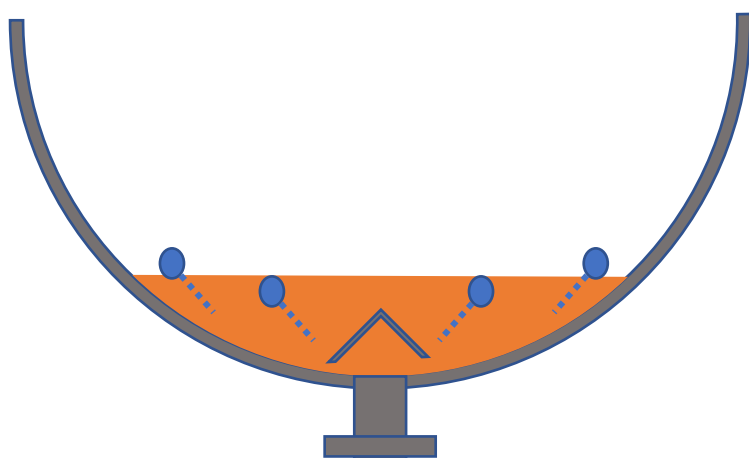


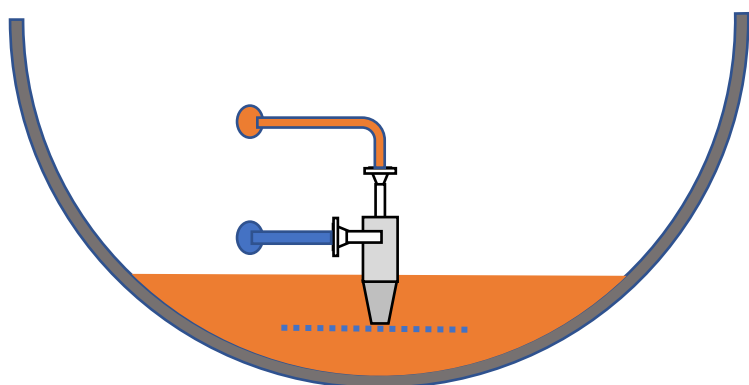
Comparison of Conventional v Swirl Type Sand Removal Systems

Fig. 1: Conventional water headers + jetting nozzles arrangement



- 2 or 4 Headers required, depending on vessel diameter
- Central sand pan usually required to prevent blocking drains
- Drain nozzles (typ 4") required every 2m typically
- Jetting pressure ~ 7bar (100 psi)
- Jetting water consumption ~20m³/m²/h
- Each nozzle sweeps in flat fan arrangement
- Some risk of vessel wall impingement / erosion without careful design
- Can operate on-line, but high water injection and drainage makes it complex

Fig. 2: Modern swirler head arrangement with water inlet and slurry outlet header



- 2 Headers (In/Out) required normally
- Heads usually on centre-line, but can be staggered for larger vessels
- No central sand pan required
- No special drain nozzles required
- Jetting pressure ~ 1bar (15 psi)
- Jetting water consumption ~6m³/m²/h
- Each head sweeps a circle approx 1m diameter
- Reduced risk of impingement
- Reverse flow can usually clear any blockages
- Easier to operate on-line