

SUGGESTED CHECK LIST FOR PERSONNEL RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE CENTRIFUGAL STATION

I Inspection Time

C Cent. Down Time

R Replacement Time

EACH SHIFT

Lockout Tagout Time: **60 min.**

Check flow of brake cooling water and if necessary temperature.

Observe the flow of water out of the head return line, note that it is clear and free of oil contamination and feel by touch to ensure it is not too hot which would indicate inefficient flow. The flow should only be present after the main motor transfers into high speed. **5 – 120 - 45**

Check flow of head lubricating oil, when circulating system is used.

Observe the flow of oil out of the head oil return line, through the "Gits" sight glass; it may be necessary hold a flashlight behind it to see the small flow. The flow should only be present after the main motor transfers into high speed. **0.5**

Check oil level in supply tank and turn Cuno filter one revolution.

This is checked at the "level sight glass" on the tank. Also, check the color and texture of the oil for water or dirt contamination. **1**

Check plowing action of discharger - Wash, lubricate and adjust if necessary.

Plough should move in and down smoothly leaving very little sugar on the screens and basket bottom. Shoe "In" 2sec. "Hold" 4sec. "Travel Down" 15sec. "Hold" 5sec. "Out & Hold" 5sec. "Travel Up" 3sec. Total time 34sec.

Check condition of screens.

Thoroughly wash the screens and check for wear and damage. **5 – 10 - 180**

Check basket spokes and underside of valve for sugar accumulation.

(This will vary according to conditions but after each strike, it is recommended).

With the basket valve in the up position, rotate the basket by hand and observe the spokes. Clean off caked sugar with water hose as necessary. **3 – 5**

Check operation of gyration switch.

Using the controls, rotate the basket at discharge speed. Using a flat bar, approximately 12" Lg. x 1-1/2" Wd. x 1/4" Thick; insert it between the spindle and the gyration switch, the centrifuge should trip on gyration. Minimum setting of gyration sensor should be 3/16". **0.5**

Check operation of gate and cycle insurance alarms.

Set the loading control gate lever at No.1 setting. Start the centrifuge up at loading speed; press load button; the gate will open up approximately 2 inches. After 30 sec. of slow filling with massecuite, the gate alarm will activate and the gate will close. Leave this condition as is, and after approximately 320 sec. the cycle insurance alarm will activate. **16** (optional check)

Check time required for mechanical braking.

Observe the centrifuge during a normal cycle. After the spin part of the cycle is complete, the two-speed motor will engage the low speed windings and regenerative brake to half speed; at this point, the mechanical brakes will activate; using a stop watch time how long it takes for the basket to come to a complete stop. With band type brakes normal stopping time is 10 to 12 seconds. Adjust the brake air pressure as necessary to achieve this time. **15**

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Lubricate with grease the gate wedges when gate is open.

Using an appropriate grease apply it to the wearing surfaces of the wedges when the loading gate is open. For best results, use a 2" paintbrush or similar tool. For other areas where grease nipples are installed, pump in recommend grease until old grease is seen to purge out. **5 - 5**

Check general cleanliness of machine and surroundings.

Ensure that the top of the centrifuge is clean and free of hardened sugar. If there is a massecuite tank overflow, the whole affected area requires decontamination.

WEEKLY

Check gate adjustments.

Check the operation of the gate to ensure that it moves up and down smoothly and that there is no undue wear in the gate shaft and connecting link bushings. Ensure that when closed, the gate cover is approximately 3/8" from the lower horizontal surface of the plate to the lower bottom surface of the gate body. See page 19, "Twin Cylinder Air Operated Gate", section two of the maintenance manual. Check the operating cylinders and associated airlines for air leaks. **10**

Check discharger ram, oil in dashpot, plow tip and for proper adjustment.

Grab and sway the square ram to test for side ways movement; there should be no more than approximately 1/8" in any direction at the top. Check the oil level in the housing reservoir and the in stroke for smooth travel. Check the down travel for smooth travel leaving no spiral lines of sugar on the screens. Check the ram stop bracket Teflon wear plug; should protrude approximately 1/8". Check the square ram for scores and violation of the chrome plating. **10**

Check belt and operation on zero speed switches.

Check the drive belt for dry rot and proper tension. Apply grease to the grease nipple. **5 - 65 - 120**

Check basket valve lifter and bolts on valve and discharger interlocks.

Lock out & Tag out all of the necessary systems; enter into the basket and with the appropriate tools, check all fasteners for proper security and tension. Check the valve for cracks. Operate the lifter and check it operates smoothly without slamming; ensure when in the up position the valve is centered around the basket spindle, is sitting on the centering pads and is at the proper height up from the basket bottom, see supplementary page 10 Installation Instructions", section two of the maintenance manual. Check the discharger interlocking rod interlock cam for adjustment see page 10, fig 27, section 2 of the maintenance manual **60 - 120 - 180**

Check sliding covers when used.

