



***Niagara***



**Basket washing systems**







**Pure Technology.**

## Customised cleanliness

Efficient cleaning despite increasing requirements for the technical cleanliness of products? Our solutions help you as a user to master this challenge. Each system is individually designed, because different customers can have very different requirements.

Our consulting and engineering staff can rely on their experience from numerous completed projects. Cleaning trials with original components at our Technical Centre give you as the user the reassurance of a safe investment for your facility while also determining the exact parameters for cleaning chemicals, time and temperature.

**BvL** systems deliver reliable cleaning for your components and can be integrated seamlessly into your production line. They are easy to operate and comply with the strict guidelines of the automotive industry. They are also designed in compliance with the Machinery Directive 2006/42/EC, C standard EN 12921 and the German Accident Prevention Regulations (UVV).

- Sturdy design & long service life
- Guaranteed cleaning success
- Intuitive operation
- Easy access for easy maintenance
- Quality components from renowned suppliers
- Quality "Made in Germany"
- Specialist firm in line with the German Water Management Act (WHG), certified management systems



# Niagara

FS | EM | RH | MO | VE | DFS

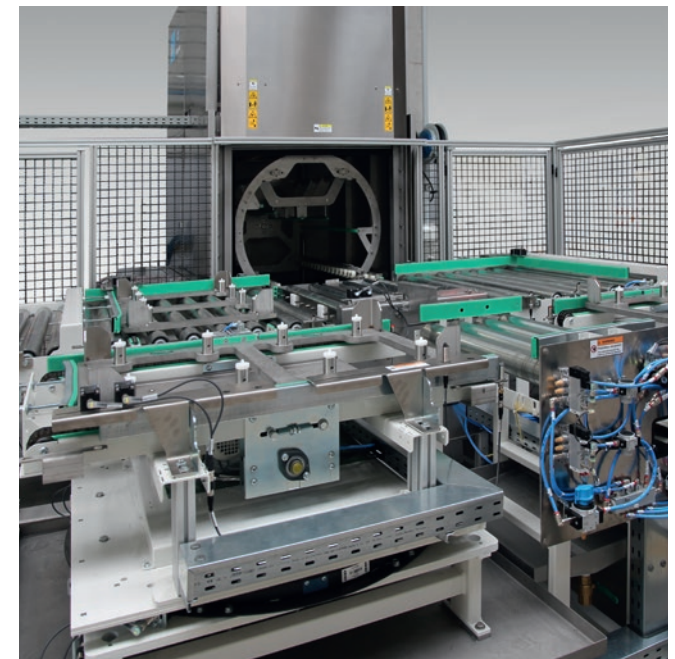




for small parts in baskets or  
individual parts on workpiece  
holders

for parts with recesses or  
cavities

for light and medium to strong  
soiling



**Detail**

**NiagaraFS** with continuous linked system



### Brief description

**Niagara FS** is a spray cleaning system with revolving wheel technology. All processing steps are carried out in a chamber. Rotating the parts baskets or parts carriers around the horizontal axis ensures all-round thorough cleaning.

### Basic system

Cleaning system:	spray cleaning with flat spray nozzles
Operating principle:	rotating revolving wheel system with vertical nozzle frame and optional rotating nozzle frame (rotating in same or opposite direction)
Number of tanks:	single-tank or multi-tank systems
Loading:	Front loading through a roller guided holding fixture
Housing:	stainless steel
Tank insulation:	stainless steel
Control and operation:	Siemens Simatic with Siemens touch panel
Bath monitoring:	Libelle Fluid Control

Standard sizes	Unit	600	800	1,000
Effective length	mm	600	800	1,000
Effective width	mm	400	600	600
Effective height	mm	300	400	600
Load capacity	kg	100	100	100
1-tank system: Tank volume	l	700	900	1,100
2-tank system: Volume tank 1	l	350	450	550
Volume tank 2	l	350	450	550
other technical data and on-site services on request				

## Versatile and practical.



### Cleaning technology

- holding fixture revolves or swivels around the horizontal axis
- a separate nozzle frame for each tank reduces mixing
- nozzles and nozzle frames can be adapted to the component
- adaptation of useful dimensions, loads and pump capacities



