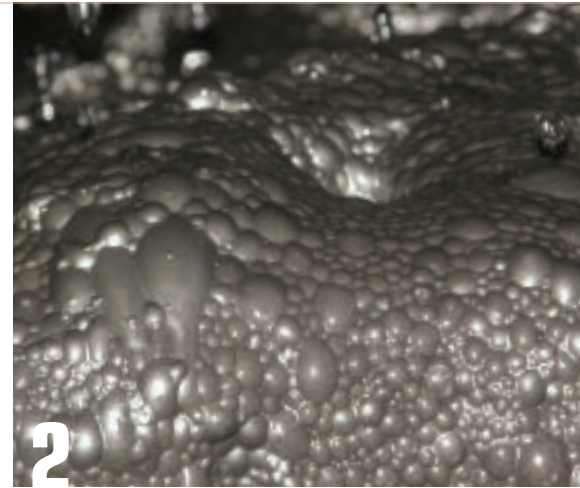
Today, the production of copper—from underground ore to what we find in just about everything in our lives—requires several stages of execution. The extraction techniques include a series of physical, chemical and

electrochemical processes, and methods tend to vary from nation to nation, depending on ecological regulations, the ore source and other factors.

When copper is mined from an open-pit mine, large power shovels are

used to load the ore (often in the form of large boulders) into railroad cars or trucks. Once transported to a mill, the copper ore is extracted from the waste rock to remove the copper and other metals (gold, silver and nickel) in the mixture. At the mill, a crusher breaks the ore into small, acornlike pieces. Then water is added to form a souplike substance called slurry.

The slurry is transferred into drum-shaped, rotating cylinders called ball mills, which are partially filled with iron



1. A 20-foot diameter ball mill rotates at a copper mine's underground processing facility in Chile. This process breaks copper-bearing ore from golf-ball sized pieces into dust. 2. Froth 3. Only a very small percentage of copper is removed from tons of ore dug out of this Chilean copper mine, the world's largest open-pit mine. The overburden, or leftover slag, is a heavy sludge that is disposed of in enormous man-made mountains. 4. Melted copper. 5. Copper cathode in electrolysis. 6. Thousands of sheets of copper are grown in an enormous acid bath at a mining processing facility in Chile.

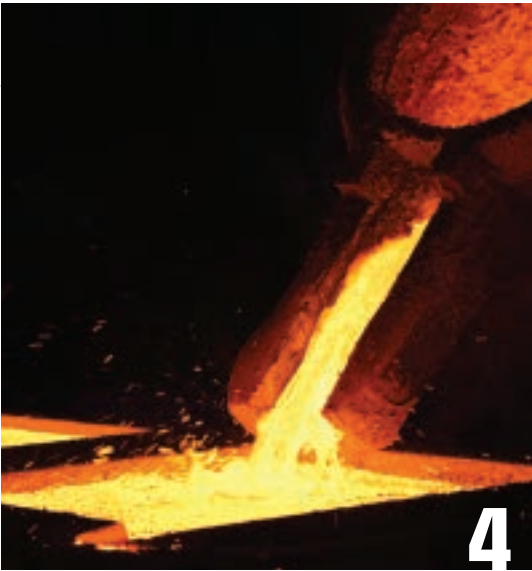
balls. The balls grind the ore into fine particles that pass through a screen with 10,000 openings per square inch.

The slurry goes through a flotation process that concentrates the mineral-laden particles. After passing into tanks called flotation cells, the slurry is

mixed with oil and chemicals and then agitated with air, thus creating a bubbling effect. The bubbles form a froth, which is skimmed off and dried. This copper concentrate contains from 15 to 33 percent copper. The remaining waste material is emptied into storage ponds.

**In a furnace, the concentrate burns and melts, releasing impurities in the form of sulfur dioxide gas. The molten material falls to the bottom of the furnace and is separated into slag (solid waste) and copper matte.**

Next, the copper concentrate is blown with air and pure oxygen into a smelting furnace. The flash furnace can smelt as much as 3,000 tons of copper concentrate daily. In a furnace, the concentrate burns and melts, releasing impurities in the form of sulfur dioxide gas. The molten material falls to the bottom of the furnace and is separated into slag (solid waste) and copper matte. The slag is removed, while the copper matte (which contains 50 to 75 percent copper) goes through a converter process. Blowers shoot air through



it and silica is added, combining with impurities to form new slag. The new slag is skimmed from the top, and the new mixture is called blister copper (because its surface blisters as the copper cools off).

It is then refined in a fire-refining furnace, which removes the rest of the impurities (largely oxygen). Natural gas is blown into the molten copper.

The fire-refined copper is cast into cakes in an electrolytic process. The copper anodes are placed into tanks containing copper sulfate and sulfuric acid. When an electric current passes through the tank, the anode bars gradually dissolve, depositing copper on negative poles called cathodes. After electrolysis, the copper cathodes are



melted in a furnace and cast into different shapes and sizes (cakes, ingots, billets and rods).

Subsequently, a leaching method is utilized to recover copper from ores that don't react to the chemicals used in the flotation process. Water with sulfuric acid or other chemicals circulates through the ore and dissolves the copper. The solution is then mixed with a kerosene solvent containing chemicals that extract the copper. The solution is placed into a tank and undergoes an electrolytic-electrowinning process.

The result: copper that is 99.9 percent pure.

With its bright metallic luster, copper—and its alloys, brass and



## Did You Know...

- Copper ranks third, after iron and aluminum, in terms of quantities of metals consumed in the United States
- The name copper derives from the Greek word *cuprum*, meaning the island of Cyprus. Cyprus was well-known in antiquity for its copper resources
- Arizona is the leading copper-producing state in the U.S. More than 60 percent of newly mined copper in the U.S. comes from Arizona
- The most common uses of copper are in copper sulfate, hammered copper, tubing, pipes, plumbing, wire, electromagnets, statues, vacuum tubes, steam engines, musical instruments, coins, cookware and cutlery
- The U.S. Geological Survey estimates that during their lifetime every American will use 1,309 pounds of copper for necessities, lifestyles and health
- Policemen in the United States are nicknamed "cops," reportedly because their uniforms used to feature copper buttons
- Utah's Bingham Canyon Mine claims to produce more copper than any mine in the world. It is called "the richest hole on earth," and since 1906 has yielded 17½ million tons of copper metal



Copper nuggets ready to be melted.

bronze—is highly regarded by scientists and industrialists alike because it is malleable, ductile and a good conductor of heat and electricity. In fact, it's second only to silver in terms of electrical conductivity.

In recent decades, because of the high expense of extracting and manufacturing copper, there has been an emphasis among many industry producers on the recycling and reuse of copper. Copper does not degrade or lose its physical or chemical properties during the process of recycling. Besides lowering costs, recycling can aid

countries in their goal toward more sustainable production and consumption. More than 30 percent of copper consumption in 2010 came from recycled copper, according to the International Copper Study Group. However, because of high demand, recycling copper cannot replace the need for processing mineral ores.

### SEEING RED

Of course, silver and gold are the glitzy minerals that tend to get all the attention, all the accolades and interest from economists, geologists and others. But copper, contends Bill Carter in *Boom, Bust, Boom*, is what largely drives economies today. He notes that many Wall Street types respectfully and reverentially call it “Dr. Copper,” since they tend to closely monitor the fluctuations of copper’s prices.

“When copper is up, the economy must be expanding, as industry uses more copper to build buildings, cars, and infrastructure,” he writes. “And when the price of copper takes a dive,



Copper wire reclaimed from computers, motors and circuit boards.

it means the industries that drive economic growth are slowing down.”

