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# How to Purchase Milking Machines

**What to consider when buying a milking machine for your dairy.**

By Kinnek Community | October 04, 2016

## What is a milking machine?

Milking machines are devices used to extract milk from animals--most commonly cows, goats, sheep and buffalo.

## How do milking machines work?

Milk is removed from the udder and transported to a sanitary storage vessel (and eventually a cooling area) by regular pulsation of a vacuum upon the animal's teat, somewhat like the sucking mechanism that a calf or kid would use to nurse.

## What are the basic components of a milking machine?

The basic components of a milking machine are: teatcups and liners, a claw or milking receiver that attaches to the teatcups and temporarily holds the milk, a vacuum pump, pulsator and milk lines.

## Size and specifications

Equipment size and specifications vary according to milking need. Today's machines and accessories are being constantly updated as manufacturers cater to more productive breeds and management practices.

Key factors driving milking equipment specifications include the type of animal being milked, desired production quantity, speed and frequency.

For example, some machines designed for cows have two pulsation rates: one for the forequarter teats and one for the rear. Rear quarter teats are typically larger and take longer to eject milk. Having two rates for milking can improve milking efficiency and animal health

Most milking machines are usually electrically powered, but some may have additional emergency options such as internal combustion engines to power the vacuum and pulsator. Regular and complete milking is important to ongoing production rates, so having a source of backup power is highly recommended.

## Different machines for different animals?

The two main factors in choosing equipment for different animals are number and size of teats:

**Number:** Goats and sheep have two, while buffalo and cows have four. Dwarf breeds or other specialty breeds also require smaller teatcups than those manufactured for standard dairy cattle.

**Size:** For teatcup liners a barrel diameter about 1-2 mm less than the average diameter of the teats after milk letdown is appropriate. For most goats this is about 20 mm and for typical Holstein cows this is slightly larger at around 21-22 mm

**Pulsation rate:** Because goat, sheep and cow teats and udders differ in size, slightly different pulsation rates are recommended for optimal milk ejection. Sheep, for example, require about twice the pulses per minute than goats. Obviously, this makes purchasing machines designed specifically for the type of animal you own the ideal choice.

## What about automatic take-off options?

Automatic take-offs (ATOs) for milking machines are milk-flow sensors that determine when the machine should be removed from the udder. Not every machine includes an ATO but this can improve overall milking productivity. "Numerous studies have shown a correlation between overmilking and slow milk flow," says Larry Tranel, Dairy Field Specialist at Iowa State Extension and Outreach. ATOs can help standardize a milking system and help you manage the productivity of your herd.

Does herd size matter when choosing equipment?

A range of options are available depending on how many animals you have, from single animal systems with one bucket that must be emptied manually to entirely automated systems. Aside from the more technical considerations listed above, space and labor resources will also determine what equipment is right for your dairy.

## What about health concerns?

Machine and operator hygiene is important to maintain milk integrity and animal health. Cleaning and drying the machine between animals and after use is imperative.

Residual water or other potential carriers of contaminants may lead to mastitis, an inflammation and infection of the udder tissue. Mastitis can be highly contagious. It also greatly reduces yield and can cause the animal pain.

Some types of machines offer a pre- or post- sanitizing spray option for the udder, though most small to medium farm staff still choose to inspect and sanitize manually for best outcomes.

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