

Maintenance tips for milking machines

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Have your milking machine serviced and tested by an Irish Milk Quality Co-operative Society (IMQCS) registered milking machine technician at least once a year. A list of registered milking machine technicians is available on www.milkquality.ie. Thorough servicing will ensure that the machine will work well and with practically no breakdowns. The milking machine should be tested at least annually.

After servicing your milking machine the technician must test it, write the results on a test report form, list any faults and recommendations and leave you a copy. The technician must look over the results to see that all readings from the test are within limits. Test results on the report should show that the vacuum gauge is accurate, the vacuum level is correct, the pulsation system is working properly, there is sufficient vacuum reserve and that there are no unnecessary or excessive air leaks.

The test report is proof that the machine is performing correctly after being serviced. It may be needed for quality assurance purposes also.

Spare parts

A good supply of spare parts will come in handy throughout the year. Spare sets of liners, short pulse tubes, claw bowels and claw seal kits, vacuum pump oil, v-belts, etc, will be needed from time to time. Having parts to hand will mean that anything that goes wrong can be sorted straight away as opposed to struggling along, for perhaps weeks without them.

Liner change interval

Research indicates that liners should be changed after about 2,000 cow milkings. Worn liners are not able to milk out cows fully and milking speed will be slower. Calculate the recommended liner change interval for your

machine, eg a 10-unit plant milking 80 cows will milk eight rows twice a day, ie 16 milkings per liner per day therefore change the liners every 125 days (2000/16) or about twice a year in this case.

When liners are being changed, cut a few liners lengthways for any signs of wear inside the barrel, especially if the change interval is longer than recommended.

Claw bowels and seal kits

Check claw seal kits and replace as necessary. Shut-off valves that don't seal properly at cluster take-off can cause clinical mastitis and raise cell counts. It is much more difficult to attach and detach a cluster that needs a new seal kit or has a cracked bowel.

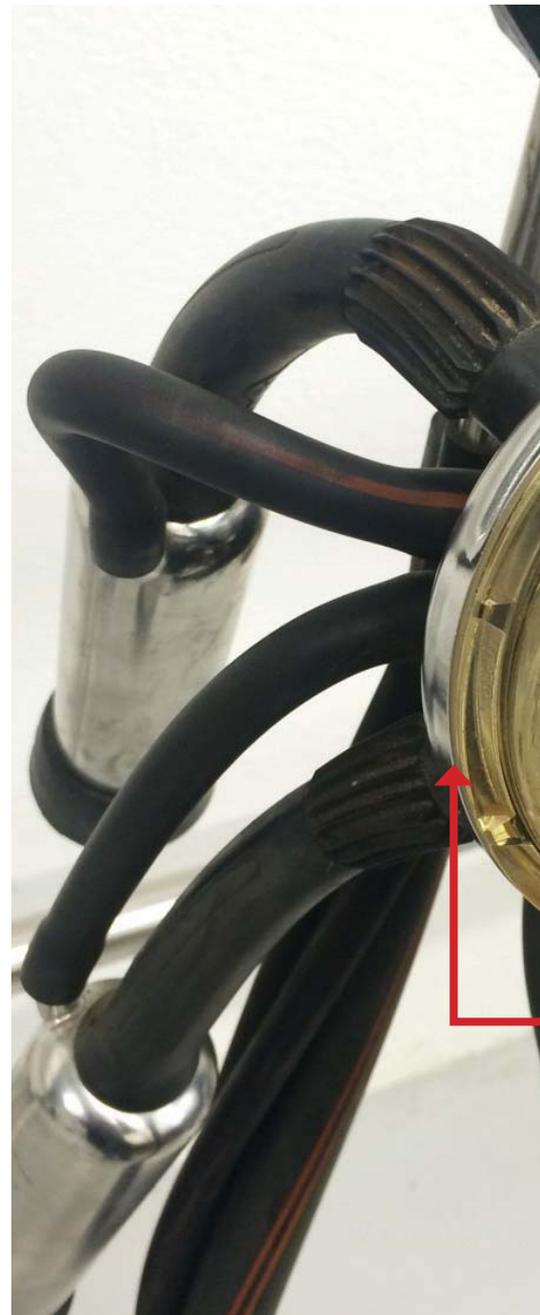
Claw seal kit replacement is often neglected at servicing. I have seen gaskets that are not seated properly under bowels and ones that have swelled up because they are long overdue a change.



