

Clarifier Drive Installation Instructions

For DH And SH Type Drive Units

1. Read the operation and maintenance manual. Follow clarifier manufacturer's installation instructions.
2. Insure the mounting location holes on mating surfaces match dimensions and orientation on the DBS drive drawing.
3. For DH type drive units, orient drive drum pads so they line up with the rake cage corners before drive is hung overhead. Use temporary power or fill the hydraulic power unit w/oil and spin the motor fan blade to turn the drive. Position drive on mounting by crane or lift. Jack up the cage in at least four structurally sound points at bottom of tank near column to line up bolt holes between drive drum and rake cage. Some reaming may be expected, but first jack up cage properly to line up holes and minimize reaming. Bolt up rake cage to drive drum. Prepare to shim drive unit between mounting flange so one arm will run in plane with floor. Jacking bolts are provided on mounting flange for temporary adjustment only. Running a DBS drive "out of plane" will not hurt the drive but may cause damage and overload the rake mechanism. Set bridge on drive. Put directional control valve in neutral, so drive and rakes may be freewheeled through tank. If hydraulic motors are removed, cover hydraulic motor shaft inputs on planetary gearboxes so nothing will fall into hole. If hydraulic circuit is opened, all hydraulic ports must be covered, such as with clean plastic bags and tape, to protect any debris from entering system. Take care not to score or nick any hydraulic fitting mating surfaces or threads. With one arm running in plane, shim between flange and column as required.
4. For SH type drive units, Bolt up rake shaft to drive hub flange on drive unit. Rig temporary power to run the drive with, or remove one of the hydraulic motors in order to manually free wheel the drive during alignment. Cover and protect all hydraulic openings. If hydraulic power unit is separate from drive unit, temporarily connect the main hydraulic pressure and return ports together at the drive unit. If hydraulic power unit and drive unit are connected, then just put directional control valve in neutral. Shim between drive unit housing and bridge so the rakes will run in plane with the bottom of the tank. Jacking bolts may be provided on drive frame. If so, they for temporary adjustment use only. Running a DBS drive "out of plane" will not hurt the drive but may cause damage to the clarifier, and overload the rake mechanism.
5. When the drive is properly shimmed and aligned, tighten all mounting bolts securely. Recheck alignment. Repeat the procedures until the installation criteria are met.
6. Hook up electrical controls to the motor, oil float level switch, alarm & cutoff torque switches, and 4-20ma torque transducer (if applicable.) Refer to the electrical controls manufacturer for controls installation instructions. Electrical information on the switches and motor is contained in the electrical section of this manual.
7. Fill all gearboxes with oil as recommended in this manual.
8. Put directional control valve in neutral. The directional control valve is a three-position detent valve with a long control handle. The middle handle position is neutral. Briefly apply electric power to the motor and observe motor rotation direction. The electric motor must rotate the same direction as the rotation arrow cast on the top front surface of the pump housing.

9. Clear the tank. Inspect for safety. Push the directional control valve handle to engage drive. Check that drive is rotating in the right direction. If not, pull the handle to the opposite position. After the direction of rotation is determined to be correct, lock the handle in position by using the bracket provided with the machine.
10. Observe the rake mechanism for smoothness of operation; irregular motions, springing action, binding or rubbing should be adjusted out of the rake assembly.
11. Change the filters after 10 days of initial operation.
12. For drives equipped with variable volume piston pumps, adjust the drive speed by using the hydraulic power unit pump maximum volume stop. This maximum volume stop speed adjustment screw is located on the front face of the pump. The Max volume stop adjustment screw is identified on the power unit photographs, and hydraulic pump information located elsewhere in this manual. Take care not to tamper with the pump compensated pressure adjustment. The pump compensated adjustment is near the back end (motor end) of the pump. The pump compensated adjustment is identified in the pump information later in this manual. To adjust speed the pump must be running. Loosen the pump maximum volume stop speed adjustment screw jam nut. Turning the screw in will slow down the drive. Turning it out will speed up the drive. When the pump volume is at maximum, the screw will feel loose. Most units may be slowed to zero speed using the max. Volume stop, but it is not recommended. Running the pump with the maximum volume stop at near zero flow for extended periods can damage the pump.
13. Do not attempt to adjust alarm or cut off switches, pressure compensating or pressure relieving valve. These settings are factory preset and should require no further adjustment. A test kit is available for testing the switches. Please consult the factory.
14. After start up, inspect for any hydraulic fitting leaks, and tighten as required. This drive was factory inspected and tested--free of leaks at time of shipment.