Sprinkle sintering method  |  Sintered friction materials

**Sprinkle sintering method**

1. **Sprinkling process**
   - Sprinkling powder particles onto surfaces, which are partly covered by blanking plates to leave out wide grooves & splines.

2. **Pre-Sintering in conveyor belt furnace**
   - Surface grinding, coating of the steel plate surface by electroplating in galvanic bath (galvanizing).
   - Manufacturing through punching and laser cutting in special tools, also further processing of counter steel plates (steel opposing plates).
   - Powder mixture retort.
   - Debinding:
     - Gases escape.
   - Pre- Sintering in conveyor belt furnace:
     - Densifying + Pressing:
       - Densification to required thickness, mould-pressing of narrower grooves into the surface on both sides.
       - Passing through sintering zone in a few minutes at circa 800°C, increase in strength of powder particles, sintering with liquid phase.
     - Sintering in bell-type furnace:
       - Sintering process under protective atmosphere, annealing below the melting temperature of main constituent, diffusion and recrystallization processes.
   - Repeating procedure for double sided lining.

3. **Sintering process**
   - Brushing and deburring edges, surface polishing, further heat treatment such as hardening or case hardening.

4. **Post-sintering processing**
   - Re-pressing and calibration operations, improvement in dimensional accuracy and surface parallelism.

5. **Sizing + Coining**
   - Brushing and deburring edges, surface polishing, further heat treatment such as hardening or case hardening.

6. **Steel plate preparation**
   - Steel plate production:
     - Steel plate preparation.

7. **Steel plate production**
   - Manufacturing through punching and laser cutting in special tools, also further processing of counter steel plates (steel opposing plates).

8. **Sprinkle sinter friction lining**

9. **Powder production**
   - Mixing and blending of metal powders, additives, graphite, binder etc. eg. containing electrolytic copper powder of high purity and excellent pressing and sintering properties.
   - Powder mixture retort.
   - Debinding:
     - Gases escape.
   - Pre- Sintering in conveyor belt furnace:
     - Densifying + Pressing:
       - Densification to required thickness, mould-pressing of narrower grooves into the surface on both sides.
       - Passing through sintering zone in a few minutes at circa 800°C, increase in strength of powder particles, sintering with liquid phase.
     - Sintering in bell-type furnace:
       - Sintering process under protective atmosphere, annealing below the melting temperature of main constituent, diffusion and recrystallization processes.
   - Repeating procedure for double sided lining.

10. **Sprinkling process**
    - Sprinkling powder particles onto surfaces, which are partly covered by blanking plates to leave out wide grooves & splines.

11. **Sprinkling process**
    - Sprinkling powder particles onto surfaces, which are partly covered by blanking plates to leave out wide grooves & splines.

12. **Sprinkle sinter friction lining**
    - Steel plate preparation.

13. **Sprinkle sinter friction lining**
    - Sprinkle sinter friction lining.