



# GEA ApolloMilkSystem

Automated Teat Dipping and  
Backflushing Milking Unit





## The ApolloMilkSystem

provides long-term benefits for milk producers: the milking process becomes faster, easier and more efficient while working processes are standardized.

# Maximum Safety for the Milk

It is a fact that automation can decrease the chance for human error, reduce labor and inefficiencies, and provide more consistent milking procedures. The combination of these benefits, all evident in the revolutionary ApolloMilkSystem, can improve the milk quality in your herd and positively impact your dairy's bottom line.

The ApolloMilkSystem is an innovative, automated milking unit exclusive to GEA. This first-of-its-kind product incorporates patented technology to automatically apply post-dip, through the head of the liner at the end of milking, and automatically backflush after detach – facilitating a superior milk harvesting process every time the cow enters the parlor.

## Approved, accepted and safe

The Apollo system for automated dipping ensures complete food safety. Independent testing and inspections confirmed that the milk never comes into contact with the cleaning agents. A smart valve technology – the heart of the system – carefully separates the milk and cleaning agents. The risk of illness within the herd decreases while milk quality increases. Apart from the milk quality the Apollo system also helps to improve udder health: careful dipping and intermediate disinfection of the milking cluster prevent mastitis pathogens and thus infections from spreading. It comprises milking, dipping, teat cup cleaning and intermediate disinfection.

## With the ApolloMilkSystem:

- Teats are consistently and optimally dipped within the milking unit prior to unit removal
- Milking units are backflushed with a sanitizing solution after each use
- Exposure to mastitis causing pathogens is reduced
- Cows are milked with minimal stress in fewer manual steps

## The results provide dairy producers:

- Better milk quality and mammary system health
- Reduced labor requirements
- Increased parlor throughput
- Improved overall profitability

# Optimal Post-Dip Application

Dip application in the best way: The ApolloMilkSystem covers the teats at the best time. Dipping directly in the teat cup is accurate. Apollo automatically ensures outstanding and consistent dipping quality and thus full protection around the teats!



## Optimal time, optimal amount, optimal protection

Post-dipping cows after milking prevents bacterial infections and helps maintain udder health, but the dip must be applied properly. The ApolloMilkSystem ensures that cows are dipped completely and consistently at every milking.

The ApolloMilkSystem applies post-dip to each teat while the teat is still under vacuum and stretched out in the liner, optimally covering the teat surface with dip and sanitizing the area before it is exposed to the external environment. This method allows the dip to penetrate into all of the folds and wrinkles of the teats, further enhancing the mastitis prevention benefits of post-dipping.

## Less dip consumption, low operating costs

The amount of dip applied is also accurately controlled. This can reduce the total amount of dip used when compared to other methods. And, it ensures the dip that is applied is always fresh and free from contamination.



## The ApolloMilkSystem

is the next step in automating the milking process on your dairy — removing manual steps for employees and ensuring that each cow is dipped properly at every milking.



# Automatic Backflushing Aids in Mastitis Prevention

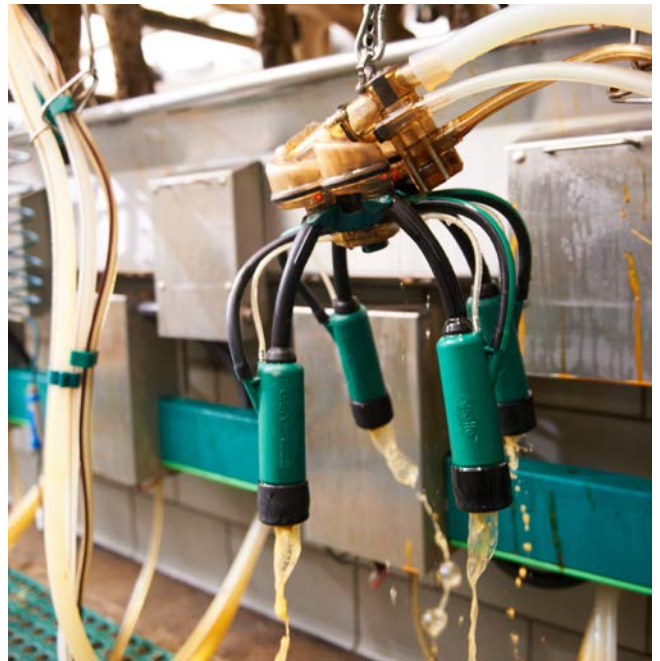
Automatic backflushing and disinfection of the cluster:  
The ApolloMilkSystem does not give pathogens a chance. An intensive rinsing process is completed before the next milking session, removing any residual dip and sanitizing the cluster in anticipation of the next cow.

