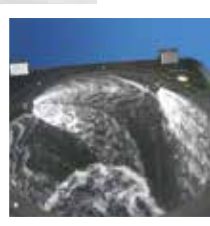
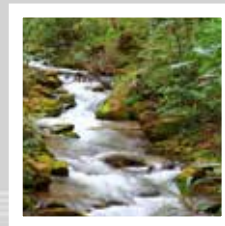


**ENGINEERING
YOUR SPRAY SOLUTION**



Cleaning Nozzles, Accessories and Application Information

Catalog R 2018



Cleaning

LECHLER AGRICULTURAL SPRAY NOZZLES – GOOD FOR YOUR CROP, GOOD FOR THE ENVIRONMENT

Lechler is a world leader in nozzle technology. For over 135 years, we have pioneered numerous groundbreaking developments in the field of nozzle technology. Comprehensive nozzle engineering know-how is combined with a deep understanding of application-specific requirements to create products that offer outstanding precision, reliability and durability.

Modern plant protection involves more than just the use of environmentally friendly chemicals. It is above all a question of precision. In order to achieve uniform coverage, the droplets must reach the target as exactly as possible. Losses due to drift, run-off or evaporation should be avoided – in favour of the environmental protection.

The application technology and here particularly the plant protection nozzles must therefore meet very high requirements. Today, nozzles must offer a degree of precision that would have been considered impossible just a few years ago.

As a globally leading manufacturer of precision nozzles, Lechler is ideally prepared to meet this challenge. For decades now, our products have set the technological

standards in the fields of crop protection and liquid fertilizer application. Through regular and extensive investment in research and development, we ensure that this will also remain the case in the future. The functions and characteristics of our precision nozzles are defined exactly and objectively right from the start. This process is based on sophisticated measuring techniques and our proven documentation system.

State-of-the-art design and simulation techniques guarantee practically-oriented products with a high practical value.

With Lechler nozzles, one spray jet is the same as the next. This demands a high level of precision and care in production. Our processes are therefore subject to permanent quality control



measures, from the incoming goods department, through development and production right up to dispatch. Our quality management system is based primarily on the requirements of our customers and is certified in accordance with ISO 9001:2008. Lechler nozzles comply with the requirements of the Julius Kühn Institute, the German Plant Protection Act as well as European EN and international ISO standards.

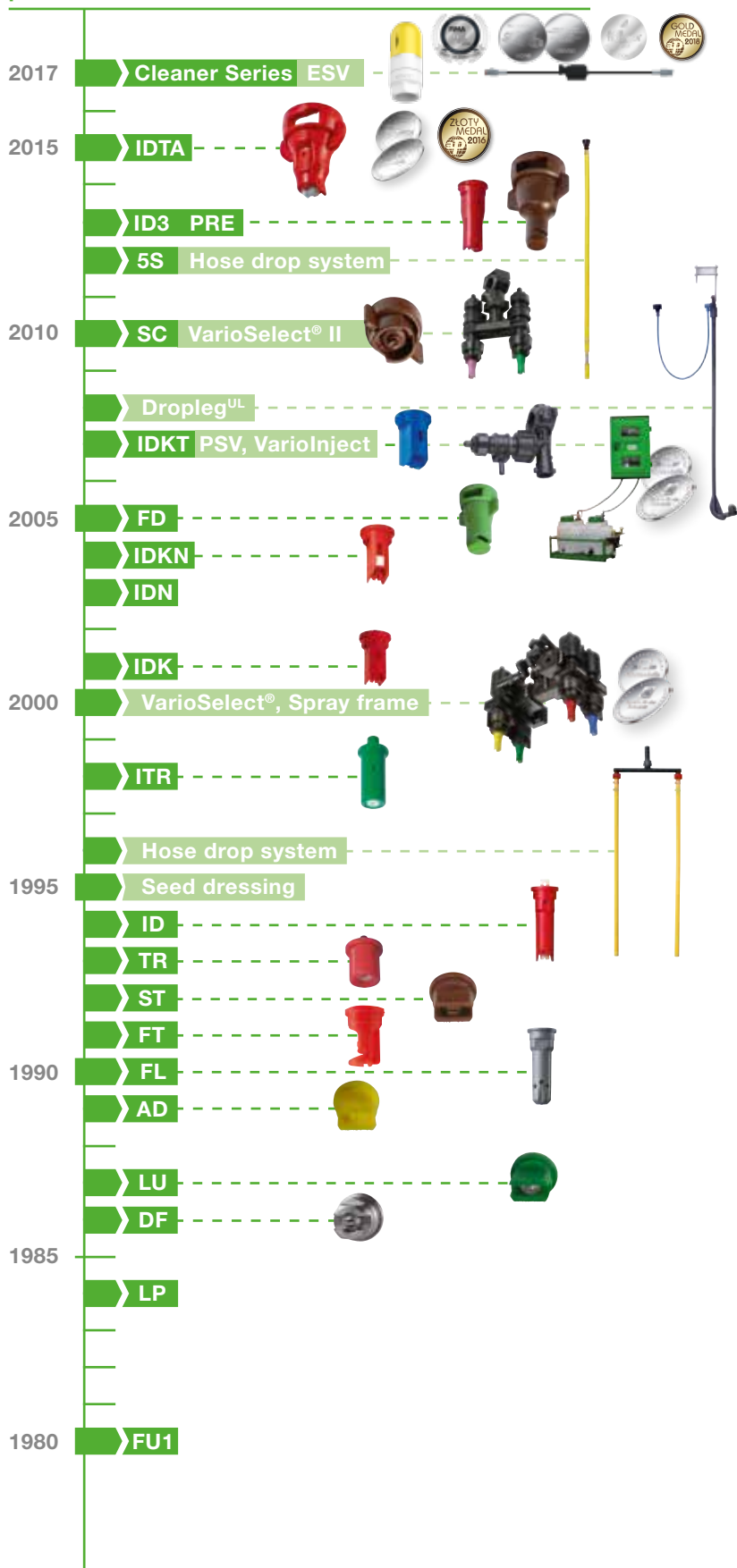
Thanks to close cooperation and active exchange of information with official test institutes, the chemicals and liquid fertilizer industry, the equipment manufacturers

and last but not least agricultural consultants, we also ensure that we are fully up-to-date on current practical requirements. After all, one thing is certain: solutions for practical applications can only be developed from practical knowledge.

This catalog contains our comprehensive Lechler cleaning nozzle and accessory range so see for yourself our product range.

PROGRESS MEANS FURTHER DEVELOPMENT

Therefore success is not a final state for us, but simply a further step on the way to even greater perfection.



CONTENT	Page
Lechler nozzles for container and tank cleaning	4–7
Tank- and outside cleaning of sprayers	8–9
Different ways of spray tank cleaning in comparison	10–11
Products	
High-pressure cleaning nozzles	12
Injector agitator nozzles	13
Cleaning nozzle for induction hopper “WallCleaner”	14
Dead-man’s circuit and “CleanerValve”	15
Static spray ball Series 540/541	16
Rotating cleaning nozzles “ContiCleaner” with slide bearing	17–19
Rotating cleaning nozzles “MicroWhirly” with slide bearing	20
Rotating cleaning nozzles “CanCleaner” ball bearing-mounted	21
Rotating cleaning nozzles “MiniWhirly” ball bearing-mounted	22
Rotating cleaning nozzles “MiniSpinner” double ball bearing mounted	23
Accessories	
Split eyelet connector	24
Check valve	24
CleanerFix	24

LECHLER NOZZLES FOR CONTAINER AND TANK CLEANING

When it comes to tank and container cleaning, efficiency has the highest priority. Cleaning has to take place quickly and thoroughly to ensure that no residues are left. The Lechler nozzle range offers innovative nozzle technologies as well as a large selection of sizes and materials for cleaning and flushing containers, tanks

and induction hoppers as well as for homogenization of tank contents.

The scope of our portfolio is unique on the market and offers the perfect solution for every application. Application fields include plant protection, animal husbandry (feeding, milk industry) and wineries.



















Nozzle selection

The choice of the right Lechler rotating cleaning nozzle or a suitable static spray ball is determined primarily by the type of dirt to be cleaned and the tank diameter.

