

MACHINE INFORMATION:

MODEL MAC 925 BD A Automatic Self-Cleaning Centrifugal Hi-Speed Disc-Bowl Separator

DESIGNED FOR BIO-DIESEL PROCESSES:

- Yellow stock and rendering oils
- General refining
- Separation of catalysts from bio-diesel oil
- Separation of glycerin from bio-diesel oil
- Separation from the bio-diesel washing process
- Glycerin clarification and refining

TECHNICAL SPECIFICATIONS:

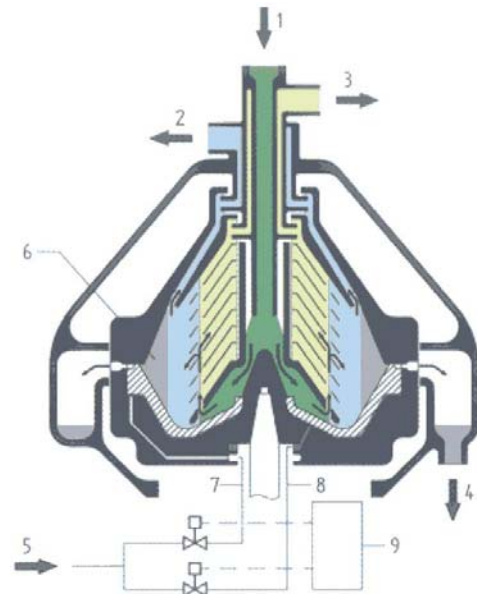
- Bowl volume: 4.8-Liters
- Maximum capacity: Up to 925-GPH
- Solids holding capacity: Up to 1.5 Liters
- Maximum RPM: 8,300
- Maximum temperature: 160°F
- Suggested Ph range: 6 to 9
- Motor 5-HP XP 480vac/60hz/3ph
- Weight 575-lbs
- Size 32"L 24"W 44"H

- **Bowl diagram and operating description:** Seal water (1) is introduced into the bowl to seal the heavy phase liquid discharge to begin the process. Product is introduced through the hermetic style product feed (1) and the light phase liquid (3) and heavy phase liquid (2) is discharged under pressure by centripetal pumps installed inside the bowl. The liquid phases are regulated and controlled by backpressure regulating valves. The MAC 925 features an automatic self-cleaning centrifuge bowl that periodically opens discharging the accumulated solids from the sludge chamber (6). This action is regulated by an adjustable timer in the PLC / control panel (9) to control the open-water (7) and close-water (8) solenoids that distribute operating water (5) causing the sliding bowl bottom to rapidly open and close the bowl discharge ports. The action can be controlled for partial and full discharges to minimize product loss.

- The automatic self-cleaning centrifuge bowl feature maintains high efficiency separation and provides maximum process up time with minimal labor requirement. The bowl is easily removed and disassembled for periodic routine maintenance and cleaning.



MODEL MAC 925 BD A



STRUCTURAL CHARACTERISTICS:

FRAME: Manufactured of cast iron, sandblasted, heat-treated, and epoxy painted. The frame must be secured to the floor using the supplied vibration absorbers and foundation bolts.

MOVING GEARS: The horizontal shaft is moved through a mechanical coupling by an electric motor flanged directly upon the equipment frame and controlled by an inverter. On the horizontal shaft a worm-wheel gear engages the pinion gear fitted directly on the vertical shaft, and the assembled bowl fits onto the tapered end. All the rotating shafts are mounted on ball bearings. The top vertical shaft bearing is located inside an appropriate shock-absorber collar, specifically designed to compensate for all radial vibrations.

LUBRICATION: Automatic splash lubrication is provided by a constant level oil bath inside the frame. Appropriate caps allow the filling and emptying of the oil. A sight glass provides a means for inspecting and controlling the lubricating oil level.

BOWL: Automatic self-cleaning bowl with the bowl bottom and top made of duplex stainless steel with providing superior mechanical strength and chemical resistance. The bowl lock-ring is made of special AISI 400 series stainless steel. The internal bowl parts such as the distributor, conical discs, feed distributor, and the centripetal pumps for the light and heavy phase discharge are made from AISI 316 stainless steel.

FRAME COVERS: The covers are made in aluminium and bolt to the base frame. The covers position the feeding pipe and the centripetal outlet pumps of the clarified liquid phases.

AUTOMATION / CONTROL PANEL: Designed and built according to IP 55 class and CEI 44-5 rules including a pre-programmed PLC to control all machine functions and provide visual and audible alarms for machine malfunctions. The panel also includes the drive motor VFD, which provides a more gradual starting load. The VFD also provides a controlled gradual stop of the bowl during shut down.

The front of the control panel includes:

- General switch
- Centrifuge start/stop switch
- Working unit light signal
- Active alarm light signal
- Full speed light signal
- VFD fault light signal
- Emergency Stop switch
- VFD Hz visualization

ALARM SYSTEM: The machine can be equipped with special alarm system and an automatic feed blocking valve should the hydraulic seal break inside the bowl.

EQUIPMENT ACCESSORIES: The centrifuge is equipped with all the accessories and the special keys for the ordinary maintenance operations including a set of spare parts for initial maintenance interval and an oil change.

DOCUMENTATION:

1. Technical drawing: P&ID and assembly drawing

2. O&M manual: (1) One hard copy and (1) one CD of the Manual Including:

- Technical features
- Safety, accidental prevention
- Installation procedure
- Operating specification for use
- Maintenance instruction