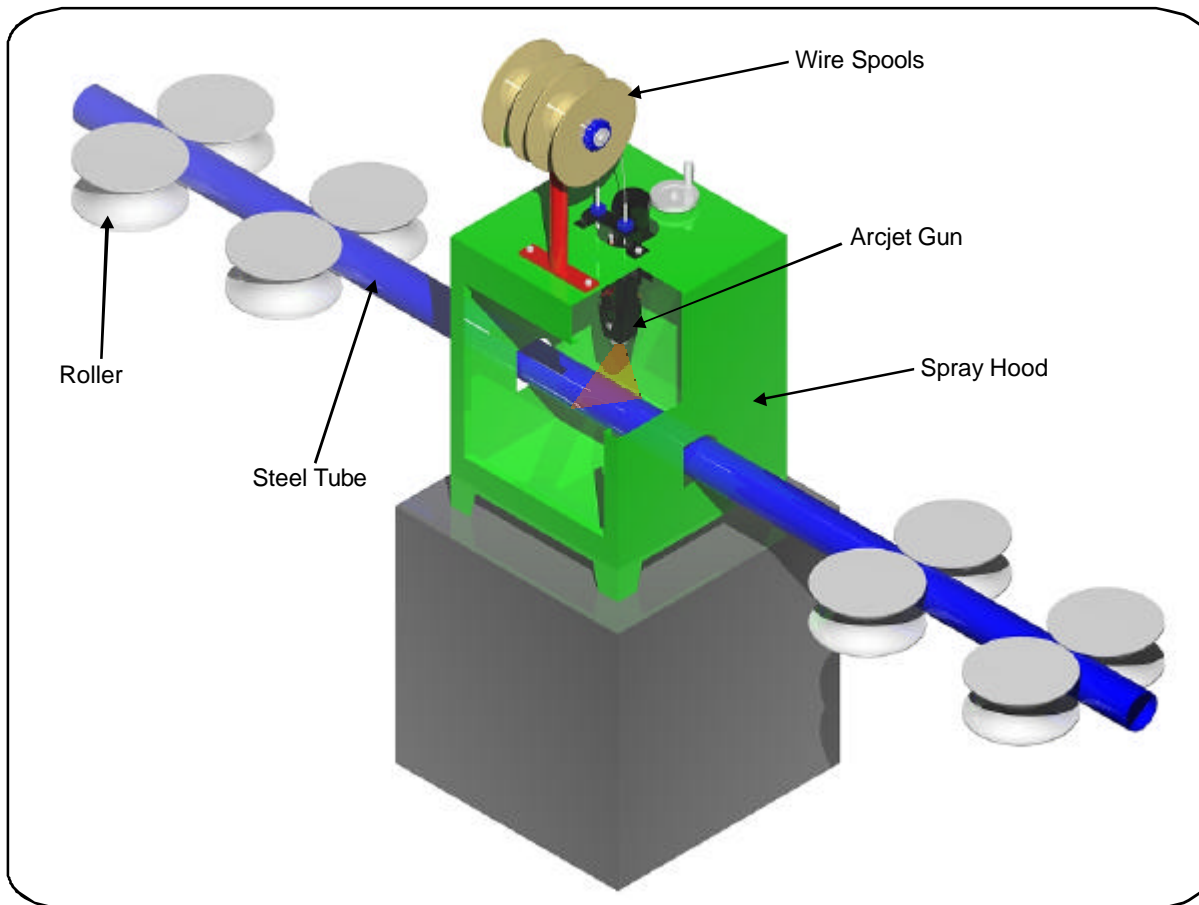


THERMAL SPRAY FACILITIES

AUTOMATIC SYSTEMS for HVOF, PLASMA, FLAME SPRAY, ARC SPRAY & ROD SPRAY

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The spray process applies coatings of aluminium, zinc or their alloy materials to reinstate the corrosion resistance properties of the tubing. Applying the spray material while the weld seam is still hot assures a metallurgical bond of the sprayed material with the substrate, improves both the deposit efficiency and density of the sprayed material, and allows the coating to blend, thereby helping to hide the weld seam.