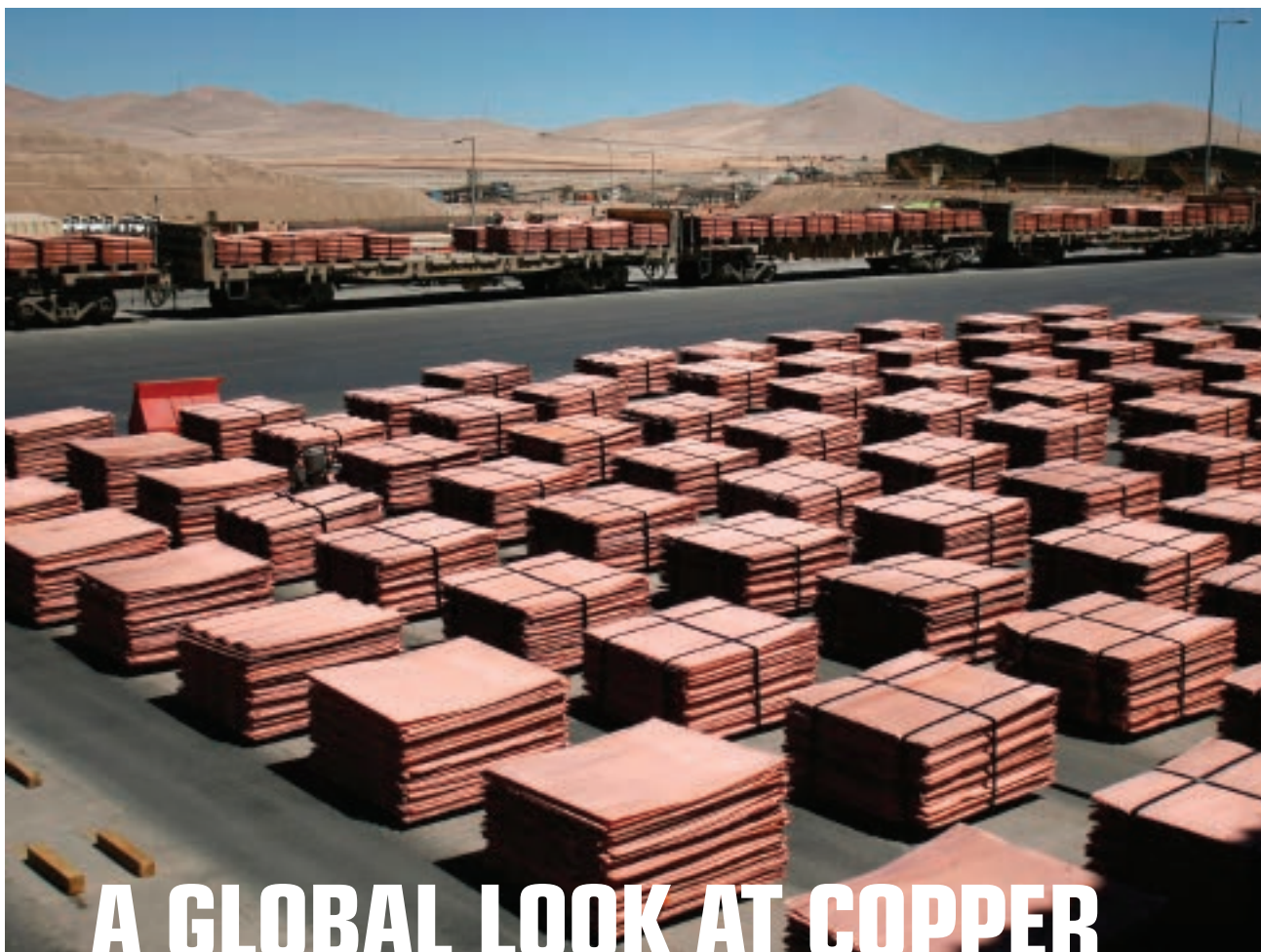
But Carter and others warn that as today’s big copper mining operations have largely taken over the industry (and supplanted the old, small mining outfits), they are building enormous open-pit mines to produce a copper that contains a smaller percentage of actual copper ore. Some environmentalists charge that such open-pit mining—which is conducted in scores of countries around the world—irrevocably damages the landscape and causes health hazards. Proponents of open-pit mining note that it is safer for workers—cave-ins are virtually eliminated and there is no buildup of toxic gases that can cause explosions. With proper planning, they argue, it is possible to mitigate the environmental impact; measures can be taken to remediate surface and groundwater, for instance, and reclamation efforts can solve problems related to drainage control, erosion and segregation of waste material.

Is there a way for the copper mining industry to continue extracting minerals from the earth and enhancing our lives while somehow minimizing damage to the environment? Thus begins only the latest chapter in the millennia-old saga of copper.

Still, it’s hard to disagree with the statement that copper remains a metal with a bright future. ●

#### Copper mining and processing use a wide variety of Dixon products, including:

- Cam & Groove
- Boss Fittings
- Boss Clamps
- Holedall Fittings
- King Combination Nipples



# A GLOBAL LOOK AT COPPER

- About 15 million metric tons of copper are mined each year around the world
- Every continent has copper deposits
- The leading copper-producing countries are Chile, Peru, China, the U.S., Canada, Mexico, Indonesia, the Russian Federation and Australia
- Much of the world's copper comes from mountain ranges stretching from Alaska to the tip of South America
- In some places around the world, copper mining is conducted in mines below the earth's surface. Elsewhere, the mining—known as open-pit mining—is done through the removal of copper from huge open pits at the surface. Most copper mining in the U.S. is the latter
- The U.S. uses more copper than it can mine. It annually imports copper from Chile, Mexico, Canada and Peru
- Large copper deposits also exist and are mined in Kazakhstan, Poland, Iran, Brazil, Papua New Guinea, Laos, Mongolia, Bulgaria, Argentina and Zambia
- Major users of copper by region in 2010: Asia (62 percent), Europe (22 percent), North America (10 percent) and Latin America (6 percent)

Above: Sheets of copper cathode are seen at the copper cathode plant inside the La Escondida copper mine near Antofagasta, Chile.

Source: *The World Copper Factbook 2012*, published by the Lisbon, Portugal-based International Copper Study Group



*Photo courtesy of The Henry Luce Foundation, Inc. Photo by Walter Eisenstaedt*



# A MAN OF HIS TIME

HENRY LUCE FOREVER CHANGED THE WAY AMERICANS GET THEIR NEWS

BY ALAN H. FEILER



an era when a universe of communication rests at our fingertips, and live-streamed reporting flourishes, one can't help but wonder what Henry R. Luce would make of it all.

Luce, the founder of the *Time-Life* magazine empire who died in 1967, was one of the most influential private citizens in the America of his day. He was also known for his often heavy-handed methods of wielding power and influence.

And arguably, he's best-known as the man who, in his 1941 essay of the same name, coined the phrase "The American Century," alluding to what was quickly emerging as U.S. domination over, well, the whole world—militarily, economically, culturally, philosophically.

One strongly suspects that Luce, always a bit of an outsider with an insatiable curiosity, would have thrown himself into today's information technological revolution to a certain degree. But he probably would have retained his strong belief in journalism—and its credo of enhancing democracy and the public good with a solid base of well-coordinated news information.

"We tell the truth as we see it," Luce once said of his media kingdom, which famously included such groundbreaking ventures as *Time*, *Fortune*, *Life* and *Sports Illustrated*. "Show me a man who claims to be objective and I'll show you a man with illusions."

Luce was a man with no illusions.

## MAKING 'TIME'

Characterized by his colleagues and contemporaries as an insecure and taciturn figure, Luce maintained a missionary zeal for just about every enterprise he embarked upon. That likely came largely from his parentage. He was born in the Chinese city of Tengchow on April 3, 1898, as the son of a Presbyterian missionary, the Rev. Dr. Henry Winters Luce, and his wife, Elizabeth Middleton Luce, an ex-YWCA worker. The Yale-educated Rev. Luce aspired not only to bring Christianity to the turn-of-the-century Chinese but also to enlighten them with Western standards of education, civility and prosperity.

Luce the younger was greatly influenced by his father. The younger Luce's lifelong commitment to Christianity, evangelism (sectarian and nonsectarian), morality and

self-empowerment is a reflection on that.

Luce attended a strict British boarding school in Chefoo (where the disciplinary practice of caning was pervasive) and arrived in the United States at age 15 to attend the Hotchkiss School, a college preparatory boarding school in Lakeville, CT. At Hotchkiss, he edited the *Hotchkiss Literary Monthly* and worked closely there with fellow student Briton Hadden. Luce and Hadden both attended Yale and worked on the *Yale Daily News*, with Luce serving as managing editor and Hadden as chairman.

The two young men were not particularly close friends, but as allies and fellow journalists they were virtually inseparable and quite formidable. "Somehow, despite the greatest differences in temperaments and even in interests, we had to work together," Luce recalled. "We were an organization. At that point everything we had belonged to each other."

Luce and Hadden did part company for a while after graduating from Yale; after spending a year studying history at Oxford, Luce worked as a legman for Ben Hecht at the *Chicago Daily News*. But in



December 1921, Luce and Hadden joined forces again, as reporters for the *Baltimore News*.

