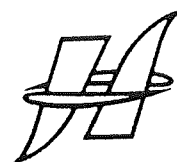


MAFO HOWDEN



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MAINTENANCE AND INSTRUCTION

WASHING MACHINE MAFO 330SN

Machine number: 9515-583/9-1993

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MAINTENANCE AND OPERATING INSTRUCTIONS MAFO 330SN

1. INSTALLATION:

Before the machine can be started, the following items have to be taken care of:

1.1 Placing:

To guarantee an efficient use of the machine and to prevent a needless loss of water the machine should always be placed horizontal (level if possible).

1.2 Electric connection:

Mains connection: 380V - 50Hz - 3 Phases + Earth.
Control voltage : 24V AC
Protection : 25 Amp.

1.3 Water connection:

The water connection can be effected by connecting a water hose with an inside diameter of 17 mm.

1.4 Heating:

1.4.1 Steam connection:

1 x 1" BSP.

To prevent the steam valve from damaging the steam pressure shall never exceed a value of 16 bar gauge pressure (200°C).

1.4.2 Level sensor:

The water level in the tank is secured by a level sensor to prevent the tank from cooking dry. If the water level sinks underneath a fixed point the machine will stop automatically. This level sensor has a yellow "Reset" button on the electro-box. If the tank is filled-up and the main switch will be turned on the lamp in the button lights-up. By pushing this button the lamp switches-off. If the light is still on check the water level.

1.5 Discharge:

The machine is provided with a combined discharge /level pipe. To let the water out of the machine open the ball valve in the discharge. Before filling up the tank be sure that the ball valve is closed.

1.6 Connections:

All feeding connections have to be provided with a main switch or tap.

2. TO PUT INTO SERVICE:

When the washing machine is connected as mentioned under 1, it can be prepared for operation as follows:

2.1 Water:

The water supply for the washer can be started by opening the ball valve. When the level of the over flow pipe is reached, close the ball valve. The tank has a capacity of 400 L water.

Check the water level now and then.

Important:

Always fill the tank before starting the pump, to prevent the mechanical seal from getting damaged.

2.2 Heating:

The temperature can be adjusted with the thermostat. For an albuminoid pollution a temperature of 50 degrees will be sufficient. A non albuminoid pollution however may demand a temperature up to 70 degrees Celcius.

2.3 Transportation:

The washing machine is equipped with belts to move the objects through the machine. The belts are driven by a speed drive. The speed of the belts depends on the choosen speed drive and chain wheels.

2.4 Final Rinse:

The final rinse can be adjusted by means of a regulation valve which is fitted in the pipe system above the water connection. There is also a valve fitted in the discharge pipe of the final rinse. In a vertical position of the handle the final rinse water flows into the discharge. In a horizontal position the water flows into the tank. If it is between these positions a part of the water flows into the discharge and a part flows into the tank. By a final rinse with warm water (advisable for a quick drying of the products) let all of the water flow into the tank. This will save energie and a lot of the pollutions will flow via the over flow pipe into the discharge. This requires that every hour some detergent has to be add. By a final rinse with cold water it is advisable to adjust the handle in a position at which enough water flows into the tank to compensate the water which is lost by the products during the washing.

2.5.1 Transit-height and transit-width:

The transit-width can be adjusted as follows:

1. Pull the side guides out of the seats and place product into the machine.
2. Choose holes which fit best to the product and replace the side guides.

The transit-height can be adjusted as follows:

Unscrew star shaped bolts and adjust hold down to product, then fasten star shaped bolts. Check height prior to washing.

It is advisable not to put the hold down and the side guides too tight on the product because this will damage the products and the transport system. The adjusting of the side guides is necessary to keep the products right on the transport belts. The adjusting of the hold down is necessary to prevent the products from getting sprayed up wards. It is advisable to select products with equal dimensions before washing. Don't place products against each other into the machine because dirt between these products will not get removed.