Arc spray is the most user-friendly and, in terms of operating cost, the least expensive of the thermal or metal spraying processes

A roll forming machine draws hot or cold rolled steel through successive stations and shapes the material into a tube. Electric resistance welding closes the seam left by the butted edges. Although no filler metal is added that would change the chemical composition, the welding process applies temperatures high enough to sacrifice some corrosion resistant properties of the base metal. The process may also vaporize aluminium or galvanized coatings previously applied to the rolled steel.

A contour scarfing tool or smoothing mandrel removes weld spatter or excess material from the outer diameter of the tube surface. Many tube makers install a Two-Wire Electric Arc Spray Process directly down line from the scarfing tool or smoothing mandrel.

used for applying metal coatings to base materials. Any electrically conductive material in wire form can be arc sprayed.

Wire pulling system by AC Motor, fitted in the gun which ensures precision wire feed speed. The wires meet at the head of the gun and melt in the electrical arc. The molten mass is atomized and blown onto the substrate with compressed air. The particles cool to ambient temperature and coalesce into a high quality metal coating.

**METAL COATING SYSTEM FOR
TUBE MILL APPLICATIONS**

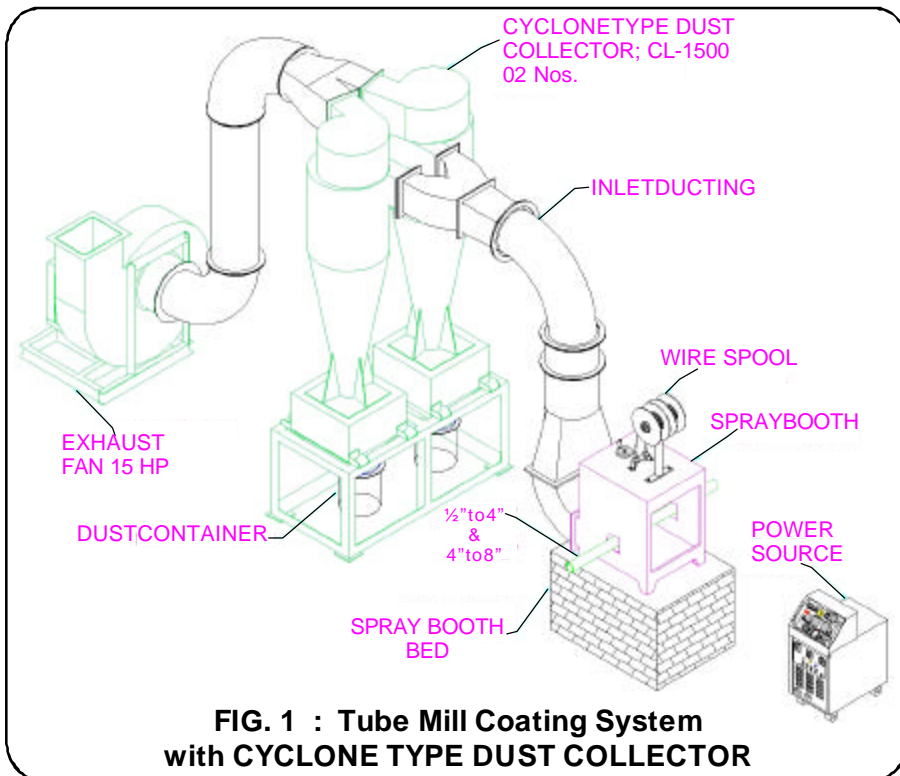


FIG. 1 : Tube Mill Coating System with CYCLONE TYPE DUST COLLECTOR

The distance from the arc to the tube seam is an important measurement on tube mill installations. Standard arc spray air caps provide conical spray patterns. Straight extensions provide elliptical patterns of 12.7mm (1/2") to 19.05mm (3/4") wide at arc to tube distances of 19.05mm to 31.75mm (3/4" to 1 1/4"). A small spray width minimizes over-spray and precisely controls material usage. Generally, the speed of the tube through the mill determines the spray amperage and spray amperage directly affects the material usage. The spraying speed for zinc is approx. 10.89Kg. (24lbs) of material per hour for every 100 amperes of current.

