In 2013, global production increased to more than 103 million metric tons, an increase of 3.4% when compared to the previous year, according to this year’s MODERN CAST-ING Census of World Casting Production. The 103.2 million metric tons of metal castings produced in 2013 represents an increase of 3.43 million tons. This rate of growth is a slight bump up from 2012’s 2.4% boost.

Of the 31 countries that provided data for the past two years, 18 reported a contraction in annual volumes when comparing 2013 to 2012. Poland increased its production by 22.1%, with gains across the board in terms of alloys. On the red side of the ledger, Pakistan saw the largest decline in production, with its metalcasting industry contracting by 18.8%. Among the top-10 countries in total output, Brazil had the highest boost in 2013 with an increase of 7.4% in production. The rebound came a year after South America’s only entry in the global survey saw a 16.9% decrease in total production.

China increased its total production by two million metric tons to a total of...
### World Totals (metric tons)

<table>
<thead>
<tr>
<th>Country</th>
<th>Gray Iron</th>
<th>Ductile Iron</th>
<th>Malleable Iron</th>
<th>Steel</th>
<th>Copper Base</th>
<th>Aluminum</th>
<th>Magnesium</th>
<th>Zinc</th>
<th>Other Nonferrous</th>
<th>Total</th>
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</thead>
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</tr>
<tr>
<td>47,844,190</td>
<td>25,045,669</td>
<td>925,565</td>
<td>11,111,572</td>
<td>1,783,402</td>
<td>15,358,327</td>
<td>175,756</td>
<td>453,861</td>
<td>525,672</td>
<td></td>
<td>103,223,514</td>
</tr>
</tbody>
</table>

### The Americas (metric tons)

<table>
<thead>
<tr>
<th>Country</th>
<th>Gray Iron</th>
<th>Ductile Iron</th>
<th>Malleable Iron</th>
<th>Steel</th>
<th>Copper Base</th>
<th>Aluminum</th>
<th>Magnesium</th>
<th>Zinc</th>
<th>Other Nonferrous</th>
<th>Total</th>
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</tbody>
</table>

### Europe (metric tons)

<table>
<thead>
<tr>
<th>Country</th>
<th>Gray Iron</th>
<th>Ductile Iron</th>
<th>Malleable Iron</th>
<th>Steel</th>
<th>Copper Base</th>
<th>Aluminum</th>
<th>Magnesium</th>
<th>Zinc</th>
<th>Other Nonferrous</th>
<th>Total</th>
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</tr>
</tbody>
</table>

### Asia (metric tons)

<table>
<thead>
<tr>
<th>Country</th>
<th>Gray Iron</th>
<th>Ductile Iron</th>
<th>Malleable Iron</th>
<th>Steel</th>
<th>Copper Base</th>
<th>Aluminum</th>
<th>Magnesium</th>
<th>Zinc</th>
<th>Other Nonferrous</th>
<th>Total</th>
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</tr>
</tbody>
</table>

### Africa (metric tons)

<table>
<thead>
<tr>
<th>Country</th>
<th>Gray Iron</th>
<th>Ductile Iron</th>
<th>Malleable Iron</th>
<th>Steel</th>
<th>Copper Base</th>
<th>Aluminum</th>
<th>Magnesium</th>
<th>Zinc</th>
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</tbody>
</table>

* 2012 data  ** 2011 data  A) Includes magnesium  B) Includes malleable iron  C) All nonferrous
44.5 million. That boost represents a large majority of the overall increase in global production, meaning China continued to increase its share of the global market. Meanwhile, the U.S., the world’s second largest producer, saw its tonnage increase by 3.9% to 12.25 million metric tons. While the top two producing nations saw increases, other top metalcasting countries had production headed south in 2013. France, Germany and Russia reported 3% to 5% decreases.

India remained No. 3 in total production at 9.81 million tons. Spots 4 through 10 remained unchanged, with Japan producing 5.54 million metric tons, Germany 5.19 million, Russia 4.1 million, Brazil 3.07 million, Korea 2.56 million, Italy 1.97 million and France 1.75 million. The top-10 nations produced 88% of the world’s castings, a figure that remains unchanged from 2012.

The U.S. saw a 4.4% increase in its productivity per site, with its 2,001 metalcasting facilities averaging 6,122 metric tons. Germany, the world leader in per plant production at 8,659, experienced a negligible increase of 41 metric tons per plant.

China and India, the two countries with the greatest number of facilities, reported gains of 4.73% and 2.7%. Productivity is calculated as total tonnage divided by the number of plants reported.

Total production of iron increased, with gray iron growing 4.6%, and ductile iron expanding by 1.3%, while malleable iron fell 27.1%. Steel output dropped by 0.1%, while aluminum production jumped by 9.9%.

The data reported in the 48th Census of World Casting Production is supplied by each nation’s metalcasting association or similar representatives. Countries that did not participate this year were Denmark, Mexico, Serbia, Slovakia and South Africa. These countries remain listed according to the last year they participated. Mongolia, which has not submitted data since 2009, has been removed from the list. Thailand returned to the census after an extended absence, reporting 316,400 metric tons.

Mexico, Ukraine and Turkey remain just outside the top-10 countries in...
Environmental.
Value.