Soon after, the two cub journalists—who shared a loathing for what they deemed an epidemic of anemic periodicals and newspapers—decided to create a new type of weekly magazine, one that synthesized the news of the day with lucid analyses and fresh perspectives. They quit their jobs, sold stocks for a while, attracted a bevy of Wall Street investors, rolled up their sleeves and got to work.

Initially intended to be called “Facts,” the magazine debuted as *Time* in March 1923 with a mission to cater to “the illiterate upper classes, the busy businessman, the tired debutante, to prepare them at least once a week for a table conversation. ... *Time* gives both sides but clearly indicates which side it believes to have the stronger position.”

Of the highly self-confident Luce and Hadden, Alan Brinkley, author of the 2010 biography *The Publisher, Henry Luce and His American Century*, writes, “They were nothing if not presumptuous—two 24-year-olds, with almost no money and less than two years of professional journalism experience between them, setting out to start a magazine at the tail end of a severe recession.”

By 1929, when Hadden suddenly died at age 31, *Time* was a major success and had reinvented the manner in which “middlebrow” journalism was delivered: fresh, concise and probing. Though frequently the butt of humor among its “highbrow” counterparts, such as *The New Yorker*, it became

life; to see the world; to eyewitness great events; to watch the faces of the poor and the gestures of the proud.” It was a tremendous success, spawning a slew of copycats.

“In an era blighted by Depression, prejudice, social turmoil and the shadow of war, *Life* offered the

BY 1929 *TIME* WAS A MAJOR SUCCESS AND HAD REINVENTED THE MANNER IN WHICH “MIDDLEBROW” JOURNALISM WAS DELIVERED: FRESH, CONCISE AND PROBING.

required reading among the middle-class and up-and-coming journalists and politicians.

Despite the loss of his brilliant partner, Luce proceeded in mapping out his empire, first by creating the business magazine *Fortune* in 1930. “Business is obviously the greatest single denominator of interest among the active leading citizens of the USA ... the distinctive expression of the American genius,” Luce said.

Six years later, he launched his most successful creation, the picture magazine *Life*. Its stated mission as a photojournalistic endeavor was “to see

comforting image of a nation united behind a shared, if contrived, vision of the ‘American Dream,’” writes Luce biographer Brinkley.

All three Luce publications featured the works of some of the finest writers of the time—Archibald MacLeish, John O’Hara, Stephen Vincent Benet, James Agee and Theodore White, to name but a few.

**NO HOLDING BACK**

With his rising success and stature, Luce—who served as editor-in-chief of his publications until 1964—became a force to be reckoned with



on the national political scene. He was a strong advocate of foreign policy imperialism and intervention (particularly when it came to China and its nationalist leader, Chiang Kai-shek), and a strong foe of communism (despite his aversion to Sen. Joseph McCarthy). He was also a defender of big business and a staunch critic of big labor, a bitter opponent of Franklin Delano Roosevelt and a devoted friend to all causes (and candidates) of a conservative hue. And he wasn't shy about using *Time* and his other publications as soapboxes for his political leanings and views, notably his support for U.S. military intervention in Vietnam in the 1960s.

"No restraint bound him in using his magazines to spread the message of his conscience," said one of Luce's correspondents.

In his autobiography *Name and Address*, T.S. Matthews, a former *Time* editor, described Luce as a publisher who could be challenged on his positions. But Matthews said Luce was not above pulling rank and embracing partisanship for a cause. A prime example was the 1952 presidential election between Dwight D. Eisenhower and Adlai Stevenson.

"In 1952, when it sniffed victory in the air at long last, there was no holding back *Time*," Matthews recalled. "The distortions, suppressions and slanting of its political 'news' seemed to me to pass the bounds of politics and to commit an offense against the ethics of journalism." A particular *Time* cover story about Stevenson, Matthews charged, was "a clumsy but malign [sic] and murderously meant attack."

Despite his limitless ambitions and agendas, Luce never quite acquired the brand of power and influence of which he dreamed. As Brinkley points out, Luce was often frustrated by his inability to turn public favor away from FDR, and Luce's virtual obsession with liberating China received little backing among American policymakers. Besides failing to push presidents and other lawmakers to adopt his viewpoints, he sporadically found it an uphill battle to convince his own editors and writers to tow his party line.

Nonetheless, David Halberstam dubbed Luce "the most powerful conservative publisher in America, and in the '50s at least as influential as the secretary of state."

Brinkley contends that Luce's true legacy lies in how he "helped transform the way many people experienced news and culture" in an

era before television and the Internet. Or as Luce himself called it, the creation of "journalism of information with a purpose." That, of course, often veered onto the slippery slope of propaganda, Luce's critics charged.

#### A ZEAL FOR NEW IDEAS

In the mid-1950s, picking up on America's growing obsession with sports, Luce created *Sports Illustrated*, with stories going beyond scores and surface statistics.

His second wife, the glamorous and occasionally controversial Clare Boothe Luce, was a force of nature unto herself. A playwright, she served two terms in the House of Representatives from Connecticut from 1943 to 1947. In 1953, President Eisenhower appointed her ambassador to Italy. (Later, she and Luce made headlines for publicly discussing their experiments with LSD, including one acid trip in which Henry Luce proclaimed that he chatted with God.)

At the time of his death in February 1967, at age 68, Henry Luce was said to be worth \$100 million in *Time* Inc. stock (about \$688 million in today's currency). Hedley Donovan, his successor as editor-in-chief at *Time*, said of Luce at the time of his passing, "He has an extraordinary zeal for new



Luce with second wife Clare Boothe Luce—playwright, politician and ambassador.

ideas, not only as inspiration for new modes and vehicles of journalism but as a subject matter for journalism. Far from being pained by new ideas, Henry Luce rejoices in them.”

Luce also left behind an impressive and considerable altruistic legacy. In particular, the Henry Luce Foundation was established in 1936 to encourage the advancement of education and innovative thinking, while promoting the virtues of service and leadership. A nonprofit organization based in New York, the foundation continues to contribute greatly to American life and global understanding, working diligently in the academic, public policy and arts communities. The foundation offers grant-making programs in such fields as higher education, theology, international affairs, the environment, and the arts.

When Luce died, the foundation became the major beneficiary of his estate. Over the years, it has made more than \$600 million in grants. And when Clare Boothe Luce passed away in October 1987, the foundation received a bequest totaling more than \$60 million “to encourage women to enter, study, graduate and teach in the natural sciences, in engineering, in computer science and in mathematics.” The Clare Boothe Luce Program has funded myriad scholarships, fellowships and professorships for female students and professors since its inception in 1989.

More than half of the grants have been allocated over the past decade, thus demonstrating that Luce’s vision and commitment to educational quality and innovation continue to this day. You could say that *Time* was indeed on Henry Luce’s side. ◀

## Stainless Steel Garden Hose Thread with Spring Loaded Quick Disconnect

New  
for  
2013

*The Ultimate No-Lead*

### Features:

- ¾" garden hose thread
- spring loaded quick disconnect
- **all stainless** construction includes spring, snap ring and balls
- corrosion resistant
- suitable for potable water applications

To learn more about this new product call 877.963.4966 or send an email to [brasssales@dixonvalve.com](mailto:brasssales@dixonvalve.com).

### Dixon Brass

40 Chestnut Avenue, Westmont, IL 60559 • ph 800.323.4440 • fx 800.628.7259

[dixonbrass.com](http://dixonbrass.com) • customer service: 877.963.4966



*The Right Connection™*

# THE DIXON DRILLER

"Published once a moon since 1932"

## SPRING 2013

To read The Dixon Driller on a monthly basis, visit our website:  
[www.dixonvalve.com](http://www.dixonvalve.com)

### PRODUCT SPOTLIGHT

#### Dixon Fire PVC Flexible Suction Hose

##### Application:

- Designed for drafting/suction use only

##### Features:

- Long handle, rocker lug, storz or cam and groove
- Aluminum couplings are made from extruded 6061-T6 lightweight aluminum alloy

- Threaded couplings have a black anodized finish and are laser engraved with the thread type and size

- Swivels are attached using roller bearings and are supplied as long handle or rocker lug style
- Proprietary collars are durable and light weight

##### Size:

- 10' standard length
- 2½", 3", 4", 4½", 5" and 6" available

For additional information, call customer service in the U.S. at 877-712-6179 or 800-786-9697 in Canada or visit [dixonfire.com](http://dixonfire.com).