### Processing steps

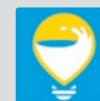
The processing steps are carried out in a chamber:

- spray washing
- spray rinsing (for multi-tank system)
- rinsing with demineralised water (optional)
- drying with air blast (optional) or circulating air (optional)



### Options and supplements

- drying systems
- handling systems: loading carriage, cross movement table, bridge loader and automation
- increased pump capacity increased spray pressure
- bath maintenance measures (e.g. filtration systems, oil separator)
- process reliability: Libelle Cleaner Control, Libelle Oil Control, Libelle Data Control
- cascade guiding
- floor drip tray
- other system components



### Smart Cleaning

Intelligent cleaning with **BvL** apps and digital networking!  
Transparent process information for predictive system diagnostics and maintenance: efficient and automatic.



compact and space saving

for small parts in baskets or  
individual parts on workpiece  
holders

for parts with recesses or  
cavities

for light to medium soiling



**Detail**

large maintenance doors for easy access



### Brief description

**Niagara EM** is a compact spray cleaning system with revolving wheel technology. The system features a modern and compact design. All processing steps are carried out in a chamber. Rotating the parts baskets or parts carriers around the horizontal axis ensures all-round thorough cleaning.

### Basic system

Cleaning system:	spray cleaning with flat spray nozzles
Operating principle:	revolving wheel system with stationary nozzle frame
Number of tanks:	1
Loading:	front loading through a roller guided holding fixture
Housing:	compact stainless steel housing
Tank insulation:	yes
Control and operation:	Siemens Simatic with Siemens touch panel
Bath monitoring:	Libelle Fluid Control

Standard sizes	Unit	480	600
Effective length	mm	480	600
Effective width	mm	320	400
Effective height	mm	200	300
Load capacity	kg	50	100
1-tank system: Tank volume	l	280	350
other technical data and on-site services on request			

## Small and compact.



### Cleaning technology

- holding fixture revolves or swivels around the horizontal axis
- all-round cleaning through special nozzle frame
- nozzles and nozzle frames can be adapted to the component
- adaptation of useful dimensions, loads and pump capacities possible



### Processing steps

The processing steps are carried out in a chamber:

- washing: spray cleaning, flood cleaning (optional), injection flood cleaning (optional)
- rinsing with demineralised water (optional)
- drying with air blast (optional) or hot air (optional)



### Options and supplements

- drying systems
- handling systems: loading carriage, cross movement table and automation
- increased pump capacity increased spray pressure
- bath maintenance options
- process reliability: Libelle Cleaner Control, Libelle Oil Control, Libelle Data Control, remote diagnosis
- cascade guiding
- floor drip tray
- other system components



### Smart Cleaning

Intelligent cleaning with **BvL** apps and digital networking!  
Transparent process information for predictive system diagnostics and maintenance: efficient and automatic.





for bulky, heavy components  
and complex geometric shapes

for use with Euro box pallets  
(and others)

for large quantities

for light to medium soiling



**Detail**

**Niagara RH** with loading carriage and workpiece fixture





### Brief description

**Niagara RH** is a spray cleaning system with revolving wheel technology. All processing steps are carried out in a chamber. Rotating the parts baskets or parts carriers around the horizontal axis ensures all-round thorough cleaning.

### Basic system

Cleaning system:	spray cleaning with flat spray nozzles
Operating principle:	rotating, revolving wheel system with vertical nozzle frame which swivels in front of the face sides
Number of tanks:	1-2
Loading:	front loading through a roller guided holding fixture
Housing:	stainless steel
Tank insulation:	stainless steel
Control and operation:	Siemens Simatic with Siemens touch panel
Bath monitoring:	Libelle Fluid Control