Rinsing is often sufficient in the case of non-adhering substances. Static spray balls meet these requirements. However, the higher the level of soiling and the more

stubborn the dirt, the more important the jet force of the nozzle. In such cases, cleaning with rotating cleaning nozzles is recommended. It must be ensured that the

diameter of the tank to be cleaned is smaller than the maximum possible tank diameter specified for the nozzle.

	Injector agitator nozzles	"WallCleaner"	Static spray ball 540/541	"ContiCleaner"	"MicroWhirly" 500 and 566	"CanCleaner"	"MiniWhirly" 500.186	"MiniSpinner" 5MI
								
Spray geometry								
Page	13	14	16	17	18	19	20	21
Rinsing of container and tank	●●	-	●●	●●	●●	-	●	●●
Rinsing inside of induction hopper	-	●●	●	○	●●	●	●	-
Rinsing of canister	-	-	●	-	●	●●	●	-
Continuous internal cleaning	-	-	-	●●	●	-	●	-
Function and max. rinsable diameter	Mixing of liquids	Rinsing of products and side walls cleaning	Rinse up to max. 6.0 m	Rinse up to max. 1.6 m	Rinse up to max. 1.6 m	Rinse up to max. 1.3 m	Rinse up to max. 1.3 m	Rinse up to max. 2.6 m
Features	Efficient mixing	Rinsing up to under the edge	High operating reliability	Reliable start-up at low pressure	Easy start-up thanks to slide bearing	Increased flow rate towards canister bottom	Ball bearing-mounted	Efficient rinsing of big tanks

●● = very well-suited ● = well-suited ○ = less well-suited - unsuitable

Nozzles for cleaning and rinsing

Static

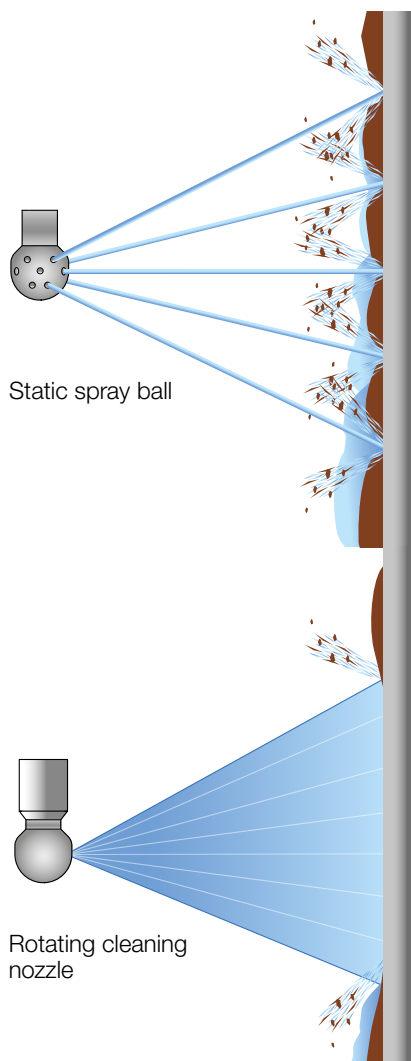


Static spray balls do not rotate and therefore require considerably higher liquid quantities. They are used primarily for rinsing tanks. They are inexpensive to purchase and are very robust (trouble-free).

Free-spinning



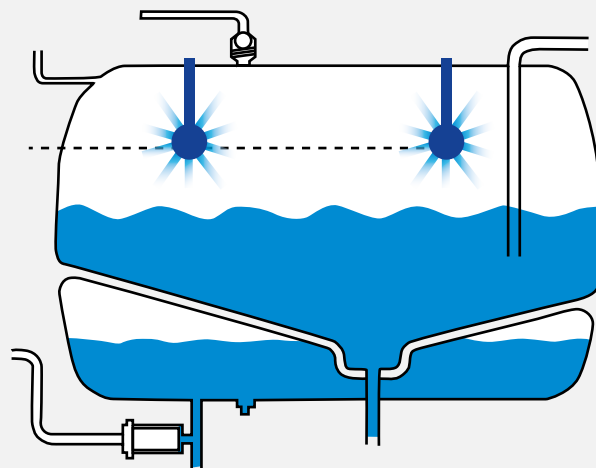
The cleaning fluid drives the spray head by means of specially aligned nozzles. The rapidly repeated impacts detach the dirt and rinse it from the tank surface. This results in optimum cleaning efficiency at low pressures in small to medium-sized tanks.



Nozzle positioning

The nozzles must be positioned in the upper part of the tank where possible. It must be ensured that sufficient cleaning fluid reaches the tank ceiling.

When cleaning large tanks, it is essential to install several nozzles. The nozzles should then be positioned so that their spray jets overlap. The spray jet can then reach almost every surface to be cleaned.



LECHLER NOZZLES FOR CONTAINER AND TANK CLEANING

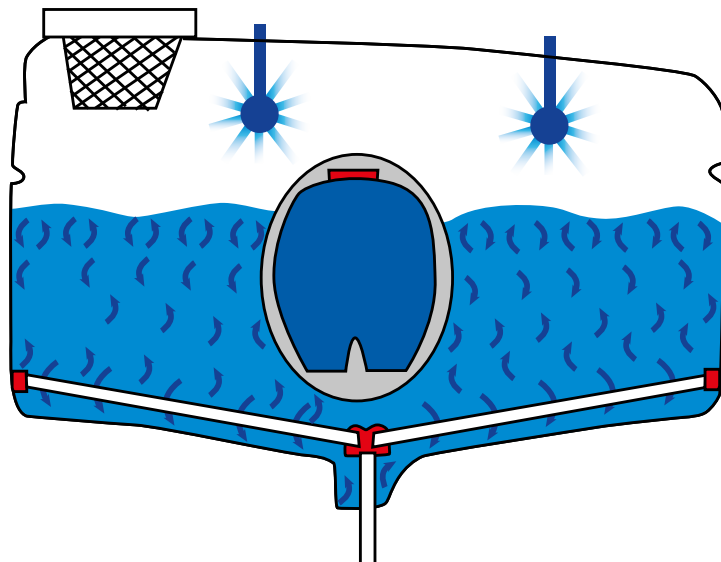


Avoidance of spray shadows

Baffles, agitators or lines prevent the spots behind them from being impacted directly by the spray jet of the tank cleaning nozzle. Cleaning by direct impact is not possible in these spots.

For this reason, several nozzles must be used in tanks and containers with built-in equipment.

The number of nozzles should be chosen so that the spray shadows of the individual nozzles are eliminated.



Nozzles for continuous internal cleaning

In the case of continuous internal cleaning, the nozzles are selected according to the working width of the field spray boom (number of nozzles). For an efficient cleaning, the volume flow of the cleaning nozzles should be max. 90% of the total nozzle output (all nozzles – full working width).

A boom sprayer with 15 m working width and 30 nozzles IDKN 120-03 has a total nozzle output of 29.1 l/min at

2 bar cleaning pressure. The nozzles for the continuous internal cleaning need an output of max. 26.2 l/min. This ensures that there remain no plant protection products in the tank. The remaining spray liquid is applied in the field via the nozzles.

The number of cleaning nozzles needed, depends on the shape of the tank and on fittings such as, for example, baffles in the tank. It is important that all corners are

cleaned and that there are no dead angles. The “ContiCleaner” has been designed especially for this application. It runs easily with reduced volume flow even at low pressure.



Nozzles for agitation and homogenization

After the plant protection product is flushed into the tank of the sprayer, Lechler injector agitator nozzles ensure fast and homogeneous mixing of the spray mixture. The injector effect of the nozzle reinforces the turbulence of the solid jet. As a result, a large volume in the tank can be circulated in a short time with a low flow rate.

Several injector agitator nozzles with a lower volume flow produce a more intensive agitation effect than a single, large agitator nozzle. In particular, corners and suction sumps are reached more effectively. Dead zones are avoided.



The agitator is located centrally in the fluid tank

Nozzles for induction hoppers

Lechler offers special, user-friendly nozzle technology for induction hoppers. This leads to improved user protection and effectively prevents residues. The induction hopper nozzles clean the wall surfaces of the induction hopper completely up to under the edge.

As a result of the rotating liquid flow, premixing already takes place during induction and therefore ensures lump-free induction of powder plant protection products by the rotating liquid flow.