2.6 Emergency stopswitch:

At any time, in case of a breakdown the whole washing machine can be suspended safely by pushing the emergency stop switch.

After repairs, the machine can be put into work again by pushing the start buttons on the electro-box.

First reset the emergency stop switch with the key.

2.7 Screen:

Every washer is provided with a removable filter.

Clean the filter once an hour or more if necessary. First switch off the pump. A dirty filter will hold up the water and the water level in the tank will sink. It is possible that the level sensor will stop the machine automatically.

Important:

Before you clean the filter, always stop the pump first, to prevent the pump from getting damaged and to prevent the nozzles from getting choked.

2.8 Detergent (powder):

The non foaming detergent can be scattered over the (fine) filter. Every working hour detergent has to be added, because you will lose a part of the washing water, and therefore also detergent is lost.

IMPORTANT

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Only alkaline detergents are allowed by application of standard cast iron pumps (no acid detergents!!!)

3. MAINTENANCE:

The washing machines are known for their minimal need of maintenance. However the following items are advisable to look after, to keep the washing machine in good condition.

3.1 Cleaning:

3.1.1 Washer:

After every use the machine should be cleaned thoroughly as follows:

1. Switch off the mains connection with the main switch.
2. Remove the tunnel halves.
3. Clean them.
4. Remove filter and rinse it, never hit it on the ground.
5. Open the ball valve in the discharge and let the rinse water flow off.
6. Clean the tank and the sensor of the thermostat and of the level sensor. The bottom plate between the filter hole and the final rinse can be removed simply to clean the tank thoroughly.

3.1.2 Pipe system:

The cleaning and rinsing of the pipe system:

1. Remove the tunnel halves.
2. Unscrew the $\frac{1}{2}$ " brass end plugs of the water pipes.
3. Push the dirt in the nozzles, with a thin steel wire, back into the water pipe. Nozzles which can not be cleaned this way have to be unscrewed and cleaned. Be sure that every nozzle is replaced in its original position.
4. Replace the tunnel halves on the machine.
5. Fill the tank up with clean water and replace the filter.
6. Let the pump run for $\pm \frac{1}{2}$ minute. The pipes get rinsed and cleaned now.
7. Replace end plugs.
8. The machine can put into work again.

3.1.3 Valve filters:

All valves in the washing machine contain a filter to catch any possible pollution. To guarantee a good functioning of the valves these filters should be cleaned from time to time.

3.2 Lubrication:

- 3.2.1 Speed drive:
Check regularly the oil level of the speed drive and add oil if necessary. Check also maintenance instructions of the speed drive further on in this book.
- 3.2.2 Driving chain:
Every month the driving chain has to be greased with "Molykote Longtherm W2".
- 3.2.3 Pump and bearing:
The pump and bearings are self-lubricating and need no special maintenance.
Important!
Please take care that the pump never runs without water in order to prevent it from getting damaged.
- 3.2.4 Control of the transport belts:
Check regular the tension of the transport belts.

4. BREAK DOWN:

In case of a break down the following actions have to be done:

4.1 Emergency stop switch:

If necessary use the emergency stop switch as set out in 2.6.

Push the start buttons on the electro-box to start the washer again after repairs.

4.2 Machine type and -number:

If the cause of the break down is unvindable, or is repair or replacement of machine parts by a factory mechanic advisable, please mention in your report to the dealer or manufacturer always the machine-type and in order to guarantee a quick response, especially the machine-number. You can find this number on the frontpage of this book, or on the plate in front of the machine.

5. GENERAL:

Injudicious use of the installation can cause damage to men and machine. The manufacturer of the installation is not responsible for the damage caused by actions which are not mentioned that way in the instruction book. For questions about function, guarantee or spare parts you can contact our section Service Support.

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MACHINE-PARTS:

1. Washing machine MAFO
2. Electro diagram
3. Pump
4. Pump characteristic
5. Motor drive
6. Magnet valve
7. Thermostat
8. Level sensor