The larger the tube, the slower the speed. Most tube mill sprays systems operate anywhere from 30 to 300 amperes depending on the speeds and the desired thickness of the sprayed material.

It would require approximately 2.95Kg. (6.5lbs) of zinc to spray a coating 26 micron thick with a 12.7mm (1/2") spray pattern on 762 meters (2500 feet) of tubing. Installing the arc spray gun in an enclosed box ventilated to a dust collector ensures environmental and personnel safety.

Dust, fumes, and over-spray must be removed from the spray zone quickly. Over-spray can contain particles of less than 2 microns in size, and can constitute to 4 to 15% of the over-spray by weight. If not properly ventilated, this could cause a hazardous breathing zone or impede mill operations down line hence efficient dust collection system is necessary.

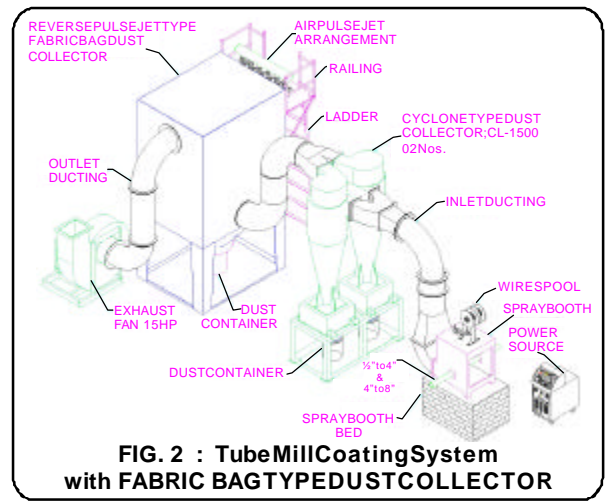


FIG. 2 : Tube Mill Coating System with FABRIC BAG TYPE DUST COLLECTOR

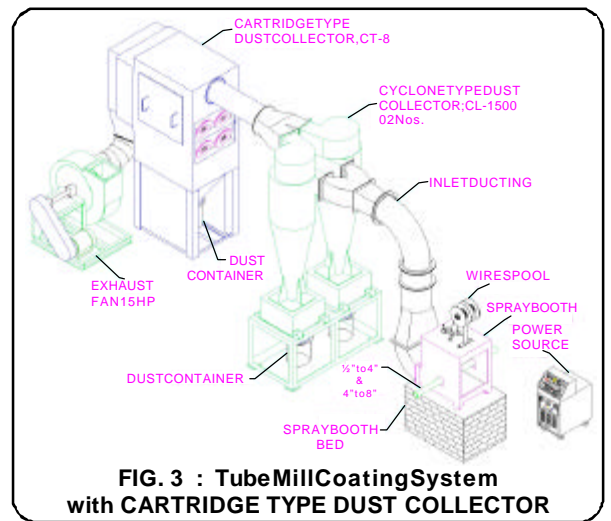


FIG. 3 : Tube Mill Coating System with CARTRIDGE TYPE DUST COLLECTOR

Dust Collection System incorporates either Cyclone type Dust Collector (Fig. 1) or Cyclone with Fabric Bag type Dust Collector (Fig. 2) or Cyclone with Cartridge type Dust Collector (Fig. 3).

The selection depends upon the level of pollution control required. The degree of pollution control is small to higher level in above types.

Our power supplies have a stable arc at low amperage, allowing operation at very low line speeds.

Instead of wire spools, 125Kg. or 250Kg. wire drum can be used for higher productions.



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