



# ALUSWIRLER® Melting Chips Process

**insertec**  
Furnaces & Refractories

ALUSWIRLER Chips – En

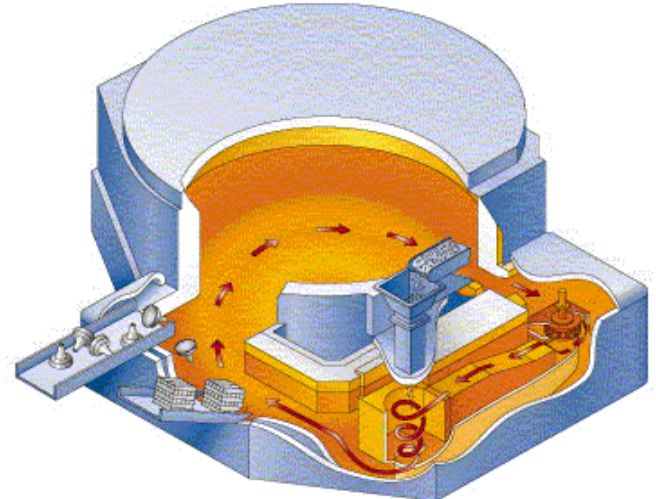
The **ALUSWIRLER®** system is designed for continuous melting of aluminium chips, by submersion in a hot molten metal vortex.

The **ALUSWIRLER®** is the hearth of the system. The aluminium chips are melted because their submersion into the liquid metal and the quick heat transfer from the hot molten metal. The vortex is generated by a mechanical pump electrically driven.

The **ALUSWIRLER®** chamber is a side well attached to the main furnace chamber, linked by communication channels, which direct the flow of molten metal generated by the mechanical pump.

The impeller, its housing and the vortex chamber are ceramic pre-cast shapes, easily replaceable. They are located into the refractory lining of the side well, becoming so the **ALUSWIRLER®** chamber.

The impeller rotation produces a high flow of molten metal, that downwards becomes a vortex of hot liquid metal, point where the pretreated and dried aluminium chips are charged for its melting, being submerged nearly instantaneously. The melting process is so quick that all the chips are melted before they can reach the main chamber of the furnace.



Schematic drawing of recirculating effect through the sink vortex and open well

## Features of the **ALUSWIRLER®** system:

- High metal recovery
- Low specific energy consumption
- Continuous melting in molten metal
- Applied sink vortex technology
- Low residence time
- Indirect heating
- Molten metal temperature uniformity
- Not salts required



Chips dosing to the ALUSWIRLER



### Chips pretreatment:

The treatment in continuous of the chips previous to the melting process requires:

1. Skip elevator of chips baskets
2. Rotary Shredder, to obtain uniform chips size between 10-30 mm
3. Centrifugal Separator, to minimize lubricants and water content, up to 3-5%,
4. Magnetic Separator, to eliminate the ferrous parts accompanying the chips
5. Buffer Hopper of treated chips, previous the drying and melting process
6. Related belt and screw conveyors, between the different components, with variable adjusted speed
7. Rotary Drier, for complete evaporation of lubricants and water, supplying hot chips ready to be melted.



Rotary Drying Furnace 1000 kg/hr

### In-house Chips Recycling in the Foundry, mean to the processing plants

- Avoid the storage of chips for resale
- Additional melting capacity
- Improvement of the Environmental issues
- Compact installation and quick pay-back

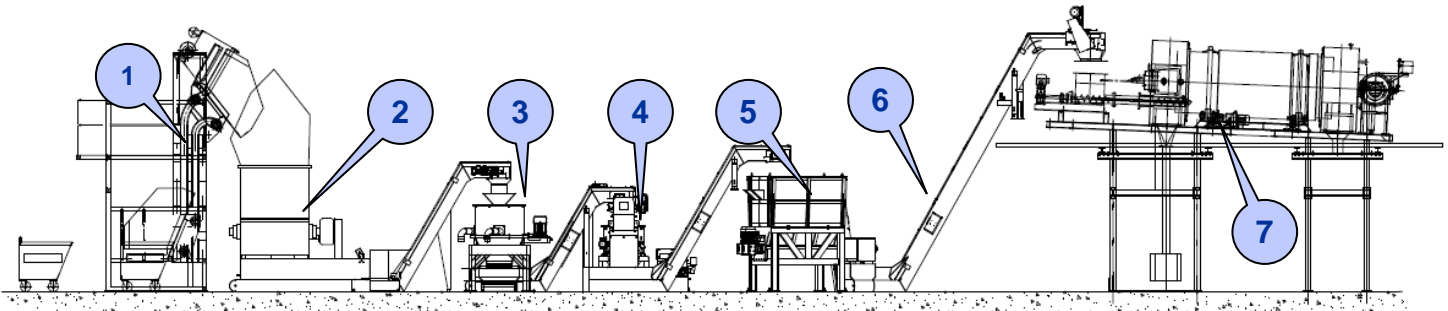


Shredder and centrifuge



Magnetic Separator, Buffer Hoper and Drier

### Typical Chips pre-treatment and drying Line



Basket / Elevator / Shredder / Centrifuge / Separator / Buffer Hopper

Rotary Drier