Top Charging System
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* Nippon Steel Engineering has supplied 80 or more units of blast furnaces and delivered two types of top charging system: bell type and bell-less type according to the customer needs.
* For the stable operation of blast furnace, it is important to uniformly charge burden peripherally. Nippon Steel Engineering’s top charging system has the function for realizing such requirement.

**Anti-segregation technology**

- **Uniform center of layer & Uniform layer thickness**

- **Uniform particle size**

- **Stable running**

- **Center feed of coke**

  * Nippon Steel Engineering’s original chute drive unit

  * Structure to reduce wear on large bearing of slewing chute drive unit

  * Nippon Steel Engineering’s original chute structure

  * Accuracy for center feed is enhanced by the cylindrical chute.

- **Service life: 15 years**

- **Temporal change of particle size of burden: Large**

- **Temporal change of particle size of burden: Constant**

- **Uniform particle size → Uniform gas flow inside furnace**

- **Segregated distribution of coarse particle and fine particle**

- **Un-segregated distribution of coarse particle and fine particle**

- **Material flow control valve**

- **Uniform center of layer**

- **Uniform layer thickness**

- **Stable gas flow inside furnace**
Nippon Steel Engineering developed a new type top charging system for the purpose of enhancing the raw material charging accuracy.

* Nippon Steel Engineering is planning to carry out a model test using a prototype with a chute of approx. 2m length.

- Simple&Compact structure → Manufacturing cost is unexpensive.
- Short free fall length of material & varying material impact area by rotating chute → Chute liner life is long.
- High-speed tilting → It is possible to shorten the time of center feed, which is normally the bottleneck for the time schedule.

Supply record

Actual result of delivery: 86unit

* Table below covers the latest 10 cases.

<table>
<thead>
<tr>
<th>No.</th>
<th>Year</th>
<th>Country</th>
<th>Customer</th>
<th>BF</th>
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