HA International’s commitment to our EcoMission means investing in and developing new environmentally friendly and sustainable products to keep your foundry compliant and competitive in the marketplace.
### CASTING SHIPMENTS

<table>
<thead>
<tr>
<th>Country</th>
<th>Gray Iron</th>
<th>Ductile Iron</th>
<th>Malleable Iron</th>
<th>Steel</th>
<th>All Nonferrous</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>581,250</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,095,000</td>
</tr>
<tr>
<td>Brazil</td>
<td>6,420,000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3,750,000</td>
</tr>
<tr>
<td>China</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>89,700,000</td>
</tr>
<tr>
<td>Finland</td>
<td>48,777</td>
<td>108,232</td>
<td>-</td>
<td>-</td>
<td>112,583</td>
<td>110,078</td>
</tr>
<tr>
<td>France</td>
<td>3,877,500</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3,341,250</td>
</tr>
<tr>
<td>Germany</td>
<td>7,548,875</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,546,375</td>
<td>6,383,000</td>
</tr>
<tr>
<td>Hungary</td>
<td>232,500</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>355,000</td>
</tr>
<tr>
<td>Italy</td>
<td>3,125,000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4,037,500</td>
</tr>
<tr>
<td>Japan</td>
<td>3,824,000</td>
<td>4,197,000</td>
<td>177,000</td>
<td>1,166,000</td>
<td>10,002,000</td>
<td>19,366,000</td>
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<tr>
<td>Norway</td>
<td>63,750</td>
<td>132,500</td>
<td>-</td>
<td>42,500</td>
<td>55,000</td>
<td>283,750</td>
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<tr>
<td>Portugal</td>
<td>61,375</td>
<td>126,125</td>
<td>-</td>
<td>59,750</td>
<td>-</td>
<td>247,250</td>
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<tr>
<td>Spain</td>
<td>2,160,000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>937,500</td>
<td>3,097,500</td>
</tr>
<tr>
<td>Thailand</td>
<td>105,096</td>
<td>51,096</td>
<td>52,822</td>
<td>57,677</td>
<td>374,000</td>
<td>640,691</td>
</tr>
<tr>
<td>Turkey</td>
<td>887,500</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4,937,500</td>
<td>5,825,000</td>
</tr>
<tr>
<td>Ukraine</td>
<td>1,116,000</td>
<td>440,000</td>
<td>138,000</td>
<td>1,700,000</td>
<td>1,790,000</td>
<td>5,184,000</td>
</tr>
<tr>
<td>United States</td>
<td>5,300,000</td>
<td>7,193,000</td>
<td>163,000</td>
<td>4,295,000</td>
<td>18,106,000</td>
<td>35,057,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>35,351,623</td>
<td>13,122,953</td>
<td>570,822</td>
<td>10,849,385</td>
<td>53,011,328</td>
<td>202,618,611</td>
</tr>
</tbody>
</table>

A) All ferrous

### TOP 10 CASTING PRODUCERS

1. **China** 44,500,000 metric tons
   - Gray iron: 20,550,000 tons
   - Ductile iron: 11,600,000 tons
   - Steel: 5,500,000 tons
   - Nonferrous: 6,250,000 tons

2. **Brazil** 12,250,000 metric tons
   - Gray iron: 4,083,000 tons
   - Ductile iron: 4,251,500 tons
   - Steel: 1,422,850 tons
   - Nonferrous: 2,411,400 tons

3. **China** 9,810,000 metric tons
   - Gray iron: 6,700,000 tons
   - Ductile iron: 1,000,000 tons
   - Steel: 1,100,000 tons
   - Nonferrous: 950,000 tons

4. **Japan** 5,538,037 metric tons
   - Gray iron: 2,135,794 tons
   - Ductile iron: 1,683,250 tons
   - Steel: 181,679 tons
   - Nonferrous: 1,492,313 tons

5. **Germany** 5,186,727 metric tons
   - Gray iron: 2,381,462 tons
   - Ductile iron: 1,541,737 tons
   - Steel: 207,585 tons
   - Nonferrous: 1,025,700 tons

6. **Russia** 4,100,000 metric tons
   - All iron: 2,800,000 tons
   - Steel: 700,000 tons
   - Nonferrous: 600,000 tons

7. **Brazil** 3,071,400 metric tons
   - Gray iron: 1,825,000 tons
   - Ductile iron: 746,300 tons
   - Steel: 232,500 tons
   - Nonferrous: 576,600 tons

8. **Korea** 2,562,000 metric tons
   - Gray iron: 1,086,400 tons
   - Ductile iron: 705,100 tons
   - Steel: 164,100 tons
   - Nonferrous: 600,400 tons

9. **Italy** 1,970,968 metric tons
   - Gray iron: 689,000 tons
   - Ductile iron: 387,600 tons
   - Steel: 697,000 tons
   - Nonferrous: 824,668 tons

10. **France** 1,748,166 metric tons
    - Gray iron: 635,414 tons
    - Ductile iron: 703,141 tons
    - Steel: 80,688 tons
    - Nonferrous: 328,923 tons

#### Note:
The total production may differ from aggregate of national totals because countries with only one reported year were excluded.

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* 2012 Results
** 2011 Results
*** 2010 Results

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