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Chipped or cracked claw bowels should be replaced. I have found that some spurious bowels don't fit correctly so that they don't seal fully on the gaskets.

The claw air admission hole should be above the milk in the bowel during milking. The admission hole can be in the bowel or in the claw piece. There is a danger when using spurious or different versions of bowels that one could end up with none or even two claw air admission holes on a cluster.



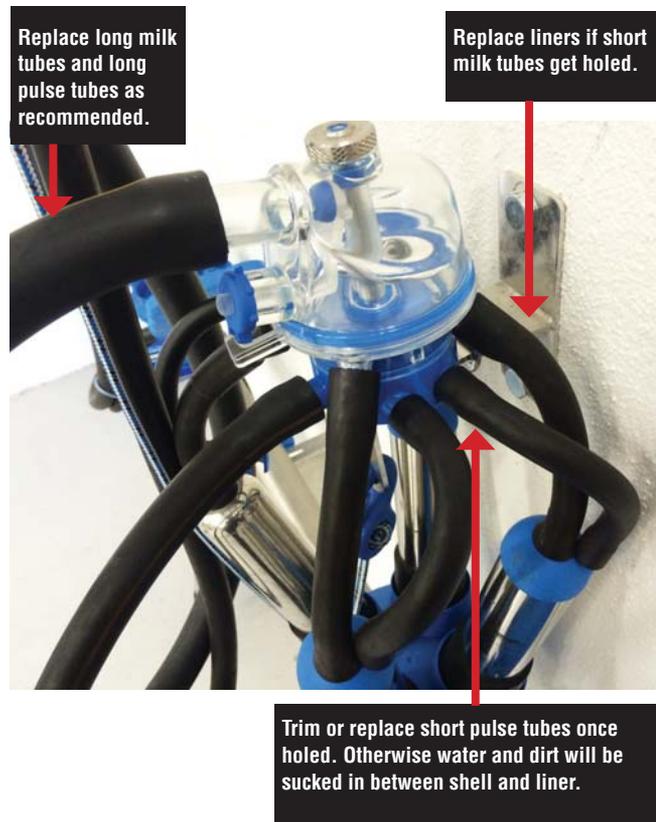
ONGOING CHECKS

While the milking machine technician will carry out the main servicing and test the milking machine, there are checks that you should do yourself daily and from time to time. The following list outlines some key tasks:

- Clean foam filters on the vacuum regulator regularly. They can be cleaned by washing in warm water and mild detergent. Dry by squeezing in a dry cloth.



The wash drain tube valve between the sanitary trap and the milk receiver must be closed during milking, otherwise drain-back, if any, will affect TBC.



- Listen for the sound of air hissing through the regulator during normal milking.
- Check vacuum level on the vacuum gauge daily.
- Don't delay in replacing any liners and short pulse tubes with holes. Have spares parts to hand. Dirt and water will be sucked into short pulse if tubes with holes are not replaced promptly.
- Ensure no water, birds or vermin can enter the air supply pipe to the pulsators.
- Check vacuum pump oil regularly, top up the reservoir and adjust oil drop rate, if necessary.
- Check that claw air bleed holes are free daily.

- The pulsation airline should always have a drain valve at its lowest point. Check that it is sealed during milking and free to drain out any liquid when machine is turned off. The airline should slope towards the drain valve.
- Check that there is an even and continuous fall on the milkline. The slope should be at least 1:100 (1%) and preferably 1:67 (1½%). There should be a similar slope on the pulsation airline.
- Inspect all rubberware for cracks and wear, regularly. If your fingers get blackened from the inside of rubber milk tubes it's a sign that it is overdue a change and/or harsh or incorrect cleaning methods may have been used. Flattening

- of the milk tube near the cluster can be caused by kinking of the tube to shut off the vacuum at cluster take off.
- Avoid excessive loops in the long milk and pulse tubes. Milk tubes that loop down into the pit lower vacuum at the teat end and slow down milking.
 - Check that the wash solution/rinse water flows freely in all clusters during machine washing. Check the jetters for signs of dirt or milk residue which can spread infection. Brush wash occasionally, if necessary.
 - Check that teat sprayer nozzles are forming a full cone shaped pattern and that valves are not sticking and valves and joints are not leaking.