### TRIVIA Did you know that...

**Under Abraham Lincoln's presidency**, the Secret Service was created.

**The Pacific Ocean** is the world's largest ocean.

**Greenland** is administered by Denmark.

**A nonagon** has nine sides.

**Texas** was once an independent republic.

**The Chinese language** does not require punctuation.

**The abbreviation in USB** cord stands for Universal Serial Bus.

**Quinine** is added to water to make tonic water.

**Brandy** is the pure spirit distilled from wine.

**Europe's** second largest island after Great Britain is Iceland.

**Until 1919**, Afghanistan belonged to the United Kingdom.

**The difference** between caskets and coffins? Coffins have six sides, while caskets have only four.

**The vegetable brussels sprout** takes its name from the capital of Belgium.

**The process of splitting atoms** is called fission.

**The main difference** between a supercharger and a turbocharger is that superchargers are usually belt-driven, while turbochargers are gas-driven.

**The only two continents** entirely located in the Southern Hemisphere are Australia and Antarctica.

**In 1939**, the day after Germany invaded Poland, Ireland announced its neutrality.

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

### ON THE LIGHTER SIDE

**It's wise to remember** how easily email can be misused, sometimes unintentionally, with serious consequences. Consider the case of the Illinois man who left the snow-filled streets of Chicago for a vacation in Florida. His wife was on a business trip and was planning to meet him there the next day. When he reached his hotel, he decided to send his wife a quick email. Unfortunately, when typing her address, he missed one letter, and his note was directed instead to an elderly preacher's wife whose husband had passed away only the day before. When the grieving widow checked her email, she took one look at the monitor, let out a

piercing scream, and fell to the floor in a dead faint. At the sound, her family rushed into the room and saw this note on the screen: Dearest Wife, Just got checked in. Everything prepared for your arrival tomorrow. P.S. Sure is hot down here. **Two guys were hiking** through the jungle when they spotted a tiger who looked both hungry and fast. One of the guys reached into his pack and pulled out a pair of Nikes. His friend looked at him. "Do you really think those shoes are going to make you run faster than that tiger?"

"I don't have to run faster than that tiger," his friend replied. "I just have to run faster than you." **A young businessman** had just started his own firm. He rented a beautiful office and had it furnished with antiques. Sitting there, he saw a man come into the outer office. Wishing to appear the hot shot, the businessman picked up the phone and started to pretend he had a big deal working. He threw huge figures around and made giant commitments. Finally he hung up and asked the visitor, "Can I help you?" The man said, "Yeah, I've come to activate your phone lines."

[www.anyjokes.net](http://www.anyjokes.net)

### Dates in History

**1781** - On March 1, the Articles of Confederation are finally ratified. The Articles were signed by Congress and sent to the individual states for ratification on November 15, 1777, after 16 months of debate. Bickering over land claims between Virginia and Maryland delayed final ratification for almost four more years. Maryland finally approved the Articles on March 1, 1781, affirming the Articles as the outline of the official government of the United States. The nation was guided by the Articles of Confederation until the implementation of the current U.S. Constitution in 1789.

**1802** - On March 16, the United States Military Academy—the first military school in the United States—is founded by Congress for the purpose of educating and training young men in the theory and practice of military science. Located at West Point, NY, the U.S. Military Academy is often simply known as West Point.

**1872** - On March 1, President Grant signs the bill creating the nation's first national park at Yellowstone. Early in 1872, Congress moved to set aside 1,221,773 acres of public land straddling the future states of Wyoming, Montana and Idaho as America's first national park. The Yellowstone Act of 1872 designated the region as a public "pleasuring-ground," which would be preserved "from injury or spoliation, of all timber, mineral deposits, natural curiosities, or wonders within."

**1931** - On March 3, President Herbert Hoover signs a congressional act making "The Star-Spangled Banner" the official national anthem of the United States.

**1959** - On March 10, Tibetans band together in revolt, surrounding the summer palace of the Dalai Lama in defiance of Chinese occupation forces.

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



Rudy's Rapid Transit  
at Santa's Village

# Old-Fashioned Fun

BY ARTHUR LEVINE

Small, family-owned amusement parks offer down-home charm for the whole family

Hear the words “theme park” and you think ... the Florida mega-resort Walt Disney World, or California’s Disneyland. Perhaps instead you zeroed in on Universal Studios or one of the other major parks in Orlando or Southern California. There are other places, however, that may be under the radar but warrant your consideration as you plan warm-weather getaways.

They are generally smaller, lack the star power of Mickey Mouse or Harry Potter and can’t match the gee-whiz effects of their big-budget counterparts. But they are loaded with down-home charm and they reflect the doting attention of the families that own and operate them. “It’s so refreshing to visit one of the winding number of the country’s privately owned amusement parks,” says *Roller Coaster* author Robert Coker. “Places that radiate idiosyncratic charm and whimsical personality. They are living pieces of American history.” And they are filled with a gentler, simpler notion of fun.

Take **Santa’s Village** ([www.santasvillage.com](http://www.santasvillage.com)) in Jefferson, NH, for example. If the breathtaking views of the area’s White Mountains don’t overwhelm you, the enchanting circa-1952 park will transport you and your companions to an



**Against the backdrop of the White Mountains in New Hampshire, Santa’s Village is enchanting.**



**Clockwise: Santa's Village's "Ho Ho H2O" water park. Holiday World's The Voyage, one of the world's most beloved wooden roller coasters. Knoebels' The Phoenix roller coaster and vintage bumper cars. Mammoth, the world's longest water coaster at Holiday World's Splashin' Safari.**

idealized vision of Christmas, open from May through December. Predating Disneyland, Santa's Village helped pioneer the theme park concept by using traditional rides to tell stories and create a sense of place.

Geared to the 12-and-under set—though adults bask in the park's warm glow of nostalgia—the park draws kids through the star power of Santa and his North Pole friends. Instead of a typical roller coaster, visitors can board Rudy's Rapid Transit, which is guided by a glowing red-nosed reindeer, or get splashed on the Yule Log flume. In addition to child-friendly rides, there is an emphasis on interactive fun such as making holiday ornaments, cookie decorating and scoring a personal audience with the jolly, red-suited gentleman.

The prices are reasonable (\$27 per person), and parking, strollers and pet

kennels are included in admission. "We understand young families," says Elaine Gainer, president, explaining the pricing policies. Her father started the park, and as she nears retirement, her children are carrying on the tradition. For the 2013 season, the park has expanded its popular "Ho Ho H2O" water park attractions. Apparently Santa and his pals enjoy cooling down in the summer.

The merry chap is also featured at **Holiday World** ([www.holidayworld.com](http://www.holidayworld.com)), a wonderful park that was originally known as Santa Claus Land when it opened in 1946 and is located in—where else?—Santa Claus, IN.



While Christmas remains an important theme, the park has grown to include lands devoted to Halloween, Fourth of July and Thanksgiving. It also offers Splashin' Safari, an enormous water park that is among the industry's best and is included in admission. Like Santa's Village, Holiday World offers incredible value and provides





## What's Up with Mickey?

Throughout 2013, the Disney parks are presenting Limited Time Magic, an ongoing series of short-lived special events. There will always be something happening—such as Independence Week, a seven-day celebration of the Fourth of July, and Long Lost Friends Week, which will give lesser-known Disney characters such as Clarabelle Cow and Remy (from *Ratatouille*) a chance to shine in the spotlight.



Radiator Springs Racers in Cars Land

### ► Disney California Adventure

([www.disneyland.com](http://www.disneyland.com)), the second park at the Disneyland Resort in California, completed a five-year \$1.1 billion expansion in 2012 and opened Cars Land, a wildly popular, richly detailed representation of the Pixar film *Cars*.

### ► Across the country, the Magic Kingdom

([www.disneyworld.com](http://www.disneyworld.com)) at Walt Disney World in Florida is in the middle of a major expansion to its fairy tale-themed Fantasyland. In late 2012, it debuted a Little Mermaid ride and a new land based on *Beauty and the Beast*, including an interactive Enchanted Tales with Belle attraction and an elegant Be Our Guest Restaurant that serves fine food. A Seven Dwarfs Mine Train coaster is planned for 2014.

delivers a record 24 seconds of “airtime,” the out-of-your-seat sensation that coaster fans adore. Other attractions include a turkey hunting-themed ride and the world’s longest water coaster.

While its rides may be cutting-edge, its standards are something of a welcome throwback. “We’re a little bit old-fashioned,” says Pat Koch, the highly visible, self-styled “director of values” and 81-year-old matriarch of the family that operates the park. Mickey’s got nothing on her. “One Pat is worth a million mice,” says daughter Natalie Koch, vice president. With the hands-on owners setting the tone, Holiday World is impeccably clean and has, perhaps, the industry’s friendliest employees. It has added a major water slide complex for 2013.

