

Technical Bulletin WITB0002 Rev D

SUBJECT: Guidelines For Abrasive Duty / Slurry Applications

Pump Models Affected: All WANNER pumps

Wanner Pump suitability:

Seal-less concept, pumping particles in suspension is possible depending on the following factors.
Please contact Wanner International for advice before selecting a pump for abrasive / slurry duty.

Liquid: (details required)

- Concentration of particles in the fluid in % by volume.
- Size of the particles.
- Tendency to settle out of suspension (sedimentation). A good test for this is to stand the liquid in a glass and monitor the amount of time it takes for the solids to drop out of suspension.
- Tendency of the particles to 'clump' / coalesce.
- Shape of the particles. Ideally the particles will be close to spherical like sand. Longer needle-like particles may not be suitable and further advice from Wanner should be sought in these cases.
- Specific gravity of the liquid.

Installation - suction / inlet feed conditions:

- This is important since liquid starvation, cavitation effects, turbulence etc. can cause instability during pumping which can induce high vibration of the valves, increasing wear effects.
- An 'end of day' flushing cycle prior to stopping the pump may be required (depending on sedimentation).

Pump speed:

- Ideally no more than 50% of the maximum speed for any pump model.
- Low pump speed = low velocity of abrasive particles through the valve assembly, thus reducing effects of wear and the number of opening and closing cycles of the valves.
- If the solids are inclined to settle out of suspension, running the pump too slowly may allow the solids to sediment in the valve assemblies and block them

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Number of cycles example:

If a pump operates at 1000rpm for 40 hours/week; in one month the valves will have opened and closed more than 10 million times.

Maximum particle size guidelines:

Assuming particles are spherical in shape (like sand)

Concentration % by volume will depend on the tendency for particles to settle out of solution. Please call Wanner for guidance.

Process pumps

Pump type	Maximum particle size
G20 / G03 / G04	200 Microns
G10 / G12 / G15	500 Microns.
G25/ G35/ G66	800 Microns.
T100 / Q155	800 Microns.
T200	800 Microns.

Metering and Dosing

Pump type	Maximum particle size
MT08	200 Microns.
P100 / P200 / P300	200 Microns.
P400 / P500	500 Microns.
P600	800 Microns.

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