TANK- AND OUTSIDE CLEANING OF SPRAYERS

(An article by Harald Kramer, Chamber of Agriculture of North-Rhine Westphalia)

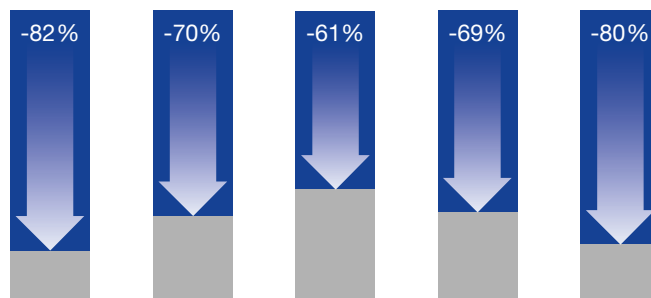
Internal cleaning is for many an annoying task. It is frequently argued that the same mixture is applied and it is therefore not necessary to perform cleaning or that cleaning is too time-consuming. However, entrainment of active ingredients into residue-relevant crops such as fruit and vegetables due to inadequate cleaning can have fatal consequences, because this often means that the goods cannot be marketed. In the event of a crop change after previous application of sulfonylurea, it is soon evident with sensitive successor crops whether the sprayer was really clean or not.

In the area of environmental and water protection, incorrectly performed internal cleaning on yard surfaces also frequently represents a very large potential source of pollution.



Spraying damage after inadequate cleaning

Reduction of point source pollution by equipment cleaning on the treated area on the basis of 5 river catchment areas in Hesse



(Source: Prof. Frede, National TOPPS Forum Bonn, 17 October 2006)

Various studies have shown that cleaning on the field or in the washing facility directly after application significantly reduces so-called point source pollution in water bodies.

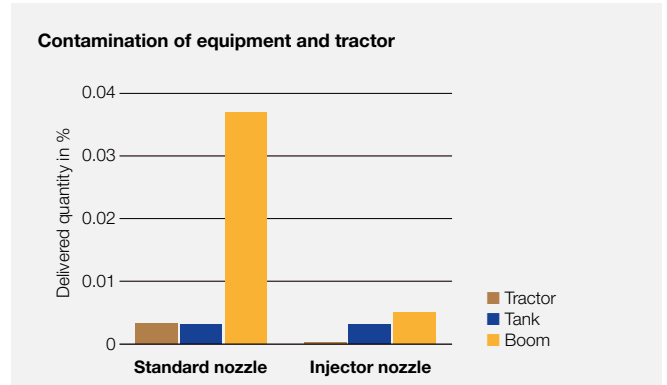
The result of internal cleaning can be significantly improved by observing the following points:

- Prepare only the amount of spray mixture that is actually needed for treatment of the area.
- If spraying has to be interrupted due to the weather, for example, all liquid-carrying parts such as pump, fittings, filters, lines and nozzles must be flushed with clear water from the fresh water tank.
- The sprayer should be emptied apart from the technical residual quantity. The agitator can be switched off shortly before the end of spraying. This minimizes the residual quantity and also avoids foaming with some products. In the case of smaller areas, the tapered edges should be treated first in order to be able to treat the last pass with all sections.
- Dilute the technical residual quantity with fresh water at least in the ratio 1:10. Newer systems are equipped with a fresh water tank (10 % of the tank volume). The water can be carried in canisters in the case of older equipment. Exact cleaning of the filters and nozzles must be performed depending on the hazard potential of the product for crops to be treated subsequently.
- If certain product groups are used, particularly sulfonylureas, special cleaning agents such as Agroclean® must be added in order to increase the cleaning effect. Cleaning should be performed in stages. In other words, cleaning should be split between two to three cycles in addition to the acting time of the cleaning agent.

In addition to internal cleaning, so-called external cleaning naturally also plays an important part. This is perhaps slightly less the case for field crops, since external cleaning can already be positively influenced with the choice of nozzle. Equipment manufacturers such as HARDI already showed at the start of the 2000s that contamination of the tractor, sprayer and boom

can be significantly reduced with the use of injector nozzles.

In fruit and wine growing, considerably more importance must be attached to external cleaning because the external contamination of the equipment is much greater. Two methods are essentially available for external sprayer cleaning.



(Source: Hardi 2002)

① Washing brush

A washing brush is mounted on the spraying equipment in many cases. This cleaning method requires a certain amount of time, but achieves a good level of cleaning. However, this is not the optimum solution for cleaning due to the high water consumption.

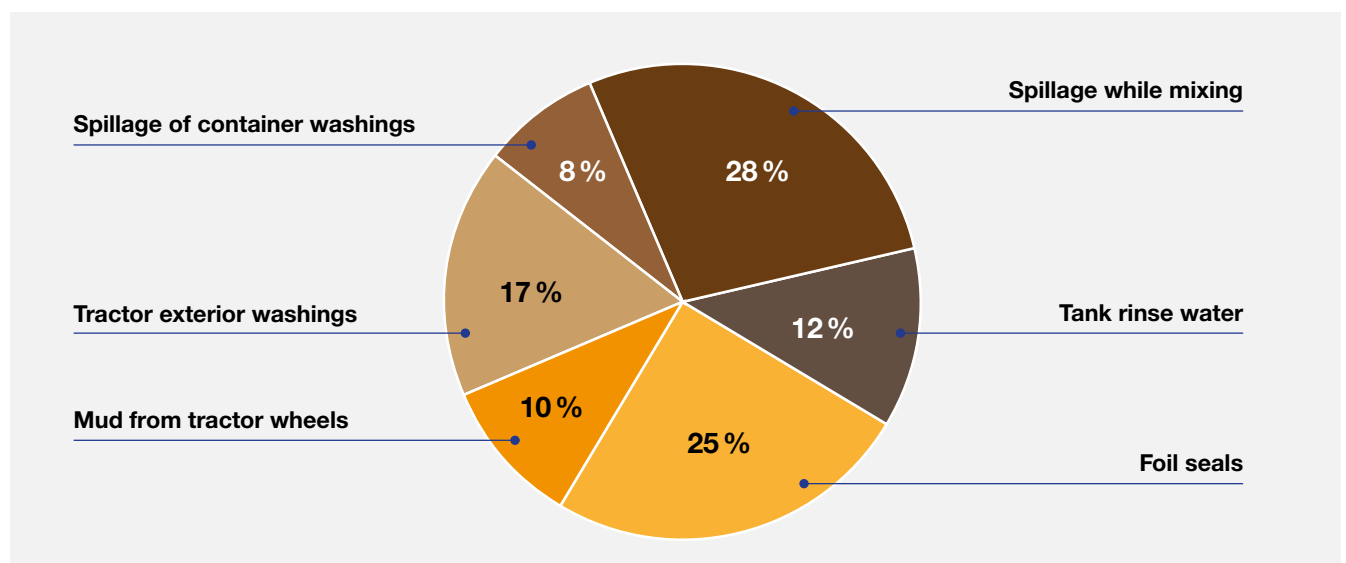
② Spray gun

A spray gun can be used as a modification for the washing brush. Both systems can be connected directly to the fitting. In some cases, equipment manufacturers also offer cleaning by a high-pressure cleaner carried on the sprayer. Here, external cleaning of the sprayer is performed conveniently with the carried clear water using a corresponding high-pressure pump and spray lance.

Experience shows that external cleaning of sprayers is not absolutely necessary after every spraying. However, it should be ensured in this case above all that sprayers are always parked under a roof where possible. Otherwise, adhering plant protection product residues could be rinsed off by the rain and seep into the ground through non-paved surfaces or enter the waste water system through the yard drains. In order to avoid such point

source pollution, the equipment should therefore be cleaned on the field or at a special washing facility. Information on design of such a washing facility should be obtained from the local advisory service or relevant authorities. In regions with animal farming, this could be a washing facility with a connection to the slurry pit, for example. Whether this is possible must always be clarified locally with the responsible authorities.

Contamination of yards with chemicals



(Source: Aventis Cherwell Study)

DIFFERENT WAYS OF SPRAY TANK CLEANING IN COMPARISON

No cleaning is not a solution

Cleaning the equipment used for pesticide application is often seen as tedious and time-consuming work and is therefore sometimes neglected. However, this does have consequences. Active ingredient residues in the equipment will be applied to the next crop. This may result in spraying damage and detectable active ingredient residues in the following crop.