While Holiday World is tucked away in the cornfields of Indiana, **Knoebels**

([www.knoebels.com](http://www.knoebels.com)) is located roughly in the middle of nowhere—rural Elysburg, PA, to be exact. And if Santa’s Village and Holiday World offer great value, Knoebels does them one better: It’s free. Instead of a pay-one-price admission policy, visitors pay per ride. “The sprawling, un-gated Knoebels is easily the most unpretentious, un-corporate park you’ll ever visit,” says Coker. “It also happens to have one of the best wooden roller coasters [The Phoenix] in the world.”

With old-school attractions such as vintage bumper cars, a Fascination parlor and an early 1900s carousel, the park has an agreeable retro vibe. Unlike Disney’s same-named ride, the Haunted Mansion at Knoebels is a traditional gotcha’ gag-filled attraction that harks back to classic “dark” rides. The park is also highly regarded for its tasty and moderately priced food, including Polish specialties, bison burgers and seriously sour pickles served on a stick.

complimentary parking, sunscreen and—get this—unlimited soft drinks.

The park doesn’t skimp on the rides, however. While it is not focused on teen-skewing thrills, Holiday World does feature three of the world’s most beloved wooden coasters, including The Voyage. The massive ride drops an adrenaline-pumping 154 feet and



At Dollywood's Splash Country, a plunge down one of the Butterfly's extreme slides ends in the Butterfly pool, a landing zone with wings. Quassy's Wooden Warrior roller coaster.

With the intoxicating smells of meals simmering in giant skillets, BBQ and other Southern dishes wafting through the park, **Dollywood** ([www.dollywood.com](http://www.dollywood.com)) in Pigeon Forge, TN, is renowned for its food as well as its fun. It is also known for its lively shows, ambitious festivals, craft demonstrations, gorgeous Smoky Mountains location, Appalachian culture exhibits and, of course, its namesake, Dolly Parton.

Over the last few years, Dollywood has been adding an impressive array of roller coasters, including a “winged” coaster (see sidebar), Wild Eagle and other notable rides. Its (separate-admission) Splash Country water park is a standout.

It may seem anomalous to include Dollywood among family-owned parks. It is larger, flashier, better known and, technically, a corporate-owned park that is part of a chain. But Parton (who, interestingly, is too chicken to ride her coasters) is actively involved and takes Dollywood to heart. “I am so blessed to have such a great team of people who know the theme park world,” she says. “We are a family and [to me] this is a family-owned business.” Despite its size and stature, Dollywood does have a welcoming aura and the feel of a family-run park.

When it comes to longevity, **Quassy** ([www.quassy.com](http://www.quassy.com)) in Middlebury, CT, trumps the others. Once called Lake Quassapaug Amusement Park, it dates back to 1908 and is one of the country's few remaining trolley parks—so named



With the intoxicating smells of meals simmering in giant skillets, BBQ and other Southern dishes wafting through the park, Dollywood is renowned for its food as well as its fun.

## Going Loopy Over Coasters

A longtime staple, roller coasters remain the kings of the midways at amusement parks, though they've become more sophisticated and often incorporate a wide variety of innovations. Among the wacky thrill machines opening in 2013:

- ▶ **Outlaw Run** at **Silver Dollar City** ([www.silverdollarcity.com](http://www.silverdollarcity.com)) in Branson, MO—The wooden coaster will be outfitted with steel “topper” track that will allow it to feature three upside-down moments, which will make it one of two “woodies” to include inversions. (The other one will be Iron Rattler, a wood/steel hybrid ride debuting at **Six Flags Fiesta Texas** [[www.sixflags.com](http://www.sixflags.com)] in San Antonio.) The aggressive ride will reach 68 mph and drop 162 feet at a perilously steep 81 degrees (a record for a wooden coaster).
- ▶ **Full Throttle** at **Six Flags Magic Mountain** ([www.sixflags.com](http://www.sixflags.com)) in Valencia, CA—The unique coaster will feature a 160-foot loop (the world’s tallest) and will use a magnetic launch system to propel riders through the loop—upside down mind you—at a bone-crushing 70 mph. Another launch will hurl passengers over the outside of the loop.
- ▶ **GateKeeper** at **Cedar Point** ([www.cedarpoint.com](http://www.cedarpoint.com)) in Sandusky, OH—The \$30 million “winged” coaster will place passengers to the left and right of the track on the “wings” of the trains. It will drop 164 feet and reach 67 mph, but the highlight will be two “keyhole” elements during which the extra-wide trains will race recklessly toward two towers with impossibly narrow openings. Just as certain doom seems imminent (twice!), the trains will rotate 90 degrees and—barely—make it through the towers.



Outlaw Run



Full Throttle



GateKeeper



because streetcar companies owned them and placed them at the end of their lines to boost weekend ridership. Located on a lovely lake, the tiny free-admission park (\$3.50 per ride) is oozing with charm and seems almost frozen in time.

It has some lovingly maintained, decades-old rides such as helicopters and Jet Fighters, but its featured attraction is decidedly contemporary. To the casual visitor, Wooden Warrior may seem like a typical coaster, but it is the second in the world (and the only one in North America) to use a unique

train that offers a remarkably smooth, yet potent ride. In addition to offering swimming in its lake, Quassy has a water park, “Saturation Station,” that has expanded in 2013.

If you visit Quassy, chances are good that owner and president Eric Anderson will greet you. That’s the kind of personal attention the bigger parks just can’t match. And it’s part of what makes seeking out less heralded parks such a delight. ◀

**At Quassy’s “Saturation Station,” the Bucket Dump drenches guests with more than 300 gallons of water.**



On a spring day in 1989, a series of pro-democracy protests drew the ire of China's government—and ended in tragedy

# MASSACRE AT TIANANMEN SQUARE

BY EUGENE FINERMAN

Tiananmen Square is the cultural center of Beijing. It is on the itinerary of every tour of China's capital. Government-approved guides point out the monuments, museums and edifices that make Tiananmen the showcase of Communist China. Along this great public square are the National Museum and the Great Hall of the People where foreign dignitaries are honored at state dinners that seat 5,000 people. There is also the Mausoleum of Mao Zedong, the founder of Communist China, with his iconic 15-by-20-foot oil portrait; the "Great Helmsman" himself envisioned Tiananmen as the glory of the People's Republic. Entire neighborhoods were demolished in 1958 to create the world's largest public square, but Mao was not one to suffer details. History, he believed, would justify the cost. That is the rationale of tyranny, and sadly, it often proves correct. When faced with the

prospect of losing political power, the successors of Mao would show the same ruthless resolve in crushing the pro-democracy movement, resulting in the massacre in Tiananmen Square.

Mao, the "Chairman," may have been a capable general and an intimidating tyrant, but he was an absurd administrator. The mundane mechanics of government actually offended him. Instead he offered maxims, but inspiration does not grow crops or run industries. And too often his visions proved illusionary. For example, he imagined that China could industrialize if every family had its own blast furnace: Make your own steel in the backyard. The idea was ridiculous but no one dared ignore his command. Of course, this "Great Leap Forward" was a disaster, squandering manpower and resources. Private farming was outlawed in favor of collectivism, which was enforced

**The death of Chinese Communist Party leader and liberal reformer Hu Yaobang, an advocate of democratic reform and a hero to college students, drew thousands of young people to protest in Tiananmen Square in April, 1989.**

through coercion, violence and terror. The result: famine, which claimed the lives of 30 million people.

When Mao died in 1976, the governance of this schizophrenic China—a world power with a hand-to-mouth economy—was left to a committee of old veterans, men who had survived both war and the Chairman's temper. Some remained true Communists, but a prevailing majority saw that China's prosperity required pragmatism rather than dogma. In the words of China's new leader of the period, Deng Xioping, "It doesn't matter whether a cat is black or white, as long as it catches mice."

China was still primarily an agrarian society, so the first reforms were in agriculture. Allow private property, permit initiative and profit, and you could turn peasants into farmers. In a decade, the average rural income had tripled. To industrialize China required a more drastic deviation from Mao and Communism: foreign capital. The coastal provinces became "special economic zones," luring foreign business with the promise of Western products at Chinese wages. In 1980, the minimum wage in the United States was \$3.10 an hour; that would have been a week's wages in China. And the undershirts made in China were indistinguishable from those woven in South Carolina. Such profits encouraged the Chinese government to permit further commercial initiative. The Chinese themselves now were permitted to go into business. The aspiring entrepreneur, craftsman or merchant had the opportunity to prove his worth in the

marketplace. In effect, the Chinese people had economic freedom. So began the boom that continues to propel China.