Operate the sliding cover and check for smooth operation. Check the actuation cylinder and associated lines for air leaks.

Drain water from air lubricator bowls. **3**

Drain water from oil supply tank. **5**

Complete lube job through all grease and oil fittings.

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See WS sheet W-1266 series sheets, "Lubrication Points for Batch Type Centrifuges"; section three of the maintenance manual. **60**

Repair any air, water or oil leaks. 60

MONTHLY

Check rubber buffer for tension.

With the centrifuge stopped and empty move the basket from side to side with a lever, see page 6, "Check for Buffer Tension", section two of the maintenance manual. 5 - 5

Check interior of brake drum.

With the centrifuge stopped, preferably locked, tagged out, remove the drain plug from the brake drum and drain any residual water in the drum. Using a flash light look inside the drum and inspect for damage, cracks and extreme wear especially around the lower edge between the bottom and the vertical wall. Look for oil contamination. Check the water scoop for damage and proper setting, see page 6, "Water Cooled Air Operated Brake", section two of the maintenance manual. 15 - 75 - 960

Check oil in head if not circulated.

Check oil in coupling cavity if not circulated.

Check strainers in water lines.

With the water supply shut off, remove the pipe plugs from the strainers, remove the screen and check for damage; thoroughly clean them by washing; ensure the screen housing is clean and free of any particulates. Replace and check for proper flow. 30 - 30

SIX MONTHS

Check oil level in Turntork™

With the centrifuge stopped, preferably locked an, tagged out, remove the ½" plug from the pipe el and nipple on the side of the housing; observe that the oil is level with the el. If oil is required, pore it through the two-inch port on the housing cap after removing the pipe plug. Before checking again allow the oil to settle, 600 weight and requires some time to completely flow into the housing. 5 - 180 - 480

Check belts on Turntork.

With the centrifuge stopped, preferably locked and tagged out, remove the inspection cover from the main belt guard and inspect the drive belt for dry rot and proper tension 30 - 60 - 240

Oil the Roto-Seal on Turntork.

See WS sheet W-1266 series sheets, "Lubrication Points for Batch Type Centrifuges"; section three of the maintenance manual. 30 - 60 - 30

Check filters in lub system. 60 - 60 - 15

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YEARLY

Grease Turntork bearings.

*With the centrifuge stopped, preferably locked and tagged out, remove the gear housing cover cap; remove as much of the existing grease as possible by hand and then repack it with new grease. To access the lower bearing, remove the two-inch pipe plug on top of the housing; rotate the internal worm gear by turning the discharger motor belts by hand until you can see the lower grease nipple mounted on the worm wheel; apply the same amount of grease as in the top. See WS sheet W-1266 series sheets, "Lubrication Points for Batch Type Centrifuges"; section three of the maintenance manual. **60 – 60 - 480***

Check On motor manufacturer's lub schedule.

Change fiberglass filters in airflow restrictors.

Check that motor base is level.

*The motor base has a leveling pad on each corner of the base; over time, these pads become caked with dirt, sugar or get painted; it is necessary to clean them off down to the bare metal without affecting the integrity of the levelness. Once this is done and the pads are scrupulously clean, place a three or four-inch parallel block on the two front pads; on top of these place a machinists straight edge; now place a machinist's level on top of the straight edge. This will tell you how level the motor and base is to the earth. Repeat this operation between any of the two side pads and make a record of the readings. If the base is not level within 0.005", loosen the motor base bolts and using the supplied Allen screws, mounted in each pad, jack the base until it is level. Insert the necessary shims under the base, **Note**; only three corners of the base get shimmed. After shimming is complete, loosen the Allen screws, double check the level, adjust if necessary and tighten down the base bolts; check for level again and adjust in necessary. **60 – 60***

Check all fasteners for corrosion and proper torque. **60 - 60**

Check framing.

*Check all support steel for cracks loose fasteners etc.
Turntork bracket. **15 – 60 - 480***

Inspect basket, spokes, rings, cap and bottom and side sheet for cracks.

*This check can be done every other year without removing the basket, if the basket is less than 10 years old and if the proper equipment is available, i.e. a non invasive metal thickness tester. The basket must be removed every two years for a full visual and non-destructive test inspection. If cracks are found, more extensive testing may be required. If repairs have to be implemented within ten years of the baskets life, the basket should be removed every year thereafter for inspection. For details of allowable material degradation see WS drawing CBS-630821 (48x30), CBS-630821-B (48x60) for details of inspection, and pages 22, 22-A and 23 "Centrifuge Basket Inspection and Repairs", section two of the WS maintenance manual. For further serviceability, clarifications send a copy of the filled in data drawings to WS. **4320 - 4440***

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