Simple conventional cleaning

With conventional cleaning, the emptied tank is rinsed with fresh water via the spray pump and cleaning nozzles. The remaining spray liquid is emptied and must be properly disposed of. The active ingredient concentration in the following tank filling is significantly less than without cleaning, but there may still be residues in the following crop.

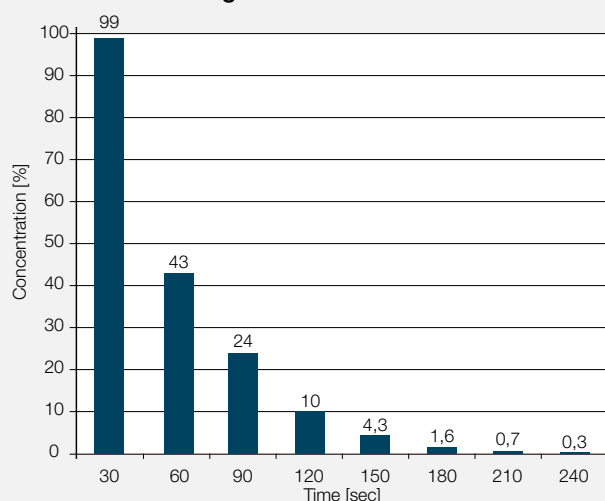
Good to know

All methods for internal and external cleaning should take place on the field or at specially equipped washing installations, e.g. Phytobac®. This avoids pesticide residues from entering the waste water system or surface water through paved yard surfaces. Plant protection product residues in surface water or other non-target organisms often result in application restrictions or active ingredient bans. It should therefore be in the interest of all those involved to avoid such point source pollution and residues.

Batchwise cleaning

With the batchwise cleaning method, the sprayer is first sprayed empty. The farmer then gets off the tractor and switches the sprayer to "cleaning" mode. Fresh water is added and then the tank is rinsed after the farmer has climbed onto the tractor again. After rinsing, he has to get off the tractor again, switch the sprayer into "spraying mode", climb onto the tractor and then spray the diluted rinsing water empty. This process is normally repeated three times. The required time is approx. 20–25 min.

Required time to reach a concentration of <1% in the boom at the last nozzle with continuous internal cleaning



(Source: Harald Kramer, Chamber of Agriculture of North-Rhine Westphalia)



“Cleaning will be carried out properly only if it can be performed quickly, easily and efficiently out on the field.”

(Picture source: Harald Kramer, Chamber of Agriculture of North-Rhine Westphalia)

(Quotation source: Werner Heller, State Institute of Agriculture, Symposium on Plant and Water Protection, Freising 2011)

Faster clean with continuous internal cleaning

At the start of spraying, a spray window of around 10–20 m is left untreated. Cleaning is started here at the end of spraying and

the remaining spray liquid is applied with all sections. This avoids areas from being treated twice and also prevents active ingredients from being “washed off” areas that have just been treated. With the continuous method, the

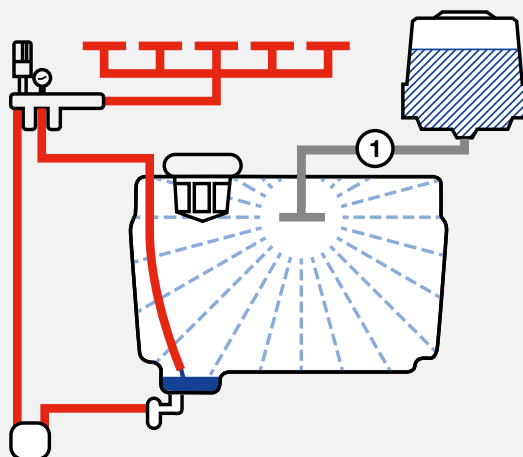
sprayer is first sprayed empty until the pressure drops (air comes out of the nozzles). The fresh water pump is activated and the tank is rinsed with fresh water via the cleaning nozzles.

The section valves are closed successively for approx. 1 min. so that the return lines, bypasses and agitators are cleaned. The fresh water pump is then switched off and the section valves opened again.

The tank is sprayed empty until the pressure drops. The fresh water pump is then switched on again and spraying is continued without interruption until the fresh water tank is empty.

In this way, the spray pump, return line, boom and nozzles are also flushed at the same time as the tank. Multiple switching on and off of the nozzle line "forces out" the residual spray liquid and ensures thorough cleaning. The time required for continuous internal cleaning is around 5 min.

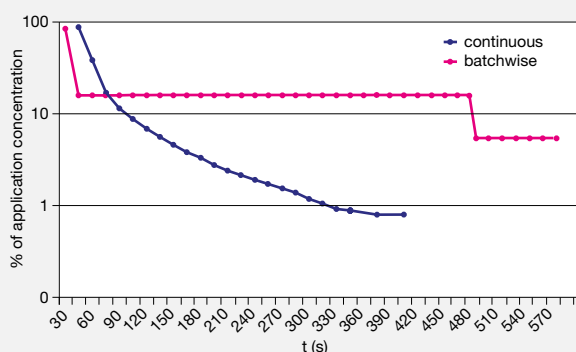
Schematic illustration of continuous internal cleaning



- ① Activation of cleaning pump ① (from tractor – no longer necessary to get off the tractor)
- ② Moving off in spray window when nozzles are spraying (first spray liquid, then very quickly highly diluted)
- ③ The cleaning operation is ended when the clear water tank is empty and the pressure drops or the nozzles close

(Source: Harald Kramer, Chamber of Agriculture of North-Rhine Westphalia)

Comparison of batchwise and continuous cleaning methods



Good to know

In the case of continuous internal cleaning, between 60 % and a maximum of 90 % of the total nozzle flow rate is supplied into the tank via the cleaning nozzles. A build-up of spray mixture is avoided and the product concentration falls continuously. This highlights the importance of selecting the appropriate pump and cleaning nozzles. Obtain advice.

In brief

Continuous internal cleaning saves a great deal of time compared with batchwise cleaning and also has a low fresh water requirement. The cleaning effect is higher compared with the conventional cleaning method and approximately the same as for batchwise cleaning. The practical efficiency of continuous cleaning is significantly higher, since it is no longer necessary to repeatedly get off and on the tractor. This also means that the operator no longer has to walk through the treated area and thus increases user protection. Handling is very simple, and the system can be retrofitted on existing spraying equipment.

When choosing the correct nozzle size, quantity and configuration, it is essential to take into account the tank shape and any dead zones in the tank!

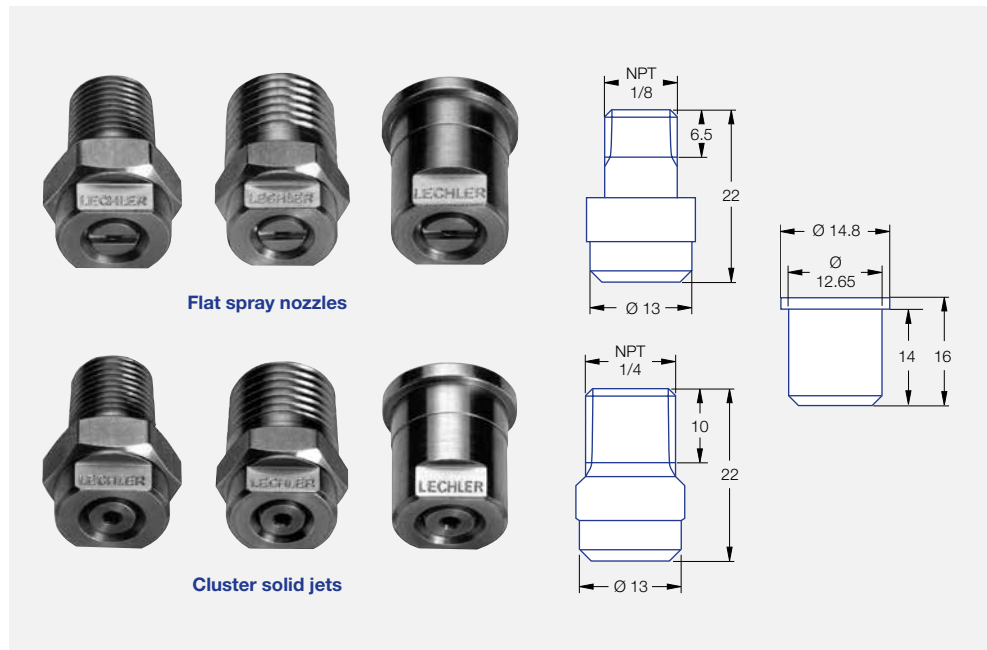
If you require further information, please contact our partner in the field of continuous internal cleaning:
Herbst Prüftechnik e.K., info@herbst-pflanzenschutztechnik.de

High-pressure cleaning nozzles

Solid and flat spray nozzles for high-pressure cleaners.