## Hygienic and healthy

Mastitis and disease-carrying bacteria can be transferred from cow-to-cow through the milking unit. The ApolloMilkSystem prevents the spread of bacteria through its automatic backflushing component.

After the consistent and reliable post-dipping of each cow, every milking unit on the ApolloMilkSystem is automatically backflushed with a sanitizing solution after unit removal.

Alternating water and sanitizing cycles with bursts of air creates powerful turbulence inside the teat cups and bowl of the milking unit, which greatly reduces the total amount of water required to effectively backflush; especially when compared to older, traditional backflush technology.



## Backflushing

reduces the risk of mastitis-causing bacteria being transferred between cows and can also reduce the risk of subclinical mastitis, thereby improving overall milk quality and the mammary system health of your herd.

# Automated Dipping, Cleaning, Disinfecting

The GEA ApolloMilkSystem automatically dispenses teat dip within the head of the liner, just prior to milking unit removal, cow after cow. Then, after detaching, the milking unit is automatically backflushed so it is cleaned and sanitized for the next cow. Here's how Apollo works.

## Step 1

### Exclusive design provides reliable safety

After milking, the ApolloMilkSystem automatically blocks the milk line through a patented safety valve. The valve automatically closes the milk line after the cow is finished milking to guarantee the purity of the milk supply, and it must be fully engaged before dip is dispensed. The key to milk quality!



## Step 2

### Teat dip is precisely calibrated within the milking unit

Teat dip moves through a valve (separate from the milk line) with the help of a pressurized injector. The dip is automatically divided among the four liners by a specifically designed manifold that ensures equal amounts of dip are delivered onto each teat. A burst of air pushes any remaining dip from the dip valve up toward the teats.







## Step 3

### Post-dip is completely and consistently applied

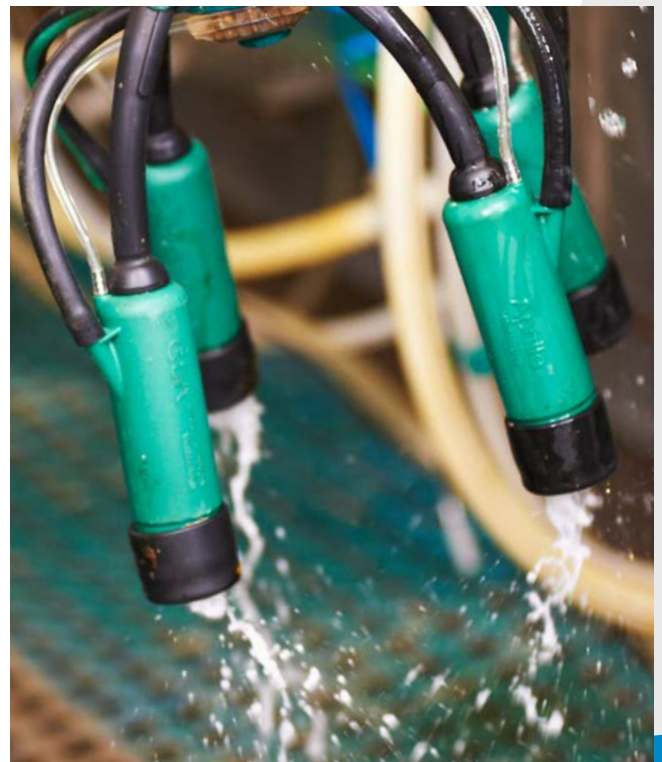
Teat dip is injected through the top of the liner and the patented geometry of the liner dome equally distributes dip around the entire surface of each teat for effective coverage before it is exposed to the external environment.



