Maintenance Plan 3Phase Range

MACHINE:
There are 3 basic factors which determine how often maintenance should be done:

1. How many hours a day and days a week does a machine run.
   - If used for more than 8 hours a day and 5 – 6 days a week the machine should be serviced every 2 months.
   - If used less but more than 2 hours a day it should be serviced every 4 to 6 months
   - If used 2 hours a day or less it should be serviced every 12 months
2. How hard is the water, i.e. how many *carbonates are in the water which feeds the boiler. If the water contains many carbonates (*limestone, calcium, chalk or how ever we want to call it), these will, due to our calcium-filter, deposit at the bottom of the boiler as very fine particles without aggregating as a hard crust on the metal parts which they come in contact with.
   - The boiler should be drained at least according to the above hourly usage, but not less than every 3 months. (In order to avoid most problems from limestone we recommend draining the boiler every month. This pro longs component life.)
   - The water filter should be cleaned as often as the boiler is drained or more often if the water contains many foreign particles (rust, sand etc.)
   - The anti-calcification filter should be exchanged every 12 month if the machine is heavily used, otherwise every 24 month. (This is a precaution, the filter may actually work for years, but the manufacturer recommends the above timetable.)

A new machine should be inspected after the first 3 months and based on the results future inspections can be established.

PROCEDURE:
Boiler and Filter Cleaning:
1. Remove the sidewalls of the machine.
2. Empty the boiler through the drain plug(s) or underneath the chassis. (Some machines may have a drain valve inside or under the machine, see your instruction manual for details). Drain into a something with sufficient volume to contain the content of the boiler. (Heating the boiler up to below 100°C before draining helps suspend the carbonates in the water for easy removal, but it also means having to wait afterward for the boiler to cool down a bit in order to work on the components exposed to direct heat. We leave it to you to heat up or not, important is to remove as many carbonate deposits as possible. If you do it with cold water, repeat the procedure because the carbonates are then harder to flush out. If a standard household limestone remover is used make sure to re move all remains from the water tank and boiler before using the machine again! Use such a remover only after having first drained the boiler. Always rock the boiler/machine a bit before draining, this also helps suspend the carbonates in the water!
3. ATTENTION! The boiler pump may be a rotary pump which is very sensitive to abrasive particles. Make sure that no such particles reach the pump after cleaning the filter element.
4. Close the water tank valve situated before the water filter, open and clean the water filter MAP0064/34. Remove and exchange the anti-calcification filter MAP0457/34. Use Teflon tape to seal! Reopen the valve!
5. Refill the boiler!

Visual Inspection:
1. Inspect all cables inside the machine for damage and make sure that all connections are firmly fitted.
2. Turn the machine on and pressure it up. Check for any leakage, both of water or steam and repair.
3. Check the ON/OFF switch and the emergency OFF switch for proper function as well as the green switches that may be on the front panel. Exchange the green switch if the protective cover is damaged.
4. Exchange the protective polycarbonate labels of the front panel if these start to detach, otherwise water could ? enter from outside.
5. Inspect the inside of the water tank with a flashlight for foreign objects. The water tank has 2 electronic level sensors, ensure that these signal low and high water level correctly. If not repair or exchange!

Yearly or 2 yearly parts exchange (depending on overall hours run) :

1. We recommend to exchange the water level sensor SEM0011/A every year as a precaution. If you choose not to exchange it then clean the surface and remount it being careful not to over-tighten the cap, this would damage the Teflon protective sheath of the sensor. Always change the copper washer MAP0006 when you remove the water sensor for inspection and cleaning.
2. If many carbonates are found when draining the boiler we also recommend to exchange both the working pres sure-stat MAP0016 and the safety pressure-stat MAP0017. Since carbonates can at times get into the tubing that goes to the pressure-stats make sure that these are free of obstructions. If these are not found in very relevant amounts (many food processing plants use pretreated water, especially in the USA) then please exchange every 2 years.
3. Exchange the pump valves MAP0010 and the non return valve MAP0001 every 2 years.
4. Control the thermostats and exchange the safety thermostat MAP0206 every 2 years.
5. Check the correct function of the pumps and make sure that the valves function correctly. The valves are meant to bleed air out of the water. If in doubt, exchange these!
6. If the safety valve (overpressure valve) starts to leak, exchange it. This component starts very slowly to relieve over pressure from just above 10Bar pressure. If carbonates get into the valve then these may cause the valve to not close properly. In this case, exchange. The safety valve must not be repaired but exchanged!!!
7. The solenoid is a heavy duty component, but carbonates may deposit and cause bad closure. The valve can be taken apart, cleaned and put back in or exchanged, but we recommend a new solenoid after 2 years. Always use Teflon tape to seal junction parts exposed to high temperatures.

Hose and Accessories: (Inspect daily and every 3 months in depth):

1. The steam hose and/or steam and vacuum hose must be controlled regularly, best before each use. The hoses are components that are subject to great heat exposure, stress through pulling, twisting and being driven over or stepped upon. If treated well a hose can last for years, if treated poorly and/or used for over 8 hours a day may well need to be repaired or replaced after 3 – 4 months.
2. Inspect the hose for cuts or other damage to the outer lining. Repair or replace if damaged!
3. Inspect the points of connection to the machine connector (plug) and to the pistol for any visible damage. Repair or replace immediately if damaged.
4. Inspect all accessories regularly and replace these when worn or damaged. Clean the accessories with steam and rinse with water and detergent if necessary. Accessories are consumables!
5. Inspect the adapter which connects the steam generator to the belt cleaner regularly. Make sure that no damage through extreme heat occurs to any component, especially any electric component. Make sure that the quick-re lease safety valve function correctly.
6. Inspect the O-rings on the hose connector (plug) and replace if damaged. Place a small amount of silicone grease on the O-rings for longer life and easy connection.
7. Inspect all O-ring on the accessories and replace is damaged. Place a small amount of silicone grease on the O-rings for longer life and easy connection.