Standard sizes	Unit	950	1,250	1,600	1,950
Effective length	mm	900	1,230	1,400	1,600
Effective width	mm	600	840	1,000	1,200
Effective height	mm	600	970	1,000	1,200
Load capacity	kg	500	750	1,000	1,000
1-tank system: Tank volume	l	1,000	1,600	2,000	2,000
2-tank system: Volume tank 1	l	600	1,000	1,400	1,300
Volume tank 2	l	400	650	650	700

other technical data and on-site services on request

## Large and efficient.



### Cleaning technology

- holding fixture revolves or swivels around the horizontal axis
- all-round cleaning through special nozzle frame
- a separate nozzle frame for each tank reduces mixing
- nozzles and nozzle frames can be adapted to the component
- adaptation of useful dimensions, loads and pump capacities possible



### Processing steps

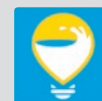
The processing steps are carried out in a chamber:

- spray washing
- spray rinsing (for two-tank system)
- circulating air drying (optional)



### Options and supplements

- drying systems
- handling systems: loading carriage, cross movement table, bridge loader and automation
- increased pump capacity
- bath maintenance options
- process reliability: Libelle Cleaner Control, Libelle Oil Control, Libelle Data Control, remote diagnosis
- cascade guiding
- floor drip tray, other system components



### Smart Cleaning

Intelligent cleaning with **BvL** apps and digital networking!  
Transparent process information for predictive system diagnostics and maintenance: efficient and automatic.



compact and space saving

for small parts in baskets or  
individual parts on workpiece  
holders

for components with complex  
geometrical shapes

for high requirements to  
cleanliness



**Detail**

**NiagaraMO** with automatic feed/discharge and loading trolley



### Brief description

**Niagara MO** is a compact two-tank, flood/spray cleaning system with revolving wheel technology. The system features a modern and compact design. Ultrasound cleaning (optional) achieves a high level of cleanliness. All processing steps are carried out in a chamber. The fully glazed door allows operators to view the washing process. Rotating the parts baskets or parts carriers around the horizontal axis ensures all-round thorough cleaning.

### Basic system

Cleaning system:	spray/flood cleaning with flat spray nozzles
Operating principle:	revolving wheel system with stationary nozzle frame
Number of tanks:	2
Loading:	front loading through a roller guided holding fixture
Housing:	compact stainless steel housing
Tank insulation:	yes
Control and operation:	Siemens Simatic with Siemens touch panel
Bath monitoring:	Libelle Fluid Control

Standard sizes	Unit	480	600
Effective length	mm	480	600
Effective width	mm	320	400
Effective height	mm	200	300
Load capacity	kg	50	100
Volume tank 1	l	370	450
Volume tank 2	l	360	420
other technical data and on-site services on request			

## Versatile and compact.



### Cleaning technology

- holding fixture revolves or swivels around the horizontal axis
- all-round cleaning through special nozzle frame
- nozzles and nozzle frames can be adapted to the component
- adaptation of useful dimensions, loads and pump capacities



### Processing steps

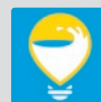
The processing steps are carried out in a chamber:

- Washing and rinsing: spray cleaning, flood cleaning, injection flood cleaning, vacuum flood cleaning (optional), ultrasound cleaning (optional)
- rinsing with demineralised water (optional)
- drying with pneumatic pulse (optional), hot air (optional), vacuum drying (optional)



### Options and supplements

- drying systems
- handling systems: loading carriage, stationary table with cross moving, automatic drive-in and drive-out device, driven conveyor
- increased pump capacity increased spray pressure
- bath maintenance options
- process reliability: Libelle Cleaner Control, Libelle Oil Control, Libelle Data Control, remote diagnosis
- cascade guiding
- floor drip tray
- other system components



### Smart Cleaning

Intelligent cleaning with **BvL** apps and digital networking!  
Transparent process information for predictive system diagnostics and maintenance: efficient and automatic.





for large weights and large quantities in baskets or on hardening grates

especially for use in hardening shops

high cleaning performance



#### Detail

Pumps and filter technology



### Brief description

**Niagara VE** is a large volume, two-tank system with spray and flood function. Cleaning is carried out by a special nozzle system while the parts basket is stationary. Ultrasound cleaning (optional) achieves a high level of cleanliness. All processing steps are carried out in a chamber.

