

CONSIDERATIONS FOR SELECTING THE RIGHT SUBMERSIBLE PUMP

Submersible pumps must be used below grade such as a pond or sump or retention area and must be submersed in the liquid to be pumped.

BASIC INFO:

- Problems experienced with old pump(s) or system
- Run dry requirements
- Slurry temperatures, nominal and extremes
- Inventory requirements
- Rebuild capability
- Budgeted?
- Slurry solids content
- Solution make-up, pH, chlorides, fluorides
- Timeline

EXISTING APPLICATION: (Replacing cantilever or submersible style)

- Identify the type of pumps to be replaced
- Verify the existing HP and voltage of the existing pumps.
- Verify the sump dimensions , length x width x depth
- Opening size for pump insertion
- Overhead clearance

What improvements would customer like to see?

- More flow?
- More discharge pressure?
- Wants to add new equipment in the discharge line?
- Wants to change the pump discharge line size or length?
- Better controls
- Better safeguards
- Other

NEW APPLICATION:

- Can we influence the design of the pumping system?
- Can we influence the pump selection?
- Acquire the solution flow in GPM and the discharge head required from customer
- Can we provide a complete package including
 - level controls
 - discharge hose
 - valves
 - control panel
 - fail safe devices

PUMP SELECTION:

MSP (abrasive slurry)

- Coal yard sumps
 - Coal tunnel
 - Hopper unloading
 - Coal pile run-off
 - Transfer tunnel
- Power Plant, process sumps?
 - Ball mill grinding
 - Limestone conveyor
 - Absorber blow-down
 - General cleanup
- Power block sumps
 - Bottom ash
 - Drag-chain
 - Ash clean-up
 - General waste
 - Pond dredging

GSP (dirty or corrosive water)

- Pond surface water pumping
- De-mineralized water (Use stainless steel materials of construction)
- Rain or storm water control sumps

ABS (water)

- Mobile pump for storm run-off
- Trash pump

PUMP SIZING DETAILS:

With the flow and head determined, refer to the MSP curves for selection criteria:

- The C.O.S. (Conditions of Service) flow and head must intersect below the pump impeller curve selected.
- The brake horsepower shown on the pump curve at the C.O.S. required must be corrected for the specific gravity of the fluid to be pumped. (Water curve BHP x S.G. = BHP for Motor Selection)
- The proper motor size must be selected, this will be the BHP required for the C.O.S. plus a safety margin.
- The power cable length must be determined and specified. The submersible type of pump has the power supply and control cables built into the motor, and so must be ordered to length required.
- Work with the customer on the locating of the pump in the sump.
- Does the sump need to be cleaned out?
- Do we have a flat, even concrete bottom to the sump?

CONTROLS:

- Are the existing starters sized correctly for the new submersible motor HP
- How do we tie the submersible pump discharge into the existing piping system. Supply hose, fittings, and valves as required, to help the customer make the installation as easy as possible.