## Step 4

### Apollo detaches and backflushing begins

Within seconds of unit removal, the sanitizing solution in the backflush system neutralizes any possible bacteria in the teat cup liners before they are used on the next cow. A clean and healthy affair!



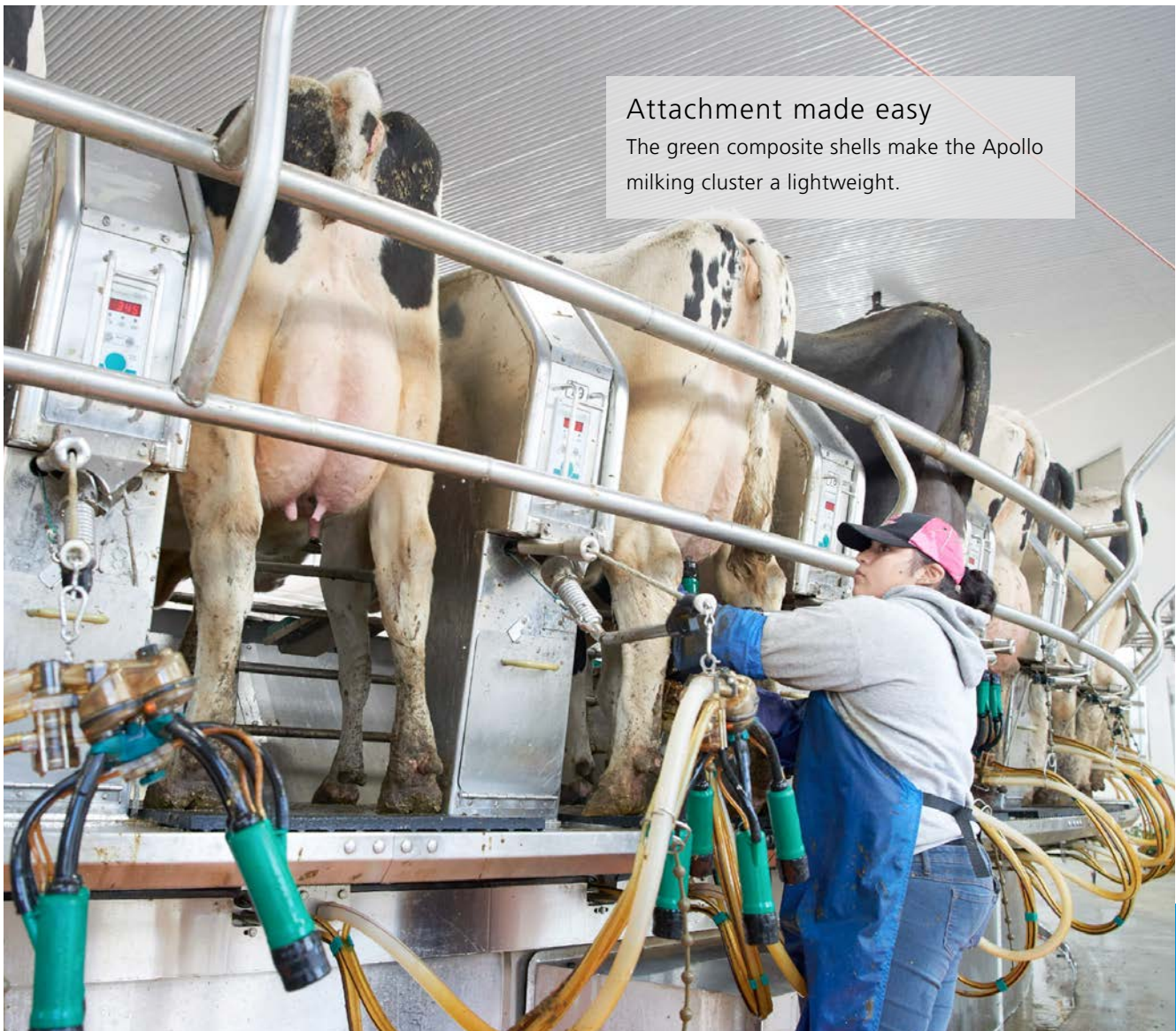


# Parlor Efficiency and Productivity Align

## Automatically ensured efficiency and udder hygiene

The ApolloMilkSystem allows you to focus your team on other areas of the operation. With less time spent on the repetitive task of manually dipping cows, you can reassign milkers to other duties in the parlor or around the dairy, without sacrificing parlor performance. In fact, automation of the

post-dip process streamlines operator procedures, which can increase parlor throughput. It also allows your operators to devote their complete attention to cow prep, which benefits udder stimulation and milk flow, and can also aid in getting more cows through the parlor.



## Attachment made easy

The green composite shells make the Apollo milking cluster a lightweight.



# Compatible with your Favorite GEA Products

## Liners

The single-piece rubber liners in the ApolloIQLiner range are available in a variety of sizes with various barrel and mouthpiece opening diameter options. This ensures maximum flexibility and adaptability to different teat and udder shapes.

## Teat dips & Backflush sanitizer

All teat dip options available for use with the ApolloMilk-System have been extensively field tested. The ApolloMilk-System uses sanitizers that are proven to prevent the spread of bacteria from cow-to-cow, helping to maintain the mammary health of your herd.

## Parlor systems and cluster positioning

The flexibility of the ApolloMilkSystem allows it to be implemented in a variety of milking systems. Whether rotary, side-by-side or herringbone – Apollo is the right choice for every milking parlor. GEA's positioning arms facilitate handling enormously, assure optimal cluster positioning for any udder shape and guarantee maximum milking comfort for both people and cows.

/// I WAS REALLY IMPRESSED WITH HOW EASY IT IS TO USE. THE APOLLO LINERS ARE DELIVERED READY FOR INSTALLATION AND YOU CAN REPLACE THEM QUICKLY WITHOUT ANY TOOLS. ///