### Basic system

Cleaning system:	spray/flood cleaning with flat spray nozzles
Number of tanks:	multi-tank system
Drying:	Circulating air drying and/or vacuum drying
Loading:	front loading
Housing:	stainless steel
Tank insulation:	stainless steel
Control and operation:	Siemens Simatic with Siemens touch panel
Bath monitoring:	Libelle Fluid Control

Standard sizes	Unit	1,200
Effective length	mm	1,200
Effective width	mm	900
Effective height	mm	1,000
Load capacity	kg	1,000
Volume tank 1	l	3,000
Volume tank 2	l	3,000
other technical data and on-site services on request		

## Large and powerful.



### Cleaning technology

- spray/flood cleaning of stationary parts with flat spray nozzles
- closely spaced spray nozzle frame with many rows
- nozzles and nozzle frames can be adapted to the component
- adaptation of useful dimensions, loads and pump capacities



### Processing steps

The processing steps are carried out in a chamber:

- washing: spray cleaning, flood cleaning, injection flood cleaning, vacuum flood cleaning, ultrasound cleaning (optional)
- rinsing (for multi-tank system) spray cleaning, flood cleaning, injection flood cleaning, vacuum flood cleaning, ultrasound cleaning (optional)
- drying with air blast (optional), circulating air (optional) or vacuum drying (optional)



### Options and supplements

- drying systems
- handling systems: batch carriage, cross movement table, bridge loader and automation
- increased pump capacity increased spray pressure
- bath maintenance options
- process reliability: Libelle Cleaner Control, Libelle Oil Control, Libelle Data Control, remote diagnosis
- floor drip tray
- other system components



### Smart Cleaning

Intelligent cleaning with **BvL** apps and digital networking!  
Transparent process information for predictive system diagnostics and maintenance: efficient and automatic.



for small parts in baskets or  
individual parts on workpiece  
holders

for components with  
complex geometrical shapes

for very high cleanliness  
requirements

for applications with  
short cycle times



#### Variante

**NiagaraDFS** with workpiece carriers on cross-movement table  
for robot loading





### Brief description

**Niagara DFS** is a flood/spray cleaning system with revolving wheel technology. Ultrasound cleaning (optional) achieves a high level of cleanliness. All processing steps are carried out in a chamber. Rotating the parts baskets or parts carriers around the horizontal axis ensures all-round thorough cleaning.

### Basic system

Cleaning system:	spray/flood cleaning with flat spray nozzles
Operating principle:	rotating revolving wheel system with vertical nozzle frame and optional rotating nozzle frame (rotating in same or opposite direction)
Number of tanks:	single-tank or multi-tank systems
Loading:	front loading through a roller guided holding fixture
Housing:	stainless steel
Tank insulation:	stainless steel
Control and operation:	Siemens Simatic with Siemens touch panel
Bath monitoring:	Libelle Fluid Control

Standard sizes	Unit	600	800	1,000	1,200
Effective length	mm	600	800	1,000	1,240
Effective width	mm	400	600	600	850
Effective height	mm	300	400	600	1,000
Load capacity	kg	100	150	250	1,000
1-tank system: Tank volume	l	1,000	2,000	2,000	3,800
2-tank system: Volume tank 1	l	550	1,100	2,000	3,800
Volume tank 2	l	550	1,100	2,000	3,800

other technical data and on-site services on request

## Thorough and versatile.



### Cleaning technology

- holding fixture revolves or swivels around the horizontal axis
- all-round cleaning through special nozzle frame
- nozzles and nozzle frames can be adapted to the component
- adaptation of useful dimensions, loads and pump capacities possible



### Processing steps

The processing steps are carried out in a chamber:

- washing: spray cleaning, flood cleaning, injection flood cleaning, vacuum flood cleaning, ultrasound cleaning (optional)
- rinsing (for multi-tank system) spray cleaning, flood cleaning, injection flood cleaning, vacuum flood cleaning, ultrasound cleaning (optional)
- drying with air blast (optional), circulating air (optional) or vacuum drying (optional)



### Options and supplements

- drying systems
- handling systems: parts baskets, loading carriage, cross movement table, bridge loader and automation
- increased pump capacity increased spray pressure
- bath maintenance options
- process reliability: Libelle Cleaner Control, Libelle Oil Control, Libelle Data Control, remote diagnosis
- cooling systems
- degaussing systems
- cascade guiding
- floor drip tray
- other system components



### Smart Cleaning

Intelligent cleaning with **BvL** apps and digital networking!  
Transparent process information for predictive system diagnostics and maintenance: efficient and automatic.