Yet these new policies would raise issues and create divisions in Chinese society. Within a decade of these economic reforms, college students were wondering why there were no political reforms. Was freedom permitted only in economics? That seemed illogical and unjust. The party leadership was aware of this growing dissension but was unsympathetic. Deng Xioping equated democracy with chaos. Within the leadership, there had been one supporter of democracy: the party's general secretary Hu Yaobang. Deng fired him in 1977 and chose Zhao Ziyang as the new general secretary. Zhao represented the second generation of Chinese leaders, not an old guard revolutionary but a pragmatic bureaucrat. Deng trusted him to pursue prosperity while preserving the political order.

So the economy boomed and dissent grew. Ironically, this status quo ended with the death of Hu Yaobang, an advocate of democratic reform, on April 15, 1989. He remained a hero to college students. They held memorial services that also were political protests. On April 26, the Communist Party's official newspaper printed a front-page denunciation of the students: "Their purpose was to sow dissension among the people, plunge the whole country into chaos and sabotage ... stability and unity."



The vitriolic accusations only incited a rebellious reaction. On April 27, thousands of students from Beijing University marched on Tiananmen Square and occupied it in the name of democracy. There, amid the monuments to Chinese Communism, the student protesters set up their camp. They made no provisions for sanitation, so their shantytown soon became squalid. To the dismay of the Communist leadership, the heart of Beijing was both a democratic forum and an open sewer.

Deng was not in a conciliatory mood. "We do not fear spilling blood, and we do not fear international reaction." Zhao, however, remained a pragmatist. He noted that the popular sentiment of Beijing sided with the students; perhaps the party should accept a more democratic system. If he could end the impasse, the party leadership would agree to some concessions. On May 12, the front page of *The People's Daily* printed Zhao's proclamation of human rights and a promise of a democratic China. However, Zhao also urged the students to end their Tiananmen demonstrations and return to classes.

ON APRIL 26, THE COMMUNIST PARTY'S OFFICIAL NEWSPAPER PRINTED A FRONT-PAGE DENUNCIATION OF THE STUDENTS: "THEIR PURPOSE WAS TO SOW DISSENSION AMONG THE PEOPLE, PLUNGE THE WHOLE COUNTRY INTO CHAOS AND SABOTAGE ... STABILITY AND UNITY."



On May 30, 1989, students and residents of Beijing gather in Tiananmen Square around the “Goddess of Democracy,” a replica of New York’s Statue of Liberty. A man blocks a column of army tanks in Tiananmen Square on June 5, 1989. A day later, tanks from the People’s Liberation Army (PLA) guard a strategic avenue leading to Tiananmen Square.

But the students only increased their demands for democratic reforms. On May 13, 3,000 went on a hunger strike. Their militancy undermined Zhao; by May 17, party leaders had stripped him of power. But he made one last appeal to the protesters, visiting them on May 19 and pleading with them to leave. They ignored him and the following day’s declaration of martial law. The students had a blithe confidence in the righteousness of their cause and in the support of Beijing’s populace. How could the People’s Army fight against the People?

Local artists, as a symbol of democracy and a tribute to its defenders, had constructed a statue of foam and papier-mâché. It was transported in pieces to Tiananmen and assembled there on May 29. The statue, 33 feet tall, of a woman defiantly bearing a torch, was named “The Goddess of Democracy.” Within five days it would be crushed by a tank.

On June 3, there were 10,000 protesters encamped in Tiananmen Square. Late that night, in armored vehicles and on foot, some 15,000 soldiers converged on the square. They had hoped that the late hour would give them the element of surprise, but it was too

large a force for stealth. An alarmed populace swarmed into the streets, trying to block the troops. But the soldiers had orders to take control by any means necessary. There was insufficient tear gas to disperse the crowds, but there were enough bullets. The suppression continued throughout the following morning. Hundreds were killed, and thousands wounded. The exact numbers may never be known; bonfires reportedly burned bodies. Although the events are known as the Tiananmen Square massacre, most of the bloodshed occurred in the streets leading there. In the square itself, the encamped protesters were driven out at gunpoint but without casualties.

Tyranny had prevailed. Yet on June 5, one gesture of defiance stirred the world. In Tiananmen, the crowds looked on as tanks patrolled the square. A single man, wearing a white shirt and carrying shopping bags, darted in front of a tank and stopped it. The tank attempted to move around him; he blocked it. One man against a tank; the impasse lasted several minutes. He could have been run over or gunned down, but the tank’s crew refrained. Perhaps they too respected courage. Two men

eventually hustled him away. Were they his friends or the police? We don’t know his identity or his fate—just his heroism.

The world denounced the massacre. But in a month, it was business as usual. After all, in the words of the U.S. State Department, the executions and arrests were China’s “internal affairs.” In China, the leaders of the student movement were put on a “Wanted” list of criminals. At least 1,500 were arrested for their “counter-revolutionary” activities. Zhao Ziyang lived under house arrest for the rest of his life; he died in 2005.

Today, China has the second largest economy in the world. Even now, the Chinese government forbids public discussion of the “turmoil.” Yet, the truth still has its advocates. In his *June Fourth Elegies*, author Liu Xiaobo wrote:

*“Beneath the forgetting and the terror/this day’s been buried. ... In memory and bravery/this day lives forever.”*

(Translation by Jeffrey Yang)

Liu Xiaobo received the Nobel Prize in literature in 2010 ... a year after he began serving an 11-year prison sentence for “inciting subversion of state power.”

## The Eagle Lands With Dixon

> On November 1, 2012, Dixon acquired Eagle America, Inc., a Rhode Island-based manufacturer of gate and globe bellows seal valves.

The company's products—designed to control hazardous media such as chlorine gas, regulated fluids, purity gases, cryogenics, heat transfer fluids and steam—are now sold under the Dixon Eagle brand name. The products are used extensively in applications where environmental control and safety are of critical importance, particularly in petroleum refining, chemical processing, nuclear power generation, solar energy, and pulp and paper segments.

Dixon Eagle products are recognized for their ability to control hazardous media in environments where leak-free emissions control is an absolute necessity. In addition, the company provides engineering and design material consultation services.

Dixon Eagle is now a division of Dixon. Its manufacturing facilities, administrative offices and employees will remain in Rhode Island. Raymond F. Grandchamp Jr., Eagle America's president at the time of the acquisition, has become part of the new management team.

Bob Grace, president of Dixon, notes that the acquisition of Eagle America aligns with Dixon's strategic focus on energy technologies. The acquisition also expands the range of standard and engineered products and services Dixon offers to the oil and gas, power generation and chemical processing industry segments.

"Not only is this a close strategic fit for our respective companies, Eagle America products have a well-deserved reputation for performance and reliability. We are pleased to add these top-quality valves and capabilities to

our product mix," Grace says.

Raymond Grandchamp underscored the strategic alignment between Dixon and Eagle America. "Dixon's strong world presence in the industrial marketplace opens up more opportunities for growing our business," he says.

"We pride ourselves in our ability to support customers in delivering both standard and custom products quickly and responsively. Now we look forward to expanding our sales and marketing activities into segments where we previously did not have a presence," Grandchamp adds.

The addition of Dixon Eagle to Dixon's roster of industrial products comes at a time of heightened scrutiny of plant and environmental safety



**"EAGLE AMERICA PRODUCTS HAVE A WELL-DESERVED REPUTATION FOR PERFORMANCE AND RELIABILITY. WE ARE PLEASED TO ADD THESE TOP QUALITY VALVES AND CAPABILITIES TO OUR PRODUCT MIX."**

—BOB GRACE, DIXON PRESIDENT



conditions. The Environmental Protection Agency (EPA), Occupational Safety and Health Administration and governmental regulations are mandating stricter adherence to emissions standards than ever before, making Dixon Eagle's bellows valve products the ideal solution.

The technology and design of Dixon Eagle's bellows valves have been developed and perfected over the last 30 years. Bellows seals are considered by the EPA to be the "best available technology" to control fugitive emissions, having been proven to ensure zero stem leakage and fully satisfy environmental regulations. Consequently, Dixon Eagle bellows valve products are a popular "no-risk"

**BELLOWS SEALS ARE CONSIDERED BY THE EPA TO BE THE "BEST AVAILABLE TECHNOLOGY" TO CONTROL FUGITIVE EMISSIONS, HAVING BEEN PROVEN TO ENSURE ZERO STEM LEAKAGE AND FULLY SATISFY ENVIRONMENTAL REGULATIONS.**

choice for LDAR, safety and environmental engineers.