Advantages

- Maximum cleaning force due to "razor-sharp" cleaning jets
- Wear-resistant, hardened special stainless steel for long service life
- Recessed outlet opening protects nozzle against mechanical damage
- Maximum precision for uniform, concentrated jet force
- Connection possible via external thread and union nut



Nozzle sizes
04–06



Spray angle
0°–40°



Material
hardened stainless steel, (hard-metal insert on request)



Pressure range
40 – 200 bar

	Nozzle type	l/min		Order no.		
		[bar]		Male threads		Threaded version
		60.0	100.0	NPT 1/8	NPT 1/4	G 3/8
0°	00-04	7.1	9.2	550.450	546.450	548.450
	00-05	8.9	11.5	550.480	546.480	548.480
	00-06	10.6	13.6	550.520	546.520	548.520
15°	15-04	7.1	9.2	608.451	602.451	652.451
	15-05	8.9	11.5	608.481	602.481	652.481
	15-06	10.6	13.6	608.521	602.521	652.521
25°	25-04	7.1	9.2	608.452	602.452	652.452
	25-05	8.9	11.5	608.482	602.482	652.482
	25-06	10.6	13.6	608.522	602.522	652.522
40°	40-04	7.1	9.2	608.453	602.453	652.453
	40-05	8.9	11.5	608.483	602.483	652.483
	40-06	10.6	13.6	608.523	602.523	652.523

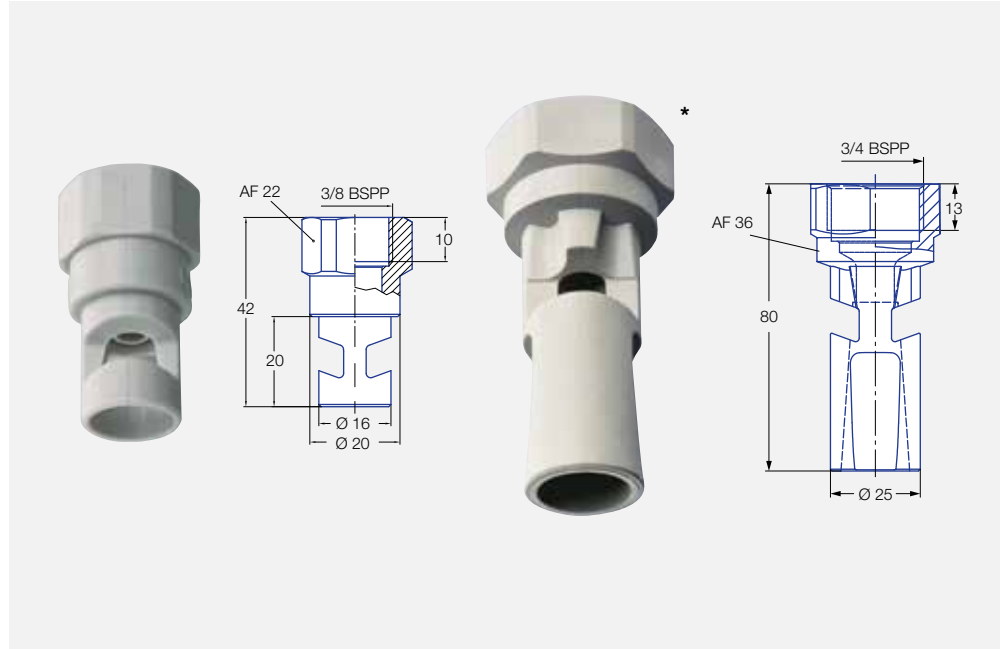


Injector agitator nozzles

Agitator nozzle for fast and homogeneous mixing in tanks.

Advantages

- Injector effect reinforces turbulence of the solid jet in the tank
- Effective circulation of large liquid quantities with a relatively small flow rate
- Clog-resistant due to large cross-sections



Bore diameter
Ø 2.2–10.55 mm



Material
PP



Pressure range
2 – 10 bar

Order no.	Bore Ø (mm)	l/min				
		2.0 bar	4.0 bar	6.0 bar	8.0 bar	10.0 bar
500.262.53.02	2.2	4.4	6.3	7.7	8.9	9.9
500.262.53.04	3.6	11.1	15.7	19.2	22.1	27.7
500.262.53.06	4.5	18.3	26.0	31.8	36.7	41.0
500.262.53.08	6.0	31.6	44.7	54.8	63.2	70.7
*500.262.53.20	10.55	96.1	136.0	166.5	192.3	215.0

Installation note

Installation using the eyelet connector (see page 24)



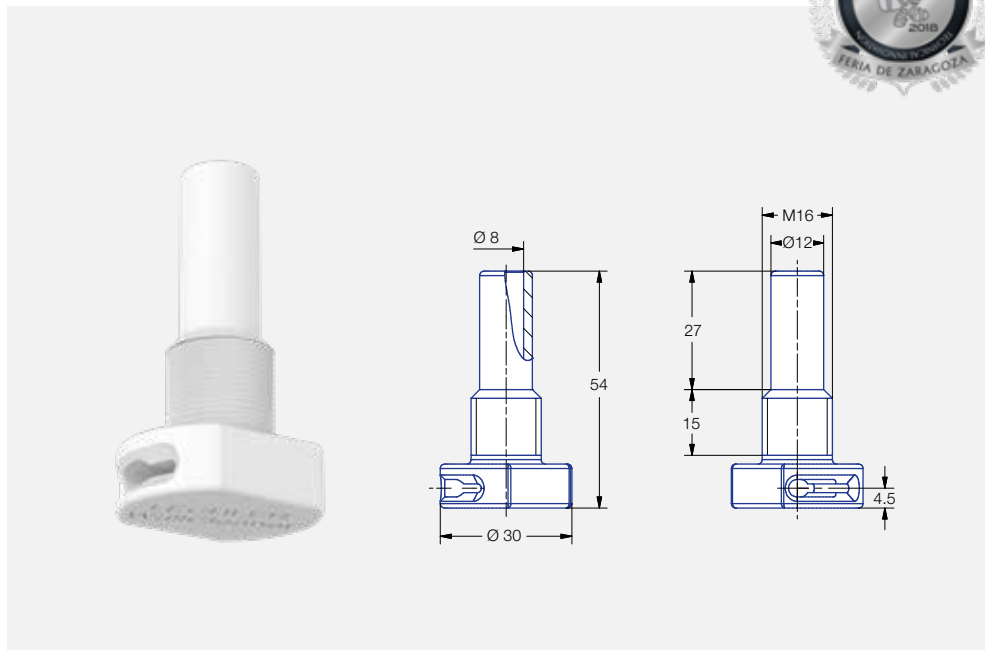


Cleaning nozzle for induction hopper “WallCleaner”

Special nozzle for induction hoppers for induction and cleaning.

Advantages

- Lump-free induction of plant protection products by rotating liquid flow
- Complete rinsing of inner wall up to under the edge for round induction hoppers
- Simple assembly by
 - M16 bolt/nut design
 - Plug connection for rinsing water (Ø 12 mm)
- Simple alignment of nozzle head with open-end wrench 24 AF
- ISO 10625 colour coded, size 40 – traffic white



Bore diameter
Ø 4.0 mm



Spray angle
60°



Material
POM



Pressure range
4 – 8 bar

Order no.	Bore Ø (mm)	l/min		
		4,0 bar	6,0 bar	8,0 bar
WallCleaner 40	4.0	19.8	24.3	28.0





Dead-man's circuit and "CleanerValve"

Safety valve for practical canister cleaning.

