Claims

1. A media dosage unit for shot peening, the media dosage unit comprising:
   - a flow sensor for measuring flow rate of solid particles; and
   - a connector on the flow sensor for coupling the flow sensor to a shot circulation conduit.

2. The media dosage unit of claim 1 further comprising
an observation window for inspecting interior of the media dosage unit visually.

3. The media dosage unit of claim 1 or 2 further comprising
a media flow valve coupled to the flow sensor for regulating the flow rate.

4. The media dosage unit of claim 3, wherein
the media flow valve is configured to close passage of the shot circulation conduit in the absence of power supply.

5. The media dosage unit of claim 3 or 4, wherein
the media flow valve comprises:
   - a holder having a through hole for aligning with the shot circulation conduit in order to transfer shot peening particles via the through hole; and
   - a shutter supported by the holder;
   wherein the shutter is movable with respect to the holder for adjusting size of an opening in order to regulate flow of the shot peening particles.

6. The media dosage unit of claim 5, wherein
the media flow valve further comprises a spreader for altering distribution pattern of the solid particles.

7. The media dosage unit of claim 6, wherein
the spreader is removable from the media flow valve (replaceable or detachable).

8. The media dosage unit of claim 5, wherein
the shutter comprises a top plate and a valve pulley joined together for moving the top plate with respect to the holder.

9. The media dosage unit of claim 5 or 8, wherein
the shutter comprises a top plate for providing a non-levelled surface in order to prevent accumulation of shot peening particles at the shutter.

10. The media dosage unit of any of the preceding claims further comprising
a hopper connected to the media flow valve, the flow sensor or both for feeding the solid particles steadily.

11. The media dosage unit of any of the preceding claims further comprising
a protective casing for preventing external disturbance to internal components of the media dosage unit.

12. The media dosage unit of any of the preceding claims further comprising
- a shot media storage tank for keeping the solid particles as shot media, the shot media storage tank connected to the shot circulation conduit;
- a shot media accelerator coupled to the shot media storage tank;
- a hose connected to the shot circulation conduit for transferring the shot peening media;
- at least one nozzle further connected to the hose for discharging the shot peening media to an object at predetermined speeds; and
- a shot blasting chamber.

13. A method of using the media dosage unit for shot peening comprising
- providing at least one shot peening medium;
- accelerating the at least one peening medium to a predetermined speed;
- measuring flow rate of the at least one shot peening medium; and
- directing the at least one shot peening medium to an object.

14. The method of claim 13 further comprising
adjusting the predetermined speed of the at least one shot peening medium automatically.

15. The method of any of the preceding claims 13 or 14 further comprising
regulating the flow rate by operating a media flow valve automatically.

16. The method of any of the preceding claims 13 to 15 further comprising
tilting a top plate of the media flow valve for preventing accumulation of the at least one shot peening medium at the media flow valve.

17. A method of making the media dosage unit for shot peening, comprising
- providing a flow sensor for measuring flow rate of solid particles; and
- coupling the flow sensor to a shot circulation conduit via a connector.

18. The method of claim 17, further comprising:
installing a media flow valve onto the shot circulation conduit for regulating the flow rate.

19. The method of any of the preceding claims 17 to 18, further comprising:
tilting a top plate of the media flow valve for preventing accumulation of the solid particles at the top plate.

20. The method of any of the preceding claims 17 to 19 comprising
replacing at least one component of the media dosage unit.

Claims

1. A media dosage unit for shot peening, the media dosage unit comprising:

- a microwave flow sensor for measuring flow rate of ferrous solid shot peening particles,
- wherein the microwave flow sensor comprises a sensor guider for altering or adjusting flow pattern of a media stream of the ferrous solid particles;
- a connector on the microwave flow sensor for coupling the microwave flow sensor to a shot circulation conduit, wherein the shot circulation conduit is configured to accelerate the ferrous solid shot peening particles before passing by the microwave flow sensor;
- a media flow valve coupled to the microwave flow sensor for regulating the flow rate;

wherein the media flow valve comprises:

- a holder having a through hole for aligning with the shot circulation conduit in order to transfer the ferrous solid shot peening particles via the through hole; and
- a shutter supported by the holder; wherein the shutter is movable with respect to the holder for adjusting size of an opening in order to regulate flow of the shot peening particles; and
- a spreader for altering distribution pattern of the ferrous solid shot peening particles; and
- a core assembly configured to regulate the media travelling in the media flow valve.

2 The media dosage unit of claim 1 further comprising an observation window for inspecting interior of the media dosage unit visually.

3. The media dosage unit of claim 1, wherein the media flow valve is configured to close passage of the shot circulation conduit in the absence of power supply.

4. The media dosage unit of claim 1, wherein the holder of the media flow valve comprises the spreader, wherein the spreader is removable from the holder of the media flow valve.

5. The media dosage unit of claim 1, wherein the shutter comprises a top plate and a valve pulley joined together for moving the top plate with respect to the holder.

6. The media dosage unit of claim 1, wherein the shutter comprises a top plate for providing a non-levelled surface in order to prevent accumulation of the ferrous solid shot peening particles at the shutter.

7. The media dosage unit of claim 1 further comprising a hopper connected to the media flow valve, the microwave flow sensor or both for feeding the ferrous solid shot peening particles in a constant flow rate.

8. The media dosage unit of claim 1 further comprising a protective casing for preventing external disturbance to internal components of the media dosage unit.

9. The media dosage unit of claim 1 further comprising a shot media storage tank for keeping the ferrous solid shot peening particles as shot media, the shot media storage tank connected to the shot circulation conduit.