As an added benefit, Dixon Eagle bellows valve products require no maintenance once installed, thereby eliminating the risk and cost of planned or unplanned plant downtime. They also prevent any corrosive or harmful atmospheric elements from entering the production process.

Dixon Eagle will continue the policy of a five-year bellows fatigue warranty on standard products.

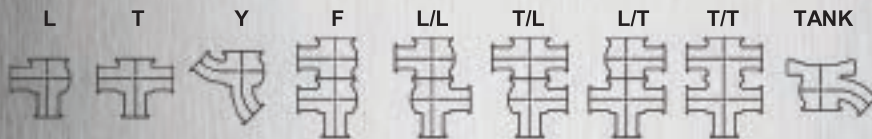
To learn more about the Dixon Eagle bellows seal valve products and solutions, visit [www.dixonvalve.com/EagleAmerica.html](http://www.dixonvalve.com/EagleAmerica.html), call 800-355-1991 or email your request to [sales@dixonvalve.com](mailto:sales@dixonvalve.com).

## Bradford™ SV-Series Seat Valves

The Bradford™ SV-Series single seat valves offer a true hygienic design to meet your most demanding process applications. This valve series is designed to shut off or divert the flow in your process either remotely by using air or locally using a manual operating device.

### Features:

- sizes: 1" to 3"
- materials:
  - body - 316 stainless steel
  - actuator or manual operating device - 304 stainless steel
  - stem seal - EPDM, silicone, Viton®
  - seat seal - EPDM, silicone, Viton®, PTFE or TFM1600
- options:
  - manual, actuated, control tops
- body configurations:



For complete information, go to [bradfordfittings.com](http://bradfordfittings.com) and download the EPC2012 Engineered Products Catalog or request a copy be sent to you.

**Dixon Sanitary**  
N25 W23040 Paul Road, Pewaukee, WI 53072 • ph 800.789.1718 • fx 800.789.4046

[bradfordfittings.com](http://bradfordfittings.com) • customer service: 800.789.1718



## Staying Current

It's critical to keep pace with a customer's parameters

> The salesman from XYZ Hose had been quite busy beating the bushes for new business, when an email from one of his long-standing customers landed on his smartphone. He was smiling as he reviewed the order for more chemical hose assemblies, but the words "We've been going through these more quickly the last several months" suddenly gave him an unsettled feeling. With hopes of resolving the problem, he quickly emailed his customer, thanking him for the order and

apologizing for not stopping by in almost a year. After setting up a meeting for the next week, he phoned in the details of the order to his office.

On the appointed day and time, the salesman walked into the meeting room, and was met by the plant manager and purchasing agent. After exchanging pleasantries, the salesman started the meeting saying, "We've supplied you with the same hose and banded-on fittings for almost eight years without any problems. Your email said you're

going through them faster than before. That has me concerned. Why do you think that is?"

The purchasing agent added, "Your company has been a valued vendor for a long time. You've given us great service at a reasonable price."

"But," chimed in the plant manager, "something's changed in the hose. It looks the same, but some of 'em sure aren't lasting as long as they used to."

The salesman interrupted, "Did I hear that you're only having problems with some of them?"

"Yeah, the ones we use in Process Building Three. Not long after your last visit, we started making another product that's thick and heavy. The only way we can get this stuff to move is to heat it. It comes out and goes into a holding tank and gets heated to about 160 degrees. Then it's pumped to a storage tank built just for this stuff. The

# King Safety Cables

*A positive safeguard for air hose connections - helps you meet today's safety standards.*

### Application:

The King safety cable reaches across hose connections to provide standby safety for hose. Spring-loaded loops in the cable ends open easily to pass over the couplings for a firm grip on the hose.

### Features:

- hose-to-hose or hose-to-rigid outlet standard
- compliant with OSHA Standard 1926.302(b1)
- highly resistant to rust and corrosion
- no tools needed - easy to install and remove
- maximum working pressure: 200 PSI
- must be installed in the extended position (no slack)
- intended to reduce hose whip thus minimizing damage to equipment and injuries to operators in the event of an accidental separation of the connection
- stocked in 12 locations



 Proudly made in the USA

For more information on King Safety Cables and other available options call 888.226.4673 or visit [dixonspecialtyhose.com](http://dixonspecialtyhose.com).

### Dixon Specialty Products

225 Talbot Blvd, Chestertown, MD 21620 • ph 888.226.4673 • fx 410.778.1958

[dixonspecialtyhose.com](http://dixonspecialtyhose.com) • customer service: 888.226.4673



The Right Connection™

hoses from the pumps to the storage tank are where we're having problems."

Suddenly, the plant manager's assistant barged into the meeting room yelling, "Boss, you've gotta' get to Process Building Three now! Fred went on break and left the pumps running

As the four rushed into Process Building Three, they encountered a surreal scene. Goop was dripping from the ceiling and slowly sliding down walls; water was leaking from pipes; sparks were flying from a breaker box; lights were randomly blinking. The equipment and everything in sight was

up this mess! This unit's going to be down for a while!"

Manufacturers continually review their products and update instructions and warnings as needed. In the past few years, most hose manufacturers have placed some type of temperature related warning regarding chemical hose in their product literature.

Typically, that warning will say, "For temperatures above 125° F, permanent fittings must be used." Heat has a devastating effect on coupling retention, particularly plastic-lined chemical hose. The STAMPED acronym, (Size, Temperature, Application, Media, Pressure, Ends, Dixon) must always be heeded, even in repeated orders. Without addressing these questions, you won't know if your customer's parameters have changed ... which could leave you with quite a mess on your hands. ◀

**SUDDENLY, THE PLANT MANAGER'S ASSISTANT BARGED INTO THE MEETING ROOM YELLING, "BOSS, YOU'VE GOTTA GET TO PROCESS BUILDING THREE NOW! FRED WENT ON BREAK AND LEFT THE PUMPS RUNNING AND ONE OF THE HOSES BLEW! ...YOU'RE NOT GOING TO BELIEVE YOUR EYES!"**

and one of the hoses blew! I don't know how long they were running, but you're not going to believe your eyes!"

covered with product. With a steely look, the plant manager turned to the salesman and growled, "Call your boss! Someone's gonna' have to pay to clean

# VEP Series

## Hydraulic Quick Disconnect Couplings

*For anywhere there's a need for a tough, reliable hydraulic connection!*

### Applications:

- High Impulse Hydraulic Applications
- Oil Field Equipment
- BOP Systems
- Construction Equipment
- Excavators
- Crane Systems

### Features:

- Fully Interchangeable with Stucchi VEP-P/VEP-HD Series, DNP FSI/PST4 Series, Holmbury HFT-Series, Voswinkel FT Series, and Parker FET-Series
- Available with NPTF, BSPP, ORB, and Optional Code 62 Connections
- Improved Connect and Disconnect Performance Up To 5,500 PSI
- Patented Valve Mechanism Optimizes Flow and Pressure Performance
- Improved Corrosion Resistance Using ROHS Compliant Trivalent Chrome Plating
- Temperature Range: -22°F to +212°F (-30°C to +100°C)



 Proudly made in the USA

### Dixon Quick Coupling

2925 Chief Court, Dallas, NC 28034 • ph 877.963.4966 • fx 800.839.9022

[dixonquickcoupling.com](http://dixonquickcoupling.com) • customer service: 877.963.4966



The Right Connection™

# Easy on the Eyes

Eight ways to preserve your sight

> It's a scenario Dr. Rachel Bishop would rather not encounter, and yet she does, time and again.

A healthy middle-aged adult who has never before been to the eye doctor accidentally scratches his eye and seeks treatment. As part of the diagnosis, Bishop, the chief of consult services at the National Eye Institute, performs a complete dilated eye exam. It's then she discovers that the patient has lost half of his visual field from glaucoma and doesn't even know it.

If the patient had come for an exam sooner, that vision loss could have been prevented and the glaucoma—an eye disease marked by damage to the optic

nerve that affects some 2.7 million people in the U.S. annually—could have been treated more effectively. But many people don't visit the eye doctor until they are having a problem, and that's a big mistake.

"One of the most common misconceptions people have about eye health is that if they are not having any problems with their eyes, then everything is fine," says Bishop, who practices general ophthalmology. "In truth, many of the early forms of eye disease don't cause any change in vision at all."