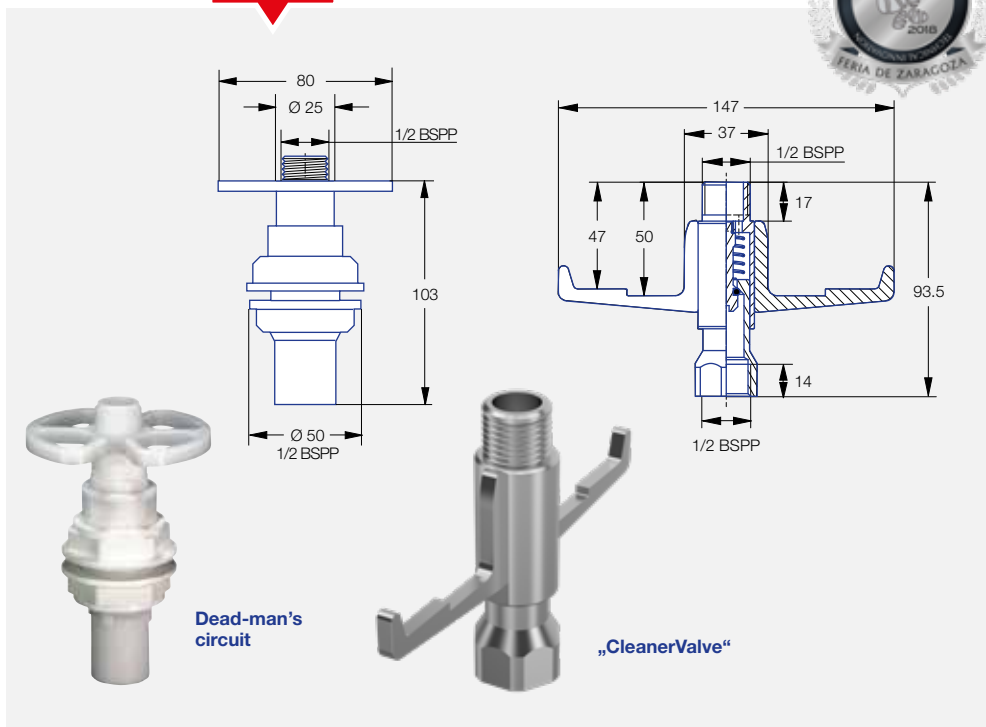
Advantages

- Valve is simple and convenient to operate
- Safety valve opens only in the event of container pressure
- Can be combined with static and rotating container cleaning nozzles
- Suitable for internal cleaning of all common canisters, containers and plant protection product packaging
- Better cleaning effect with stainless steel version in that container cleaning nozzle plunges deeper into container

CleanerValve

- Cleaning nozzle goes deeper into the canister, so the cleaning efficiency is increased
- Very robust stainless steel valve
- Extra wide bearing area for easy cleaning of measuring cups
- Operators safety: gradings on the bearing area prevent slipping

NEW



Type	Order no.
Dead-man's circuit POM	A.510.100.00
CleanerValve Stainless steel	092.175.17.01.00.1



Material

POM,
stainless steel



Pressure range

2 – 5 bar
>5 bar: use orifice
for reduction of the
pressure



Width across flats

CleanerValve
hex Ø 27 mm



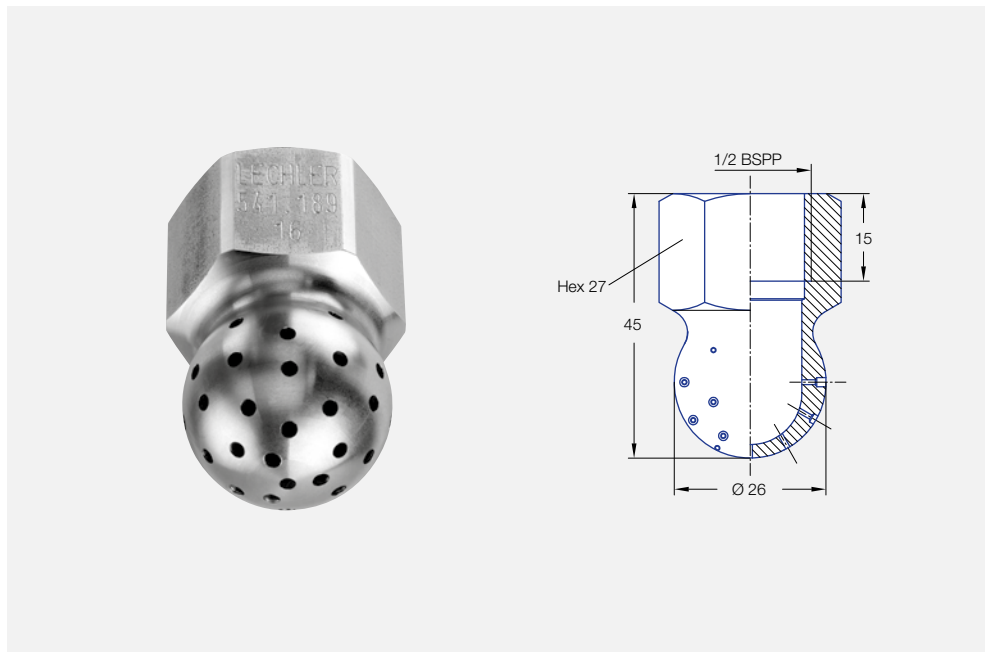


Static spray ball Series 540/541

Static multichannel solid jet nozzle.

Advantages

- Ideal for rinsing containers
- Compact design
- Self-draining
- No moving parts and thus fault-free
- Easy to inspect



Spray angle
240°



Material
Solid stainless steel,
PVC



Pressure range
2 – 3 – 10 bar



Operating principle
Static



Installation
Operation in every
direction is possible



Max. tank diameter
7.5 m

	Order no.	l/min					Max. tank diameter [m]
		2.0 bar	3.0 bar	4.0 bar	5.0 bar	10.0 bar	
240°	540.909.16 ¹	18.0	22.0	25.4	28.5	40.2	6.5
	540.989.16 ¹	28.0	34.3	39.6	44.3	62.6	7.0
	541.109.16	57.0	69.8	80.6	90.1	127.5	7.5

¹ Also available in PVC



Rotating cleaning nozzle "ContiCleaner" with slide bearing

NEW



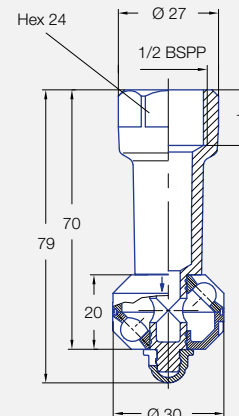
Rotating cleaning head with flat spray nozzles and slide bearings.

Advantages

- Effective rotating cleaning by means of flat spray nozzles
- Optimum internal cleaning of plant protection equipment tanks
- Self-powered, without external drive
- Robust design
- Resistant to chemicals
- Optimised for continuous internal cleaning
- ISO 10625 colour coded, sizes 12, 25, 30 and 60
- It runs easily even at low pressure
- Suitable for all sprayers



ContiCleaner



Spray angle
360°



Material
PVDF, PTFE



Pressure range
2 – 5 bar



Operating principle
Free-spinning



Installation
Operation in every direction is possible



Max. tank diameter
ContiCleaner: 1.6m



Filtration
Line strainer with a mesh size of 0.3 mm/50 mesh



Bearing
Slide bearing made of PEEK and PVDF

	Order no.		l/min			Dimensions					Max. tank diameter [m]
	Type	Mat.-no. PTFE and PVDF	2,0 bar	3,0 bar	5,0 bar	H ₁	H ₂	D	G	SW	
	ContiCleaner 12	○	4.1	5	6.5	79	15	30	G 1/2 ISO 228	24	1.6
	ContiCleaner 25	○	8.2	10	12.9	79	15	30	G 1/2 ISO 228	24	1.6
	ContiCleaner 30	○	9.8	12	15.5	79	15	30	G 1/2 ISO 228	24	1.6
	ContiCleaner 60	○	20.4	25	32.3	79	15	30	G 1/2 ISO 228	24	1.6



Function video

Scan the QR code
or go to:
www.lechler.com/microwhirly



Selection table “ContiCleaner” field spray boom and atomizer

Continuous internal cleaning: 60-90 % of the complete flow rate of the nozzles (=100 %) is used to rinse the tank.

