

Metallurgical Industry



Continuous Casting of steel Secondary Cooling

For higher productivity secondary cooling plays critical part where various rates of heat flux are to be removed from hot slab at various stages. Thus, spray nozzles are used for secondary cooling. For this purpose single fluid, twin fluid spray nozzles are used.

Descaling

During the process of cooling, iron oxide scales are formed on hot steel surface where high pressure water jet are used to remove this scales. For this purpose specially designed flat spray nozzle are used which has operating pressure range from 80 to 450 bar.

Roll Cooling

As hot slab rolls through series of rollers, heat transfers due to mutual contact; Thus to recover this heat from rolls, spray nozzles are used. This also helps to control and improves the shape of rolls.

In steel industries spray nozzles are used for so many other applications elaborated as below :

Coke ovens

- Coke quenching
- Gas cleaning and droplet separators
- Strip spray-off and blow-off

Hot rolling

- Settlement of oxide dusts in the stand
- Intermediate stand cooling
- Strip surface quenching to protect the work rolls

Chemical Industry



Cleaning packing columns and Demister pads

Packing columns are used in chemical and petrochemical industries, for washing of packing materials / beds spray nozzles are used. Specially non-clogging spray nozzles are used for this purpose.

Wet gas scrubber

To absorb the chemical compounds from gas, some absorbents are sprayed into the gas scrubber. For even distribution of absorbents, spray nozzles are used.

Cleaning of fermentation tanks and reactors

Several types of cleaning agents and solvents are used to clean fermentation tanks and reactors. Thus, here specially designed self-rotating and stationary spray nozzles are used.

Food and Beverages Industries



Cooling and Heating (Pasteurization)

During the packaging of hot or cold foods full cone spray nozzles are used for thermal transfer, the uniform circular spray pattern helps to maintain uniform and steady heat transfer. In pasteurizing tunnels tangential entry hollow cone spray nozzles are used for both cooling or heating of packed cans, bottles, pouches of food or beverages.

Sanitizing, Washing Bottles and Cans

Spray nozzles and spray balls are used for sanitizing, washing and drying packaged or empty bottles / barrels. This is being used in automated packages and material handling equipments

Pharmaceutical Industry



Tablet coating

After making a good tablet, you must often coat it. The coating can have several functions. It can strengthen the tablet, control its release, improve its taste, colour, it makes it easier to handle and package, and protect it from moisture.

Clean In Place (CIP)

For efficient cleaning of mixing tanks, containers, equipment, coating pans spray balls / turbo disc spray nozzles are installed inside the equipments made of pharma grade stainless steel which cleans the equipments in place.

Granulation With RMG / HSG

Also known as wet granulation process. Material is loaded into bowl having agitator and chopper and mixed rigorously then binder material is sprayed from top and granules are formed.

Good quality granules are foundation for good quality tablet.

Various liquid blenders are used for wet granulation.

Spraying binder over bulk material could reduce wet granulation cycle time and increase productivity.

Air Pollution Control



Emission regulations are made compulsory everywhere by government for small, large industries which creates dust, exhaust gases which are dangerous for environment.

Dust Suppression system

Fine mist spray nozzle are used at various dumping, transfer points where large emission of dust happens to suppress flying contamination water spray nozzles are used. Application industries are power plants Cement Industry, Glass Industry, Refineries, Pulp and Paper Industries, Chemical Industries, Steel Industries, Mining Industries etc.

Some other applications

- Wet Flue Gas Desulphurization
- Circulating Fluidized Bed
- Spray Dry Absorber
- NOX Removal
- Fire Protection Systems
- Gas Conditioning

Automotive / Sheet Metal Industry



Surface treatment

Surface treatment consist of several process stations like cold / hot water rising, degreasing, phosphatising, coating, galvanzing, and cleaning. Full cone, Flat spray nozzles with quick release type assembly and clip on mountings are used to set in several spray angels, assemble and dismantle easily. Surface treatment plays critical role in automotive and sheet metal industries as it is giving base for painting operations.

Assembly and Quality Assurance

In the final stages of automotive production, many applications require the use of nozzles. These include sealing, dewaxing car bodies, vehicle washing, high-pressure cleaning and various simulation tests (e.g. corrosion tests, leak tests, aquaplaning tests).

Some other applications we provide spray nozzles for

- Humidification with water and steam
- Desuperheating
- Oil burners
- Incinerator

For any other application please contact with our technical experts.

Paper Industry



Coating

Surface sizing operations are performed to provide increased surface strength, as well as to produce paper with an increased resistance to penetration by liquid solutions. Treatment can also provide better surface characteristics and improve certain physical properties of the paper sheet.

Showers and Oscillators

spray showers with the built-in cleaning device have been successfully used in paper mills around the world for years. A simple turn of the handwheel sweeps contaminants away from the nozzle orifices and directs all debris down the flush-out valve.

Trimming

Paper trim and edge sprays are used in various sections of paper machines. Generally, they improve the mill speed and reduce risk of web breaks. Some machines use trim nozzles after the last drying roll as well.

Fire Suppression for Tanks



Spray irrigation of tanks aims to protect tanks and other vessels against unacceptable heating during burning. Here, heating must be understood as a condition where an increase of a tank's inner pressure and a decrease of the tank walls' resistance will lead to bursting of the tank.

Also important is the heat-influenced breakdown of the sealing elements in detachable connections. Water spray simultaneously extinguishes and cools the complete surface of the incendiary matter.