**NiagaraDFS** as double system with Nevada drying, roller conveyor, bridge loader and workpiece carrier station



**NiagaraDFS** with triple cross-movement table, maintenance platform and complete housing.

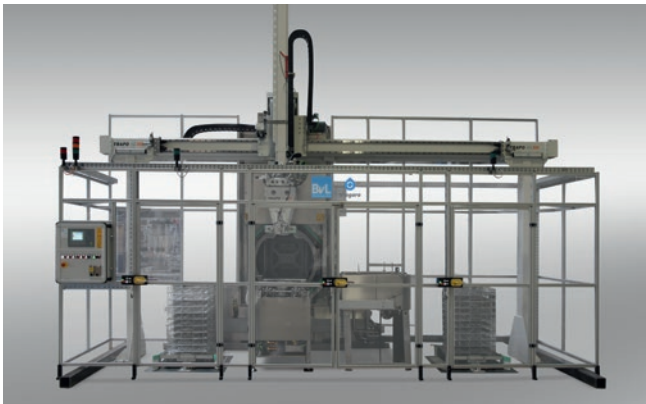


**NiagaraDFS** as double-chamber continuous system with downstream Nevada vacuum drying and active Arctic cooling tunnel

# Individuality and cleanliness at the highest level



**NiagaraDFS** with automatic loading and unloading  
incl. basket buffer



**NiagaraDFS** with double-cell bridge loader,  
incl. floor roller cleaning device



**NiagaraDFS** as double-chamber system, with Nevada vacuum drying, passive Arctic cooling tunnel, maintenance platform and continuous roller system for automatic component loading and unloading of the workpiece carriers



# BvL cleaning systems – intelligent functions for high efficiency

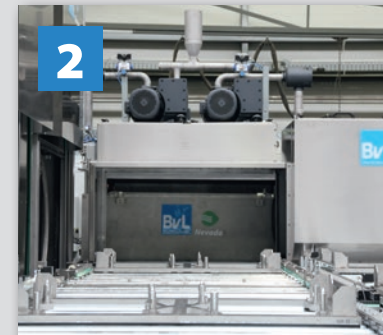
We design what you need: as powerful as necessary, as efficient as possible. The extensive selection of available features ranges from simple filter technology and powerful vacuum dryers to fully automated transport units with identification system for workpiece detection. This allows all **BvL** systems to provide customised cleaning solutions – perfectly adapted for your process reliability.

## Preventive maintenance

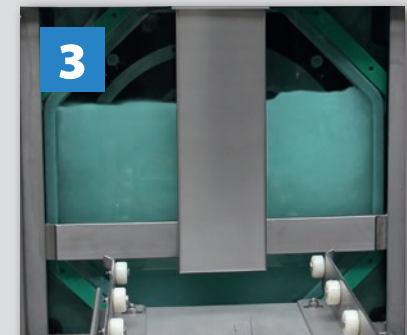
Following the guiding principle of Smart Cleaning, we offer sensor technology for preventive maintenance based on real-time data. This allows you to achieve more efficient production planning as well as a longer service life and increased availability of the machines.



**Detail**  
Lifting/lowering station



**Detail**  
External vacuum dryer



**Detail**  
Flood cleaning



**Detail**  
Libelle for bath monitoring



**Detail**  
Energy saving insulation package



**Detail**  
Barcode scan + washing program storage



**Detail**  
ergonomic loading



**Detail**  
clearly structured display view for  
easy operation





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**Pure technology.**