Do you see the importance of taking care of your eyes a little more clearly



now? Good. Here are eight easy things you can do to help keep your eyes healthy:

**Have a comprehensive dilated eye exam.** During a complete eye exam, a specialist uses eye drops to dilate the eye in order to see all the structures within, including the retina and optic nerve. This is the most reliable way to keep track of changes in the eye, including those caused by early stages of age-related macular degeneration and glaucoma, which often have no warning signs and can lead to blindness. After your first comprehensive dilated eye exam, your eye specialist will let you know when it's time to return for a follow-up.

## Dixon's Field Adjustable Pressure Reducing Valve <sup>UL</sup>

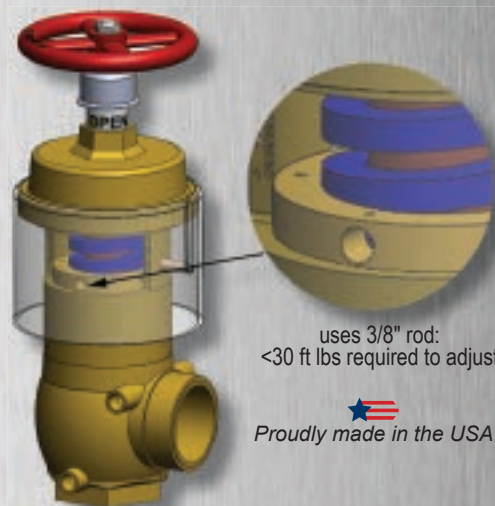
**New  
for  
2013**

### Application:

Used in applications when the inlet pressure is greater than 175 PSI

### Features:

- compact design fits into small spaces
- setting of the valve requires less than 30 ft lbs of torque
- U/L listed
- gives contractor installation flexibility and the ability to adjust the settings once installed
- ¼" NPT gauge ports - both sides, drilled and tapped
- available tamper switch as factory set PRV
- flow data available upon request: [rwible@dixonvalve.com](mailto:rwible@dixonvalve.com)



 Proudly made in the USA

### Dixon Fire

800 High Street, Chestertown, MD 21620 USA • ph 877.712.6179 • fx 800.283.4966  
6350-5 Netherhard Road, Miss. Ontario, Canada • ph 800.786.9697 • fx 905.564.8822

[dixonfire.com](http://dixonfire.com) • ph 877.712.6179 US, 800.786.9697 Canada



The Right Connection™

**Recognize that you could be seeing better.** People can have healthy eyes but still not be seeing as well as they should. The most common vision problems are refractive errors, including nearsightedness, farsightedness, astigmatism and presbyopia, all of which occur when the shape of the eye prevents light from focusing directly on the retina. Glasses or contact lenses can help address such issues. In addition, nuisance problems such as eye strain and dry eyes can be easily treated by an eye doctor.

**Eat your carrots.** Mom was right. Carrots are good for your eyes. So are kale, chard and spinach. Eating a diet rich in fruits and vegetables, especially dark, leafy greens, is important for keeping your eyes healthy. And eat your salmon, tuna and halibut, too. Research has shown there are eye benefits from eating fish that's high in omega-3 fatty acids.

**Be protected.** Wearing protective eyewear when playing sports or working under the car or doing yardwork helps keep projectiles from damaging your eyes. Protective eyewear includes safety glasses and goggles, safety shields, and eye guards specially designed to provide the correct protection for a certain activity. Most protective eyewear lenses are made of polycarbonate, which is 10 times stronger than other plastics.

**Don't smoke.** Research has linked smoking to an increased risk of developing age-related macular degeneration, cataracts and optic nerve damage, which can lead to blindness. For healthy eyes, quit smoking or don't start in the first place.

**Wear your shades.** The sun's ultraviolet rays damage the surface of your eyes by causing thickening of the whites of the eyes, the conjunctiva. This can cause the area to become inflamed,

dry and painful. The sun also affects the deeper structures of the eye, including the lens and retina. When buying sunglasses, look for those that block 99 to 100 percent of both UV-A and UV-B radiation.

**Know your family's history.** Many eye diseases, including glaucoma, are hereditary. Talk to your family and learn about your health history so that you can be aware of what eye diseases you may be at a greater risk of developing.

**If it's good for your heart, it's good for your eyes.** Those very same guidelines for keeping your heart healthy—eat well, exercise, control diabetes and hypertension—are useful for keeping your eyes healthy, too. Maintaining a healthy weight is of special importance since being overweight or obese increases your risk of developing diabetes and other systemic conditions that can lead to vision loss. ■



# Sticking Power

The inspiration for Velcro came from a walk in the woods

> It isn't often that an inventor can claim that his idea actually sprouted from a seed, but in the case of Velcro, that's exactly what happened. At least, that was Georges de Mestral's story—and he stuck to it.

It was 1941, and de Mestral, a Swiss electrical engineer, had gone hunting in the Alps with his dog. When he got home, he noticed that his clothing and the dog's fur were covered with small burrs—the seed-containing flower heads of the burdock, a member of the thistle family.

When the curious de Mestral examined the tenacious pods under a microscope, he discovered that they consisted of many dozen hooks that easily caught onto any surface containing loops. He theorized that if he could duplicate the hooks and loops, he could

succeed in making cotton strips that could be fastened together with the hook-and-loop technique. Through trial and error, he determined that nylon made an extremely strong material for the hook side of the fastener.

He named his new product Velcro, a combination of the French words *velours* (velvet) and *crochet* (hook). Years of refinement ensued, and 10 years after conceiving his idea, de Mestral applied for a patent in Switzerland. Before long, he had obtained patents in seven European countries and Canada. Today, there are dozens of trademarked variations of the Velcro fastener.

In 1958, after de Mestral opened a manufacturing plant in

**ASTRONAUTS USE VELCRO TO KEEP THEIR DINNER PLATES FROM FLOATING AWAY WHILE IN ORBIT. IT HAS EVEN BEEN USED TO HOLD TOGETHER A HUMAN HEART DURING CARDIAC SURGERY.**

produce materials with a strong, though not permanent, bond. He imagined the new device as a fastener for clothing—in much the same way that his ancestors had used burrs to keep their coats wrapped tightly on blustery days.

After some initial discouragement, de Mestral found a weaver in Lyon who

New Hampshire, financial columnist Sylvia Porter introduced the product to the American public, describing it as a “zipperless zipper.” Although de Mestral expected Velcro to be immediately embraced by American consumers, it saw limited use in everyday products until the early 1960s.



The aerospace industry was the first to recognize the usefulness of Velcro for getting in and out of bulky garments, such as space suits. Ski and scuba enthusiasts soon followed. By the mid-1960s, Velcro had gained a foothold in the fashion industry.

In the 60 years since its initial manufacture, Velcro has been used in clothing as a replacement for buttons, zippers and shoelaces. Its ease of use makes it ideal for individuals who have difficulty dressing themselves. Astronauts use Velcro to keep their dinner plates from floating away while in orbit (using nets to keep their food in place while they're eating). It has even been used to hold together a human heart during cardiac surgery.

Not bad for an idea that was unwittingly picked up on a walk in the woods. ●



©2012 Dixon Valve & Coupling Company. All rights reserved.

# **GO AHEAD: ASK THE TOUGH QUESTIONS. AT DIXON'S INNOVATION CENTER, THAT'S HOW WE COME UP WITH THE BEST ANSWERS.**

At Dixon, we're much more than quality products, people and customer service.  
We're the place to go for answers to your processing challenges.

Finding new ways to optimize operations ... reduce maintenance downtime ... promote better safety and environmental compliance. These are the reasons why we opened our Innovation Center – the industry's newest product R&D resource featuring state-of-the-art equipment, a dedicated engineering staff, and interactive training facilities.

Bring us your challenges. Let's work together to develop the new generation of products and solutions.

**Dixon: *The Right Connection* for innovation.**



**Call: 877-963-4966**

*The Right Connection*™

**[dixonvalve.com/innovationcenter](http://dixonvalve.com/innovationcenter)**



I ❤️ LOGISTICS

**Logistics helps your business go anywhere.** You need a steady flow of components and products on the front end of your supply chain and the flexibility to meet your customers' delivery needs on the back end. With UPS, your supply chain can fire on all cylinders. Our logistics experts can help you take days and dollars out of your supply chain by eliminating bottlenecks, minimizing delays, and providing easy-to-use UPS technology for a smoother operation. Put the power of logistics to work for you. **Learn more at [thenewlogistics.com](http://thenewlogistics.com).**



**WE ❤️ LOGISTICS™**