Andreas Richter  
AG Dobra / Sachsen / Germany, 1,050 cows



# A smart way to milk cows

The ApolloIQ milking cluster combines all advantages of the IQ milking unit with an automatic teat dipping and backflushing function.

## Secure and gentle milk flow

The milking unit is sub-divided into four separate guide chambers that channel the milk toward the outlet. This means milk is transferred quickly from the unit, even at higher flow rates. The unique liner connection allows the cluster to hang straighter, optimizing milking geometry and udder confirmation.

The integrated automatic vacuum shut-off decreases milking vacuum fluctuations and keeps dirt from being sucked into the milking system. The unique liner connection allows the cluster to hang straighter, optimizing milking geometry and udder confirmation.



## The key to milk quality

The safety valve separates the milk and the sanitizing media carefully from each other. This way it is guaranteed that water, dip and disinfectant will never come in contact with the tank milk.





### Benefits at a glance

Thanks to the ApolloMilkSystem, you can:

- Gain efficiency by reducing the work load and or achieving faster parlor throughput
- Reduce the risk that one sick cow infects the whole herd and thus minimize the mastitis risk
- Minimize stress by simplifying and standardizing your work process
- Protect milk quality by means of the unique safety valve

The technology of the ApolloSystem was authorized by leading milk processing companies.

## We live our values.

Excellence • Passion • Integrity • Responsibility • GEA-versity

“Engineering for a better world” is the driving and energizing principle connecting GEA’s workforce. As one of the largest systems suppliers, GEA makes an important contribution to a sustainable future with its solutions and services, particularly in the food, beverage and pharmaceutical sectors. Across the globe, GEA’s plants, processes and components contribute significantly to the reduction of CO<sub>2</sub> emissions, plastic use as well as food waste in production.

GEA is listed on the German MDAX and the STOXX® Europe 600 Index and also included in the DAX 50 ESG and MSCI Global Sustainability indexes.

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