Selection table - field sprayer

ISO nozzle size	x	working width	x	2	=	ISO flow rate of all nozzles
03	x	18 m	x	2	=	108
60–90 % of 108 = 65–97 = 1 x ContiCleaner 60 or 2 x ContiCleaner 30 or 3 x ContiCleaner 25						

Combination of ContiCleaner 60 and ContiCleaner 30 possible (depending on the form of the tank).

 Working width  3 bar												Number of ContiCleaner			
												1	2	3	4
12	15	18	21	24	27	30	32	33	36	38	42				
24	30											1 x			
36	45	36	42	48								1 x	2 x		
48		54			54							1 x	1 x	1 x	3 x
60	60		63			60	64	66				1 x	2 x	2 x	1 x
72	75	72	84	72	81	90			72	76	84	1 x	2 x	1 x	2 x
96	90	90	105	96	108		96	99	108	114		1 x	2 x	3 x	2 x
		108										1 x	2 x	3 x	2 x
120	120		126	120	135	120	128	132			126		1 x	1 x	3 x
	150	144	168	144	162	150	160	165	144	152	168		2 x	2 x	1 x
		180	210	192		180	192	198	180	190	210			1 x	2 x
				240	216	240			216	228	252			3 x	2 x
					270	300	256	264	288	304					1 x
							320	330	360	380	336				4 x
											420				4 x



ISO nozzle sizes of the nozzles on the field spray boom:

01 = ■ 015 = ■ 02 = ■ 025 = ■
 03 = ■ 04 = ■ 05 = ■



ISO nozzle sizes ContiCleaner:

ContiCleaner 12 = ■ ContiCleaner 25 = ■
 ContiCleaner 30 = ■ ContiCleaner 60 = ■

Selection table - atomizer

ISO nozzle size x number of nozzles x 2 = ISO flow rate of all nozzles

02

x

18

x


2

=

72

60–90 % of 72 = 43–65 = 1 x ContiCleaner 60 or 2 x ContiCleaner 30

Combination of ContiCleaner 60 and ContiCleaner 30 possible (depending on the form of the tank).

Number of nozzles on atomizer  12 bar													Number of ContiCleaner		
													1	2	3
6	8	10	12	14	16	18	20	24	26	30	36	40			
	16	13.4	16.1	14	16								1 x		
18	24	20	24	18.8	21.4	18	20						1 x		
24				28		24.1	26.8	24	26				1 x		
30	32	30			32			32.2		30			1 x	2 x	
36	40	40	36	42		36	40		34.8	40.2	36	40	1 x	2 x	
48	48	50	48		48			48	52		48.2		1 x	2 x	
	64	60	60	56	64	54	60			60		53.6	1 x	2 x	3 x
		80	72	70	80	72	80	72	78		72	80	1 x	2 x	1 x 2 x
				84									1 x	2 x	1 x 2 x
			96		96	90	100	96	104	90			1 x	2 x	3 x
				112	128	108	120	120	130	120	108	120		1 x 1 x	3 x
						144		144		150	144			2 x	2 x 1 x
							160		156			160		2 x	2 x 1 x
								192	208	180	180	200			1 x 2 x
										240	180	240			3 x



ISO nozzle sizes of the nozzles on the atomizer:

005 = 0067 = 01 = 015 =
02 = 025 = 03 = 04 =



ISO nozzle sizes ContiCleaner:

ContiCleaner 12 = ContiCleaner 25 =
ContiCleaner 30 = ContiCleaner 60 =

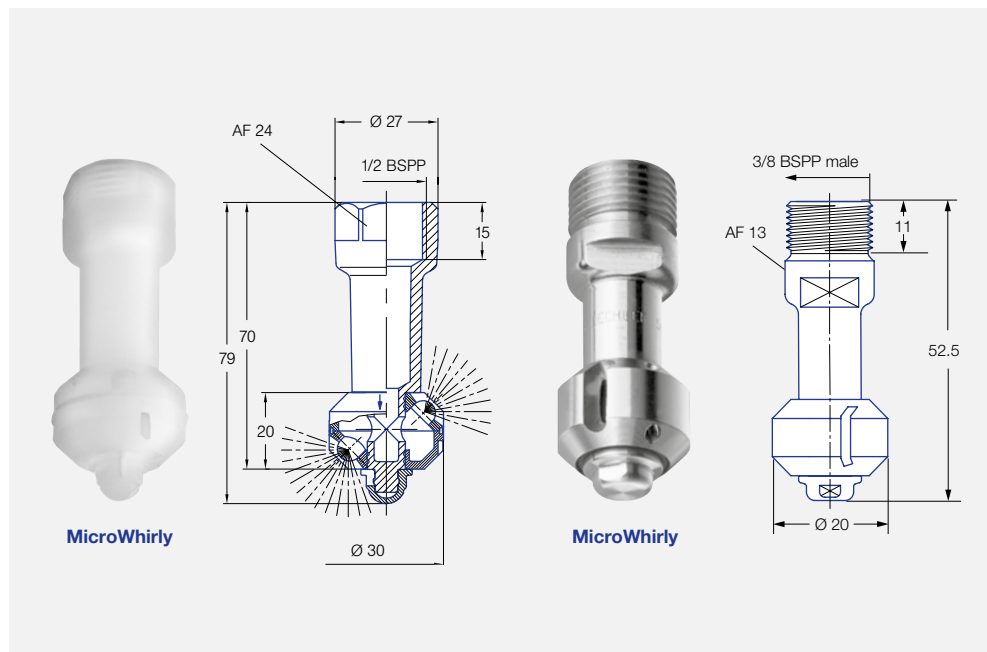


Rotating cleaning nozzle "MicroWhirly" with slide bearing

Rotating cleaning head with flat spray nozzles and slide bearings.

Advantages

- Effective rotating cleaning by means of flat spray nozzles
- Optimum internal cleaning of plant protection equipment tanks, canisters, containers and plant protection product packaging
- Self-powered, without external drive
- Robust design
- Resistant to chemicals



Spray angle
360°



Material
PVDF, stainless steel



Pressure range
2 – 5 bar



Operating principle
Free-spinning



Installation
Operation in every direction is possible





Max. tank diameter
Type 566: 1.7 m
Type 500.191: 1.1 m



Filtration
Line strainer with a mesh size of 0.3 mm/50 mesh



Bearing
Slide bearing made of PEEK and PVDF

	Order no.			l/min			Dimensions					Max. tank diameter [m]
	Type	Material-code										
		316 LSS	5E PVDF	2.0 bar	3.0 bar	5.0 bar	H ₁	H ₂	D	G	AF	
360° 	500.191	–	○	20	24	31	79	15	30	3/8 BSPP male	24	1.1
	566.939.1Y.AE	○	–	21	26	33.6	52.5	11	20	3/8 BSPP male	13	1.7



Function video

Scan the QR code
or go to:
www.lechler.com/microwhirly



Function video

Scan the QR-code
or go to:
www.lechler.com/pvdfmicrowhirly



Rotating cleaning nozzle “CanCleaner” ball bearing-mounted

Rotating cleaning head with flat spray nozzles and ball bearings.

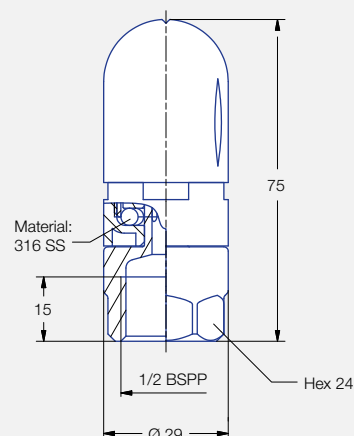
Advantages

- Effective rotating cleaning by means of flat spray nozzles
- Optimum internal cleaning of plant protection equipment tanks, containers and plant protection product packaging
- Self-powered, without external drive
- Slow rotation for optimum cleaning effect
- Resistant to chemicals
- 20 % increased flow rate towards canister bottom compared to MiniWhirly
- Color-coded in accordance with ISO 10625, in size 60

NEW



CanCleaner



Spray angle
300°



Material
POM
Stainless steel



Pressure range
2 – 3 – 5 bar



Operating principle
Free-spinning




Max. tank diameter
1.3 m



Filtration
Line strainer with a mesh size of 0.3 mm/50 mesh



Bearing
Ball bearing made of stainless steel

	Order no.	l/min				Max. tank diameter [m]
		2.0 bar	3.0 bar	4.0 bar	5.0 bar	
300° 	CanCleaner 60	20.4	25.0	28.9	32.3	1.3



Rotating cleaning nozzle “MiniWhirly” ball bearing-mounted

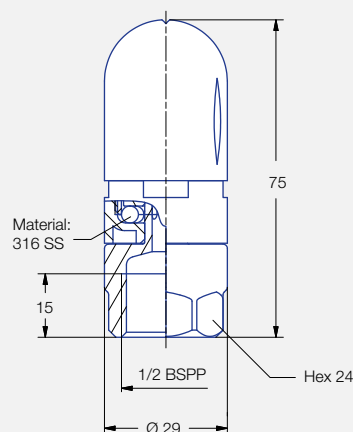
Rotating cleaning head with flat spray nozzles and ball bearings.

Advantages

- Effective rotating cleaning by means of flat spray nozzles
- Optimum internal cleaning of plant protection equipment tanks, canisters, containers and plant protection product packaging
- Self-powered, without external drive
- Slow rotation for optimum cleaning effect
- Resistant to chemicals



MiniWhirly



Spray angle
300°



Material
POM
Stainless steel



Pressure range
2 – 3 – 5 bar



Operating principle
Free-spinning




Max. tank diameter
1.3 m



Filtration
Line strainer with a mesh size of 0.3 mm/50 mesh



Bearing
Ball bearing made of stainless steel

	Order no.	l/min				Max. tank diameter [m]
		2.0 bar	3.0 bar	4.0 bar	5.0 bar	
300° 	500.186.56.AH	18.0	22.0	25.4	28.4	1.3



Function video

Scan the QR code
or go to:
www.lechler.com/miniwhirly

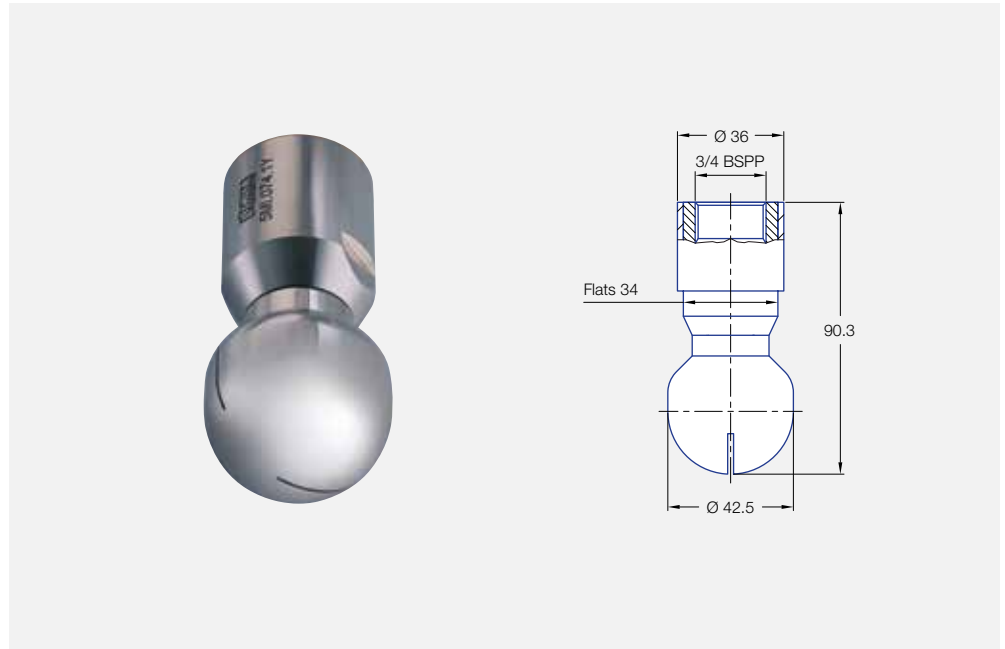


Rotating cleaning nozzle “MiniSpinner” double ball bearing mounted

Rotating cleaning head with flat spray nozzles and double ball bearings.

Advantages

- Efficient internal cleaning thanks to innovative slot design
- Reliable and long service life due to double ball bearings
- Self-powered, without external drive
- Resistant to chemicals



Spray angle
360°



Material
Stainless steel



Pressure range
1 – 2 – 3 bar

	Order no.	l/min			Max. tank diameter [m]
		1.0 bar	2.0 bar	3.0 bar	
360°	5MI.054.1Y.AL	21	30	37	1.8
	5MI.074.1Y.AL	35	49	60	2.1
	5MI.014.1Y.AL	49	69	85	2.3



Operating principle
Free-spinning



Installation
Operation in every direction is possible



Max. tank diameter
2.3 m



Filtration
Line strainer with a mesh size of 0.1 mm/170 Mesh

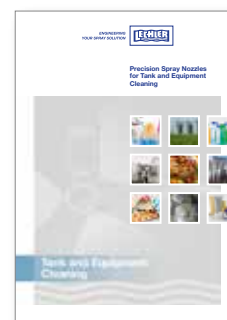


Bearing
Double ball bearing made of AISI 440C



Function video

Scan the QR code or go to:
www.lechler.com/spinner

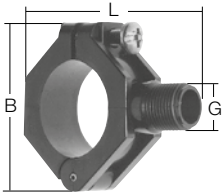


Here you will find more cleaning nozzles




Accessories

Split eyelet connector, max. 10 bar, with stainless-steel screw

	for pipe Ø	Male thread G	L mm	B mm	Material	Order no.
	3/8"	G 3/8	49	41	Polyamid	090.053.51
	1/2"	G 3/8	53	45	Polyamid	090.003.51
	3/4"	G 3/8	57	51	Polyamid	090.013.51
	1"	G 3/8	65	61	Polyamid	090.023.51

Check valve

Additional flange and threaded fittings see main catalogue
Agricultural Spray Nozzles and Accessories

Designation	Connection	Order no.
	1"	BMCV100
	2", Full Port	BMCV220
	3", Full Port	BMCV 300

Full Port = full continuity corresponding to connection

CleanerFix

- Mounting cleaning nozzles without entering the tank
- Simple, fast and safe exchange of cleaning nozzles in the tank

Designation	Order no.
	050.050.56.00.00.0

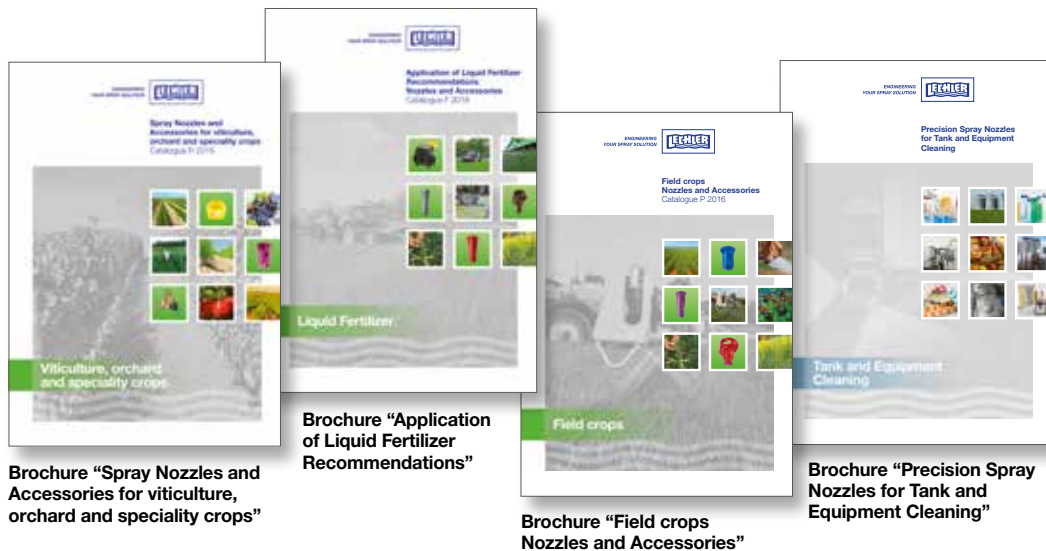
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Information is available
for various applications in
our catalog.

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